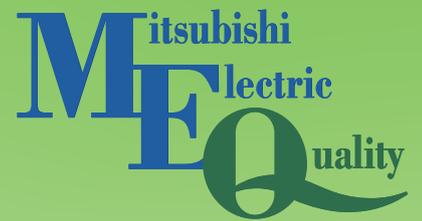




Changes for the Better

AIR TO WATER HEAT PUMP SYSTEMS



ecodan

Renewable Heating Technology

DATA BOOK

PUZ-WZ Vol.1.0

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Outdoor unit

Cylinder unit/
Hydrobox

Optional parts

When installing or relocating, or servicing the heat pump, use only the specified refrigerant (R32) to charge the refrigerant lines. Do not mix it with any other refrigerant and do not allow air to remain in the lines. If air is mixed with the refrigerant, then it can be the cause of abnormal high pressure in the refrigerant line, and may result in an explosion and other hazards. The use of any refrigerant other than that specified for the system will cause mechanical failure or system malfunction or unit breakdown. In the worst case, this could lead to a serious impediment to securing product safety.

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1 Specifications

1.1 Outdoor unit specifications

(1) Hydro-Split

MODEL NAME			PUZ-WZ50VAA(-BS)	PUZ-WZ60VAA(-BS)
POWER SUPPLY(Phase, voltage, frequency)			1ø, 230 V, 50 Hz	1ø, 230 V, 50 Hz
	Max. Current	A	13.0	13.0
Braker size		A	16.0	16.0
Outer casing			Galvanized plate	Galvanized plate
External finish			Munsell N8.75, N2.75 (FRONT PANEL)	Munsell N8.75, N2.75 (FRONT PANEL)
Refrigerant control			Linear expansion valve	Linear expansion valve
Compressor			Rolling piston type rotary	Rolling piston type rotary
	Model		SPB280FARMC	SPB280FARMC
	Motor output	kW	2.0	2.0
Start type			Inverter	Inverter
Protection devices			Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector	Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector
	Oil	L	0.38 (PZ46M)	0.38 (PZ46M)
Crankcase heater			-	-
Heat exchanger	Air		Plate fin coil	Plate fin coil
	Water		Plate heat exchanger	Plate heat exchanger
Fan	Fan(drive) x No.		Propeller fan ×1	Propeller fan ×1
	Fan motor output	kW	0.074	0.074
	Air flow	m ³ /min (CFM)	46 (1625)	46 (1625)
Defrost method			Reverse cycle	Reverse cycle
Noise level (SPL)	Heating *1	dBA	42 *3	42 *3
	Cooling *2	dBA	45 *3	45 *3
Noise level (PWL) (Based on EN12102:2022)	Heating	dBA	53	53
Dimensions	Width	mm(in)	1050 (41-5/16)	1050 (41-5/16)
	Depth	mm(in)	480 (18-7/8)	480 (18-7/8)
	Height	mm(in)	1020 (40-3/16)	1020 (40-3/16)
Weight		kg(lbs)	89 (196)	89 (196)
Refrigerant			R290 (3)	R290 (3)
	Chargeless	kg(lbs)	0.6 (1.3)	0.6 (1.3)
	MAX.	kg(lbs)	-	-
Pipe size O.D.	Liquid	mm(in)	-	-
	Gas	mm(in)	-	-
Connection method			Water Connect	Water Connect
Between the indoor & outdoor unit	Height difference	m	-	-
	Piping length	m	-	-
Guaranteed operating range (Outdoor)	Heating	°C	-25 to +24	-25 to +24
	DHW	°C	-25 to +46	-25 to +46
	Cooling	°C	+10 to +46	+10 to +46
Outlet water temp. (Max in Heating, Min in Cooling)	Heating	°C	+75	+75
	Cooling	°C	-	-
Nominal return water temperature range	Heating	°C	+9 to +74 *4	+9 to +74 *4
	Cooling	°C	+9 to +28 *4	+9 to +28 *4
Water Flow rate range		L/min	6.5 to 14.3	6.5 to 17.2

*1 Heating: Dry-bulb temperature 7°C, Wet-bulb temperature 6°C

*2 Cooling: Dry-bulb temperature 35°C

*3 For measurement conditions, see the Section "6 Noise criterion curves".

*4 Due to the water quantity of system. See the graph of Section "1.5 Available range".

1 Specifications

MODEL NAME			PUZ-WZ80VAA(-BS)		
POWER SUPPLY(Phase, voltage, frequency)			1ø, 230 V, 50 Hz		
	Max. Current	A	22		
Braker size			A 25		
Outer casing			Galvanized plate		
External finish			Munsell N8.75, N2.75 (FRONT PANEL)		
Refrigerant control			Linear expansion valve		
Compressor			Rolling piston type rotary		
	Model		SPB280FARMC		KP173VGBC
	Motor output	kW	2.0		0.8
	Start type		Inverter		Fixed
	Protection devices		Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector		High pressure switch Thermostat (Built in bimetal)
	Oil	L	0.38 (PZ46M)		0.30 (PZ46M)
Crankcase heater			-		
Heat exchanger		Air	Plate fin coil		
		Water	Plate heat exchanger		
Fan	Fan(drive) x No.		Propeller fan ×1		
	Fan motor output	kW	0.074		
	Air flow	m ³ /min (CFM)	46 (1625)		
Defrost method			Reverse cycle		Hot gas
Noise level (SPL)	Heating *1	dB(A)	45 *3		
	Cooling *2	dB(A)	45 *3		
Noise level (PWL) (Based on EN12102:2022)	Heating	dB(A)	54		
Dimensions	Width	mm(in)	1050 (41-5/16)		
	Depth	mm(in)	480 (18-7/8)		
	Height	mm(in)	1020 (40-3/16)		
Weight		kg(lbs)	117 (258)		
Refrigerant			R290 (3)		
	Chargeless	kg(lbs)	0.6 (1.3)		0.4 (0.9)
	MAX.	kg(lbs)	-		
Pipe size O.D.	Liquid	mm(in)	-		
	Gas	mm(in)	-		
Connection method			Water Connect		
Between the indoor & outdoor unit	Height difference	m	-		
	Piping length	m	-		
Guaranteed operating range (Outdoor)	Heating	°C	-25 to +24		
	DHW	°C	-25 to +46		
	Cooling	°C	+10 to +46		
Outlet water temp. (Max in Heating, Min in Cooling)	Heating	°C	+75		
	Cooling	°C	-		
Nominal return water temperature range	Heating	°C	+9 to +74 *4		
	Cooling	°C	+9 to +28 *4		
Water Flow rate range		L/min	6.5 to 22.9		

*1 Heating: Dry-bulb temperature 7°C, Wet-bulb temperature 6°C

*2 Cooling: Dry-bulb temperature 35°C

*3 For measurement conditions, see the Section "6 Noise criterion curves".

*4 Due to the water quantity of system. See the graph of Section "1.5 Available range".

1 Specifications

Outdoor unit

MODEL NAME			PUZ-WZ85VAA(-BS)	PUZ-WZ85YAA(-BS)
POWER SUPPLY(Phase, voltage, frequency)			1ø, 230 V, 50 Hz	3ø, 400 V, 50 Hz
	Max. Current	A	23	12
Braker size		A	25	16
Outer casing			Galvanized plate	Galvanized plate
External finish			Munsell N8.75, N2.75 (FRONT PANEL)	Munsell N8.75, N2.75 (FRONT PANEL)
Refrigerant control			Linear expansion valve	Linear expansion valve
Compressor			Rolling piston type rotary	Rolling piston type rotary
	Model		TPB420FBVMT	TPB420FBWMT
	Motor output	kW	1.9	1.9
Start type			Inverter	Inverter
Protection devices			Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector	Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector
	Oil	L	0.45 (PZ46M)	0.45 (PZ46M)
Crankcase heater			-	-
Heat exchanger	Air		Plate fin coil	Plate fin coil
	Water		Plate heat exchanger	Plate heat exchanger
Fan	Fan(drive) x No.		Propeller fan × 1	Propeller fan × 1
	Fan motor output	kW	0.074	0.074
	Air flow	m ³ /min (CFM)	46 (1625)	46 (1625)
Defrost method			Reverse cycle	Reverse cycle
Noise level (SPL)	Heating *1	dBA	47	47
	Cooling *2	dBA	47	47
Noise level (PWL) (Based on EN12102:2022)	Heating	dBA	54	54
Dimensions	Width	mm(in)	1050 (41-3/8)	1050 (41-3/8)
	Depth	mm(in)	480 (18-7/8)	480 (18-7/8)
	Height	mm(in)	1040 (40)	1040 (40)
Weight		kg(lbs)	102.5 (226)	117 (258)
Refrigerant			R290 (3)	R290 (3)
	Chargeless	kg(lbs)	0.60 (1.32)	0.60 (1.32)
	MAX.	kg(lbs)	-	-
Pipe size O.D.	Liquid	mm(in)	-	-
	Gas	mm(in)	-	-
Connection method			Water Connect	Water Connect
Between the indoor & outdoor unit	Height difference	m	-	-
	Piping length	m	-	-
Guaranteed operating range (Outdoor)	Heating	°C	-25 to +24	-25 to +24
	DHW	°C	-25 to +46	-25 to +46
	Cooling	°C	+10 to +46	+10 to +46
Outlet water temp. (Max in Heating, Min in Cooling)	Heating	°C	+75	+75
	Cooling	°C	-	-
Nominal return water temperature range	Heating	°C	+9 to +74 *4	+9 to +74 *4
	Cooling	°C	+9 to +28 *4	+9 to +28 *4
Water Flow rate range		L/min	7.2 to 27.2	7.2 to 27.2

*1 Heating: Dry-bulb temperature 7°C, Wet-bulb temperature 6°C

*2 Cooling: Dry-bulb temperature 35°C

*3 For measurement conditions, see the Section "6 Noise criterion curves".

*4 Due to the water quantity of system. See the graph of Section "1.5 Available range".

1 Specifications

MODEL NAME			PUZ-WZ100VAA(-BS)	PUZ-WZ100YAA(-BS)		
POWER SUPPLY(Phase, voltage, frequency)			1ø, 230 V, 50 Hz	3ø, 400 V, 50 Hz		
	Max. Current	A	30	12		
Braker size			32	16		
Outer casing			Galvanized plate	Galvanized plate		
External finish			Munsell N8.75, N2.75 (FRONT PANEL)	Munsell N8.75, N2.75 (FRONT PANEL)		
Refrigerant control			Linear expansion valve	Linear expansion valve		
Compressor			Hermetic scroll	Hermetic scroll		
	Model		DPB52FEAMT	DPB52FEBMT		
	Motor output	kW	2.5	2.5		
Start type			Inverter	Inverter		
Protection devices			Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector	Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector		
	Oil	L	0.90 (PZ46M)	0.90 (PZ46M)		
Crankcase heater			-	-		
Heat exchanger		Air	Plate fin coil	Plate fin coil		
		Water	Plate heat exchanger	Plate heat exchanger		
Fan	Fan(drive) x No.		Propeller fan × 1	Propeller fan × 1		
	Fan motor output	kW	0.200	0.200		
	Air flow	m ³ /min (CFM)	44 (1550)	44 (1550)		
Defrost method			Reverse cycle	Reverse cycle		
Noise level (SPL)	Heating *1	dBA	47	47		
	Cooling *2	dBA	50	50		
Noise level (PWL) (Based on EN12102:2022)	Heating	dBA	55	55		
Dimensions	Width	mm(in)	1050 (41-3/8)	1050 (41-3/8)		
	Depth	mm(in)	480 (18-7/8)	480 (18-7/8)		
	Height	mm(in)	1040 (40)	1040 (40)		
Weight		kg(lbs)	119.5 (263)	131 (289)		
Refrigerant			R290 (3)	R290 (3)		
			Chargeless	kg(lbs)	0.82 (1.80)	0.82 (1.80)
			MAX.	kg(lbs)	-	-
Pipe size O.D.	Liquid	mm(in)	-	-		
	Gas	mm(in)	-	-		
Connection method			Water Connect	Water Connect		
Between the indoor & outdoor unit	Height difference	m	-	-		
	Piping length	m	-	-		
Guaranteed operating range (Outdoor)	Heating	°C	-25 to +24	-25 to +24		
	DHW	°C	-25 to +46	-25 to +46		
	Cooling	°C	+10 to +46	+10 to +46		
Outlet water temp. (Max in Heating, Min in Cooling)	Heating	°C	+75	+75		
	Cooling	°C	-	-		
Nominal return water temperature range	Heating	°C	+9 to +74 *4	+9 to +74 *4		
	Cooling	°C	+9 to +28 *4	+9 to +28 *4		
Water Flow rate range		L/min	10.0 to 34.4	10.0 to 34.4		

*1 Heating: Dry-bulb temperature 7°C, Wet-bulb temperature 6°C

*2 Cooling: Dry-bulb temperature 35°C

*3 For measurement conditions, see the Section "6 Noise criterion curves".

*4 Due to the water quantity of system. See the graph of Section "1.5 Available range".

1 Specifications

MODEL NAME			PUZ-WZ120VAA(-BS)	PUZ-WZ120YAA(-BS)
POWER SUPPLY(Phase, voltage, frequency)			1ø, 230 V, 50 Hz	3ø, 400 V, 50 Hz
	Max. Current	A	37	12
Braker size		A	40	16
Outer casing			Galvanized plate	Galvanized plate
External finish			Munsell N8.75, N2.75 (FRONT PANEL)	Munsell N8.75, N2.75 (FRONT PANEL)
Refrigerant control			Linear expansion valve	Linear expansion valve
Compressor			Hermetic scroll	Hermetic scroll
	Model		DPB52FEAMT	DPB52FEBMT
	Motor output	kW	2.5	2.5
Start type			Inverter	Inverter
Protection devices			Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector	Discharge temp. thermistor Shell temp. thermistor High pressure switch Thermal protector
	Oil	L	0.90 (PZ46M)	0.90 (PZ46M)
Crankcase heater			-	-
Heat exchanger		Air	Plate fin coil	Plate fin coil
		Water	Plate heat exchanger	Plate heat exchanger
Fan	Fan(drive) x No.		Propeller fan × 1	Propeller fan × 1
	Fan motor output	kW	0.200	0.200
	Air flow	m ³ /min (CFM)	44 (1550)	44 (1550)
Defrost method			Reverse cycle	Reverse cycle
Noise level (SPL)		Heating *1	dBA	47
		Cooling *2	dBA	50
Noise level (PWL) (Based on EN12102:2022)		Heating	dBA	55
Dimensions		Width	mm(in)	1050 (41-3/8)
		Depth	mm(in)	480 (18-7/8)
		Height	mm(in)	1040 (40)
Weight			kg(lbs)	119.5 (263)
Refrigerant			R290 (3)	R290 (3)
	Chargeless	kg(lbs)	0.82 (1.80)	0.82 (1.80)
	MAX.	kg(lbs)	-	-
Pipe size O.D.		Liquid	mm(in)	-
		Gas	mm(in)	-
Connection method			Water Connect	Water Connect
Between the indoor & outdoor unit		Height difference	m	-
		Piping length	m	-
Guaranteed operating range (Outdoor)		Heating	°C	-25 to +24
		DHW	°C	-25 to +46
		Cooling	°C	+10 to +46
Outlet water temp. (Max in Heating, Min in Cooling)		Heating	°C	+75
		Cooling	°C	-
Nominal return water temperature range		Heating	°C	+9 to +74 *4
		Cooling	°C	+9 to +28 *4
Water Flow rate range		L/min	10.0 to 34.4	10.0 to 34.4

*1 Heating: Dry-bulb temperature 7°C, Wet-bulb temperature 6°C

*2 Cooling: Dry-bulb temperature 35°C

*3 For measurement conditions, see the Section "6 Noise criterion curves".

*4 Due to the water quantity of system. See the graph of Section "1.5 Available range".

1 Specifications

1.2 Capacity (1) Hydro-Split

Based on EN14511-1:2018, EN14511-2:2018, EN14511-3:2018 and EN14511-4:2018.

MODEL NAME			PUZ-WZ50VAA(-BS)	PUZ-WZ60VAA(-BS)	PUZ-WZ80VAA(-BS)
Heating (A7/W35)	Capacity	kW	4.00	5.00	6.00
	COP		5.10	5.00	4.70
	Power input	kW	0.78	1.00	1.28
	Test condition flow rate	L/min	11.5	14.3	17.2
Heating (A2/W35)	Capacity	kW	5.00	6.00	8.00
	COP		3.15	3.10	3.05
	Power input	kW	1.59	1.94	2.62
	Test condition flow rate	L/min	14.3	17.2	22.9
Pressure difference (Water circuit)		kPa	13	19	18
Heating pump input (Based on EN14511)		kW	0.017	0.023	0.022
Cooling (A35/W7)	Capacity	kW	3.20	3.60	4.00
	EER (COP)		3.10	2.90	2.70
	Power input	kW	1.03	1.24	1.48
	Test condition flow rate	L/min	9.2	10.3	11.5
Cooling (A35/W18)	Capacity	kW	4.20	4.60	5.00
	EER (COP)		3.20	3.00	2.80
	Power input	kW	0.35	0.35	0.35
	Test condition flow rate	L/min	12.0	13.2	14.3
Pressure difference (Water circuit)		kPa	9	11	9
Cooling pump input (Based on EN14511)		kW	0.013	0.015	0.013
Recommended plate heat exchanger			Built-in	Built-in	Built-in

Note: "COP" and "Power input" in the above table are values that contains the "pump input (Based on EN 14511)".

Based on EN14511-1:2022, EN14511-2:2022, EN14511-3:2022 and EN14511-4:2022.

MODEL NAME			PUZ-WZ85V/YAA(-BS)	PUZ-WZ100V/YAA(-BS)	PUZ-WZ120V/YAA(-BS)
Heating (A7/W35)	Capacity	kW	5.31	5.80	5.80
	COP		4.80	5.10	5.10
	Power input	kW	1.11	1.14	1.14
	Test condition flow rate	L/min	15.2	16.6	16.6
Heating (A2/W35)	Capacity	kW	5.31	5.80	5.80
	COP		4.03	4.12	4.12
	Power input	kW	1.32	1.41	1.41
	Test condition flow rate	L/min	15.2	16.6	16.6
Pressure difference (Water circuit)		kPa	10.1	11.0	11.0
Heating pump input (Based on EN14511)		kW	0.025	0.029	0.029
Cooling (A35/W7)	Capacity	kW	5.00	7.00	9.00
	EER (COP)		3.30	3.30	3.15
	Power input	kW	1.52	2.12	2.86
	Test condition flow rate	L/min	14.3	20.1	25.8
Cooling (A35/W18)	Capacity	kW	5.00	6.50	9.00
	EER (COP)		4.61	5.40	4.80
	Power input	kW	1.08	1.20	1.88
	Test condition flow rate	L/min	14.3	18.7	25.8
Pressure difference (Water circuit)		kPa	9.00	15.2	23.5
Cooling pump input (Based on EN14511)		kW	0.022	0.042	0.069
Recommended plate heat exchanger			Built-in	Built-in	Built-in

Note: "COP" and "Power input" in the above table are values that contains the "pump input (Based on EN 14511)".

1 Specifications

1.3 Erp Lot1 data

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Model information						Electric power input in power modes other than 'active mode'				Other items		
		Air to Water heat pump: [yes/no]	Water to Water heat pump: [yes/no]	Brine to Water heat pump: [yes/no]	Low temperature heat pump: [yes/no]	Equipped with a supplementary heater: [yes/no]	Heat pump combination heater:[yes/no]	off mode Average/Warmer/ Colder	standby mode Average/ Warmer/Colder	thermostat - off mode Average/Warmer/Colder	crankcase heater mode Average/Warmer/Colder	Sound power level outdoor model	Sound power level indoor model	Rated air flow outdoor
		-	-	-	-	-	-	POFF	PSB	PTO(h)	PCK	LWA	LWA	-
		[-]	[-]	[-]	[-]	[-]	[-]	[kW]	[kW]	[kW]	[kW]	[dB]	[dB]	[m3/h]
PUZ-WZ50VAA(-BS)	EHPT17X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT17X-VM6E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT17X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT17X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT20X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT20X-TM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT20X-MEHEW	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT20X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT20X-VM6E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT20X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT30X-VM9EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT30X-VM2EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT30X-VM6EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT30X-VM9EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPX-ME	yes	no	no	no	no	no	0.015	0.015	0.015	0.000	53	40	2,760
	ERPX-VM2E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	53	40	2,760
ERPX-VM6E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	53	40	2,760	
ERPX-VM9E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	53	40	2,760	
PUZ-WZ60VAA(-BS)	EHPT17X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT17X-VM6E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT17X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT17X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT20X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT20X-TM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT20X-MEHEW	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT20X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT20X-VM6E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT20X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	EHPT30X-VM9EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT30X-VM2EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT30X-VM6EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPT30X-VM9EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	53	40	2,760
	ERPX-ME	yes	no	no	no	no	no	0.015	0.015	0.015	0.000	53	40	2,760
	ERPX-VM2E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	53	40	2,760
ERPX-VM6E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	53	40	2,760	
ERPX-VM9E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	53	40	2,760	
PUZ-WZ80VAA(-BS)	EHPT17X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	EHPT17X-VM6E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	EHPT17X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPT17X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	EHPT20X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	EHPT20X-TM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	EHPT20X-MEHEW	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPT20X-VM2E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPT20X-VM6E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPT20X-VM9E	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	EHPT30X-VM9EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPT30X-VM2EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPT30X-VM6EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPT30X-VM9EE	yes	no	no	no	yes	yes	0.015	0.015	0.015	0.000	54	40	2,760
	ERPX-ME	yes	no	no	no	no	no	0.015	0.015	0.015	0.000	54	40	2,760
	ERPX-VM2E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	54	40	2,760
ERPX-VM6E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	54	40	2,760	
ERPX-VM9E	yes	no	no	no	yes	no	0.015	0.015	0.015	0.000	54	40	2,760	

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Medium-temperature application / Average climate conditions																											
		Rated heat output	ns	Tj=-7°C		Tj=2°C		Tj=7°C		Tj=12°C		Tj=bivalent temperature		Tj=operating limit		Bivalent temperature	Reference design conditions for space heating	Operating limit temperature	Operating limit temperature Heating Water	Supplementary heater Rated heat output	Annual electricity consumption Heating	Domestic Hot Water							
				Declared capacity	Seasonal space heating energy efficiency	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh							COPd	Cdh	Pdh	COPd	Tbiv	Tdesignh	Tol	WTOL
		[kW]	[%]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	[%]	[kWh]	[kWh]
PUZ-WZ50VAA(-BS)	EHPT17X-VM2E	5.0	135	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,984	L	120	4.420	972
	EHPT17X-VM6E	5.0	135	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,984	L	120	4.420	972
	EHPT17X-VM9E	5.0	135	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,984	L	120	4.420	972
	ERPT17X-VM2E	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	L	120	4.420	972
	EHPT20X-VM9E	5.0	135	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,984	L	134	4.070	895
	EHPT20X-TM9E	5.0	135	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,984	L	134	4.070	895
	EHPT20X-MEHEW	5.0	135	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,984	L	134	4.070	895
	ERPT20X-VM2E	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	L	134	4.070	895
	ERPT20X-VM6E	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	L	134	4.070	895
	ERPT20X-VM9E	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	L	134	4.070	895
	EHPT30X-VM9EE	5.0	135	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,984	XL	120	7.040	1,548
	ERPT30X-VM2EE	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	XL	120	7.040	1,548
	ERPT30X-VM6EE	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	XL	120	7.040	1,548
	ERPT30X-VM9EE	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	XL	120	7.040	1,548
	ERPX-ME	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	-	-	-	-
	ERPX-VM2E	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	-	-	-	-
	ERPX-VM6E	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	-	-	-	-
	ERPX-VM9E	5.0	138	4.4	2.39	0.99	2.7	3.22	0.98	1.7	4.80	0.96	1.8	6.54	0.95	4.4	2.39	4.9	2.07	-7	-10	-25	75	0.1	2,929	-	-	-	-
PUZ-WZ60VAA(-BS)	EHPT17X-VM2E	6.0	137	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,541	L	120	4.420	972
	EHPT17X-VM6E	6.0	137	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,541	L	120	4.420	972
	EHPT17X-VM9E	6.0	137	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,541	L	120	4.420	972
	ERPT17X-VM2E	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	L	120	4.420	972
	EHPT20X-VM9E	6.0	137	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,541	L	134	4.070	895
	EHPT20X-TM9E	6.0	137	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,541	L	134	4.070	895
	EHPT20X-MEHEW	6.0	137	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,541	L	134	4.070	895
	ERPT20X-VM2E	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	L	134	4.070	895
	ERPT20X-VM6E	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	L	134	4.070	895
	ERPT20X-VM9E	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	L	134	4.070	895
	EHPT30X-VM9EE	6.0	137	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,541	XL	120	7.040	1,548
	ERPT30X-VM2EE	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	XL	120	7.040	1,548
	ERPT30X-VM6EE	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	XL	120	7.040	1,548
	ERPT30X-VM9EE	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	XL	120	7.040	1,548
	ERPX-ME	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	-	-	-	-
	ERPX-VM2E	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	-	-	-	-
	ERPX-VM6E	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	-	-	-	-
	ERPX-VM9E	6.0	139	5.3	2.35	0.99	3.2	3.42	0.98	2.1	4.42	0.97	1.7	6.39	0.94	5.3	2.35	5.9	2.03	-7	-10	-25	75	0.1	3,486	-	-	-	-
PUZ-WZ80VAA(-BS)	EHPT17X-VM2E	8.0	138	7.1	2.19	1.00	4.3	3.34	0.99	2.8	5.00	0.97	1.9	6.55	0.95	7.1	2.19	7.2	1.79	-7	-10	-25	75	0.9	4,694	L	120	4.420	972
	EHPT17X-VM6E	8.0	138	7.1	2.19	1.00	4.3	3.34	0.99	2.8	5.00	0.97	1.9	6.55	0.95	7.1	2.19	7.2	1.79	-7	-10	-25	75	0.9	4,694	L	120	4.420	972
	EHPT17X-VM9E	8.0	138	7.1	2.19	1.00	4.3	3.34	0.99	2.8	5.00	0.97	1.9	6.55	0.95	7.1	2.19	7.2	1.79	-7	-10	-25	75	0.9	4,694	L	120	4.420	972
	ERPT17X-VM2E	8.0	140	7.1	2.19	1.00	4.3	3.34	0.99	2.8	5.00	0.97	1.9	6.55	0.95	7.1	2.19	7.2	1.79	-7	-10	-25	75	0.9	4,639	L	120	4.420	972
	EHPT20X-VM9E	8.0	138	7.1	2.19	1.00	4.3	3.34	0.99	2.8	5.00	0.97	1.9	6.55	0.95	7.1	2.19	7.2	1.79	-7	-10	-25	75	0.9	4,694	L	134	4.070	895
	EHPT20X-TM9E	8.0	138	7.1	2.19	1.00	4.3	3.34	0.99	2.8	5.00																		

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Medium-temperature application / colder climate conditions																																									
		Rated heat output	ηs	Tj=-7°C						Tj=2°C						Tj=7°C						Tj=12°C						Tj=bivalent temperature		Tj=operating limit		Tj=-15°C		Bivalent temperature	Reference design conditions for space heating	Operating limit temperature	Operating limit temperature Heating Water	Supplementary heater Rated heat output	Annual electricity consumption Heating	Domestic Hot Water			
				Declared capacity	Seasonal space heating energy efficiency	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Tbiv	Tdesignh	Tol	WTOL	Psup							QHE	Declared load profile	Water heating energy efficiency	Daily electricity consumption
		Pdesignh	ηs	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	ηwh	Qelec	AEC					
PUJZ-WZ50VAA(-BS)	EHPT17X-VM2E	3.0	112	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.562	L	101	5.170	1,137												
	EHPT17X-VM6E	3.0	112	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.562	L	101	5.170	1,137												
	EHPT17X-VM9E	3.0	112	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.562	L	101	5.170	1,137												
	ERPT17X-VM2E	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	L	101	5.170	1,137												
	EHPT20X-VM9E	3.0	112	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.562	L	111	4.760	1,048												
	EHPT20X-TM9E	3.0	112	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.562	L	111	4.760	1,048												
	EHPT20X-MEHEW	3.0	112	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.562	L	111	4.760	1,048												
	ERPT20X-VM2E	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	L	111	4.760	1,048												
	ERPT20X-VM6E	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	L	111	4.760	1,048												
	ERPT20X-VM9E	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	L	111	4.760	1,048												
	EHPT30X-VM9EE	3.0	112	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.562	XL	96	8.570	1,885												
	ERPT30X-VM2EE	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	XL	96	8.570	1,885												
	ERPT30X-VM6EE	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	XL	96	8.570	1,885												
	ERPT30X-VM9EE	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	XL	96	8.570	1,885												
	ERPX-ME	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	-	-	-	-												
ERPX-VM2E	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	-	-	-	-													
ERPX-VM6E	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	-	-	-	-													
ERPX-VM9E	3.0	114	2.1	2.40	0.98	1.5	3.42	0.97	1.7	5.08	0.95	1.9	6.73	0.95	2.4	1.83	2.9	1.57	2.4	1.83	-15	-22	-25	75	0.1	2.528	-	-	-	-													
PUJZ-WZ60VAA(-BS)	EHPT17X-VM2E	4.0	115	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.351	L	101	5.170	1,137												
	EHPT17X-VM6E	4.0	115	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.351	L	101	5.170	1,137												
	EHPT17X-VM9E	4.0	115	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.351	L	101	5.170	1,137												
	ERPT17X-VM2E	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	L	101	5.170	1,137												
	ERPT17X-VM9E	4.0	115	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.351	L	111	4.760	1,048												
	EHPT20X-VM9E	4.0	115	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.351	L	111	4.760	1,048												
	EHPT20X-MEHEW	4.0	115	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.351	L	111	4.760	1,048												
	ERPT20X-VM2E	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	L	111	4.760	1,048												
	ERPT20X-VM6E	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	L	111	4.760	1,048												
	ERPT20X-VM9E	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	L	111	4.760	1,048												
	EHPT30X-VM9EE	4.0	115	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.351	XL	96	8.570	1,885												
	ERPT30X-VM2EE	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	XL	96	8.570	1,885												
	ERPT30X-VM6EE	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	XL	96	8.570	1,885												
	ERPT30X-VM9EE	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	XL	96	8.570	1,885												
	ERPX-ME	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	-	-	-	-												
ERPX-VM2E	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	-	-	-	-													
ERPX-VM6E	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	-	-	-	-													
ERPX-VM9E	4.0	116	2.4	2.45	0.99	1.5	3.36	0.97	1.6	5.10	0.95	1.8	6.65	0.95	3.3	1.91	3.9	1.61	3.3	1.91	-15	-22	-25	75	0.1	3.318	-	-	-	-													
PUJZ-WZ80VAA(-BS)	EHPT17X-VM2E	5.0	120	3.0	2.63	0.99	1.8	3.52	0.97	1.7	5.02	0.96	2.0	6.76	0.95	4.1	1.98	4.3	1.68	4.1	1.98	-15	-22	-25	75	0.7	3.994	L	101	5.170	1,137												
	EHPT17X-VM6E	5.0	120	3.0	2.63	0.99	1.8	3.52	0.97	1.7	5.02	0.96	2.0	6.76	0.95	4.1	1.98	4.3	1.68	4.1	1.98	-15	-22	-25	75	0.7	3.994	L	101	5.170	1,137												

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor unit	Outdoor model	Indoor model	Low-temperature application / Average climate conditions																																		
			Rated heat output		Seasonal space heating energy efficiency		T _J =7°C		T _J =2°C		T _J =7°C		T _J =12°C		T _J =bivalent temperature		T _J =operating limit		Bivalent temperature		Reference design conditions for space heating		Operating limit temperature		Operating limit temperature Heating Water		Supplementary heater Rated heat output		Annual electricity consumption Heating		Domestic Hot Water						
			Declared capacity	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s	η _s
			P _{designh}	η _s	P _{dh}	COP _d	C _{dh}	P _{dh}	COP _d	C _{dh}	P _{dh}	COP _d	C _{dh}	P _{dh}	COP _d	C _{dh}	P _{dh}	COP _d	C _{dh}	P _{dh}	COP _d	C _{dh}	T _{biv}	T _{designh}	T _{ol}	WTOL	P _{sup}	QHE	-	η _{wh}	Q _{elec}	AEC					
[kW]	[%]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	[%]	[kWh]	[kWh]							
PUZ-WZ50VAA(-BS)	EHPT17X-VM2E	5.0	177	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,291	L	120	4.420	972								
	EHPT17X-VM6E	5.0	177	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,291	L	120	4.420	972								
	EHPT17X-VM9E	5.0	177	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,291	L	120	4.420	972								
	ERPT17X-VM2E	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	L	120	4.420	972								
	EHPT20X-VM9E	5.0	177	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,291	L	134	4.070	895								
	EHPT20X-TM9E	5.0	177	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,291	L	134	4.070	895								
	EHPT20X-MEHEW	5.0	177	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,291	L	134	4.070	895								
	ERPT20X-VM2E	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	L	134	4.070	895								
	ERPT20X-VM6E	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	L	134	4.070	895								
	ERPT20X-VM9E	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	L	134	4.070	895								
	EHPT30X-VM9EE	5.0	177	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,291	XL	120	7.040	1,548								
	ERPT30X-VM2EE	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	XL	120	7.040	1,548								
	ERPT30X-VM6EE	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	XL	120	7.040	1,548								
	ERPT30X-VM9EE	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	XL	120	7.040	1,548								
	ERPX-ME	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	-	-	-	-								
	ERPX-VM2E	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	-	-	-	-								
	ERPX-VM6E	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	-	-	-	-								
	ERPX-VM9E	5.0	182	4.4	3.02	0.99	2.7	4.42	0.98	1.7	6.08	0.95	1.7	7.50	0.93	4.4	3.02	4.9	2.76	-7	-10	-25	75	0.1	2,236	-	-	-	-								
	PUZ-WZ60VAA(-BS)	EHPT17X-VM2E	6.0	175	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,778	L	120	4.420	972							
		EHPT17X-VM6E	6.0	175	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,778	L	120	4.420	972							
EHPT17X-VM9E		6.0	175	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,778	L	120	4.420	972								
ERPT17X-VM2E		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	L	120	4.420	972								
EHPT20X-VM9E		6.0	175	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,778	L	134	4.070	895								
EHPT20X-TM9E		6.0	175	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,778	L	134	4.070	895								
EHPT20X-MEHEW		6.0	175	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,778	L	134	4.070	895								
ERPT20X-VM2E		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	L	134	4.070	895								
ERPT20X-VM6E		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	L	134	4.070	895								
ERPT20X-VM9E		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	L	134	4.070	895								
EHPT30X-VM9EE		6.0	175	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,728	XL	120	7.040	1,548								
ERPT30X-VM2EE		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	XL	120	7.040	1,548								
ERPT30X-VM6EE		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	XL	120	7.040	1,548								
ERPT30X-VM9EE		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	XL	120	7.040	1,548								
ERPX-ME		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	-	-	-	-								
ERPX-VM2E		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	-	-	-	-								
ERPX-VM6E		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	-	-	-	-								
ERPX-VM9E		6.0	179	5.3	2.97	0.99	3.2	4.40	0.98	2.1	5.78	0.96	1.8	7.69	0.94	5.3	2.97	5.9	2.63	-7	-10	-25	75	0.1	2,723	-	-	-	-								
PUZ-WZ80VAA(-BS)		EHPT17X-VM2E	8.0	174	7.1	3.04	0.99	4.4	4.13	0.99	2.8	6.17	0.97	2.1	7.68	0.95	7.1	3.04	7.1	2.68	-7	-10	-25	75	0.9	3,738	L	120	4.420	972							
		EHPT17X-VM6E	8.0	174	7.1	3.04	0.99	4.4	4.13	0.99	2.8	6.17	0.97	2.1	7.68	0.95	7.1	3.04	7.1	2.68	-7	-10	-25	75	0.9	3,738	L	120	4.420	972							
	EHPT17X-VM9E	8.0	174	7.1	3.04	0.99	4.4	4.13	0.99	2.8	6.17	0.97	2.1	7.68	0.95	7.1	3.04	7.1	2.68	-7	-10	-25	75	0.9	3,738	L	120	4.420	972								
	ERPT17X-VM2E	8.0	176	7.1																																	

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Low-temperature application / warmer climate conditions																																
		Rated heat output	ns	Tj=2°C						Tj=7°C						Tj=12°C						Tj=bivalent temperature	Tj=operating limit		Bivalent temperature	Reference design conditions for space heating	Operating limit temperature	Operating limit temperature Heating Water	Supplementary heater Rated heat output	Annual electricity consumption Heating	Domestic Hot Water			
				Declared capacity Warmer	Seasonal space heating energy efficiency	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Tbiv	Tdesignh		Tol	WTOL							Psup	QHE	-	ηwh
		ns	ns																			ns			ns	ns	ns	ns	ns	ns				
		Pdesignh	ns	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Tbiv	Tdesignh	Tol	WTOL	Psup	QHE	-	ηwh	Qelec	AEC						
[kW]	[%]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	[%]	[kWh]	[kWh]								
PUZ-WZ50VAA(-BS)	EHPT17X-VM2E	5.0	230	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,148	L	135	3.980	876								
	EHPT17X-VM6E	5.0	230	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,148	L	135	3.980	876								
	EHPT17X-VM9E	5.0	230	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,148	L	135	3.980	876								
	ERPT17X-VM2E	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	L	135	3.980	876								
	EHPT20X-VM9E	5.0	230	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,148	L	148	3.700	815								
	EHPT20X-TM9E	5.0	230	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,148	L	148	3.700	815								
	EHPT20X-MEHEW	5.0	230	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,148	L	148	3.700	815								
	ERPT20X-VM2E	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	L	148	3.700	815								
	ERPT20X-VM6E	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	L	148	3.700	815								
	ERPT20X-VM9E	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	L	148	3.700	815								
	EHPT30X-VM9EE	5.0	230	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,148	XL	135	6.370	1,401								
	ERPT30X-VM2EE	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	XL	135	6.370	1,401								
	ERPT30X-VM6EE	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	XL	135	6.370	1,401								
	ERPT30X-VM9EE	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	XL	135	6.370	1,401								
	ERPX-ME	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	-	-	-	-								
	ERPX-VM2E	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	-	-	-	-								
ERPX-VM6E	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	-	-	-	-									
ERPX-VM9E	5.0	244	5.0	3.52	0.99	3.2	5.69	0.97	2.0	7.53	0.95	5.0	3.52	5.0	3.52	2	2	-25	75	0.0	1,082	-	-	-	-									
PUZ-WZ60VAA(-BS)	EHPT17X-VM2E	6.0	233	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,357	L	135	3.980	876								
	EHPT17X-VM6E	6.0	233	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,357	L	135	3.980	876								
	EHPT17X-VM9E	6.0	233	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,357	L	135	3.980	876								
	ERPT17X-VM2E	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	L	135	3.980	876								
	EHPT20X-VM9E	6.0	233	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,357	L	148	3.700	815								
	EHPT20X-TM9E	6.0	233	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,357	L	148	3.700	815								
	EHPT20X-MEHEW	6.0	233	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,357	L	148	3.700	815								
	ERPT20X-VM2E	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	L	148	3.700	815								
	ERPT20X-VM6E	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	L	148	3.700	815								
	ERPT20X-VM9E	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	L	148	3.700	815								
	EHPT30X-VM9EE	6.0	233	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,357	XL	135	6.370	1,401								
	ERPT30X-VM2EE	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	XL	135	6.370	1,401								
	ERPT30X-VM6EE	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	XL	135	6.370	1,401								
	ERPT30X-VM9EE	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	XL	135	6.370	1,401								
	ERPX-ME	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	-	-	-	-								
	ERPX-VM2E	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	-	-	-	-								
ERPX-VM6E	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	-	-	-	-									
ERPX-VM9E	6.0	245	6.0	3.37	0.99	3.9	5.52	0.98	2.1	7.80	0.95	6.0	3.37	6.0	3.37	2	2	-25	75	0.0	1,291	-	-	-	-									
PUZ-WZ80VAA(-BS)	EHPT17X-VM2E	8.0	226	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,870	L	135	3.980	876								
	EHPT17X-VM6E	8.0	226	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,870	L	135	3.980	876								
	EHPT17X-VM9E	8.0	226	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,870	L	135	3.980	876								
	ERPT17X-VM2E	8.0	234	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,803	L	135	3.980	876								
	EHPT20X-VM9E	8.0	226	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,870	L	148	3.700	815								
	EHPT20X-TM9E	8.0	226	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,870	L	148	3.700	815								
	EHPT20X-MEHEW	8.0	226	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,870	L	148	3.700	815								
	ERPT20X-VM2E	8.0	234	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3.42	8.0	3.42	2	2	-25	75	0.0	1,803	L	148	3.700	815								
	ERPT20X-VM6E	8.0	234	8.0	3.42	0.99	5.1	5.26	0.99	2.3	7.24	0.95	8.0	3																				

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Low-temperature application / colder climate conditions																																															
		Rated heat output	ηs	Tj=-7°C						Tj=2°C						Tj=7°C						Tj=12°C						Bivalent temperature		Tj=operating limit		Tj=-15°C		Bivalent temperature		Reference design conditions for space heating		Operating limit temperature		Operating limit temperature Heating Water		Supplementary heater Rated heat output		Annual electricity consumption Heating		Domestic Hot Water			
		Declared capacity		Seasonal space heating energy efficiency	Pdesignh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Tbiv	Tdesignh	Tol	WTOL	Psup	QHE	Declared load profile	Water heating efficiency	Daily electricity consumption	Annual electricity consumption												
		[kW]	[%]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	[%]	[kWh]	[kWh]													
PUZ-WZ50(VAA)(BS)	EHPT17X-VM2E	3.0	142	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,037	L	101	5.170	1,137																		
	EHPT17X-VM6E	3.0	142	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,037	L	101	5.170	1,137																		
	EHPT17X-VM9E	3.0	142	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,037	L	101	5.170	1,137																		
	ERPT17X-VM2E	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	L	101	5.170	1,137																		
	EHPT20X-VM9E	3.0	142	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,037	L	111	4.760	1,048																		
	EHPT20X-TM9E	3.0	142	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,037	L	111	4.760	1,048																		
	EHPT20X-MEHEW	3.0	142	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,037	L	111	4.760	1,048																		
	ERPT20X-VM2E	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	L	111	4.760	1,048																		
	ERPT20X-VM6E	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	L	111	4.760	1,048																		
	ERPT20X-VM9E	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	L	111	4.760	1,048																		
	EHPT30X-VM9EE	3.0	142	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,037	XL	96	8.570	1,885																		
	ERPT30X-VM2EE	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	XL	96	8.570	1,885																		
	ERPT30X-VM6EE	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	XL	96	8.570	1,885																		
	ERPT30X-VM9EE	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	XL	96	8.570	1,885																		
	ERPX-ME	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	-	-	-	-																		
ERPX-VM2E	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	-	-	-	-																			
ERPX-VM6E	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	-	-	-	-																			
ERPX-VM9E	3.0	145	2.2	3.21	0.98	1.6	4.16	0.96	1.8	6.20	0.95	2.1	8.17	0.94	2.4	2.39	2.9	2.06	2.4	2.39	-15	-22	-25	75	0.1	2,004	-	-	-	-																			
PUZ-WZ60(VAA)(BS)	EHPT17X-VM2E	4.0	143	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,695	L	101	5.170	1,137																		
	EHPT17X-VM6E	4.0	143	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,695	L	101	5.170	1,137																		
	EHPT17X-VM9E	4.0	143	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,695	L	101	5.170	1,137																		
	ERPT17X-VM2E	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	L	101	5.170	1,137																		
	EHPT20X-VM9E	4.0	143	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	L	111	4.760	1,048																		
	EHPT20X-TM9E	4.0	143	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,695	L	111	4.760	1,048																		
	EHPT20X-MEHEW	4.0	143	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,695	L	111	4.760	1,048																		
	ERPT20X-VM2E	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	L	111	4.760	1,048																		
	ERPT20X-VM6E	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	L	111	4.760	1,048																		
	ERPT20X-VM9E	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	L	111	4.760	1,048																		
	EHPT30X-VM9EE	4.0	143	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,695	XL	96	8.570	1,885																		
	ERPT30X-VM2EE	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	XL	96	8.570	1,885																		
	ERPT30X-VM6EE	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	XL	96	8.570	1,885																		
	ERPT30X-VM9EE	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	XL	96	8.570	1,885																		
	ERPX-ME	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	-	-	-	-																		
ERPX-VM2E	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	-	-	-	-																			
ERPX-VM6E	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	-	-	-	-																			
ERPX-VM9E	4.0	145	2.4	3.23	0.98	1.6	4.05	0.96	1.7	6.05	0.95	1.8	7.89	0.94	3.3	2.45	3.9	2.08	3.3	2.45	-15	-22	-25	75	0.1	2,662	-	-	-	-																			
PUZ-WZ80(VAA)(BS)	EHPT17X-VM2E	5.0	144	3.0	3.13	0.99	1.8	4.20	0.97	1.8	5.78	0.95	2.1	7.05	0.95	4.1	2.48	4.5	2.12	4.1	2.48	-15	-22	-25	75	0.5	3,355	L	101	5.170	1,137																		
	EHPT17X-VM6E	5.0	144	3.0	3.13	0.99	1.8	4.20	0.97	1.8	5.78	0.95	2.1	7.05	0.95	4.1	2.48	4.5	2.12	4.1	2.48	-15	-22	-25	75	0.5	3,355	L	101	5.170	1,137																		
	EHPT17X-VM9E	5.0																																															

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Model information						Electric power input in power modes other than 'active mode'				Other items		
		Air to Water heat pump: [yes/no]	Water to Water heat pump: [yes/no]	Brine to Water heat pump: [yes/no]	Low temperature heat pump: [yes/no]	Equipped with a supplementary heater: [yes/no]	Heat pump combination heater:[yes/no]	off mode Average/Warmer/ Colder	standby mode Average/ Warmer/Colder	thermostat - off mode Average/Warmer/Colder	crankcase heater mode Average/Warmer/Colder	Sound power level outdoor model	Sound power level indoor model	Rated air flow outdoor
		-	-	-	-	-	-	POFF [kW]	PSB [kW]	PTO(h) [kW]	PCK [kW]	LWA [dB]	LWA [dB]	- [m3/h]
PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)	EHPT17X-VM2E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	EHPT17X-VM6E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	EHPT17X-VM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPT17X-VM2E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	EHPT20X-VM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	EHPT20X-TM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	EHPT20X-MEHEW	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPT20X-VM2E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPT20X-VM6E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPT20X-VM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	EHPT30X-VM9EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPT30X-VM2EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPT30X-VM6EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPT30X-VM9EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	54	40	3,170
	ERPX-ME	yes	no	no	no	no	no	0.022	0.022	0.022	0.000	54	40	3,170
ERPX-VM2E	yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	54	40	3,170	
ERPX-VM6E	yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	54	40	3,170	
ERPX-VM9E	yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	54	40	3,170	
PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)	EHPT20X-VM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	EHPT20X-TM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	EHPT20X-MEHEW	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	ERPT20X-VM2E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	ERPT20X-VM6E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	ERPT20X-VM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	EHPT30X-VM9EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	ERPT30X-VM2EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	ERPT30X-VM6EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	ERPT30X-VM9EE	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
	ERPX-ME	yes	no	no	no	no	no	0.022	0.022	0.022	0.000	55	40	3,170
	ERPX-VM2E	yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	55	40	3,170
	ERPX-VM6E	yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	55	40	3,170
	ERPX-VM9E	yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	55	40	3,170
	PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)	EHPT20X-VM9E	yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40
EHPT20X-TM9E		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
EHPT20X-MEHEW		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
ERPT20X-VM2E		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
ERPT20X-VM6E		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
ERPT20X-VM9E		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
EHPT30X-VM9EE		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
ERPT30X-VM2EE		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
ERPT30X-VM6EE		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
ERPT30X-VM9EE		yes	no	no	no	yes	yes	0.022	0.022	0.022	0.000	55	40	3,170
ERPX-ME		yes	no	no	no	no	no	0.022	0.022	0.022	0.000	55	40	3,170
ERPX-VM2E		yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	55	40	3,170
ERPX-VM6E		yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	55	40	3,170
ERPX-VM9E		yes	no	no	no	yes	no	0.022	0.022	0.022	0.000	55	40	3,170

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Medium-temperature application / warmer climate conditions																															
		Rated heat output	ηs		Tj=2°C			Tj=7°C			Tj=12°C			Tj=bivalent temperature		Tj=operating limit		Bivalent temperature		Reference design conditions for space heating		Operating limit temperature		Operating limit temperature Heating Water		Supplementary heater Rated heat output		Annual electricity consumption Heating		Domestic Hot Water			
		Declared capacity Warmer	Seasonal space heating energy efficiency	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Pdh	COPd	Tbiv	Tdesignh	Tol	WTOL	Psup	QHE	-	ηwh	Qelec	AEC	Declared load profile	Water heating energy efficiency	Daily electricity consumption	Annual electricity consumption			
		[kW]	[%]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	[%]	[kWh]	[kWh]	[-]	[%]	[kWh]	[kWh]		
		Pdesignh	ηs	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Tbiv	Tdesignh	Tol	WTOL	Psup	QHE	-	ηwh	Qelec	AEC	Declared load profile	Water heating energy efficiency	Daily electricity consumption	Annual electricity consumption		
PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)	EHPT17X-VM2E	8.0	171	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,453	L	139	3,580	788							
	EHPT17X-VM6E	8.0	171	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,453	L	139	3,580	788							
	EHPT17X-VM9E	8.0	171	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,453	L	139	3,580	788							
	ERPT17X-VM2E	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	L	139	3,580	788							
	EHPT20X-VM9E	8.0	171	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,453	L	154	3,270	719							
	EHPT20X-TM9E	8.0	171	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,453	L	154	3,270	719							
	EHPT20X-MEHEW	8.0	171	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,453	L	154	3,270	719							
	ERPT20X-VM2E	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	L	154	3,270	719							
	ERPT20X-VM6E	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	L	154	3,270	719							
	ERPT20X-VM9E	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	L	154	3,270	719							
	EHPT30X-VM9EE	8.0	171	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,453	XL	127	6,250	1,375							
	ERPT30X-VM2EE	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	XL	127	6,250	1,375							
	ERPT30X-VM6EE	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	XL	127	6,250	1,375							
	ERPT30X-VM9EE	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	XL	127	6,250	1,375							
	ERPX-ME	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	-	-	-	-							
	ERPX-VM2E	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	-	-	-	-							
	ERPX-VM6E	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	-	-	-	-							
	ERPX-VM9E	8.0	178	8.0	2.24	0.99	5.1	3.99	0.98	3.5	5.87	0.96	8.0	2.24	8.0	2.24	2	2	-25	75	0.0	2,356	-	-	-	-							
PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)	EHPT20X-VM9E	9.5	164	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	3,045	L	147	3,410	750							
	EHPT20X-TM9E	9.5	164	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	3,045	L	147	3,410	750							
	EHPT20X-MEHEW	9.5	164	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	3,045	L	147	3,410	750							
	ERPT20X-VM2E	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	L	147	3,410	750							
	ERPT20X-VM6E	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	L	147	3,410	750							
	ERPT20X-VM9E	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	L	147	3,410	750							
	EHPT30X-VM9EE	9.5	164	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	3,045	XL	141	5,660	1,245							
	ERPT30X-VM2EE	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	XL	141	5,660	1,245							
	ERPT30X-VM6EE	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	XL	141	5,660	1,245							
	ERPT30X-VM9EE	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	XL	141	5,660	1,245							
	ERPX-ME	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	-	-	-	-							
	ERPX-VM2E	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	-	-	-	-							
ERPX-VM6E	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	-	-	-	-								
ERPX-VM9E	9.5	169	9.5	2.15	1.00	6.1	3.87	0.99	4.2	5.40	0.97	9.5	2.15	9.5	2.15	2	2	-25	75	0.0	2,947	-	-	-	-								
PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)	EHPT20X-VM9E	11.0	171	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,378	L	147	3,410	750							
	EHPT20X-TM9E	11.0	171	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,378	L	147	3,410	750							
	EHPT20X-MEHEW	11.0	171	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,378	L	147	3,410	750							
	ERPT20X-VM2E	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	L	147	3,410	750							
	ERPT20X-VM6E	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	L	147	3,410	750							
	ERPT20X-VM9E	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	L	147	3,410	750							
	EHPT30X-VM9EE	11.0	171	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,378	XL	141	5,660	1,245							
	ERPT30X-VM2EE	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	XL	141	5,660	1,245							
	ERPT30X-VM6EE	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	XL	141	5,660	1,245							
	ERPT30X-VM9EE	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	XL	141	5,660	1,245							
	ERPX-ME	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	-	-	-	-							
	ERPX-VM2E	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	-	-	-	-							
ERPX-VM6E	11.0	176	11.0	2.05	1.00	7.1	3.87	0.99	4.2	5.90	0.97	11.0	2.05	11.0	2.05	2	2	-25	75	0.0	3,281	-	-	-	-								
ERPX-VM9E</																																	

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Medium-temperature application / colder climate conditions																																					
		Rated heat output		Seasonal space heating energy efficiency		Tj=-7°C			Tj=2°C			Tj=7°C			Tj=12°C			Tj=bivalent temperature		Tj=operating limit		Tj=-15°C		Bivalent temperature		Reference design conditions for space heating		Operating limit temperature		Operating limit temperature Heating Water		Supplementary heater Rated heat output		Annual electricity consumption Heating		Domestic Hot Water			
		Declared capacity	ηs	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Pdh	COPd	Tbiv	Tdesign	Tol	WTOL	Psup	QHE	-	ηwh	Qelec	AEC							
		[kW]	[%]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	[%]	[kWh]	[kWh]							
		Pdesignh	ηs	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Pdh	COPd	Tbiv	Tdesign	Tol	WTOL	Psup	QHE	-	ηwh	Qelec	AEC							
PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)	EHPT17X-VM2E	8.0	120	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,424	L	96	5,110	1,124								
	EHPT17X-VM6E	8.0	120	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,424	L	96	5,110	1,124								
	EHPT17X-VM9E	8.0	120	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,424	L	96	5,110	1,124								
	ERPT17X-VM2E	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	L	96	5,110	1,124								
	EHPT20X-VM9E	8.0	120	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,424	L	105	4,710	1,036								
	EHPT20X-TM9E	8.0	120	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,424	L	105	4,710	1,036								
	EHPT20X-MEHEW	8.0	120	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,424	L	105	4,710	1,036								
	ERPT20X-VM6E	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	L	105	4,710	1,036								
	ERPT20X-VM9E	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	L	105	4,710	1,036								
	EHPT30X-VM9EE	8.0	120	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,424	XL	95	8,300	1,826								
	ERPT30X-VM2EE	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	XL	95	8,300	1,826								
	ERPT30X-VM6EE	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	XL	95	8,300	1,826								
	ERPT30X-VM9EE	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	XL	95	8,300	1,826								
	ERPX-ME	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	-	-	-	-								
	ERPX-VM2E	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	-	-	-	-								
	ERPX-VM6E	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	-	-	-	-								
	ERPX-VM9E	8.0	121	4.8	2.48	0.99	3.0	3.61	0.97	3.5	5.24	0.97	3.5	6.66	0.96	6.5	2.02	6.8	1.54	6.5	2.02	-15	-22	-25	75	1.2	6,375	-	-	-	-								
	PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)	EHPT20X-VM9E	9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,461	L	107	4,620	1,016							
EHPT20X-TM9E		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,461	L	107	4,620	1,016								
EHPT20X-MEHEW		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,461	L	107	4,620	1,016								
ERPT20X-VM2E		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	L	107	4,620	1,016								
ERPT20X-VM6E		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	L	107	4,620	1,016								
ERPT20X-VM9E		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	L	107	4,620	1,016								
EHPT30X-VM9EE		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,461	XL	109	7,260	1,597								
ERPT30X-VM2EE		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	XL	109	7,260	1,597								
ERPT30X-VM6EE		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	XL	109	7,260	1,597								
ERPT30X-VM9EE		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	XL	109	7,260	1,597								
ERPX-ME		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	-	-	-	-								
ERPX-VM2E		9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	-	-	-	-								
ERPX-VM6E	9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	-	-	-	-									
ERPX-VM9E	9.5	123	5.8	2.74	0.99	3.5	3.64	0.98	3.8	4.76	0.97	4.3	6.15	0.97	7.8	1.96	8.0	1.44	7.8	1.96	-15	-22	-25	75	1.5	7,413	-	-	-	-									
PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)	EHPT20X-VM9E	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,626	L	107	4,620	1,016								
	EHPT20X-TM9E	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,626	L	107	4,620	1,016								
	EHPT20X-MEHEW	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,626	L	107	4,620	1,016								
	ERPT20X-VM2E	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,577	L	107	4,620	1,016								
	ERPT20X-VM6E	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,577	L	107	4,620	1,016								
	ERPT20X-VM9E	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,577	L	107	4,620	1,016								
	EHPT30X-VM9EE	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,626	XL	109	7,260	1,597								
	ERPT30X-VM2EE	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,577	XL	109	7,260	1,597								
	ERPT30X-VM6EE	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,577	XL	109	7,260	1,597								
	ERPT30X-VM9EE	11.0	123	6.7	2.70	0.99	4.1	3.72	0.98	3.8	4.90	0.97	4.3	6.10	0.97	9.0	1.87	9.0	1.41	9.0	1.87	-15	-22	-25	75	2.0	8,577	XL	109	7,260	1,597								
	ERPX-ME	11.0	123	6.7	2.70	0.99	4.1	3.72																															

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Low-temperature application / temperature application / Average climate conditions																																											
		Rated heat output	ηs	Tj=-7°C						Tj=2°C						Tj=7°C						Tj=12°C						Tj=bivalent temperature						Tj=operating limit		Bivalent temperature	Reference design conditions for space heating	Operating limit temperature	Operating limit temperature Heating Water	Supplementary heater Rated heat output	Annual electricity consumption Heating	Domestic Hot Water			
				Declared capacity	Seasonal space heating energy efficiency	Pdesignh	ηsp	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Tbiv	Tdesignh	Tol	WTOL	Psup	QHE	-							ηwh	Qelec	AEC	
		[kW]	[%]																																	[kW]	[-]	[-]	[kW]	[-]	[-]				[kW]
PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)	EHPT17X-VM2E	8.0	179	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,640	L	121	4,110	904																
	EHPT17X-VM6E	8.0	179	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,640	L	121	4,110	904																
	EHPT17X-VM9E	8.0	179	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,640	L	121	4,110	904																
	ERPT17X-VM2E	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	L	121	4,110	904																
	EHPT20X-VM9E	8.0	179	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,640	L	137	3,650	803																
	EHPT20X-TM9E	8.0	179	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,640	L	137	3,650	803																
	EHPT20X-MEHEW	8.0	179	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,640	L	137	3,650	803																
	ERPT20X-VM2E	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	L	137	3,650	803																
	ERPT20X-VM6E	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	L	137	3,650	803																
	ERPT20X-VM9E	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	L	137	3,650	803																
	EHPT30X-VM9EE	8.0	179	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,540	XL	114	6,960	1,531																
	ERPT30X-VM2EE	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	XL	114	6,960	1,531																
	ERPT30X-VM6EE	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	XL	114	6,960	1,531																
	ERPT30X-VM9EE	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	XL	114	6,960	1,531																
	ERPX-ME	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	-	-	-	-																
	ERPX-VM2E	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	-	-	-	-																
	ERPX-VM6E	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	-	-	-	-																
	ERPX-VM9E	8.0	183	7.1	2.96	0.99	4.3	4.67	0.98	3.5	5.84	0.96	3.5	7.10	0.96	7.1	2.96	7.5	2.53	-7	-10	-25	75	0.5	3,559	-	-	-	-																
PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)	EHPT20X-VM9E	9.5	185	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,177	L	129	3,850	847																
	EHPT20X-TM9E	9.5	185	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,177	L	129	3,850	847																
	EHPT20X-MEHEW	9.5	185	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,177	L	129	3,850	847																
	ERPT20X-VM2E	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	L	129	3,850	847																
	ERPT20X-VM6E	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	L	129	3,850	847																
	ERPT20X-VM9E	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	L	129	3,850	847																
	EHPT30X-VM9EE	9.5	185	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,177	XL	123	6,490	1,428																
	ERPT30X-VM2EE	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	XL	123	6,490	1,428																
	ERPT30X-VM6EE	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	XL	123	6,490	1,428																
	ERPT30X-VM9EE	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	XL	123	6,490	1,428																
	ERPX-ME	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	-	-	-	-																
	ERPX-VM2E	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	-	-	-	-																
ERPX-VM6E	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	-	-	-	-																	
ERPX-VM9E	9.5	189	8.4	3.13	0.99	5.1	4.62	0.98	4.2	6.50	0.97	4.2	7.02	0.96	8.4	3.13	9.4	2.45	-7	-10	-25	75	0.1	4,096	-	-	-	-																	
PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)	EHPT20X-VM9E	11.0	188	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,748	L	129	3,850	847																
	EHPT20X-TM9E	11.0	188	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,748	L	129	3,850	847																
	EHPT20X-MEHEW	11.0	188	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,748	L	129	3,850	847																
	ERPT20X-VM2E	11.0	192	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,667	L	129	3,850	847																
	ERPT20X-VM6E	11.0	192	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,667	L	129	3,850	847																
	ERPT20X-VM9E	11.0	192	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,667	L	129	3,850	847																
	EHPT30X-VM9EE	11.0	188	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,748	XL	123	6,490	1,428																
	ERPT30X-VM2EE	11.0	192	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.97	4.2	7.66	0.96	9.7	3.00	10.9	2.57	-7	-10	-25	75	0.1	4,667	XL	123	6,490	1,428																
	ERPT30X-VM6EE	11.0	192	9.7	3.00	0.99	5.9	4.73	0.98	4.2	6.59	0.																																	

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Low-temperature application / warmer climate conditions																																	
		Rated heat output	ηs	Tj=2°C						Tj=7°C			Tj=12°C			Tj=bivalent temperature		Tj=operating limit		Bivalent temperature		Reference design conditions for space heating		Operating limit temperature		Operating limit temperature Heating Water		Supplementary heater Rated heat output		Annual electricity consumption Heating		Domestic Hot Water			
				Declared capacity Warmer	Seasonal space heating energy efficiency	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Pdh	COPd	Tbiv	Tdesignh	Tol	WTOL	Psup	QHE	-	ηwh	Qelec	AEC	Declared load profile	Water heating energy efficiency	Daily electricity consumption	Annual electricity consumption			
		Pdesignh	ηs	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	[%]	[kWh]	[kWh]	[-]	[%]	[kWh]	[kWh]				
PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)	EHPT17X-VM2E	8.0	222	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,902	L	139	3.580	788									
	EHPT17X-VM6E	8.0	222	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,902	L	139	3.580	788									
	EHPT17X-VM9E	8.0	222	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,902	L	139	3.580	788									
	ERPT17X-VM2E	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	L	139	3.580	788									
	EHPT20X-VM9E	8.0	222	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,902	L	154	3.270	719									
	EHPT20X-TM9E	8.0	222	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,902	L	154	3.270	719									
	EHPT20X-MEHEW	8.0	222	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,902	L	154	3.270	719									
	ERPT20X-VM2E	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	L	154	3.270	719									
	ERPT20X-VM6E	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	L	154	3.270	719									
	ERPT20X-VM9E	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	L	154	3.270	719									
	EHPT30X-VM9EE	8.0	222	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,902	XL	127	6.250	1,375									
	ERPT30X-VM2EE	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	XL	127	6.250	1,375									
	ERPT30X-VM6EE	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	XL	127	6.250	1,375									
	ERPT30X-VM9EE	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	XL	127	6.250	1,375									
	ERPX-ME	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	-	-	-	-									
	ERPX-VM2E	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	-	-	-	-									
ERPX-VM6E	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	-	-	-	-										
ERPX-VM9E	8.0	234	8.0	3.30	0.99	5.1	5.98	0.97	3.5	6.64	0.96	8.0	3.30	8.0	3.30	2	2	-25	75	0.0	1,805	-	-	-	-										
PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)	EHPT20X-VM9E	9.5	240	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	2,092	L	147	3.410	750									
	EHPT20X-TM9E	9.5	240	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	2,092	L	147	3.410	750									
	EHPT20X-MEHEW	9.5	240	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	2,092	L	147	3.410	750									
	ERPT20X-VM2E	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	L	147	3.410	750									
	ERPT20X-VM6E	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	L	147	3.410	750									
	ERPT20X-VM9E	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	L	147	3.410	750									
	EHPT30X-VM9EE	9.5	240	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	2,092	XL	141	5.660	1,245									
	ERPT30X-VM2EE	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	XL	141	5.660	1,245									
	ERPT30X-VM6EE	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	XL	141	5.660	1,245									
	ERPT30X-VM9EE	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	XL	141	5.660	1,245									
	ERPX-ME	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	-	-	-	-									
	ERPX-VM2E	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	-	-	-	-									
ERPX-VM6E	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	-	-	-	-										
ERPX-VM9E	9.5	251	9.5	3.16	0.99	6.1	6.57	0.98	4.3	7.08	0.96	9.5	3.16	9.5	3.16	2	2	-25	75	0.0	1,995	-	-	-	-										
PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)	EHPT20X-VM9E	11.0	224	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,585	L	147	3.410	750									
	EHPT20X-TM9E	11.0	224	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,585	L	147	3.410	750									
	EHPT20X-MEHEW	11.0	224	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,585	L	147	3.410	750									
	ERPT20X-VM2E	11.0	233	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,488	L	147	3.410	750									
	ERPT20X-VM6E	11.0	233	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,488	L	147	3.410	750									
	ERPT20X-VM9E	11.0	233	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,488	L	147	3.410	750									
	EHPT30X-VM9EE	11.0	224	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,585	XL	141	5.660	1,245									
	ERPT30X-VM2EE	11.0	233	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,488	XL	141	5.660	1,245									
	ERPT30X-VM6EE	11.0	233	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,488	XL	141	5.660	1,245									
	ERPT30X-VM9EE	11.0	233	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	11.0	2.91	11.0	2.91	2	2	-25	75	0.0	2,488	XL	141	5.660	1,245									
	ERPX-ME	11.0	233	11.0	2.91	0.99	7.1	6.38	0.98	4.3	6.25	0.97	1																						

1 Specifications

This information is based on EU regulation No 811/2013 and No 813/2013.

Outdoor model	Indoor model	Low-temperature application/temperature application / colder climate conditions																														
		Rated heat output	ns	Tj=-7°C			Tj=2°C			Tj=7°C			Tj=12°C			Tj=bivalent temperature		Tj=operating limit		Tj=-15°C		Bivalent temperature	Reference design conditions for space heating	Operating limit temperature	Operating limit temperature Heating Water	Supplementary heater Rated heat output	Annual electricity consumption Heating	Domestic Hot Water				
				Declared capacity	Seasonal space heating energy efficiency	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Cdh	Pdh	COPd	Pdh	COPd							Tbiv	Tdesignh	Toi	WTOL	Psup
		Pdesignh	ηs	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[kW]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	ηwh	Qelec	AEC	
[kW]	[%]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[-]	[kW]	[-]	[kW]	[-]	[kW]	[-]	[°C]	[°C]	[°C]	[°C]	[kW]	[kWh]	[-]	ηwh	Qelec	AEC			
PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)	EHPT17X-VM2E	8.0	152	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,099	L	96	5.110	1,124	
	EHPT17X-VM6E	8.0	152	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,099	L	96	5.110	1,124	
	EHPT17X-VM9E	8.0	152	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,099	L	96	5.110	1,124	
	ERPT17X-VM2E	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	L	96	5.110	1,124	
	EHPT20X-VM9E	8.0	152	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,099	L	105	4.710	1,036	
	EHPT20X-TM9E	8.0	152	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,099	L	105	4.710	1,036	
	EHPT20X-MEHEW	8.0	152	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,099	L	105	4.710	1,036	
	ERPT20X-VM2E	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	L	105	4.710	1,036	
	ERPT20X-VM6E	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	L	105	4.710	1,036	
	ERPT20X-VM9E	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	L	105	4.710	1,036	
	EHPT30X-VM9EE	8.0	152	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,099	XL	95	8.300	1,826	
	ERPT30X-VM2EE	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	XL	95	8.300	1,826	
	ERPT30X-VM6EE	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	XL	95	8.300	1,826	
	ERPT30X-VM9EE	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	XL	95	8.300	1,826	
	ERPX-ME	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	-	-	-	-	
	ERPX-VM2E	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	-	-	-	-	
ERPX-VM6E	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	-	-	-	-		
ERPX-VM9E	8.0	153	4.8	3.31	0.99	3.0	4.50	0.97	3.5	6.30	0.96	3.5	8.00	0.95	6.5	2.46	7.0	1.90	6.5	2.46	-15	-22	-25	75	1.0	5,050	-	-	-	-		
PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)	EHPT20X-VM9E	9.5	152	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,051	L	107	4.620	1,016	
	EHPT20X-TM9E	9.5	152	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,051	L	107	4.620	1,016	
	EHPT20X-MEHEW	9.5	152	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,051	L	107	4.620	1,016	
	ERPT20X-VM2E	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	L	107	4.620	1,016	
	ERPT20X-VM6E	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	L	107	4.620	1,016	
	ERPT20X-VM9E	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	L	107	4.620	1,016	
	EHPT30X-VM9EE	9.5	152	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,051	XL	109	7.260	1,597	
	ERPT30X-VM2EE	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	XL	109	7.260	1,597	
	ERPT30X-VM6EE	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	XL	109	7.260	1,597	
	ERPT30X-VM9EE	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	XL	109	7.260	1,597	
	ERPX-ME	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	-	-	-	-	
	ERPX-VM2E	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	-	-	-	-	
	ERPX-VM6E	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	-	-	-	-	
	ERPX-VM9E	9.5	153	5.8	3.29	0.99	3.5	4.27	0.97	4.2	6.25	0.97	4.3	7.15	0.96	7.8	2.95	8.0	2.37	7.8	2.95	-15	-22	-25	75	1.5	6,003	-	-	-	-	
	PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)	EHPT20X-VM9E	11.0	160	6.7	3.66	0.99	4.1	4.53	0.98	4.2	6.24	0.97	4.3	6.38	0.97	9.0	2.80	9.0	2.36	9.0	2.80	-15	-22	-25	75	2.0	6,658	L	107	4.620	1,016
		EHPT20X-TM9E	11.0	160	6.7	3.66	0.99	4.1	4.53	0.98	4.2	6.24	0.97	4.3	6.38	0.97	9.0	2.80	9.0	2.36	9.0	2.80	-15	-22	-25	75	2.0	6,658	L	107	4.620	1,016
EHPT20X-MEHEW		11.0	160	6.7	3.66	0.99	4.1	4.53	0.98	4.2	6.24	0.97	4.3	6.38	0.97	9.0	2.80	9.0	2.36	9.0	2.80	-15	-22	-25	75	2.0	6,658	L	107	4.620	1,016	
ERPT20X-VM2E		11.0	161	6.7	3.66	0.99	4.1	4.53	0.98	4.2	6.24	0.97	4.3	6.38	0.97	9.0	2.80	9.0	2.36	9.0	2.80	-15	-22	-25	75	2.0	6,609	L	107	4.620	1,016	
ERPT20X-VM6E		11.0	161	6.7	3.66	0.99	4.1	4.53	0.98	4.2	6.24	0.97	4.3	6.38	0.97	9.0	2.80	9.0	2.36	9.0	2.80	-15	-22	-25	75	2.0	6,609	L	107	4.620	1,016	
ERPT20X-VM9E		11.0	161	6.7	3.66	0.99	4.1	4.53	0.98	4.2	6.24	0.97	4.3																			

1 Specifications

1.4 Maximum outlet water temperature

(1) Hydro-Split

PUZ-WZ50VAA(-BS)

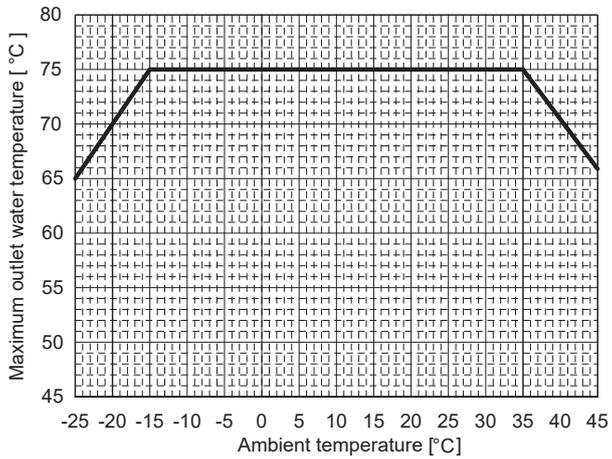
PUZ-WZ85V/YAA(-BS)

PUZ-WZ60VAA(-BS)

PUZ-WZ100V/YAA(-BS)

PUZ-WZ80VAA(-BS)

PUZ-WZ120V/YAA(-BS)



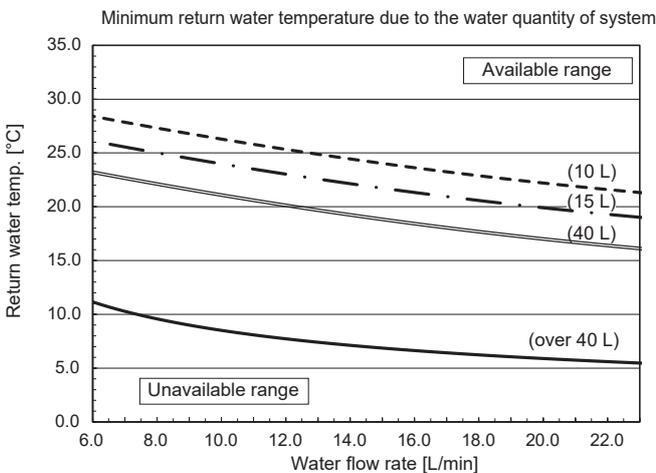
1 Specifications

1.5 Available range (Water flow rate, return water temp.)

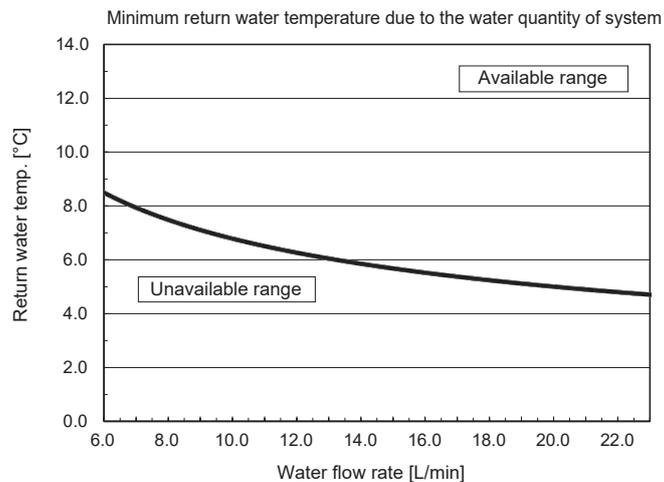
(1) Hydro-Split

PUZ-WZ50VAA(-BS) PUZ-WZ60VAA(-BS) PUZ-WZ80VAA(-BS)

■ Heating

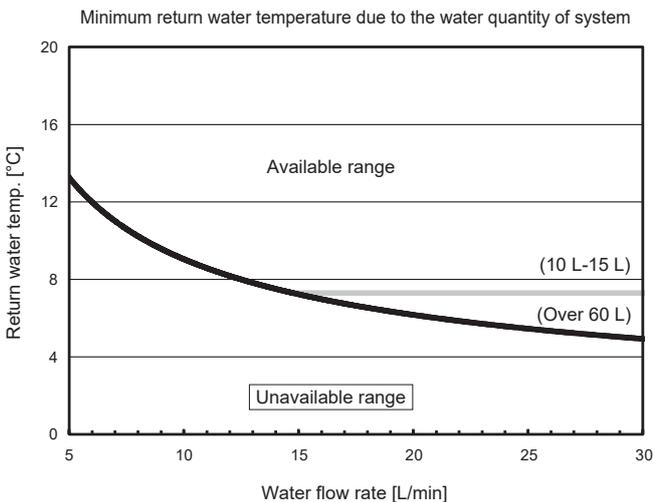


■ Cooling

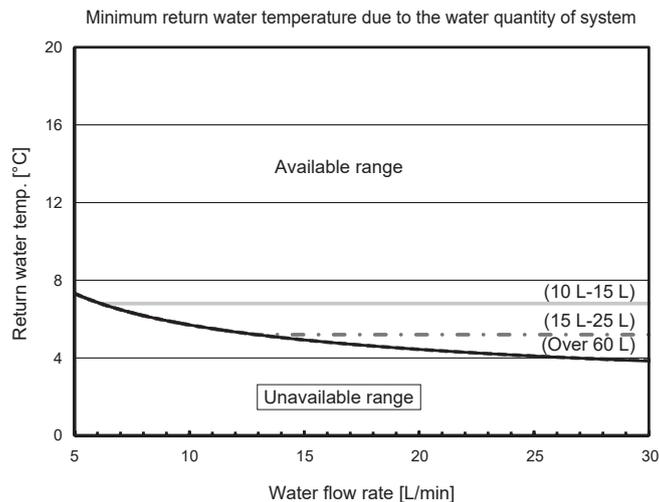


PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)

■ Heating

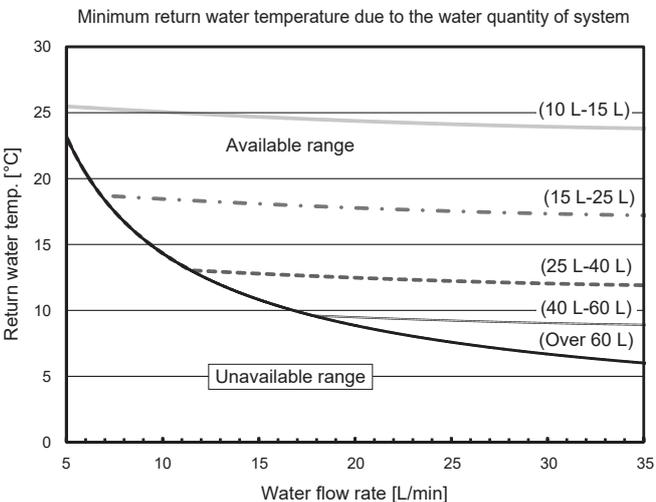


■ Cooling

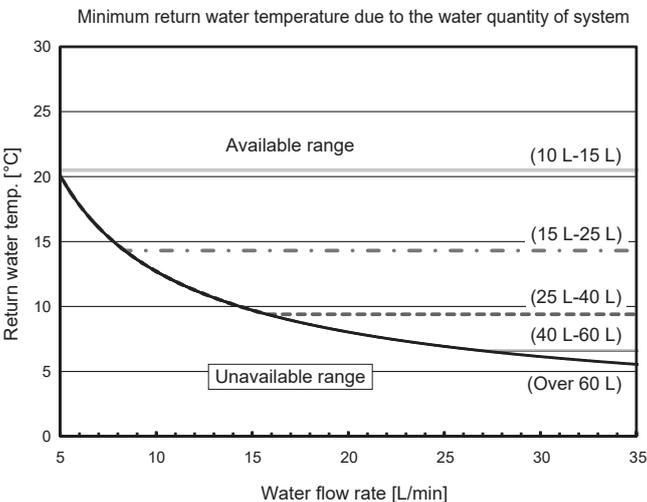


PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)
PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)

■ Heating



■ Cooling



Note:

Be sure to avoid the unavailable range during defrosting.

Otherwise, the outdoor unit is insufficiently defrosted and/or the heat exchanger of the indoor unit may freeze.

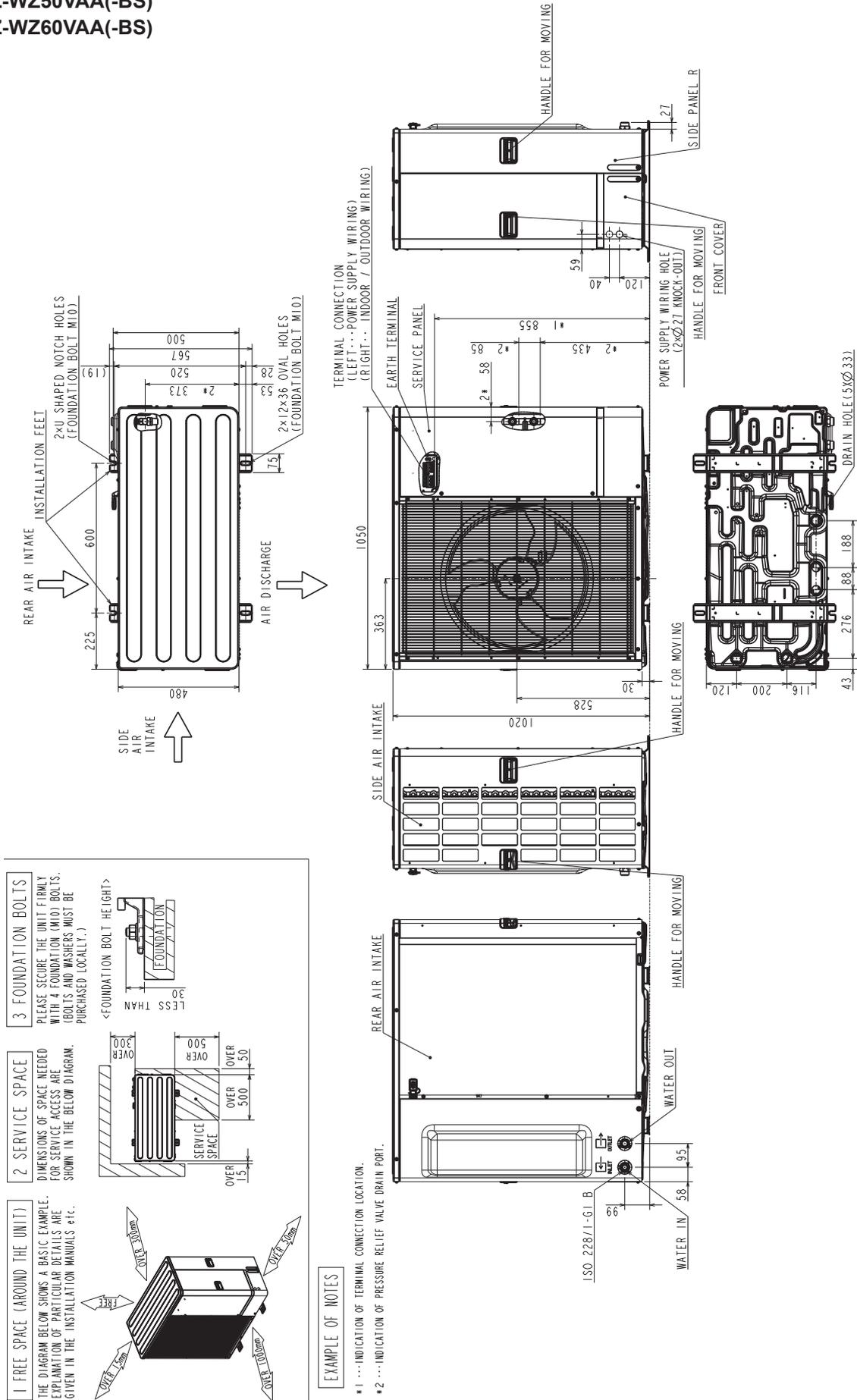
2 Outlines and dimensions

(1) Hydro-Split

- PUZ-WZ50VAA(-BS)
- PUZ-WZ60VAA(-BS)

Unit : mm

Outdoor unit

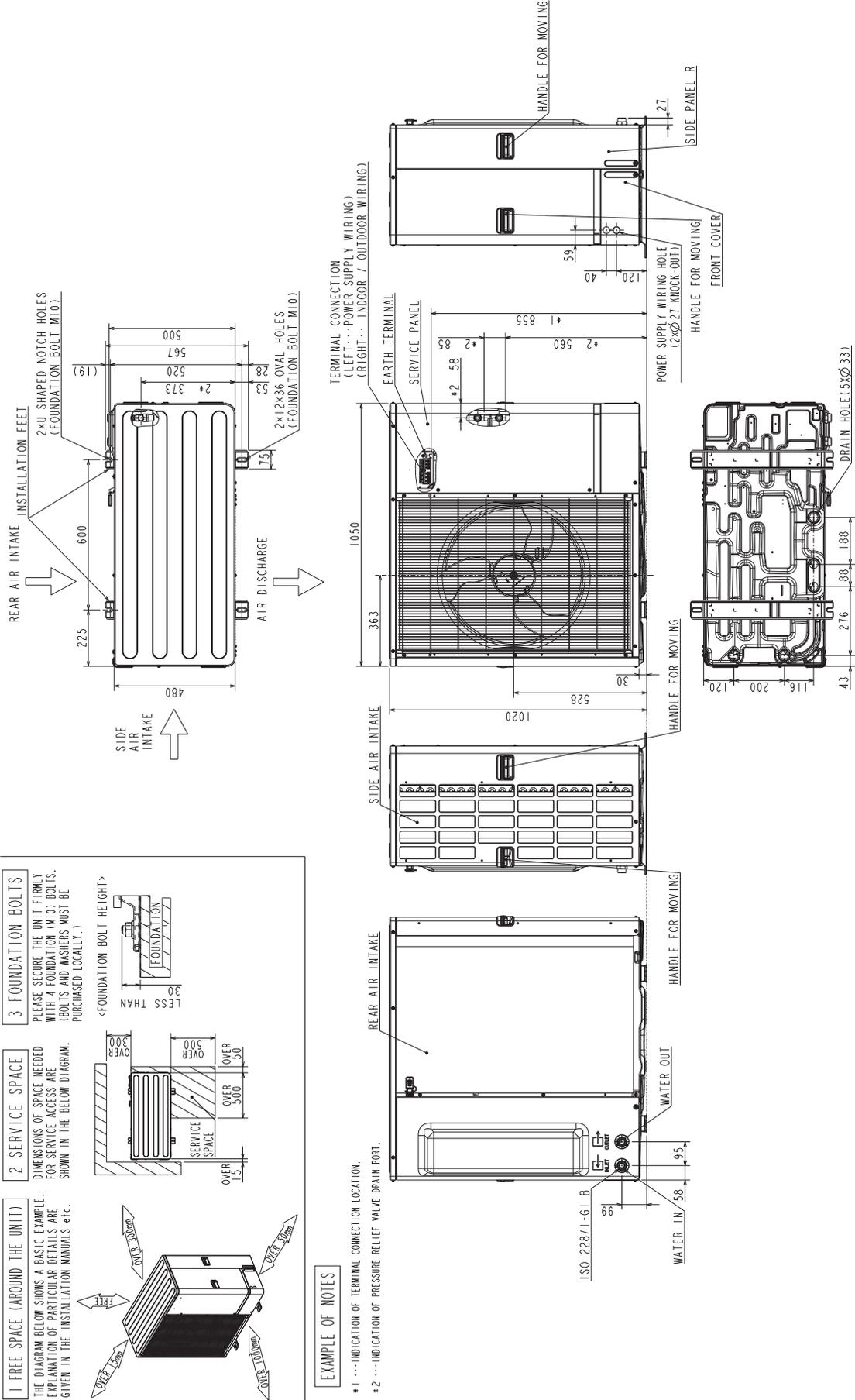


2 Outlines and dimensions

■ PUZ-WZ80VAA(-BS)

Unit : mm

Outdoor unit



EXAMPLE OF NOTES

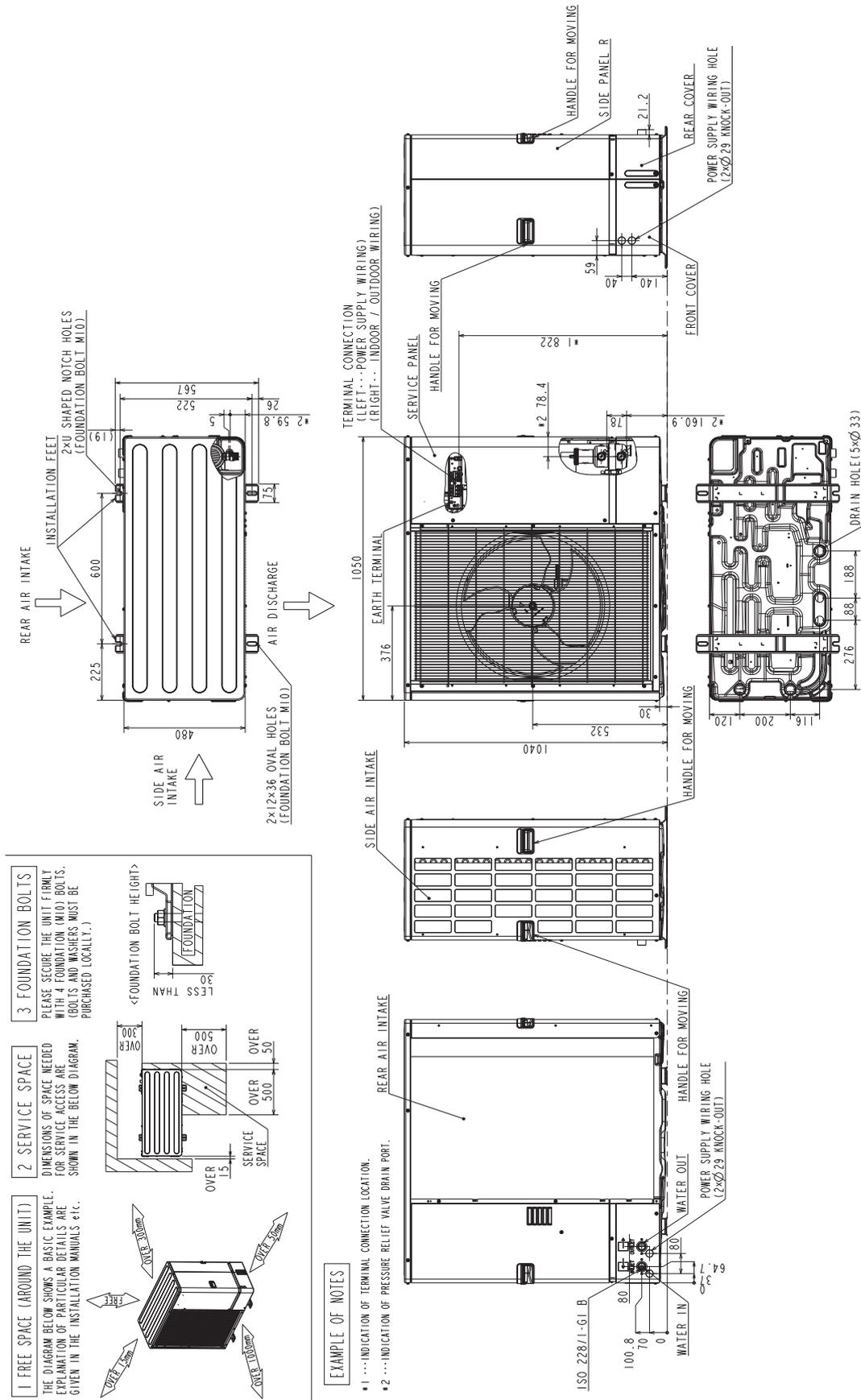
- * 1 ... INDICATION OF TERMINAL CONNECTION LOCATION.
- * 2 ... INDICATION OF PRESSURE RELIEF VALVE DRAIN PORT.

2 Outlines and dimensions

Unit : mm

- PUZ-WZ85V/YAA(-BS)
- PUZ-WZ100V/YAA(-BS)
- PUZ-WZ120V/YAA(-BS)

Outdoor unit



3 Wiring diagrams

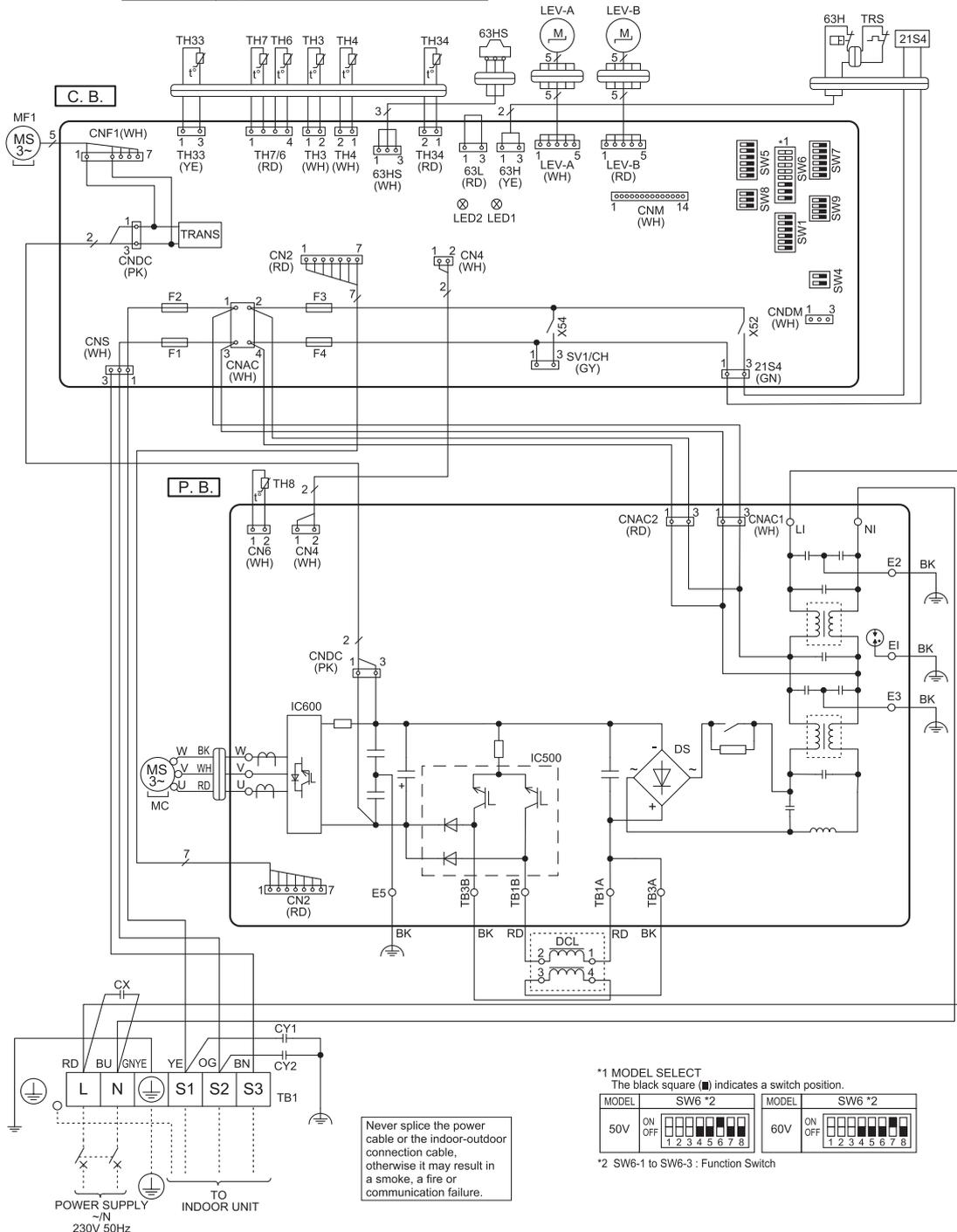
(1) Hydro-Split

■ PUZ-WZ50VAA(-BS)

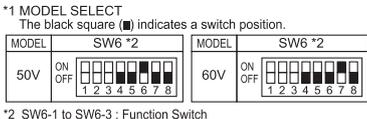
PUZ-WZ60VAA(-BS)

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME
TB1	Terminal Block <Power Supply, Indoor/Outdoor>	CX	Capacitor
MC	Motor for Compressor	P. B.	Power Circuit Board
MF1	Fan Motor	C. B.	Controller Circuit Board
21S4	Solenoid Valve (4-Way Valve)	SW1	Switch <Manual Defrost, Defect History Record Reset, Refrigerant Address>
63H	High Pressure Switch	SW4	Switch <Function Switch>
63HS	Pressure Sensor	SW5	Switch <Function Switch>
TH3	Thermistor <Liquid>	SW6	Switch <Function Switch, Model Select>
TH4	Thermistor <Discharge>	SW7	Switch <Function Switch>
TH6	Thermistor <2-Phase Pipe>	SW8	Switch <Function Switch>
TH7	Thermistor <Ambient>	SW9	Switch <Function Switch>
TH8	Thermistor <Heat Sink>	CNDM	Connector <Connection for Option>
TH33	Thermistor <Comp. Surface>	SV1/CH	Connector <Connection for Option>
TH34	Thermistor <Plate Hex Liquid>	CNM	Connector <Connection for Option>
TRS	Thermal Protector	F1, F2	Fuse <T10AL250V>
LEV-A, LEV-B	Linear Expansion Valve	F3, F4	Fuse <T6.3AL250V>
DCL	Reactor		
CY1, CY2	Capacitor		



Never splice the power cable or the indoor-outdoor connection cable, otherwise it may result in a smoke, a fire or communication failure.



*2 SW6-1 to SW6-3 : Function Switch

Outdoor unit

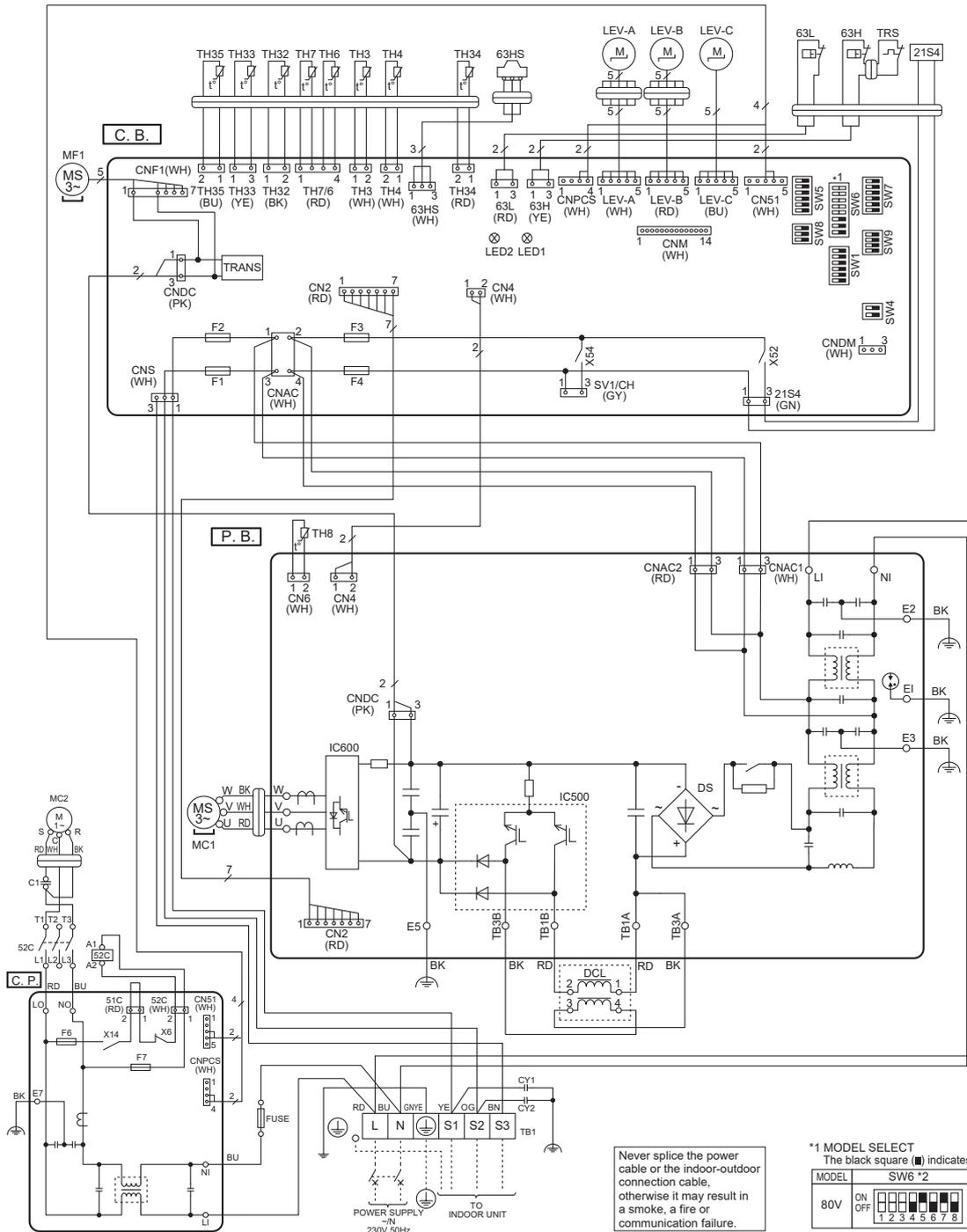
3 Wiring diagrams

PUZ-WZ80VAA(-BS)

Outdoor unit

(LEGEND)

SYMBOL	NAME	SYMBOL	NAME
TB1	Terminal Block<Power Supply, Indoor/Outdoor>	FUSE	Fuse <T20AL250V>
MC1	Motor for INV Compressor	C1	Run Capacitor
MC2	Motor for FIX Compressor	52C	Contact
MF1	Fan Motor	P.B.	Power Circuit Board
21S4	Solenoid Valve(4-Way Valve)	C.B.	Controller Circuit Board
63H	High Pressure Switch INV	SW1	Switch <Manual Defrost, Defect History Record Reset, Refrigerant Address>
63L	High Pressure Switch FIX	SW4	Switch <Function Switch>
63HS	Pressure Sensor	SW5	Switch <Function Switch>
TH3	Thermistor <INV Liquid>	SW6	Switch <Function Switch, Model Select>
TH4	Thermistor <Discharge>	SW7	Switch <Function Switch>
TH6	Thermistor <2-Phase Pipe>	SW8	Switch <Function Switch>
TH7	Thermistor <Ambient>	SW9	Switch <Function Switch>
TH8	Thermistor <Heat Sink>	CNDM	Connector <Connection for Option>
TH32	Thermistor <FIX Liquid>	SV1/CH	Connector <Connection for Option>
TH33	Thermistor <Comp. Surface>	CNM	Connector <Connection for Option>
TH34	Thermistor <Plate Hex Liquid>	F1,F2	Fuse <T10AL250V>
TH35	Thermistor <Suction Pipe>	F3,F4	Fuse <T6.3AL250V>
TRS	Thermal Protector	C.P.	Comp Protector Circuit Board
LEV-A,LEV-B,LEV-C	Linear Expansion Valve	DCL	Reactor
DCL	Reactor	CY1,CY2	Capacitor



3 Wiring diagrams

■ PUZ-WZ85YAA(-BS) PUZ-WZ100YAA(-BS) PUZ-WZ120YAA(-BS)

[LEGEND]

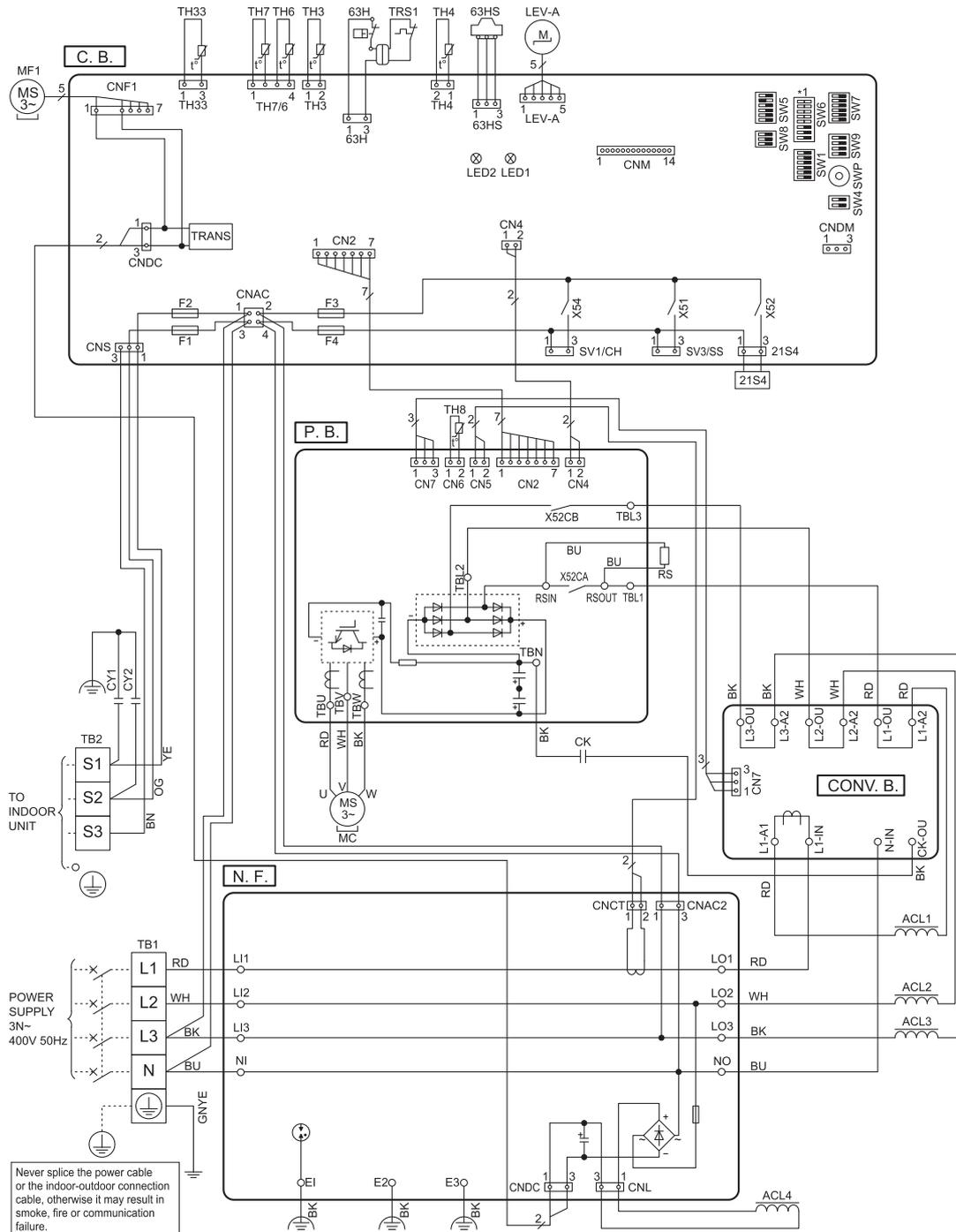
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
TB1	Terminal Block <Power Supply>	LEV-A	Linear Expansion Valve	SW6	Switch <Function Switch, Model Select>
TB2	Terminal Block <Indoor/Outdoor>	ACL1, ACL2	Reactor	SW7	Switch <Function Switch>
MC	Motor for Compressor	ACL3, ACL4	Reactor	SW8	Switch <Function Switch>
MF1	Fan Motor	CY1, CY2	Capacitor	SW9	Switch <Function Switch>
21S4	Solenoid Valve (4-Way Valve)	CK	Capacitor	SWP	Switch <Pump Down (No Function)>
63H	High Pressure Switch	RS	Rush Current Protect Resistor	CNDM	Connector <Connection for Option>
63HS	High Pressure Sensor	P. B.	Power Circuit Board	SV1/CH	Connector <Connection for Option>
TH3	Thermistor <Liquid>	N. F.	Noise Filter Circuit Board	SV3/SS	Connector *3
TH4	Thermistor <Discharge>	CONV. B.	Converter Circuit Board	CNM	Connector <Connection for Option>
TH6	Thermistor <2-Phase Pipe>	C. B.	Controller Circuit Board	F1, F2	Fuse <T10AL250V>
TH7	Thermistor <Ambient>	SW1	Switch <Manual Defrost, Defect History Record Reset, Refrigerant Address>	F3, F4	Fuse <T6.3AL250V>
TH8	Thermistor <Heat Sink>	SW4	Switch <Function Switch>	BH	Base Heater
TH33	Thermistor <Comp. Surface>	SW5	Switch <Function Switch>		
TRS1, TRS2	Thermal Protector				

*1 MODEL SELECT
The black square (■) indicates the switch position.

MODEL	SW6 *2	MODEL	SW6 *2	MODEL	SW6 *2
85Y	ON OFF [1 2 3 4 5 6 7 8]	100Y	ON OFF [1 2 3 4 5 6 7 8]	120Y	ON OFF [1 2 3 4 5 6 7 8]
90Y	ON OFF [1 2 3 4 5 6 7 8]	115Y	ON OFF [1 2 3 4 5 6 7 8]	140Y	ON OFF [1 2 3 4 5 6 7 8]

*2 SW6-1 to SW6-3 : Function Switch

*3 connection for Option



3 Wiring diagrams

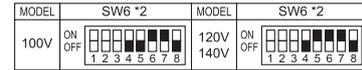
■ PUZ-WZ100VAA(-BS) PUZ-WZ120VAA(-BS)

Outdoor unit

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME
TB1	Terminal Block <Power Supply, Indoor/Outdoor>	C. B.	Controller Circuit Board
MC	Motor for Compressor	SW1	Switch <Manual Defrost, Defect History Record Reset, Refrigerant Address>
MF1	Fan Motor	SW4	Switch <Function Switch>
21S4	Solenoid Valve (4-Way Valve)	SW5	Switch <Function Switch>
63H	High Pressure Switch	SW6	Switch <Function Switch, Model Select>
63HS	High Pressure Sensor	SW7	Switch <Function Switch>
TH3	Thermistor <Liquid>	SW8	Switch <Function Switch>
TH4	Thermistor <Discharge>	SW9	Switch <Function Switch>
TH6	Thermistor <2-Phase Pipe>	SWP	Switch <Pump Down (No Function)>
TH7	Thermistor <Ambient>	CNDM	Connector <Connection for Option>
TH8	Thermistor <Heat Sink>	SV1/CH	Connector <Connection for Option>
TH33	Thermistor <Comp. Surface>	SV3/SS	Connector *3
TRS1, TRS2	Thermal Protector	CNM	Connector <Connection for Option>
LEV-A	Linear Expansion Valve	F1, F2	Fuse <T10AL250V>
DCL1, DCL2, DCL3	Reactor	F3, F4	Fuse <T6.3AL250V>
P. B.	Power Circuit Board	BH	Base Heater
N. F.	Noise Filter Circuit Board		

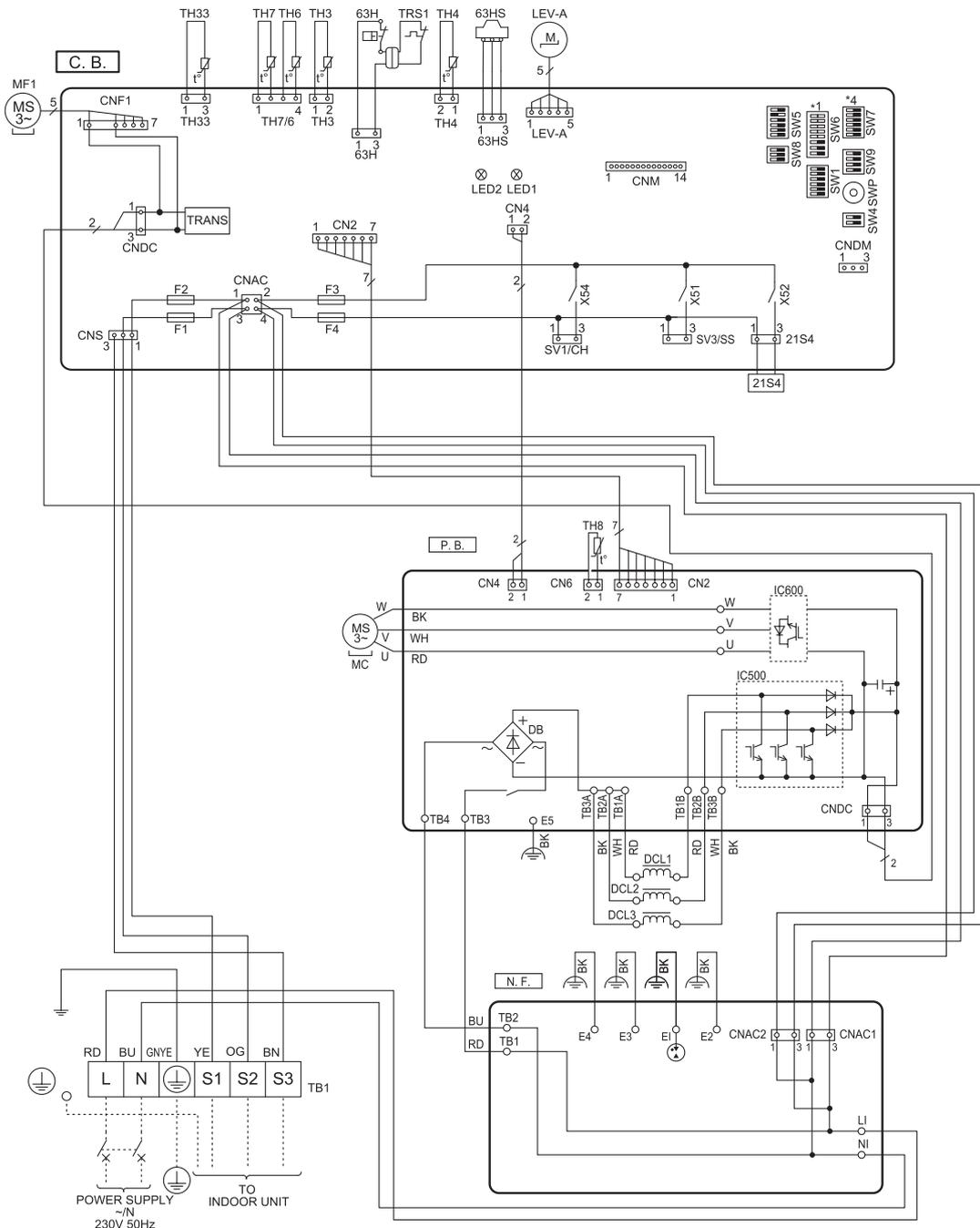
*1 MODEL SELECT
The black square (■) indicates a switch position.



*2 SW6-1 to SW6-3 : Function Switch

*3 connection for Option

*4 When connecting the indoor unit to another breaker, turn on SW7-5.

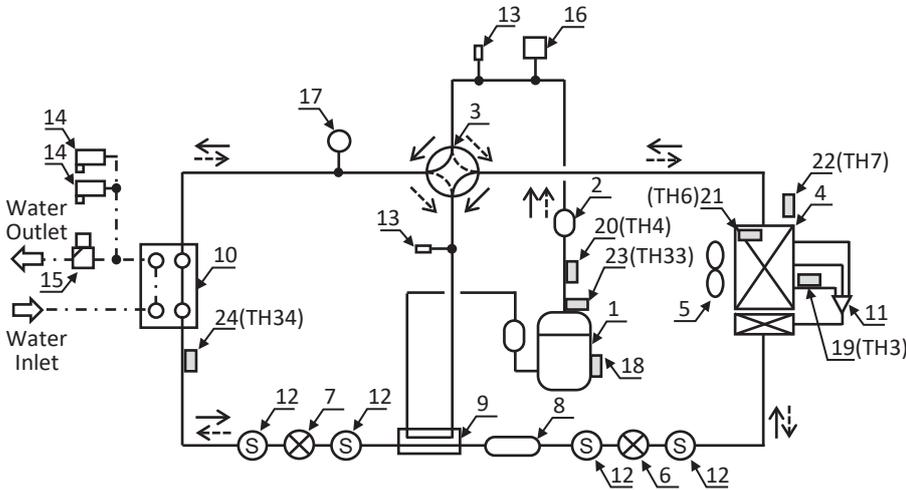
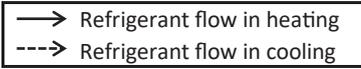


Never splice the power cable or the indoor-outdoor connection cable, otherwise it may result in a smoke, a fire or communication failure.

