

TECHNICAL CATALOGUE HEAT PUMPS 2024/2025

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- BUFFER TANKS
- DHW TANKS
- ACCESSORIES

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ONTARIO SERIES

MONOBLOC 4TH GENERATION

MODEL			SMH-40IRB	SMH-60IRB	SMH-80IRB	SMH-100IRB2	SMH-100IRB2-3
Suitable for building heat loss			3 - 5 kW	4 - 6 kW	6 - 8 kW	7 - 9,5 kW	7 - 9,5 kW
Capacity*1	Cooling (floor heating)	kW	3,8	5,8	6,8	8,8	8,8
	Heating (floor heating)	kW	4	6	7,5	10	10
Power Input*1	Cooling (floor heating)	kW	0,82	1,32	1,55	1,96	1,96
	Heating (floor heating)	kW	0,78	1,2	1,63	2,15	2,15
EER*1 (floor cooling)		-	4,65	4,4	4,4	4,5	4,5
COP*1 (floor heating)		-	5,1	5	4,6	4,65	4,65
Capacity*2	Cooling (fan coil)	kW	3	4	5	7,8	7,8
	Heating (fan coil or radiator)	kW	4	6	7,5	10	10
Power Input*2	Cooling (fan coil)	kW	0,94	1,27	1,56	2,48	2,48
	Heating (fan coil or radiator)	kW	0,98	1,56	2	2,67	2,67
EER*2 (fan coil)		-	3,2	3,15	3,2	3,15	3,15
COP*2 (fan coil or radiator)		-	4,1	3,85	3,75	3,75	3,75
Refrigerant charge		kg	R32/0,87			R32/2,2	
Average climate SCOP (55 °C / 35 °C)		-	3,3/4,8	3,3/4,8	3,3/4,8	3,2/4,5	3,2/4,5
Energy class (55 °C / 35 °C)		-	A++/A+++	A++/A+++	A++/A+++	A++/A+++	A++/A+++
Compressor type		-	Twin rotary				
Fin coating		-	gold fin				
Operation range	Cooling	°C	7~25				
	Heating	°C	20~60				
	DHW	°C	40~80 (55 °C maximum by compressor)				
Outdoor air operation temperature range	Cooling	°C	10~48				
	Heating	°C	-25~35				
	DHW	°C	-25~45				
Sound pressure level in 1m	Cooling	dB (A)	56			59	
	Heating	dB (A)	58			61	
Dimensions (WxDxH)	Outline	mm	1150×345×758			1200×460×879	
	Package	mm	1258×488×900			1288×588×1020	
Net/gross weight		kg	96/109			151/166	
Power supply		V/Ph/Hz	220-240 / 1 / 50				380-415 / 3 / 50
Circuit breaker		A	16	16	20	25	16
Recommended power cable		-	3×2,5 mm²	3×2,5 mm²	3×4 mm²	3×6 mm²	5×2,5 mm²
Inrush current		A	1	1	1	1	1
Nominal current		A	3,5	5,8	6,8	8,6	2,9
Maximum current		A	10,4		19	23	12
Built in backup heater		kW	No				
OTHER TECHNICAL DATA							
Water pipe connection		inch	1" (outer)				
Distance of holes		mm	1150×345			1200×460	
STANDARD ACCESSORIES							
Y-filter		-	Yes				
Display		-	Yes				
Remote Air Temperature Sensor with cable		-	Yes (9,5 m)				
Display communication cable		-	Yes (8 m)				
Temperature sensor for DHW		-	Yes (20 m)				
Temperature sensor for E-heater		-	Yes (5,5 m)				
Product fiche + energy label		-	Yes				
OPTIONAL ACCESSORIES							
Optional E-heater		-	EH-SMH				
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENTS							
Minimum water volume of heating system		l	60	90	120	150	150
Minimum water flow		l/min	9,2±1,7	9,2±1,7	9,2±1,7	9,2±1,7	9,2±1,7

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35°C DB/24°C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

MONOBLOC 4TH GENERATION

MODEL			SMH-120IRB2-3	SMH-140IRB2-3	SMH-160IRB2-3	SMH-120IRB2	SMH-140IRB2
Suitable for building heat loss			10 - 12 kW	11 - 14 kW	12 - 15 kW	10 - 12 kW	11 - 14 kW
Capacity*1	Cooling (floor heating)	kW	11	12,5	14,5	11	12,5
	Heating (floor heating)	kW	12	14	15,5	12	14
Power Input*1	Cooling (floor heating)	kW	2,56	3,05	3,82	2,56	3,05
	Heating (floor heating)	kW	2,64	3,22	3,6	2,64	3,22
EER*1 (floor cooling)		-	4,2	4	4	4,2	4
COP*1 (floor heating)		-	4,55	4,35	4,35	4,55	4,35
Capacity*2	Cooling (fan coil)	kW	9,5	12	13	9,5	12
	Heating (fan coil or radiator)	kW	12	14	15,5	12	14
Power Input*2	Cooling (fan coil)	kW	3,11	4,14	4,73	3,11	4,14
	Heating (fan coil or radiator)	kW	3,48	4,18	4,7	3,48	4,18
EER*2 (fan coil)		-	3	3,05	2,9	3	3,05
COP*2 (fan coil or radiator)		-	3,5	3,6	3,55	3,5	3,6
Refrigerant charge		kg	R32/2,2				
Average climate SCOP (55 °C / 35 °C)		-	3,3/4,5	3,2/4,3	3,2/4,3	3,2/4,5	3,2/4,3
Energy class (55 °C / 35 °C)		-	A++/A+++	A++/A++	A++/A++	A++/A+++	A++/A++
Compressor type		-	Twin rotary				
Fin coating		-	gold fin				
Operation range	Cooling	°C	7~25				
	Heating	°C	20~60				
	DHW	°C	40~80 (55 °C maximum by compressor)				
Outdoor air operation temperature range	Cooling	°C	10~48				
	Heating	°C	-25~-35				
	DHW	°C	-25~-45				
Sound pressure level in 1m	Cooling	dB (A)	59				
	Heating	dB (A)	61				
Dimensions (WxDxH)	Outline	mm	1200×460×879				
	Package	mm	1288×588×1020				
Net/gross weight		kg	151/166				
Power supply		V/Ph/Hz	380-415 / 3 / 50			220-240 / 1 / 50	
Circuit breaker		A	16	16	16	32	40
Recommended power cable		-	5×2,5 mm²	5×2,5 mm²	5×2,5 mm²	3x10mm²	3x10mm²
Inrush current		A	1	1	1	1	1
Nominal current		A	3,8	4,5	5,6	11,47	14
Maximum current		A	12	12	12	25	34
Built in backup heater		kW	No				
OTHER TECHNICAL DATA							
Water pipe connection		inch	1" (outer)				
Distance of holes		mm	1200×460				
STANDARD ACCESSORIES							
Y-filter		-	Yes				
Display		-	Yes				
Remote Air Temperature Sensor with cable		-	Yes (9,5 m)				
Display communication cable		-	Yes (8 m)				
Temperature sensor for DHW		-	Yes (20 m)				
Temperature sensor for E-heater		-	Yes (5,5 m)				
Product fiche + energy label		-	Yes				
OPTIONAL ACCESSORIES							
Optional E-heater		-	EH-SMH				
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENTS							
Minimum water volume of heating system		l	180	210	240	180	210
Minimum water flow		l/min	9,2±1,7	9,2±1,7	9,2±1,7	9,2±1,7	9,2±1,7

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35°C DB/24°C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

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R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

MONOBLOC 4TH GENERATION

MODEL			SMH-160IRB2				
Suitable for building heat loss			12 - 15 kW				
Capacity*1	Cooling (floor heating)	kW	14,5				
	Heating (floor heating)	kW	15,5				
Power Input*1	Cooling (floor heating)	kW	3,82				
	Heating (floor heating)	kW	3,6				
EER*1 (floor cooling)		-	4				
COP*1 (floor heating)		-	4,35				
Capacity*2	Cooling (fan coil)	kW	13				
	Heating (fan coil or radiator)	kW	15,5				
Power Input*2	Cooling (fan coil)	kW	4,73				
	Heating (fan coil or radiator)	kW	4,7				
EER*2 (fan coil)		-	2,9				
COP*2 (fan coil or radiator)		-	3,55				
Refrigerant charge		kg	R32/2,2				
Average climate SCOP (55 °C / 35 °C)		-	3,2/4,2				
Energy class (55 °C / 35 °C)		-	A++/A++				
Compressor type		-	Twin rotary				
Fin coating		-	gold fin				
Operation range	Cooling	°C	7~25				
	Heating	°C	20~60				
	DHW	°C	40~80 (55 °C max. by compressor)				
Outdoor air operation temperature range	Cooling	°C	10~48				
	Heating	°C	-25~35				
	DHW	°C	-25~45				
Sound pressure level in 1m	Cooling	dB (A)	59				
	Heating	dB (A)	61				
Dimensions (WxDxH)	Outline	mm	1200×460×879				
	Package	mm	1288×588×1020				
Net/gross weight		kg	151/166				
Power supply		V/Ph/Hz	220-240 / 1 / 50				
Circuit breaker		A	40				
Recommended power cable		-	3x10mm²				
Inrush current		A	1				
Nominal current		A	15,65				
Maximum current		A	34				
Built in backup heater		kW	No				
OTHER TECHNICAL DATA							
Water pipe connection		inch	1" (outer)				
Distance of holes		mm	1200×460				
STANDARD ACCESSORIES							
Y-filter		-	Yes				
Display		-	Yes				
Remote Air Temperature Sensor with cable		-	Yes (9,5 m)				
Display communication cable		-	Yes (8 m)				
Temperature sensor for DHW		-	Yes (20 m)				
Temperature sensor for E-heater		-	Yes (5,5 m)				
Product fiche + energy label		-	Yes				
OPTIONAL ACCESSORIES							
Optional E-heater		-	EH-SMH				
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENTS							
Minimum water volume of heating system		l	240				
Minimum water flow		l/min	9,2±1,7				

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35°C DB/24°C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

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R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

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Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

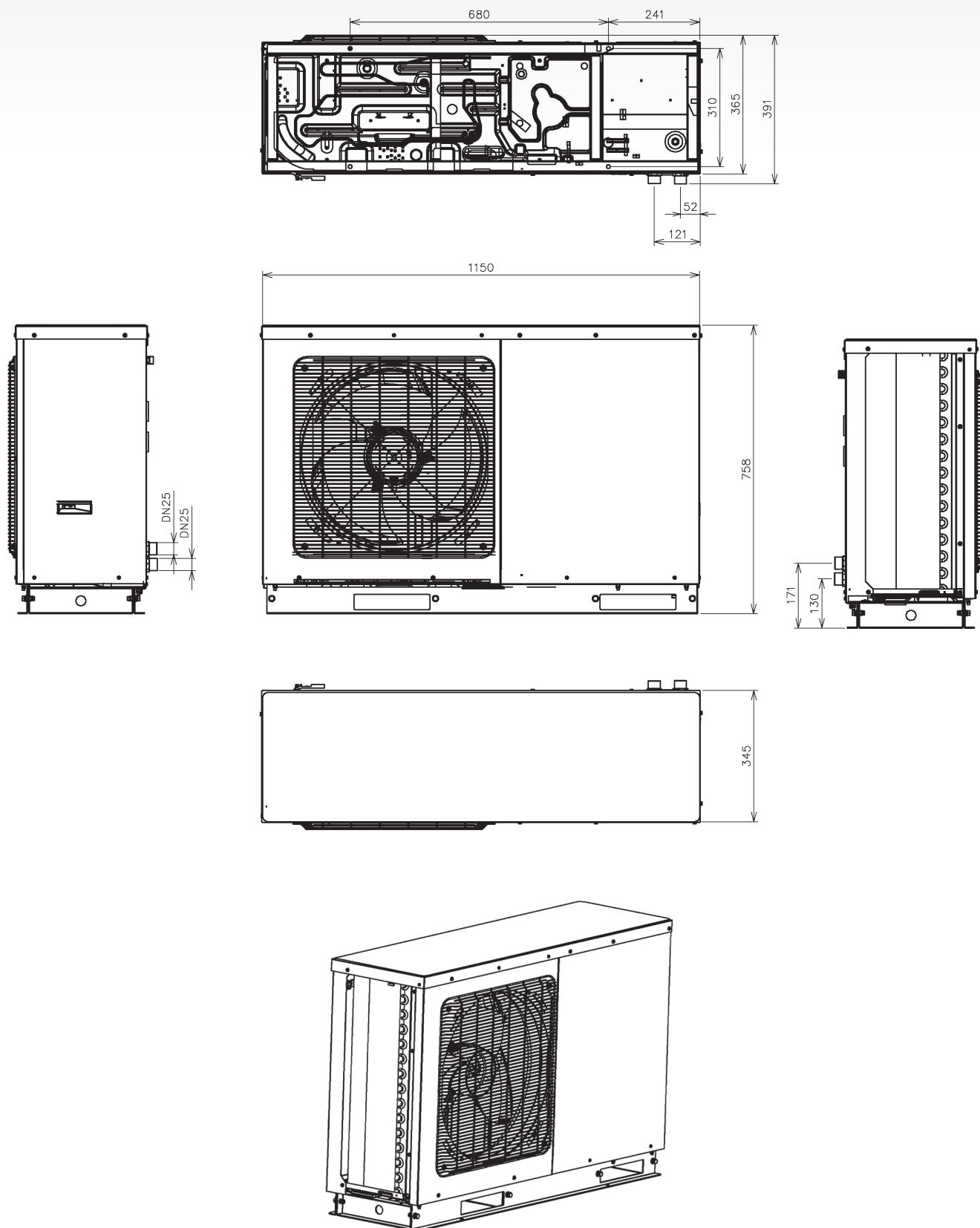
MONOBLOC 4TH GENERATION

SMH-100IRB2, SMH-120IRB2, SMH-140IRB2, SMH-160IRB2

SMH-100IRB2-3, SMH-120IRB2-3, SMH-140IRB2-3, SMH-160IRB2-3

SMH-100IRB, SMH-160IRB

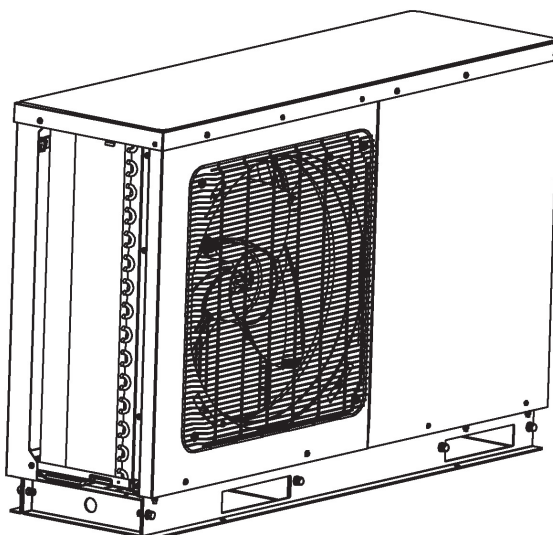
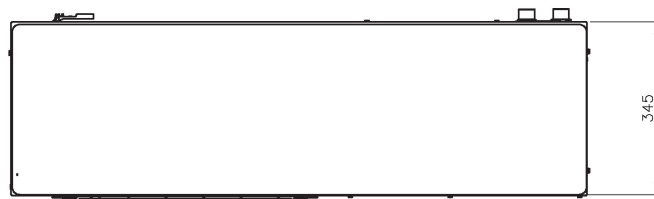
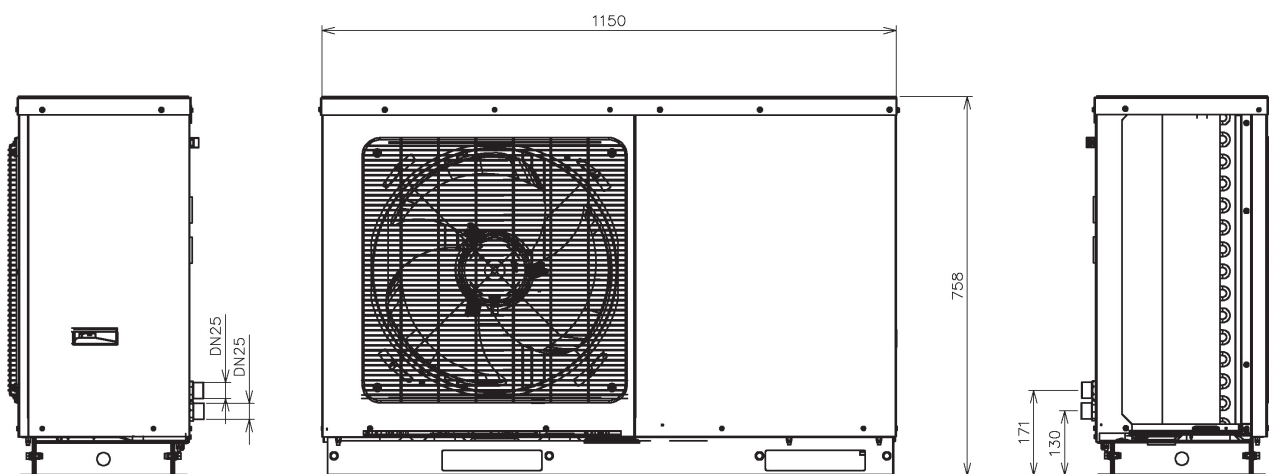
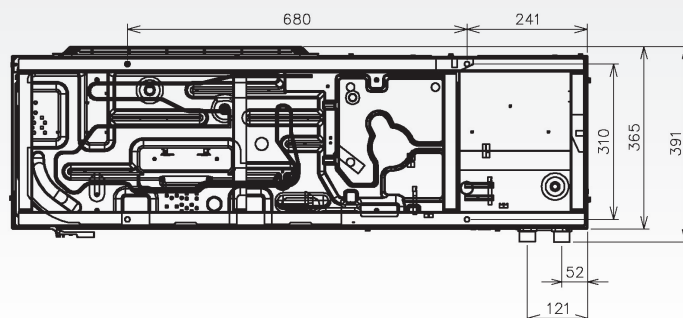
SMH-100IRB-3



APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

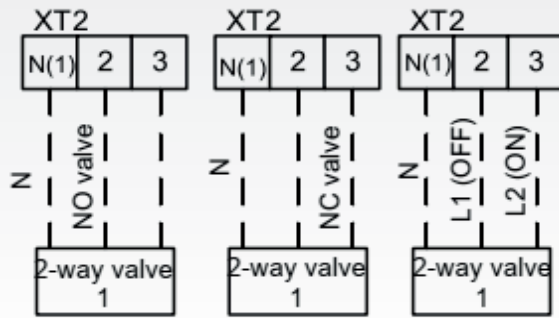
MONOBLOC 4TH GENERATION

SMH-40IRB, SMH-60IRB, SMH-80IRB

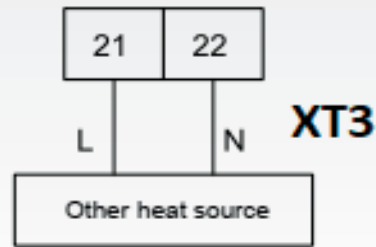


MONOBLOC 4TH GENERATION

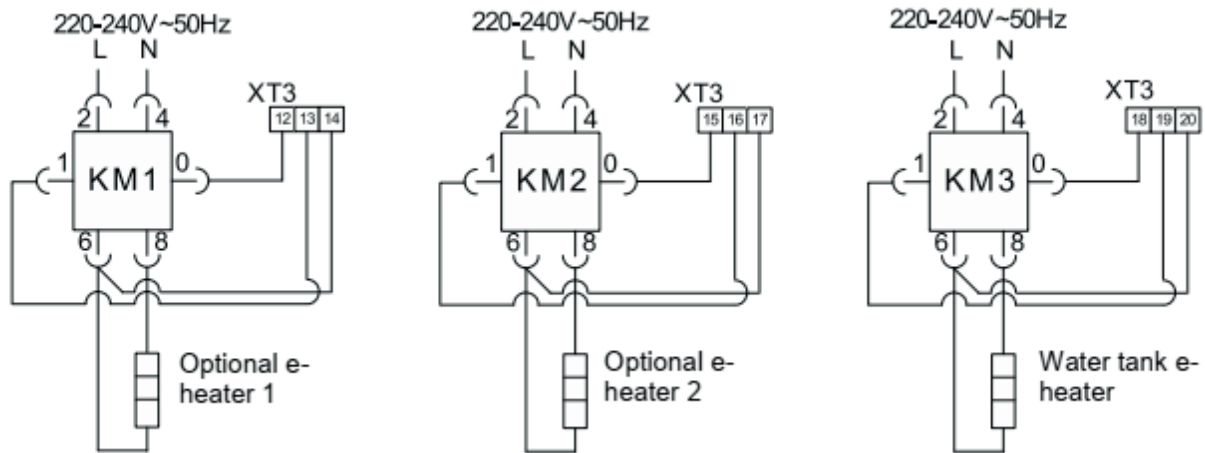
2-way valve



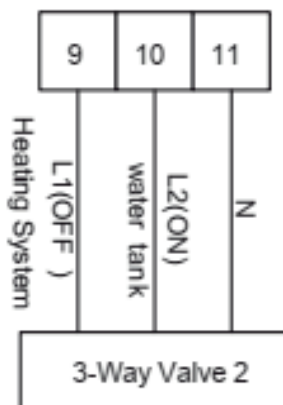
Other heat source



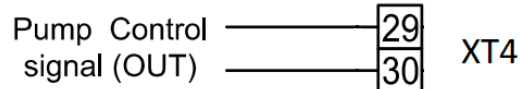
1-phase contactor



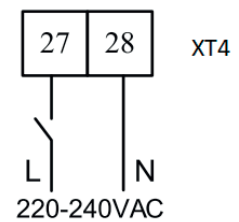
3-way valve



Additional water pump

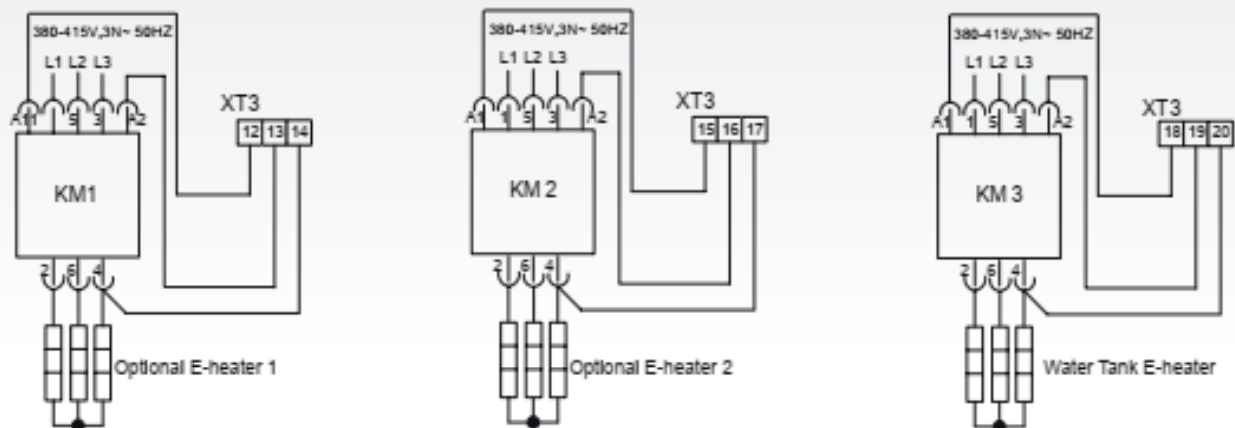


Gate controller

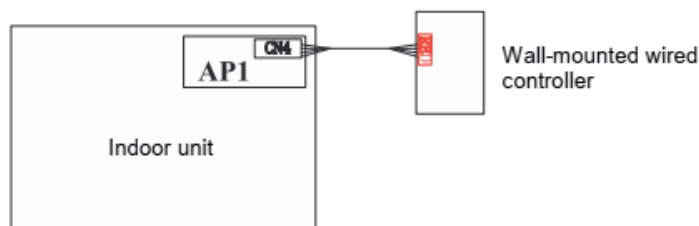


WIRING OF ONTARIO HEAT PUMPS **MONOBLOC 4TH GENERATION**

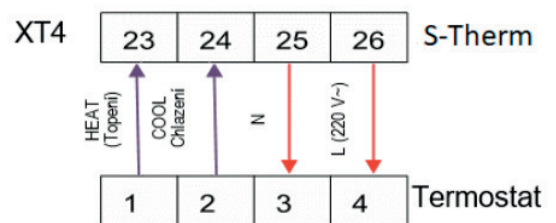
3-phase contactor



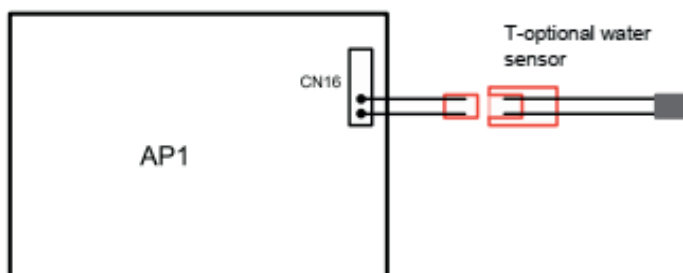
Controller connection



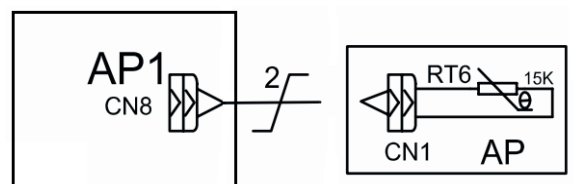
External thermostat



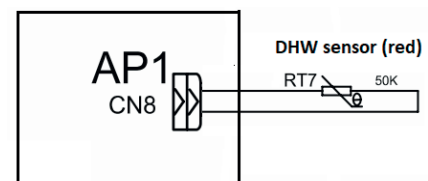
T-sensor for e-heater



Room temperature sensor



DHW sensor



Attention: You can find a detailed wiring diagram in the installation manual.

MONOBLOC 5TH GENERATION

MODEL			SMH-40IRBC	SMH-60IRBC/	SMH-80IRBC	SMH-100IRBC2	
Suitable for building heat loss			3 - 5 kW	4 - 6 kW	6 - 8 kW	7 - 9,5 kW	
Capacity*1	Cooling (floor cooling)	kW	5	6,5	8,3	10,2	
	Heating (floor heating)	kW	5	6	8,2	10,2	
Power Input*1	Cooling (floor cooling)	kW	0,962	1,275	1,56	2	
	Heating (floor heating)	kW	0,926	1,111	1,54	2,02	
EER*1 (floor cooling)		-	5,2	5,1	5,32	5,1	
COP*1 (floor heating)		-	5,4	5,4	5,32	5,05	
Capacity*2	Cooling (fan coil)	kW	4,9	5,7	7,4	9	
	Heating (fan coil or radiator)	kW	4,9	6,8	8,3	10,2	
Power Input*2	Cooling (floor cooling)	kW	1,4	1,76	2	2,65	
	Heating (fan coil or radiator)	kW	1,167	1,659	1,9	2,5	
EER*2 (fan coil)		-	3,5	3,25	3,7	3,4	
COP*2 (fan coil or radiator)		-	4,2	4,1	4,36	4,08	
Refrigerant charge		kg	R32/0,95		R32/1,6		
Average climate SCOP (55 °C / 35 °C)		-	3,5/4,87	3,5/5,05	3,7/4,5	3,45/4,47	
Energy class (55 °C / 35 °C)		-	A++/A+++	A++/A+++	A++/A+++	A++/A+++	
Compressor type		-	Inverter rotary				
Fin coating		-	gold fin				
Operation range	Cooling	°C	7~25				
	Heating	°C	20~60				
	DHW	°C	40~80 (55 °C maximum by compressor)				
Outdoor air operation temperature range	Cooling	°C	-15~48				
	Heating	°C	-25~35				
	DHW	°C	-25~45				
Sound pressure level in 1m	Cooling	dB(A)	51	52		56	
	Heating	dB(A)	53		54	56	
	Cooling (Silent mode)	dB(A)	33		37		
	Heating (Silent mode)	dB(A)	35		39		
Dimensions (WxDxH)	Outline	mm	1150x365x735		1206x445x878		
	Package	mm	1250x500x765		1320x525x885		
Net/gross weight		kg	90/106		120/139		
Power supply		V/Ph/Hz	220-240 / 1 / 50				
Circuit breaker		A	16	16	25	25	
Recommended power cable		-	3x2,5mm²	3x2,5mm²	3x6mm²	3x6mm²	
Inrush current		A	1	1	1	1	
Nominal current		A	4,02	4,83	6,69	8,78	
Maximum current		A	11		23	24	
Built in backup heater		kW	No				
OTHER TECHNICAL DATA							
Water pipe connection		inch	1" (outer)				
Distance of holes		mm	1063x302		1120x322		
STANDARD ACCESSORIES							
Y-filter		-	Yes				
Display		-	Yes				
Remote Air Temperature Sensor with cable		-	Yes (9,5m)				
Display communication cable		-	Yes (8m)				
Temperature sensor for DHW		-	Yes (20m)				
Temperature sensor for E-heater		-	Yes (5,5m)				
Product fiche + energy label		-	Yes				
OPTIONAL ACCESSORIES							
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENTS							
Minimum water volume of heating system		l	60	90	120	150	
Minimum water flow		l/min	9,2±1,7	9,2±1,7	9,2±1,7	9,2±1,7	

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35°C DB/24°C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

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Explanatory notes on the very last page of the catalogue.

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MONOBLOC 5TH GENERATION

MODEL			SMH-100IRBC2-3	SMH-120IRBC2-3	SMH-140IRBC2-3	SMH-160IRBC2-3		
Suitable for building heat loss			7 - 9,5 kW	10 - 12 kW	11 - 14 kW	12 - 15 kW		
Capacity*1	Cooling (floor cooling)	kW	10,2	12	13,9	15,4		
	Heating (floor heating)	kW	10,2	12	14,2	15,7		
Power Input*1	Cooling (floor cooling)	kW	2,13	2,61	3,32	4,05		
	Heating (floor heating)	kW	2,06	2,49	3,09	3,57		
EER*1 (floor cooling)		-	4,79	4,6	4,19	3,8		
COP*1 (floor heating)		-	4,95	4,82	4,6	4,4		
Capacity*2	Cooling (fan coil)	kW	9,1	11,1	13,3	13,8		
	Heating (fan coil or radiator)	kW	10,2	13	14,2	16,2		
Power Input*2	Cooling (floor cooling)	kW	2,8	3,68	4,75	5,09		
	Heating (fan coil or radiator)	kW	2,6	3,45	3,84	4,49		
EER*2 (fan coil)		-	3,25	3,1	2,8	2,71		
COP*2 (fan coil or radiator)		-	3,92	3,77	3,7	3,61		
Refrigerant charge		kg	R32/1,6	R32/2,2				
Average climate SCOP (55 °C / 35 °C)		-	3,57/4,8	3,5/4,57	3,52/4,55	3,52/4,55		
Energy class (55 °C / 35 °C)		-	A++/A+++	A++/A+++	A++/A+++	A++/A+++		
Compressor type		-	Inverter rotary					
Fin coating		-	gold fin					
Operation range	Cooling	°C	7~25					
	Heating	°C	20~60					
	DHW	°C	40~80 (55 °C maximum by compressor)					
Outdoor air operation temperature range	Cooling	°C	-15~48					
	Heating	°C	-25~35					
	DHW	°C	-25~45					
Sound pressure level in 1m	Cooling	dB(A)	54		55	56		
	Heating	dB(A)	56		58	59		
	Cooling (Silent mode)	dB(A)	37	38				
	Heating (Silent mode)	dB(A)	39					
Dimensions (WxDxH)	Outline	mm	1206x445x878					
	Package	mm	1320x525x885					
Net/gross weight		kg	134/152	144/162				
Power supply		V/Ph/Hz	380-415 / 3 / 50					
Circuit breaker		A	16	16	16	16		
Recommended power cable		-	5x2,5mm²	5x2,5mm²	5x2,5mm²	5x2,5mm²		
Inrush current		A	1	1	1	1		
Nominal current		A	3,14	3,8	4,66	5,21		
Maximum current		A	12	12	12	12		
Built in backup heater		kW	No					
OTHER TECHNICAL DATA								
Water pipe connection		inch	1" (outer)					
Distance of holes		mm	1120x322					
STANDARD ACCESSORIES								
Y-filter		-	Yes					
Display		-	Yes					
Remote Air Temperature Sensor with cable		-	Yes (9,5m)					
Display communication cable		-	Yes (8m)					
Temperature sensor for DHW		-	Yes (20m)					
Temperature sensor for E-heater		-	Yes (5,5m)					
Product fiche + energy label		-	Yes					
OPTIONAL ACCESSORIES								
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)					
HEATING SYSTEM REQUIREMENTS								
Minimum water volume of heating system		l	150	180	210	240		
Minimum water flow		l/min	9,2±1,7	9,2±1,7	9,2±1,7	9,2±1,7		

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35°C DB/24°C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

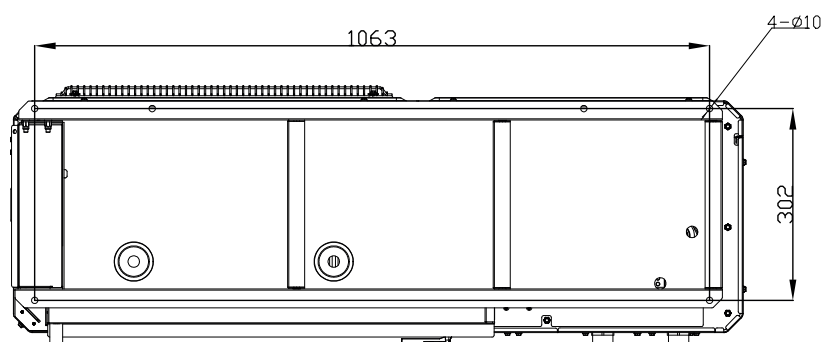
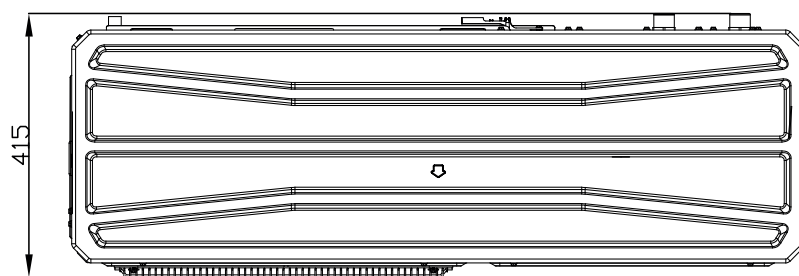
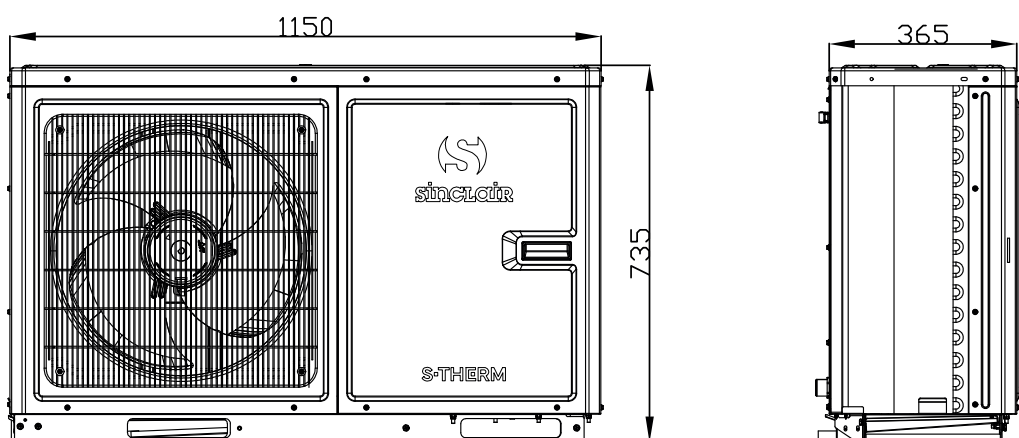
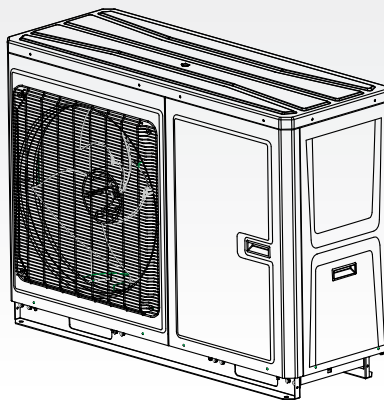
Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

MONOBLOC 5TH GENERATION

SMH-40IRBC

SMH-60IRBC



APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

MONOBLOC 5TH GENERATION

SMH-80IRBC

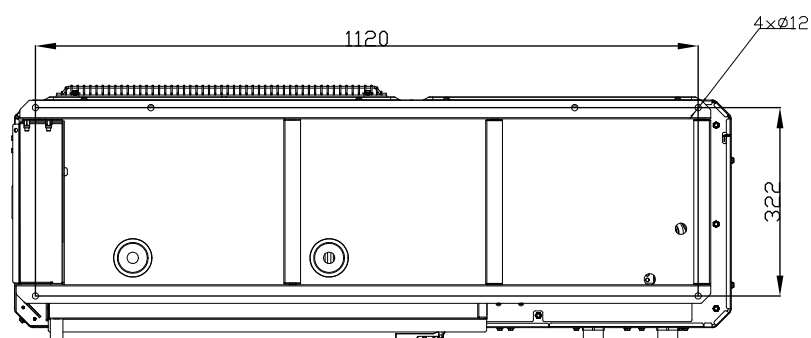
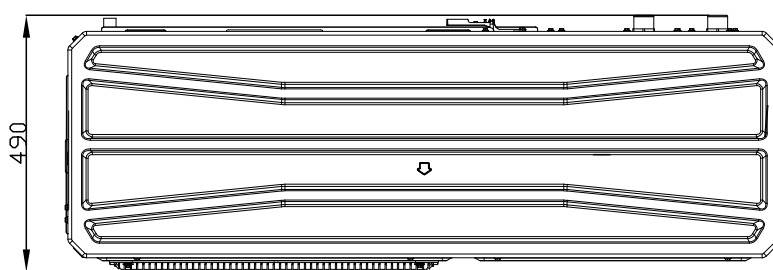
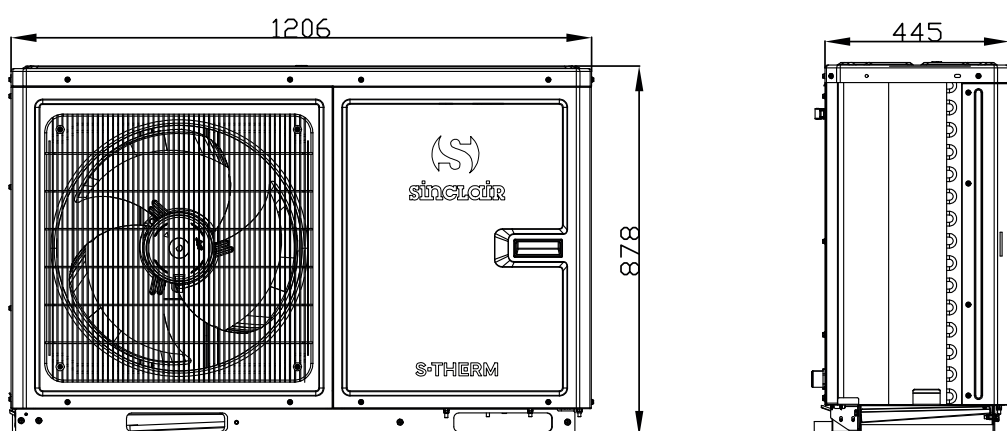
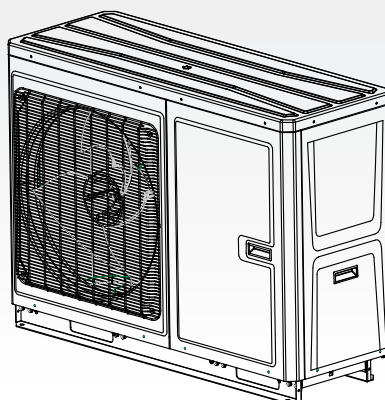
SMH-100IRBC2

SMH-100IRBC2-3

SMH-120IRBC2-3

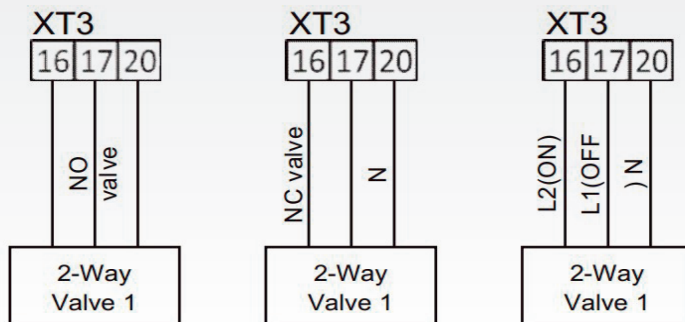
SMH-140IRBC2-3

SMH-160IRBC2-3

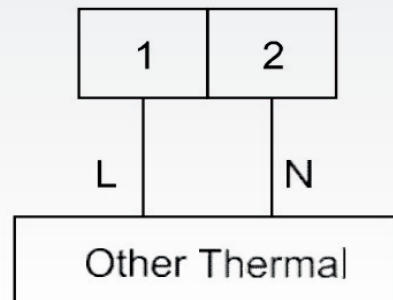


MONOBLOC 5TH GENERATION

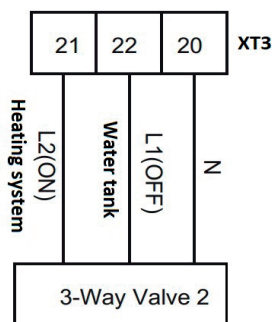
2-way valve



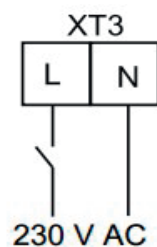
Other heat source



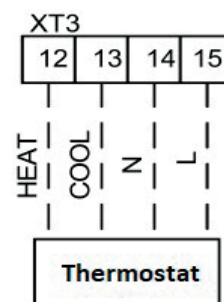
3-way valve



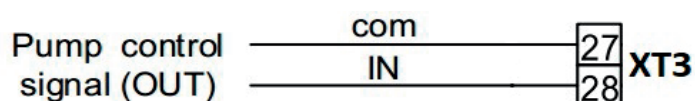
Gate controller



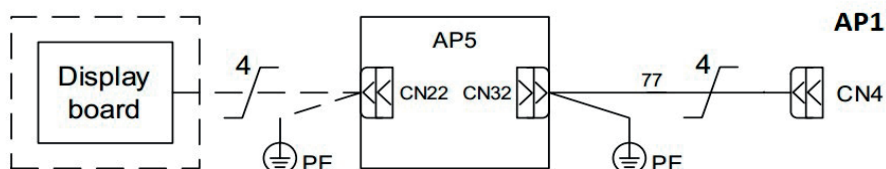
External thermostat



Additional water pump

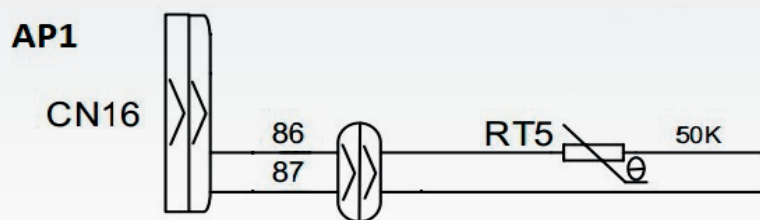


Controller connection

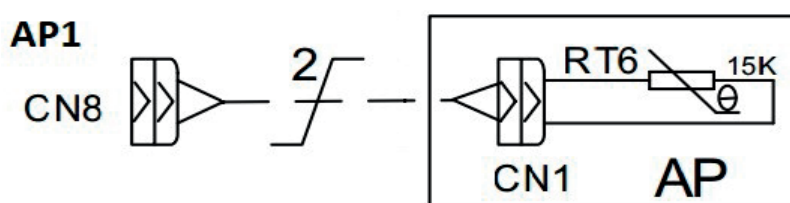


MONOBLOC 5TH GENERATION

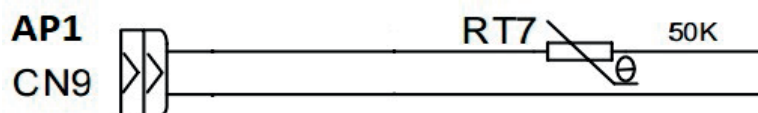
T-sensor for Other thermal



Room temperature sensor



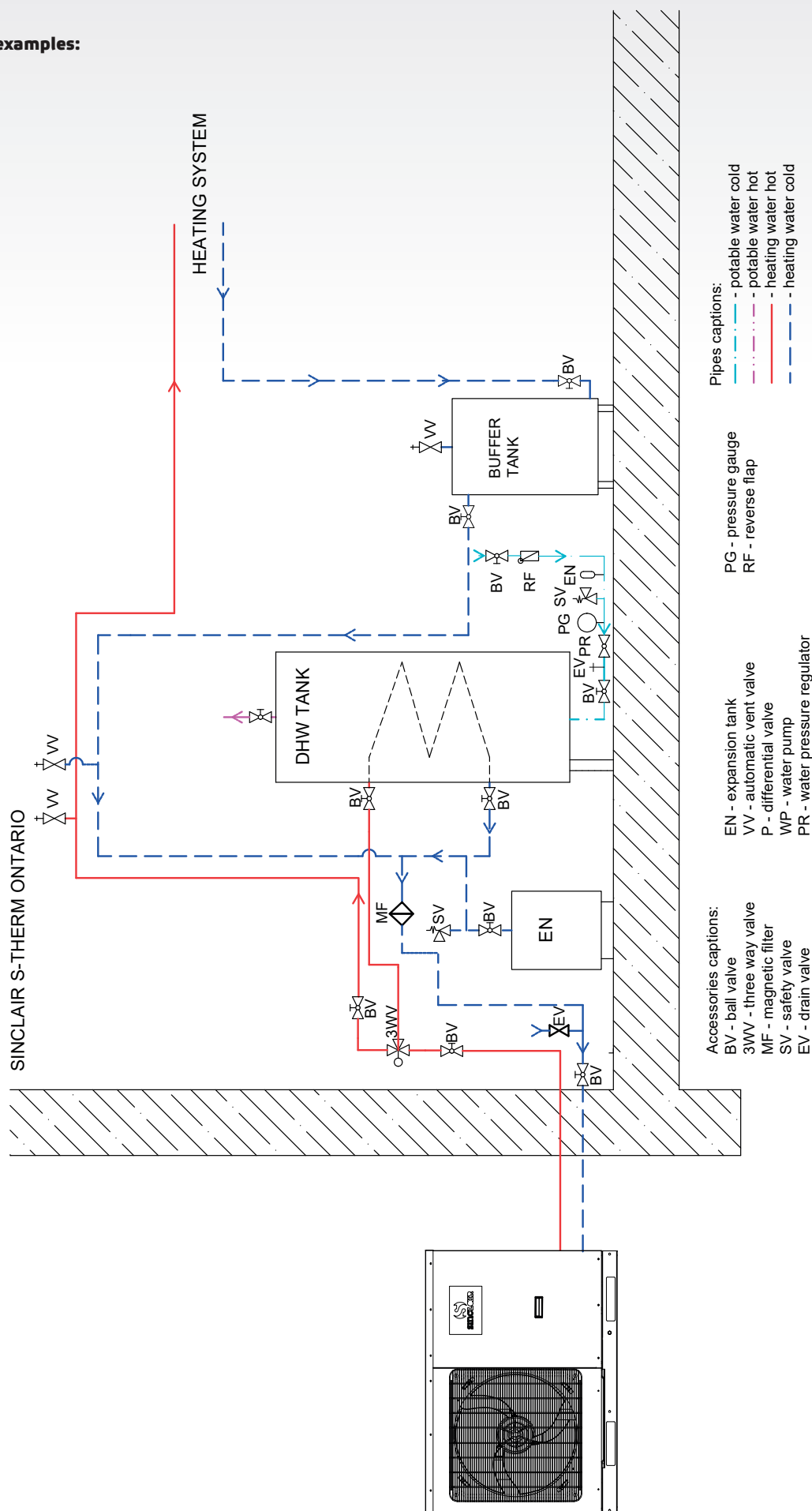
DHW sensor



Attention: You can find a detailed wiring diagram in the installation manual.