4 Refrigerant system diagrams

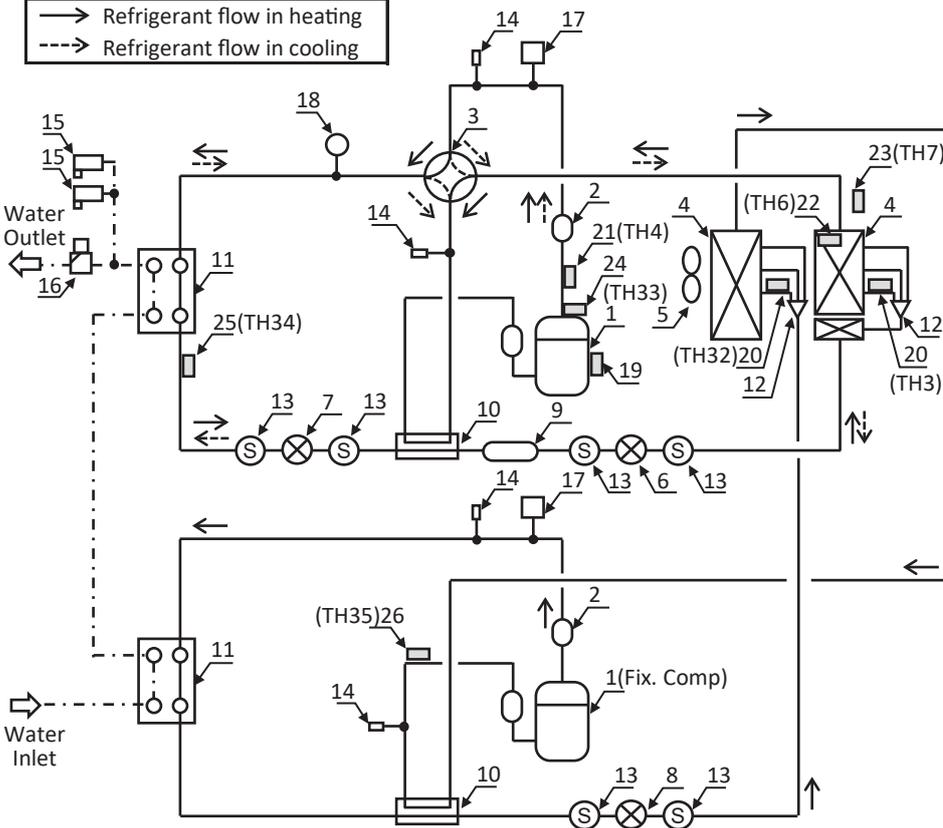
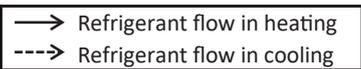
(1) Hydro-Split

■ PUZ-WZ50VAA(-BS) PUZ-WZ60VAA(-BS)



Parts Name	
1	Compressor
2	Muffler
3	4-Way Valve Heating: Coil OFF/Cooling: Coil ON
4	Air Heat Exchanger
5	Fan Motor
6	Liner Expansion Valve - A
7	Liner Expansion Valve - B
8	Pressure Vessel
9	Heat Inter Changer
10	Plate Heat Exchanger
11	Distributor
12	Strainer
13	Service Port - 5/16"
14	Pressure Relief Valve
15	Automatic Air Vent Valve
16	High Pressure Switch
17	High Pressure Sensor
18	Thermal Protector
19	Thermistor - Liquid temp.
20	Thermistor - Discharge temp.
21	Thermistor - Two phase pipe temp.
22	Thermistor - Ambient temp.
23	Thermistor - Comp surface temp.
24	Thermistor - Plate HEX temp.

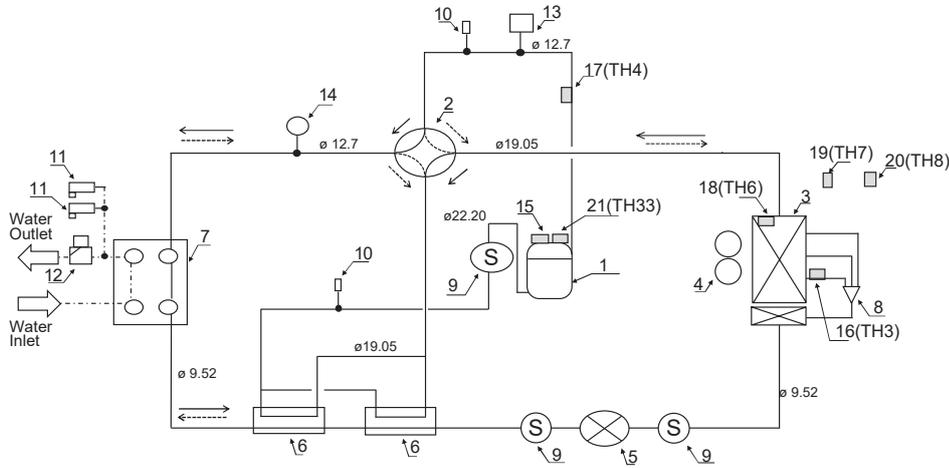
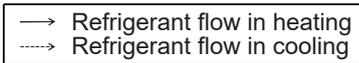
■ PUZ-WZ80VAA(-BS)



Parts Name	
1	Compressor
2	Muffler
3	4-Way Valve Heating: Coil OFF/Cooling: Coil ON
4	Air Heat Exchanger
5	Fan Motor
6	Liner Expansion Valve - A
7	Liner Expansion Valve - B
8	Liner Expansion Valve - C
9	Pressure Vessel
10	Heat Inter Changer
11	Plate Heat Exchanger
12	Distributor
13	Strainer
14	Service Port - 5/16"
15	Pressure Relief Valve
16	Automatic Air Vent Valve
17	High Pressure Switch
18	High Pressure Sensor
19	Thermal Protector
20	Thermistor - Liquid temp.
21	Thermistor - Discharge temp.
22	Thermistor - Two phase pipe temp.
23	Thermistor - Ambient temp.
24	Thermistor - Comp surface temp.
25	Thermistor - Plate HEX temp.
26	Thermistor - Suction temp.

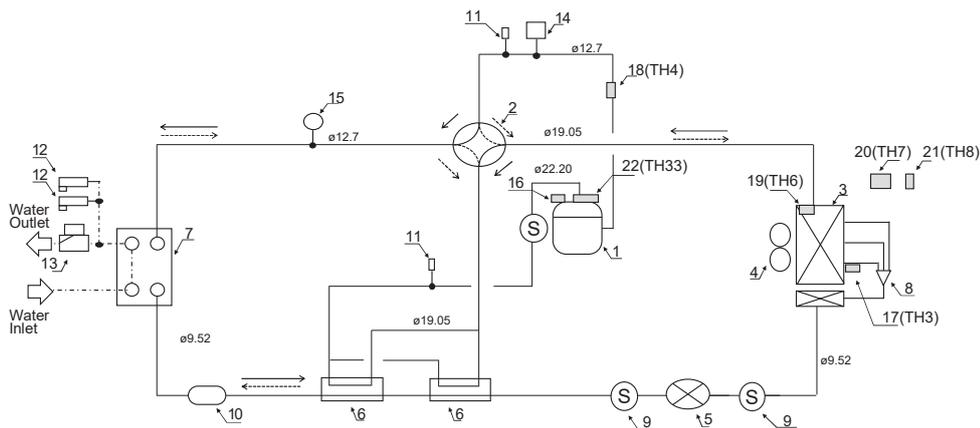
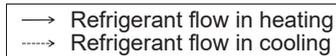
4 Refrigerant system diagrams

■ PUZ-WZ85V/YAA(-BS)



No.	Parts name
1	Compressor
2	4-Way Valve Heating: Coil OFF Cooling: Coil ON
3	Air Heat Exchanger
4	Fan Motor
5	Linear Expansion Valve A
6	Heat Inter Changer
7	Plate Heat Exchanger
8	Distributor
9	Strainer
10	Service Port - 5/16"
11	Pressure Relief Valve
12	Automatic Air Vent Valve
13	High Pressure Switch
14	High Pressure Sensor
15	Thermal protector
16	Thermistor - Liquid temp.
17	Thermistor - Discharge temp.
18	Thermistor - Two phase pipe temp.
19	Thermistor - Ambient temp.
20	Thermistor - Heatsink temp.
21	Thermistor - Shell temp.

■ PUZ-WZ100V/YAA(-BS) PUZ-WZ120V/YAA(-BS)



No.	Parts name
1	Compressor
2	4-Way Valve Heating: Coil OFF Cooling: Coil ON
3	Air Heat Exchanger
4	Fan Motor
5	Linear Expansion Valve A
6	Heat Inter Changer
7	Plate Heat Exchanger
8	Distributor
9	Strainer
10	Pressure Vessel
11	Service Port - 5/16"
12	Pressure Relief Valve
13	Automatic Air Vent Valve
14	High Pressure Switch
15	High Pressure Sensor
16	Thermal protector
17	Thermistor - Liquid temp.
18	Thermistor - Discharge temp.
19	Thermistor - Two phase pipe temp.
20	Thermistor - Ambient temp.
21	Thermistor - Heatsink temp.
22	Thermistor - Shell temp.

5 Performance data

NOTES:

- These values are only for reference purpose. Actual performance may vary depending on operating conditions.
- Grey highlighted data includes defrost operation.
- The values in the table include interpolation / calculation basing upon measured data in accordance with EN14511.

Max: Maximum capacity

Partload1: Heating reference capacity defined at A-7W35

Cooling reference capacity defined at A35W7 and A35W18

Partload2: Capacity between Partload1 and Min

Min: Minimum capacity

5.1 Cooling performance data

(1) Hydro-Split

■ Power inverter

Water outlet temperature [°C]		7		18		
Model	Ambient temperature [°C]	Capacity	COP	Capacity	COP	
PUZ-WZ50VAA(-BS)	Max	35	3.5	2.74	4.2	3.20
		30	3.8	3.17	4.4	3.59
		25	3.9	3.45	4.5	3.85
		20	4.0	3.82	4.7	4.23
	Partload1	35	3.2	3.10	4.2	3.20
		30	3.2	3.44	4.2	3.73
		25	3.2	3.94	4.2	4.14
		20	3.2	4.67	4.2	4.77
	Min	35	0.9	2.73	1.4	3.62
		30	1.1	3.44	1.5	4.53
		25	1.2	4.32	1.6	5.68
		20	1.2	5.47	1.7	7.19
PUZ-WZ60VAA(-BS)	Max	35	3.8	2.51	4.6	3.00
		30	4.1	2.88	4.9	3.23
		25	4.0	3.27	5.0	3.42
		20	4.1	3.69	5.1	3.70
	Partload1	35	3.6	2.90	4.6	3.00
		30	3.6	3.29	4.6	3.47
		25	3.6	3.73	4.6	3.78
		20	3.6	4.34	4.6	4.30
	Min	35	0.9	2.69	1.4	3.55
		30	1.1	3.38	1.5	4.43
		25	1.1	4.24	1.6	5.54
		20	1.2	5.36	1.7	7.00
PUZ-WZ80VAA(-BS)	Max	35	4.3	2.42	5.3	2.62
		30	4.6	2.79	5.6	2.93
		25	4.6	2.92	5.6	2.96
		20	4.6	3.18	5.7	3.10
	Partload1	35	4.0	2.70	5.0	2.80
		30	4.0	3.04	5.0	3.40
		25	4.0	3.27	5.0	3.55
		20	4.0	3.66	5.0	3.93
	Min	35	1.0	2.73	1.5	3.89
		30	1.1	3.40	1.7	4.92
		25	1.2	4.22	1.8	6.20
		20	1.3	5.24	1.9	7.88

5 Performance data

Water outlet temperature [°C]		7		18		
Model	Ambient temperature [°C]	Capacity	COP	Capacity	COP	
PUZ-WZ85V/YAA(-BS)	Max	35	8.8	2.39	12.1	3.02
		30	9.6	2.74	13.0	3.23
		25	10.1	3.04	13.6	3.51
		20	10.4	3.22	14.1	3.72
	Partload1	35	5.0	3.30	5.0	4.61
		30	5.0	3.96	5.0	5.94
		25	5.0	4.74	5.0	7.49
		20	5.0	5.55	5.0	9.35
	Partload2	35	4.0	3.44	4.0	5.14
		30	4.0	4.21	4.0	6.18
		25	4.0	5.16	4.0	7.87
		20	4.0	6.28	4.0	10.07
	Min	35	1.4	2.91	2.0	4.62
		30	1.5	3.76	2.2	5.89
		25	1.6	4.85	2.3	7.67
		20	1.7	6.34	2.4	10.43
PUZ-WZ100V/YAA(-BS)	Max	35	10.5	3.10	13.6	3.89
		30	12.1	3.15	15.7	3.93
		25	12.6	3.36	16.2	4.25
		20	12.9	3.83	16.5	4.63
	Partload1	35	7.0	3.30	6.5	5.40
		30	7.0	4.24	6.5	7.26
		25	7.0	4.93	6.5	8.77
		20	7.0	5.42	6.5	9.02
	Partload2	35	5.6	3.74	5.2	6.01
		30	5.6	4.46	5.2	7.65
		25	5.6	5.18	5.2	9.37
		20	5.6	5.91	5.2	10.83
	Min	35	3.1	3.60	4.4	5.76
		30	3.3	4.16	4.7	7.04
		25	3.6	5.15	5.0	9.51
		20	3.9	6.04	5.1	11.01
PUZ-WZ120V/YAA(-BS)	Max	35	11.7	2.27	15.1	2.74
		30	13.4	2.88	17.4	3.49
		25	14.0	3.21	18.0	3.82
		20	14.3	3.28	18.3	3.85
	Partload1	35	9.0	3.15	9.0	4.80
		30	9.0	3.91	9.0	6.20
		25	9.0	4.43	9.0	7.32
		20	9.0	4.94	9.0	8.51
	Partload2	35	7.0	3.30	6.5	5.40
		30	7.0	4.24	7.0	7.08
		25	7.0	4.93	7.0	8.59
		20	7.0	5.42	7.0	10.64
	Min	35	3.1	3.60	4.4	5.76
		30	3.3	4.16	4.7	7.04
		25	3.6	5.15	5.0	9.51
		20	3.9	6.04	5.1	11.01

5 Performance data

5.2 Heating performance data

(1) Hydro-Split

■ PUZ-WZ50VAA(-BS)

Water outlet temperature [°C]		25		35		40		45		50		55		60		65		70		75	
Ambient temperature [°C]		Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP
Max	-25	-	-	3.2	1.85	3.2	1.64	3.2	1.41	3.0	1.32	2.9	1.22	2.7	1.14	2.7	1.03	-	-	-	-
	-20	-	-	3.8	2.20	3.7	1.96	3.6	1.75	3.6	1.55	3.6	1.39	3.3	1.28	3.1	1.15	2.8	1.04	-	-
	-15	-	-	4.2	2.37	4.0	2.14	4.0	1.90	3.9	1.73	3.9	1.51	3.4	1.34	3.2	1.20	2.9	1.08	2.6	0.96
	-10	4.8	3.40	4.9	2.63	4.7	2.46	4.6	2.16	4.5	2.00	4.5	1.76	4.1	1.61	3.7	1.45	3.1	1.22	2.9	1.07
	-7	5.4	3.81	5.2	2.68	5.1	2.57	4.9	2.41	4.9	2.25	4.5	2.01	4.0	1.85	3.7	1.67	3.3	1.49	3.1	1.23
	2	6.1	3.58	5.8	2.95	5.7	2.60	5.5	2.35	5.5	2.23	5.0	2.07	4.6	1.89	4.3	1.69	3.7	1.47	3.5	1.35
	7	6.5	6.58	6.2	5.12	6.1	4.57	6.0	3.79	5.9	3.45	5.8	3.08	5.6	2.76	5.2	2.53	5.0	2.16	4.8	1.97
	12	7.8	7.77	7.5	6.04	7.1	5.26	6.9	4.32	6.9	3.92	6.7	3.50	6.5	3.12	6.1	2.89	5.3	2.56	4.5	2.19
	15	8.0	8.68	7.7	6.55	7.5	5.78	7.6	5.16	7.6	4.67	7.4	4.16	7.2	3.71	7.2	3.37	6.2	2.99	5.6	2.29
	20	8.5	8.77	8.8	7.74	8.5	6.60	8.6	5.79	8.3	5.12	8.1	4.49	7.6	3.86	7.2	3.31	7.0	3.36	6.8	2.70
Partload1	-25	-	-	3.2	1.85	3.2	1.64	3.2	1.41	3.0	1.32	2.9	1.22	2.7	1.14	2.7	1.03	-	-	-	-
	-20	-	-	3.8	2.20	3.7	1.96	3.6	1.75	3.6	1.55	3.6	1.39	3.3	1.28	3.1	1.15	2.8	1.04	-	-
	-15	-	-	4.2	2.37	4.0	2.14	4.0	1.90	3.9	1.73	3.9	1.51	3.4	1.34	3.2	1.20	2.9	1.08	2.6	0.96
	-10	4.8	3.40	4.9	2.63	4.7	2.46	4.6	2.16	4.5	2.00	4.5	1.76	4.1	1.61	3.7	1.45	3.1	1.22	2.9	1.07
	-7	5.0	4.02	5.0	2.70	5.0	2.57	4.9	2.41	4.9	2.25	4.5	2.01	4.0	1.85	3.7	1.67	3.3	1.49	3.1	1.23
	2	5.0	4.11	5.0	3.15	5.0	2.74	5.0	2.45	5.0	2.32	5.0	2.07	4.6	1.89	4.3	1.69	3.7	1.47	3.5	1.35
	7	4.0	6.85	4.0	5.10	4.0	4.60	4.0	4.00	4.0	3.58	4.0	3.20	4.0	2.86	4.0	2.51	4.0	2.14	4.0	1.95
	12	4.0	8.36	4.0	6.20	4.0	5.44	4.0	4.66	4.0	4.14	4.0	3.70	4.0	3.28	4.0	2.85	4.0	2.47	4.0	2.13
	15	4.0	9.66	4.0	6.93	4.0	6.03	4.0	5.08	4.0	4.49	4.0	3.96	4.0	3.49	4.0	3.05	4.0	2.64	4.0	2.28
	20	4.0	11.16	4.0	8.46	4.0	7.12	4.0	5.95	4.0	5.18	4.0	4.49	4.0	3.83	4.0	3.32	4.0	2.98	4.0	2.63
Min	-25	-	-	1.9	1.83	1.8	1.59	1.8	1.40	1.7	1.29	1.5	1.18	1.3	1.07	1.2	0.97	-	-	-	-
	-20	-	-	2.4	2.25	2.3	1.97	2.2	1.73	2.1	1.55	2.0	1.37	1.8	1.26	1.7	1.15	1.5	1.02	-	-
	-15	-	-	2.9	2.73	2.8	2.41	2.7	2.12	2.6	1.88	2.5	1.67	2.4	1.47	2.2	1.32	2.1	1.17	1.9	1.04
	-10	3.8	4.09	3.6	3.22	3.4	2.85	3.3	2.52	3.1	2.24	3.0	1.99	2.9	1.77	2.8	1.57	2.7	1.34	2.5	1.18
	-7	1.6	4.05	1.6	3.25	1.6	2.87	1.6	2.53	1.7	2.41	2.6	2.15	2.5	1.91	2.4	1.70	2.2	1.50	2.1	1.28
	2	1.6	4.15	1.6	3.15	1.4	2.74	1.4	2.39	1.9	2.32	1.8	2.03	1.7	1.78	1.7	1.57	1.5	1.37	1.5	1.27
	7	1.8	6.67	1.8	4.82	1.8	4.02	1.8	3.67	1.8	3.42	1.8	3.04	2.9	2.70	2.7	2.35	2.6	2.10	2.5	1.84
	12	2.0	7.69	1.9	5.55	1.8	4.59	1.7	4.17	1.6	3.45	1.5	3.01	1.5	2.59	1.3	2.23	1.3	1.99	1.2	1.73
	15	2.1	8.50	2.0	6.67	2.0	5.45	1.9	4.63	1.8	3.80	1.7	3.30	1.6	2.83	1.5	2.44	1.4	2.20	1.3	1.91
	20	2.3	10.19	2.3	7.56	2.3	6.34	2.2	5.32	2.1	4.62	2.0	4.07	2.0	3.63	1.8	3.10	1.7	2.70	1.6	2.34

■ PUZ-WZ60VAA(-BS)

Water outlet temperature [°C]		25		35		40		45		50		55		60		65		70		75	
Ambient temperature [°C]		Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP
Max	-25	-	-	4.1	1.76	4.0	1.59	3.7	1.37	3.4	1.28	3.2	1.20	3.0	1.12	2.7	1.02	-	-	-	-
	-20	-	-	4.8	2.06	4.7	1.86	4.5	1.69	4.0	1.49	3.7	1.37	3.4	1.26	3.1	1.15	2.8	1.03	-	-
	-15	-	-	5.4	2.13	5.1	1.92	4.8	1.79	4.4	1.64	4.0	1.51	3.6	1.34	3.2	1.21	2.9	1.09	2.6	0.97
	-10	6.1	3.05	6.2	2.37	5.9	2.21	5.5	2.04	5.1	1.89	4.7	1.76	4.3	1.61	3.9	1.46	3.3	1.23	2.9	1.07
	-7	6.4	3.51	6.2	2.47	6.0	2.37	5.9	2.27	5.8	2.12	5.4	1.97	4.8	1.82	4.4	1.67	3.9	1.49	3.7	1.26
	2	7.1	3.54	6.8	2.92	6.2	2.57	6.0	2.34	6.0	2.21	6.0	2.03	5.5	1.86	5.0	1.68	4.3	1.46	4.0	1.34
	7	7.6	6.07	7.2	4.72	7.1	4.22	6.9	3.74	6.8	3.40	6.8	3.07	6.6	2.75	6.4	2.43	6.1	2.08	6.0	1.92
	12	9.1	7.17	8.7	5.57	8.2	4.86	8.0	4.27	8.0	3.87	7.8	3.48	7.6	3.11	7.4	2.78	6.4	2.46	5.6	2.13
	15	9.7	7.96	9.3	6.00	9.0	5.30	8.8	4.63	8.7	4.19	8.6	3.77	8.3	3.35	8.1	2.99	7.0	2.65	5.9	2.26
	20	10.2	8.04	10.6	7.10	10.2	6.06	9.9	5.20	9.6	4.60	9.3	4.06	8.8	3.49	8.0	2.93	7.9	2.98	7.1	2.66
Partload1	-25	-	-	4.1	1.76	4.0	1.59	3.7	1.37	3.4	1.28	3.2	1.20	3.0	1.12	2.7	1.02	-	-	-	-
	-20	-	-	4.8	2.06	4.7	1.86	4.5	1.69	4.0	1.49	3.7	1.37	3.4	1.26	3.1	1.15	2.8	1.03	-	-
	-15	-	-	5.4	2.13	5.1	1.92	4.8	1.79	4.4	1.64	4.0	1.51	3.6	1.34	3.2	1.21	2.9	1.09	2.6	0.97
	-10	6.0	3.31	6.0	2.56	6.0	2.26	5.5	2.04	5.1	1.89	4.7	1.76	4.3	1.61	3.9	1.46	3.3	1.23	2.9	1.07
	-7	6.0	3.72	6.0	2.50	6.0	2.37	5.9	2.27	5.8	2.12	5.4	1.97	4.8	1.82	4.4	1.67	3.9	1.49	3.7	1.26
	2	6.0	4.05	6.0	3.10	6.0	2.69	6.0	2.34	6.0	2.21	6.0	2.03	5.5	1.86	5.0	1.68	4.3	1.46	4.0	1.34
	7	5.0	6.72	5.0	5.00	5.0	4.51	5.0	3.96	5.0	3.55	5.0	3.15	5.0	2.82	5.0	2.51	5.0	2.15	5.0	1.96
	12	5.0	8.20	5.0	6.08	5.0	5.33	5.0	4.61	5.0	4.10	5.0	3.64	5.0	3.23	5.0	2.86	5.0	2.48	5.0	2.14
	15	5.0	9.46	5.0	6.78	5.0	5.91	5.0	5.07	5.0	4.48	5.0	3.97	5.0	3.50	5.0	3.09	5.0	2.67	5.0	2.31
	20	5.0	10.93	5.0	8.28	5.0	6.97	5.0	5.93	5.0	5.16	5.0	4.51	5.0	3.85	5.0	3.36	5.0	3.02	5.0	2.66
Min	-25	-	-	1.9	1.81	1.8	1.58	1.7	1.39	1.6	1.28	1.5	1.17	1.3	1.06	1.2	0.97	-	-	-	-
	-20	-	-	2.4	2.23	2.3	1.95	2.2	1.71	2.1	1.53	2.0	1.37	1.8	1.26	1.7	1.15	1.5	1.02	-	-
	-15	-	-	2.9	2.72	2.8	2.40	2.7	2.11	2.6	1.88	2.5	1.66	2.4	1.46	2.2	1.32	2.1	1.17	1.9	1.03
	-10	3.8	4.08	3.6	3.20	3.4	2.84	3.3	2.51	3.1	2.23	3.0	1.98	2.9	1.76	2.8	1.56	2.7	1.33	2.5	1.17
	-7	1.6	4.03	1.6	3.24	1.6	2.86	1.6	2.52	1.7	2.39	2.6	2.14	2.5	1.90	2.4	1.70	2.2	1.49	2.1	1.27
	2	1.6	4.10	1.6	3.12	1.4	2.71	1.4	2.36	1.9	2.28	1.8	2.02	1.7	1.78	1.7	1.57	1.5	1.37	1.5	1.26
	7	1.8	6.95	1.8	5.03	1.8	4.19	1.8	3.62	1.8	3.37	1.8	2.96	2.9	2.63	2.8	2.32	2.7	2.0		

5 Performance data

■ PUZ-WZ80VAA(-BS)

Water outlet temperature [°C]		25		35		40		45		50		55		60		65		70		75	
Ambient temperature [°C]		Capacity	COP																		
Max	-25	-	-	5.6	1.66	5.5	1.57	5.6	1.36	4.8	1.11	4.6	1.04	4.5	1.02	4.2	0.91	-	-	-	-
	-20	-	-	6.3	1.99	6.1	1.91	6.2	1.56	5.4	1.26	5.7	1.22	5.1	1.08	4.7	1.00	4.1	0.88	-	-
	-15	-	-	7.0	2.18	6.7	1.96	6.7	1.78	6.6	1.63	6.6	1.46	5.2	1.11	4.8	1.02	4.2	0.89	3.2	0.72
	-10	8.0	2.88	8.2	2.23	7.8	2.08	6.8	1.83	6.7	1.70	6.7	1.54	6.0	1.28	5.5	1.17	4.6	0.98	3.4	0.74
	-7	8.5	3.24	8.2	2.28	8.0	2.19	7.4	1.87	7.3	1.75	7.0	1.62	6.8	1.49	6.6	1.23	6.4	1.02	6.2	0.94
	2	9.2	3.36	8.8	2.77	8.7	2.44	8.7	2.27	8.5	2.14	8.3	1.96	7.6	1.79	6.6	1.57	5.9	1.40	5.0	1.03
	7	9.7	5.21	9.2	4.06	9.1	3.62	9.0	3.20	8.9	2.91	8.8	2.66	8.5	2.38	7.9	2.05	7.8	1.75	7.6	1.64
	12	11.6	6.16	11.1	4.78	10.5	4.17	10.4	3.65	10.3	3.31	10.1	3.02	9.9	2.69	9.2	2.34	8.0	2.07	7.1	1.82
	15	11.7	6.37	11.2	4.81	11.1	4.24	11.1	4.02	11.1	3.64	10.9	3.33	10.8	2.97	10.8	2.84	9.4	2.51	7.9	1.78
	20	12.3	6.44	12.8	5.68	12.5	4.85	12.5	4.52	12.2	3.99	11.9	3.59	11.2	3.09	10.8	2.78	10.7	2.83	9.6	2.09
Partload1	-25	-	-	5.6	1.66	5.5	1.57	5.6	1.36	4.8	1.11	4.6	1.04	4.5	1.02	4.2	0.91	-	-	-	-
	-20	-	-	6.3	1.99	6.1	1.91	6.2	1.56	5.4	1.26	5.7	1.22	5.1	1.08	4.7	1.00	4.1	0.88	-	-
	-15	-	-	7.0	2.18	6.7	1.96	6.7	1.78	6.6	1.63	6.6	1.46	5.2	1.11	4.8	1.02	4.2	0.89	3.2	0.72
	-10	8.0	2.88	8.0	2.26	7.8	2.08	6.8	1.83	6.7	1.70	6.7	1.54	6.0	1.28	5.5	1.17	4.6	0.98	3.4	0.74
	-7	8.0	3.42	8.0	2.30	8.0	2.19	7.4	1.87	7.3	1.75	7.0	1.62	6.8	1.49	6.6	1.23	6.4	1.02	6.2	0.94
	2	8.0	3.98	8.0	3.05	8.0	2.65	8.0	2.50	8.0	2.37	8.0	2.12	7.6	1.79	6.6	1.57	5.9	1.40	5.0	1.03
	7	6.0	6.31	6.0	4.70	6.0	4.24	6.0	3.79	6.0	3.40	6.0	3.00	6.0	2.68	6.0	2.34	6.0	2.00	6.0	1.80
	12	6.0	7.71	6.0	5.72	6.0	5.01	6.0	4.42	6.0	3.93	6.0	3.47	6.0	3.07	6.0	2.35	6.0	2.04	6.0	1.81
	15	6.0	8.55	6.0	6.13	6.0	5.34	6.0	4.83	6.0	4.26	6.0	3.80	6.0	3.35	6.0	2.35	6.0	2.04	6.0	1.81
	20	6.0	9.87	6.0	7.48	6.0	6.30	6.0	5.65	6.0	4.91	6.0	4.32	6.0	3.68	6.0	2.55	6.0	2.29	6.0	2.08
Min	-25	-	-	2.0	1.90	1.9	1.66	1.8	1.45	1.7	1.33	1.6	1.24	1.4	1.13	1.3	1.04	-	-	-	-
	-20	-	-	2.5	2.31	2.4	2.03	2.3	1.79	2.2	1.60	2.1	1.42	1.9	1.31	1.8	1.21	1.6	1.07	-	-
	-15	-	-	3.0	2.73	2.9	2.41	2.8	2.14	2.7	1.91	2.6	1.71	2.5	1.50	2.3	1.37	2.2	1.22	2.0	1.09
	-10	3.9	4.09	3.6	3.22	3.5	2.85	3.4	2.55	3.2	2.27	3.1	2.03	3.0	1.81	2.9	1.63	2.8	1.39	2.6	1.23
	-7	1.6	4.06	1.6	3.26	1.6	2.87	1.6	2.59	2.7	2.46	2.7	2.27	2.6	2.03	2.5	1.85	2.4	1.63	2.3	1.41
	2	1.6	3.90	1.6	2.97	1.4	2.58	1.4	2.26	2.0	2.19	1.9	1.93	1.8	1.70	1.7	1.50	1.6	1.31	1.6	1.20
	7	1.8	6.36	1.8	4.60	1.8	3.83	1.8	3.55	1.8	3.31	1.8	2.71	2.9	2.40	2.8	2.31	2.7	2.07	2.5	1.78
	12	2.0	7.33	1.9	5.29	1.8	4.38	1.7	4.04	1.6	3.34	1.5	2.68	1.5	2.31	1.4	2.20	1.3	1.97	1.2	1.68
	15	2.1	7.96	2.0	6.24	1.9	5.09	1.7	4.19	1.6	3.44	1.7	3.08	1.6	2.64	1.5	2.33	1.4	2.09	1.3	1.81
	20	2.3	9.54	2.3	7.08	2.2	5.93	2.0	4.82	2.0	4.18	2.0	3.80	1.9	3.39	1.8	2.95	1.7	2.57	1.6	2.21

Outdoor unit

■ PUZ-WZ85VAA(-BS)

PUZ-WZ85YAA(-BS)

Water outlet temperature [°C]		25		35		40		45		50		55		60		65		70		75	
Ambient temperature [°C]		Capacity	COP																		
Max	-25	5.8	2.32	5.7	2.02	5.7	1.91	5.5	1.76	5.4	1.65	5.4	1.56	5.2	1.46	5.0	1.35	-	-	-	-
	-20	6.7	2.50	6.7	2.20	6.6	2.05	6.5	1.89	6.5	1.82	6.4	1.72	6.3	1.62	6.2	1.55	5.6	1.34	-	-
	-15	8.0	2.78	7.8	2.39	7.7	2.23	7.6	2.06	7.5	1.96	7.5	1.86	7.4	1.69	7.3	1.67	6.4	1.53	6.2	1.41
	-10	9.3	3.06	9.0	2.50	8.9	2.40	8.7	2.22	8.5	2.08	8.4	1.95	7.8	1.87	7.6	1.75	6.8	1.64	6.5	1.51
	-7	9.6	3.09	9.5	2.52	9.3	2.44	9.1	2.24	8.6	2.09	8.4	1.96	8.2	1.90	7.9	1.77	7.1	1.64	6.6	1.52
	2	9.4	4.03	9.4	2.93	9.4	2.74	9.4	2.64	9.3	2.41	8.9	2.25	8.5	1.99	8.3	1.91	7.5	1.74	6.9	1.57
	7	12.0	4.47	12.0	3.74	12.0	3.45	12.0	3.19	11.6	3.02	11.0	2.87	10.7	2.60	10.5	2.63	9.5	2.46	9.1	2.27
	12	15.1	5.50	14.9	4.42	14.8	4.01	14.6	3.66	14.4	3.37	13.3	3.04	12.2	2.89	12.2	2.86	10.3	2.69	9.6	2.49
	15	16.1	5.29	15.9	4.30	15.6	3.88	15.3	3.54	14.6	3.52	14.5	3.34	12.7	2.98	12.7	2.94	11.2	2.73	11.0	2.52
	20	18.4	7.35	18.2	5.24	18.2	4.39	18.1	4.34	16.7	3.97	15.2	3.75	14.9	3.29	13.6	3.32	12.8	3.06	11.2	2.78
Partload1	-25	5.8	2.32	5.7	2.02	5.7	1.91	5.5	1.76	5.4	1.65	5.4	1.56	5.2	1.46	5.0	1.35	-	-	-	-
	-20	6.7	2.50	6.7	2.20	6.6	2.05	6.4	1.90	6.2	1.85	5.9	1.74	5.7	1.63	5.4	1.56	5.2	1.41	-	-
	-15	8.0	2.78	7.7	2.40	7.5	2.24	7.2	2.09	7.0	1.97	6.7	1.87	6.5	1.71	6.2	1.68	6.0	1.56	5.7	1.42
	-10	8.5	3.15	8.5	2.57	8.3	2.43	8.0	2.25	7.8	2.11	7.5	2.03	7.3	1.90	6.8	1.76	6.8	1.64	6.5	1.51
	-7	8.5	3.19	8.5	2.60	8.5	2.45	8.5	2.45	8.3	2.13	8.0	2.04	7.4	2.00	7.3	1.82	7.1	1.64	6.6	1.52
	2	8.5	4.29	8.5	3.12	8.2	2.92	8.0	2.80	7.7	2.57	7.5	2.40	7.2	2.12	7.0	2.03	6.7	1.85	6.5	1.67
	7	8.5	4.65	8.5	4.32	8.5	3.72	8.5	3.44	8.5	3.27	8.5	2.92	8.5	2.82	8.5	2.64	8.3	2.45	8.0	2.29
	12	8.5	5.36	8.5	5.07	8.5	4.67	8.5	4.19	8.5	3.86	8.5	3.54	8.5	3.09	8.5	3.00	8.5	2.76	8.5	2.58
	15	8.5	6.04	8.5	5.69	8.5	5.19	8.5	4.58	8.5	4.17	8.5	3.78	8.5	3.27	8.5	3.13	8.5	2.86	8.5	2.64
	20	8.5	6.74	8.5	6.54	8.5	6.09	8.5	5.39	8.5	4.84	8.5	4.30	8.5	3.67	8.5	3.46	8.5	3.13	8.5	2.84
Partload2	-25	5.3	2.37	5.3	2.13	5.3	1.88	5.3	1.78	5.3	1.69	5.0	1.60	4.8	1.49	4.5	1.40	-	-	-	-
	-20	5.3	2.57	5.3	2.28	5.3	1.98	5.3	1.88	5.3	1.79	5.3	1.69	5.3	1.59	5.3	1.50	5.2	1.33	-	-
	-15	5.3	3.05	5.3	2.43	5.3	2.24	5.3	2.08	5.3	1.97	5.3	1.88	5.3	1.75	5.3	1.68	5.3	1.59	5.3	1.51
	-10	5.3	3.12	5.3	2.47	5.3	2.25	5.3	2.17	5.3	2.03	5.3	1.92	5.3	1.81	5.3	1.71	5.3	1.63	5.3	1.55
	-7	5.3	3.44	5.3	2.76	5.3	2.28	5.3	2.28	5.3	2.09	5.3	1.97	5.3	1.87	5.3	1.78	5.3	1.69	5.3	1.61
	2	5.3	5.17	5.3	4.03	5.3	3.23	5.3	2.90	5.3	2.67	5.3	2.48	5.3	2.31	5.3	2.18	5.3	2.06	5.3	1.96
	7	5.3	6.86	5.3	4.80	5.3	4.47	5.3	3.99	5.3	3.61	5.3	3.07	5.3	2.76	5.3	2.60	5.3	2.44	5.3	2.29
	12	5.3	7.71	5.3	5.57	5.3	4.86	5.3	4.30	5.3	3.92	5.3	3.58	5.3	3.24	5.3	2.84	5.3	2.55	5.3	2.30
	15	5.3	8.71	5.3	6.74	5.3	5.73	5.3	4.96	5.3	4.46	5.3	4.02	5.3	3.58	5.3	3.28	5.3	2.94	5.3	2.63
	20	5.3	8.92	5.3	6.97	5.3	6.66	5.3	5.43	5.3	4.67	5.3	4.09	5.3	3.69	5.3	3.38	5.3	3.19	5.3	2.99
Min	-25	3.5	2.29	3.4	1.95	3.4	1.85	3.3	1.69	2.9	1.47	2.8	1.30	2.8	1.25	2.4	1.02	-	-	-	-
	-20	4.2	2.57	4.2	2.22	4.1	2.03	4.0	1.87	3.8	1.73	3.6	1.58	3.5	1.45	3.4	1.32	3.3	1.19	-	-
	-15	5.0	2.91	4.5	2.30	4.8	2.26	4.7	2.07	4.6	1.95	4.5	1.77	4.3	1.63	4.1	1.48	3.9	1.36	3.7	1.23
	-10	5.2	2.99	5.1	2.46	5.0	2.25	4.9	2.0												

5 Performance data

Outdoor unit

■ PUZ-WZ100VAA(-BS)

PUZ-WZ100YAA(-BS)

Water outlet temperature [°C]		25		35		40		45		50		55		60		65		70		75	
Ambient temperature [°C]		Capacity	COP																		
Max	-25	6.9	2.46	6.7	2.11	6.6	1.99	6.4	1.83	6.4	1.76	6.3	1.64	6.1	1.55	6.0	1.50	-	-	-	-
	-20	8.0	2.67	7.9	2.41	7.8	2.15	7.7	2.00	7.6	1.92	7.6	1.82	7.3	1.68	7.1	1.55	6.7	1.41	-	-
	-15	9.3	2.90	9.3	2.48	8.8	2.27	8.8	2.14	8.6	2.01	8.5	1.90	8.4	1.78	8.3	1.69	7.7	1.52	6.9	1.31
	-10	10.7	3.17	10.7	2.55	10.6	2.52	10.5	2.34	10.4	2.22	10.2	2.09	10.0	1.97	9.6	1.80	9.1	1.64	8.0	1.38
	-7	11.7	3.31	11.3	2.59	11.2	2.56	11.1	2.38	11.0	2.25	10.9	2.13	10.9	2.03	10.8	1.92	10.2	1.74	7.7	1.45
	2	11.8	3.41	11.3	2.93	11.0	2.66	10.7	2.40	10.7	2.25	10.4	2.06	9.4	1.96	9.1	1.75	8.0	1.63	7.3	1.33
	7	16.3	4.27	16.0	3.67	15.9	3.41	15.3	3.07	15.2	2.87	15.1	2.68	13.1	2.44	12.6	2.20	10.0	1.86	9.6	1.69
	12	18.4	5.05	18.3	4.40	18.1	4.05	17.9	3.69	17.7	3.22	17.5	3.00	14.5	2.69	13.5	2.34	10.8	2.00	10.1	1.79
	15	20.0	5.28	19.5	4.50	19.5	4.11	19.3	3.77	19.0	3.50	18.9	3.22	15.5	2.86	14.6	2.51	11.4	2.10	11.2	1.97
	20	23.1	6.47	22.6	5.46	22.4	5.01	22.1	4.56	21.6	4.04	21.0	3.56	19.2	3.48	18.6	3.12	13.2	2.41	12.0	2.11
Partload1	-25	6.9	2.46	6.7	2.11	6.6	1.99	6.4	1.83	6.3	1.79	6.0	1.71	5.8	1.61	5.5	1.55	-	-	-	-
	-20	8.0	2.67	7.9	2.41	7.7	2.16	7.4	2.01	7.2	1.95	6.9	1.84	6.7	1.72	6.4	1.60	5.8	1.46	-	-
	-15	9.0	2.94	9.0	2.51	8.5	2.30	8.2	2.17	8.0	2.02	7.7	1.97	7.5	1.84	7.2	1.73	7.0	1.57	6.7	1.40
	-10	9.9	3.26	9.8	2.62	9.3	2.59	9.0	2.39	8.8	2.27	8.5	2.15	8.3	2.00	8.0	1.89	7.8	1.71	7.5	1.42
	-7	10.0	3.45	10.0	2.70	10.0	2.61	10.0	2.52	10.0	2.40	10.0	2.20	9.8	2.10	9.5	1.95	9.3	1.77	7.7	1.45
	2	10.0	3.95	10.0	3.24	10.0	2.92	10.0	2.61	9.8	2.42	9.5	2.21	9.3	1.98	8.8	1.79	8.0	1.63	7.1	1.58
	7	10.0	5.55	10.0	4.56	10.0	4.04	10.0	3.57	10.0	3.23	10.0	2.90	10.0	2.58	10.0	2.32	10.0	1.86	9.6	1.69
	12	10.0	7.30	10.0	5.70	10.0	4.94	10.0	4.31	10.0	3.86	10.0	3.46	10.0	3.08	10.0	2.76	10.0	2.43	10.0	2.31
	15	10.0	8.58	10.0	6.33	10.0	5.48	10.0	4.82	10.0	4.28	10.0	3.79	10.0	3.32	10.0	2.98	10.0	2.65	10.0	2.51
	20	10.0	9.21	10.0	7.96	10.0	6.48	10.0	5.56	10.0	4.83	10.0	4.19	10.0	3.61	10.0	3.21	10.0	2.84	10.0	2.69
Partload2	-25	5.8	2.34	5.8	1.78	5.8	1.64	5.8	1.52	5.8	1.44	5.8	1.38	5.8	1.31	5.5	1.22	-	-	-	-
	-20	5.8	2.37	5.8	1.89	5.8	1.72	5.8	1.63	5.8	1.56	5.8	1.48	5.8	1.41	5.8	1.31	5.8	1.23	-	-
	-15	5.8	2.51	5.8	2.20	5.8	2.09	5.8	1.93	5.8	1.91	5.8	1.77	5.8	1.67	5.8	1.53	5.8	1.39	5.8	1.03
	-10	5.8	2.81	5.8	2.29	5.8	2.13	5.8	1.94	5.8	1.92	5.8	1.81	5.8	1.71	5.8	1.57	5.8	1.48	5.8	1.07
	-7	5.8	3.33	5.8	2.88	5.8	2.73	5.8	2.56	5.8	2.34	5.8	2.23	5.8	2.09	5.8	1.92	5.8	1.69	5.8	1.26
	2	5.8	4.69	5.8	4.12	5.8	3.34	5.8	2.96	5.8	2.66	5.8	2.52	5.8	2.25	5.8	2.10	5.8	1.88	5.8	1.66
	7	5.8	5.81	5.8	5.10	5.8	3.65	5.8	3.38	5.8	3.01	5.8	2.72	5.8	2.39	5.8	2.30	5.8	2.03	5.8	1.76
	12	5.8	6.39	5.8	5.28	5.8	4.25	5.8	4.12	5.8	3.82	5.8	3.29	5.8	2.84	5.8	2.47	5.8	2.18	5.8	1.89
	15	5.8	8.21	5.8	7.19	5.8	5.83	5.8	4.85	5.8	4.15	5.8	3.57	5.8	3.18	5.8	2.98	5.8	2.69	5.8	2.49
	20	5.8	9.27	5.8	8.60	5.8	6.65	5.8	5.32	5.8	4.43	5.8	3.97	5.8	3.45	5.8	3.04	5.8	2.82	5.8	2.61
Min	-25	4.6	2.40	4.1	1.88	4.1	1.81	3.7	1.55	3.4	1.35	3.2	1.22	3.0	1.09	2.9	1.00	-	-	-	-
	-20	4.9	2.43	4.8	2.09	4.7	1.90	4.1	1.58	3.8	1.41	3.8	1.36	3.8	1.30	3.6	1.16	3.4	1.04	-	-
	-15	5.3	2.53	5.3	2.16	5.1	1.95	4.9	1.77	4.8	1.63	4.7	1.54	4.7	1.45	4.7	1.37	4.6	1.28	4.4	1.18
	-10	5.8	2.70	5.7	2.22	5.7	2.06	5.5	1.84	5.4	1.73	5.3	1.62	5.2	1.52	5.1	1.39	5.1	1.31	4.9	1.23
	-7	4.7	3.63	4.5	2.89	4.6	2.75	4.3	2.42	4.6	2.20	4.9	1.98	4.8	1.80	4.7	1.64	4.3	1.37	3.7	1.18
	2	4.6	5.15	4.2	4.21	4.0	3.34	3.7	3.20	3.6	2.89	5.3	2.40	4.4	2.33	4.0	1.93	3.5	1.54	3.0	1.32
	7	4.4	5.97	4.1	5.04	4.0	4.41	3.4	3.67	3.3	3.08	5.4	3.05	5.1	2.64	4.8	2.22	4.1	1.74	3.3	1.24
	12	4.0	7.29	3.5	4.75	3.2	3.83	3.0	3.18	2.8	2.69	2.7	2.31	2.7	2.11	2.5	1.76	2.2	1.45	2.0	1.18
	15	5.6	8.40	5.1	6.67	5.1	5.76	4.9	4.89	4.2	3.82	3.4	2.75	3.1	2.32	2.9	1.94	2.6	1.62	2.2	1.26
	20	5.7	8.94	5.6	7.92	5.6	6.74	5.1	5.29	4.6	4.20	4.3	3.48	4.1	2.95	4.0	2.59	3.5	2.07	2.6	1.28

■ PUZ-WZ120VAA(-BS)

PUZ-WZ120YAA(-BS)

Water outlet temperature [°C]		25		35		40		45		50		55		60		65		70		75	
Ambient temperature [°C]		Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP												
Max	-25	8.0	2.41	7.8	2.07	7.7	1.97	7.6	1.86	7.4	1.76	7.0	1.59	6.4	1.40	6.1	1.30	-	-	-	-
	-20	9.1	2.57	9.0	2.23	8.8	2.08	8.8	1.96	8.6	1.85	8.5	1.75	8.4	1.65	8.2	1.57	7.7	1.42	-	-
	-15	10.8	2.80	10.7	2.29	10.6	2.19	10.0	2.06	9.9	1.93	9.9	1.88	9.9	1.78	9.4	1.66	9.3	1.57	8.2	1.35
	-10	12.3	3.07	12.3	2.34	12.2	2.21	12.1	2.11	11.7	1.94	11.2	1.89	10.8	1.84	10.7	1.75	10.6	1.66	9.3	1.39
	-7	13.4	3.17	13.4	2.41	13.3	2.25	13.2	2.21	13.0	2.10	13.0	2.04	12.4	1.97	12.1	1.85	11.6	1.70	10.5	1.46
	2	13.4	3.12	13.4	2.68	13.3	2.45	13.3	2.26	13.3	2.15	13.0	1.99	11.1	1.80	10.7	1.61	9.4	1.49	8.7	1.28
	7	18.5	3.92	18.3	3.38	17.3	3.03	16.7	2.71	16.2	2.50	15.6	2.26	15.5	2.28	15.4	2.11	13.7	1.96	12.5	1.67
	12	21.2	4.54	20.7	3.91	20.7	3.59	20.6	3.32	19.6	2.92	19.2	2.69	18.7	2.62	16.2	2.45	15.5	2.16	14.6	1.96
	15	22.8	4.98	22.6	4.20	22.2	3.82	21.8	3.43	21.8	3.14	21.7	2.95	20.1	2.75	16.7	2.48	15.6	2.18	13.4	2.09
	20	26.0	5.48	25.7	4.73	25.3	4.34	25.2	3.97	24.8	3.58	22.1	3.29	22.0	3.03	20.4	2.97	20.0	2.70	15.9	2.38
Partload1	-25	8.0	2.41	7.8	2.07	7.7	1.97	7.6	1.86	7.4	1.76	7.0	1.60	6.4	1.40	6.1	1.30	-	-	-	-
	-20	9.1	2.58	9.0	2.24	8.8	2.08	8.8	1.97	8.6	1.86	8.4	1.80	8.2	1.69	7.9	1.60	7.7	1.42	-	-
	-15	10.7	2.84	10.0	2.33	10.0	2.28	9.7	2.14	9.5	2.05	9.2	1.95	9.0	1.83	8.7	1.69	8.5	1.59	8.2	1.35
	-10	11.5	3.10	11.0	2.38	10.8	2.30	10.5	2.18	10.3	2.06	10.0	2.03	9.8	1.90	9.5	1.83	9.3	1.67	9.0	1.42
	-7	11.5	3.37	11.5	2.45	11.5	2.34	11.5	2.28	11.5	2.22	11.5	2.18	11.3	2.07	11.0	1.92	10.8	1.71	10.5	1.46
	2	12.0	3.57	12.0	2.73	12.0	2.55	12.0	2.33	12.0	2.27	12.0	2.21	11.1	1.80	10.7	1.61	9.4	1.49	8.7	1.28
	7	12.0	5.24	12.0	4.10	12.0	3.74	12.0	3.28	12.0	2.96	12.0	2.68	12.0	2.34	12.0	2.12	12.0	1.95	12.0	1.75
	12	12.0	7.08	12.0	5.33	12.0	4.70	12.0	4.12	12.0	3.71	12.0	3.31	12.0	2.91	12.0	2.60	12.0	2.29	12.0	2.16
	15	12.0	7.38	12.0	5.98	12.0	5.19	12.0	4.51	12.0	4.04	12.0	3.58	12.0	3.13	12.0	2.78	12.0	2.43	12.0	2.29
	20	12.0	8.55	12.0	7.61	12.0	6.28	12.0	5.27	12.0	4.62	12.0	4.03	12.0	3.46	12.0	3.05	12.0	2.67	12.0	2.49
Partload2	-25	5.8	2.34	5.8	1.78	5.8	1.64	5.8	1.52	5.8	1.44	5.8	1.38	5.8	1.31	5.5	1.22	-	-	-	-
	-20	5.8	2.37	5.8	1.89	5.8	1.72	5.8	1.63	5.8	1.56	5.8	1.48	5.8	1.41</						

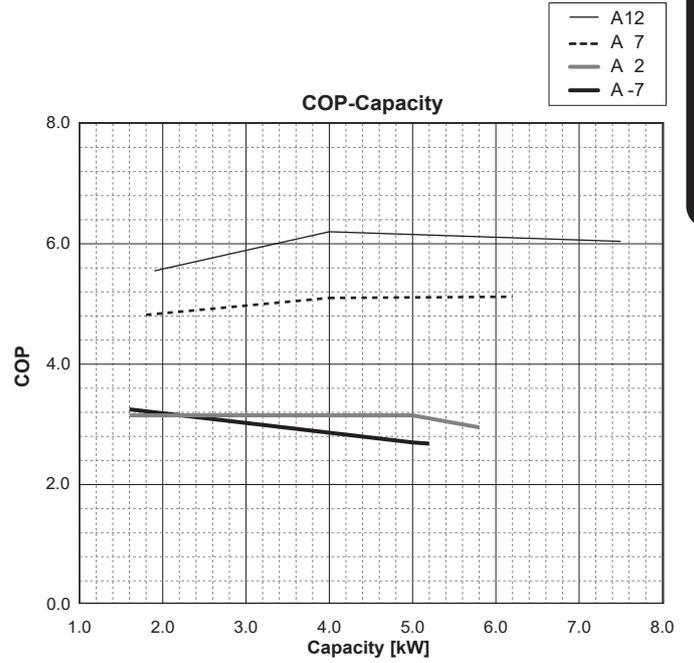
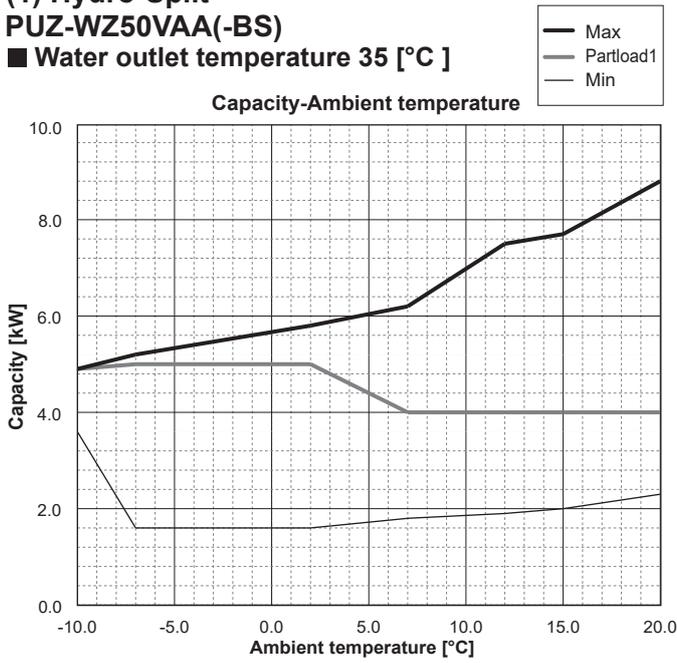
5 Performance data

5.3 Part load chart

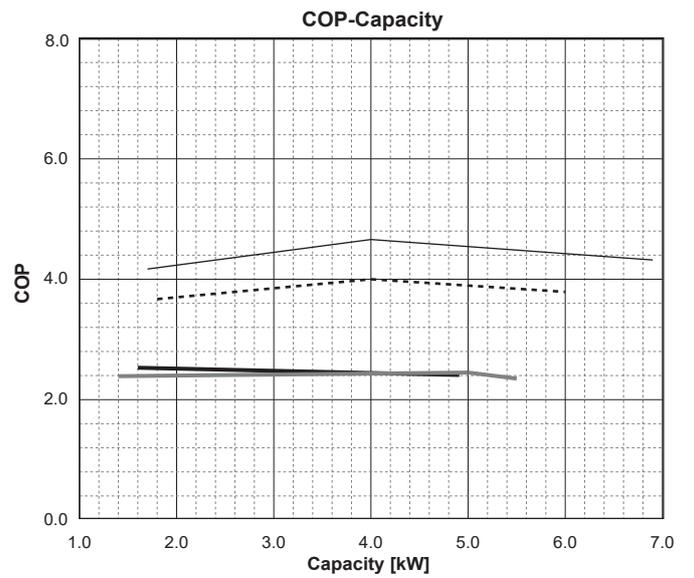
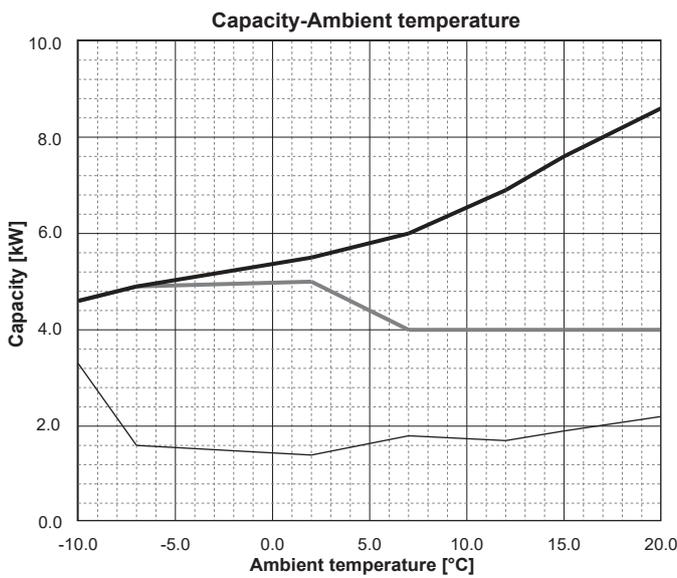
(1) Hydro-Split

PUZ-WZ50VAA(-BS)

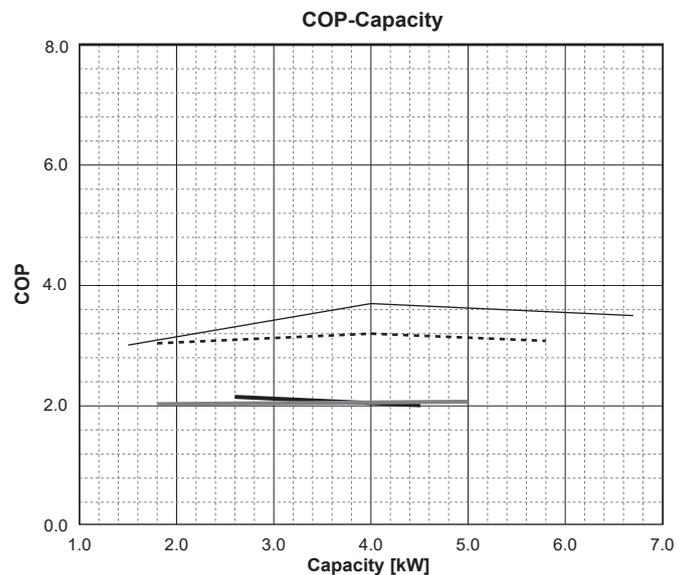
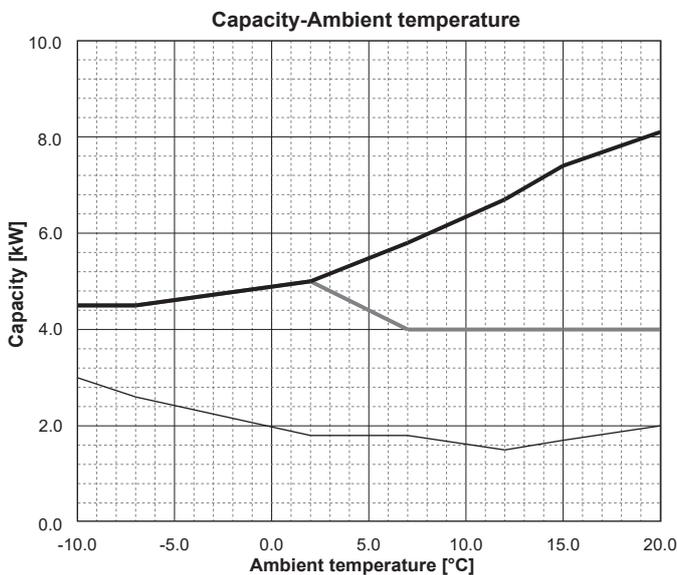
■ Water outlet temperature 35 [°C]



■ Water outlet temperature 45 [°C]



■ Water outlet temperature 55 [°C]

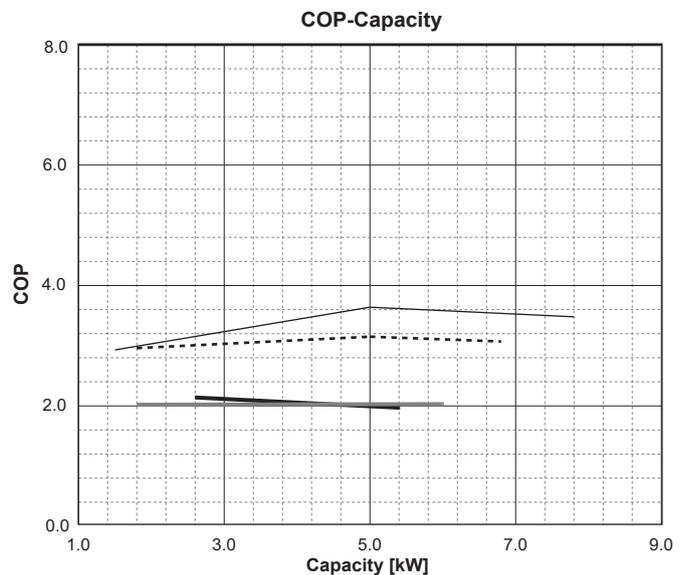
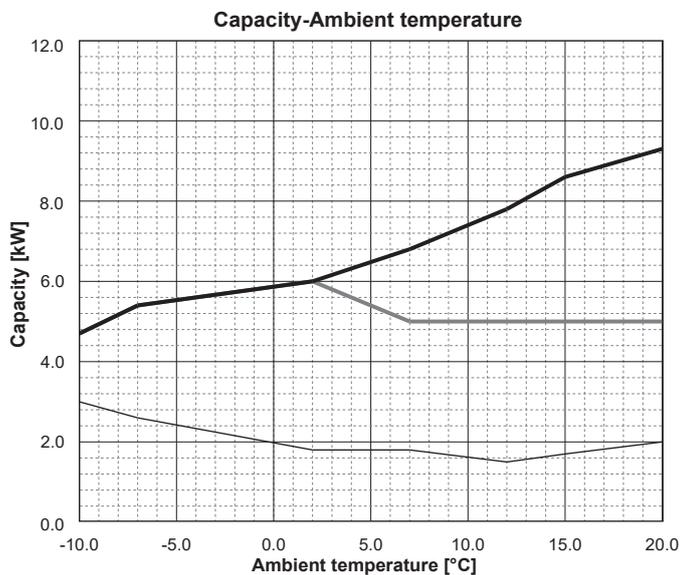
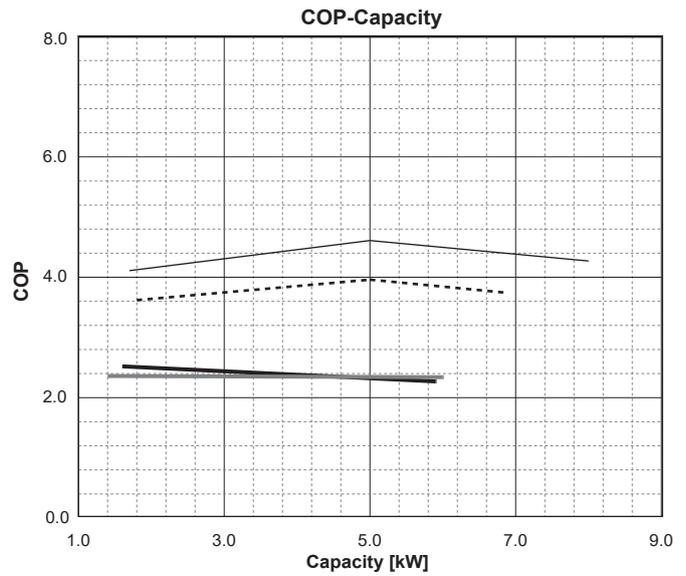
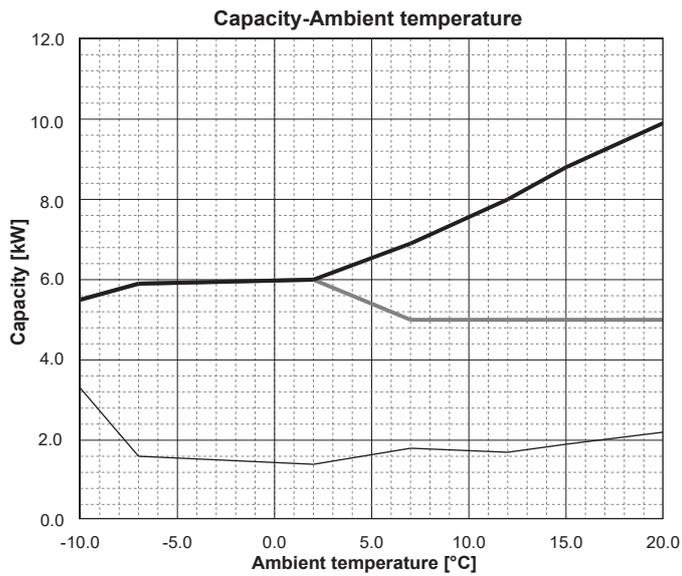
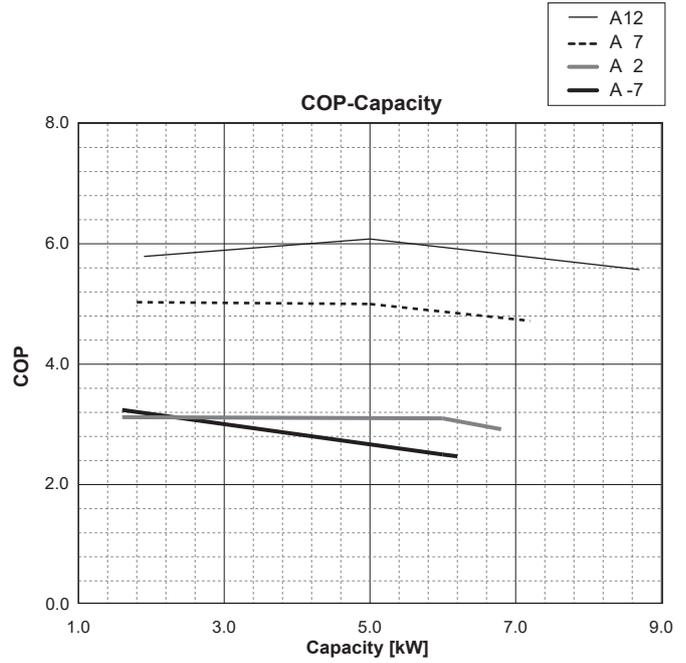
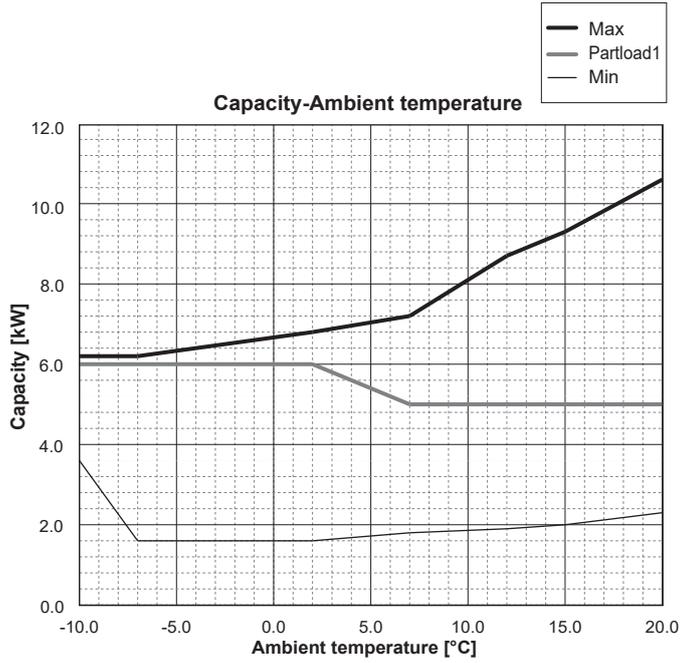


Outdoor unit

5 Performance data

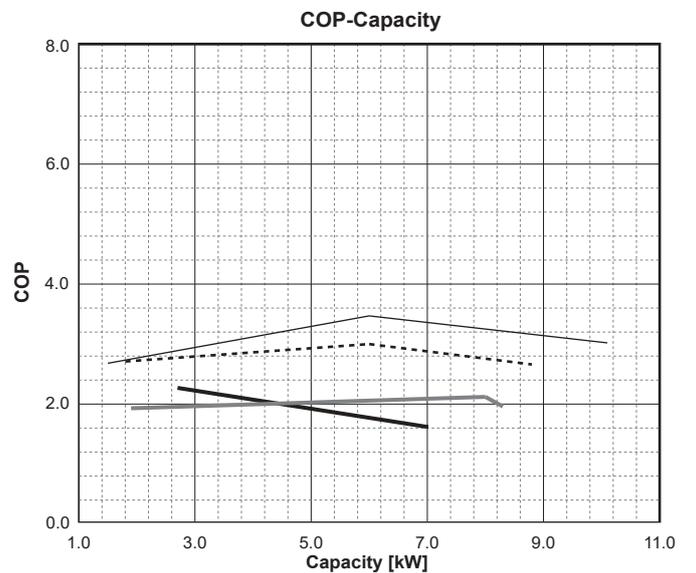
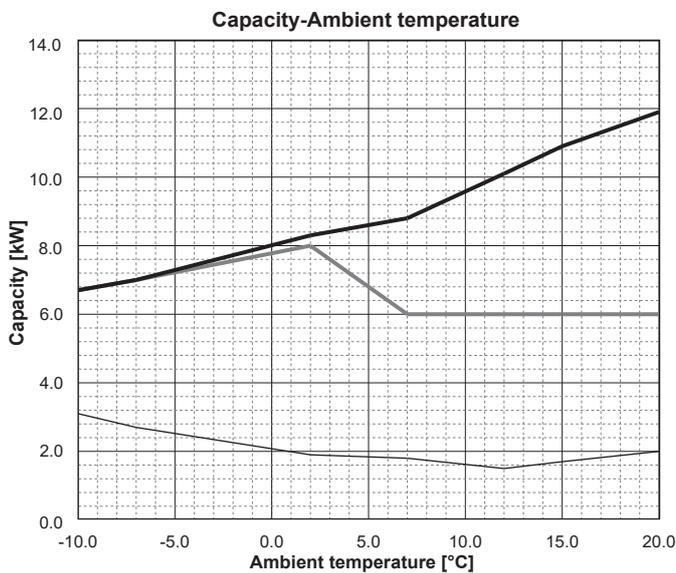
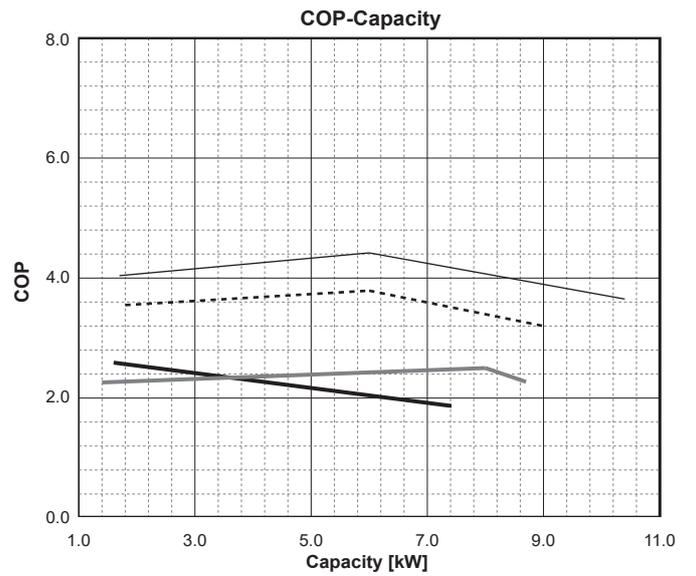
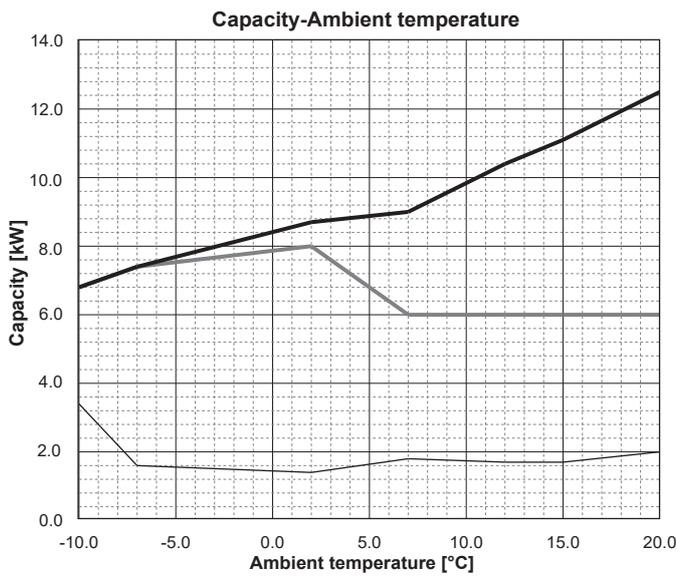
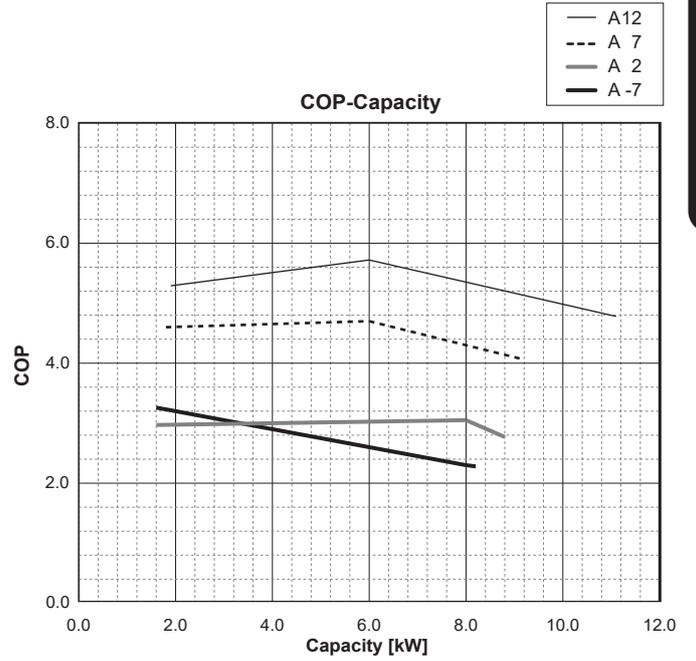
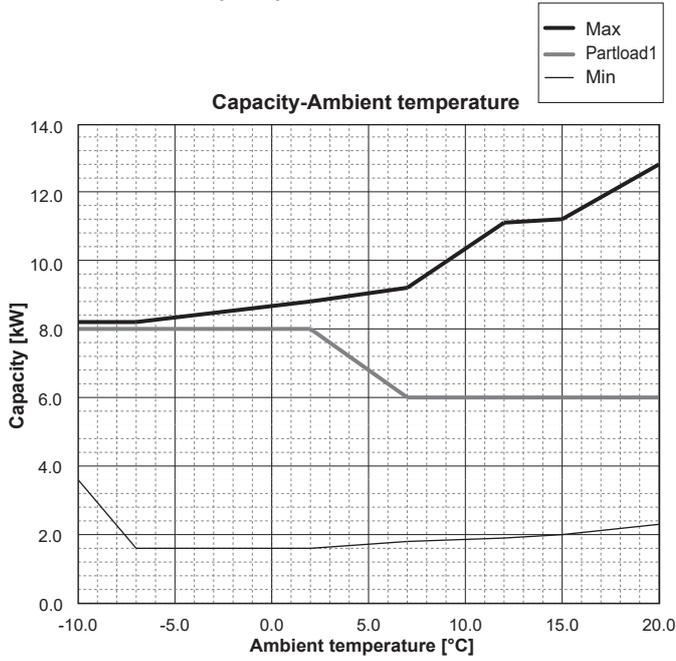
PUZ-WZ60VAA(-BS)

Outdoor unit



5 Performance data

PUZ-WZ80VAA(-BS)



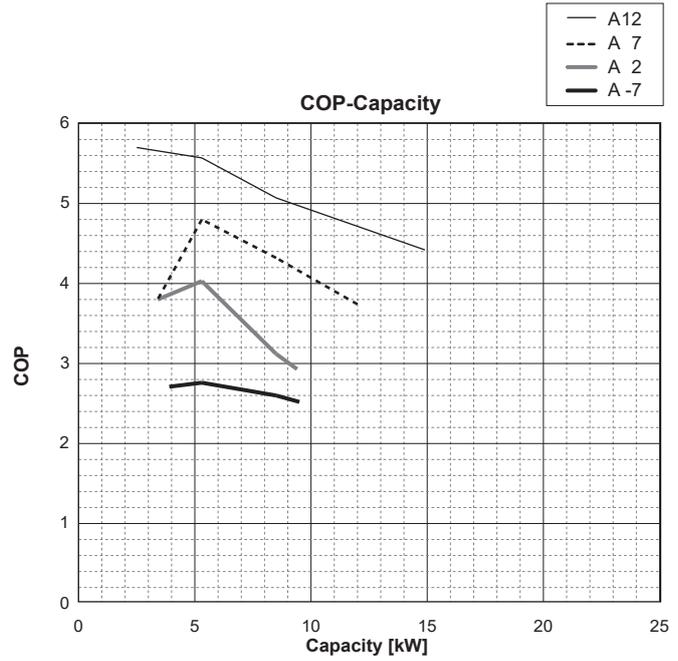
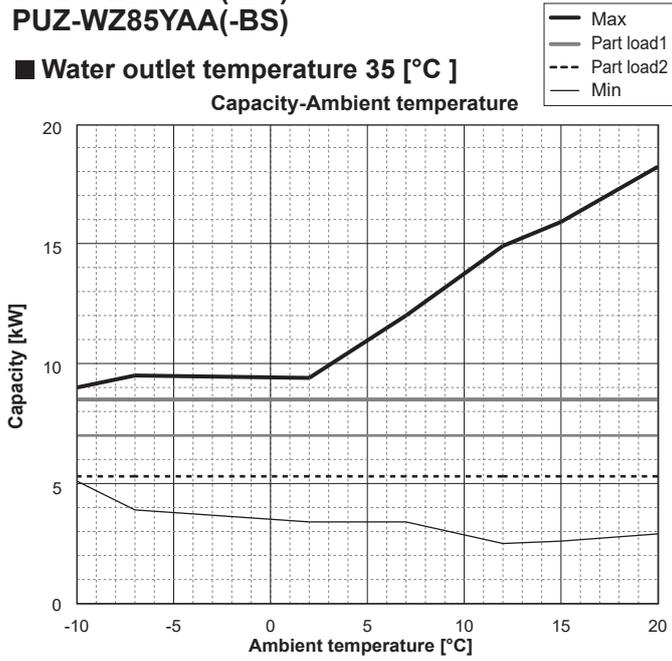
Outdoor unit

5 Performance data

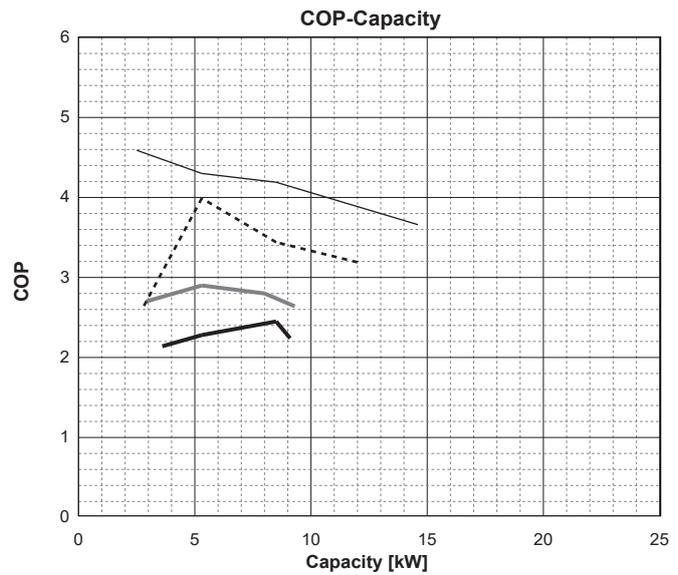
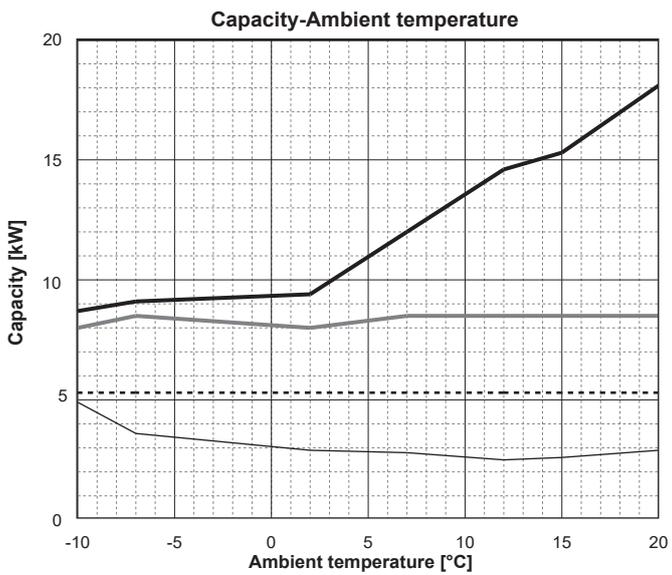
Outdoor unit

**PUZ-WZ85VAA(-BS)
PUZ-WZ85YAA(-BS)**

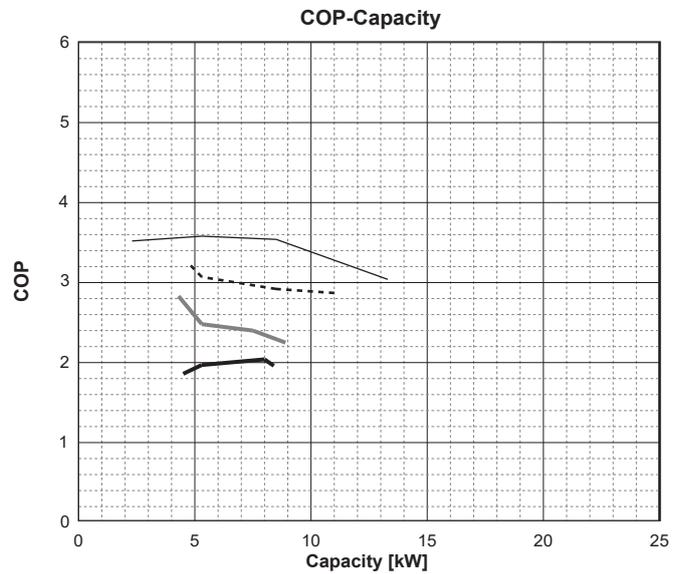
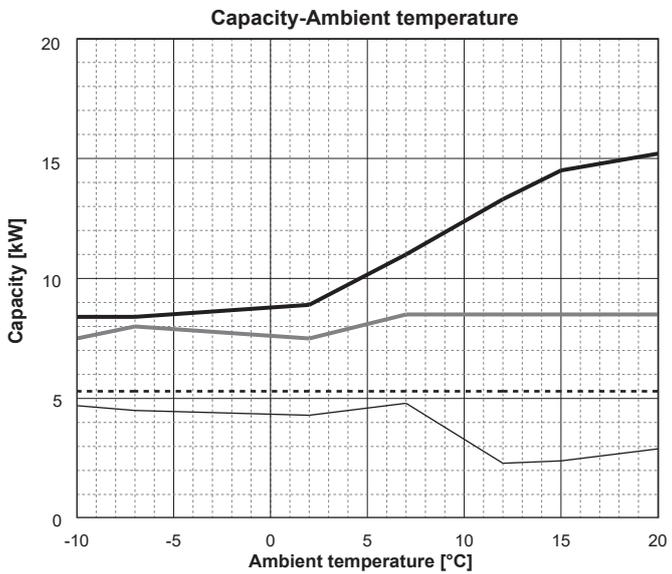
■ **Water outlet temperature 35 [°C]**



■ **Water outlet temperature 45 [°C]**



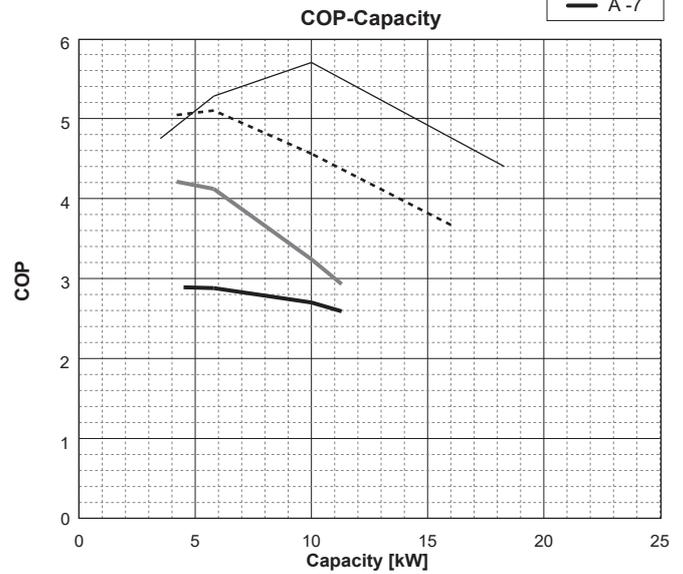
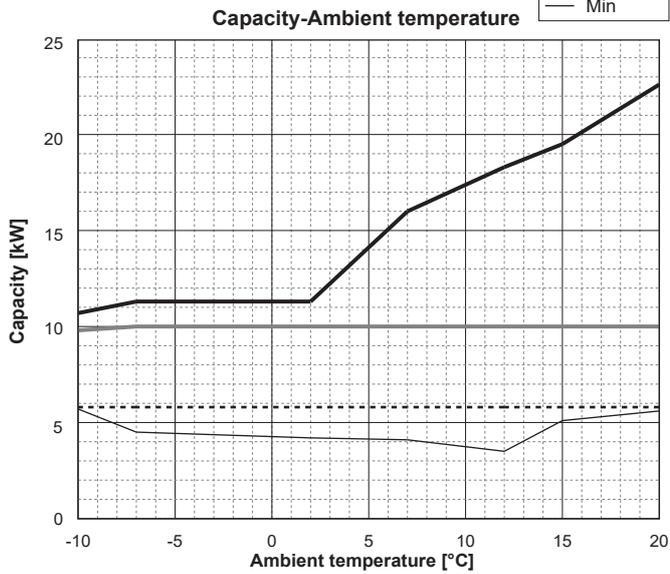
■ **Water outlet temperature 55 [°C]**



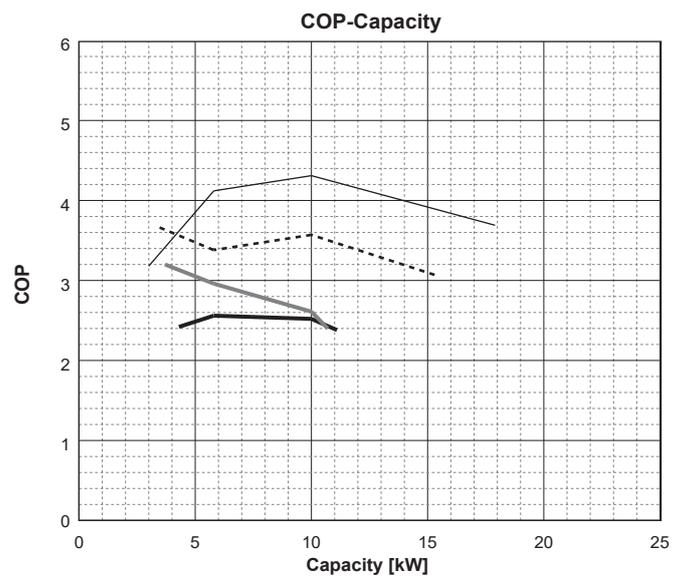
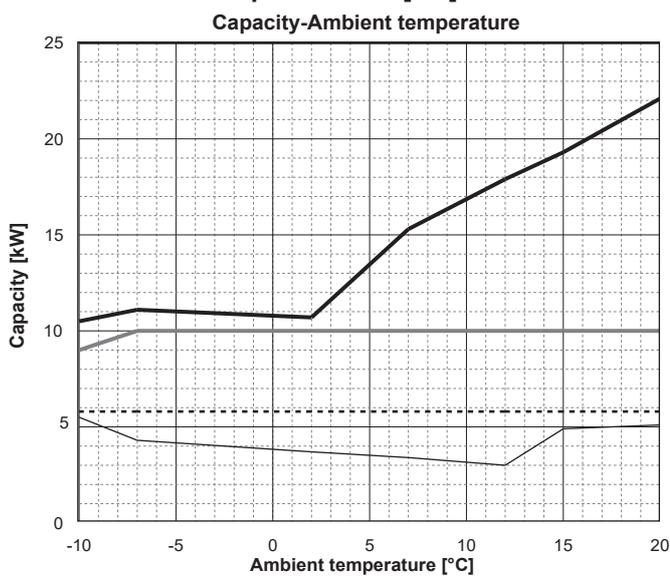
5 Performance data

PUZ-WZ100VAA(-BS)
PUZ-WZ100YAA(-BS)

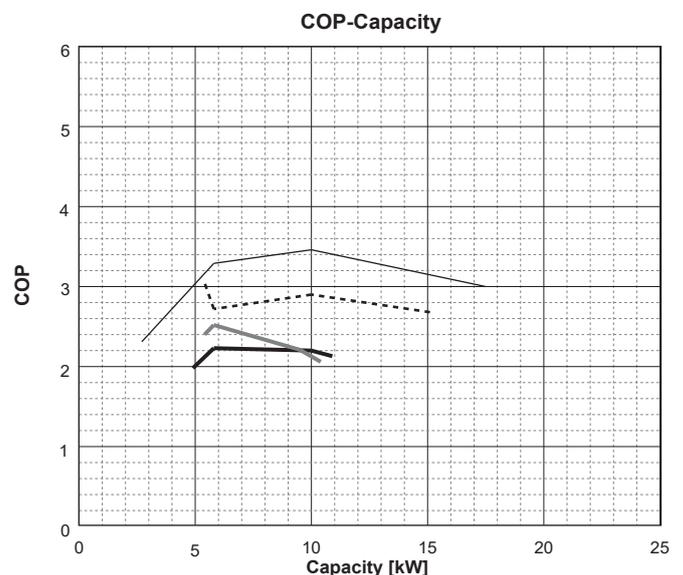
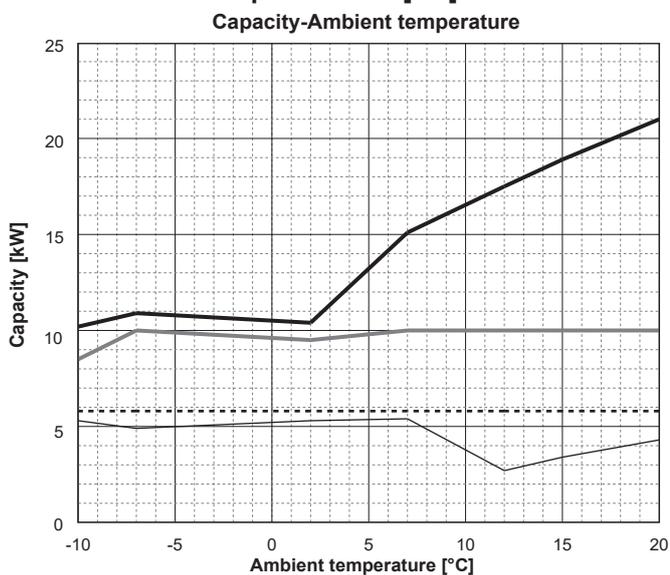
Water outlet temperature 35 [°C]



Water outlet temperature 45 [°C]



Water outlet temperature 55 [°C]



Outdoor unit

5 Performance data

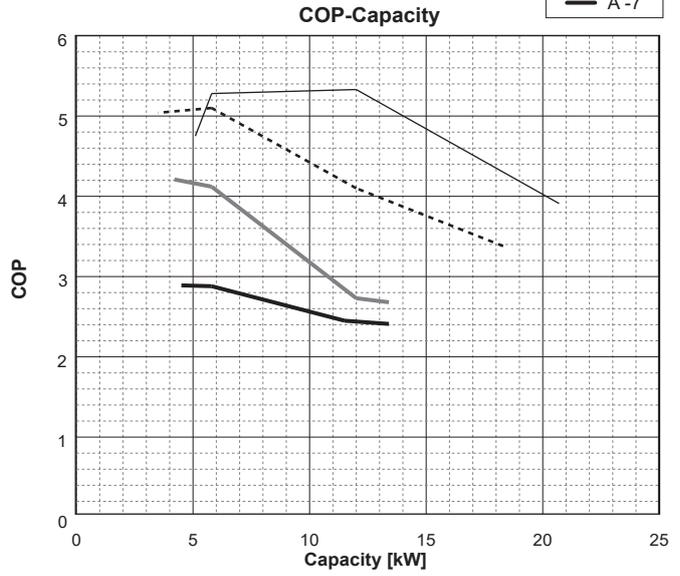
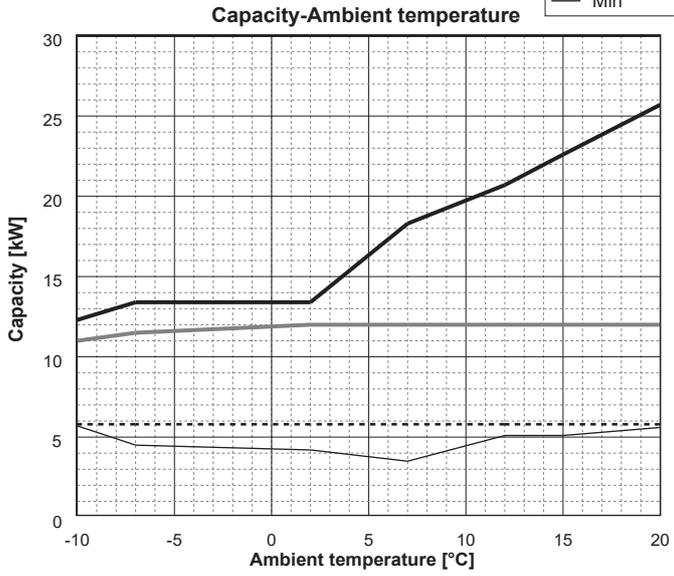
Outdoor unit

PUZ-WZ120VAA(-BS)
PUZ-WZ120YAA(-BS)

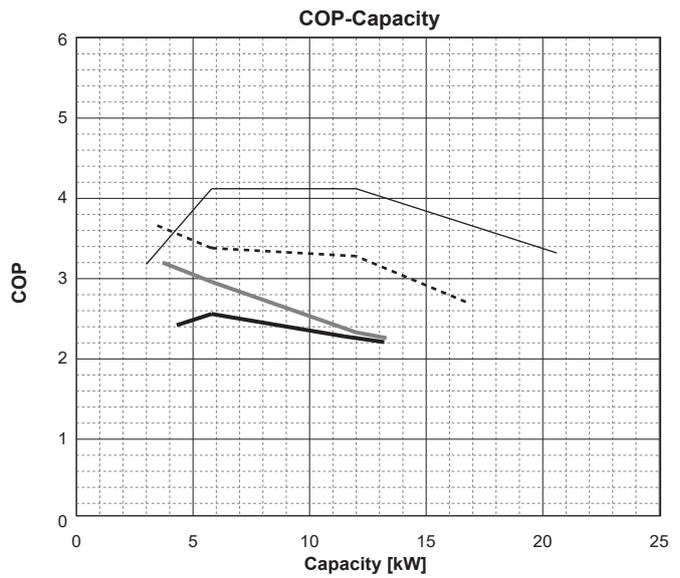
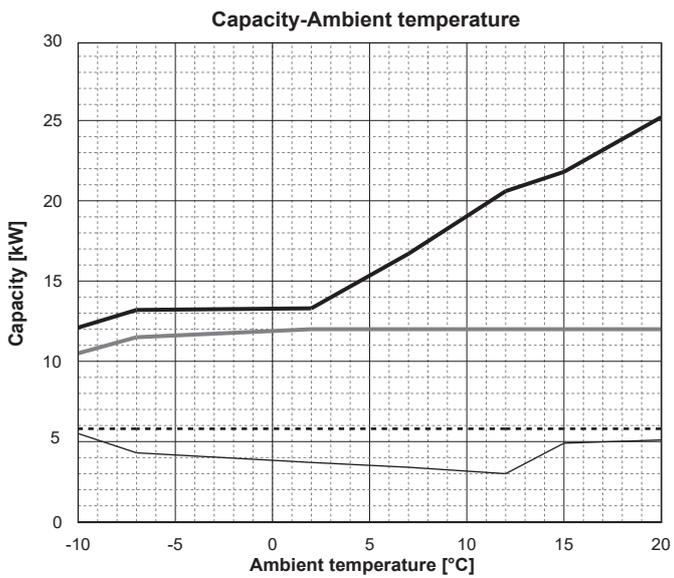
■ Water outlet temperature 35 [°C]

— Max
— Part load1
- - - Part load2
— Min

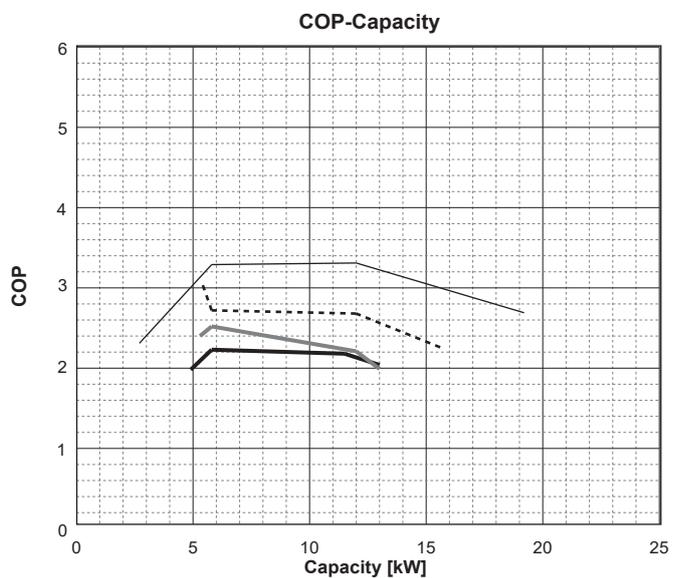
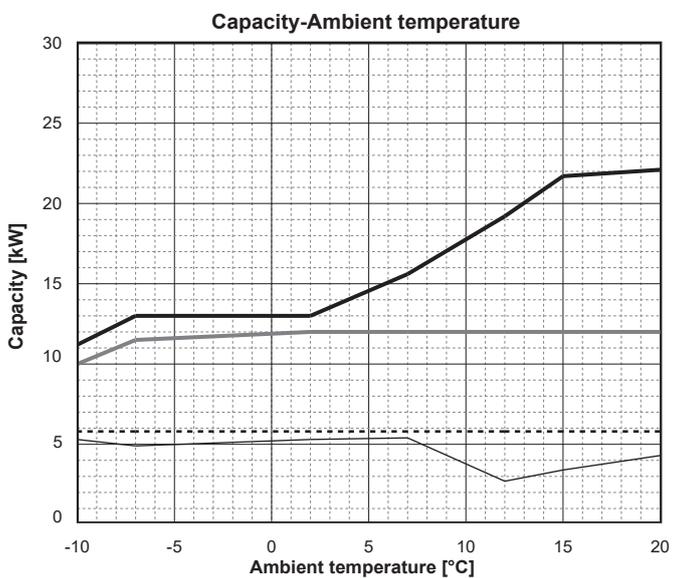
— A12
- - - A 7
— A 2
— A-7



■ Water outlet temperature 45 [°C]



■ Water outlet temperature 55 [°C]



5 Performance data

5.4 Best COP

- The values in the table include interpolation / calculation basing upon measured data in accordance with EN14511.

<Notes>

1) Max COP of each model at each condition are shown.

2) Gray highlighted data means integrated data including defrost operation.

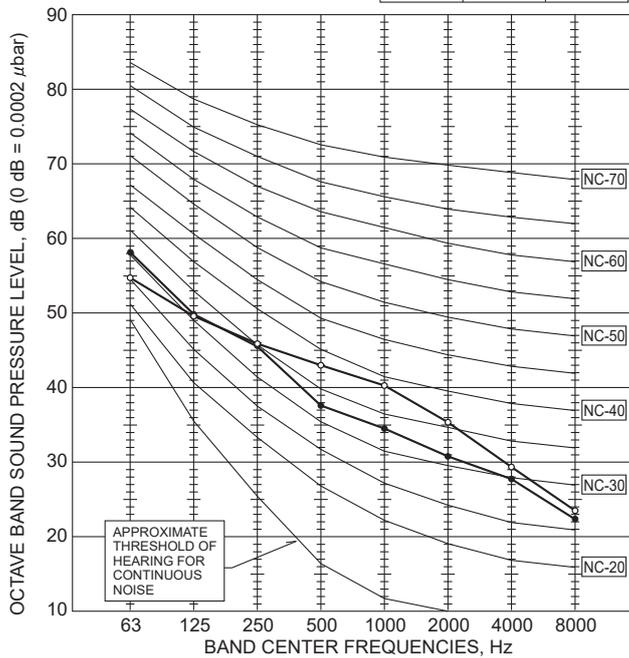
Water outlet temperature[°C]		35		45		55	
Ambient temperature[°C]		Capacity	COP	Capacity	COP	Capacity	COP
PUZ-WZ50VAA(-BS)	-7	3.5	2.87	3.4	2.54	3.4	2.07
	2	3.8	3.27	3.7	2.55	4.0	2.11
		3.6	3.49	4.0	2.75	4.5	2.28
7	4.0	5.10	4.5	4.00	4.7	3.23	
PUZ-WZ60VAA(-BS)	-7	3.4	2.84	3.6	2.58	3.7	2.05
	2	3.8	3.52	3.8	2.62	4.6	2.09
		3.6	3.76	4.0	2.83	5.2	2.27
7	3.1	5.05	4.2	3.97	5.0	3.15	
PUZ-WZ80VAA(-BS)	-7	3.5	2.90	3.6	2.60	3.8	2.14
	2	6.6	3.35	6.5	2.81	5.0	2.40
		3.3	3.49	3.6	2.92	4.7	2.59
7	3.9	4.85	4.5	3.88	4.8	3.04	
PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)	-7	5.3	2.76	8.5	2.45	8.0	2.04
	2	8.5	3.12	8.0	2.80	7.5	2.40
		5.3	4.03	5.3	2.90	4.3	2.83
7	5.3	4.80	5.3	3.99	4.8	3.22	
PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)	-7	4.5	2.89	5.8	2.56	5.8	2.23
	2	10.0	3.24	10.0	2.61	9.5	2.21
		4.2	4.21	3.7	3.20	5.8	2.52
7	5.8	5.10	3.4	3.67	5.4	3.05	
PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)	-7	4.5	2.89	5.8	2.56	5.8	2.23
	2	10.0	3.24	10.0	2.61	9.5	2.21
		4.2	4.21	3.7	3.20	5.8	2.52
7	5.8	5.10	3.4	3.67	5.4	3.05	

6 Noise criterion curves

(1) Hydro-Split

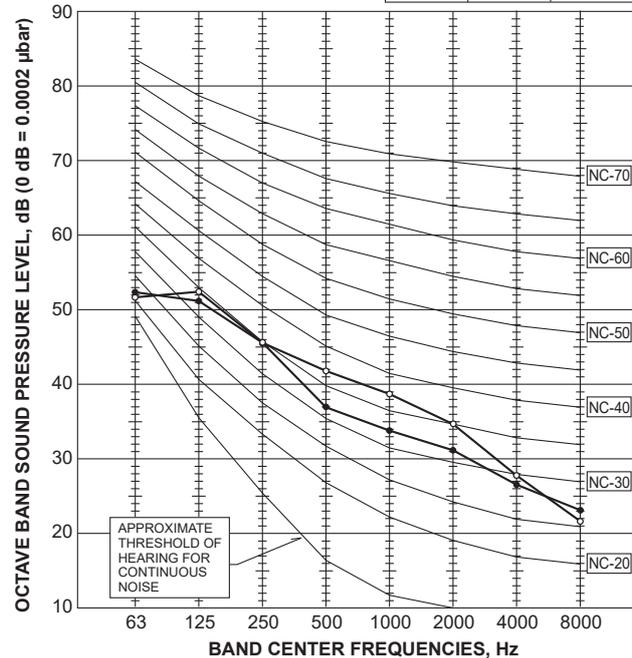
■ PUZ-WZ50VAA(-BS)

MODE	SPL(dB)	LINE
COOLING	45	○—○
HEATING	42	●—●



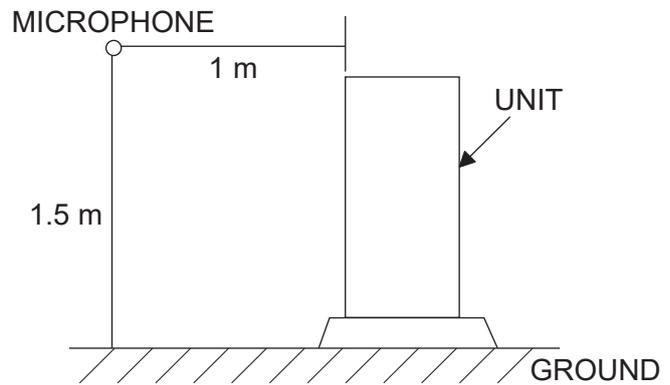
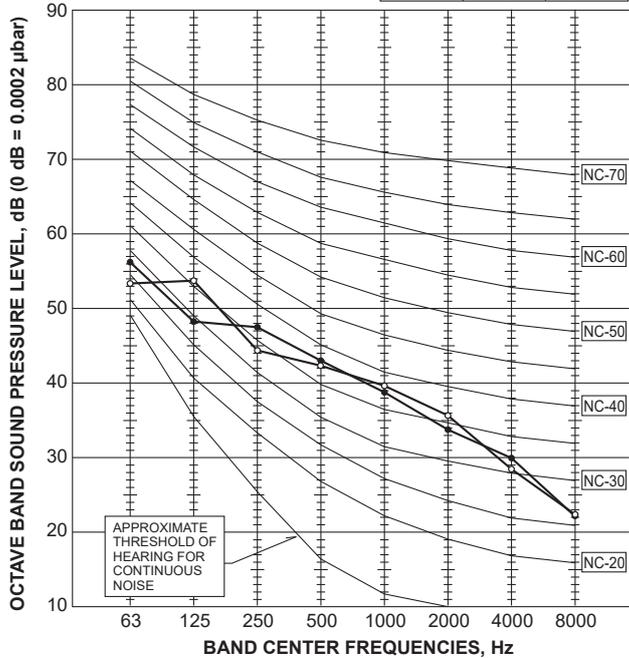
■ PUZ-WZ60VAA(-BS)

MODE	SPL(dB)	LINE
COOLING	45	○—○
HEATING	42	●—●



■ PUZ-WZ80VAA(-BS)

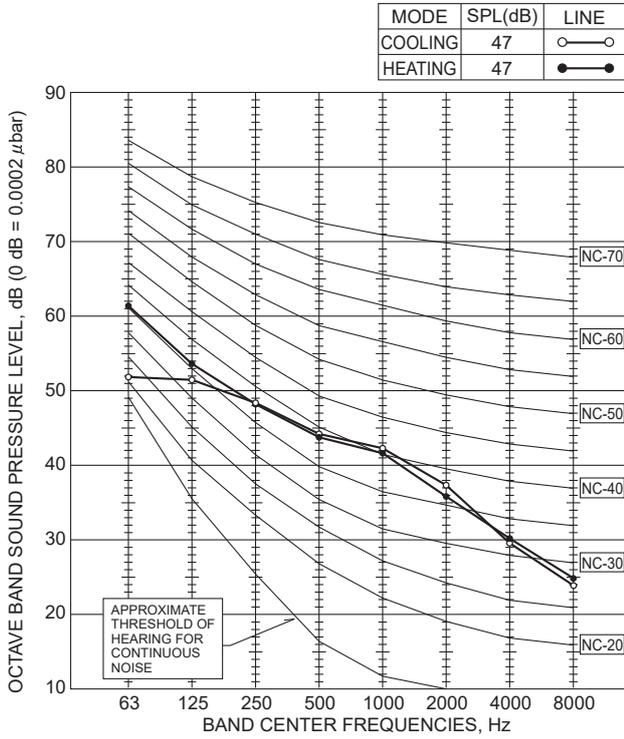
MODE	SPL(dB)	LINE
COOLING	45	○—○
HEATING	45	●—●



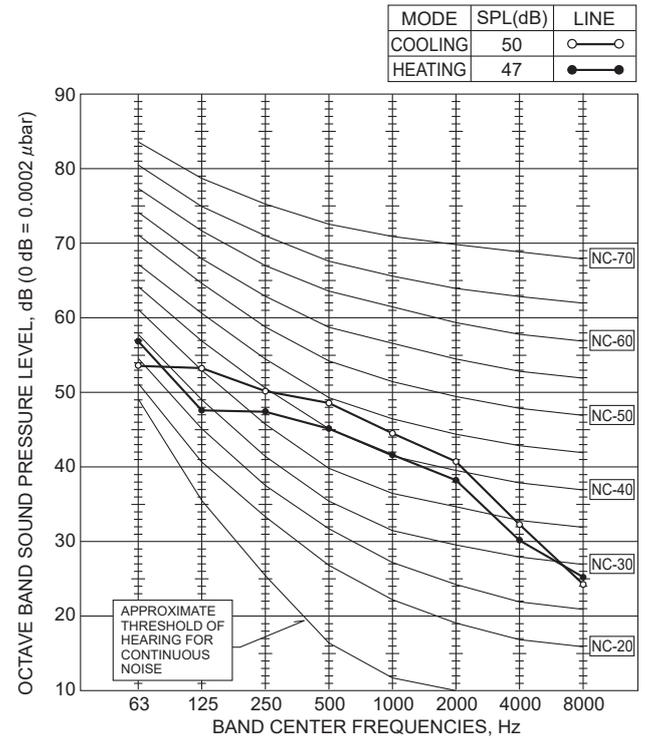
<Note>
These values are only for reference purpose.

6 Noise criterion curves

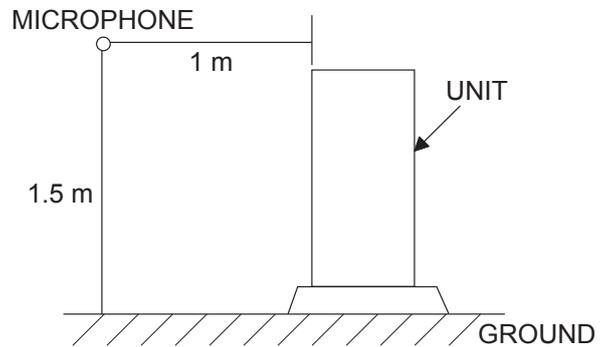
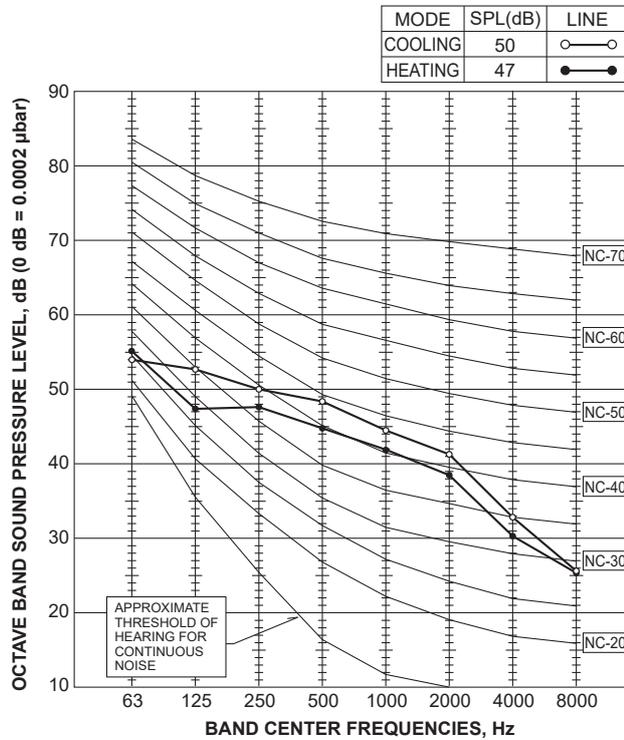
■ PUZ-WZ85VAA(-BS) PUZ-WZ85YAA(-BS)



■ PUZ-WZ100VAA(-BS) PUZ-WZ100YAA(-BS)



■ PUZ-WZ120VAA(-BS) PUZ-WZ120YAA(-BS)

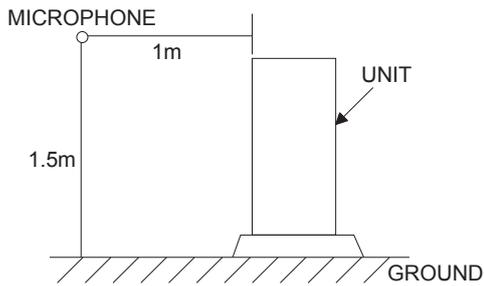


<Note>
These values are only for reference purpose.

7 Estimated noise level based on the distance from outdoor unit

Annotation and measurement condition

Outdoor unit

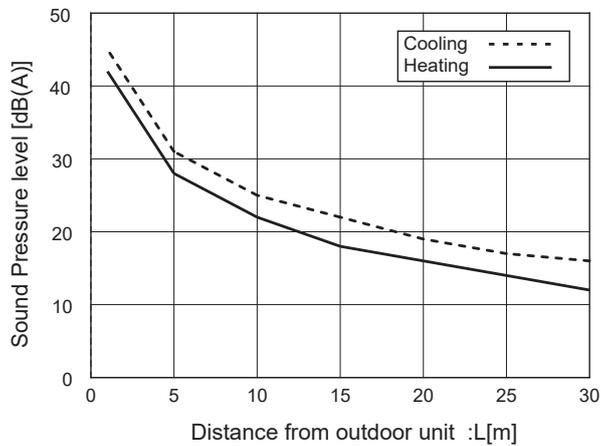


<Notes>

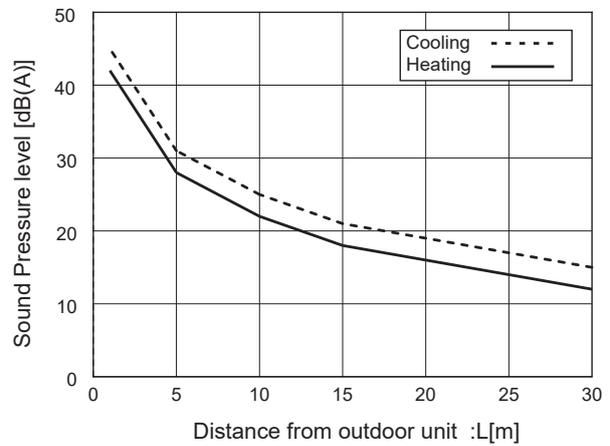
- 1) Sound data is taken when the system is running stably.
- 2) Relatively large noise could be heard transiently in the case 4-way valve, or LEV operates.
- 3) Sound reflection from ground and surrounding walls is not considered.

(1) Hydro-Split

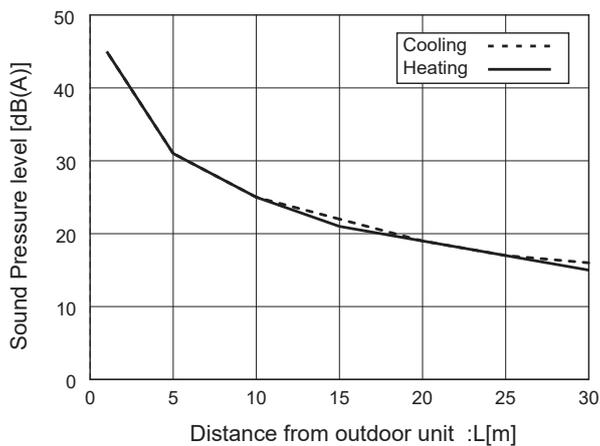
■ PUZ-WZ50VAA(-BS)



■ PUZ-WZ60VAA(-BS)



■ PUZ-WZ80VAA(-BS)

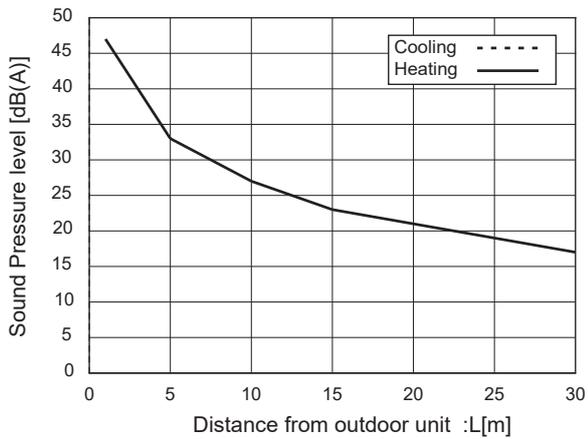


<Note>

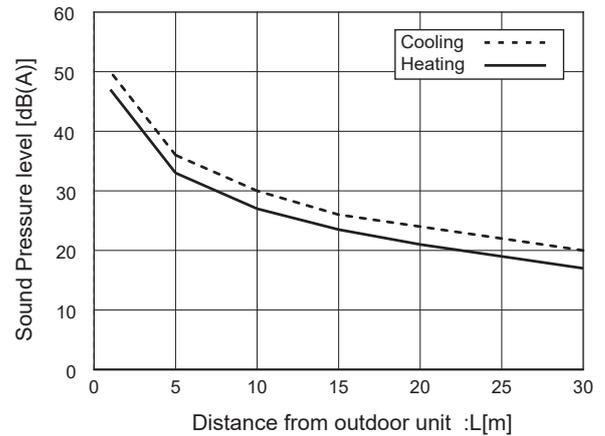
These values are only for reference purpose.

7 Estimated noise level based on the distance from outdoor unit

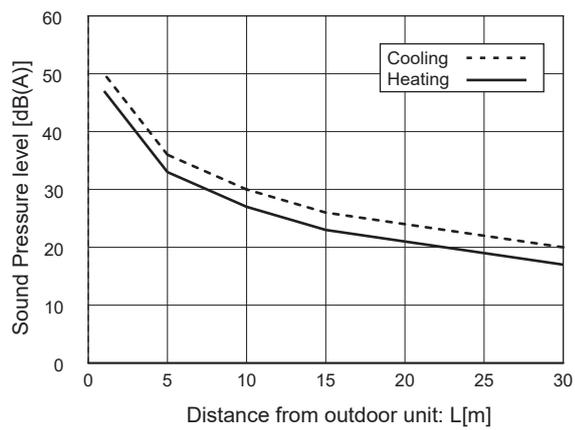
■ PUZ-WZ85VAA(-BS)
PUZ-WZ85YAA(-BS)



■ PUZ-WZ100VAA(-BS)
PUZ-WZ100YAA(-BS)



■ PUZ-WZ120VAA(-BS)
PUZ-WZ120YAA(-BS)



<Note>
These values are only for reference purpose.

8 Earthquake-proof strength analysis

Outdoor unit

1.Type:

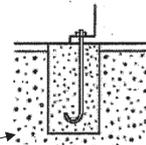
2.Model name:

3.Specification

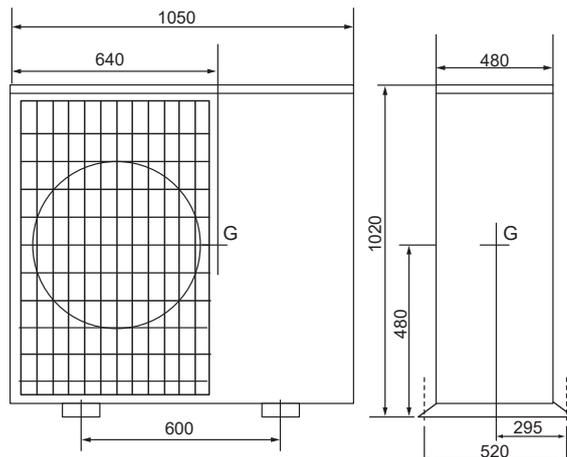
- | | |
|--|---|
| (1) Unit mass | W= <input type="text" value="89"/> kg |
| (2) Anchor bolt | |
| 1.The total number of bolts. | N= <input type="text" value="4"/> |
| 2.The size and shape. | "=M <input type="text" value="10"/> type |
| 3.The axis section area per one bolt. | A= <input type="text" value="78"/> mm ² = <input type="text" value="78 × 10<sup>-6"/> "/> m ² |
| 4.The total number of bolts in one side which be pulled stronger when the unit inverted. | Nt= <input type="text" value="2"/> |
| (3) The height between the installing surface and the center of gravity of the unit | Hg= <input type="text" value="480"/> mm= <input type="text" value="0.480"/> m |
| (4) The bolt-span from the examination angle | L= <input type="text" value="520"/> mm= <input type="text" value="0.520"/> m |
| (5) The distance between the center of bolt and the center of gravity of the unit | Lg= <input type="text" value="295"/> mm(Lg ≤ L/2)= <input type="text" value="0.295"/> m |

4.The examination calculation (by rounding off to the first decimal place of each item)

- | | |
|---|--|
| (1) The horizontal seismic coefficient for designing | Kh= <input type="text" value="1.0"/> |
| (2) The vertical seismic coefficient for designing | Kv=Kh/2= <input type="text" value="0.5"/> |
| (3) The horizontal earthquake forces for designing | Fh=Kh·W·9.8= <input type="text" value="872.2"/> N |
| (4) The vertical earthquake forces for designing | Fv=Kv·W·9.8= <input type="text" value="436.1"/> N |
| (5) The withdrawal strength of the anchor bolt | $R_b = \frac{F_h \cdot H_g - (W \cdot 9.8 - F_v) \cdot L_g}{L \cdot N_t}$ = <input type="text" value="278.9"/> N |
| (6) The shear forces of the anchor bolt | Q=Fh/N= <input type="text" value="218.1"/> N |
| (7) The stress arising to the anchor bolt | |
| 1.The tensile stress. | $\sigma = R_b/A =$ <input type="text" value="3.6"/> MPa < $f_t = 176.4$ MPa |
| 2.The shearing stress. | $\tau = Q/A =$ <input type="text" value="2.8"/> MPa < $f_s = 132.3$ MPa |
| 3.The stress when affected by both the shearing and the tensile at the same time. $f_{ts} = 1.4f_t - 1.6\tau$ | <input type="text" value="244.2"/> MPa |
| | $\sigma =$ <input type="text" value="3.6"/> MPa < $f_{ts} = 176.4$ MPa |
| (8) The construction way of the anchor bolt | |
| 1.The construction way of the anchor bolt. | = <input type="text" value="Boxed J type anchor"/> |
| 2.The thickness of the concrete. | = <input type="text" value="120"/> mm = <input type="text" value="0.120"/> m |
| 3.The length of buried part of bolt. | = <input type="text" value="70"/> mm = <input type="text" value="0.070"/> m |
| 4.The permissible withdrawal weight. | Ta= <input type="text" value="3136"/> N > Rb= <input type="text" value="278.9"/> N |



Since the results from the examination above, the anchor bolt has enough strength



8 Earthquake-proof strength analysis

1.Type:

2.Model name:

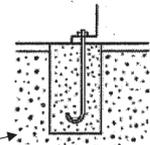
3.Specification

- | | |
|--|---|
| (1) Unit mass | W= <input type="text" value="89"/> kg |
| (2) Anchor bolt | |
| 1.The total number of bolts. | N= <input type="text" value="4"/> |
| 2.The size and shape. | "=M <input type="text" value="10"/> type |
| 3.The axis section area per one bolt. | A= <input type="text" value="78"/> mm ² = <input type="text" value="78 × 10<sup>-6"/> "/> m ² |
| 4.The total number of bolts in one side which be pulled stronger when the unit inverted. | Nt= <input type="text" value="2"/> |
| (3) The height between the installing surface and the center of gravity of the unit | Hg= <input type="text" value="480"/> mm= <input type="text" value="0.480"/> m |
| (4) The bolt-span from the examination angle | L= <input type="text" value="520"/> mm= <input type="text" value="0.520"/> m |
| (5) The distance between the center of bolt and the center of gravity of the unit | Lg= <input type="text" value="295"/> mm(Lg ≤ L/2)= <input type="text" value="0.295"/> m |

4.The examination calculation (by rounding off to the first decimal place of each item)

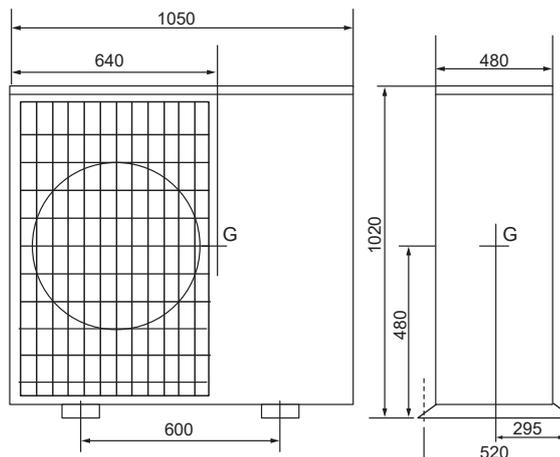
- | | |
|--|--|
| (1) The horizontal seismic coefficient for designing | Kh= <input type="text" value="1.0"/> |
| (2) The vertical seismic coefficient for designing | Kv=Kh/2= <input type="text" value="0.5"/> |
| (3) The horizontal earthquake forces for designing | Fh=Kh·W·9.8= <input type="text" value="872.2"/> N |
| (4) The vertical earthquake forces for designing | Fv=Kv·W·9.8= <input type="text" value="436.1"/> N |
| (5) The withdrawal strength of the anchor bolt | $R_b = \frac{F_h \cdot H_g - (W \cdot 9.8 - F_v) \cdot L_g}{L \cdot N_t}$ = <input type="text" value="278.9"/> N |
| (6) The shear forces of the anchor bolt | Q=Fh/N= <input type="text" value="218.1"/> N |
| (7) The stress arising to the anchor bolt | |

- | | |
|---|---|
| 1.The tensile stress. | $\sigma = R_b/A =$ <input type="text" value="3.6"/> MPa < ft = 176.4 MPa |
| 2.The shearing stress. | $\tau = Q/A =$ <input type="text" value="2.8"/> MPa < fs = 132.3 MPa |
| 3.The stress when affected by both the shearing and the tensile at the same time. fts=1.4ft-1.6 τ = | <input type="text" value="244.2"/> MPa |
| | $\sigma =$ <input type="text" value="3.6"/> MPa < fts= <input type="text" value="176.4"/> MPa |



- | | |
|---|--|
| (8) The construction way of the anchor bolt | = <input type="text" value="Boxed J type anchor"/> |
| 1.The construction way of the anchor bolt. | |
| 2.The thickness of the concrete. | = <input type="text" value="120"/> mm = <input type="text" value="0.120"/> m |
| 3.The length of buried part of bolt. | = <input type="text" value="70"/> mm = <input type="text" value="0.070"/> m |
| 4.The permissible withdrawal weight. | Ta= <input type="text" value="3136"/> N > Rb= <input type="text" value="278.9"/> N |

Since the results from the examination above, the anchor bolt has enough strength



8 Earthquake-proof strength analysis

Outdoor unit

1.Type:

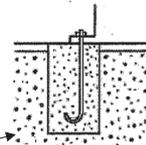
2.Model name:

3.Specification

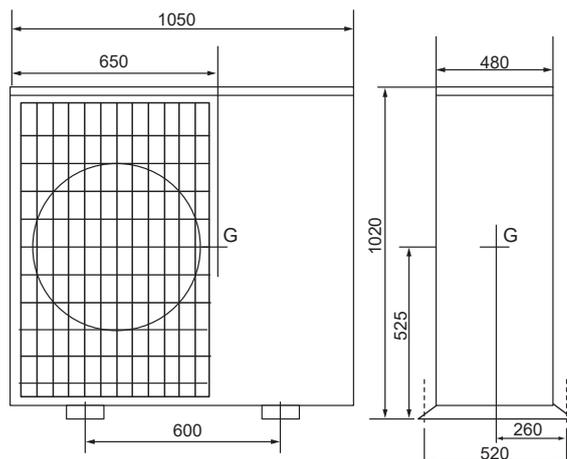
- | | |
|--|---|
| (1) Unit mass | W= <input type="text" value="117"/> kg |
| (2) Anchor bolt | |
| 1.The total number of bolts. | N= <input type="text" value="4"/> |
| 2.The size and shape. | "=M <input type="text" value="10"/> type |
| 3.The axis section area per one bolt. | A= <input type="text" value="78"/> mm ² = <input type="text" value="78 × 10<sup>-6"/> "/> m ² |
| 4.The total number of bolts in one side which be pulled stronger when the unit inverted. | Nt= <input type="text" value="2"/> |
| (3) The height between the installing surface and the center of gravity of the unit | Hg= <input type="text" value="525"/> mm= <input type="text" value="0.525"/> m |
| (4) The bolt-span from the examination angle | L= <input type="text" value="520"/> mm= <input type="text" value="0.520"/> m |
| (5) The distance between the center of bolt and the center of gravity of the unit | Lg= <input type="text" value="260"/> mm(Lg ≤ L/2)= <input type="text" value="0.26"/> m |

4.The examination calculation (by rounding off to the first decimal place of each item)

- | | |
|---|--|
| (1) The horizontal seismic coefficient for designing | Kh= <input type="text" value="1.0"/> |
| (2) The vertical seismic coefficient for designing | Kv=Kh/2= <input type="text" value="0.5"/> |
| (3) The horizontal earthquake forces for designing | Fh=Kh·W·9.8= <input type="text" value="1146.6"/> N |
| (4) The vertical earthquake forces for designing | Fv=Kv·W·9.8= <input type="text" value="573.3"/> N |
| (5) The withdrawal strength of the anchor bolt | $R_b = \frac{F_h \cdot H_g - (W \cdot 9.8 - F_v) \cdot L_g}{L \cdot N_t}$ = <input type="text" value="435.5"/> N |
| (6) The shear forces of the anchor bolt | Q=Fh/N= <input type="text" value="286.7"/> N |
| (7) The stress arising to the anchor bolt | |
| 1.The tensile stress. | $\sigma = R_b/A =$ <input type="text" value="5.6"/> MPa < ft = 176.4 MPa |
| 2.The shearing stress. | $\tau = Q/A =$ <input type="text" value="3.7"/> MPa < fs = 132.3 MPa |
| 3.The stress when affected by both the shearing and the tensile at the same time. fts=1.4ft-1.6 τ | <input type="text" value="244.2"/> MPa |
| | $\sigma =$ <input type="text" value="5.6"/> MPa < fts= <input type="text" value="176.4"/> MPa |
| (8) The construction way of the anchor bolt | |
| 1.The construction way of the anchor bolt. | = <input type="text" value="Boxed J type anchor"/> |
| 2.The thickness of the concrete. | = <input type="text" value="120"/> mm = <input type="text" value="0.120"/> m |
| 3.The length of buried part of bolt. | = <input type="text" value="70"/> mm = <input type="text" value="0.070"/> m |
| 4.The permissible withdrawal weight. | Ta= <input type="text" value="3136"/> N > Rb= <input type="text" value="435.5"/> N |



Since the results from the examination above, the anchor bolt has enough strength



8 Earthquake-proof strength analysis

1.Type:

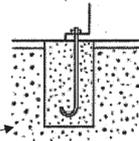
2.Model name:

3.Specification

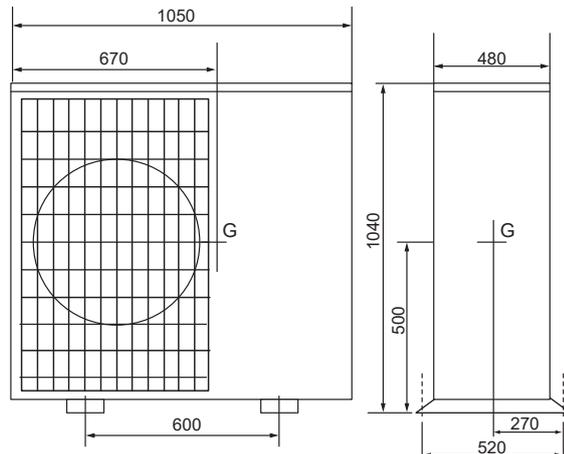
- | | |
|--|---|
| (1) Unit mass | W= <input type="text" value="102.5"/> kg |
| (2) Anchor bolt | |
| 1.The total number of bolts. | N= <input type="text" value="4"/> |
| 2.The size and shape. | "=M <input type="text" value="10"/> type |
| 3.The axis section area per one bolt. | A= <input type="text" value="78"/> mm ² = <input type="text" value="0.000078"/> m ² |
| 4.The total number of bolts in one side which be pulled stronger when the unit inverted. | Nt= <input type="text" value="2"/> |
| (3) The height between the installing surface and the center of gravity of the unit | Hg= <input type="text" value="500"/> mm= <input type="text" value="0.50"/> m |
| (4) The bolt-span from the examination angle | L= <input type="text" value="520"/> mm= <input type="text" value="0.52"/> m |
| (5) The distance between the center of bolt and the center of gravity of the unit | Lg= <input type="text" value="270"/> mm(Lg≤L/2)= <input type="text" value="0.27"/> m |

4.The examination calculation (by rounding off to the first decimal place of each item)

- | | |
|---|---|
| (1) The horizontal seismic coefficient for designing | Kh= <input type="text" value="1.0"/> |
| (2) The vertical seismic coefficient for designing | Kv=Kh/2= <input type="text" value="0.5"/> |
| (3) The horizontal earthquake forces for designing | Fh=Kh·W·9.8= <input type="text" value="1004.5"/> N |
| (4) The vertical earthquake forces for designing | Fv=Kv·W·9.8= <input type="text" value="502.25"/> N |
| (5) The withdrawal strength of the anchor bolt | $R_b = \frac{F_h \cdot H_g - (W \cdot 9.8 - F_v) \cdot L_g}{L \cdot N_t}$
= <input type="text" value="352.5"/> N |
| (6) The shear forces of the anchor bolt | Q=Fh/N= <input type="text" value="251.125"/> N |
| (7) The stress arising to the anchor bolt | |
| 1.The tensile stress. | $\sigma = R_b/A =$ <input type="text" value="4.5"/> MPa < ft = 176.4 MPa |
| 2.The shearing stress. | $\tau = Q/A =$ <input type="text" value="3.2"/> MPa < fs = 132.3 MPa |
| 3.The stress when affected by both the shearing and the tensile at the same time. fts=1.4ft-1.6 τ | <input type="text" value="244.2"/> MPa
< fts= <input type="text" value="176.4"/> MPa |
| | $\sigma =$ <input type="text" value="4.5"/> MPa |
| (8) The construction way of the anchor bolt | |
| 1.The construction way of the anchor bolt. | = <input type="text" value="Boxed J type anchor"/> |
| 2.The thickness of the concrete. | = <input type="text" value="120"/> mm = <input type="text" value="0.120"/> m |
| 3.The length of buried part of bolt. | = <input type="text" value="70"/> mm = <input type="text" value="0.07"/> m |
| 4.The permissible withdrawal weight. | Ta= <input type="text" value="3136"/> N > Rb= <input type="text" value="352.5"/> N |



Since the results from the examination above, the anchor bolt has enough strength



8 Earthquake-proof strength analysis

Outdoor unit

1.Type:

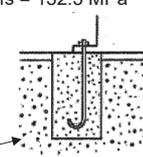
2.Model name:

3.Specification

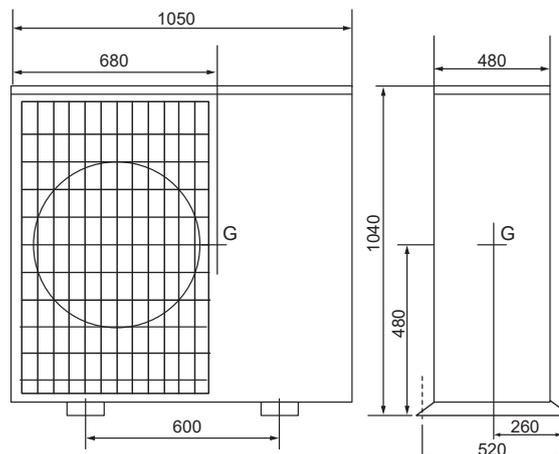
- | | |
|--|---|
| (1) Unit mass | W= <input type="text" value="117"/> kg |
| (2) Anchor bolt | |
| 1.The total number of bolts. | N= <input type="text" value="4"/> |
| 2.The size and shape. | "=M <input type="text" value="10"/> type |
| 3.The axis section area per one bolt. | A= <input type="text" value="78"/> mm ² = <input type="text" value="0.000078"/> m ² |
| 4.The total number of bolts in one side which be pulled stronger when the unit inverted. | Nt= <input type="text" value="2"/> |
| (3) The height between the installing surface and the center of gravity of the unit | Hg= <input type="text" value="480"/> mm= <input type="text" value="0.48"/> m |
| (4) The bolt-span from the examination angle | L= <input type="text" value="520"/> mm= <input type="text" value="0.52"/> m |
| (5) The distance between the center of bolt and the center of gravity of the unit | Lg= <input type="text" value="260"/> mm(Lg≤L/2)= <input type="text" value="0.26"/> m |

4.The examination calculation (by rounding off to the first decimal place of each item)

- | | |
|---|---|
| (1) The horizontal seismic coefficient for designing | Kh= <input type="text" value="1.0"/> |
| (2) The vertical seismic coefficient for designing | Kv=Kh/2= <input type="text" value="0.5"/> |
| (3) The horizontal earthquake forces for designing | Fh=Kh·W·9.8= <input type="text" value="1146.6"/> N |
| (4) The vertical earthquake forces for designing | Fv=Kv·W·9.8= <input type="text" value="573.3"/> N |
| (5) The withdrawal strength of the anchor bolt | $R_b = \frac{F_h \cdot H_g - (W \cdot 9.8 - F_v) \cdot L_g}{L \cdot N_t}$
= <input type="text" value="385.9"/> N |
| (6) The shear forces of the anchor bolt | Q=Fh/N= <input type="text" value="286.65"/> N |
| (7) The stress arising to the anchor bolt | |
| 1.The tensile stress. | $\sigma = R_b/A =$ <input type="text" value="4.9"/> MPa < $f_t = 176.4$ MPa |
| 2.The shearing stress. | $\tau = Q/A =$ <input type="text" value="3.7"/> MPa < $f_s = 132.3$ MPa |
| 3.The stress when affected by both the shearing and the tensile at the same time. | $f_{ts} = 1.4f_t - 1.6\tau =$ <input type="text" value="244.2"/> MPa
$\sigma =$ <input type="text" value="4.9"/> MPa < $f_{ts} =$ <input type="text" value="176.4"/> MPa |
| (8) The construction way of the anchor bolt | |
| 1.The construction way of the anchor bolt. | = <input type="text" value="Boxed J type anchor"/> |
| 2.The thickness of the concrete. | = <input type="text" value="120"/> mm = <input type="text" value="0.120"/> m |
| 3.The length of buried part of bolt. | = <input type="text" value="70"/> mm = <input type="text" value="0.07"/> m |
| 4.The permissible withdrawal weight. | Ta= <input type="text" value="3136"/> N > Rb= <input type="text" value="385.9"/> N |



Since the results from the examination above, the anchor bolt has enough strength



8 Earthquake-proof strength analysis

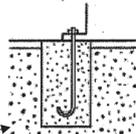
1.Type:

2.Model name:

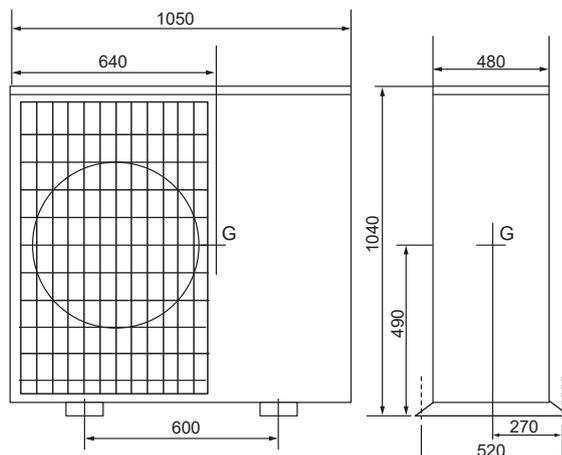
3.Specification

- | | |
|--|---|
| (1) Unit mass | W= <input type="text" value="119.5"/> kg |
| (2) Anchor bolt | |
| 1.The total number of bolts. | N= <input type="text" value="4"/> |
| 2.The size and shape. | "=M <input type="text" value="10"/> type |
| 3.The axis section area per one bolt. | A= <input type="text" value="78"/> mm ² = <input type="text" value="0.000078"/> m ² |
| 4.The total number of bolts in one side which be pulled stronger when the unit inverted. | Nt= <input type="text" value="2"/> |
| (3) The height between the installing surface and the center of gravity of the unit | Hg= <input type="text" value="490"/> mm= <input type="text" value="0.49"/> m |
| (4) The bolt-span from the examination angle | L= <input type="text" value="520"/> mm= <input type="text" value="0.52"/> m |
| (5) The distance between the center of bolt and the center of gravity of the unit | Lg= <input type="text" value="270"/> mm(Lg≤L/2)= <input type="text" value="0.27"/> m |

4.The examination calculation (by rounding off to the first decimal place of each item)

- | | |
|---|---|
| (1) The horizontal seismic coefficient for designing | Kh= <input type="text" value="1.0"/> |
| (2) The vertical seismic coefficient for designing | Kv=Kh/2= <input type="text" value="0.5"/> |
| (3) The horizontal earthquake forces for designing | Fh=Kh·W·9.8= <input type="text" value="1171.1"/> N |
| (4) The vertical earthquake forces for designing | Fv=Kv·W·9.8= <input type="text" value="585.55"/> N |
| (5) The withdrawal strength of the anchor bolt | $R_b = \frac{F_h \cdot H_g - (W \cdot 9.8 - F_v) \cdot L_g}{L \cdot N_t}$
= <input type="text" value="399.8"/> N |
| (6) The shear forces of the anchor bolt | Q=Fh/N= <input type="text" value="292.775"/> N |
| (7) The stress arising to the anchor bolt | |
| 1.The tensile stress. | $\sigma = R_b/A =$ <input type="text" value="5.1"/> MPa < ft = 176.4 MPa |
| 2.The shearing stress. | $\tau = Q/A =$ <input type="text" value="3.8"/> MPa < fs = 132.3 MPa |
| 3.The stress when affected by both the shearing and the tensile at the same time. | fts=1.4ft-1.6τ = <input type="text" value="244.2"/> MPa
σ = <input type="text" value="5.1"/> MPa < fts= <input type="text" value="176.4"/> MPa |
| (8) The construction way of the anchor bolt | |
| 1.The construction way of the anchor bolt. | = <input type="text" value="Boxed J type anchor"/>  |
| 2.The thickness of the concrete. | = <input type="text" value="120"/> mm = <input type="text" value="0.120"/> m |
| 3.The length of buried part of bolt. | = <input type="text" value="70"/> mm = <input type="text" value="0.07"/> m |
| 4.The permissible withdrawal weight. | Ta= <input type="text" value="3136"/> N > Rb= <input type="text" value="399.8"/> N |

Since the results from the examination above, the anchor bolt has enough strength



8 Earthquake-proof strength analysis

Outdoor unit

1.Type:

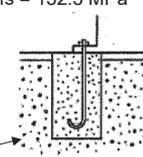
2.Model name:

3.Specification

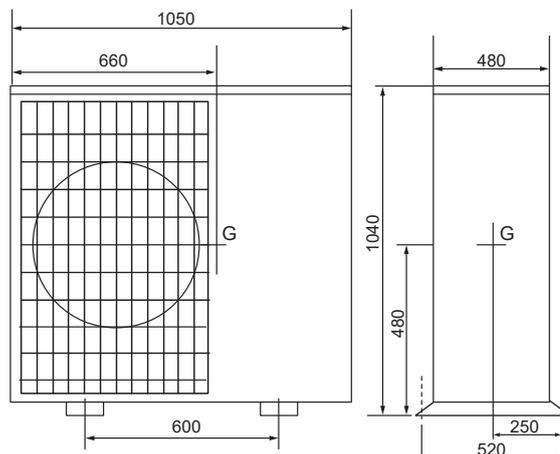
- | | |
|--|---|
| (1) Unit mass | W= <input type="text" value="131"/> kg |
| (2) Anchor bolt | |
| 1.The total number of bolts. | N= <input type="text" value="4"/> |
| 2.The size and shape. | "=M <input type="text" value="10"/> type |
| 3.The axis section area per one bolt. | A= <input type="text" value="78"/> mm ² = <input type="text" value="0.000078"/> m ² |
| 4.The total number of bolts in one side which be pulled stronger when the unit inverted. | Nt= <input type="text" value="2"/> |
| (3) The height between the installing surface and the center of gravity of the unit | Hg= <input type="text" value="480"/> mm= <input type="text" value="0.48"/> m |
| (4) The bolt-span from the examination angle | L= <input type="text" value="520"/> mm= <input type="text" value="0.52"/> m |
| (5) The distance between the center of bolt and the center of gravity of the unit | Lg= <input type="text" value="250"/> mm(Lg≤L/2)= <input type="text" value="0.25"/> m |

4.The examination calculation (by rounding off to the first decimal place of each item)

- | | |
|---|---|
| (1) The horizontal seismic coefficient for designing | Kh= <input type="text" value="1.0"/> |
| (2) The vertical seismic coefficient for designing | Kv=Kh/2= <input type="text" value="0.5"/> |
| (3) The horizontal earthquake forces for designing | Fh=Kh·W·9.8= <input type="text" value="1283.8"/> N |
| (4) The vertical earthquake forces for designing | Fv=Kv·W·9.8= <input type="text" value="641.9"/> N |
| (5) The withdrawal strength of the anchor bolt | $R_b = \frac{F_h \cdot H_g - (W \cdot 9.8 - F_v) \cdot L_g}{L \cdot N_t}$
= <input type="text" value="438.2"/> N |
| (6) The shear forces of the anchor bolt | Q=Fh/N= <input type="text" value="320.95"/> N |
| (7) The stress arising to the anchor bolt | |
| 1.The tensile stress. | $\sigma = R_b/A =$ <input type="text" value="5.6"/> MPa < $f_t = 176.4$ MPa |
| 2.The shearing stress. | $\tau = Q/A =$ <input type="text" value="4.1"/> MPa < $f_s = 132.3$ MPa |
| 3.The stress when affected by both the shearing and the tensile at the same time. | $f_{ts} = 1.4f_t - 1.6\tau =$ <input type="text" value="244.2"/> MPa
$\sigma =$ <input type="text" value="5.6"/> MPa < $f_{ts} =$ <input type="text" value="176.4"/> MPa |
| (8) The construction way of the anchor bolt | |
| 1.The construction way of the anchor bolt. | = <input type="text" value="Boxed J type anchor"/> |
| 2.The thickness of the concrete. | = <input type="text" value="120"/> mm = <input type="text" value="0.120"/> m |
| 3.The length of buried part of bolt. | = <input type="text" value="70"/> mm = <input type="text" value="0.07"/> m |
| 4.The permissible withdrawal weight. | Ta= <input type="text" value="3136"/> N > Rb= <input type="text" value="438.2"/> N |



Since the results from the examination above, the anchor bolt has enough strength



9 Error code table

Display	Contents to be inspected (During operation)
U1	Abnormal high pressure (63H operated)
U2	Abnormal temperature of discharge/Comp. Surface, shortage of refrigerant
U3	Open/short (TH4, TH33)
U4	Open/short (TH3, TH6, TH7, TH8), TH3 thermistor loose
U5	Abnormal temperature of heatsink
U6	Abnormality in power module
U7	Abnormal super heat
U8	Abnormality in outdoor fan motor
U9	Voltage error, Current sensor error (Input current)
Ud	Overheat error
UF	Compressor overcurrent shutoff (When Comp. locked)
UH	Current sensor error (Comp. current), Input overcurrent shutoff
UL	Abnormal low pressure (63L operated)
UP	Compressor overcurrent shutoff
P4	Drain sensor abnormality, Contact failure of drain float switch
P5	Drain over flow protection
P6	Freezing/overheating protection
P8	Abnormality temperature of pipe
PA	Water leakage
Pb	Fan trouble (Indoor unit)
PE	Abnormal temperature of inlet water
Ed	Serial communication error
EA, Eb, EC	Incorrect wiring indoor / outdoor unit connection
E6 - E9	Indoor / Outdoor unit communication error
E0, E3 - E5	Remote communication error
EE, EF	Combination error, undefined error
A0	Duplex address error
A2	Transmission processor hardware error
A3	Transmission bus BUSY error
A6	Signal communication error with transmission processor
A7	No ACK error
A8	No response frame error
L6	Circulation water freeze protection

Display	Contents to be inspected (When power is turned on)
F3	63L connector (red) open
F5	63H connector (yellow) open
F9	2 connectors (63H and 63L) open
FC	Outdoor control system error

10 Installation location

1. Selecting the installation location

Outdoor unit

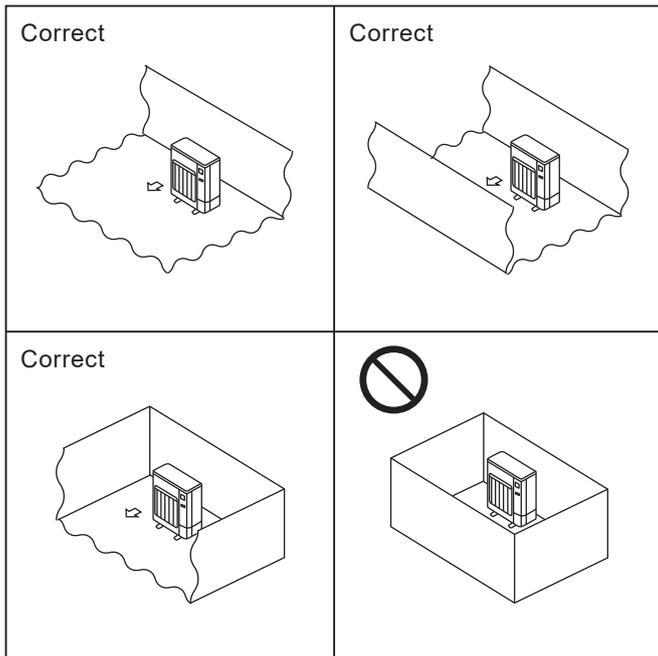


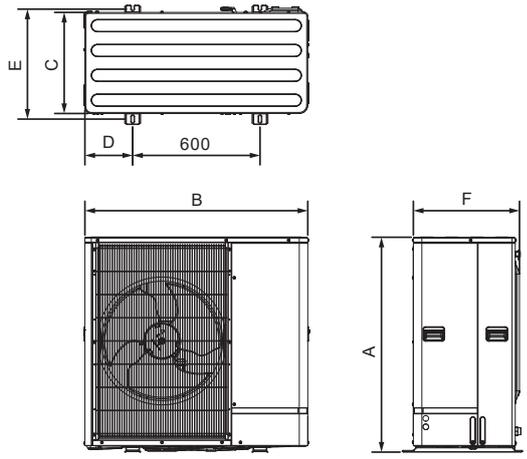
Fig. 1-1

1.1. Choosing the outdoor unit installation location

- R290 is heavier than air—as well as other refrigerants—so tends to accumulate at the base (in the vicinity of the floor). If R290 accumulates around base, it may reach a flammable concentration in case room is small. To avoid ignition, maintaining a safe work environment is required by ensuring appropriate ventilation. If a refrigerant leak is confirmed in a room or an area where there is insufficient ventilation, refrain from using of flames until the work environment can be improved by ensuring appropriate ventilation.
- Avoid locations exposed to direct sunlight or other sources of heat.
- Select a location from which noise emitted by the unit will not inconvenience neighbors.
- Select a location permitting easy wiring and pipe access to the power source and indoor unit.
- Avoid locations where combustible gases may leak, be produced, flow, or accumulate.
- Note that water may drain from the unit during operation.
- Select a level location that can bear the weight and vibration of the unit.
- Avoid locations where the unit can be covered by snow. In areas where heavy snow fall is anticipated, special precautions such as raising the installation location or installing a hood on the air intake must be taken to prevent the snow from blocking the air intake or blowing directly against it. This can reduce the airflow and a malfunction may result.
- Avoid locations exposed to oil, steam, or sulfuric gas.
- Use the transportation handles of the outdoor unit to transport the unit. If the unit is carried from the bottom, hands or fingers may be pinched.
- Refrigerant pipes connection shall be accessible for maintenance purposes.
- Install outdoor units in a place where at least one of the four sides is open, and in a sufficiently large space without depressions. (Fig. 2-1)
- Define a protective zone close around the unit according to section “3. Protective zone”.

⚠ CAUTION:

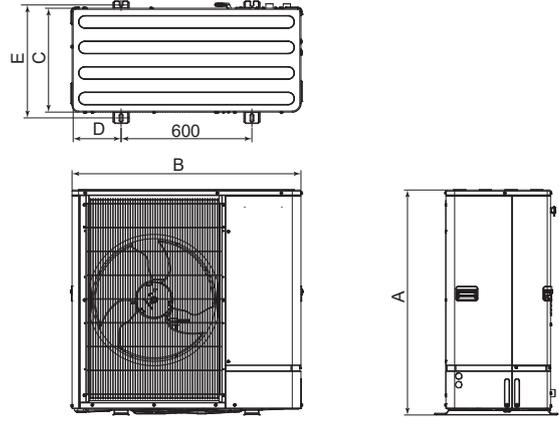
- **Perform grounding.**
Do not connect the ground wire to a gas pipe, water pipe arrester or telephone ground wire. Defective grounding could cause an electric shock.
- **Do not install the unit in a place where an inflammable gas leaks.**
If gas leaks and accumulates in the area surrounding the unit, it could cause an explosion.
- **Install a ground leakage breaker depending on the installation place (where it is humid).**
If a ground leakage breaker is not installed, it could cause an electric shock.
- **Perform the drainage/piping work securely according to the Installation Manual.**
If there is a defect in the drainage/piping work, water could drop from the unit and household goods could be wet and damaged.



Models	A	B	C	D	E	F
50	1020	1050	480	225	520	500
60	1020	1050	480	225	520	500
80	1020	1050	480	225	520	500

Fig. 1-2-1

2.2. Outline dimensions (Outdoor unit) (Fig. 1-2)



Models	A	B	C	D	E
85/100/120	1040	1050	480	225	520

Fig. 1-2-2

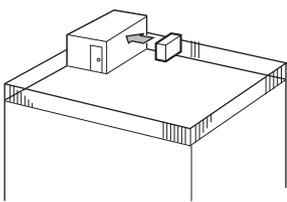


Fig. 1-3

2.3. Ventilation and service space

2.3.1. Windy location installation

When installing the outdoor unit on a rooftop or other location unprotected from the wind, situate the air outlet of the unit so that it is not directly exposed to strong winds. Strong wind entering the air outlet may impede the normal airflow and a malfunction may result.

The following shows three examples of precautions against strong winds.

- (1) Face the air outlet towards the nearest available wall 35 cm away from the wall. (Fig. 1-3)
- (2) Install an air guide if the unit is installed in a location where strong winds from a typhoon, etc. may directly enter the air outlet. (Fig. 1-4)
 - A: Air Protect Guide
- (3) Position the unit so that the air outlet blows perpendicularly to the direction of the wind. (Fig. 1-5)
 - B: Wind direction

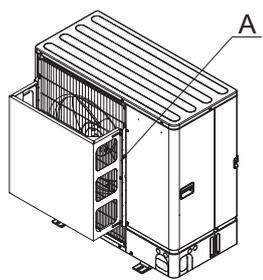


Fig. 1-4

2.3.2. When installing a single outdoor unit

Minimum dimensions are as follows, except for Max., meaning Maximum dimensions, indicated.

Refer to the figures for each case.

- (1) Obstruction or closed surface at rear only (Fig. 1-6)
- (2) Obstructions or closed surfaces at rear and above only (Fig. 1-7)
 - Do not install an air outlet guide for upward airflow.
- (3) Obstructions or closed surfaces at rear and sides only (Fig. 1-8)
- (4) Obstruction or closed surface at front only (Fig. 1-9)
- (5) Obstructions or closed surfaces at front and rear only (Fig. 1-10)
- (6) Obstructions or closed surfaces at rear, sides, and above only (Fig. 1-11)
 - Do not install an air outlet guide for upward airflow.

2.3.3. When installing multiple outdoor units

Leave a space of no less than 50 mm between the units.

Refer to the figures for each case.

- (1) Obstruction or closed surface at rear only (Fig. 1-12)
- (2) Obstructions or closed surfaces at rear and above only (Fig. 1-13)
 - No more than 3 units must be installed side by side. In addition, leave space as shown.
 - C: Space (Fig. 1-13)
 - Do not install air outlet guides for upward airflow.
- (3) Obstruction or closed surface at front only (Fig. 1-14)
- (4) Obstructions or closed surfaces at front and rear only (Fig. 1-15)
- (5) Single parallel unit arrangement (Fig. 1-16)
 - * When using air outlet guides installed for upward airflow, the distance between the frontal faces of the units should be no less than 500 mm.
- (6) Multiple parallel unit arrangement (Fig. 1-17)
 - * When using air outlet guides installed for upward airflow, the distance between the frontal faces of the units should be no less than 1000 mm.
- (7) Stacked unit arrangement (Fig. 1-18)
 - The units can be stacked up to two units high.
 - No more than 2 stacked units must be installed side by side. In addition, leave space as shown.
 - D: Space (Fig. 1-18)

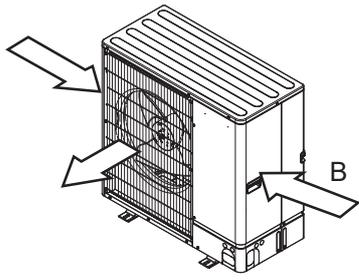


Fig. 1-5

10 Installation location

Outdoor unit

UNIT : mm

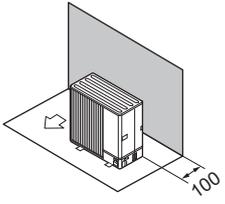


Fig. 1-6

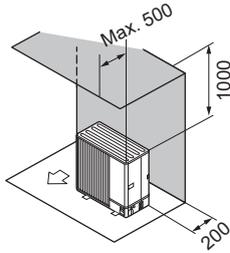


Fig. 1-7

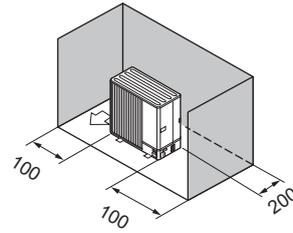


Fig. 1-8

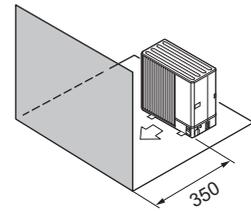


Fig. 1-9

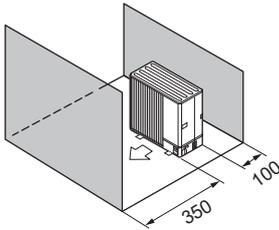


Fig. 1-10

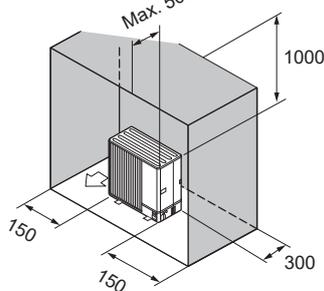


Fig. 1-11

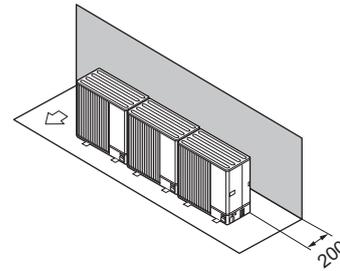


Fig. 1-12

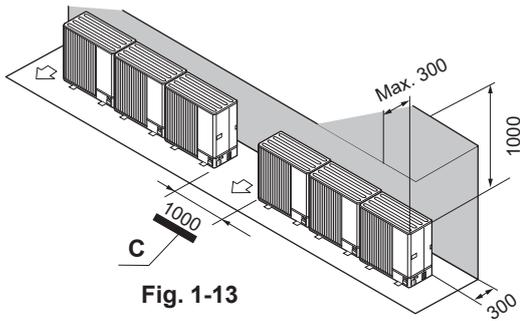


Fig. 1-13

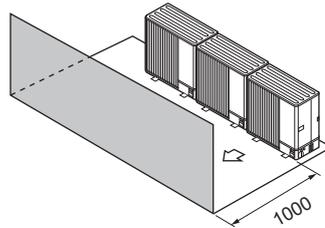


Fig. 1-14

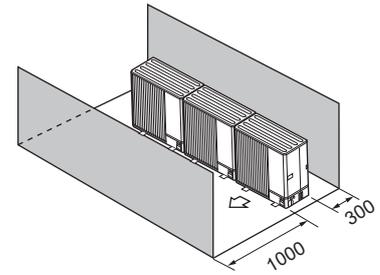


Fig. 1-15

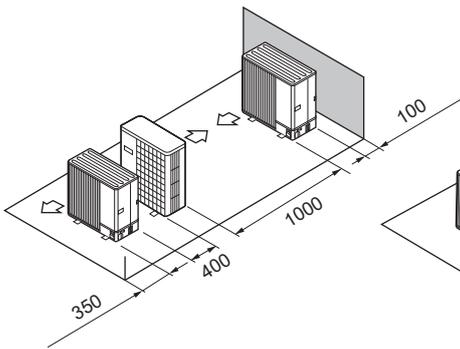


Fig. 1-16

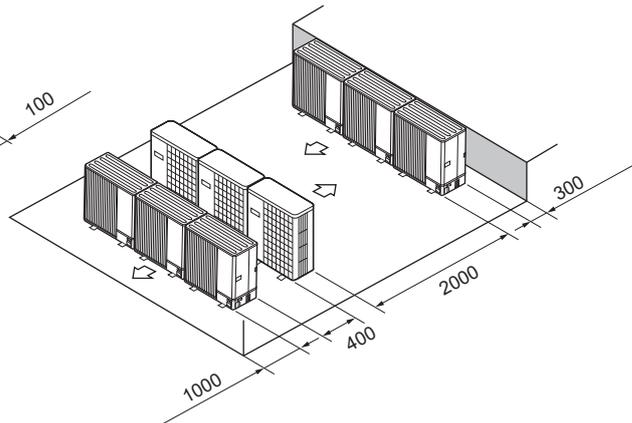


Fig. 1-17

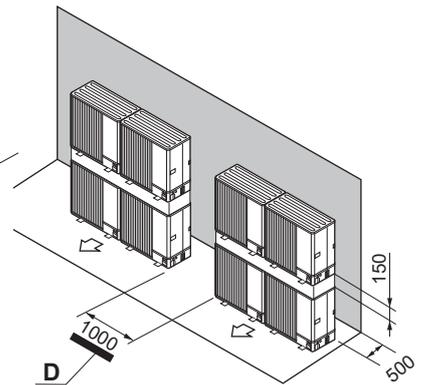


Fig. 1-18

10 Installation location

○ 1.4. Minimum installation area

⚠ CAUTION:

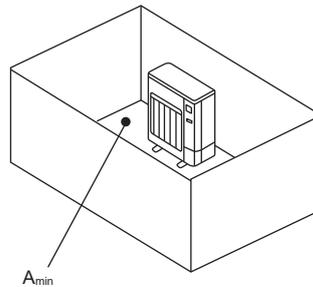
If despite the instructions delineated in section "1. Safety precautions" of this Installation Manual you elect to install a unit in a space where all four sides are blocked and/or there are obstructions, you do so of your own risk and volition. Mitsubishi Electric does not warrant or represent the functionality; specification; quality; accuracy; or output deriving from any such unit installed in such a way and shall not be liable for any resulting cost or damage. In the event you still choose to install the unit(s) in such a space, we recommend that you accord with one of the following situations (A, B or C) below, to increase the likelihood of the unit's function in accordance with its specification.

Note: The following recommended Situations are provided solely for the installer to consider safe operations, and do not warrant or guarantee the unit performance against its specification.

A) Secure sufficient installation space (minimum installation area A_{min}).

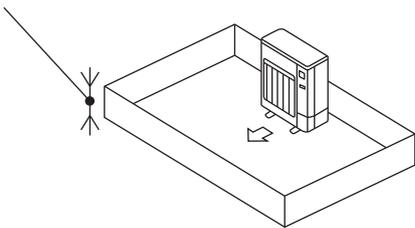
Install in a space with an installation area of A_{min} or more, corresponding to refrigerant quantity M (factory-charged refrigerant + locally added refrigerant).

M [kg]	A_{min} [m ²]
0.6	44
0.8	58
1.0	72
1.5	108
2.0	143

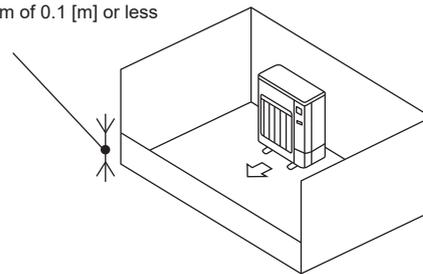


B) Install in a space with a depression height of ≤ 0.1 [m].

Height from the bottom of 0.1 [m] or less



Height from the bottom of 0.1 [m] or less

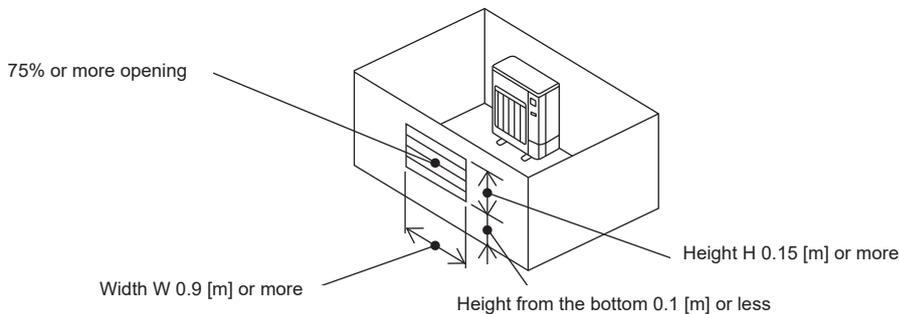


C) Create an opening in the closed face in front of the unit to enable ventilation in the area, ensuring to follow all professional safety instructions and equipment requirements when making the opening through drilling or otherwise.

Make sure that the width of the open area is 0.9 [m] or more and the height of the open area is 0.15 [m] or more.

However, the height from the bottom of the installation space to the bottom edge of the open area should be 0.1 [m] or less.

Open area should be 75% or more opening.



Note: This countermeasure is for keeping safety and specification is not guaranteed.

10 Installation location

2. Installation diagram

Outdoor unit

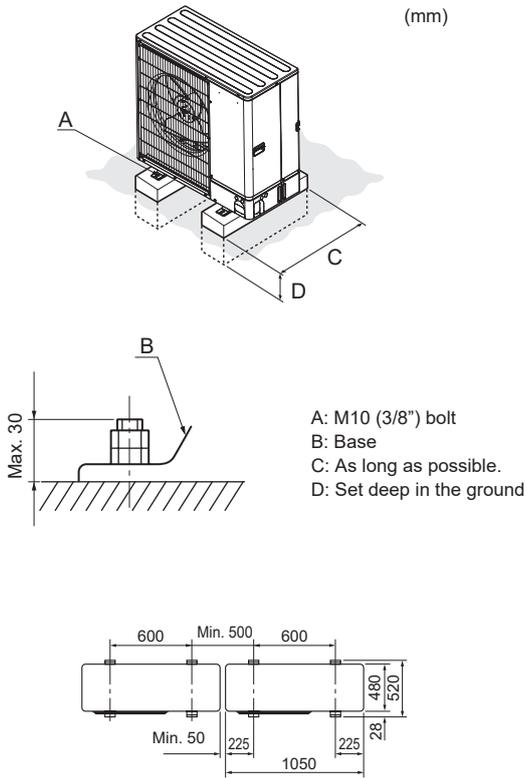


Fig. 2-1

- Be sure to install the unit in a sturdy, level surface to prevent rattling noises during operation. (Fig. 2-1)

<Foundation specifications>

Foundation bolt	M10 (3/8")
Thickness of concrete	120 mm
Length of bolt	70 mm
Weight-bearing capacity	320 kg

- Make sure that the length of the foundation bolt is within 30 mm of the bottom surface of the base.
- Secure the base of the unit firmly with four-M10 foundation bolts in sturdy locations.

Installing the outdoor unit

- In addition to the unit base, use the installation holes on the back of the unit to attach wires, etc., if necessary to install the unit. Use self-tapping screws (ø5 × 15 mm or less) and install on site.

⚠ WARNING:

- **The unit must be securely installed on a structure that can sustain its weight. If the unit is mounted on an unstable structure, it may fall down and cause damage or injuries.**
- **The unit must be installed according to the instructions in order to minimize the risk of damage from earthquakes, typhoons, or strong winds. An incorrectly installed unit may fall down and cause damage or injuries.**
- **Be sure to install the unit according to section "2. Installation location and 3. Protective zone".**
- **There must be no ignition sources in the protective zone.**
- **Take care that the tools used and work clothes do not become a source of ignition.**
- **The area shall be checked by the installer for refrigerant leak with a refrigerant detector prior to and during work in the protective zone.**
- **In the event of refrigerant leakage, to do as follows:**
 - Evacuate any people from the danger zone.
 - From a safe position, switch off the electricity supply for all system components.
 - Remove ignition sources from the danger zone.
 - Do not operate the unit until repairs are completed.
- **Wear protective equipment when touching the bottom of the outdoor unit.**
Failure to do so could cause injuries.

⚠ CAUTION:

- **Install the unit on a rigid structure to prevent excessive operation sound or vibration.**

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1 Combination table

Hydro-Split indoor/outdoor unit combination		R290								
		PUZ-WZ50VAA	PUZ-WZ60VAA	PUZ-WZ80VAA	PUZ-WZ85VAA(-BS)	PUZ-WZ85YAA(-BS)	PUZ-WZ100VAA(-BS)	PUZ-WZ100YAA(-BS)	PUZ-WZ120VAA(-BS)	PUZ-WZ120YAA(-BS)
Heating only Cylinder	EHPT17X-VM2E	●	●	●	●	●				
	EHPT17X-VM6E	●	●	●	●	●				
	EHPT17X-YM9E	●	●	●	●	●				
	EHPT20X-YM9E	●	●	●	●	●	●	●	●	●
	EHPT20X-TM9E	●	●	●	●	●	●	●	●	●
	EHPT20X-MEHEW	●	●	●	●	●	●	●	●	●
	EHPT30X-YM9EE	●	●	●	●	●	●	●	●	●
Reversible Cylinder	ERPT17X-VM2E	●	●	●	●	●	●	●	●	●
	ERPT20X-VM2E	●	●	●	●	●	●	●	●	●
	ERPT20X-VM6E	●	●	●	●	●	●	●	●	●
	ERPT20X-YM9E	●	●	●	●	●	●	●	●	●
	ERPT30X-VM2EE	●	●	●	●	●	●	●	●	●
	ERPT30X-VM6EE	●	●	●	●	●	●	●	●	●
	ERPT30X-YM9EE	●	●	●	●	●	●	●	●	●
Reversible Hydrobox	ERPX-ME	●	●	●	●	●	●	●	●	●
	ERPX-VM2E	●	●	●	●	●	●	●	●	●
	ERPX-VM6E	●	●	●	●	●	●	●	●	●
	ERPX-YM9E	●	●	●	●	●	●	●	●	●

●: Combination is available.

Blank: Combination is NOT available.

2 Specifications

2.1. Cylinder unit

Model name				EHPT17X-VM2E	EHPT17X-VM6E	EHPT17X-VM9E	EHPT20X-VM9E	EHPT20X-TM9E	
Dimensions	Without package	Height	mm	1400	1400	1400	1600	1600	
		Width	mm	595	595	595	595	595	
		Depth	mm	680	680	680	680	680	
	With package	Height	mm	1670	1670	1670	1850	1850	
		Width	mm	660	660	660	660	660	
		Depth	mm	800	800	800	800	800	
Casing	Munsell	-	6.2PB 9/0.9						
	RAL code	-	260 90 05	260 90 05	260 90 05	260 90 05	260 90 05		
	Material	-	Pre-coated metal						
Product weight (empty)		kg	83	84	85	90	90		
Product weight (full)		kg	258	259	263	299	299		
Water volume of heating circuit in the unit *1		L	3.2	3.2	5.5	6.0	6.0		
Type of Installation		-	Floor standing						
Electrical data	Control board *2 (Including 4 pumps)	Power supply	Ph	~N	~N	~N	~N	~N	
			V	230	230	230	230	230	
			Hz	50	50	50	50	50	
		Input	kW	0.30	0.30	0.30	0.30	0.30	
		Current	A	1.95	1.95	1.95	1.95	1.95	
		Breaker	A	10	10	10	10	10	
	Booster heater	Power supply	Ph	~N	~N	3~	3~	3~	
			V	230	230	400	400	230	
			Hz	50	50	50	50	50	
		Capacity	kW	2	2+4	3+6	3+6	3+6	
		Heater step	-	1	3	3	3	3	
		Breaker	A	9	26	13	13	23	
	Immersion heater	Power supply	Ph	-	-	-	-	-	
			V	-	-	-	-	-	
			Hz	-	-	-	-	-	
		Capacity	kW	-	-	-	-	-	
		Current	A	-	-	-	-	-	
		Breaker	A	-	-	-	-	-	
	Water circulation pump (Primary circuit)	Type	-	DC motor	DC motor	DC motor	DC motor	DC motor	
			Speed 1	W	10/13/14	10/13/14	10/13/14	10/13/15	10/13/15
			Speed 2	W	16/21/24	16/21/24	16/21/24	16/21/27	16/21/27
			Speed 3	W	24/32/36	24/32/36	24/32/36	24/32/42	24/32/42
			Speed 4	W	34/46/54	34/46/54	34/46/54	34/46/58	34/46/58
			Speed 5	W	47/58/60	47/58/60	47/58/60	47/58/60	47/58/60
Performance curve: please refer to the following page	Current (10/20/max L/min)*3	Speed 1	A	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3	
		Speed 2	A	0.2/0.3/0.4	0.2/0.3/0.4	0.2/0.3/0.4	0.2/0.3/0.4	0.2/0.3/0.4	
		Speed 3	A	0.3/0.4/0.5	0.3/0.4/0.5	0.3/0.4/0.5	0.3/0.4/0.5	0.3/0.4/0.5	
		Speed 4	A	0.4/0.5/0.6	0.4/0.5/0.6	0.4/0.5/0.6	0.4/0.5/0.6	0.4/0.5/0.6	
		Speed 5	A	0.5/0.6/0.6	0.5/0.6/0.6	0.5/0.6/0.6	0.5/0.6/0.6	0.5/0.6/0.6	
		Water circulation pump (DHW circuit)	Input	Speed I	W	55	55	55	58
Speed II	W	69		69	69	72	72		
Speed III	W	80		80	80	83	83		
Current	Speed I	A	0.25	0.25	0.25	0.27	0.27		
	Speed II	A	0.31	0.31	0.31	0.33	0.33		
	Speed III	A	0.34	0.34	0.34	0.36	0.36		
Flow rate	Speed I	L/min	13.5	13.5	13.5	14.5	14.5		
	Speed II	L/min	19.0	19.0	19.0	21.0	21.0		
	Speed III	L/min	22.9	22.9	22.9	25.2	25.2		
Flow rate	Primary circuit	Max.*4	L/min	25.8	25.8	25.8	36.9	36.9	
		Min.*5	L/min	5.0	5.0	5.0	5.0	5.0	
Domestic hot water tank	Volume	L	170	170	170	200	200		
	Material	-	Duplex 2304 stainless steel (EN10088)						
	Declared load profile	-	L	L	L	L	L		
Expansion vessel (Primary circuit)	Volume	L	12	12	12	12	12		
	Charge pressure	MPa	0.1	0.1	0.1	0.1	0.1		
Safety device	Primary circuit	Control thermistor	°C	1 to 80	1 to 80	1 to 80	1 to 80	1 to 80	
		Pressure relief valve	MPa	0.3	0.3	0.3	0.3	0.3	
		Flow sensor (Min. flow)	L/min	5.0	5.0	5.0	5.0	5.0	
		BH manual reset thermostat	°C	90	90	90	90	90	
		BH thermal Cut Off	°C	121	121	121	121	121	
	DHW tank	Control thermistor	°C	75	75	75	75	75	
		IH manual reset thermostat	°C	-	-	-	-	-	
		Temperature & pressure relief valve	°C	-	-	-	-	-	
			MPa	1.0	1.0	1.0	1.0	1.0	
		Connections	Water	Primary circuit for local system	-	G1	G1	G1	G1
Primary circuit for outdoor unit	-	φ28 mm		φ28 mm	φ28 mm	φ28 mm	φ28 mm		
DHW circuit	-	G3/4		G3/4	G3/4	G3/4	G3/4		
Refrigerant	Gas	mm	-	-	-	-	-		
	Liquid	mm	-	-	-	-	-		
Refrigerant *6	-	R718	R718	R718	R718	R718			
Guaranteed operating range *7	Ambient	°C	0 to 35						
		%RH	≤ 80	≤ 80	≤ 80	≤ 80	≤ 80		
Operating range	Heating	Heating	°C	See outdoor unit spec table.					
		Cooling *8	°C	-					
	Room temperature	Room temperature	°C	10 to 30	10 to 30	10 to 30	10 to 30	10 to 30	
		Flow temperature *10, 11	°C	20 to 75	20 to 75	20 to 75	20 to 75	20 to 75	
	Cooling	Room temperature	°C	-	-	-	-	-	
		Flow temperature *10, 11	°C	-	-	-	-	-	
DHW *9	°C	40 to 70	40 to 70	40 to 70	40 to 70	40 to 70			
Legionella prevention *9	°C	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70			
Sound power level (PWL)		dB(A)	40	40	40	40	40		

*1 Volume of sanitary water circuit, primary DHW circuit (from 3-way valve to confluent point with Heating circuit), piping to Expansion vessel, and Expansion vessel is not included in this value.
 *2 When powered by an independent source.
 *3 Allowable flow rate range differs depending on connected outdoor unit.
 *4 If the water flow rate range exceeds maximum, the flow speed will be greater than 2.0 m/s, which could corrode the pipes.
 *5 If the water flow is less than the minimum, the flow error will be activated.
 *6 Refrigerant of outdoor unit connected to cylinder unit.
 *7 The environment must be frost-free.
 *8 See outdoor unit spec table (min, 10°C). Cooling mode is not available in low outdoor temperature. If you use our system in cooling mode at the low ambient temperature (10°C or below), there are some risks of plate heat exchanger damages by frozen water.
 *9 For the model without both booster heater and immersion heater, the max. hot water temperature is [Max. outlet water of outdoor unit -3 °C]. For the max. outlet of outdoor unit spec table.
 *10 Maximum temperature of E****F model depending on the connected outdoor unit. PUZ: 70°C. Other: 60°C.
 *11 Maximum temperature of E****X model depending on the connected outdoor unit. WZ: 75°C. Other: 60°C.

2 Specifications

Model name				EHPT20X-MEHEW	EHPT30X-YM9EE	ERPT17X-VM2E	ERPT20X-VM2E	ERPT20X-VM6E	
Dimensions	Without package	Height	mm	1600	2050	1400	1600	1600	
		Width	mm	595	595	595	595	595	
		Depth	mm	680	680	680	680	680	
	With package	Height	mm	1850	2320	1670	1850	1850	
		Width	mm	660	660	660	660	660	
		Depth	mm	800	800	800	800	800	
Casing	Munsell		-	6.2PB 9/0.9	6.2PB 9/0.9	6.2PB 9/0.9	6.2PB 9/0.9	6.2PB 9/0.9	
	RAL code		-	260 90 05	260 90 05	260 90 05	260 90 05	260 90 05	
	Material		-	Pre-coated metal	Pre-coated metal	Pre-coated metal	Pre-coated metal	Pre-coated metal	
Product weight (empty)			kg	81	105	84	88	89	
Product weight (full)			kg	287	415	260	294	295	
Water volume of heating circuit in the unit *1			L	3.7	6.7	3.2	3.7	3.7	
Type of Installation				-	Floor standing	Floor standing	Floor standing	Floor standing	
Electrical data	Control board *2 (Including 4 pumps)	Power supply	Ph	~N	~N	~N	~N	~N	
			V	230	230	230	230	230	
			Hz	50	50	50	50	50	
		Input	kW	0.30	0.30	0.30	0.30	0.30	
			Current	A	1.95	1.95	1.95	1.95	1.95
			Breaker	A	10	10	10	10	10
	Booster heater	Power supply	Ph	-	3~	~N	~N	~N	
			V	-	400	230	230	230	
			Hz	-	50	50	50	50	
		Capacity	kW	-	3+6	2	2	2+4	
			Heater step	-	-	3	1	3	
			Current	A	-	13	9	9	26
	Breaker	A	-	16	16	16	32		
		Immersion heater	Power supply	Ph	~N	-	-	-	-
				V	230	-	-	-	-
	Hz			50	-	-	-	-	
	Capacity		kW	3	-	-	-	-	
			Current	A	13	-	-	-	-
Breaker			A	16	-	-	-	-	
Water circulation pump (Primary circuit)	Type		-	DC motor	DC motor	DC motor	DC motor	DC motor	
		Input (10/20/max L/min)*3	Speed 1	W	10/13/15	10/13/15	10/13/14	10/13/15	10/13/15
			Speed 2	W	16/21/27	16/21/27	16/21/24	16/21/27	16/21/27
			Speed 3	W	24/32/42	24/32/42	24/32/36	24/32/42	24/32/42
			Speed 4	W	34/46/58	34/46/58	34/46/54	34/46/58	34/46/58
			Speed 5	W	47/58/60	47/58/60	47/58/60	47/58/60	47/58/60
	Current (10/20/max L/min)*3	Speed 1	A	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3	
		Speed 2	A	0.2/0.3/0.4	0.3/0.4/0.5	0.2/0.3/0.4	0.2/0.3/0.4	0.2/0.3/0.4	
		Speed 3	A	0.3/0.4/0.5	0.4/0.5/0.7	0.3/0.4/0.5	0.3/0.4/0.5	0.3/0.4/0.5	
		Speed 4	A	0.4/0.5/0.6	0.6/0.8/1.0	0.4/0.5/0.6	0.4/0.5/0.6	0.4/0.5/0.6	
		Speed 5	A	0.5/0.6/0.6	0.9/1.1/1.4	0.5/0.6/0.6	0.5/0.6/0.6	0.5/0.6/0.6	
		Water circulation pump (DHW circuit)	Input	Speed I	W	58	58	58	58
Speed II	W			72	72	69	72	72	
Speed III	W			83	83	80	83	83	
Current	Speed I		A	0.27	0.27	0.25	0.27	0.27	
	Speed II		A	0.33	0.33	0.31	0.33	0.33	
	Speed III		A	0.36	0.36	0.34	0.36	0.36	
Flow rate	Speed I		L/min	14.5	14.5	13.5	14.5	14.5	
	Speed II		L/min	21.0	21.0	19.0	21.0	21.0	
	Speed III		L/min	25.2	25.2	22.9	25.2	25.2	
Flow rate	Primary circuit		Max.*4	L/min	36.9	36.9	25.8	36.9	36.9
			Min.*5	L/min	5.0	5.0	5.0	5.0	5.0
Domestic hot water tank	Volume		L	200	300	170	200	200	
	Material	-	Duplex 2304 stainless steel (EN10088)						
	Declared load profile	-	L	XL	L	L	L		
Expansion vessel (Primary circuit)	Volume	L	-	-	12	12	12		
	Charge pressure	MPa	-	-	0.1	0.1	0.1		
Safety device	Primary circuit	Control thermistor	°C	1 to 80	1 to 80	1 to 80	1 to 80	1 to 80	
		Pressure relief valve	MPa	0.3	0.3	0.3	0.3	0.3	
		Flow sensor (Min. flow)	L/min	5.0	5.0	5.0	5.0	5.0	
		BH manual reset thermostat	°C	-	90	90	90	90	
		BH thermal Cut Off	°C	-	121	121	121	121	
	DHW tank	Control thermistor	°C	75	75	75	75	75	
		IH manual reset thermostat	°C	85	-	-	-	-	
		Temperature & pressure relief valve	°C	90	-	-	-	-	
			MPa	0.7	1.0	1.0	1.0	1.0	
			mm	-	-	-	-	-	
Connections	Water	Primary circuit for local system	-	G1	G1	G1	G1	G1	
		Primary circuit for outdoor unit	-	φ28 mm	φ28 mm	φ28 mm	φ28 mm	φ28 mm	
		DHW circuit	-	G3/4	G3/4	G3/4	G3/4	G3/4	
	Refrigerant	Gas	mm	-	-	-	-	-	
		Liquid	mm	-	-	-	-	-	
				-	-	-	-	-	
Refrigerant *6		-	R718	R718	R718	R718	R718		
Guaranteed operating range *7	Ambient	°C	0 to 35						
		%RH	≤ 80	≤ 80	≤ 80	≤ 80	≤ 80		
	Outdoor temperature	Heating	°C	-	-	See outdoor unit spec table.			
Operating range	Heating	Room temperature	°C	10 to 30	10 to 30	10 to 30	10 to 30	10 to 30	
		Flow temperature *10, 11	°C	20 to 60	20 to 75	20 to 75	20 to 75	20 to 75	
	Cooling	Room temperature	°C	-	-	-	-	-	
		Flow temperature *10, 11	°C	-	-	5 to 25	5 to 25	5 to 25	
	DHW *9	°C	40 to 60	40 to 70	40 to 70	40 to 70	40 to 70		
	Legionella prevention *9	°C	60 to 70						
Sound power level (PWL)		dB(A)	40	40	40	40	40		

*1 Volume of sanitary water circuit, primary DHW circuit (from 3-way valve to confluent point with Heating circuit), piping to Expansion vessel, and Expansion vessel is not included in this value.

*2 When powered by an independent source.

*3 Allowable flow rate range differs depending on connected outdoor unit.

*4 If the water flow rate range exceeds maximum, the flow speed will be greater than 2.0 m/s, which could corrode the pipes.

*5 If the water flow is less than the minimum, the flow error will be activated.

*6 Refrigerant of outdoor unit connected to cylinder unit.

*7 The environment must be frost-free.

*8 See outdoor unit spec table (min, 10°C). Cooling mode is not available in low outdoor temperature. If you use our system in cooling mode at the low ambient temperature (10°C or below), there are some risks of plate heat exchanger damages by frozen water.

*9 For the model without both booster heater and immersion heater, the max. hot water temperature is [Max. outlet water of outdoor unit -3 °C]. For the max. outlet of outdoor unit spec table.

*10 Maximum temperature of E****F model depending on the connected outdoor unit. PUZ: 70°C, Other: 60°C.

*11 Maximum temperature of E****X model depending on the connected outdoor unit. WZ: 75°C. Other: 60°C.

2 Specifications

Model name			ERPT20X-YM9E	ERPT30X-VM2EE	ERPT30X-VM6EE	ERPT30X-YM9EE		
Dimensions	Without package	Height	mm	1600	2050	2050	2050	
		Width	mm	595	595	595	595	
		Depth	mm	680	680	680	680	
	With package	Height	mm	1850	2320	2320	2320	
		Width	mm	660	660	660	660	
		Depth	mm	800	800	800	800	
Casing	Munsell	-	6.2PB 9/0.9	6.2PB 9/0.9	6.2PB 9/0.9	6.2PB 9/0.9		
	RAL code	-	260 90 05	260 90 05	260 90 05	260 90 05		
	Material	-	Pre-coated metal	Pre-coated metal	Pre-coated metal	Pre-coated metal		
Product weight (empty)		kg	90	104	105	106		
Product weight (full)		kg	299	411	412	416		
Water volume of heating circuit in the unit *1		L	6.0	4.4	4.4	6.7		
Type of Installation		-	Floor standing	Floor standing	Floor standing	Floor standing		
Electrical data	Control board *2 (Including 4 pumps)	Power supply	Ph	~N	~N	~N	~N	
			V	230	230	230	230	
			Hz	50	50	50	50	
		Input	kW	0.30	0.30	0.30	0.30	
			Current	A	1.95	1.95	1.95	1.95
			Breaker	A	10	10	10	10
	Booster heater	Power supply	Ph	3~	~N	~N	3~	
			V	400	230	230	400	
			Hz	50	50	50	50	
		Capacity	kW	3+6	2	2+4	3+6	
		Heater step	-	3	1	3	3	
		Current	A	13	9	26	13	
	Immersion heater	Power supply	Ph	-	-	-	-	
			V	-	-	-	-	
			Hz	-	-	-	-	
		Capacity	kW	-	-	-	-	
		Current	A	-	-	-	-	
		Breaker	A	-	-	-	-	
	Water circulation pump (Primary circuit)	Type	Input	-	DC motor	DC motor	DC motor	
			(10/20/max L/min)*3	Speed 1	W	10/13/15	10/13/15	10/13/15
				Speed 2	W	16/21/27	16/21/27	16/21/27
Speed 3				W	24/32/42	24/32/42	24/32/42	
Speed 4				W	34/46/58	34/46/58	34/46/58	
Speed 5				W	47/58/60	47/58/60	47/58/60	
Performance curve: please refer to the following page	Current (10/20/max L/min)*3	Speed 1	A	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3		
		Speed 2	A	0.2/0.3/0.4	0.3/0.4/0.5	0.3/0.4/0.5		
		Speed 3	A	0.3/0.4/0.5	0.4/0.5/0.7	0.4/0.5/0.7		
		Speed 4	A	0.4/0.5/0.6	0.6/0.8/1.0	0.6/0.8/1.0		
		Speed 5	A	0.5/0.6/0.6	0.9/1.1/1.4	0.9/1.1/1.4		
		Water circulation pump (DHW circuit)	Input	Speed I	W	58	58	58
Speed II	W			72	72	72		
Speed III	W			83	83	83		
Current	Speed I		A	0.27	0.27	0.27		
	Speed II		A	0.33	0.33	0.33		
	Speed III		A	0.36	0.36	0.36		
Flow rate	Speed I	L/min	14.5	14.5	14.5			
	Speed II	L/min	21.0	21.0	21.0			
	Speed III	L/min	25.2	25.2	25.2			
Flow rate	Primary circuit	Max.*4	L/min	36.9	36.9	36.9		
		Min.*5	L/min	5.0	5.0	5.0		
Domestic hot water tank	Volume	L	200	300	300	300		
	Material	-	Duplex 2304 stainless steel (EN10088)					
	Declared load profile	-	L	XL	XL	XL		
Expansion vessel (Primary circuit)	Volume	L	12	-	-	-		
	Charge pressure	MPa	0.1	-	-	-		
Safety device	Primary circuit	Control thermistor	°C	1 to 80	1 to 80	1 to 80	1 to 80	
		Pressure relief valve	MPa	0.3	0.3	0.3	0.3	
		Flow sensor (Min. flow)	L/min	5.0	5.0	5.0	5.0	
		BH manual reset thermostat	°C	90	90	90	90	
		BH thermal Cut Off	°C	121	121	121	121	
	DHW tank	Control thermistor	°C	75	75	75	75	
		IH manual reset thermostat	°C	-	-	-	-	
		Temperature & pressure relief valve	°C	-	-	-	-	
		MPa	1.0	1.0	1.0	1.0		
		Connections	Water	Primary circuit for local system	-	G1	G1	G1
Primary circuit for outdoor unit	-	φ28 mm		φ28 mm	φ28 mm			
DHW circuit	-	G3/4		G3/4	G3/4			
Refrigerant	Gas	mm	-	-	-	-		
	Liquid	mm	-	-	-	-		
Refrigerant *6	-	-	R718	R718	R718	R718		
Guaranteed operating range *7	Ambient	°C	0 to 35	0 to 35	0 to 35	0 to 35		
		%RH	≤ 80	≤ 80	≤ 80	≤ 80		
	Outdoor temperature	Heating	°C	See outdoor unit spec table.				
Operating range	Heating	Room temperature	°C	10 to 30	10 to 30	10 to 30	10 to 30	
		Flow temperature *10, 11	°C	20 to 75	20 to 75	20 to 75	20 to 75	
	Cooling	Room temperature	°C	-	-	-	-	
		Flow temperature *10, 11	°C	5 to 25	5 to 25	5 to 25	5 to 25	
	DHW *9	°C	40 to 70	40 to 70	40 to 70	40 to 70		
	Legionella prevention *9	°C	60 to 70	60 to 70	60 to 70	60 to 70		
Sound power level (PWL)	-	dB(A)	40	40	40	40		

*1 Volume of sanitary water circuit, primary DHW circuit (from 3-way valve to confluent point with Heating circuit), piping to Expansion vessel, and Expansion vessel is not included in this value.

*2 When powered by an independent source.

*3 Allowable flow rate range differs depending on connected outdoor unit.

*4 If the water flow rate range exceeds maximum, the flow speed will be greater than 2.0 m/s, which could corrode the pipes.

*5 If the water flow is less than the minimum, the flow error will be activated.

*6 Refrigerant of outdoor unit connected to cylinder unit.

*7 The environment must be frost-free.

*8 See outdoor unit spec table (min. 10°C). Cooling mode is not available in low outdoor temperature. If you use our system in cooling mode at the low ambient temperature (10°C or below), there are some risks of plate heat exchanger damages by frozen water.

*9 For the model without both booster heater and immersion heater, the max. hot water temperature is [Max. outlet water of outdoor unit -3 °C]. For the max. outlet of outdoor unit spec table.

*10 Maximum temperature of E****F model depending on the connected outdoor unit. PUZ: 70°C, Other: 60°C.

*11 Maximum temperature of E****X model depending on the connected outdoor unit. WZ: 75°C, Other: 60°C.

2 Specifications

2.2. Hydrobox

Model name				ERPX-ME	ERPX-VM2E	ERPX-VM6E	ERPX-YM9E		
Dimensions	Without package	Height	mm	800	800	800	800		
		Width	mm	530	530	530	530		
		Depth	mm	360	360	360	360		
	With package	Height	mm	560	560	560	560		
		Width	mm	600	600	600	600		
		Depth	mm	990	990	990	990		
Casing	Munsell		-	6.2PB 9/0.9	6.2PB 9/0.9	6.2PB 9/0.9	6.2PB 9/0.9		
	RAL code		-	260 90 05	260 90 05	260 90 05	260 90 05		
	Material		-	Pre-coated metal	Pre-coated metal	Pre-coated metal	Pre-coated metal		
Product weight (empty)			kg	29	31	33	33		
Product weight (full)			kg	30	36	38	38		
Water volume of heating circuit in the unit *1			L	1.0	4.5	4.5	4.5		
Type of Installation				Wall mounted	Wall mounted	Wall mounted	Wall mounted		
Electrical data	Control board *2 (Including 4 pumps)	Power supply	Ph	~N	~N	~N	~N		
			V	230	230	230	230		
			Hz	50	50	50	50		
		Input	kW	0.30	0.30	0.30	0.30		
			Current	A	1.95	1.95	1.95	1.95	
			Breaker	A	10	10	10	10	
	Booster heater	Power supply	Ph	-	~N	~N	3~		
			V	-	230	230	400		
			Hz	-	50	50	50		
		Capacity	kW	-	2	2+4	3+6		
		Heater step	-	-	1	3	3		
		Current	A	-	9	26	13		
	Immersion heater	Power supply	Ph	-	-	-	-		
			V	-	-	-	-		
			Hz	-	-	-	-		
		Capacity	kW	-	-	-	-		
		Current	A	-	-	-	-		
		Breaker	A	-	-	-	-		
	Water circulation pump (Primary circuit)	Type		-	DC motor	DC motor	DC motor	DC motor	
			Input (10/20/max L/min)*3	Speed 1	W	10/13/15	10/13/15	10/13/15	10/13/15
				Speed 2	W	16/21/27	16/21/27	16/21/27	16/21/27
				Speed 3	W	24/32/42	24/32/42	24/32/42	24/32/42
				Speed 4	W	34/46/58	34/46/58	34/46/58	34/46/58
				Speed 5 (Default setting)	W	47/58/60	47/58/60	47/58/60	47/58/60
Current (10/20/max L/min)*3		Speed 1	A	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3	0.2/0.2/0.3		
		Speed 2	A	0.2/0.3/0.4	0.2/0.3/0.4	0.2/0.3/0.4	0.2/0.3/0.4		
		Speed 3	A	0.3/0.4/0.5	0.3/0.4/0.5	0.3/0.4/0.5	0.3/0.4/0.5		
		Speed 4	A	0.4/0.5/0.6	0.4/0.5/0.6	0.4/0.5/0.6	0.4/0.5/0.6		
		Speed 5 (Default setting)	A	0.5/0.6/0.6	0.5/0.6/0.6	0.5/0.6/0.6	0.5/0.6/0.6		
		Water circulation pump (DHW circuit)	Input	Speed I	W	-	-	-	-
Speed II (Default setting)	W			-	-	-	-		
Speed III	W			-	-	-	-		
Current	Speed I		A	-	-	-	-		
	Speed II (Default setting)		A	-	-	-	-		
	Speed III		A	-	-	-	-		
Flow rate	Speed I		L/min	-	-	-	-		
	Speed II (Default setting)		L/min	-	-	-	-		
	Speed III		L/min	-	-	-	-		
Flow rate	Primary circuit	Max.*4	L/min	36.9	36.9	36.9	36.9		
		Min.*5	L/min	5.0	5.0	5.0	5.0		
Domestic hot water tank	Volume	L	-	-	-	-			
	Material		-	-	-	-			
	Declared load profile		-	-	-	-			
Expansion vessel (Primary circuit)	Volume	L	10	10	10	10			
	Charge pressure	MPa	0.1	0.1	0.1	0.1			
Safety device	Primary circuit	Control thermistor	°C	1 to 80	1 to 80	1 to 80	1 to 80		
		Pressure relief valve	MPa	0.3	0.3	0.3	0.3		
		Flow sensor (Min. flow)	L/min	5.0	5.0	5.0	5.0		
		BH manual reset thermostat	°C	-	90	90	90		
		BH thermal Cut Off	°C	-	121	121	121		
	DHW tank	Control thermistor	°C	-	-	-	-		
		IH manual reset thermostat	°C	-	-	-	-		
		Temperature & pressure relief valve	°C	-	-	-	-		
			MPa	-	-	-	-		
			MPa	-	-	-	-		
Connections	Water	Primary circuit for local system	-	G1	G1	G1	G1		
		Primary circuit for outdoor unit	-	G1	G1	G1	G1		
		DHW circuit	-	-	-	-	-		
	Refrigerant	Gas	mm	-	-	-	-		
		Liquid	mm	-	-	-	-		
				-	-	-	-		
Refrigerant *6			R718	R718	R718	R718			
Guaranteed operating range *7	Ambient	°C	0 to 35	0 to 35	0 to 35	0 to 35			
		%RH	≤ 80	≤ 80	≤ 80	≤ 80			
	Outdoor temperature	Heating	°C	See outdoor unit spec table.					
Operating range	Heating	Room temperature	°C	10 to 30	10 to 30	10 to 30	10 to 30		
		Flow temperature *10, 11	°C	20 to 75	20 to 75	20 to 75	20 to 75		
	Cooling	Room temperature	°C	-	-	-	-		
		Flow temperature *10, 11	°C	5 to 25	5 to 25	5 to 25	5 to 25		
	DHW *9	°C	-	-	-	-			
	Legionella prevention *9	°C	-	-	-	-			
Sound power level (PWL)			dB(A)	40	40	40	40		

*1 Volume of sanitary water circuit, primary DHW circuit (from 3-way valve to confluent point with Heating circuit), piping to Expansion vessel, and Expansion vessel is not included in this value.

*2 When powered by an independent source.

*3 Allowable flow rate range differs depending on connected outdoor unit.

*4 If the water flow rate range exceeds maximum, the flow speed will be greater than 2.0 m/s, which could corrode the pipes.

*5 If the water flow is less than the minimum, the flow error will be activated.

*6 Refrigerant of outdoor unit connected to cylinder unit.

*7 The environment must be frost-free.

*8 See outdoor unit spec table (min, 10°C). Cooling mode is not available in low outdoor temperature. If you use our system in cooling mode at the low ambient temperature (10°C or below), there are some risks of plate heat exchanger damages by frozen water.

*9 For the model without both booster heater and immersion heater, the max. hot water temperature is [Max. outlet water of outdoor unit -3°C]. For the max. outlet of outdoor unit spec table.

*10 Maximum temperature of E*****F model depending on the connected outdoor unit. PUZ: 70°C, Other: 60°C.

*11 Maximum temperature of E*****X model depending on the connected outdoor unit. WZ: 75°C, Other: 60°C.

3 Performance data

3.1 Combination performance

Hydro-Split

			Cylinder unit											Hydrobox						
			EHPT17X-VM2E	EHPT17X-VM6E	EHPT17X-VM9E	EHPT20X-VM9E	EHPT20X-TM9E	EHPT20X-MEHEW	EHPT30X-VM9EE	ERPT17X-VM2E	ERPT20X-VM2E	ERPT20X-VM6E	ERPT20X-VM9E	ERPT30X-VM2EE	ERPT30X-VM6EE	ERPT30X-VM9EE	ERPX-ME	ERPX-VM2E	ERPX-VM6E	ERPX-VM9E
Outdoor unit			PUZ-WZ50VAA(-BS)																	
Heating A7/W35	Capacity	kW																	4.00	
	COP	-																	5.10	
	Power input(*)	kW																	0.78	
Heating A2/W35	Capacity	kW																	5.00	
	COP	-																	3.15	
	Power input(*)	kW																	1.59	
Cooling A35/W7	Capacity	kW																	3.20	
	EER	-																	3.10	
	Power input(*)	kW																	1.03	
Cooling A35/W18	Capacity	kW																	4.20	
	EER	-																	3.20	
	Power input(*)	kW																	1.31	
DHW Average climate condition	η_{wh}	-	120		134		120	120		134		120								
	Pes	kW	0.041		0.041		0.046	0.041		0.041		0.046								
	Water heater energy efficiency class	-	A+		A+		A	A+		A+		A								
Outdoor unit			PUZ-WZ60VAA(-BS)																	
Heating A7/W35	Capacity	kW																	5.00	
	COP	-																	5.00	
	Power input(*)	kW																	1.00	
Heating A2/W35	Capacity	kW																	6.00	
	COP	-																	3.10	
	Power input(*)	kW																	1.94	
Cooling A35/W7	Capacity	kW																	3.60	
	EER	-																	2.90	
	Power input(*)	kW																	1.24	
Cooling A35/W18	Capacity	kW																	4.60	
	EER	-																	3.00	
	Power input(*)	kW																	1.53	
DHW Average climate condition	η_{wh}	-	120		134		120	120		134		120								
	Pes	kW	0.041		0.041		0.046	0.041		0.041		0.046								
	Water heater energy efficiency class	-	A+		A+		A	A+		A+		A								
Outdoor unit			PUZ-WZ80VAA(-BS)																	
Heating A7/W35	Capacity	kW																	6.00	
	COP	-																	4.70	
	Power input(*)	kW																	1.28	
Heating A2/W35	Capacity	kW																	8.00	
	COP	-																	3.05	
	Power input(*)	kW																	2.62	
Cooling A35/W7	Capacity	kW																	4.00	
	EER	-																	2.70	
	Power input(*)	kW																	1.48	
Cooling A35/W18	Capacity	kW																	5.00	
	EER	-																	2.80	
	Power input(*)	kW																	1.79	
DHW Average climate condition	η_{wh}	-	120		134		120	120		134		120								
	Pes	kW	0.041		0.041		0.046	0.041		0.041		0.046								
	Water heater energy efficiency class	-	A+		A+		A	A+		A+		A								

Note: "Power input" in the above table are values that contains the "pump input (Based on EN 14511)".

Heating: A7W35: Heating outside air DB 7°C/WB 6°C, Water outlet temperature 35°C ($\Delta T=5^{\circ}C$)

A2W35: Heating outside air DB 2°C/WB 1°C, Water outlet temperature 35°C ($\Delta T=5^{\circ}C$)

Cooling: A35/W7: Cooling outside air DB 35°C, Water outlet temperature 7°C ($\Delta T=5^{\circ}C$)

A35/W18: Cooling outside air DB 35°C, Water outlet temperature 18°C ($\Delta T=5^{\circ}C$)

DHW: η_{wh} values are measured based on EN16147:2017.

3 Performance data

Cylinder unit/Hydrobox

			Cylinder unit											Hydrobox						
			EHPT17X-VM2E	EHPT17X-VM6E	EHPT17X-VM9E	EHPT20X-VM9E	EHPT20X-TM9E	EHPT20X-MEHEW	EHPT30X-VM9EE	ERPT17X-VM2E	ERPT20X-VM2E	ERPT20X-VM6E	ERPT20X-VM9E	ERPT30X-VM2EE	ERPT30X-VM6EE	ERPT30X-VM9EE	ERPX-ME	ERPX-VM2E	ERPX-VM6E	ERPX-VM9E
Outdoor unit			PUZ-WZ85V/YAA(-BS)																	
Heating A7/W35	Capacity	kW																	5.31	
	COP	-																	4.80	
	Power input(*)	kW																	1.11	
Heating A2/W35	Capacity	kW																	5.31	
	COP	-																	4.03	
	Power input(*)	kW																	1.32	
Cooling A35/W7	Capacity	kW																	5.00	
	EER	-																	3.30	
	Power input(*)	kW																	1.52	
Cooling A35/W18	Capacity	kW																	5.00	
	EER	-																	4.61	
	Power input(*)	kW																	1.08	
DHW Average climate condition	ηwh	-	121		137		114		121		137		114						-	
	Pes	kW	0.044		0.045		0.051		0.044		0.045		0.051						-	
	Water heater energy efficiency class	-	A+		A+		A		A+		A+		A						-	
Outdoor unit			PUZ-WZ100V/YAA(-BS)																	
Heating A7/W35	Capacity	kW																	5.80	
	COP	-																	5.10	
	Power input(*)	kW																	1.14	
Heating A2/W35	Capacity	kW																	5.80	
	COP	-																	4.12	
	Power input(*)	kW																	1.41	
Cooling A35/W7	Capacity	kW																	7.00	
	EER	-																	3.30	
	Power input(*)	kW																	2.12	
Cooling A35/W18	Capacity	kW																	6.50	
	EER	-																	5.40	
	Power input(*)	kW																	1.20	
DHW Average climate condition	ηwh	-			129		123				129		123						-	
	Pes	kW			0.046		0.049				0.046		0.049						-	
	Water heater energy efficiency class	-			A+		A+				A+		A+						-	
Outdoor unit			PUZ-WZ120V/YAA(-BS)																	
Heating A7/W35	Capacity	kW																	5.80	
	COP	-																	5.10	
	Power input(*)	kW																	1.14	
Heating A2/W35	Capacity	kW																	5.80	
	COP	-																	4.12	
	Power input(*)	kW																	1.41	
Cooling A35/W7	Capacity	kW																	9.00	
	EER	-																	3.15	
	Power input(*)	kW																	2.86	
Cooling A35/W18	Capacity	kW																	9.00	
	EER	-																	4.80	
	Power input(*)	kW																	1.88	
DHW Average climate condition	ηwh	-			129		123				129		123						-	
	Pes	kW			0.046		0.049				0.046		0.049						-	
	Water heater energy efficiency class	-			A+		A+				A+		A+						-	

Note: "Power input" in the above table are values that contains the "pump input (Based on EN 14511)".

Heating: A7W35: Heating outside air DB 7°C/WB 6°C, Water outlet temperature 35°C (ΔT=5°C)

A2W35: Heating outside air DB 2°C/WB 1°C, Water outlet temperature 35°C (ΔT=5°C)

Cooling: A35/W7: Cooling outside air DB 35°C, Water outlet temperature 7°C (ΔT=5°C)

A35/W18: Cooling outside air DB 35°C, Water outlet temperature 18°C (ΔT=5°C)

DHW: ηwh values are measured based on EN16147:2017.

3 Performance data

3.2 Heat time data (DHW mode)

Heat time (min)	170L			200L			300L		
	Ambient temperature [°C]			Ambient temperature [°C]			Ambient temperature [°C]		
	2	7	14	2	7	14	2	7	14
PUZ-WZ50VAA(-BS)	137	107	93	153	119	103	219	171	148
PUZ-WZ60VAA(-BS)	114	89	77	127	99	86	182	142	123
PUZ-WZ80VAA(-BS)	86	89	77	95	99	86	137	142	123
PUZ-WZ85V/YAA(-BS)	73	63	54	86	74	64	117	100	86
PUZ-WZ100V/YAA(-BS)	-	-	-	70	60	52	94	81	70
PUZ-WZ120V/YAA(-BS)	-	-	-	64	55	47	86	74	64

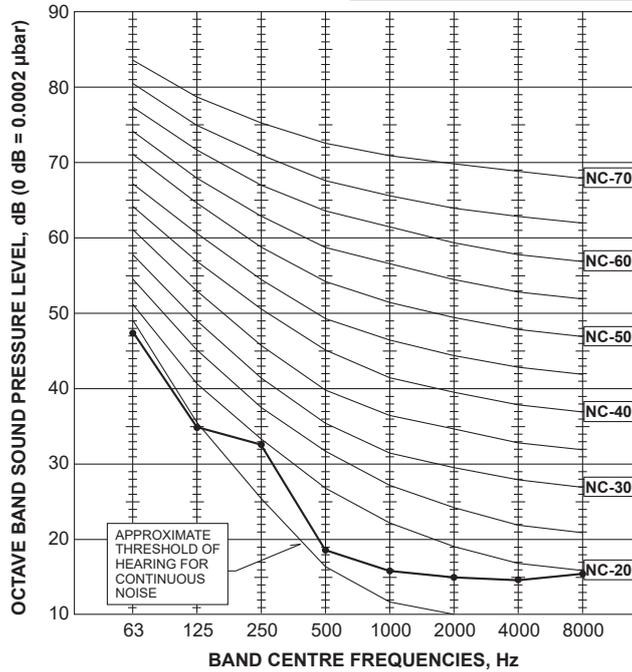
- Notes: 1. Mitsubishi's domestic hot water tank.
 2. Time to raise DHW tank temperature 15-55[°C].
 3. Reheat time is half of this heat time.

3 Performance data

3.3 Noise criterion curves

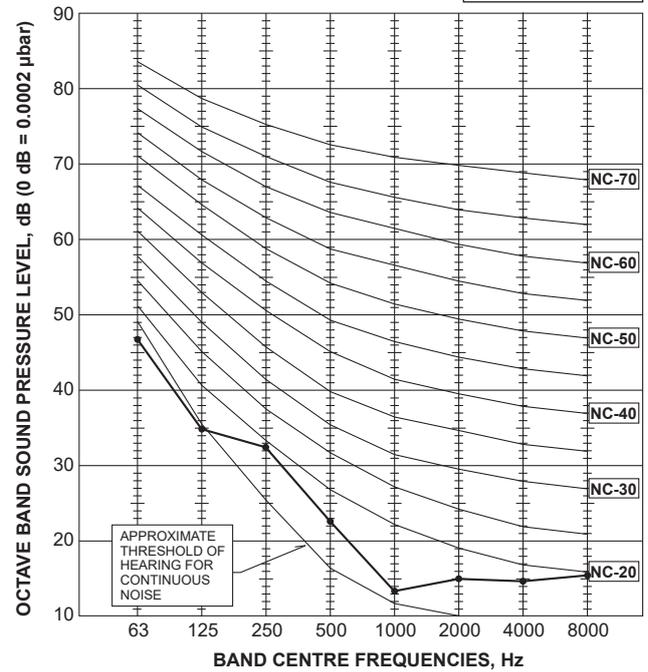
■ Cylinder unit

Pump speed (primary circuit): 5
 Pump speed (sanitary circuit): 2
 Flow rate: 20L/min
 SPL: 29dB

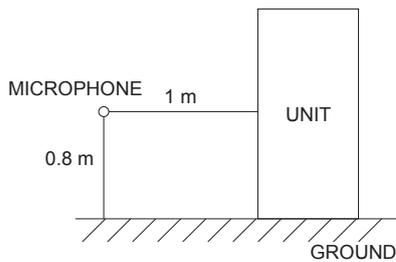


■ Hydrobox

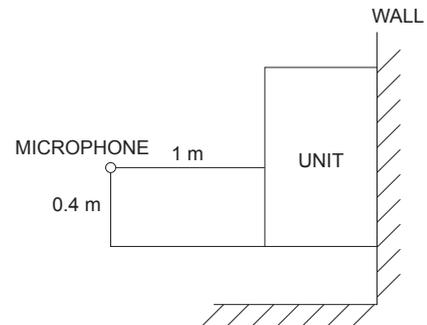
Pump speed: 5
 Flow rate: 20L/min
 SPL: 29dB



■ Cylinder unit



■ Hydrobox



Note: These values are only for reference purpose.

4 Cylinder unit

4.1 Outlines and dimensions

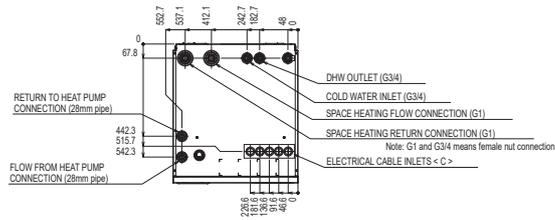
■ Technical Drawings

<Unit: mm>

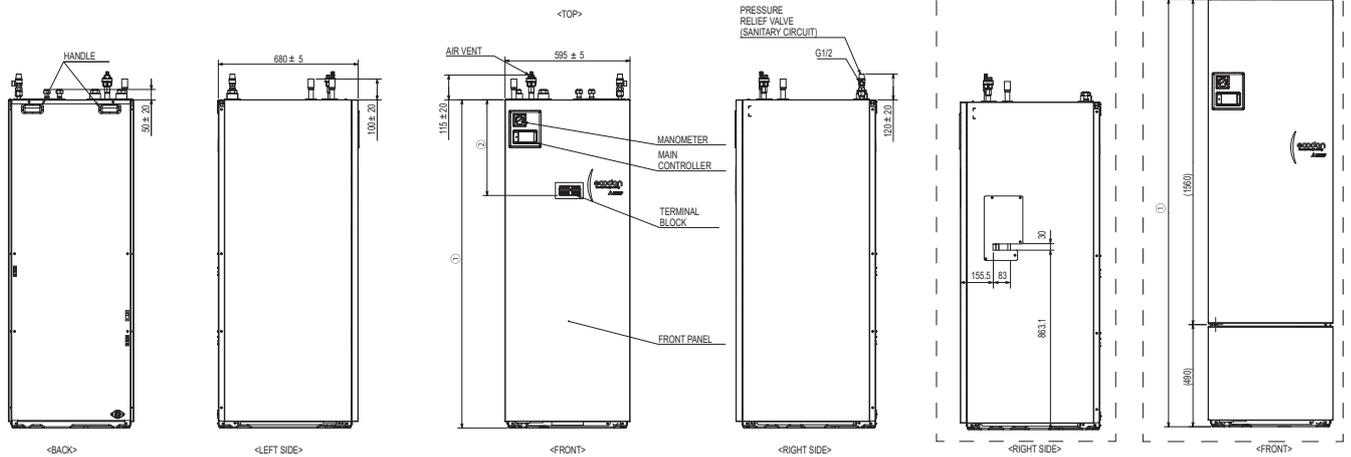
<E**T***-M**E>

(Hydro-Split system)

DHW tank capacity	170L	200L	300L
①	1400	1600	2050
②	456	456	931



<EHPT20X-MEHEW> <E*PT30X-M*EE>



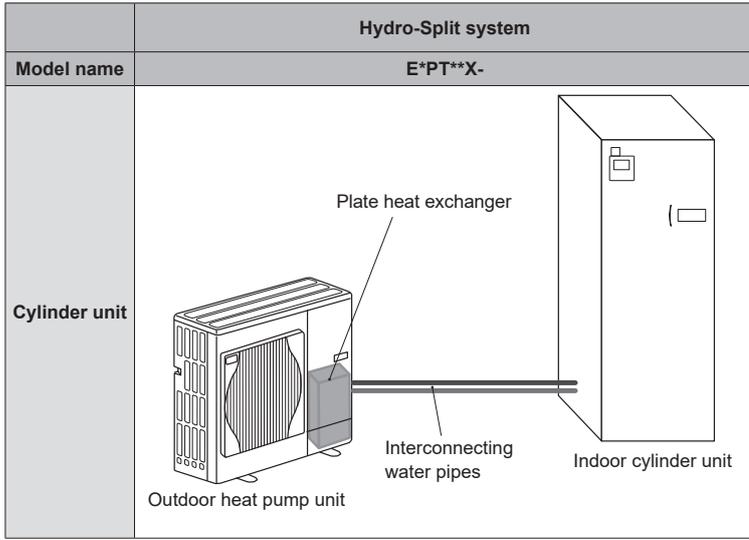
Cylinder unit/Hydrobox

Pipe description	Connection size/type
Electrical cable inlets ① ② ③ ④ ⑤	For inlets ①, ② and ③, run low-voltage wires including external input wires and thermistor wires. For inlets ④ and ⑤, run high-voltage wires including power cable, indoor-outdoor cable, and external output wires. *For a wireless receiver (option) cable and ecodan Wi-Fi interface (option) cable, use inlet ①.

<Table 4.1.1>

4 Cylinder unit

System configuration

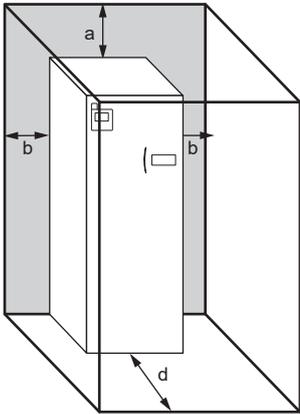


Service access diagrams

Service access	
Parameter	Dimension (mm)
a	300*
b	150
c (distance behind unit not visible in Figure 4.1.1)	10
d	500

<Table 4.1.2>

Sufficient space MUST be left for the provision of discharge pipework as detailed in National and Local Building Regulations.



* An additional 300 mm of space (total 600 mm) is required, when installing the optional 2-zone kit (PAC-TZ02-E2) on top of the cylinder unit.

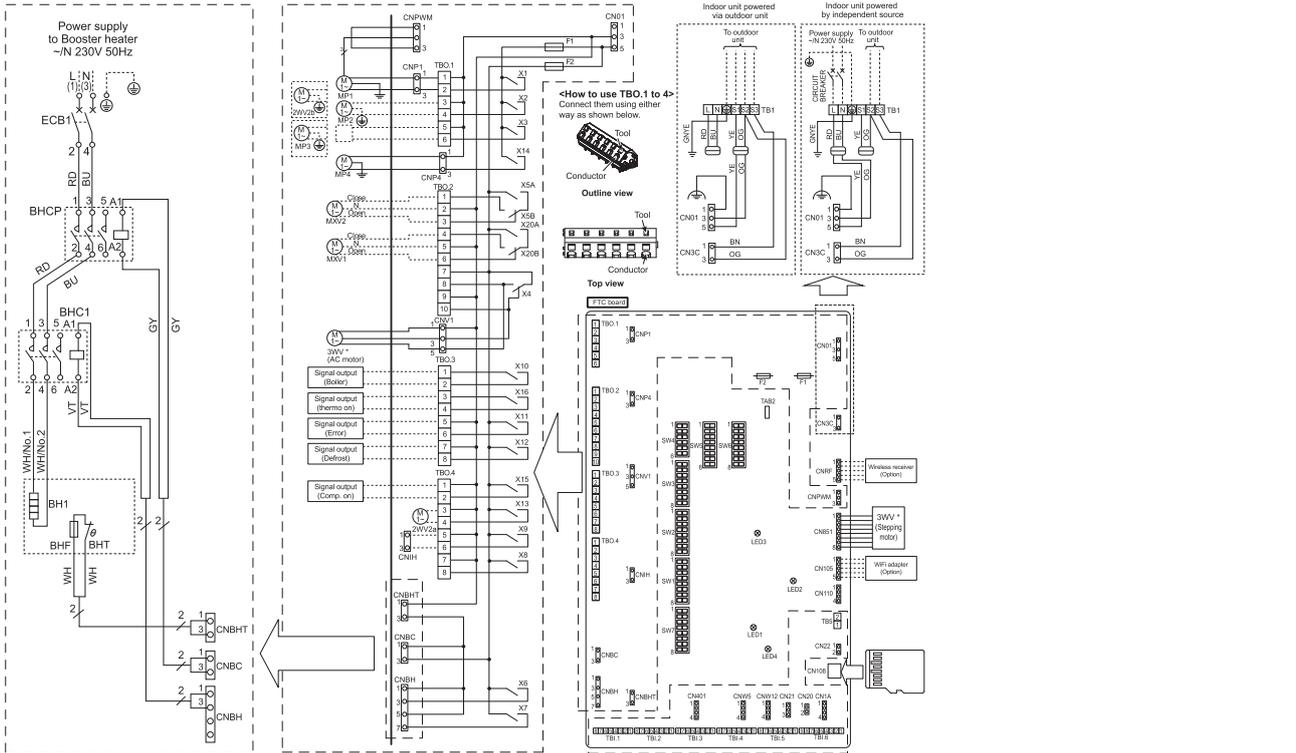
<Figure 4.1.1>
Service access

The cylinder unit must be located indoors and in a frost-free environment, for example in a utility room, to minimise heat loss from stored water.

4 Cylinder unit

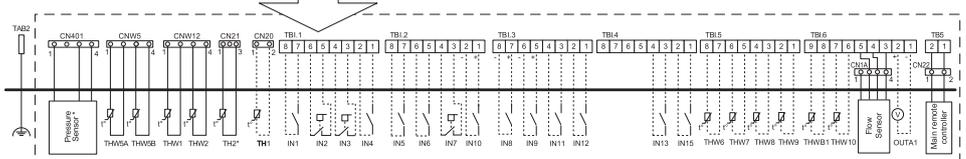
4.2 Wiring diagrams

E**T***-VM2(E)



LEGEND

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
ECB2	Earth leakage circuit breaker for immersion heater
MP1	Water circulation pump 1(Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)
3WV	3-way valve (AC motor) (E*PT20/30X-M*E, E*ST**C/F-M*E) 3-way valve (Stepping motor) (EHP117X-M*E, E*ST**D-M*E)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone 1)(Local supply)
MXV2	Mixing valve 2(For Zone 2)(Local supply)
IHT	Thermostat (fixed temp.) for immersion heater
IH	Immersion heater
IHC	Contact for immersion heater
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5A	Thermistor (DHW tank upper water temp.)
THW5B	Thermistor (DHW tank lower water temp.)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Forced cooling mode (Local supply)
IN13	Cooling limit temp. (Local supply)
IN15	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4	Terminal block <Outputs>
TB1.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CN108	microSD card connector



- Symbols used in wiring diagram are, : connector, : terminal block. Function with asterisk (*) may not be available depending on model types.
- Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
- Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.
- Refer to the installation manual for the water circulation diagrams of the models other than shown below.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TB1.1 7-8	—	Room thermostat 1 input *1	Refer to SW2-1 in "6-10, DIP Switch Functions".	
IN2	TB1.1 5-6	—	Flow switch 1 input	Refer to SW2-2 in "6-10, DIP Switch Functions".	
IN3	TB1.1 3-4	—	Flow switch 2 input (Zone1)	Refer to SW3-2 in "6-10, DIP Switch Functions".	
IN4	TB1.1 1-2	—	Demand control input	Normal	Heat source OFF/Boiler operation *3
IN5	TB1.2 7-8	—	Outdoor thermostat input	Standard operation	Heater operation/Boiler operation *3
IN6	TB1.2 5-6	—	Room thermostat 2 input *1	Refer to SW3-1 in "6-10, DIP Switch Functions".	
IN7	TB1.2 3-4	—	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-10, DIP Switch Functions".	
IN8	TB1.3 7-8	—	Electric energy meter 1		
IN9	TB1.3 5-6	—	Electric energy meter 2		Refer to installation manual.
IN10	TB1.2 1-2	—	Heat meter		
IN11	TB1.3 3-4	—	Smart grid ready		
IN12	TB1.3 1-2	—	input		
IN13	TB1.4 3-4	—	Forced cooling mode *4	Refer to SW7-2 in "6-10, DIP Switch Functions".	
IN15	TB1.4 1-2	—	Cooling limit temp. *4	Refer to SW7-3 in "6-10, DIP Switch Functions".	
INA1	TB1.6 3-5	CN1A	Flow sensor		Refer to installation manual.

Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1 1-2	CNP1	Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1 3-4	—	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1 5-6	—	Water circulation pump 3 output (Space heating/cooling for Zone2) *1	OFF	ON
OUT4	TBO.2 7-9	—	3-way valve SPST (2-way valve 1) output		
OUT4	TBO.2 8-10	CNV1	3-way valve SPDT output	Heating	DHW
OUT5	TBO.2 1-2	—	Zone 2 mixing valve output *1	Stop	Close Open
OUT6	TBO.2 2-3	—	Zone 2 mixing valve output *1	Stop	Close Open
OUT6	—	CNB13	Booster heater 1 output	OFF	ON
OUT7	—	CNB15	Booster heater 2 output	OFF	ON
OUT8	TBO.4 7-8	—	Cooling signal output	OFF	ON
OUT8	TBO.4 5-6	CNIH	Immersion heater output	OFF	ON
OUT10	TBO.3 1-2	—	Boiler output	OFF	ON
OUT11	TBO.3 5-6	—	Error output	Normal	Error
OUT12	TBO.3 7-8	—	Defrost output	Normal	Defrost
OUT13	TBO.4 3-4	—	2-way valve 2a output *2	OFF	ON
OUT14	—	CNP4	Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4 1-2	—	Comp. ON signal	OFF	ON
OUT16	TBO.3 3-4	—	Thermo ON signal	OFF	ON
OUT18	TBO.2 4-5	—	Zone 1 mixing valve output *1	Stop	Close Open
OUTA1	TB1.6 1-2	—	Analog output		0V-10V

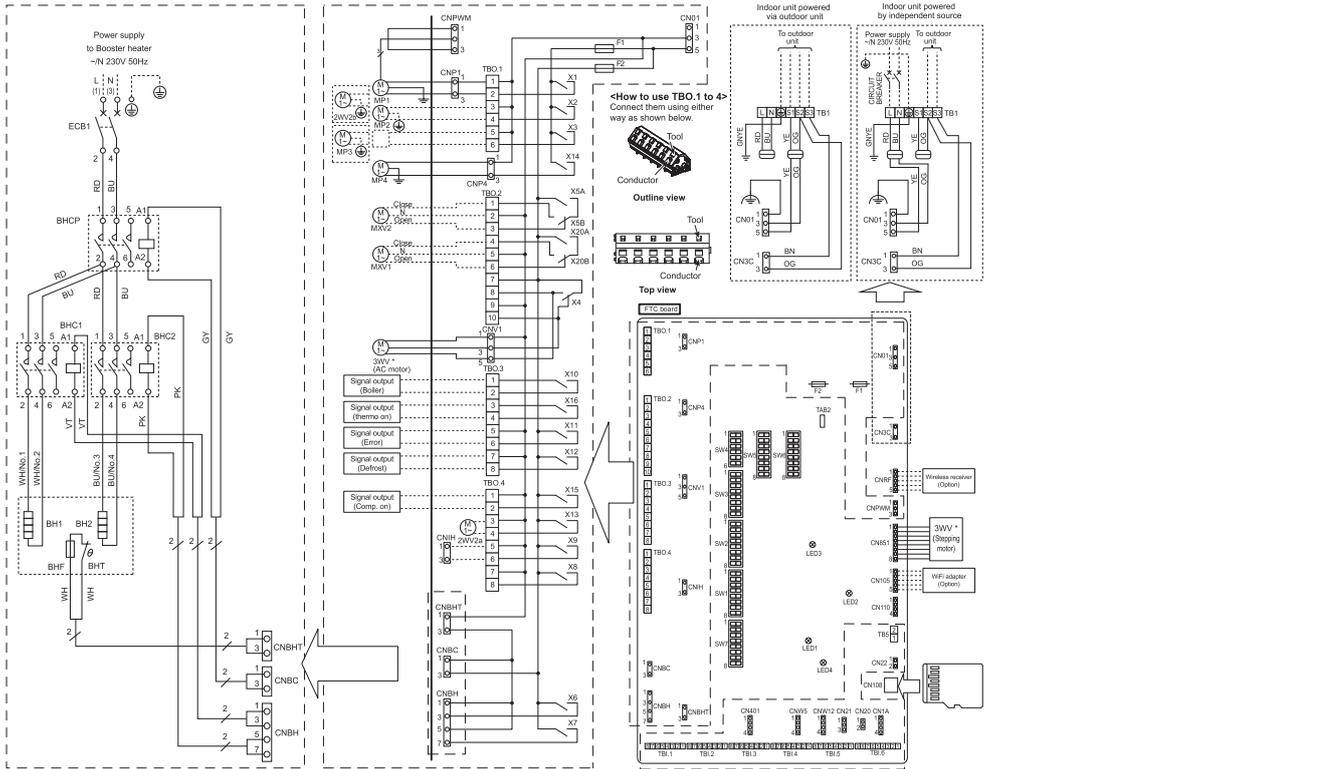
- Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
- If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- Only for ER series.

Do not connect to the terminals that are indicated as "—" in the "Terminal block" field.
 *1. For 2-zone temperature control.
 *2. For 2-zone valve ON/OFF control.

4 Cylinder unit

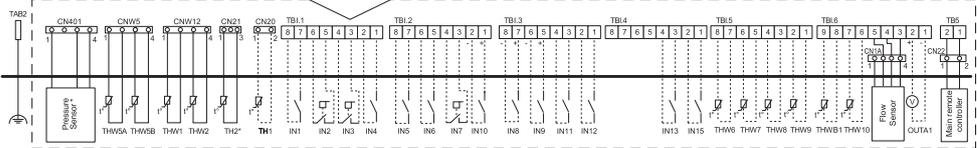
E**T***-VM6(E)E

Cylinder unit/Hydrobox



LEGEND

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
ECB2	Earth leakage circuit breaker for immersion heater
MP1	Water circulation pump 1(Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)
3WV	3-way valve (AC motor) (E*PT20/30X-M**E, E*ST**C/F-M**E)
3WV2	3-way valve (Stepping motor) (E*HT17X-M**E, E*ST**D-M**E)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone 1)(Local supply)
MXV2	Mixing valve 2(For Zone 2)(Local supply)
IHT	Thermostat (fixed temp.) for immersion heater
IH	Immersion heater
IHC	Contact for immersion heater
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5A	Thermistor (DHW tank upper water temp.)
THW5B	Thermistor (DHW tank lower water temp.)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Forced cooling mode (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4	Terminal block <Outputs>
TBI.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CN108	microSD card connector



1. Symbols used in wiring diagram are, : connector, : terminal block. Function with asterisk (*) may not be available depending on model types.
2. Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
3. Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.
4. Refer to the installation manual for the water circulation diagrams of the models other than shown below.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1	7-8	Room thermostat 1 input *1	Refer to SW2-1 in "6-10. DIP Switch Functions".	
IN2	TBI.1	5-6	Flow switch 1 input	Refer to SW2-2 in "6-10. DIP Switch Functions".	
IN3	TBI.1	3-4	Flow switch 2 input (Zone1)	Refer to SW2-2 in "6-10. DIP Switch Functions".	
IN4	TBI.1	1-2	Demand control input *2	Normal	Heat source OFF/Boiler operation *3
IN5	TBI.2	7-8	Outdoor thermostat input *2	Standard operation	Heater operation/Boiler operation *3
IN6	TBI.2	5-6	Room thermostat 2 input *1	Refer to SW3-1 in "6-10. DIP Switch Functions".	
IN7	TBI.2	3-4	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-10. DIP Switch Functions".	
IN8	TBI.3	7-8	Electric energy meter 1		
IN9	TBI.3	5-6	Electric energy meter 2		
IN10	TBI.2	1-2	Heat meter		Refer to installation manual.
IN11	TBI.3	3-4	Smart grid ready input		
IN12	TBI.3	1-2	Forced cooling mode *4	Refer to SW7-2 in "6-10. DIP Switch Functions".	
IN15	TBI.4	1-2	Cooling limit temp. *4	Refer to SW7-3 in "6-10. DIP Switch Functions".	
INA1	TBI.6	3-5	CN1A Flow sensor		Refer to installation manual.

Table 2 Outputs

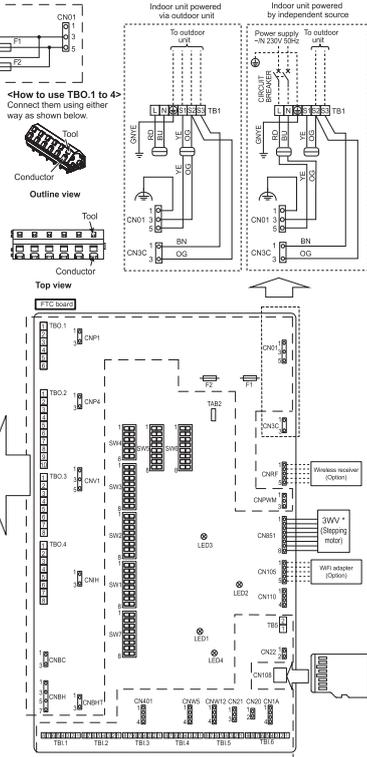
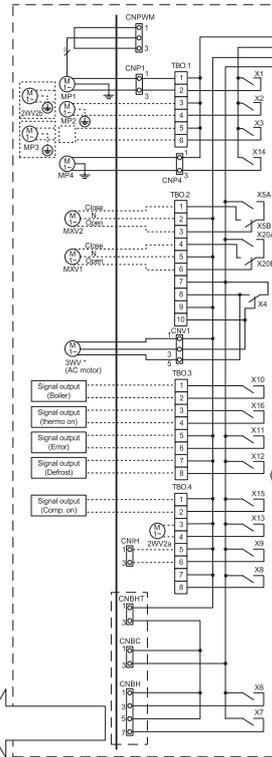
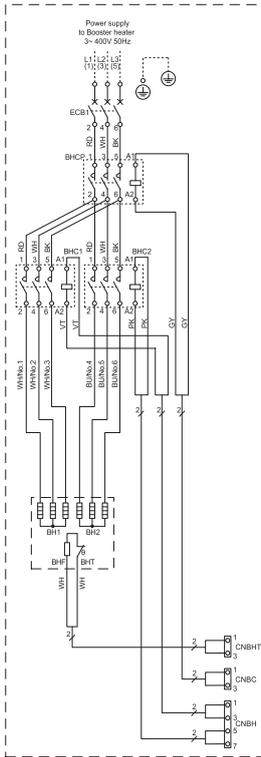
Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1	1-2	CNP1 Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1	3-4	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1	5-6	Water circulation pump 3 output (Space heating/cooling for Zone2) *1 2-way valve 2b output *2	OFF	ON
OUT4	TBO.2	7-9	3-way valve SPST (2-way valve 1) output		Heating DHW
OUT5	TBO.2	8-10	CNV1 3-way valve SPDT output		
OUT6	TBO.2	2-3	CN851 3-way valve output		Stop Close Open
OUT7			CN81-3 Booster heater 1 output	OFF	ON
OUT7			CN81-5 Booster heater 2 output	OFF	ON
OUT8	TBO.4	7-8	CN108 Cooling signal output	OFF	ON
OUT9	TBO.4	5-6	CNIH Immersion heater output	OFF	ON
OUT10	TBO.3	1-2	Boiler output	OFF	ON
OUT11	TBO.3	5-6	Error output	Normal	Error
OUT12	TBO.3	7-8	Defrost output	Normal	Defrost
OUT13	TBO.4	3-4	2-way valve 2a output *2	OFF	ON
OUT14			CNP4 Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4	1-2	Comp. ON signal	OFF	ON
OUT16	TBO.3	3-4	Thermo ON signal	OFF	ON
OUT18	TBO.2	4-5	Zone 1 mixing valve output *1	Stop	Close Open
OUTA1	TBI.6	1-2	Analog output		0V-10V

- Do not connect to the terminals that are indicated as "-" in the "Terminal block" field.
- *1. For 2-zone temperature control.
*2. For 2-zone valve ON/OFF control.