ONTARIO SERIES - HEATING SYSTEM **MONOBLOC 4TH AND 5TH GENERATION**

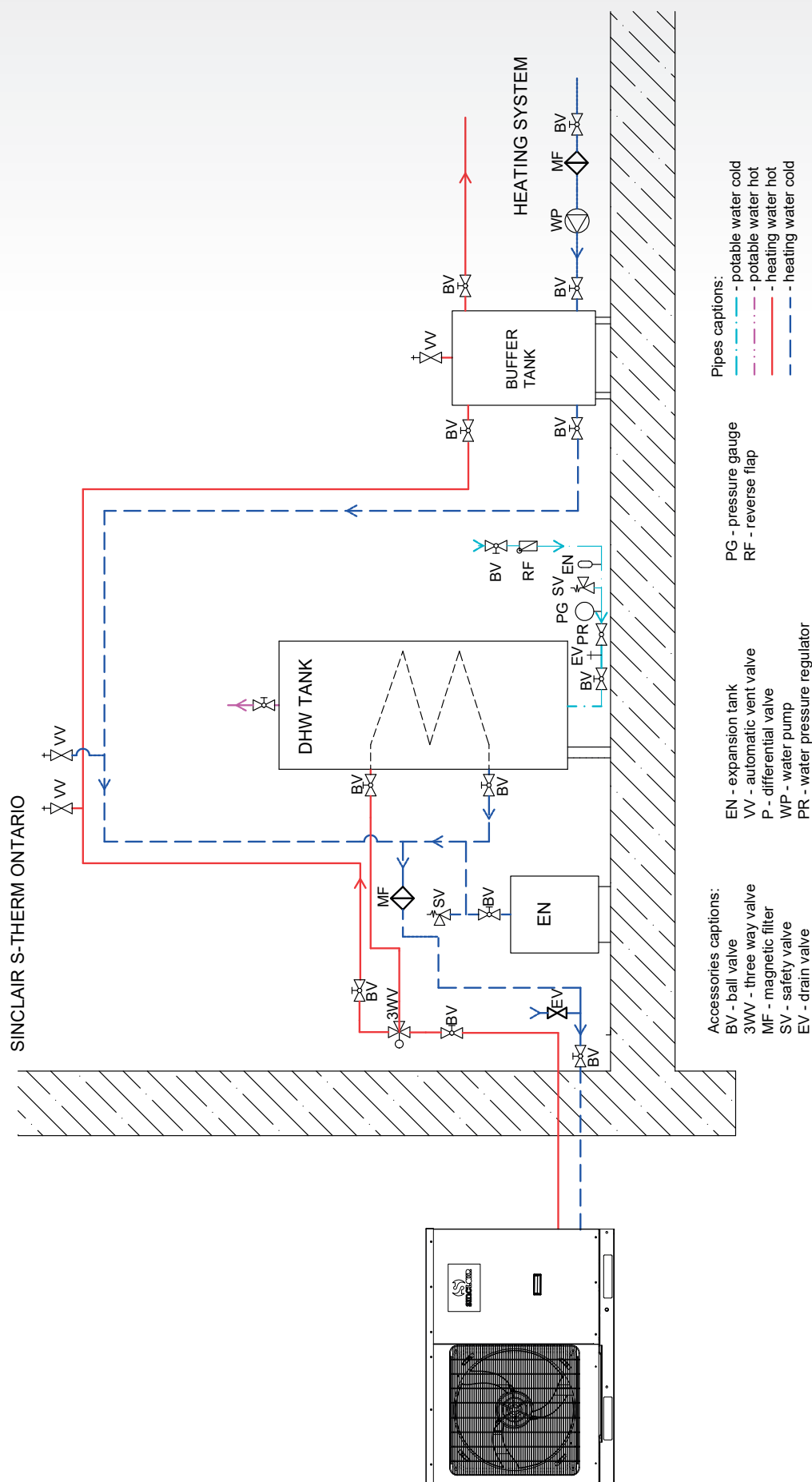
Wiring examples:



ONTARIO SERIES - HEATING SYSTEM

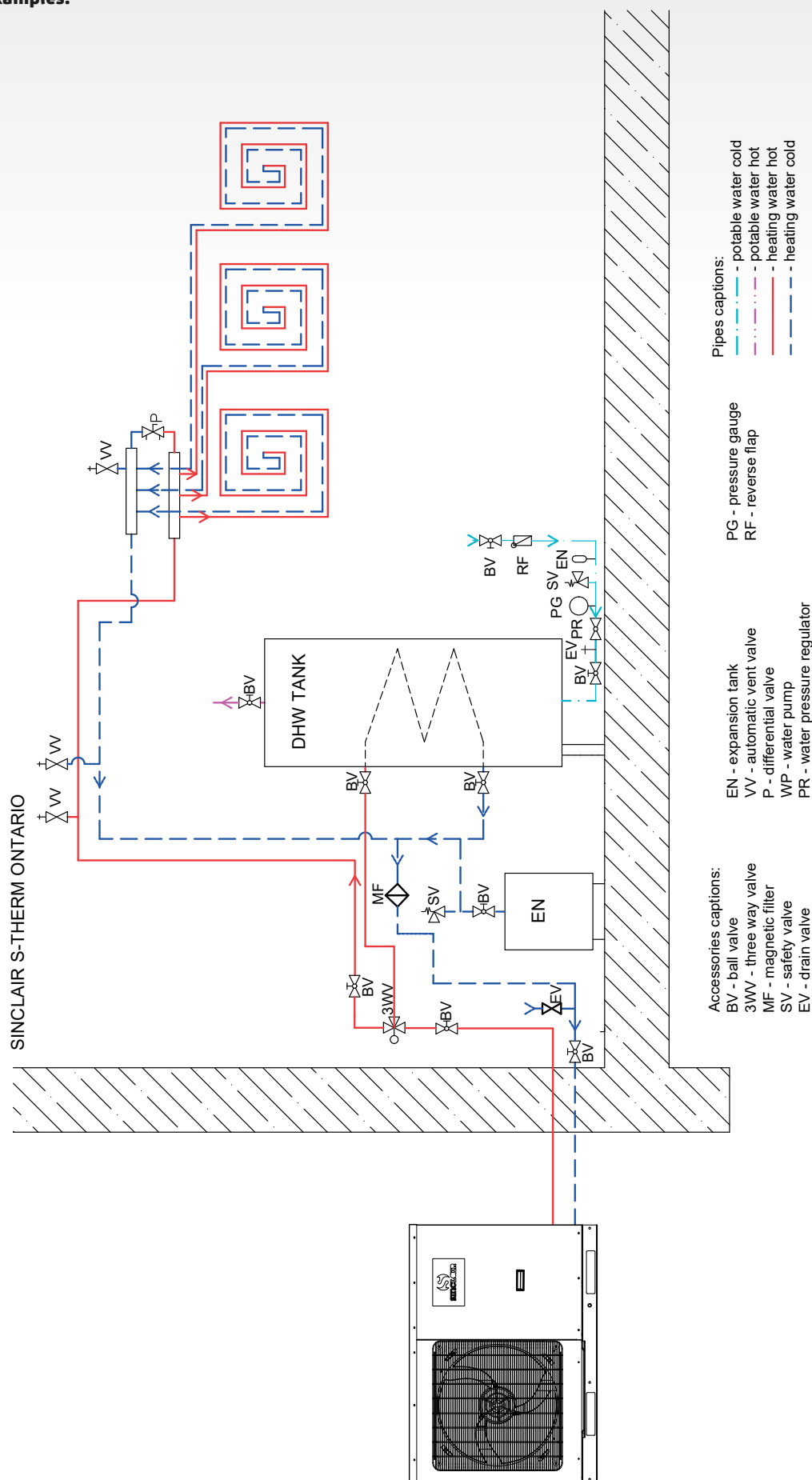
MONOBLOC 4TH AND 5TH GENERATION

Wiring examples:



ONTARIO SERIES - HEATING SYSTEM **MONOBLOC 4TH AND 5TH GENERATION**

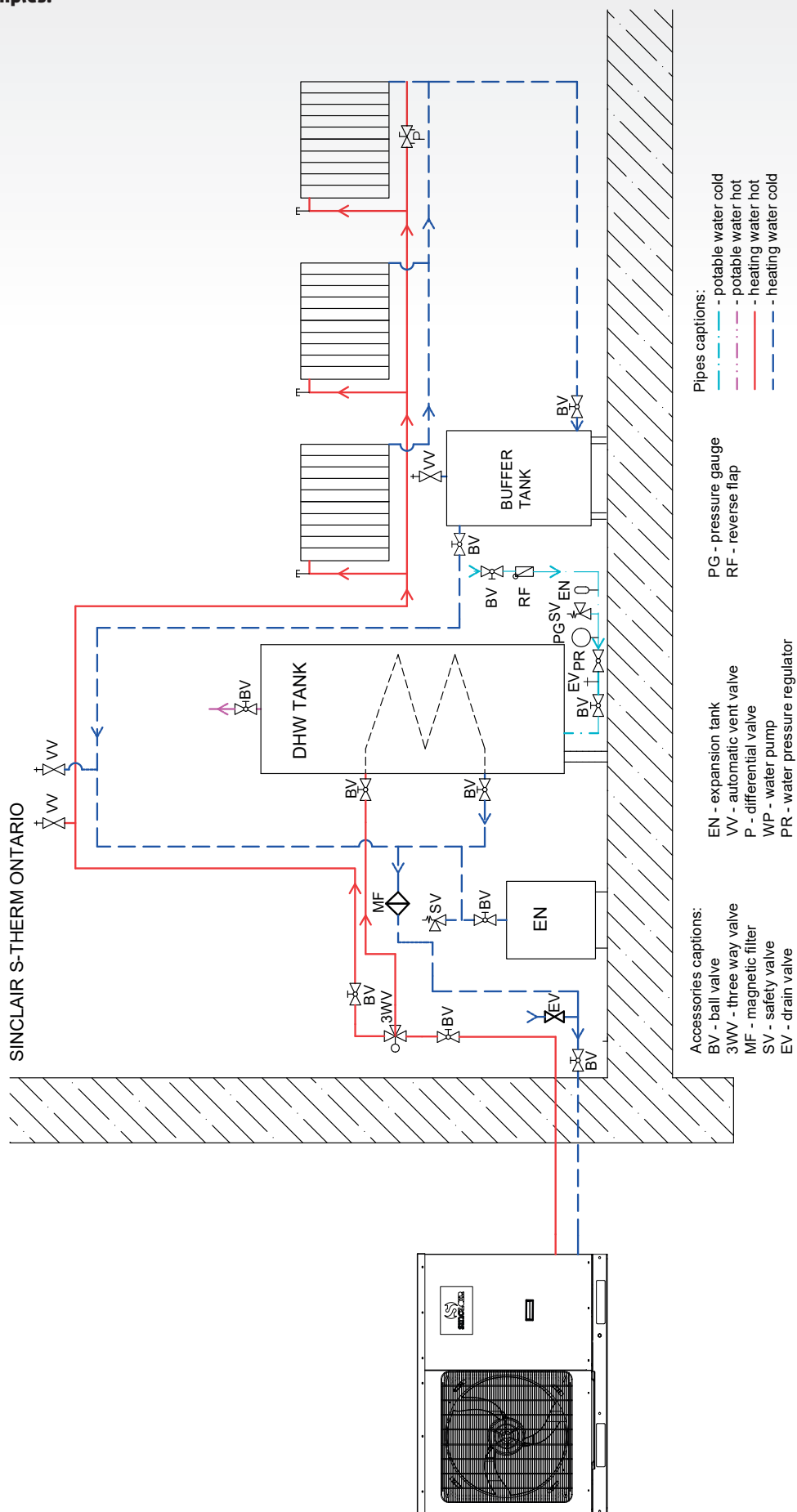
Wiring examples:



ONTARIO SERIES - HEATING SYSTEM

MONOBLOC 4TH AND 5TH GENERATION

Wiring examples:



SPLIT - OUTDOOR UNITS

MODEL			GSH-40ERB2		GSH-60ERB2		GSH-80ERB2		GSH-100ERB2	
Suitable for building heat loss			3 - 5 kW		4 - 6 kW		6 - 8 kW		7 - 9,5 kW	
Capacity*1	Cooling (floor cooling)	kW	3,9		5,8		7,7		9,35	
	Heating (floor heating)	kW	4		6		8		10	
Power Input*1	Cooling (floor cooling)	kW	0,68		1,14		1,72		2,36	
	Heating (floor heating)	kW	0,77		1,23		1,61		2,1	
EER*1 (floor cooling)		-	5,74		5,09		4,48		3,96	
COP*1 (floor heating)		-	5,19		4,88		4,97		4,76	
Capacity*2	Cooling (fan coil)	kW	3,4		4		7,15		7,6	
	Heating (fan coil or radiator)	kW	4,1		5,8		8		9,85	
Power Input*2	Cooling (floor cooling)	kW	0,92		1,16		2,49		2,77	
	Heating (fan coil or radiator)	kW	1,04		1,52		2,07		2,68	
EER*2 (fan coil)		-	3,69		3,45		2,87		2,74	
COP*2 (fan coil or radiator)		-	3,94		3,82		3,86		3,67	
Refrigerant charge		kg	1,1		1,1		1,84		1,84	
Average climate SCOP (55 °C / 35 °C)		-	3,27/4,66		3,27/4,61		3,3/4,59		3,24/4,6	
Energy class (55 °C / 35 °C)		-	A++/A+++		A++/A+++		A++/A+++		A++/A+++	
Compressor type		-	twin rotary							
Fin coating		-	gold fin							
Operation range	Cooling	°C	7~25							
	Heating	°C	20~60							
	DHW	°C	40~80 (55 °C maximum by compressor)							
Outdoor air operation temperature range	Cooling	°C	10~48							
	Heating	°C	-25~35							
	DHW	°C	-25~43							
Sound pressure level	Cooling	dB (A)	52		52		55		55	
	Heating	dB (A)	52		52		55		55	
Dimensions (WxDxH)	Outline	mm	975x396x702		975x396x702		982x427x787		982x427x787	
	Package	mm	1028x458x830		1028x458x830		1097x478x937		1097x478x937	
Net/gross weight		kg	55/65		55/65		82/92		82/92	
Power supply		V/Ph/Hz	220-240 / 1 / 50							
Circuit breaker		A	16		16		20		25	
Minimum crossection of the earth wire		mm²	2,5		2,5		4		6	
Minimum crossection of the power supply wire		mm²	2,5		2,5		4		6	
Inrush current		A	1		1		1		1	
Nominal		A	3,4		5,4		7,4		9	
Maximum (rated) current		A	10		10		19		22	
Pipe size - Gas		inch	1/2"							
Pipe size - Liquid		inch	1/4"							
Precharged length		m	10							
Length - Standart (Min.)		m	5 (3,5)							
Length - Max.		m	20				25			
Height - Standart		m	0							
Height - Max.		m	15							
Additional refrigerant		g/m	16							
Gas pipe tightening torque		N/m	45-55							
Liquid pipe tightening torque		N/m	15-25							
OTHER TECHNICAL DATA										
Distance of holes	W x D	mm	364x560		364x560		395x650		395x650	
Communication cable		mm²	2x0,129		2x0,129		2x0,129		2x0,129	
Recommended power supply cable		mm²	3x2,5		3x2,5		3x6		3x6	
STANDARD ACCESSORIES										
Y-filter		-	yes							
Communication cable		-	yes (12 m)							
Wall bracket with anchors		-	yes							
Flare nut		-	yes							
Remote Air Temperature Sensor with cable		-	yes (9,5 m)							
Display communication cable		-	yes (8 m)							
Temperature sensor for DHW		-	yes (20 m)							
Temperature sensor for E-heater		-	yes (5,5 m)							
Product fiche + energy label		-	yes							

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

SPLIT - OUTDOOR UNITS

MODEL			GSH-40ERB		GSH-60ERB		GSH-80ERB		GSH-100ERB		GSH-120ERB	
Suitable for building heat loss			3 - 5 kW		4 - 6 kW		6 - 8 kW		7 - 9,5 kW		10 - 12 kW	
Capacity*1	Cooling (floor cooling)	kW	3,8		5,8		7		8,5		11	
	Heating (floor heating)	kW	4		6		8		9,5		12	
Power Input*1	Cooling (floor cooling)	kW	0,8		1,32		1,75		2,24		2,5	
	Heating (floor heating)	kW	0,78		1,2		1,7		2,07		2,4	
EER*1 (floor cooling)		-	4,75		4,4		4		3,8		4,4	
COP*1 (floor heating)		-	5,1		5		4,7		4,6		5	
Capacity*2	Cooling (fan coil)	kW	3,15		4,09		5,3		6,5		10,59	
	Heating (fan coil or radiator)	kW	4		5,9		8		9,5		12,4	
Power Input*2	Cooling (floor cooling)	kW	0,92		1,28		1,73		2,27		3,79	
	Heating (fan coil or radiator)	kW	1,02		1,51		2,14		2,64		3,29	
EER*2 (fan coil)		-	3,4		3,2		3		2,9		2,79	
COP*2 (fan coil or radiator)		-	3,9		3,9		3,7		3,6		3,77	
Refrigerant charge		kg	1		1		1,6		1,6		1,84	
Average climate SCOP (55 °C / 35 °C)		-	3,3/4,7		3,3/4,5		3,3/4,6		3,3/4,6		3,5/4,6	
Energy class (55 °C / 35 °C)		-	A++/A+++		A++/A+++		A++/A+++		A++/A+++		A++/A+++	
Compressor type		-	twin rotary									
Fin coating		-	gold fin									
Operation range	Cooling	°C	7~25									
	Heating	°C	20~60									
	DHW	°C	40~80 (55 °C maximum by compressor)									
Outdoor air operation temperature range	Cooling	°C	10~48									
	Heating	°C	-25~35									
	DHW	°C	-25~43									
Sound pressure level	Cooling	dB (A)	52		52		55		55		58	
	Heating	dB (A)	52		52		55		55		60	
Dimensions (WxDxH)	Outline	mm	975×396×702		975×396×702		982×427×787		982×427×787		940×460×820	
	Package	mm	1028×458×830		1028×458×830		1097×478×937		1097×478×937		1073×563×868	
Net/gross weight		kg	55/65		55/65		82/92		82/92		104/114	
Power supply		V/Ph/Hz	220-240 / 1 / 50									
Circuit breaker		A	16		16		20		25		32	
Minimum crossection of the earth wire		mm²	2,5		2,5		4		6		10	
Minimum crossection of the power supply wire		mm²	2,5		2,5		4		6		10	
Inrush current		A	1		1		1		1		1	
Nominal		A	3,4		5,4		7,4		9		10,4	
Maximum (rated) current		A	10		10		19		22		26	
Pipe size - Gas		inch	1/2"									
Pipe size - Liquid		inch	1/4"									
Precharged length		m	10									
Length - Standart (Min.)		m	5 (3,5)									
Length - Max.		m	20					25				
Height - Standart		m	0									
Height - Max.		m	15									
Additional refrigerant		g/m	16									
Gas pipe tightening torque		N/m	45-55									
Liquid pipe tightening torque		N/m	15-25									
OTHER TECHNICAL DATA												
Distance of holes		W x D	mm		364×560		364×560		395×650		395×650	
Communication cable		mm²	2x0,129		2x0,129		2x0,129		2x0,129		2x0,129	
Recommended power supply cable		mm²	3×2,5		3×2,5		3×6		3×6		3×10	
STANDARD ACCESSORIES												
Y-filter		-	yes									
Communication cable		-	yes (12 m)									
Wall bracket with anchors		-	yes									
Flare nut		-	yes									
Remote Air Temperature Sensor with cable		-	yes (9,5 m)									
Display communication cable		-	yes (8 m)									
Temperature sensor for DHW		-	yes (20 m)									
Temperature sensor for E-heater		-	yes (5,5 m)									
Product fiche + energy label		-	yes									

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35°C DB/24°C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

SPLIT - OUTDOOR UNITS

MODEL			GSH-140ERB		GSH-160ERB		GSH-80ERB-3		GSH-100ERB-3		GSH-120ERB-3	
Suitable for building heat loss			11 - 14 kW		12 - 15 kW		6 - 8 kW		7 - 9,5 kW		10 - 12 kW	
Capacity*1	Cooling (floor cooling)	kW	12,6		13		8,5		10		11	
	Heating (floor heating)	kW	14		15,5		8		10		12	
Power Input*1	Cooling (floor cooling)	kW	3,41		3,6		1,74		2,33		2,5	
	Heating (floor heating)	kW	2,98		3,44		1,63		2,15		2,4	
EER*1 (floor cooling)		-	3,7		3,6		4,89		4,29		4,4	
COP*1 (floor heating)		-	4,7		4,5		4,91		4,65		5	
Capacity*2	Cooling (fan coil)	kW	11,07		11,51		7,6		8,2		10,65	
	Heating (fan coil or radiator)	kW	14,48		16,09		8		10,2		12,29	
Power Input*2	Cooling (floor cooling)	kW	4,18		4,49		1,52		1,91		3,74	
	Heating (fan coil or radiator)	kW	3,93		4,44		1,92		2,55		3,09	
EER*2 (fan coil)		-	2,65		2,57		5		4,3		2,85	
COP*2 (fan coil or radiator)		-	3,68		3,62		4,16		4		3,98	
Refrigerant charge		kg	1,84		1,84		1,84		1,84		1,84	
Average climate SCOP (55 °C / 35 °C)		-	3,5/4,7		3,5/4,5		3,2/4,6		3,5/4,7		3,2/4,5	
Energy class (55 °C / 35 °C)		-	A++/A+++		A++/A+++		A++/A+++		A++/A+++		A++/A+++	
Compressor type		-	twin rotary									
Fin coating		-	gold fin									
Operation range	Cooling	°C	7~25									
	Heating	°C	20~60									
	DHW	°C	40~80 (55 °C maximum by compressor)									
Outdoor air operation temperature range	Cooling	°C	10~48									
	Heating	°C	-25~35									
	DHW	°C	-25~43									
Sound pressure level	Cooling	dB (A)	59		60		55		55		58	
	Heating	dB (A)	61		61		55		55		60	
Dimensions (WxDxH)	Outline	mm	940×460×820		940×460×820		982×395×787		982×395×787		940×460×820	
	Package	mm	1073×563×868		1073×563×868		1097×478×937		1097×478×937		1073×563×868	
Net/gross weight		kg	104/114		104/114		88/98		88/98		110/121	
Power supply		V/Ph/Hz	220-240 / 1 / 50					380-415 / 3 / 50				
Circuit breaker		A	40		40		16		16		16	
Minimum crossection of the earth wire		mm²	10		10		2,5		2,5		2,5	
Minimum crossection of the power supply wire		mm²	10		10		2,5		2,5		2,5	
Inrush current		A	1		1		1		1		1	
Nominal		A	13		15		2,35		3,1		2,02	
Maximum (rated) current		A	29		31		7,5		8		9,2	
Pipe size - Gas		inch	5/8"					1/2"				
Pipe size - Liquid		inch	1/4"									
Precharged length		m	15									
Length - Standart (Min.)		m	5 (3,5)									
Length - Max.		m	15									
Height - Standart		m	0									
Height - Max.		m	15									
Additional refrigerant		g/m	0									
Gas pipe tightening torque		N/m	60-65					45-55				
Liquid pipe tightening torque		N/m	15-25									
OTHER TECHNICAL DATA												
Distance of holes	W x D	mm	460×610		460×610		395×650		395×650		460×610	
Communication cable		mm²	3x0,129		3x0,129		3x0,129		3x0,129		3x0,129	
Recommended power supply cable		mm²	3×10		3×10		5×2,5		5×2,5		5×2,5	
STANDARD ACCESSORIES												
Y-filter		-	yes									
Communication cable		-	yes (12 m)									
Wall bracket with anchors		-	yes									
Flare nut		-	yes									
Remote Air Temperature Sensor with cable		-	yes (9,5 m)									
Display communication cable		-	yes (8 m)									
Temperature sensor for DHW		-	yes (20 m)									
Temperature sensor for E-heater		-	yes (5,5 m)									
Product fiche + energy label		-	yes									

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

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R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

SPLIT - OUTDOOR UNITS

MODEL			GSH-140ERB-3	GSH-160ERB-3			
Suitable for building heat loss			11 - 14 kW	12 - 15 kW			
Capacity*1	Cooling (floor cooling)	kW	12,6	13			
	Heating (floor heating)	kW	14	15,5			
Power Input*1	Cooling (floor cooling)	kW	3,41	3,6			
	Heating (floor heating)	kW	2,98	3,44			
EER*1 (floor cooling)		-	3,7	3,6			
COP*1 (floor heating)		-	4,7	4,51			
Capacity*2	Cooling (fan coil)	kW	11,24	11,52			
	Heating (fan coil or radiator)	kW	14,44	16,13			
Power Input*2	Cooling (floor cooling)	kW	4,13	4,38			
	Heating (fan coil or radiator)	kW	3,63	4,16			
EER*2 (fan coil)		-	2,72	2,63			
COP*2 (fan coil or radiator)		-	3,98	3,88			
Refrigerant charge		kg	1,84	1,84			
Average climate SCOP (55 °C / 35 °C)		-	3,4/4,5	3,4/4,5			
Energy class (55 °C / 35 °C)		-	A++/A+++	A++/A+++			
Compressor type		-	twin rotary				
Fin coating		-	gold fin				
Operation range	Cooling	°C	7~25				
	Heating	°C	20~60				
	DHW	°C	40~80 (55 °C maximum by compressor)				
Outdoor air operation temperature range	Cooling	°C	10~48				
	Heating	°C	-25~35				
	DHW	°C	-25~43				
Sound pressure level	Cooling	dB (A)	59	60			
	Heating	dB (A)	61	61			
Dimensions (WxDxH)	Outline	mm	940×460×820	940×460×820			
	Package	mm	1073×563×868	1073×563×868			
Net/gross weight		kg	110/121	110/121			
Power supply		V/Ph/Hz	380-415 / 3 / 50				
Circuit breaker		A	16	16			
Minimum crossection of the earth wire		mm ²	2,5	2,5			
Minimum crossection of the power supply wire		mm ²	2,5	2,5			
Inrush current		A	1	1			
Nominal		A	4,3	4,97			
Maximum (rated) current		A	11,5	11,5			
Pipe size - Gas		inch	5/8"				
Pipe size - Liquid		inch	1/4"				
Precharged length		m	15				
Length - Standart (Min.)		m	5 (3,5)				
Length - Max.		m	15				
Height - Standart		m	0				
Height - Max.		m	15				
Additional refrigerant		g/m	0				
Gas pipe tightening torque		N/m	60-65				
Liquid pipe tightening torque		N/m	15-25				
OTHER TECHNICAL DATA							
Distance of holes	W x D	mm	460×610	460×610			
Communication cable		mm ²	3x0,129	3x0,129			
Recommended power supply cable		mm ²	5x2,5	5x2,5			
STANDARD ACCESSORIES							
Y-filter		-	yes				
Communication cable		-	yes (12 m)				
Wall bracket with anchors		-	yes				
Flare nut		-	yes				
Remote Air Temperature Sensor with cable		-	yes (9,5 m)				
Display communication cable		-	yes (8 m)				
Temperature sensor for DHW		-	yes (20 m)				
Temperature sensor for E-heater		-	yes (5,5 m)				
Product fiche + energy label		-	yes				

Values marked *1 condition:

Cooling: Indoor Water Temperature: 23 °C/18 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: W30 °C/35 °C, Outdoor Temperature: 7 °C DB/6 °C WB

Values marked *2 condition:

Cooling: Indoor Water Temperature: 12 °C/7 °C, Outdoor Temperature: 35 °C DB/24 °C WB

Heating: Indoor Water Temperature: 40 °C/45 °C, Outdoor Temperature: 7 °C DB/6 °C WB

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R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

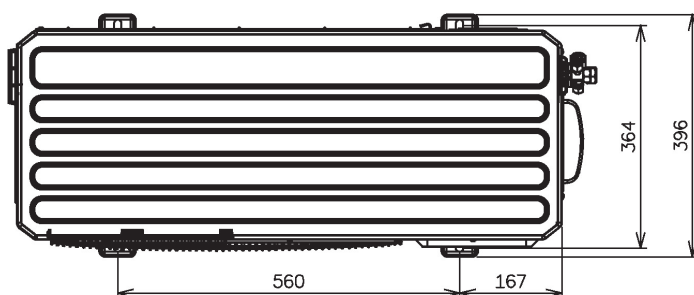
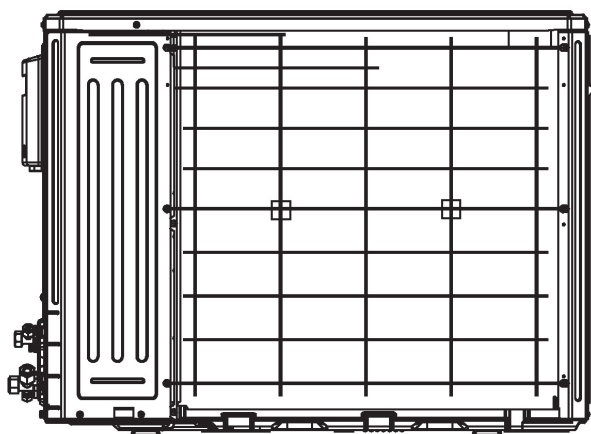
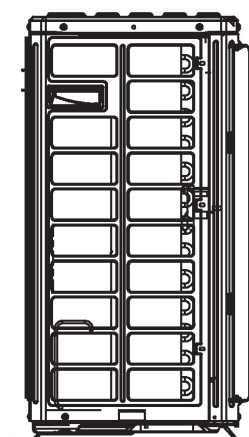
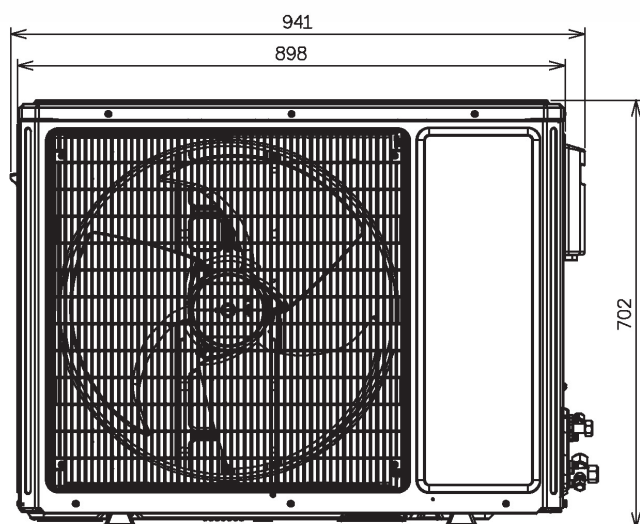
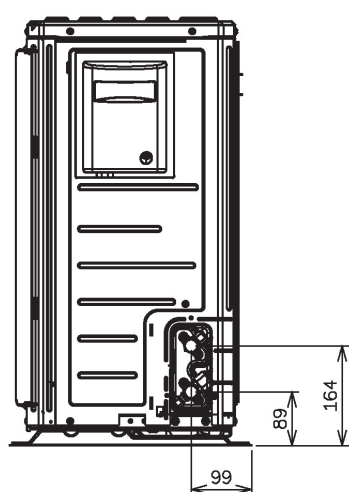
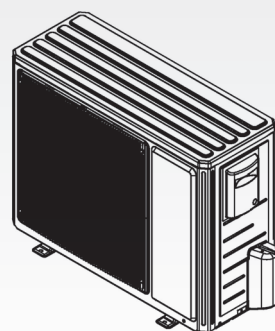
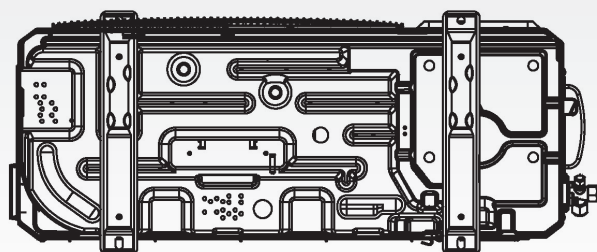
Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

SPLIT - OUTDOOR UNITS

GSH-40ERB2, GSH-60ERB2

GSH-40ERB, GSH-60ERB

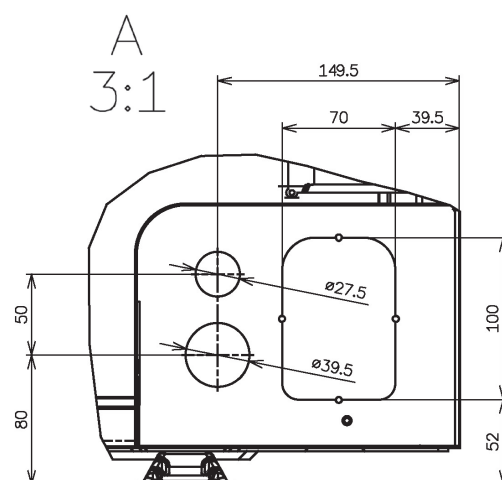
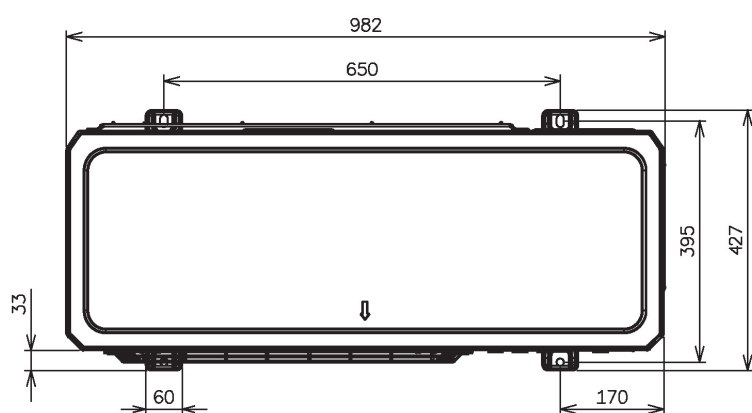
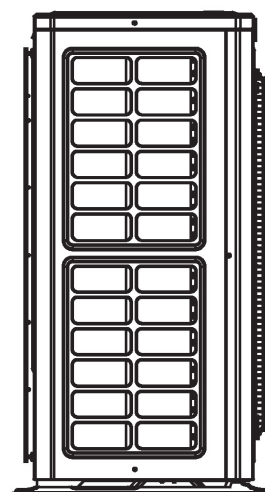
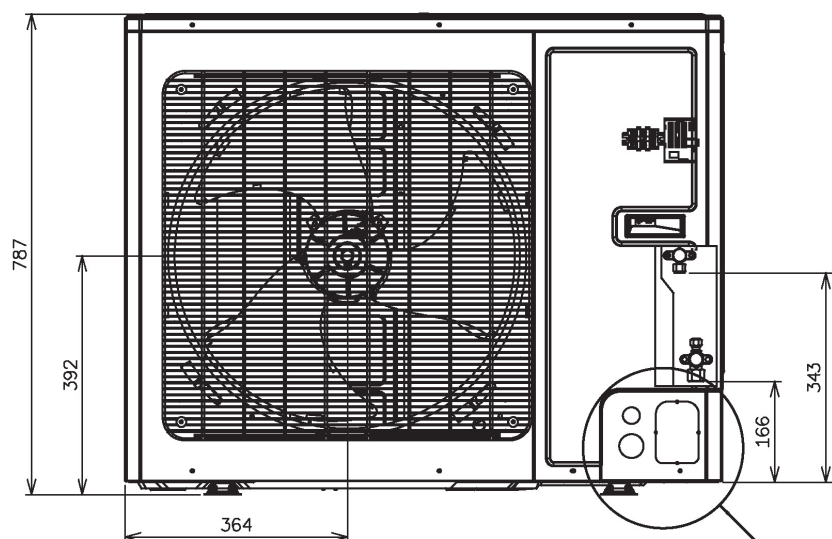
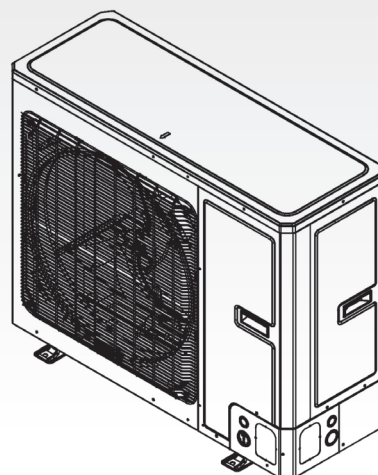
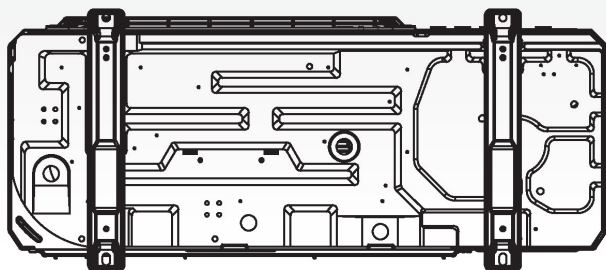


APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

SPLIT - OUTDOOR UNITS

GSH-80ERB-3, GSH-100ERB-3

GSH-80ERB, GSH-100ERB, GSH-80ERB2, GSH-100ERB2

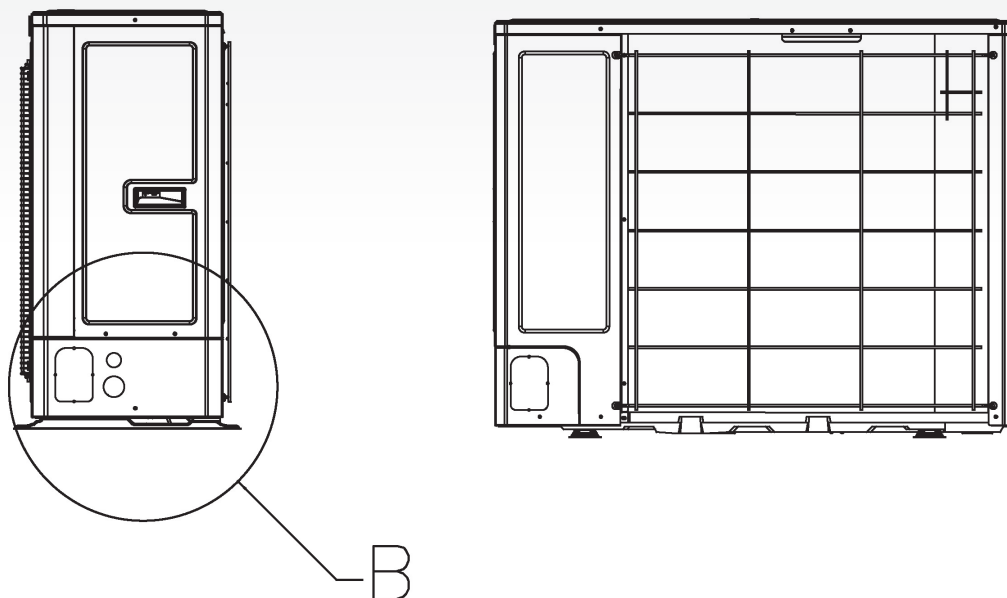


APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

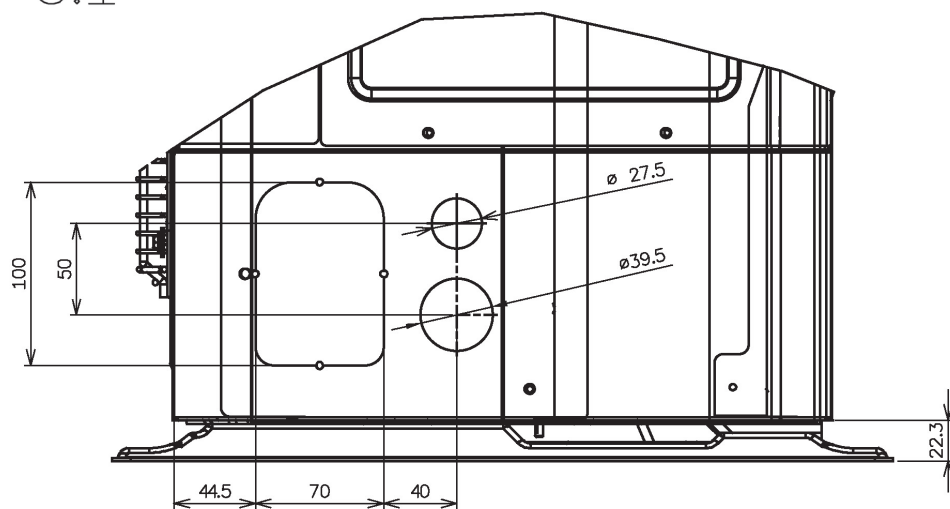
SPLIT - OUTDOOR UNITS

GSH-80ERB-3, GSH-100ERB-3

GSH-80ERB, GSH-100ERB, GSH-80ERB2, GSH-100ERB2



B
3:1

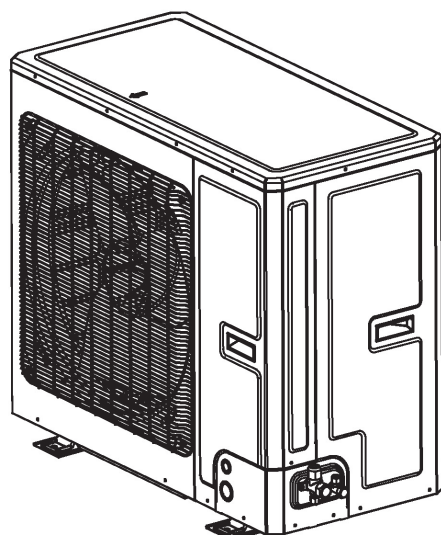
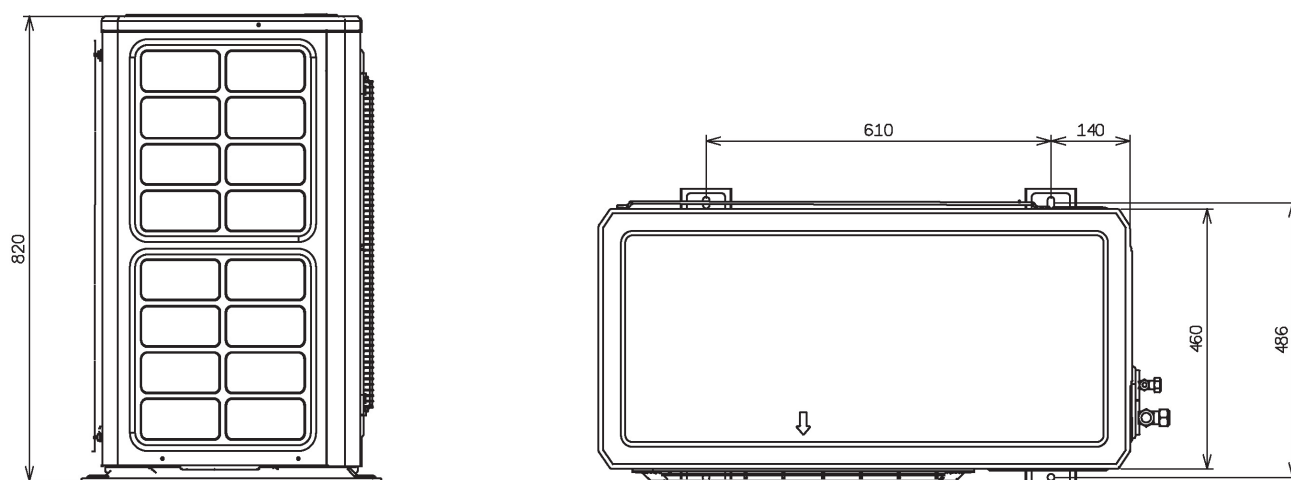
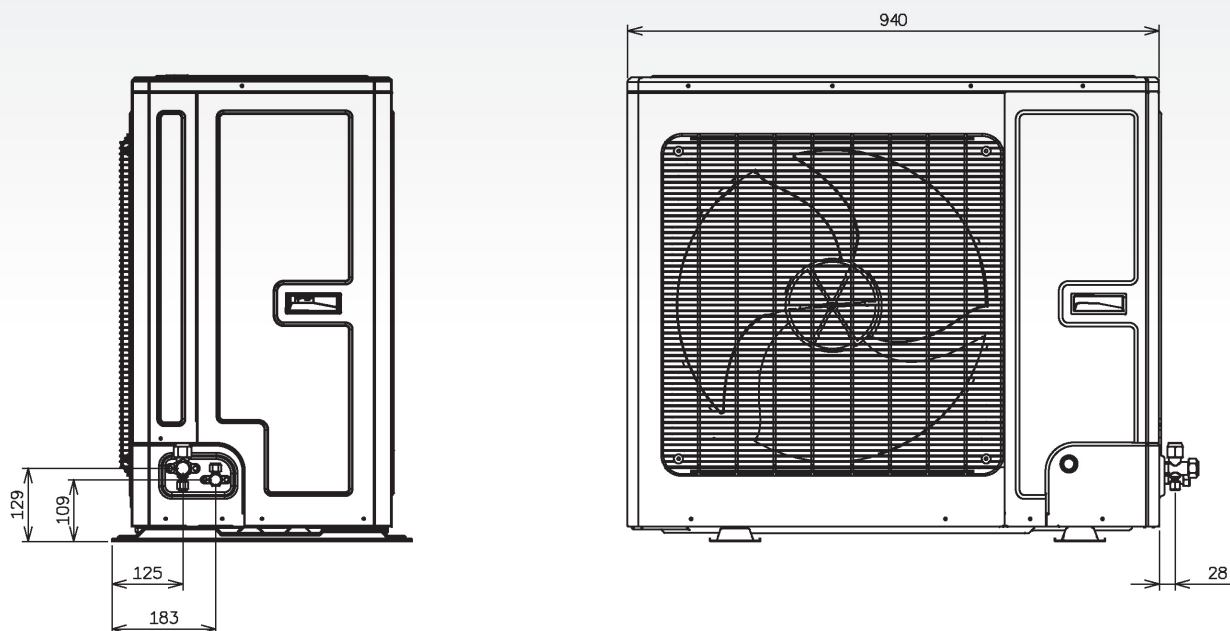


APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

SPLIT - OUTDOOR UNITS

GSH-120ERB-3, GSH-140ERB-3, GSH-160ERB-3

GSH-120ERB, GSH-140ERB, GSH-160ERB



ONTARIO SERIES

SPLIT - HYDROBOX INDOOR UNIT

MODEL			GSH-40IRB	GSH-60IRB	GSH-80IRB	GSH-100IRB	GSH-120IRB
Power supply		V/Ph/Hz	220-240/1/50				
Connecting pipe (refrigerant)	Gas	inch	1/2"				5/8"
	Liquid		1/4"				
Connecting pipe (water)	Inlet	inch	1" (outer)				
	Outlet						
Safety valve		bar	3				
Leaving water temperature	Cooling	°C	7-25				
	Heating		25-60				
MAIN COMPONENTS							
Additional water pump	Type	-	Inverter PWM1				
	Speed	-	Automatic regulation				
	Max. power	W	75				87
Expansion tank	Volume	l	10				
	Max. pressure	bar	3				
	Pressure	bar	1				
Auxiliary electric heater	Type	-	Automatic				
	Capacity	kW	3		6		
	Combination	-	1,5+1,5		3+3		
	Power supply	V/Ph/Hz	220-240 / 1 / 50				
Heat exchanger	Type	-	Blazed plate				
Level of acoustic pressure in 1m		dB (A)	29				
Dimensions (WxDxH)	Outline	mm	460×318×860				
	Packaged		565×375×1130				568×390×1133
Weight	Net	kg	62				59,5
	Gross		71				68,5
Maximum current		A	13 (27*)	13 (27*)	26 (39,5*)	26 (39,5*)	26 (39,5*)
Circuit breaker		A	16 (32*)	16 (32*)	32 (40*)	32 (40*)	32 (40*)
Nominal current		A	<1	<1	<1	<1	<1
Recommended supply cable		-	3×2,5 (10*) mm²	3×2,5 (10*) mm²	3×10 mm²	3×10 mm²	3×10 mm²
HEATING SYSTEM REQUIREMENTS							
Minimum water flow		l/min	10,8±1,7	10,8±1,7	10,8±1,7	10,8±1,7	10,8±1,7
Minimum water volume of heating system		l	60	90	120	150	180
STANDARD ACCESSORIES							
Three-way valve		-	Yes (already built in)				

Values marked with * are valid when DHW E-heater (3kW) is connected.