- *1. Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
*2. If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
*3. To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
*4. Only for ER series.

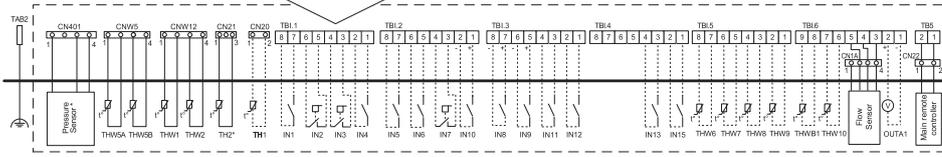
4 Cylinder unit

E**T***-YM9(E)



[LEGEND]

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
ECB2	Earth leakage circuit breaker for immersion heater
MP1	Water circulation pump 1 (Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)
3WV	3-way valve (AC motor) (E*PT2030X-M**E, E*ST**CF-M**E) 3-way valve (Stepping motor) (E*PT17X-M**E, E*ST**D-M**E)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1 (For Zone 1)(Local supply)
MXV2	Mixing valve 2 (For Zone 2)(Local supply)
IHT	Thermostat (fixed temp.) for immersion heater
IH	Immersion heater
IHC	Contactor for immersion heater
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5A	Thermistor (DHW tank upper water temp.)
THW5B	Thermistor (DHW tank lower water temp.)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Forced cooling mode (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4 Terminal block <Outputs>	
TB1.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPVM	Pump speed control signal for MP1
CN108	microSD card connector



- Symbols used in wiring diagram are, □ : connector, □ : terminal block. Function with asterisk (*) may not be available depending on model types.
- Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
- Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.
- Refer to the installation manual for the water circulation diagrams of the models other than shown below.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TB1.1	7-8	Room thermostat 1 input *1	Refer to SW2-1 in "6-10, DIP Switch Functions".	
IN2	TB1.1	5-6	Flow switch 1 input	Refer to SW2-2 in "6-10, DIP Switch Functions".	
IN3	TB1.1	3-4	Flow switch 2 input (Zone1)	Refer to SW2-2 in "6-10, DIP Switch Functions".	
IN4	TB1.1	1-2	Demand control input	Normal	Heat source OFF/Boiler operation *3
IN5	TB1.2	7-8	Outdoor thermostat input *2	Standard operation	Heater operation/Boiler operation *3
IN6	TB1.2	5-6	Room thermostat 2 input *1	Refer to SW3-1 in "6-10, DIP Switch Functions".	
IN7	TB1.2	3-4	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-10, DIP Switch Functions".	
IN8	TB1.3	7-8	Electric energy meter 1		
IN9	TB1.3	5-6	Electric energy meter 2		
IN10	TB1.2	1-2	Heat meter	Refer to installation manual.	
IN11	TB1.3	3-4	Smart grid ready input		
IN12	TB1.3	1-2	input		
IN13	TB1.4	3-4	Forced cooling mode *4	Refer to SW7-2 in "6-10, DIP Switch Functions".	
IN15	TB1.4	1-2	Cooling limit temp.	Refer to SW7-3 in "6-10, DIP Switch Functions".	
INA1	TB1.6	3-5	CN1A Flow sensor	Refer to installation manual.	

Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1	1-2	CNP1 Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1	3-4	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1	5-6	Water circulation pump 3 output (Space heating/cooling for Zone2) *1	OFF	ON
OUT4	TBO.2	7-9	3-way valve SPST (2-way valve 1) output		
	TBO.2	8-10	3-way valve SPDT output	Heating	DHW
			CNV1 3-way valve output		
OUT5	TBO.2	1-2	Zone 2 mixing valve output *1	Stop	Close
	TBO.2	2-3		Open	
OUT6			OBH1-3 Booster heater 1 output	OFF	ON
OUT7			OBH5-7 Booster heater 2 output	OFF	ON
OUT8	TBO.4	7-8	Cooling signal output	OFF	ON
OUT9	TBO.4	5-6	CNH1 Immersion heater output	OFF	ON
OUT10	TBO.3	1-2	Boiler output	OFF	ON
OUT11	TBO.3	5-6	Error output	Normal	Error
OUT12	TBO.3	7-8	Defrost output	Normal	Defrost
OUT13	TBO.4	3-4	2-way valve 2a output *2	OFF	ON
OUT14			CNP4 Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4	1-2	Comp. ON signal	OFF	ON
OUT16	TBO.3	3-4	Thermo ON signal	OFF	ON
OUT18	TBO.2	4-5	Zone 1 mixing valve output *1	Stop	Close
	TBO.2	5-6		Open	
OUTA1	TB1.6	1-2	Analog output	0V-10V	

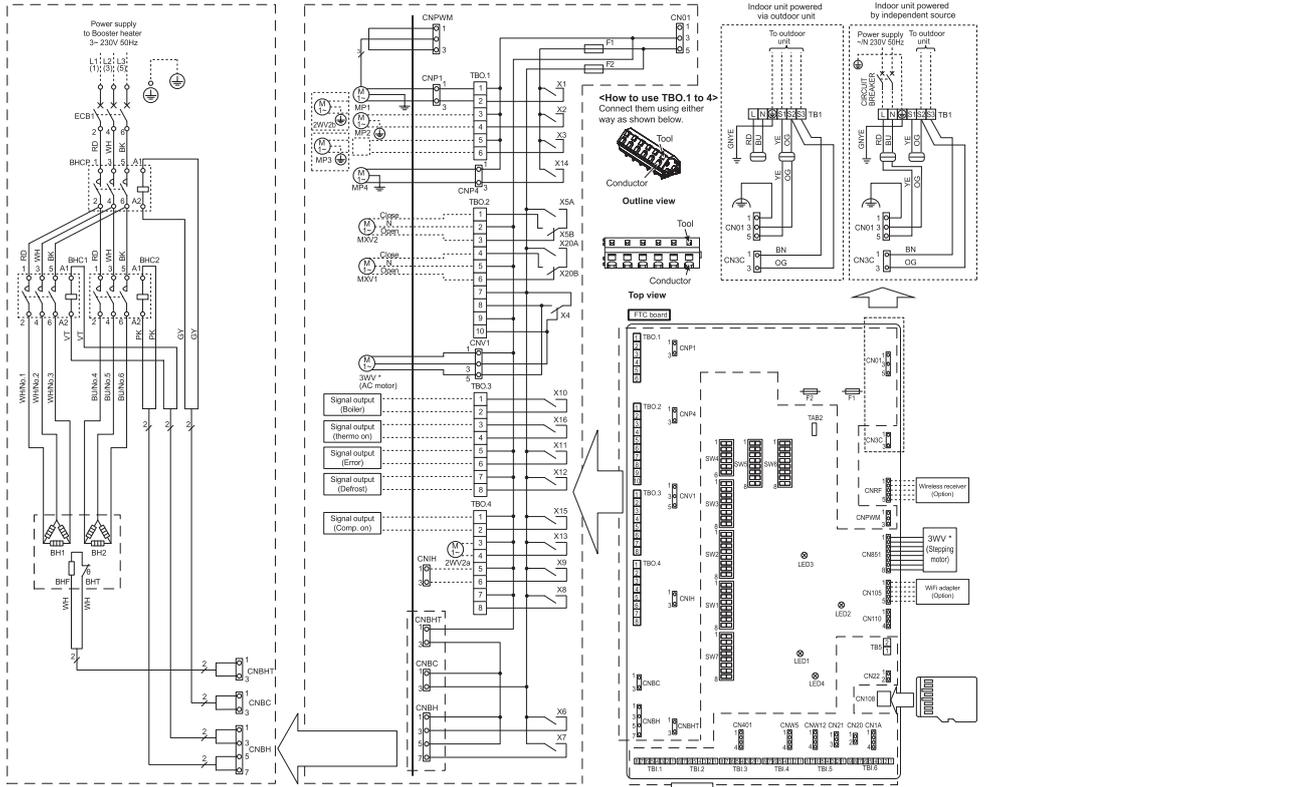
- Set the ON/OFF cycle time of the room thermostat for 10 minutes or more, otherwise the compressor may be damaged.
- If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- Only for ER series.

Do not connect to the terminals that are indicated as "-" in the "Terminal block" field.
*1. For 2-zone temperature control.
*2. For 2-zone valve ON/OFF control.

4 Cylinder unit

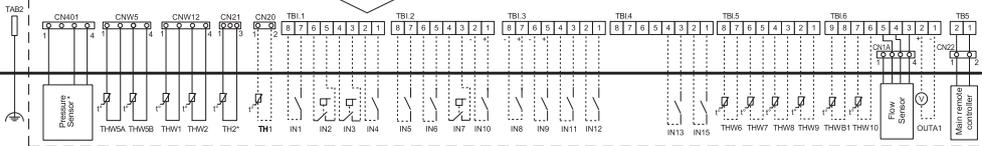
EH*T***-TM9(E)E

Cylinder unit/Hydrobox



LEGEND

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
ECB2	Earth leakage circuit breaker for immersion heater
MP1	Water circulation pump 1(Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)
3WV	3-way valve (AC motor) (E*P1*20/30X-M**E, E*ST**C/F-M**E) 3-way valve (Stepping motor) (EHPT17X-M**E, E*ST**D-M**E)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone 1)(Local supply)
MXV2	Mixing valve 2(For Zone 2)(Local supply)
IHT	Thermostat (fixed temp.) for immersion heater
IH	Immersion heater
IHC	Contact for immersion heater
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5A	Thermistor (DHW tank upper water temp.)
THW5B	Thermistor (DHW tank lower water temp.)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Smart grid ready input (Local supply)
IN13	Forced cooling mode (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4	Terminal block <Outputs>
TBI.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CN108	microSD card connector



1. Symbols used in wiring diagram are, : connector, : terminal block. Function with asterisk (*) may not be available depending on model types.
2. Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wiring.
3. Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.
4. Refer to the installation manual for the water circulation diagrams of the models other than shown below.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1	7-8	Room thermostat 1 input *1	Refer to SW2-1 in "6-10, DIP Switch Functions".	
IN2	TBI.1	5-6	Flow switch 1 input	Refer to SW2-2 in "6-10, DIP Switch Functions".	
IN3	TBI.1	3-4	Flow switch 2 input (Zone1)	Refer to SW3-2 in "6-10, DIP Switch Functions".	
IN4	TBI.1	1-2	Demand control input	Normal	Heat source OFF/Boiler operation *3
IN5	TBI.2	7-8	Outdoor thermostat input *2	Standard operation	Heater operation/Boiler operation *3
IN6	TBI.2	5-6	Room thermostat 2 input *1	Refer to SW3-1 in "6-10, DIP Switch Functions".	
IN7	TBI.2	3-4	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-10, DIP Switch Functions".	
IN8	TBI.3	7-8	Electric energy meter 1		
IN9	TBI.3	5-6	Electric energy meter 2		Refer to installation manual.
IN10	TBI.2	1-2	Heat meter		
IN11	TBI.3	3-4	Smart grid ready input		
IN12	TBI.3	1-2	Smart grid ready input		
IN13	TBI.4	3-4	Forced cooling mode *4	Refer to SW7-2 in "6-10, DIP Switch Functions".	
IN15	TBI.4	1-2	Cooling limit temp. *4	Refer to SW7-3 in "6-10, DIP Switch Functions".	
INA1	TBI.6	3-5	CN1A Flow sensor		Refer to installation manual.

- *1. Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
- *2. If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- *3. To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- *4. Only for ER series.

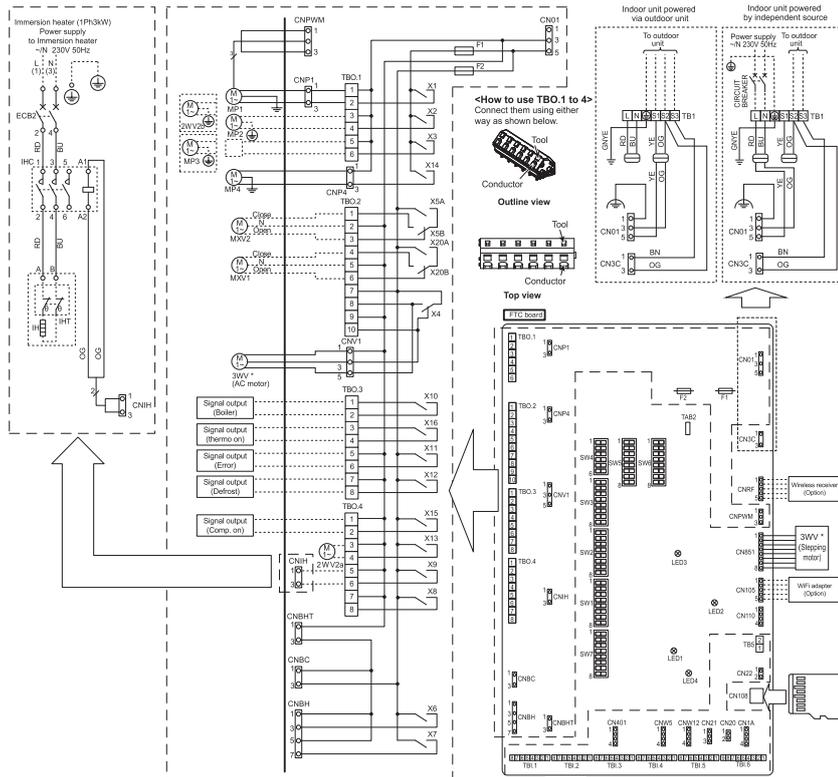
Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1	1-2	CNP1 Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1	3-4	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1	5-6	Water circulation pump 3 output (Space heating/cooling for Zone2) *1	OFF	ON
OUT4	TBO.2	7-9	2-way valve 2b output *2		
		3-way valve SPST (2-way valve 1) output	Heating	DHW	
OUT4	TBO.2	8-10	CNV1 3-way valve SPDT output		
OUT5	TBO.2	1-2	CN851 Zone 2 mixing valve output *1	Stop	Close
OUT5	TBO.2	2-3		Open	
OUT6		CN8 1-3	Booster heater 1 output	OFF	ON
OUT7		CN8 5-7	Booster heater 2 output	OFF	ON
OUT8	TBO.4	7-8	CN1H Cooling signal output	OFF	ON
OUT9	TBO.4	5-6	CN1H Immersion heater output	OFF	ON
OUT10	TBO.3	1-2	CN1H Boiler output	OFF	ON
OUT11	TBO.3	5-6	CN1H Error output	Normal	Error
OUT12	TBO.3	7-8	CN1H Defrost output	Normal	Defrost
OUT13	TBO.4	3-4	CN1H 2-way valve 2a output *2	OFF	ON
OUT14		CNP4	Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4	1-2	CNP4 Comp. ON signal	OFF	ON
OUT16	TBO.3	3-4	CNP4 Thermo ON signal	OFF	ON
OUT18	TBO.2	4-5	CNP4 Zone 1 mixing valve output *1	Stop	Close
OUT18	TBO.2	5-6		Open	
OUTA1	TBI.6	1-2	CN1A Analog output		0V-10V

- Do not connect to the terminals that are indicated as "-" in the "Terminal block" field.
- *1. For 2-zone temperature control.
 - *2. For 2-zone valve ON/OFF control.

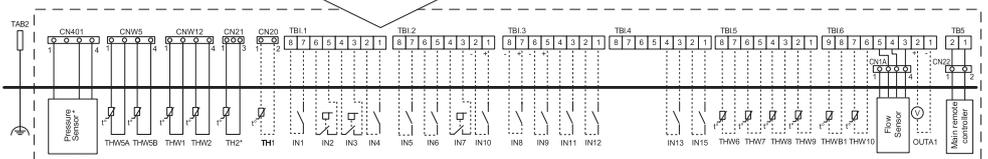
4 Cylinder unit

EHPT20X-MEHEW



[LEGEND]

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
ECB2	Earth leakage circuit breaker for immersion heater
MP1	Water circulation pump 1(Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)
3WV	3-way valve (AC motor) (E*P*F20/30X-M**E, E*ST**C/F-M**E) 3-way valve (Stepping motor) (EHP*17X-M**E, E*ST**D-M**E)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone 1)(Local supply)
MXV2	Mixing valve 2(For Zone 2)(Local supply)
IHT	Thermostat (fixed temp.) for immersion heater
IH	Immersion heater
IHC	Contactor for immersion heater
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THWSA	Thermistor (DHW tank upper water temp.)
THWSB	Thermistor (DHW tank lower water temp.)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Forced cooling mode (Local supply)
IN13	Flow switch 2 (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4 Terminal block <Outputs>	
TBI.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CN108	microSD card connector



- Symbols used in wiring diagram are: : connector, : terminal block. Function with asterisk (*) may not be available depending on model types.
- Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
- Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1	7-8	Room thermostat 1 input *1	Refer to SW2-1 in "6-10, DIP Switch Functions".	
IN2	TBI.1	5-6	Flow switch 1 input	Refer to SW2-2 in "6-10, DIP Switch Functions".	
IN3	TBI.1	3-4	Flow switch 2 input (Zone1)	Refer to SW3-2 in "6-10, DIP Switch Functions".	
IN4	TBI.1	1-2	Demand control input	Normal	Heat source OFF/Boiler operation *3
IN5	TBI.2	7-8	Outdoor thermostat input *2	Standard operation	Heater operation/Boiler operation *3
IN6	TBI.2	5-6	Room thermostat 2 input *1	Refer to SW2-1 in "6-10, DIP Switch Functions".	
IN7	TBI.2	3-4	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-10, DIP Switch Functions".	
IN8	TBI.3	7-8	Electric energy meter 1		
IN9	TBI.3	5-6	Electric energy meter 2		
IN10	TBI.2	1-2	Heat meter		
IN11	TBI.3	3-4	Smart grid ready input		
IN12	TBI.3	1-2	Input		
IN13	TBI.4	3-4	Forced cooling mode *4	Refer to SW7-2 in "6-10, DIP Switch Functions".	
IN15	TBI.4	1-2	Cooling limit temp. *4	Refer to SW7-3 in "6-10, DIP Switch Functions".	
INA1	TBI.6	3-5	CN1A Flow sensor		

- *1. Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
- *2. If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- *3. To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- *4. Only for ER series.

Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1	1-2	Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1	3-4	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1	5-6	Water circulation pump 3 output (Space heating/cooling for Zone2) *1	OFF	ON
OUT4	TBO.2	7-9	2-way valve 2b output *2		
			3-way valve SPST (2-way valve 1) output	Heating	DHW
	TBO.2	8-10	CNV1 3-way valve SPDT output		
			CN851 3-way valve output		
OUT5	TBO.2	1-2	Zone 2 mixing valve output *1	Stop	Close
	TBO.2	2-3		Open	
OUT6			DNH13 Booster heater 1 output	OFF	ON
OUT7			DNH51 Booster heater 2 output	OFF	ON
OUT8	TBO.4	7-8	Cooling signal output	OFF	ON
OUT9	TBO.4	5-6	CNIH Immersion heater output	OFF	ON
OUT10	TBO.3	1-2	Boiler output	OFF	ON
OUT11	TBO.3	5-6	Error output	Normal	Error
OUT12	TBO.3	7-8	Defrost output	Normal	Defrost
OUT13	TBO.4	3-4	2-way valve 2a output *2	OFF	ON
OUT14			CNP4 Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4	1-2	Comp. ON signal	OFF	ON
OUT16	TBO.3	3-4	Thermo ON signal	OFF	ON
OUT18	TBO.2	5-6	Zone 1 mixing valve output *1	Stop	Close
				Open	
OUTA1	TBI.6	1-2	Analog output		0V-10V

- Do not connect to the terminals that are indicated as "—" in the "Terminal block" field.
- *1. For 2-zone temperature control.
 - *2. For 2-zone valve ON/OFF control.

4 Cylinder unit

4.3 DIP switch functions

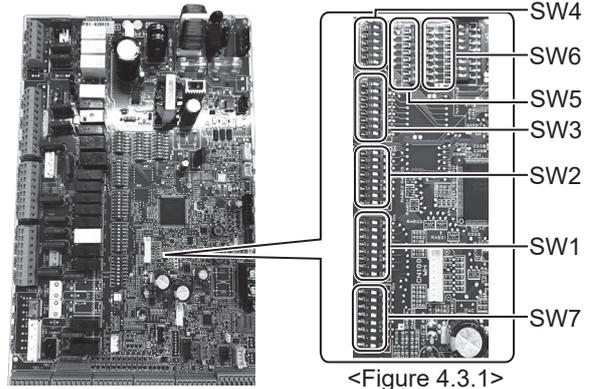
4.3.1 DIP switch functions

The DIP switch number is printed on the circuit board next to the relevant switches. The word ON is printed on the circuit board and on the DIP switch block itself. To move the switch, you will need to use a pin or the corner of a thin metal ruler or similar.

DIP switch settings are listed below in Table 4.3.1.

Only an authorised installer can change DIP switch setting under one's own responsibility according to the installation condition.

Make sure to turn off both indoor unit and outdoor unit power supplies before changing the switch settings.



<Figure 4.3.1>

DIP switch	Function	OFF	ON	Default settings: Indoor unit model	
SW1	SW1-1 Boiler	WITHOUT Boiler	WITH Boiler	OFF	
	SW1-2 Heat pump maximum outlet water temperature	55°C	60/70/75°C *1	ON *2	
	SW1-3 DHW tank	WITHOUT DHW tank	WITH DHW tank	ON	
	SW1-4 Immersion heater	WITHOUT Immersion heater	WITH Immersion heater	OFF: Except EHPT20X-MEHEW ON : EHPT20X-MEHEW	
	SW1-5 Booster heater	WITHOUT Booster heater	WITH Booster heater	OFF: E**T***-M**E* ON : E**T***-M 2/6/9*E	
	SW1-6 Booster heater function	For heating only	For heating and DHW	OFF: E**T***-M**E* ON : E**T***-M 2/6/9*E	
	SW1-7 Outdoor unit type	Split type	Hydro-Split type	OFF: E*ST***-M**E* ON : E*PT***-M**E*	
	SW1-8 Wireless remote controller	WITHOUT Wireless remote controller	WITH Wireless remote controller	OFF	
SW2	SW2-1 Room thermostat 1 input (IN1) logic change	Zone 1 operation stop at thermostat short	Zone 1 operation stop at thermostat open	OFF	
	SW2-2 Flow switch 1 input (IN2) logic change	Failure detection at short	Failure detection at open	OFF	
	SW2-3 Booster heater capacity restriction	Inactive	Active	OFF: Except E**T***-VM2*E ON : E**T***-VM2*E	
	SW2-4 Cooling mode function	Inactive	Active	OFF: EH*T***-M**E* ON : ER*T***-M**E	
	SW2-5 Automatic switch to backup heat source operation (When outdoor unit stops by error)	Inactive	Active *3	OFF	
	SW2-6 Mixing tank	WITHOUT Mixing tank	WITH Mixing tank	OFF: Except E*ST***-M*BE ON : E*ST***-M*BE	
	SW2-7 2-zone temperature control	Inactive	Active *4	ON	
	SW2-8 Flow sensor	WITHOUT Flow sensor	WITH Flow sensor	ON	
SW3	SW3-1 Room thermostat 2 input (IN6) logic change	Zone 2 operation stop at thermostat short	Zone 2 operation stop at thermostat open	OFF	
	SW3-2 Flow switch 2 and 3 input logic change	Failure detection at short	Failure detection at open	OFF	
	SW3-3 3-way valve type	AC motor	Stepping motor	OFF: Except E**T17X/17D/20D-*M**E ON : E**T17X/17D/20D-*M**E	
	SW3-4 Electric energy meter	WITHOUT Electric energy meter	WITH Electric energy meter	OFF	
	SW3-5 Heating mode function *5	Inactive	Active	ON	
	SW3-6 2-zone valve ON/OFF control	Inactive	Active	OFF	
	SW3-7 Heat exchanger for DHW	Coil in tank	External plate HEX	ON	
	SW3-8 Heat meter	WITHOUT Heat meter	WITH Heat meter	OFF	
SW4	SW4-1	—	—	OFF	
	SW4-2	—	—	OFF	
	SW4-3	—	—	OFF	
	SW4-4 Indoor unit only operation (during installation work) *6	Inactive	Active	OFF	
	SW4-5 Emergency mode (Heater only operation)	Normal	Emergency mode (Heater only operation)	OFF *7	
	SW4-6 Emergency mode (Boiler operation)	Normal	Emergency mode (Boiler operation)	OFF *7	
SW5	SW5-1	—	—	OFF	
	SW5-2 Advanced auto adaptation	Inactive	Active	ON	
	SW5-3	Capacity code			
	SW5-4	Capacity code			
	SW5-5	Capacity code			
	SW5-6	Capacity code			
	SW5-7	Capacity code			
		Capacity code			
SW5-8	—	—	—	OFF	

4 Cylinder unit

DIP switch	Function	OFF	ON	Default settings: Indoor unit model	
SW6	SW6-1	—	—	OFF	
	SW6-2	—	—	OFF	
	SW6-3	Pressure sensor	Inactive	Active	OFF: Except E*ST**D/F-*M**E ON : E*ST**D/F-*M**E
	SW6-4	Analog output signal (0-10 V)	Inactive	Active	OFF
	SW6-5	—	—	—	OFF
	SW6-6	—	—	—	OFF
	SW6-7	—	—	—	OFF
	SW6-8	—	—	—	OFF
SW7	SW7-1	Mixing valve setting	Only Zone 2	Zone 1 and Zone 2	OFF
	SW7-2	Forced cooling mode input (IN13) logic change	Active at short	Active at open	OFF
	SW7-3	Cooling limit temp. input (IN15) logic change	Active at short	Active at open	OFF
	SW7-4	—	—	—	OFF
	SW7-5	—	—	—	OFF
	SW7-6	—	—	—	OFF
	SW7-7	—	—	—	OFF
	SW7-8	—	—	—	OFF

<Table 4.3.1>

- Notes:**
- *1. When the cylinder unit is connected with a PUMY-P and PXZ outdoor unit of which maximum outlet water temperature is 55°C, DIP SW1-2 must be changed to OFF.
 - *2. External output (OUT11) will be available. For safety reasons, this function is not available for certain errors. (In that case, system operation must be stopped and only the water circulation pump keeps running.)
 - *3. Active only when SW3-6 is set to OFF.
 - *4. This switch functions only when the cylinder unit is connected with a PUHZ-FRP outdoor unit. When another type of outdoor unit is connected, the heating mode function is active regardless of the fact that this switch is ON or OFF.
 - *5. Space heating and DHW can be operated only in indoor unit, like an electric heater. (Refer to "5.4 Indoor unit only operation".)
 - *6. If emergency mode is no longer required, return the switch to OFF position.

4 Cylinder unit

4.4 Field wiring

4.4.1 Electrical connection

All electrical work should be carried out by a suitably qualified technician. Failure to comply with this could lead to electrocution, fire, and death. It will also invalidate product warranty. All wiring should be according to national wiring regulations.

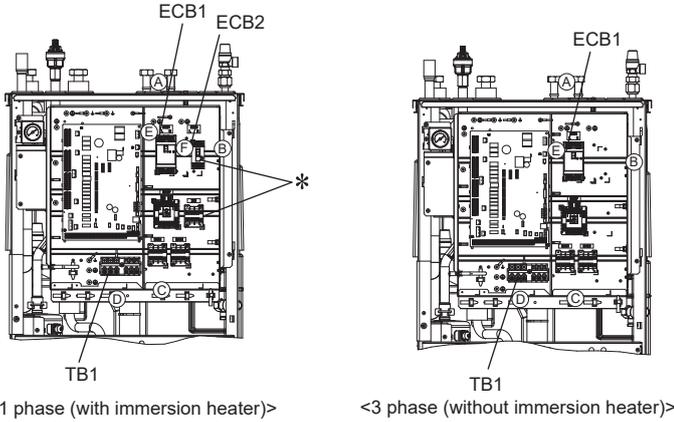
Breaker abbreviation	Meaning
ECB1	Earth leakage circuit breaker for booster heater
ECB2	Earth leakage circuit breaker for immersion heater
TB1	Terminal block 1

The cylinder unit can be powered in two ways.

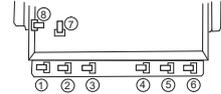
1. Power cable is run from the outdoor unit to the cylinder unit.
2. Cylinder unit has independent power source.

Connections should be made to the terminals indicated in the figures to the left below depending on the phase.

Booster heater and immersion heater should be connected independently from one another to dedicated power supplies.



- Ⓐ Locally supplied wiring should be inserted through the inlets situated on the top of the cylinder unit. (Refer to Table 4.1.1.)
- Ⓑ Wiring should be fed down the right hand side of the control and electrical box and clamped in place using clips provided.
- Ⓒ The wires should be inserted individually through the cable inlets as below.
 - ② Outputs wire
 - ③ Indoor-Outdoor wire
 - ⑤ Power line (B.H.) / Power line (I.H.) (Option)
 - ⑦ Signal input wires
- Ⓓ Connect the outdoor unit – cylinder unit connecting cable to TB1.
- Ⓔ Connect the power cable for the booster heater to ECB1.
- Ⓕ If immersion heater is present, connect the power cable to ECB2.



- Avoid contact between wiring and parts (*).
- Make sure that ECB1 and ECB2 are ON.
- On completion of wiring, ensure main remote controller cable is connected to the relay connector.

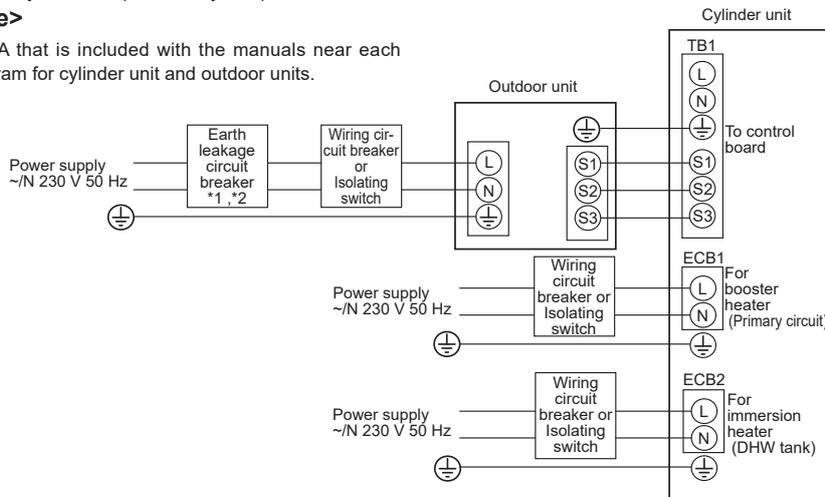
Option 1: Cylinder unit powered via outdoor unit

(If you want to use independent source, go to the Mitsubishi Electric website.)
PXZ model is not available.

The model is cylinder unit powered by independent source ONLY.

<1 phase>

Affix label A that is included with the manuals near each wiring diagram for cylinder unit and outdoor units.



<Figure 4.4.1>
Electrical connections 1 phase

- *1. If the installed earth leakage circuit breaker does not have an over-current protection function, install a breaker with that function along the same power line.
- *2. A breaker with at least 3.0 mm contact separation in each pole shall be provided. Use earth leakage circuit breaker (NV). The breaker shall be provided to ensure disconnection of all active phase conductors of the supply.
- *3. Max. 45 m
If 2.5 mm² used, Max. 50 m
If 2.5 mm² used and S3 separated, Max. 80 m
- *4. The values given in the table below are not always measured against the ground value.

Description	Power supply	Capacity	Breaker	Wiring
Booster heater (Primary circuit)	~N 230 V 50 Hz	2 kW	16 A *2	2.5 mm ²
		6 kW	32 A *2	6.0 mm ²
Immersion heater (DHW tank)	~N 230 V 50 Hz	3 kW	16 A *2	2.5 mm ²

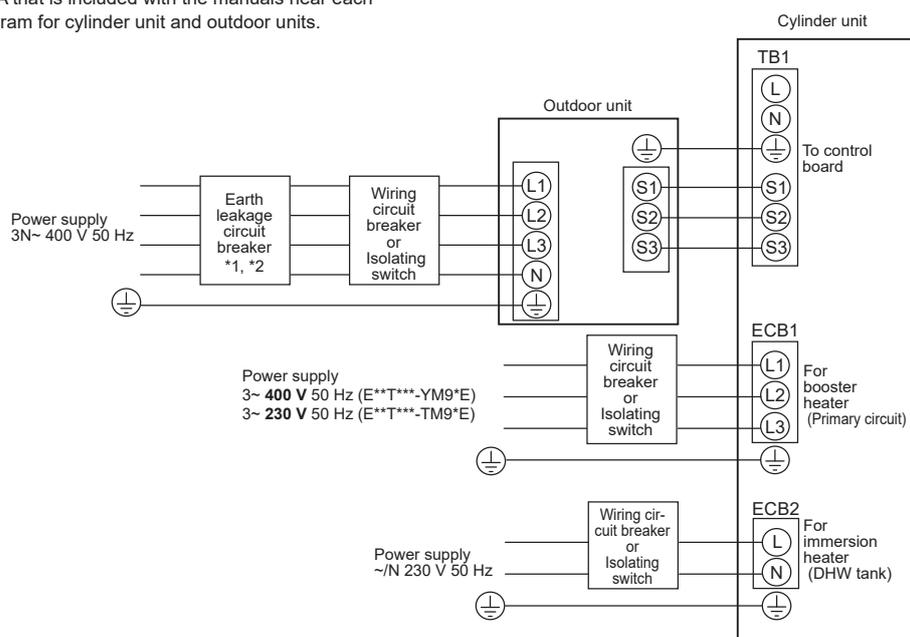
Wiring No. x size (mm ²)	Cylinder unit - Outdoor unit	*3	3 × 1.5 (polar)
	Cylinder unit - Outdoor unit earth	*3	1 × Min. 1.5
Circuit rating	Cylinder unit - Outdoor unit S1 - S2	*4	230 V AC
	Cylinder unit - Outdoor unit S2 - S3	*4	24 V DC

- Notes:
1. Wiring size must comply with the applicable local and national codes.
 2. Indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)
Indoor unit power supply cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60227 IEC 53)
 3. Install an earth longer than other cables.
 4. Please keep enough output capacity of power supply for each heater. Insufficient power supply capacity might cause chattering.

4 Cylinder unit

<3 phase>

Affix label A that is included with the manuals near each wiring diagram for cylinder unit and outdoor units.



<Figure 4.4.2>
Electrical connections 3 phase

Description	Power supply	Capacity (Indoor unit Ref.)	Breaker	Wiring
Booster heater (Primary circuit)	3~ 400 V 50 Hz	9 kW	16 A *2	2.5 mm ²
	3~ 230 V 50 Hz	9 kW	32 A *2	6.0 mm ²
Immersion heater (DHW tank)	~/N 230 V 50 Hz	3 kW	16 A *2	2.5 mm ²

Wiring No. × size (mm ²)	Cylinder unit - Outdoor unit	*3	3 × 1.5 (polar)
	Cylinder unit - Outdoor unit earth	*3	1 × Min. 1.5
Circuit rating	Cylinder unit - Outdoor unit S1 - S2	*4	230 V AC
	Cylinder unit - Outdoor unit S2 - S3	*4	24 V DC

*1. If the installed earth leakage circuit breaker does not have an over-current protection function, install a breaker with that function along the same power line.

*2. A breaker with at least 3.0 mm contact separation in each pole shall be provided. Use earth leakage circuit breaker (NV). The breaker shall be provided to ensure disconnection of all active phase conductors of the supply.

*3. Max. 45 m
If 2.5 mm² used, Max. 50 m
If 2.5 mm² used and S3 separated, Max. 80 m

*4. The values given in the table above are not always measured against the ground value.

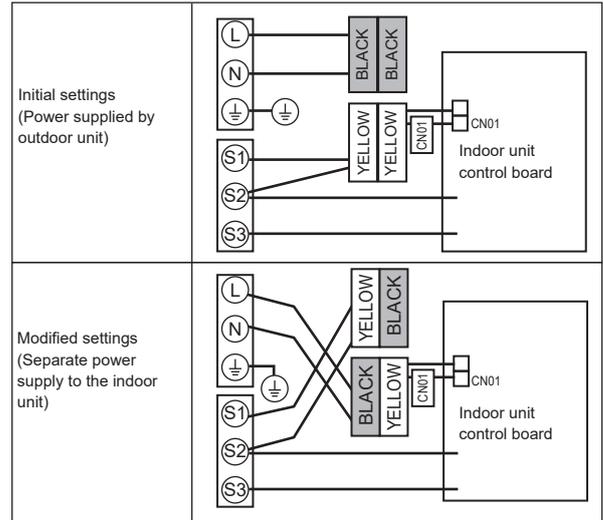
- Notes:**
1. Wiring size must comply with the applicable local and national codes.
 2. Indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)
Indoor unit power supply cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60227 IEC 53)
 3. Install an earth longer than other cables.
 4. Please keep enough output capacity of power supply for each heater. Insufficient power supply capacity might cause chattering.

4 Cylinder unit

Option 2: Cylinder unit powered by independent source

If the indoor unit and outdoor unit have separate power supplies, the following requirements must be carried out:

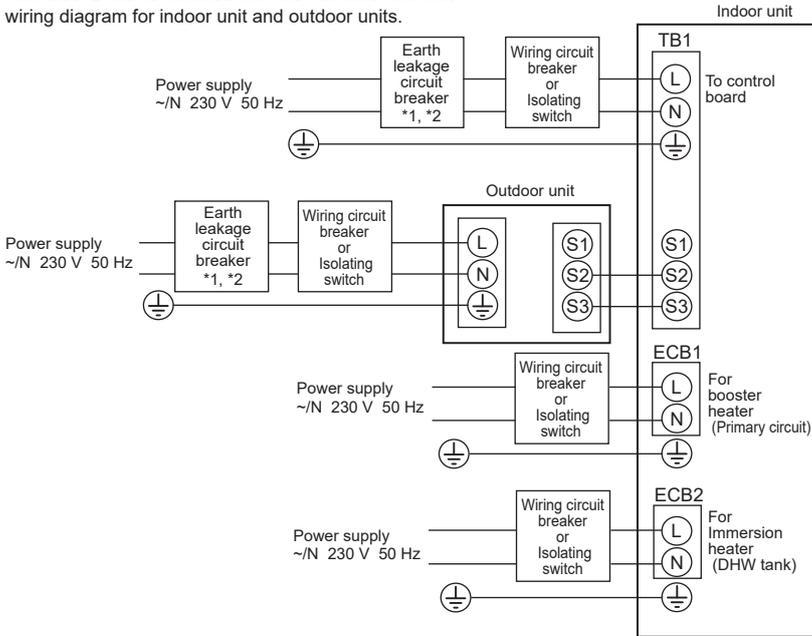
- Change the interconnected wiring in the control and electrical box of the indoor unit (see Figure 4.4.3)
- Turn the outdoor unit DIP switch SW8-3 to ON
- Turn on the outdoor unit before the indoor unit.
- Power by independent source is not available for particular models of outdoor unit model. For more details, refer to the connecting outdoor unit Installation Manual.



<Figure 4.4.3>

<1 phase>

Affix label B that is included with the manuals near each wiring diagram for indoor unit and outdoor units.



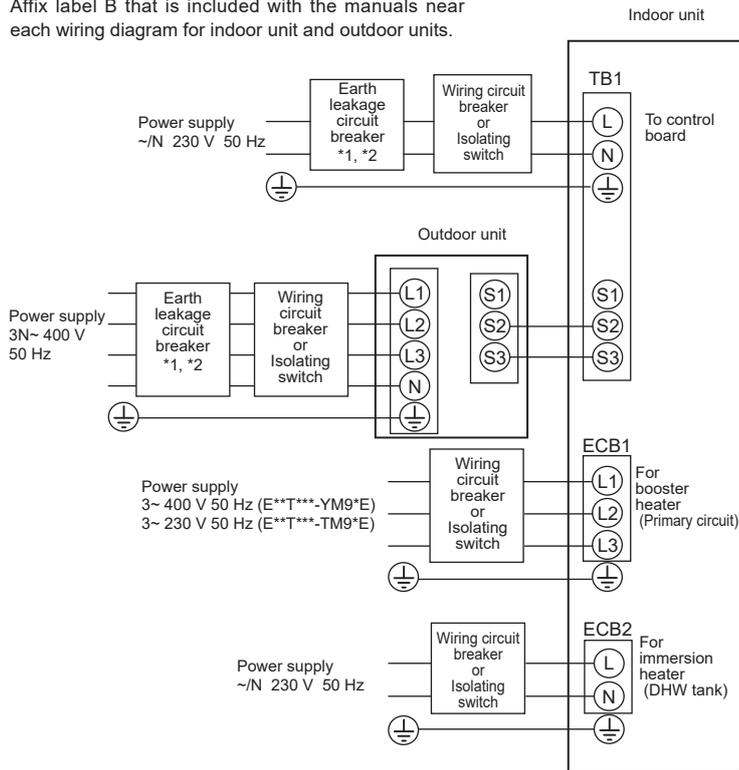
<Figure 4.4.4>
Electrical connections 1 phase

Description	Power supply	Capacity	Breaker	Wiring
Booster heater (Primary circuit)	~N 230 V 50 Hz	2 kW	16 A *2	2.5 mm ²
		6 kW	32 A *2	6.0 mm ²
Immersion heater (DHW tank)	~N 230 V 50 Hz	3 kW	16 A *2	2.5 mm ²

4 Cylinder unit

<3 phase>

Affix label B that is included with the manuals near each wiring diagram for indoor unit and outdoor units.



<Figure 4.4.5>
Electrical connections 3 phase

Description	Power supply	Capacity (Indoor unit Ref.)	Breaker	Wiring
Booster heater (Primary circuit)	3~ 400 V 50 Hz	9 kW	16 A *2	2.5 mm ²
	3~ 230 V 50 Hz	9 kW	32 A *2	6.0 mm ²
Immersion heater (DHW tank)	~N 230 V 50 Hz	3 kW	16 A *2	2.5 mm ²

Indoor unit power supply		~N 230 V 50 Hz
Indoor unit input capacity	*2	16 A
Main switch (Breaker)		
Wiring No. x size (mm ²)	Indoor unit power supply	2 x min. 1.5
	Indoor unit power supply earth	1 x min. 1.5
	Indoor unit - Outdoor unit *3	2 x min. 0.3
	Indoor unit - Outdoor unit earth	—
Circuit rating	Indoor unit L - N *4	230 V AC
	Indoor unit - Outdoor unit S1 - S2 *4	—
	Indoor unit - Outdoor unit S2 - S3 *4	24 V DC

*1. If the installed earth leakage circuit breaker does not have an over-current protection function, install a breaker with that function along the same power line.

*2. A breaker with at least 3.0 mm contact separation in each pole shall be provided. Use earth leakage breaker (NV). The breaker shall be provided to ensure disconnection of all active phase conductors of the supply.

*3. Max. 120 m

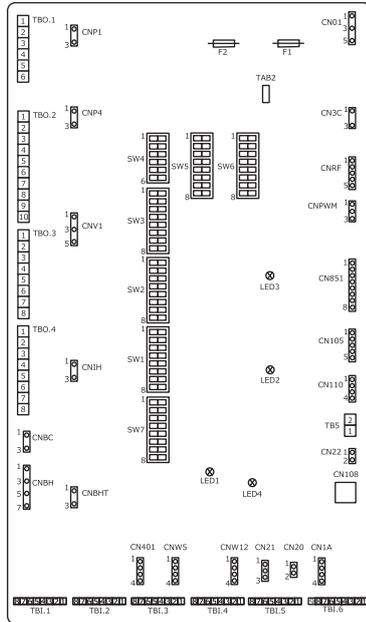
*4. The values given in the table above are not always measured against the ground value.

- Note:**
1. Wiring size must comply with the applicable local and national codes.
 2. Indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)
Indoor unit power supply cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60227 IEC 53)
 3. Install an earth longer than other cables.
 4. Please keep enough output capacity of power supply for each heater. Insufficient power supply capacity might cause chattering.

4 Cylinder unit

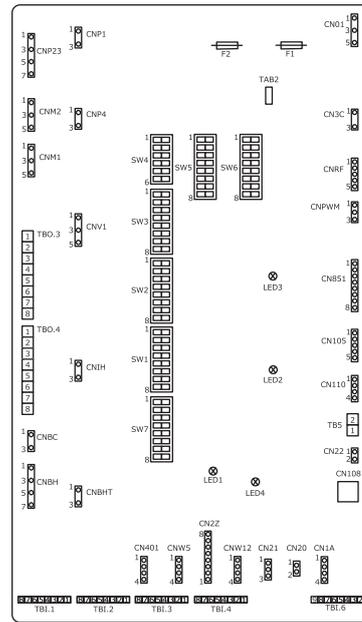
4.4.2 Connecting inputs/outputs

(Except E*ST***-M*BE)



<Figure 4.4.6>

(E*ST***-M*BE)



<Figure 4.4.7>

Signal inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1 7-8	—	Room thermostat 1 input *1	Refer to SW2-1 in <4.3 DIP Switch Functions>.	Refer to SW2-1 in <4.3 DIP Switch Functions>.
IN2	TBI.1 5-6	—	Flow switch 1 input	Refer to SW2-2 in <4.3 DIP Switch Functions>.	Refer to SW2-2 in <4.3 DIP Switch Functions>.
IN3	TBI.1 3-4	—	Flow switch 2 input (Zone 1)	Refer to SW3-2 in <4.3 DIP Switch Functions>.	Refer to SW3-2 in <4.3 DIP Switch Functions>.
IN4	TBI.1 1-2	—	Demand control input	Normal	Heat source OFF/ Boiler operation *3
IN5	TBI.2 7-8	—	Outdoor thermostat input *2	Standard operation	Heater operation/ Boiler operation *3
IN6	TBI.2 5-6	—	Room thermostat 2 input *1	Refer to SW3-1 in <4.3 DIP Switch Functions>.	Refer to SW3-1 in <4.3 DIP Switch Functions>.
IN7	TBI.2 3-4	—	Flow switch 3 input (Zone 2)	Refer to SW3-2 in <4.3 DIP Switch Functions>.	Refer to SW3-2 in <4.3 DIP Switch Functions>.
IN8	TBI.3 7-8	—	Electric energy meter 1	*4	
IN9	TBI.3 5-6	—	Electric energy meter 2		
IN10	TBI.2 1-2	—	Heat meter		
IN11	TBI.3 3-4	—	Smart grid ready input	*5	
IN12	TBI.3 1-2	—			
IN13	TBI.4 3-4	—	Forced cooling mode *6	Refer to SW7-2 in <4.3 DIP Switch Functions>.	Refer to SW7-2 in <4.3 DIP Switch Functions>.
IN15	TBI.4 1-2	—	Cooling limit temp. *6	Refer to SW7-3 in <4.3 DIP Switch Functions>.	Refer to SW7-3 in <4.3 DIP Switch Functions>.
INA1	TBI.6 3-5	CN1A	Flow sensor	—	—

*1. Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.

*2. If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.

*3. To turn on the boiler operation, use the main remote controller to select [Boiler settings] in [Operation settings] from [Service].

*4. Connectable electric energy meter and heat meter

- Pulse type Voltage free contact for 12 VDC detection by FTC (TBI.2 1pin, TBI.3 5 and 7 pins have a positive voltage.)
- Pulse duration Minimum ON time: 40 ms
Minimum OFF time: 100 ms
- Possible unit of pulse 0.1 pulse/kWh 1 pulse/kWh 10 pulse/kWh
100 pulse/kWh 1000 pulse/kWh

Those values can be set by the main remote controller. (Refer to the menu tree in "Main remote controller".)

*5. As for the SG ready, refer to "5.5 Smart grid ready".

*6. Only for ER series

Wiring specification and local supply parts (except INA1)

Item	Name	Model and specifications
Signal input function	Signal input wire	Use sheathed vinyl coated cord or cable. Max. 30 m Wire type: CV, CVS or equivalent Wire size: Stranded wire 0.13 mm ² to 0.52 mm ² Solid wire: ø0.4 mm to ø0.8 mm
	Switch	Non-voltage "a" contact signals

Note:

Stranded wire should be processed with insulation-covered bar terminal (DIN46228-4 standard compatible type).

4 Cylinder unit

Thermistor inputs

Name	Terminal block	Connector	Item	Optional part model
TH1	—	CN20	Thermistor (Room temp.) (Option)	PAC-SE41TS-E
TH2	—	CN21	Thermistor (Ref. liquid temp.)	—
THW1	—	CNW12 1-2	Thermistor (Flow water temp.)	—
THW2	—	CNW12 3-4	Thermistor (Return water temp.)	—
THW5A	—	CNW5 1-2	Thermistor (DHW tank upper water temp.)	—
THW5B	—	CNW5 3-4	Thermistor (DHW tank lower water temp.)	—
THW6	TBI.5 7-8	CN2Z 1-2	Thermistor (Zone 1 flow water temp.) (Option) *1	PAC-TH011-E(Except E*ST***-M*BE)
THW7	TBI.5 5-6	CN2Z 3-4	Thermistor (Zone 1 return water temp.) (Option) *1	
THW8	TBI.5 3-4	CN2Z 5-6	Thermistor (Zone 2 flow water temp.) (Option) *1	PAC-TH011-E(Except E*ST***-M*BE)
THW9	TBI.5 1-2	CN2Z 7-8	Thermistor (Zone 2 return water temp.) (Option) *1	
THW10	TBI.6 6-7	—	Thermistor (Mixing tank water temp.) (Option) *1	PAC-TH012HT-E(5 m)/ PAC-TH012HTL-E(30 m)
THWB1	TBI.6 8-9	—	Thermistor (Boiler flow water temp.) (Option) *1	

Ensure to wire thermistor wirings away from the power line and/or OUT1 to OUT18 wirings.

*1. The maximum length of the thermistor wiring is 30 m.

The length of the optional thermistors are 5 m. If you need to splice and extend the wirings, following points must be carried out.

1) Connect the wirings by soldering.

2) Insulate each connecting point against dust and water. Stranded wire should be processed with insulation-covered bar terminal (DIN46228-4 standard compatible type).

Outputs

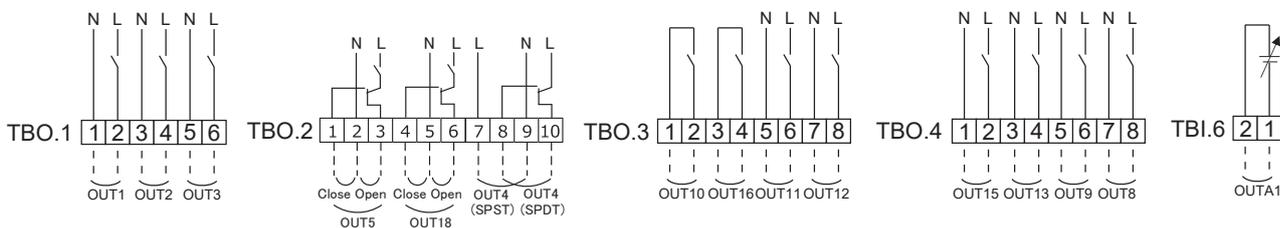
Name	Terminal block	Connector	Item	OFF	ON	Signal/Max current	Max. total current
OUT1	TBO.1 1-2	CNP1	Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	4.0 A (a)
OUT2	TBO.1 3-4	CNP23 1-3	Water circulation pump 2 output (Space heating/cooling for Zone 1)	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	
OUT3	TBO.1 5-6	CNP23 5-7	Water circulation pump 3 output (Space heating/cooling for Zone 2) *1	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	
OUT14	—	CNP4	2-way valve 2b output *2 Water circulation pump 4 output (DHW)	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	
OUT4	TBO.2 7-9	—	3-way valve SPST (2-way valve 1) output	Heating	DHW	230 V AC 0.1 A Max.	3.0 A (b)
	TBO.2 8-10	CNV1	3-way valve SPDT output				
OUT5	TBO.2 1-2	CNM2	Zone 2 mixing valve output *1	Stop	Close	230 V AC 0.1 A Max.	
	TBO.2 2-3			Open			
OUT6	—	CNBH 1-3	Booster heater 1 output	OFF	ON	230 V AC 0.5 A Max. (Relay)	
OUT7	—	CNBH 5-7	Booster heater 2 output	OFF	ON	230 V AC 0.5 A Max. (Relay)	
OUT8	TBO.4 7-8	—	Cooling signal output	OFF	ON	230 V AC 0.5 A Max.	
OUT9	TBO.4 5-6	CNIH	Immersion heater output	OFF	ON	230 V AC 0.5 A Max. (Relay)	
OUT10	TBO.3 1-2	—	Boiler output	OFF	ON	non-voltage contact ·220 - 240 V AC (30 V DC) 0.5 A or less ·10 mA 5 V DC or more	—
OUT11	TBO.3 5-6	—	Error output	Normal	Error	230 V AC 0.5 A Max.	3.0 A (b)
OUT12	TBO.3 7-8	—	Defrost output	Normal	Defrost	230 V AC 0.5 A Max.	
OUT13	TBO.4 3-4	—	2-way valve 2a output *2	OFF	ON	230 V AC 0.1 A Max.	
OUT15	TBO.4 1-2	—	Comp ON signal	OFF	ON	230 V AC 0.5 A Max.	
OUT16	TBO.3 3-4	—	Heating/Cooling thermo ON signal	OFF	ON	non-voltage contact ·220 - 240 V AC (30 V DC) 0.5 A or less ·10 mA 5 V DC or more	—
OUT18	TBO.2 4-5	CNM1	Zone 1 mixing valve output *1	Stop	Close	230 V AC 0.1 A Max.	
	TBO.2 5-6			Open			
OUTA1	TBI.6 1-2	—	Analog output	0 - 10 V	0 - 10 V DC 5 mA max.	—	

Do not connect to the terminals that are indicated as “—” in the “Terminal block” field.

*1 For 2-zone temperature control.

*2 For 2-zone valve ON/OFF control.

(Except E*ST***-M*BE) (Except E*ST***-M*BE)

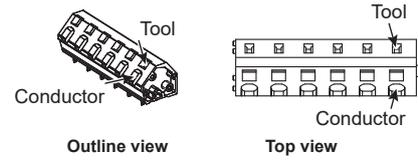


4 Cylinder unit

Wiring specification and local supply parts

Item	Name	Model and specifications
External output function	Outputs wire	Use sheathed vinyl coated cord or cable. Max. 30 m Wire type: CV, CVS or equivalent Wire size: Stranded wire 0.25 mm ² to 1.5 mm ² Solid wire: ø0.57 mm to ø1.2 mm

How to use TBO.1 to 4



Connect them using either way as shown above.

<Figure 4.4.8>

Notes:

1. When the cylinder unit is powered via outdoor unit, the maximum grand total current of (a)+(b) is 3.0 A.
2. Do not connect multiple water circulation pumps directly to each output (OUT1, OUT2, and OUT3). In such a case, connect them via (a) relay(s).
3. Do not connect water circulation pumps to both TBO.1 1-2 and CNP1 at the same time.
4. Connect an appropriate surge absorber to OUT10 (TBO.3 1-2) depending on the load at site.
5. Stranded wire should be processed with insulation-covered bar terminal (DIN46228-4 standard compatible type).
6. Use the same thing as the signal input wire for OUTA1 wiring.

4 Cylinder unit

4.4.3 Wiring for 2-zone temperature control

Connect the pipe work and locally supplied parts according to the relevant circuit diagram shown in "Local system" in Section 3, of this manual.

<Mixing valve>

- Except 2-zone cylinder
Zone1

Connect the signal line to open Port A (hot water inlet port) to TBO. 2-6 (Open), the signal line to open Port B (cold water inlet port) to TBO. 2-4 (Close) , and the neutral terminal wire to TBO. 2-5 (N).

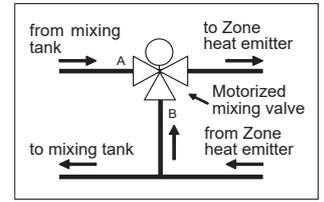
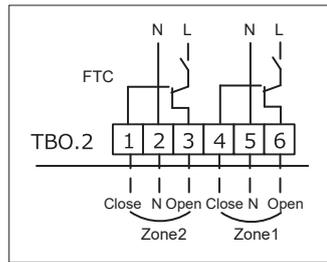
Zone2

Connect the signal line to open Port A (hot water inlet port) to TBO. 2-3 (Open), the signal line to open Port B (cold water inlet port) to TBO. 2-1 (Close) , and the neutral terminal wire to TBO. 2-2 (N).

<Thermistor>

- Do not install the thermistors on the mixing tank.
- Install the thermistor (Zone 1 flow water temp.) (THW6) near the mixing valve.
- Install the thermistor (zone 2 flow water temp.) (THW8) near the mixing valve.
- The maximum length of the thermistor wiring is 30 m.
- The length of the optional thermistors are 5 m. If you need to splice and extend the wirings, following points must be carried out.
 - 1) Connect the wirings by soldering.
 - 2) Insulate each connecting point against dust and water.

Except 2-zone cylinder



DIP Switch settings of cylinder unit (hydrobox)

Setting the following DIP switches are necessary for 2-zone control.

DIP switch	Function	OFF	ON	Setting when using 2-zone kit
SW2-6	Mixing tank	WITHOUT Mixing tank	WITH Mixing tank	ON
SW2-7	2-zone temperature control	Inactive	Active *	ON
SW7-1	Mixing valve setting	Only Zone2	Zone1 and Zone2	OFF

* Active only when SW3-6 is set to OFF.

Specifications

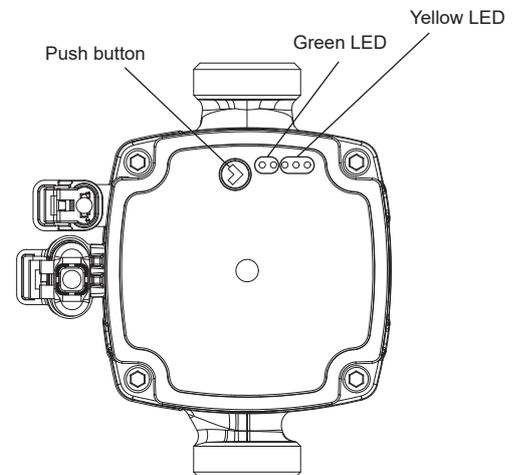
Model name	PAC-TZ02-E2
Dimension	265 mm × 383 mm × 383 mm
Weight	17 kg
Power supply	230 V/single phase/50 Hz from cylinder unit (hydrobox)
Sound pressure level	28 dB(A)
Sound power level	40 dB(A)
Pump 2, 3	Max. 52 W/0.52 A
	Max. head 7.0 m ^{''}
Mixing valve	5 W
	Running time 90° 120s
Water flow rate range	Depend on outdoor unit

Note:

- Max. flow rate is 36.9 L/min. If the flow rate exceeds 36.9L/min, pipes would be eroded.
- The water flow rate between the cylinder unit (hydrobox) and the 2-zone kit must be greater than the total flow rate of Zone 1 and Zone 2.

Pump performance view

Display	Performance in % of MAX consumption
One green LED	0
Two green LED	0-25
Two green LED + one yellow LED	25-50
Two green LED + two yellow LED	50-75
Two green LED + three yellow LED	75-100



Pump key lock function

If you press the push button for more than 10 seconds, you can toggle between enabling/disabling the key lock function.

4 Cylinder unit

Pump setting selection

You can check the setting by pressing the push button.

If you press the button for 2 to 10 seconds, the user interface switches to "setting selection" if the user interface is unlocked.

You can change the settings as below table.

Mode	LED1 green	LED2 green	LED3 yellow	LED4 yellow	LED5 yellow
PP1	•		•		
PP2	•		•	•	
PP3	•		•	•	•
PP AA	•				
CP1		•	•		
CP2		•	•	•	
CP3		•	•	•	•
CP AA		•			
CC1			•		
CC2			•	•	
CC3			•	•	•

PP: Proportional Pressure

The head (pressure) is reduced at falling heat demand and increased at rising heat demand.

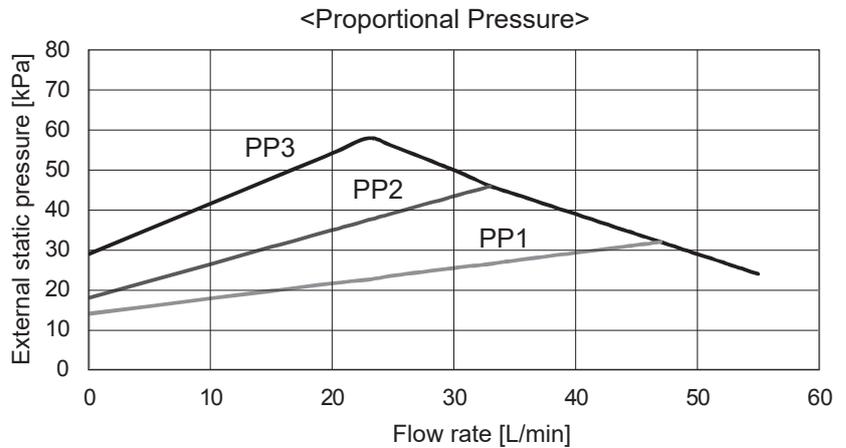
PP1: lowest proportional pressure curve

PP2: intermediate proportional pressure curve

PP3: highest proportional pressure curve

PP Auto Adapt: highest to lowest proportional pressure curve

The Auto Adapt function enables the circulator to adjust the pump performance automatically to the size of the system or the variations in load over time.



CP: Constant Pressure

The head (pressure) is kept constant, irrespective of the heat demand.

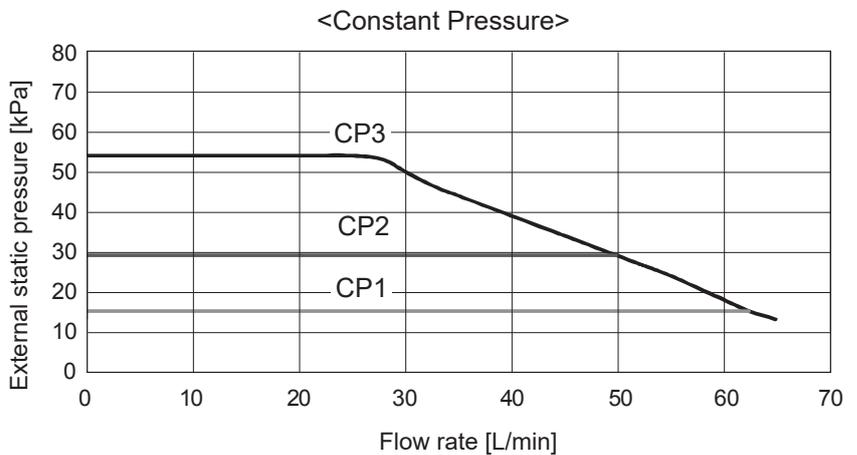
CP1: lowest constant pressure curve

CP2: intermediate constant pressure curve

CP3: highest constant pressure curve

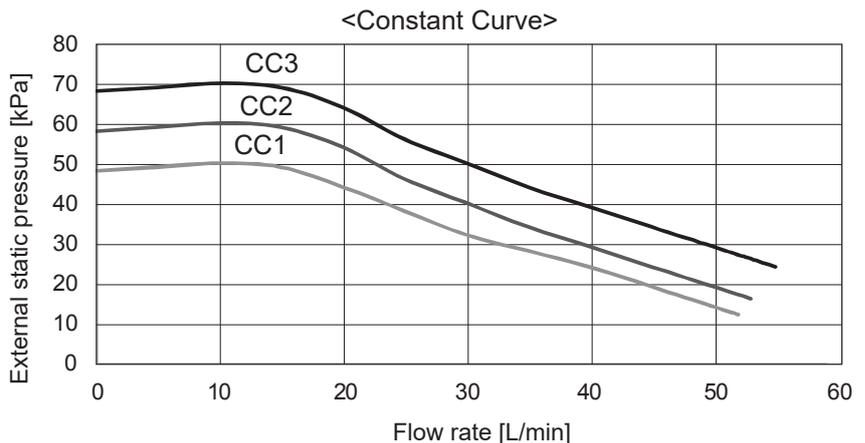
CP Auto Adapt: highest to lowest constant pressure curve

The Auto Adapt function enables the circulator to adjust the pump performance automatically to the size of the system or the variations in load over time.



CC: Constant Curve

The circulator runs on a constant curve.



4 Cylinder unit

4.4.4 Indoor unit only operation (during installation work)

In the case when DHW or heating operation is required prior to connection of the outdoor unit; i.e. during installation work, an electric heater in indoor unit (*1) can be used.

*1 Model with electric heater only

1. To start operation

- Check if the indoor unit power supply is OFF, and turn DIP switch 4-4 and 4-5 ON.
- Turn ON the indoor unit power supply.

2. To end operation*2

- Turn OFF the indoor unit power supply.
- Turn DIP switch 4-4 and 4-5 OFF.

*2 When the indoor unit only operation is ended, ensure to check over the settings after outdoor unit is connected.

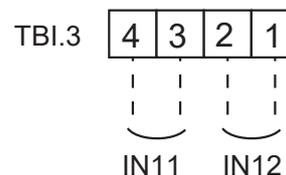
Note:

Prolonged running of this operation may affect the life of the electric heater.

4.4.5 Smart grid ready

In DHW, heating or cooling operation, the commands in the table below can be used.

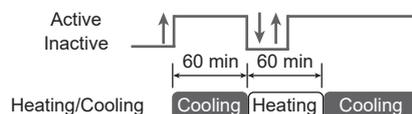
IN11	IN12	Meaning
OFF (open)	OFF (open)	Normal operation
ON (short)	OFF (open)	Switch-on recommendation
OFF (open)	ON (short)	Switch-off command
ON (short)	ON (short)	Switch-on command



4.4.6 Forced cooling mode input (IN13) (only for ER series)

- When IN13 is active, the mode (heating/cooling) is fixed to cooling.
- SW7-2 changes the logic of IN13.

Name	Terminal block	DIP SW7-2	
		OFF	ON
IN13	TBI.4 3-4	Active at short (Default setting)	Active at open



Notes:

Use non-voltage contact signals for the switch of IN13.

The mode (heating/cooling) does not switch under the condition such as

- within 60 minutes since the mode switched last time,
- during DHW mode or legionella prevention mode,
- during outdoor unit protection control,
- during emergency operation, floor dry up operation, or abnormality.

Check the mode with the main remote controller or the cooling signal output (OUT8 ON: cooling, OFF: heating).

4 Cylinder unit

4.4.7 Using microSD memory card

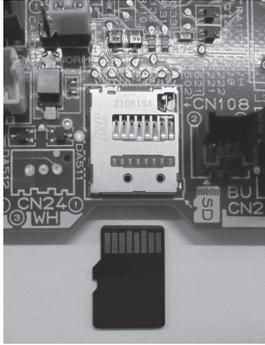
The cylinder unit is equipped with a microSD memory card interface in FTC.

Using a microSD memory card can simplify main remote controller settings and can store operating logs. *1

*1 To edit main remote controller settings or to check operating data, an Ecodan service tool (for use with PC) is required.

<Handling precautions>

- (1) Use a microSD memory card that complies with the SD standards. Check that the microSD memory card has a logo on it of those shown to the right.
- (2) SD memory cards to the SD standards include microSD and microSDHC memory cards. The capacities are available up to 32 GB.
- (3) Insert the microSD memory card into the FTC control board in the direction shown below.



- (4) Before inserting or ejecting a microSD memory card, make sure to power off the system. If a microSD memory card is inserted or ejected with the system powered on, the stored data could be corrupted or the microSD memory card be damaged.
*A microSD memory card is live for a short duration after the system is powered off. Before insertion or ejection wait until the LED lamps on the FTC control board are all off.
- (5) The read and write operations have been verified using the following microSD memory cards, however, these operations are not always guaranteed as the specifications of these microSD memory cards could change.

Manufacturer	Model	Tested in
Vantastek	Vantastek 8GB microSDHC	Sep. 2022
Longsys	NC5MC 2008G-52A39	Sep. 2022
Kingston	SDCS2/32GBSP	Sep. 2022

Before using a new microSD memory card (including the card that comes with the unit), always check that the microSD memory card can be safely read and written to by the FTC controller.

<How to check read and write operations>

- a) Check for correct wiring of power supply to the system. For more details, refer to section 4.4.
(Do not power on the system at this point.)
- b) Insert a microSD memory card.
- c) Power on the system.
- d) The LED4 lamp lights if the read and write operations are successfully completed. If the LED4 lamp continues blinking or does not light, the microSD memory card cannot be read or written to by the FTC controller.

- (6) Make sure to follow the instruction and the requirement of the microSD memory card's manufacturer.
- (7) Format the microSD memory card if determined unreadable in step (5). This could make it readable.
Download an SD card formatter from the following site.
SD Association homepage: <https://www.sdcard.org/home/>
- (8) FTC supports FAT12/FAT16/FAT32 file system but not NTFS/exFAT file system.
- (9) Mitsubishi Electric is not liable for any damages, in whole or in part, including failure of writing to a microSD memory card, and corruption and loss of the saved data, or the like. Back up saved data as necessary.
- (10) Do not touch any electronic parts on the FTC control board when inserting or ejecting a microSD memory card, or else the control board could fail.

Logos
Capacities
2 GB to 32 GB *2
SD speed classes
All

• The microSD logo is a trademark of SD-3C, LLC.

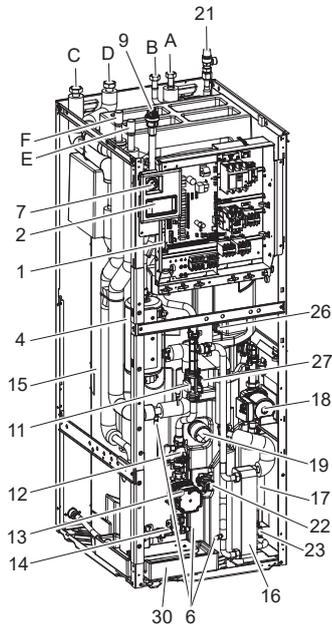
*2 A 2GB SD memory card stores up to 30 days of operation logs.

4 Cylinder unit

4.5 Water circuit diagrams

4.5.1 Component parts

<E**T***-M**E>
(Hydro-Split system)



<Figure 4.5.1>

Note:

For installation of all E**T***-M**E* models, make sure to install a suitably sized primary-side expansion vessel. (See figure 4.5.2 and 4.5.3 for further guidance)

4 Cylinder unit

No.	Part name	EHPT17/20X- *M*E	EHPT30X- *M*EE	ERPT17/20X- *M*E	ERPT30X- *M*EE	EHPT20X- MEHEW
A	DHW outlet pipe	✓	✓	✓	✓	✓
B	Cold water inlet pipe	✓	✓	✓	✓	✓
C	Water pipe (Space heating/cooling return connection)	✓	✓	✓	✓	✓
D	Water pipe (Space heating/cooling flow connection)	✓	✓	✓	✓	✓
E	Water pipe (Flow from heat pump connection)	✓	✓	✓	✓	✓
F	Water pipe (Return to heat pump connection)	✓	✓	✓	✓	✓
G	Refrigerant pipe (Gas)	—	—	—	—	—
H	Refrigerant pipe (Liquid)	—	—	—	—	—
1	Control and electrical box	✓	✓	✓	✓	✓
2	Main remote controller	✓	✓	✓	✓	✓
3	Plate heat exchanger (Refrigerant - Water)	—	—	—	—	—
4	Booster heater 1,2	✓	✓	✓	✓	—
5	3-way valve	✓	✓	✓	✓	✓
6	Drain cock (Primary circuit)	✓	✓	✓	✓	✓
7	Manometer	✓	✓	✓	✓	✓
8	Pressure relief valve (3 bar)	—	—	—	—	—
9	Automatic air vent	✓	✓	✓	✓	✓
10	Expansion vessel (Primary circuit)	✓	—	✓	—	—
11	Flow sensor	✓	✓	✓	✓	✓
12	Magnetic filter	✓	✓	✓	✓	✓
13	Water circulation pump 1 (Primary circuit)	✓	✓	✓	✓	✓
14	Pump elbow	✓	✓	✓	✓	✓
15	DHW tank	✓	✓	✓	✓	✓
16	Plate heat exchanger (Water - Water)	✓	✓	✓	✓	✓
17	Scale trap	✓	✓	✓	✓	✓
18	Water circulation pump (Sanitary circuit)	✓	✓	✓	✓	✓
19	Immersion heater	—	—	—	—	✓
20	Temperature and pressure relief valve	—	—	—	—	✓
21	Pressure relief valve (10 bar) (DHW Tank)	✓	✓	✓	✓	—
22	Drain cock (DHW tank)	✓	✓	✓	✓	✓
23	Drain cock (Sanitary circuit)	✓	✓	✓	✓	✓
24	Thermistor (Flow water temp.) (THW1)	✓	✓	✓	✓	✓
25	Thermistor (Return water temp.) (THW2)	✓	✓	✓	✓	✓
26	Thermistor (DHW tank upper water temp.) (THW5A)	✓	✓	✓	✓	✓
27	Thermistor (DHW tank lower water temp.) (THW5B)	✓	✓	✓	✓	✓
28	Thermistor (Ref. liquid temp.) (TH2)	—	—	—	—	—
29	Pressure sensor	—	—	—	—	—
30	Drain pan	—	—	✓	✓	—
31	Outdoor unit	—	—	—	—	—
32	Drain pipe (Local supply)	—	—	—	—	—
33	Back flow prevention device (Local supply)	—	—	—	—	—
34	Isolating valve (Local supply)	—	—	—	—	—
35	Magnetic filter (Local supply) (Recommended)	—	—	—	—	—
36	Strainer (Local supply)	—	—	—	—	—
37	Pressure relief valve (3 bar - In outdoor unit)	—	—	—	—	—
38	Inlet control group *1	—	—	—	—	—
39	Filling loop (Ball valves, check valves and flexible hose) *1	—	—	—	—	—
40	Potable expansion vessel *1	—	—	—	—	—
41	Air vent (Local supply)	—	—	—	—	—
42	Pressure relief valve (5 bar)	✓	—	✓	—	—
43	Water circulation pump 2 (Zone 1)	—	—	—	—	—
44	Water circulation pump 3 (Zone 2)	—	—	—	—	—
45	Mixing valve	—	—	—	—	—
46	Magnetic filter	—	—	—	—	—
47	Mud trap	—	—	—	—	—
48	Thermistor (Zone 1 flow water temp.) (THW6)	—	—	—	—	—
49	Thermistor (Zone 1 return water temp.) (THW7)	—	—	—	—	—
50	Thermistor (Zone 2 flow water temp.) (THW8)	—	—	—	—	—
51	Thermistor (Zone 2 return water temp.) (THW9)	—	—	—	—	—
52	Header	—	—	—	—	—

*1 Supplied with UK model ONLY. Please refer to PAC-WK02UK-E Installation Manual for more information on accessories.

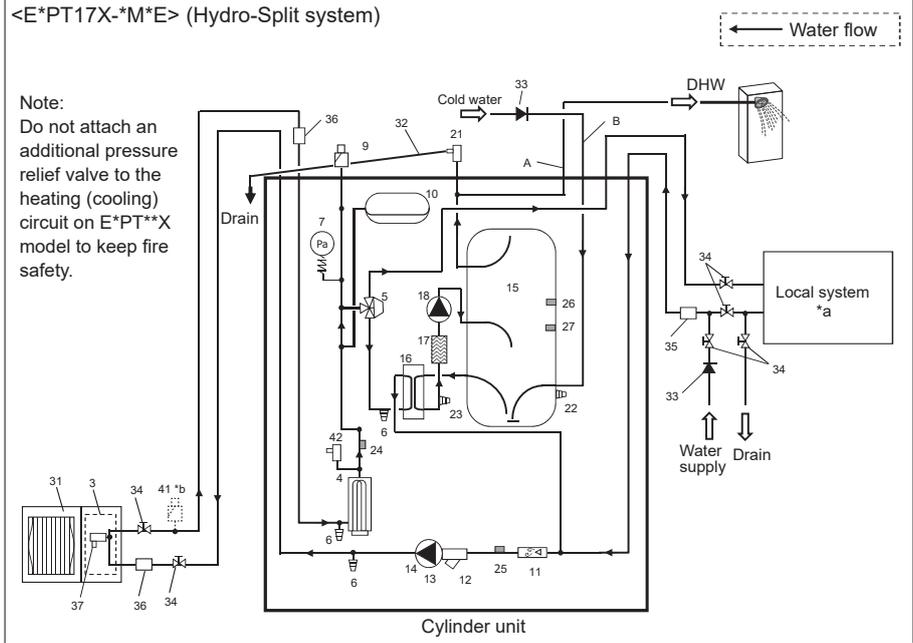
*2 Attachment the part to the position of 3 bar PRV for E*ST20 series. (Refer to *c of the Figure 4.5.6)

*3 Attachment the part to the position of 3 bar PRV for E*ST30 series. (Refer to *d of the Figure 4.5.6)

<Table 4.5.2>

4 Cylinder unit

Water circuit diagram



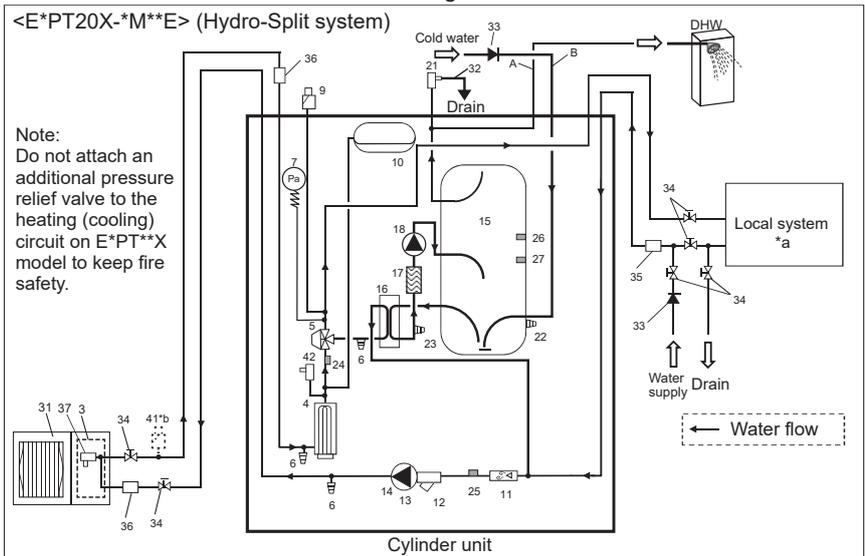
<Figure 4.5.2>

*a Refer to the following section "Local system" on the paper-based manual.

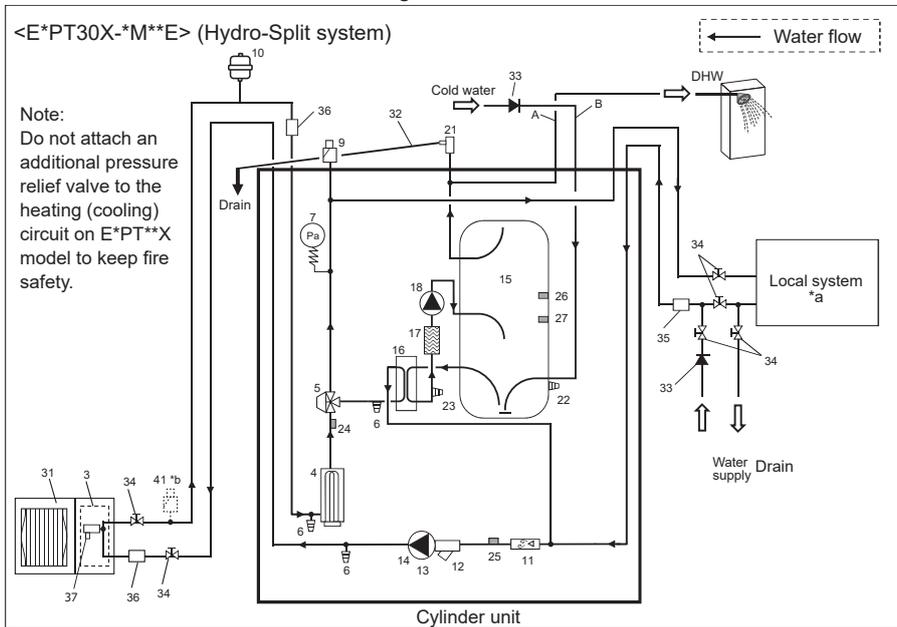
*b If the outdoor unit is higher than the indoor unit, or if there is a location where air gets trapped in the upper part of the water pipe, consider adding this part.

Note

- To enable draining of the cylinder unit an isolating valve should be positioned on both the inlet and outlet pipework.
- Be sure to install a strainer on the inlet pipework to the cylinder unit.
- Suitable drain pipework should be attached to the relief valves instructed to be connected to it in Figure 4.5.2, 4.5.3 and 4.5.4 in accordance with your country's regulations.
- A backflow prevention device must be installed on the cold water supply pipework (IEC 61770)
- When using components made from different metals or connecting pipes made of different metals insulate the joints to prevent any corrosive reaction taking place which may damage the pipework.



<Figure 4.5.3>

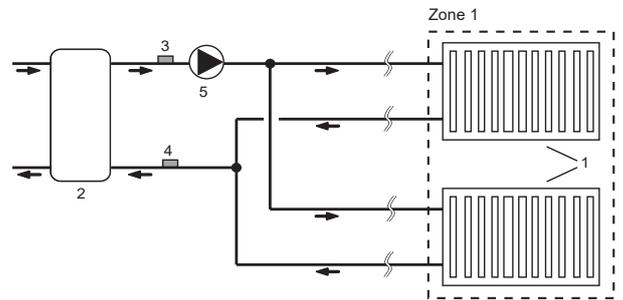
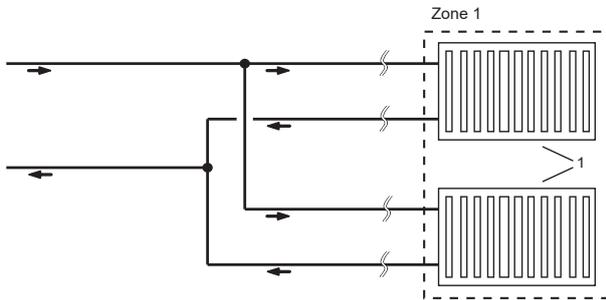


<Figure 4.5.4>

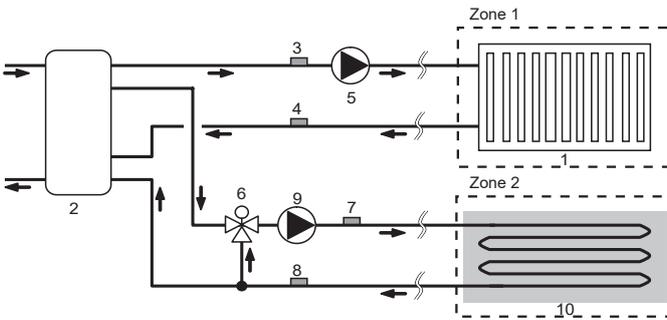
4 Cylinder unit

4.5.2 Local system

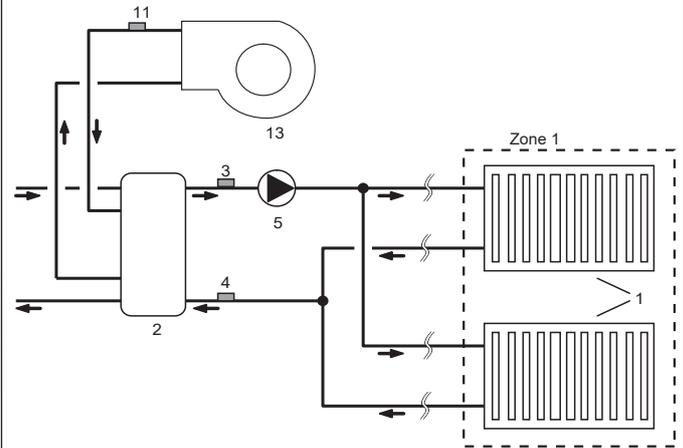
1-zone temperature control



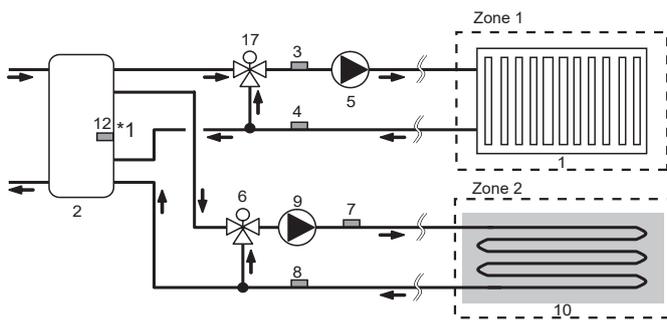
2-zone temperature control



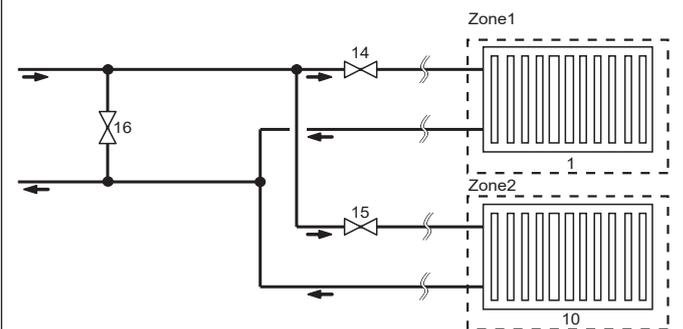
1-zone temperature control with boiler



2-zone temperature control & Buffer tank control



1-zone temperature control (2-zone valve ON/OFF control)



- 1. Zone 1 heat emitters (e.g. radiator, fan coil unit) (local supply)
- 2. Mixing tank (local supply)
- 3. Thermistor (Zone 1 flow water temp.) (THW6)
- 4. Thermistor (Zone 1 return water temp.) (THW7) } Optional part: PAC-TH011-E
- 5. Zone 1 water circulation pump (local supply)
- 6. Zone 2 motorized mixing valve (local supply)
- 7. Thermistor (Zone 2 flow water temp.) (THW8)
- 8. Thermistor (Zone 2 return water temp.) (THW9) } Optional part: PAC-TH011-E
- 9. Zone 2 water circulation pump (local supply)

- 10. Zone 2 heat emitters (e.g. underfloor heating) (local supply)
- 11. Thermistor (Boiler flow water temp.) (THWB1)
- 12. Thermistor (Mixing tank water temp.) (THW10) *1 } Optional part: PAC-TH012HT(L)-E
- 13. Boiler (local supply)
- 14. Zone 1 2-way valve (local supply)
- 15. Zone 2 2-way valve (local supply)
- 16. Bypass valve (local supply)
- 17. Zone 1 motorized mixing valve (local supply)

*1 ONLY buffer tank control (heating/cooling) applies to "Smart grid ready".

4 Cylinder unit

4.6. Installation

<Preparation before the installation and service>

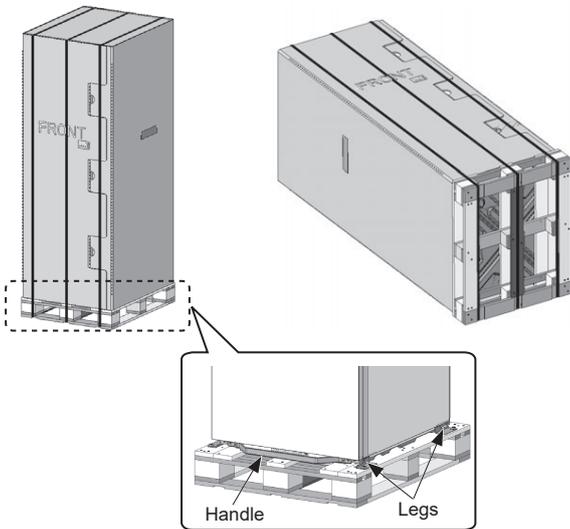
- Prepare the proper tools.
- Prepare the proper protection.
- Allow parts to cool before attempting any maintenance.
- Provide adequate ventilation.
- After stopping the operation of the system, turn off the power-supply breaker and remove the power plug.
- Discharge the capacitor before commencing work involving the electric parts.

<Precautions during service>

- Do not perform work involving electric parts with wet hands.
- Do not pour water or liquid into the electric parts.
- Do not touch the refrigerant.
- Do not touch the hot or cold surfaces in the refrigerant cycle.
- When the repair or the inspection of the circuit needs to be carried out without turning off the power, exercise great caution NOT to touch any LIVE parts.

4.6.1 Location

■ Transportation and Handling



<Figure 4.6.1>

Cylinder unit is delivered on a wooden pallet base with cardboard protection.

Care should be taken when transporting the cylinder unit that the casing is not damaged by impact. Do not remove the protective packaging until cylinder unit has reached its final location. This will help protect the structure and control panel.

- The cylinder unit can be transported either vertically or horizontally. If transported horizontally, the panel marked 'Front' must be facing **UPWARDS** <Figure 4.6.1>.
- The cylinder unit should **ALWAYS** be moved by a minimum of 3 people.
- When carrying the cylinder unit, use the handles provided.
- Before using the handles, make sure they are securely attached.
- **Please wear protective equipment when you touch front handle.** It could cause injury if you do not wear the protective equipment.
- **Please remove front handle, fixing legs, wooden base and any other packaging once the unit is in installation location.**
- **Keep the handles for future transportation.**

■ Suitable Location

Before installation, the cylinder unit should be stored in a frost-free weather-proof location. Units must **NOT** be stacked.

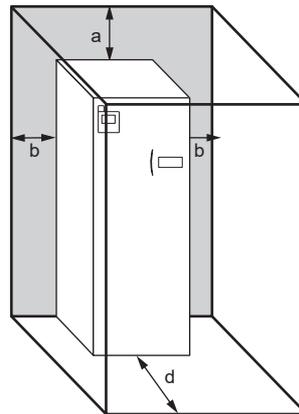
- The cylinder unit should be installed indoors in a frost free weather proof location.
- Install the cylinder unit where it is not exposed to water/excessive moisture.
- The cylinder unit should be positioned on a level surface capable of supporting its **FILLED** weight. (Adjustable feet (accessory parts) can be used to ensure unit is level.)
- When using the adjustable feet, ensure that the floor is strong enough.
- Care should be taken that minimum distances around and in front of the unit for service access are observed <Figure 4.6.2>.
- Secure the cylinder unit to prevent it being knocked over.
- Please be careful not to break the insulation attached to the unit.

■ Service access diagrams

Service access	
Parameter	Dimension (mm)
a	300*
b	150
c (distance behind unit not visible in Figure 4.6.2)	10
d	500

<Table 4.6.1>

Sufficient space **MUST** be left for the provision of discharge pipework as detailed in National and Local Building Regulations.



<Figure 4.6.2>

Service access

* An additional 300 mm of space (total 600 mm) is required, when installing the optional 2-zone kit (PAC-TZ02-E2) on top of the cylinder unit.

The cylinder unit must be located indoors and in a frost-free environment, for example in a utility room, to minimise heat loss from stored water.

■ Repositioning

If you need to move the cylinder unit to a new position, fully drain the cylinder unit before moving to avoid damage to the unit.

4 Cylinder unit

4.6.2 Water quality and system preparation

The water quality must comply with European Directive (EU) 2020/2184 standards, and/or local national standards.

■ Water quality in primary circuit

- The water in primary circuit should observe local national standards
- The water in primary circuit should be clean and with a pH value of pH6.5-9.5.

■ Water quality in sanitary circuit

- In known hard water areas, to prevent/minimise scaling, it is beneficial to restrict the routine stored water temperature (DHW max. temp.) to 55°C, and/or to add an appropriate water treatment (i.e: softener).

■ Anti-Freeze

Anti-freeze solutions should use propylene glycol with a toxicity rating of Class 1 as listed in Clinical Toxicology of Commercial Products, 5th Edition.

Notes:

1. Ethylene glycol is toxic and should NOT be used in the primary water circuit in case of any cross-contamination of the potable circuit.
2. For 2-zone valve ON/OFF control, propylene glycol should be used.

■ New Installation (primary water circuit)

- Before connecting outdoor unit, thoroughly cleanse pipework of building debris, solder, etc. using a suitable chemical cleansing agent.
- Flush the system to remove chemical cleanser.
- For all Hydro-Split model systems, add a combined inhibitor and anti-freeze solution to prevent damage to the pipework and system components.
- For split model systems, the responsible installer should decide if anti-freeze solution is necessary for each site's conditions. Corrosion inhibitor however should ALWAYS be used.

■ Existing Installation (primary water circuit)

- Before connecting outdoor unit, the existing heating circuit MUST be chemically cleansed to remove existing debris from the heating circuit.
- Flush the system to remove chemical cleanser.
- For all Hydro-Split model systems, and the split model or PUMY system without booster heater, add a combined inhibitor and anti-freeze solution to prevent damage to the pipework and system components.
- For split model systems, the responsible installer should decide if anti-freeze solution is necessary for each site's conditions. Corrosion inhibitor however should ALWAYS be used.

When using chemical cleansers and inhibitors, always follow manufacturer's instructions and ensure the product is appropriate for the materials used in the water circuit

■ Minimum amount of water required in the space heating/cooling circuit

Outdoor heat pump unit		Indoor unit containing water amount [L]	Additional required water amount [L]*1	
			Average / Warmer climate*2	Colder climate*2
Hydro-Split model	PUZ-WZ50	5	2	24
	PUZ-WZ60		4	21
	PUZ-WZ80		6	29
	PUZ-WZ85		7	44
	PUZ-WZ100		8	47
	PUZ-WZ120		12	64

<Table 4.6.2>

*1 Water amount: If there is a bypass circuit, above table means minimum water amount in case of bypass.

*2 Climate: Please refer to 2009/125/EC: Energy-related Products Directive and Regulation (EU) No 813/2013 to confirm your climate zone.

*3 SUZ series: Flow temperature MUST always be NO lower than 32 °C when outdoor temperature drops below -15 °C. Potential risks of plate HEX get frozen and damaged, and also outdoor HEX would be frosted due to insufficient defrosting.

Case 1. No division between primary and secondary circuit

- Please ensure the required water amount according to Table 4.6.2 by water pipe and radiator or underfloor heating.

Case 2. Separate primary and secondary circuit

- If the interlock operation of primary and secondary pump is not available, please ensure required additional water in only primary circuit according to Table 4.6.2.
- If the interlock operation of primary and secondary pump is available, please ensure total water amount of primary and secondary circuit according to Table 4.6.2.

In case of the shortage of required water amount, please install buffer tank.

4 Cylinder unit

4.6.3 Water pipe work

■ Hot water pipework

The cylinder unit is **UNVENTED**. When installing unvented hot water systems, building regulations part G3 (England and Wales), P3 (Scotland) and P5 (Northern Ireland) should be adhered to. If outside of the UK, please adhere to your own country's regulations for unvented hot water systems.

Connect the flow for the DHW to pipe A (Figure 4.5.1).

The function of the following safety components of the cylinder unit should be checked on installation for any abnormalities;

- Pressure relief valve (primary circuit and tank)
- Expansion vessel pre-charge (gas charge pressure)

The instruction on the following pages regarding safe discharge of hot water from safety devices should be followed carefully.

- The pipework will become very hot, so should be insulated to prevent burns.
- When connecting pipework, ensure that no foreign objects such as debris or the like enter the pipe.

■ Cold water pipework

Cold water to the suitable standard (see section 4.6.2) should be introduced to the system by connecting pipe B (Figure 4.5.1) using appropriate fittings.

■ Short cycling prevention

If there are thermostatic or motorized valves on the installation, at least one of the valves on each zone must be fully open (preferably on the largest emitter).

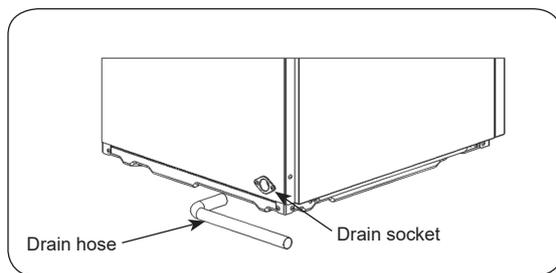
■ Drain pipework (Only ER series)

The drain should be set from the drain socket at left rear of the unit.

The drain pipe should be installed to drain condensed water during cooling mode.

Close the drain socket hole when cooling operation is not used.

- To prevent dirty water from draining directly onto the floor next to cylinder unit, please connect appropriate discharge pipework from the cylinder drain pan.
- Securely install the drain pipe to prevent leakage from the connection.
- Securely insulate the drain pipe to prevent water dripping from the locally supplied drain pipe.
- Install the drain pipe at a down slope of 1/100 or more.
- Do not place the drain pipe in drain channel where sulphuric gas exists.
- After installation, check that the drain pipe drains water properly from the outlet of the pipe to suitable discharge location.
- The drain hose should be connected to the drainage hole that is in the room.



<Figure 4.6.3>

■ Negative pressure prevention

To prevent negative pressure effecting DHW tank, installer should install appropriate pipework or use appropriate devices.

■ Hydraulic filter work (Only E*PT series)

Install a hydraulic filter or strainer (local supply) at the water intake ("Pipe E" in Fig.4.5.1)

■ Pipework connections

Connections to the cylinder unit should be made using the G-screw connection.

Note: Before brazing pipes in the field, protect pipes on the cylinder unit using wet towels, etc. as "heat shield".

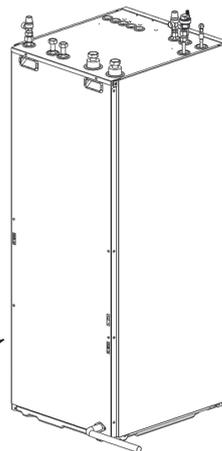
■ Insulation of pipework

- All exposed water pipework should be insulated to prevent unnecessary heat loss and condensation. To prevent condensate entering the cylinder unit, the pipework and connections at the top of the cylinder unit should be carefully insulated.
- Cold and hot water pipework should not be run close together where possible, to avoid unwanted heat transfer.
- Pipework between outdoor heat pump unit and cylinder unit should be insulated with suitable pipe insulation material with a thermal conductivity of ≤ 0.04 W/m.K.

<Installation>

1. The drain socket (inside diameter 26 mm) is left rear of the cylinder unit. (Figure 4.6.3)
2. Fix the drain pipe (VP-20) which fits the drain socket with the polyvinyl chloride type adhesive.
3. Set the drain pipework up to the outlet with the down grade of more than one hundredth.

Note: Securely support the locally supplied drain pipe to avoid the drain pipe falling from the drain socket.



4 Cylinder unit

■ Sizing expansion vessels

Expansion vessel volume must fit the local system water volume.

To size an expansion vessel for the heating circuit, the following formula and graph can be used.

When the necessary expansion vessel volume exceeds the volume of an built-in expansion vessel, install an additional expansion vessel so that the sum of the volumes of the expansion vessels exceeds the necessary expansion vessel volume.

* For installation of an E**T***-M*EE* model, provide and install a suitable primary-side expansion vessel and additional 3 bar rated pressure relief valve in the field as the model DOES NOT come fitted with a primary-side expansion vessel.

$$V = \frac{\epsilon \times G}{1 - \frac{P_1 + 0.098}{P_2 + 0.098}}$$

Where;

V : Necessary expansion vessel volume [L]

ε : Water expansion coefficient

G : Total volume of water in the system [L]

P₁ : Expansion vessel setting pressure [MPa]

P₂ : Max. pressure during operation [MPa]

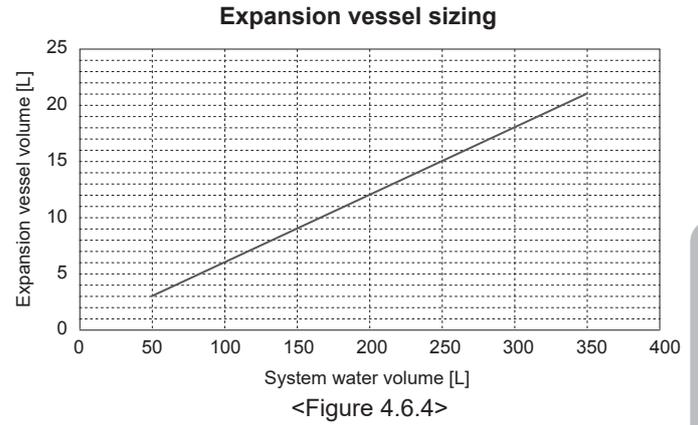
Graph to the right is for the following values

ε : at 70°C = 0.0229

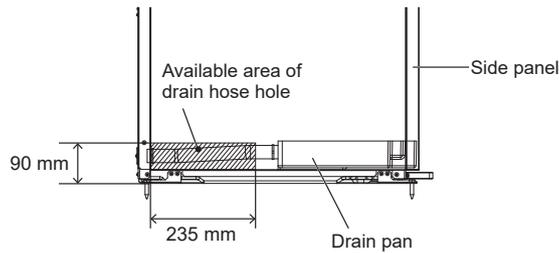
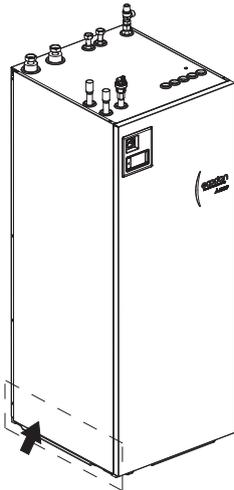
P₁ : 0.1 MPa

P₂ : 0.3 MPa

*A 30% safety margin has been added.



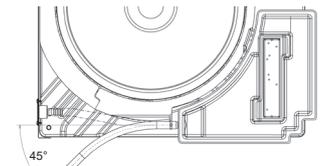
■ Drain hose connection from left side



<Note>

Please make a hole to come out drain hose within this area.

* Please note that bigger hole will deteriorate insulation and sound level.



<Note>

Be careful not to kink or collapse the drain hose.
(Must be in a state where it can be drained)

4 Cylinder unit

4.6.4 Water circulation pump characteristics

1. Primary circuit

Pump speed can be selected by main remote controller setting (see Figure 4.6.5 to 4.6.12).

Adjust the pump speed setting so that the flow rate in the primary circuit is appropriate for the outdoor unit installed (see Table 4.6.3). It may be necessary to add an additional pump to the system depending on the length and lift of the primary circuit.

For outdoor unit model not listed in Table 4.6.3, refer to the water flow rate range in the specification table of outdoor unit Data Book.

<Second pump >

If a second pump is required for the installation, please read the following carefully. If a second pump is used in the system, it can be positioned in 2 ways.

The position of the pump influences which terminal of the FTC the signal cable should be wired to. If the additional pump(s) have current greater than 1A, please use appropriate relay. Pump signal cable can either be wired to TBO.1 1-2 or CNP1 but NOT both.

Option 1 (Space heating/cooling only)

If the second pump is being used for the heating circuit, only then the signal cable should be wired to TBO.1 terminals 3 and 4 (OUT2). In this position, the pump can be run at a different speed to the cylinder unit's in-built pump.

Option 2 (Primary circuit DHW and space heating/cooling)

If the second pump is being used in the primary circuit between the cylinder unit and the outdoor unit (Package system ONLY), then the signal cable should be wired to TBO.1 terminals 1 and 2 (OUT1). In this position, the pump speed **MUST** match the speed of the cylinder unit's in-built pump.

Note: Refer to 4.4.2 Connecting inputs/outputs.

2. Sanitary circuit

Default setting: Speed 2

DHW circulation pump **MUST** be set to speed 2.

Outdoor heat pump unit		Water flow rate range [L/min]	Recommended flow [L/min] *1
Hydro-Split model	PUZ-WZ50	6.5 - 14.3	9.0
	PUZ-WZ60	6.5 - 17.2	10.8
	PUZ-WZ80	6.5 - 22.9	14.3
	PUZ-WZ85	7.2 - 27.2	14.3
	PUZ-WZ100	10.0 - 34.4 *3	21.5 *2
	PUZ-WZ120	10.0 - 34.4 *3	21.5 *2

<Table 4.6.3>

Notes:

1. If the water flow rate is less than the minimum flow rate setting of the flow sensor (default 5.0 L/min), the flow rate error will be activated.
2. If the water flow rate exceeds 36.9 L/min (E**T20/30 series) or 25.8 L/min (E**T17 series), the flow speed will be greater than 2.0 m/s, which could erode the pipes.

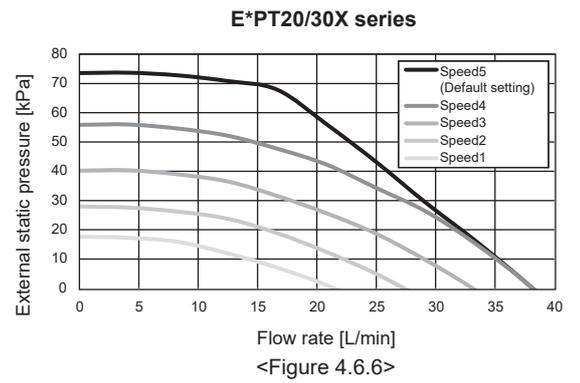
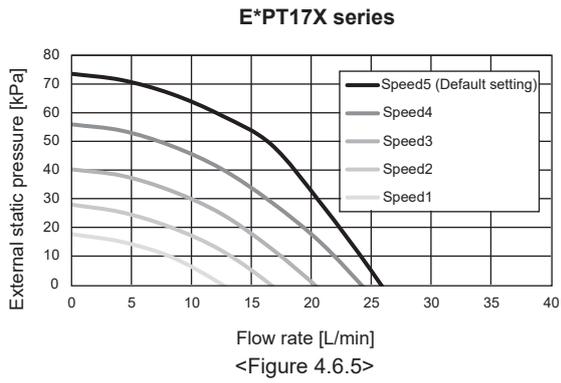
*1 To ensure optimal heating operation (condition: inlet/outlet temperature difference $\Delta T = 8K$).

*2 With buffer tank

*3 If you want to secure the maximum flow rate, please install an additional pump.

4 Cylinder unit

Water circulation pump characteristics



Note: For installation of E*PT series, set its pump speed with a pressure drop between the cylinder unit and the outdoor unit factored into the external static pressure.

4 Cylinder unit

■ Immersion heater

When an immersion heater is fitted, do NOT energise the heater until the DHW tank is full of water. Also do NOT energise any immersion heater if any sterilisation chemicals remain in the DHW tank as this will cause premature failure of the heater.

■ Safety device connections

The expansion relief valve on the secondary hot water side, and the temperature and pressure (T&P) relief valve (*A), both need appropriate discharge pipework. There must be no valve fitted between the expansion relief valve and the tank.

*A EHPT20X-MEHEW is equipped with factory-fitted T & P relief valve on the tank (2). Any other models are equipped with Pressure relief valve, fitted to the DHW pipework (3).

Note : 1. Do not secure the screws excessively when connecting the Discharge pipe, otherwise it may result in damage to the cylinder unit.

<For UK>

The right side panel has a plate (*B) so that connection can be made to the factory fitted temperature and pressure relief valve. If you wish to make the connection in a different position you will have to cut a hole in the side panel yourself. However it remains necessary that the drainage parameters outlined in the appropriate Building Regulations are complied with.

*B Unscrew the plate on the right-side panel, connect the Pressure relief valve to the discharge pipework, and refit the plate. Always replace the plate so that no gaps exist between the plate and side panel and the plate and drain pipe to avoid heat loss.

In accordance with Building Regulations a tundish must be fitted into the pipework within 500 mm of the safety device (also see Figure 4.6.14). Due to the distance between the two safety devices it may be necessary to fit each safety device with its own tundish before you run the pipework together to a safe discharge (see Figure 4.6.13).

Note : 2. Alternatively the discharges from the expansion relief valve and T&P relief valve may commonly discharge to a singular tundish, so long as this tundish is located within 500 mm of the T&P relief valve in UK. When connecting discharge pipes to the safety devices, beware not to strain the inlet connections.

Diagram part No.	Description	Connection size	Connection type
1	Expansion relief valve (part of inlet control group)	15 mm	Compression
2	T&P relief valve	15 mm /G 1/2	Compression/ Female
3	Pressure relief valve	G 1/2	Female

<Table 4.6.4>

Always refer to local regulations when installing discharge pipework. Install discharge pipework in a frost-free environment. It is necessary to provide appropriate drainage from the pressure relief valve situated on top of the cylinder unit to prevent damage to the unit and the surrounding area from any steam or hot water released. Relief valves MUST NOT be used for any other purpose.

For UK use WK02UK-E kit, for other countries please see below;

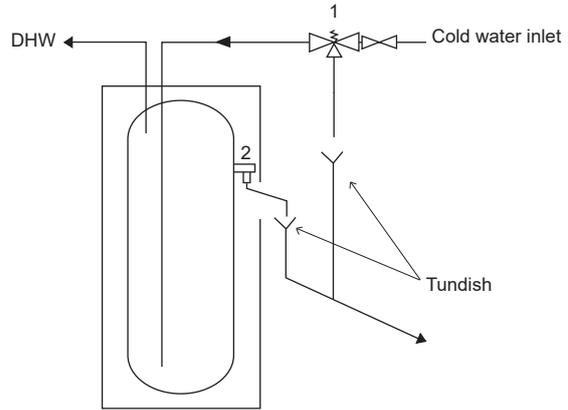
- Any discharge pipework should be capable of withstanding discharge of hot water. Discharge pipework should be installed in a continuously downward direction. Discharge pipework must be left open to the environment.

■ Piping diagram for 2-zone temperature control

Connect the pipe work and locally supplied parts according to the relevant circuit diagram shown in Section 3. Technical Information, of this manual. For more details on wiring, refer to "4.4.3 Wiring for 2-zone temperature control".

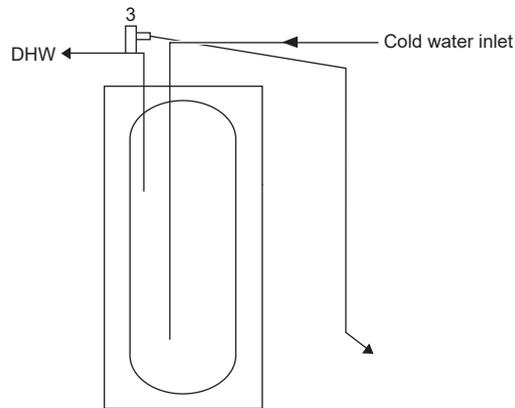
Note: Do not install the thermistors on the mixing tank. This could affect correct monitoring of flow and return temperatures through each zone. Install the Zone2 flow temp. thermistor (THW8) near the mixing valve.

<UK model> EHPT20X-MEHEW



<Other models>

The expansion vessel on the sanitary water side shall be installed as necessary in accordance with your local regulations.



<Figure 4.6.13>

4 Cylinder unit

4.6.5 Safety device discharge arrangements (G3)

The following instructions are a requirement of UK Building Regulations and must be adhered to. For other countries please refer to local legislation. If you are in any doubt please seek advice from local building planning office.

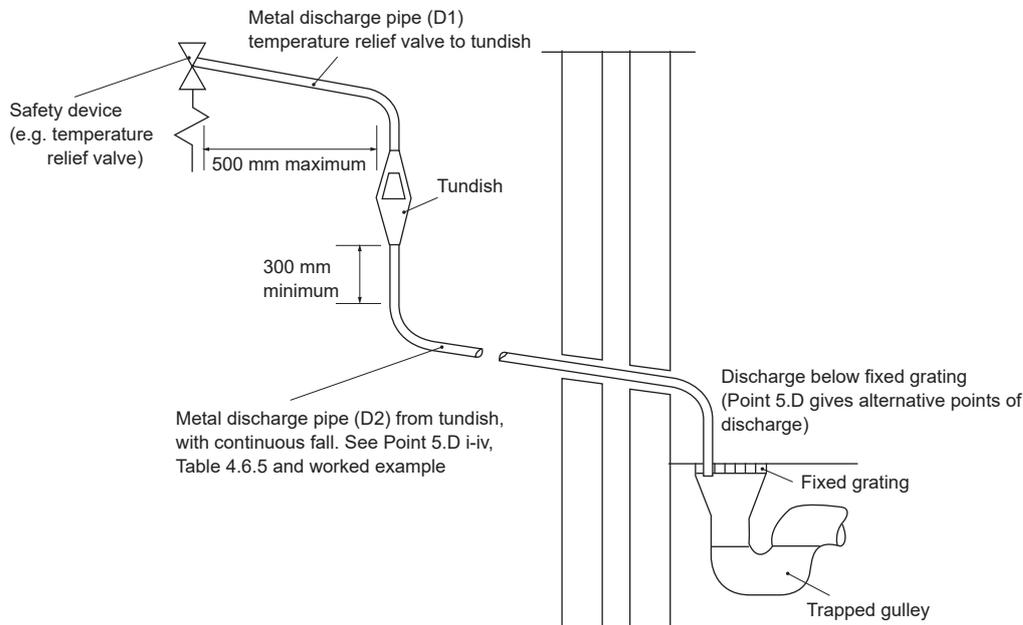
1. Position the inlet control group so that discharge from both safety valves can be joined together via a 15 mm end feed Tee.
2. Connect the tundish and route the discharge pipe as shown in Figure 4.6.14.
3. The tundish should be fitted vertically and as close to the safety device as possible and within 500 mm of the device.
4. The tundish should be visible to occupants and positioned away from electrical devices.
5. The discharge pipe (D2) from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge, be of metal construction and:
 - A) Be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9 m long i.e. discharge pipes between 9 m and 18 m equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device, between 18 and 27 m at least 3 sizes larger, and so on. Bends must be taken into account in calculating the flow resistance. Refer to Figure 4.6.14, Table 4.6.5 and the worked example. An alternative approach for sizing discharge pipes would be to follow BS 6700: 1987 specification for design installation, testing and maintenance of services supplying water for domestic use within buildings and their cartilages.
 - B) Have a vertical section of pipe at least 300 mm long, below the tundish before any elbows or bends in the pipework.
 - C) Be installed with a continuous fall.
 - D) Have discharges visible at both the tundish and the final point of discharge but where this is not possible or is practically difficult there should be clear visibility at one or other of these locations. Examples of acceptable discharge arrangements are:

- i. Ideally below a fixed grating and above the water seal in a trapped gully.
- ii. Downward discharges at low level; i.e. up to 100 mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that where children may play or otherwise come into contact with discharges a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility.
- iii. Discharges at high level; e.g. into a metal hopper and metal down pipe with the end of the discharge pipe clearly visible (tundish visible or not) or onto a roof capable of withstanding high temperature discharges of water and 3 m from any plastic guttering system that would collect such discharges (tundish visible).
- iv. Where a single pipe serves a number of discharges, such as in blocks of flats, the number served should be limited to not more than 6 systems so that any installation discharging can be traced reasonably easily. The single common discharge pipe should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected. If unvented hot water storage systems are installed where discharges from safety devices may not be apparent i.e. in dwellings occupied by blind, infirm or disabled people, consideration should be given to the installation of an electronically operated device to warn when discharge takes place.

Note: The discharge will consist of scalding water and steam. Asphalt, roofing felt and nonmetallic rainwater goods may be damaged by such discharges.

Worked example: The example below is for a G½ temperature relief valve with a discharge pipe (D2) having 4 No. elbows and length of 7 m from the tundish to the point of discharge.