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

ONTARIO SERIES

SPLIT - HYDROBOX INDOOR UNIT

MODEL			GSH-140IRB		GSH-160IRB	GSH-80IRB-3	GSH-100IRB-3	GSH-120IRB-3
Power supply		V/Ph/Hz	220-240/1/50			380-415/3/50		
Connecting pipe (refrigerant)	Gas	inch	5/8"			1/2"		5/8"
	Liquid		1/4"					
Connecting pipe (water)	Inlet	inch	1" (outer)					
	Outlet							
Safety valve		bar	3					
Leaving water temperature	Cooling	°C	7-25					
	Heating		25-60					
MAIN COMPONENTS								
Additional water pump	Type	-	Inverter PWM1					
	Speed	-	Automatic regulation					
	Max. power	W	87					
Expansion tank	Volume	l	10					
	Max. pressure	bar	3					
	Pressure	bar	1					
Auxiliary electric heater	Type	-	Automatic					
	Capacity	kW	6					
	Combination	-	3+3					
	Power supply	V/Ph/Hz	220-240 / 1 / 50		380-415 / 3 / 50			
Heat exchanger	Type	-	Blazed plate					
Level of acoustic pressure in 1m		dB (A)	29					
Dimensions (WxDxH)	Outline	mm	460×318×860					
	Packaged		568×390×1133					
Weight	Net	kg	59,5					
	Gross		68,5					
Maximum current		A	26 (39,5*)	26 (39,5*)	9 (13*)	9 (13*)	9 (13*)	
Circuit breaker		A	32 (40*)	32 (40*)	9 (13*)	9 (13*)	9 (13*)	
Nominal current		A	<1	<1	<1	<1	<1	
Recommended supply cable		-	3×10 mm²	3×10 mm²	5×2,5 mm²	5×2,5 mm²	5×2,5 mm²	
HEATING SYSTEM REQUIREMENTS								
Minimum water flow		l/min	10,8±1,7	10,8±1,7	10,8±1,7	10,8±1,7	10,8±1,7	
Minimum water volume of heating system		l	210	240	120	150	180	
STANDARD ACCESSORIES								
Three-way valve		-	Yes (already built in)					

MODEL			GSH-140IRB-3		GSH-160IRB-3			
Power supply		V/Ph/Hz	380-415/3/50					
Connecting pipe (refrigerant)	Gas	inch	5/8"					
	Liquid		1/4"					
Connecting pipe (water)	Inlet	inch	1" (outer)					
	Outlet							
Safety valve		bar	3					
Leaving water temperature	Cooling	°C	7-25					
	Heating		25-60					
MAIN COMPONENTS								
Additional water pump	Type	-	Inverter PWM1					
	Speed	-	Automatic regulation					
	Max. power	W	87					
Expansion tank	Volume	l	10					
	Max. pressure	bar	3					
	Pressure	bar	1					
Auxiliary electric heater	Type	-	Automatic					
	Capacity	kW	6					
	Combination	-	3+3					
	Power supply	V/Ph/Hz	380-415 / 3 / 50					
Heat exchanger	Type	-	Blazed plate					
Level of acoustic pressure in 1m		dB (A)	29					
Dimensions (WxDxH)	Outline	mm	460×318×860					
	Packaged		568×390×1133					
Weight	Net	kg	59,5					
	Gross		68,5					
Maximum current		A	9 (13*)	9 (13*)				
Circuit breaker		A	9 (13*)	9 (13*)				
Nominal current		A	<1	<1				
Recommended supply cable		-	5×2,5 mm²	5×2,5 mm²				
HEATING SYSTEM REQUIREMENTS								
Minimum water flow		l/min	10,8±1,7	10,8±1,7				
Minimum water volume of heating system		l	210	240				
STANDARD ACCESSORIES								
Three-way valve		-	Yes (already built in)					

Values marked with * are valid when DHW E-heater (3kW) is connected.

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675. Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

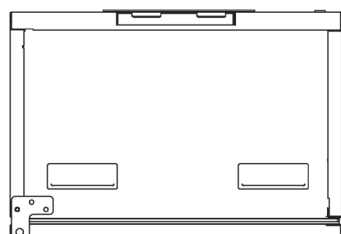
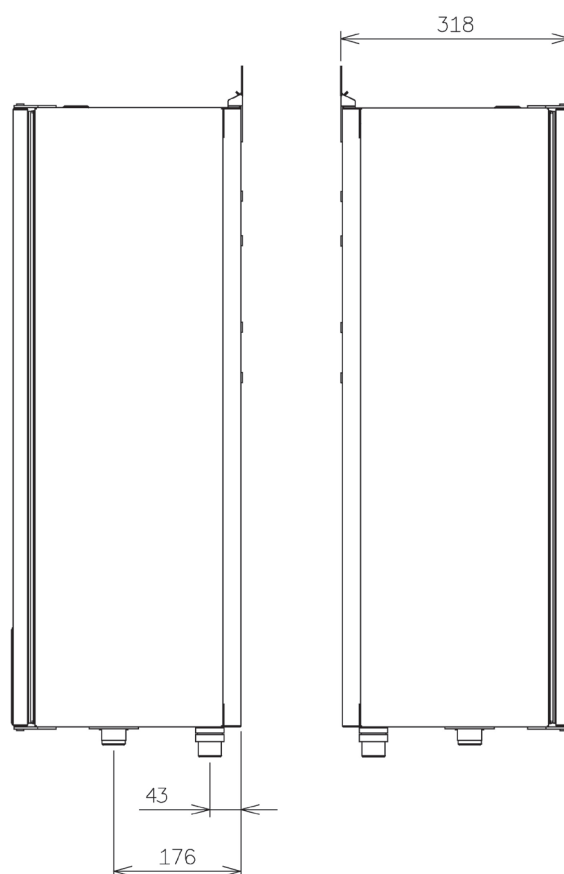
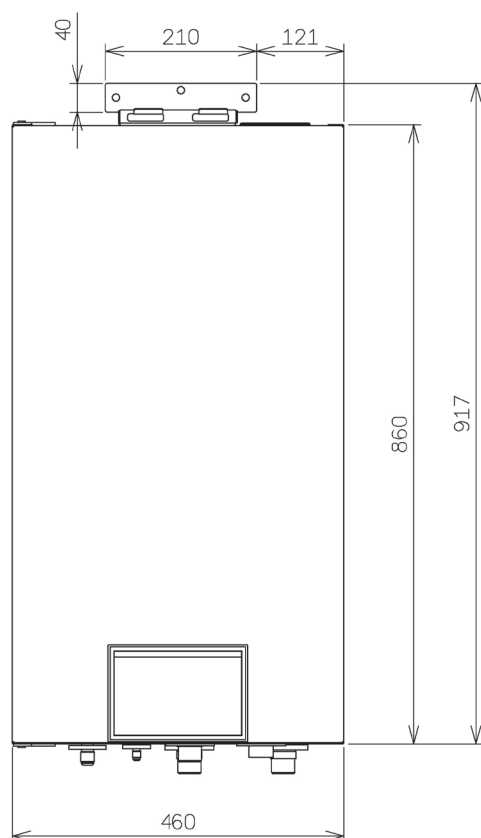
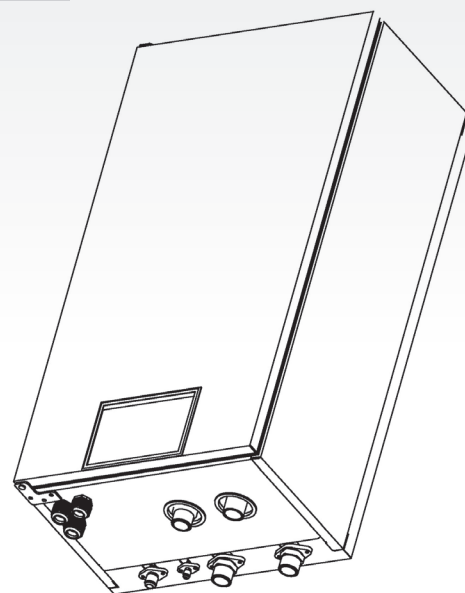
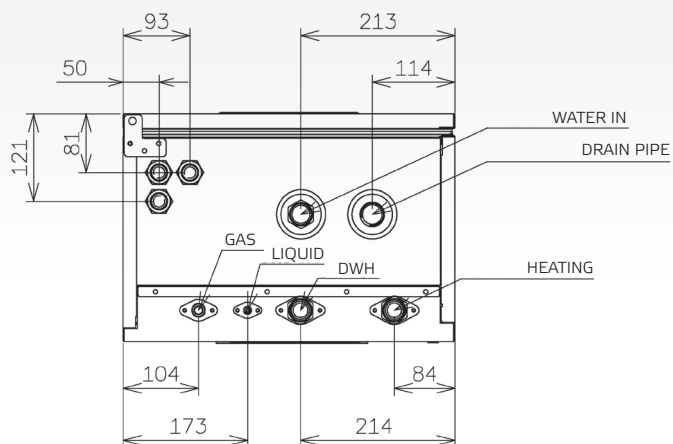
APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

SPLIT - HYDROBOX INDOOR UNIT

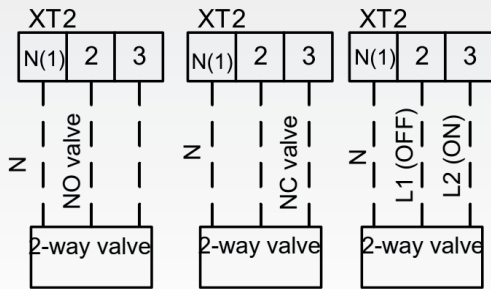
GSH-40IRB, GSH-60IRB, GSH-80IRB, GSH-100IRB, GSH-120IRB

GSH-140IRB, GSH-160IRB, GSH-80IRB-3, GSH-100IRB-3, GSH-120IRB-3

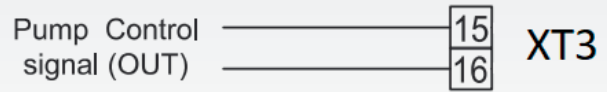
GSH-140IRB-3, GSH-160IRB-3



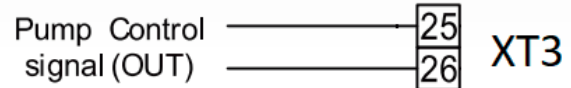
2-way valve for 1-phase units 4-6 kW



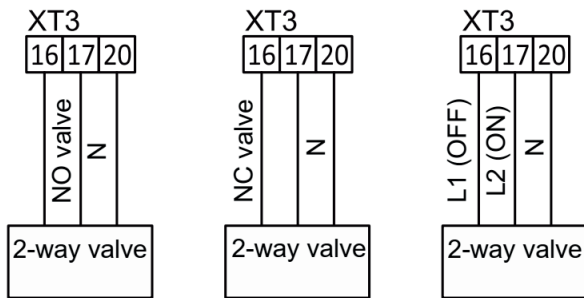
Additional water pump control (PWM) for 1-phase units 4-10 kW



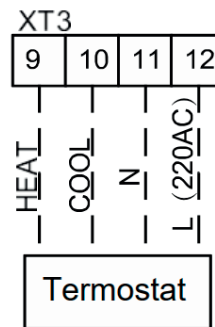
Additional water pump control (PWM) for 3-phase units 8&10 kW and all units 12-16 kW



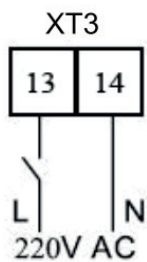
2-way valve for 3-phase units 8&10 kW and all units 12-16 kW



Thermostat for 1-phase units 4-10 kW



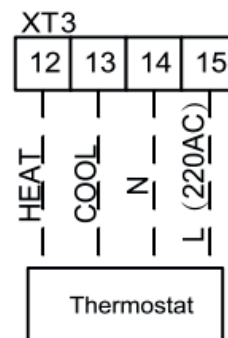
Gate controller for 1-phase units 4-10 kW



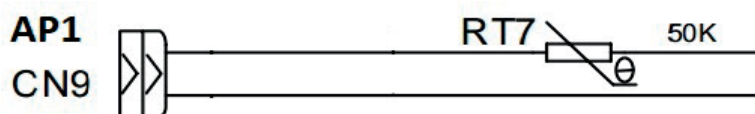
Gate controller for 3-phase units 8&10 kW and all units 12-16 kW



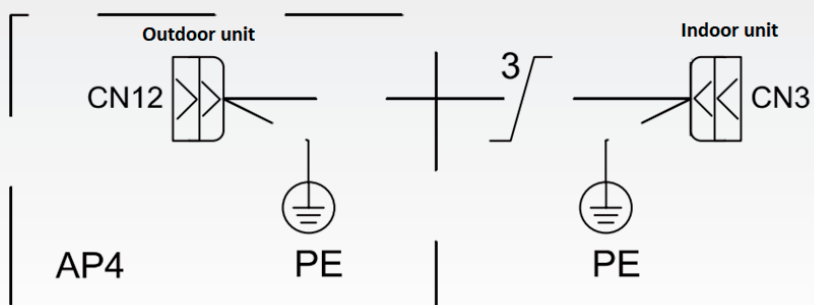
Thermostat for 3-phase units 8&10 kW and all units 12-16 kW



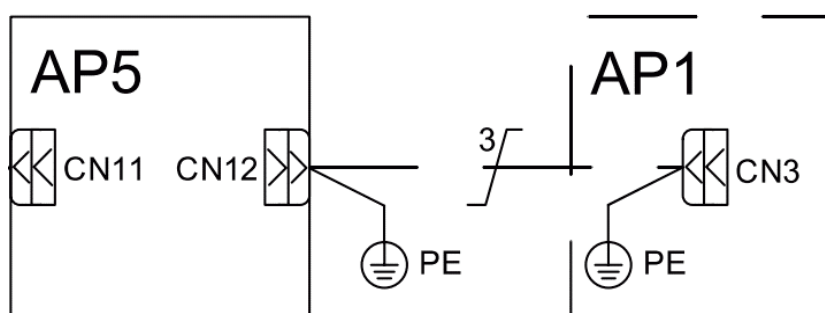
DHW sensor



ODU-IDU communication for 1-phase units 4-10 kW



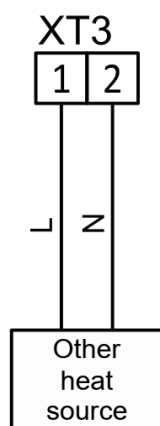
ODU-IDU communication for 3-phase units 8&10 kW and all units 12-16 kW



Other for 3-phase units 8&10 kW and all units 12-16 kW



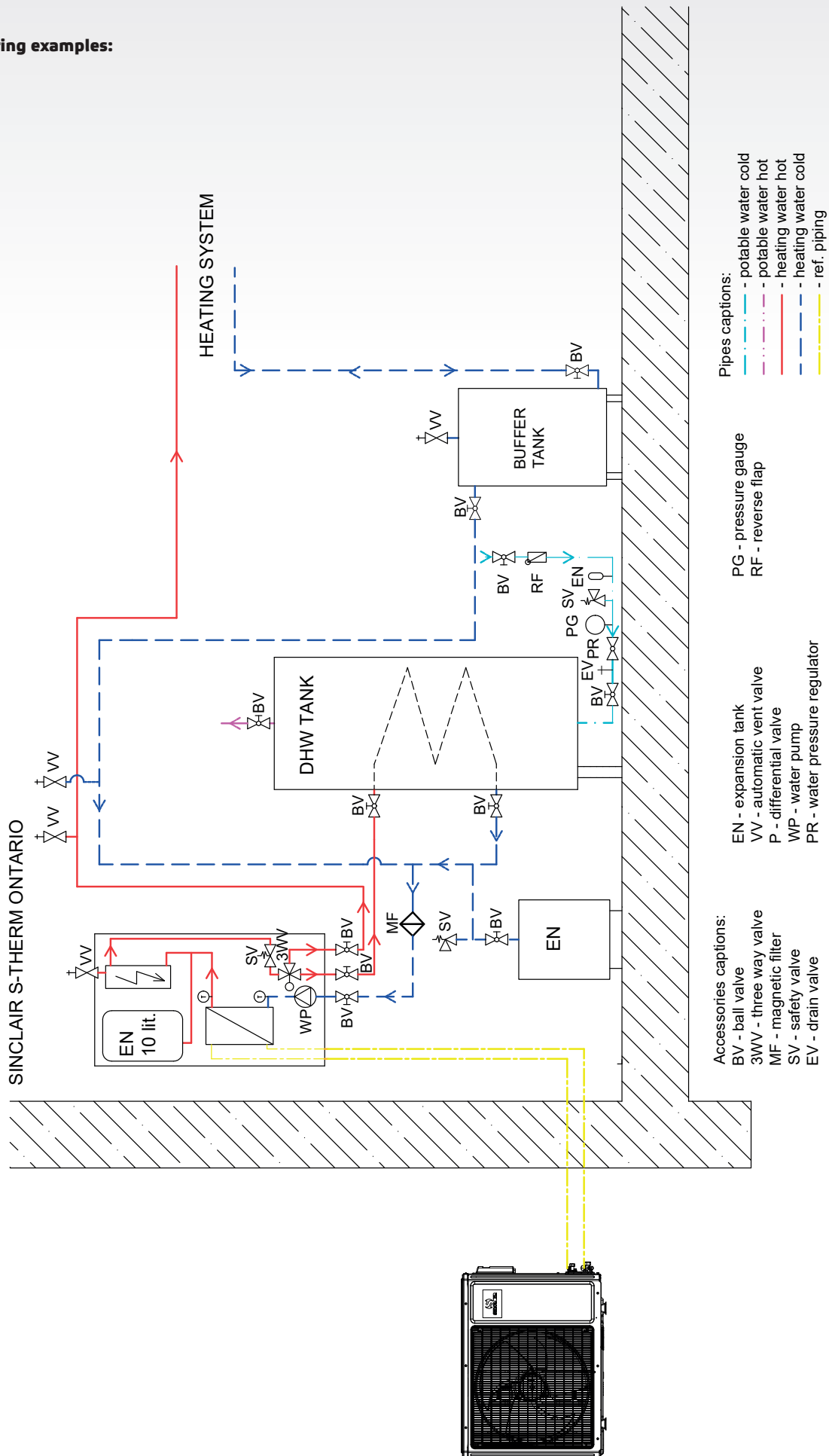
Other thermal for 1-phase units 4-10 kW



Attention: You can find a detailed wiring diagram in the installation manual.

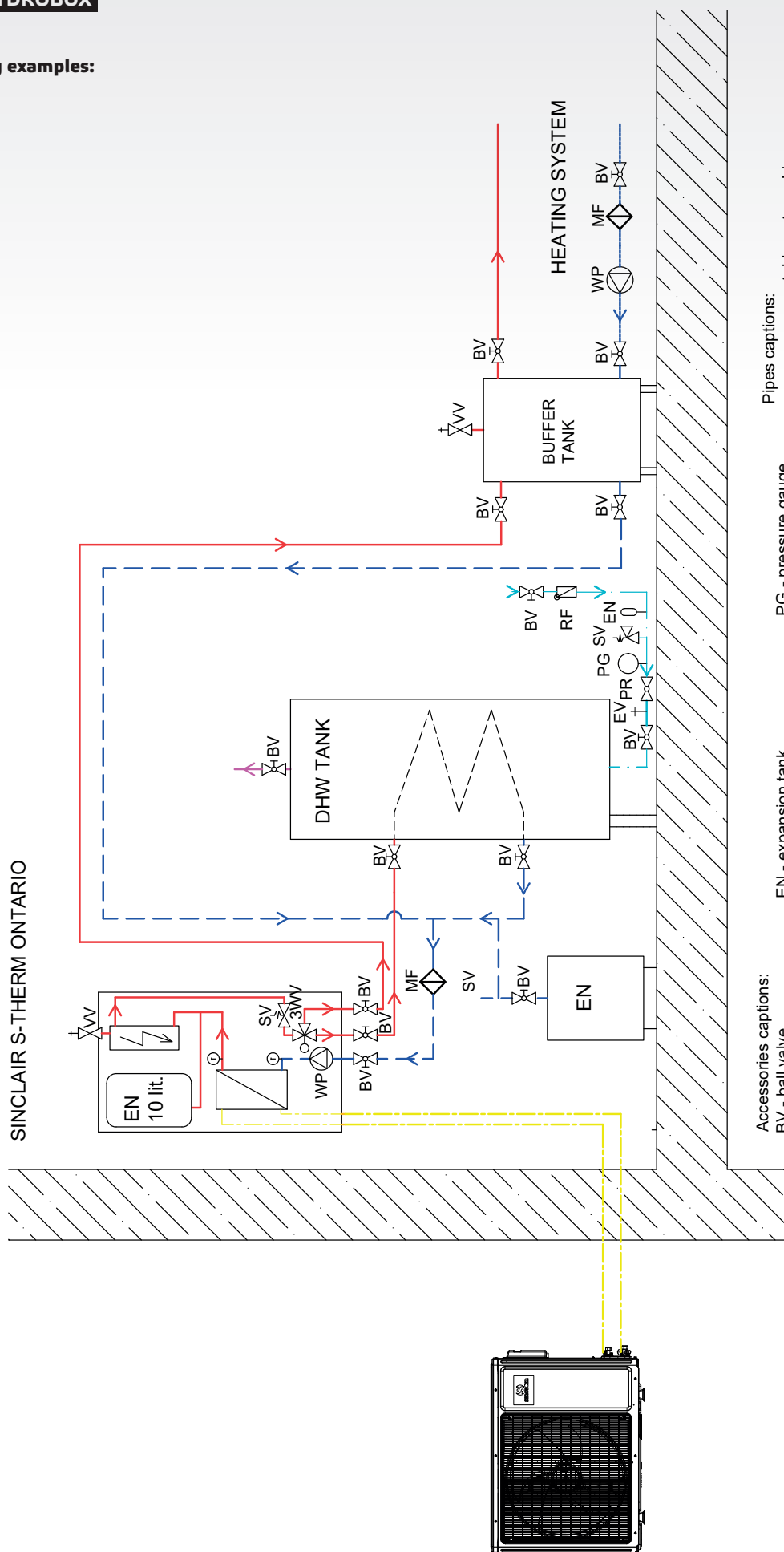
SPLIT - HYDROBOX

Wiring examples:



Wiring examples:

SINCLAIR S-THERM ONTARIO



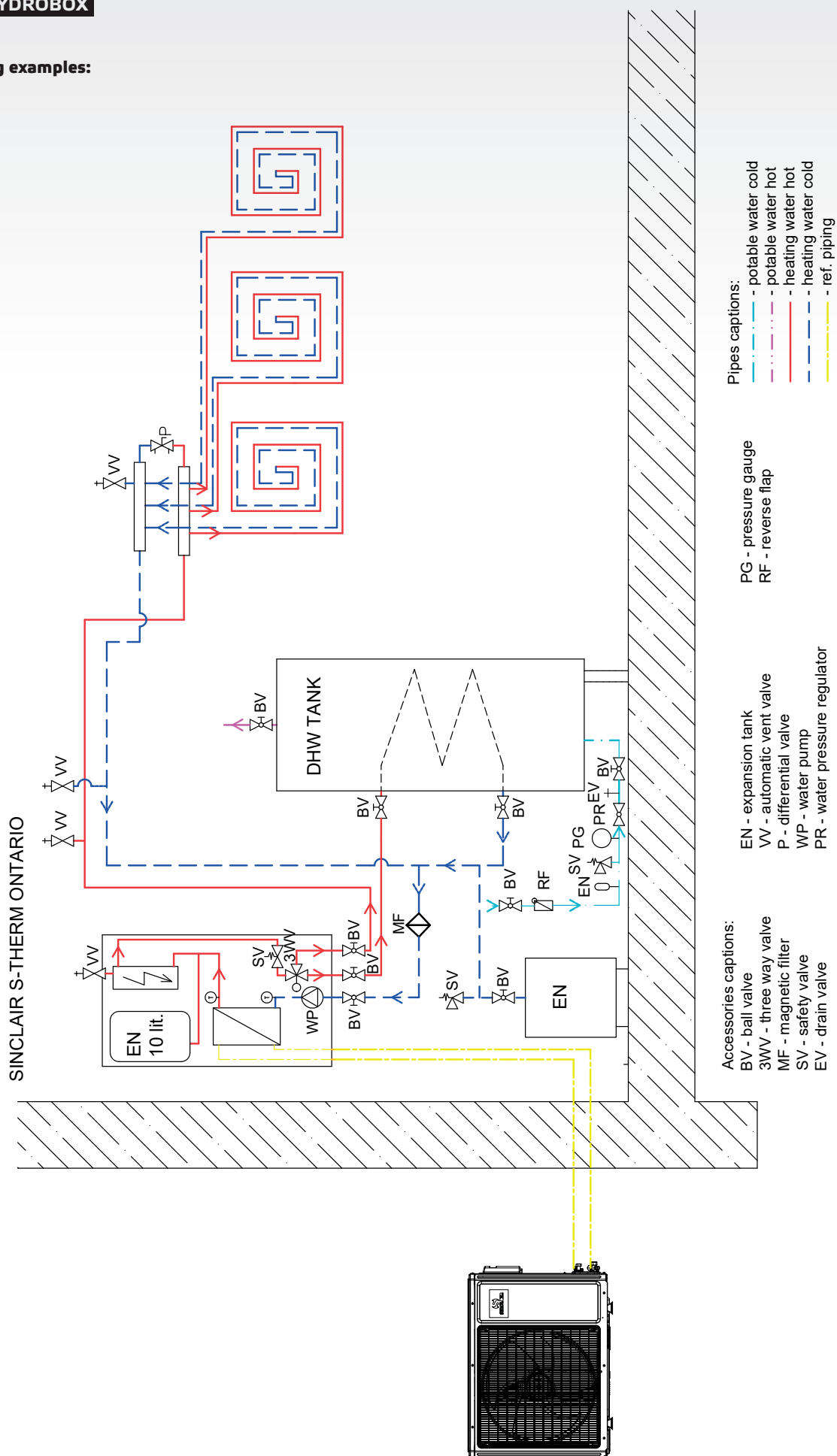
Accessories captions:
 BV - ball valve
 3WV - three way valve
 MF - magnetic filter
 SV - safety valve
 EV - drain valve

EN - expansion tank
 VV - automatic vent valve
 P - differential valve
 WP - water pump
 PR - water pressure regulator

PG - pressure gauge
 RF - reverse flap

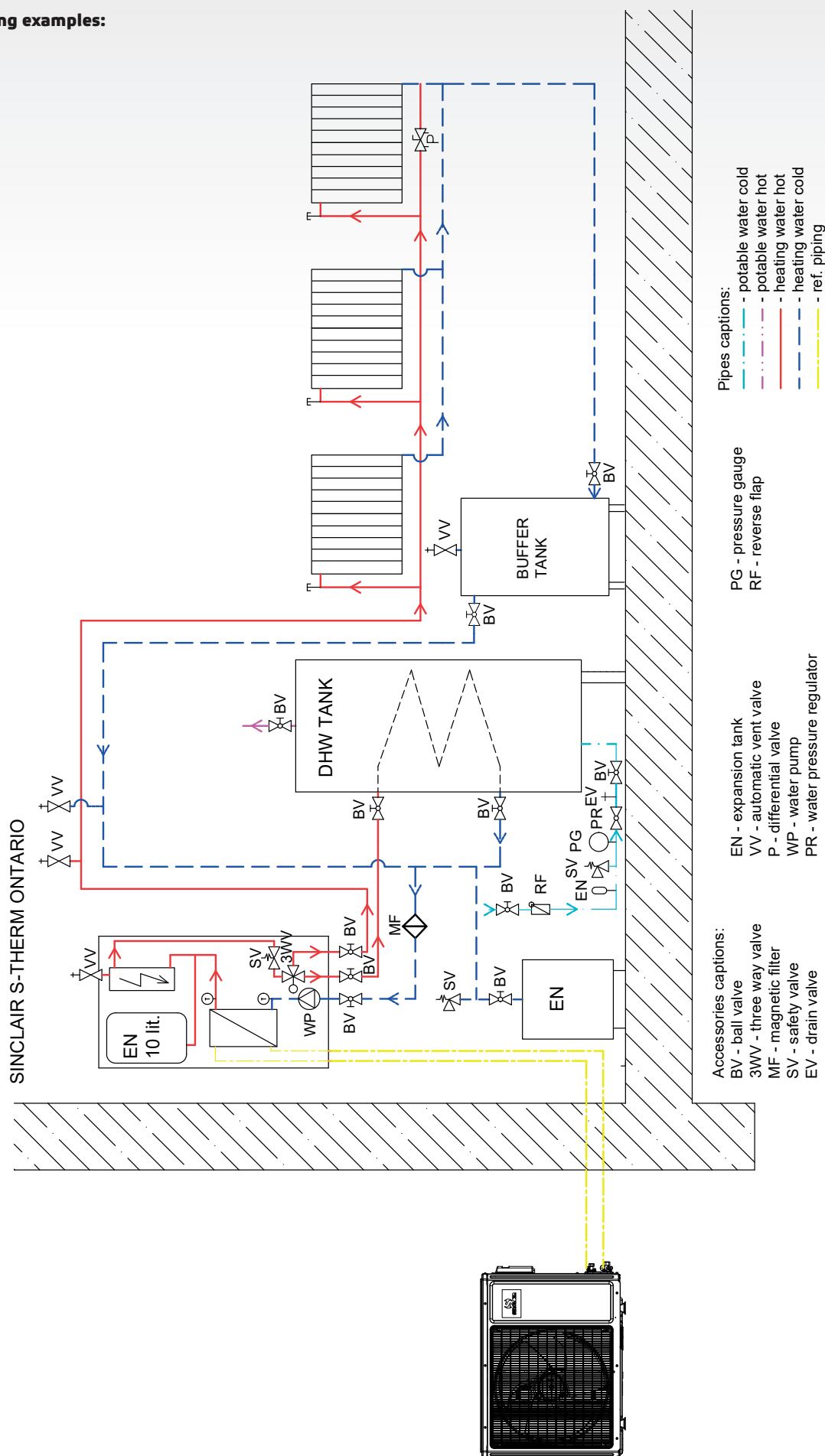
Pipes captions:
 - - - potable water cold
 - - - potable water hot
 - - - heating water hot
 - - - heating water cold
 - - - ref. piping

Wiring examples:



SPLIT - HYDROBOX

Wiring examples:



ONTARIO SERIES

SPLIT - ALL IN ONE

MODEL			GSH-40TRB2	GSH-60TRB2	GSH-80TRB2	GSH-100TRB2	GSH-120TRB2
Power supply		V/Ph/Hz	220-240/1/50				
Connecting pipe (refrigerant)	Gas	inch	1/2"				5/8"
	Liquid		1/4"				
Connecting pipe (water)	Inlet	inch	1" 6,35mm				
	Outlet		1" (outer)				
Safety valve		bar	3				
Leaving water temperature	Cooling	°C	7-25				
	Heating		25-60				
MAIN COMPONENTS							
Additional water pump	Type	-	Inverter - PWM1				
	Speed	-	Automatic regulation				
	Max. power	W	75				87
Hot water tank	Volume	l	190				
	EL Heater	kW	3				
Expansion tank	Volume	l	10				
	Max. Pressure	bar	3				
	Pressure	bar	1				
Auxiliary electric heater	Type	-	Automatic				
	Capacity	kW	3	6			
	Combination	-	1,5+1,5	3+3			
	Power supply	V/Ph/Hz	220-240 / 1 / 50				
Heat exchanger	Type	-	Blazed plate				
Sound pressure level in 1m		dB (A)	29				
Dimensions (WxDxH)	Outline	mm	650×600×1800				
	Packaged		803×703×2035				
Weight	Net	kg	195				
	Gross		219				
Maximum current		A	27	27	39,5	39,5	39,5
Circuit breaker		A	32	32	40	40	40
Nominal current		A	<1	<1	<1	<1	<1
Recommended supply cable		-	3×10 mm²	3×10 mm²	3×10 mm²	3×10 mm²	3×10 mm²
HEATING SYSTEM REQUIREMENTS							
Minimum water flow		l/min	6,7±1,7	6,7±1,7	6,7±1,7	6,7±1,7	6,7±1,7
Minimum water volume of heating system		l	60	90	120	150	180
STANDARD ACCESSORIES							
Three-way valve		-	Yes (already built in)				

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.
R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.
Contains fluorinated greenhouse gases covered by the Kyoto Protocol.
Explanatory notes on the very last page of the catalogue.
Cross-section of each wire must correspond to the IEC 603640.
Above notes valid also for tables on the page 31.

ONTARIO SERIES

SPLIT - ALL IN ONE

MODEL			GSH-140TRB2		GSH-160TRB2	GSH-80TRB2-3	GSH-100TRB2-3	GSH-120TRB2-3
Power supply		V/Ph/Hz	220-240/1/50			380-415/3/50		
Connecting pipe (refrigerant)	Gas	inch	5/8"			1/2"		5/8"
	Liquid		1/4"					
Connecting pipe (water)	Inlet	inch	1" (outer)					
	Outlet							
Safety valve		bar	3					
Leaving water temperature	Cooling	°C	7-25					
	Heating		25-60					
MAIN COMPONENTS								
Additional water pump	Type	-	Inverter - PWM1					
	Speed	-	Automatic regulation					
	Max. power	W	87					
Hot water tank	Volume	l	190					
	El. Heater	kW	3					
Expansion tank	Volume	l	10					
	Max. Pressure	bar	3					
	Pressure	bar	1					
Auxiliary electric heater	Type	-	Automatic					
	Capacity	kW	6					
	Combination	-	3+3					
	Power supply	V/Ph/Hz	220-240 / 1 / 50			380-415 / 3 / 50		
Heat exchanger	Type	-	Blazed plate					
Sound pressure level in 1m		dB (A)	29					
Dimensions (WxDxH)	Outline	mm	650×600×1800					
	Packaged		803×703×2035					
Weight	Net	kg	195					
	Gross		219					
Maximum current		A	39,5	39,5	13	13	13	
Circuit breaker		A	40	40	16	16	16	
Nominal current		A	<1	<1	<1	<1	<1	
Recommended supply cable		-	3×10 mm²	3×10 mm²	5×2,5 mm²	5×2,5 mm²	5×2,5 mm²	
HEATING SYSTEM REQUIREMENTS								
Minimum water flow		l/min	6,7±1,7	6,7±1,7	6,7±1,7	6,7±1,7	6,7±1,7	
Minimum water volume of heating system		l	210	240	120	150	180	
STANDARD ACCESSORIES								
Three-way valve		-	Yes (already built in)					

MODEL			GSH-140TRB2-3		GSH-160TRB2-3	
Power supply		V/Ph/Hz	380-415/3/50			
Connecting pipe (refrigerant)	Gas	inch	5/8"			
	Liquid		1/4"			
Connecting pipe (water)	Inlet	inch	1" (outer)			
	Outlet					
Safety valve		bar	3			
Leaving water temperature	Cooling	°C	7-25			
	Heating		25-60			
MAIN COMPONENTS						
Additional water pump	Type	-	Inverter - PWM1			
	Speed	-	Automatic regulation			
	Max. power	W	87			
Hot water tank	Volume	l	190			
	El. Heater	kW	3			
Expansion tank	Volume	l	10			
	Max. Pressure	bar	3			
	Pressure	bar	1			
Auxiliary electric heater	Type	-	Automatic			
	Capacity	kW	6			
	Combination	-	3+3			
	Power supply	V/Ph/Hz	380-415 / 3 / 50			
Heat exchanger	Type	-	Blazed plate			
Sound pressure level in 1m		dB (A)	29			
Dimensions (WxDxH)	Outline	mm	650×600×1800			
	Packaged		803×703×2035			
Weight	Net	kg	195			
	Gross		219			
Maximum current		A	13	13		
Circuit breaker		A	16	16		
Nominal current		A	<1	<1		
Recommended supply cable		-	5×2,5 mm²	5×2,5 mm²		
HEATING SYSTEM REQUIREMENTS						
Minimum water flow		l/min	6,7±1,7	6,7±1,7		
Minimum water volume of heating system		l	210	240		
STANDARD ACCESSORIES						
Three-way valve		-	Yes (already built in)			

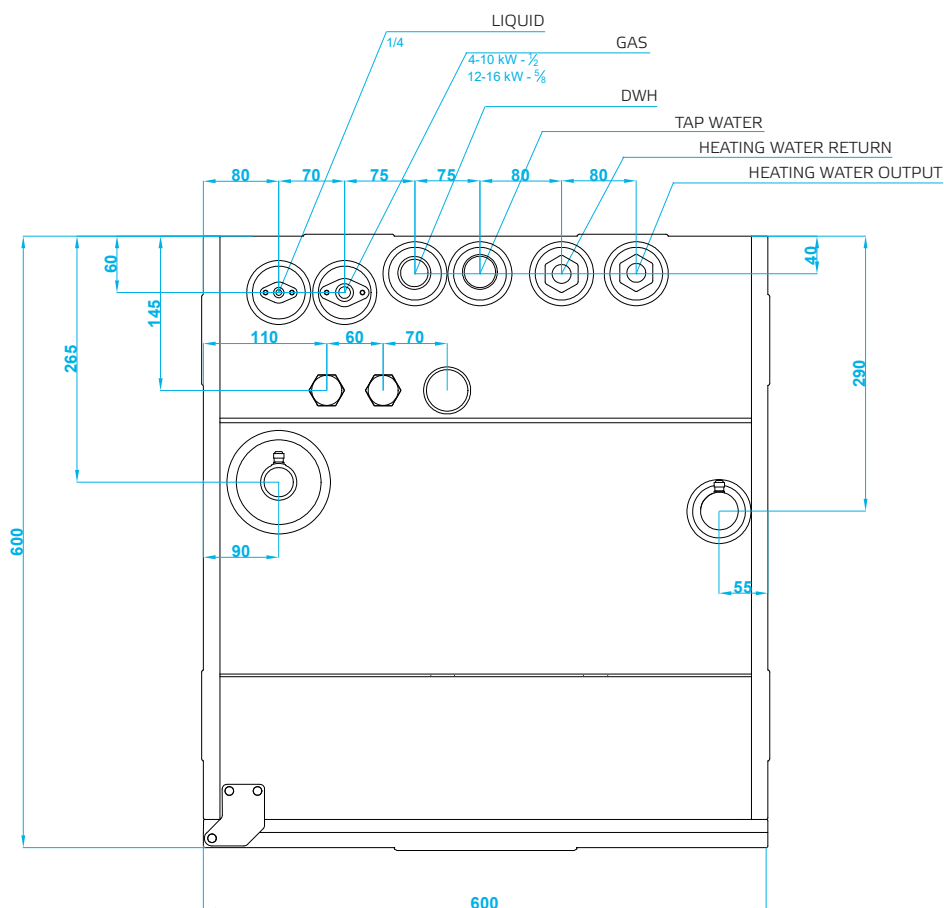
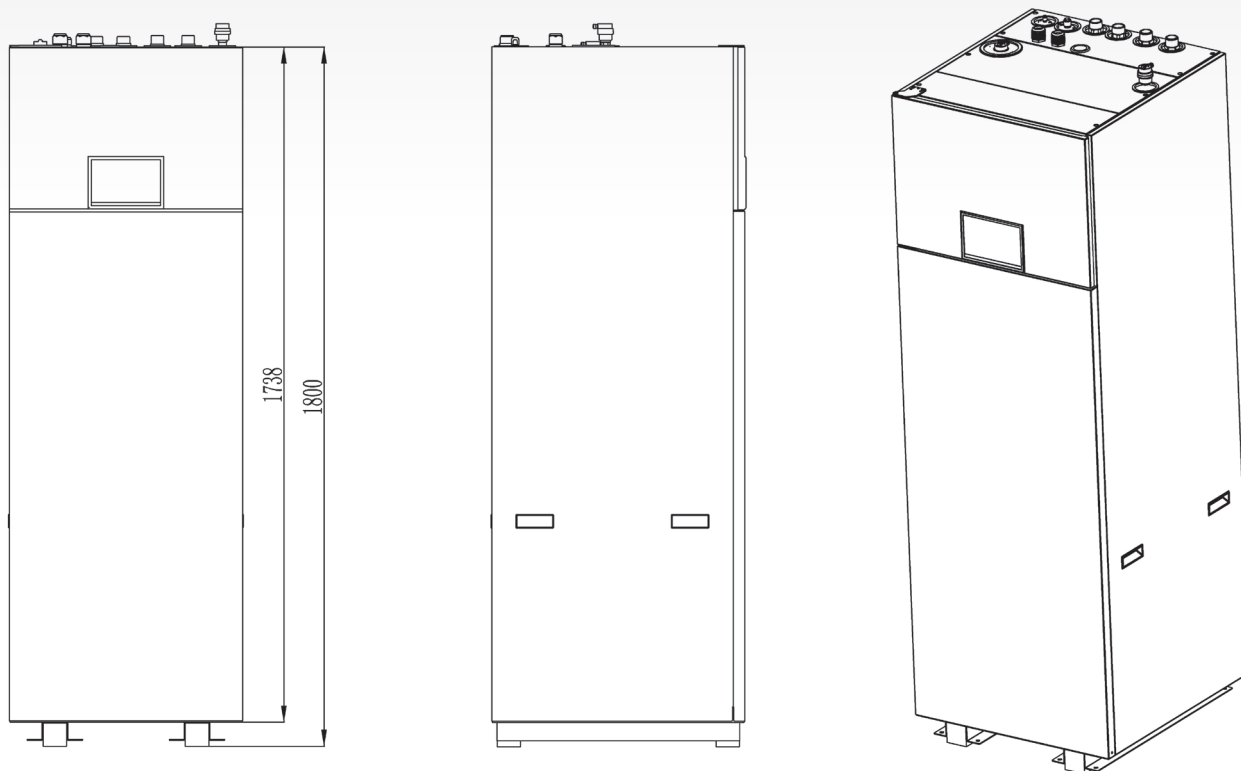
APPEARANCE AND DIMENSIONS OF ONTARIO HEAT PUMPS

SPLIT - ALL IN ONE

GSH-40TRB2, GSH-60TRB2, GSH-80TRB2, GSH-100TRB2, GSH-120TRB2

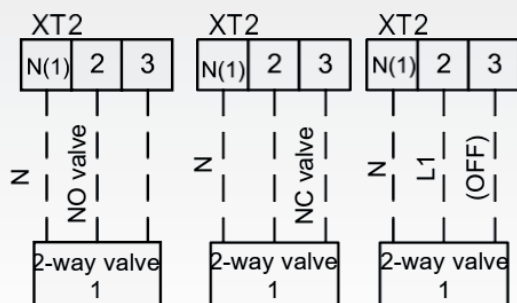
GSH-140TRB2, GSH-160TRB2, GSH-80TRB2-3, GSH-100TRB2-3, GSH-120TRB2-3

GSH-140TRB2-3, GSH-160TRB2-3

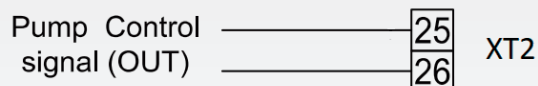


ALL IN ONE

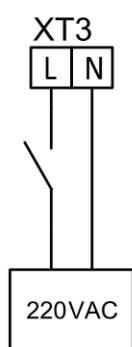
2-way valve



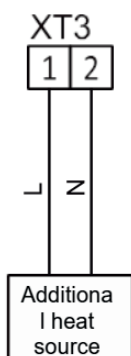
Additional heat pump (PWM signal)



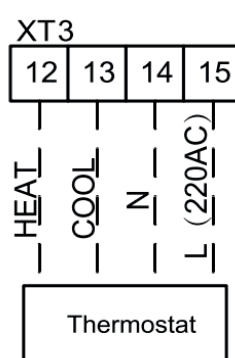
Gate controller



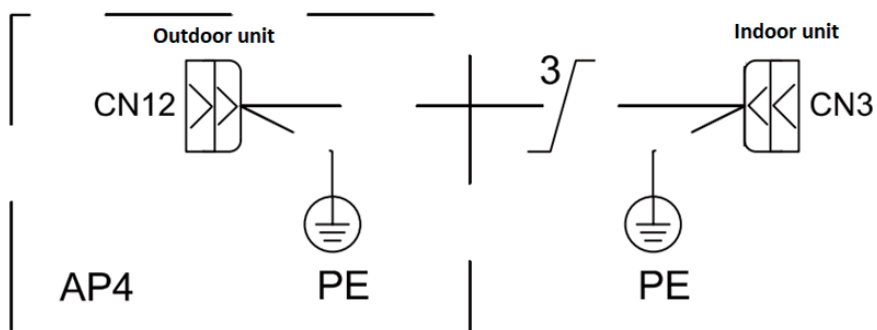
Additional heat source



External thermostat

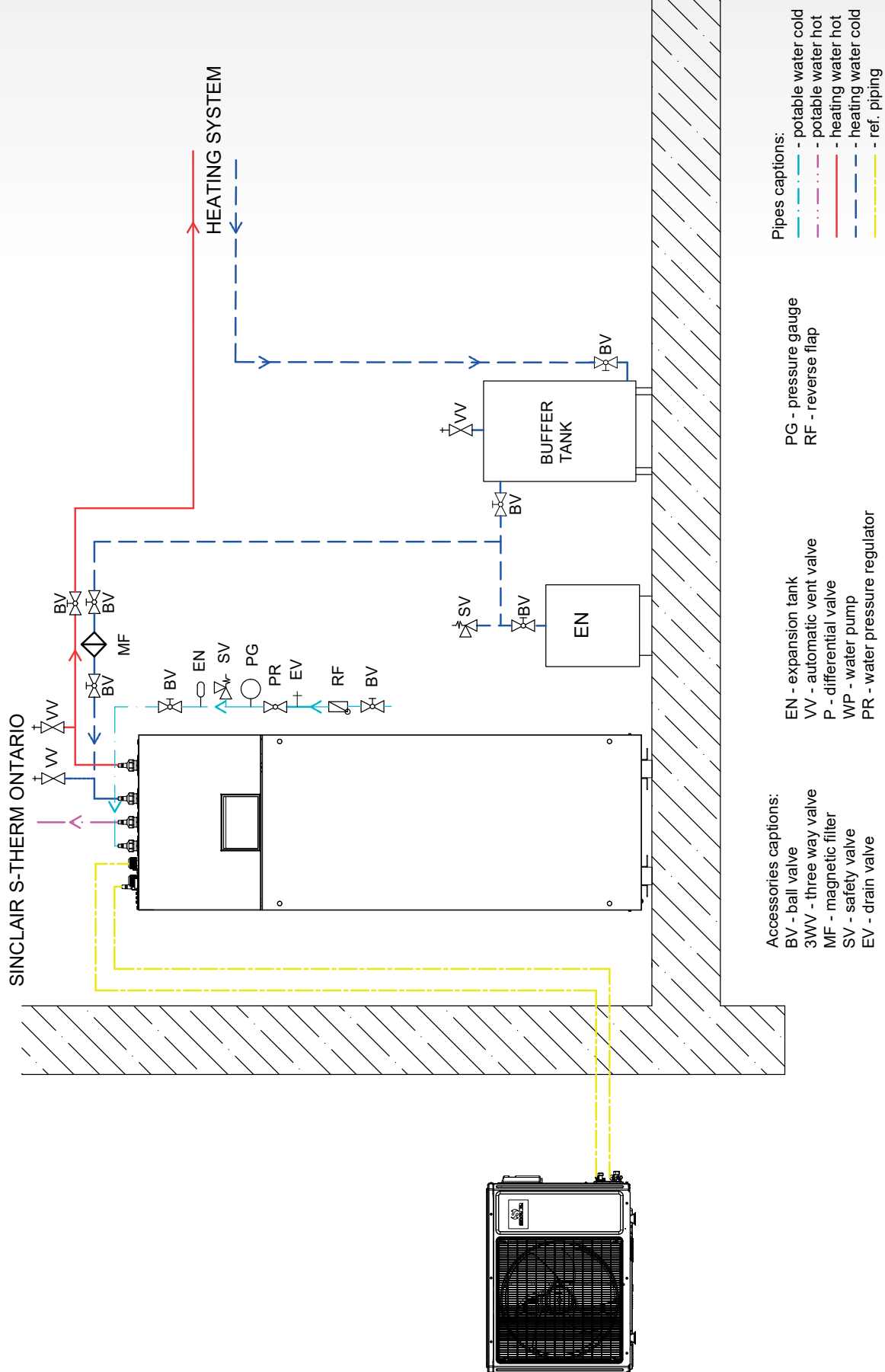


Communication ODU - IDU

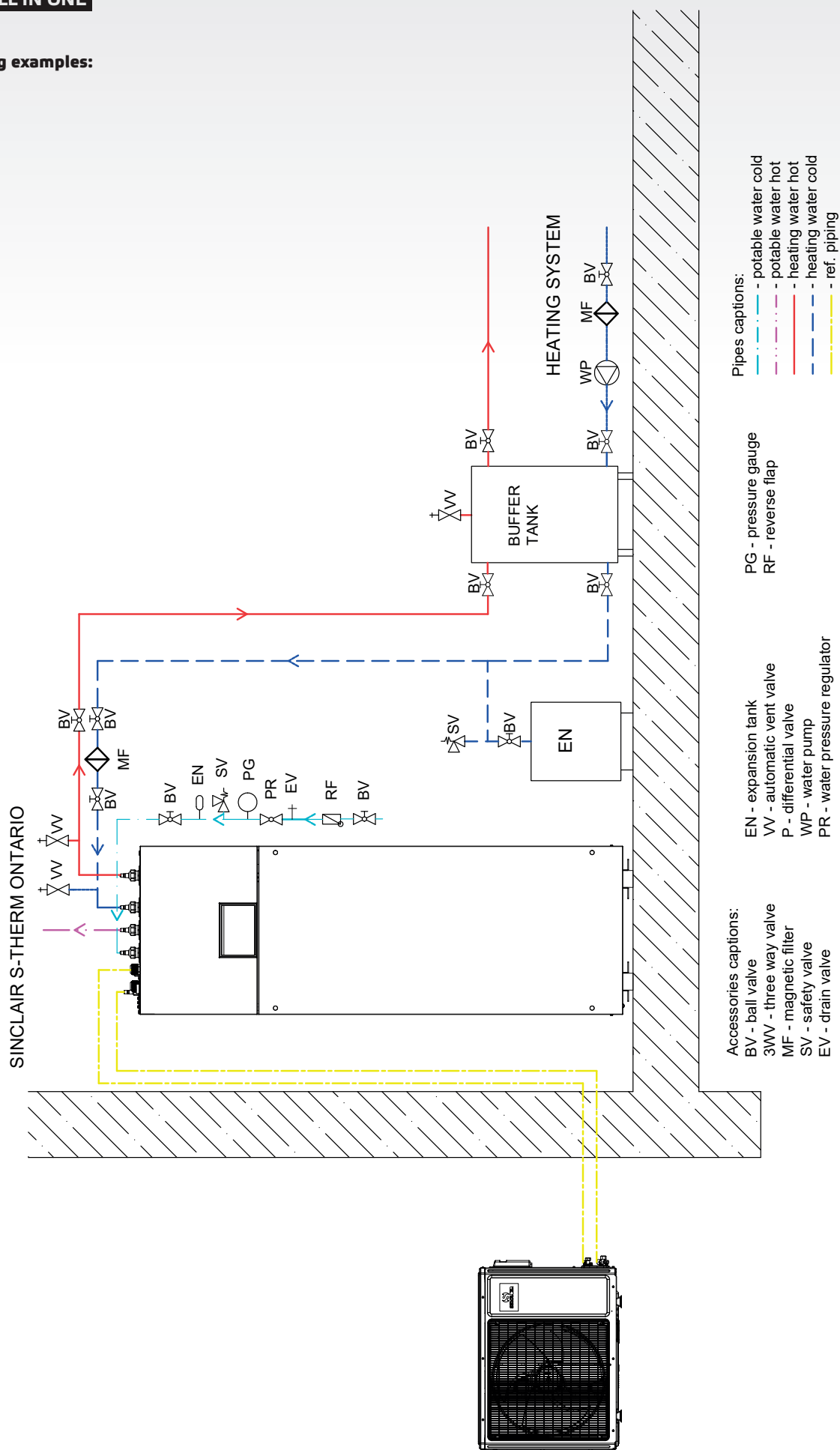


Attention: You can find a detailed wiring diagram in the installation manual.