From Table 4.6.5: Maximum resistance allowed for a straight length of 22 mm copper discharge pipe (D2) from a G½ temperature relief valve is: 9.0 m subtract the resistance for 4 No. 22 mm elbows at 0.8 m each = 3.2 m. Therefore the maximum permitted length equates to: 5.8 m. 5.8 m is less than the actual length of 7 m, therefore calculate the next largest size. Maximum resistance allowed for a straight length of 28 mm pipe (D2) from a G½ temperature relief valve equates to: 18 m Subtract the resistance for 4 No. 28 mm elbows at 1.0 m each = 4 m. Therefore the maximum permitted length equates to: 14 m. As the actual length is 7 m, a 28 mm (D2) copper pipe will be satisfactory.



<Figure 4.6.14>

Valve outlet size	Minimum size of discharge pipe D1	Minimum size of discharge pipe D2 from tundish	Maximum resistance allowed, expressed as a length of straight pipe (no elbows or bends)	Resistance created by each elbow or bend
G 1/2	15 mm	22 mm	Up to 9 m	0.8 m
		28 mm	Up to 18 m	1.0 m
		35 mm	Up to 27 m	1.4 m
G 3/4	22 mm	28 mm	Up to 9 m	1.0 m
		35 mm	Up to 18 m	1.4 m
		42 mm	Up to 27 m	1.7 m
G1	28 mm	35 mm	Up to 9 m	1.4 m
		42 mm	Up to 18 m	1.7 m
		54 mm	Up to 27 m	2.3 m

<Table 4.6.5>

4 Cylinder unit

4.7. System set up

4.7.1 Remote controller options

The indoor unit comes factory fitted with a main remote controller. This incorporates a thermistor for temperature monitoring and a graphical user interface to enable set-up, view current status and input scheduling functions. The main remote controller is also used for servicing purposes. This facility is accessed via password protected service menus.

To provide the best efficiency in heating operation, Mitsubishi Electric recommends using Auto Adaptation function based on room temperature. To use this function, a room thermistor needs to be present in a main living area. This can be done in a number of ways. The most convenient are detailed below.

Refer to heating section of this manual for instructions on how to set the weather compensation curve, flow temperature or room temperature (Auto Adaptation).

For instructions on how to set the thermistor input for the FTC, please refer to Setting section in 6. Remote Controller in the installation manual.

The factory setting for space heating mode is set to room temperature (Auto Adaptation). If there is no room sensor present in the system, this setting must be changed to either weather compensation curve mode or flow temperature mode.

Note: Auto Adaptation is not available in cooling mode.

■ 1-zone temperature control

<p>Control option A</p> <p>This option features the main remote controller and the Mitsubishi Electric wireless remote controller. The wireless remote controller is used to monitor room temperature and can be used to make changes to the space heating settings, boost DHW *1 and switch to holiday mode without directly using the main remote controller.</p> <p>If more than one wireless remote controller is used, the most recently requested temperature setting will commonly be applied to all rooms by the central control system regardless of which wireless remote controller was used. No hierarchy exists across these remote controllers.</p> <p>Wire the wireless receiver to FTC referring to the wireless remote controller instruction manual. Turn DIP SW1-8 to ON. Before operation, configure the wireless remote controller to transmit and receive data referring to the wireless remote controller installation manual.</p>	<p>Factory supplied standard</p> <p>Outdoor unit</p> <p>FTC (Main)</p> <p>Main remote controller</p> <p>Wireless receiver (option)</p> <p>Wireless remote controller (option)</p> <p>Room</p> <p>Max. 8</p>
<p>Control option B</p> <p>This option features the main remote controller and the Mitsubishi Electric thermistor wired to FTC. The thermistor is used to monitor room temperature but can not make any changes in control operation. Any changes to DHW *1 must be made using the main remote controller mounted on the indoor unit.</p> <p>Wire the thermistor to the TH1 connector on FTC. The number of room temperature thermistors that can be connected to FTC is always one.</p>	<p>Outdoor unit</p> <p>FTC (Main)</p> <p>Main remote controller</p> <p>Room temperature thermistor (option)</p> <p>Room</p>
<p>Control option C</p> <p>This option features the main remote controller being removed from the indoor unit and situated in a different room. A thermistor built in the main remote controller can be used for monitoring the room temperature for Auto Adaptation function whilst keeping all its features of the main remote controller available.</p> <p>The main remote controller and FTC are connected by a 2-core, 0.3 mm², non-polar cable (local supply) with a maximum length of 150 m.</p> <p>To use the sensor in the main remote controller, the main remote controller should come off from the indoor unit. Otherwise it will detect the temperature of the indoor unit instead of room temperature. This will affect the output of the space heating.</p> <p>Note: Wiring for main remote controller cable shall be (5 cm or more) apart from power source wiring so that it is not influenced by electrical noise from power source wiring. (Do not insert main remote controller cable and power source wiring in the same conduit.)</p>	<p>Outdoor unit</p> <p>FTC (Main)</p> <p>Main remote controller (remote position)</p> <p>Room</p>
<p>Control option D (Flow temperature or weather compensation curve only)</p> <p>This option features the main remote controller and a locally supplied thermostat wired to FTC. The thermostat is used to set the maximum temperature for heating room or the minimum temperature for cooling room. Any changes to DHW *1 must be made using main remote controller mounted on the indoor unit.</p> <p>The thermostat is wired to IN1 in TBI.1 on FTC. The number of thermostats that can be connected to FTC is one for one zone.</p>	<p>Outdoor unit</p> <p>FTC (Main)</p> <p>Main remote controller</p> <p>Room temperature thermostat (local supply)</p> <p>Room</p>

*1 If applicable

★ The wireless remote controller can be also used as a thermostat.

4 Cylinder unit

2-zone temperature control

Control option A

This option features the main remote controller, the Mitsubishi Electric wireless remote controller and a locally supplied thermostat.

The wireless remote controller is used to monitor the Zone 1 room temperature and the thermostat is used to monitor the Zone 2 room temperature.

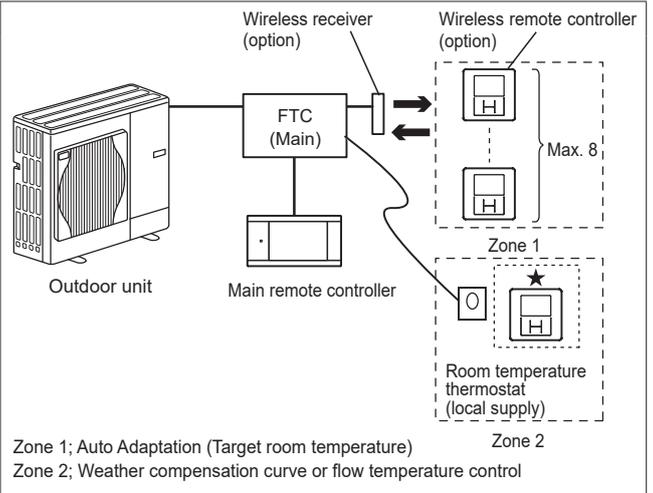
The thermostat can be also allocated to Zone 1 and the wireless remote controller to Zone 2.

The wireless remote controller can be also used to make changes to the space heating settings, boost DHW *1 and switch to holiday mode without having to use the main remote controller.

If more than one wireless remote controller is used, the last temperature setting adjustment/demand will be applied to all rooms in same zone.

Wire the wireless receiver to FTC referring to the wireless remote controller instruction manual. Turn DIP SW1-8 to ON. Before operation, configure the wireless remote controller to transmit and receive data referring to the wireless remote controller installation manual.

The thermostat is used to set the maximum temperature for heating Zone 2 room. The thermostat is wired to IN6 on FTC. (If the thermostat is allocated to Zone 1, it is wired to IN1 on TBI.1.) (Refer to 5.2. on the paper-based manual.)



Control option B

This option features the main remote controller, the Mitsubishi Electric thermistor and a locally supplied thermostat that are wired to FTC.

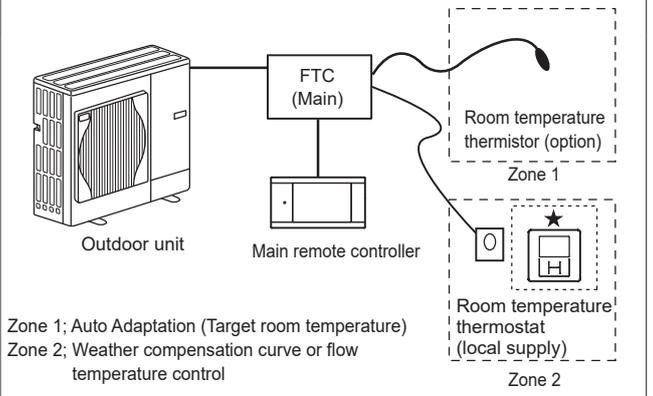
The thermistor is used to monitor the Zone 1 room temperature and the thermostat is used to control the Zone 2 room temperature.

The thermostat can be also allocated to Zone 1 and the thermistor to Zone 2. The thermistor can not make any changes in control operation. Any changes to DHW *1 must be made using the main remote controller mounted on the indoor unit.

Wire the thermistor to the TH1 connector on FTC.

The number of room temperature thermistors that can be connected to FTC is always one.

The thermostat is used to set the maximum temperature for heating Zone 2 room. The thermostat is wired to IN6 on FTC. (If the thermostat is allocated to Zone 1, wire it to IN1 on TBI.1.) (Refer to 5.2. on the paper-based manual.)



Control option C

This option features the main remote controller (with in-built thermistor) that is removed from the indoor unit to monitor the Zone 1 room temperature and a locally supplied thermostat to monitor the Zone 2 room temperature.

The thermostat can be also allocated to Zone 1 and the thermistor to Zone 2.

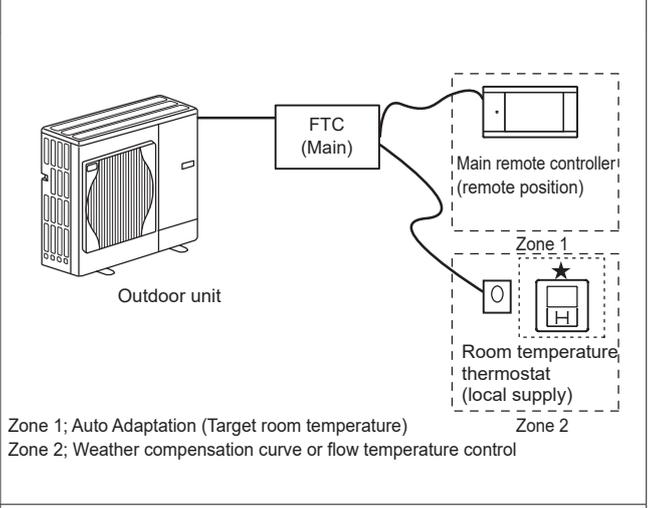
A thermistor built into the main remote controller can be used for monitoring the room temperature for Auto Adaptation function whilst keeping all its features of the main remote controller available.

The main remote controller and FTC are connected by a 2-core, 0.3 mm², non-polar cable (local supply) with a maximum length of 150 m.

To use the sensor in the main remote controller, the main remote controller should be detached from the indoor unit. Otherwise it will detect the temperature of the indoor unit instead of room temperature. This will affect the output of the space heating.

The thermostat is used to set the maximum temperature for heating Zone 2 room. The thermostat is wired to IN6 on FTC. (If the thermostat is allocated to Zone 1, wire it to IN1 on TBI.1.) (Refer to 5.2. on the paper-based manual.)

Note: Wiring for main remote controller cable shall be (5 cm or more) apart from power source wiring so that it is not influenced by electrical noise from power source wiring. (Do not insert main remote controller cable and power source wiring in the same conduit.)

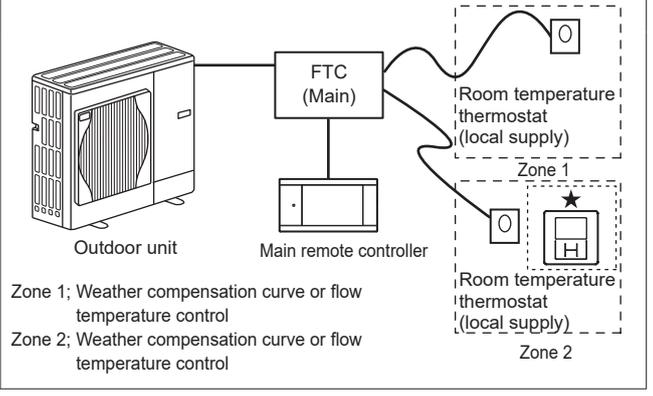


Control option D

This option features the locally supplied thermostats wired to FTC. The thermostats are individually allocated to Zone 1 and Zone 2. The thermostats are used to set each maximum temperature for heating Zone 1 and Zone 2 rooms or the minimum temperature for cooling Zone 1 and Zone 2. Any changes to DHW *1 must be made using the main remote controller mounted on the indoor unit.

The thermostat for Zone 1 is wired to IN1 in TBI.1 on FTC.

The thermostat for Zone 2 is wired to IN6 in TBI.1 on FTC.



*1 If applicable
 *2 For the options above, the sensor types can be exchanged between Zone 1 and Zone 2. (e.g. Wireless remote controller in Zone 1 and room temperature thermostat in Zone 2 can be changed to room temperature thermostat and wireless remote controller, respectively.)
 ★ The wireless remote controller can be also used as a thermostat.

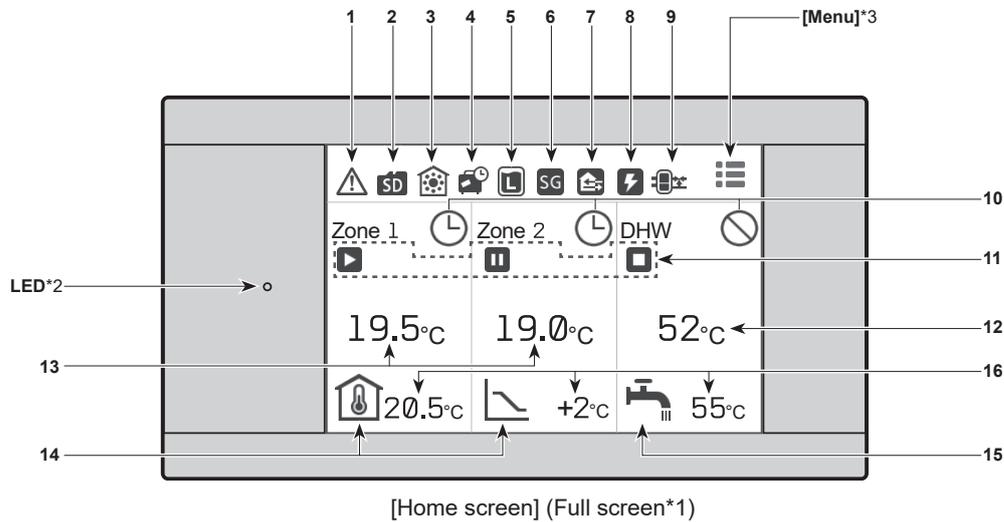
4 Cylinder unit

4.7.2 Main remote controller

Main remote controller

To change the settings of your heating/cooling system, please use the main remote controller located on the wall or the front panel of the cylinder unit or hydrobox. The following is a guide to viewing the main settings. Should you require more information, please contact your installer or local Mitsubishi Electric dealer. Some functions are not available depending on the system configuration. These functions are grayed out or not shown.

Note: The terms displayed on the remote controller are enclosed in square brackets.



Home screen icons

No.	Icons	Description
1		Alert (for multiple outdoor units control) Touching the menu icon displays error codes.
	J1	Alert Error codes are displayed.
2		SD card is inserted. Normal operation
		SD card is inserted. Abnormal operation
3		Heating mode
		Cooling mode
4		Holiday schedule is activated.
5		Legionella prevention mode is running.
6		Smart grid ready is running.
7		Compressor is running.
		Compressor is running and defrosting.
		Compressor is running and in quiet mode. The sound level is shown at left side of the icon.
		Emergency heating
8		Electric heater is running.

No.	Icons	Description
9		Boiler is running.
		Buffer tank control is running.
10		Schedule
		Prohibited
11		Cloud control
		Operation
		Standby
		This unit is in standby whilst other indoor unit(s) is in operation by priority.
12		Actual DHW tank temperature values
13		Actual room temperature values [- °C] appears when the unit is not connected to the room RC (Remote Controller) and it is under control other than Auto Adaptation.

No.	Icons	Description
14		Weather compensation curve When the operation stops: Black During heating operation: Orange During cooling operation: Blue
		Auto Adaptation (Target room temperature) When the operation stops: Black During heating operation: Orange During cooling operation: Orange
		Flow temperature (Target flow temperature) When the operation stops: Black During heating operation: Orange During cooling operation: Blue
15		DHW icon is displayed when DHW is enabled. When the operation stops: Black During operation: Orange
	16	Target temperature values The settable temperature differs depending on the control logic.

- The screen will turn off when the main remote controller is not operated for a while. Touching any part of the screen turns it on again.
- From [Touch screen] in [Setting], the brightness can be adjusted.
- By selecting [Always on] for [Backlight time] from [Touch screen] in [Setting], the backlight stays lit for 30 seconds and after it dims down.

*1 From [Setting], the screen can be switched to the full screen or the base screen.
The base screen does not display the operation icons and the target temperature values.

*2 From [Display] in [Setting], the LED lamp can be turned on/off.

*3 Pressing and holding the menu icon for 3 seconds switches the lock menu to on/off.

Some functions cannot be edited when the lock menu is on.

(The icon changes to when the lock menu is on.)

*4 Auto Adaptation cannot be selected during the cooling mode.

4 Cylinder unit

Quick start

When the main remote controller is switched on for the first time, the screen automatically goes to the [Language], [Date/Time], [System configuration], [Initial settings] and quick start setting screen in order. On the quick start setting screen, the following items can be set.

ONLY cylinder unit:

1. [DHW] ([ECO]/[Comfort])

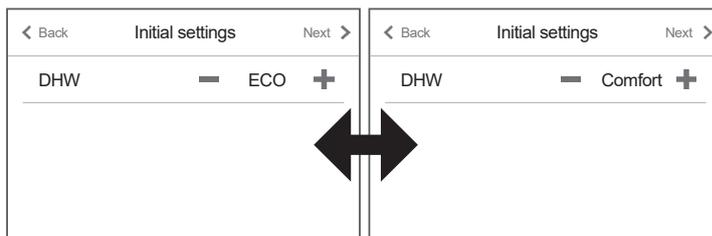
You can select ECO or Comfort mode according to your needs. In either mode, you can change the pre-set values according to your actual needs. For frequent DHW use, set to Comfort mode or adjust DHW settings ([Eco], [DHW target temperature], [Max. temp. drop], [Volume]) to reduce shortage risk.

2. [ECO]

ECO mode takes a little longer to heat the water in the DHW tank but the energy used is reduced. For ECO mode, make sure to select an appropriate pre-set option according to the combinations of your indoor and outdoor units, as shown in the table below. For ECO mode, [Legionella], [Booster heater] and [Immersion heater] are pre-set OFF.

3. [Comfort]

Comfort mode will heat the water in the DHW tank more quickly using the full power of the heat pump.



4. [DHW ECO] options

Split type	Outdoor unit model							
Indoor unit model	SUZ-SWM30VA SUZ-SHWM30VAH SUZ-SWM40VA2(-SC)	SUZ-SHM40VAH(-SC) SUZ-SWM60VA2(-SC) SUZ-SHWM60VAH(-SC)	SUZ-SWM80VA2 SUZ-SWM80VAH2 SUZ-SWM100VA SUZ-SWM100VAH	PUZ-S(H)WM60VAA PUZ-S(H)WM80VYAA PUZ-S(H)WM80YAAH-SC	PUZ-S(H)WM100VYAA PUZ-S(H)WM120VYAA PUZ-S(H)WM140VYAA PUZ-S(H)WM100YAAH-SC PUZ-S(H)WM120YAAH-SC PUZ-S(H)WM140YAAH-SC	PXZ-4F75VG	PXZ-5F85VG	PUMY-P112YKM6(-BS) PUMY-P112YKM5(-BS) PUMY-P125YKM6(-BS) PUMY-P125YKM5(-BS) PUMY-P140YKM6(-BS) PUMY-P140YKM5(-BS)
E*ST17*.*.*E	170-OU2	170-OU2	170-OU2	170-OU2	-	170-OU2	170-OU2	-
E*ST20*.*.*E	200-OU2	200-OU2	200-OU2	200-OU2	200-OU2	200-OU2	200-OU2	200-OU1
E*ST30*.*.*E	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	-

Hydro-Split type	Outdoor unit model							
Indoor unit model	PUZ-WM50VHA(-BS)	PUZ-WM60VAA(-BS)	PUZ-WM85VYAA(-BS)	PUZ-WM112VYAA(-BS)	PUZ-HWM140VYHA(-BS)	PUZ-WZ50VAA(-BS) PUZ-WZ60VAA(-BS) PUZ-WZ90VAA(-BS)	PUZ-WZ85VYAA(-BS) PUZ-WZ85VYAAH-SC PUZ-WZ90VYAA(-BS)	PUZ-WZ100VYAA(-BS) PUZ-WZ100VYAAH-SC PUZ-WZ115VYAA(-BS) PUZ-WZ120VYAA(-BS) PUZ-WZ120VYAAH-SC PUZ-WZ140VYAA(-BS)
E*PT17X*.*.*E	170-OU1	170-OU1	170-OU1	-	-	170-OU1	170-OU1	-
E*PT20X*.*.*E	200-OU1	200-OU1	200-OU1	200-OU2	200-OU2	200-OU1	200-OU1	200-OU1
E*PT30X*.*.*E	-	-	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1

Note:

- DHW performance is measured in ECO mode according to EN16147 to comply with EU regulation No 813/2013. Space heating (& cooling) mode are disabled during the measurement.
- All combinations can be found on the latest installation manuals available on our website; <https://www12.mitsubishielectric.com/>

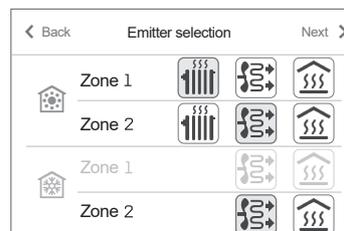
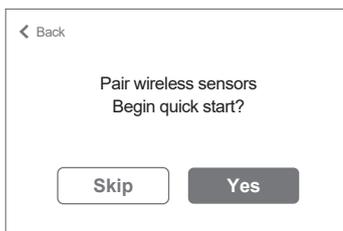
Quick start

- [Zone sensor selection]*1
- [Emitter selection]
- [Control logic]
- [Outdoor design temperature]
- [Zone sensor selection]*2
- [DHW]
- [Flow rate & pump speed]
- [Electric booster heater use]*3

*1 Selection of zone to assign each wireless remote controller

*2 Selection of room sensors for monitoring the room temperature

*3 It cannot be reset, so be careful when you set it.



[Emitter selection]

Next setting

Note:

[Electric booster heater use]

This setting restricts the booster heater capacity. It is NOT possible to change the setting after starting up.

If you do not have any special requirements (such as building regulations) in your country, skip this setting (select [Next]).

4 Cylinder unit

Lock menu

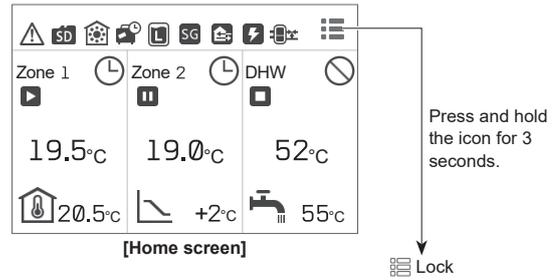
Pressing and holding the menu icon  for 3 seconds switches the lock menu to on.

(The icon changes to  when the lock menu is on.)

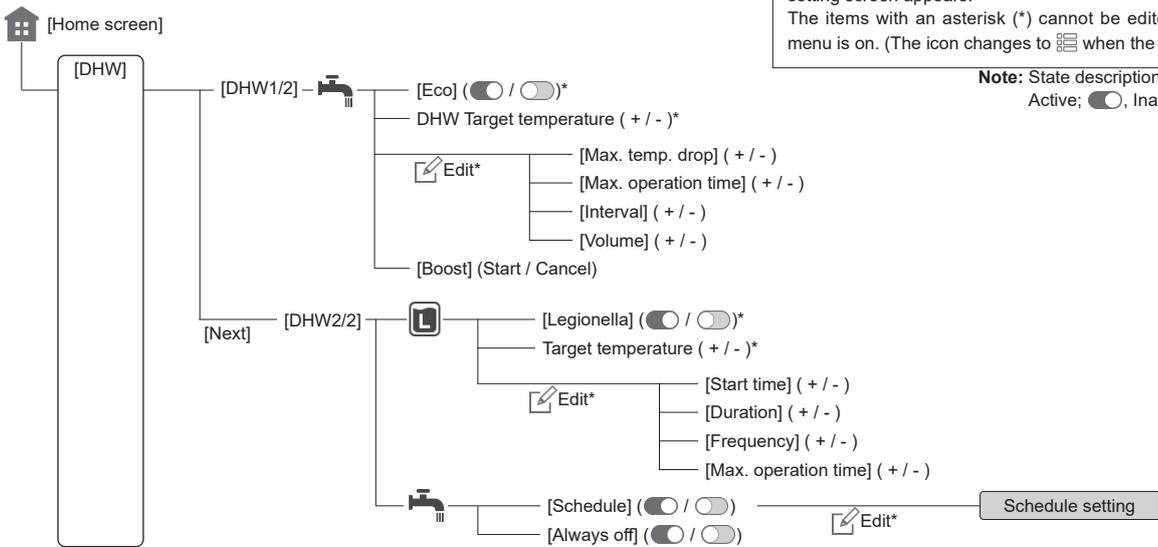
Some functions cannot be edited in this state.

Note: You need a password to edit [Service] even when the lock menu is off.

Refer to the main controller menu tree for details of the items which cannot be edited when the lock menu is on.



<Main Controller Menu Tree>

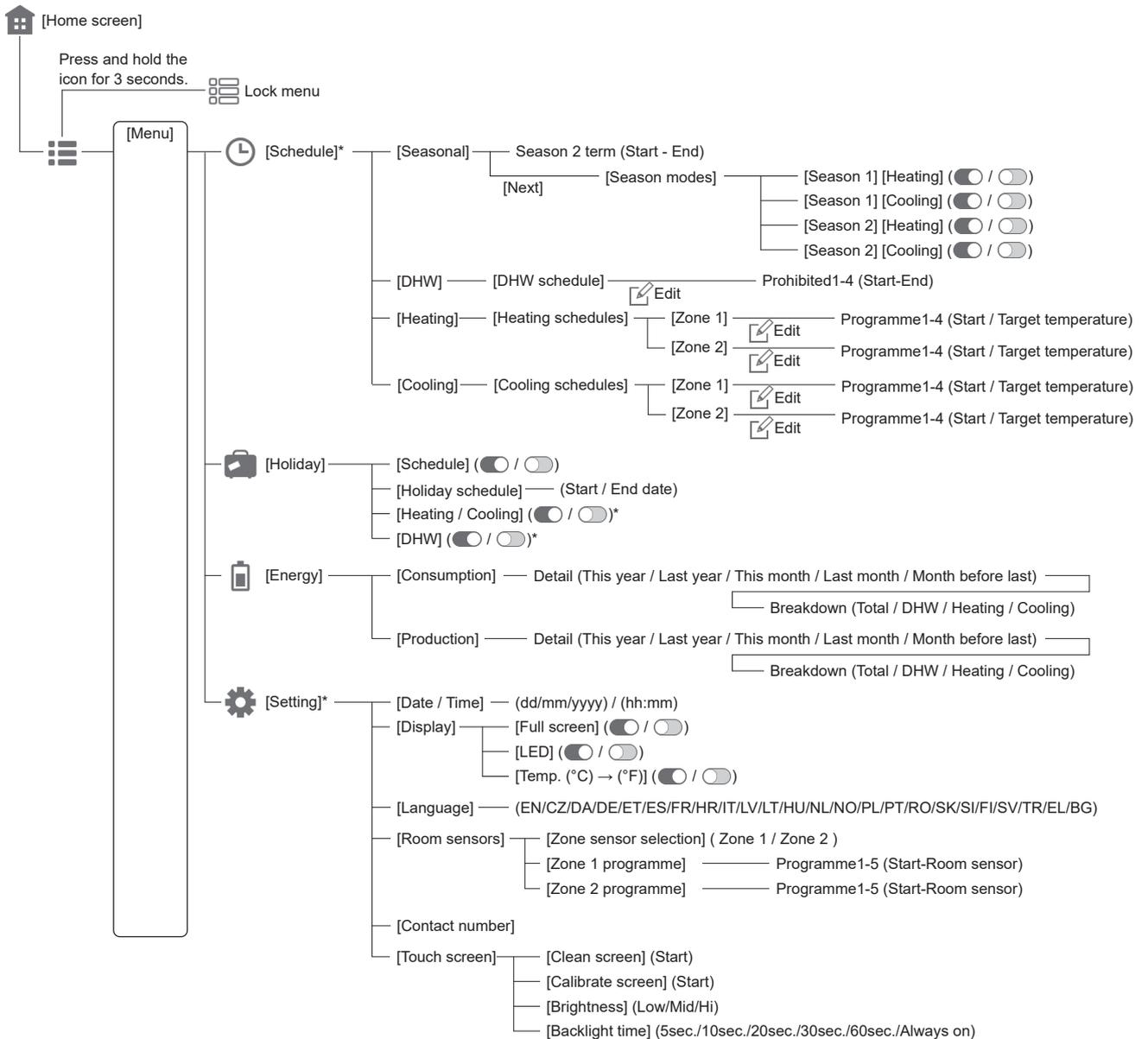
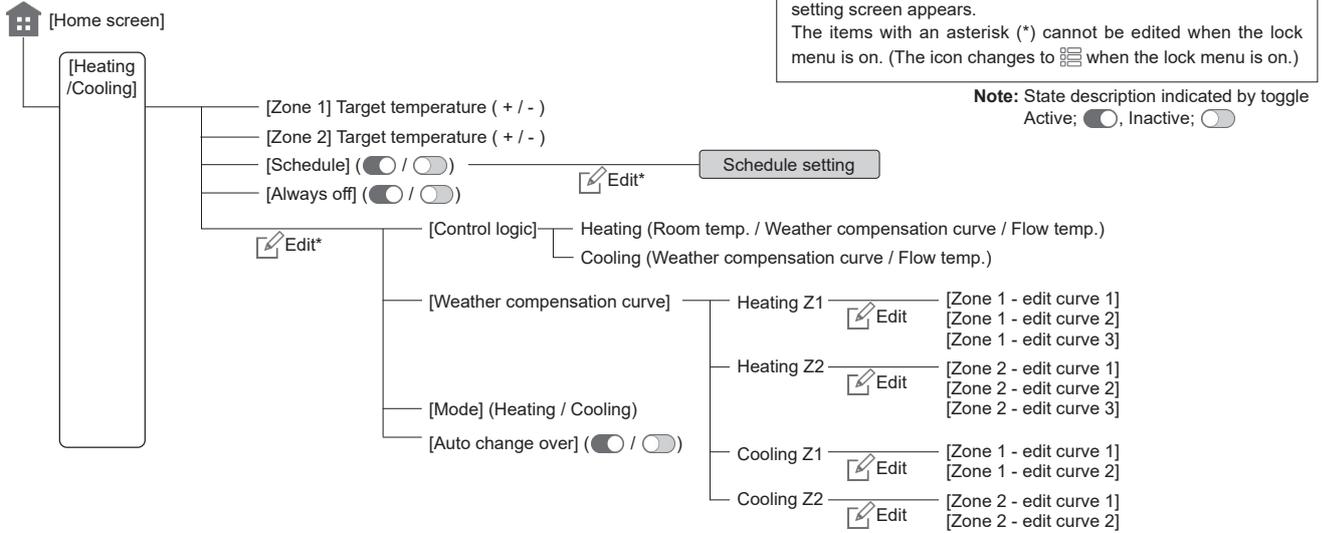


When the system is started up for the first time, the quick start setting screen appears. The items with an asterisk (*) cannot be edited when the lock menu is on. (The icon changes to  when the lock menu is on.)

Note: State description indicated by toggle
Active; , Inactive; 

4 Cylinder unit

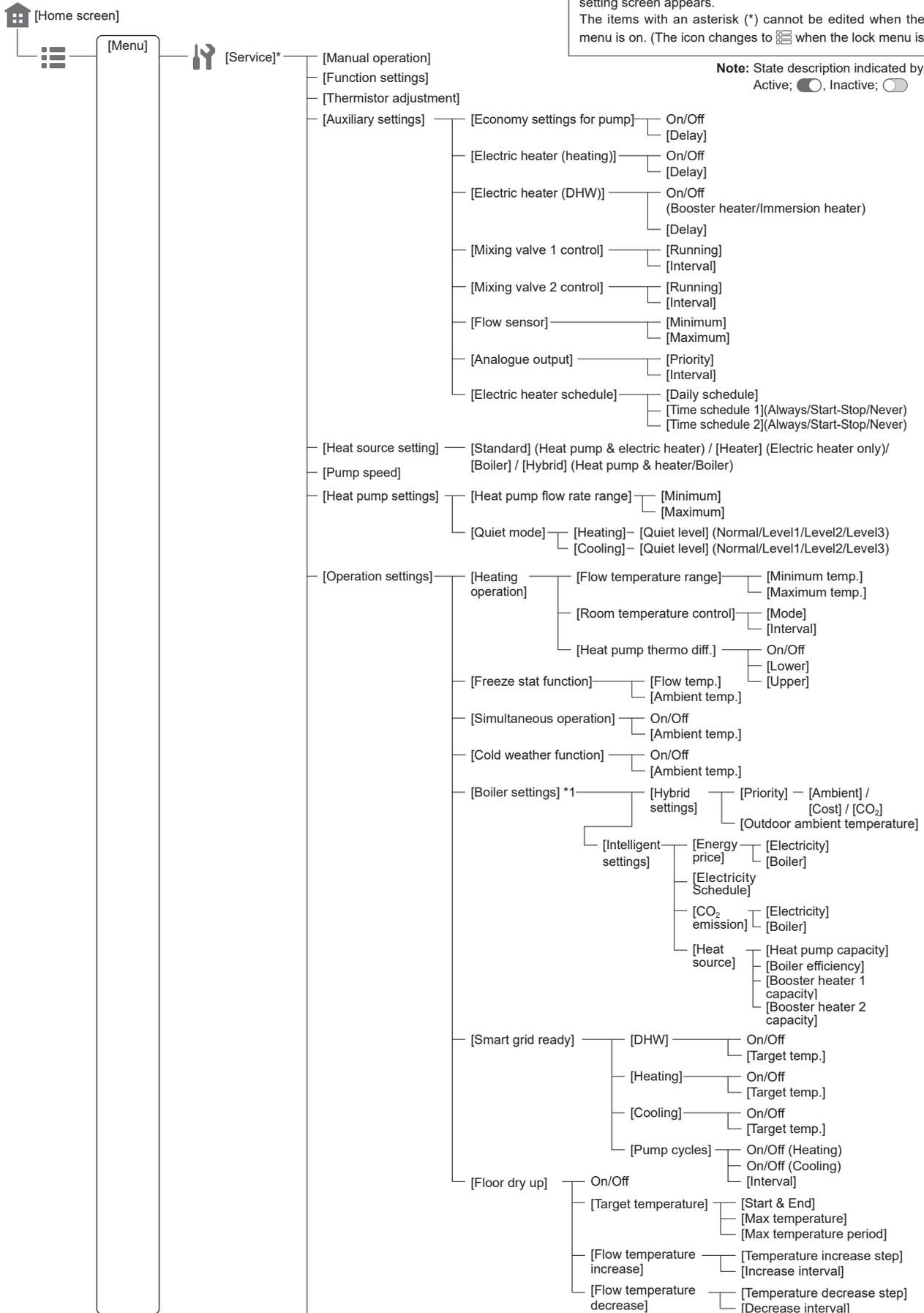
<Main Controller Menu Tree>



4 Cylinder unit

Continued from the previous page.

<Main Controller Menu Tree>



When the system is started up for the first time, the quick start setting screen appears.
The items with an asterisk (*) cannot be edited when the lock menu is on. (The icon changes to when the lock menu is on.)

Note: State description indicated by toggle
Active; , Inactive;

<Continued to next page.>

*1 For more details, refer to the installation manual of PAC-TH012HT(L)-E.

Cylinder unit/Hydrobox

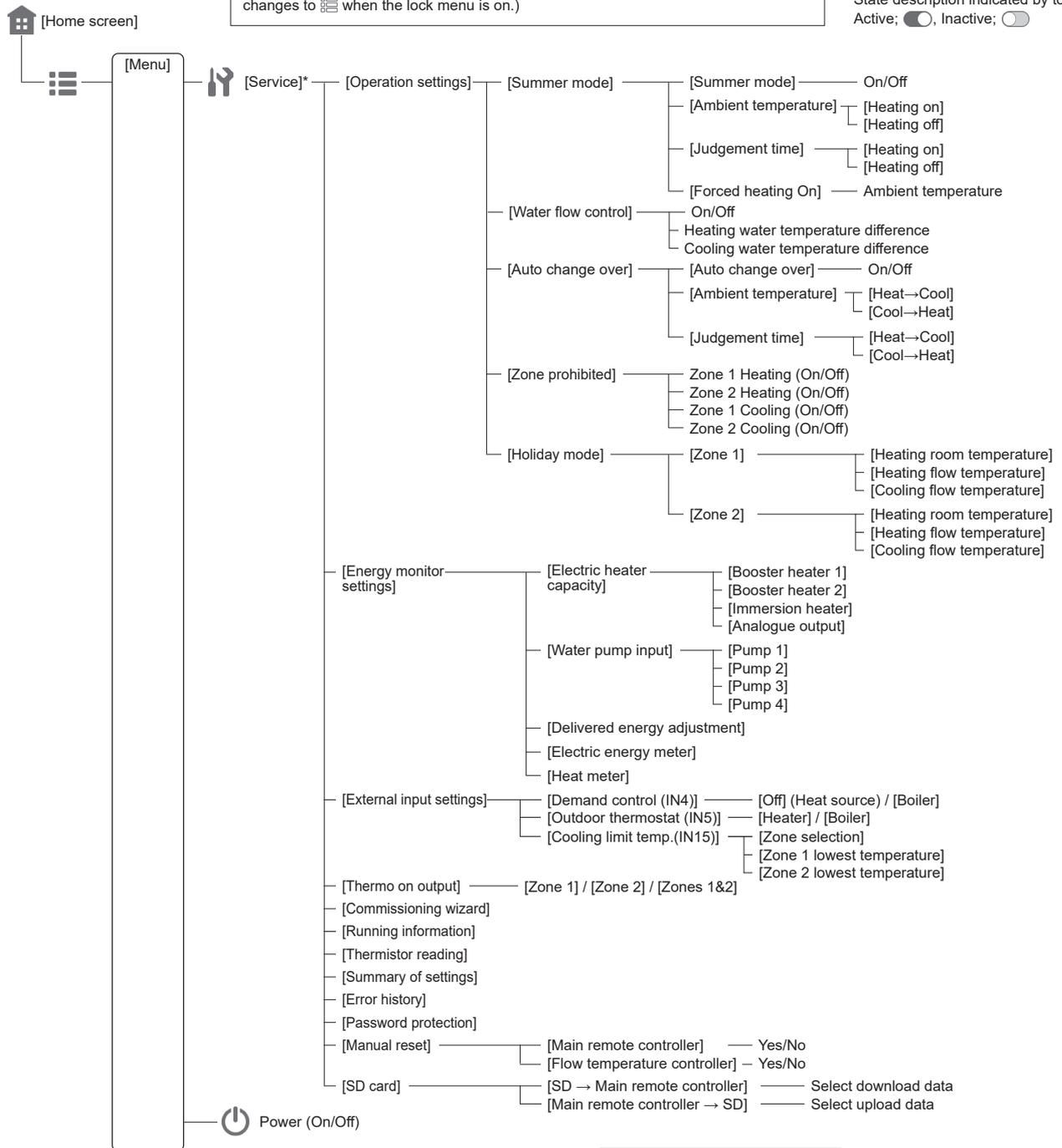
4 Cylinder unit

Continued from the previous page.

<Main Controller Menu Tree>

When the system is started up for the first time, the quick start setting screen appears. The items with an asterisk (*) cannot be edited when the lock menu is on. (The icon changes to  when the lock menu is on.)

- Note: State description indicated by toggle Active: , Inactive: 



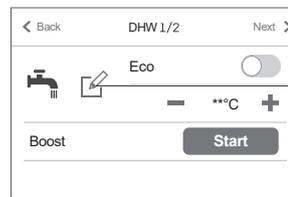
Cylinder unit/Hydrobox

DHW (Domestic Hot Water) / Legionella Prevention

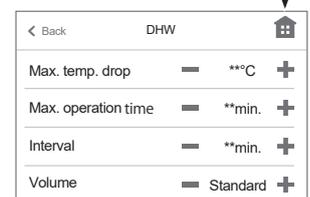
The DHW and legionella prevention menus control the operation of DHW tank heat ups.

DHW mode settings

- [DHW]: The Eco mode can be activated/deactivated by the toggle. The target temperature can be adjusted by +/-.
- From the edit icon , [Max. temp. drop], [Max. operation time], [Interval], and [Volume] can be set.



[DHW]



[DHW]

4 Cylinder unit

Menu subtitle	Function	Range	Unit
DHW target temp.	Desired temperature of stored hot water	40 - 70*1	°C
[Max. temp. drop]	Difference in temperature between the DHW maximum temperature and the temperature at which DHW mode restarts	5 - 40*2	°C
[Max. operation time]	Maximum time allowed for stored water heating DHW mode	30 - 120	min.
[Interval]	The time period after DHW mode when space heating has priority over DHW mode temporarily preventing further stored water heating (Only when DHW max. operation time has passed.)	30 - 120	min.

*1 The maximum temperature differs depending on the connected outdoor unit. (60°C/65°C/70°C)

*2 When the DHW maximum temperature is set over 55°C, the temperature at which DHW mode restarts must be less than 50°C to protect the device.

[Eco]

Eco mode can be activated/deactivated by the toggle (☐ / ☐). Eco mode takes a little longer to heat the water in the DHW tank but the energy used is reduced. This is because heat pump operation is restricted using signals from the FTC based on measured DHW tank temperature.

Note:

The actual energy saved in Eco mode will vary according to outdoor ambient temperature.

For frequent DHW use, change the operation mode.

[Volume]

Select the amount of DHW tank. If you need much hot water, select [Large].

Return to the DHW/legionella prevention menu.

Legionella prevention mode settings (LP mode)

- [Legionella]: It can be activated/deactivated by the toggle.
The target temperature can be changed by +/-.
From the edit icon , [Start time], [Duration], [Frequency], and [Max. operation time] can be set.
- [Schedule]: It can be activated/deactivated by the toggle.
- [Always off]: It can be activated/deactivated by the toggle.

During LP mode, the temperature of the stored water is increased above 60°C to inhibit legionella bacteria growth. It is strongly recommended that this is done at regular intervals. Please check local regulations for the recommended frequency of heat ups.

Note 1: When failures occur on the hydrobox, the LP mode may not function normally.

Note 2: Even when DHW operation is prohibited, LP mode will operate.

Please note that LP mode uses the assistance of electric heaters to supplement the energy input of the heat pump. Heating water for long periods of time is not efficient and will increase running costs. The installer should give careful consideration to the necessity of legionella prevention treatment whilst not wasting energy by heating the stored water for excessive time periods. The end user should understand the importance of this feature.
ALWAYS COMPLY WITH LOCAL AND NATIONAL GUIDANCE FOR YOUR COUNTRY REGARDING LEGIONELLA PREVENTION.

Menu subtitle	Function	Range	Unit
Hot water temp.	Desired temperature of stored hot water	60 - 70	°C
[Start time]	Time when LP mode will begin	0:00 - 23:00	-
[Duration]	The time period after LP mode desired water temperature has been reached	1 - 120	min.
[Frequency]	Time between LP mode DHW tank heat up	1 - 30	day
[Max. operation time]	Maximum time allowed for LP mode DHW tank heat	1 - 5	h

[Setting]

From the menu icon , access [Setting].
The following items can be edited in [Setting].

- [Date / time]
- [Display] (From [Setting], the screen can be switched to the full screen or the base screen.)
- [Language]
- [Room sensors]
- [Contact number]
- [Touch screen] ([Calibrate screen]*1, [Clean screen]*2, [Brightness], and [Backlight time])

Follow the procedure described in General Operation for the set up operation.

*1 Touching the 9 dots displayed on the screen starts calibration.

To properly calibrate the touch panel, use a pointy but not sharp object to touch the dots.

Note: A sharp object may damage or scratch the touch screen.

*2 You can wipe the screen while touch operations are invalid for 30 seconds.

Wipe with a soft dry cloth, a cloth soaked in water with mild detergent, or a cloth dampened with ethanol.

Do not use acidic, alkaline, or organic solvents.

[Room sensors]

For [Room sensors], it is important to choose the correct room sensor depending on the heating and cooling mode the system will operate in.



[Zone 1 programme]

4 Cylinder unit

Menu subtitle	Description																	
[Zone sensor selection]	When 2-zone temperature control is active and wireless remote controllers are available, select [Zone sensor selection] in [Room sensors] from [Setting], and then select zone No. (Zone 1/Zone 2) to assign each remote controller.																	
[Zone 1 programme] [Zone 2 programme]	<p>From [Zone 1 programme] or [Zone 2 programme], select a wireless remote controller to be used for monitoring the room temperature from Zone 1 and Zone 2 separately.</p> <table border="1"> <thead> <tr> <th rowspan="2">Control option *</th> <th colspan="2">Corresponding initial settings room sensor</th> </tr> <tr> <th>[Zone 1]</th> <th>[Zone 2]</th> </tr> </thead> <tbody> <tr> <td>A Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control</td> <td>RC 1~8 (Wireless remote controller)</td> <td>*1</td> </tr> <tr> <td>B Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control</td> <td>TH1 (Room temperature thermistor (option))</td> <td>*1</td> </tr> <tr> <td>C Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control</td> <td>[MainRC] (Main remote controller)</td> <td>*1</td> </tr> <tr> <td>D Zone 1 ; Weather compensation curve or flow temperature control Zone 2 ; Weather compensation curve or flow temperature control</td> <td>*1</td> <td>*1</td> </tr> </tbody> </table> <p>*1. Not specified (if a locally-supplied room thermostat is used) RC 1-8 (if a wireless remote controller is used as a room thermostat) The wireless remote controller to be used can be changed up to 4 times within 24 hours according to the set time schedule. (Programme 1-5)</p> <p style="text-align: right;">* Refer to the website manual for details.</p>	Control option *	Corresponding initial settings room sensor		[Zone 1]	[Zone 2]	A Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	RC 1~8 (Wireless remote controller)	*1	B Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	TH1 (Room temperature thermistor (option))	*1	C Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	[MainRC] (Main remote controller)	*1	D Zone 1 ; Weather compensation curve or flow temperature control Zone 2 ; Weather compensation curve or flow temperature control	*1	*1
Control option *	Corresponding initial settings room sensor																	
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C Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	[MainRC] (Main remote controller)	*1																
D Zone 1 ; Weather compensation curve or flow temperature control Zone 2 ; Weather compensation curve or flow temperature control	*1	*1																

[Service]

The service menu provides functions to be used by installer or service engineer. It is NOT intended for the home owner to alter settings within this menu. It is for this reason password protection is required to prevent unauthorised access to the service settings.

The factory default password is "0000".

Follow the procedure described in [Password protection] for the set up operation.

Many functions can not be set whilst the indoor unit is running. The installer should turn off the unit before trying to set these functions. If the installer attempts to change the settings whilst the unit is running, the main remote controller will display a reminder message prompting the installer to stop operation before continuing. By selecting "Yes", the unit will cease operation.

[Manual operation]

During the filling of the system, the primary circuit circulation pump, 3-way valve and mixing valve can be manually overridden using manual operation mode.

When manual operation is selected, a small timer icon appears in the screen. When selected, this function will only remain in manual operation for a maximum of 2 hours.

This is to prevent accidental permanent override of the FTC.

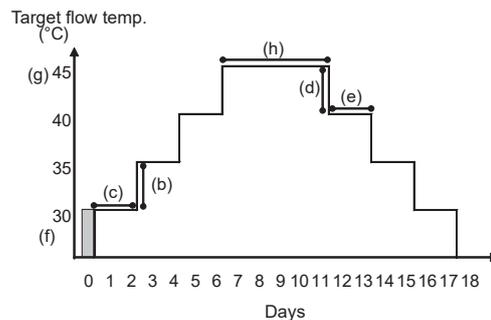
Manual operation and heat source setting can not be selected if the system is running. A screen will be displayed asking the installer to stop the system before these modes can be activated.
The system automatically stops 2 hours after last operation.

[Floor dry up function]

The floor dry up function automatically changes the target hot water temperature in stages to gradually dry concrete when this particular type of underfloor heating system is installed.

Upon completion of the operation, the system stops all the operations except the Freeze stat. operation.

For floor dry up function, the target flow temperature of Zone 1 is the same as that of Zone 2.



- This function is not available when a PUAZ-FRP outdoor unit is connected.
- Disconnect wiring to external inputs of room thermostat, demand control, and outdoor thermostat, or the target flow temperature may not be maintained.

4 Cylinder unit

Functions	Symbol	Description	Option/Range	Unit	
[Floor dry up function]	a	Set the function to on and power on the system using the main remote controller, and the dry up heating operation will start.	on/off	—	
[Flow temperature increase]	[Temperature increase step]	b	It sets the increase step of the target flow temperature.	+1 to +30	°C
	[Increase interval]	c	It sets the period for which the same target flow temperature is maintained.	1 to 7	day
[Flow temperature decrease]	[Temperature decrease step]	d	It sets the decrease step of the target flow temperature.	-1 to -30	°C
	[Decrease interval]	e	It sets the period for which the same target flow temperature is maintained.	1 to 7	day
[Target temperature]	[Start & End]	f	It sets the target flow temperature at the start and the finish of the operation.	20 to 60*	°C
	[Max temperature]	g	It sets the maximum target flow temperature.	20 to 60*	°C
	[Max temperature period]	h	It sets the period for which the maximum target flow temperature is maintained.	1 to 20	day

* The maximum temperature differs depending on the connected outdoor unit.

[Password protection]

Password protection is recommended to prevent unauthorised access to the service menu by untrained persons.

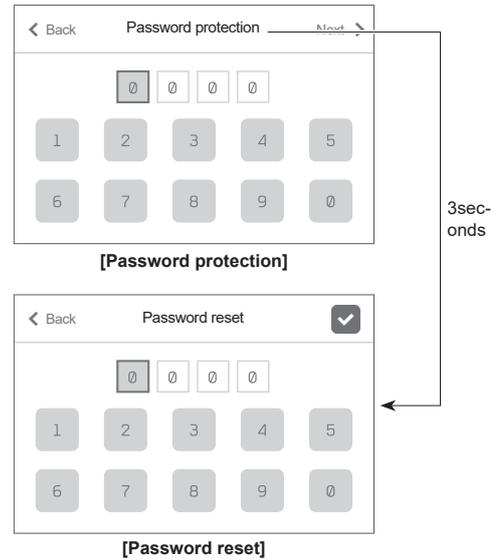
[Password reset]

If you forget the password you entered, or have to service a unit somebody else installed, you can reset and change the password.

1. From [Service] in [Menu], access the [Password protection] screen.
2. Press and hold the title section for 3 seconds to access the [Password reset] screen.
3. Enter a new password.
4. Touching [Back] or the confirm icon saves the password.

[Manual reset]

Should you wish to restore the factory settings at any time, you should use the manual reset function. Please note this will reset ALL functions to the factory default settings.



4 Cylinder unit

■ Energy monitor

End user can monitor accumulated*1 consumption and production energy in each operation mode*2 on the main remote controller.

*1 Monthly and Year to date

*2 - DHW operation

- Space heating
- Space cooling

Refer to "4.7.2 Main remote controller" for how to check the energy, and "4.3 DIP switch functions" for the details on DIP-SW setting. Either one of the following two methods is used for monitoring.

Note: Method 1 should be used as a guide. If a certain accuracy is required, the 2nd method should be used.

	Booster heater 1	Booster heater 2	Immersion heater *3	Pump 1 *4
Default	2 kW	4 kW	0 kW	*** (factory fitted pump)
EHPT17X-VM2E	2 kW	0 kW	0 kW	***
EHPT17X-VM6E	2 kW	4 kW	0 kW	***
EHPT17X-YM9E	3 kW	6 kW	0 kW	***
EHPT20X-YM9E	3 kW	6 kW	0 kW	***
EHPT20X-TM9E	3 kW	6 kW	0 kW	***
EHPT20X-MEHEW	0 kW	0 kW	3 kW	***
EHPT30X-YM9EE	3 kW	6 kW	0 kW	***
ERPT17X-VM2E	2 kW	0 kW	0 kW	***
ERPT20X-VM2E	2 kW	0 kW	0 kW	***
ERPT20X-VM6E	2 kW	4 kW	0 kW	***
ERPT20X-YM9E	3 kW	6 kW	0 kW	***
ERPT30X-VM2EE	2 kW	0 kW	0 kW	***
ERPT30X-VM6EE	2 kW	4 kW	0 kW	***
ERPT30X-YM9EE	3 kW	6 kW	0 kW	***

<Table 4.7.1>

Method 1. Calculation internally

Electricity consumption is calculated internally based on the energy consumption of outdoor unit, electric heater, water pump(s) and other auxiliaries. *5

Delivered heat is calculated internally by multiplying delta T (flow and return temperature) and flow rate measured by the factory fitted sensors.

Set the electric heater capacity and water pump(s) input according to indoor unit model and specs of additional pump(s) supplied locally. (Refer to the menu tree in "4.7.2 Main remote controller" on the paper-based manual)

*3 Change setting to 3 kW when connecting optional immersion heater "PAC-IH03V2-E".

*4 "****" displayed in the energy monitor setting mode means the factory fitted pump is connected as Pump 1 so that the input is automatically calculated.

*5 When the indoor unit is connected with a PXZ or PUMY models, electricity consumption is not calculated internally. To display the electricity consumption, use the 2nd method.

When additional pumps supplied locally are connected as Pump2/3, change setting according to specs of the pumps.

When anti-freeze solution (propylene glycol) is used for primary water circuit, set the delivered energy adjustment if necessary.

Should you need more details, refer to "4.7.2 Main remote controller" on the paper-based manual.

Method 2. Actual measurement by external meter (locally supplied)

FTC has external input terminals for 2 'Electric energy meters' and a 'Heat meter'.

If two 'Electric energy meters' are connected, the 2 recorded values will be combined at the FTC and shown on the main remote controller.

(e.g. Meter 1 for H/P power line, Meter 2 for heater power line)

Refer to "Signal inputs" section in "4.4.2 Connecting inputs/outputs. on the paper-based manual for more information on connectable electric energy meter and heat meter.

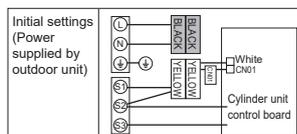
4 Cylinder unit

4.8. Service and maintenance

The cylinder unit must be serviced **once a year** by a qualified individual. Servicing and maintenance of the outdoor unit should only be done by a Mitsubishi Electric trained technician with relevant qualifications and experience. Any electrical work should be done by a trades person with the appropriate electrical qualifications. Any maintenance or 'DIY' fixes done by a non-accredited person could invalidate the Warranty and/or result in damage to the cylinder unit and injury to the person.

Basic troubleshooting

No.	Fault symptom	Possible cause	Explanation - Solution
1	Main remote controller display is blank.	<ol style="list-style-type: none"> There is no power supply to main remote controller. Power is supplied to main remote controller, however, the display on the main remote controller does not appear. 	<ol style="list-style-type: none"> Check LED2 on FTC. (See "4.2 Wiring diagrams".) <ol style="list-style-type: none"> When LED2 is lit. Check for damage or contact failure of the main remote controller wiring. When LED2 is blinking. Refer to No. 5 below. When LED2 is not lit. Refer to No. 4 below. Check the following: <ul style="list-style-type: none"> Disconnection between the main remote controller cable and the FTC control board Failure of the main remote controller if "Please Wait" is not displayed. Refer to No. 2 below if "Please Wait" is displayed.
2	"Please Wait" remains displayed on the main remote controller.	<ol style="list-style-type: none"> "Please Wait" is displayed for up to 6 minutes. Communication failure between the main remote controller and FTC Communication failure between FTC and outdoor unit 	<ol style="list-style-type: none"> Normal operation Main remote controller start up checks/procedure. <ol style="list-style-type: none"> If "0%" or "50-99%" is displayed below "Please Wait" there is a communication error between the main remote controller and the FTC control board. <ul style="list-style-type: none"> Check wiring connections on the main remote controller. Replace the main remote controller or the FTC control board. If "1-49%" is displayed there is a communication error between the outdoor unit's and FTC's control boards. <ul style="list-style-type: none"> Check the wiring connections on the outdoor unit control board and the FTC control board. (Ensure S1 and S2 are not cross-wired and S3 is securely wired with no damage. (See "4.4 Field wiring".)) Replace the outdoor unit's and/or the FTC's control boards.
3	The main screen appears with a press of the "ON" button, but disappears in a second.	The main remote controller operations do not work for a while after the settings are changed in the service menu. This is because the system takes time to apply the changes.	<p>Normal operation</p> <p>The indoor unit is applying updated settings made in the service menu. Normal operation will start shortly.</p>
4	LED2 on FTC is off. (See "4.2 Wiring diagrams".)	<p>When LED1 on FTC is also off. (See "4.2 Wiring diagrams".) <FTC powered via outdoor unit.></p> <ol style="list-style-type: none"> The outdoor unit is not supplied at the rated voltage. Defective outdoor controller circuit board FTC is not supplied with 220 to 240 V AC. FTC failure Faulty connector wiring 	<ol style="list-style-type: none"> Check the voltage across the terminals L and N or L3 and N on the outdoor power board. (See "4.4 Field wiring".) <ul style="list-style-type: none"> When the voltage is not 220 to 240 V AC, check wiring of the outdoor unit and of the breaker. When the voltage is at 220 to 240 V AC, go to "2." below. Check the voltage across the outdoor unit terminals S1 and S2. (See "4.4 Field wiring".) <ul style="list-style-type: none"> When the voltage is not 220 to 240 V AC, check the fuse on the outdoor control board and check for faulty wiring. When the voltage is 220 to 240 V AC, go to "3." below. Check the voltage across the indoor unit terminals S1 and S2. (See "4.4 Field wiring".) <ul style="list-style-type: none"> When the voltage is not 220 to 240 V AC, check FTC-outdoor unit wiring for faults. When the voltage is 220 to 240 V AC, go to "4." below. Check the FTC control board. <ul style="list-style-type: none"> Check the fuse on FTC control board. Check for faulty wiring. If no problem found with the wiring, the FTC control board is faulty. Check the connector wiring. <ul style="list-style-type: none"> When the connectors are wired incorrectly, re-wire the connectors referring to below. (See "4.4 Field wiring".)



4 Cylinder unit

No.	Fault symptom	Possible cause	Explanation - Solution
4	LED2 on FTC is off. (See "4.2 Wiring diagrams".)	<FTC powered on independent source> 1. FTC is not supplied with 220 to 240 V AC. 2. There are problems in the method of connecting the connectors. 3. FTC failure	<ol style="list-style-type: none"> Check the voltage across the L and N terminals on the indoor power supply terminal block. (See "4.4 Field wiring".) <ul style="list-style-type: none"> When the voltage is not 220 to 240 V AC, check for faulty wiring to power supply. When the voltage is 220 to 240 V AC, go to 2. below. Check for faulty wiring between the connectors. <ul style="list-style-type: none"> When the connectors are wired incorrectly re-wire them correctly referring to below. (See "4.4 Field wiring" and a wiring diagram on the control and electrical box cover.) <ul style="list-style-type: none"> If no problem found with the wiring, go to 3. below.
		When LED1 on FTC is lit. Incorrect setting of refrigerant address for outdoor unit (None of the refrigerant address is set to "0".)	Recheck the refrigerant address setting on the outdoor unit. Set the refrigerant address to "0". (Set refrigerant address using SW1(3-6) on outdoor controller circuit board.)
5	LED2 on FTC is blinking. (See "4.2 Wiring diagrams".)	When LED1 is also blinking on FTC . Faulty wiring between FTC and outdoor unit	Check for faulty wiring between FTC and outdoor unit.
		When LED1 on FTC is lit. 1. Faulty wiring in main remote controller Multiple indoor units have been wired to a single outdoor unit. 2. Short-circuited wiring in main remote controller 3. Main remote controller failure	<ol style="list-style-type: none"> Check for faulty wiring in main remote controller. The number of indoor units that can be wired to a single outdoor unit is one. Additional indoor units must be wired individually to a single outdoor unit. Remove main remote controller wires and check LED2 on FTC. (See "4.2 Wiring diagrams".) <ul style="list-style-type: none"> If LED2 is blinking check for short circuits in the main remote controller wiring. If LED2 is lit, wire the main remote controller again and: <ul style="list-style-type: none"> - if LED2 is blinking, the main remote controller is faulty; - if LED2 is lit, faulty wiring of the main remote controller has been corrected.
6	LED4 on FTC is off. (See "4.2 Wiring diagrams".)	1. SD memory card is NOT inserted into the memory card slot with correct orientation. 2. Not an SD standards compliant memory card.	<ol style="list-style-type: none"> Correctly insert SD memory card in place until a click is heard. Use an SD standards compliant memory card. (Refer to "4.4.7 Using microSD memory card".)
	LED4 on FTC is blinking. (See "4.2 Wiring diagrams".)	1. Full of data 2. Write-protected 3. NOT formatted 4. Formatted in NTFS file system	<ol style="list-style-type: none"> Move or delete data, or replace SD memory card with a new one. Release the write-protect switch. Refer to "4.4.7 Using microSD memory card". FTC is Not compatible with NTFS file system. Use an micro SD memory card formatted in FAT12/FAT16/FAT32 file system.
7	No water at hot tap.	1. Cold main off 2. Strainer (local supply) blocked.	<ol style="list-style-type: none"> Check and open stop cock. Isolate water supply and clean strainer.
8	Cold water at tap.	<ol style="list-style-type: none"> Hot water run out. Prohibit, schedule timer or holiday mode selected or demand control input (IN4) or smart grid ready (switch-off command). Heat pump not working. Booster heater cut-out tripped. The earth leakage circuit breaker for booster heater breaker (ECB1) tripped. The booster heater thermal cut-out has tripped and cannot be reset using the manual reset button. Immersion heater cut-out tripped. Immersion heater breaker (ECB2) tripped. 3-way valve fault 	<ol style="list-style-type: none"> Ensure DHW mode is operating and wait for DHW tank to re-heat. Check settings and change as appropriate. Check heat pump – consult outdoor unit service manual. Check booster heater thermostat and press reset button if safe. Reset button is located on the side of booster heater, covered with white rubber cap. See "4.5.1 Component parts" to find out its position. Check the cause and reset if safe. Check resistance across the thermal cut-out, if open then the connection is broken and the booster heater will have to be replaced. Contact your Mitsubishi Electric dealer. Check immersion heater thermostat and press reset button, located on immersion heater boss, if safe. If the heater has been operated with no water inside it may have failed, so please replace it with a new one. Check the cause and reset if safe. Check plumbing/wiring to 3-way valve. <ol style="list-style-type: none"> Manually override 3-way valve using the main remote controller. (Refer to <Manual operation> in "4.7 System setup") If the valve does not still function, go to (ii) below. Replace 3-way valve coil. If the valve does not still function, go to (iii) below. Replace 3-way valve. (Refer to Service manual.)

4 Cylinder unit

No.	Fault symptom	Possible cause	Explanation - Solution
9	Water heating takes longer.	<ol style="list-style-type: none"> Heat pump not working. Booster heater cut-out tripped. Booster heater breaker (ECB1) tripped. The booster heater thermal cut-out has tripped and cannot be reset using the manual reset button. Immersion heater cut-out has been triggered. Immersion heater breaker (ECB2) tripped. Flow rate of the sanitary circuit may be reduced. The operation mode of DHW is set to 'Eco'. 	<ol style="list-style-type: none"> Check heat pump – consult outdoor unit service manual. Check booster heater thermostat and press reset button if safe. Reset button is located on the side of booster heater, covered with white rubber cap. See "4. PART NAMES AND FUNCTIONS" to find out its position. Check the cause and reset if safe. Check resistance across the thermal cut-out, if open then connection is broken and the booster heater will have to be replaced. Contact your Mitsubishi Electric dealer. Check immersion heater thermostat and press reset button located on immersion heater boss, if safe. If the heater kept running with no water inside, this may have resulted in failure, so replace it with a new one. Check the cause and reset if safe. Check the following items <ul style="list-style-type: none"> Check for trapped air in water pump (sanitary circuit). Check if the speed of water pump (sanitary circuit) is set to 2. Check water pump (sanitary circuit) for malfunction. (Refer to "10-6. Checking Component Parts' Function".) Replace plate heat exchanger (water - water) or scale trap, if there are a blockage which blocks the sanitary circuit. Confirm the setting and change the operation mode as necessary. (Refer to "<Function settings>Operation efficiency setting for DHW Eco mode".)
10	Temperature of DHW tank water dropped.	<p>When DHW operation is not running, the DHW tank emits heat and the water temperature decreases to a certain level. If water in the DHW tank is reheated frequently because of a significant drop in water temperature, check for the following.</p> <ol style="list-style-type: none"> Water leakage in the pipes that connect to the DHW tank Insulation material coming loose or off. 3-way valve failure Water pump (sanitary circuit) speed setting failure DHW settings are not appropriate. 	<ol style="list-style-type: none"> Take the following measures. <ul style="list-style-type: none"> Retighten the nuts holding the pipes onto the DHW tank. Replace seal materials. Replace the pipes. Fix insulation. Check plumbing/wiring to 3-way valve. <ol style="list-style-type: none"> Manually override 3-way valve using the main remote controller. (Refer to <Manual operation> in "9-5. Service menu".) If the valve does not still function, go to (ii) below. Replace 3-way valve motor. If the valve does not still function, go to (iii) below. Replace 3-way valve. (Refer to "11. DISASSEMBLY PROCEDURE".) Water pump (sanitary circuit) MUST be set to speed 2. When it set to speed 1, hot water would be mixed with cold water due to circulation. <ul style="list-style-type: none"> Review the setting of 'DHW'. (DHW setting, Operation mode, DHW max. temp., DHW temp. drop, DHW recharge) Operate the unit in 'Forced DHW'.
11	Hot or warm water from cold tap.	Heat of hot water pipe is transferred to cold water pipe.	Insulate/re-route pipework.
12	Water leakage	<ol style="list-style-type: none"> Poorly sealed connections of water circuit components Water circuit components reaching the end of life 	<ol style="list-style-type: none"> Tighten connections as required. Refer to PARTS CATALOG for expected part lifetimes and replace them as necessary.
13	Heating system does not reach the set temperature.	<ol style="list-style-type: none"> Prohibit, schedule timer or holiday mode selected or demand control input (IN4) or smart grid ready (switch-off command). Check settings and change as appropriate. The temperature sensor is located in a room that has a different temperature relative to that of the rest of the house. Heat pump not working. Booster heater cut-out tripped. Booster heater breaker (ECB1) tripped. The booster heater thermal cut-out tripped and cannot be reset using the manual reset button. Incorrectly sized heat emitter 3-way valve failure Battery problem (wireless control only) If a mixing tank is installed, the flow rate between the mixing tank and the cylinder unit is less than that between the mixing tank and the local system. 	<ol style="list-style-type: none"> Check settings and change as appropriate. Check the battery power and replace if flat. Relocate the temperature sensor to a more suitable room. Check heat pump – consult outdoor unit service manual. Check booster heater thermostat and press reset button if safe. Reset button is located on the side of booster heater, covered with white rubber cap. (See "4. PART NAMES AND FUNCTIONS" for position.) Check the cause of the trip and reset if safe. Check resistance across the thermal cut-out, if open then the connection is broken and the booster heater will have to be replaced. Contact your Mitsubishi Electric dealer. Check the heat emitter surface area is adequate. Increase size if necessary. Check plumbing/wiring to 3-way valve. <ol style="list-style-type: none"> Manually override 3-way valve using the main remote controller. (Refer to <Manual operation> in "9-5. Service menu".) If the 3-way valve does not function, go to (ii) below. Replace 3-way valve motor. If the 3-way valve coil is replaced but the 3-way valve does not function go to (iii) below. Replace 3-way valve. (Refer to "11. DISASSEMBLY PROCEDURE".) Check the battery power and replace if flat. Increase the flow rate between the mixing tank and the cylinder unit decrease that between the mixing tank and the local system.

4 Cylinder unit

No.	Fault symptom	Possible cause	Explanation - Solution
14	Heating system does not reach the set lower temperature.	Heating system operates depending on the heating load to prevent low-load heating system from the frequent switching (ON/OFF) of the compressor.	Normal operation, no action necessary.
15	In 2-zone temperature control, Zone1 or Zone2 does not reach the set temperature.	<ol style="list-style-type: none"> When Zone1 and Zone2 are both in heating mode, the hot water temperature in Zone2 does not exceed that in Zone1. Faulty wiring of motorized mixing valve Faulty installation of motorized mixing valve Incorrect setting of Running time Motorized mixing valve failure Pump2 (Zone1 pump) or Pump3 (Zone2 pump) failure Valves on heating system are closed. 	<ol style="list-style-type: none"> Normal action no action necessary. Refer to installation manual, "4.4.3 Wiring for 2-zone temperature control". Check for correct installation. (Refer to the manual included with each motorized mixing valve.) Check for correct setting of Running time. Inspect the mixing valve. (Refer to the manual included with each motorized mixing valve.) Inspect the pumps Check the valves
16	When a PUHZ-FRP outdoor unit is connected, DHW or Heating operation cannot run.	The outdoor unit is set to have operation of the indoor unit of air conditioner take precedence over that of the cylinder unit, and in the main remote controller settings "Electric heater (Heating)" or "Electric heater (DHW)" is turned off.	Turn ON Electric heater (Heating) or Electric heater (DHW) using the main remote controller.
17	When a PUHZ-FRP outdoor unit is connected and is in heat recovery operation, the set temperature is not reached.	When the outdoor unit is set to have cooling operation of the indoor unit of air conditioner take precedence over that of the cylinder unit, the outdoor unit controls the frequency of the compressor according to the load of air conditioner. The DHW and heating run according to that frequency.	Normal operation no action necessary. If Air-to-Water system is given priority in operation, comp Hz can be regulated depending on the load of DHW or Heating. For more details, refer to the PUHZ-FRP installation manual.
18	After DHW operation room temperature rises slightly.	At the end of the DHW mode operation the 3-way valve diverts hot water away from the DHW circuit into space heating circuit. This is done to prevent the cylinder unit components from overheating. The amount of hot water directed into the space heating circuit varies according to the type of the system and of the pipe run between the plate heat exchanger and the cylinder unit.	Normal operation no action necessary.
19	The room temperature rises during DHW operation.	3-way valve failure	<p>Check the 3-way valve.</p> <ol style="list-style-type: none"> Manually override 3-way valve using the main remote controller. (Refer to <Manual operation> in "4.7 System setup".) If the 3-way valve does not function, go to (ii) below. Replace 3-way valve coil. If the 3-way valve coil is replaced but the 3-way valve does not function go to (iii) below. Replace 3-way valve. (Refer to Service manual.)
20	Water discharges from pressure relief valve. (Primary circuit)	<ol style="list-style-type: none"> If continual – pressure relief valve could bite foreign objects and the valve seat may be damaged. If intermittent – expansion vessel charge may have reduced/bladder perished. 	<ol style="list-style-type: none"> Turn the handle on the pressure relief valve several turns. If leakage persists, replace the pressure relief valve with a new one. Check pressure in expansion vessel. Recharge to 1 bar if necessary. If bladder perished replace expansion vessel with a new one.
21	Water discharges from pressure relief valve. (Sanitary circuit)	<ol style="list-style-type: none"> If continual – field supplied pressure reducing valve not working. If continual – pressure relief valve could bite foreign objects and the valve seat may be damaged. If intermittent – expansion vessel charge may have reduced/bladder perished. DHW tank may have subjected to backflow. 	<ol style="list-style-type: none"> Check function of pressure reducing valve and replace if necessary. Turn the handle on the pressure relief valve several turns. If leakage persists, replace the pressure relief valve with a new one. Check gas-side pressure in expansion vessel. Recharge to correct precharge pressure if necessary. If bladder perished replace expansion vessel with a new one with appropriate pre-charge. Check the pressure in DHW tank. If pressure in DHW tank is similar to that in the incoming mains, cold water supply that merges with incoming mains water supply could flow back to DHW tank. Investigate source of back-feed and rectify error in pipework/fitting configuration. Adjust pressure in cold supply.
22	Water discharges from temperature and pressure relief valve (EHPT20X-MEHEW only) (Sanitary circuit)	<ol style="list-style-type: none"> If continual – field supplied pressure reducing valve not working. If continual – temperature and pressure relief valve could bite foreign objects and the valve seat may be damaged. If intermittent – expansion vessel charge may have reduced/bladder perished. DHW tank may have subjected to backflow. Unit has overheated – thermal controls have failed. 	<ol style="list-style-type: none"> Check function of pressure reducing valve and replace if necessary. Turn the handle on the temperature and pressure relief valve several turns. If leakage persists, replace the temperature and pressure relief valve with a new one. Check gas-side pressure in expansion vessel. Recharge to correct precharge pressure if necessary. If bladder perished replace expansion vessel with a new one with appropriate pre-charge. Check pressure in DHW tank. If pressure in DHW tank is similar to that in the incoming mains, cold water supply that merges with incoming mains water supply could flow back to DHW tank. Investigate source of back-feed and rectify error in pipework/fitting configuration. Adjust pressure in cold supply. Switch off power to the heat pump and immersion heaters. Leave water running. Wait until discharge stops. Isolate water supply and replace if faulty.

4 Cylinder unit

No.	Fault symptom	Possible cause	Explanation - Solution						
23	Water discharges from expansion relief valve - part of Inlet Control Group (EHPT20X-MHEDW only) (sanitary circuit)	<ol style="list-style-type: none"> If continual – field supplied pressure reducing valve not working. If continual – expansion relief valve may be damaged. If intermittent – expansion vessel charge may have reduced/bladder perished. DHW tank may have subjected to backflow. Unit has overheated – thermal controls have failed. 	<ol style="list-style-type: none"> Check function of pressure reducing valve and replace if necessary. Turn the handle on the expansion relief valve to check for foreign objects inside. If the problem is not still solved, replace the expansion relief valve with a new one. Check gas-side pressure in expansion vessel. Recharge to correct precharge pressure if necessary. If bladder perished replace expansion vessel with a new one with appropriate precharge. Check pressure in DHW tank. If pressure in DHW tank is similar to that in the incoming mains, cold water supply that merges with incoming mains water supply could flow back to DHW tank. Investigate source of back-feed and rectify error in pipework/fitting configuration. Adjust pressure in cold supply. Switch off power to the heat pump and immersion heaters. Leave water running. Wait until discharge stops. Isolate water supply and replace if faulty. 						
24	Noisy water circulation pump	Air in water circulation pump	Use manual and automatic air vents to remove air from system. Top up water if necessary to achieve 1 bar on primary circuit.						
25	Noise during hot water draw off typically worse in the morning.	<ol style="list-style-type: none"> Loose airing cupboard pipework Heaters switching on/off 	<ol style="list-style-type: none"> Install extra pipe fastening clips. Normal operation no action necessary. 						
26	Mechanical noise heard coming from the cylinder unit.	<ol style="list-style-type: none"> Heaters switching on/off 3-way valve changing position between DHW and heating mode 	Normal operation no action necessary.						
27	Water circulation pump runs for a short time unexpectedly.	Water circulation pump jam prevention mechanism (routine) to inhibit the build-up of scale	Normal operation no action necessary.						
28	Milky/Cloudy water (Sanitary circuit)	Oxygenated water	Water from any pressurised system will release oxygen bubbles when water is running. The bubbles will settle out.						
29	Heating mode has been on standby for a long time (does not start operation smoothly.)	The time of "Delay" set in "Economy settings for pump" is too short. (Go to "Service menu" → "Auxiliary settings" → "Economy settings for pump").	Increase the time of "Delay" in "Economy settings for pump" .						
30	The cylinder unit that was running in the heating mode before power failure is running in the DHW mode after power recovery.	The cylinder unit is designed to run in an operation mode with a higher priority (i.e. DHW mode in this case) at power recovery.	<ul style="list-style-type: none"> Normal operation. After the DHW max. operation time has elapsed or the DHW max. temperature has been reached, the DHW mode switches to the other mode (ex. Heating mode). 						
31	Cooling mode is NOT available.	DIP SW2-4 is OFF.	Turn DIP SW2-4 to ON. (Refer to "4.3 DIP switch functions".)						
32	The cooling system does not cool down to the set temperature.	<ol style="list-style-type: none"> When the water in the circulation circuit is unduly hot, Cooling mode starts with a delay for the protection of the outdoor unit. When the outdoor ambient temperature is lower than the preset temperature that activates the freeze stat function, Cooling mode does not start running. 	<ol style="list-style-type: none"> Normal operation To run Cooling mode overriding the freeze stat function, adjust the preset temperature that activates the freeze stat function. (Refer to <Freeze stat function> in "4.7 System setup".) 						
33	The electric heaters are activated shortly after DHW or LP mode starts running after Cooling mode.	The setting time period of Heat-pump-only operation is short.	Adjust the setting time period of Heat-pump only operation. (Refer to <Electric heater (DHW)> in "4.7 System setup".)						
34	During DHW or LP mode following the cooling mode, error L6 (circulation water freeze protection error) occurs and the system stops all the operations.	The unit runs in Cooling mode when the outdoor ambient temperature is lower than 10°C (outside of the guaranteed operating range). (When defrosting operation is running at such a low outdoor ambient temperature after Cooling mode is switched to DHW or LP mode, the water temperature in the cooling circuit drops too low, which could result in L6 error to stop all the operations.	<p>Do not run Cooling operation when the outdoor ambient temperature is lower than 10°C.</p> <p>To automatically stop or recover only Cooling operation and keep other operations running, the freeze stat function can be used. Set the preset temperature that activates the freeze stat function to adjust the outdoor ambient temperature as follows. (Refer to <Freeze stat function> in "4.7 System setup".)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Outdoor ambient temperature</th> <th style="text-align: left;">Cooling operation</th> </tr> </thead> <tbody> <tr> <td>3°C higher than the preset temperature</td> <td>Stop</td> </tr> <tr> <td>5°C higher than the preset temperature</td> <td>Recover</td> </tr> </tbody> </table>	Outdoor ambient temperature	Cooling operation	3°C higher than the preset temperature	Stop	5°C higher than the preset temperature	Recover
Outdoor ambient temperature	Cooling operation								
3°C higher than the preset temperature	Stop								
5°C higher than the preset temperature	Recover								

4 Cylinder unit

No.	Fault symptom	Possible cause	Explanation - Solution																
35	<p>The energy monitor value seems not correct.</p> <p>Note: There could be some discrepancies between the actual and the calculated values. If you seek for accuracy, please make sure to connect power meter(s) and heat meter to FTC board. Both should be locally supplied.</p>	<p>1. Incorrect setting of the energy monitor</p> <p>2. Non-connectable type of external meter (local supply) is connected.</p> <p>3. External meter (local supply) failure</p> <p>4. FTC board failure</p>	<p>1. Check the setting by following the procedure below. (1) Check if the DIP switch is set as the table below.</p> <table border="1"> <tr> <td colspan="2">Consumed electric energy</td> <td colspan="2">Delivered heat energy</td> </tr> <tr> <td>SW3-4</td> <td>Electric energy meter (Local supply)</td> <td>SW3-8</td> <td>Heat meter (Local supply)</td> </tr> <tr> <td>OFF</td> <td>Without</td> <td>OFF</td> <td>Without</td> </tr> <tr> <td>ON</td> <td>With</td> <td>ON</td> <td>With</td> </tr> </table> <p>(2) In the case external electric energy meter and/or heat meter is not used, check if the setting for electric heater and water pump(s) input is correct by referring to "Energy monitor" in "4.7 System setup".</p> <p>(3) In the case external electric energy meter and/or heat meter is used, check if the unit of output pulse on external meter matches with the one set at the main remote controller by referring to "Energy monitor" in "4.7 System setup".</p> <p>2. Check if the external meter (local supply) is connectable type by referring to "Energy monitor" in "4.7 System setup".</p> <p>3. Check if signal is sent to IN8 to IN10 properly. (Refer to section 4.2 Wiring diagram) Replace the external heat meter if defective.</p> <p>4. Check the FTC control board. • Check for faulty wiring. • If no problem found with the wiring, the FTC control board is faulty. Replace the board.</p>	Consumed electric energy		Delivered heat energy		SW3-4	Electric energy meter (Local supply)	SW3-8	Heat meter (Local supply)	OFF	Without	OFF	Without	ON	With	ON	With
Consumed electric energy		Delivered heat energy																	
SW3-4	Electric energy meter (Local supply)	SW3-8	Heat meter (Local supply)																
OFF	Without	OFF	Without																
ON	With	ON	With																
36	Heat pump is forced to turn ON and OFF.	Smart grid ready input (IN11 and IN12) is used, and switch-on and off commands are input.	Normal operation no action necessary.																

Annual maintenance

It is essential that the cylinder unit is serviced at least once a year by a qualified individual. Any spare parts required should be purchased from Mitsubishi Electric. NEVER bypass safety devices or operate the unit without them being fully operational.

<Annual maintenance points>

Use the Annual Maintenance Log Book as a guide to carrying out the necessary checks on the cylinder unit and outdoor unit.

4 Cylinder unit

4.7.4 Service and maintenance

The indoor unit must be serviced once a year by a qualified individual. Service and maintenance of the outdoor unit should only be done by a Mitsubishi Electric trained technician with relevant qualifications and experience. Any electrical work should be done by a personnel with the appropriate electrical qualifications. Any maintenance or 'DIY' fixes done by a non-accredited person could invalidate the Warranty and/or result in damage to the hydrobox/cylinder unit and injury to the person.

■ Error Codes

Code	Error	Action
L3	Circulation water temperature overheat protection	Flow rate may be reduced. Check for; <ul style="list-style-type: none"> • Water leakage • Magnetic filter / Strainer blockage • Water circulation pump function (Error code may display during filling of primary circuit, complete filling and reset error code.)
L4	DHW tank water temperature overheat protection	Check the immersion heater and it's contactor.
L5	Indoor unit temperature thermistor (THW1, THW2, THW5A, THW5B, THW6, THW7, THW8, THW9) failure	Check resistance across the thermistor.
L6	Circulation water freeze protection	See Action for L3.
L8	Heating operation error	Check and re-attach any thermistors that may have become dislodged.
L9	Low primary circuit flow rate detected by flow sensor or flow switch (flow switches 1, 2, 3)	See Action for L3. If the flow sensor or flow switch itself does not work, replace it. Caution: The pump valves may be hot, please take care.
LA	Pressure sensor failure	Check pressure sensor cable for damage or loose connections.
LB	High pressure protection	<ul style="list-style-type: none"> • Flow rate of the heating circuit may be reduced. Check water circuit. • Plate heat exchanger may be clogged. Check the plate heat exchanger. • Outdoor unit failure. Check refrigerant volume, valve, LEV coil and pipe crushing of outdoor unit.
LC	Boiler circulation water temperature overheat protection	Check if the setting temperature of the Boiler for heating exceeds the restriction. (See the manual of the thermistors "PAC-TH012HT(L)-E") Flow rate of the heating circuit from the boiler may be reduced. Check for <ul style="list-style-type: none"> • Water leakage • Magnetic filter / Strainer blockage • Water circulation pump function.
LD	Thermistor (Boiler flow water temp.) (THWB1) failure	Check resistance across the thermistor.
LE	Boiler operation error	See Action for L8. Check the status of the boiler.
LF	Flow sensor failure	Check flow sensor cable for damage or loose connections.
LH	Boiler circulation water freeze protection	Flow rate of the heating circuit from the boiler may be reduced. Check for <ul style="list-style-type: none"> • Water leakage • Magnetic filter / Strainer blockage • Water circulation pump function.
LJ	DHW operation error (type of external plate HEX)	<ul style="list-style-type: none"> • Check for disconnection of the thermistor (DHW tank lower water temp.) (THW5B). • Flow rate may be reduced. Check for water circulation pump function. (primary / sanitary)
LL	Setting errors of DIP switches on FTC control board	For boiler operation, check that DIP SW1-1 is set to ON (With Boiler) and DIP SW2-6 is set to ON (With Mixing Tank). For 2-zone temperature control, check DIP SW2-7 is set to ON (2-zone) and DIP SW2-6 is set to ON (With Mixing Tank).
LP	Out of water flow rate range for outdoor heat pump unit	Check the installation the water flow rate range (Table 4.3.1). Check remote controller settings ([Service] → [Heat pump settings] → [Heat pump flow rate range]) See Action for L3.
P1	Thermistor (Room temp.) (TH1) failure	Check resistance across the thermistor.
P2	Thermistor (Ref. liquid temp.) (TH2) failure	Check resistance across the thermistor.
P6	Anti-freeze protection of plate heat exchanger	See Action for L3. Check for correct amount of refrigerant.
J0	Communication failure between FTC and wireless receiver	Check connection cable for damage or loose connections.
J1 - J8	Communication failure between wireless receiver and wireless remote controller	Check wireless remote controller's battery is not flat. Check the pairing between wireless receiver to wireless remote controller. Test the wireless communication. (See the manual of wireless system)
E0 - E5	Communication failure between main remote controller and FTC	Check connection cable for damage or loose connections.
E6 - EF	Communication failure between FTC and outdoor unit	Check that the outdoor unit has not been turned off. Check connection cable for damage or loose connections. Refer to outdoor unit service manual.
E9	Outdoor unit receives no signal from indoor unit.	Check both units are switched on. Check connection cable for damage or loose connections. Refer to outdoor unit service manual.
EE	Combination error between FTC and outdoor unit	Check combination of FTC and outdoor unit.
U*, F*	Outdoor unit failure	Refer to outdoor unit service manual.
A*	M-NET communication error	Refer to outdoor unit service manual.

Note: To cancel error codes, please switch system off (Touch [Reset] on main remote controller).

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■ Annual Maintenance (cylinder unit and hydrobox)

It is essential that the indoor unit is serviced at least once a year by a qualified individual. Any required parts should be purchased from Mitsubishi Electric. NEVER bypass safety devices or operate the unit without them being fully operational. For more details, refer to service handbook.

Notes

- Within the first couple of months of installation, remove and clean the indoor unit's strainer plus any additional filter items that are fitted external to the indoor unit. This is especially important when installing on an old/existing pipe work system.
- The pressure relief valve and T&P valve should be checked annually by turning the knob manually so that the medium is discharged, thus cleaning the seal seat.

In addition to annual servicing it is necessary to replace or inspect some parts after a certain period of system operation. Please see tables below for detailed instructions. Replacement and inspection of parts should always be done by a competent person with relevant training and qualifications.

Parts which require regular replacement

Parts	Replace every	Possible failures
Pressure relief valve (PRV) Manometer Inlet control group (ICG)*1 Mud trap*2	6 years	Water leakage

*1 OPTIONAL PARTS for UK

*2 Cylinder unit: ERST17D-*M*BE

Parts which require regular inspection

Parts	Check every	Possible failures
Pressure relief valve (3bar) Temperature and pressure relief valve	1 year (turning the knob manually)	It could seize and risk burst of expansion vessel
Immersion heater*3	2 years	Earth leakage causing circuit breaker to activate (Heater is always OFF)
Water circulation pump (Primary circuit)	20,000 hrs (3 years)	Water circulation pump failure
Magnetic filter	3 years	Flow rate decrease due to clogging
Mud trap*4	1 year	Flow rate decrease due to clogging

*3 Cylinder unit: EHPT20X-MEHEW and OPTIONAL PART

*4 Cylinder unit: ERST17D-*M*BE

Parts which must NOT be re-used when servicing

- * O-ring
- * Gasket

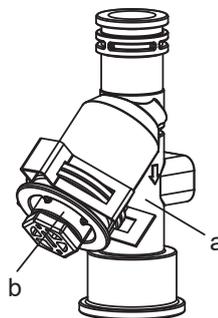
Note:

- Always replace the gasket for pump with a new one at each regular maintenance (every 20,000 hours of use or every 3 years).

<Draining particles from the magnetic filter>

Note: DRAINED WATER MAY BE VERY HOT

1. Turn OFF the unit via the user interface.
2. Turn OFF the circuit breaker.
3. Check if body of the magnet filter is still fitted tight (a).
4. Close the isolating valves.
5. Put a suitable bottle below the magnetic filter.
6. Remove fastener and open the cap of the filter (b).
7. Collect the water and particles in the bottle.
8. Wash the inside mesh and magnet and remove particles from them.
9. Put the inside mesh and magnet back into the filter.
10. Fit the cap with fastener.
11. Open the isolating valves.
12. Check the pressure of the water circuit.

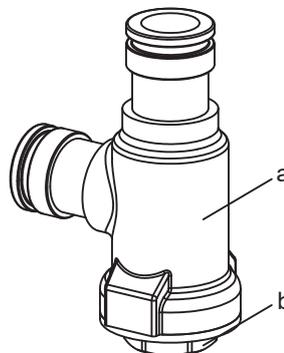


a. body
b. cap

<Draining particles from the magnetic filter (ONLY Cylinder unit: ERST17D-*M*BE)>

Note: DRAINED WATER MAY BE VERY HOT

1. Turn OFF the unit via the user interface.
2. Turn OFF the circuit breaker.
3. Check if body of the magnet filter is still screwed tight (a).
4. Close the isolating valves.
5. Hold the motor of mixing valve and pull hard to remove it from the valve.
6. Put a suitable bottle below the magnetic filter.
7. Open the cap of the filter with 2 spanners (b).
8. Collect the water and particles in the bottle.
9. Wash the inside mesh and magnet and remove particles from them.
10. Put the inside mesh and magnet back into the filter.
11. Screw the cap with 2 spanners.
12. Reattach the motor on the mixing valve.
13. Open the isolating valves.
14. Check the pressure of the water circuit.



a. body
b. cap

4 Cylinder unit

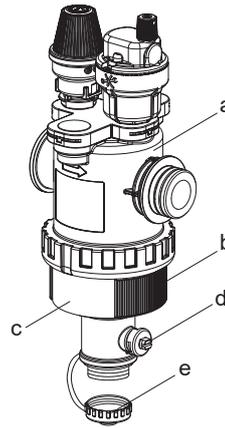
<Draining dirt from the mud trap (ONLY Cylinder unit: ERST17D-*M*BE)>

Note: DRAINED WATER MAY BE VERY HOT

1. Turn OFF the unit via the user interface.
2. Turn OFF the circuit breaker.
3. Check if upper and lower parts of the mud trap are still screwed tight (a, c).
4. Take off the magnetic sleeve (b).
5. Unscrew the drain cap (e).
6. Connect a drain hose to the bottom of the mud trap so that the water and dirt can be collected in a suitable bottle.
7. Open the drain valve for a couple of seconds (d).
8. After dirt drained, close the drain valve.
9. Screw the drain cap back on.
10. Reattach the magnetic sleeve.
11. Check the pressure of the water circuit.

Notes:

- When checking the mud trap for tightness, hold it firmly, so as NOT to apply stress to the water piping.
- To prevent dirt from remaining in the mud trap, take off the magnetic sleeve.
- Always first unscrew the drain cap, and connect a drain hose to the bottom of the water filter, then open the drain valve.



- a upper part
- b magnetic sleeve
- c lower part
- d drain valve
- e drain cap

4 Cylinder unit

■ Engineers Forms

Should settings be changed, please enter and record new setting in 'Field Setting' column. This will ease resetting in the future should the system use change or the circuit board need to be replaced.

Commissioning/Field settings record sheet

Main remote controller screen			Parameters	Field setting	Notes	
DHW	DHW *4	Eco	On/Off			
		Boost	On/Off			
		DHW max. temp.	40°C to 55/60/65/70°C *5			
		Max. temp. drop	5°C to 40°C			
		Max. operation time	30 to 120 min.			
		Interval	30 to 120 min.			
		Volume	Large / Standard			
		Schedule	On/Off			
		Always off	On/Off			
		Legionella prevention *4	Legionella	On/Off		
		Hot water temp.	60°C to 70°C *5			
		Start time	00:00 to 23:00			
		Duration	1 to 120 min.			
		Frequency	1 to 30 days			
		Max. operation time	1 to 5 h			
	Heating / Cooling *3	Heating / Cooling	Zone 1 heating room temp.	10°C to 30°C		
			Zone 2 heating room temp. *1	10°C to 30°C		
Zone 1 heating flow temp.			20°C to 60/70/75°C			
Zone 2 heating flow temp. *2			20°C to 60/70/75°C			
Zone 1 cooling flow temp. *3			5°C to 25°C			
Zone 2 cooling flow temp. *3			5°C to 25°C			
Zone 1 heating weather compensation curve			-9°C to +9°C			
Zone 2 heating weather compensation curve *2			-9°C to +9°C			
Zone 1 cooling weather compensation curve			-9°C to +9°C			
Zone 2 cooling weather compensation curve *2			-9°C to +9°C			
Schedule			On/Off			
Always off			On/Off			
Heating / Cooling			Heating / Cooling			
Zone 1 control logic			Heating room temp./ Heating flow temp./ Heating weather compensation curve / Cooling flow temp./ Cooling weather compensation curve			
Zone 2 control logic *2		Heating room temp./ Heating flow temp./ Heating weather compensation curve / Cooling flow temp./ Cooling weather compensation curve				
Auto change over		On/Off				
Weather compensation curve (Heating)		Hi flow temp. set point	Zone 1 outdoor ambient temp.	-30°C to +33°C *7		
			Zone 1 flow temp.	20°C to 60/70/75°C		
			Zone 2 outdoor ambient temp. *2	-30°C to +33°C *7		
		Lo flow temp. set point	Zone 2 flow temp. *2	20°C to 60/70/75°C		
			Zone 1 outdoor ambient temp.	-28°C to +35°C *8		
			Zone 1 flow temp.	20°C to 60/70/75°C		
Adjust		Zone 2 outdoor ambient temp. *2	-28°C to +35°C *8			
		Zone 2 flow temp. *2	20°C to 60/70/75°C			
		Zone 1 outdoor ambient temp.	-29°C to +34°C *9			
Weather compensation curve (Cooling)		Hi flow temp. set point	Zone 1 flow temp.	20°C to 60/70/75°C		
			Zone 2 outdoor ambient temp. *2	-29°C to +34°C *9		
			Zone 2 flow temp. *2	20°C to 60/70/75°C		
		Lo flow temp. set point	Zone 1 outdoor ambient temp.	10°C to 46°C		
			Zone 1 flow temp.	5°C to 25°C		
			Zone 2 outdoor ambient temp. *2	10°C to 46°C		
		Zone 2 flow temp. *2	5°C to 25°C			
Menu		Energy	Energy monitor	Consumed electrical energy/Delivered energy		
	Holiday		Schedule	On/Off/Set time		
			DHW *4	On/Off		
			Heating / Cooling *3	On/Off		
	Setting	Language	EN/CZ/DA/DE/ET/ES/FR/HR/IT/LV/LT/HU/NL/NO/PL/PT/RO/SK/SI/FI/SV/TR/EL/BG			
		Room sensors	Zone sensor selection *2	Zone 1/Zone 2		
			Zone 1 programme	TH1/Main RC/Room RC1-8/"Time/Zone"		
			Zone 2 programme *2	TH1/Main RC/Room RC1-8/"Time/Zone"		
		Display	Temp. (°C) → (°F)	On/Off		
		Touch screen	Clean screen	On/Off		
			Calibrate screen	On/Off		
			Brightness	Low / Mid / Hi		
			Backlight time	5sec./10sec./20sec./30sec./60sec./Always on		

Continued to next page.

4 Cylinder unit

Engineers Forms

Commissioning/Field settings record sheet

Main remote controller screen			Parameters		Field setting	Notes		
Menu	Service	Thermistor adjustment	THW1	-10°C to +10°C				
			THW2	-10°C to +10°C				
			THW5B	-10°C to +10°C				
			THW6	-10°C to +10°C				
			THW7	-10°C to +10°C				
			THW8	-10°C to +10°C				
			THW9	-10°C to +10°C				
			THW10	-10°C to +10°C				
			THWB1	-10°C to +10°C				
			Auxiliary settings	Economy settings for pump.	On/Off *10			
				Delay (3 to 60 min.)				
		Electric heater (heating)		Space heating: On (used)/Off (not used)				
				Electric heater delay timer (5 to 180 min.)				
		Electric heater (DHW) *4		Booster heater	DHW: On (used)/Off (not used)			
				Immersion heater	DHW: On (used)/Off (not used)			
				Electric heater delay timer (15 to 30 min.)				
		Mixing valve 1 control		Running (10 to 240 sec.)				
				Interval (1 to 30 min.)				
		Mixing valve 2 control		Running (10 to 240 sec.)				
				Interval (1 to 30 min.)				
		Flow sensor *11		Minimum (0 to 100 L/min)				
				Maximum (0 to 100 L/min)				
		Analogue output		Interval (1 to 30 min.)				
				Priority (Normal / High)				
		Electric heater schedule *18		Daily schedule (Schedule 1/Schedule 2)				
				Time schedule 1 (Always/Start-Stop/Never)				
				Time schedule 2 (Always/Start-Stop/Never)				
		Pump speed	DHW	Pump speed (1 to 5)				
			Heating / Cooling	Pump speed (1 to 5)				
		Heat source setting	Standard / Heater / Boiler / Hybrid *12					
		Heat pump settings	Heat pump flow rate range	Minimum (0 to 100 L/min)				
				Maximum (0 to 100 L/min)				
			Quiet mode	Heating	Day (Mon to Sun)			
					Time			
					Quiet level (Normal/ Level1/ Level2/ Level3)			
				Cooling	Day (Mon to Sun)			
			Time					
				Quiet level (Normal/ Level1/ Level2/ Level3)				
		Operation settings	Heating operation	Flow temperature range *13	Minimum temp. (20 to 45°C)			
					Maximum temp. (35 to 60/70/75°C)			
				Room temperature control *13	Mode (Auto/Quick/Normal/Slow)			
					Interval (10 to 60 min.)*14			
				Heat pump thermo diff.	On/Off *10			
					Lower (-9 to -1°C)			
				Upper (+3 to +5°C)				
			Freeze stat function *15	Ambient temp. (3 to 20°C) / **				
			Simultaneous operation (DHW/ Heating)	On/Off *10				
			Cold weather function	Ambient temp. (-30 to +10°C) *7				
				On/Off *10				
			Boiler settings	Hybrid settings	Ambient temp. (-30 to -10°C) *7			
		Outdoor ambient temp. (-30 to +10°C) *7						
		Priority mode (Ambient/Cost/CO ₂) *16						
		Outdoor ambient temp. rise (+1 to +5°C)						
		Intelligent settings		Energy price *17	Electricity (0.001 to 999 */kWh)			
					Boiler (0.001 to 999 */kWh)			
				CO ₂ emission	Electricity (0.001 to 999 kg -CO ₂ /kWh)			
					Boiler (0.001 to 999 kg -CO ₂ /kWh)			
				Heat source	Heat pump capacity (1 to 40 kW)			
					Boiler efficiency (25 to 150%)			
			Booster heater 1 capacity (0 to 30 kW)					
			Booster heater 2 capacity (0 to 30 kW)					

Continued to next page.

4 Cylinder unit

Engineers Forms

Commissioning/Field settings record sheet (continued from the previous page)

Main remote controller screen			Parameters		Field setting	Notes	
Menu	Service	Operation settings	Smart grid ready	DHW	On/Off		
					Target temp. (+1 to +30°C) / -- (Non active)		
			Heating	On/Off			
				Target temp.	Switch-on recommendation (20 to 60/70/75°C)		
					Switch-on command (20 to 60/70/75°C)		
			Cooling	On/Off			
				Target temp.	Switch-on recommendation (5 to 25°C)		
					Switch-on command (5 to 25°C)		
			Pump cycles	Heating (On/Off)			
				Cooling (On/Off)			
				Interval (10 to 120 min.)			
			Floor dry up	On/Off *10			
				Target temperature	Start & End (20 to 60/70/75°C)		
					Max temperature (20 to 60/70/75°C)		
					Max temperature period (1 to 20 days)		
				Flow temperature increase	Temperature increase step (+1 to +30°C)		
					Increase interval (1 to 7 days)		
			Flow temperature decrease	Temperature decrease step (-1 to -30°C)			
				Decrease interval (1 to 7 days)			
			Summer mode	On/Off			
				Ambient temperature	Heating on (4 to 19°C)		
					Heating off (5 to 20°C)		
				Judgement time	Heating on (1 to 48 h)		
					Heating off (1 to 48 h)		
			Forced heating On (-30 to 10°C)				
			Auto change over	On/Off			
				Ambient temperature	Heat→Cool (10 to 40°C)		
					Cool→Heat (5 to 20°C)		
				Judgement time	Heat→Cool (1 to 48 h)		
			Cool→Heat (1 to 48 h)				
			Water flow control	On/Off			
				Water temperature difference *19	Heating (+3 to +20°C)		
					Cooling (+3 to +10°C)		
			Holiday mode	Zone 1 heating room temp.	10°C to 30°C		
				Zone 2 heating room temp. *1	10°C to 30°C		
				Zone 1 heating flow temp.	20°C to 60/70/75°C		
				Zone 2 heating flow temp. *2	20°C to 60/70/75°C		
				Zone 1 cooling flow temp. *3	5°C to 25°C		
				Zone 2 cooling flow temp. *3	5°C to 25°C		
			Zone prohibited	Heating (Zone 1)	Permitted/Prohibited		
				Heating (Zone 2)	Permitted/Prohibited		
Cooling (Zone 1)	Permitted/Prohibited						
Cooling (Zone 2)	Permitted/Prohibited						

Continued to next page.

4 Cylinder unit

■ Engineers Forms

Commissioning/Field settings record sheet (continued from the previous page)

Main remote controller screen				Parameters	Field setting	Notes			
Menu	Service	Energy monitor settings	Electric heater capacity	Booster heater 1	0 to 30 kW				
				Booster heater 2	0 to 30 kW				
				Immersion heater	0 to 30 kW				
				Analogue output	0 to 30 kW				
			Delivered energy adjustment	-50 to +50%					
			Water pump input	Pump 1	0 to 200 W or *(factory fitted pump)				
				Pump 2	0 to 200 W				
				Pump 3	0 to 200 W				
				Pump 4 *6	0 to 200 W				
			Electric energy meter	0.1/1/10/100/1000 pulse/kWh					
		Heat meter	0.1/1/10/100/1000 pulse/kWh						
		External input settings	Demand control (IN4)		Heat source OFF/Boiler operation				
			Outdoor thermostat (IN5)		Heater operation/Boiler operation				
			Cooling limit temp. (IN15)	Zone selection		Zone 1/Zone 2/Zone 1&2			
				Zone 1 lowest temperature		5°C to 25°C			
				Zone 2 lowest temperature		5°C to 25°C			
		Thermo on output			Zone 1/Zone 2/Zone 1&2				

- *1. The settings related to Zone 2 can be switched only when 2-zone temperature control or 2-zone valve ON/OFF control is active.
- *2. The settings related to Zone 2 can be switched only when 2-zone temperature control is enabled (when DIP SW 2-6 and SW 2-7 are ON).
- *3. Cooling mode settings are available for ERS* model only.
- *4. Only available if DHW tank is present in system.
- *5. For the model without both booster and immersion heater, it may not reach the set temperature depending on the outside ambient temperature.
- *6. This setting is valid for only cylinder units.
- *7. The lower limit is -15°C depending on the connected outdoor unit.
- *8. The lower limit is -13°C depending on the connected outdoor unit.
- *9. The lower limit is -14°C depending on the connected outdoor unit.
- *10. On: the function is active; Off: the function is inactive.
- *11. Do not change the setting since it is set according to the specification of flow sensor attached to the indoor unit.
- *12. When DIP SW1-1 is set to OFF "WITHOUT Boiler" or SW2-6 is set to OFF "WITHOUT Mixing tank", neither Boiler nor Hybrid can be selected.
- *13. Valid only when operating in Heating room temperature.
- *14. When DIP SW5-2 is set to OFF, the function is active.
- *15. If asterisk (*) is chosen freeze stat function is deactivated. (i.e. primary water freeze risk)
- *16. When the indoor unit is connected with a PUMY-P and PXZ outdoor unit, the mode is fixed to "Ambient".
- *17. "*" of "/kWh" represents currency unit (e.g. €, £, or the like)
- *18. Valid only during heating mode
- *19. To enable this function in the outdoor unit of PUZ-S(H)WM, switch the [Mode 7] in [Function settings] to "2".
([Menu] → [Service] → [Function settings], [Ref. add: 0], [Unit: 1] → [Mode 7], 1-High temperature control (default) / 2-Water temperature difference control)

4 Cylinder unit

■ Refrigerant collecting (pumpdown) for split model systems only

Refer to "Refrigerant collection" in the outdoor unit installation manual or service manual.

■ Back-up operation of boiler

Heating operation is backed up by boiler.

For more details, refer to the installation manual of PAC-TH012HT-E.

<Installation & System set up>

1. Set DIP-SW 1-1 to ON "With boiler" and SW2-6 to ON "With Mixing tank".
2. Install the thermistor (Boiler flow water temp.) (THWB1) *1 on the boiler circuit.
3. Connect the output wire (OUT10: Boiler operation) to the signal input (room thermostat input) on the boiler. *2
4. Install one of the following room temperature thermostats. *3

- Wireless remote controller (option)
- Room temperature thermostat (local supply)
- Main remote controller (remote position)

<Main remote controller settings>

1. Go to [Service] menu, then [Heat source setting], and choose [Boiler] or [Hybrid]. *4
2. Go to [Service] menu, and choose [Operation settings], then [Boiler settings] to make detailed settings for [Hybrid settings].

*1 The boiler temperature thermistor is an optional part.

*2 OUT10 has no voltage across it.

*3 Boiler heating is controlled on/off by the room temp. thermostat.

*4 [Hybrid] automatically switches heat sources between heat pump (and electric heater) and boiler.

■ Multiple outdoor units control

To realize bigger systems by using multiple outdoor units, up to 6 units of the same model can be connected.

The hydrobox can be used as a sub unit for multiple outdoor unit control.

For more details, refer to the installation manual of the flow temperature controller [main] (PAC-IF081/082).

PAC-IF071/072B-E can not be connected to the hydrobox.

Check the model name of connecting main unit.

<DIP switch setting>

- Set DIP SW4-1 to ON "Active: multiple outdoor unit control".
- Keep DIP SW4-2 OFF (default setting) (main/sub setting: sub).
- Set DIP SW1-3 to ON when the hydrobox is connected to a DHW tank.

Note : SUZ-SWM/PXZ/PUMY-P outdoor unit is not available for multiple outdoor units control.



Mitsubishi Electric Erp Directive Related Product Information: erp.mitsubishielectric.eu/erp
Details and precautions on installation, maintenance and assembly can be found in the installation and operation manuals.
This information is based on EU regulation No 811/2013 and No 813/2013.

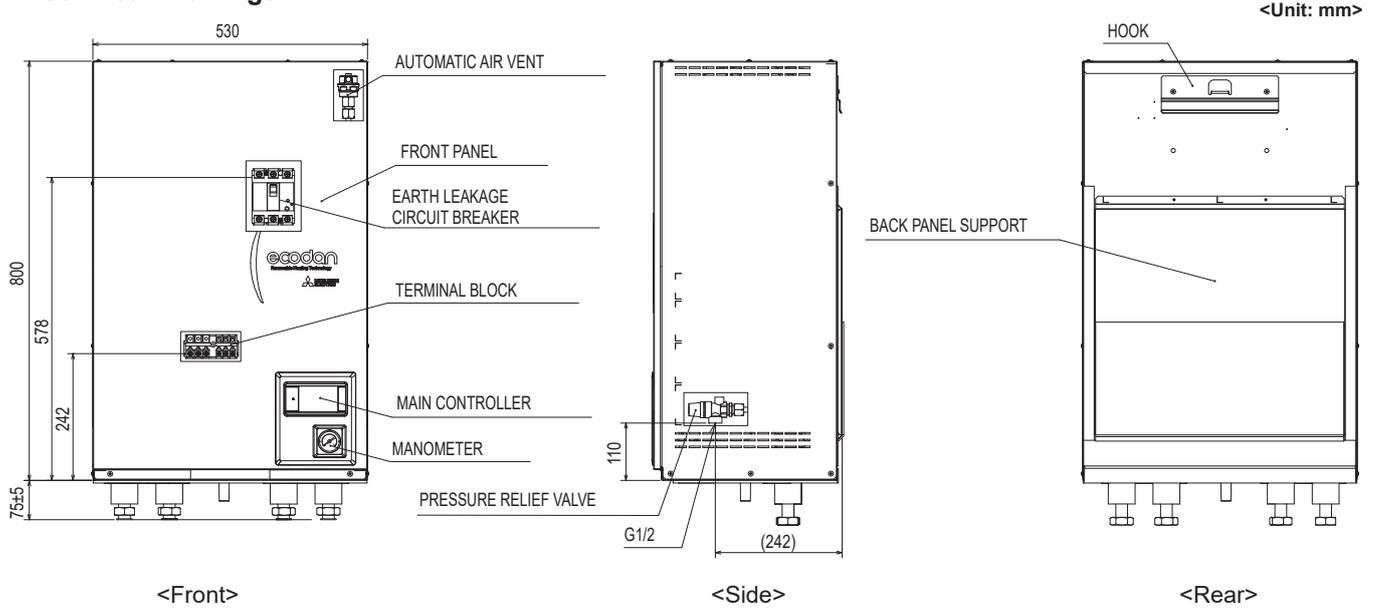
PRODUCT FICHE OF TEMPERATURE CONTROLS

1	Parts name	5	Main Remote controller	7	Wireless remote controller & receiver
2	Model name	6	(Indoor Unit Accessory)		PAR-WT60R-E & PAR-WR61R-E
3	The class of the temperature control		VI		VI
4	The contribution to seasonal space heating energy efficiency (%)		4		4

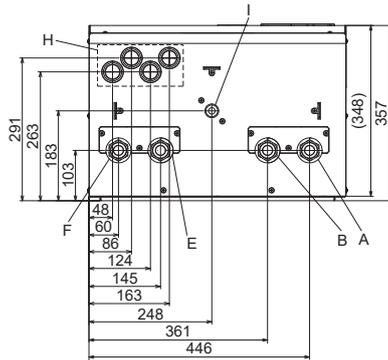
5 Hydrobox

5.1. Outlines and dimensions

■ Technical Drawings



<ERPX> (Hydro-Split system for heating and cooling)



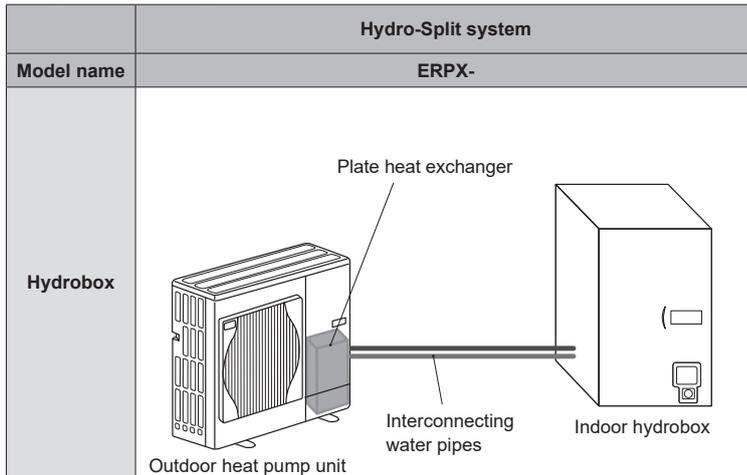
<View from below>

Letter	Pipe description	Connection size/type
A	Space heating/Indirect DHW tank (primary) RETURN connection	G1
B	Space heating/Indirect DHW tank (primary) FLOW connection	G1
E	Flow connection FROM heat pump	G1
F	Return connection TO heat pump	G1
G	Discharge pipe (by installer) from pressure relief valve	G1/2 (valve port within hydrobox casing)
H	Electrical cable inlets ① ② ③ ④	For inlets ① and ②, run high-voltage wires including power cable, indoor-outdoor cable, and external output wires. For inlets ③ and ④, run low-voltage wires including external input wires and thermistor wires. For a wireless receiver (option) cable, use inlet ④.
I	Drain socket	Outside diameter 20 mm (EHSD-* not included.)

<Table 5.1.1>

5 Hydrobox

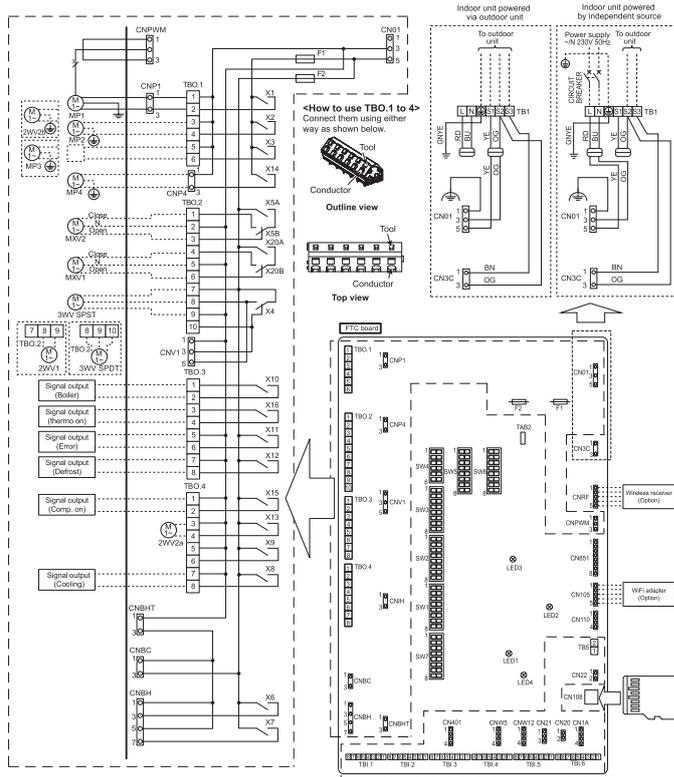
■ System configuration



5 Hydrobox

5.2. Wiring diagrams

■ E***-M(E)



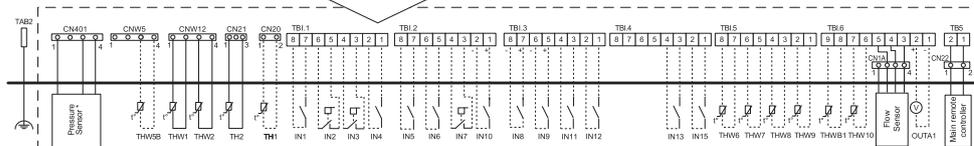
Cylinder unit/Hydrobox

[LEGEND]

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
MP1	Water circulation pump 1(Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)(Local supply)
3WV(2WV1)	3-way valve (2-way valve 1)(Local supply)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone1)(Local supply)
MXV2	Mixing valve 2(For Zone2)(Local supply)
BHT	Thermostat for booster heater
BHF	Thermal fuse for booster heater
BH1	Booster heater 1
BH2	Booster heater 2
BHC1	Contactor for booster heater 1
BHC2	Contactor for booster heater 2
BHCP	Contactor for booster heater protection
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5B	Thermistor (DHW tank water temp.)(Option)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Smart grid ready input (Local supply)
IN13	Forced cooling mode (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor

FLOW TEMP. CONTROLLER (FTC)

TBO.1-4	Terminal block <Outputs>
TB1.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CN108	microSD card connector



- Symbols used in wiring diagram are, [] : connector, [] : terminal block.
- Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
- Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TB1.1	7-8	Room thermostat 1 input *1	Refer to SW2-1 in "6-6. DIP Switch Functions".	
IN2	TB1.1	5-6	Flow switch 1 input	Refer to SW2-2 in "6-6. DIP Switch Functions".	
IN3	TB1.1	3-4	Flow switch 2 input (Zone1)	Refer to SW3-2 in "6-6. DIP Switch Functions".	
IN4	TB1.1	1-2	Demand control input	Normal	Heat source OFF/Boiler operation *3
IN5	TB1.2	7-8	Outdoor thermostat input *2	Standard operation	Heater operation/Boiler operation *3
IN6	TB1.2	5-6	Room thermostat 2 input *1	Refer to SW3-1 in "6-6. DIP Switch Functions".	
IN7	TB1.2	3-4	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-6. DIP Switch Functions".	
IN8	TB1.3	7-8	Electric energy meter 1		
IN9	TB1.3	5-6	Electric energy meter 2		
IN10	TB1.2	1-2	Heat meter		
IN11	TB1.3	3-4	Smart grid ready input		
IN12	TB1.3	1-2	Smart grid ready input		
IN13	TB1.4	3-4	Forced cooling mode *4	Refer to SW7-2 in "6-6. DIP Switch Functions".	
IN15	TB1.4	1-2	Cooling limit temp. *4	Refer to SW7-3 in "6-6. DIP Switch Functions".	
INA1	TB1.6	3-5	CN1A Flow sensor		

- Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
- If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- Only for ER series.

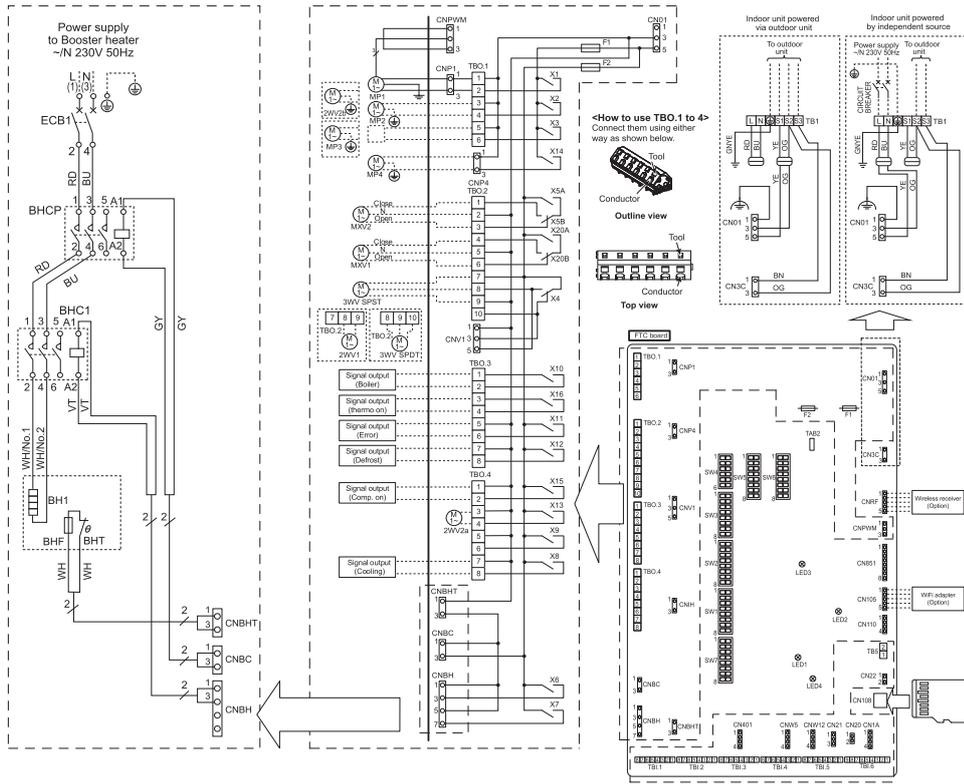
Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1	1-2	CNP1 Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1	3-4	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1	5-6	Water circulation pump 3 output (Space heating/cooling for Zone2) *1	OFF	ON
OUT4	TBO.2	7-9	2-way valve 2b output *2		
		8-10	3-way valve SPST (2-way valve 1) output	Heating	DHW
OUT5	TBO.2	1-2	CNV1 3-way valve output	Stop	Close
		2-3	CN851 3-way valve output	Open	Open
OUT6		CNH 1-3	Booster heater 1 output	OFF	ON
OUT7		CNH 5-7	Booster heater 2 output	OFF	ON
OUT8	TBO.4	7-8	Cooling signal output	OFF	ON
OUT9	TBO.4	5-6	CNIH Immersion heater output	OFF	ON
OUT10	TBO.3	1-2	Boiler output	OFF	ON
OUT11	TBO.3	5-6	Error output	Normal	Error
OUT12	TBO.3	7-8	Defrost output	Normal	Defrost
OUT13	TBO.4	3-4	2-way valve 2a output *2	OFF	ON
OUT14		CNP4	Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4	1-2	Comp. ON signal	OFF	ON
OUT16	TBO.3	3-4	Thermo ON signal	OFF	ON
OUT18	TBO.2	4-5	Zone 1 mixing valve output *1	Stop	Close
OUTA1	TB1.6	1-2	Analog output	0V-10V	Open

- Do not connect to the terminals that are indicated as "-" in the "Terminal block" field.
- For 2-zone temperature control.
 - For 2-zone valve ON/OFF control.

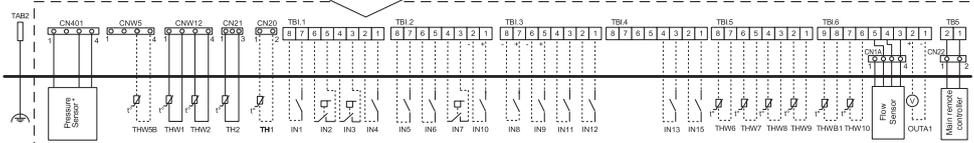
5 Hydrobox

E***-VM2E



LEGEND

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
MP1	Water circulation pump 1(Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)(Local supply)
3WV(2WV1)	3-way valve (2-way valve 1)(Local supply)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone1)(Local supply)
MXV2	Mixing valve 2(For Zone2)(Local supply)
BHT	Thermostat for booster heater
BHF	Thermal fuse for booster heater
BH1	Booster heater 1
BH2	Booster heater 2
BHC1	Contactor for booster heater 1
BHC2	Contactor for booster heater 2
BHCP	Contactor for booster heater protection
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5B	Thermistor (DHW tank water temp.)(Option)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Smart grid ready input (Local supply)
IN13	Forced cooling mode (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4	Terminal block <Outputs>
TBI.1-6	Terminal block <Signal Inputs, Thermostor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CNI08	microSD card connector



- Symbols used in wiring diagram are, : connector, : terminal block.
- Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
- Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1 7-8	—	Room thermostat 1 input *1	Refer to SW2-1 in "6-6, DIP Switch Functions".	—
IN2	TBI.1 5-6	—	Flow switch 1 input	Refer to SW2-2 in "6-6, DIP Switch Functions".	—
IN3	TBI.1 3-4	—	Flow switch 2 input (Zone1)	Refer to SW3-2 in "6-6, DIP Switch Functions".	—
IN4	TBI.1 1-2	—	Demand control input	Normal	Heat source OFF/Boiler operation *3
IN5	TBI.2 7-8	—	Outdoor thermostat input *2	Standard operation	Heater operation/Boiler operation *3
IN6	TBI.2 5-6	—	Room thermostat 2 input *1	Refer to SW3-1 in "6-6, DIP Switch Functions".	—
IN7	TBI.2 3-4	—	Flow switch 3 input (Zone2)	Refer to SW3-3 in "6-6, DIP Switch Functions".	—
IN8	TBI.3 7-8	—	Electric energy meter 1	—	—
IN9	TBI.3 5-6	—	Electric energy meter 2	—	Refer to installation manual.
IN10	TBI.2 1-2	—	Heat meter	—	—
IN11	TBI.3 3-4	—	Smart grid ready input	—	—
IN12	TBI.3 1-2	—	Forced cooling mode *4	Refer to SW2-2 in "6-6, DIP Switch Functions".	—
IN15	TBI.4 1-2	—	Cooling limit temp. *4	Refer to SW7-3 in "6-6, DIP Switch Functions".	—
INA1	TBI.6 3-5	CN1A	Flow sensor	Refer to installation manual.	—

Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1 1-2	CNP1	Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1 3-4	—	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1 5-6	—	Water circulation pump 3 output (Space heating/cooling for Zone2) *1	OFF	ON
OUT4	TBO.2 7-9	—	3-way valve SPST (2-way valve 1) output	—	—
OUT4	TBO.2 8-10	CNV1	3-way valve SPDT output	Heating	DHW
OUT4	TBO.2 11-12	CN8S1	3-way valve output	—	—
OUT5	TBO.2 1-2	—	Zone 2 mixing valve output *1	Stop	Close
OUT6	—	ONB13	Booster heater 1 output	OFF	ON
OUT7	—	ONB57	Booster heater 2 output	OFF	ON
OUT8	TBO.4 7-8	—	Cooling signal output	OFF	ON
OUT9	TBO.4 5-6	CNIH	Immersion heater output	OFF	ON
OUT10	TBO.3 1-2	—	Boiler output	OFF	ON
OUT11	TBO.3 5-6	—	Error output	Normal	Error
OUT12	TBO.3 7-8	—	Defrost output	Normal	Defrost
OUT13	TBO.4 3-4	—	2-way valve 2a output *2	OFF	ON
OUT14	—	CNP4	Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4 1-2	—	Comp. ON signal	OFF	ON
OUT16	TBO.3 3-4	—	Thermo ON signal	OFF	ON
OUT18	TBO.2 4-5	—	Zone 1 mixing valve output *1	Stop	Close
OUT18	TBO.2 5-6	—	Zone 1 mixing valve output *1	Stop	Open
OUTA1	TBI.6 1-2	—	Analog output	0V-10V	—

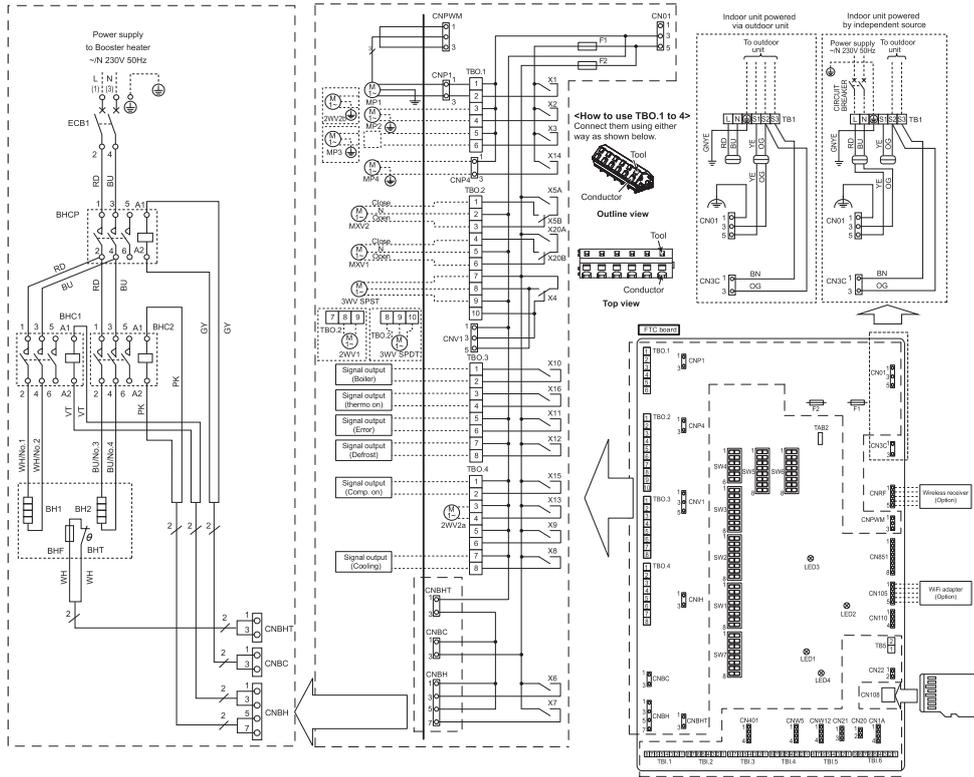
- Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
- If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- Only for ER series.

Do not connect to the terminals that are indicated as "—" in the "Terminal block" field.
 *1. For 2-zone temperature control.
 *2. For 2-zone valve ON/OFF control.

5 Hydrobox

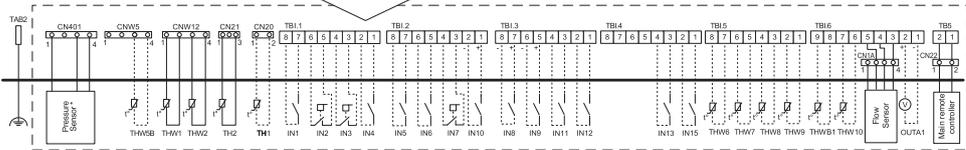
E***-VM6E

Cylinder unit/Hydrobox



[LEGEND]

Symbol	Name
TBI	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
MP1	Water circulation pump 1 (Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)(Local supply)
3W1(2W1)	3-way valve (2-way valve 1)(Local supply)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone1)(Local supply)
MXV2	Mixing valve 2(For Zone2)(Local supply)
BHT	Thermostat for booster heater
BHF	Thermal fuse for booster heater
BH1	Booster heater 1
BH2	Booster heater 2
BHC1	Contact for booster heater 1
BHC2	Contact for booster heater 2
BHCP	Contact for booster heater protection
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5B	Thermistor (DHW tank water temp.)(Option)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Smart grid ready input (Local supply)
IN13	Forced cooling mode (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4	Terminal block <Outputs>
TBI.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CN108	microSD card connector



- Symbols used in wiring diagram are, [] : connector, [] : terminal block.
- Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
- Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1 7-8	—	Room thermostat 1 input *1	Refer to SW2-1 in "6-6, DIP Switch Functions".	
IN2	TBI.1 5-6	—	Flow switch 1 input	Refer to SW2-2 in "6-6, DIP Switch Functions".	
IN3	TBI.1 3-4	—	Flow switch 2 input (Zone1)	Refer to SW3-2 in "6-6, DIP Switch Functions".	
IN4	TBI.1 1-2	—	Demand control input	Normal	Heat source OFF/Boiler operation*3
IN5	TBI.2 7-8	—	Outdoor thermostat input *2	Standard operation	[Heater operation]/Boiler operation*3
IN6	TBI.2 5-6	—	Room thermostat 2 input *1	Refer to SW3-1 in "6-6, DIP Switch Functions".	
IN7	TBI.2 3-4	—	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-6, DIP Switch Functions".	
IN8	TBI.3 7-8	—	Electric energy meter 1	Refer to installation manual.	
IN9	TBI.3 5-6	—	Electric energy meter 2	Refer to installation manual.	
IN10	TBI.2 1-2	—	Heat meter	Refer to installation manual.	
IN11	TBI.3 3-4	—	Smart grid ready input		
IN12	TBI.3 1-2	—	Forced		
IN13	TBI.4 3-4	—	Forced cooling mode *4	Refer to SW7-2 in "6-6, DIP Switch Functions".	
IN15	TBI.4 1-2	—	Cooling limit temp. *4	Refer to SW7-3 in "6-6, DIP Switch Functions".	
INA1	TBI.6 3-5	CN1A	Flow sensor	Refer to installation manual.	

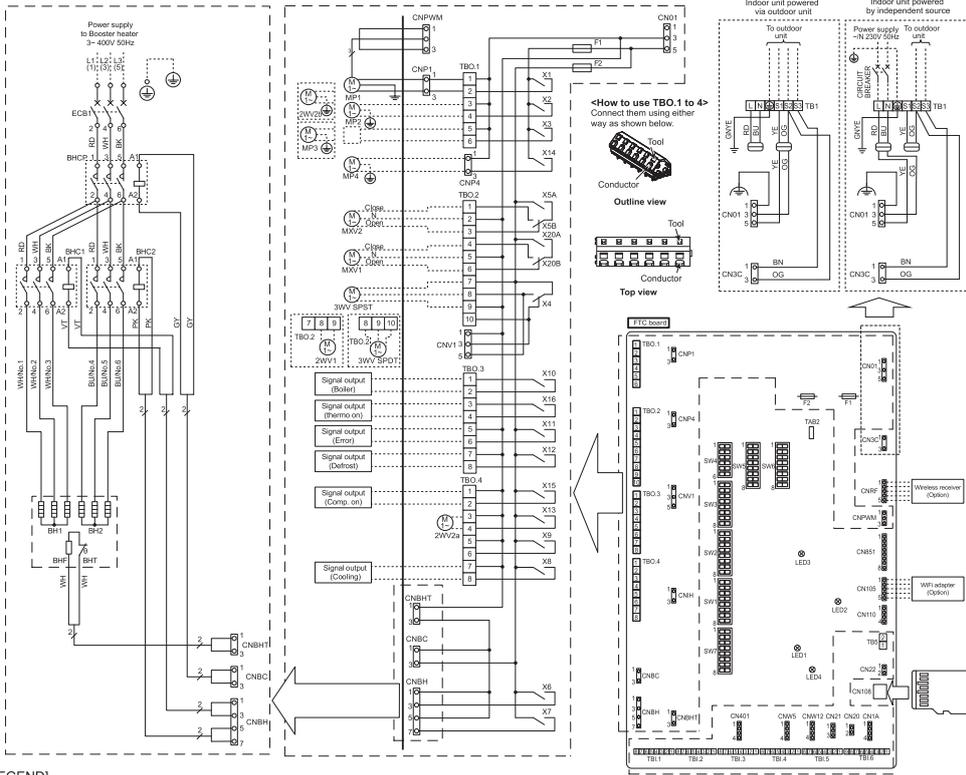
Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1 1-2	CNP1	Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1 3-4	—	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1 5-6	—	Water circulation pump 3 output (Space heating/cooling for Zone2) *1 2-way valve 2b output *2	OFF	ON
OUT4	TBO.2 7-9	—	3-way valve SPST (2-way valve 1) output	Heating	DHW
OUT4	TBO.2 8-10	CNV1	3-way valve SPDT output		
OUT5	TBO.2 1-2	—	Zone 2 mixing valve output *1	Stop	Close Open
OUT6	—	QBH1-3	Booster heater 1 output	OFF	ON
OUT7	—	QBH5-7	Booster heater 2 output	OFF	ON
OUT8	TBO.4 7-8	—	Cooling signal output	OFF	ON
OUT9	TBO.4 5-6	CNIH	Immersion heater output	OFF	ON
OUT10	TBO.3 1-2	—	Boiler output	OFF	ON
OUT11	TBO.3 5-6	—	Error output	Normal	Error
OUT12	TBO.3 7-8	—	Defrost output	Normal	Defrost
OUT13	TBO.4 3-4	—	2-way valve 2a output *2	OFF	ON
OUT14	—	CNP4	Water circulation pump 4 output (DHW)	OFF	ON
OUT15	TBO.4 1-2	—	Comp. ON signal	OFF	ON
OUT16	TBO.3 3-4	—	Thermo ON signal	OFF	ON
OUT18	TBO.2 4-5	—	Zone 1 mixing valve output *1	Stop	Close Open
OUTA1	TBI.6 1-2	—	Analog output		0V-10V

- Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
- If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- Only for ER series.

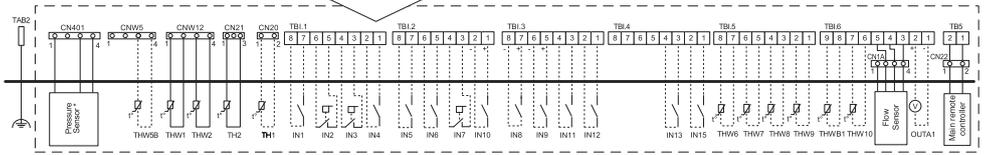
Do not connect to the terminals that are indicated as "—" in the "Terminal block" field.
*1. For 2-zone temperature control.
*2. For 2-zone valve ON/OFF control.

E***-YM9(E)E



LEGEND

Symbol	Name
TB1	Terminal block <Power supply, Outdoor unit>
ECB1	Earth leakage circuit breaker for booster heater
MP1	Water circulation pump 1(Space heating and DHW)
MP2	Water circulation pump 2 (Space heating for Zone1)(Local supply)
MP3	Water circulation pump 3 (Space heating for Zone2)(Local supply)
MP4	Water circulation pump 4 (DHW)(Local supply)
3WV2WV1	3-way valve (2-way valve 1)(Local supply)
2WV2a	2-way valve (For Zone 1)(Local supply)
2WV2b	2-way valve (For Zone 2)(Local supply)
MXV1	Mixing valve 1(For Zone1)(Local supply)
MXV2	Mixing valve 2(For Zone2)(Local supply)
BHT	Thermostat for booster heater
BHF	Thermal fuse for booster heater
BH1	Booster heater 1
BH2	Booster heater 2
BHC1	Contactor for booster heater 1
BHC2	Contactor for booster heater 2
BHCP	Contactor for booster heater protection
TH1	Thermistor (Room temp.)(Option)
TH2	Thermistor (Ref. liquid temp.)
THW1	Thermistor (Flow water temp.)
THW2	Thermistor (Return water temp.)
THW5B	Thermistor (DHW tank water temp.)(Option)
THW6	Thermistor (Zone1 flow temp.)(Option)
THW7	Thermistor (Zone1 return temp.)(Option)
THW8	Thermistor (Zone2 flow temp.)(Option)
THW9	Thermistor (Zone2 return temp.)(Option)
THW10	Thermistor (Mixing tank temp.)(Option)
THWB1	Thermistor (Boiler flow temp.)(Option)
IN1	Room thermostat 1 (Local supply)
IN2	Flow switch 1 (Local supply)
IN3	Flow switch 2 (Local supply)
IN4	Demand control (Local supply)
IN5	Outdoor thermostat (Local supply)
IN6	Room thermostat 2 (Local supply)
IN7	Flow switch 3 (Local supply)
IN8	Electric energy meter 1 (Local supply)
IN9	Electric energy meter 2 (Local supply)
IN10	Heat meter (Local supply)
IN11	Smart grid ready input (Local supply)
IN12	Smart grid ready input (Local supply)
IN13	Forced cooling mode (Local supply)
IN15	Cooling limit temp. (Local supply)
INA1	Flow sensor
FLOW TEMP. CONTROLLER (FTC)	
TBO.1-4	Terminal block <Outputs>
TBI.1-6	Terminal block <Signal Inputs, Thermistor>
F1	Fuse (IEC T10AL250V)
F2	Fuse (IEC T6.3AL250V)
SW1-7	DIP switch *See Table 3
X1-20	Relay
LED1	Power supply (FTC)
LED2	Power supply (Main remote controller)
LED3	Communication (FTC-Outdoor unit)
LED4	Reading or writing data to microSD card
CNPWM	Pump speed control signal for MP1
CN108	microSD card connector



1. Symbols used in wiring diagram are, \square : connector, \square : terminal block.
2. Indoor unit and outdoor unit connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wirings.
3. Since the outdoor unit side electric wiring may change, be sure to check the outdoor unit electric wiring diagram for service.

Table 1 Signal Inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1 7-8	—	Room thermostat 1 input *1	Refer to SW2-1 in "6-6, DIP Switch Functions".	—
IN2	TBI.1 5-6	—	Flow switch 1 input	Refer to SW2-2 in "6-6, DIP Switch Functions".	—
IN3	TBI.1 3-4	—	Flow switch 2 input (Zone1)	Refer to SW3-2 in "6-6, DIP Switch Functions".	—
IN4	TBI.1 1-2	—	Demand control input	Normal	Heat source OFF/Boiler operation *3
IN5	TBI.2 7-8	—	Outdoor thermostat input *2	Standard operation	Heater operation/Boiler operation *3
IN6	TBI.2 5-6	—	Room thermostat 2 input *1	Refer to SW3-1 in "6-6, DIP Switch Functions".	—
IN7	TBI.2 3-4	—	Flow switch 3 input (Zone2)	Refer to SW3-2 in "6-6, DIP Switch Functions".	—
IN8	TBI.3 7-8	—	Electric energy meter 1	—	—
IN9	TBI.3 5-6	—	Electric energy meter 2	—	—
IN10	TBI.2 1-2	—	Heat meter	Refer to installation manual.	—
IN11	TBI.3 3-4	—	Smart grid ready input	—	—
IN12	TBI.3 1-2	—	Smart grid ready input	—	—
IN13	TBI.4 3-4	—	Forced cooling mode *4	Refer to SW7-2 in "6-6, DIP Switch Functions".	—
IN15	TBI.4 1-2	—	Cooling limit temp. *4	Refer to SW7-3 in "6-6, DIP Switch Functions".	—
INA1	TBI.6 3-5	CN1A	Flow sensor	Refer to installation manual.	—

Table 2 Outputs

Name	Terminal block	Connector	Item	OFF	ON
OUT1	TBO.1 1-2	CNP1	Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON
OUT2	TBO.1 3-4	—	Water circulation pump 2 output (Space heating/cooling for Zone1)	OFF	ON
OUT3	TBO.1 5-6	—	Water circulation pump 3 output (Space heating/cooling for Zone2) *1	OFF	ON
OUT4	TBO.2 7-9	—	3-way valve SPST (2-way valve 1) output	—	—
			3-way valve SPDT output	Heating	DHW
OUT5	TBO.2 1-2	—	3-way valve output	—	—
			Zone 2 mixing valve output *1	Stop	Close Open
OUT6	—	DNB13	Booster heater 1 output	OFF	ON
OUT7	—	DNB13	Booster heater 2 output	OFF	ON
OUT8	TBO.4 7-8	—	Cooling signal output	OFF	ON
OUT9	TBO.4 5-8	CNIH	Immersion heater output	OFF	ON
OUT10	TBO.3 1-2	—	Boiler output	OFF	ON
OUT11	TBO.3 5-6	—	Error output	Normal	Error
OUT12	TBO.3 7-8	—	Defrost output	Normal	Defrost
OUT13	TBO.4 3-4	—	2-way valve 2a output *2	OFF	ON
OUT14	—	CNP4	Water circulation pump 4 output (DHW)	OFF	ON
			Comp. ON signal	OFF	ON
OUT15	TBO.4 1-2	—	Comp. ON signal	OFF	ON
OUT16	TBO.3 3-4	—	Thermo ON signal	OFF	ON
OUT18	TBO.2 4-5	—	Zone 1 mixing valve output *1	Stop	Close Open
OUTA1	TBI.6 1-2	—	Analog output	0V-10V	—

- *1. Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.
- *2. If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.
- *3. To turn on the boiler operation, use the main remote controller to select "Boiler" in "External input setting" screen in the service menu.
- *4. Only for ER series.

Do not connect to the terminals that are indicated as "—" in the "Terminal block" field.
 *1. For 2-zone temperature control.
 *2. For 2-zone valve ON/OFF control.

5 Hydrobox

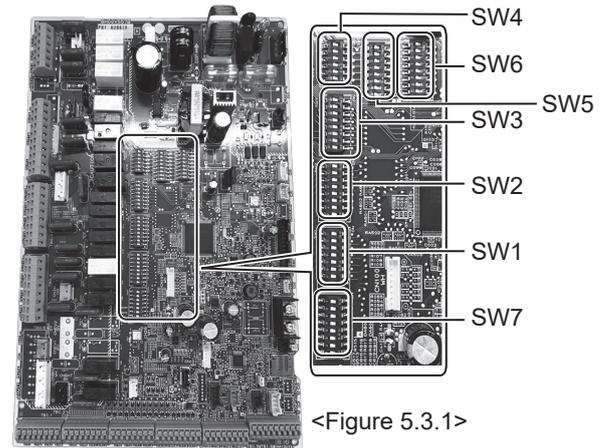
5.3 DIP switch functions

The DIP switch number is printed on the circuit board next to the relevant switches. The word ON is printed on the circuit board and on the DIP switch block itself. To move the switch, you will need to use a pin or the corner of a thin metal ruler or similar.

DIP switch settings are listed below in Table 5.3.1.

Only an authorised installer can change DIP switch setting under one's own responsibility according to the installation condition.

Make sure to turn off both indoor unit and outdoor unit power supplies before changing the switch settings.



<Figure 5.3.1>

DIP switch		Function	OFF	ON	Default settings: Indoor unit model		
SW1	SW1-1	Boiler	WITHOUT Boiler	WITH Boiler	OFF		
	SW1-2	Heat pump maximum outlet water temperature	55°C	60/70/75°C *1	ON *2		
	SW1-3	DHW tank	WITHOUT DHW tank	WITH DHW tank	OFF		
	SW1-4	Immersion heater	WITHOUT Immersion heater	WITH Immersion heater	OFF		
	SW1-5	Booster heater	WITHOUT Booster heater	WITH Booster heater	OFF: E***-M*E ON : E***-M2/6/9*E		
	SW1-6	Booster heater function	For heating only	For heating and DHW	OFF: E***-M*E ON : E***-M2/6/9*E		
	SW1-7	Outdoor unit type	Split type	Hydro-Split type	OFF: Except ERPX-*M*E ON : ERPX-*M*E		
	SW1-8	Wireless remote controller	WITHOUT Wireless remote controller	WITH Wireless remote controller	OFF		
SW2	SW2-1	Room thermostat1 input (IN1) logic change	Zone 1 operation stop at thermostat short	Zone 1 operation stop at thermostat open	OFF		
	SW2-2	Flow switch1 input (IN2) logic change	Failure detection at short	Failure detection at open	OFF		
	SW2-3	Booster heater capacity restriction	Inactive	Active	OFF: Except E***-VM2E ON : E***-VM2E		
	SW2-4	Cooling mode function	Inactive	Active	OFF: EHSD-*M*E ON : ER**-*M**E		
	SW2-5	Automatic switch to backup heat source operation (When outdoor unit stops by error)	Inactive	Active *3	OFF		
	SW2-6	Mixing tank	WITHOUT Mixing tank	WITH Mixing tank	OFF		
	SW2-7	2-zone temperature control	Inactive	Active *4	OFF		
	SW2-8	Flow sensor	WITHOUT Flow sensor	WITH Flow sensor	ON		
SW3	SW3-1	Room thermostat 2 (IN6) input logic change	Zone 2 operation stop at thermostat short	Zone 2 operation stop at thermostat open	OFF		
	SW3-2	Flow switch 2 and 3 input logic change	Failure detection at short	Failure detection at open	OFF		
	SW3-3	—	—	—	OFF		
	SW3-4	Electric energy meter	WITHOUT Electric energy meter	WITH Electric energy meter	OFF		
	SW3-5	Heating mode function *5	Inactive	Active	ON		
	SW3-6	2-zone valve ON/OFF control	Inactive	Active	OFF		
	SW3-7	Heat exchanger for DHW	Coil in tank	External plate HEX	OFF		
	SW3-8	Heat meter	WITHOUT Heat meter	WITH Heat meter	OFF		
SW4	SW4-1	Multiple outdoor units control	Inactive	Active	OFF		
	SW4-2	Position of multiple outdoor units control *6	Sub	Main	OFF		
	SW4-3	—	—	—	OFF		
	SW4-4	Indoor unit only operation (during installation work) *7	Inactive	Active	OFF		
	SW4-5	Emergency mode (Heater only operation)	Normal	Emergency mode (Heater only operation)	OFF *8		
	SW4-6	Emergency mode (Boiler operation)	Normal	Emergency mode (Boiler operation)	OFF *8		
SW5	SW5-1	—	—	—	OFF		
	SW5-2	Advanced auto adaptation	Inactive	Active	ON		
	SW5-3	Capacity code					
	SW5-4		SW 5-3	SW 5-4	SW 5-5	SW 5-6	SW 5-7
	SW5-5	ERSC-*M*E	ON	ON	ON	ON	OFF
	SW5-6	E*SD-*M*E	ON	OFF	OFF	ON	OFF
	SW5-6	ERSF-*M*E	OFF	OFF	ON	ON	OFF
	SW5-6	ERSE-*M*EE	OFF	ON	ON	OFF	ON
SW5-7	ERPX-*M*E	OFF	OFF	OFF	OFF	OFF	
SW5-8	—	—	—	—	—	OFF	

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DIP switch	Function	OFF	ON	Default settings: Indoor unit model	
SW6	SW6-1	—	—	OFF	
	SW6-2	—	—	OFF	
	SW6-3	Pressure sensor	Inactive	Active	OFF: Except E*SD-*M*E, ERSF-*M*E ON : E*SD-*M*E, ERSF-*M*E
	SW6-4	Analog output	Inactive	Active	OFF
	SW6-5	—	—	—	OFF
	SW6-6	—	—	—	OFF
	SW6-7	—	—	—	OFF
	SW6-8	—	—	—	OFF
SW7	SW7-1	Mixing valve setting	Only Zone 2	Zone 1 and Zone 2	OFF
	SW7-2	Forced cooling mode input (IN13) logic change	Active at short	Active at open	OFF
	SW7-3	Cooling limit temp. input (IN15) logic change	Active at short	Active at open	OFF
	SW7-4	—	—	—	OFF
	SW7-5	—	—	—	OFF
	SW7-6	—	—	—	OFF
	SW7-7	—	—	—	OFF
	SW7-8	—	—	—	OFF

<Table 5.3.1>

- Notes:**
- *1 Depending on the outdoor unit connected.
 - *2. When the hydrobox is connected with a PUMY-P and PXZ outdoor unit of which maximum outlet water temperature is 55°C, DIP SW1-2 must be changed to OFF.
 - *3. OUT11 will be available. For safety reasons, this function is not available for certain errors. (In that case, system operation must be stopped and only the water circulation pump keeps running.)
 - *4. Active only when SW3-6 is set to OFF.
 - *5. This switch functions only when the hydrobox is connected with a PUHZ-FRP outdoor unit. When another type of outdoor unit is connected, the heating mode function is active regardless of the fact that this switch is ON or OFF.
 - *6. Active only when SW4-1 is set to ON.
 - *7. Space heating and DHW can be operated only in indoor unit, like an electric heater. (Refer to “5.4.4 Indoor unit only operation”.)
 - *8. If emergency mode is no longer required, return the switch to OFF position.

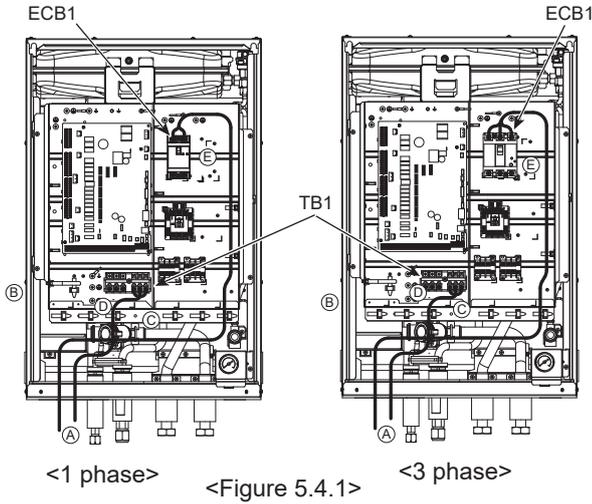
5 Hydrobox

5.4. Field wiring

5.4.1 Electrical connection

All electrical work should be carried out by a suitably qualified technician. Failure to comply with this could lead to electrocution, fire, and death. It will also invalidate product warranty. All wiring should be according to national wiring regulations.

Breaker abbreviation	Meaning
ECB1	Earth leakage circuit breaker for booster heater
TB1	Terminal block 1



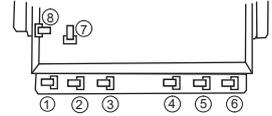
The hydrobox can be powered in two ways.

1. Power cable is run from the outdoor unit to the hydrobox.
2. Hydrobox has independent power source.

Connections should be made to the terminals indicated in the figures to the left below depending on the phase.

Booster heater and immersion heater should be connected independently from one another to dedicated power supplies.

- Ⓐ Locally supplied wiring should be inserted through the inlets situated on the base of the hydrobox. (Refer to Table 5.1.1)
- Ⓑ Wiring should be fed down the left hand side of the control and electrical box and clamped in place using clips provided.
- Ⓒ The wires should be fixed with the cable straps as below.
 - Ⓓ Output wires
 - Ⓔ Indoor-Outdoor wire
 - Ⓕ Power line (B.H.)
 - Ⓖ Signal input wires/ Wireless receiver (option) wire (PAR-WR61R-E)
- Ⓗ Connect the outdoor unit – hydrobox connecting cable to TB1.
- Ⓘ Connect the power cable for the booster heater to ECB1.



• Make sure that ECB1 is ON.

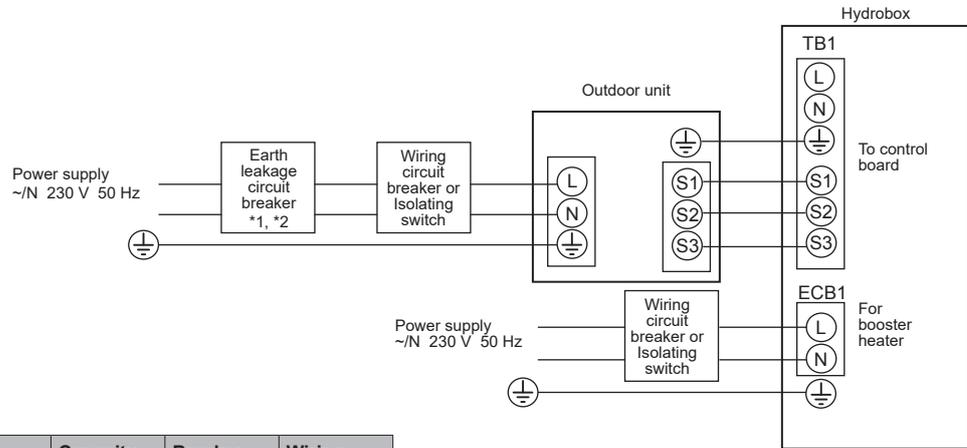
■ Option 1: Hydrobox powered via outdoor unit

(If you want to use independent source, go to the Mitsubishi website.)
PXZ model is not available.

The model is Hydrobox powered by independent source ONLY.

<1 phase>

Affix label A that is included with the manuals near each wiring diagram for hydrobox and outdoor units.



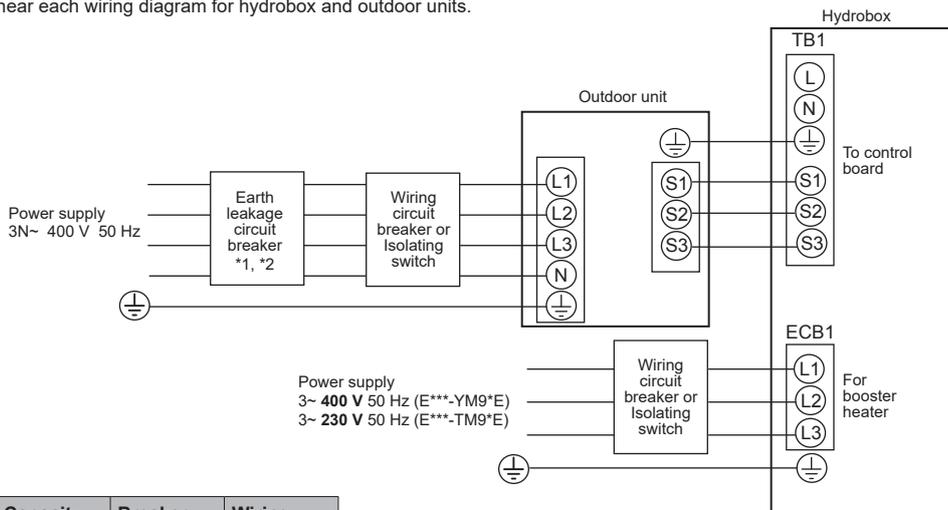
<Figure 5.4.2>
Electrical connections 1 phase

Description	Power supply	Capacity	Breaker	Wiring
Booster heater	~N 230 V 50 Hz	2 kW	16 A *2	2.5 mm ²
		6 kW	32 A *2	6.0 mm ²

5 Hydrobox

<3 phase>

Affix label A that is included with the manuals near each wiring diagram for hydrobox and outdoor units.



<Figure 5.4.3>
Electrical connections 3 phase

Description	Power supply	Capacity	Breaker	Wiring
Booster heater	3~ 400 V 50 Hz	9 kW	16 A *2	2.5 mm ²
	3~ 230 V 50 Hz	9 kW	32 A *2	6.0 mm ²

		<EHSD/ERSF/ERSC/ERPX series>	<ERSE series>
Wiring No. × size (mm ²)	Hydrobox - Outdoor unit	3 × 1.5 (polar) *3	3 × 4 (polar) *4
	Hydrobox - Outdoor unit earth	1 × Min. 1.5 *3	1 × Min. 2.5 *5
Circuit rating	Hydrobox - Outdoor unit S1 - S2 *6	230 V AC	230 V AC
	Hydrobox - Outdoor unit S2 - S3 *6	24 V DC	24 V DC

- *1. If the installed earth leakage circuit breaker does not have an over-current protection function, install a breaker with that function along the same power line.
- *2. A breaker with at least 3.0 mm contact separation in each pole shall be provided. Use earth leakage circuit breaker (NV).
The breaker shall be provided to ensure disconnection of all active phase conductors of the supply.
- *3. Max. 45 m
If 2.5 mm² used, Max. 50 m
If 2.5 mm² used and S3 separated, Max. 80 m
- *4. Max. 50 m
If 6 mm² used, Max. 80 m
- *5. If S3 separated, Max. 80 m
- *6. The values given in the table above are not always measured against the ground value.

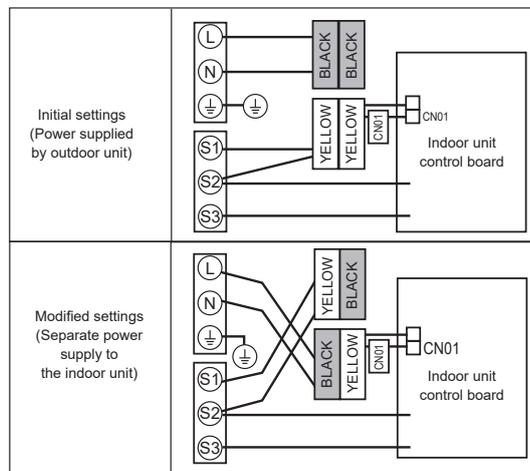
- Notes:**
1. Wiring size must comply with the applicable local and national codes.
 2. Indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)
Indoor unit power supply cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60227 IEC 53)
 3. Install an earth longer than other cables.
 4. Please keep enough output capacity of power supply for each heater. Insufficient power supply capacity might cause chattering.

■ Option 2: Hydrobox powered by independent source

Indoor unit powered by independent source.

If the indoor unit and outdoor unit have separate power supplies, the following requirements must be carried out:

- Change the interconnected wiring in the control and electrical box of the indoor unit (see Figure 5.4.4)
- Turn the outdoor unit DIP switch SW8-3 to ON
- Turn on the outdoor unit before the indoor unit.
- Power by independent source is not available for particular models of outdoor unit model. For more details, refer to the connecting outdoor unit Installation Manual.

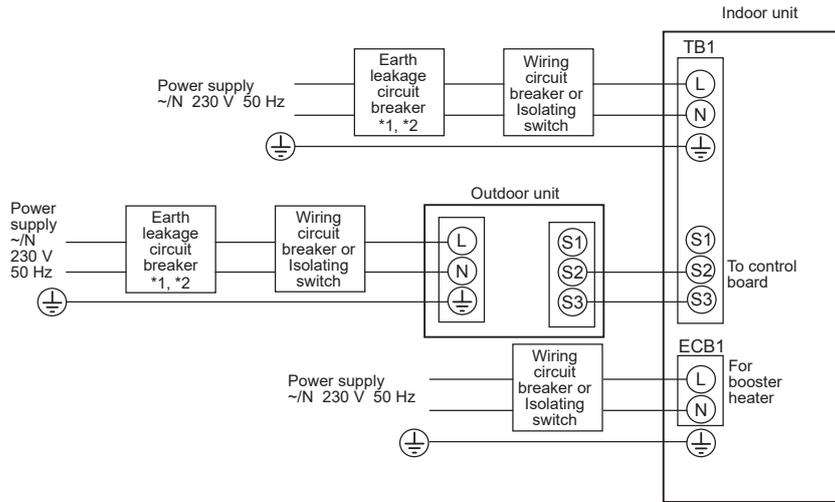


<Figure 5.4.4>

5 Hydrobox

<1 phase>

Affix label B that is included with the manuals near each wiring diagram for indoor unit and outdoor units.

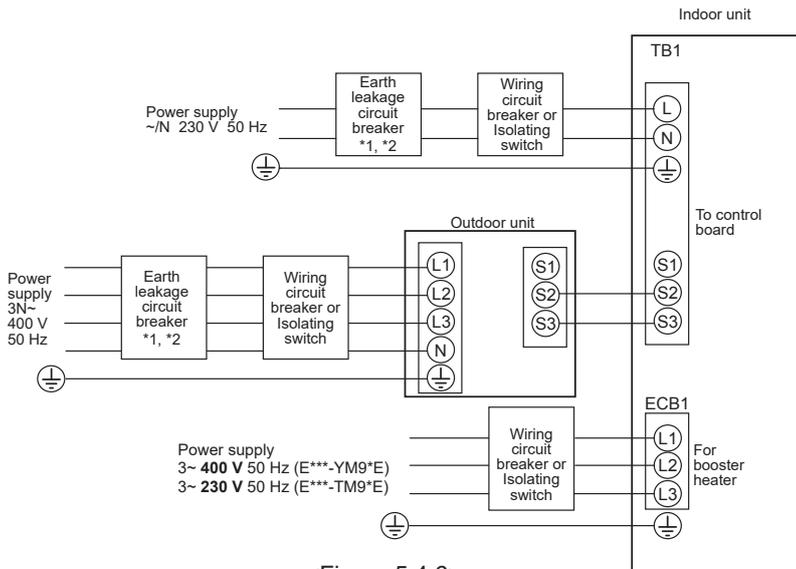


<Figure 5.4.5>
Electrical connections 1 phase

Description	Power supply	Capacity	Breaker	Wiring
Booster heater	~N 230 V 50 Hz	2 kW	16 A *2	2.5 mm ²
		6 kW	32 A *2	6.0 mm ²

<3 phase>

Affix label B that is included with the manuals near each wiring diagram for indoor unit and outdoor units.



<Figure 5.4.6>
Electrical connections 3 phase

Description	Power supply	Capacity	Breaker	Wiring
Booster heater	3~ 400 V 50 Hz	9 kW	16 A *2	2.5 mm ²
	3~ 230 V 50 Hz	9 kW	32 A *2	6.0 mm ²

Indoor unit power supply		~N 230 V 50 Hz
Indoor unit input capacity	*2	16 A
Main switch (Breaker)		
Wiring No. × size (mm ²)	Indoor unit power supply	2 × min. 1.5
	Indoor unit power supply earth	1 × min. 1.5
	Indoor unit - Outdoor unit	*3 2 × min. 0.3
	Indoor unit - Outdoor unit earth	—
Circuit rating	Indoor unit L - N	*4 230 V AC
	Indoor unit - Outdoor unit S1 - S2	*4 —
	Indoor unit - Outdoor unit S2 - S3	*4 24 V DC

Notes: 1. Wiring size must comply with the applicable local and national codes.

2. Indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)

Indoor unit power supply cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60227 IEC 53)

3. Install an earth longer than other cables.

4. Please keep enough output capacity of power supply for each heater. Insufficient power supply capacity might cause chattering.

*1. If the installed earth leakage circuit breaker does not have an over-current protection function, install a breaker with that function along the same power line.

*2. A breaker with at least 3.0 mm contact separation in each pole shall be provided. Use earth leakage breaker (NV). The breaker shall be provided to ensure disconnection of all active phase conductors of the supply.

*3. Max. 120 m

*4. The values given in the table above are not always measured against the ground value.

5 Hydrobox

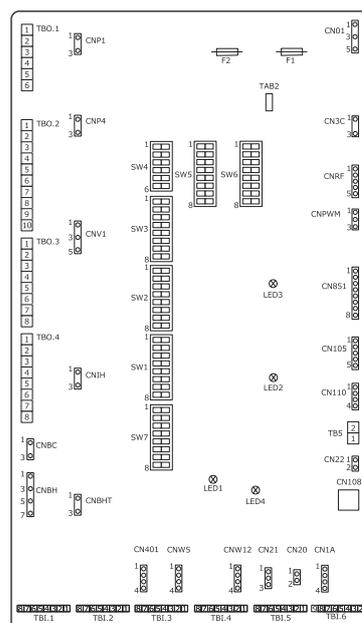
5.4.2 Connecting inputs/outputs

Wiring specification and local supply parts

Item	Name	Model and specifications
Signal input function	Signal input wire	Use sheathed vinyl coated cord or cable. Max. 30 m Wire type: CV, CVS or equivalent Wire size: Stranded wire 0.13 mm ² to 0.52 mm ² Solid wire: ø0.4 mm to ø0.8 mm
	Switch	Non-voltage "a" contact signals Remote switch: minimum applicable load 12 V DC, 1 mA

Note:

Stranded wire should be processed with insulation-covered bar terminal (DIN46228-4 standard compatible type).



<Figure 5.4.7>

Signal inputs

Name	Terminal block	Connector	Item	OFF (Open)	ON (Short)
IN1	TBI.1 7-8	—	Room thermostat 1 input *1	Refer to SW2-1 in <5.3 DIP Switch Functions>.	
IN2	TBI.1 5-6	—	Flow switch 1 input	Refer to SW2-2 in <5.3 DIP Switch Functions>.	
IN3	TBI.1 3-4	—	Flow switch 2 input (Zone 1)	Refer to SW3-2 in <5.3 DIP Switch Functions>.	
IN4	TBI.1 1-2	—	Demand control input	Normal	Heat source OFF/ Boiler operation *3
IN5	TBI.2 7-8	—	Outdoor thermostat input *2	Standard operation	Heater operation/ Boiler operation *3
IN6	TBI.2 5-6	—	Room thermostat 2 input *1	Refer to SW3-1 in <5.3 DIP Switch Functions>.	
IN7	TBI.2 3-4	—	Flow switch 3 input (Zone 2)	Refer to SW3-2 in <5.3 DIP Switch Functions>.	
IN8	TBI.3 7-8	—	Electric energy meter 1		
IN9	TBI.3 5-6	—	Electric energy meter 2	*4	
IN10	TBI.2 1-2	—	Heat meter		
IN11	TBI.3 3-4	—	Smart grid ready input	*5	
IN12	TBI.3 1-2	—	Forced cooling mode *6	Refer to SW7-2 in <5.3 DIP Switch Functions>.	
IN15	TBI.4 1-2	—	Cooling limit temp. *6	Refer to SW7-3 in <5.3 DIP Switch Functions>.	
INA1	TBI.6 3-5	CN1A	Flow sensor	—	—

*1. Set the ON/OFF cycle time of the room thermostat for 10 minutes or more; otherwise the compressor may be damaged.

*2. If using outdoor thermostat for controlling operation of heaters, the lifetime of the heaters and related parts may be reduced.

*3. To turn on the boiler operation, use the main remote controller to select [Boiler settings] in [Operation settings] from [Service].

*4. Connectable electric energy meter and heat meter

- Pulse type: Voltage free contact for 12 V DC detection by FTC (TBI.2 1 pin, TBI.3 5 and 7 pins have a positive voltage.)
- Pulse duration: Minimum ON time: 40 ms
Minimum OFF time: 100 ms
- Possible unit of pulse: 0.1 pulse/kWh 1 pulse/kWh 10 pulse/kWh
100 pulse/kWh 1000 pulse/kWh

Those values can be set by the main remote controller. (Refer to the menu tree in "Main remote controller".)

*5. As for the smart grid ready, refer to website manual.

*6. Only for ER series.

Thermistor inputs

Name	Terminal block	Connector	Item	Optional part model
TH1	—	CN20	Thermistor (Room temp.) (Option)	PAC-SE41TS-E
TH2	—	CN21	Thermistor (Ref. liquid temp.)	—
THW1	—	CNW12 1-2	Thermistor (Flow water temp.)	—
THW2	—	CNW12 3-4	Thermistor (Return water temp.)	—
THW5B	—	CNW5 3-4	Thermistor (DHW tank lower water temp.) (Option) *1	PAC-TH011TK2-E(5 m)/ PAC-TH011TKL2-E(30 m)
THW6	TBI.5 7-8	—	Thermistor (Zone 1 flow water temp.) (Option) *1	PAC-TH011-E
THW7	TBI.5 5-6	—	Thermistor (Zone 1 return water temp.) (Option) *1	PAC-TH011-E
THW8	TBI.5 3-4	—	Thermistor (Zone 2 flow water temp.) (Option) *1	PAC-TH011-E
THW9	TBI.5 1-2	—	Thermistor (Zone 2 return water temp.) (Option) *1	PAC-TH011-E
THW10	TBI.6 6-7	—	Thermistor (Mixing tank water temp.)(Option) *1	PAC-TH012HT-E(5 m)/ PAC-TH012HTL-E(30 m)
THWB1	TBI.6 8-9	—	Thermistor (Boiler flow water temp.) (Option) *1	PAC-TH012HT-E(5 m)/ PAC-TH012HTL-E(30 m)

Ensure to wire thermistor wirings away from the power line and/or OUT1 to OUT18 wirings.

*1. The maximum length of the thermistor wiring is 30 m. When the wires are wired to adjacent terminals, use ring terminals and insulate the wires.

The length of the optional thermistors are 5 m. If you need to splice and extend the wirings, following points must be carried out.

- 1) Connect the wirings by soldering.
- 2) Insulate each connecting point against dust and water.

5 Hydrobox

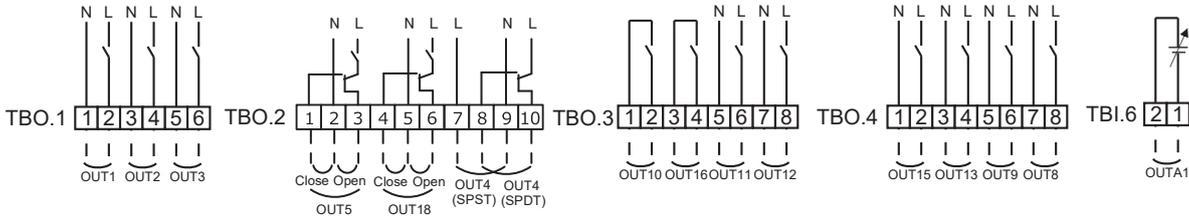
■ Outputs

Name	Terminal block	Connector	Item	OFF	ON	Signal/Max. current	Max. total current
OUT1	TBO.1 1-2	CNP1	Water circulation pump 1 output (Space heating/cooling & DHW)	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	4.0 A (a)
OUT2	TBO.1 3-4	—	Water circulation pump 2 output (Space heating/cooling for Zone 1)	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	
OUT3	TBO.1 5-6	—	Water circulation pump 3 output (Space heating/cooling for Zone 2) *1 2-way valve 2b output *2	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	
OUT14	—	CNP4	Water circulation pump 4 output (DHW)	OFF	ON	230 V AC 1.0 A Max. (Inrush current 40 A Max.)	3.0 A (b)
OUT4	TBO.2 7-9	—	3-way valve SPST (2-way valve 1) output	Heating	DHW	230 V AC 0.1 A Max.	
	TBO.2 8-10	CNV1	3-way valve SPDT output				
	—	CN851	3-way valve output				
OUT5	TBO.2 1-2 TBO.2 2-3	—	Zone 2 mixing valve output *1	Stop	Close Open	230 V AC 0.1 A Max.	
OUT6	—	CNBH 1-3	Booster heater 1 output	OFF	ON	230 V AC 0.5 A Max. (Relay)	
OUT7	—	CNBH 5-7	Booster heater 2 output	OFF	ON	230 V AC 0.5 A Max. (Relay)	
OUT8	TBO.4 7-8	—	Cooling signal output	OFF	ON	230 V AC 0.5 A Max.	
OUT9	TBO.4 5-6	CNIH	Immersion heater output	OFF	ON	230 V AC 0.5 A Max. (Relay)	
OUT10	TBO.3 1-2	—	Boiler output	OFF	ON	non-voltage contact · 220 - 240 V AC (30 V DC) 0.5 A or less · 10 mA 5 V DC or more	—
OUT11	TBO.3 5-6	—	Error output	Normal	Error	230 V AC 0.5 A Max.	3.0 A (b)
OUT12	TBO.3 7-8	—	Defrost output	Normal	Defrost	230 V AC 0.5 A Max.	
OUT13	TBO.4 3-4	—	2-way valve 2a output *2	OFF	ON	230 V AC 0.1 A Max.	
OUT15	TBO.4 1-2	—	Comp ON signal	OFF	ON	230 V AC 0.5 A Max.	
OUT16	TBO.3 3-4	—	Heating/Cooling thermostat ON signal	OFF	ON	non-voltage contact · 220 - 240 V AC (30 V DC) 0.5 A or less · 10 mA 5 V DC or more	—
OUT18	TBO.2 4-5 TBO.2 5-6	—	Zone 1 mixing valve output *1	Stop	Close Open	230 V AC 0.1 A Max.	3.0 A (b)
OUTA1	TBI.6 1-2	—	Analog output	0 V - 10 V		0 - 10 V DC 5 mA max.	—

Do not connect to the terminals that are indicated as “—” in the “Terminal block” field.

*1 For 2-zone temperature control.

*2 For 2-zone valve ON/OFF control.



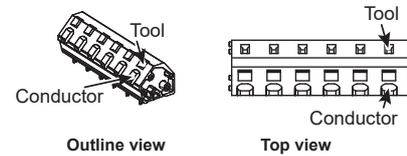
Wiring specification and local supply parts

Item	Name	Model and specifications
External output function	Outputs wire	Use sheathed vinyl coated cord or cable. Max. 30 m Wire type: CV, CVS or equivalent Wire size: Stranded wire 0.25 mm ² to 1.5 mm ² Solid wire: 0.25 mm ² to 1.5 mm ²

Note:

- When the hydrobox is powered via outdoor unit, the maximum grand total current of (a)+(b) is 3.0 A.
- Do not connect multiple water circulation pumps directly to each output (OUT1, OUT2, and OUT3). In such a case, connect them via (a) relay(s).
- Do not connect water circulation pumps to both TBO.1 1-2 and CNP1 at the same time.
- Connect an appropriate surge absorber to OUT10 (TBO.3 1-2) depending on the load at site.
- Stranded wire should be processed with insulation-covered bar terminal (DIN46228-4 standard compatible type).
- Use the same thing as the Signal input wire for OUTA1 wiring.

How to use TBO.1 to 4



Connect them using either way as shown above.

<Figure 5.4.8>

5 Hydrobox

5.4.3 Wiring for 2-zone temperature control

Connect the pipe work and locally supplied parts according to the relevant circuit diagram shown "Local system" in Section 3, of this manual.

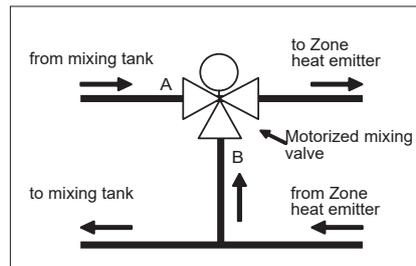
<Mixing valve>

Zone1

Connect the signal line to open Port A (hot water inlet port) to TBO. 2-6 (Open), the signal line to open Port B (cold water inlet port) to TBO. 2-4 (Close), and the neutral terminal wire to TBO. 2-5 (N).

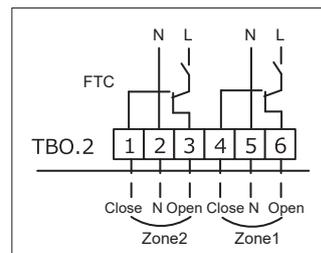
Zone2

Connect the signal line to open Port A (hot water inlet port) to TBO. 2-3 (Open), the signal line to open Port B (cold water inlet port) to TBO. 2-1 (Close), and the neutral terminal wire to TBO. 2-2 (N).



<Thermistor>

- Do not install the thermistors on the mixing tank.
- Install the thermistor (Zone 1 flow water temp.) (THW6) near the mixing valve.
- Install the thermistor (Zone 2 flow water temp.) (THW8) near the mixing valve.
- The maximum length of the thermistor wiring is 30 m.
- The length of the optional thermistors are 5 m. If you need to splice and extend the wirings, following points must be carried out.
 - 1) Connect the wirings by soldering.
 - 2) Insulate each connecting point against dust and water.



5.4.4 Indoor unit only operation (during installation work)

In the case when DHW or heating operation is required prior to connection of the outdoor unit; i.e. during installation work, an electric heater in indoor unit (*1) can be used.

*1 Model with electric heater only.

1. To start operation

- Check if the indoor unit power supply is OFF, and turn DIP switch 4-4 and 4-5 ON.
- Turn ON the indoor unit power supply.

2. To end operation *2

- Turn OFF the indoor unit power supply.
- Turn DIP switch 4-4 and 4-5 OFF.

*2 When the indoor unit only operation is ended, ensure to check over the settings after outdoor unit is connected.

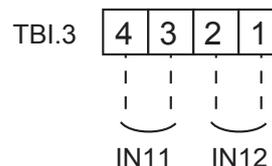
Note:

Prolonged running of this operation may affect the life of the electric heater.

5.4.5 Smart grid ready

In DHW, heating or cooling operation, the commands in the table below can be used.

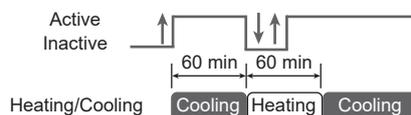
IN11	IN12	Meaning
OFF (open)	OFF (open)	Normal operation
ON (short)	OFF (open)	Switch-on recommendation
OFF (open)	ON (short)	Switch-off command
ON (short)	ON (short)	Switch-on command



5.4.6 Forced cooling mode input (IN13) (only for ER series)

- When IN13 is active, the mode (heating/cooling) is fixed to cooling.
- SW7-2 changes the logic of IN13.

Name	Terminal block	DIP SW7-2	
		OFF	ON
IN13	TBI.4 3-4	Active at short (Default setting)	Active at open



Notes:

Use non-voltage contact signals for the switch of IN13.

The mode (heating/cooling) does not switch under the condition such as

- within 60 minutes since the mode switched last time,
- during DHW mode or legionella prevention mode,
- during outdoor unit protection control,
- during emergency operation, floor dry up operation, or abnormality.

Check the mode with the main remote controller or the cooling signal output (OUT8 ON: cooling, OFF: heating).

5 Hydrobox

5.4.7 Using microSD memory card

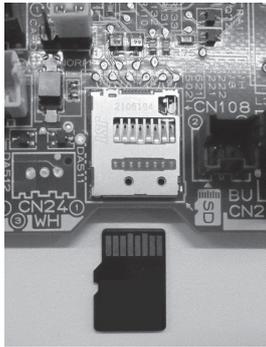
The indoor unit is equipped with a microSD memory card interface in FTC.

Using a microSD memory card can simplify main remote controller settings and can store operating logs. *1

*1 To edit main remote controller settings or to check operating data, an Ecodan service tool (for use with PC) is required.

<Handling precautions>

- (1) Use a microSD memory card that complies with the SD standards. Check that the microSD memory card has a logo on it of those shown to the right.
- (2) SD memory cards to the SD standards include microSD and microSDHC memory cards. The capacities are available up to 32 GB.
- (3) Insert the microSD memory card into the FTC control board in the direction shown below.



- (4) Before inserting or ejecting a microSD memory card, make sure to power off the system. If a microSD memory card is inserted or ejected with the system powered on, the stored data could be corrupted or the microSD memory card be damaged.

*A microSD memory card is live for a short duration after the system is powered off. Before insertion or ejection wait until the LED lamps on the FTC control board are all off.

- (5) The read and write operations have been verified using the following microSD memory cards, however, these operations are not always guaranteed as the specifications of these microSD memory cards could change.

Manufacturer	Model	Tested in
Vantastek	Vantastek 8GB microSDHC	Sep. 2022
Longsys	NC5MC 2008G-52A39	Sep. 2022
Kingston	SDCS2/32GBSP	Sep. 2022

Before using a new microSD memory card (including the card that comes with the unit), always check that the microSD memory card can be safely read and written to by the FTC controller.

<How to check read and write operations>

- a) Check for correct wiring of power supply to the system. For more details, refer to section 5.4.
(Do not power on the system at this point.)
- b) Insert a microSD memory card.
- c) Power on the system.
- d) The LED4 lamp lights if the read and write operations are successfully completed. If the LED4 lamp continues blinking or does not light, the microSD memory card cannot be read or written to by the FTC controller.

- (6) Make sure to follow the instruction and the requirement of the microSD memory card's manufacturer.
- (7) Format the microSD memory card if determined unreadable in step (5). This could make it readable.
Download an SD card formatter from the following site.
SD Association homepage: <https://www.sdcard.org/home/>
- (8) FTC supports FAT12/FAT16/FAT32 file system but not NTFS/exFAT file system.
- (9) Mitsubishi Electric is not liable for any damages, in whole or in part, including failure of writing to a microSD memory card, and corruption and loss of the saved data, or the like. Back up saved data as necessary.
- (10) Do not touch any electronic parts on the FTC control board when inserting or ejecting a microSD memory card, or else the control board could fail.

Logos



Capacities

2 GB to 32 GB *2

SD speed classes

All

* The microSD logo is a trademark of SD-3C, LLC.

*2 A 2GB microSD memory card stores up to 30 days of operation logs.

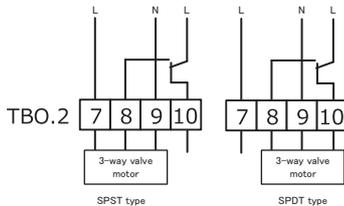
5 Hydrobox

5.4.8 DHW tank for Hydrobox

■ Connecting procedure for DHW tank

Notes:

- Be aware that the respective DHW operations are greatly effected by the selections of the components such as tank, immersion heater, or the like.
 - Follow your local regulations to perform system configuration.
1. To enable switching of the water circulation circuit between the DHW mode and the heating mode, install a 3-way valve (local supply).
The use of two 2-way valves can perform the same function as a 3-way valve.
 2. Install the optional thermistor THW5B (optional part PAC-TH011TK2-E/PAC-TH011TKL2-E) on the DHW tank.
It is recommended to position the thermistor at the mid point of the DHW tank capacity. Insulate thermistor from ambient air. Especially for double (insulated) tank, thermistor should be attached to the inner side (to detect the water temperature).
 3. Connect the thermistor lead to the CNW5 connector on the FTC. If the thermistor lead is too long, bundle it with a strap to adjust the length.
 4. The output terminals for the 3-way valve (SPST) is TBO.2 7-9 (OUT4). The output terminals for the 3-way valve (SPDT) is TBO.2 8-10 (OUT4).



When the rated current of the 3-way valve exceeds 0.1 A, be sure to use a relay with maximum voltage and current ratings of 230 V AC / 0.1 A when connecting to the FTC. Do not directly connect the 3-way valve cable to the FTC. Connect the relay cable to the TBO.2 8-9 terminals.
For systems using 2-way valves instead of a 3-way valve please read the following;

	Installation position	Electrical connection terminal block	Output signal		
			Heating	DHW	System
2-way valve1	DHW	TBO.2 8-9	OFF (closed)	ON (open)	OFF (closed)
2-way valve2	Heating	TBO.4 3-4	ON (open)	OFF (closed)	OFF (closed)

Notes:

- Should the 2-way valve become blocked, the water circulation will stop. A bypass valve or circuit should be installed between pump and 2-way valve for safety.
- The TBO.4 3-4 terminals on the FTC are shown in the wiring diagram.
- The 2-way valve (local supply) should be installed according to the instructions supplied with it. Follow 2-way valve's manufacturer's instructions as to whether to connect an earth cable or not.
- For the 2-way valve, choose the one that slowly opens and shuts off to prevent water hammer sound.
- Choose the 2-way valve equipped with manual override, which is necessary for topping up or draining of water.

5. Turn the DIP SW1-3 on the FTC to ON.
6. When using an immersion heater (local supply), connect a contact relay cable for the immersion heater to TBO.4 5-6 (OUT9), and turn the DIP SW1-4 to ON. Do not directly connect the power cable to the FTC.

Notes:

- When an immersion heater is installed, select appropriate breaker capacity and a cable with appropriate diameter on the basis of heater output.
- When wiring an immersion heater in the field, always install an earth leakage breaker to prevent accidental electric shock.

Specification of 2-way valve (local supply)

- Power supply: 230 V AC
- Current: 0.1 A Max. (If over 0.1 A you must use a relay)
- Type: Normally closed

⚠ WARNING: When connecting DHW tank

- (1) Attach the optional thermistor THW5B (PAC-TH011TK2-E/PAC-TH011TKL2-E).
- (2) Always use earth leakage breaker when connecting immersion heater.
- (3) When installing an immersion heater, be sure that the immersion heater has a built-in direct cut-off thermostat.
- (4) Connect a pressure relief valve on the sanitary water side.
- (5) It is essential that no check valve or isolating valve is fitted between the hydrobox and the pressure relief valve.

Recommended DHW system

Where system involves a DHW tank:

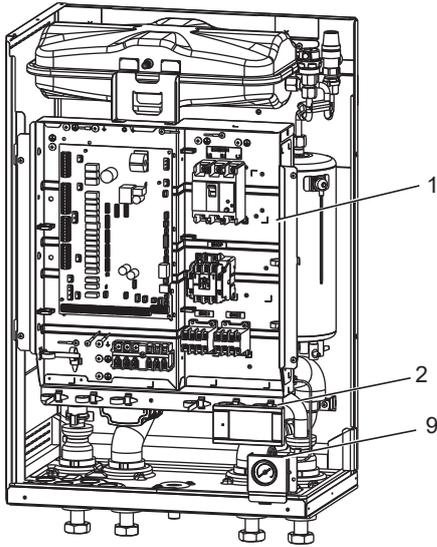
DHW tank	Immersion heater	Booster heater	BH function	System diagram	Thermistor
Present	Absent	Present	For space heating/cooling and DHW		THW1: Flow water temp. THW2: Return water temp. THW5B: DHW tank lower water temp. (optional part PAC-TH011TK2-E/PAC-TH011TKL2-E)
Present	Present	Present	For space heating/cooling and DHW		THW1: Flow water temp. THW2: Return water temp. THW5B: DHW tank lower water temp. (optional part PAC-TH011TK2-E/PAC-TH011TKL2-E)

*The use of two 2-way valves can perform same function as a 3-way valve.

5 Hydrobox

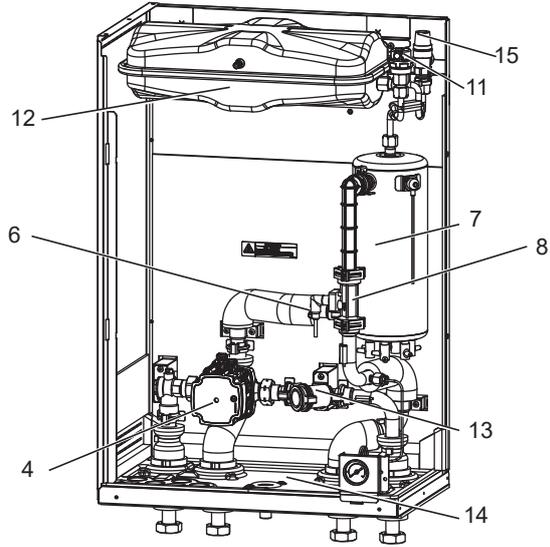
5.5. Water circuit diagrams

5.5.1 Component Parts



<Figure 5.5.1>

<ERPX-*M*E> (Hydro-Split system)



<Figure 5.5.2>

No.	Part name	ERPX-ME	ERPX-*M*E
1	Control and electrical box	✓	✓
2	Main remote controller	✓	✓
3	Plate heat exchanger (Refrigerant - Water)	-	-
4	Water circulation pump 1	✓	✓
5	Air vent (manual)	-	-
6	Drain cock (Primary circuit)	-	✓
7	Booster heater 1, 2	-	✓
8	Flow sensor	✓	✓
9	Manometer	✓	✓
10	Pressure relief valve (3 bar)	-	-
11	Automatic air vent	✓	✓
12	Expansion vessel	✓	✓
13	Magnetic filter	✓	✓
14	Drain pan	✓	✓
15	Pressure relief valve (5 bar)	✓	✓
16	Pressure sensor	-	-

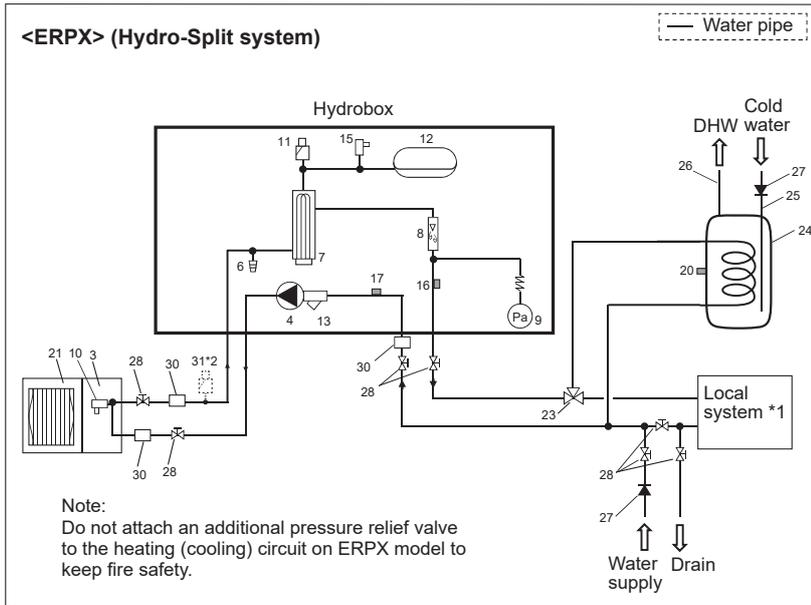
<Table 5.5.1>

Note:

For installation of all E***-*M*EE models, make sure to install a suitably sized primary-side expansion vessel. (See figure 5.5.5 for further guidance)

5 Hydrobox

5.5.2 Water circuit diagram



<Figure 5.5.5>

Notes

- Be sure to follow your local regulations to perform system configuration of the DHW connections.
- DHW connections are not included in the hydrobox package. All required parts are to be sourced locally.
- To enable draining of the hydrobox, an isolating valve should be positioned on both the inlet and outlet pipework.
- Be sure to install a strainer on the inlet pipe work to the hydrobox.
- Suitable drain pipework should be attached to the relief valves instructed to be connected to it in Figure 5.5.5 in accordance with your country's regulations.
- A backflow prevention device must be installed on water supply pipework (IEC 61770).
- When using components made from different metals or connecting pipes made of different metals, insulate the joints to prevent a corrosive reaction taking place which will damage the pipework.

No.	Part name	ERPX-ME	ERPX-M'E
1	Control and electrical box	✓	✓
2	Main remote controller	✓	✓
3	Plate heat exchanger (Refrigerant - Water)	-	-
4	Water circulation pump 1	✓	✓
5	Air vent (manual)	-	-
6	Drain cock (Primary circuit)	-	✓
7	Booster heater 1, 2	-	✓
8	Flow sensor	✓	✓
9	Manometer	✓	✓
10	Pressure relief valve (3 bar)	-	-
11	Automatic air vent	✓	✓
12	Expansion vessel	✓	✓
13	Magnetic filter	✓	✓
14	Drain pan	✓	✓
15	Pressure relief valve (5 bar)	✓	✓
16	THW1	✓	✓
17	THW2	✓	✓
18	TH2	-	-
19	Pressure sensor	-	-
20	THW5B (Optional part PAC-TH011TK2-E or PAC-TH011TKL2-E)	-	-
21	Outdoor unit	-	-
22	Drain pipe (Local supply)	-	-
23	3-way valve (Local supply)	-	-
24	DHW indirect unvented tank (Local supply)	-	-
25	Cold water inlet pipe (Local supply)	-	-
26	DHW outlet pipe (Local supply)	-	-
27	Back flow prevention device (Local supply)	-	-
28	Isolating valve (Local supply)	-	-
29	Magnetic filter (Local supply) (Recommended)	-	-
30	Strainer (Local supply)	-	-
31	Air vent (Local supply)	-	-

<Table 5.5.2>

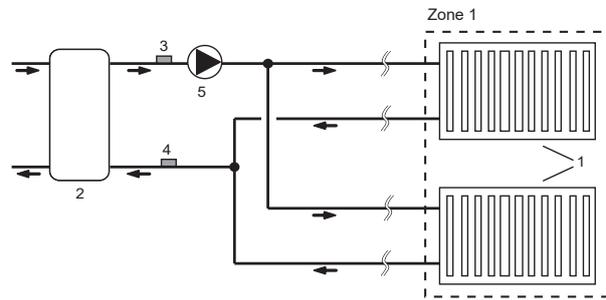
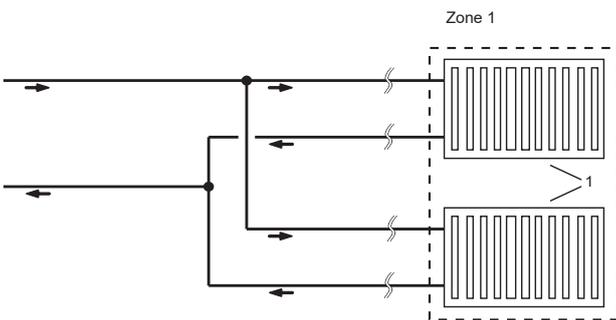
*1 Refer to the following section "Local system".

*2 If the outdoor unit is higher than the indoor unit, or if there is a location where air gets trapped in the upper part of the water pipe, consider adding this part.

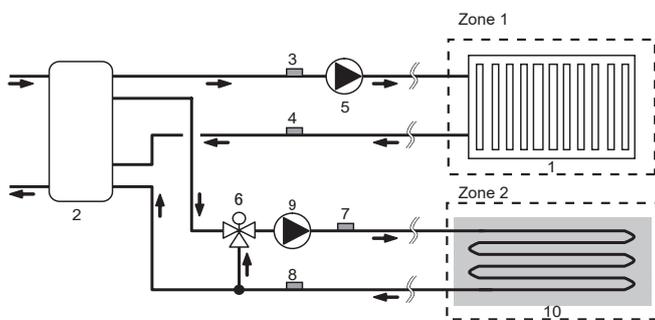
5 Hydrobox

5.5.3 Local system

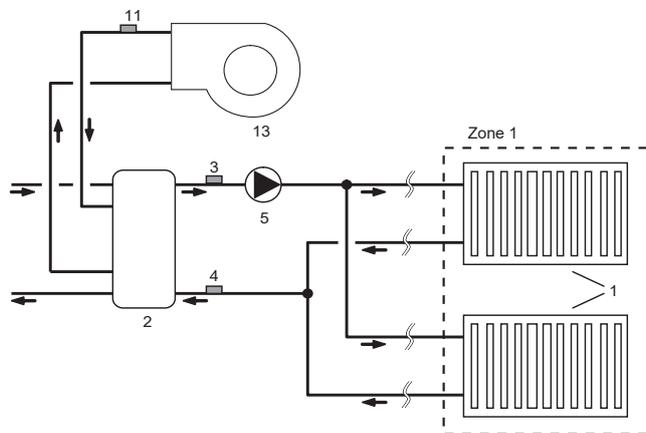
1-zone temperature control



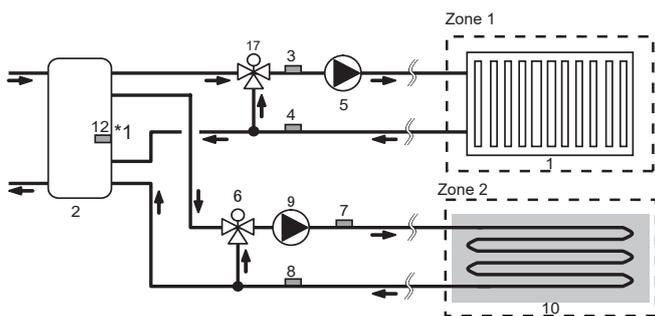
2-zone temperature control



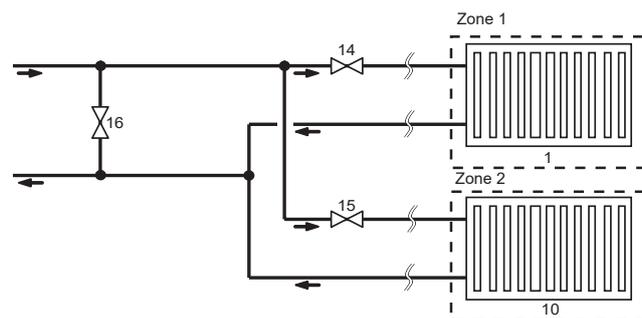
1-zone temperature control with boiler



2-zone temperature control & Buffer tank control



1-zone temperature control (2-zone valve ON/OFF control)



1. Zone 1 heat emitters (e.g. radiator, fan coil unit) (local supply)
 2. Mixing tank (local supply)
 3. Thermistor (Zone 1 flow water temp.) (THW6)
 4. Thermistor (Zone 1 return water temp.) (THW7)
 5. Zone 1 water circulation pump (local supply)
 6. Zone 2 motorized mixing valve (local supply)
 7. Thermistor (Zone 2 flow water temp.) (THW8)
 8. Thermistor (Zone 2 return water temp.) (THW9)
 9. Zone 2 water circulation pump (local supply)
- } Optional part :
PAC-TH011-E

10. Zone 2 heat emitters (e.g. underfloor heating) (local supply)
 11. Thermistor (Boiler flow water temp.) (THWB1)
 12. Thermistor (Mixing tank water temp.) (THW10) *1
 13. Boiler (local supply)
 14. Zone 1 2-way valve (local supply)
 15. Zone 2 2-way valve (local supply)
 16. Bypass valve (local supply)
 17. Zone 1 motorized mixing valve (local supply)
- } Optional part :
PAC-TH012HT(L)-E

*1 ONLY Buffer tank control (heating/cooling) applies to [Smart grid ready].

5 Hydrobox

5.6. Installation

<Preparation before the installation and service>

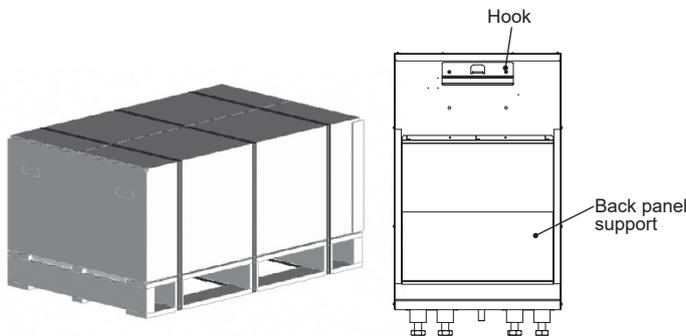
- Prepare the proper tools.
- Prepare the proper protection.
- Allow parts to cool before attempting any maintenance.
- Provide adequate ventilation.
- After stopping the operation of the system, turn off the power-supply breaker and remove the power plug.
- Discharge the capacitor before commencing work involving the electric parts.

<Precautions during service>

- Do not perform work involving electric parts with wet hands.
- Do not pour water or liquid into the electric parts.
- Do not touch the refrigerant.
- Do not touch the hot or cold surfaces in the refrigerant cycle.
- When the repair or the inspection of the circuit needs to be carried out without turning off the power, exercise great caution NOT to touch any LIVE parts.

5.6.1 Location

■ Transportation and Handling



<Figure 5.6.1>

Hydrobox is delivered on a wooden pallet base with cardboard protection.

<Figure 5.6.2>

Care should be taken when transporting the hydrobox so that the casing is not damaged by impact. Do not remove the protective packaging until hydrobox has reached its final location. This will help protect the structure and control panel.

Notes:

- The hydrobox should ALWAYS be moved by a minimum of 2 people.
- Do NOT hold piping when moving or lifting the hydrobox.

■ Suitable Location

Before installation the hydrobox should be stored in a frost-free weatherproof location. Units must **NOT** be stacked.

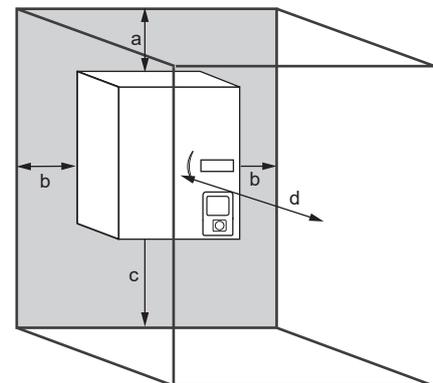
- The hydrobox should be installed indoors in a frost free weather proof location.
- Install the hydrobox where it is not exposed to water/excessive moisture.
- The hydrobox should be positioned on a level wall capable of supporting it's filled weight.
- To find out the weight, refer to "3. Technical Information".
- Care should be taken that minimum distances around and in front of the unit for service access are observed <Figure 5.6.3>.
- Secure the hydrobox to prevent it being knocked over.
- The hook and panel supports should be used to fix the hydrobox to the wall. <Figure 5.6.2>

■ Service access diagrams

Service access	
Parameter	Dimension (mm)
a	200
b	150
c	500
d	500

<Table 5.6.1>

Sufficient space MUST be left for the provision of discharge pipework as detailed in National and Local building regulations.



<Figure 5.6.3>

Service access

The hydrobox must be located indoors and in a frost-free environment, for example in a utility room.

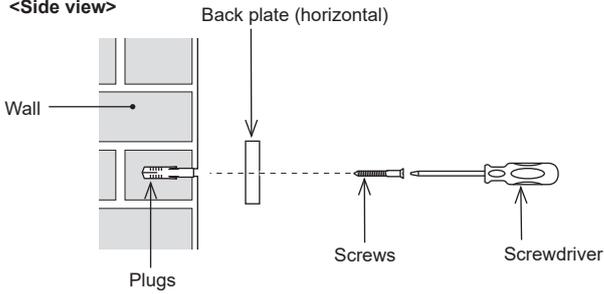
5 Hydrobox

Mounting procedure

1. Install the included back plate accessory.

* When installing the back plate, use locally-supplied screws and compatible fixing plugs.

<Side view>



<Figure 5.6.4>

- Fit the back plate correctly with its horizontal notch profile positioned at the TOP.

The back plate is provided with screw mounting holes that are round or oval. To prevent the unit from falling off the wall, choose the appropriate number of holes or hole positions and horizontally secure the back plate to the appropriate wall location.

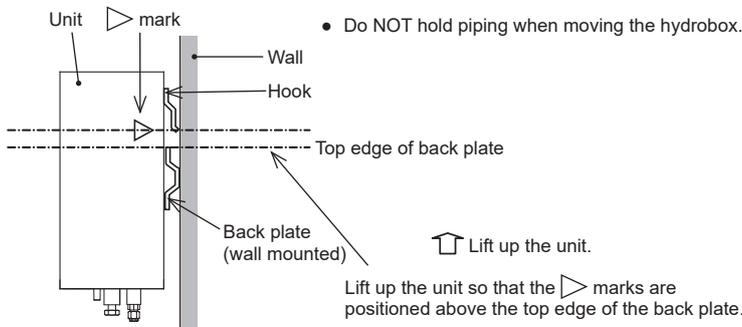
2. Insert the hook on the back of the hydrobox behind the notch of the back plate.

*The lifting up of the hydrobox is facilitated by first tilting the unit forward using the included packaging cushioning.

i) Each of the right and left side panels has a \triangleright mark indication.

Lift up the unit so that the \triangleright marks are positioned above the top edge of the back plate as shown below.

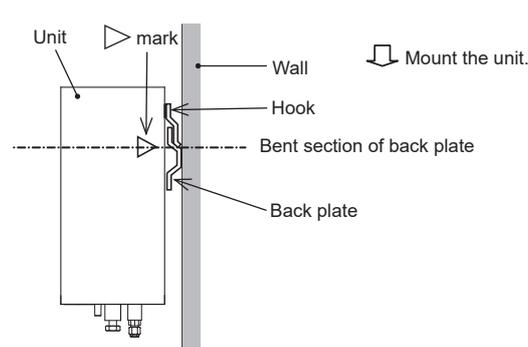
<Side view of unit>



<Figure 5.6.5>

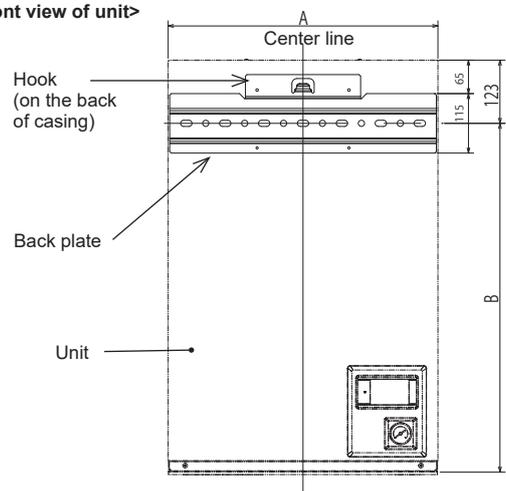
ii) Check and ensure that the \triangleright marks are positioned and properly engaged at the bent section level on the back plate as shown below.

<Side view of unit>



<Figure 5.6.6>

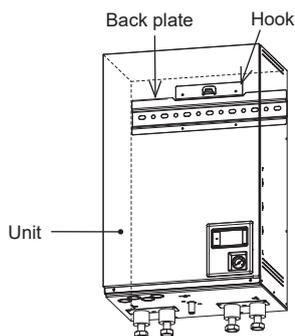
<Front view of unit>



<Figure 5.6.7>

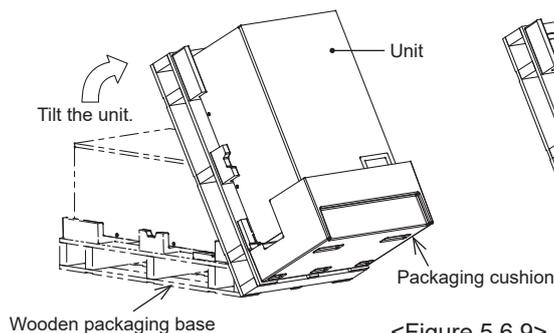
- Figure 5.6.7 shows the relative positions between the unit and the wall secured back plate. Referring to <Figure 5.6.3> Service access, install the back plate.

Dimensions (mm)	A	B
Hydro box		
ERPX	530	677

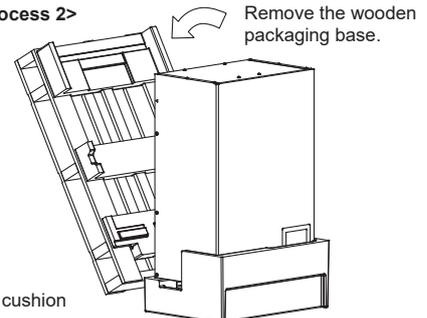


<Figure 5.6.8>

<Process 1>



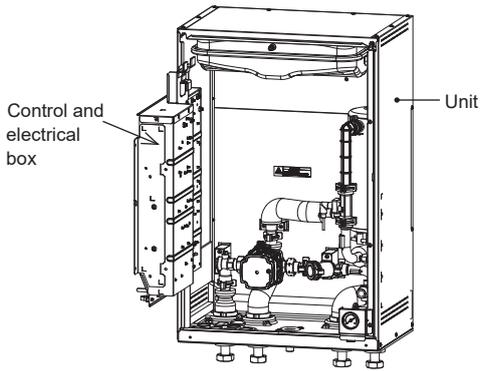
<Process 2>



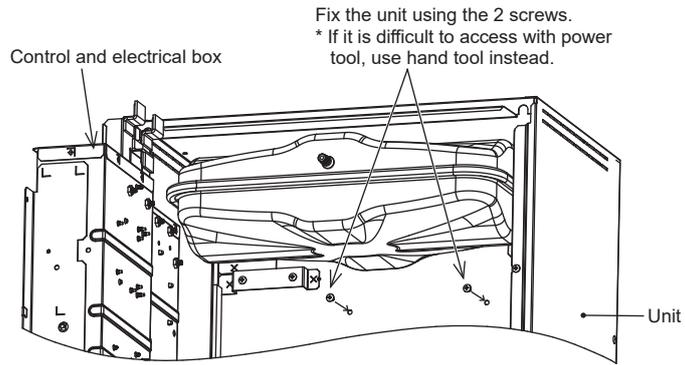
<Figure 5.6.9>

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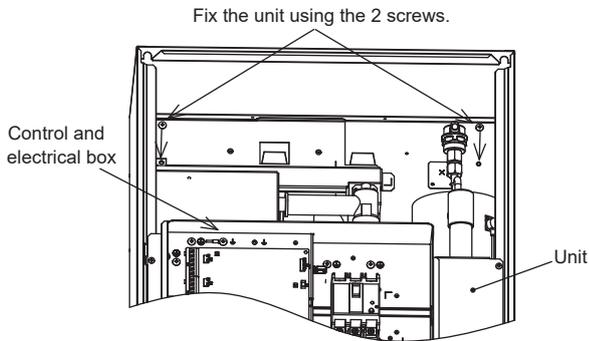
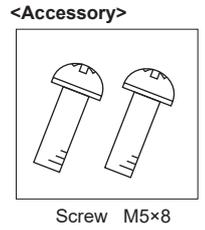
3. Fix the unit to the back plate using the included 2 screws (accessory items).



<Figure 5.6.10>



<Figure 5.6.11>



<Figure 5.6.12>

CAUTION: BEFORE performing field piping, be sure to fit and tighten these two screws. Otherwise, the hook could be disengaged, and the unit could fall down.

5.6.2 Water quality and system preparation

The water quality must comply with European Directive (EU) 2020/2184 standards, and/or local national standards.

For example, in France : Arrêté du 11 Janvier 2007 relative aux limites et références de qualité des eaux brutes et des eaux destinées à la consommation humaine

Water quality in primary circuit

- The water in primary circuit should observe local national standards :
For example, in Germany and Belgium : VDI2035 Sheet 1
- The water in primary circuit should be clean and with a pH value of pH6.5-10.0.

Water quality in sanitary circuit

- The sanitary water circuit should be clean and with a pH value of pH6.5-8.0
- The following are maximum values of water in sanitary circuit;
Calcium: 100 mg/L, Hardness: 250 mg/L (Ca Hardness)
14.0 °dH (German degree)
25 °f (French degree)
17.5 °E (English degree)
Chloride: 100 mg/L, Copper: 0.3 mg/L
- Other constituents of water in sanitary circuit should be compliant with European Directive (EU) 2020/2184 standards.
- In known hard water areas, to prevent/minimise scaling, it is beneficial to restrict the routine stored water temperature (DHW maximum temperature) to 55°C, and/or to add an appropriate water treatment (i.e: softener).

Anti-Freeze

Anti-freeze solutions should use propylene glycol with a toxicity rating of Class 1 as listed in Clinical Toxicology of Commercial Products, 5th Edition.

Notes:

- Ethylene glycol is toxic and should NOT be used in the primary water circuit in case of any cross-contamination of the potable circuit.
- For 2-zone valve ON/OFF control, propylene glycol should be used.

New Installation (primary water circuit)

- Before connecting outdoor unit, thoroughly cleanse pipework of building debris, solder, etc. using a suitable chemical cleansing agent.
- Flush the system to remove chemical cleanser.
- For all Hydro-Split model systems, and the split model or PUMY system without booster heater, add a combined inhibitor and anti-freeze solution to prevent damage to the pipework and system components.
- For split model systems, the responsible installer should decide if anti-freeze solution is necessary for each site's conditions. Corrosion inhibitor however should ALWAYS be used.

Existing Installation (primary water circuit)

- Before connecting outdoor unit, the existing heating circuit MUST be chemically cleansed to remove existing debris from the heating circuit.
- Flush the system to remove chemical cleanser.
- For all Hydro-Split model systems, add a combined inhibitor and anti-freeze solution to prevent damage to the pipework and system components.
- For split model systems, the responsible installer should decide if anti-freeze solution is necessary for each site's conditions. Corrosion inhibitor however should ALWAYS be used.

When using chemical cleansers and inhibitors, always follow manufacturer's instructions and ensure the product is appropriate for the materials used in the water circuit.

Minimum amount of water required in the space heating/cooling circuit

Outdoor heat pump unit	Indoor unit containing water amount [L]	Additional required water amount [L]*1	
		Average / Warmer climate*2	Colder climate*2
Hydro-Split model	PUZ-WZ50	2	24
	PUZ-WZ60	4	21
	PUZ-WZ80	6	29
	PUZ-WZ85	7	44
	PUZ-WZ100	8	47
	PUZ-WZ120	12	64

<Table 5.6.2>

*1 Water amount: If there is a bypass circuit, above table means minimum water amount in case of bypass.

*2 Climate: Please refer to 2009/125/EC: Energy-related Products Directive and Regulation (EU) No 813/2013 to confirm your climate zone.

*3 SUZ series: Flow temperature MUST always be NO lower than 32 °C when outdoor temperature drops below -15 °C.
Potential risks of plate HEX get frozen and damaged, and also outdoor HEX would be frosted due to insufficient defrosting.

Case 1. No division between primary and secondary circuit

- Please ensure the required water amount according to Table 5.6.2 by water pipe and radiator or underfloor heating.

Case 2. Separate primary and secondary circuit

- If the interlock operation of primary and secondary pump is not available, please ensure required additional water in only primary circuit according to Table 5.6.2.
- If the interlock operation of primary and secondary pump is available, please ensure total water amount of primary and secondary circuit according to Table 5.6.2.

In case of the shortage of required water amount, please install buffer tank.

5 Hydrobox

5.6.3 Water pipe work

Note: Prevent the field piping from straining the piping on the hydrobox by fixing it to a wall or applying other methods.

Hot Water Pipework

The function of the following safety components of the hydrobox should be checked on installation for any abnormalities;

- Pressure relief valve
- Expansion vessel pre-charge (gas charge pressure)

The instruction on the following pages regarding safe discharge of hot water from safety devices should be followed carefully.

- The pipework will become very hot, so should be insulated to prevent burns.
- When connecting pipework, ensure that no foreign objects such as debris or the like enter the pipe.

Safety device connections

The hydrobox contains a pressure relief valve. (see Figure 5.6.13) The connection size is G1/2. The installer **MUST** responsibly connect appropriate discharge pipework from this valve in accordance with local and national regulations.

Failure to do so will result in discharge from the pressure relief valve directly into the hydrobox and cause serious damage to the product.

All pipework used should be capable of withstanding discharge of hot water. Relief valves should **NOT** be used for any other purpose, and their discharges should terminate in a safe and appropriate manner in accordance with local regulation requirements.

Note: Beware that the manometer and the pressure relief valve are **NOT** strained on its capillary side and on its inlet side respectively. If a pressure relief valve is added, it is essential that no check valve or isolation valve is fitted between the hydrobox connection and the added pressure relief valve (safety matter).

Hydraulic filter work

Install a hydraulic filter or strainer (local supply) at the water intake ("Pipe E" in Table 5.1.1, also see associated schematic Fig. 5.5.5)

Pipework connections

Connections to the hydrobox should be made using the G-Screw connection (EHSD/ERSD/ERSF/ERSC/ERPX series) or the G1-1/2B (ERSE series) as appropriate. (The hydrobox has G1 or G1 -1/2B thread connections.)

Do not over-tighten compression fittings as this will lead to deformation of the olive ring and potential leaks.

Drain pipework

The drain pipe should be installed to drain condensing water in cooling mode.

- Securely install the drain pipe to prevent leakage from the connection.
- Securely insulate the drain pipe to prevent water dripping from the locally supplied drain pipe.
- Install the drain pipe at a down slope of 1/100 or more.
- Do not place the drain pipe in drain channel where sulphuric gas exists.
- After installation, check that the drain pipe drains water properly from the outlet of the pipe.

<Installation>

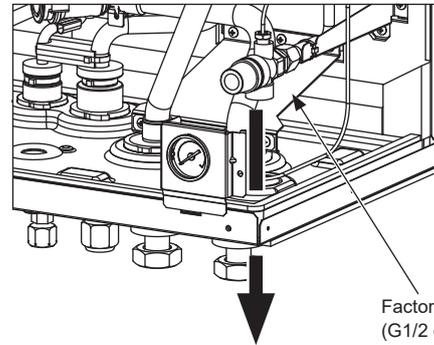
1. Apply polyvinyl chloride type adhesive over the shaded surfaces inside of the drain pipe and on the exterior of the drain socket as shown.
2. Insert the drain socket deeply into the drain pipe <Figure 5.6.15>.

Note: Securely support the locally supplied drain pipe using pipe support to avoid the drain pipe falling from the drain socket.

To prevent dirty water from draining directly onto the floor next to hydrobox, please connect appropriate discharge pipework from the hydrobox.

Insulation of pipework

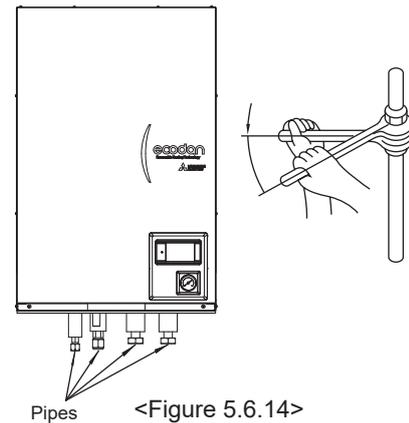
- All exposed water pipework should be insulated to prevent unnecessary heat loss and condensation. To prevent condensate entering the hydrobox, the pipework and connections at the top of the hydrobox should be carefully insulated.
- Cold and hot water pipework should not be run close together where possible, to avoid unwanted heat transfer.
- Pipework between outdoor heat pump unit and hydrobox should be insulated with suitable pipe insulation material with a thermal conductivity of ≤ 0.04 W/m.K.



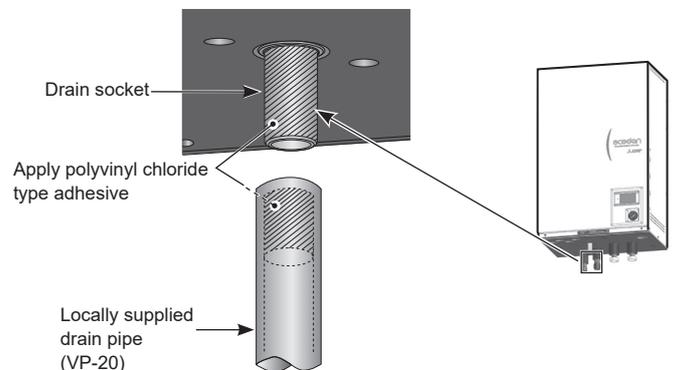
Factory-fitted pressure relief valve (G1/2 connection)

Discharge to drain (pipe **MUST** responsibly be fitted by installer).

<Figure 5.6.13>



Pipes <Figure 5.6.14>



<Figure 5.6.15>

5 Hydrobox

Water circulation pump characteristics

Pump speed can be selected by main remote controller setting (see Figure 5.6.16).

Adjust the pump speed setting so that the flow rate in the primary circuit is appropriate for the installed outdoor unit (see Table 5.6.3). It may be necessary to add an additional pump to the system depending on the length and lift of the primary circuit.

For outdoor unit model not listed in Table 5.6.3, refer to water flow rate range in the specification table of outdoor unit Data Book.

<Second pump>

If a second pump is required for the installation, please read the following carefully.

The second pump can be positioned in 2 ways.

If the additional pump(s) have current greater than 1A, please use appropriate relay. Pump signal cable can either be wired to TBO.1 1-2 or CNP1 but NOT both.

Option 1 (Space heating/cooling only)

If the second pump is being used for the heating/cooling circuit only then the signal cable should be wired to TBO.1 terminals 3 and 4 (OUT2). In this position, the pump can be run at a different speed from the hydrobox's in-built pump.

Option 2 (Primary circuit DHW and space heating/cooling)

If the second pump is being used in the primary circuit between the hydrobox and the outdoor unit (Package system ONLY) then the signal cable should be wired to TBO.1 terminals 1 and 2 (OUT1). In this position the pump speed **MUST** match the speed of the hydrobox's in-built pump.

Note: Refer to 5.4.2 Connecting inputs/outputs.

Outdoor heat pump unit		Water flow rate range [L/min]	Recommended flow [L/min] *1
Hydro-Split model	PUZ-WZ50	6.5 - 14.3	9.0
	PUZ-WZ60	6.5 - 17.2	10.8
	PUZ-WZ80	6.5 - 22.9	14.3
	PUZ-WZ85	7.2 - 27.2	14.3
	PUZ-WZ100	10.0 - 34.4 *3	21.5 *2
	PUZ-WZ120	10.0 - 34.4 *3	21.5 *2

<Table 5.6.3>

Notes:

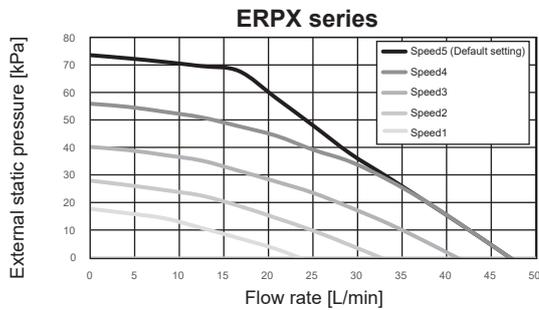
1. If the water flow rate is less than the minimum flow rate setting of the flow sensor (default 5.0 L/min), the flow rate error will be activated.
2. If the water flow rate exceeds 36.9 L/min, the flow speed will be greater than 2.0 m/s, which could erode the pipes.

*1 To ensure optimal heating operation (condition: inlet/outlet temperature difference $\Delta T = 8K$)

*2 With buffer tank

*3 If you want to secure the maximum flow rate, please install an additional pump.

Water circulation pump characteristics



<Figure 5.6.16>

5 Hydrobox

■ Sizing expansion vessels

Expansion vessel volume must fit the local system water volume.

To size an expansion vessel both for the heating and cooling circuits, the following formula and graph can be used.

When the necessary expansion vessel volume exceeds the volume of an built-in expansion vessel, install an additional expansion vessel so that the sum of the volumes of the expansion vessels exceeds the necessary expansion vessel volume.

* For installation of an E***.M*EE model, provide and install a suitable primary-side expansion vessel and additional 3 bar rated pressure relief valve in the field as the model does not come fitted with a primary-side expansion vessel.

$$V = \frac{\epsilon \times G}{1 - \frac{P_1 + 0.098}{P_2 + 0.098}}$$

Where;

- V : Necessary expansion vessel volume [L]
- ϵ : Water expansion coefficient
- G : Total volume of water in the system [L]
- P₁ : Expansion vessel setting pressure [MPa]
- P₂ : Max. pressure during operation [MPa]

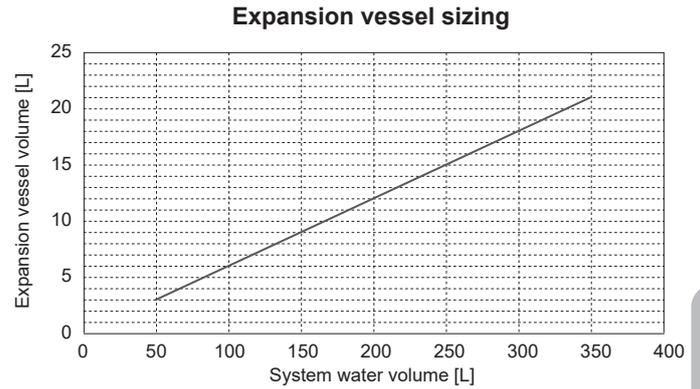
Graph to the right is for the following values

ϵ : at 70°C = 0.0229

P₁ : 0.1 MPa

P₂ : 0.3 MPa

*A 30% safety margin has been added.



<Figure 5.6.17>

5 Hydrobox

5.7. System set up

5.7.1 Remote controller options

The indoor unit comes factory fitted with a main remote controller. This incorporates a thermistor for temperature monitoring and a graphical user interface to enable set-up, view current status and input scheduling functions. The main remote controller is also used for servicing purposes. This facility is accessed via password protected service menus.

To provide the best efficiency in heating operation, Mitsubishi Electric recommends using Auto Adaptation function based on room temperature. To use this function, a room thermistor needs to be present in a main living area. This can be done in a number of ways. The most convenient are detailed below.

Refer to heating section of this manual for instructions on how to set the weather compensation curve, flow temperature or room temperature (Auto Adaptation). For instructions on how to set the thermistor input for the FTC, please refer to Setting section in 6. Remote Controller in the installation manual.

The factory setting for space heating mode is set to room temperature (Auto Adaptation). If there is no room sensor present in the system, this setting must be changed to either weather compensation curve mode or flow temperature mode.

Note: Auto Adaptation is not available in cooling mode.

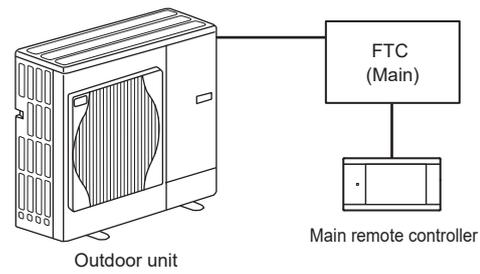
■ 1-zone temperature control

Control option A	
<p>This option features the main remote controller and the Mitsubishi Electric wireless remote controller. The wireless remote controller is used to monitor room temperature and can be used to make changes to the space heating settings, boost DHW *1 and switch to holiday mode without directly using the main remote controller.</p> <p>If more than one wireless remote controller is used, the most recently requested temperature setting will commonly be applied to all rooms by the central control system regardless of which wireless remote controller was used. No hierarchy exists across these remote controllers.</p> <p>Wire the wireless receiver to FTC referring to the wireless remote controller instruction manual. Turn DIP SW1-8 to ON. Before operation, configure the wireless remote controller to transmit and receive data referring to the wireless remote controller installation manual.</p>	
Control option B	
<p>This option features the main remote controller and the Mitsubishi Electric thermistor wired to FTC. The thermistor is used to monitor room temperature but can not make any changes in control operation. Any changes to DHW *1 must be made using the main remote controller mounted on the indoor unit.</p> <p>Wire the thermistor to the TH1 connector on FTC.</p> <p>The number of room temperature thermistors that can be connected to FTC is always one.</p>	
Control option C	
<p>This option features the main remote controller being removed from the indoor unit and situated in a different room. A thermistor built in the main remote controller can be used for monitoring the room temperature for Auto Adaptation function whilst keeping all its features of the main remote controller available.</p> <p>The main remote controller and FTC are connected by a 2-core, 0.3 mm², non-polar cable (local supply) with a maximum length of 150 m.</p> <p>To use the sensor in the main remote controller, the main remote controller should come off from the indoor unit. Otherwise it will detect the temperature of the indoor unit instead of room temperature. This will affect the output of the space heating.</p> <p>Note: Wiring for main remote controller cable shall be (5 cm or more) apart from power source wiring so that it is not influenced by electrical noise from power source wiring. (Do not insert main remote controller cable and power source wiring in the same conduit.)</p>	
Control option D (Flow temperature or weather compensation curve only)	
<p>This option features the main remote controller and a locally supplied thermostat wired to FTC. The thermostat is used to set the maximum temperature for heating room or the minimum temperature for cooling room. Any changes to DHW *1 must be made using main remote controller mounted on the indoor unit.</p> <p>The thermostat is wired to IN1 in TBI.1 on FTC. The number of thermostats that can be connected to FTC is one for one zone.</p>	

*1 If applicable

★ The wireless remote controller can be also used as a thermostat.

Factory supplied standard



Cylinder unit/Hydrobox

5 Hydrobox

2-zone temperature control

Control option A

This option features the main remote controller, the Mitsubishi Electric wireless remote controller and a locally supplied thermostat.

The wireless remote controller is used to monitor the Zone 1 room temperature and the thermostat is used to monitor the Zone 2 room temperature.

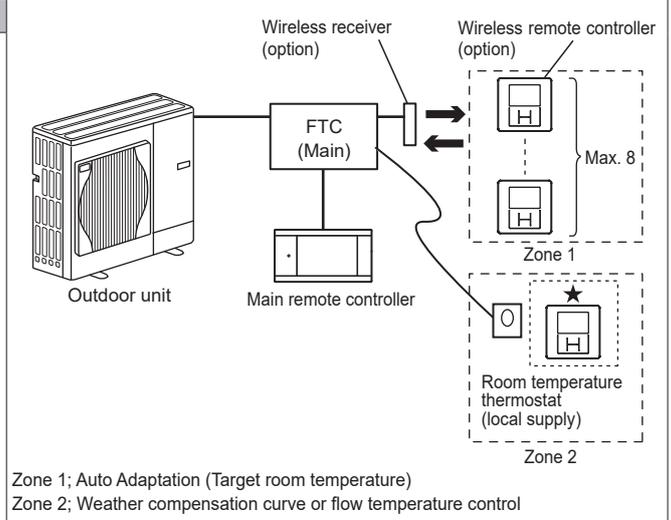
The thermostat can be also allocated to Zone 1 and the wireless remote controller to Zone 2.

The wireless remote controller can be also used to make changes to the space heating settings, boost DHW *1 and switch to holiday mode without having to use the main remote controller.

If more than one wireless remote controller is used, the last temperature setting adjustment/demand will be applied to all rooms in same zone.

Wire the wireless receiver to FTC referring to the wireless remote controller instruction manual. Turn DIP SW1-8 to ON. Before operation, configure the wireless remote controller to transmit and receive data referring to the wireless remote controller installation manual.

The thermostat is used to set the maximum temperature for heating Zone 2 room. The thermostat is wired to IN6 on FTC. (If the thermostat is allocated to Zone 1, it is wired to IN1 on TBI.1.) (Refer to 5.2. on the paper-based manual.)



Control option B

This option features the main remote controller, the Mitsubishi Electric thermistor and a locally supplied thermostat that are wired to FTC.

The thermistor is used to monitor the Zone 1 room temperature and the thermostat is used to control the Zone 2 room temperature.

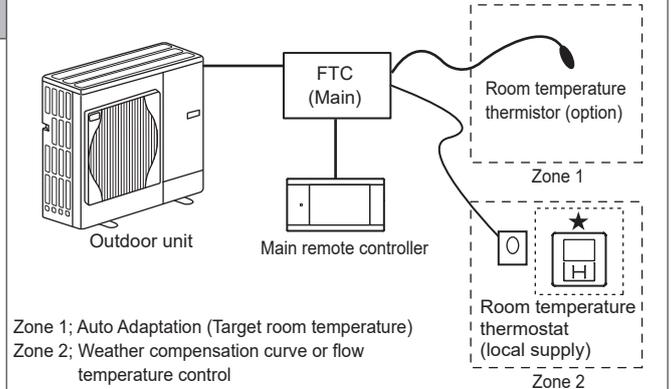
The thermostat can be also allocated to Zone 1 and the thermistor to Zone 2.

The thermistor can not make any changes in control operation. Any changes to DHW *1 must be made using the main remote controller mounted on the indoor unit.

Wire the thermistor to the TH1 connector on FTC.

The number of room temperature thermistors that can be connected to FTC is always one.

The thermostat is used to set the maximum temperature for heating Zone 2 room. The thermostat is wired to IN6 on FTC. (If the thermostat is allocated to Zone 1, wire it to IN1 on TBI.1.) (Refer to 5.2. on the paper-based manual.)



Control option C

This option features the main remote controller (with in-built thermistor) that is removed from the indoor unit to monitor the Zone 1 room temperature and a locally supplied thermostat to monitor the Zone 2 room temperature.

The thermostat can be also allocated to Zone 1 and the thermistor to Zone 2.

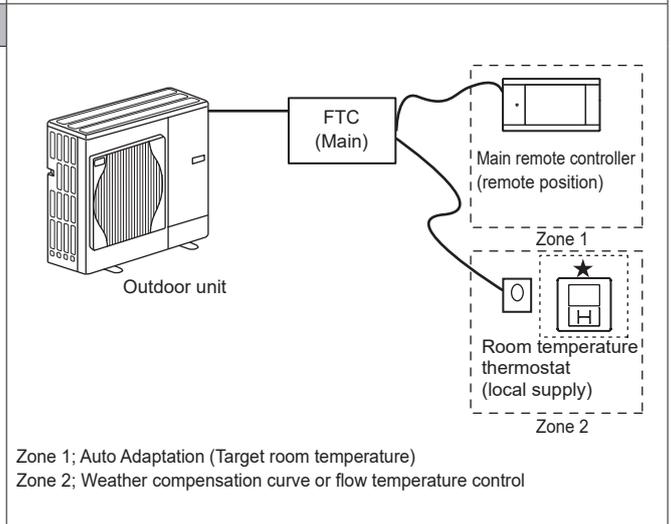
A thermistor built into the main remote controller can be used for monitoring the room temperature for Auto Adaptation function whilst keeping all its features of the main remote controller available.

The main remote controller and FTC are connected by a 2-core, 0.3 mm², non-polar cable (local supply) with a maximum length of 150 m.

To use the sensor in the main remote controller, the main remote controller should be detached from the indoor unit. Otherwise it will detect the temperature of the indoor unit instead of room temperature. This will affect the output of the space heating.

The thermostat is used to set the maximum temperature for heating Zone 2 room. The thermostat is wired to IN6 on FTC. (If the thermostat is allocated to Zone 1, wire it to IN1 on TBI.1.) (Refer to 5.2. on the paper-based manual.)

Note: Wiring for main remote controller cable shall be (5 cm or more) apart from power source wiring so that it is not influenced by electrical noise from power source wiring. (Do not insert main remote controller cable and power source wiring in the same conduit.)