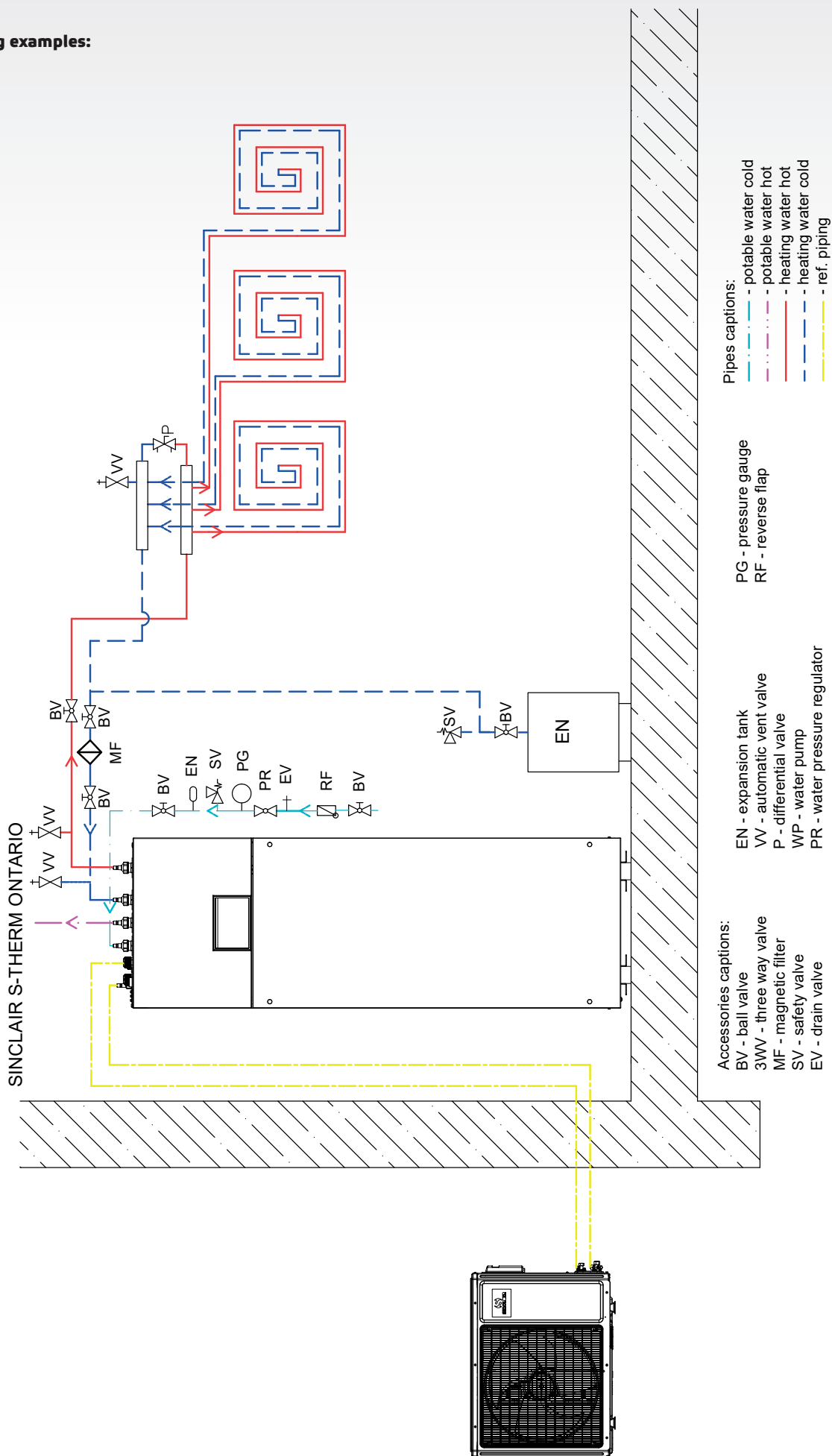
Wiring examples:



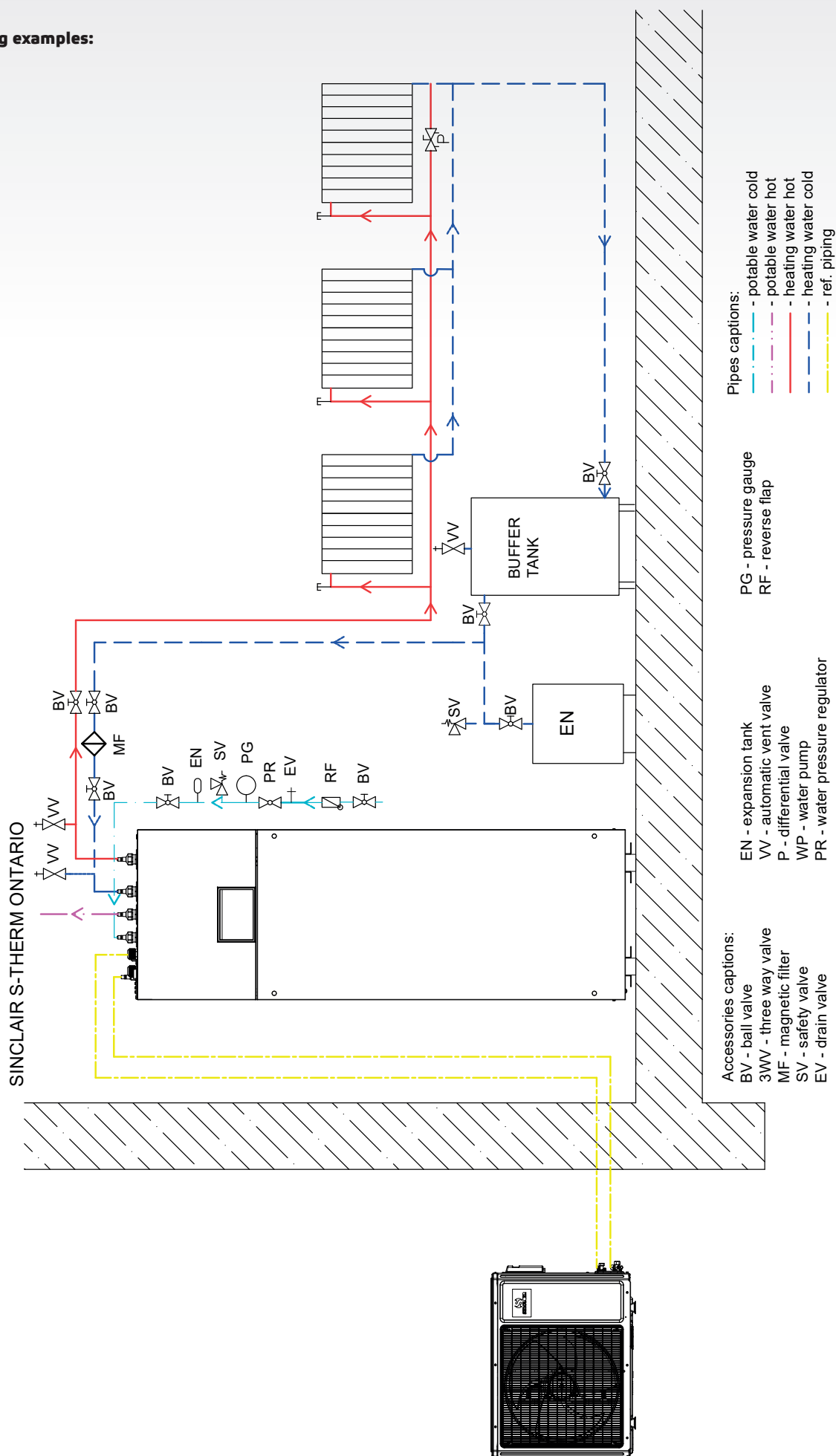
Wiring examples:



Wiring examples:



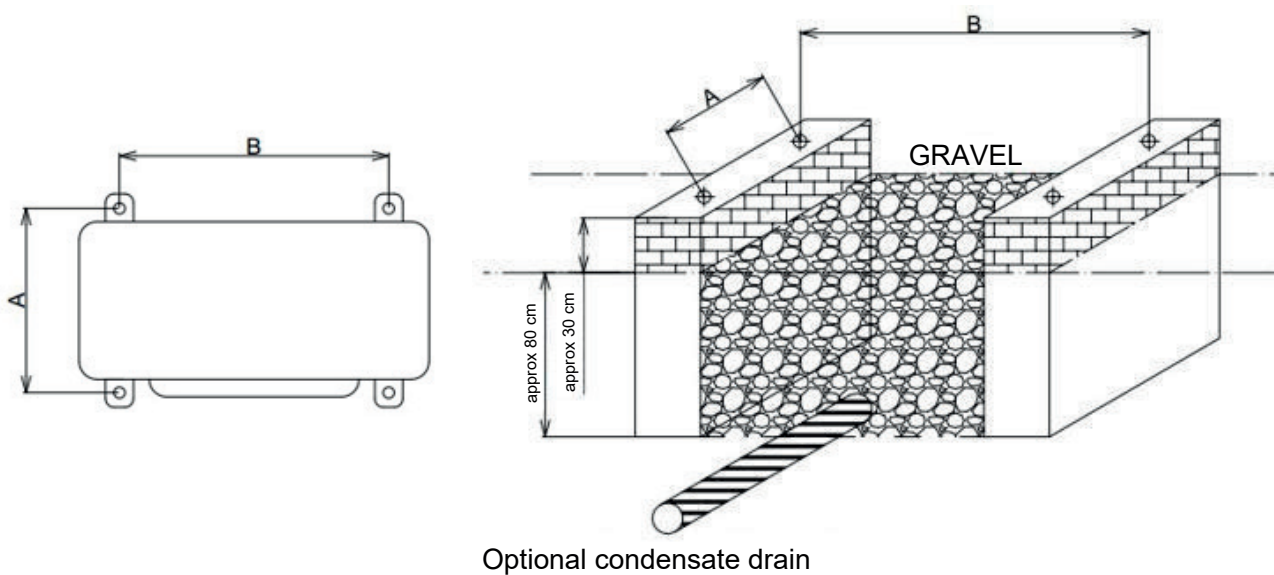
Wiring examples:



ONTARIO SERIES
OUTDOOR UNIT BASE

Pedestals for outdoor units

Outdoor and monobloc unit model	A [mm]	B [mm]
GSH-40ERB, GSH-40ERB2, GSH-60ERB, GSH-60ERB2	364	560
GSH-80ERB, GSH-80ERB2, GSH-80ERB-3, GSH-100ERB, GSH-100ERB2, GSH-100ERB-3	395	650
GSH-120ERB; GSH-140ERB; GSH-160ERB; GSH-120ERB-3; GSH-140ERB-3; GSH-160ERB-3	460	610
SMH-60IRB; SMH-80IRB	310	680
SMH-100IRB; SMH-100IRB-3; SMH-100IRB2; SMH-100IRB2-3	438	900
SMH-120IRB; SMH-120IRB2; SMH-120IRB-3; SMH-120IRB2-3	438	900
SMH-140IRB; SMH-140IRB2; SMH-140IRB-3; SMH-140IRB2-3	438	900
SMH-160IRB; SMH-160IRB2; SMH-160IRB-3; SMH-160IRB2-3	438	900
SMH-40IRBC, SMH-60IRBC	302	1063
SMH-80IRBC	322	1120
SMH-100IRBC2; SMH-100IRBC2-3	322	1120
SMH-120IRBC2-3	322	1120
SMH-140IRBC2-3	322	1120
SMH-160IRBC2-3	322	1120



MONOBLOC 4-16 KW R32

MODEL			SMHM-40B/3	SMHM-60B/3	SMHM-80B/3	SMHM-100B/3	SMHM-120B-3/9
			3 - 5 kW	4 - 6 kW	6 - 8 kW	7 - 9,5 kW	10 - 12 kW
Power supply		V/Ph/Hz	220-240/1/50				380-415/3/50
Heating (A7/W35)	Capacity	kW	4,20	6,35	8,40	10,0	12,1
	Rated input	kW	0,82	1,28	1,63	2,02	2,44
	COP		5,10	4,95	5,15	4,95	4,95
Cooling (A35/W18)	Capacity	kW	4,5	6,5	8,3	9,9	12
	Rated input	kW	0,82	1,35	1,64	2,18	3,04
	EER		5,5	4,8	5,05	4,55	3,95
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A++				
SCOP	Warmer climate	35 °C	6,46	6,57	6,99	7,09	6,48
		55 °C	4,15	4,21	4,51	4,62	4,43
	Average climate	35 °C	4,85	4,95	5,22	5,20	4,81
		55 °C	3,31	3,52	3,37	3,47	3,45
	Colder climate	35 °C	4,06	4,21	4,33	4,32	4,08
		55 °C	2,63	2,85	2,88	2,99	3,02
Sound pressure level in 1 m		dB (A)	55	58	59	60	65
Sound power level		dB (A)	45	47,5	48,5	50,5	53,5
Sound pressure level in 1 m (silent mode 1)		dB(A)	42	43	44	45	49
Sound pressure level in 1 m (silent mode 2)		dB(A)	39	40	41	41	43
Sound power level (silent mode 1)		dB(A)	54	55	56	57	61
Sound power level (silent mode 2)		dB(A)	51	52	53	53	55
Rated water flow		m³/h	0,72	1,09	1,44	1,72	2,08
Water flow range		m³/h	0,4~0,9	0,4~1,25	0,4~1,65	0,4~2,1	0,7~2,5
Minimum water amount in heating system		l	60	90	120	150	180
Compressor	Type		Twin rotary				
Outdoor fan	Motor type / Number of fans		DC fan / 1				
Fin coating			Blue fin				
Refrigerant	Type / Ammount	kg	R32 / 1,4				R32 / 1,75
Auxiliary electric heater	Type	-	Automatic				
	Capacity	kW	3				9
	Combination	-	3				3/6/9
	Power supply	V/Ph/Hz	220-240/1/50				380-415/3/50
Expansion tank	Volume	l	8				
	Max. water pressure	MPa	0,3				
	Pressure	MPa	0,15				
Unit dimension (W×H×D)		mm	1295×718×429			1385×865×523	
Packing dimension (W×H×D)		mm	1375×885×475			1465×1035×560	
Net/gross weight		kg	91/112			110/137 149/179	
Outdoor air temperature range	Cooling	°C	-5~43				
	Heating	°C	-25~35				
	DHW	°C	-25~43				
Water side heat exchanger			Plate type				
Water side connection		inch	1 "			5/4"	
Water setting temperature range	Cooling	°C	5~25				
	Heating	°C	25~65				
	DHW	°C	30~60				
OTHER TECHNICAL DATA							
Distance of holes		mm	375×1023			458×1019	
Circuit breaker		A	32 (16*)	32 (16*)	32 (16*)	32 (20*)	25 (16*)
Recommended supply cable		mm²	3×10 (3×2,5*)	3×10 (3×2,5*)	3×10 (3×2,5*)	3×10 (3×4*)	5×6 (5×2,5*)
Inrush current		A	1	1	1	1	1
Nominal current		A	3,8	5,7	7,2	8,9	3,6
Maximum current		A	25	26	29,5	30,5	23
Display cable		-	Field supplied - 5x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	yes (10m)				
Y-filter		-	yes				
Contoller		-	yes				
Resistor for cascade		-	yes				
OPTIONAL ACCESSORIES							
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water amount in heating system		l	60	90	120	150	180

Values marked with * are valid only after blocking Auxiliary electric heater (IBH).

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

YUKON SERIES

MONOBLOC 4-16 KW R32

MODEL			SMHM-140B-3/9	SMHM-160B-3/9	SMHM-40B	SMHM-60B	SMHM-80B
			11 - 14 kW	12 - 15 kW	3 - 5 kW	4 - 6 kW	6 - 8 kW
Power supply		V/Ph/Hz	220-240/1/50				
Heating (A7/W35)	Capacity	kW	14,5	15,9	4,20	6,35	8,40
	Rated input	kW	3,15	3,53	0,82	1,28	1,63
	COP		4,60	4,50	5,10	4,95	5,15
Cooling (A35/W18)	Capacity	kW	13,50	14,2	4,5	6,5	8,3
	Rated input	kW	3,74	3,94	0,82	1,35	1,64
	EER		3,61	3,61	5,5	4,8	5,05
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A++				
SCOP	Warmer climate	35 °C	6,58	6,29	6,46	6,57	6,99
		55 °C	4,49	4,48	4,15	4,21	4,51
	Average climate	35 °C	4,72	4,62	4,85	4,95	5,22
		55 °C	3,47	3,41	3,31	3,52	3,37
	Colder climate	35 °C	4,07	4,02	4,06	4,21	4,33
		55 °C	3,05	3,12	2,63	2,85	2,88
Sound pressure level in 1 m		dB (A)	65	68	55	58	59
Sound power level		dB (A)	54	58	45	47,5	48,5
Sound pressure level in 1 m (silent mode 1)		dB(A)	49	50	42	43	44
Sound pressure level in 1 m (silent mode 2)		dB(A)	43	43	39	40	41
Sound power level (silent mode 1)		dB(A)	61	62	54	55	56
Sound power level (silent mode 2)		dB(A)	55	55	51	52	53
Rated water flow		m³/h	2,49	2,73	0,72	1,09	1,44
Water flow range		m³/h	0,7~2,75	0,7~3,0	0,4~0,9	0,4~1,25	0,4~1,65
Minimum water amount in heating system		l	210	240	60	90	120
Compressor	Type		Twin rotary				
Outdoor fan	Motor type / Number of fans		DC fan / 1				
Fin coating			Blue fin				
Refrigerant	Type / Ammount	kg	R32 / 1,75		R32 / 1,4		
Auxiliary electric heater	Type	-	Automatic		-		
	Capacity	kW	9				
	Combination	-	3/6/9				
	Power supply	V/Ph/Hz	380-415/3/50				
Expansion tank	Volume	l	8				
	Max. water pressure	MPa	0,3				
	Pressure	MPa	0,15				
Unit dimension (W×H×D)		mm	1385×865×523			1295×718×429	
Packing dimension (W×H×D)		mm	1465×1035×560			1375×885×475	
Net/gross weight		kg	149/179			86/107 105/132	
Outdoor air temperature range	Cooling	°C	-5-43				
	Heating	°C	-25-35				
	DHW	°C	-25-43				
Water side heat exchanger			Plate type				
Water side connection		inch	5/4"			1 " 5/4"	
Water setting temperature range	Cooling	°C	5-25				
	Heating	°C	25-65				
	DHW	°C	30-60				
OTHER TECHNICAL DATA							
Distance of holes		mm	458×1019			375×1023 458×1019	
Circuit breaker		A	25 (16*)	25 (16*)	16	16	16
Recommended supply cable		mm²	5×6 (5×2,5*)	5×6 (5×2,5*)	3×2,5	3×2,5	3×2,5
Inrush current		A	1	1	1	1	1
Nominal current		A	4,65	5,2	3,8	5,7	7,2
Maximum current		A	24	24,5	13	12,5	15
Display cable		-	Field supplied - 5x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	yes (10m)				
Y-filter		-	yes				
Contoller		-	yes				
Resistor for cascade		-	yes				
OPTIONAL ACCESSORIES							
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water amount in heating system		l	210	240	60	90	120

Values marked with * are valid only after blocking Auxiliary electric heater (IBH).

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

YUKON SERIES

MONOBLOC 4-16 KW R32

MODEL			SMHM-100B	SMHM-120B	SMHM-140B	SMHM-160B	SMHM-120B-3
			7 - 9,5 kW	10 - 12 kW	12 - 15 kW	12 - 15 kW	10 - 12 kW
Power supply		V/Ph/Hz	220-240/1/50				380-415/3/50
Heating (A7/W35)	Capacity	kW	10,0	12,1	14,5	15,9	12,1
	Rated input	kW	2,02	2,44	3,15	3,53	2,44
	COP		4,95	4,95	4,60	4,50	4,95
Cooling (A35/W18)	Capacity	kW	9,9	12	13,50	14,2	12
	Rated input	kW	2,18	3,04	3,74	3,94	3,04
	EER		4,55	3,95	3,61	3,61	3,95
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A++				
SCOP	Warmer climate	35 °C	7,09	6,48	6,58	6,29	6,48
		55 °C	4,62	4,43	4,49	4,48	4,43
	Average climate	35 °C	5,20	4,81	4,72	4,62	4,81
		55 °C	3,47	3,45	3,47	3,41	3,45
	Colder climate	35 °C	4,32	4,08	4,07	4,02	4,08
		55 °C	2,99	3,02	3,05	3,12	3,02
Sound pressure level in 1 m		dB (A)	60	65	65	68	65
Sound power level		dB (A)	50,5	53	53,5	57,5	53,5
Sound pressure level in 1 m (silent mode 1)		dB(A)	45	49	49	50	49
Sound pressure level in 1 m (silent mode 2)		dB(A)	41	43	43	43	43
Sound power level (silent mode 1)		dB(A)	57	61	61	62	61
Sound power level (silent mode 2)		dB(A)	53	55	55	55	55
Rated water flow		m³/h	1,72	2,08	2,49	2,73	2,08
Water flow range		m³/h	0,4~2,1	0,7~2,5	0,7~2,75	0,7~3,0	0,7~2,5
Minimum water amount in heating system		l	150	180	210	240	180
Compressor	Type		Twin rotary				
Outdoor fan	Motor type / Number of fans		DC fan / 1				
Fin coating			Blue fin				
Refrigerant	Type / Ammount	kg	R32 / 1,4	R32 / 1,75			
Auxiliary electric heater	Type	-	-				
	Capacity	kW					
	Combination	-					
	Power supply	V/Ph/Hz					
Expansion tank	Volume	l	8				
	Max. water pressure	MPa	0,3				
	Pressure	MPa	0,15				
Unit dimension (W×H×D)		mm	1295×718×429	1385×865×523			
Packing dimension (W×H×D)		mm	1375×885×475	1465×1035×560			
Net/gross weight		kg	105/132	129/155			149/177
Outdoor air temperature range	Cooling	°C	-5-43				
	Heating	°C	-25-35				
	DHW	°C	-25-43				
Water side heat exchanger			Plate type				
Water side connection		inch	5/4"				
Water setting temperature range	Cooling	°C	5-25				
	Heating	°C	25-65				
	DHW	°C	30-60				
OTHER TECHNICAL DATA							
Distance of holes		mm	458×1019				
Circuit breaker		A	20	32	32	32	16
Recommended supply cable		mm²	3×4	3×10	3×10	3×10	5×2,5
Inrush current		A	1	1	1	1	1
Nominal current		A	8,9	10,7	13,8	15,5	3,6
Maximum current		A	16,5	25	25,5	26,5	9,5
Display cable		-	Field supplied - 5x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	yes (10m)				
Y-filter		-	yes				
Contoller		-	yes				
Resistor for cascade		-	yes				
OPTIONAL ACCESSORIES							
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water amount in heating system		l	150	180	210	240	180

Values marked with * are valid only after blocking Auxiliary electric heater (IBH).

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

MONOBLOC 4-16 KW R32

MODEL			SMHM-140B-3	SMHM-160B-3		
			11 - 14 kW	12 - 15 kW		
Power supply		V/Ph/Hz	380-415/3/50			
Heating (A7/W35)	Capacity	kW	14,5	15,9		
	Rated input	kW	3,15	3,53		
	COP		4,60	4,50		
Cooling (A35/W18)	Capacity	kW	13,50	14,2		
	Rated input	kW	3,74	3,94		
	EER		3,61	3,61		
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++			
	Water outlet at 55 °C		A++			
SCOP	Warmer climate	35 °C	6,58	6,29		
		55 °C	4,49	4,48		
	Average climate	35 °C	4,72	4,62		
		55 °C	3,47	3,41		
	Colder climate	35 °C	4,07	4,02		
		55 °C	3,05	3,12		
Sound pressure level in 1 m		dB (A)	65	68		
Sound power level		dB (A)	54	58		
Sound pressure level in 1 m (silent mode 1)		dB(A)	49	50		
Sound pressure level in 1 m (silent mode 2)		dB(A)	43	43		
Sound power level (silent mode 1)		dB(A)	61	62		
Sound power level (silent mode 2)		dB(A)	55	55		
Rated water flow		m³/h	2,49	2,73		
Water flow range		m³/h	0,7~2,75	0,7~3,0		
Minimum water amount in heating system		l	210	240		
Compressor	Type		Twin rotary			
Outdoor fan	Motor type / Number of fans		DC fan / 1			
Fin coating			Blue fin			
Refrigerant	Type / Ammount	kg	R32 / 1,75			
Auxiliary electric heater	Type	-	-			
	Capacity	kW				
	Combination	-				
	Power supply	V/Ph/Hz				
Expansion tank	Volume	l	8			
	Max. water pressure	MPa	0,3			
	Pressure	MPa	0,15			
Unit dimension (W×H×D)		mm	1385×865×523			
Packing dimension (W×H×D)		mm	1465×1035×560			
Net/gross weight		kg	149/177			
Outdoor air temperature range	Cooling	°C	-5~43			
	Heating	°C	-25~35			
	DHW	°C	-25~43			
Water side heat exchanger			Plate type			
Water side connection		inch	5/4"			
Water setting temperature range	Cooling	°C	5~25			
	Heating	°C	25~65			
	DHW	°C	30~60			
OTHER TECHNICAL DATA						
Distance of holes		mm	458×1019			
Circuit breaker		A	16	16		
Recommended supply cable		mm²	5×2,5	5×2,5		
Inrush current		A	1	1		
Nominal current		A	4,65	5,2		
Maximum current		A	10,5	11		
Display cable		-	Field supplied - 5x0,75			
STANDARD ACCESSORIES						
DHW sensor		-	yes (10m)			
Y-filter		-	yes			
Contoller		-	yes			
Resistor for cascade		-	yes			
OPTIONAL ACCESSORIES						
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)			
HEATING SYSTEM REQUIREMENT						
Minimum water amount in heating system		l	210	240		

Values marked with * are valid only after blocking Auxiliary electric heater (IBH).

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

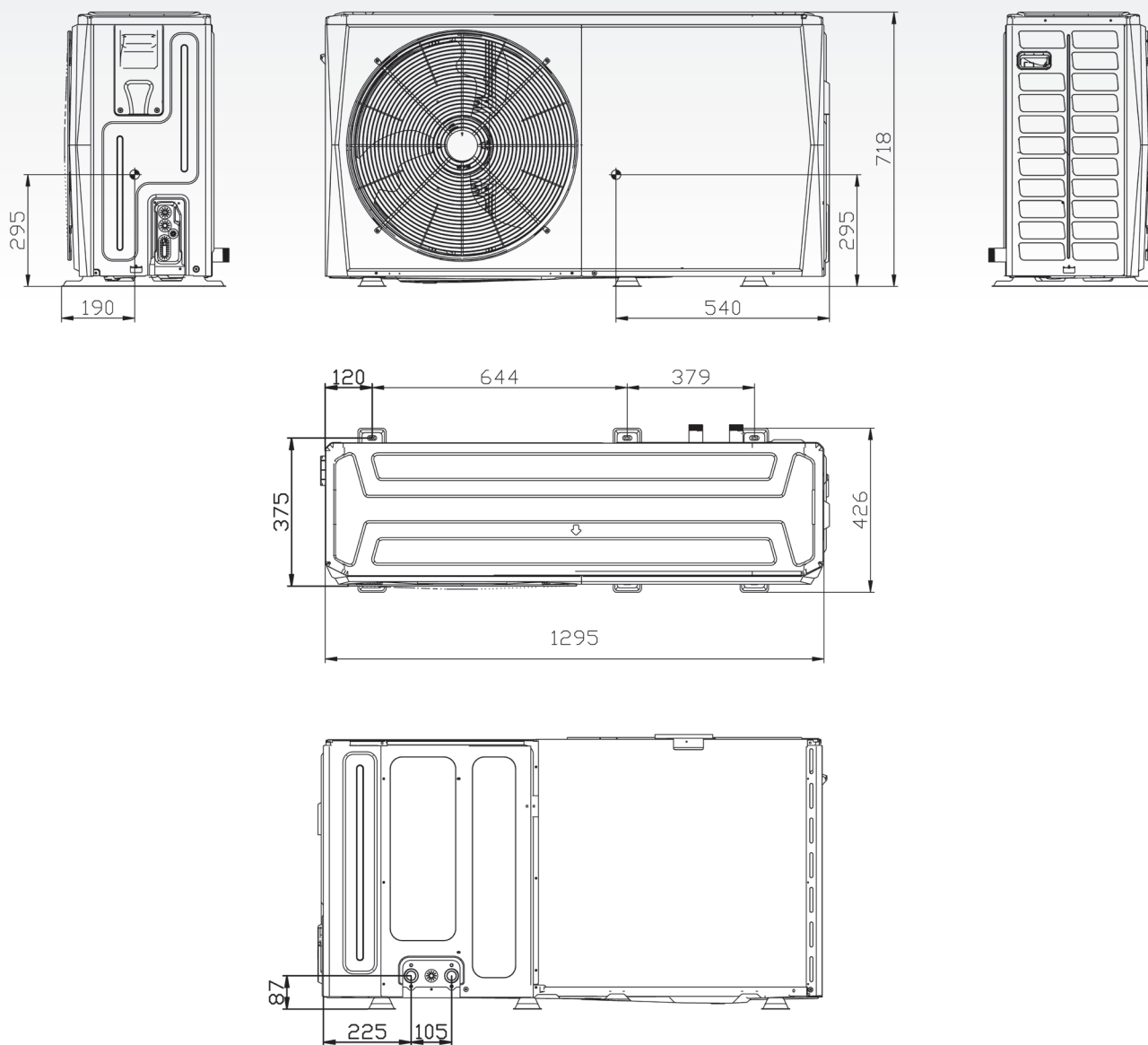
Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF YUKON SERIES

MONOBLOC 4-16 KW R32

SMHM-40B, SMHM-60B, SMHM-40B/3, SMHM-60B/3

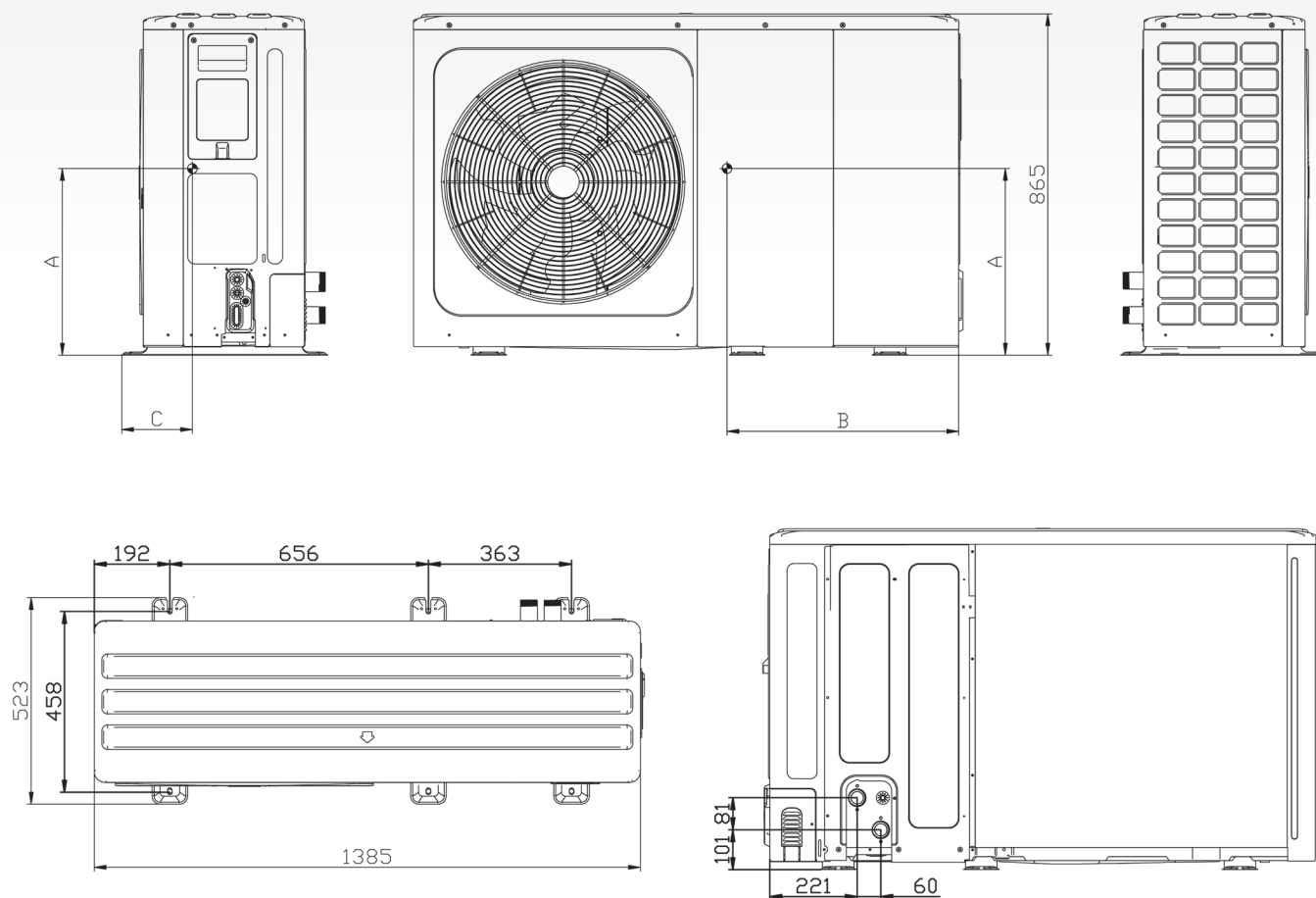


APPEARANCE AND DIMENSIONS OF YUKON SERIES

MONOBLOC 4-16 KW R32

SMHM-80B, SMHM-100B, SMHM-120B, SMHM-140B, SMHM-160B, SMHM-120B-3, SMHM-140B-3, SMHM-160B-3

SMHM-80B/3, SMHM-100B/3, SMHM-120B/3, SMHM-140B/3, SMHM-160B/3, SMHM-120B-3/9, SMHM-140B-3/9, SMHM-160B-3/9



Model	A	B	C
SMHM-80B SMHM-100B SMHM-80B/3 SMHM-100B/3	330	580	280
SMHM-120B SMHM-140B SMHM-160B SMHM-120B/3 SMHM-140B/3 SMHM-160B/3	290	605	245
SMHM-120B-3 SMHM-140B-3 SMHM-160B-3 SMHM-120B-3/9 SMHM-140B-3/9 SMHM-160B-3/9	200	605	245

YUKON SERIES

MONOBLOC 18-30 KW R32

MODEL			SMHM-180B-3	SMHM-220B-3	SMHM-260B-3	SMHM-300B-3	
Suitable for building heat loss			16 - 18 kW	18 - 22 kW	22 - 26 kW	26 - 30 kW	
Power supply		V/Ph/Hz	380-415/3/50				
Heating (A7/W35)	Capacity	kW	18	22	26	30,1	
	Rated input	kW	3,83	5	6,37	7,69	
	COP		4,7	4,4	4,08	3,91	
Cooling (A35/W18)	Capacity	kW	18,5	23	27	31	
	Rated input	kW	3,89	5	6,27	7,75	
	EER		4,75	4,6	4,3	4	
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A++				
SCOP	Warmer climate	35 °C	5,73	5,93	5,85	5,4	
		55 °C	4	4,1	4,28	4,15	
	Average climate	35 °C	4,6	4,53	4,5	4,2	
		55 °C	3,2	3,23	3,15	3,15	
	Colder climate	35 °C	3,73	3,73	3,65	3,53	
		55 °C	2,5	2,63	2,6	2,58	
Sound pressure level in 1 m		dB (A)	71	73	75	77	
Sound power level		dB (A)	57,6	59,8	61,5	63,5	
Rated water flow		m³/h	3,1	3,78	4,47	5,18	
Compressor	Type		Twin rotary				
Outdoor fan	Motor type / Number of fans		DC fan / 2				
Fin coating			Blue fin				
Refrigerant	Type / Ammount	kg	R32 / 5				
Expansion tank	Volume	l	8				
	Max. water pressure	MPa	3				
	Pressure	MPa	1				
Unit dimension (W×H×D)		mm	1129×1558×528				
Packing dimension (W×H×D)		mm	1220×1735×565				
Net/gross weight		kg	177/206				
Outdoor air temperature range	Cooling	°C	-5~46				
	Heating	°C	-25~35				
	DHW	°C	-25~43				
Water side heat exchanger			plate type				
Water side connection		inch	5/4"				
Water setting temperature range	Cooling	°C	5~25				
	Heating	°C	25~60				
	DHW	°C	30~60				
OTHER TECHNICAL DATA							
Distance of holes		mm	494x874				
Circuit breaker		A	25(*20)	25(*20)	32(*25)	32(*25)	
Recommended supply cable		mm²	5x4	5x4	5x10	5x10	
Inrush current		A	1	1	1	1	
Nominal current		A	5,7	7,4	9,4	11	
Maximum current		A	16,8	19,6	21,6	22,8	
Display cable		-	Field supplied - 5x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	Yes (10m)				
Y-filter		-	Yes				
Contoller		-	Yes				
Resistor for cascade		-	Yes				
OPTIONAL ACCESSORIES							
Optional E-heater		-	EH-SMH				
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water volume of heating system		l	270	330	390	450	

Values marked with * are for minimal circuit breaker.