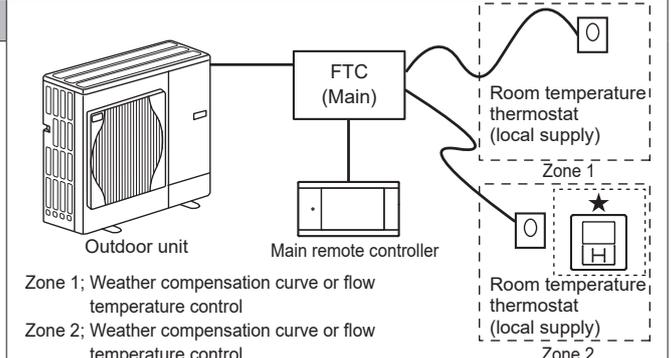


Control option D

This option features the locally supplied thermostats wired to FTC. The thermostats are individually allocated to Zone 1 and Zone 2. The thermostats are used to set each maximum temperature for heating Zone 1 and Zone 2 rooms or the minimum temperature for cooling Zone 1 and Zone 2. Any changes to DHW *1 must be made using the main remote controller mounted on the indoor unit.

The thermostat for Zone 1 is wired to IN1 in TBI.1 on FTC.

The thermostat for Zone 2 is wired to IN6 in TBI.1 on FTC.



*1 If applicable
*2 For the options above, the sensor types can be exchanged between Zone 1 and Zone 2. (e.g. Wireless remote controller in Zone 1 and room temperature thermostat in Zone 2 can be changed to room temperature thermostat and wireless remote controller, respectively)

★ The wireless remote controller can be also used as a thermostat.

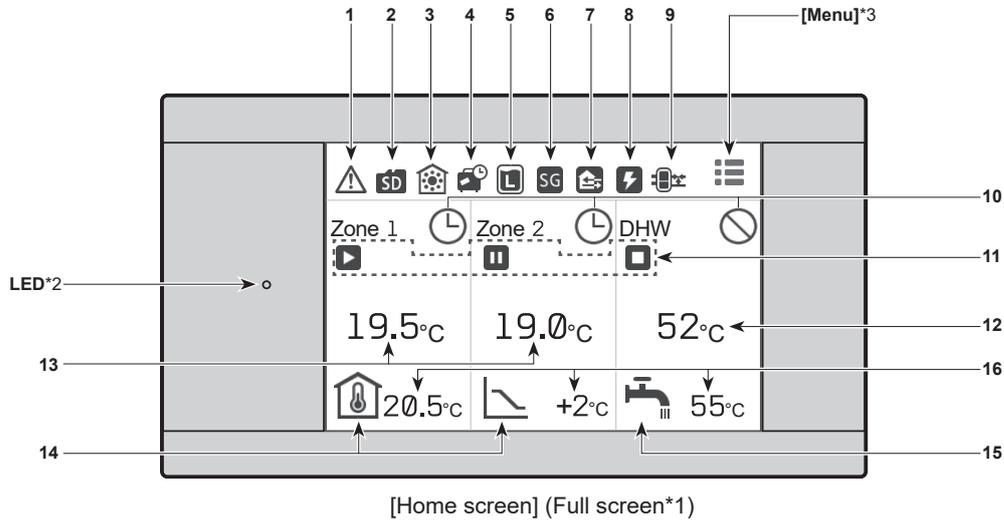
5 Hydrobox

5.7.2 Main remote controller

■ Main remote controller

To change the settings of your heating/cooling system, please use the main remote controller located on the wall or the front panel of the cylinder unit or hydrobox. The following is a guide to viewing the main settings. Should you require more information, please contact your installer or local Mitsubishi Electric dealer. Some functions are not available depending on the system configuration. These functions are grayed out or not shown.

Note: The terms displayed on the remote controller are enclosed in square brackets.



Home screen icons

No.	Icons	Description
1		Alert (for multiple outdoor units control) Touching the menu icon displays error codes.
	J1	Alert Error codes are displayed.
2		SD card is inserted. Normal operation
		SD card is inserted. Abnormal operation
3		Heating mode
		Cooling mode
4		Holiday schedule is activated.
5		Legionella prevention mode is running.
6		Smart grid ready is running.
7		Compressor is running.
		Compressor is running and defrosting.
		Compressor is running and in quiet mode. The sound level is shown at left side of the icon.
		Emergency heating
8		Electric heater is running.

No.	Icons	Description
9		Boiler is running.
		Buffer tank control is running.
10		Schedule
		Prohibited
11		Cloud control
		Operation
		Standby
		This unit is in standby whilst other indoor unit(s) is in operation by priority.
12		Actual DHW tank temperature values
13		Actual room temperature values [-- °C] appears when the unit is not connected to the room RC (Remote Controller) and it is under control other than Auto Adaptation.

No.	Icons	Description
14		Weather compensation curve When the operation stops: Black During heating operation: Orange During cooling operation: Blue
		Auto Adaptation (Target room temperature) When the operation stops: Black During heating operation: Orange During cooling operation: Blue
		Flow temperature (Target flow temperature) When the operation stops: Black During heating operation: Orange During cooling operation: Blue
15		DHW icon is displayed when DHW is enabled. When the operation stops: Black During operation: Orange
		Target temperature values The settable temperature differs depending on the control logic.

- The screen will turn off when the main remote controller is not operated for a while. Touching any part of the screen turns it on again.
- From [Touch screen] in [Setting], the brightness can be adjusted.
- By selecting [Always on] for [Backlight time] from [Touch screen] in [Setting], the backlight stays lit for 30 seconds and after it dims down.

*1 From [Setting], the screen can be switched to the full screen or the base screen.

The base screen does not display the operation icons and the target temperature values.

*2 From [Display] in [Setting], the LED lamp can be turned on/off.

*3 Pressing and holding the menu icon for 3 seconds switches the lock menu to on/off.

Some functions cannot be edited when the lock menu is on.

(The icon changes to when the lock menu is on.)

*4 Auto Adaptation cannot be selected during the cooling mode.

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Quick start

When the main remote controller is switched on for the first time, the screen automatically goes to the [Language], [Date/Time], [System configuration], [Initial settings] and quick start setting screen in order. On the quick start setting screen, the following items can be set.

ONLY cylinder unit:

1. [DHW] ([ECO]/[Comfort])

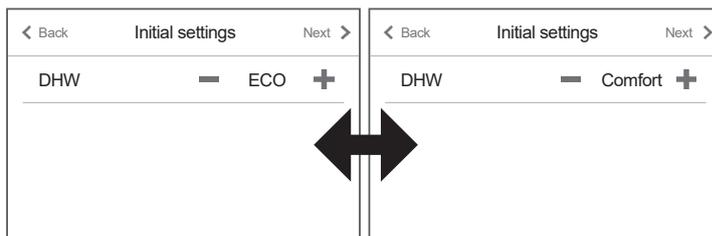
You can select ECO or Comfort mode according to your needs. In either mode, you can change the pre-set values according to your actual needs. For frequent DHW use, set to Comfort mode or adjust DHW settings ([Eco], [DHW target temperature], [Max. temp. drop], [Volume]) to reduce shortage risk.

2. [ECO]

ECO mode takes a little longer to heat the water in the DHW tank but the energy used is reduced. For ECO mode, make sure to select an appropriate pre-set option according to the combinations of your indoor and outdoor units, as shown in the table below. For ECO mode, [Legionella], [Booster heater] and [Immersion heater] are pre-set OFF.

3. [Comfort]

Comfort mode will heat the water in the DHW tank more quickly using the full power of the heat pump.



4. [DHW ECO] options

Split type	Outdoor unit model							
Indoor unit model	SUZ-SWM30VA SUZ-SHWM30VAH SUZ-SWM40VA2(-SC)	SUZ-SHM40VAH(-SC) SUZ-SWM60VA2(-SC) SUZ-SHWM60VAH(-SC)	SUZ-SWM80VA2 SUZ-SWM80VAH2 SUZ-SWM100VA SUZ-SWM100VAH	PUZ-S(H)WM60VAA PUZ-S(H)WM80VYAA PUZ-S(H)WM80YAAH-SC	PUZ-S(H)WM100VYAA PUZ-S(H)WM120VYAA PUZ-S(H)WM140VYAA PUZ-S(H)WM100YAAH-SC PUZ-S(H)WM120YAAH-SC PUZ-S(H)WM140YAAH-SC	PXZ-4F75VG	PXZ-5F85VG	PUMY-P112YKM6(-BS) PUMY-P112YKM5(-BS) PUMY-P125YKM6(-BS) PUMY-P125YKM5(-BS) PUMY-P140YKM6(-BS) PUMY-P140YKM5(-BS)
E*ST17*.*.*E	170-OU2	170-OU2	170-OU2	170-OU2	-	170-OU2	170-OU2	-
E*ST20*.*.*E	200-OU2	200-OU2	200-OU2	200-OU2	200-OU2	200-OU2	200-OU2	200-OU1
E*ST30*.*.*E	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	-

Hydro-Split type	Outdoor unit model							
Indoor unit model	PUZ-WM50VHA(-BS)	PUZ-WM60VAA(-BS)	PUZ-WM85VYAA(-BS)	PUZ-WM112VYAA(-BS)	PUZ-HWM140VYHA(-BS)	PUZ-WZ50VAA(-BS) PUZ-WZ60VAA(-BS) PUZ-WZ90VAA(-BS)	PUZ-WZ85VYAA(-BS) PUZ-WZ85VYAAH-SC PUZ-WZ90VYAA(-BS)	PUZ-WZ100VYAA(-BS) PUZ-WZ100VYAAH-SC PUZ-WZ115VYAA(-BS) PUZ-WZ120VYAA(-BS) PUZ-WZ120VYAAH-SC PUZ-WZ140VYAA(-BS)
E*PT17X*.*.*E	170-OU1	170-OU1	170-OU1	-	-	170-OU1	170-OU1	-
E*PT20X*.*.*E	200-OU1	200-OU1	200-OU1	200-OU2	200-OU2	200-OU1	200-OU1	200-OU1
E*PT30X*.*.*E	-	-	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1	300-OU1

Note:

- DHW performance is measured in ECO mode according to EN16147 to comply with EU regulation No 813/2013.
- Space heating (& cooling) mode are disabled during the measurement.
- All combinations can be found on the latest installation manuals available on our website; <https://www12.mitsubishielectric.com/>

Quick start

- [Zone sensor selection]*1
- [Emitter selection]
- [Control logic]
- [Outdoor design temperature]
- [Zone sensor selection]*2
- [DHW]
- [Flow rate & pump speed]
- [Electric booster heater use]*3

- *1 Selection of zone to assign each wireless remote controller
- *2 Selection of room sensors for monitoring the room temperature
- *3 It cannot be reset, so be careful when you set it.

Note:

[Electric booster heater use]
This setting restricts the booster heater capacity. It is NOT possible to change the setting after starting up. If you do not have any special requirements (such as building regulations) in your country, skip this setting (select [Next]).



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Lock menu

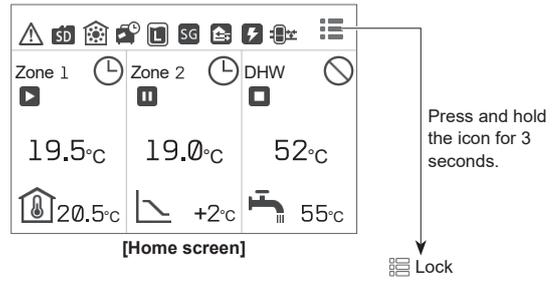
Pressing and holding the menu icon  for 3 seconds switches the lock menu to on.

(The icon changes to  when the lock menu is on.)

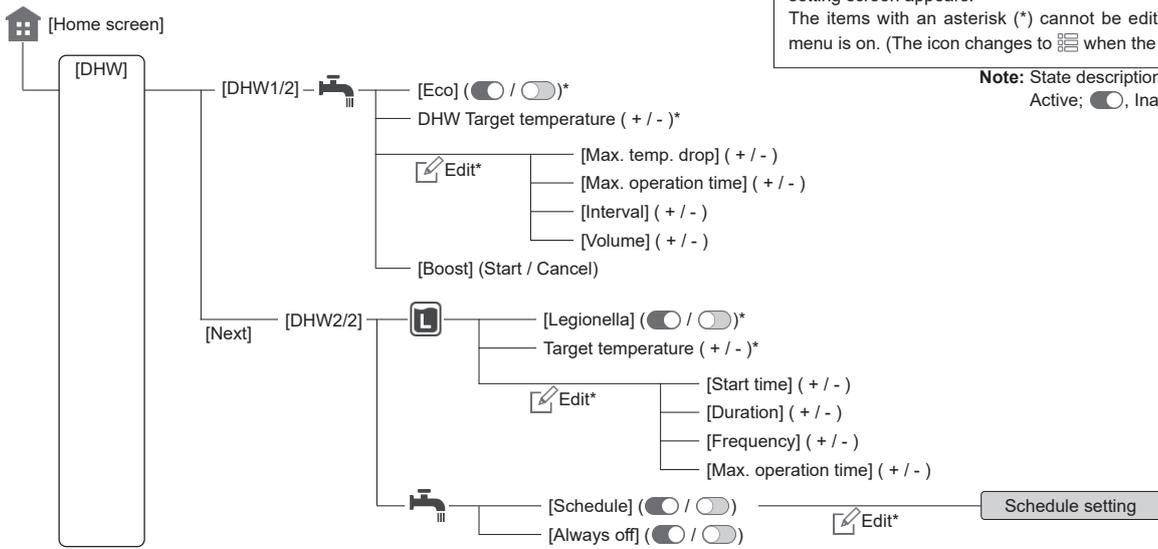
Some functions cannot be edited in this state.

Note: You need a password to edit [Service] even when the lock menu is off.

Refer to the main controller menu tree for details of the items which cannot be edited when the lock menu is on.



<Main Controller Menu Tree>

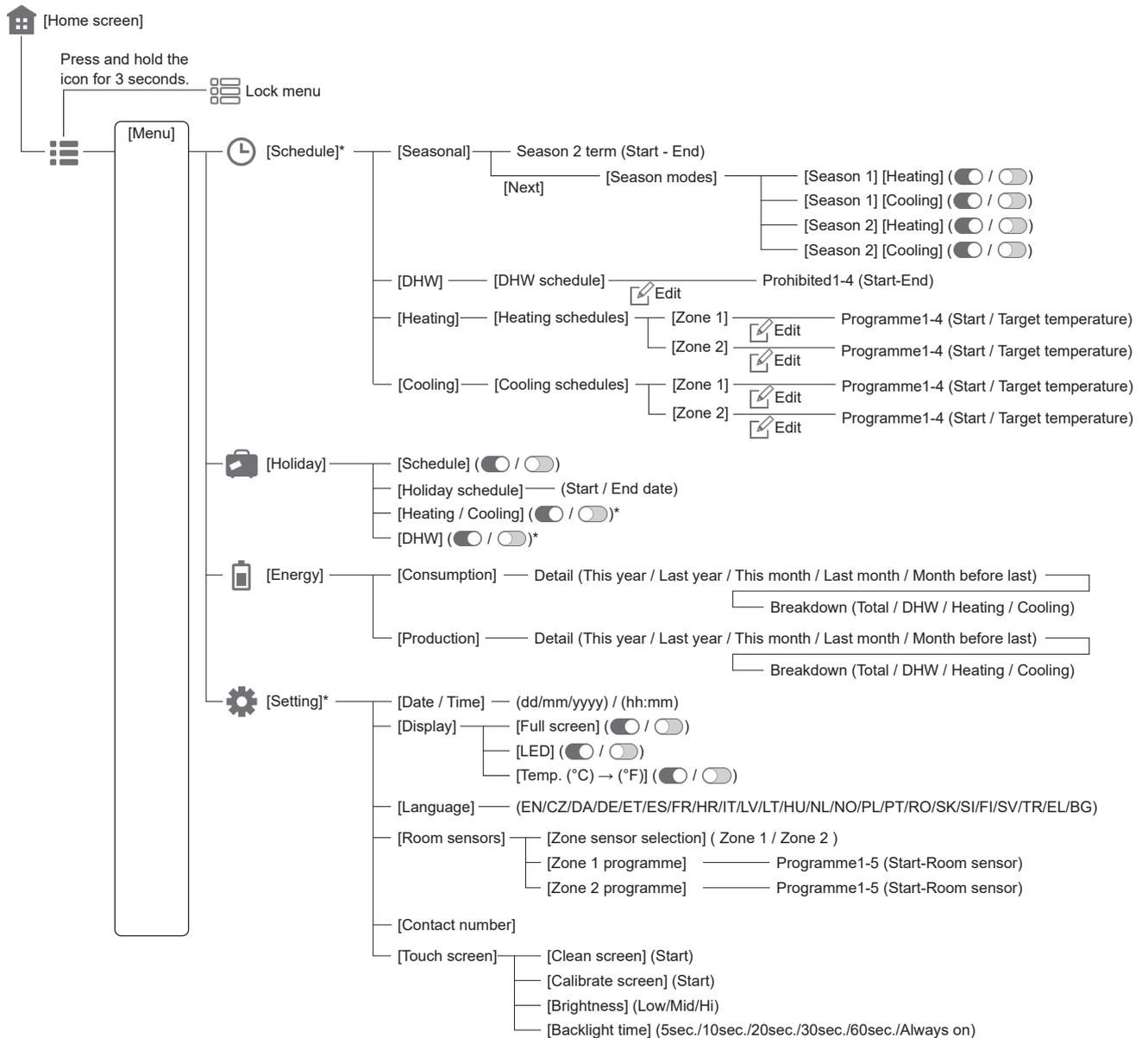
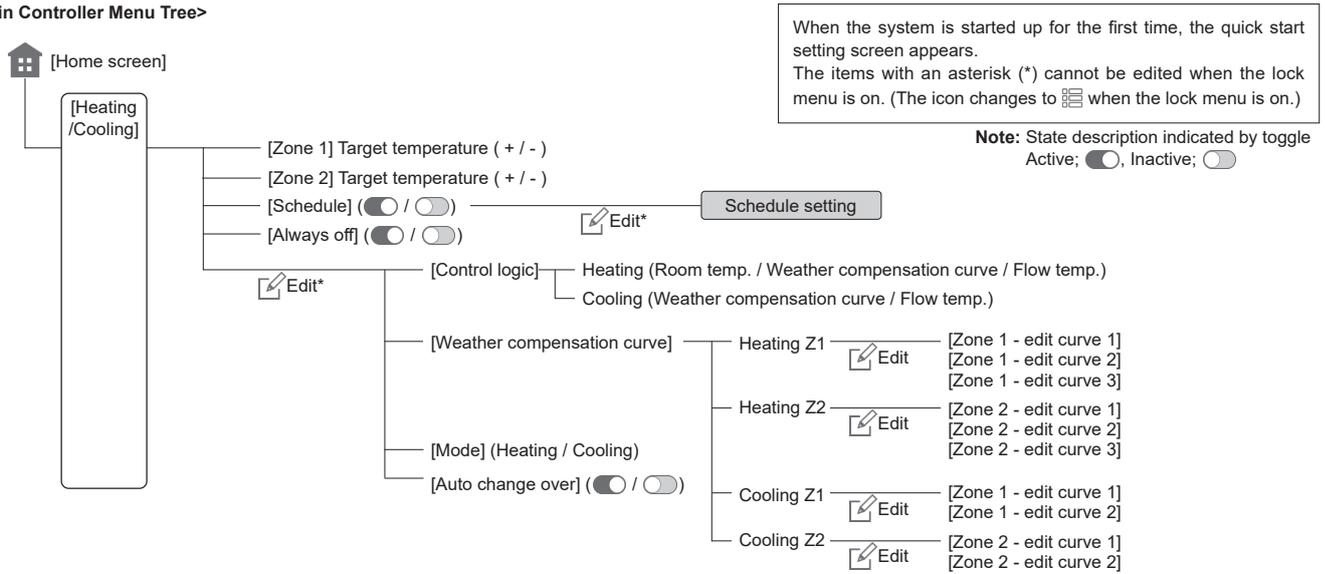


When the system is started up for the first time, the quick start setting screen appears. The items with an asterisk (*) cannot be edited when the lock menu is on. (The icon changes to  when the lock menu is on.)

Note: State description indicated by toggle
Active; , Inactive; 

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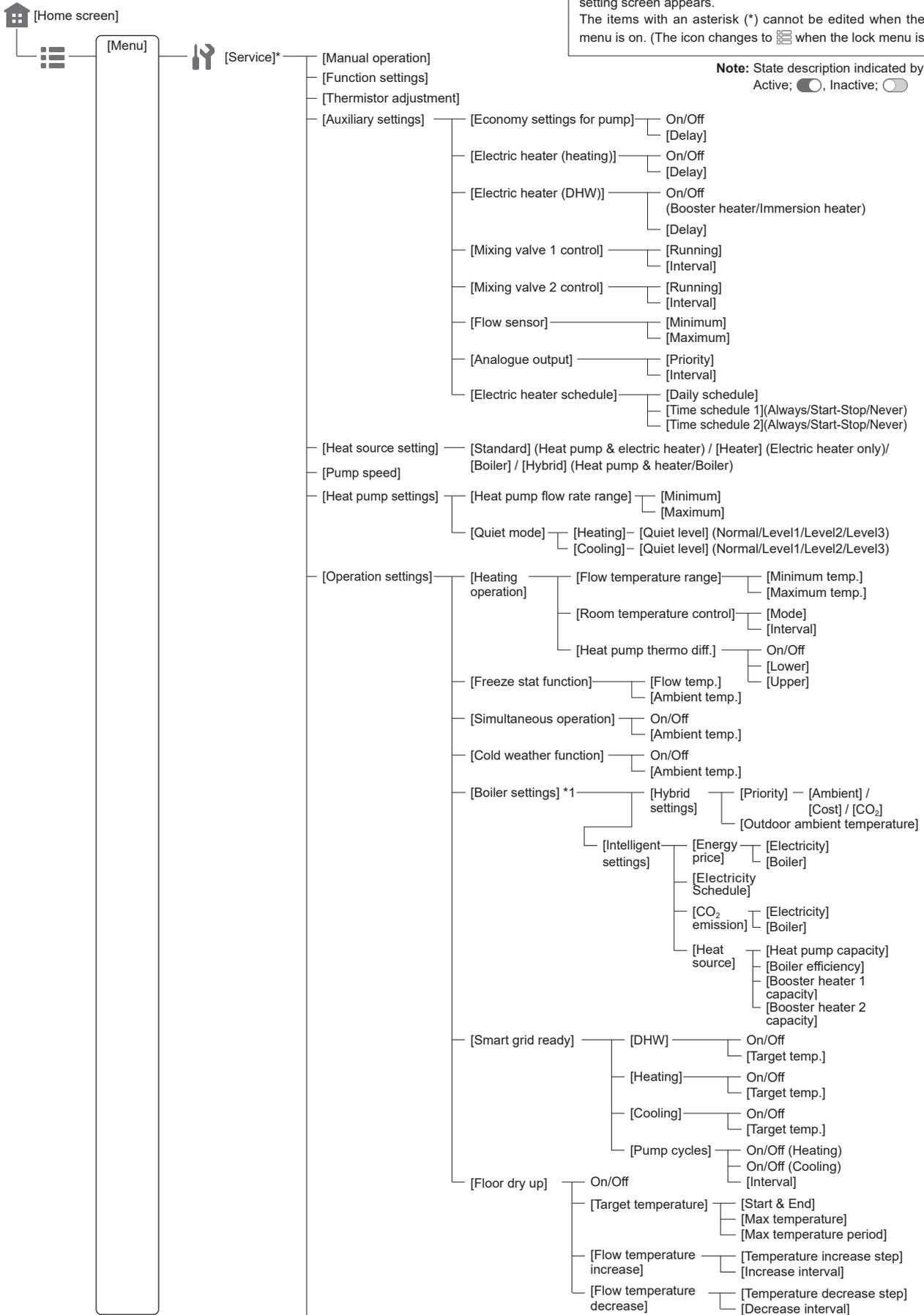
<Main Controller Menu Tree>



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Continued from the previous page.

<Main Controller Menu Tree>



When the system is started up for the first time, the quick start setting screen appears.
The items with an asterisk (*) cannot be edited when the lock menu is on. (The icon changes to when the lock menu is on.)

Note: State description indicated by toggle
Active; , Inactive;

<Continued to next page.>

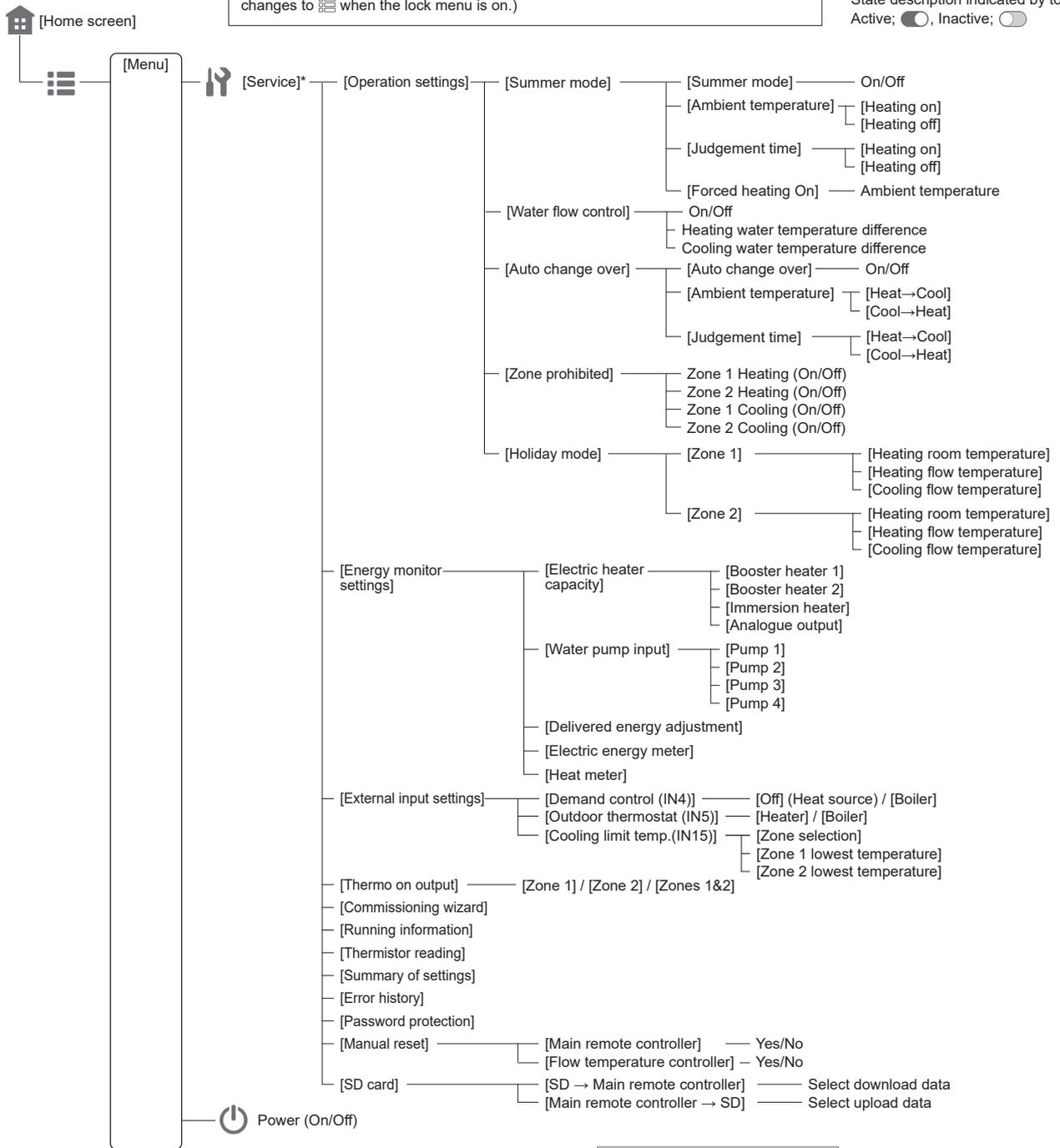
*1 For more details, refer to the installation manual of PAC-TH012HT(L)-E.

Cylinder unit/Hydrobox

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Continued from the previous page.

<Main Controller Menu Tree>



- Note: State description indicated by toggle Active; , Inactive;

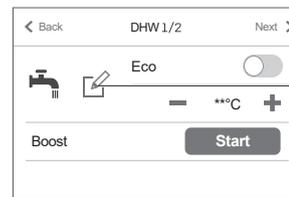
Cylinder unit/Hydrobox

DHW (Domestic Hot Water) / Legionella Prevention

The DHW and legionella prevention menus control the operation of DHW tank heat ups.

DHW mode settings

- [DHW]: The Eco mode can be activated/deactivated by the toggle. The target temperature can be adjusted by +/-.
- From the edit icon , [Max. temp. drop], [Max. operation time], [Interval], and [Volume] can be set.



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Menu subtitle	Function	Range	Unit
DHW target temp.	Desired temperature of stored hot water	40 - 70*1	°C
[Max. temp. drop]	Difference in temperature between the DHW maximum temperature and the temperature at which DHW mode restarts	5 - 40*2	°C
[Max. operation time]	Maximum time allowed for stored water heating DHW mode	30 - 120	min.
[Interval]	The time period after DHW mode when space heating has priority over DHW mode temporarily preventing further stored water heating (Only when DHW max. operation time has passed.)	30 - 120	min.

*1 The maximum temperature differs depending on the connected outdoor unit. (60°C/65°C/70°C)

*2 When the DHW maximum temperature is set over 55°C, the temperature at which DHW mode restarts must be less than 50°C to protect the device.

[Eco]

Eco mode can be activated/deactivated by the toggle ( / ). Eco mode takes a little longer to heat the water in the DHW tank but the energy used is reduced. This is because heat pump operation is restricted using signals from the FTC based on measured DHW tank temperature.

Note:

The actual energy saved in Eco mode will vary according to outdoor ambient temperature.

For frequent DHW use, change the operation mode.

[Volume]

Select the amount of DHW tank. If you need much hot water, select [Large].

Return to the DHW/legionella prevention menu.

Legionella prevention mode settings (LP mode)

- [Legionella]: It can be activated/deactivated by the toggle.
The target temperature can be changed by +/-.
From the edit icon , [Start time], [Duration], [Frequency], and [Max. operation time] can be set.
- [Schedule]: It can be activated/deactivated by the toggle.
- [Always off]: It can be activated/deactivated by the toggle.

During LP mode, the temperature of the stored water is increased above 60°C to inhibit legionella bacteria growth. It is strongly recommended that this is done at regular intervals. Please check local regulations for the recommended frequency of heat ups.

Note 1: When failures occur on the hydrobox, the LP mode may not function normally.

Note 2: Even when DHW operation is prohibited, LP mode will operate.

Please note that LP mode uses the assistance of electric heaters to supplement the energy input of the heat pump. Heating water for long periods of time is not efficient and will increase running costs. The installer should give careful consideration to the necessity of legionella prevention treatment whilst not wasting energy by heating the stored water for excessive time periods. The end user should understand the importance of this feature.
ALWAYS COMPLY WITH LOCAL AND NATIONAL GUIDANCE FOR YOUR COUNTRY REGARDING LEGIONELLA PREVENTION.

Menu subtitle	Function	Range	Unit
Hot water temp.	Desired temperature of stored hot water	60 - 70	°C
[Start time]	Time when LP mode will begin	0:00 - 23:00	-
[Duration]	The time period after LP mode desired water temperature has been reached	1 - 120	min.
[Frequency]	Time between LP mode DHW tank heat up	1 - 30	day
[Max. operation time]	Maximum time allowed for LP mode DHW tank heat	1 - 5	h

[Setting]

From the menu icon , access [Setting].

The following items can be edited in [Setting].

- [Date / time]
- [Display] (From [Setting], the screen can be switched to the full screen or the base screen.)
- [Language]
- [Room sensors]
- [Contact number]
- [Touch screen] ([Calibrate screen]*1, [Clean screen]*2, [Brightness], and [Backlight time])

Follow the procedure described in General Operation for the set up operation.

*1 Touching the 9 dots displayed on the screen starts calibration.

To properly calibrate the touch panel, use a pointy but not sharp object to touch the dots.

Note: A sharp object may damage or scratch the touch screen.

*2 You can wipe the screen while touch operations are invalid for 30 seconds.

Wipe with a soft dry cloth, a cloth soaked in water with mild detergent, or a cloth dampened with ethanol.

Do not use acidic, alkaline, or organic solvents.

[Room sensors]

For [Room sensors], it is important to choose the correct room sensor depending on the heating and cooling mode the system will operate in.



[Zone 1 programme]

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Menu subtitle	Description																	
[Zone sensor selection]	When 2-zone temperature control is active and wireless remote controllers are available, select [Zone sensor selection] in [Room sensors] from [Setting], and then select zone No. (Zone 1/Zone 2) to assign each remote controller.																	
[Zone 1 programme] [Zone 2 programme]	<p>From [Zone 1 programme] or [Zone 2 programme], select a wireless remote controller to be used for monitoring the room temperature from Zone 1 and Zone 2 separately.</p> <table border="1"> <thead> <tr> <th rowspan="2">Control option *</th> <th colspan="2">Corresponding initial settings room sensor</th> </tr> <tr> <th>[Zone 1]</th> <th>[Zone 2]</th> </tr> </thead> <tbody> <tr> <td>A Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control</td> <td>RC 1~8 (Wireless remote controller)</td> <td>*1</td> </tr> <tr> <td>B Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control</td> <td>TH1 (Room temperature thermistor (option))</td> <td>*1</td> </tr> <tr> <td>C Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control</td> <td>[MainRC] (Main remote controller)</td> <td>*1</td> </tr> <tr> <td>D Zone 1 ; Weather compensation curve or flow temperature control Zone 2 ; Weather compensation curve or flow temperature control</td> <td>*1</td> <td>*1</td> </tr> </tbody> </table> <p>*1. Not specified (if a locally-supplied room thermostat is used) RC 1-8 (if a wireless remote controller is used as a room thermostat) The wireless remote controller to be used can be changed up to 4 times within 24 hours according to the set time schedule. (Programme 1-5)</p> <p style="text-align: right;">* Refer to the website manual for details.</p>	Control option *	Corresponding initial settings room sensor		[Zone 1]	[Zone 2]	A Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	RC 1~8 (Wireless remote controller)	*1	B Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	TH1 (Room temperature thermistor (option))	*1	C Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	[MainRC] (Main remote controller)	*1	D Zone 1 ; Weather compensation curve or flow temperature control Zone 2 ; Weather compensation curve or flow temperature control	*1	*1
Control option *	Corresponding initial settings room sensor																	
	[Zone 1]	[Zone 2]																
A Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	RC 1~8 (Wireless remote controller)	*1																
B Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	TH1 (Room temperature thermistor (option))	*1																
C Zone 1 ; Auto Adaptation (Target room temperature) Zone 2 ; Weather compensation curve or flow temperature control	[MainRC] (Main remote controller)	*1																
D Zone 1 ; Weather compensation curve or flow temperature control Zone 2 ; Weather compensation curve or flow temperature control	*1	*1																

[Service]

The service menu provides functions to be used by installer or service engineer. It is NOT intended for the home owner to alter settings within this menu. It is for this reason password protection is required to prevent unauthorised access to the service settings.

The factory default password is "0000".

Follow the procedure described in [Password protection] for the set up operation.

Many functions can not be set whilst the indoor unit is running. The installer should turn off the unit before trying to set these functions. If the installer attempts to change the settings whilst the unit is running, the main remote controller will display a reminder message prompting the installer to stop operation before continuing. By selecting "Yes", the unit will cease operation.

[Manual operation]

During the filling of the system, the primary circuit circulation pump, 3-way valve and mixing valve can be manually overridden using manual operation mode.

When manual operation is selected, a small timer icon appears in the screen. When selected, this function will only remain in manual operation for a maximum of 2 hours.

This is to prevent accidental permanent override of the FTC.

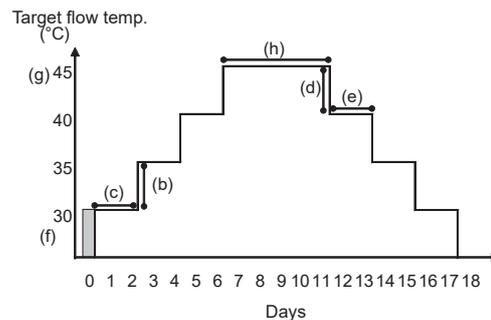
Manual operation and heat source setting can not be selected if the system is running. A screen will be displayed asking the installer to stop the system before these modes can be activated.
The system automatically stops 2 hours after last operation.

[Floor dry up function]

The floor dry up function automatically changes the target hot water temperature in stages to gradually dry concrete when this particular type of underfloor heating system is installed.

Upon completion of the operation, the system stops all the operations except the Freeze stat. operation.

For floor dry up function, the target flow temperature of Zone 1 is the same as that of Zone 2.



- This function is not available when a PUAZ-FRP outdoor unit is connected.
- Disconnect wiring to external inputs of room thermostat, demand control, and outdoor thermostat, or the target flow temperature may not be maintained.

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Functions	Symbol	Description	Option/Range	Unit	
[Floor dry up function]	a	Set the function to on and power on the system using the main remote controller, and the dry up heating operation will start.	on/off	—	
[Flow temperature increase]	[Temperature increase step]	b	It sets the increase step of the target flow temperature.	+1 to +30	°C
	[Increase interval]	c	It sets the period for which the same target flow temperature is maintained.	1 to 7	day
[Flow temperature decrease]	[Temperature decrease step]	d	It sets the decrease step of the target flow temperature.	-1 to -30	°C
	[Decrease interval]	e	It sets the period for which the same target flow temperature is maintained.	1 to 7	day
[Target temperature]	[Start & End]	f	It sets the target flow temperature at the start and the finish of the operation.	20 to 60*	°C
	[Max temperature]	g	It sets the maximum target flow temperature.	20 to 60*	°C
	[Max temperature period]	h	It sets the period for which the maximum target flow temperature is maintained.	1 to 20	day

* The maximum temperature differs depending on the connected outdoor unit.

[Password protection]

Password protection is recommended to prevent unauthorised access to the service menu by untrained persons.

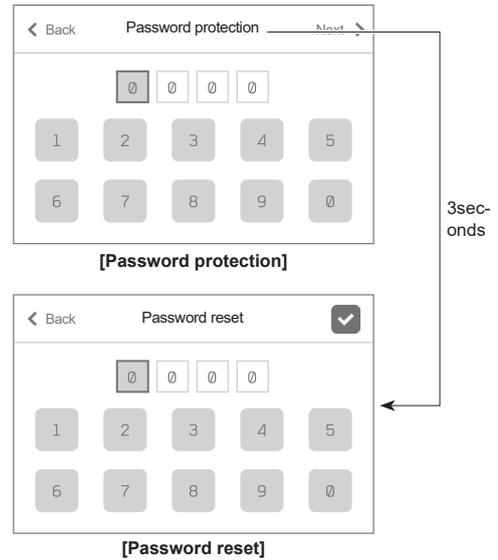
[Password reset]

If you forget the password you entered, or have to service a unit somebody else installed, you can reset and change the password.

1. From [Service] in [Menu], access the [Password protection] screen.
2. Press and hold the title section for 3 seconds to access the [Password reset] screen.
3. Enter a new password.
4. Touching [Back] or the confirm icon saves the password.

[Manual reset]

Should you wish to restore the factory settings at any time, you should use the manual reset function. Please note this will reset ALL functions to the factory default settings.



Cylinder unit/Hydrobox

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Energy monitor

End user can monitor accumulated*1 consumption and production energy in each operation mode*2 on the main remote controller.

*1 Monthly and Year to date

*2 - DHW operation

- Space heating
- Space cooling

Refer to "5.7.2 Main remote controller" for how to check the energy, and "5.3 DIP switch functions" for the details on DIP-SW setting. Either one of the following two methods is used for monitoring.

Note: Method 1 should be used as a guide. If a certain accuracy is required, the 2nd method should be used.

	Booster heater 1	Booster heater 2	Pump 1 *4	Pump 2	Pump 3
Default	2 kW	4 kW	***(factory fitted pump)	0 kW	0 kW
ERPX-ME	0 kW	0 kW	***	"When additional pumps supplied locally are connected as Pump 2/3, change setting according to specs of the pumps."	
ERPX-VM2E	2 kW	0 kW	***		
ERPX-VM6E	2 kW	4 kW	***		
ERPX-YM9E	3 kW	6 kW	***		

<Table 5.7.1>

Method 1. Calculation internally

Electricity consumption is calculated internally based on the energy consumption of outdoor unit, electric heater, water pump(s) and other auxiliaries. (*3)

Delivered heat is calculated internally by multiplying delta T (flow and return temperature) and flow rate measured by the factory fitted sensors.

Set the electric heater capacity and water pump(s) input according to indoor unit model and specs of additional pump(s) supplied locally. (Refer to the menu tree in "5.7.2 Main remote controller" on the paper-based manual)

*3 When the indoor unit is connected with a PXZ or PUMY models, electricity consumption is not calculated internally. To display the electricity consumption, use the 2nd method.

*4 "****" displayed in the energy monitor setting mode means the factory fitted pump is connected as Pump 1 so that the input is automatically calculated.

When anti-freeze solution (propylene glycol) is used for primary water circuit, set the delivered energy adjustment if necessary.

Should you need more details, refer to "5.7.2 Main remote controller" on the paper-based manual.

Method 2. Actual measurement by external meter (locally supplied)

FTC has external input terminals for 2 'Electric energy meters' and a 'Heat meter'.

If two 'Electric energy meters' are connected, the 2 recorded values will be combined at the FTC and shown on the main remote controller.

(e.g. Meter 1 for H/P power line, Meter 2 for heater power line)

Refer to the "Signal inputs" section in "5.4.2 Connecting inputs/outputs" on the paper-based manual for more information on connectable electric energy meter and heat meter.

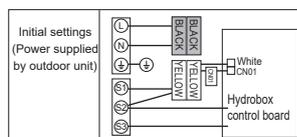
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5.8. Service and maintenance

The indoor hydrobox must be serviced **once a year** by a qualified individual. Servicing and maintenance of the outdoor unit should only be done by a Mitsubishi Electric trained technician with relevant qualifications and experience. Any electrical work should be done by a tradesperson with the appropriate electrical qualifications. Any maintenance or 'DIY' fixes done by a non-accredited person could invalidate the Warranty and/or result in damage to the hydrobox and injury to the person.

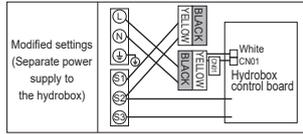
Basic troubleshooting

No.	Fault symptom	Possible cause	Explanation - Solution
1	Main remote controller display is blank.	<ol style="list-style-type: none"> There is no power supply to main remote controller. Power is supplied to main remote controller, however, the display on the main remote controller does not appear. 	<ol style="list-style-type: none"> Check LED2 on FTC. (See "5.2 Wiring diagrams".) <ol style="list-style-type: none"> When LED2 is lit. Check for damage or contact failure of the main remote controller wiring. When LED2 is blinking. Refer to No. 5 below. When LED2 is not lit. Refer to No. 4 below. Check the following: <ul style="list-style-type: none"> Disconnection between the main remote controller cable and the FTC control board Failure of the main remote controller if "Please Wait" is not displayed. Refer to No. 2 below if "Please Wait" is displayed.
2	"Please Wait" remains displayed on the main remote controller.	<ol style="list-style-type: none"> "Please Wait" is displayed for up to 6 minutes. Communication failure between the main remote controller and FTC Communication failure between FTC and outdoor unit 	<ol style="list-style-type: none"> Normal operation, no action necessary. 3. Main remote controller start up checks/procedure <ol style="list-style-type: none"> If "0%" or "50–99%" is displayed below "Please Wait" there is a communication error between the main remote controller and the FTC control board. <ul style="list-style-type: none"> Check wiring connections on the main remote controller. Replace the main remote controller or the FTC control board. If "1–49%" is displayed there is a communication error between the outdoor unit's and FTC's control boards. <ul style="list-style-type: none"> Check the wiring connections on the outdoor unit control board and the FTC control board. (Ensure S1 and S2 are not cross-wired and S3 is securely wired with no damage. See "5.4 Field wiring".) Replace the outdoor unit's and/or the FTC's control boards.
3	The main screen appears with a press of the "ON" button, but disappears in a second.	The main remote controller operations do not work for a while after the settings are changed in the service menu. This is because the system takes time to apply the changes.	Normal operation, no action necessary. The indoor unit is applying updated settings made in the service menu. Normal operation will start shortly.
4	LED2 on FTC is off. (See "5.2 Wiring diagrams".)	<p>When LED1 on FTC is also off. (See "5.2 Wiring diagrams".) <FTC powered via outdoor unit.></p> <ol style="list-style-type: none"> The outdoor unit is not supplied at the rated voltage. Defective outdoor controller circuit board FTC is not supplied with 220 to 240 V AC. FTC failure Faulty connector wiring 	<ol style="list-style-type: none"> Check the voltage across the terminals L and N or L3 and N on the outdoor power board. (See "5.4 Field wiring".) <ul style="list-style-type: none"> When the voltage is not 220 to 240 V AC, check wiring of the outdoor unit and of the breaker. When the voltage is at 220 to 240 V AC, go to "2." below. Check the voltage across the outdoor unit terminals S1 and S2. (See "5.4 Field wiring".) <ul style="list-style-type: none"> When the voltage is not 220 to 240 V AC, check the fuse on the outdoor control board and check for faulty wiring. When the voltage is 220 to 240 V AC, go to "3." below. Check the voltage across the indoor unit terminals S1 and S2. (See "5.4 Field wiring".) <ul style="list-style-type: none"> When the voltage is not 220 to 240 V AC, check FTC-outdoor unit wiring for faults. When the voltage is 220 to 240 V AC, go to "4." below. Check the FTC control board. <ul style="list-style-type: none"> Check the fuse on FTC control board. Check for faulty wiring. If no problem found with the wiring, the FTC control board is faulty. Check the connector wiring. <ul style="list-style-type: none"> When the connectors are wired incorrectly, re-wire the connectors referring to below. (See "5.4 Field wiring".)



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No.	Fault symptom	Possible cause	Explanation - Solution
4	LED2 on FTC is off. (See "5.2 Wiring diagrams".)	<FTC powered on independent source> 1. FTC is not supplied with 220 to 240 V AC. 2. There are problems in the method of connecting the connectors.	1. Check the voltage across the L and N terminals on the indoor power supply terminal block. (See "5.4 Field wiring".) • When the voltage is not 220 to 240 V AC, check for faulty wiring to power supply. • When the voltage is 220 to 240 V AC, go to 2. below. 2. Check for faulty wiring between the connectors. • When the connectors are wired incorrectly re-wire them correctly referring to below. (See "5.4 Field wiring". and a wiring diagram on the control and electrical box cover.)  • If no problem found with the wiring, go to 3. below.
		3. FTC failure	3. Check the FTC control board. • Check the fuse on FTC control board. • Check for faulty wiring. • If no problem found with the wiring, the FTC control board is faulty.
		When LED1 on FTC is lit. Incorrect setting of refrigerant address for outdoor unit (None of the refrigerant address is set to "0".)	Recheck the refrigerant address setting on the outdoor unit. Set the refrigerant address to "0". (Set refrigerant address using SW1(3–6) on outdoor controller circuit board.)
5	LED2 on FTC is blinking. (See "5.2 Wiring diagrams".)	When LED1 is also blinking on FTC . Faulty wiring between FTC and outdoor unit	Check for faulty wiring between FTC and outdoor unit.
		When LED1 on FTC is lit. 1. Faulty wiring in main remote controller Multiple indoor units have been wired to a single outdoor unit. 2. Short-circuited wiring in main remote controller 3. Main remote controller failure	1. Check for faulty wiring in main remote controller. The number of indoor units that can be wired to a single outdoor unit is one. Additional indoor units must be wired individually to a single outdoor unit. 2,3. Remove main remote controller wires and check LED2 on FTC. (See Figure 5.4.7) • If LED2 is blinking check for short circuits in the main remote controller wiring. • If LED2 is lit, wire the main remote controller again and: - if LED2 is blinking, the main remote controller is faulty; - if LED2 is lit, faulty wiring of the main remote controller has been corrected.
6	LED4 on FTC is off. (See "5.2 Wiring diagrams".)	1. SD memory card is NOT inserted into the memory card slot with correct orientation. 2. Not an SD standards compliant memory card	1. Correctly insert SD memory card in place until a click is heard. 2. Use an SD standards compliant memory card. (Refer to "5.4.7 Using microSD memory card".)
	LED4 on FTC is blinking. (See "5.2 Wiring diagrams".)	1. Full of data 2. Write-protected 3. NOT formatted 4. Formatted in NTFS file system	1. Move or delete data, or replace SD memory card with a new one. 2. Release the write-protect switch. 3. Refer to "5.4.7 Using microSD memory card". 4. FTC is Not compatible with NTFS file system. Use an micro SD memory card formatted in FAT file system.
7	No water at hot tap.	1. Cold main off 2. Strainer (local supply) blocked	1. Check and open stop cock. 2. Isolate water supply and clean strainer.
8	Cold water at tap.	1. Hot water run out. 2. Prohibit, schedule timer or holiday mode selected or demand control input (IN4) or smart grid ready (switch-off command). 3. Heat pump not working 4. Booster heater cut-out tripped. 5. The earth leakage circuit breaker for booster heater breaker (ECB1) tripped. 6. The booster heater thermal cut-out has tripped and cannot be reset using the manual reset button. 7. Immersion heater cut-out tripped. 8. Immersion heater breaker (ECB2) tripped. 9. 3-way valve fault	1. Ensure DHW mode is operating and wait for DHW tank to re-heat. 2. Check settings and change as appropriate. 3. Check heat pump – consult outdoor unit service manual. 4. Check booster heater thermostat and press reset button if safe. Reset button is located on the side of booster heater, covered with white rubber cap. See "5.5.1 Component parts" to find out its position. 5. Check the cause and reset if safe. 6. Check resistance across the thermal cut-out, if open then the connection is broken and the booster heater will have to be replaced. Contact your Mitsubishi Electric dealer. 7. Check immersion heater thermostat and press reset button, located on immersion heater boss, if safe. If the heater has been operated with no water inside it may have failed, so please replace it with a new one. 8. Check the cause and reset if safe. 9. Check plumbing/wiring to 3-way valve. (i) Manually override 3-way valve using the main remote controller. (Refer to <Manual operation> in section "5.7 System setup".) If the valve does not still function, go to (ii) below. (ii) Replace 3-way valve.

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No.	Fault symptom	Possible cause	Explanation - Solution
9	Water heating takes longer.	<ol style="list-style-type: none"> Heat pump not working Booster heater cut-out tripped. Booster heater breaker (ECB1) tripped. The booster heater thermal cut-out has tripped and cannot be reset using the manual reset button. Immersion heater cut-out has been triggered. Immersion heater breaker (ECB2) tripped. 	<ol style="list-style-type: none"> Check heat pump – consult outdoor unit service manual. Check booster heater thermostat and press reset button if safe. Reset button is located on the side of booster heater, covered with white rubber cap. See "5.5.1 Component parts" to find out its position. Check the cause and reset if safe. Check resistance across the thermal cut-out, if open then connection is broken and the booster heater will have to be replaced. Contact your Mitsubishi Electric dealer. Check immersion heater thermostat and press reset button if safe. If the heater kept running with no water inside, this may have resulted in failure, so replace it with a new one. Check the cause and reset if safe.
10	Temperature of DHW tank water dropped.	<p>When DHW operation is not running, the DHW tank emits heat and the water temperature decreases to a certain level. If water in the DHW tank is reheated frequently because of a significant drop in water temperature, check for the following.</p> <ol style="list-style-type: none"> Water leakage in the pipes that connect to the DHW tank Insulation material coming loose or off 3-way valve failure 	<ol style="list-style-type: none"> Take the following measures. <ul style="list-style-type: none"> Retighten the nuts holding the pipes onto the DHW tank. Replace seal materials. Replace the pipes. Fix insulation. Check plumbing/wiring to 3-way valve. <ol style="list-style-type: none"> Manually override 3-way valve using the main remote controller. (Refer to <Manual operation> in "5.7 System setup".) If the valve does not still function, go to (ii) below. Replace 3-way valve.
11	Hot or warm water from cold tap.	Heat of hot water pipe is transferred to cold water pipe.	Insulate/re-route pipework.
12	Water leakage	<ol style="list-style-type: none"> Poorly sealed connections of water circuit components Water circuit components reaching the end of life 	<ol style="list-style-type: none"> Tighten connections as required. Refer to PARTS CATALOG in the service manual for expected part lifetimes and replace them as necessary.
13	Heating system does not reach the set higher temperature.	<ol style="list-style-type: none"> Prohibit, schedule timer or holiday mode selected or demand control input (IN4) or smart grid ready (switch-off command). Check settings and change as appropriate. The temperature sensor is located in a room that has a different temperature relative to that of the rest of the house. Heat pump not working Booster heater cut-out tripped. Booster heater breaker (ECB1) tripped. The booster heater thermal cut-out tripped and cannot be reset using the manual reset button. Incorrectly sized heat emitter 3-way valve failure Battery problem (*wireless control only) If a mixing tank is installed, the flow rate between the mixing tank and the hydrobox is less than that between the mixing tank and the local system. 	<ol style="list-style-type: none"> Check settings and change as appropriate. Check the battery power and replace if flat. Relocate the temperature sensor to a more suitable room. Check heat pump – consult outdoor unit service manual. Check booster heater thermostat and press reset button if safe. Reset button is located on the side of booster heater, covered with white rubber cap. (See "5.5.1 Component parts" for position.) Check the cause of the trip and reset if safe. Check resistance across the thermal cut-out, if open then the connection is broken and the booster heater will have to be replaced. Contact your Mitsubishi Electric dealer. Check the heat emitter surface area is adequate. Increase size if necessary. Check plumbing/wiring to 3-way valve. Check the battery power and replace if flat. Increase the flow rate between the mixing tank and the hydrobox or decrease that between the mixing tank and the local system.
14	Heating system does not reach the set lower temperature.	The heating system operates according to the heating pressure to prevent the low pressure system from frequent switching (ON/OFF) of the compressor.	Normal operation, no action necessary.

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No.	Fault symptom	Possible cause	Explanation - Solution
15	In 2-zone temperature control, only Zone2 does not reach the set temperature.	<ol style="list-style-type: none"> When Zone1 and Zone2 are both in heating mode, the hot water temperature in Zone2 does not exceed that in Zone1. Faulty wiring of motorized mixing valve Faulty installation of motorized mixing valve Incorrect setting of Running time Motorized mixing valve failure 	<ol style="list-style-type: none"> Normal operation, no action necessary. Refer to "5.4.3 Wiring for 2-zone temperature control" in installation manual. Check for correct installation. (Refer to the manual included with each motorized mixing valve.) Check for correct setting of Running time. Inspect the mixing valve. (Refer to the manual included with each motorized mixing valve.)
16	When a PUHZ-FRP outdoor unit is connected, DHW or Heating operation cannot run.	The outdoor unit is set to have operation of the indoor unit of air conditioner take precedence over that of the hydrobox, and in the main remote controller settings "Electric heater (Heating)" or "Electric heater (DHW)" is turned off.	Turn ON Electric heater (Heating) or Electric heater (DHW) using the main remote controller.
17	When a PUHZ-FRP outdoor unit is connected and is in heat recovery operation, the set temperature is not reached.	When the outdoor unit is set to have cooling operation of the indoor unit of air conditioner take precedence over that of the hydrobox, the outdoor unit controls the frequency of the compressor according to the load of air conditioner. The DHW and heating run according to that frequency.	Normal operation, no action necessary. If Air-to-Water system is given priority in operation, comp Hz can be regulated depending on the load of DHW or Heating. For more details, refer to the PUHZ-FRP installation manual.
18	After DHW operation room temperature rises slightly.	At the end of the DHW mode operation the 3-way valve diverts hot water away from the DHW circuit into space heating circuit. This is done to prevent the hydrobox components from overheating. The amount of hot water directed into the space heating circuit varies according to the type of the system and of the pipe run between the plate heat exchanger and the hydrobox.	Normal operation, no action necessary.
19	The room temperature rises during DHW operation.	3-way valve failure	Check the 3-way valve.
20	Water discharges from pressure relief valve. (Primary circuit)	<ol style="list-style-type: none"> If continual – pressure relief valve may be damaged. If intermittent – expansion vessel charge may have reduced/bladder perished. 	<ol style="list-style-type: none"> Turn the handle on the pressure relief valve to check for foreign objects in it. If the problem is not still solved, replace the pressure relief valve with a new one. Check pressure in expansion vessel. Recharge to 1 bar if necessary. If bladder perished, replace expansion vessel with a new one.
21	Water discharges from pressure relief valve (field supplied item). (Sanitary circuit)	<ol style="list-style-type: none"> If continual – field supplied pressure reducing valve not working. If continual – pressure relief valve seat may be damaged. If intermittent – expansion vessel charge may have reduced/bladder perished. DHW tank may have subjected to backflow. 	<ol style="list-style-type: none"> Check function of pressure reducing valve and replace if necessary. Turn the handle on the pressure relief valve to check for foreign objects inside. If the problem is not still solved, replace the pressure relief valve. Check gas-side pressure in expansion vessel. Recharge to correct precharge pressure if necessary. If bladder perished, replace expansion vessel with a new one with appropriate pre-charge. Check the pressure in DHW tank. If pressure in DHW tank is similar to that in the incoming mains, cold water supply that merges with incoming mains water supply could flow back to DHW tank. Investigate source of back-feed and rectify error in pipework/fitting configuration. Adjust pressure in cold supply.
22	Noisy water circulation pump	Air in water circulation pump	Use manual and automatic air vents to remove air from system. Top up water if necessary to achieve 1 bar on primary circuit.
23	Noise during hot water draw off typically worse in the morning.	<ol style="list-style-type: none"> Loose airing cupboard pipework Heaters switching on/off 	<ol style="list-style-type: none"> Install extra pipe fastening clips. Normal operation, no action necessary.
24	Mechanical noise heard coming from the hydrobox.	<ol style="list-style-type: none"> Heaters switching on/off 3-way valve changing position between DHW and heating mode 	Normal operation, no action necessary.
25	Water circulation pump runs for a short time unexpectedly .	Water circulation pump jam prevention mechanism (routine) to inhibit the build-up of scale	Normal operation, no action necessary.
26	Milky/Cloudy water (Sanitary circuit)	Oxygenated water	Water from any pressurised system will release oxygen bubbles when water is running. The bubbles will settle out.
27	Heating mode has been on standby for a long time (does not start operation smoothly.)	The time of "Delay" set in "Economy settings for pump" is too short. (Go to "Service menu" → "Auxiliary settings" → "Economy settings for pump").	Increase the time of "Delay" in "Economy settings for pump" .

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No.	Fault symptom	Possible cause	Explanation - Solution																
28	The hydrobox that was running in the heating mode before power failure is running in the DHW mode after power recovery.	The hydrobox is designed to run in an operation mode with a higher priority (i.e. DHW mode in this case) at power recovery.	<ul style="list-style-type: none"> • Normal operation, no action necessary. • After the DHW max. operation time has elapsed or the DHW max. temperature has been reached, the DHW mode switches to the other mode (ex. Heating mode). 																
29	Cooling mode is NOT available.	DIP SW2-4 is OFF.	Turn DIP SW2-4 to ON. (Refer to "5.3 DIP switch functions".)																
30	The cooling system does not cool down to the set temperature.	<ol style="list-style-type: none"> 1. When the water in the circulation circuit is unduly hot, Cooling mode starts with a delay for the protection of the outdoor unit. 2. When the outdoor ambient temperature is lower than the preset temperature that activates the freeze stat. function, Cooling mode does not start running. 	<ol style="list-style-type: none"> 1. Normal operation, no action necessary. 2. To run Cooling mode overriding the freeze stat. function, adjust the preset temperature that activates the freeze stat. function. (Refer to <Freeze stat function> in "5.7 System setup".) 																
31	The electric heaters are activated shortly after DHW or LP mode starts running after Cooling mode.	The setting time period of Heat-pump-only operation is short.	Adjust the setting time period of Heat-pump only operation. (Refer to <Electric heater (DHW)> in "5.7 System setup".)																
32	During DHW or LP mode following the cooling mode, error L6 (circulation water freeze protection error) occurs and the system stops all the operations.	The unit runs in Cooling mode when the outdoor ambient temperature is lower than 10°C (outside of the guaranteed operating range). (When defrosting operation is running at such a low outdoor ambient temperature after Cooling mode is switched to DHW or LP mode, the water temperature in the cooling circuit drops too low, which could result in L6 error to stop all the operations.	Do not run Cooling operation when the outdoor ambient temperature is lower than 10°C. To automatically stop or recover only Cooling operation and keep other operations running, the freeze stat. function can be used. Set the preset temperature that activates the freeze stat. function to adjust the outdoor ambient temperature as follows. (Refer to <Freeze stat function> in "5.7 System setup".) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Outdoor ambient temperature</th> <th>Cooling operation</th> </tr> </thead> <tbody> <tr> <td>3°C higher than the preset temperature</td> <td>Stop</td> </tr> <tr> <td>5°C higher than the preset temperature</td> <td>Recover</td> </tr> </tbody> </table>	Outdoor ambient temperature	Cooling operation	3°C higher than the preset temperature	Stop	5°C higher than the preset temperature	Recover										
Outdoor ambient temperature	Cooling operation																		
3°C higher than the preset temperature	Stop																		
5°C higher than the preset temperature	Recover																		
33	The energy monitor value seems not correct. Note: There could be some discrepancies between the actual and the calculated values. If you seek for accuracy, please make sure to connect power meter(s) and heat meter to FTC board. Both should be locally supplied.	<ol style="list-style-type: none"> 1. Incorrect setting of the energy monitor 2. Non-connectable type of external meter (local supply) is connected. 3. External meter (local supply) failure 4. FTC board failure 	<ol style="list-style-type: none"> 1. Check the setting by following the procedure below. (1) Check if the DIP switch is set as the table below. <table border="1" style="margin-top: 5px;"> <thead> <tr> <th colspan="2">Consumed electric energy</th> <th colspan="2">Delivered heat energy</th> </tr> </thead> <tbody> <tr> <td>SW3-4</td> <td>Electric energy meter (Local supply)</td> <td>SW3-8</td> <td>Heat meter (Local supply)</td> </tr> <tr> <td>OFF</td> <td>Without</td> <td>OFF</td> <td>Without</td> </tr> <tr> <td>ON</td> <td>With</td> <td>ON</td> <td>With</td> </tr> </tbody> </table> (2) In the case external electric energy meter and/or heat meter is not used, check if the setting for electric heater and water pump(s) input is correct by referring to <Energy monitor setting> in "5.7 System setup". (3) In the case external electric energy meter and/or heat meter is used, check if the unit of output pulse on external meter matches with the one set at the main remote controller by referring to <Energy monitor setting> in "5.7 System setup". 2. Check if the external meter (local supply) is connectable type by referring to <Energy monitor setting> in "5.7 System setup". 3. Check if signal is sent to IN8 to IN10 properly. (Refer to "5.2 Wiring diagrams".) Replace the external heat meter if defective. 4. Check the FTC control board. <ul style="list-style-type: none"> • Check for faulty wiring. • If no problem found with the wiring, the FTC control board is faulty. Replace the board. 	Consumed electric energy		Delivered heat energy		SW3-4	Electric energy meter (Local supply)	SW3-8	Heat meter (Local supply)	OFF	Without	OFF	Without	ON	With	ON	With
Consumed electric energy		Delivered heat energy																	
SW3-4	Electric energy meter (Local supply)	SW3-8	Heat meter (Local supply)																
OFF	Without	OFF	Without																
ON	With	ON	With																
34	Heat pump is forced to turn ON and OFF.	Smart grid ready input (IN11 and IN12) is used, and switch-on and off commands are input.	Normal operation, no action necessary.																

Annual Maintenance

It is essential that the hydrobox is serviced at least once a year by a qualified individual any spare parts required MUST be purchased from Mitsubishi Electric (safety matter).

NEVER bypass safety devices or operate the unit without them being fully operational.

<Annual maintenance points>

Use the Annual Maintenance Log Book as a guide to carrying out the necessary checks on the indoor and outdoor unit.

■ Error Codes

Code	Error	Action
L3	Circulation water temperature overheat protection	Flow rate may be reduced. Check for; <ul style="list-style-type: none"> • Water leakage • Magnetic filter / Strainer blockage • Water circulation pump function (Error code may display during filling of primary circuit, complete filling and reset error code.)
L4	DHW tank water temperature overheat protection	Check the immersion heater and it's contactor.
L5	Indoor unit temperature thermistor (THW1, THW2, THW5A, THW5B, THW6, THW7, THW8, THW9) failure	Check resistance across the thermistor.
L6	Circulation water freeze protection	See Action for L3.
L8	Heating operation error	Check and re-attach any thermistors that may have become dislodged.
L9	Low primary circuit flow rate detected by flow sensor or flow switch (flow switches 1, 2, 3)	See Action for L3. If the flow sensor or flow switch itself does not work, replace it. Caution: The pump valves may be hot, please take care.
LA	Pressure sensor failure	Check pressure sensor cable for damage or loose connections.
LB	High pressure protection	<ul style="list-style-type: none"> • Flow rate of the heating circuit may be reduced. Check water circuit. • Plate heat exchanger may be clogged. Check the plate heat exchanger. • Outdoor unit failure. Check refrigerant volume, valve, LEV coil and pipe crushing of outdoor unit.
LC	Boiler circulation water temperature overheat protection	<p>Check if the setting temperature of the Boiler for heating exceeds the restriction. (See the manual of the thermistors "PAC-TH012HT(L)-E")</p> <p>Flow rate of the heating circuit from the boiler may be reduced. Check for</p> <ul style="list-style-type: none"> • Water leakage • Magnetic filter / Strainer blockage • Water circulation pump function.
LD	Thermistor (Boiler flow water temp.) (THWB1) failure	Check resistance across the thermistor.
LE	Boiler operation error	See Action for L8. Check the status of the boiler.
LF	Flow sensor failure	Check flow sensor cable for damage or loose connections.
LH	Boiler circulation water freeze protection	Flow rate of the heating circuit from the boiler may be reduced. Check for <ul style="list-style-type: none"> • Water leakage • Magnetic filter / Strainer blockage • Water circulation pump function.
LJ	DHW operation error (type of external plate HEX)	<ul style="list-style-type: none"> • Check for disconnection of the thermistor (DHW tank lower water temp.) (THW5B). • Flow rate may be reduced. Check for water circulation pump function. (primary / sanitary)
LL	Setting errors of DIP switches on FTC control board	For boiler operation, check that DIP SW1-1 is set to ON (With Boiler) and DIP SW2-6 is set to ON (With Mixing Tank). For 2-zone temperature control, check DIP SW2-7 is set to ON (2-zone) and DIP SW2-6 is set to ON (With Mixing Tank).
LP	Out of water flow rate range for outdoor heat pump unit	Check the installation the water flow rate range (Table 4.3.1). Check remote controller settings ([Service] → [Heat pump settings] → [Heat pump flow rate range]) See Action for L3.
P1	Thermistor (Room temp.) (TH1) failure	Check resistance across the thermistor.
P2	Thermistor (Ref. liquid temp.) (TH2) failure	Check resistance across the thermistor.
P6	Anti-freeze protection of plate heat exchanger	See Action for L3. Check for correct amount of refrigerant.
J0	Communication failure between FTC and wireless receiver	Check connection cable for damage or loose connections.
J1 - J8	Communication failure between wireless receiver and wireless remote controller	Check wireless remote controller's battery is not flat. Check the pairing between wireless receiver to wireless remote controller. Test the wireless communication. (See the manual of wireless system)
E0 - E5	Communication failure between main remote controller and FTC	Check connection cable for damage or loose connections.
E6 - EF	Communication failure between FTC and outdoor unit	Check that the outdoor unit has not been turned off. Check connection cable for damage or loose connections. Refer to outdoor unit service manual.
E9	Outdoor unit receives no signal from indoor unit.	Check both units are switched on. Check connection cable for damage or loose connections. Refer to outdoor unit service manual.
EE	Combination error between FTC and outdoor unit	Check combination of FTC and outdoor unit.
U*, F*	Outdoor unit failure	Refer to outdoor unit service manual.
A*	M-NET communication error	Refer to outdoor unit service manual.

Note: To cancel error codes, please switch system off (Touch [Reset] on main remote controller).

5 Hydrobox

■ Engineers Forms

Should settings be changed, please enter and record new setting in 'Field Setting' column. This will ease resetting in the future should the system use change or the circuit board need to be replaced.

Commissioning/Field settings record sheet

Main remote controller screen			Parameters	Field setting	Notes		
DHW	DHW *4	Eco	On/Off				
		Boost	On/Off				
		DHW max. temp.	40°C to 55/60/65/70°C *5				
		Max. temp. drop	5°C to 40°C				
		Max. operation time	30 to 120 min.				
		Interval	30 to 120 min.				
		Volume	Large / Standard				
		Schedule	On/Off				
		Always off	On/Off				
	Legionella prevention *4	Legionella	On/Off				
		Hot water temp.	60°C to 70°C *5				
		Start time	00:00 to 23:00				
		Duration	1 to 120 min.				
		Frequency	1 to 30 days				
		Max. operation time	1 to 5 h				
		Heating / Cooling *3	Heating / Cooling	Zone 1 heating room temp.	10°C to 30°C		
				Zone 2 heating room temp. *1	10°C to 30°C		
				Zone 1 heating flow temp.	20°C to 60/70/75°C		
	Zone 2 heating flow temp. *2			20°C to 60/70/75°C			
Zone 1 cooling flow temp. *3	5°C to 25°C						
Zone 2 cooling flow temp. *3	5°C to 25°C						
Zone 1 heating weather compensation curve	-9°C to +9°C						
Zone 2 heating weather compensation curve *2	-9°C to +9°C						
Zone 1 cooling weather compensation curve	-9°C to +9°C						
Zone 2 cooling weather compensation curve *2	-9°C to +9°C						
Schedule	On/Off						
Always off	On/Off						
Heating / Cooling	Heating / Cooling						
Weather compensation curve (Heating)	Hi flow temp. set point		Zone 1 outdoor ambient temp.	-30°C to +33°C *7			
			Zone 1 flow temp.	20°C to 60/70/75°C			
			Zone 2 outdoor ambient temp. *2	-30°C to +33°C *7			
	Lo flow temp. set point		Zone 1 outdoor ambient temp.	-28°C to +35°C *8			
			Zone 1 flow temp.	20°C to 60/70/75°C			
			Zone 2 outdoor ambient temp. *2	-28°C to +35°C *8			
Adjust	Zone 1 outdoor ambient temp.	-29°C to +34°C *9					
	Zone 1 flow temp.	20°C to 60/70/75°C					
	Zone 2 outdoor ambient temp. *2	-29°C to +34°C *9					
Weather compensation curve (Cooling)	Hi flow temp. set point	Zone 1 outdoor ambient temp.	10°C to 46°C				
		Zone 1 flow temp.	5°C to 25°C				
		Zone 2 outdoor ambient temp. *2	10°C to 46°C				
	Lo flow temp. set point	Zone 1 outdoor ambient temp.	10°C to 46°C				
		Zone 1 flow temp.	5°C to 25°C				
		Zone 2 outdoor ambient temp. *2	10°C to 46°C				
Menu	Energy	Energy monitor	Consumed electrical energy/Delivered energy				
		Holiday	Schedule	On/Off/Set time			
			DHW *4	On/Off			
			Heating / Cooling *3	On/Off			
	Setting	Language	EN/CZ/DA/DE/ET/ES/FR/HR/IT/LV/LT/HU/NL/NO/PL/PT/RO/SK/SI/FI/SV/TR/EL/BG				
		Room sensors	Zone sensor selection *2	Zone 1/Zone 2			
			Zone 1 programme	TH1/Main RC/Room RC1-8/"Time/Zone"			
			Zone 2 programme *2	TH1/Main RC/Room RC1-8/"Time/Zone"			
		Display	Temp. (°C) → (°F)	On/Off			
			Touch screen	Clean screen	On/Off		
				Calibrate screen	On/Off		
				Brightness	Low / Mid / Hi		
				Backlight time	5sec./10sec./20sec./30sec./60sec./Always on		

Continued to next page.

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■ Engineers Forms

Commissioning/Field settings record sheet

Main remote controller screen			Parameters		Field setting	Notes			
Menu	Service	Thermistor adjustment	THW1	-10°C to +10°C					
			THW2	-10°C to +10°C					
			THW5B	-10°C to +10°C					
			THW6	-10°C to +10°C					
			THW7	-10°C to +10°C					
			THW8	-10°C to +10°C					
			THW9	-10°C to +10°C					
			THW10	-10°C to +10°C					
			THWB1	-10°C to +10°C					
			Auxiliary settings	Economy settings for pump.	On/Off *10				
		Delay (3 to 60 min.)							
		Electric heater (heating)		Space heating: On (used)/Off (not used)					
				Electric heater delay timer (5 to 180 min.)					
		Electric heater (DHW) *4		Booster heater	DHW: On (used)/Off (not used)				
				Immersion heater	DHW: On (used)/Off (not used)				
				Electric heater delay timer (15 to 30 min.)					
		Mixing valve 1 control		Running (10 to 240 sec.)					
				Interval (1 to 30 min.)					
		Mixing valve 2 control		Running (10 to 240 sec.)					
				Interval (1 to 30 min.)					
		Flow sensor *11		Minimum (0 to 100 L/min)					
				Maximum (0 to 100 L/min)					
		Analogue output		Interval (1 to 30 min.)					
				Priority (Normal / High)					
		Electric heater schedule *18	Daily schedule (Schedule 1/Schedule 2)						
			Time schedule 1 (Always/Start-Stop/Never)						
			Time schedule 2 (Always/Start-Stop/Never)						
		Pump speed	DHW	Pump speed (1 to 5)					
			Heating / Cooling	Pump speed (1 to 5)					
		Heat source setting	Standard / Heater / Boiler / Hybrid *12						
		Heat pump settings	Heat pump flow rate range		Minimum (0 to 100 L/min)				
					Maximum (0 to 100 L/min)				
			Quiet mode	Heating	Day (Mon to Sun)				
					Time				
				Quiet level (Normal/ Level1/ Level2/ Level3)					
			Cooling	Day (Mon to Sun)					
		Time							
		Quiet level (Normal/ Level1/ Level2/ Level3)							
		Operation settings	Heating operation	Flow temperature range *13	Minimum temp. (20 to 45°C)				
					Maximum temp. (35 to 60/70/75°C)				
				Room temperature control *13	Mode (Auto/Quick/Normal/Slow)				
					Interval (10 to 60 min.)*14				
			Heat pump thermo diff.	On/Off *10					
				Lower (-9 to -1°C)					
					Upper (+3 to +5°C)				
			Freeze stat function *15		Ambient temp. (3 to 20°C) / **				
			Simultaneous operation (DHW/ Heating)		On/Off *10				
			Cold weather function		Ambient temp. (-30 to +10°C) *7				
				On/Off *10					
				Ambient temp. (-30 to -10°C) *7					
		Boiler settings	Hybrid settings	Outdoor ambient temp. (-30 to +10°C) *7					
				Priority mode (Ambient/Cost/CO ₂) *16					
				Outdoor ambient temp. rise (+1 to +5°C)					
				Intelligent settings	Energy price *17	Electricity (0.001 to 999 */kWh)			
						Boiler (0.001 to 999 */kWh)			
			CO ₂ emission	Boiler	Electricity (0.001 to 999 kg -CO ₂ /kWh)				
					Boiler (0.001 to 999 kg -CO ₂ /kWh)				
					Boiler (0.001 to 999 kg -CO ₂ /kWh)				
			Heat source	Heat pump capacity (1 to 40 kW)					
				Boiler efficiency (25 to 150%)					
		Booster heater 1 capacity (0 to 30 kW)							
		Booster heater 2 capacity (0 to 30 kW)							

Continued to next page.

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Engineers Forms

Commissioning/Field settings record sheet (continued from the previous page)

Main remote controller screen				Parameters		Field setting	Notes	
Menu	Service	Operation settings	Smart grid ready	DHW	On/Off			
					Target temp. (+1 to +30°C) / -- (Non active)			
			Heating	On/Off				
				Target temp.	Switch-on recommendation (20 to 60/70/75°C) Switch-on command (20 to 60/70/75°C)			
			Cooling	On/Off				
				Target temp.	Switch-on recommendation (5 to 25°C) Switch-on command (5 to 25°C)			
			Pump cycles	Heating (On/Off)				
				Cooling (On/Off)				
				Interval (10 to 120 min.)				
			Floor dry up	On/Off *10				
				Target temperature	Start & End (20 to 60/70/75°C)			
					Max temperature (20 to 60/70/75°C)			
					Max temperature period (1 to 20 days)			
				Flow temperature increase	Temperature increase step (+1 to +30°C)			
					Increase interval (1 to 7 days)			
			Flow temperature decrease	Temperature decrease step (-1 to -30°C)				
				Decrease interval (1 to 7 days)				
			Summer mode	On/Off				
				Ambient temperature	Heating on (4 to 19°C)			
					Heating off (5 to 20°C)			
				Judgement time	Heating on (1 to 48 h)			
			Heating off (1 to 48 h)					
			Forced heating On (-30 to 10°C)					
			Auto change over	On/Off				
				Ambient temperature	Heat→Cool (10 to 40°C)			
					Cool→Heat (5 to 20°C)			
				Judgement time	Heat→Cool (1 to 48 h)			
			Cool→Heat (1 to 48 h)					
			Water flow control	On/Off				
				Water temperature difference *19	Heating (+3 to +20°C)			
					Cooling (+3 to +10°C)			
			Holiday mode	Zone 1 heating room temp.	10°C to 30°C			
				Zone 2 heating room temp. *1	10°C to 30°C			
				Zone 1 heating flow temp.	20°C to 60/70/75°C			
				Zone 2 heating flow temp. *2	20°C to 60/70/75°C			
				Zone 1 cooling flow temp. *3	5°C to 25°C			
				Zone 2 cooling flow temp. *3	5°C to 25°C			
			Zone prohibited	Heating (Zone 1)	Permitted/Prohibited			
				Heating (Zone 2)	Permitted/Prohibited			
				Cooling (Zone 1)	Permitted/Prohibited			
Cooling (Zone 2)	Permitted/Prohibited							

Continued to next page.

■ Engineers Forms

Commissioning/Field settings record sheet (continued from the previous page)

Main remote controller screen			Parameters	Field setting	Notes	
Menu	Service	Energy monitor settings	Electric heater capacity	Booster heater 1	0 to 30 kW	
				Booster heater 2	0 to 30 kW	
				Immersion heater	0 to 30 kW	
				Analogue output	0 to 30 kW	
			Delivered energy adjustment	-50 to +50%		
			Water pump input	Pump 1	0 to 200 W or ***(factory fitted pump)	
				Pump 2	0 to 200 W	
				Pump 3	0 to 200 W	
				Pump 4 *6	0 to 200 W	
			Electric energy meter	0.1/1/10/100/1000 pulse/kWh		
		Heat meter	0.1/1/10/100/1000 pulse/kWh			
		External input settings	Demand control (IN4)	Heat source OFF/Boiler operation		
			Outdoor thermostat (IN5)	Heater operation/Boiler operation		
			Cooling limit temp. (IN15)	Zone selection	Zone 1/Zone 2/Zone 1&2	
				Zone 1 lowest temperature	5°C to 25°C	
				Zone 2 lowest temperature	5°C to 25°C	
		Thermo on output	Zone 1/Zone 2/Zone 1&2			

- *1. The settings related to Zone 2 can be switched only when 2-zone temperature control or 2-zone valve ON/OFF control is active.
- *2. The settings related to Zone 2 can be switched only when 2-zone temperature control is enabled (when DIP SW 2-6 and SW 2-7 are ON).
- *3. Cooling mode settings are available for ERS* model only.
- *4. Only available if DHW tank is present in system.
- *5. For the model without both booster and immersion heater, it may not reach the set temperature depending on the outside ambient temperature.
- *6. This setting is valid for only cylinder units.
- *7. The lower limit is -15°C depending on the connected outdoor unit.
- *8. The lower limit is -13°C depending on the connected outdoor unit.
- *9. The lower limit is -14°C depending on the connected outdoor unit.
- *10. On: the function is active; Off: the function is inactive.
- *11. Do not change the setting since it is set according to the specification of flow sensor attached to the indoor unit.
- *12. When DIP SW1-1 is set to OFF "WITHOUT Boiler" or SW2-6 is set to OFF "WITHOUT Mixing tank", neither Boiler nor Hybrid can be selected.
- *13. Valid only when operating in Heating room temperature.
- *14. When DIP SW5-2 is set to OFF, the function is active.
- *15. If asterisk (**) is chosen freeze stat function is deactivated. (i.e. primary water freeze risk)
- *16. When the indoor unit is connected with a PUMY-P and PXZ outdoor unit, the mode is fixed to "Ambient".
- *17. *** of "*/kWh" represents currency unit (e.g. €, £, or the like)
- *18. Valid only during heating mode
- *19. To enable this function in the outdoor unit of PUZ-S(H)WM, switch the [Mode 7] in [Function settings] to "2".
([Menu] → [Service] → [Function settings], [Ref. add: 0], [Unit: 1] → [Mode 7], 1-High temperature control (default) / 2-Water temperature difference control)

5 Hydrobox

■ Refrigerant collecting (pumpdown) for split model systems only

Refer to "Refrigerant collection" in the outdoor unit installation manual or service manual.

■ Back-up operation of boiler

Heating operation is backed up by boiler.

For more details, refer to the installation manual of PAC-TH012HT-E.

<Installation & System set up>

1. Set DIP-SW 1-1 to ON "With boiler" and SW2-6 to ON "With Mixing tank".
2. Install the thermistor (Boiler flow water temp.) (THWB1) *1 on the boiler circuit.
3. Connect the output wire (OUT10: Boiler operation) to the signal input (room thermostat input) on the boiler. *2
4. Install one of the following room temperature thermostats. *3

- Wireless remote controller (option)
- Room temperature thermostat (local supply)
- Main remote controller (remote position)

<Main remote controller settings>

1. Go to [Service] menu, then [Heat source setting], and choose [Boiler] or [Hybrid]. *4
2. Go to [Service] menu, and choose [Operation settings], then [Boiler settings] to make detailed settings for [Hybrid settings].

*1 The boiler temperature thermistor is an optional part.

*2 OUT10 has no voltage across it.

*3 Boiler heating is controlled on/off by the room temp. thermostat.

*4 [Hybrid] automatically switches heat sources between heat pump (and electric heater) and boiler.

■ Multiple outdoor units control

To realize bigger systems by using multiple outdoor units, up to 6 units of the same model can be connected.

The hydrobox can be used as a sub unit for multiple outdoor unit control.

For more details, refer to the installation manual of the flow temperature controller [main] (PAC-IF081/082).

PAC-IF071/072B-E can not be connected to the hydrobox.

Check the model name of connecting main unit.

<DIP switch setting>

- Set DIP SW4-1 to ON "Active: multiple outdoor unit control".
- Keep DIP SW4-2 OFF (default setting) (main/sub setting: sub).
- Set DIP SW1-3 to ON when the hydrobox is connected to a DHW tank.

Note : SUZ-SWM/PXZ/PUMY-P outdoor unit is not available for multiple outdoor units control.



Mitsubishi Electric Erp Directive Related Product Information: erp.mitsubishielectric.eu/erp
 Details and precautions on installation, maintenance and assembly can be found in the installation and or operation manuals.
 This information is based on EU regulation No 811/2013 and No 813/2013.

PRODUCT FICHE OF TEMPERATURE CONTROLS

1	Parts name	5	Main Remote controller	7	Wireless remote controller & receiver
2	Model name	6	(Indoor Unit Accessory)		PAR-WT60R-E & PAR-WR61R-E
3	The class of the temperature control		VI		VI
4	The contribution to seasonal space heating energy efficiency (%)		4		4

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8	Flow sensor	C-42

1 Optional parts list

Hydro-Split model

<Indoor unit (Cylinder unit)>

Parts name	Model name	Specification	Cylinder unit							
			EHPT17X-VM2E	EHPT17X-VM6E	EHPT17X-YM9E	EHPT20X-YM9E	EHPT20X-TM9E	EHPT20X-MEHEW	EHPT30X-YM9EE	ERPT17X-VM2E
Wireless remote controller	PAR-WT60R-E		x	x	x	x	x	x	x	x
Wireless receiver	PAR-WR61R-E		x	x	x	x	x	x	x	x
Thermistors	PAC-SE41TS-E	For room temp.	x	x	x	x	x	x	x	x
	PAC-TH011-E	For zone (flow and return temp.)	x	x	x	x	x	x	x	x
	PAC-TH012HT-E	For boiler and buffer (5 m)	x	x	x	x	x	x	x	x
	PAC-TH012HTL-E	For boiler and buffer (30 m)	x	x	x	x	x	x	x	x
Immersion heater	PAC-IH01V2-E	1Ph 1kW	x	x	x	x	x	-	x	x
	PAC-IH03V2-E	1Ph 3kW	x	x	x	x	x	-	x	x
EHPT accessories for UK	PAC-WK02UK-E		-	-	-	-	-	x	-	-
Wi-Fi interface	MAC-587IF-E		x	x	x	x	x	x	x	x
2 zone kit	PAC-TZ02-E2		x	x	x	x	x	x	x	x
Expansion vessel kit	PAC-EVP12-E1	12L	-	-	-	-	-	x	x	-

<Indoor unit (Cylinder unit)>

Parts name	Model name	Specification	Cylinder unit					
			ERPT20X-VM2E	ERPT20X-VM6E	ERPT20X-YM9E	ERPT30X-VM2EE	ERPT30X-VM6EE	ERPT30X-YM9EE
Wireless remote controller	PAR-WT60R-E		x	x	x	x	x	x
Wireless receiver	PAR-WR61R-E		x	x	x	x	x	x
Thermistors	PAC-SE41TS-E	For room temp.	x	x	x	x	x	x
	PAC-TH011-E	For zone (flow and return temp.)	x	x	x	x	x	x
	PAC-TH012HT-E	For boiler and buffer (5 m)	x	x	x	x	x	x
	PAC-TH012HTL-E	For boiler and buffer (30 m)	x	x	x	x	x	x
Immersion heater	PAC-IH01V2-E	1Ph 1kW	x	x	x	x	x	x
	PAC-IH03V2-E	1Ph 3kW	x	x	x	x	x	x
EHPT accessories for UK	PAC-WK02UK-E		-	-	-	-	-	-
Wi-Fi interface	MAC-587IF-E		x	x	x	x	x	x
2 zone kit	PAC-TZ02-E2		x	x	x	x	x	x
Expansion vessel kit	PAC-EVP12-E1	12L	-	-	-	x	x	x

<Indoor unit (Hydrobox)>

Parts name	Model name	Specification	Hydrobox			
			ERPX-ME	ERPX-VM2E	ERPX-VM6E	ERPX-YM9E
Wireless remote controller	PAR-WT60R-E		x	x	x	x
Wireless receiver	PAR-WR61R-E		x	x	x	x
Thermistors	PAC-SE41TS-E	For room temp.	x	x	x	x
	PAC-TH011-E	For zone (flow and return temp.)	x	x	x	x
	PAC-TH011TK2-E	For tank temp. (5 m)	x	x	x	x
	PAC-TH011TKL2-E	For tank temp. (30 m)	x	x	x	x
	PAC-TH012HT-E	For boiler and buffer (5 m)	x	x	x	x
	PAC-TH012HTL-E	For boiler and buffer (30 m)	x	x	x	x
Wi-Fi interface	MAC-587IF-E		x	x	x	x
2 zone kit	PAC-TZ02-E2		x	x	x	x
Expansion vessel kit	PAC-EVP12-E1	12L	-	-	-	-

1 Optional parts list

<Outdoor unit>

Parts name	Model name	Power Inverter					
		PUZ-WZ50VAA (-BS)	PUZ-WZ60VAA (-BS)	PUZ-WZ80VAA (-BS)	PUZ-WZ85V/YAA (-BS)	PUZ-WZ100V/YAA (-BS)	PUZ-WZ120V/YAA (-BS)
Connector for Drain Hose Heater Signal Output	PAC-SE60RA-E	-	-	-	x	x	x
	MAC-063RA-E	x	x	x	-	-	-
Air discharge Guide	PAC-SH96SG-E	x ²	x ²	x ²	x ²	x ²	x ²
Air Protection Guide	PAC-SH95AG-E	x ²	x ²	x ²	x ²	x ²	x ²
Attachment	PAC-SJ82AT-E	x	x	x	x	x	x
Drain Socket	PAC-SG61DS-E	x	x	x	x	x	x
Centralized Drain Pan*1	PAC-SJ83DP-E	x	x	x	x	x	x
Control/Service Tool	PAC-SK52ST	x	x	x	x	x	x

*1 Cannot be used for cold climate.

*2 Attachment (PAC-SJ82AT-E) is necessary for the Air Guide.

<Interface/Flow temperature control>

Parts name	Model name	Specification	Power Inverter					
			PUZ-WZ50VAA (-BS)	PUZ-WZ60VAA (-BS)	PUZ-WZ80VAA (-BS)	PUZ-WZ85V/YAA (-BS)	PUZ-WZ100V/YAA (-BS)	PUZ-WZ120V/YAA (-BS)
Flow Temperature Controller	PAC-IF033B-E	1 PC Board w/ Case	x ³	x ³	-	x ³	x ³	x ³
	PAC-IF081B-E		x ³	x ³	x ³	x ³	x ³	x ³
	PAC-IF082B-E		x ³	x ³	x ³	x ³	x ³	x ³
	PAC-IF083B-E		x ³	x ³	x ³	x ³	x ³	x ³
Flow sensor	PAC-FS01-E	1 PC Flow sensor	x	x	x	x	x	x
Thermistor	PAC-TH011-E		x	x	x	x	x	x

*3 Flow sensor (PAC-FS01-E) is required.

1 Optional parts list

CONTENTS

Parts name	Model name	Contents	Q'ty
Air discharge guide	PAC-SH96SG-E	Air discharge guide	1
		Support	1
		Screw(5×15)	12
		Washer	12
		Spring washer	12
Air protection guide	PAC-SH95AG-E	Air guide	1
		Mounting screw (5×15)	6
		Washer	6
		Spring washer	6
Drain socket	PAC-SG61DS-E	Drain socket	1
		Drain cap (φ33)	5
		Heat insulator	3
		Band	8
Centralized drain pan	PAC-SJ83DP-E	Centralized drain pan	1
Thermistors	PAC-TH011-E	For zone (flow and return temp.)	20 ¹⁾
	PAC-TH012HT-E	For boiler and buffer (5m)	10 ²⁾
	PAC-TH012HTL-E	For boiler and buffer (30m)	5 ³⁾
2 zone kit	PAC-TZ02-E2	2 zone kit	1
		Flexible hose	2
		Conversion joint	2
		Gasket	4
Attachment	PAC-SJ82AT-E	Attachment	2
		Mounting screw 5×15	8
		Washer	8
		Spring washer	8
Wi-Fi interface	MAC-587IF-E	Interface unit (with connecting cable)	1
		Fixing screw 3.5×16 mm	2
		Fixing screw 4×16 mm	1
		Mounting cord clamp	1
		Fastener (for bundling the wires)	1
		Holder	1
Expansion vessel kit	PAC-EVP12-E1	Expansion vessel 12L	1
		5 bar pressure relief valve	1
Drain hose heater connector	MAC-063RA-E	Terminal block	1
		Screw	1
		Lead wire with connector	1
Air discharge guide	PAC-SH96SG-E	Air discharge guide	1
		Support	1
		Screw(5×15)	12
		Washer	12
		Spring washer	12
Air protection guide	PAC-SH95AG-E	Air guide	1
		Mounting screw (5×15)	6
		Washer	6
		Spring washer	6
Drain socket	PAC-SG61DS-E	Drain socket	1
		Drain cap (φ33)	5
		Heat insulator	3
		Band	8
Centralized drain pan	PAC-SJ83DP-E	Centralized drain pan	1
Thermistors	PAC-TH011-E	For zone (flow and return temp.)	20 ¹⁾
	PAC-TH012HT-E	For boiler and buffer (5m)	10 ²⁾
	PAC-TH012HTL-E	For boiler and buffer (30m)	5 ³⁾
2 zone kit	PAC-TZ02-E2	2 zone kit	1
		Flexible hose	2
		Conversion joint	2
		Gasket	4
Attachment	PAC-SJ82AT-E	Attachment	2
		Mounting screw 5×15	8
		Washer	8
		Spring washer	8
Wi-Fi interface	MAC-587IF-E	Interface unit (with connecting cable)	1
		Fixing screw 3.5×16 mm	2
		Fixing screw 4×16 mm	1
		Mounting cord clamp	1
		Fastener (for bundling the wires)	1
		Holder	1
Expansion vessel kit	PAC-EVP12-E1	Expansion vessel 12L	1
		5 bar pressure relief valve	1

Notes:

- 1) Two thermistors per package; 10 packages per carton
- 2) One thermistors per package; 10 packages per carton
- 3) One thermistors per package; 5 packages per carton

2 ATW wireless system

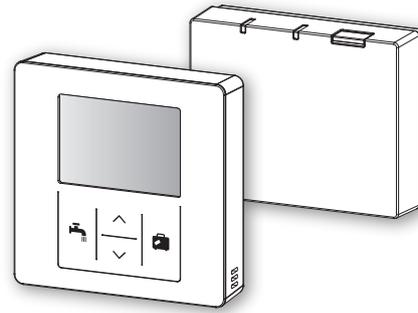


ecodan

Wireless Remote Controller
and Receiver

PAR-WT60R-E

PAR-WR61R-E



UK
CA CE



This manual explains installation of the PAR-WR61R-E wireless receiver and the PAR-WT60R-E wireless remote controller, and settings of these devices. Before installing the devices, read this manual thoroughly. After reading, be sure to hand this manual to the user.

1. Safety precautions

- The precautions mentioned below are important to use the device safely. Be sure to understand and follow them.
- The following hazardous classification shows the likelihood and severity of hazards if a person does not follow the instructions contained on the following signs.

Warning	Indicates a hazardous situation which, if a person does not follow the instructions, could result in death or serious injury.
Caution	Indicates a potentially hazardous situation that, if a person does not follow the instructions, may result in bodily injury or property damage.

Warning	
► Installation	
Do not use the device in particular environments.	Do not use the device in particular environments where the following substances are present in large amounts: oil, vapour, organic solvent, corrosive gas (such as ammonia, sulphuric compounds, and acid or the like), or where acid or alkali solution, or particular sprays are used frequently. This could affect operating performance, or cause corrosion, which could result in electrical shock, breakdown, smoke generation, or fire.
Do not place the devices in an environment where flammable gas may occur, stay, flow in, or leak.	Build-up of flammable gas could result in fire or explosion.
The device must be installed by a dealer or an authorised technician according to the appropriate installation manual.	If the device is installed improperly, electric shock or fire could result.
Do not place the device in an environment that exposes it to large amounts of vapor or condensation.	Electric shock, fire, or breakdown could result.
► Wiring	
The wireless receiver's maximum voltage is 12V DC. Do not connect 230V AC power source to the wireless receiver.	Breakdown, ignition, or fire could result.
Connections must be made securely and without tension or external force on the terminals.	If connections are made improperly, breaking of wire, heat generation, or fire could result.
► Others	
Do not use sharp objects to press the buttons.	Electric shock or breakdown may result.
Do not touch or operate the device with wet hands.	Electric shock or breakdown may result.
Do not wash the device with water or solution or the like.	Electric shock or breakdown may result.
When installing or repairing the device, ask a dealer or a qualified technician.	If the device is not installed properly, electric shock, smoke generation, or fire could result from entry of dust or water.
Do not disassemble or modify.	

2 ATW wireless system

⚠ Caution

Do not drop the device.	This could break the case or affect the device enough to make it inoperable.
Install the device in a place capable of bearing its own weight .	If the device is not installed securely or properly, the wireless receiver may fall.

■ Disposal

This symbol mark is for EU countries only.



This symbol mark is according to the directive 2002/96/EC Article 10 Information for users and Annex IV, and/or to the directive 2006/66/EC Article 20 Information for end-users and Annex II.

Your MITSUBISHI ELECTRIC product is designed and manufactured with high quality materials and components which can be recycled and/or reused. This symbol means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste. If a chemical symbol is printed beneath the symbol, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration.

This will be indicated as follows: Hg: mercury (0.0005%), Cd; cadmium (0.002 %), Pb: lead (0.004%)

In the European Union there are separate collection systems for used electrical and electronic products, batteries and accumulators.

Please, dispose of this equipment, batteries and accumulators correctly at your local community waste collection/recycling centre.

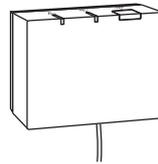
Please, help us to conserve the environment we live in!

2. Accessories and installation tool

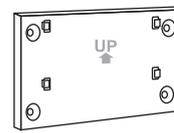
The following items are included in the box.

Part name	No.
① Wireless receiver <PAR-WR61R-E> (2 m long cable included)	1
② Bracket	1
③ Flat head screw (4.1 × 6)	4
④ Installation and setting manual	1

①



②



③



* Installing of the devices requires a Phillips-head screwdriver (No.2 6 mm).

■ How to read the year of manufacture

The year of manufacture is indicated on the wireless remote controller and receiver as below.

L * * * * * S * * * * *

Month of manufacture : 1,2,3,4,5,6,7,8,9,X(10),Y(11),Z(12)

Year of manufacture (western calendar) 2=2022, 3=2023

3. Before using ATW wireless system

Following is the summary of the procedure for installing and setting the wireless system.

1. Devices and manuals required to set and install the wireless system

- ① PAR-WT60R-E wireless remote controller
- ② PAR-WR61R-E wireless receiver
- ③ ATW wireless system installation and setting manual (this manual)
- ④ Wireless remote controller operation manual (hereinafter abbreviated as OM)
- ⑤ Ecodan system installation manual (hereinafter abbreviated as IM)

2. Installing and setting procedure

- ① Power off the ecodan system.
- ② Install the wireless receiver on the ecodan system.
(See "4. Installing the Wireless Receiver" in this manual.)

When installing the wireless receiver, be sure to set the SW1-8 on the control board to ON. (See "5.1 DIP Switch Functions" in IM.)

- ③ Power on the ecodan system, and the LEDs will blink on the receiver for 3 seconds.
- ④ Place two AA alkaline batteries in the wireless remote controller.
(See "Batteries" in "4. Before Operation" in OM.)
- ⑤ Perform pairing process between the wireless receiver and the remote controller.
(See "5. Pairing process" in this manual.)

The wireless receiver does not go through a pairing process unless the ecodan system is off. When the system is ON, be sure to turn it off before beginning the pairing process.

2 ATW wireless system

- ⑥ Test wireless communication between the wireless remote controller and the wireless receiver.
(See "6.4 Communication Test" in "6. Setting wireless remote controllers" in this manual.)
- ⑦ Position the wireless remote controller in an appropriate place.
(See "4. Before Operation" in OM.)
- ⑧ To set the wireless remote controller as a room sensor that monitors room temperature, see "Main remote controller Options" in IM.
- ⑨ Use the main controller to set the ecodan system to the room temp. (🏠) mode.
When the flow temp. (💧) mode or the compensation curve (📈) mode is selected, the wireless remote controller will operate as a thermostat. (See "Main remote controller" in IM.)

When the remote controller set as a room sensor runs out of battery or gets a communication error during room temp. mode, the room temp. mode will automatically switch to the compensation curve mode. The room temp. mode will be restored by battery replacement or solution of communication error.

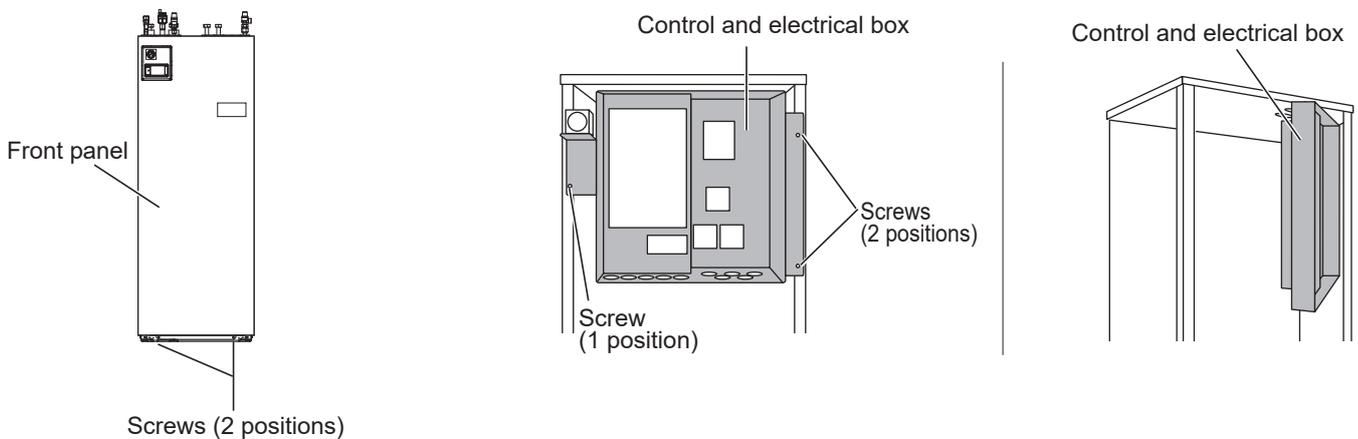
Installation and setting of the wireless remote controller is complete. To set additional wireless remote controllers, repeat Step ④ to ⑧.

4. Installing Wireless Receiver

4.1. Connecting to Cylinder unit

* Before installation, be sure to turn off the main power supply.

- ① Remove the two screws that hold the front panel, and remove the panel.
- ② Remove the screw and pull the control and electrical box so that the control and electrical box is swung toward you from left.

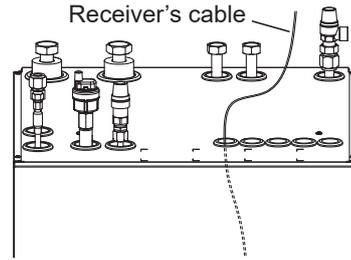


If the removed front panel is set aside away from the indoor unit, ensure the relay connector on Main remote controller is disconnected.

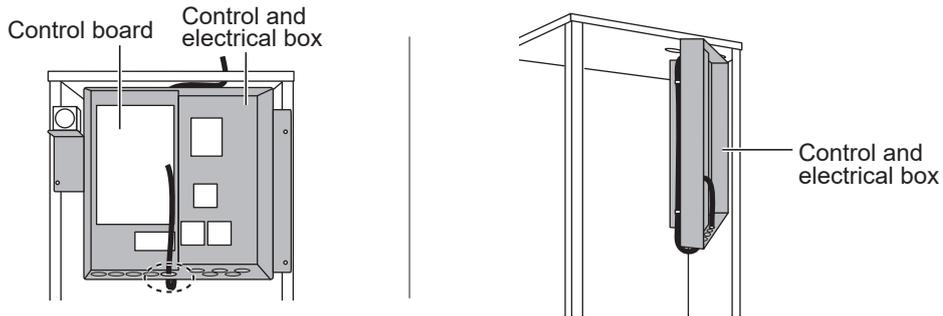
2 ATW wireless system

- ③ Run the receiver's cable into the cylinder unit through the inlet as shown on the figure.

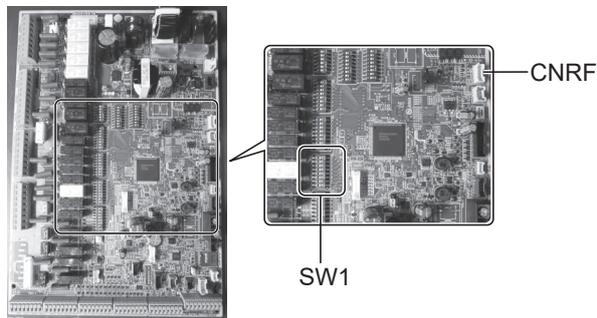
Do not run the receiver's cable through an inlet that a power cable goes through and do not bundle the cable together with a power cable.



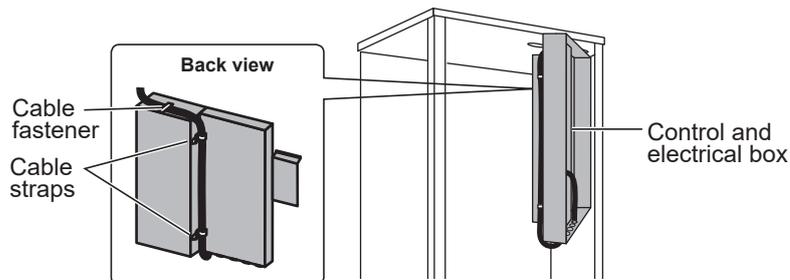
- ④ Route the cable out the back of the control and electrical box, and run the cable into the box through the shown inlet in the underside of the box.



- ⑤ Connect the cable connector to the CNRF terminal on the control board. Switch ON SW1-8.



- ⑥ Remove excessive slack on the cable, then secure the cable with a cable fastener and 2 cable straps on the upper side and center on the back of control and electrical box.

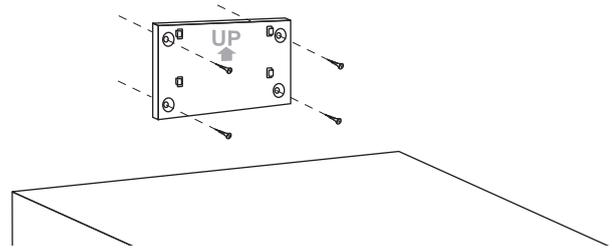


2 ATW wireless system

⑦ Place the control and electrical box back in the original position and reinstall the 3 screws.

⑧ Check the maximum reach of the cable and install the bracket on the wall with screws.

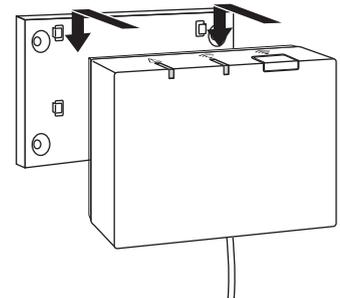
Do not excessively pull the cable when checking the maximum reach.



<Notice>

- **Do not overtighten the screws.**
 - ▶ The bracket may deform or break.
- **When installing the bracket, select an interference-free space.**
 - ▶ Keep the installing area at least 10 cm away from metal or a wall box. If unable to do so, always place the room wireless remote controllers in locations where the communication test determines that the wireless remote controllers are fully capable of communication with the wireless receiver.
- **Do not install the bracket with screws on the exterior casing of the cylinder unit.**
 - ▶ The internal parts may be damaged, which could result in breakdown of the indoor unit.
- **Do not install the bracket where the receiver could be exposed to moisture or leaked water from piping connections above.**
 - ▶ The wireless receiver subjected to moisture or leaked water could cause electric shock, fire, or its breakdown.

⑨ Place the wireless receiver on the fixed bracket. Hook the holes on the back of the wireless receiver onto the projections on the bracket, and fix the wireless receiver in place.



<Notice>

- **Do not place the wireless receiver inside the cylinder unit.**
 - ▶ Both the wireless receiver and its wire may break due to heat inside the indoor unit.
- **Do not let the wireless receiver stand on top of the cylinder unit. Always fix the wireless receiver onto the bracket.**
 - ▶ Wireless communication performance may be affected.
- **Do not pull the cable excessively.**
 - ▶ Breakdown, ignition, or fire may result.
- **Do not have the wireless receiver suspended.**
 - ▶ Breakdown, ignition, or fire may result.

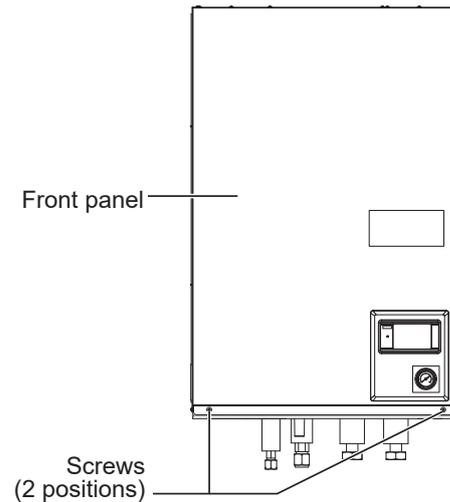
⑩ Fix the front panel with screws.

2 ATW wireless system

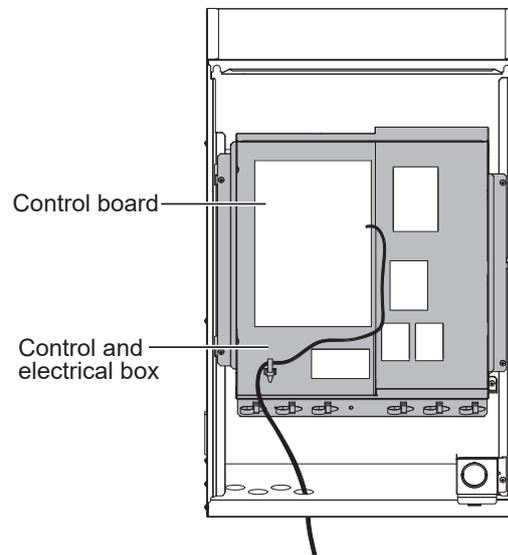
4.2. Connecting to Hydrobox

* Before installation, be sure to turn off the main power supply.

- ① Remove the two screws that hold the front panel, and remove the panel.



- ② Route the receiver's cable into the hydrobox through the leftmost inlet at the bottom of the unit. Then route into the control and electrical box through the shown inlet at the bottom of the control and electrical box.

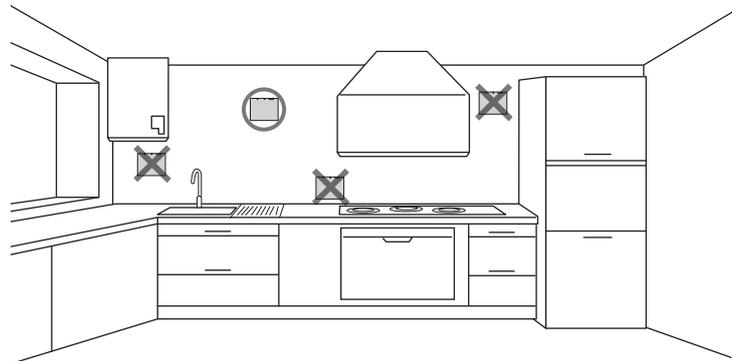


- Do not bundle the receiver cable with a power cable.
- Do not run the cable through an inlet that a power cable goes through.

Refer to ⑥, ⑦, and ⑧ in "4.1. Connecting to Cylinder unit" in this manual for the procedures ③ and ④.

When installing the wireless receiver, observe the following.

- Keep the other electric or electronic devices (e.g. radio, induction heating cooker, microwave oven, refrigerator, and mobile phone or the like) at least 50 cm away from the wireless receiver.
- Place the wireless receiver in an interference-free area and keep the wireless receiver away from metal.



Refer to ⑨ and ⑩ in "4.1. Connecting to Cylinder unit" in this manual for the procedures ⑤ and ⑥.

2 ATW wireless system

5. Pairing process

- If the wireless remote controller is not paired, the indoor unit cannot be operated using the remote controller.
- Before using the wireless remote controllers, always ensure to go through a pairing process.
- Pairing is NOT possible unless the ecodan system is off. When the ecodan system is ON, be sure to turn it off before starting the pairing process.
- The wireless receiver is also needed for pairing, so please make sure to operate the wireless remote controller near the wireless receiver.
- Do not pair multiple wireless remote controllers with the receiver at the same time.

- When the remote controller operating, be sure to touch the buttons with your fingers or Stylus pen.
- ▶ The operation panel may not work properly in the following cases.
 - * The operation panel or your finger is wet or dirty.
 - * The operation panel is touched with a gloved finger or a finger with a bandage.
 - * The operation panel is touched with a sharp-pointed instrument.If the operation panel does not respond to touch on the screen, release your finger from the screen and touch it again.

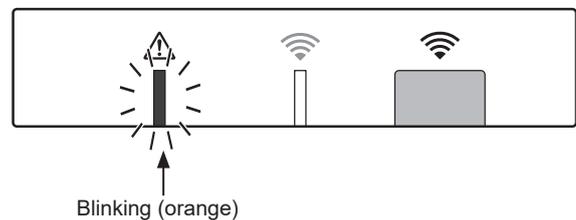
Touching the screen again without pause may result in false detection. Touching on the screen strongly does not enhance the detection sensitivity.

The response of operation panel depends on the ambient temperature and humidity, physical condition of the user, and operating conditions of the electric appliances.

- ① Press  button on the wireless receiver for 3 seconds or more until orange  LED blinks.

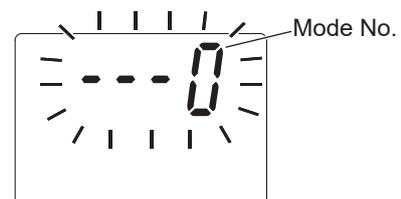
The pairing mode is cancelled by pressing  button.

<Receiver Top view>

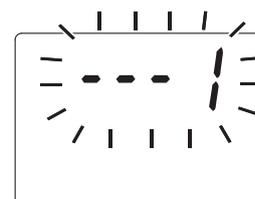


- ② Touch,  and  buttons simultaneously for at least 3 seconds until the mode number blinks.

<Remote controller Display>



- ③ Touch  or  button to set the mode number to "1" and touch  button.



2 ATW wireless system

- ④ When  button is touched in the middle of setting, the screen returns to the previous indication.

When  appears on the display, do not perform pairing. The power may be turned off in the middle of pairing, which may lose the pairing information.

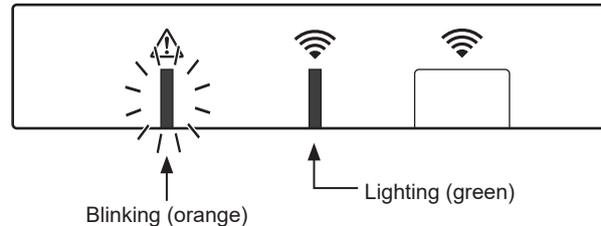
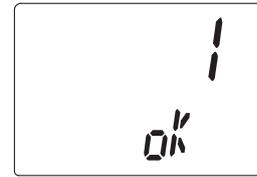
- ⑤ Touch  or  button to select a pairing address, and touch  button to set the address.
"•" (no setting) is displayed initially. Choose a number from 1 to 8.

After touching  button, the wireless remote controller starts communication with the wireless receiver.

When using multiple wireless remote controllers in one ecodan system, be sure to set different address for each remote controller.

- ⑥ When the pairing process has been successfully performed, "ok" is shown on the remote controller and green  LED steadily lights on the wireless receiver.

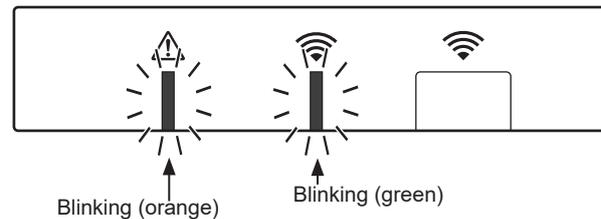
<Pairing is successful>



When "Err" appears on the remote controller and green  LED on the wireless receiver blinks, correctly repeat the same process from step 5.

Even if the pairing process failed, the wireless receiver stays in the pairing mode for 5 minutes unless cancelled.

<Pairing is unsuccessful>



<<Main causes that prevent successful pairing>>

- **The wireless receiver does not enter the pairing mode.**
 - ▶ Press  button for 3 seconds or more until orange  LED blinks.
Make sure to turn off the ecodan system by main controller.
- **Pairing is attempted outside the transmission range of the wireless receiver.**
 - ▶ Adjust the distance between the wireless receiver and remote controller, and so try again.
If the distance is excessively short, pairing may fail. Keep the distance of about 50 cm.
- **The wireless remote controller has been already paired with the wireless receiver.**
 - ▶ The pairing address assigned to a wireless remote controller cannot be changed by remote controller. Use the wireless receiver to reset pairing information. (Refer to "(3) Resetting pairing information" in "7.3. Wireless Receiver Functions".)

Even when power fails or when the batteries run down, the pairing information will be kept.

2 ATW wireless system

6. Setting wireless remote controllers

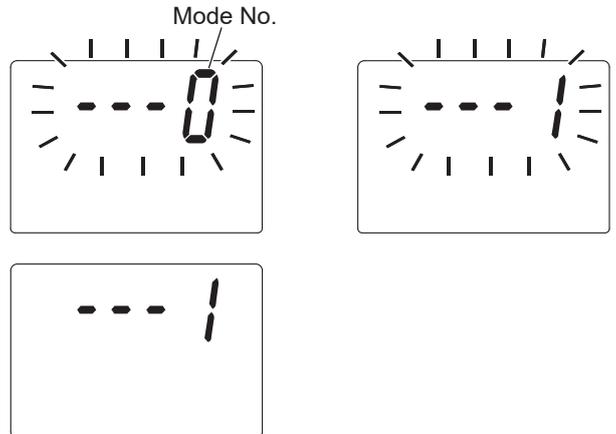
① Touch,  and  buttons simultaneously for at least 3 seconds until the mode number blinks.