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R32 (single component refrigerant HFC-32), GWP of refrigerant used: 675.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

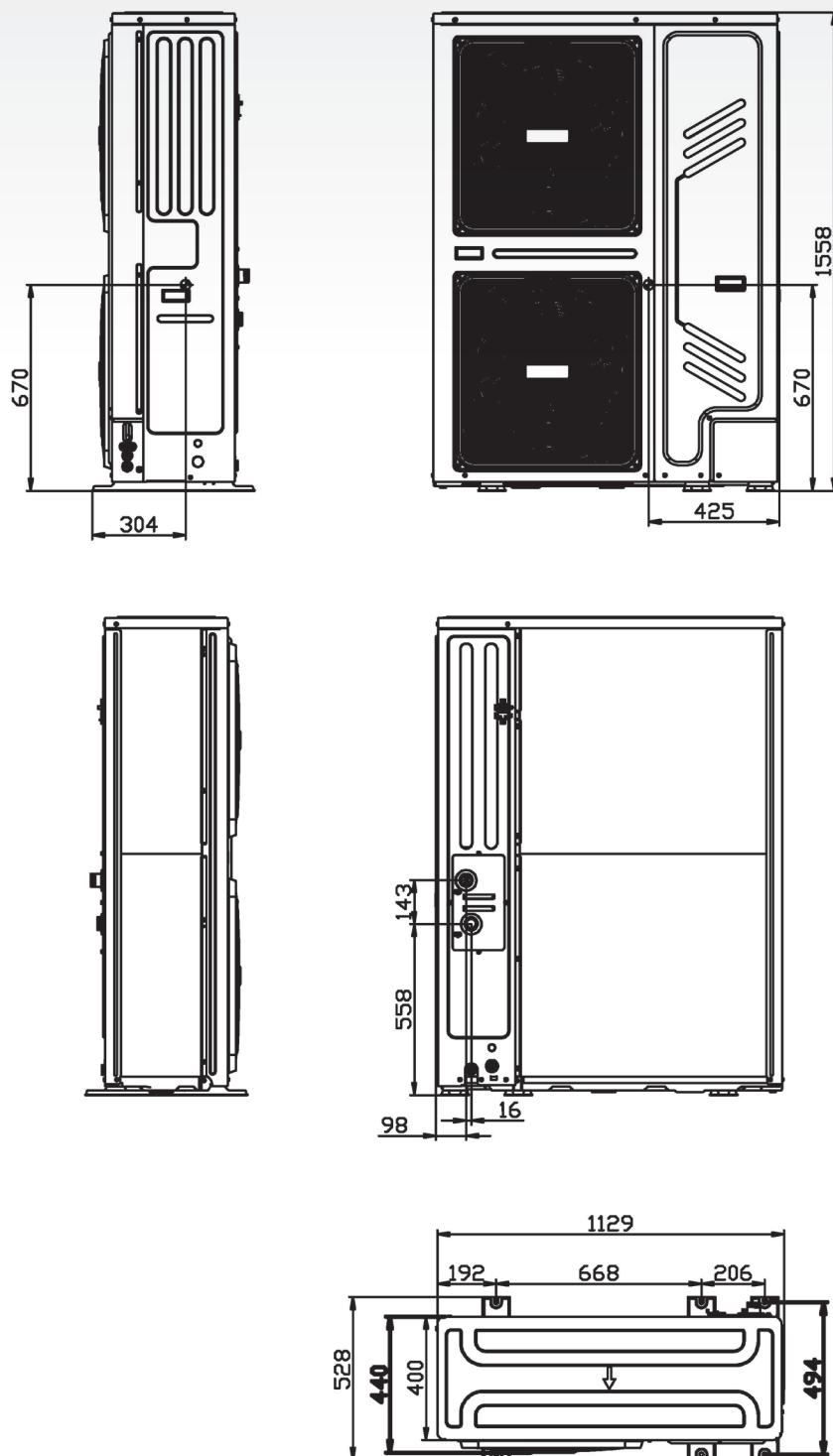
Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF YUKON SERIES

MONOBLOC 18-30 KW R32

SMHM-180B-3, SMHM-220B-3, SMHM-260B-3, SMHM-300B-3



MONOBLOC 26 - 35 KW R290

MODEL			SMHM-260P-3	SMHM-300P-3	SMHM-350P-3		
Suitable for building heat loss			22 - 26 kW	26 - 30 kW	30 - 35 kW		
Power supply		V/Ph/Hz	380-415/3/50				
Heating (A7/W35)	Capacity	kW	26	30	35		
	Rated input	kW	5,45	6,67	8,4		
	COP		4,77	4,5	4,17		
Cooling (A35/W18)	Capacity	kW	26	30	35		
	Rated input	kW	5,6	6,8	8,5		
	EER		4,64	4,41	4,12		
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A+++	A++			
SCOP	Warmer climate	35 °C	6,57	6,26	6,08		
		55 °C	4,94	4,9	4,75		
	Average climate	35 °C	4,95	4,92	4,48		
		55 °C	3,84	3,79	3,63		
	Colder climate	35 °C	3,95	3,91	3,85		
		55 °C	3,23	3,14	3,03		
Sound pressure level in 1 m		dB (A)	61,1	61,4	62,8		
Sound power level		dB (A)	74,5	74,8	75,5		
Rated water flow		m³/h	1,2-5,4	1,2-6,2	1,2-7,2		
Compressor	Type		Scroll type				
Outdoor fan	Motor type / Number of fans		DC fan / 2				
Fin coating			Blue fin				
Refrigerant	Type / Ammount	kg	R290 / 2,9				
Expansion tank	Volume	l	5				
	Max. water pressure	MPa	0,8				
	Pressure	MPa	0,3				
Unit dimension (W×H×D)		mm	1384×1816×523				
Packing dimension (W×H×D)		mm	1480×2000×570				
Net/gross weight		kg	260/280				
Outdoor air temperature range	Cooling	°C	-15~-48				
	Heating	°C	-25~-43				
	DHW	°C	-25~-43				
Water side heat exchanger			Plate type				
Water side connection		inch	5/4"				
Water setting temperature range	Cooling	°C	5~25				
	Heating	°C	25~85				
	DHW	°C	20~75				
OTHER TECHNICAL DATA							
Distance of holes		mm	453x1019				
Circuit breaker		A	32	32	32		
Recommended supply cable		mm²	5x10	5x10	5x10		
Inrush current		A	1	1	1		
Nominal current		A	7,89	9,6	12,17		
Maximum current		A	28	30	31		
Display cable		-	Field supplied 2x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	Yes (10m)				
Y-filter		-	Yes				
Contoller		-	Yes				
Resistor for cascade		-	Yes				
OPTIONAL ACCESSORIES							
Optional E-heater		-	EH-SMH				
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water volume of heating system		l	390	450	525		

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R290 (100% CH₃CH₂CH₃), GWP of refrigerant used: 3.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

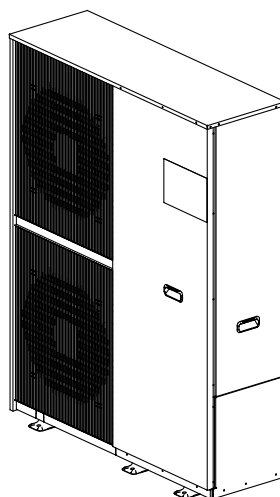
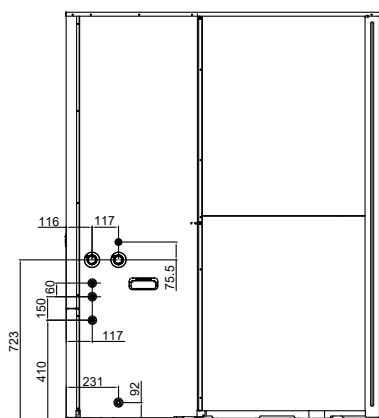
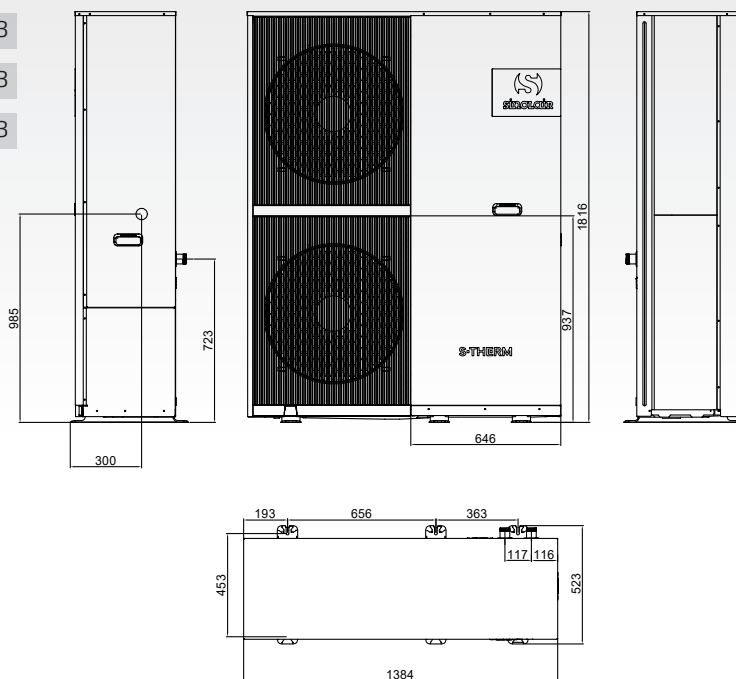
APPEARANCE AND DIMENSIONS OF YUKON SERIES

MONOBLOC 26-35 KW R290

SMHM-260P-3

SMHM-300P-3

SMHM-350P-3



YUKON SERIES

MONOBLOC 4-16 KW R290

MODE NAME			SMHM-40P/3	SMHM-60P/3	SMHM-80P/3	SMHM-100P/3	SMHM-120P-3/9
Suitable for building heat loss			3 - 5 kW	4 - 6 kW	6 - 8 kW	7 - 9,5 kW	10 - 12 kW
Power supply		V/Ph/Hz	220-240/1/50				380-415/3/50
Heating (A7/W35)	Capacity	kW	4,5	6,2	8,40	10,0	12
	Rated input	kW	0,874	1,26	1,68	2,12	2,5
	COP		5,15	4,9	5	4,7	4,8
Cooling (A35/W18)	Capacity	kW	4,5	6,5	8,3	10	12
	Rated input	kW	0,81	1,27	1,61	2,1	2,66
	EER		5,5	5,1	5,15	4,75	4,5
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A++				
SCOP	Warmer climate	35 °C	5,97	6,14	6,56	7,11	5,9
		55 °C	4,34	4,55	4,68	4,79	4,45
	Average climate	35 °C	5,07	4,89	5,19	5,07	4,67
		55 °C	3,79	3,82	3,82	3,82	3,62
	Colder climate	35 °C	4,03	4,24	4,44	4,54	4,13
		55 °C	3,18	3,38	3,46	3,49	3,26
Sound pressure level in 1 m	Cooling	dB(A)	46	48	50	51	53
	Heating	dB(A)	46	48	50	51	53
	Cooling (Silence mode 1)	dB(A)	42	43	45	46	47
	Heating (Silence mode 1)	dB(A)	42	44	45	46	47
	Cooling (Silence mode 2)	dB(A)	39	40	42	43	44
	Heating (Silence mode 2)	dB(A)	40	42	42	43	43
Sound power level	Cooling	dB(A)	58	60	62	63	66
	Heating	dB(A)	58	60	62	63	67
	Cooling (Silence mode 1)	dB(A)	54	56	57	58	62
	Heating (Silence mode 1)	dB(A)	54	56	58	59	62
	Cooling (Silence mode 2)	dB(A)	51	53	54	55	58
	Heating (Silence mode 2)	dB(A)	51	53	55	56	58
Rated water flow		m³/h	0,72	1,09	1,44	1,72	2,08
Water flow range		m³/h	0,4~0,9	0,4~1,25	0,4~1,65	0,4~2,1	0,7~2,5
Compressor	Type		Twin rotary				
Outdoor fan	Motor type / Number of fans		DC fan / 1				
Fin coating		Blue fin	Blue fin				
Refrigerant	Type / Ammount	kg	R290 / 0,7		R290 / 1,1		R290 / 1,25
Auxiliary electric heater	Type	-	Automatic				
	Capacity	kW	3				9
	Combination	-	3				3/6/9
	Power supply	V/Ph/Hz	220-240/1/50				380-415/3/50
Expansion tank	Volume	l	8				
	Max. water pressure	MPa	0,8				
	Pre-pressure	MPa	1				
Unit dimension (W×H×D)		mm	1299×717×426			1385×865×523	
Packing dimension (W×H×D)		mm	1375×885×475			1465×1035×560	
Net/Gross weight		kg	90/110			117/139	142/164
Outdoor air temperature range	Cooling	°C	-5~43				
	Heating	°C	-25~35				
	DHW	°C	-25~46				
Water side heat exchanger		Plate type	Plate type				
Water side connection		inch	1 "			5/4"	
Water setting temperature range		°C	5~30				
		°C	12~75				
		°C	30~60				
OTHER TECHNICAL DATA							
Distance of holes		mm	375x1023			456x1019	
Unit		A	16	16	20	20	16
		mm²	3x2,5	3x2,5	3x4	3x4	5x2,5
		A	1	1	1	1	1
		A	3,8	5,5	7,3	9,2	3,6
		A	15	15	19	19	11
IBH		A	16				
		mm²	3x2,5				4x2,5
		A	13				
Display cable		-	Field supplied 5x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	Yes (10m)				
Y-filter		-	Yes				
Contoller		-	Yes				
Resistor for cascade		-	Yes				
OPTIONAL ACCESSORIES							
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water flow		m³/h	0,36				0,6
Minimum water volume of heating system		l	60	90	120	150	180

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label. R290 (100% CH3CH2CH3), GWP of refrigerant used: 3. Contains fluorinated greenhouse gases covered by the Kyoto Protocol. Explanatory notes on the very last page of the catalogue.

YUKON SERIES

MONOBLOC 4-16 KW R290

MODE NAME			SMHM-140P-3/9	SMHM-160P-3/9	SMHM-40P	SMHM-60P	SMHM-80P
Suitable for building heat loss			11 - 14 kW	12 - 15 kW	3 - 5 kW	4 - 6 kW	6 - 8 kW
Power supply		V/Ph/Hz	380-415/3/50		220-240/1/50		
Heating (A7/W35)	Capacity	kW	14	15	4,5	6,2	8,40
	Rated input	kW	3,11	3,4	0,874	1,26	1,68
	COP		4,5	4,4	5,15	4,9	5
Cooling (A35/W18)	Capacity	kW	14	16	4,5	6,5	8,3
	Rated input	kW	3,33	4,1	0,81	1,27	1,61
	EER		4,2	3,9	5,5	5,1	5,15
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A++				
SCOP	Warmer climate	35 °C	5,85	6,05	5,97	6,14	6,56
		55 °C	4,43	4,62	4,34	4,55	4,68
	Average climate	35 °C	4,64	4,59	5,07	4,89	5,19
		55 °C	3,61	3,57	3,79	3,82	3,82
	Colder climate	35 °C	4,13	4,08	4,03	4,24	4,44
		55 °C	3,23	3,29	3,18	3,38	3,46
Sound pressure level in 1 m	Cooling	dB(A)	54	58	46	48	50
	Heating	dB(A)	54	58	46	48	50
	Cooling (Silence mode 1)	dB(A)	48	52	42	43	45
	Heating (Silence mode 1)	dB(A)	48	52	42	44	45
	Cooling (Silence mode 2)	dB(A)	45	48	39	40	42
	Heating (Silence mode 2)	dB(A)	44	48	40	42	42
Sound power level	Cooling	dB(A)	67	70	58	60	62
	Heating	dB(A)	68	70	58	60	62
	Cooling (Silence mode 1)	dB(A)	62	64	54	56	57
	Heating (Silence mode 1)	dB(A)	63	64	54	56	58
	Cooling (Silence mode 2)	dB(A)	59	60	51	53	54
	Heating (Silence mode 2)	dB(A)	59	60	51	53	55
Rated water flow		m³/h	2,49	2,73	0,72	1,09	1,44
Water flow range		m³/h	0,7~2,75	0,7~3,0	0,4~0,9	0,4~1,25	0,4~1,65
Compressor	Type		Twin rotary				
Outdoor fan	Motor type / Number of fans		DC fan / 1				
Fin coating		Blue fin	Blue fin				
Refrigerant	Type / Ammount	kg	R290 / 1,25		R290 / 0,7		R290 / 1,1
Auxiliary electric heater	Type	-	Automatic		-		
	Capacity	kW	9				
	Combination	-	3/6/9				
	Power supply	V/Ph/Hz	380-415/3/50				
Expansion tank	Volume	l	8				
	Max. water pressure	MPa	0,8				
	Pre-pressure	MPa	1				
Unit dimension (W×H×D)		mm	1385×865×523		1299×717×426		1385×865×523
Packing dimension (W×H×D)		mm	1465×1035×560		1375×885×475		1465×1035×560
Net/Gross weight		kg	142/164		90/110		117/139
Outdoor air temperature range	Cooling	°C	-5~43				
	Heating	°C	-25~35				
	DHW	°C	-25~46				
Water side heat exchanger		Plate type	Plate type				
Water side connection		inch	5/4"		1 "		5/4"
Water setting temperature range		°C	5~30				
		°C	12~75				
		°C	30~60				
OTHER TECHNICAL DATA							
Distance of holes		mm	456x1019		375x1023		456x1019
Unit		A	16	16	16	16	20
		mm²	5x2,5	5x2,5	3x2,5	3x2,5	3x4
		A	1	1	1	1	1
		A	4,5	4,9	3,8	5,5	7,3
		A	11	11	15	15	19
IBH		A	16				
		mm²	4x2,5				
		A	13				
Display cable		-	Field supplied 5x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	Yes (10m)				
Y-filter		-	Yes				
Contoller		-	Yes				
Resistor for cascade		-	Yes				
OPTIONAL ACCESSORIES							
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water flow		m³/h	0,6		0,36		
Minimum water volume of heating system		l	210	240	60	90	120

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label. R290 (100% CH3CH2CH3), GWP of refrigerant used: 3. Contains fluorinated greenhouse gases covered by the Kyoto Protocol. Explanatory notes on the very last page of the catalogue.

YUKON SERIES

MONOBLOC 4-16 KW R290

MODE NAME			SMHM-100P	SMHM-120P	SMHM-140P	SMHM-160P	SMHM-120P-3
Suitable for building heat loss			7 - 9,5 kW	10 - 12 kW	11 - 14 kW	12 - 15 kW	10 - 12 kW
Power supply		V/Ph/Hz	220-240/1/50				380-415/3/50
Heating (A7/W35)	Capacity	kW	10	12	14	15	12
	Rated input	kW	2,12	2,5	3,11	3,4	2,5
	COP		4,7	4,8	4,5	4,4	4,8
Cooling (A35/W18)	Capacity	kW	10	12	14	16	12
	Rated input	kW	2,1	2,66	3,33	4,1	2,66
	EER		4,75	4,5	4,2	3,9	4,5
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++				
	Water outlet at 55 °C		A++				
SCOP	Warmer climate	35 °C	7,11	5,9	5,85	6,05	5,9
		55 °C	4,79	4,45	4,43	4,62	4,45
	Average climate	35 °C	5,07	4,67	4,63	4,59	4,67
		55 °C	3,82	3,62	3,61	3,57	3,62
	Colder climate	35 °C	4,54	4,13	4,13	4,08	4,13
		55 °C	3,49	3,26	3,23	3,29	3,26
Sound pressure level in 1 m	Cooling	dB(A)	51	53	54	58	53
	Heating	dB(A)	51	53	54	58	53
	Cooling (Silence mode 1)	dB(A)	46	47	48	52	47
	Heating (Silence mode 1)	dB(A)	46	47	48	52	47
	Cooling (Silence mode 2)	dB(A)	43	44	45	48	44
	Heating (Silence mode 2)	dB(A)	43	43	44	48	43
Sound power level	Cooling	dB(A)	63	66	67	70	66
	Heating	dB(A)	63	67	68	70	67
	Cooling (Silence mode 1)	dB(A)	58	62	62	64	62
	Heating (Silence mode 1)	dB(A)	59	62	63	64	62
	Cooling (Silence mode 2)	dB(A)	55	58	59	60	58
	Heating (Silence mode 2)	dB(A)	56	58	59	60	58
Rated water flow		m³/h	1,72	2,08	2,49	2,73	2,08
Water flow range		m³/h	0,4~2,1	0,7~2,5	0,7~2,75	0,7~3,0	0,7~2,5
Compressor	Type		Twin rotary				
Outdoor fan	Motor type / Number of fans		DC fan / 1				
Fin coating		Blue fin	Blue fin				
Refrigerant	Type / Ammount	kg	R290 / 1,1	R290 / 1,25			
Auxiliary electric heater	Type	-	-				
	Capacity	kW					
	Combination	-					
	Power supply	V/Ph/Hz					
Expansion tank	Volume	l	8				
	Max. water pressure	MPa	0,8				
	Pre-pressure	MPa	1				
Unit dimension (W×H×D)		mm	1385×865×523				
Packing dimension (W×H×D)		mm	1465×1035×560				
Net/Gross weight		kg	117/139	135/157			137/159
Outdoor air temperature range	Cooling	°C	-5~43				
	Heating	°C	-25~35				
	DHW	°C	-25~46				
Water side heat exchanger		Plate type	Plate type				
Water side connection		inch	5/4"				
Water setting temperature range		°C	5~30				
		°C	12~75				
		°C	30~60				
OTHER TECHNICAL DATA							
Distance of holes		mm	456x1019				
Unit		A	20	32	32	32	16
		mm²	3x4	3x10	3x10	3x10	5x2,5
		A	1	1	1	1	1
		A	9,25	10,8	13,5	14,8	3,6
		A	19	31	31	31	11
IBH		A					
		mm²					
		A					
Display cable		-	Field supplied 5x0,75				
STANDARD ACCESSORIES							
DHW sensor		-	Yes (10m)				
Y-filter		-	Yes				
Contoller		-	Yes				
Resistor for cascade		-	Yes				
OPTIONAL ACCESSORIES							
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)				
HEATING SYSTEM REQUIREMENT							
Minimum water flow		m³/h	0,36	0,6			
Minimum water volume of heating system		l	150	180	210	240	180

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label. R290 (100% CH3CH2CH3), GWP of refrigerant used: 3. Contains fluorinated greenhouse gases covered by the Kyoto Protocol. Explanatory notes on the very last page of the catalogue.

MONOBLOC 4-16 KW R290

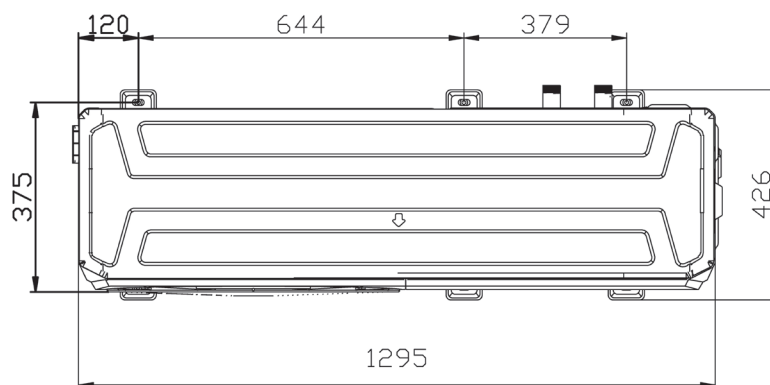
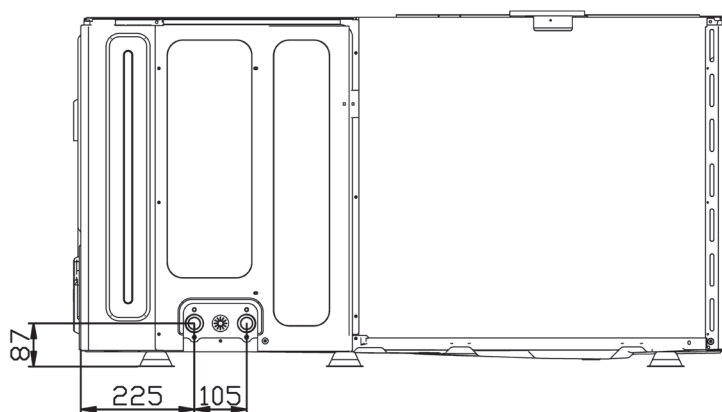
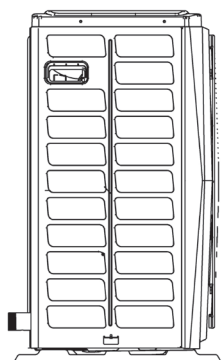
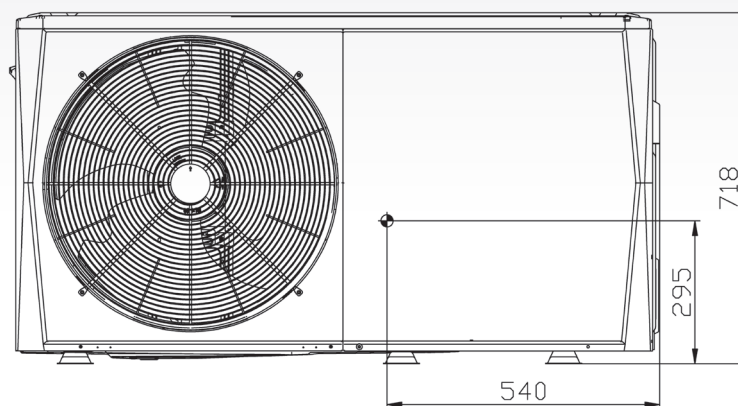
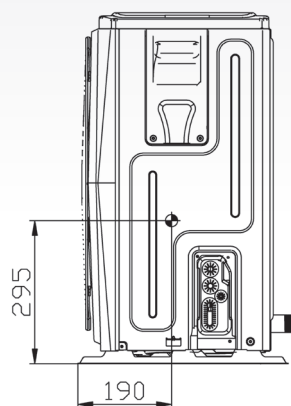
MODE NAME			SMHM-140P-3	SMHM-160P-3		
Suitable for building heat loss			11 - 14 kW	12 - 15 kW		
Power supply		V/Ph/Hz	380-415/3/50			
Heating (A7/W35)	Capacity	kW	14	15		
	Rated input	kW	3,11	3,4		
	COP		4,5	4,4		
Cooling (A35/W18)	Capacity	kW	14	16		
	Rated input	kW	3,33	4,1		
	EER		4,2	3,9		
Seasonal space heating energy efficiency class	Water outlet at 35 °C		A+++			
	Water outlet at 55 °C		A++			
SCOP	Warmer climate	35 °C	5,85	6,05		
		55 °C	4,43	4,62		
	Average climate	35 °C	4,64	4,59		
		55 °C	3,61	3,57		
	Colder climate	35 °C	4,13	4,08		
		55 °C	3,23	3,29		
Sound pressure level in 1 m	Cooling	dB(A)	54	58		
	Heating	dB(A)	54	58		
	Cooling (Silence mode 1)	dB(A)	48	52		
	Heating (Silence mode 1)	dB(A)	48	52		
	Cooling (Silence mode 2)	dB(A)	45	48		
	Heating (Silence mode 2)	dB(A)	44	48		
Sound power level	Cooling	dB(A)	67	70		
	Heating	dB(A)	68	70		
	Cooling (Silence mode 1)	dB(A)	62	64		
	Heating (Silence mode 1)	dB(A)	63	64		
	Cooling (Silence mode 2)	dB(A)	59	60		
	Heating (Silence mode 2)	dB(A)	59	60		
Rated water flow		m³/h	2,49	2,73		
Water flow range		m³/h	0,7~2,75	0,7~3,0		
Compressor	Type		Twin rotary			
Outdoor fan	Motor type / Number of fans		DC fan / 1			
Fin coating		Blue fin	Blue fin			
Refrigerant	Type / Ammount	kg	R290 / 1,25			
Auxiliary electric heater	Type	-	-			
	Capacity	kW				
	Combination	-				
	Power supply	V/Ph/Hz				
Expansion tank	Volume	l	8			
	Max. water pressure	MPa	0,8			
	Pre-pressure	MPa	1			
Unit dimension (W×H×D)		mm	1385×865×523			
Packing dimension (W×H×D)		mm	1465×1035×560			
Net/Gross weight		kg	137/159			
Outdoor air temperature range	Cooling	°C	-5~43			
	Heating	°C	-25~35			
	DHW	°C	-25~46			
Water side heat exchanger		Plate type	Plate type			
Water side connection		inch	5/4"			
Water setting temperature range		°C	5~30			
		°C	12~75			
		°C	30~60			
OTHER TECHNICAL DATA						
Distance of holes		mm	456x1019			
Unit		A	16	16		
		mm²	5x2,5	5x2,5		
		A	1	1		
		A	4,5	4,94		
		A	11	11		
IBH		A				
		mm²				
		A				
Display cable		-	Field supplied 5x0,75			
STANDARD ACCESSORIES						
DHW sensor		-	Yes (10m)			
Y-filter		-	Yes			
Contoller		-	Yes			
Resistor for cascade		-	Yes			
OPTIONAL ACCESSORIES						
Three-way valve		-	Field supply (230V, 10-30 sec. switch time)			
HEATING SYSTEM REQUIREMENT						
Minimum water flow		m³/h	0,6			
Minimum water volume of heating system		l	210	240		

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label. R290 (100% CH3CH2CH3), GWP of refrigerant used: 3. Contains fluorinated greenhouse gases covered by the Kyoto Protocol. Explanatory notes on the very last page of the catalogue.

APPEARANCE AND DIMENSIONS OF YUKON SERIES

MONOBLOC 4-16 KW R290

SMHM-40P, SMHM-60P, SMHM-40P/3, SMHM-60P/3

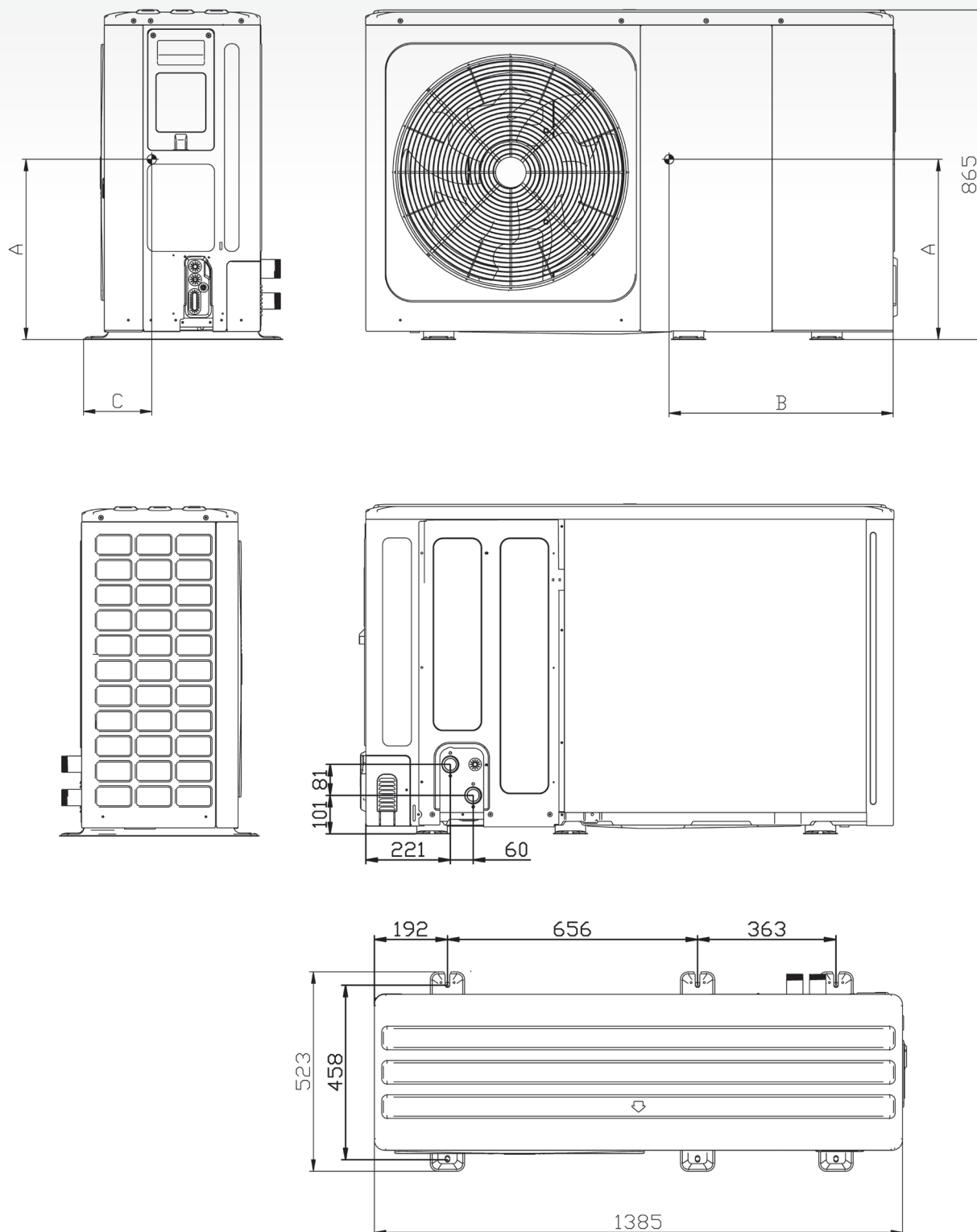


APPEARANCE AND DIMENSIONS OF YUKON SERIES

MONOBLOC 4-16 KW R290

SMHM-80P, SMHM-100P, SMHM-120P, SMHM-140P, SMHM-160P, SMHM-120P-3, SMHM-140P-3, SMHM-160P-3

SMHM-80P/3, SMHM-100P/3, SMHM-120P/3, SMHM-140P/3, SMHM-160P/3, SMHM-120P-3/9, SMHM-140P-3/9, SMHM-160P-3/9



YUKON COMMERCIAL SERIES

MONOBLOC R32

MODEL			SMHM-650B-3	SMHM-650BH-3	SMHM-750B-3	SMHM-750BH-3	SMHM-1100B-3
Power supply		V/Ph/Hz	380-415/3/50				
Cooling (A35W7)	Capacity	kW	57	56,7	70	69,29	100
	Input	kW	19	19,8	26,80	28,26	32,8
	EER	-	3	2,86	2,61	2,45	3,05
	SEER	-	5,00	4,92	5,00	4,85	4,80
Heating (A7W45)	Capacity	kW	65	65,7	75	75,71	110
	Input	kW	18,3	19,4	22,06	23,51	29,9
	COP	-	3,55	3,39	3,40	3,22	3,68
Heating (A7W35)	Capacity	kW	64	64,7	77	77,70	112
	Input	kW	15,24	16,37	19,74	21,61	27
	COP	-	4,20	3,95	3,90	3,60	4,15
	SCOP (W35 average)	-	4,50	4,47	4,50	4,47	4,25
Compressor	Type	DC inverter rotary	DC inverter rotary	DC inverter rotary	DC inverter rotary	DC inverter rotary	DC inverter rotary
	Quantity	Pieces	1	1	1	1	2
Air side heat exchanger	Type	Finned tube	Finned tube	Finned tube	Finned tube	Finned tube	Finned tube
	Quantity of fan motor	Pieces	2	2	2	2	2
Water side heat exchanger	Air flow	m³/h	22 000	22 000	28 500	28 500	32 500
	Type	Plate	Plate	Plate	Plate	Plate	Plate
	Water pressure drop	kPa	44	-	65	-	39
	Volume	L	5,17	5,17	5,17	5,17	11,1
	Water flow range	m³/h	3~14	3~14	3~14	3~14	5~26
Refrigerant	Type	R32	R32	R32	R32	R32	R32
	Charged volume	kg / t eq. CO ₂	9 / 6,075	9 / 6,075	9 / 6,075	9 / 6,075	15,5* (11,5+4) / 10,463
	Throttle type	EXV	EXV	EXV	EXV	EXV	EXV
Sound power level (A7W45)	dB(A)	80	80	80	86	86	80
Sound pressure level (1m) (A7W45)	dB(A)	64	64	64	69	69	64
Silent mode sound power level (A7W45)	dB(A)	77	77	77	82	82	75
Super silent mode sound power level (A7W45)	dB(A)	74	74	74	78	78	72
Unit net dimension	DxHxW	mm	2000x1770x960	2000x1770x960	2000x1770x960	2000x1770x960	2220x2300x1135
Packing dimension	DxHxW	mm	2085x1890x1030	2085x1890x1030	2085x1890x1030	2085x1890x1030	2250x2445x1180
Net / Gross weight		kg	440/455	475/490	440/455	475/490	670/690
Pipe connections	Water inlet/outlet	mm	DN50	DN50	DN50	DN50	DN65
Water pipe connection type			Hoop connection	Hoop connection	Hoop connection	Hoop connection	Hoop connection
Controller			Wired controller KJRM-120H2 (standard)				
Ambient temperature range	Cooling	°C	-15~48				
	Heating	°C	-25~43				
	DHW	°C	-20~43				
Water outlet temperature range	Cooling	°C	5~20				
	Heating	°C	25~65				
	DHW (heat pump)	°C	30~62				
	DHW	°C	30~70				
ADDITIONAL TECHNICAL INFORMATION							
Screw holes distance of chiller	w x d	mm	1550x862	1550x862	1550x862	1550x862	1460x1017
Recommended power cable	mm²		5x16	5x16	5x16	5x16	5x50
Recommended air switch	A		B63	B63	B63	B63	B160
EQUIPMENT							
Crankcase heater			Yes	Yes	Yes	Yes	Yes
Drain pipe connector			-	-	-	-	-
ON/OFF connector			Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)
Cool/Heat connector			Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)
Alarm connector			Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)
STANDARD ACCESSORIES							
Wire controller			Yes (support ModBus)	Yes (support ModBus)	Yes (support ModBus)	Yes (support ModBus)	Yes (support ModBus)
Hydraulic module			No	Yes	No	Yes	No

TECHNICAL SPECIFICATIONS

Water side fouling factor: 0.086m² °C /kW.

* The total amount of refrigerant is 15,5 kg, including the 11,5 kg already charged before delivery and the 4 kg to be charged.

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol. R32 (100% HFC-32), GWP of refrigerant: 675. Noise is tested in the semi-anechoic room, so it should be slightly higher due to change of location. Power input is tested under standard conditions.

YUKON COMMERCIAL SERIES

MONOBLOC R32

MODEL			SMHM-1100BH-3	SMHM-1400B-3	SMHM-1400BH-3		
Power supply		V/Ph/Hz	380-415/3/50				
Cooling (A35W7)	Capacity	kW	99,3	130	129,29		
	Input	kW	34,1	50	52,01		
	EER	-	2,91	2,60	2,49		
	SEER	-	4,78	4,80	4,77		
Heating (A7W45)	Capacity	kW	110,7	140	140,94		
	Input	kW	31,2	44,73	47,10		
	COP	-	3,55	3,13	2,99		
Heating (A7W35)	Capacity	kW	113,1	142	142,94		
	Input	kW	28,5	38,17	40,54		
	COP	-	3,97	3,72	3,53		
	SCOP (W35 average)	-	4,23	4,25	4,23		
Compressor	Type	DC inverter rotary	DC inverter rotary	DC inverter rotary	DC inverter rotary		
	Quantity	Pieces	2	2	2		
Air side heat exchanger	Type	Finned tube	Finned tube	Finned tube	Finned tube		
	Quantity of fan motor	Pieces	2	2	2		
	Air flow	m³/h	32 500	50000	50000		
Water side heat exchanger	Type	Plate	Plate	Plate	Plate		
	Water pressure drop	kPa	-	65	-		
	Volume	L	11,1	11,1	11,1		
	Water flow range	m³/h	5~26	5~26	5~26		
Refrigerant	Type	R32	R32	R32	R32		
	Charged volume	kg / t eq. CO ₂	15,5* (11,5+4) / 10,463	15,5* (11,5+4) / 10,463	15,5* (11,5+4) / 10,463		
	Throttle type	EXV	EXV	EXV	EXV		
Sound power level (A7W45)	dB(A)	80	80	92	92		
Sound pressure level (1m) (A7W45)	dB(A)	64	64	73	73		
Silent mode sound power level (A7W45)	dB(A)	77	75	88	88		
Super silent mode sound power level (A7W45)	dB(A)	74	72	85	85		
Unit net dimension	DxHxW	mm	2220x2300x1135	2220x2300x1135	2220x2300x1135		
Packing dimension	DxHxW	mm	2250x2445x1180	2250x2445x1180	2250x2445x1180		
Net / Gross weight		kg	746/767	670/690	746/767		
Pipe connections	Water inlet/outlet	mm	DN65	DN65	DN65		
Water pipe connection type			Hoop connection	Hoop connection	Hoop connection		
Controller			Wired controller KJRM-120H2 (standard)				
Ambient temperature range	Cooling	°C	-15~48				
	Heating	°C	-25~43				
	DHW	°C	-20~43				
Water outlet temperature range	Cooling	°C	5~20				
	Heating	°C	25~65				
	DHW (heat pump)	°C	30~62				
	DHW	°C	30~70				
ADDITIONAL TECHNICAL INFORMATION							
Screw holes distance of chiller	w x d	mm	1460x1017	1460x1017	1460x1017		
Recommended power cable	mm²		5x50	5x50	5x50		
Recommended air switch	A		B160	B160	B160		
EQUIPMENT							
Crancase heater			Yes	Yes	Yes		
Drain pipe connector			-	-	-		
ON/OFF connector			Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)		
Cool/Heat connector			Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)		
Alarm connector			Yes (dry-contact)	Yes (dry-contact)	Yes (dry-contact)		
STANDARD ACCESSORIES							
Wire controller			Yes (support ModBus)	Yes (support ModBus)	Yes (support ModBus)		
Hydraulic module			Yes	No	Yes		

TECHNICAL SPECIFICATIONS

Water side fouling factor: 0.086m² °C /kW.

* The total amount of refrigerant is 15,5 kg, including the 11,5 kg already charged before delivery and the 4 kg to be charged.

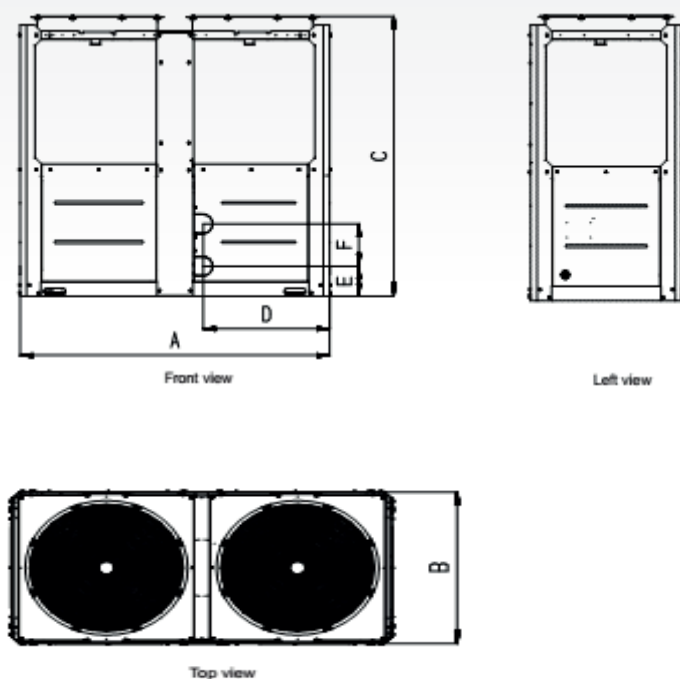
The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol. R32 (100% HFC-32), GWP of refrigerant: 675. Noise is tested in the semi-anechoic room, so it should be slightly higher due to change of location. Power input is tested under standard conditions.

APPEARANCE AND DIMENSIONS OF OUTDOOR UNIT

MONOBLOC R32

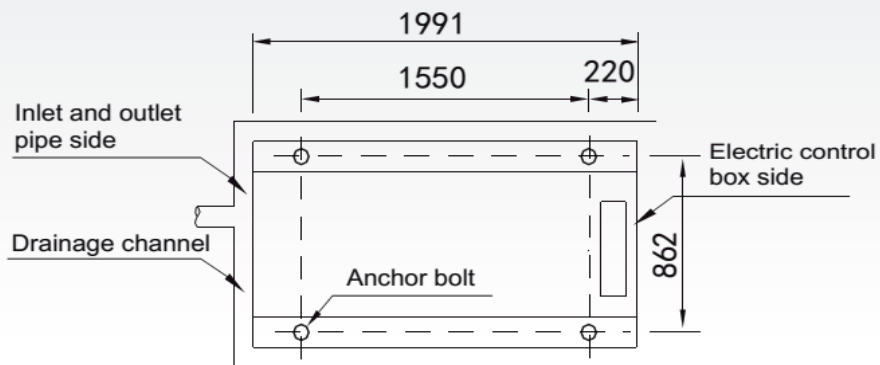
SMHM-650B-3/650BH-3/1100B-3/1100BH-3/750B-3/750BH-3/1400B-3/1400BH-3



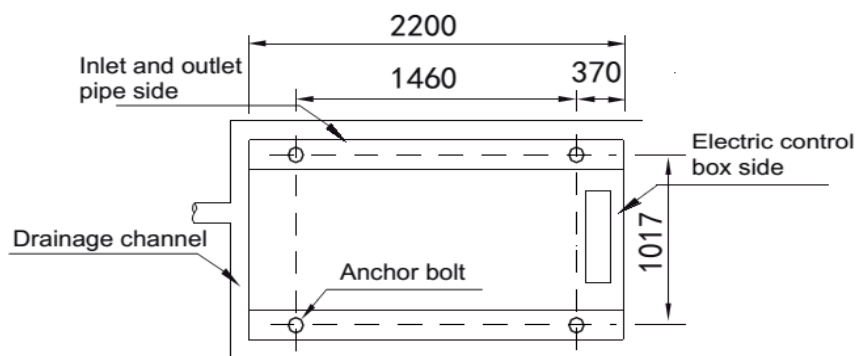
Model	SMHM-650B-3/ 650BH-3	SMHM-1100B-3/ 1100BH-3	SMHM-750B-3/ 750BH-3	SMHM-1400B-3/ 1400BH-3
A (mm)	2000	2220	2000	2220
B (mm)	960	1135	960	1135
C (mm)	1770	2300	1770	2300
D (mm)	816	910	816	910
E (mm)	190	185	190	185
F (mm)	270	380	270	380

EXPANSION BOLT POSITIONING

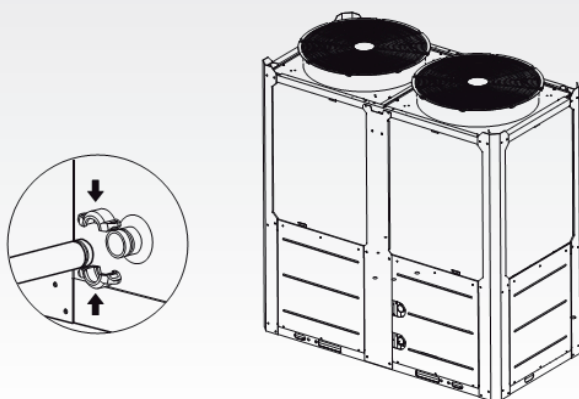
SMHM-650B-3/650BH-3/750B-3/750BH-3



SMHM-650B-3/650BH-3/1100B-3/1100BH-3/750B-3/750BH-3/1400B-3/1400BH-3



EXPANSION BOLT POSITIONING



Model	Pipe connection methods	Spec. of water pipe
SMHM-650B-3/650BH-3	Hoop	DN50
SMHM-750B-3/750BH-3	Hoop	DN50
SMHM-1100B-3/1100BH-3	Hoop	DN65
SMHM-1400B-3/1400BH-3	Hoop	DN65

YUKON SERIES

SPLIT - OUTDOOR UNITS

MODEL			MSH-40EB	MSH-60EB	MSH-80EB	MSH-100EB	MSH-120EB
Suitable for building heat loss			3 - 5 kW	4 - 6 kW	6 - 8 kW	7 - 9,5 kW	10 - 12 kW
Compatible hydronic box			MSH-60IB MSH-60IB-3		MSH-100IB MSH-100IB/3 MSH-100IB-3/9		MSH-160IB MSH-160IB/3 MSH-160IB-3/9
Power supply		V/Ph/Hz	220-240/1/50				
Heating (A7/W35)	Capacity	kW	4,25	6,20	8,30	10,0	12,1
	Rated input	kW	0,82	1,24	1,60	2,00	2,44
	COP		5,20	5,00	5,20	5,00	4,95
Cooling (A35/W18)	Capacity	kW	4,5	6,55	8,4	10	12
	Rated input	kW	0,81	1,34	1,66	2,08	3
	EER		5,55	4,9	5,05	4,8	4
Seasonal space heating energy efficiency class	LWT at 35 °C		A+++				
	LWT at 55 °C		A++				
SCOP	Warmer climate	35 °C	6,46	6,57	6,99	7,09	6,48
		55 °C	4,15	4,21	4,51	4,62	4,43
	Average climate	35 °C	4,85	4,95	5,22	5,20	4,81
		55 °C	3,31	3,52	3,37	3,47	3,45
	Colder climate	35 °C	4,06	4,21	4,33	4,32	4,08
		55 °C	2,63	2,85	2,88	2,99	3,02
SEER	LWT at 7 °C		4,99	5,34	5,83	5,98	4,89
	LWT at 18 °C		7,77	8,21	8,95	8,78	7,1
Minimum crossection of the earth wire		mm²	2,5	2,5	2,5	4	6
Minimum crossection of the power supply wire		mm²	2,5	2,5	2,5	4,0	6,0
Inrush current		A	1				
Rated current		A	10,5	12,0	14,5	16,0	24,5
Circuit breaker		A	16	16	16	20	32
Water flow range		m³/h	0,4~0,9	0,4~1,25	0,4~1,65	0,4~2,1	0,7~2,5
Rated water flow		m³/h	0,73	1,07	1,43	1,72	2,08
Compressor	Type		Twin rotary DC inverter				
Outdoor fan	Motor type		Brushless DC motor				
	Number of fans		1				
Air side heat exchanger	Type		Finned tube				
Refrigerant (R32)	Factory charge	kg	1,5		1,65		1,84
Precharged length		m	15				
Additional refrigerant		g/m	20		38		
Throttle type			Electronic expansion valve				
Piping connections	Type		Flare				
	Liquid Dia. (OD)	inch	1/4"		3/8"		
	Gas Dia. (OD)	inch	5/8"				
	Min. pipe length	m	3,5				
	Max. pipe length	m	30				
Installation height difference	Outdoor unit above	m	20				
	Outdoor unit below	m	20				
Sound power level		dB(A)	56	58	59	60	64
Sound pressure level in 1 meter		dB(A)	44	45	46	49	50
Net dimensions (W×H×D)		mm	1008×712×426		1118×865×523		1118×865×523
Packed dimensions (W×H×D)		mm	1065×800×485		1180×890×560		1180×890×560
Net/gross weight		kg	58/64		77/88		96/110
Operating temperature range	Cooling	°C	-5 to 43				
	Heating	°C	-25 to 35				
	DHW	°C	-25 to 43				
OTHER TECHNICAL DATA							
Distance of holes	W x D	mm	375×663		456×656		
Communication cable		mm²	3x0,75 Shielded field supplied				
STANDARD ACCESSORIES							
Coper flare nuts		-	yes				
Drainage hose adapter		-	yes				
HEATING SYSTEM REQUIREMENT							
Minimum water volume of heating system		l	60	90	120	150	180

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SPLIT - OUTDOOR UNITS

MODEL			MSH-140EB	MSH-160EB	MSH-120EB-3	MSH-140EB-3	MSH-160EB-3
Suitable for building heat loss			11 - 14 kW	12 - 15 kW	10 - 12 kW	11 - 14 kW	12 - 15 kW
Compatible hydronic box			MSH-160IB MSH-160IB/3 MSH-160IB-3/9		MSH-160IB MSH-160IB/3 MSH-160IB-3/9		
Power supply		V/Ph/Hz	220-240/1/50		380-415/3/50		
Heating (A7/W35)	Capacity	kW	14,5	16,0	12,1	14,5	16,0
	Rated input	kW	3,09	3,56	2,44	3,09	3,56
	COP		4,70	4,50	4,95	4,70	4,50
Cooling (A35/W18)	Capacity	kW	13,5	14,2	12	13,5	14,2
	Rated input	kW	3,74	3,94	3	3,74	3,94
	EER		3,61	3,61	4	3,61	3,61
Seasonal space heating energy efficiency class	LWT at 35 °C		A+++				
	LWT at 55 °C		A++				
SCOP	Warmer climate	35 °C	6,58	6,29	6,48	6,58	6,29
		55 °C	4,49	4,48	4,43	4,49	4,48
	Average climate	35 °C	4,72	4,62	4,81	4,72	4,62
		55 °C	3,47	3,41	3,45	3,47	3,41
	Colder climate	35 °C	4,07	4,02	4,08	4,07	4,02
		55 °C	3,05	3,12	3,02	3,05	3,12
SEER	LWT at 7 °C		4,86	4,69	4,89	4,86	4,69
	LWT at 18 °C		6,9	6,75	7,1	6,9	6,75
Minimum crossection of the earth wire		mm²	10	10	2,5	2,5	2,5
Minimum crossection of the power supply wire		mm²	10,0	10,0	2,5	2,5	2,5
Inrush current		A	1				
Rated current		A	25,0	26,0	9,0	10,0	11,0
Circuit breaker		A	32	32	16	16	16
Water flow range		m³/h	0,7~2,75	0,7~3,0	0,7~2,5	0,7~2,75	0,7~3,0
Rated water flow		m³/h	2,49	2,75	2,08	2,49	2,75
Compressor	Type		Twin rotary DC inverter				
Outdoor fan	Motor type		Brushless DC motor				
	Number of fans		1				
Air side heat exchanger	Type		Finned tube				
Refrigerant (R32)	Factory charge	kg	1,84				
Precharged length		m	15				
Additional refrigerant		g/m	38				
Throttle type			Electronic expansion valve				
Piping connections	Type		Flare				
	Liquid Dia. (OD)	inch	3/8"				
	Gas Dia. (OD)	inch	5/8"				
	Min. pipe length	m	3,5				
	Max. pipe length	m	30				
Installation height difference	Outdoor unit above	m	20				
	Outdoor unit below	m	20				
Sound power level		dB(A)	65	68	64	65	68
Sound pressure level in 1 meter		dB(A)	51	54	50	51	54
Net dimensions (W×H×D)		mm	1118×865×523				
Packed dimensions (W×H×D)		mm	1180×890×560				
Net/gross weight		kg	96/110				
Operating temperature range	Cooling	°C	-5 to 43				
	Heating	°C	-25 to 35				
	DHW	°C	-25 to 43				
OTHER TECHNICAL DATA							
Distance of holes	W x D	mm	456×656				
Communication cable		mm²	3x0,75 Shielded field supplied				
STANDARD ACCESSORIES							
Coper flare nuts		-	yes				
Drainage hose adapter		-	yes				
HEATING SYSTEM REQUIREMENT							
Minimum water volume of heating system		l	210	240	180	210	240

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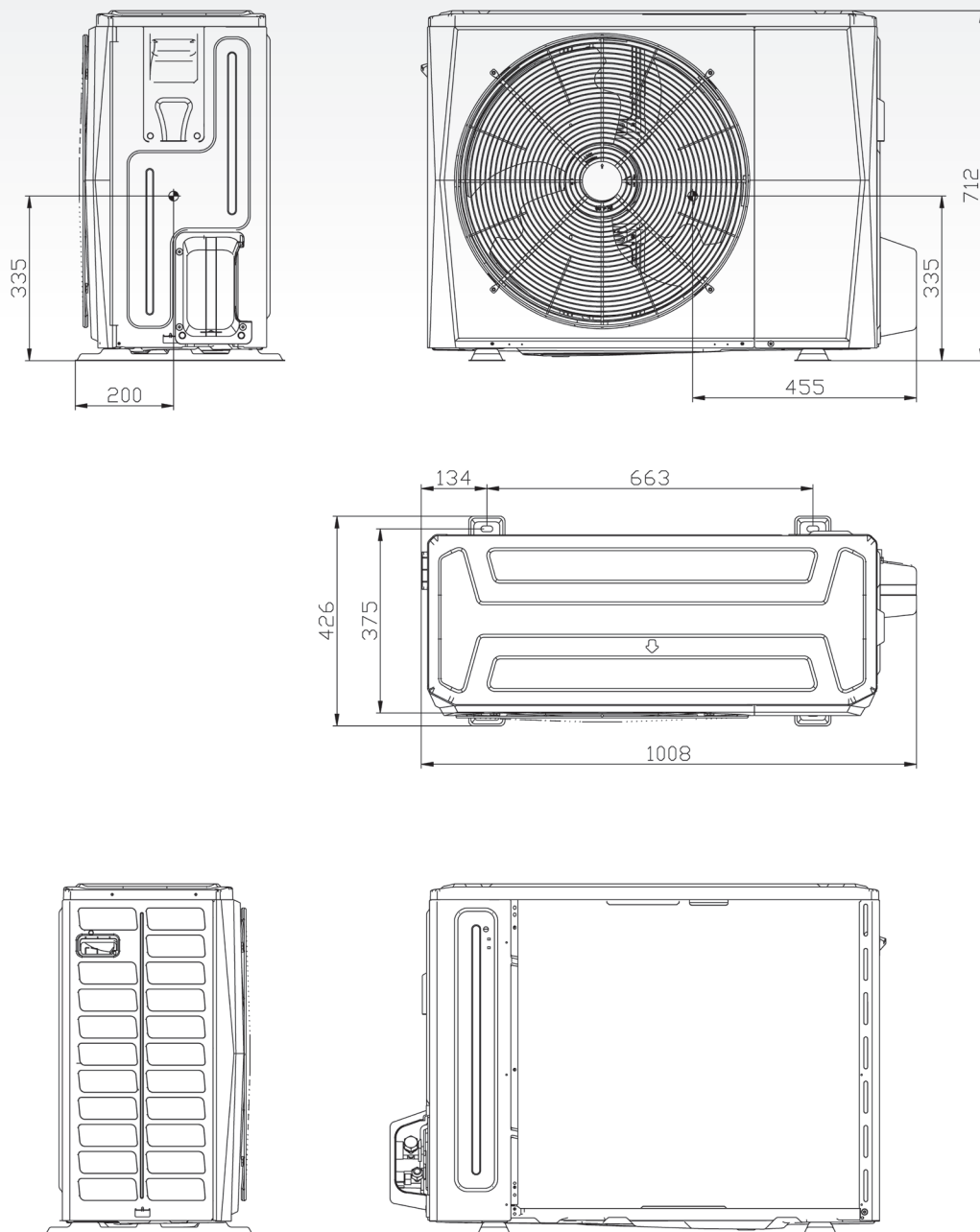
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APPEARANCE AND DIMENSIONS OF YUKON SERIES

SPLIT - OUTDOOR UNITS

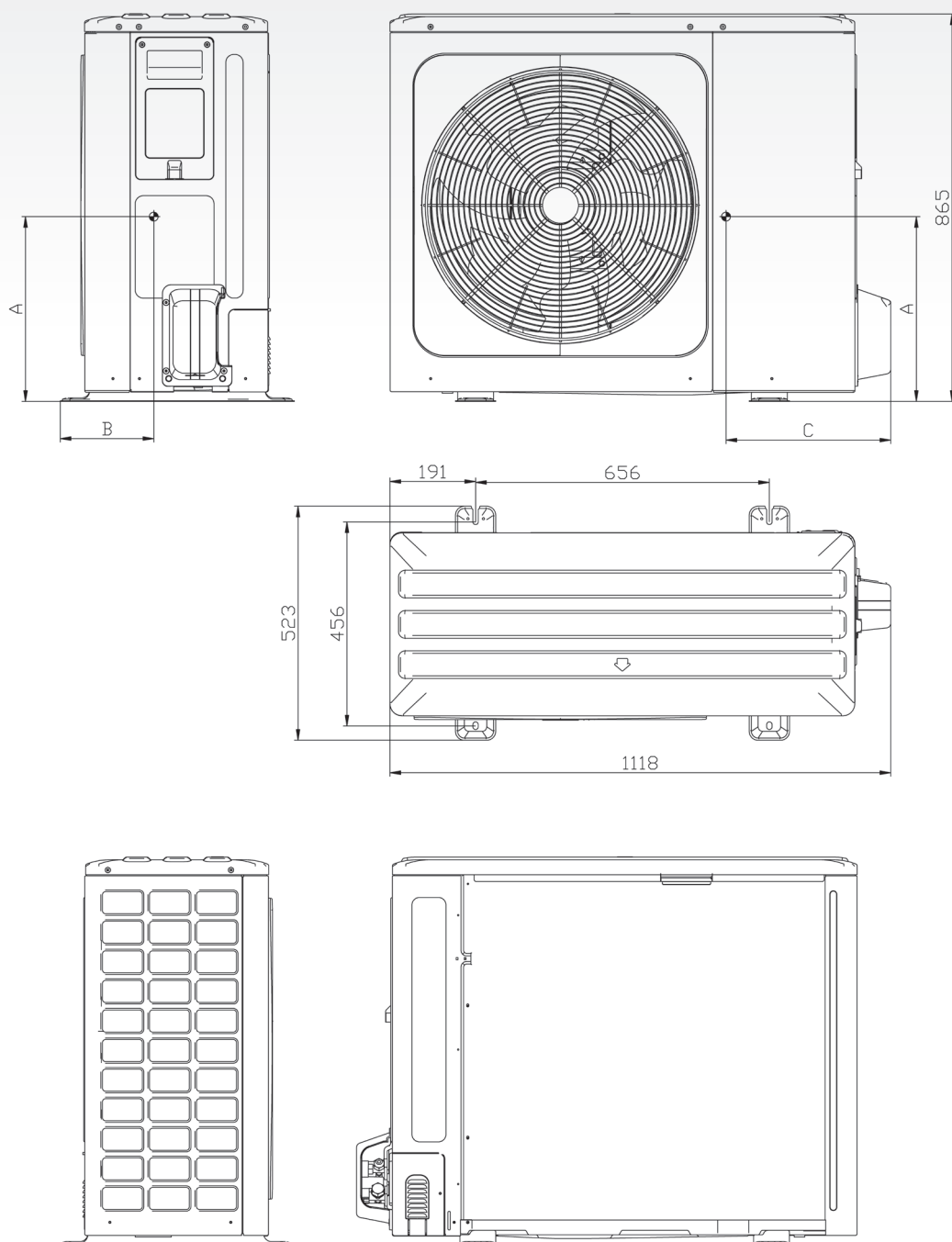
MSH-40EB, MSH-60EB



APPEARANCE AND DIMENSIONS OF YUKON SERIES

SPLIT - OUTDOOR UNITS

MSH-80EB, MSH-100EB, MSH-120EB, MSH-140EB, MSH-160EB, MSH-120EB-3, MSH-140EB-3, MSH-160EB-3



Model	A	B	C
MSH-80EB MSH-100EB	350	220	560
MSH-120EB MSH-140EB MSH-160EB	355	275	520
MSH-120EB-3 MSH-140EB-3 MSH-160EB-3	465	250	445

SPLIT - INDOOR HYDROBOX UNIT

MODEL			MSH-60IB/3		MSH-100IB/3		MSH-100IB-3/9		MSH-160IB/3		MSH-160IB-3/9	
Compatible Outdoor unit model			MSH-40EB MSH-60EB		MSH-80EB MSH-100EB		MSH-80EB MSH-100EB		MSH-120EB MSH-140EB MSH-160EB		MSH-120EB-3 MSH-140EB-3 MSH-160EB-3	
Function			Heating and Cooling									
Setting water temperature range		Cooling	°C		5~25							
		Heating	°C		25~65							
		DHW	°C		30~60							
Power supply			V/Ph/Hz		220-240/1/50		380-415/3/50		220-240/1/50		380-415/3/50	
Sound power level			dB(A)		38		42		43			
Sound pressure level (1m)			dB(A)		28		30		32			
Dimensions (WxHxD)			mm		421×790×270							
Packing (W×H×D)			mm		525×1050×360							
Net/gross weight			kg		42/48				44/50			
WATER CIRCUIT												
Piping connections			inch		R1"							
Safety valve set pressure			MPa		0,3							
Drainage pipe connection			inch		1"							
Expansion tank		Volume	L		8							
		Max. water pressure	MPa		0,3							
		Pre-pressure	MPa		0,1							
Water side			Type		Plate type							
Water pump head			m		9							
Water flow range			m³/h		0,4-1,25		0,4~2,10			0,70~3,00		
Auxiliary electric heater		Type	-		Automatic							
		Capacity	kW		3		9		3		9	
		Combination	-		3		3/6/9		3		3/6/9	
		Power supply	V/Ph/Hz		220-240/1/50		380-415/3/50		220-240/1/50		380-415/3/50	
Internal water volume			L		5							
Refrigerant circuit		Liquid Dia. (OD)	inch		1/4"		3/8"					
		Gas Dia. (OD)	inch		5/8"							
OTHER TECHNICAL DATA												
Circuit breaker			A		16		16		16		16	
Recommended power cable			mm²		2,5		2,5		2,5		2,5	
Inrush current			A		13,5		13,5		13,5		13,5	
Nominal current			A		13,5		13,5		13,5		13,5	
Maximum current			A		13,5		13,5		13,5		13,5	
Display cable			-		Field supplied 5x0,75							
STANDARD ACCESSORIES												
Installation and owner's manual			-		yes							
Operation manual			-		yes							
M16 Copper Nut Tamper Cap			-		1							
M9 Copper Nut Tamper Cap			-		0		1					
M6 Copper Nut Tamper Cap			-		1		0					
M8 expansion screws			-		5							
Thermistor for domestic hot water tank or zone 2 water flow			-		1							
M16 Copper nut			-		1							
Y-shape filter			-		1							
Mounting bracket			-		1							
OPTIONAL ACCESSORIES												
Three-way valve			-		Field supply (230V, 10-30 sec. switch time)							

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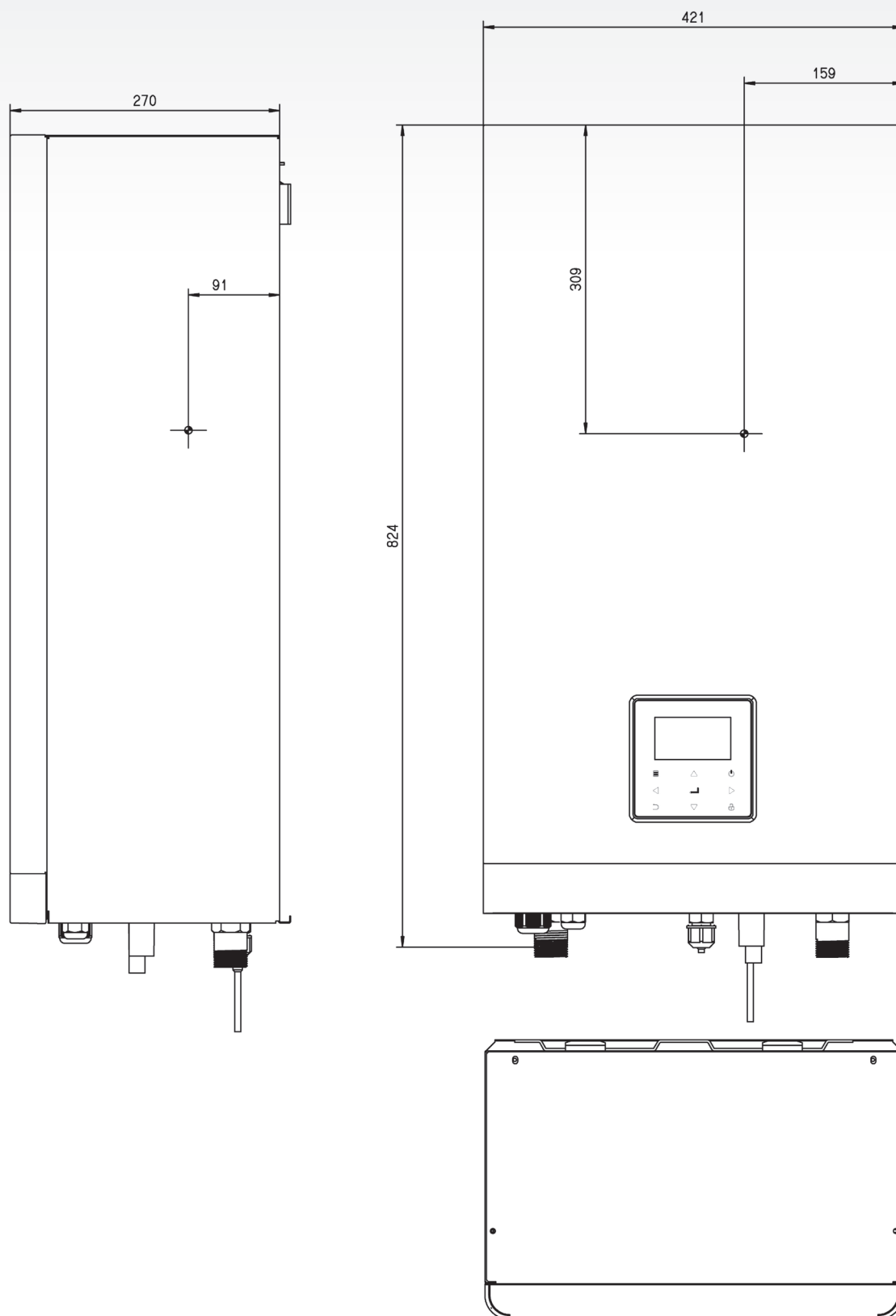
Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF YUKON HEAT PUMPS

SPLIT - HYDROBOX INDOOR UNIT

MSH-60IB, MSH-60IB/3, MSH-100IB, MSH-100IB-3, MSH-100IB/3, MSH-100IB-3/9

MSH-160IB, MSH-160IB-3, MSH-160IB/3, MSH-160IB-3/9



SPLIT - INDOOR UNITS ALL IN ONE

MODEL				MSH-190TB/3	MSH-190TB-3/9	MSH-240TBL/3	MSH-240TB-3/9	
Compatible Outdoor unit model				MSH-40EB MSH-60EB	MSH-80EB MSH-100EB	MSH-40EB MSH-60EB MSH-80EB MSH-100EB	MSH-120EB-3 MSH-140EB-3 MSH-160EB-3	
Function				Heating and Cooling				
Setting water temperature range		Cooling	°C	5~25				
		Heating	°C	25~65				
		DHW	°C	30~60				
Power supply			V/Ph/Hz	220-240/1/50	380-415/3/50	220-240/1/50	380-415/3/50	
Sound power level			dB(A)	38/40			42/44	
Sound pressure level (1m)			dB(A)	27/29		22/24	31/33	
Dimensions (WxHxD)			mm	600×600×1683		600×600×1943		
Packing (W×H×D)			mm	730×730×1920		730×730×2180		
Net/gross weight			kg	140/161		157/178		
Water circuit	Piping connections	Water circuit	inch	R1"				
		DHW tank water circuit		R3/4"				
	Safety valve set pressure		MPa	0,3				
	Expansion tank	Volume	L	8				
		Max. water pressure	MPa	0,3				
		Pre-pressure	MPa	0,1				
	Water side	Type		Plate type				
	Water pump head		m	9				
	Water flow range		m³/h	0,4~2,3			0,7~3	
	Auxiliary electric heater	Type	-	Automatic				
		Capacity	kW	3	9	3	9	
		Combination	-	3	3/6/9	3	3/6/9	
		Power supply	V/Ph/Hz	220-240/1/50	380-415/3/50	220-240/1/50	380-415/3/50	
	DHW Tank	Type	-	Stainless steel				
		Material	-	SUS 316L				
		Water Volume	l	190		240		
		Max. water temp. (Disinfection mode)	°C	70				
		Max. water pressure limit	bar	10				
		Isolation (Material)	-	Polyurethane				
		Isolation (Thickness)	mm	45				
Refrigerant circuit		Liquid Dia. (OD)	inch	3/8"				
		Gas Dia. (OD)	inch	5/8"				
OTHER TECHNICAL DATA								
Circuit breaker			A	16	16	16	16	
Recommended power cable			mm²	2,5	2,5	2,5	2,5	
Inrush current			A	13,5	4,5	13,5	4,5	
Nominal current			A	13,5	13,5	13,5	13,5	
Maximum current			A	13,5	13,5	13,5	13,5	
Display cable			-	Field supplied 5x0,75				
STANDARD ACCESSORIES								
Installation and owner's manual			-	Yes				
Operation manual			-	Yes				
M16 Copper Nut Tamper Cap			-	1				
M9 Copper Nut Tamper Cap			-	0	1			
M6 Copper Nut Tamper Cap			-	1	0			
M8 expansion screws			-	5				
Thermistor for domestic hot water tank or zone 2 water flow			-	1				
M16 Copper nut			-	1				
Y-shape filter			-	1				
Mounting bracket				-				
Transfer 3/8 - 1/4				1				
OPTIONAL ACCESSORIES								
Three-way valve				Yes (already built in)				

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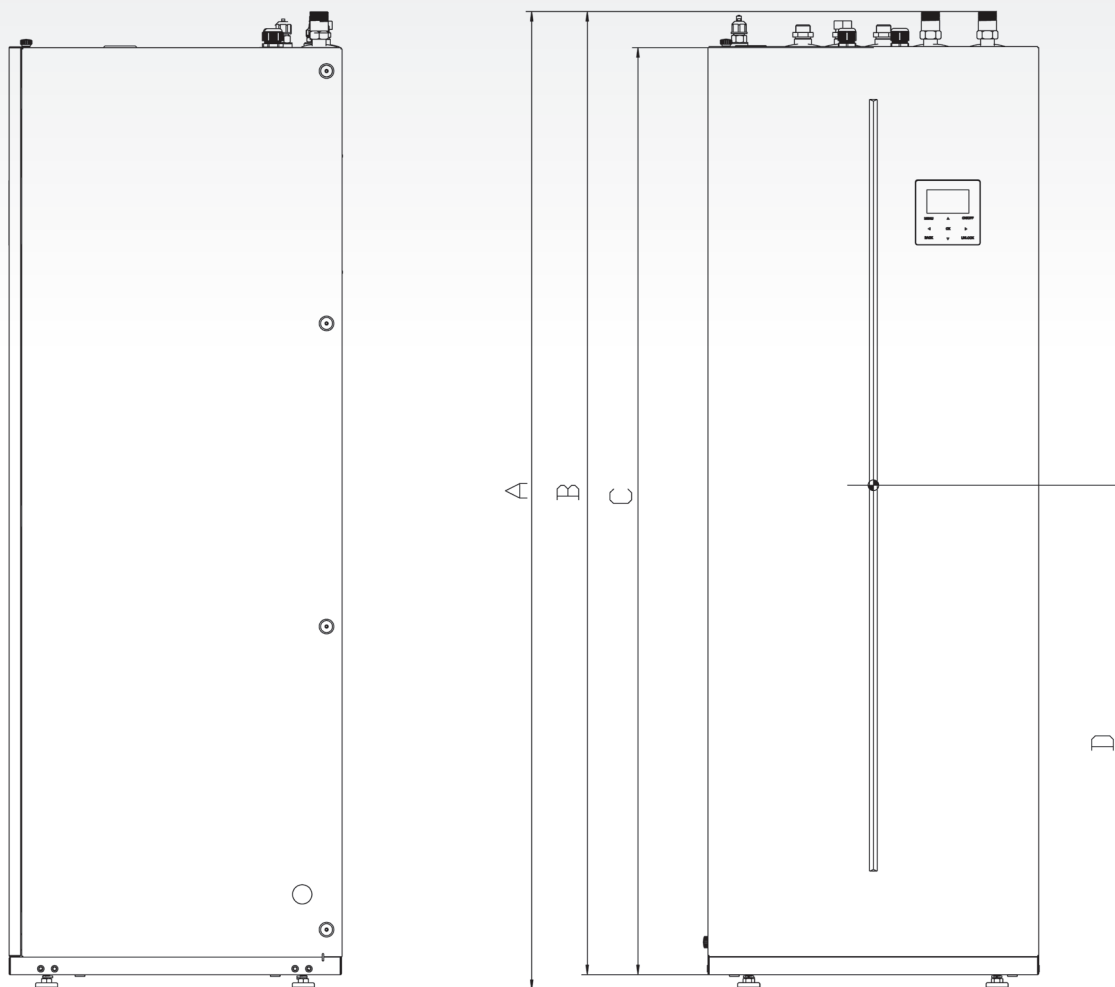
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APPEARANCE AND DIMENSIONS OF YUKON HEAT PUMPS

SPLIT - INDOOR UNITS ALL IN ONE

MSH-240TBL/3, MSH-240TB-3/9, MSH-190TB-3/9, MSH-190TB/3



SPLIT - INDOOR UNITS ALL IN ONE

HEATING WATER OUTPUT 1"

HEATING WATER RETURN 1"

TAP WATER 3/4"

DWH CIRCULATION 3/4"

DWH 3/4"

600

58

74

75

87

106

81

LIQUID 3/8"

GAS 5/8"

53

55

35

41

125

M25x1,5

100

250

305

300

73

Internal backup heater

⑩	14	IBH1	Internal backup heater 1
	17	N	

Additional antifreeze tape

②	25	HT	External antifreeze e-heating tape
	29	N	

Cascade communication

③	9	H1	Cascade communication
	10	H2	

Solar external input

①	1	SL1	Solar energy input signal
	2	SL2	

AHS (Additional heat source)

③	27	AHS1	Additional heat source
	28	AHS2	

SV1 (3-way valve for switching DHW and heating)

③	5	1ON	SV1 (3-way valve)
	6	1OFF	
	16	N	

Wired controller

1	A	Wired controller
2	B	
3	X	
4	Y	
5	E	

SV2 (3-way valve for splitting heating and cooling part of system)

④	7	2ON	SV2 (3-way valve)
	8	2OFF	
	17	N	

Water pump for zone 2

⑤	9	P_c	Pumpc (zone 2 pump)
	21	N	

SV3 (Mixing valve for zone 2)

⑪	18	N	SV3 (3-way valve)
	19	3ON	
	20	3OFF	

DHW circulator pump

⑧	12	P_d	DHW pump
	24	N	

TBH (E-heater inside DHW tank)

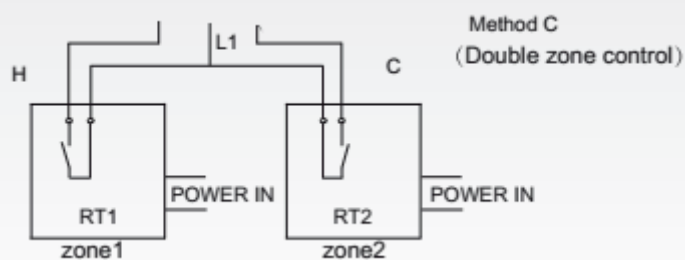
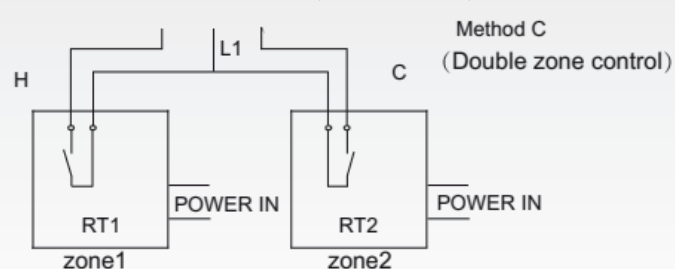
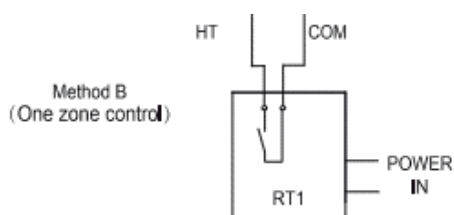
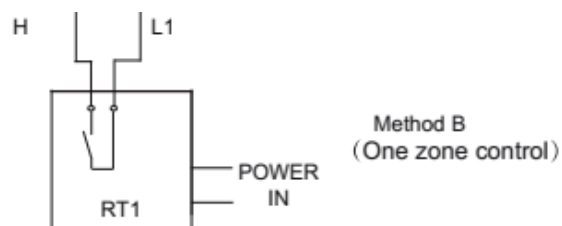
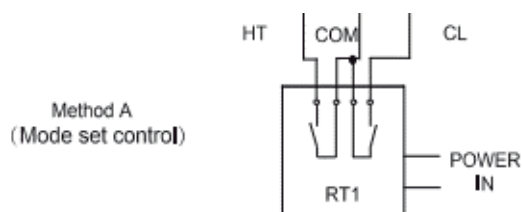
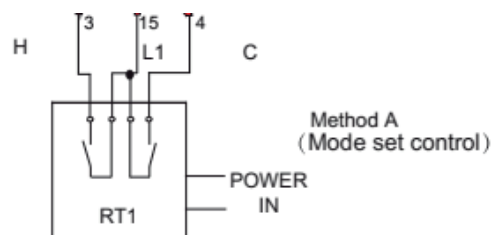
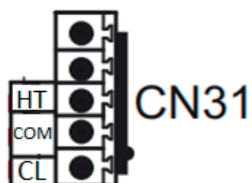
⑨	13	TBH	TBH (DHW e-heater)
	16	N	

Water pump for zone 1

⑥	10	P_o	External water pump/zone1
	22	N	

Solar water pump

⑦	11	P_s	Solar energy pump
	23	N	

External Thermostat 24V (for two zones)**External thermostat 230V (for two zones)****External thermostat 24V (one zone)****External thermostat 230V (one zone)****External thermostat 24V (heating x cooling)****External thermostat 230V (heating x cooling)****External Thermostat
24 V connection
terminal****External thermostat 230V connection terminal**

②	3	H	Room thermostat input (high voltage)
	4	C	
	15	L1	

Wiring for contactors and thermostats

Voltage	220-240VAC
Maximum running current(A)	0.2
Wiring size(mm ²)	0.75

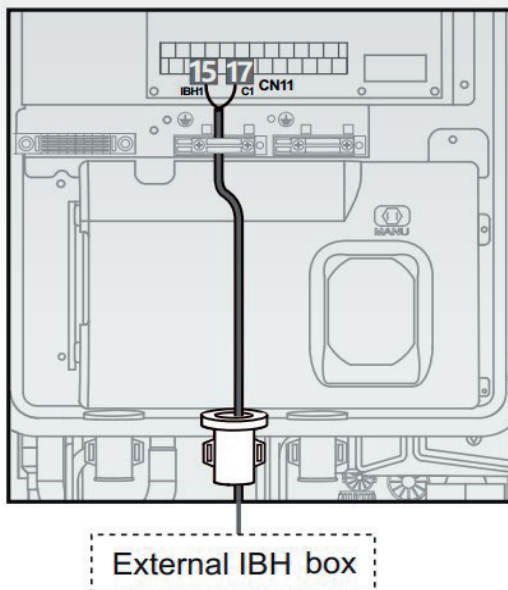
Sensor resistance

Temp.sensor code	Property values
T2/T2B	$B_{25/50}=4100K$, $R_{25^{\circ}C}=10k\Omega$
T1/TW_out TW_in/T5/Tw2	$B_{0/100}=3970K$, $R_{50^{\circ}C}=17.6k\Omega$

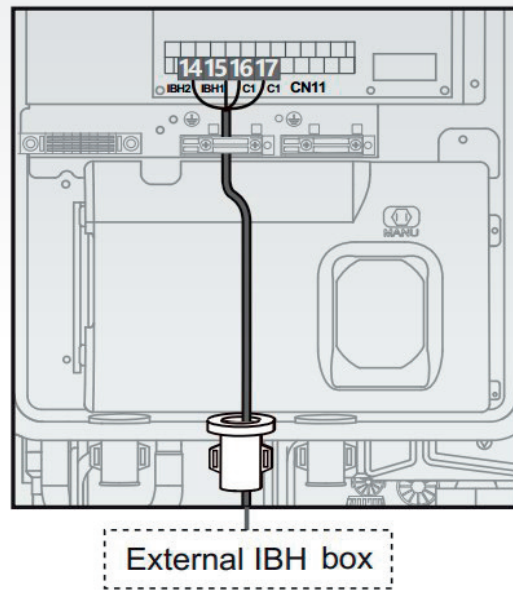
Temp. Sensor code	Property values
T3/T4/Th	$B_{25/50}=4100K$, $R_{25^{\circ}C}=10k\Omega$
Tp	$B_{25/50}=3950K$, $R_{90^{\circ}C}=5k\Omega$

Attention: You can find a detailed wiring diagram in the installation manual.

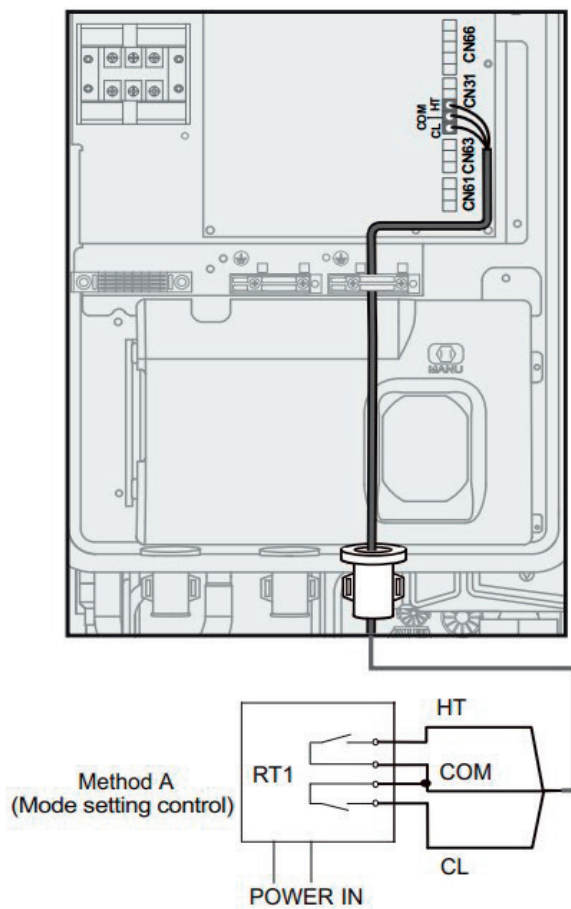
IBH (Internal backup heater) 3 kW



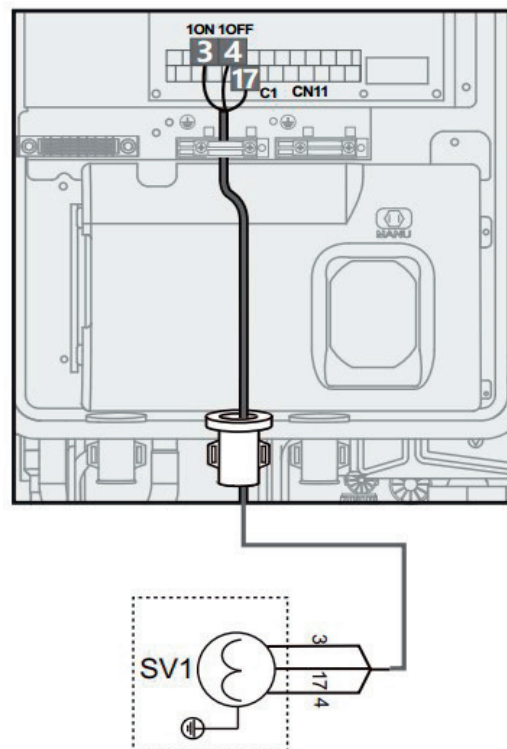
IBH (Internal backup heater) 9 kW



External thermostat (cooling x heating)



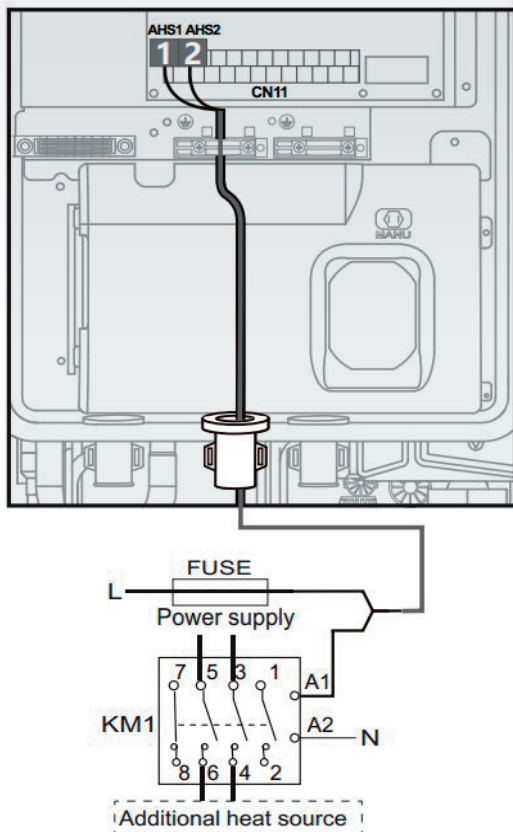
SV1 (3-way valve for switching DHW and heating)



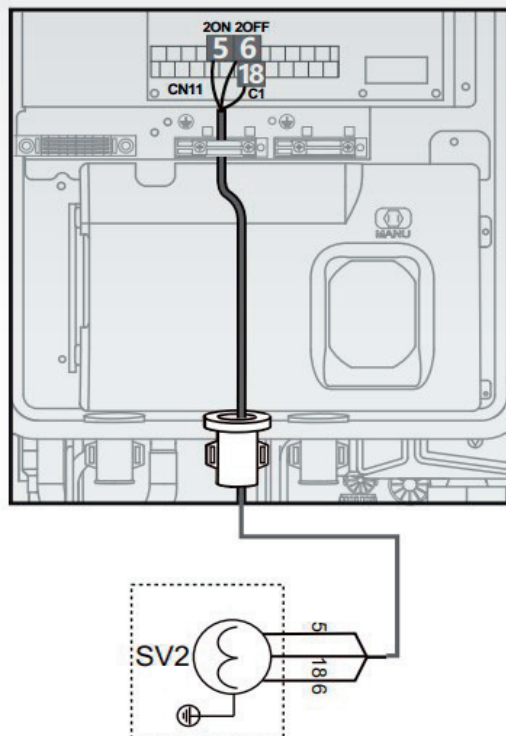
Cascade communication



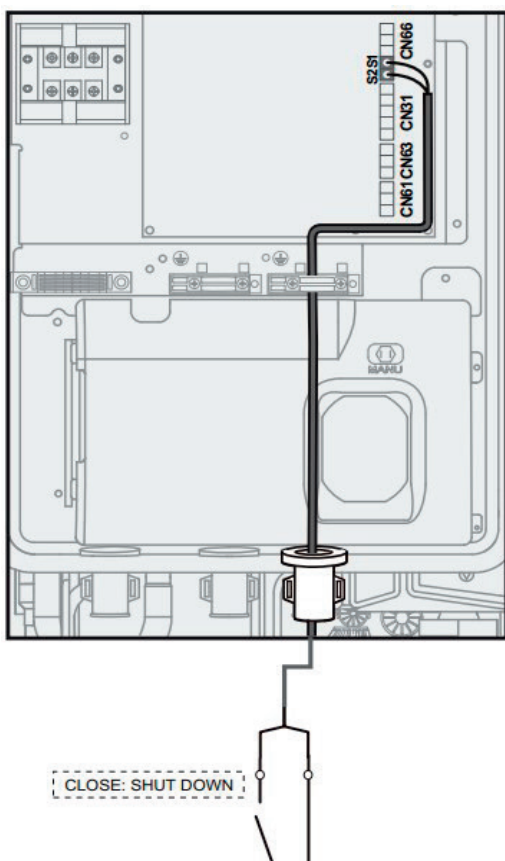
AHS (Additional heat source)



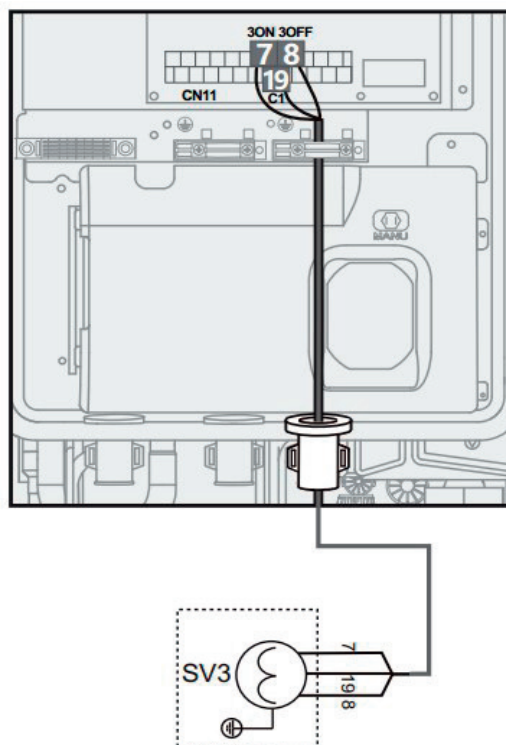
SV2 (3-way valve for splitting heating and cooling part of system)



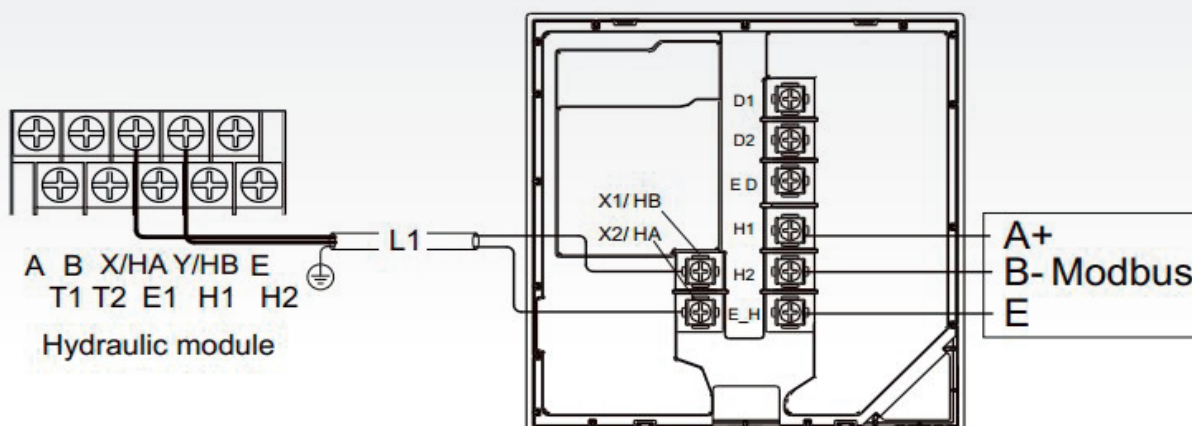
Solar external input



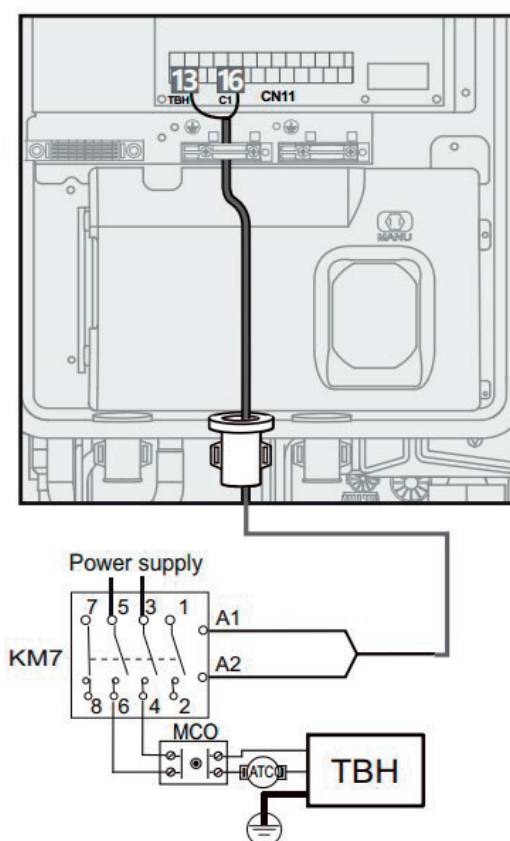
SV3 (Mixing valve for zone 2)



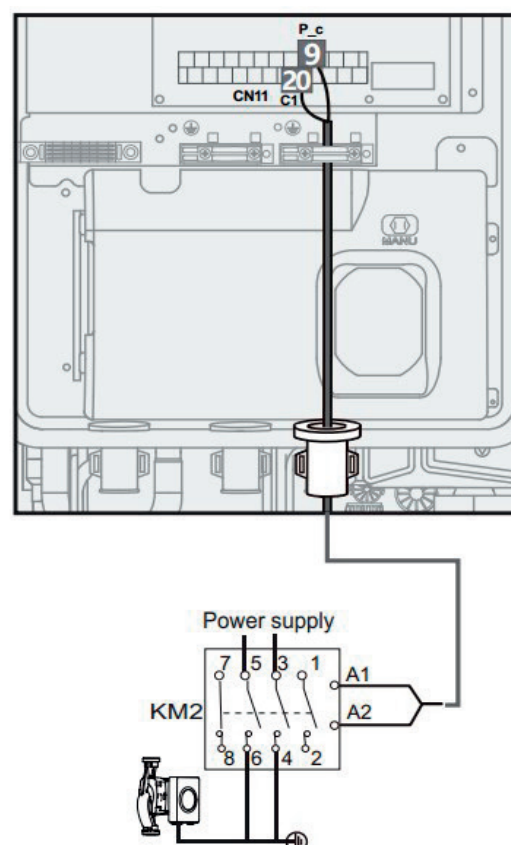
Wired controller



TBH (E-heater inside DHW tank)