② Touch  or  button to choose a mode number.

③ Confirm setting by touching  button.
The display stops blinking and lights steadily.

When  button is touched in the middle of setting, the screen returns to the previous indication.

<Remote controller Display>



Mode No.	Names	Functions	Initial settings
0	Pairing address display	To view the own pairing address of the wireless remote controller.	
1	Pairing	To perform a pairing process with the wireless receiver.	
2	Temperature unit	To select °C or °F.	°C
3	Communication test	Communication test with the wireless receiver.	
4	Room temperature display	Actual room temperature display	ON
5	Automatic zone no. display	To enable or disable automatic zone no. display.	OFF

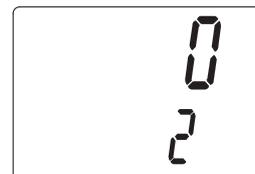
Optional parts

6.1. Viewing Address Number (Mode No. 0)

Set the mode no. to "0".

The display to the right shows that the address is set to "2".

<Remote controller Display>



6.2. Pairing (Mode No. 1)

For details, refer to "5. Pairing process".

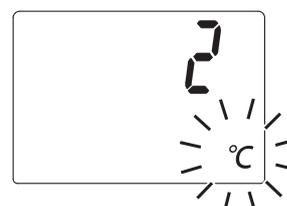
6.3. Selecting the Temperature Unit (Mode No. 2)

Set the mode no. to "2".

The temperature reading can be selected between Celsius (°C) or Fahrenheit (°F).

Touch  or  button to select °C or °F and touch  button to confirm the selection.

<Remote controller Display>



2 ATW wireless system

6.4. Communication Test (Mode No. 3)

Set the mode no. to "3".

Communication test is performed between the wireless remote controller and the wireless receiver.

When the display shows "OK", this indicates that the communication between the remote controller and the receiver is established. If "Err" is shown, the wireless remote controller is not communicating with the wireless receiver.

Do not leave the wireless remote controller in a location where the communication test results in "Err".

Before conducting the communication test, ensure that the wireless remote controller goes through a pairing process. Do not conduct the communication test on multiple remote controllers at the same time.

6.5. Displaying or Hiding Room Temperature (Mode No. 4)

Set the mode no. to "4".

Select either displaying or hiding the room temperature.

Touch  or  button to select displaying or hiding the room temperature, and touch  button to save the setting.

Hiding : " - - -".

Displaying : Actual room temperature is displayed

When the indoor unit is operating, the room temperature display shows the actual room temperature (18°C) above and the set temperature (20°C) below as shown in the figure to the right. The measurable temperature range is from 0°C to 40°C.

If the measured room temperature is out of 0°C to 40°C range, the room temperature display blinks.

<Remote controller Display>



When the wireless remote controller is installed on a bracket, room temperature might not be accurate being affected by the wall temperature. Perform a test run and place the remote controller where the room temperature can be correctly detected.

6.6. Automatic Zone No. Display (Mode No. 5)

Set the mode no. to "5".

When the automatic zone no. display is active, a zone number assigned to the remote controller is displayed for 3 seconds after temperature setting.

Touch  or  button to select between "- - -" and z_1 or z_2 , and touch  button to save setting.

Inactive : " - - -".

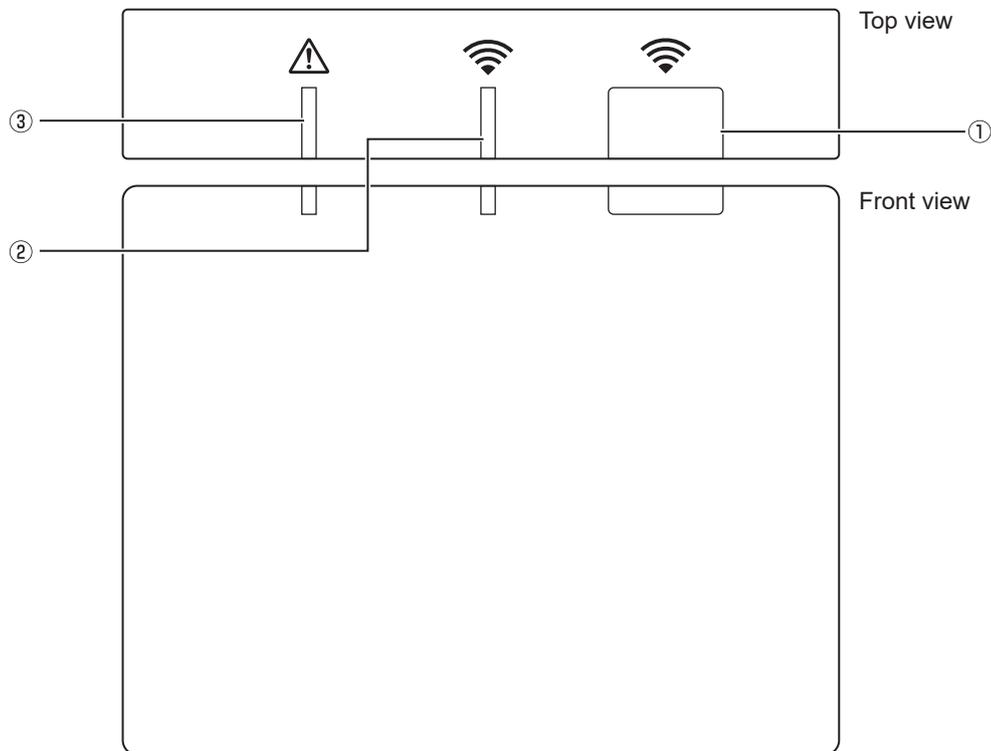
Active : The zone no. (z_1 or z_2) assigned to the remote controller is shown.

2 ATW wireless system

7. Wireless Receiver Operation

The wireless receiver is powered by indoor unit. It communicates with the wireless remote controller(s), and transmits to the indoor unit the operation status and commands received from the wireless remote controller(s). The wireless receiver has two modes available: pairing mode and pairing reset mode.

7.1. Functions of Buttons and Displays



Number	Item	Description
①	Setting button	To switch operating mode.
②	Communication LED (green)	To indicate that the wireless receiver is communicating.
③	Operation LED (orange)	To show operating status of the wireless receiver.

The following table shows the operating and illuminating status of the LEDs.

Operation LED (orange)	Communication LED (green)	Description
Blinking	Blinking	Power is ON (for 3 seconds).
Off	Off	Normal mode: Not paired
Off	On	Normal mode: Paired
Off	Blinking	Normal mode: Communicating
Blinking	Off	Performing a pairing process
Blinking	On	Pairing: Successful
Blinking	Blinking	Pairing: Unsuccessful
On	On	Pairing information is cleared.

2 ATW wireless system

7.2. Turning on Power

When the wireless receiver is powered by indoor unit after installation, green  LED and orange  LED blink for 3 seconds.

Power ON



7.3. Wireless Receiver Functions

(1) Normal mode

When the wireless receiver is paired with a wireless remote controller, green  LED comes on. When the wireless receiver is communicating with a wireless remote controller, green  LED blinks.

Not paired



Paired



Transmitting



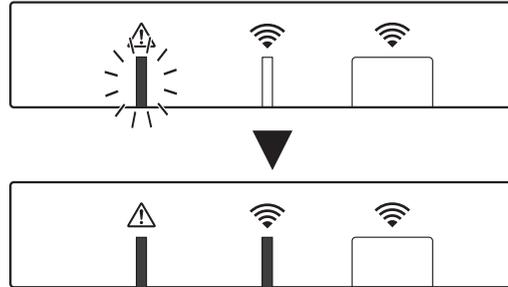
(2) Pairing mode

For details, refer to "5. Pairing process" in this manual.

(3) Resetting pairing information

Once pairing information has been cleared, ALL the wireless remote controllers need go through a pairing process again.

Press  button for 5 seconds or more until  and  LED light while pairing mode is active. All the pairing information is cleared.



8. Specifications

Item	Description
Power source	12V DC (powered by indoor unit)
Operating temperature and humidity requirements	Temperature: 0 to 40°C Humidity 30 to 90%RH (No condensation)
Weight	150 g (excluding a cable)
Dimension (W×H×D)	100 mm × 80 mm × 30 mm
Transmitter power level (MAX)	10 dBm
Frequency	868.3 MHz

2 ATW wireless system

9. FAQ

Questions	Answers
How many wireless remote controllers are allowed to be paired?	Up to 8 controllers.
What should be noted about Pairing?	<ul style="list-style-type: none"> • The same address cannot be assigned to multiple remote controllers • If the same address is assigned to multiple controllers, the address can be assigned to only the last paired remote controller. • Once the remote controller is paired, its pairing address cannot be changed by remote controller. Use the wireless receiver to reset pairing information.
What causes a communication error between the wireless remote controller and wireless receiver?	<p>Check the following possible causes.</p> <ul style="list-style-type: none"> • The batteries on the wireless remote controller are running out. • The transmitted signal does not reach the wireless receiver. • The wireless remote controller is not paired.
What measures should be taken when the room temp. display indicates "1" with  and LED light blinks?	The indoor unit or outdoor unit has a failure. Refer to the indications on the main controller and take appropriate measures. Please also check installation and service manuals for the indoor unit.
What measures should be taken when the room temp. display indicates "2" with  and LED light blinks?	The thermistor inside the wireless remote controller has a failure. Check the resistance of the thermistor. (When the room temperature is between 0 and 40°C, the resistance must be between 5 and 28 kΩ.)
What measures should be taken when the room temp. display indicates "3" with  and LED light blinks?	<p>A communication error occurs between the wireless remote controller and the wireless receiver. Check the following possible causes.</p> <ul style="list-style-type: none"> • The signal that is transmitted by the wireless remote controller does not reach the wireless receiver. • The wireless remote controller is not paired.
What measures should be taken when the room temp. display indicates "4" with  and LED light blinks?	<p>A communication error occurs between the wireless receiver and the indoor unit. Check the following possible causes.</p> <ul style="list-style-type: none"> • The cable connecting between the wireless receiver and the indoor unit has severed. • The wireless receiver is not correctly connected to the indoor unit.
What measures should be taken when the room temp. display indicates "E" with  and LED light blinks?	<p>Backup heater is running due to a failure of the indoor unit or the outdoor unit. Check the error code displayed on the main controller and take appropriate measures accordingly.</p> <p>The holiday mode is NOT available during backup heater only operation.</p>



ATW/BTW UNIT OPTIONAL PARTS IMMERSION HEATER (1Ph 1/3kW) PAC-IH01V2-E / PAC-IH03V2-E

INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the ATW/BTW unit.
- Please read carefully and observe fully the following safety precautions.

⚠ WARNING Precaution that must be observed to prevent injuries or death.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user.
Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

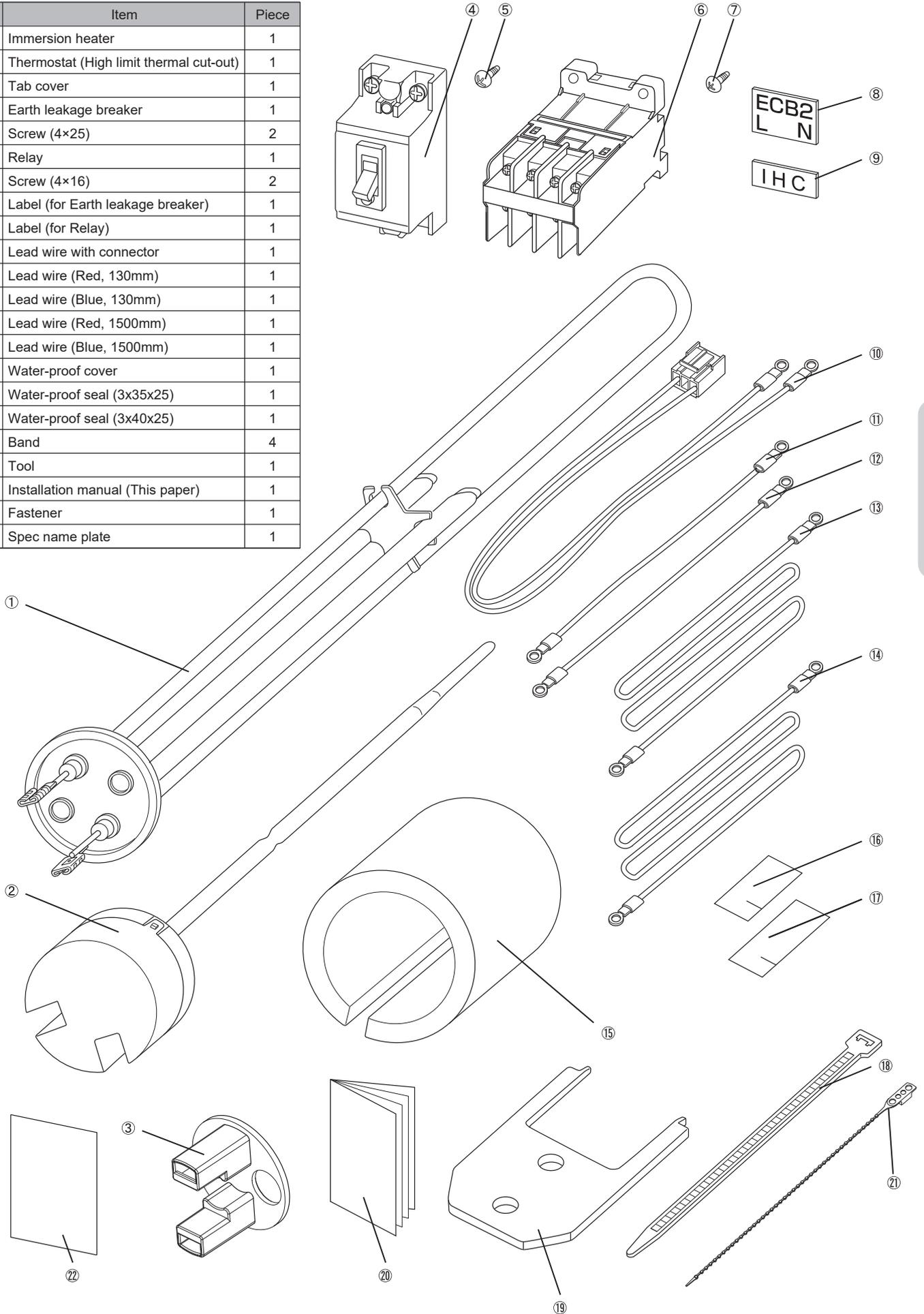
⚠ WARNING

- If the ATW/BTW unit has already been connected to the power supply ensure circuit breaker is off before carrying out electrical work.
- If the immersion heater is installed incorrectly or modified after installation by the user, water leakage, electric shock or fire may result.
- All electrical work should be performed by a qualified technician according to local regulations and the instructions given in this manual.
- The immersion heater must be powered by a dedicated power supply and the correct voltage and correctly sized circuit breakers must be used.
- Connections must be made securely and without tension on the terminals.
The included component parts of the PAC-IH01V2-E / PAC-IH03V2-E IMMERSION HEATER (1Ph 1/3kW) shall be used only for the purposes indicated in the installation manual.

3 Immersion heater

Contents

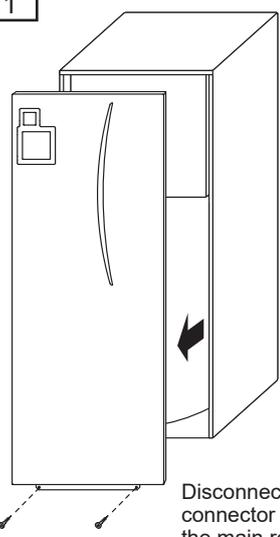
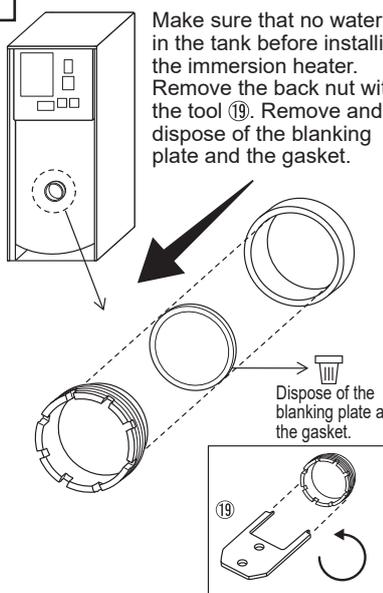
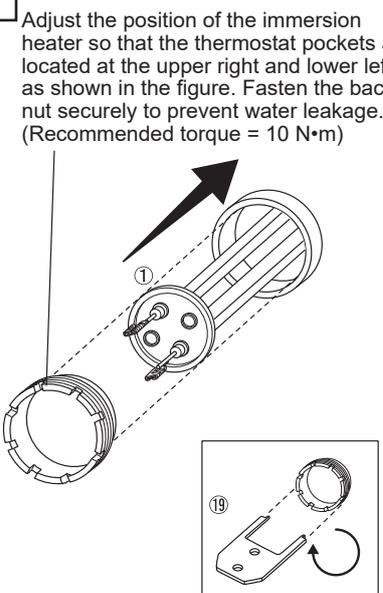
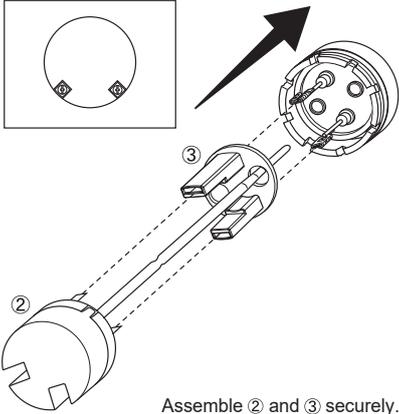
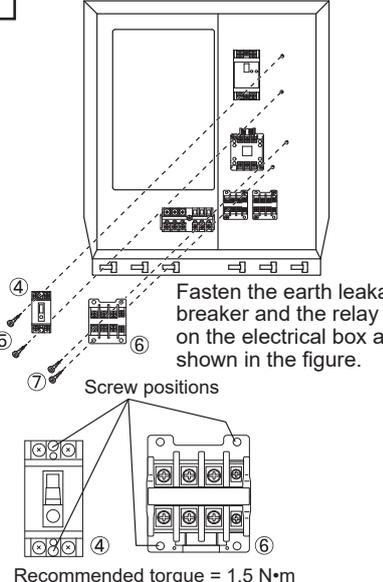
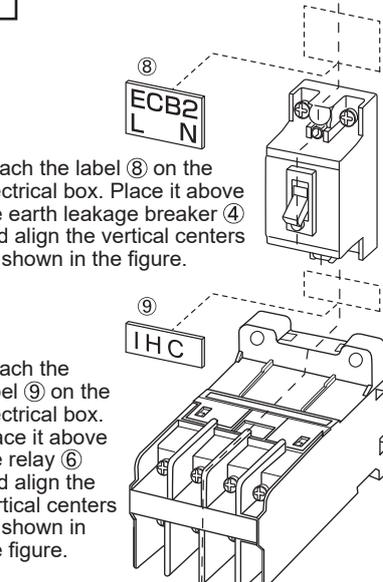
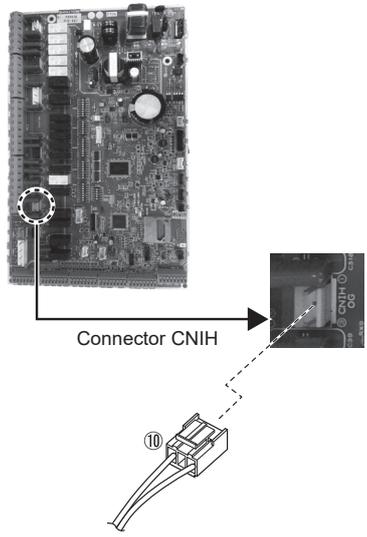
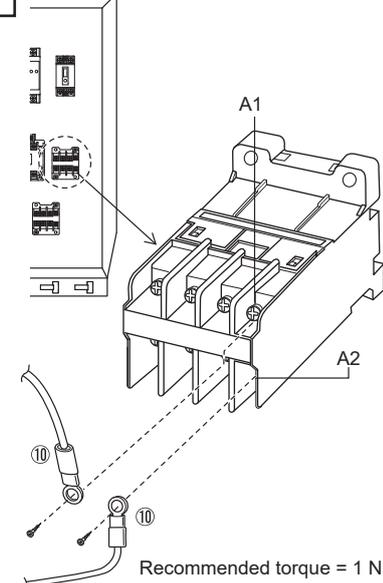
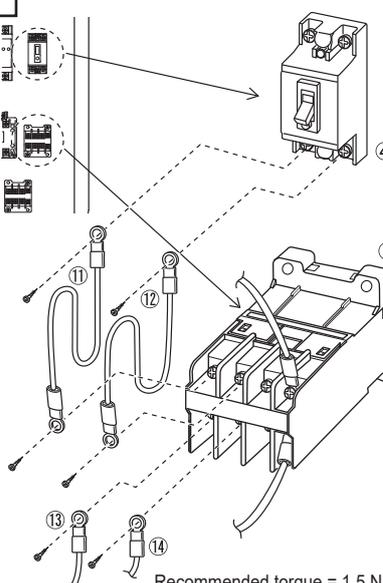
	Item	Piece
①	Immersion heater	1
②	Thermostat (High limit thermal cut-out)	1
③	Tab cover	1
④	Earth leakage breaker	1
⑤	Screw (4×25)	2
⑥	Relay	1
⑦	Screw (4×16)	2
⑧	Label (for Earth leakage breaker)	1
⑨	Label (for Relay)	1
⑩	Lead wire with connector	1
⑪	Lead wire (Red, 130mm)	1
⑫	Lead wire (Blue, 130mm)	1
⑬	Lead wire (Red, 1500mm)	1
⑭	Lead wire (Blue, 1500mm)	1
⑮	Water-proof cover	1
⑯	Water-proof seal (3x35x25)	1
⑰	Water-proof seal (3x40x25)	1
⑱	Band	4
⑲	Tool	1
⑳	Installation manual (This paper)	1
㉑	Fastener	1
㉒	Spec name plate	1



Optional parts

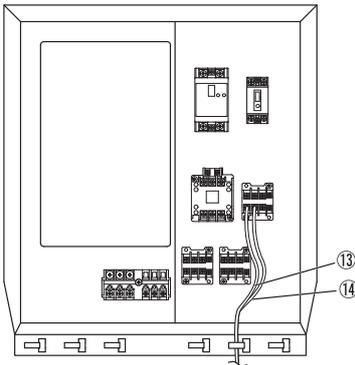
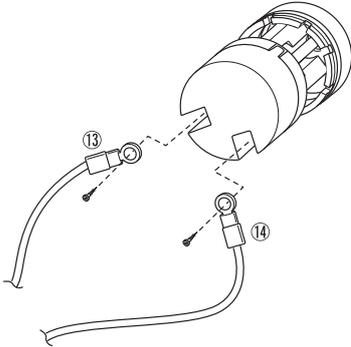
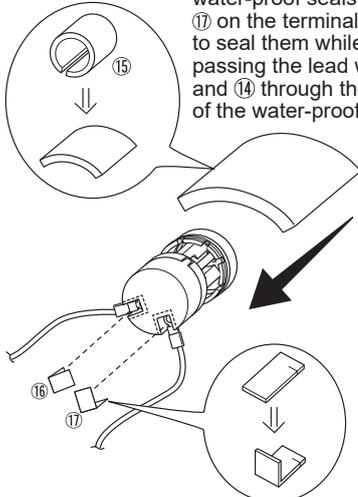
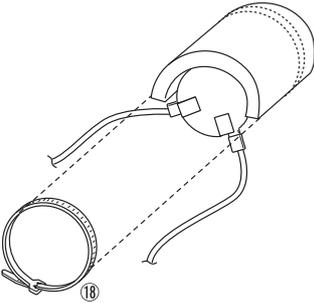
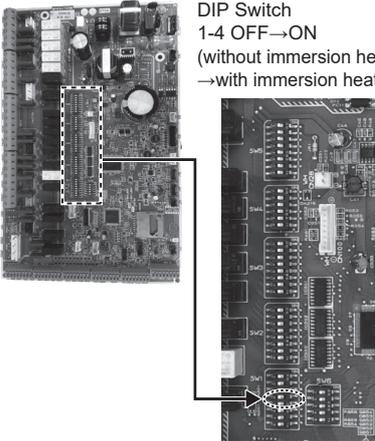
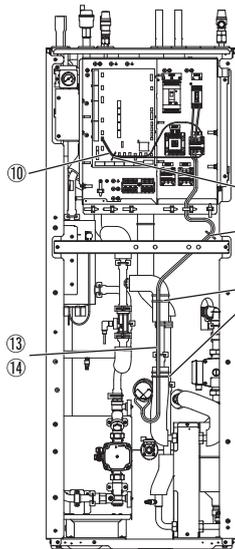
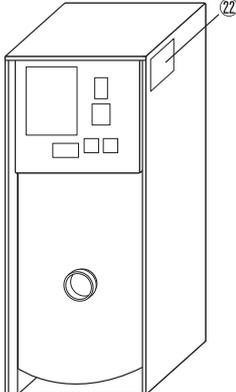
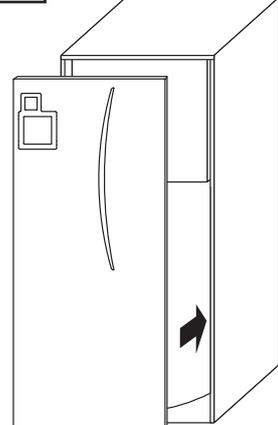
3 Immersion heater

<ATW unit>

<p>1</p>  <p>Refer to the installation manual of the ATW unit for the front panel removal.</p> <p>Disconnect the relay connector connecting from the main remote controller under the electrical box. Remove the front panel.</p>	<p>2</p>  <p>Make sure that no water is in the tank before installing the immersion heater. Remove the back nut with the tool (19). Remove and dispose of the blanking plate and the gasket.</p> <p>Dispose of the blanking plate and the gasket.</p>	<p>3</p>  <p>Adjust the position of the immersion heater so that the thermostat pockets are located at the upper right and lower left as shown in the figure. Fasten the back nut securely to prevent water leakage. (Recommended torque = 10 N•m)</p>
<p>4</p> <p>Attach the tab cover (3) to the immersion heater. Insert the thermostat into the upper right thermostat pocket. Position the terminals on the thermostat head at the bottom as shown in the figure.</p>  <p>Assemble (2) and (3) securely.</p>	<p>5</p>  <p>Fasten the earth leakage breaker and the relay on the electrical box as shown in the figure.</p> <p>Screw positions</p> <p>Recommended torque = 1.5 N•m</p>	<p>6</p>  <p>Attach the label (8) on the electrical box. Place it above the earth leakage breaker (4) and align the vertical centers as shown in the figure.</p> <p>Attach the label (9) on the electrical box. Place it above the relay (6) and align the vertical centers as shown in the figure.</p>
<p>7</p>  <p>Connector CNIH</p>	<p>8</p>  <p>Recommended torque = 1 N•m</p>	<p>9</p>  <p>Recommended torque = 1.5 N•m</p>

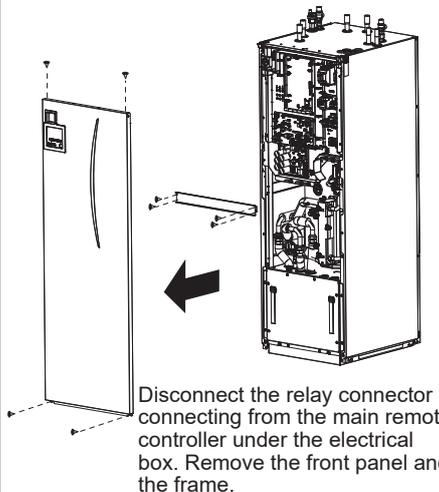
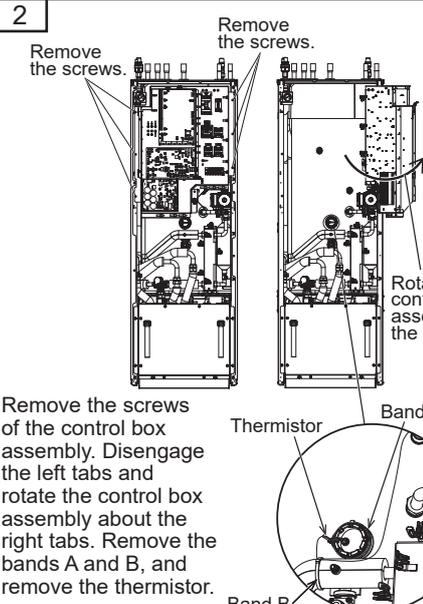
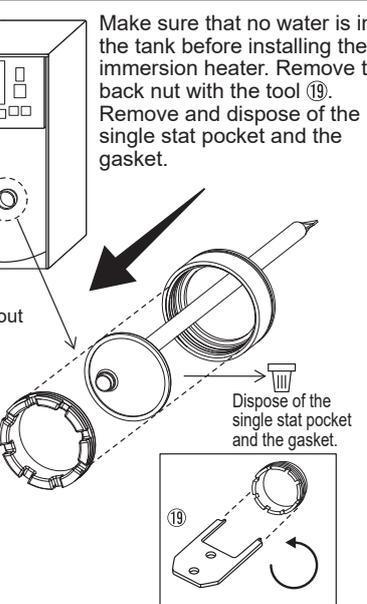
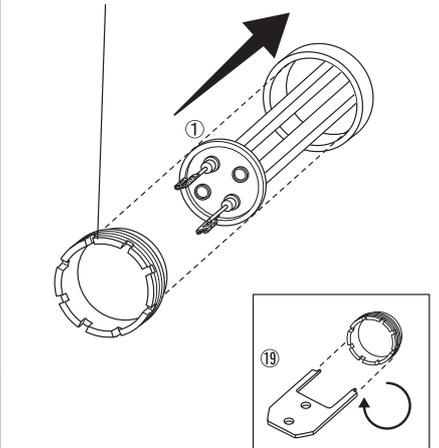
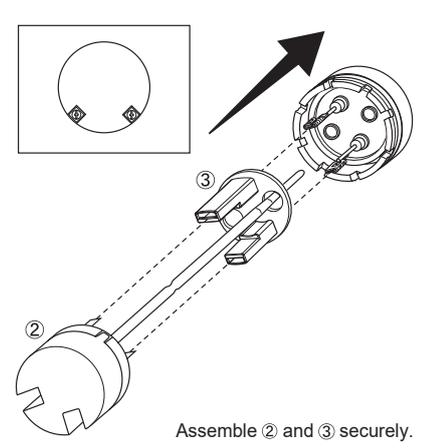
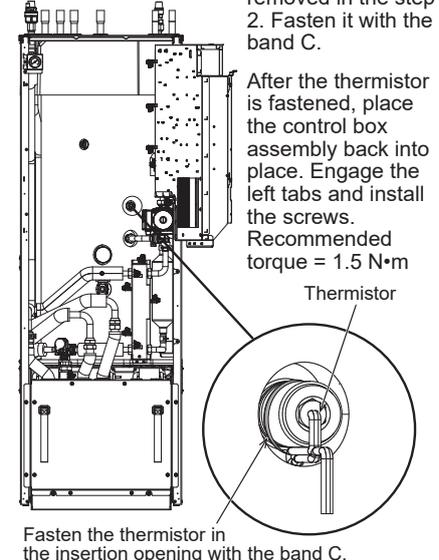
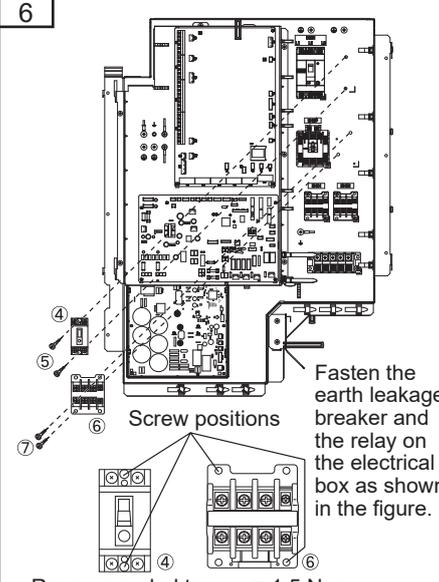
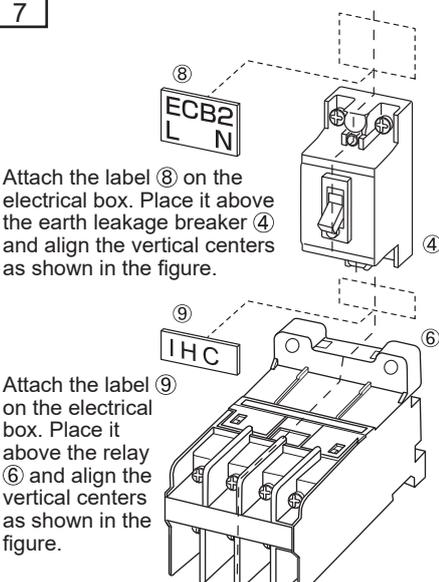
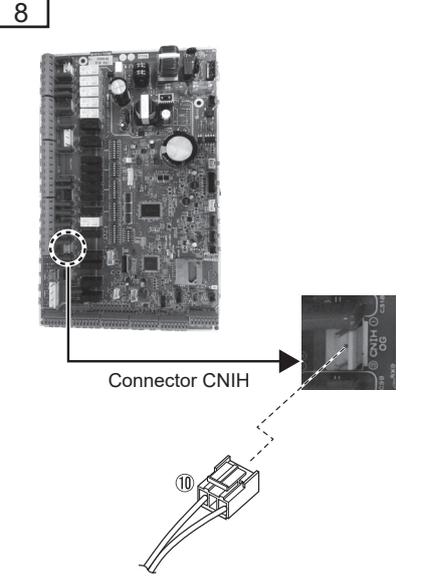
Optional parts

3 Immersion heater

<p>10</p>  <p>Do not bundle the lead wires ⑬ and ⑭ together with the low voltage wires, such as the main remote controller wires.</p>	<p>11</p>  <p>Recommended torque = 1.2 N·m</p>	<p>12</p>  <p>Attach the water-proof cover ⑮ as shown in the figure. Attach the water-proof seals ⑯ and ⑰ on the terminal screws to seal them while passing the lead wires ⑬ and ⑭ through the slits of the water-proof seals.</p>
<p>13</p>  <p>Fasten the water-proof cover ⑮ to the boss of the cylinder unit with the band ⑱.</p>	<p>14</p>  <p>DIP Switch 1-4 OFF→ON (without immersion heater →with immersion heater)</p>	<p>15</p>  <p>Fasten the lead wires with the bands ⑱ and the fastener ㉑ as shown in the figure.</p> <p>⑲ Fix it to the other wires. ⑲ Fix it to the pipe covers.</p>
<p>16</p> <p>For details of wiring to the earth leakage breaker, refer to the installation manual and the wiring diagram of the ATW unit. Fill the tank with water and make sure that no water leaks around the immersion heater.</p>	<p>17</p> <p>Attach the label ㉒. Do not cover or overlap the other labels.</p> 	<p>18</p>  <p>Refer to the installation manual of the ATW unit for the front panel installation.</p> <p>Connect the relay connector of the main remote controller wires under the electrical box before installing the front panel.</p>

3 Immersion heater

<BTW unit>

<p>1</p> <p>Refer to the installation manual of the BTW unit for the front panel removal.</p>  <p>Disconnect the relay connector connecting from the main remote controller under the electrical box. Remove the front panel and the frame.</p>	<p>2</p> <p>Remove the screws.</p>  <p>Remove the screws of the control box assembly. Disengage the left tabs and rotate the control box assembly about the right tabs. Remove the bands A and B, and remove the thermistor.</p> <p>Remove the screws.</p> <p>Rotate the control box assembly about the right tabs</p> <p>Make sure that no water is in the tank before installing the immersion heater. Remove the back nut with the tool 19. Remove and dispose of the single stat pocket and the gasket.</p> <p>Dispose of the single stat pocket and the gasket.</p>  <p>Thermistor</p> <p>Band A</p> <p>Band B</p>	
<p>3</p> <p>Adjust the position of the immersion heater so that the thermostat pockets are located at the upper right and lower left as shown in the figure. Fasten the back nut securely to prevent water leakage. (Recommended torque = 10 N•m)</p> 	<p>4</p> <p>Attach the tab cover ③ to the immersion heater. Insert the thermostat into the upper right thermostat pocket. Position the terminals on the thermostat head at the bottom as shown in the figure.</p>  <p>Assemble ② and ③ securely.</p>	<p>5</p> <p>Mount the thermistor removed in the step 2. Fasten it with the band C.</p> <p>After the thermistor is fastened, place the control box assembly back into place. Engage the left tabs and install the screws. Recommended torque = 1.5 N•m</p>  <p>Thermistor</p> <p>Fasten the thermistor in the insertion opening with the band C.</p>
<p>6</p>  <p>Fasten the earth leakage breaker and the relay on the electrical box as shown in the figure.</p> <p>Screw positions</p> <p>Recommended torque = 1.5 N•m</p>	<p>7</p> <p>Attach the label ⑧ on the electrical box. Place it above the earth leakage breaker ④ and align the vertical centers as shown in the figure.</p> <p>Attach the label ⑨ on the electrical box. Place it above the relay ⑥ and align the vertical centers as shown in the figure.</p>  <p>ECB2 L N</p> <p>IHC</p>	<p>8</p>  <p>Connector CNIH</p>

Optional parts

3 Immersion heater

<p>9</p> <p>Recommended torque = 1 N·m</p>	<p>10</p> <p>Recommended torque = 1.5 N·m</p>	<p>11</p> <p>Fix it to the wires</p> <p>Fasten the lead wire.</p> <p>To immersion heater</p>
<p>12</p> <p>Recommended torque = 1.2 N·m</p> <p>Attach the water-proof cover 15 as shown in the figure. Attach the water-proof seals 16 and 17 on the terminal screws to seal them while passing the lead wires 13 and 14 through the slits of the water-proof seals.</p>	<p>13</p> <p>Fasten the water-proof cover 15 to the boss of the cylinder unit with the band 18.</p>	<p>14</p> <p>DIP Switch 1-4 OFF → ON (without immersion heater → with immersion heater)</p>
<p>15</p> <p>For details of wiring to the earth leakage breaker, refer to the installation manual and the wiring diagram of the BTW unit. Fill the tank with water and make sure that no water leaks around the immersion heater.</p>	<p>16</p> <p>Attach the label 22. Do not cover or overlap the other labels.</p>	<p>17</p> <p>Assemble in the reverse order of the step 1. Recommended torque for the frame = 1.5 N·m Recommended torque for the front panel = 3 N·m</p> <p>Connect the relay connector of the main remote controller wires under the electrical box before installing the front panel.</p>



CYLINDER UNIT OPTIONAL PARTS EHPT ACCESSORIES for UK PAC-WK02UK-E

INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the cylinder unit.
- Please read carefully and observe fully the following safety precautions.

⚠ WARNING Precautions that must be observed to prevent injuries or death.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user.
Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

⚠ WARNING

- Before installing any accessories on the cylinder unit ensure the unit is isolated from the power supply.
- Connections must be made securely and without tension on the terminals.
The included component parts of the PAC-WK02UK-E EHPT ACCESSORIES for UK shall be used only for the purposes indicated in the installation manual.

In addition to annual servicing it is necessary to replace or inspect the ICG after a certain period of system operation. Please see table below for detailed instructions. Replacement and inspection of the ICG should always be done by a competent person with relevant training and qualifications.

Part which requires regular replacement

Part	Replace every	Possible failures
Inlet control group (ICG)	6 years	Water leakage due to brass corrosion (Dezincification)

4 EHPT accessories for UK

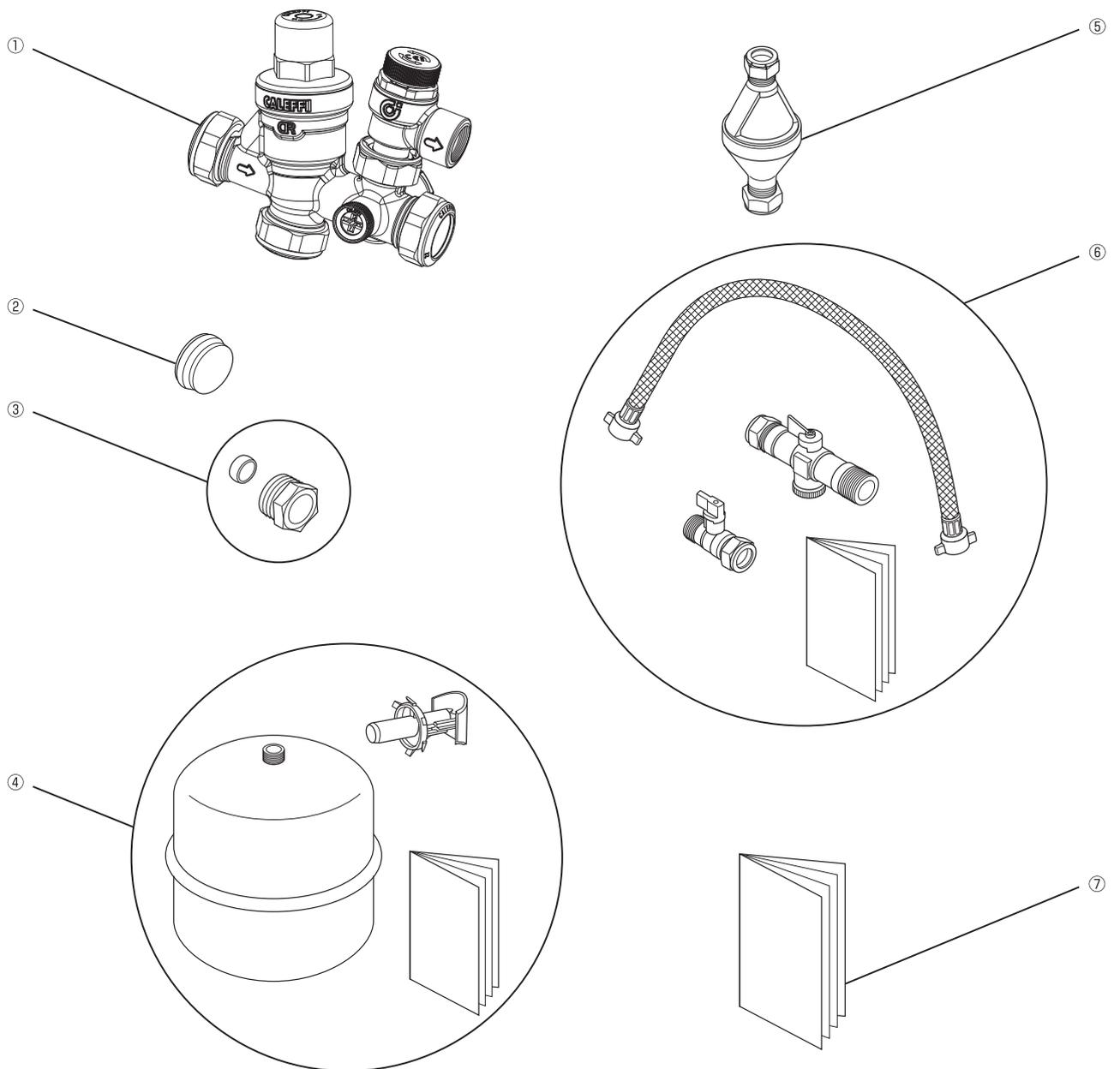
Contents

	Item	Piece(s)
①	Unvented inlet control group (Pressure reducing valve/strainer/check valves/ expansion relief valve).	1
②	Blanking cap (22mm)	1
③	Nipple & Olive (15mm)	1
④	Expansion vessel 18L (R3/4")	1
⑤	Tundish (15mm, 22mm)	2
⑥	Filling loop (15mm)	1
⑦	Installation manual	1

The parts ① to ⑤ are provided to meet the requirements for the UK Building Regulation G3.
The parts ② and ③ are accessory parts for the unvented inlet control group.

The pressure reducing valve is factory set at 3.5 bar and the expansion relief valve at 6.0 bar.

The gas charge pressure for the expansion vessel is 3.0 bar.



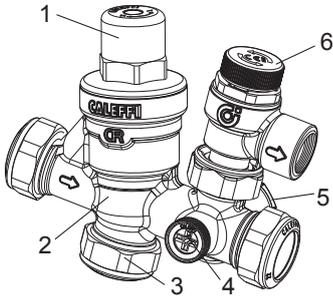
Optional parts

4 EHPT accessories for UK

Installation

Carefully follow these instructions and ensure that the installation conforms to UK Building Regulation G3 and the Water Supply Regulations.

Unvented inlet control group (ICG)



Item	Component
1	Pressure reducing valve
2	Manifold block (Including check valve)
3	22mm balanced cold water take-off
4	Pressure gauge port
5	3/4" connection for exp.vessel
6	Expansion relief valve

It is recommended that isolating valves are installed upstream and downstream to facilitate any future maintenance.

For safety reasons, it is essential that no isolation valve is fitted between the ICG and the cold water inlet connection of the cylinder. Install the pressure reducing valve with its embossed arrow pointing in the direction of flow.

Ensure the expansion relief valve is seated correctly into the main block/ casting and its nut is fully tightened to secure its position. Ensure that the expansion relief valve discharge pipework has a continuous fall and terminates via a tundish and in such a position as not to cause injury.

The first 22mm connection (Item 3 above) can be used to provide an unbalanced cold water supply. It must never be used to connect the expansion vessel. If not used, use the blanking cap (22mm) supplied.

The small black plug is a connection prepared for a pressure gauge, which is available when specified.

On the opposite side of the manifold to the pressure gauge connection, there is a 3/4" plastic plugged connection that may be used for direct mounting to the expansion vessel if required.

Expansion vessel

Install the expansion vessel between the pressure reducing valve and the cylinder unit or by using the appropriate port of the ICG. (Ensure the expansion vessel is connected to an active section of the potable pipework and is NOT directly connected to any redundant "Dead-leg" section of pipework.)

Note:

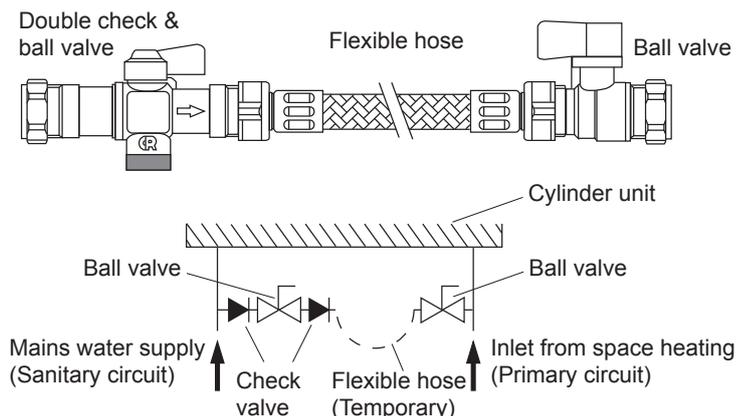
- When connecting the ICG to the expansion vessel using a field-supplied flexible hose, provide sufficient bending radius to prevent abnormal noise.
- For more details about the following instructions, refer to the installation manual provided with the potable expansion vessel, as well as this manual.
 - If the expansion vessel is installed separately to the ICG (ie. direct in-line) then the supplied flow diverter can be used.
 - ICG should always be installed on cold water supply to cylinder to comply with WRAS/Building Regulation G3.
 - The ICG should be installed above the level of the T&P valve. This will avoid the requirement to drain cylinder when servicing the ICG in future.
 - Expansion vessel should be installed hanging from connecting pipework.
 - Expansion vessel should be fastened to a suitable surface (wall etc.) to prevent strain on pipe connection.
 - Gas inlet screw type of expansion vessel: 8V1

Tundish

Install the tundishes in accordance with the UK Building Regulation G3. For more details refer to the "Safety Device Discharge Arrangements" section in the installation manual for the cylinder unit.

Filling loop

Note: Refer to the installation manual provided with the filling loop as well.



4 EHPT accessories for UK

The procedure and recommendations specified in the cylinder unit installation manual for filling and pressurising the primary heating circuit of the cylinder unit must be followed.

The heating return pipe and the cold water supply pipe must be provided with tees with a short length of R250 (half hard) copper tube in the side port.

Fit the double check valve to the pipe from the mains supply pipe using the compression joint, which complies with BS EN 1252-2, ensuring that the flow through the valve is in the same direction as the arrow on the body.

Fit the ball valve to the pipe from the heating return using the compression joint.

Connect the flexible hose between the double check valve and ball valve and tighten the wing nuts to make water tight joints.

Open both ball valves and fill the system, when the pressure starts to increase on the cylinder unit pressure gauge partially close the ball valve on the double check valve to control the pressure to that specified by the cylinder unit installation manual.

Once filling and pressurisation have been completed, close both ball valves and remove the flexible hose.

If the flexible hose is removed it is recommended that caps (not supplied) are fitted to both valve connections to prevent any potential leakage.

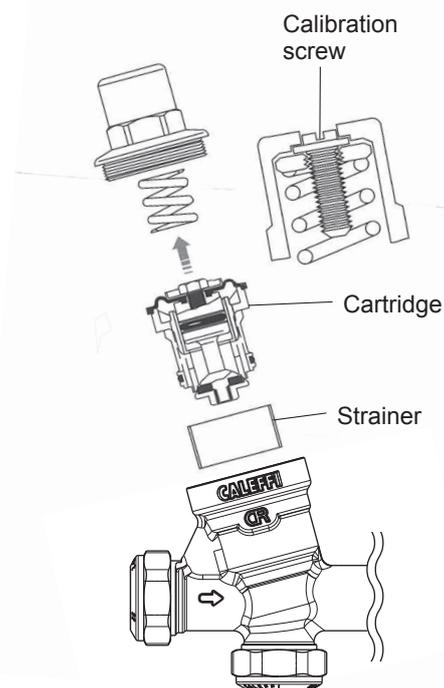
Maintenance and service

Pressure reducing valve

Under normal circumstances the pressure reducing valve should not require any maintenance, but regular inspection and cleaning is recommended.

If the strainer or cartridge are damaged replace entire valve.

1. Isolate the water supply to the pressure reducing valve.
2. Unscrew anticlockwise the central calibration screw to decompress the spring.
3. Remove the plastic cover using a spanner on the hexagon faces.
4. Extract the cartridge with the aid of long nosed pliers to grip the head of the set screw.
5. Remove the strainer element.
*If the strainer or cartridge are damaged replace item(s) accordingly.
6. Clean the strainer element and cartridge under clean running water.
7. Replace the strainer, cartridge and cover.
8. Turn on the water supply and check for leakage.
9. Re-calibrate the pressure reducing valve. (Rotate it clockwise to increase the outlet pressure and anticlockwise to reduce it.)



Expansion relief valve

Manually operate (rotate head anti-clockwise) the expansion relief valve to ensure free water flow through discharge port and connecting pipe.

Expansion vessel

The pre-charge gas pressure must be checked annually to make sure that the expansion vessel is in working order.

If water discharges through the expansion relief valve, it is possible that the expansion vessel's existing gas pre-charge pressure is too low.

Check this in the following manner:

1. Close the water supply.
2. Drain the sanitary circuit until the pressure is 0 bar.
3. Check the pre-charge.
4. Increase the gas pre-charge pressure with nitrogen/air to 3.0 bar.

Make sure that the pre-charge is not higher than the maximum working pressure.

If the expansion vessel cannot be pressurized, it is possible that the membrane has a leak.

If so, you must then replace the expansion vessel.

5 High temp. thermistor



PARTS NAME : HIGH TEMP. THERMISTOR

PARTS No. : PAC-TH012HT-E

SALES MODEL CODE : 7H1THR7

MITSUBISHI ELECTRIC CORPORATION

INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the unit.
- Please read carefully and observe fully the following safety precautions.

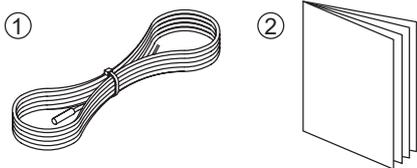
⚠ WARNING Precautions that must be observed to prevent injuries or death.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user. Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

⚠ WARNING

- Before installing any accessories on the unit ensure the unit is isolated from the power supply.
- Connections must be made securely and without tension on the terminals.
- All electrical work should be performed by a qualified technician according to local regulations and the instructions given in this manual.
- The flow temperature from boiler MUST NOT exceed 70 °C (*1).
- Before running Floor Dry-up function, disconnect IN4, IN5, IN11 and IN12 wirings. (*2)
- *1 When the temperature sensed by flow temp. thermistor or return temp. thermistor exceeds 80°C, FTC will detect it as overheat error.
- *2 High-temperature water produced by boiler operation could flow in and this could cause a big damage to the floor.
- Make sure to install the boiler that has overheat protection and output flow temperature control.
- Install the sensing part in a place where a user cannot touch it.

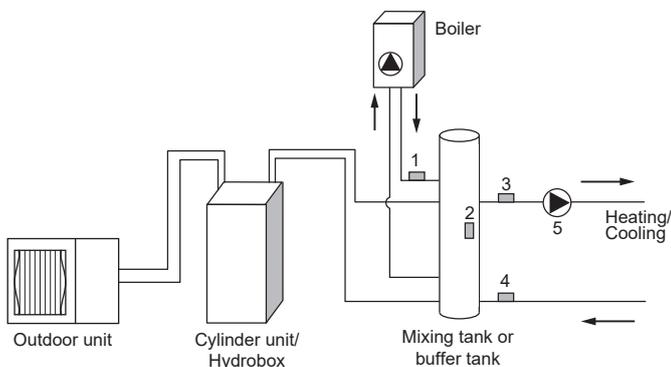
<Included items>



	Item	Piece
①	High temp. thermistor 5 m, color: black	1
②	Installation manual (This paper)	1

■ Local system

The high temp. thermistor is used as the boiler flow temp. thermistor (THWB1) or the mixing tank temp. thermistor (THW10).



Number	Component
1	Boiler flow temp. thermistor (THWB1)
2	Mixing tank temp. thermistor (THW10)
3	Flow temp. thermistor (THW6) (option)
4	Return temp. thermistor (THW7) (option)
5	Circulation pump (local supply)

1. Boiler operation

FTC can control boiler only in space heating mode.

When boiler is running, the heating operation is regulated by the room thermostat connected to FTC.

IMPORTANT NOTE: Be sure to connect room thermostat to FTC.

5 High temp. thermistor

1.1 Wiring for boiler control

<Thermistor inputs>

Name	Terminal block	Item	Optional part model
THW6	TBI.5 7-8	Thermistor (Zone1 flow water temp.) (Option)	PAC-TH011-E
THW7	TBI.5 5-6	Thermistor (Zone1 return water temp.) (Option)	
THWB1	TBI.6 7-8 ^{*1} TBI.6 8-9 ^{*2}	Thermistor (Boiler flow water temp.)	PAC-TH012HT-E

*1 For E*****C/D model

*2 For E*****E model

<Outputs>

Connect OUT10 to boiler external input (Room thermostat).

Name	Terminal block	Item	OFF	ON	Signal/Max current
OUT10	TBO.3 1-2	Boiler output	OFF	ON	non-voltage contact • 220 - 240V AC (30V DC) 0.5 A or less • 10 mA 5V DC or more

Note: • OUT10 is separated by basic insulation from other external output signals in FTC.
• Connect the surge absorber according to the load at site.
• When the wires are wired to adjacent terminals, use ring terminals and insulate the wires.
• Do not splice the wiring to extend or shorten it, or this could affect correct monitoring of each temperature.
If the wiring is too long, bundle it with a strap to adjust the length.

1.2 Dip switch setting

Set Dip SW1-1 and SW2-6 to ON .

Dip switch	Function	OFF	ON
SW1-1	Boiler	WITHOUT Boiler	WITH Boiler
SW2-6	Mixing tank	WITHOUT Mixing tank	WITH Mixing tank

1.3 Main controller setting

<Service menu> → "Heat source setting"
→ "Operation settings" → "Boiler operation"

	Menu	Description
Heat source setting	Hybrid	Automatically switch "Heat pump" and "Boiler".
Hybrid settings	Outdoor ambient temp.	Set the ambient temperature to switch to Boiler operation.
	Priority mode	Set which one to prioritize (Ambient or Cost or CO ₂).
	Outdoor ambient temp. rise	Difference in temperature to switch to Heat pump operation.
Intelligent settings	Energy price	Enter unit prices of electricity, and gas or oil (depending on boiler type) per 1 kWh.
	CO ₂ emission	Enter CO ₂ emission amount from electricity or boiler (gas or oil).
	Heat source	Enter outdoor unit capacity, electric heater capacity, and boiler efficiency.

2. Buffer tank control

Buffer tank control operates when heating (or cooling) function is active in the smart grid ready*.

* Refer to the installation manual of indoor unit.

2.1 Wiring for buffer tank control

<Thermistor inputs>

Name	Terminal block	Item	Optional part model
THW6	TBI.5 7-8	Thermistor (Zone1 flow water temp.) (Option)	PAC-TH011-E
THW7	TBI.5 5-6	Thermistor (Zone1 return water temp.) (Option)	
THW10	TBI.6 5-6 ^{*1} TBI.6 6-7 ^{*2}	Thermistor (Mixing tank water temp.)	PAC-TH012HT-E

*1 For E*****C/D model

*2 For E*****E model

<Signal inputs>

Name	Terminal block	Item	OFF (open)		ON (short)
			IN11	IN12	Meaning
IN11	TBI.3 3-4	Smart grid ready input	OFF (open)	OFF (open)	Normal operation
			ON (short)	OFF (open)	Switch-on recommendation
IN12	TBI.3 1-2		OFF (open)	ON (short)	Switch-off command
			ON (short)	ON (short)	Switch-on command

2.2 Dip switch setting

Set Dip SW2-6 to ON.

Dip switch	Function	OFF	ON
SW2-6	Mixing tank	WITHOUT Mixing tank	WITH Mixing tank

2.3 Main controller setting

<Service menu> → "Operation settings" → "Smart grid ready"

Name	Description	
Heating	Target temp.	↕ Target temp. of "Switch-on recommendation".
		↑ Target temp. of "Switch-on command".
Cooling	Target temp.	↕ Target temp. of "Switch-on recommendation".
		↓ Target temp. of "Switch-on command".
Pump cycles	On/Off	When set to "On", the water circulation pump is operated intermittently according to the heat storage temp. of the buffer tank.
	Interval	Re-judgment of the pump on/off time.

6 High temp. thermistor



PARTS NAME : HIGH TEMP. THERMISTOR

PARTS No. : PAC-TH012HTL-E

SALES MODEL CODE : 7H1THR8

MITSUBISHI ELECTRIC CORPORATION

INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the unit.
- Please read carefully and observe fully the following safety precautions.

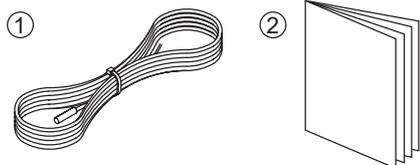
⚠ WARNING Precautions that must be observed to prevent injuries or death.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user. Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

⚠ WARNING

- Before installing any accessories on the unit ensure the unit is isolated from the power supply.
- Connections must be made securely and without tension on the terminals.
- All electrical work should be performed by a qualified technician according to local regulations and the instructions given in this manual.
- The flow temperature from boiler MUST NOT exceed 70 °C (*1).
- Before running Floor Dry-up function, disconnect IN4, IN5, IN11 and IN12 wirings. (*2)
- *1 When the temperature sensed by flow temp. thermistor or return temp. thermistor exceeds 80°C, FTC will detect it as overheat error.
- *2 High-temperature water produced by boiler operation could flow in and this could cause a big damage to the floor.
- Make sure to install the boiler that has overheat protection and output flow temperature control.
- Install the sensing part in a place where a user cannot touch it.

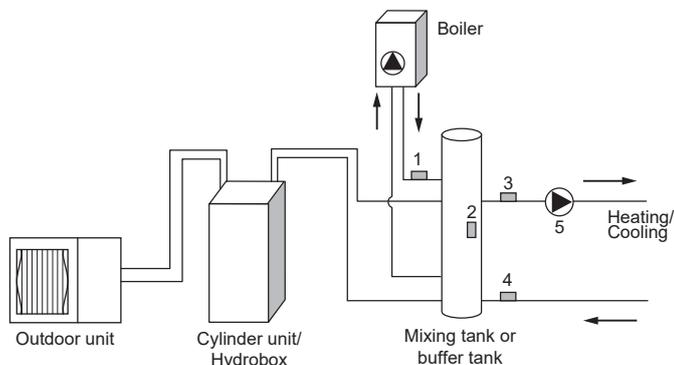
<Included items>



	Item	Piece
①	High temp. thermistor 30 m, color: black	1
②	Installation manual (This paper)	1

■ Local system

The high temp. thermistor is used as the boiler flow temp. thermistor (THWB1) or the mixing tank temp. thermistor (THW10).



Number	Component
1	Boiler flow temp. thermistor (THWB1)
2	Mixing tank temp. thermistor (THW10)
3	Flow temp. thermistor (THW6) (option)
4	Return temp. thermistor (THW7) (option)
5	Circulation pump (local supply)

1. Boiler operation

FTC can control boiler only in space heating mode.

When boiler is running, the heating operation is regulated by the room thermostat connected to FTC.

IMPORTANT NOTE: Be sure to connect room thermostat to FTC.

6 High temp. thermistor

1.1 Wiring for boiler control

<Thermistor inputs>

Name	Terminal block	Item	Optional part model
THW6	TBI.5 7-8	Thermistor (Zone1 flow water temp.) (Option)	PAC-TH011-E
THW7	TBI.5 5-6	Thermistor (Zone1 return water temp.) (Option)	
THWB1	TBI.6 7-8 *1 TBI.6 8-9 *2	Thermistor (Boiler flow water temp.)	PAC-TH012HTL-E

*1 For E*****C/D model

*2 For E*****E model

<Outputs>

Connect OUT10 to boiler external input (Room thermostat).

Name	Terminal block	Item	OFF	ON	Signal/Max current
OUT10	TBO.3 1-2	Boiler output	OFF	ON	non-voltage contact • 220 - 240V AC (30V DC) 0.5 A or less • 10 mA 5V DC or more

Note: • OUT10 is separated by basic insulation from other external output signals in FTC.
• Connect the surge absorber according to the load at site.
• When the wires are wired to adjacent terminals, use ring terminals and insulate the wires.
• Do not splice the wiring to extend or shorten it, or this could affect correct monitoring of each temperature.
If the wiring is too long, bundle it with a strap to adjust the length.

1.2 Dip switch setting

Set Dip SW1-1 and SW2-6 to ON .

Dip switch	Function	OFF	ON
SW1-1	Boiler	WITHOUT Boiler	WITH Boiler
SW2-6	Mixing tank	WITHOUT Mixing tank	WITH Mixing tank

1.3 Main controller setting

<Service menu> → "Heat source setting"
→ "Operation settings" → "Boiler operation"

	Menu	Description
Heat source setting	Hybrid	Automatically switch "Heat pump" and "Boiler".
	Outdoor ambient temp.	Set the ambient temperature to switch to Boiler operation.
Hybrid settings	Priority mode	Set which one to prioritize (Ambient or Cost or CO ₂).
	Outdoor ambient temp. rise	Difference in temperature to switch to Heat pump operation.
Intelligent settings	Energy price	Enter unit prices of electricity, and gas or oil (depending on boiler type) per 1 kWh.
	CO ₂ emission	Enter CO ₂ emission amount from electricity or boiler (gas or oil).
	Heat source	Enter outdoor unit capacity, electric heater capacity, and boiler efficiency.

2. Buffer tank control

Buffer tank control operates when heating (or cooling) function is active in the smart grid ready*.

* Refer to the installation manual of indoor unit.

2.1 Wiring for buffer tank control

<Thermistor inputs>

Name	Terminal block	Item	Optional part model
THW6	TBI.5 7-8	Thermistor (Zone1 flow water temp.) (Option)	PAC-TH011-E
THW7	TBI.5 5-6	Thermistor (Zone1 return water temp.) (Option)	
THW10	TBI.6 5-6 *1 TBI.6 6-7 *2	Thermistor (Mixing tank water temp.)	PAC-TH012HTL-E

*1 For E*****C/D model

*2 For E*****E model

<Signal inputs>

Name	Terminal block	Item	OFF (open)		ON (short)
			IN11	IN12	Meaning
IN11	TBI.3 3-4	Smart grid ready input	OFF (open)	OFF (open)	Normal operation
			ON (short)	OFF (open)	Switch-on recommendation
IN12	TBI.3 1-2		OFF (open)	ON (short)	Switch-off command
			ON (short)	ON (short)	Switch-on command

2.2 Dip switch setting

Set Dip SW2-6 to ON.

Dip switch	Function	OFF	ON
SW2-6	Mixing tank	WITHOUT Mixing tank	WITH Mixing tank

2.3 Main controller setting

<Service menu> → "Operation settings" → "Smart grid ready"

Name		Description
Heating	Target temp.	↕ Target temp. of "Switch-on recommendation".
		↑ Target temp. of "Switch-on command".
Cooling	Target temp.	↕ Target temp. of "Switch-on recommendation".
		↑ Target temp. of "Switch-on command".
Pump cycles	On/Off	When set to "On", the water circulation pump is operated intermittently according to the heat storage temp. of the buffer tank.
	Interval	Re-judgment of the pump on/off time.



ATW INDOOR UNIT OPTIONAL PARTS 2 ZONE KIT PAC-TZ02-E2

INSTALLATION MANUAL

- This 2 zone kit **MUST** be used with Cylinder unit or Hydrobox **except for ERSE models**.
- Before starting installation, read the following description together with the installation manual included with the Cylinder unit (Hydrobox).
- Please read carefully and observe fully the following safety precautions.

WARNING	Precaution that must be observed to prevent injuries or death.
CAUTION	Incorrect handling could lead to injury or damage to house and household articles.

- After installation, carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user.
Tell your customers to keep this installation manual, and when they give or sell this machine to any other person include this installation manual with it.

WARNING

- If Cylinder unit (Hydrobox) has already been connected to the power supply, ensure circuit breaker is off before carrying out electrical work.
- If the 2 zone kit is installed incorrectly or modified after installation by the user, water may leak or 2 zone kit may fall from Cylinder unit or wall.
- All installation should be performed by a qualified technician according to local regulations and the instructions given in this manual.
- Connections must be made securely and without tension on the terminals.

CAUTION

- The 2 zone kit must be installed by 2 or more people.
- All exposed water pipework should be insulated to prevent unnecessary heat loss and condensation.
- To also use the 2 zone kit in Cooling mode, securely apply heat-insulation to draining pipework. If heat-insulation is inadequate, condensation could occur on the surface of pipes and dew could drop on the floor or important goods.
- To prevent dirty water from draining onto the floor next to Cylinder unit or under Hydrobox, please connect appropriate discharge pipework from the 2 zone kit to its disposal location.
- Secure 2 zone kit to prevent it from falling.
- Do not hold piping or drain socket when moving the 2 zone kit.
- Avoid the connection of piping or drain socket from damage. Otherwise, it may cause water leakage.
- To prevent incorrect installation, please connect the flexible hose at the bend radius of 150 mm or more.
- The water flow rate between the Cylinder unit (Hydrobox) and the 2 zone kit must be greater than the total flow rate of Zone1 and Zone2. Otherwise, Zone1 and Zone2 may not be heated properly.

7 2 zone kit

Disposal of the Unit

Note: This symbol mark is for EU countries only.

This symbol mark is according to the directive 2012/19/EU Article 14 Information for users and Annex IX, and/or to the directive 2006/66/EC Article 20 Information for end-users and Annex II.



Your Mitsubishi Electric heating system products have been manufactured with high quality materials and components which can be recycled and/or reused. The symbol in Figure 1.1 means that electrical and electronic equipment, batteries and accumulators at the end of their life, should be disposed of separately from your household waste.

If a chemical symbol is printed beneath the symbol (Figure 1.1), this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration. This is indicated as follows;

Hg: mercury (0.0005%), Cd: cadmium (0.002%), Pb: lead (0.004%)

<Figure 1.1>

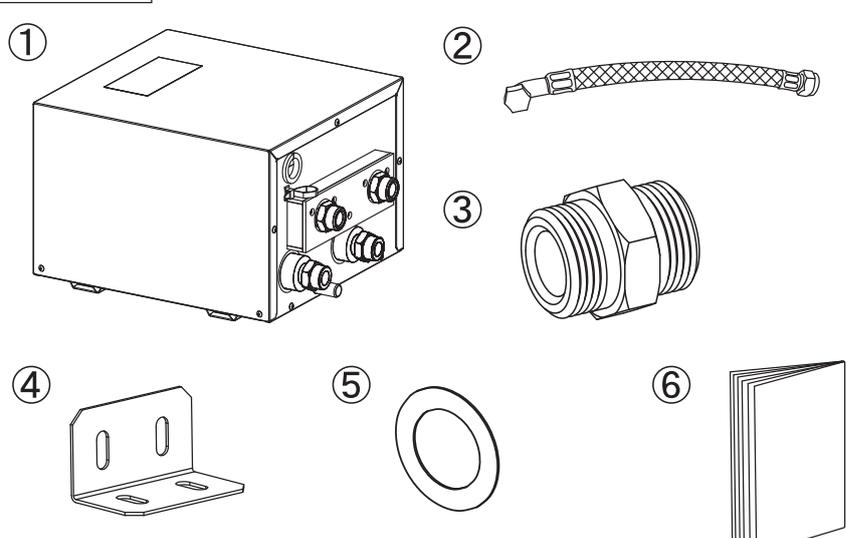
In the European Union there are separate collection systems for used electrical and electronic products, batteries and accumulators.

Please dispose of this equipment, batteries and accumulators correctly at your local community waste collection/recycling centre.

Contact your local Mitsubishi Electric dealer for country-specific details on disposal.

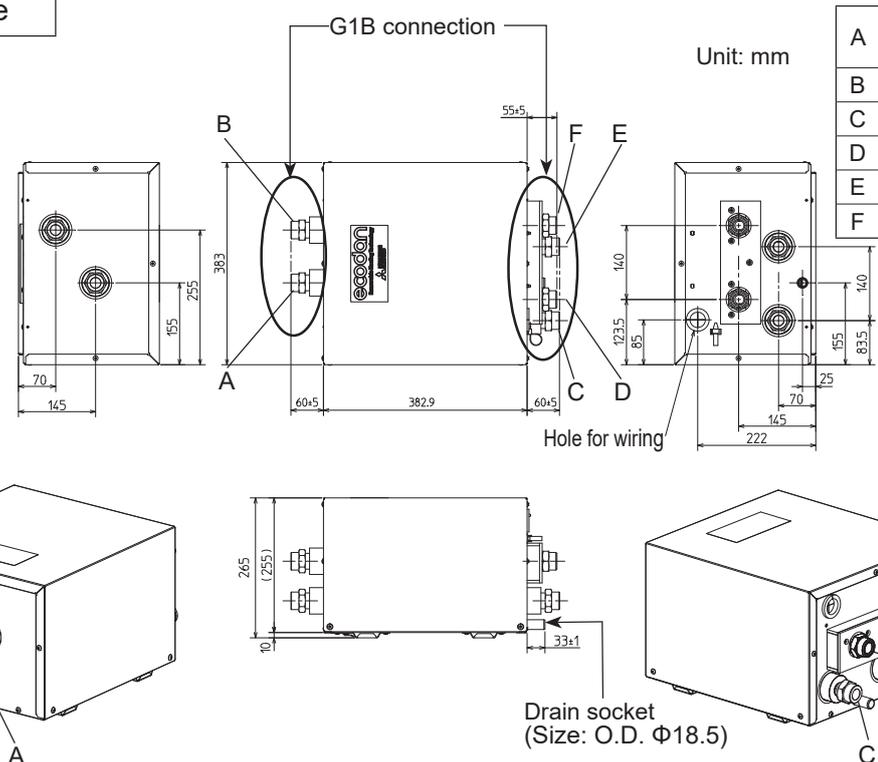
Please, help us to conserve the environment we live in.

Contents



Item	Q'ty
① 2 zone kit	1
② Flexible hose (520mm)	2
③ Connection joint	2
④ Fixing plate	2
⑤ Gasket	4
⑥ Installation manual	1
⑦ Screw (M5x8)	2

Outline

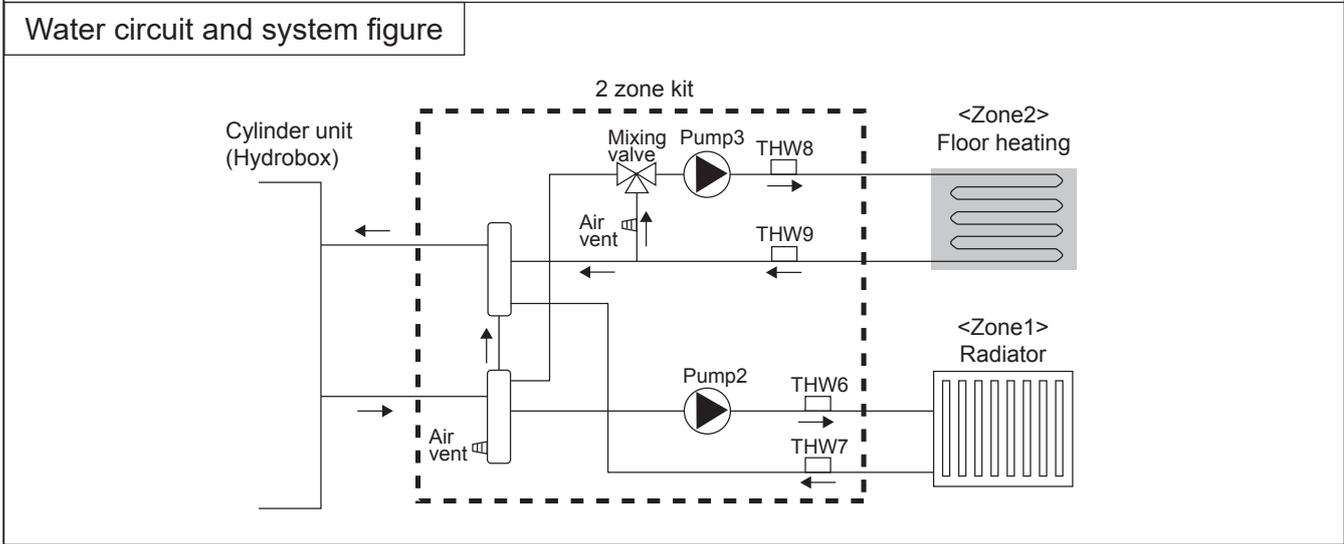
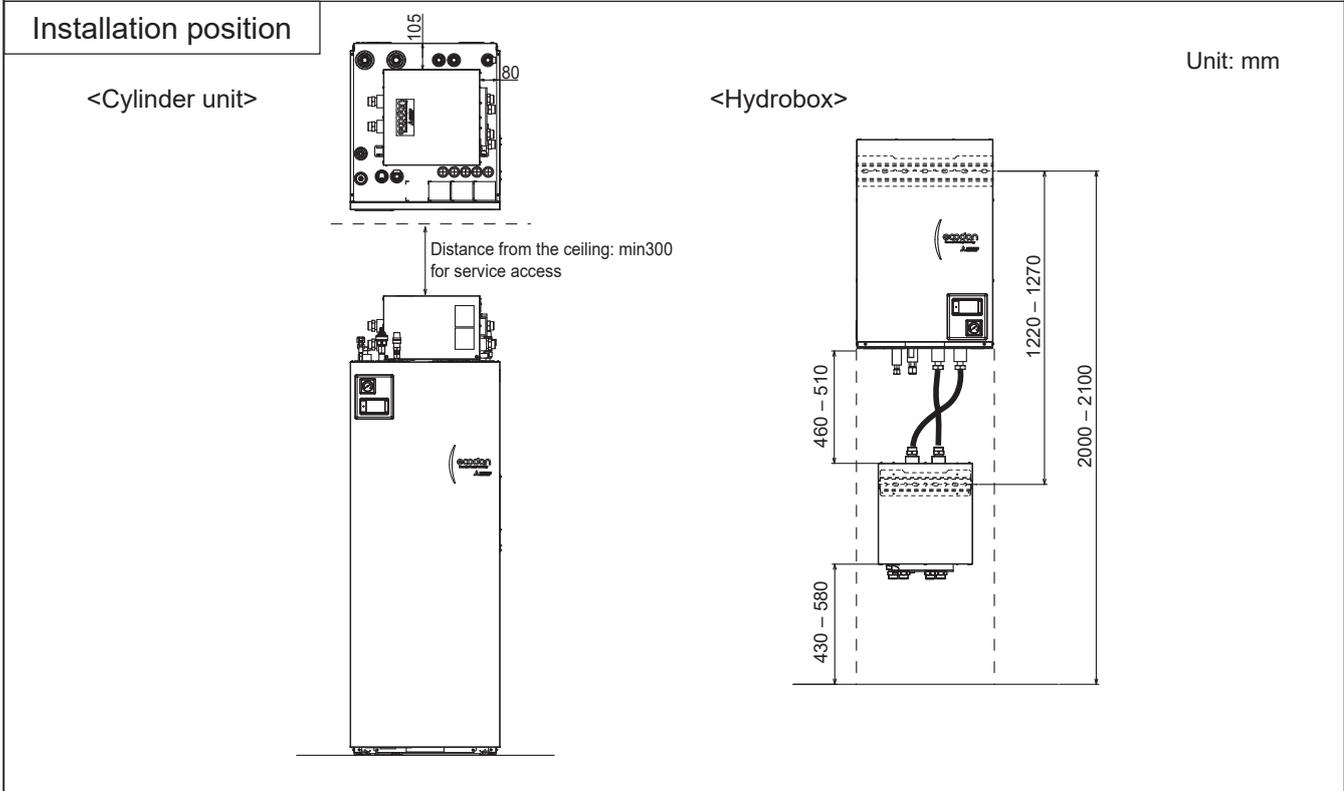
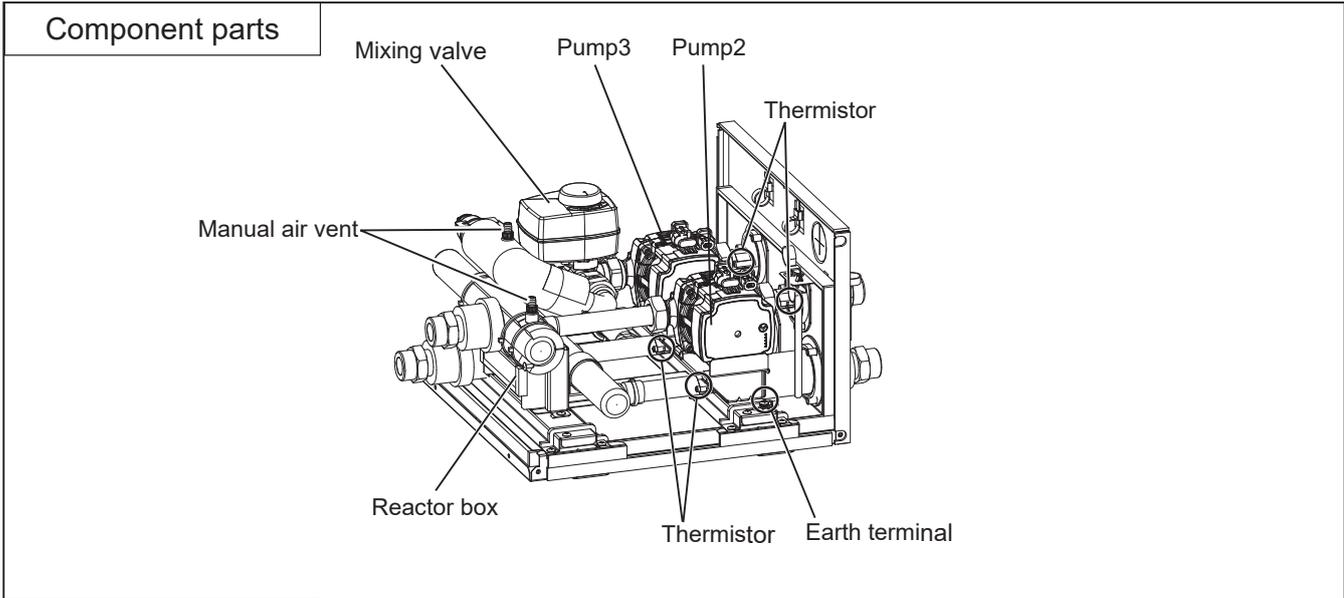


Unit: mm

A	From Cylinder unit or Hydrobox
B	To Cylinder unit or Hydrobox
C	From Zone1
D	To Zone1
E	From Zone2
F	To Zone2

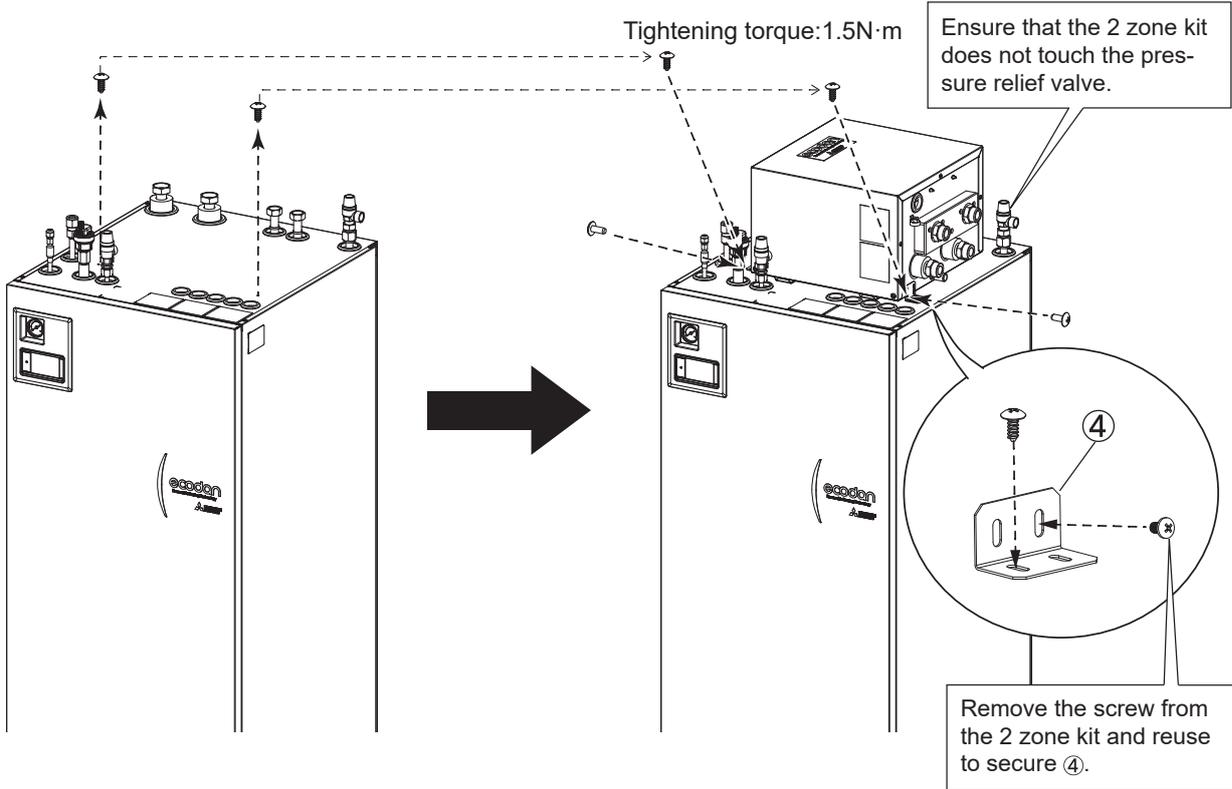
Drain socket
(Size: O.D. Φ18.5)

7 2 zone kit



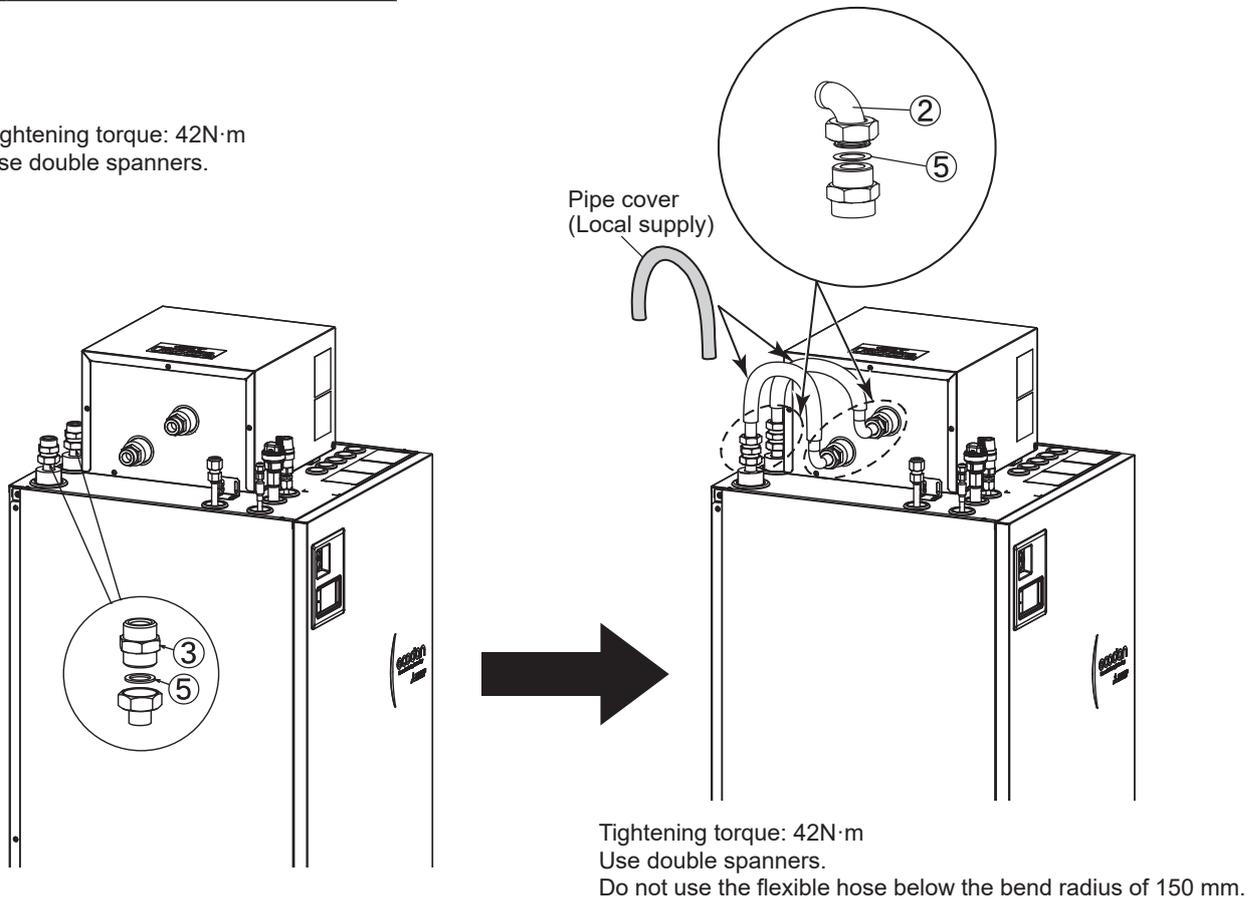
7 2 zone kit

1 Case of Cylinder unit



2 Case of Cylinder unit

Tightening torque: 42N·m
Use double spanners.

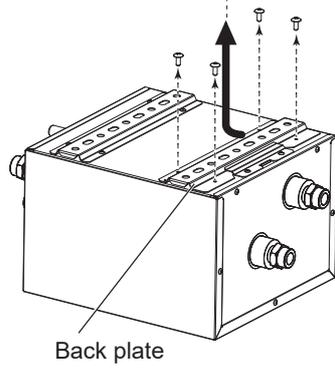


Optional parts

7 2 zone kit

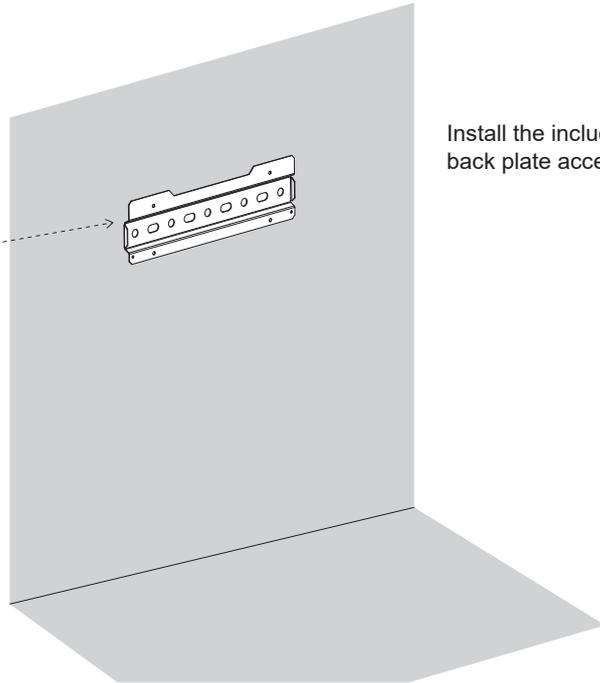
1 Case of Hydrobox

1. Remove the back plate from the top of the 2- zone kit.



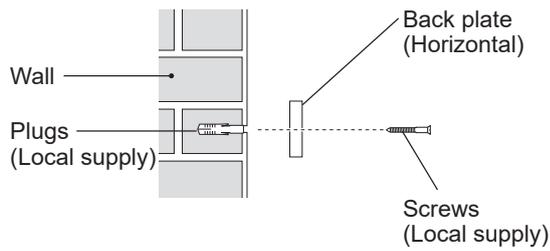
Back plate

2.



Install the included back plate accessory.

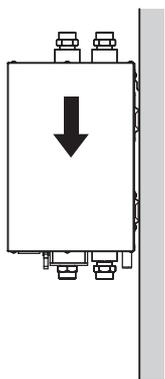
<Side view>



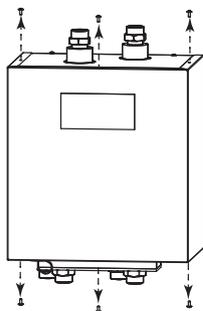
- Ensure that the notch is positioned at the TOP of the back plate. The back plate is provided with screw mounting holes that are round or oval. To prevent the 2- zone kit from falling off the wall, choose the appropriate number of holes or hole positions and horizontally secure the back plate to the appropriate wall location.

2 Case of Hydrobox

1.

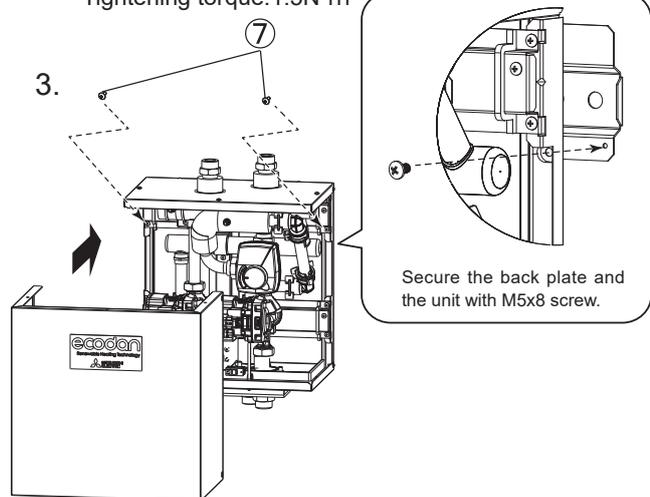


2.



Tightening torque: 1.5N·m

3.

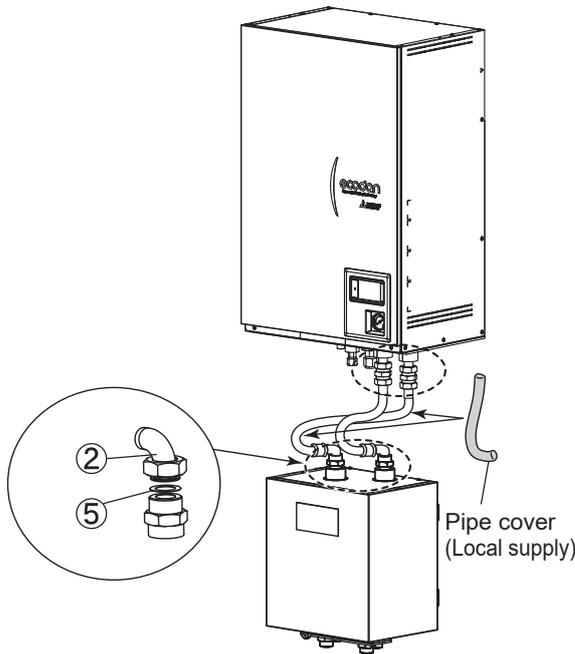


Secure the back plate and the unit with M5x8 screw.

Optional parts

7 2 zone kit

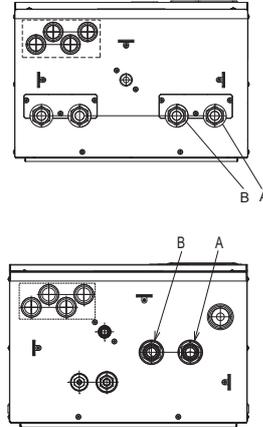
3 Case of Hydrobox



Tightening torque: 42N·m
 Use double spanners.
 Do not use the flexible hose below the bend radius of 150 mm.

<View from below>

Heating and cooling model

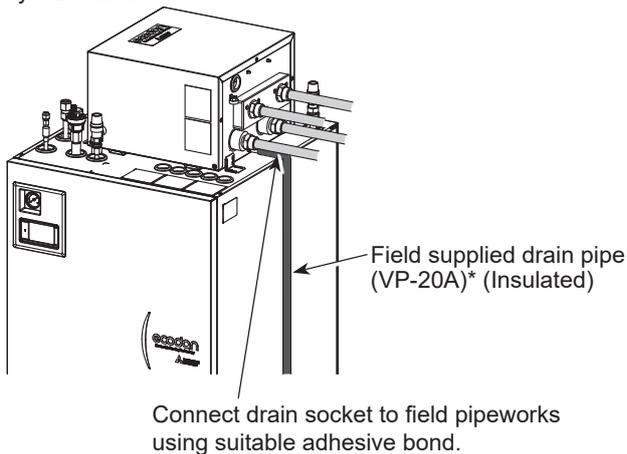


Letter	Pipe description
A	Space heating/Indirect DHW tank (primary) return connection
B	Space heating/Indirect DHW tank (primary) flow connection

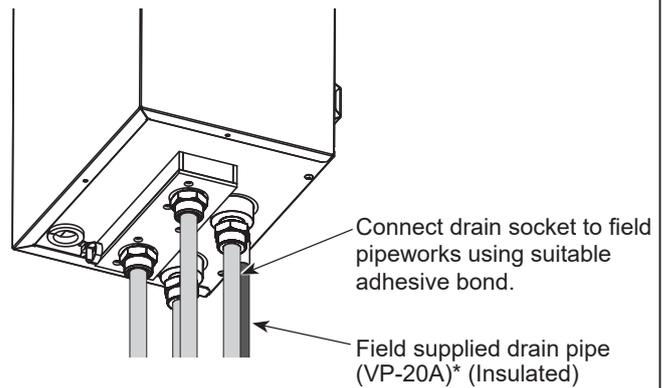
Drain piping

Connect the drain pipe only for Heating and Cooling models.

<Cylinder unit>



<Hydrobox>



NOTE

- Please use PVC pipe for drain piping.
- Use only compatible adhesive/glue for pipe joint.
- For proper drain-off, install pipework with gradient/fall of min. 1/100.
- Install pipe to fall continuously without bowing.
- Do not install any air purge points on condensate drain pipe run.
- Condensate drain pipe must discharge to suitable and safe outlet location. It should not be directly connected to any sewer-connected pipework that may introduce sulphurous gases/smells to the building.

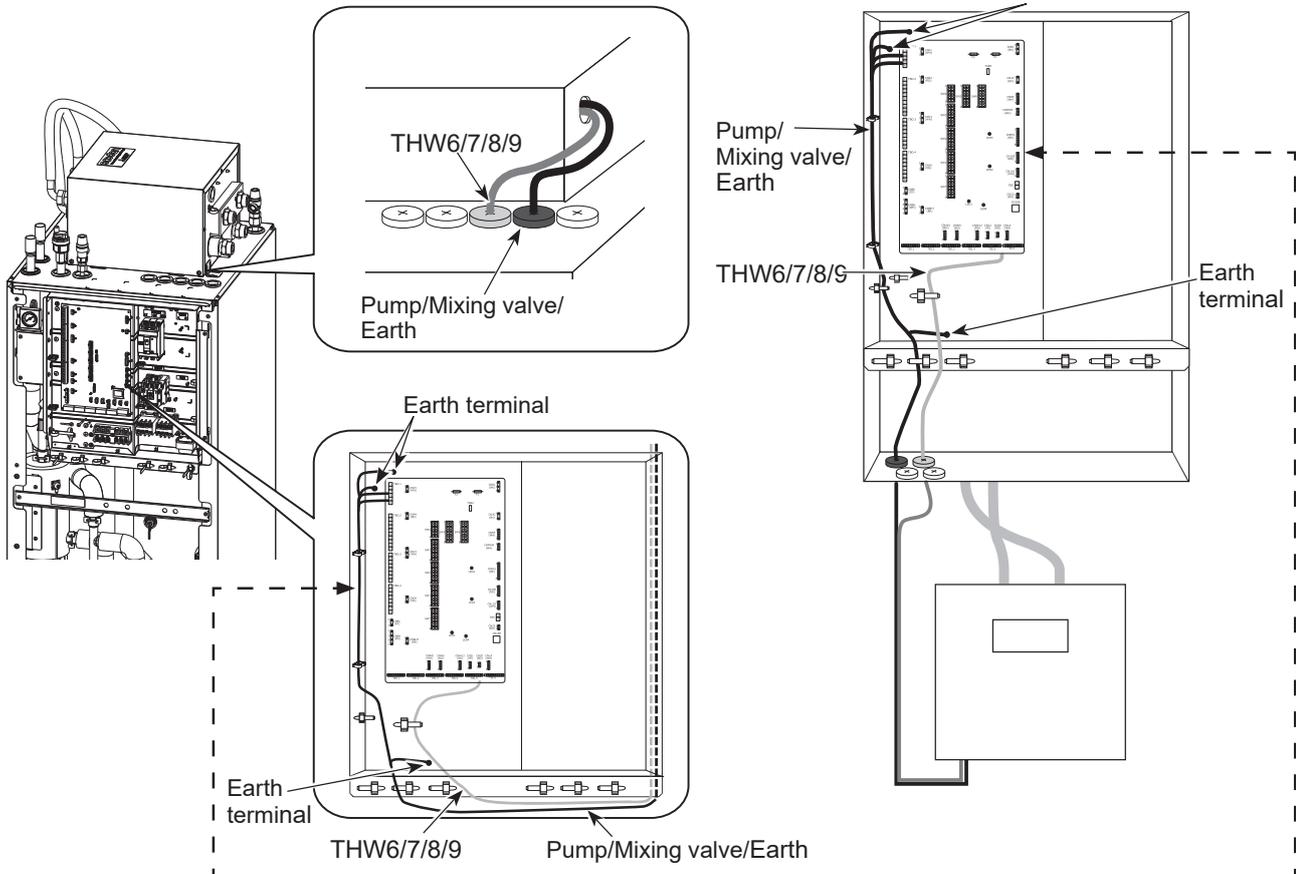
* "VP-20" is a PVC pipe with an outside diameter of 26 mm and an inside diameter of 20 mm.

7 2 zone kit

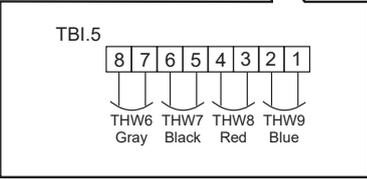
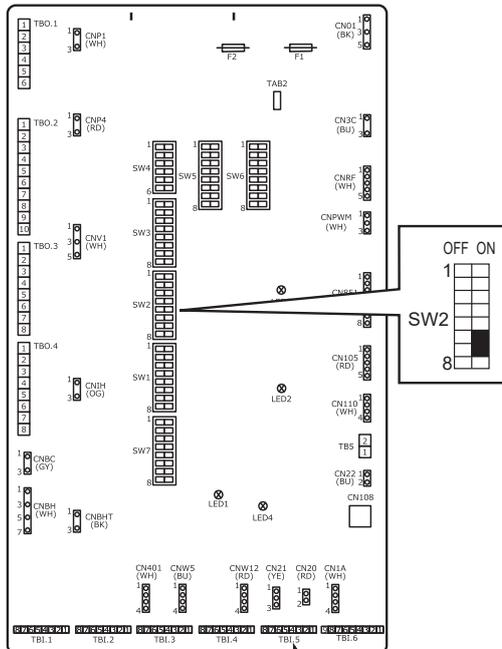
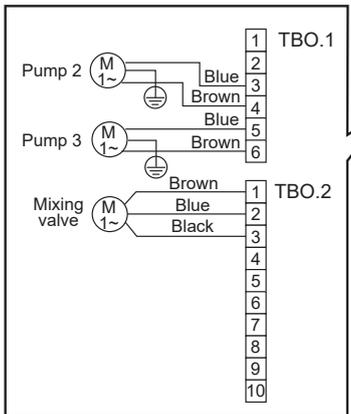
Wiring

<Cylinder unit>

<Hydrobox>



Optional parts



7 2 zone kit

DIP Switch settings of Cylinder unit (Hydrobox)

Setting the following DIP switches are necessary for 2 zone control. (See the installation manual of Cylinder unit or Hydrobox for more information.)

DIP switch	Function	OFF	ON	Setting when using 2 zone kit
SW2-6	Mixing tank	WITHOUT Mixing tank	WITH Mixing tank	ON
SW2-7	2-zone temperature control	Inactive	Active *	ON

* Active only when SW3-6 is set to OFF.

Specifications

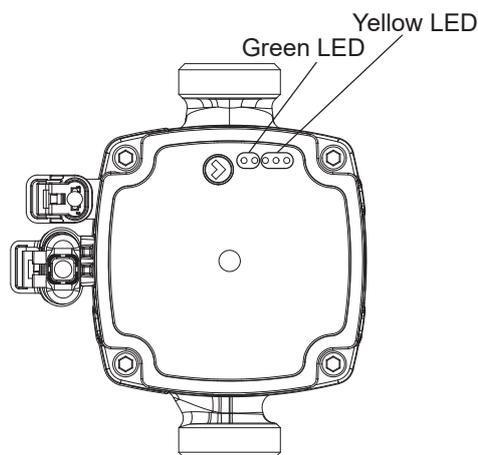
Model name	PAC-TZ02-E2
Dimension	265mm × 383mm × 383mm
Weight	17kg
Power supply	230V/single phase/50Hz from Cylinder unit or Hydrobox
Sound pressure level	28dB(A)
Sound power level	40dB(A)
Pump2, 3	Max. 52W/0.52A
	Max. head 7.0m ^{*1}
Mixing valve	5W
	Running time 90° 120s
Water flow rate range	Depend on outdoor unit

Note:

- Max. flow rate is 36.9L/min. If the flow rate exceeds 36.9L/min, pipes would be eroded.
- The water flow rate between the Cylinder unit or Hydrobox and the 2 zone kit must be greater than the total flow rate of Zone1 and Zone2.

Pump performance view

Display	Performance in % of MAX consumption
One green LED	0
Two green LED	0-25
Two green LED + one yellow LED	25-50
Two green LED + two yellow LED	50-75
Two green LED + three yellow LED	75-100



Pump key lock function

If you press the button for more than 10 seconds, you can toggle between enabling/disabling the key lock function.

7 2 zone kit

Pump setting selection

You can check the setting by pressing the push button.

If you press the button for 2 to 10 seconds, the user interface switches to "setting selection" if the user interface is unlocked.

You can change the settings as below table.

Mode	LED1 green	LED2 green	LED3 yellow	LED4 yellow	LED5 yellow
PP1	•		•		
PP2	•		•	•	
PP3	•		•	•	•
PP AA	•				
CP1		•	•		
CP2		•	•	•	
CP3		•	•	•	•
CP AA		•			
CC1			•		
CC2			•	•	
CC max.			•	•	•

PP: Proportional Pressure

The head (pressure) is reduced at falling heat demand and increased at rising heat demand.

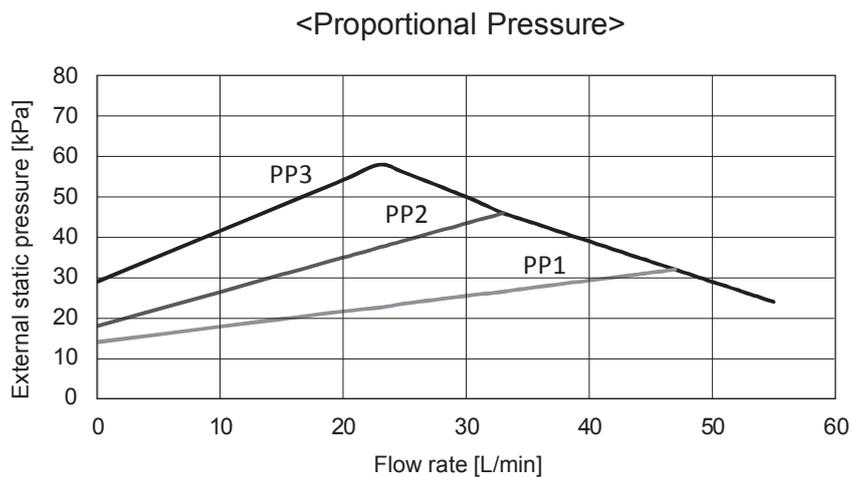
PP1: lowest proportional pressure curve

PP2: intermediate proportional pressure curve

PP3: highest proportional pressure curve

PP Auto Adapt: highest to lowest proportional pressure curve

The Auto Adapt function enables the circulator to adjust the pump performance automatically to the size of the system or the variations in load over time.



7 2 zone kit

CP: Constant Pressure

The head (pressure) is kept constant, irrespective of the heat demand.

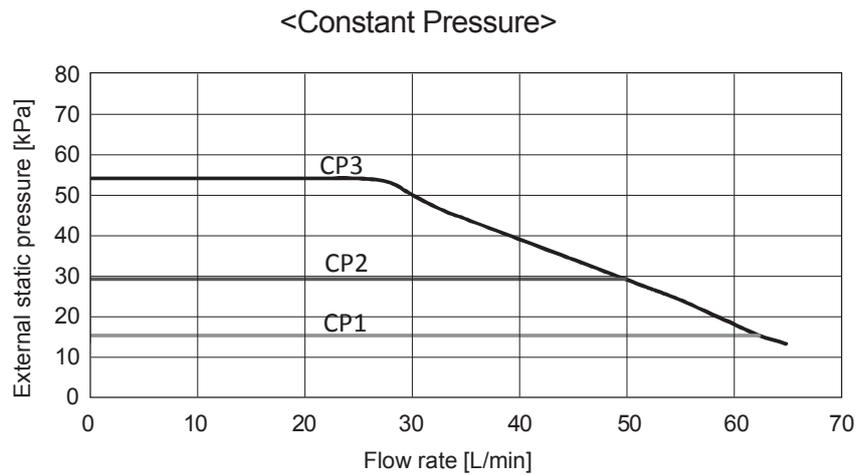
CP1: lowest constant pressure curve

CP2: intermediate constant pressure curve

CP3: highest constant pressure curve

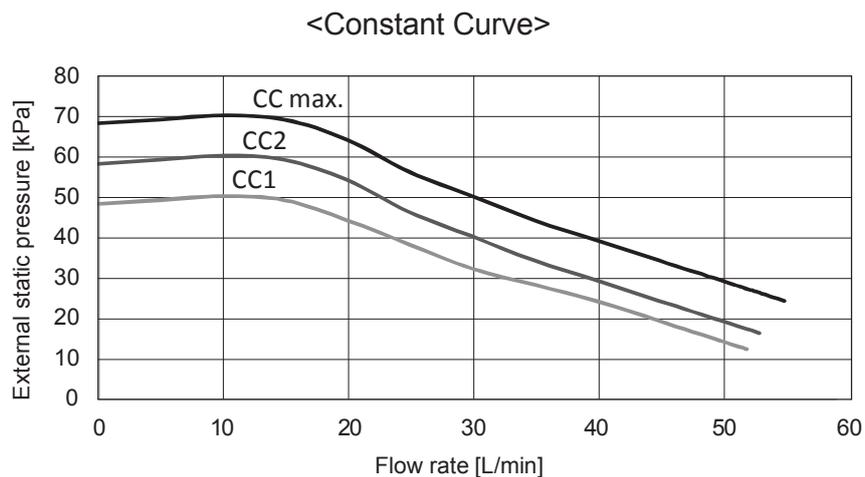
CP Auto Adapt: highest to lowest constant pressure curve

The Auto Adapt function enables the circulator to adjust the pump performance automatically to the size of the system or the variations in load over time.



CC: Constant Curve

The circulator runs on a constant curve.



8 Flow sensor



PARTS NAME : FLOW SENSOR

PARTS No. : PAC-FS01-E

SALES MODEL CODE : 7H1FS01

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INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the unit.
- Please read carefully and observe fully the following safety precautions.

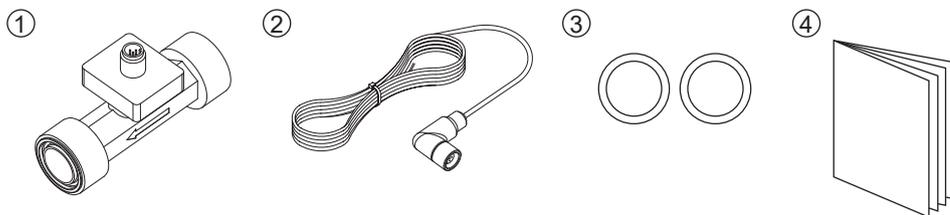
⚠ WARNING Precautions that must be observed to prevent injuries or death.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user. Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

⚠ WARNING

- Before installing any accessories on the unit ensure the unit is isolated from the power supply.
- Connections must be made securely and without tension on the terminals.
- All electrical work should be performed by a qualified technician according to local regulations and the instructions given in this manual.
- Do not remodel this part.

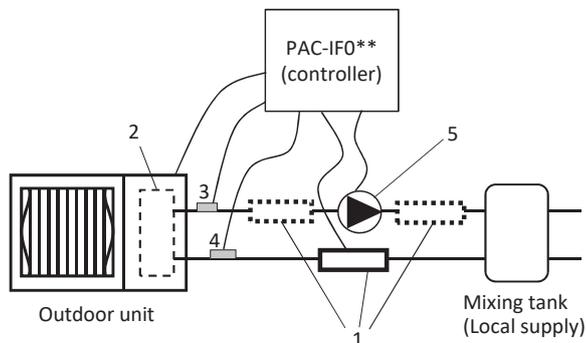
<Included items>



	Item	Piece
①	Flow sensor body	1
②	Flow sensor cable 5 m, color: black	1
③	O-ring	2
④	Installation manual (This paper)	1

■ Local system

Install the flow sensor between the mixing tank and the plate heat exchanger when using the mixing tank.



Number	Component
1	Flow sensor
2	Plate heat exchanger
3	Flow temp. thermistor (THW1)
4	Return temp. thermistor (THW2)
5	Circulation pump (local supply)

<Note>

Be sure to install this optional part when the combination of the below models are set.

- Outdoor unit: PUZ-(H)WM****A • Indoor unit: PAC-IF072B-E, PAC-IF082B-E
PAC-IF033****-E

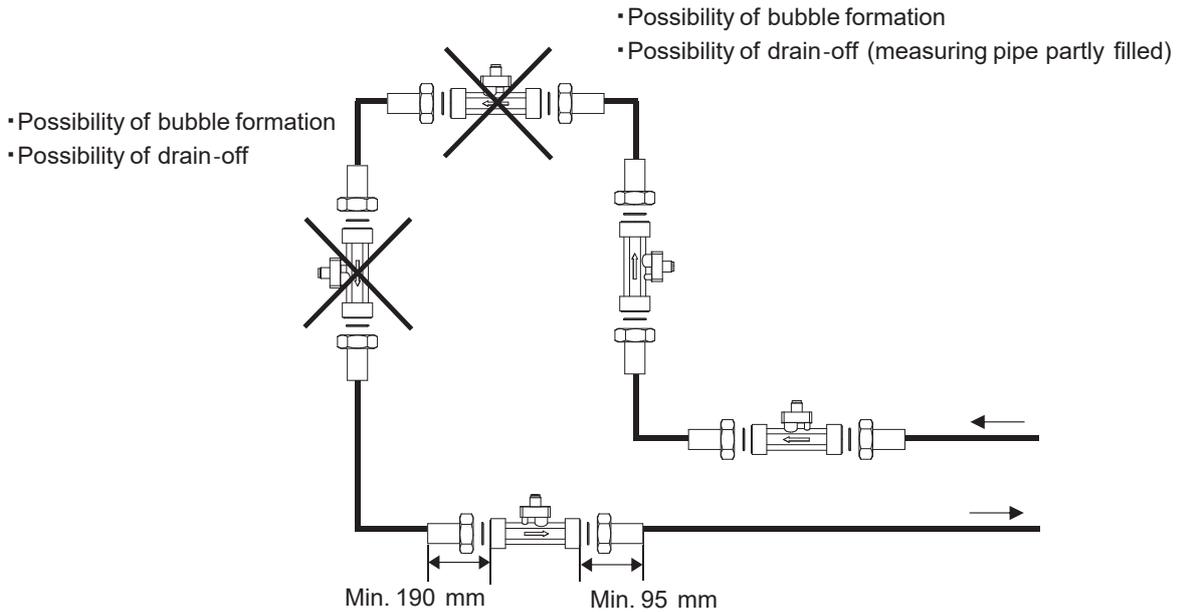
Install this flow sensor optionally for the combination of the below models.

- Outdoor unit: SUZ-SWM**VA • Indoor unit: PAC-IF071B-E, PAC-IF081B-E
PUD-S(H)WM****AA PAC-IF033****-E
PUHZ-S(H)W*****A

8 Flow sensor

1. Installation

The unit can be installed in both horizontal as well as vertical pipelines.
The flow sensor is only suitable for use in fully filled piping.



<Note>

- The length of the inlet section should be at least 190 mm and the length of the outlet section should be at least 95 mm.

2. Electrical work

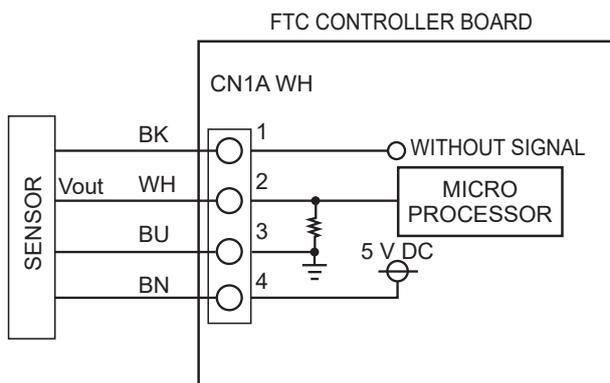
Model	Signal name	Terminal block	Connector	Item
PAC-IF07*B-E PAC-IF08*B-E	INA1	TBI.4 1-3	CN1A	Flow sensor
PAC-IF033****-E	—	—	CN1A	Flow sensor

3. Dip switch setting

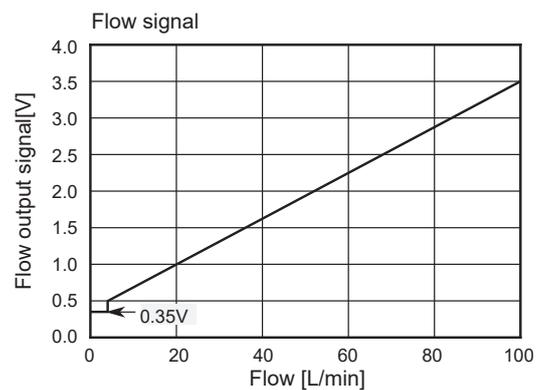
Model	Dip switch	Function	OFF	ON
PAC-IF07*B-E PAC-IF08*B-E	SW2-8	Flow sensor	WITHOUT Flow sensor	WITH Flow sensor
PAC-IF033****-E	SW4-2	Flow sensor	WITHOUT Flow sensor	WITH Flow sensor

4. Specifications

Ambient temperature range	0 to 70 °C
Fluid temperature range	5 to 90 °C



- ④-③ : 5 V (DC)
- ②-③ : Output Vout (DC)



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