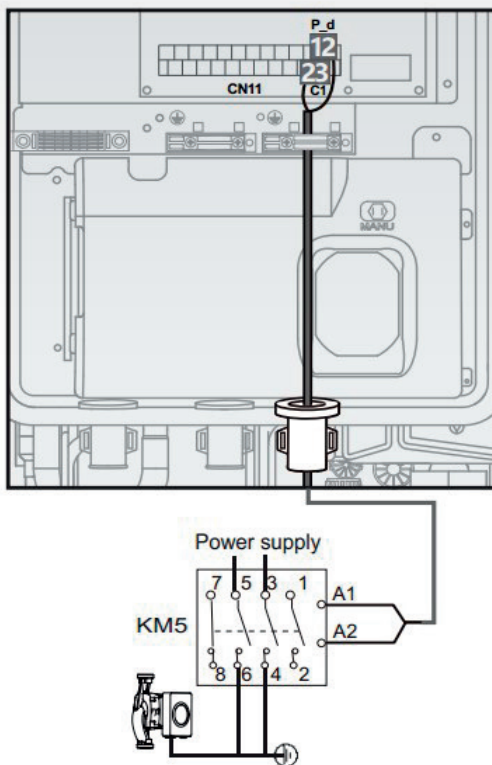


Water pump for zone 2

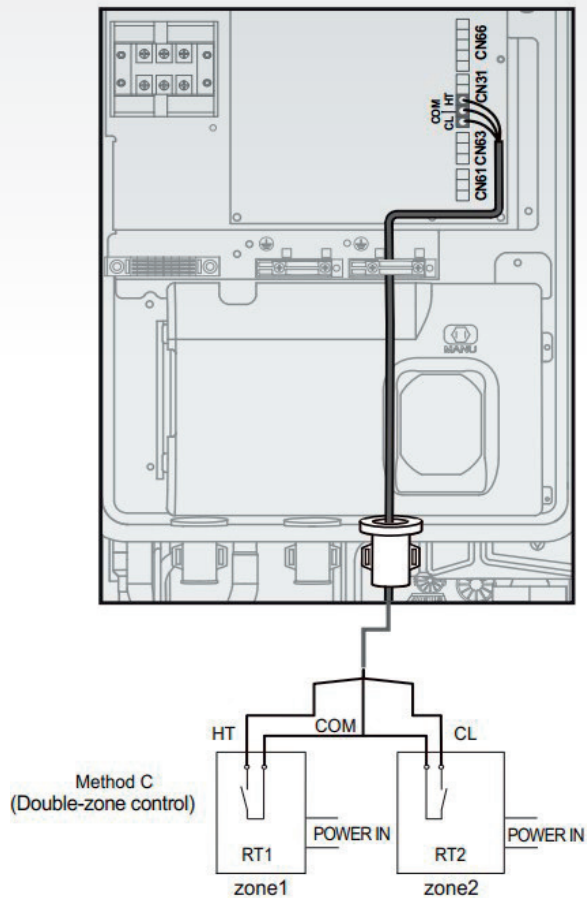


YUKON CONNECTION
MONOBLOC 4-16 KW R290

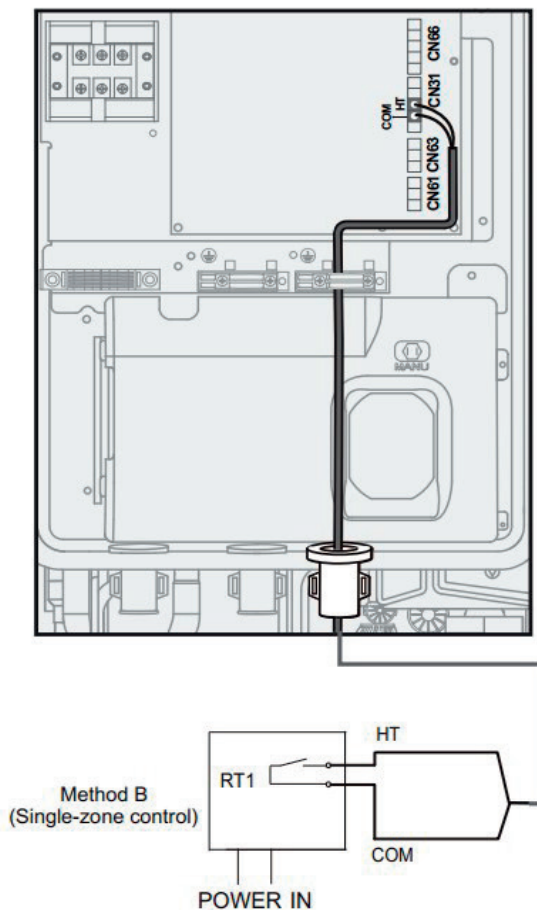
DHW circulator pump



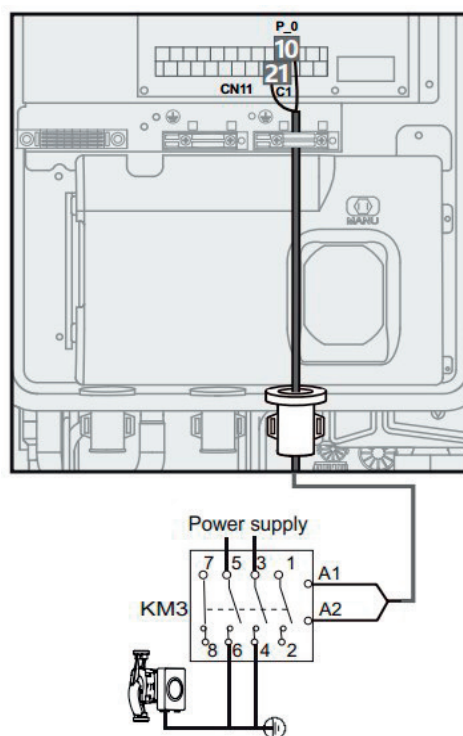
External Thermostat (for two zones)



External thermostat (one zone)

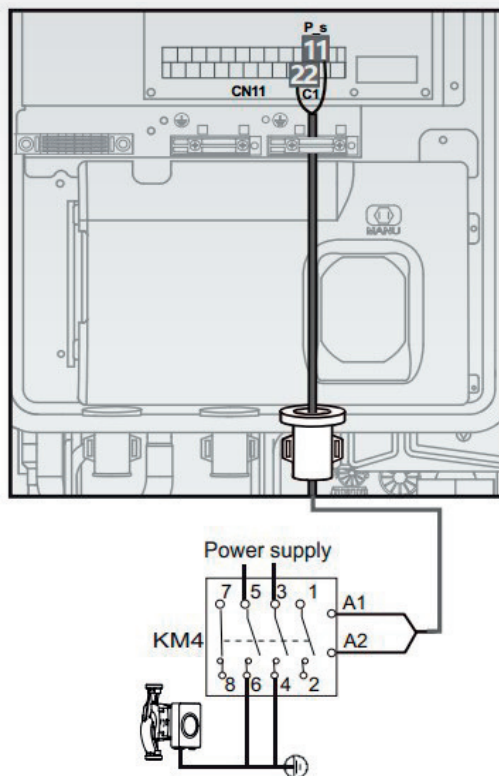


External water pump for zone 1

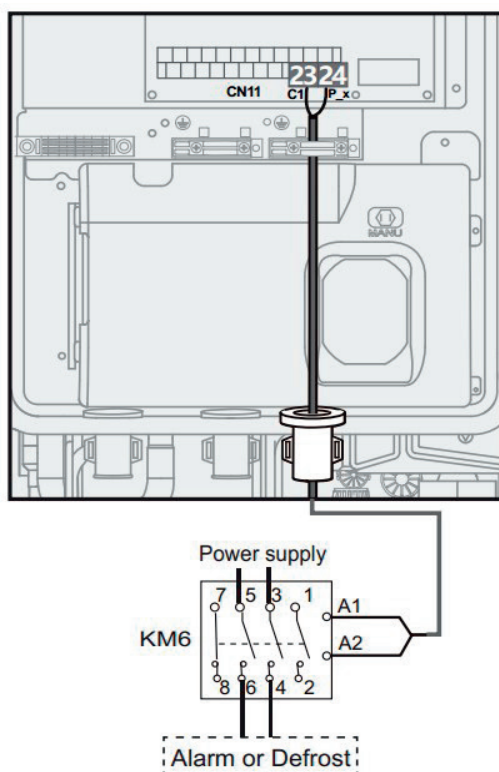


YUKON CONNECTION **MONOBLOC 4-16 KW R290**

Solar water pump



Output signal Alarm/Defrost



Controller cabel type

Input voltage (HA/HB)	18VDC
Wire size	0.75 mm ²
Wire type	2-core shielded twisted pair cable
Wire length	L1<50 m

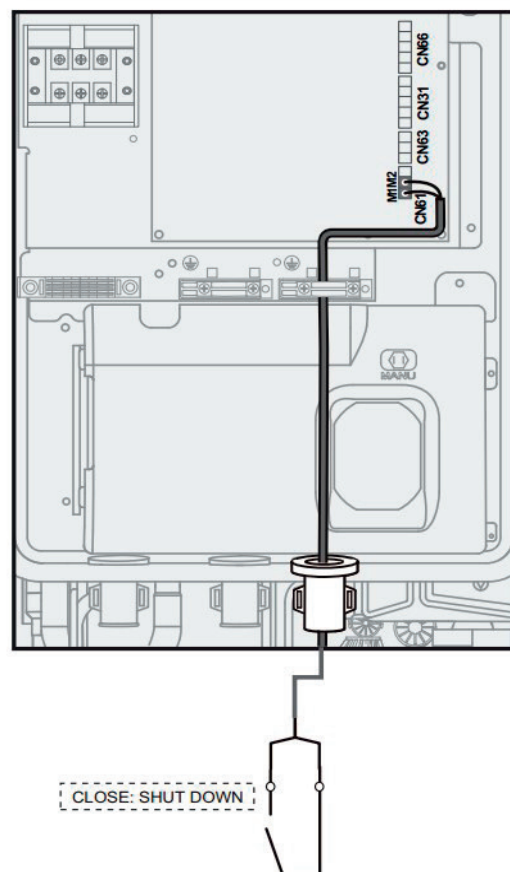
Sensors resistance

Temp. Sensor code	Property values
T3/T4/Th	B _{25/50} =4100K, R _{25°C} =10kΩ
Tp	B _{25/50} =3950K, R _{90°C} =5kΩ
T2/T2B	B _{25/50} =4100K, R _{25°C} =10kΩ
T1/TW_out TW_in/T5/Tw2	B _{0/100} =3970K, R _{50°C} =17.6kΩ

Wiring for contactors and thermostats

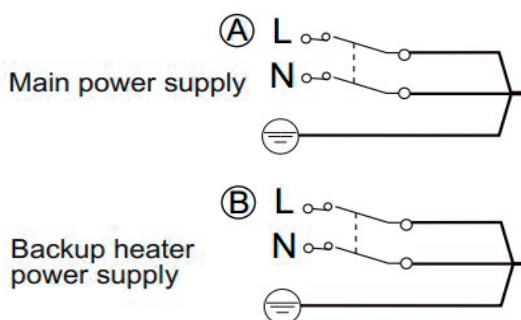
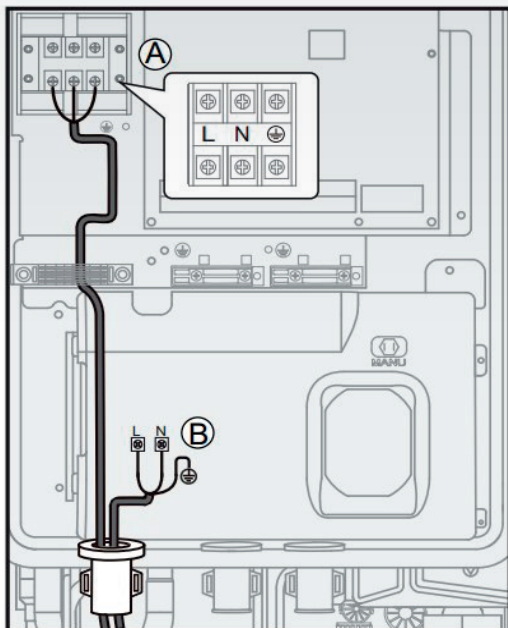
Voltage	220-240VAC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75

Remote control

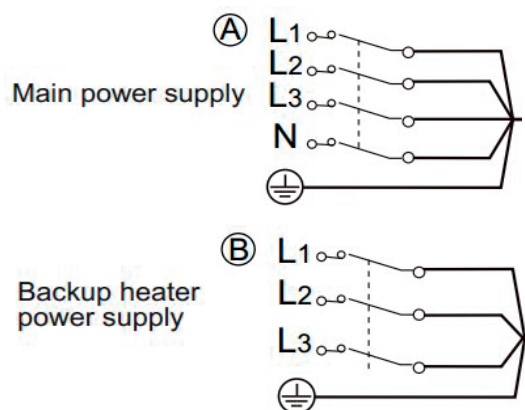
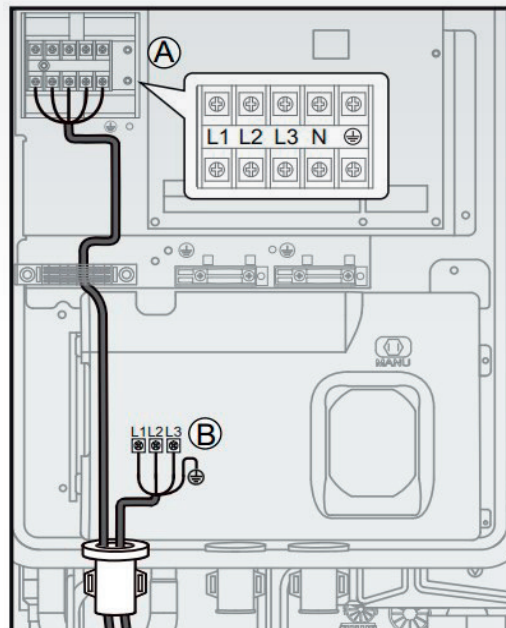


YUKON CONNECTION
MONOBLOC 4-16 kW R290

1 phase connection of main power supply and power supply of e-heater



3 phase connection of main power supply and power supply of e-heater

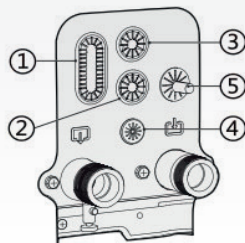


E-heater power supply

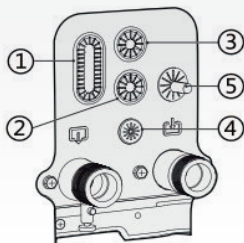
Backup heater type	Power supply	Maximum circuit current (A)	Minimum wire size (mm ²)
3 kW	220-240V~ 50Hz	13.5	(2+PE) x(2.5-4)
9 kW	380-415V 3N~ 50Hz	13.5	(3+PE) x(2.5-4)

YUKON CONNECTION
MONOBLOC 4-16 kW R290

**Electric connection
for 4-6 kW units**

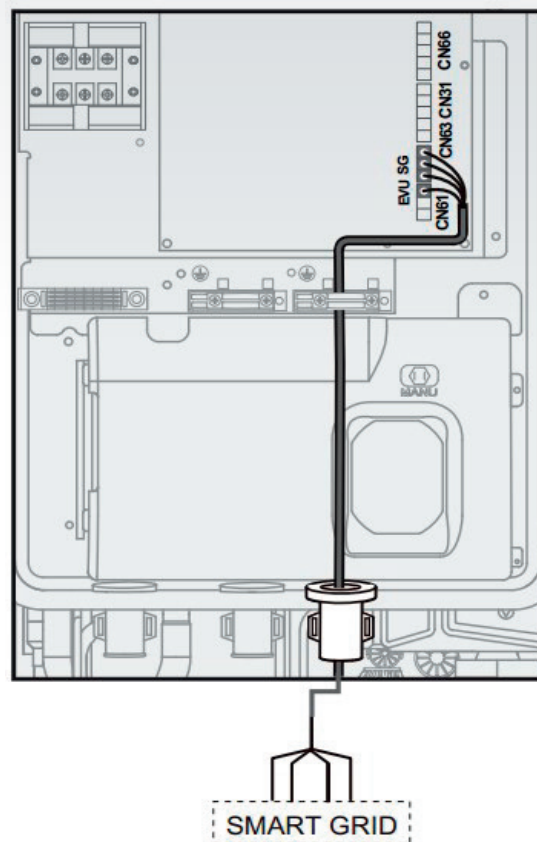


**Electric connection
for 8-16 kW units**

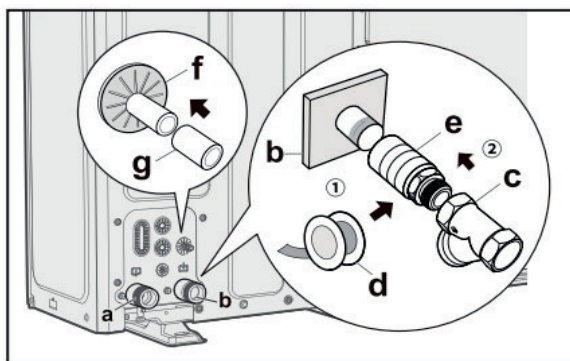


①②③	For high voltage wiring.
④	For low voltage wiring.
⑤	Safety valve drain.

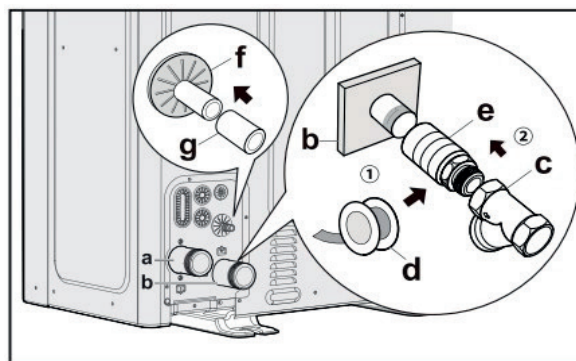
Smart grid signal



Connection of 4-6 kW units



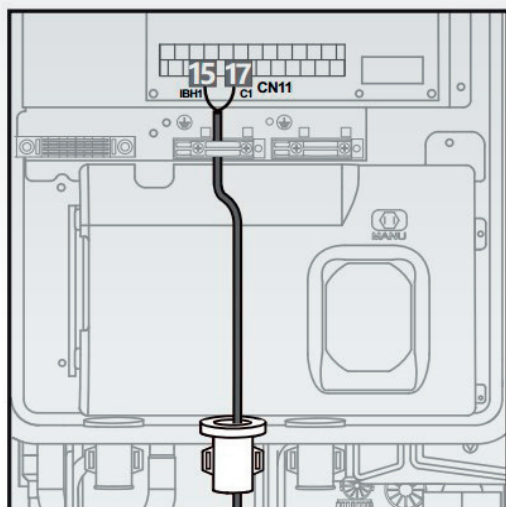
Connection of 8-16 kW units



a	Water OUTLET (connection with screws, male, 1" for 4/6 kW units and 1 1/4" for 8-16 kW units)
b	Water INLET (connection with screws, male, 1" for 4/6 kW units and 1 1/4" for 8-16 kW units)
c	Y-shaped strainer (delivered with the unit) (2 screws for connection, female, 1" for 4/6 kW units and 1 1/4" for 8-16 kW units)
d	Thread seal tape
e	Extension pipe (recommended, with the length depending on the field conditions)
f	Safety valve outlet (hose, $\varnothing$ 16mm)
g	Drain hose (supplied on the site)

Attention: You can find a detailed wiring diagram in the installation manual

IBH (Internal backup heater)

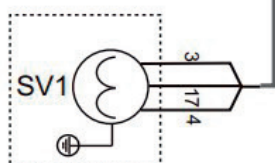
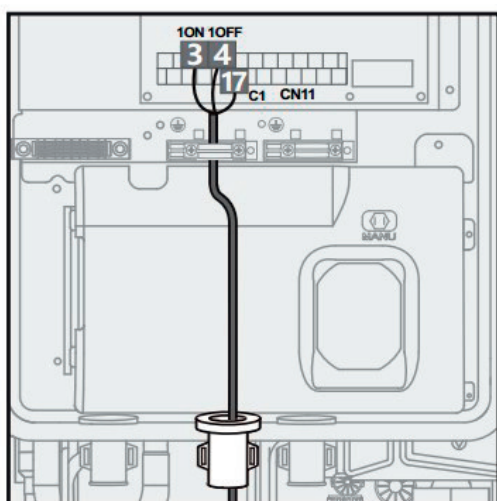


External IBH box

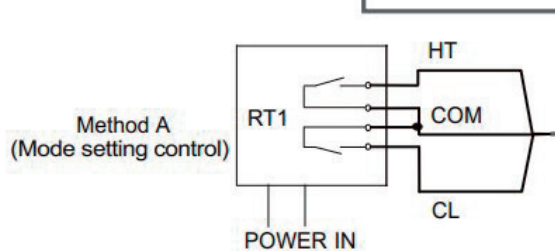
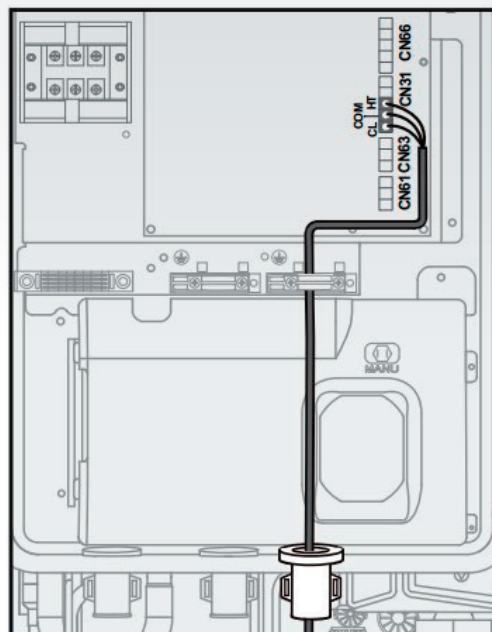
Cascade communication



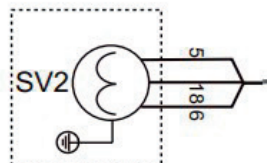
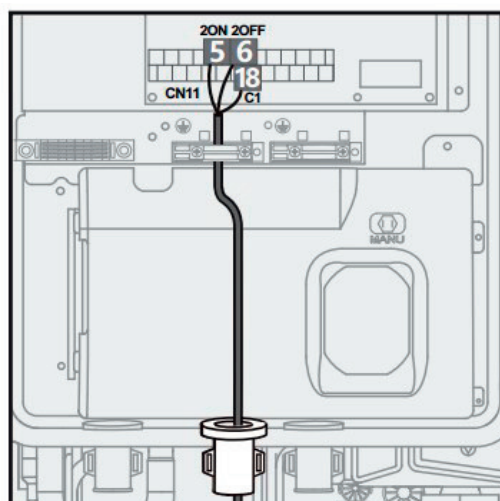
SV1 (3-way valve for switching DHW and heating)



External thermostat (cooling x heating)

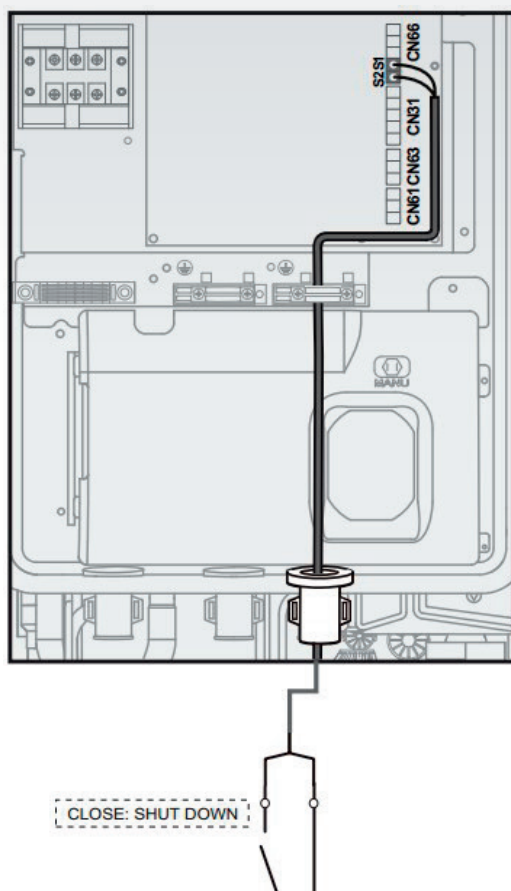


SV2 (3-way valve for splitting heating and cooling part of system)

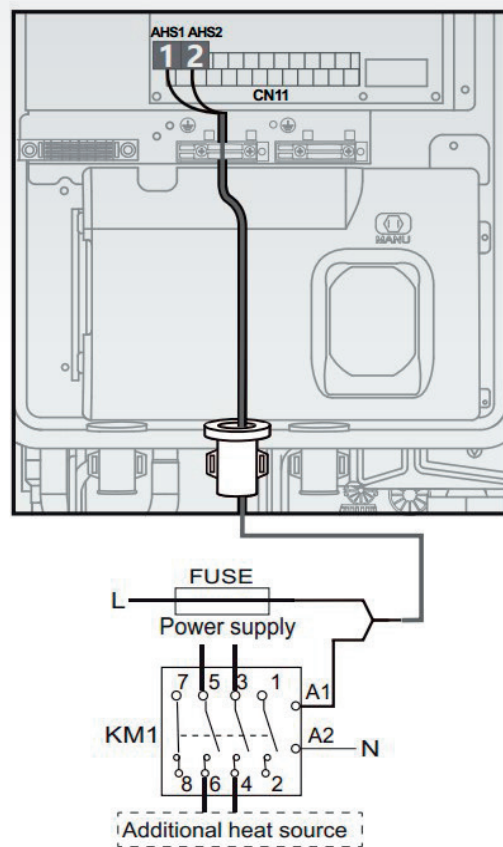


YUKON CONNECTION
MONOBLOC 26-35 KW R290

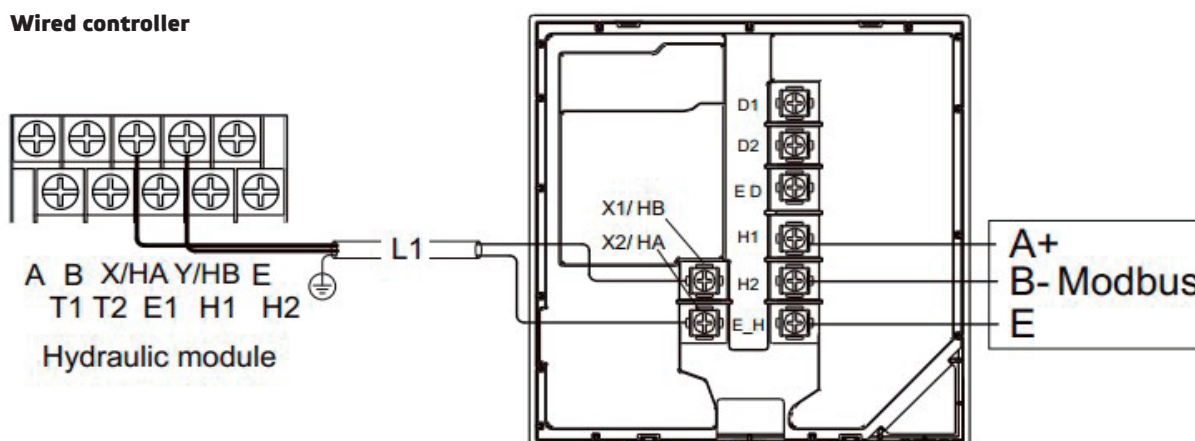
Solar external input



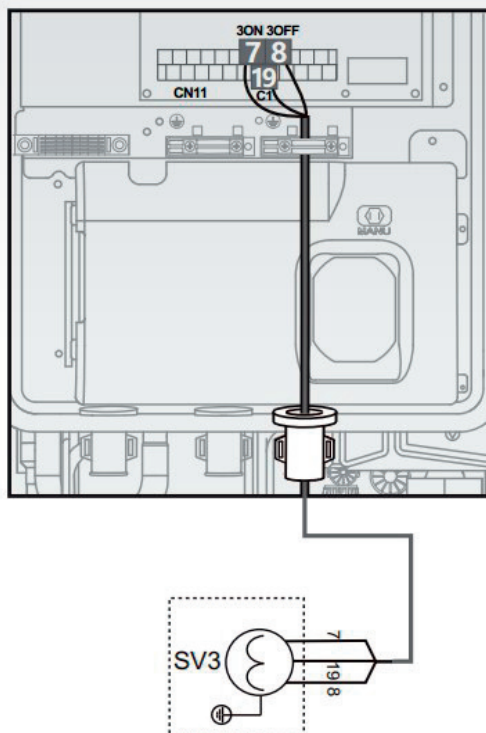
AHS (Additional heat source)



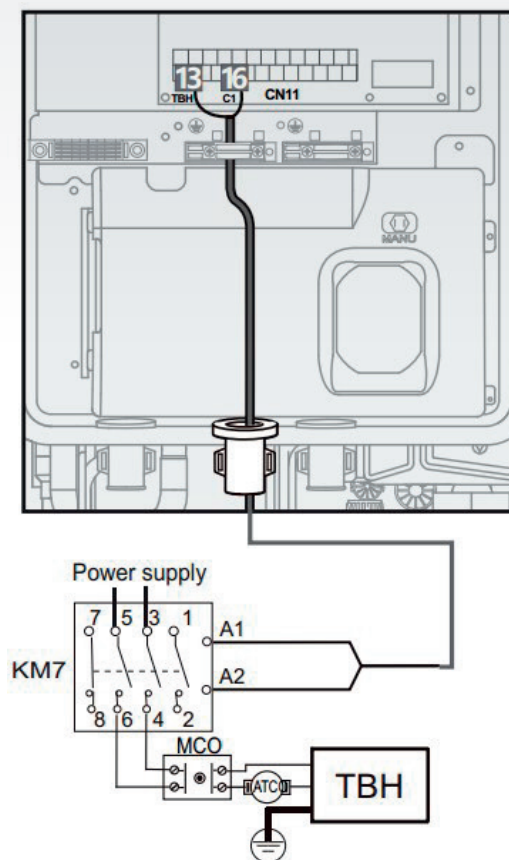
Wired controller



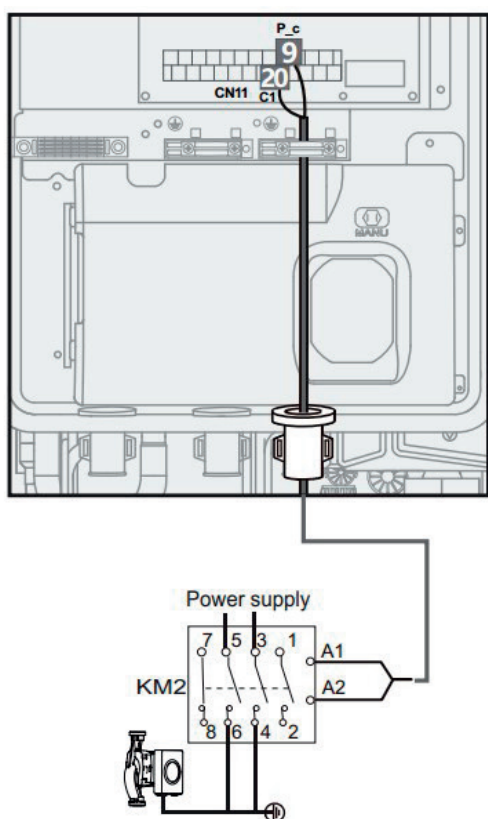
SV3 (Mixing valve for zone 2)



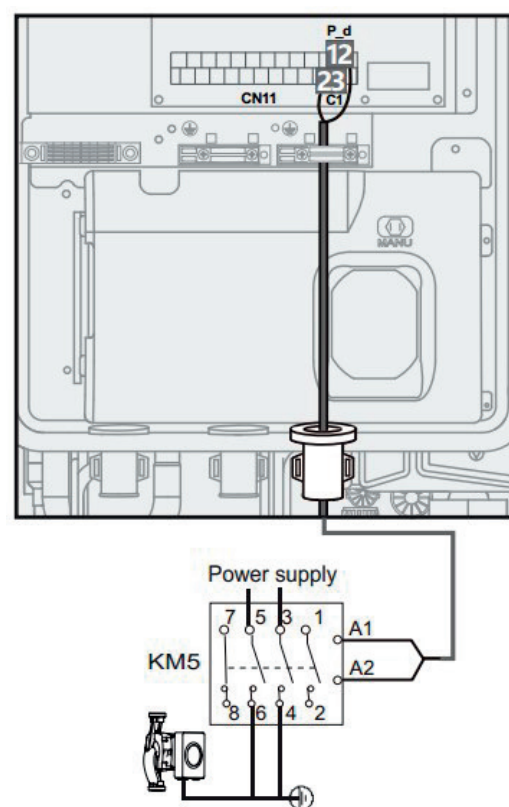
TBH (E-heater inside DHW tank)



Water pump for zone 2



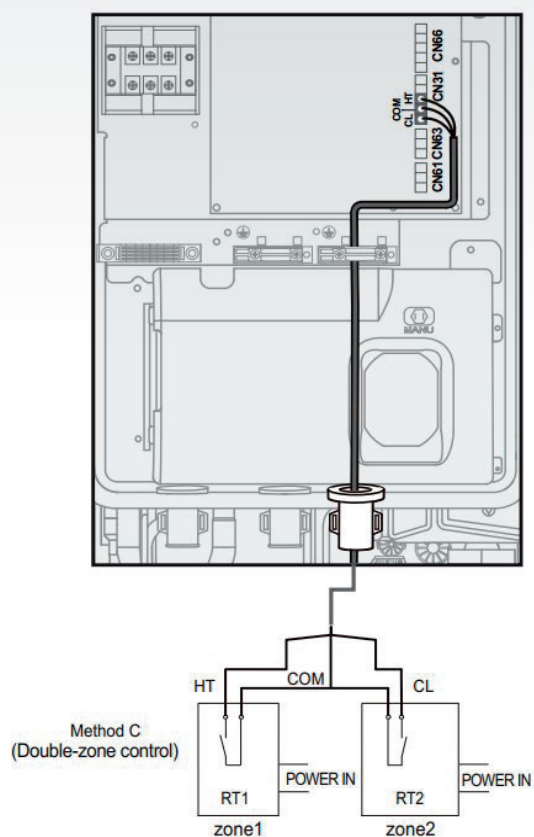
DHW circulator pump



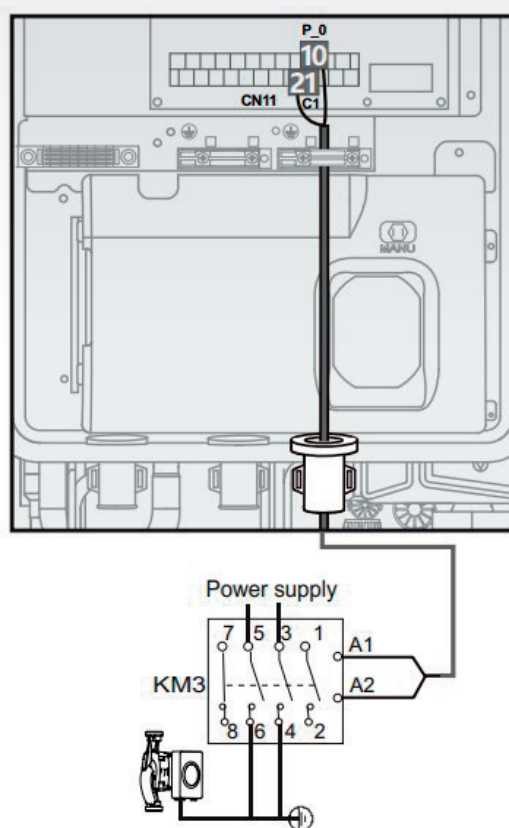
YUKON CONNECTION

MONOBLOC 26-35 KW R290

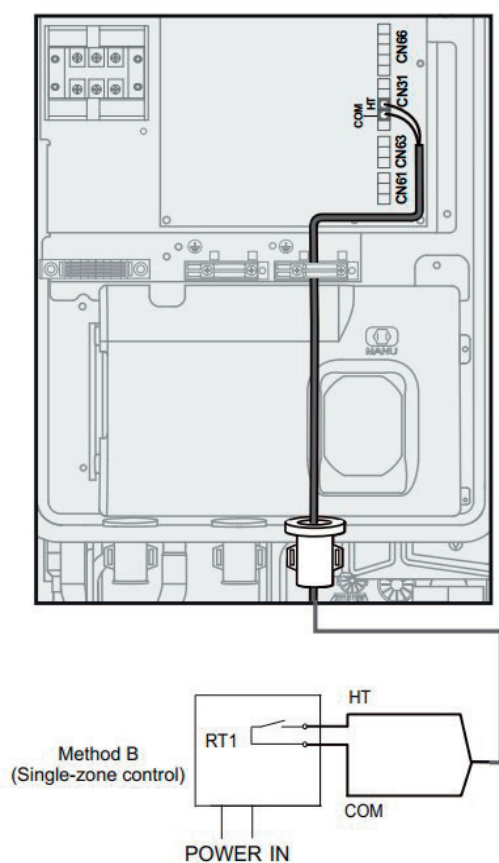
External Thermostat (for two zones)



External water pump for zone 1



External thermostat (one zone)

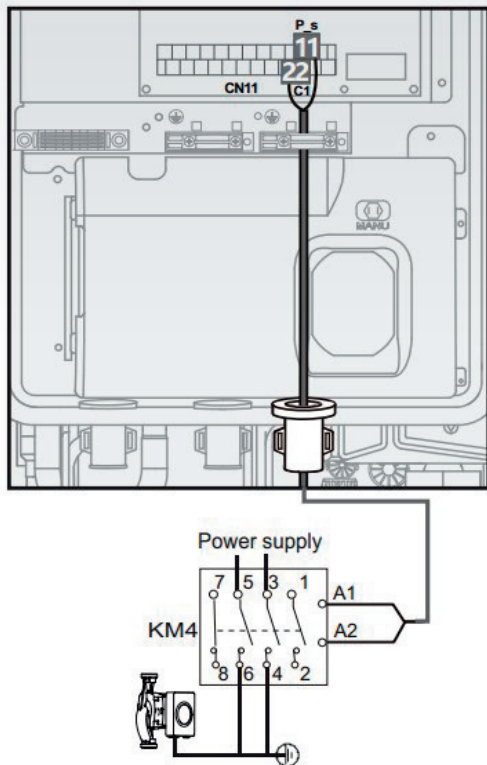


Controller cabel type

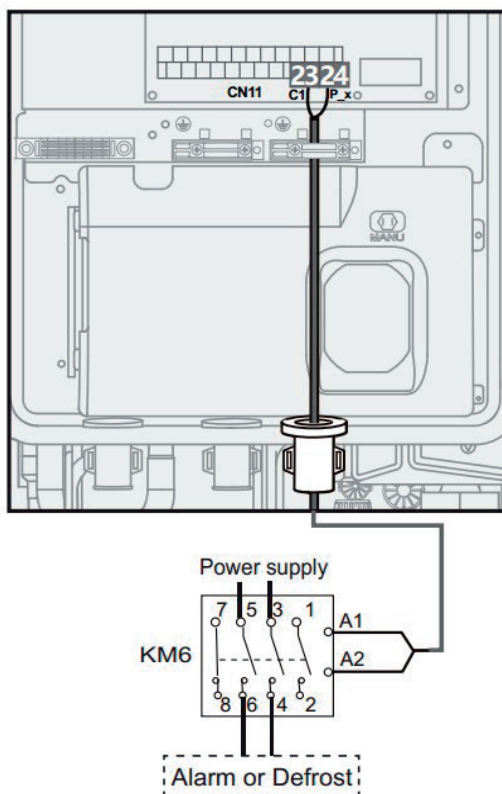
Input voltage (HA/HB)	18VDC
Wire size	0.75 mm ²
Wire type	2-core shielded twisted pair cable
Wire length	L1<50 m

YUKON CONNECTION
MONOBLOC 26-35 KW R290

Solar water pump



Output signal Alarm/Defrost



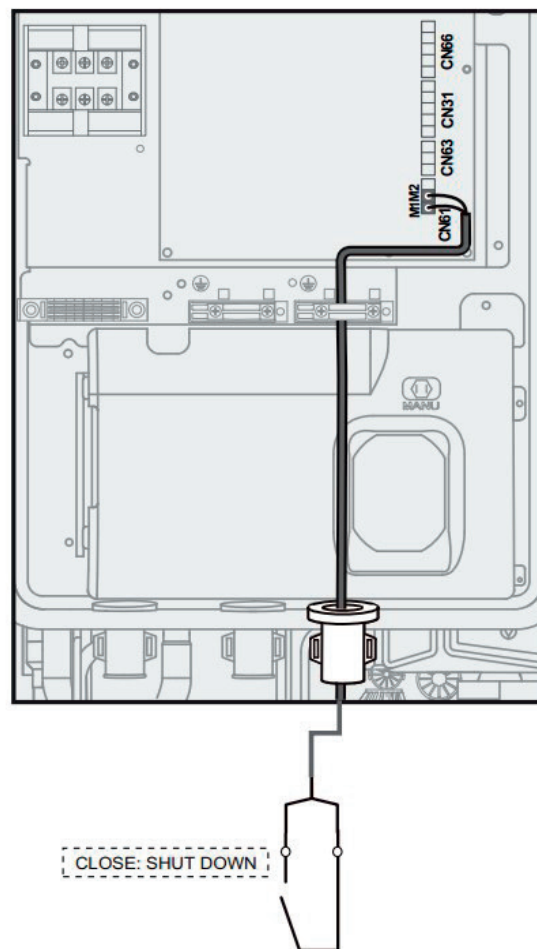
Sensors resistance

Temp. Sensor code	Property values
T3/T4/Th	$B_{25/50}=4100K, R_{25^{\circ}C}=10k\Omega$
Tp	$B_{25/50}=3950K, R_{90^{\circ}C}=5k\Omega$
T2/T2B	$B_{25/50}=4100K, R_{25^{\circ}C}=10k\Omega$
T1/TW_out TW_in/T5/Tw2	$B_{0/100}=3970K, R_{50^{\circ}C}=17.6k\Omega$

Wiring for contactors and thermostats

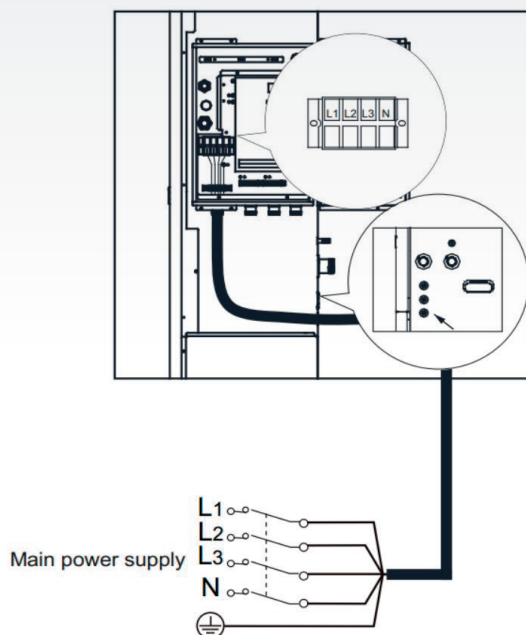
Voltage	220-240VAC
Maximum running current (A)	0.2
Minimum wire size (mm ²)	0.75

Remote control

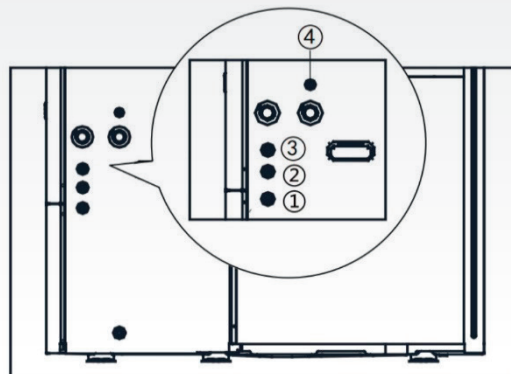


YUKON CONNECTION
MONOBLOC 26-35 KW R290

Main power supply

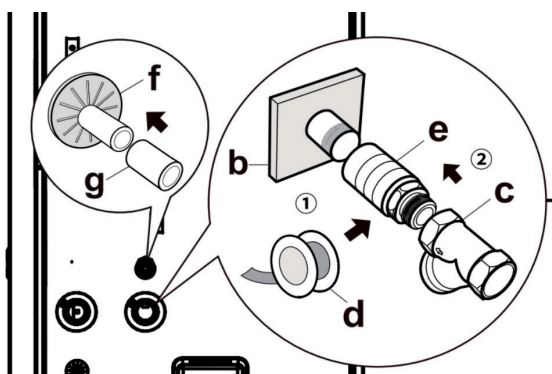


Electric connection



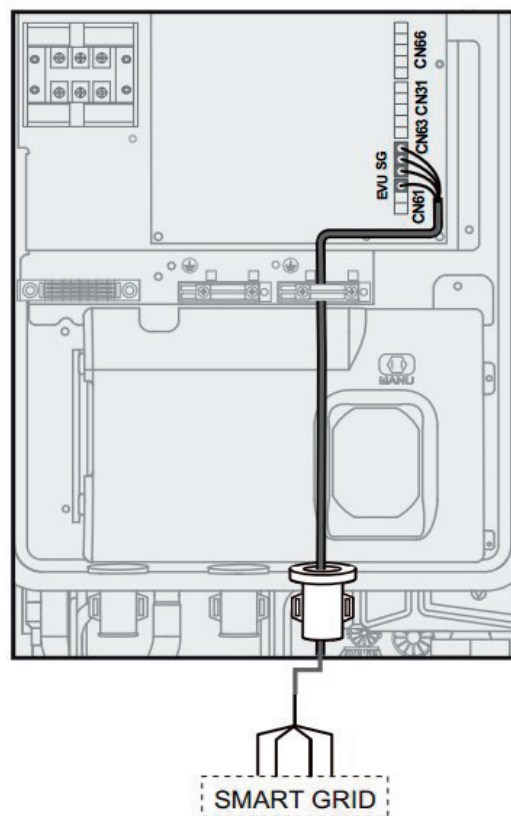
①	For main power wiring.
②	For high voltage wiring.
③	For low voltage wiring.
④	Safety valve drain.

Connection

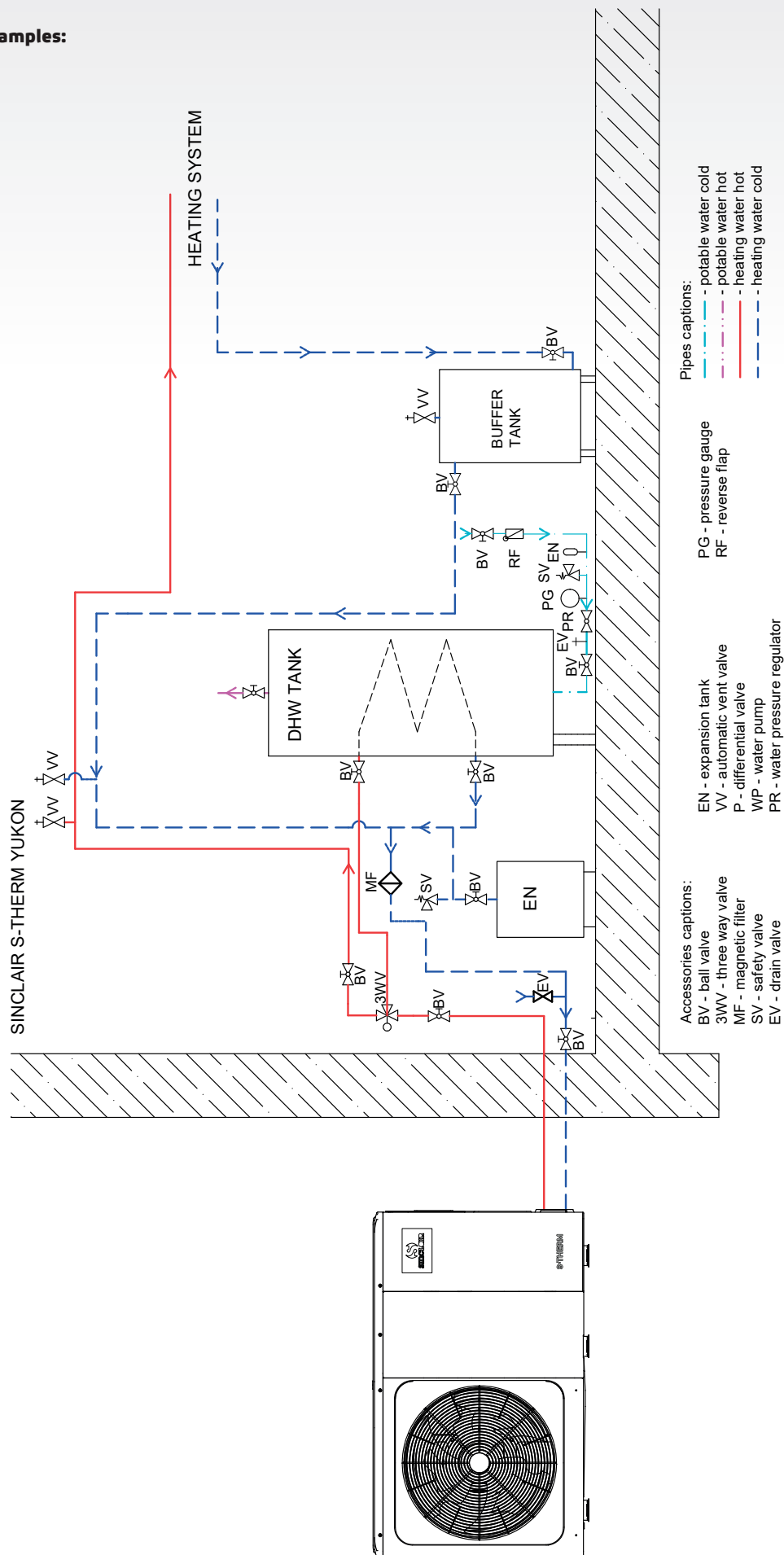


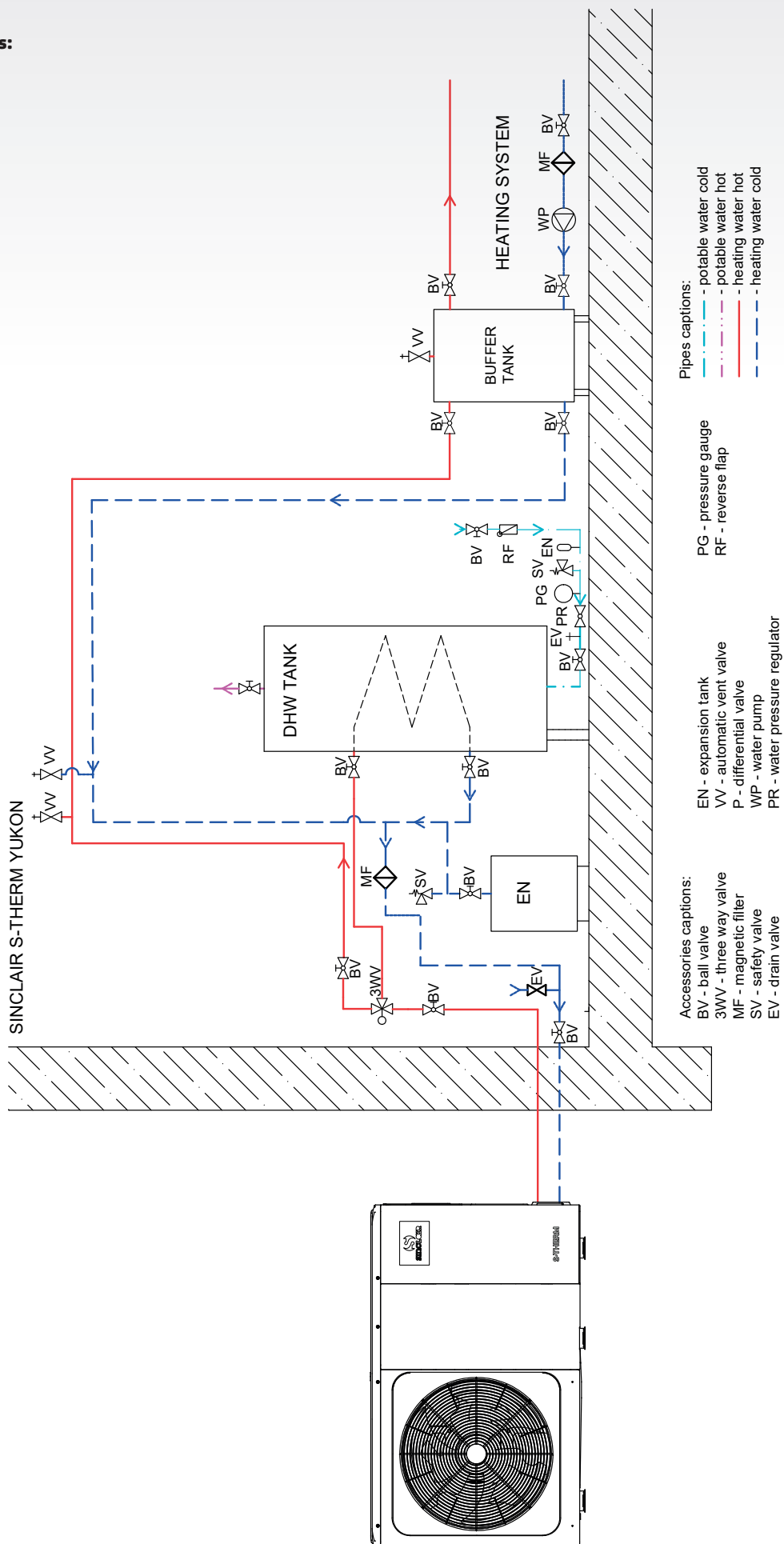
a	Water OUTLET (connection with screws, male)
b	Water INLET (connection with screws, male)
c	Y-shaped strainer (delivered with the unit) (2 screws for connection, female)
d	Thread seal tape
e	Extension pipe (recommended, with the length depending on the field conditions)
f	Safety valve outlet (hose, $\phi 16\text{mm}$)
g	Drain hose (supplied on the site)

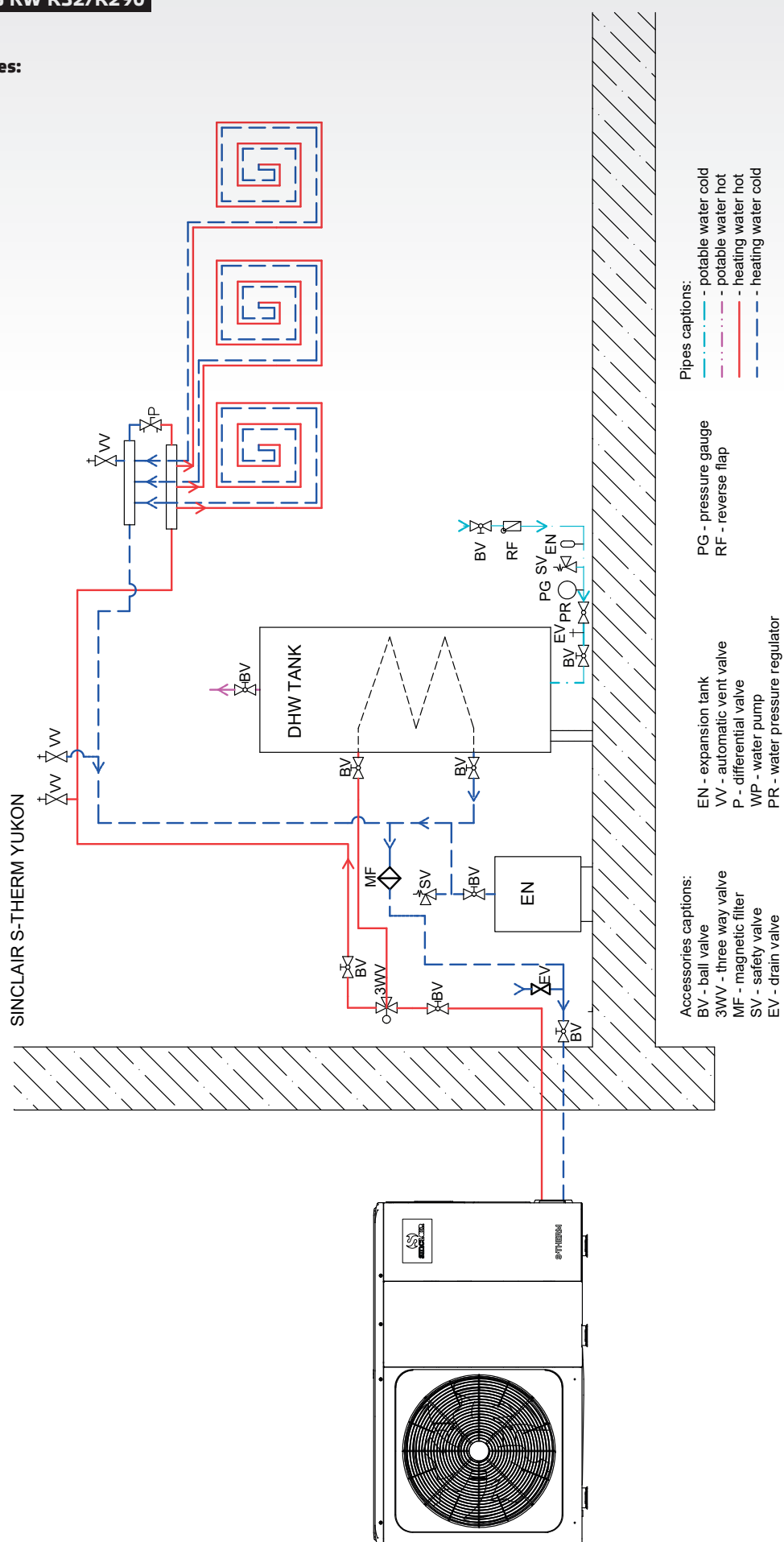
Smart grid signal

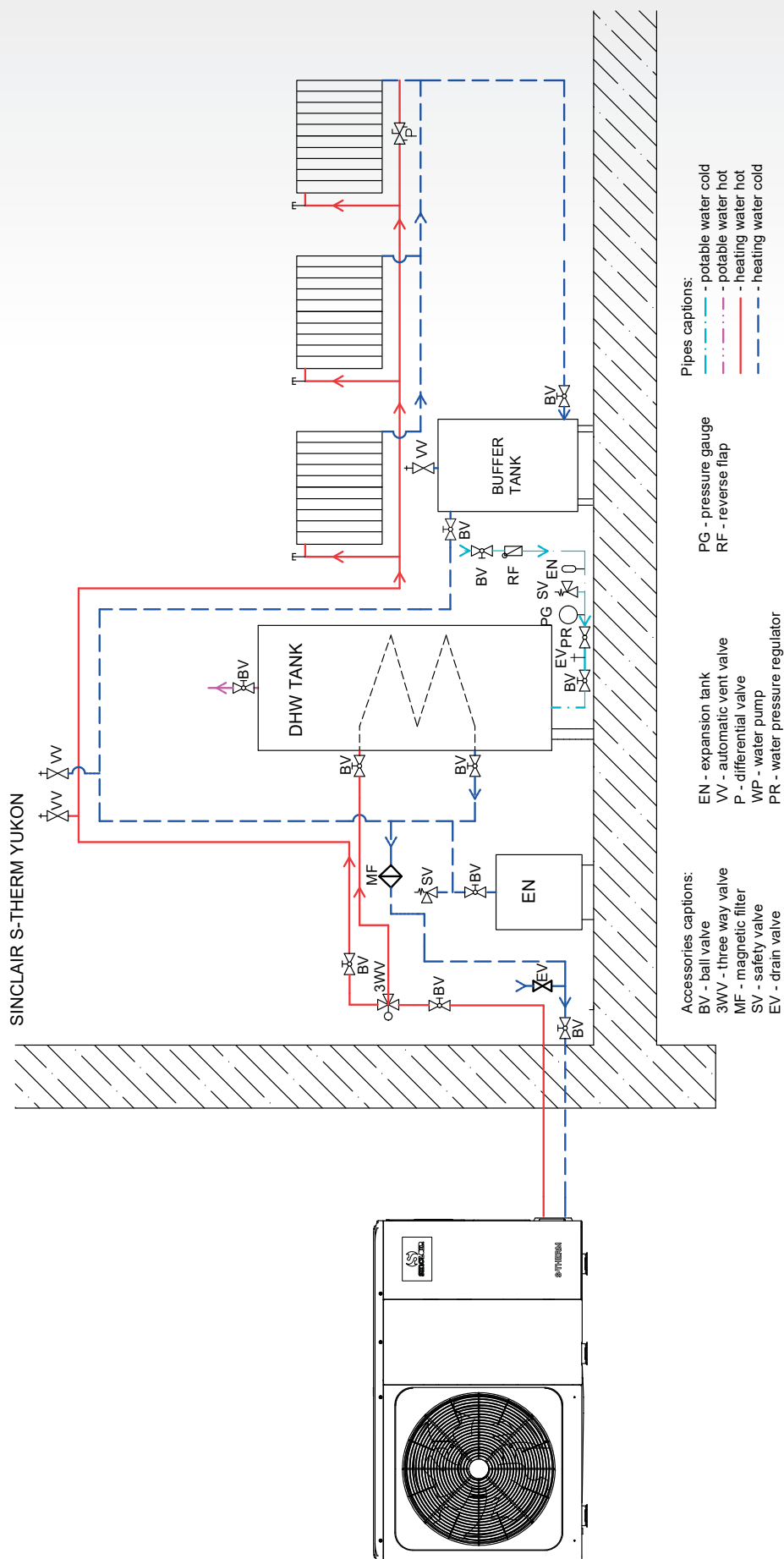


Attention: You can find a detailed wiring diagram in the installation manual.

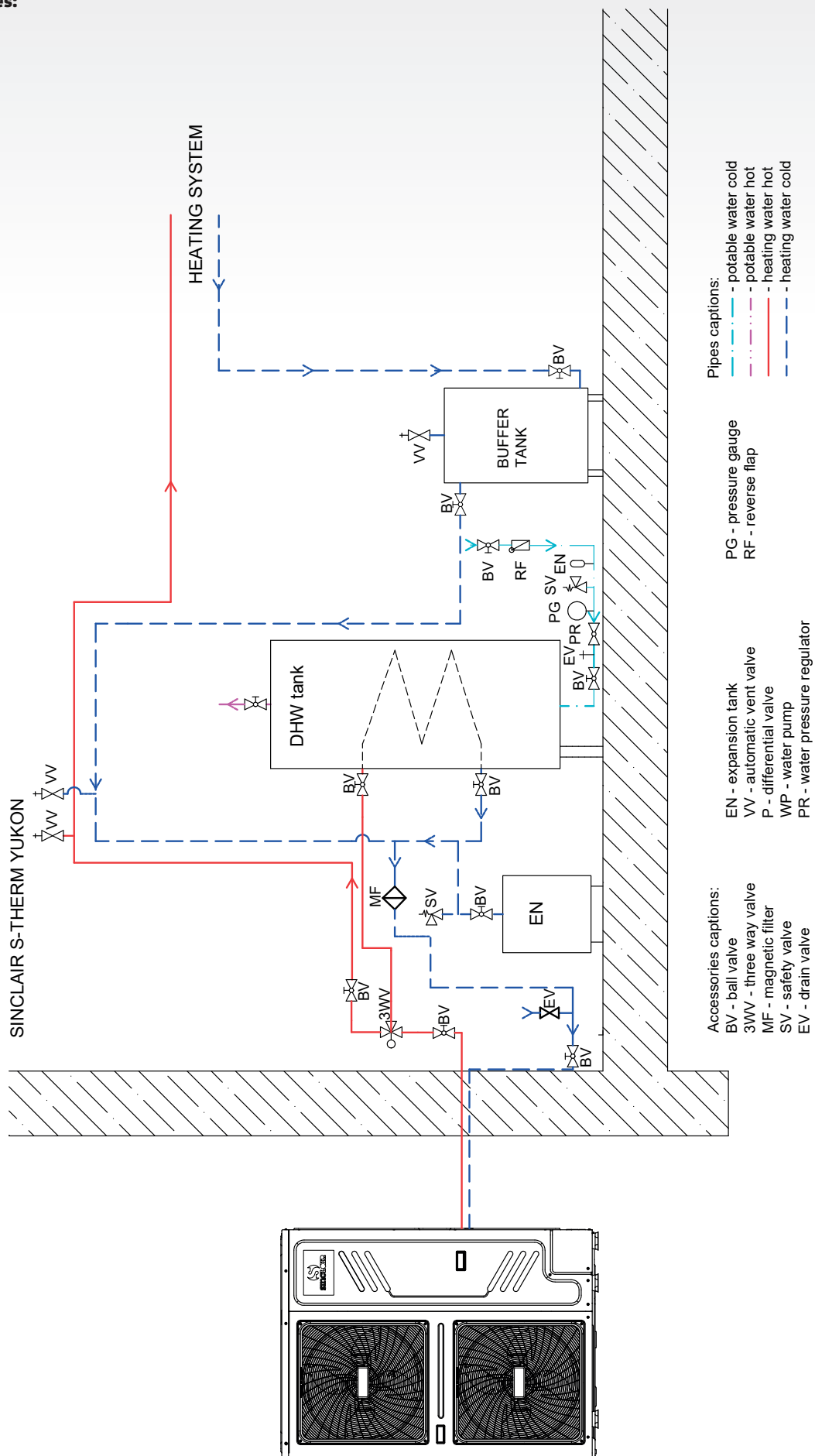
Wiring examples:

Wiring examples:

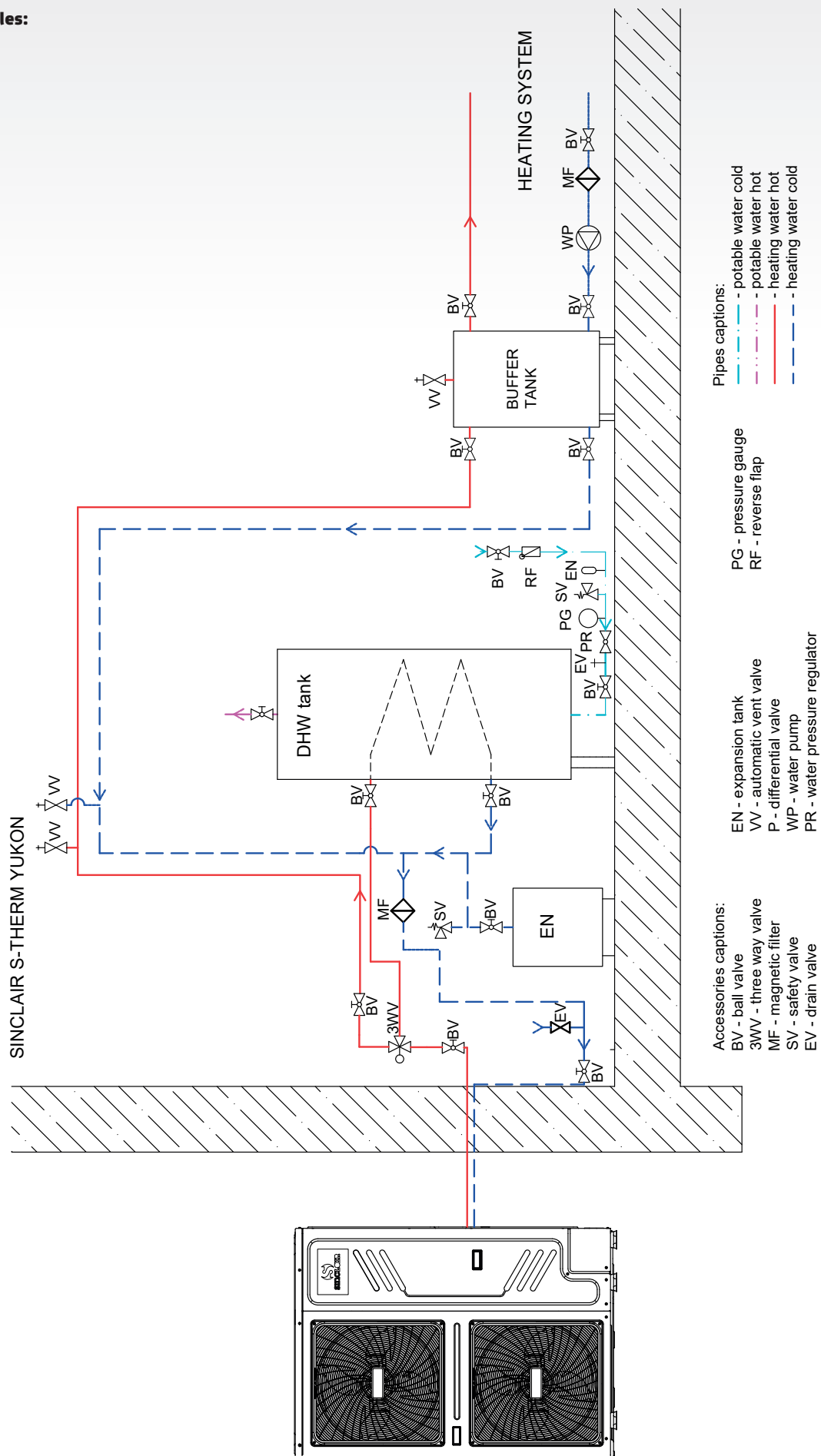
Wiring examples:

Wiring examples:

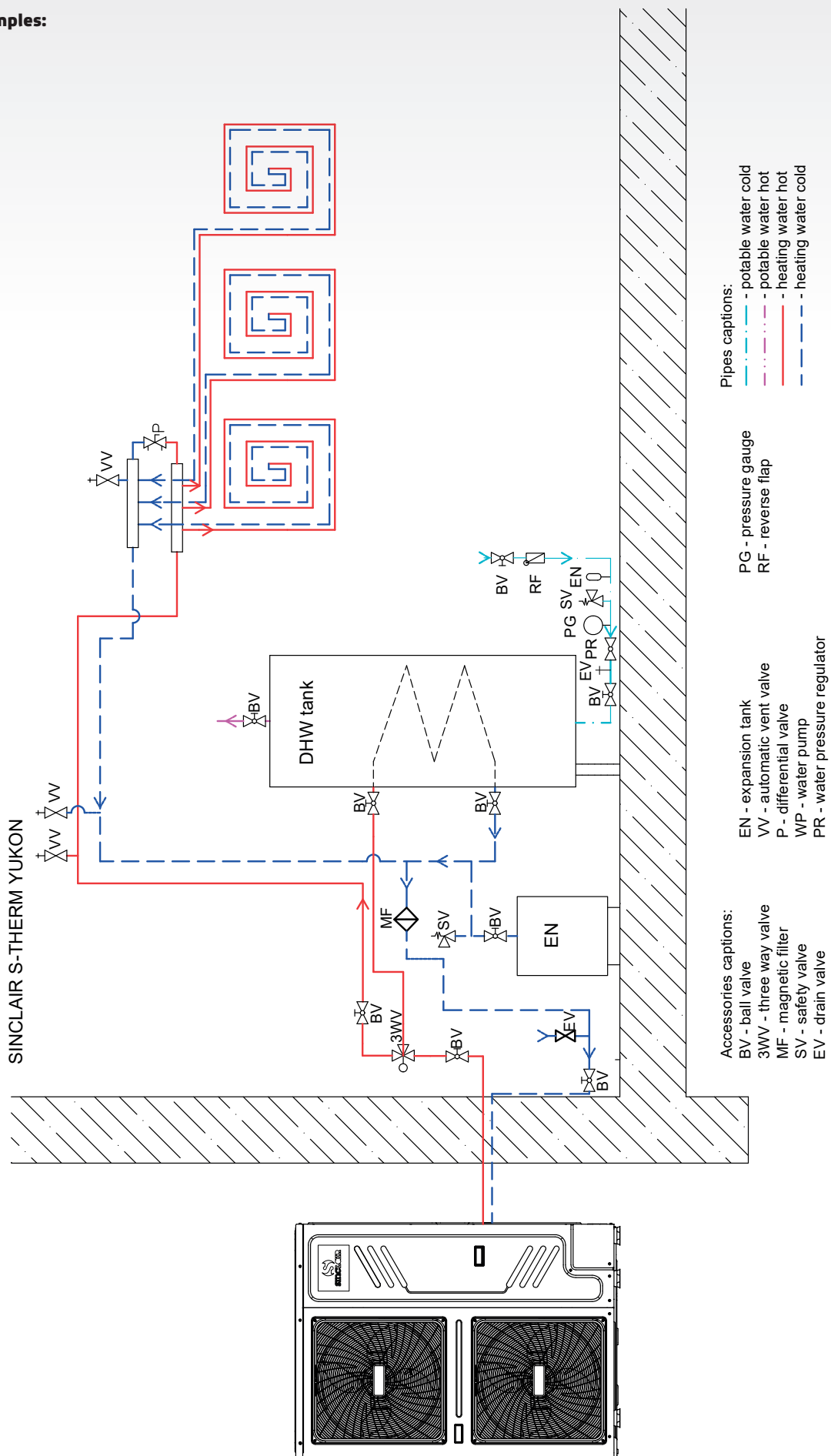
Wiring examples:



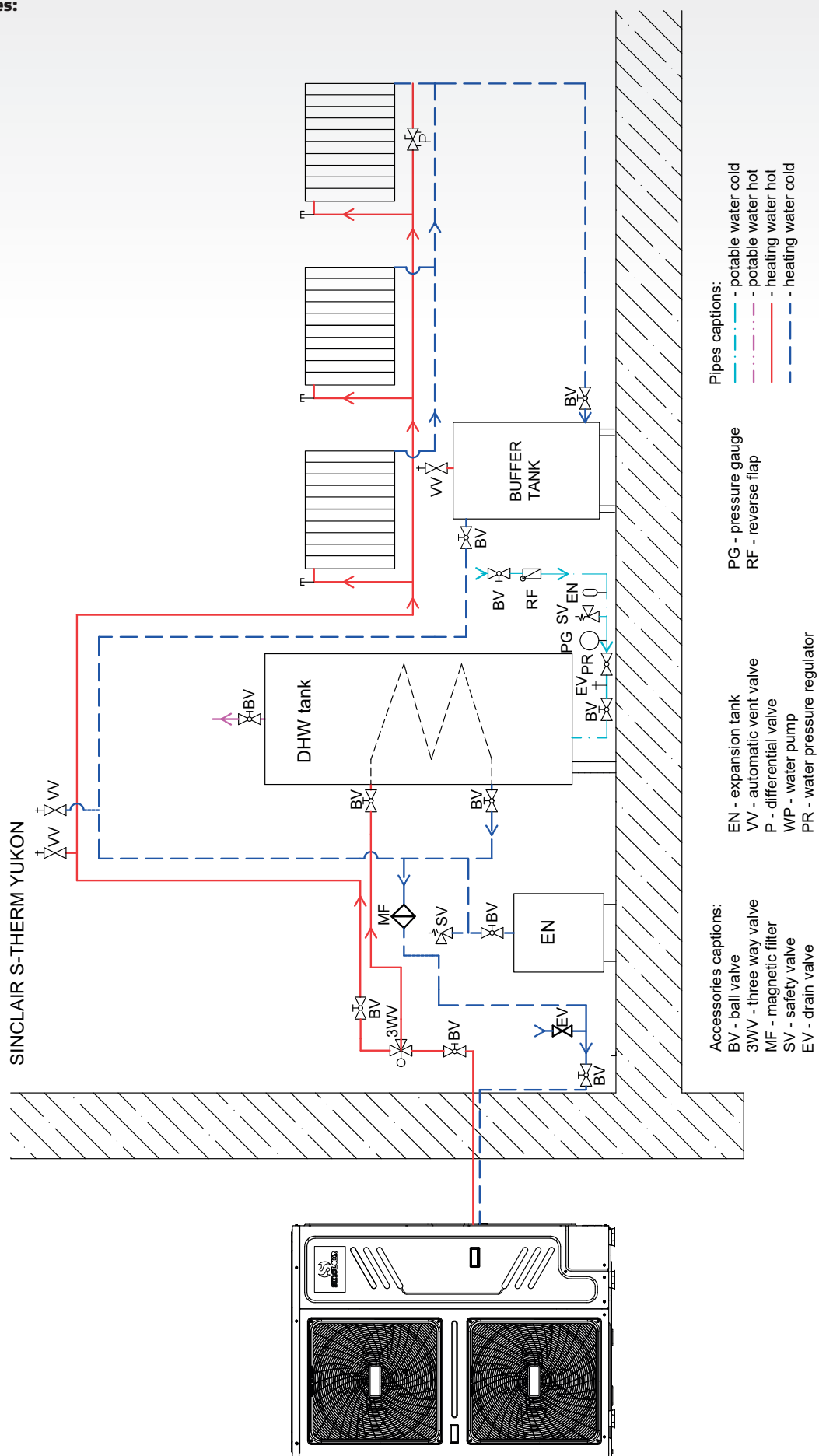
Wiring examples:



Wiring examples:



Wiring examples:



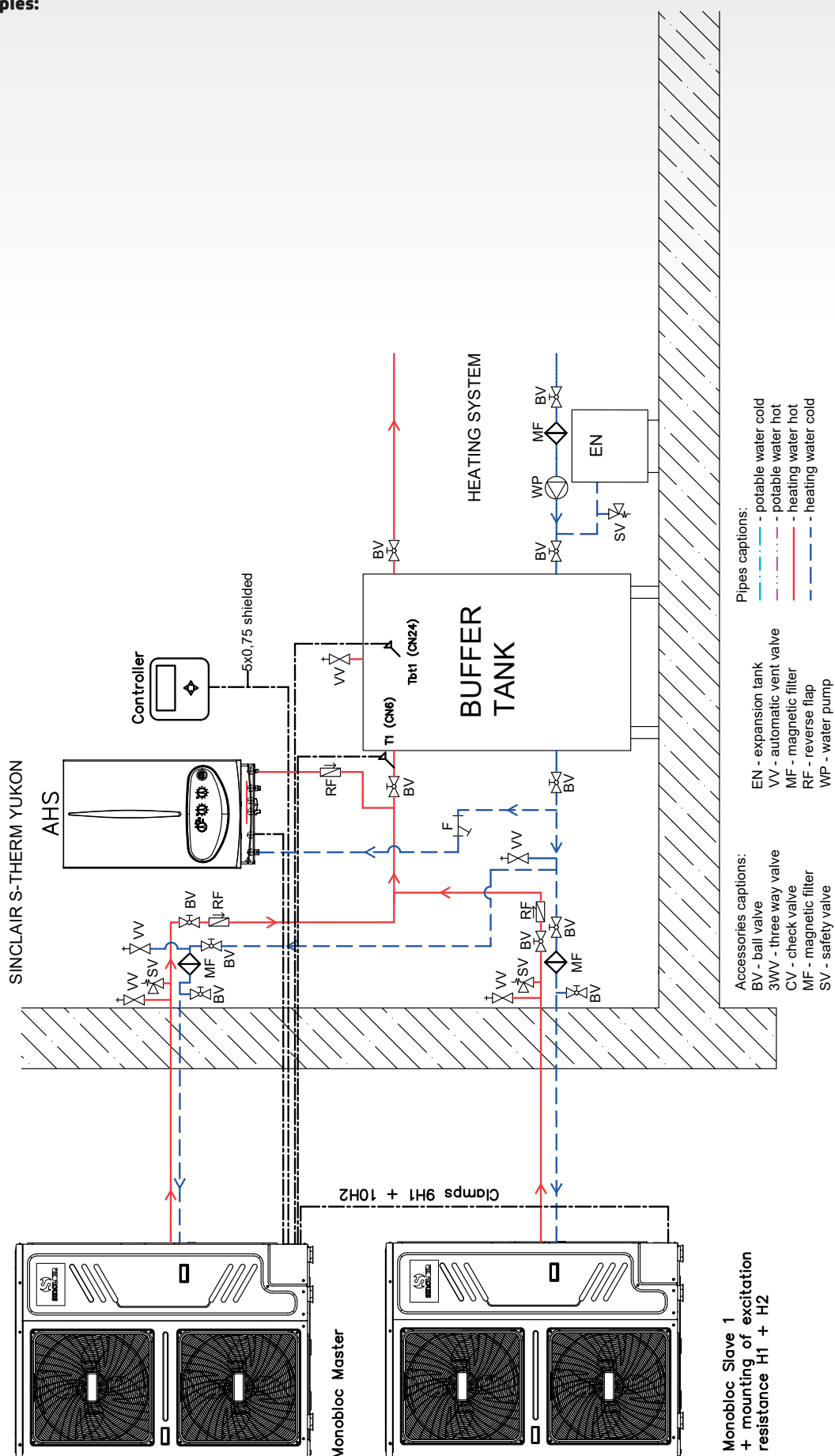
YUKON SERIES - CASCADE DIMENSION

Recommended common pipe diameter DN at medium and short distances (up to 7 m)

YUKON	Number of units in cascade			
	1	2	3	4
Yukon 12/14/16 kW	32	40	50	50
Yukon mono 18/22/26/30/35 kW	40	50	50	50

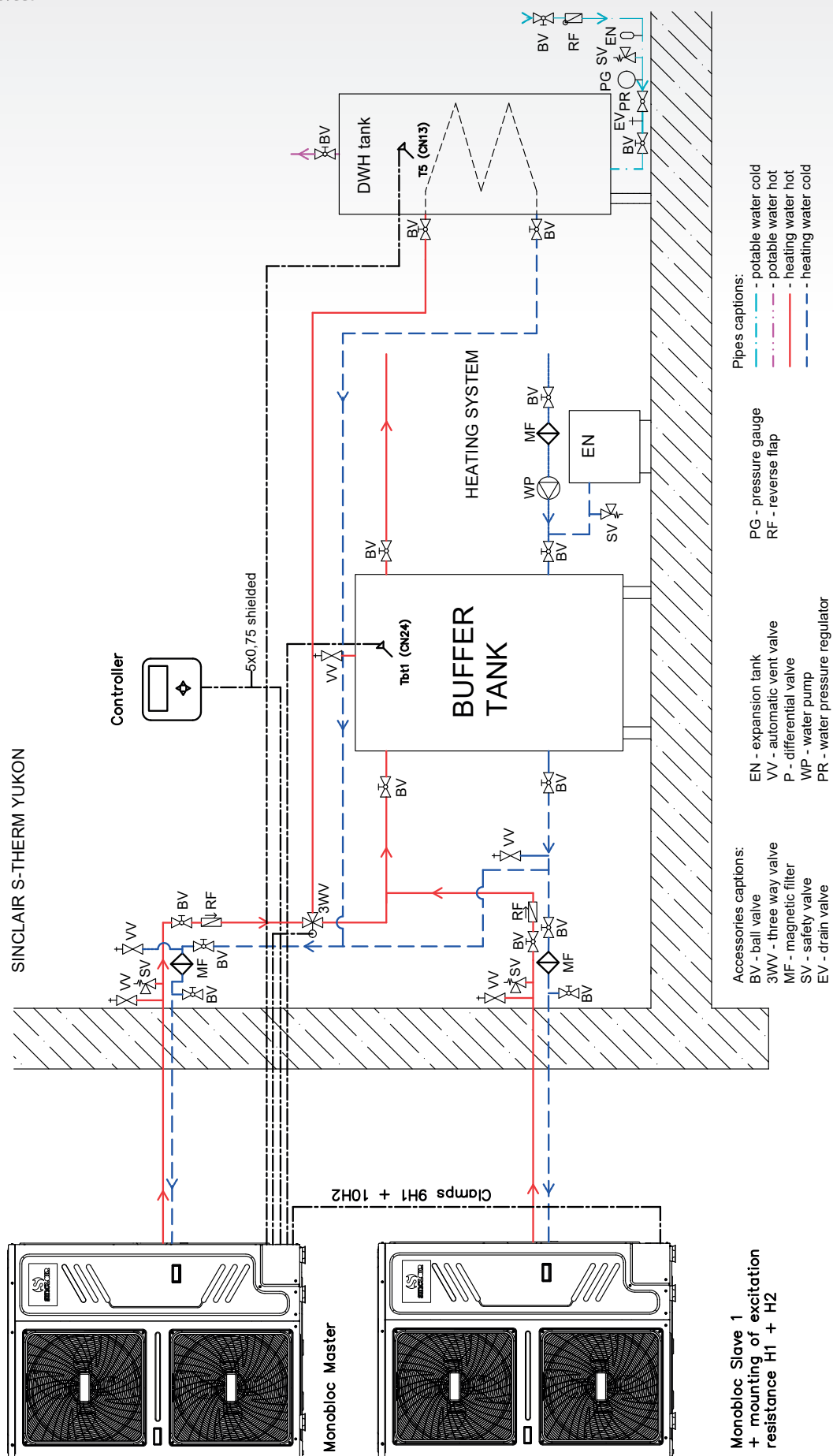
Recommended common pipe diameter DN at long distances (over 7 m)

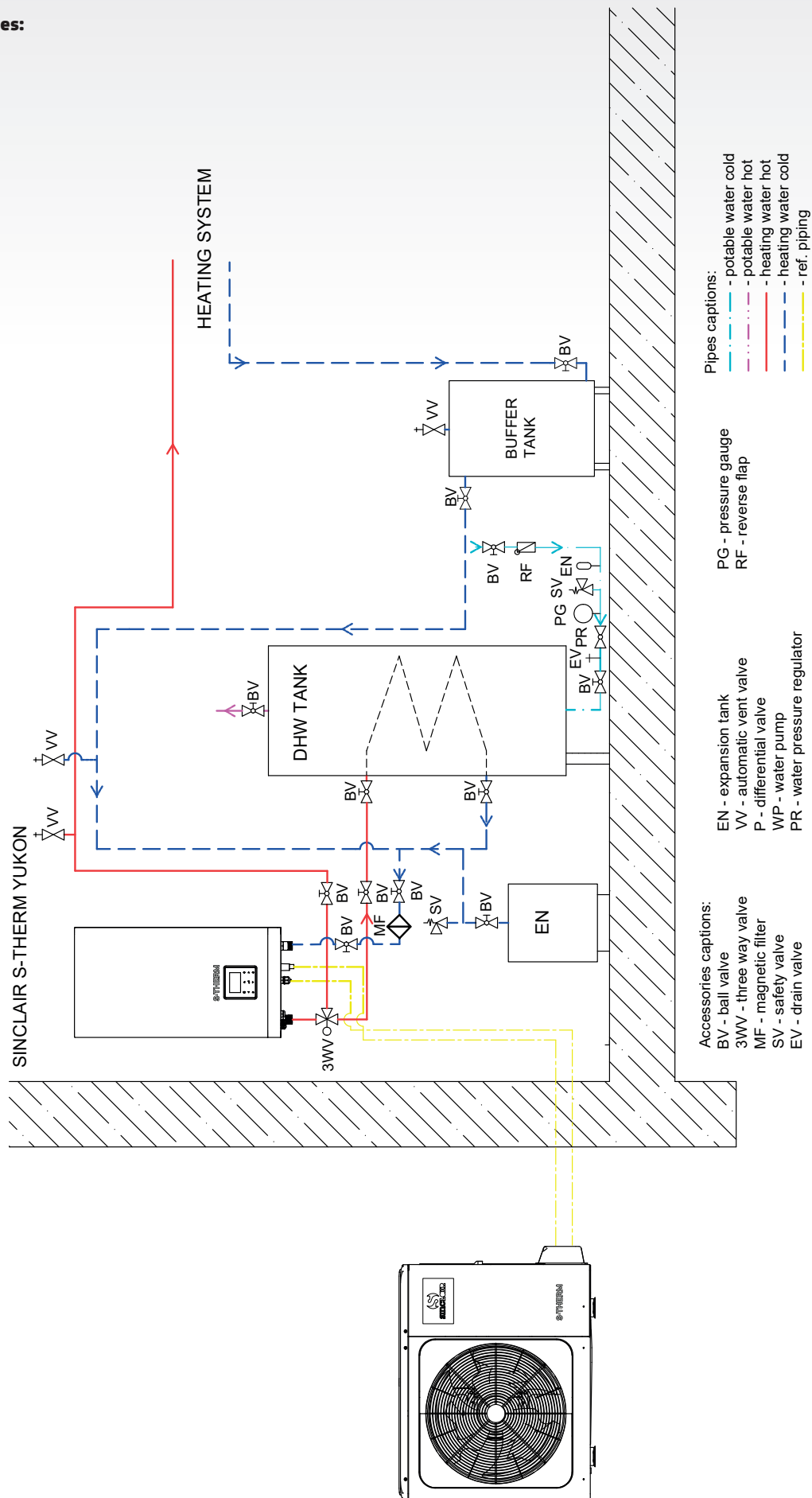
YUKON	Number of units in cascade			
	1	2	3	4
Yukon 12/14/16 kW	40	50	65	65
Yukon mono 18/22/26/30/35 kW	50	65	80	80

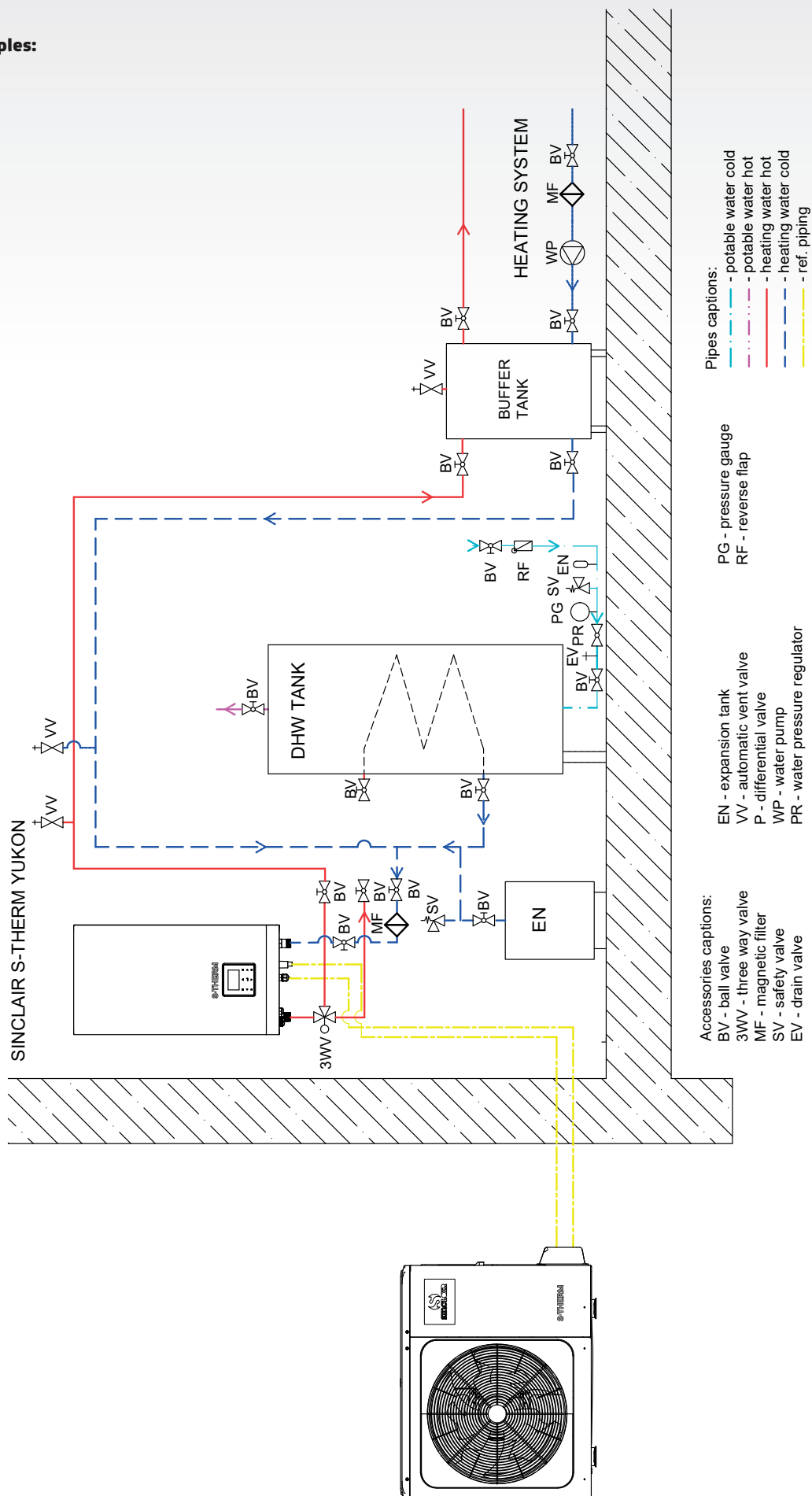
Wiring examples:

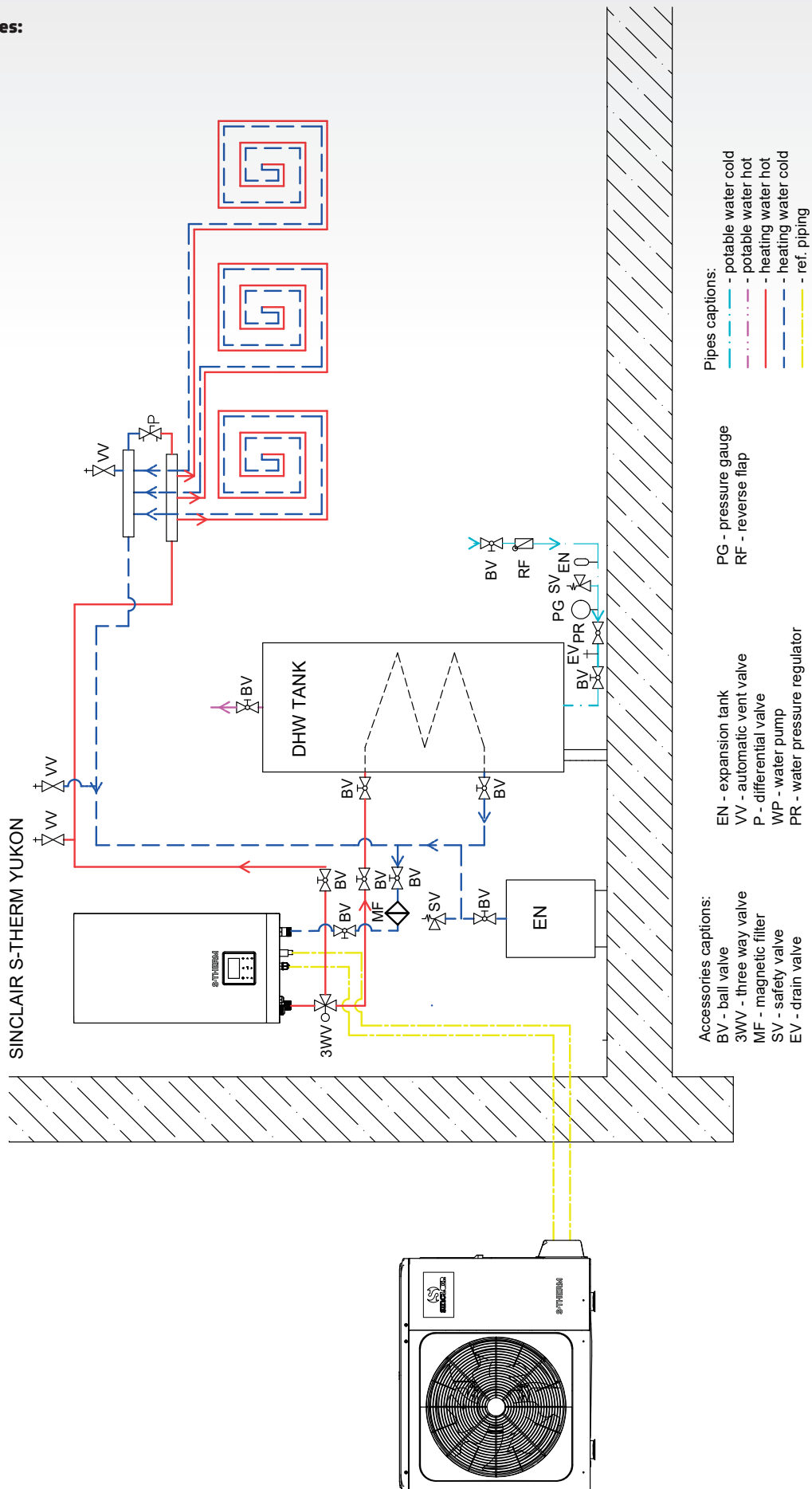
[illegible]

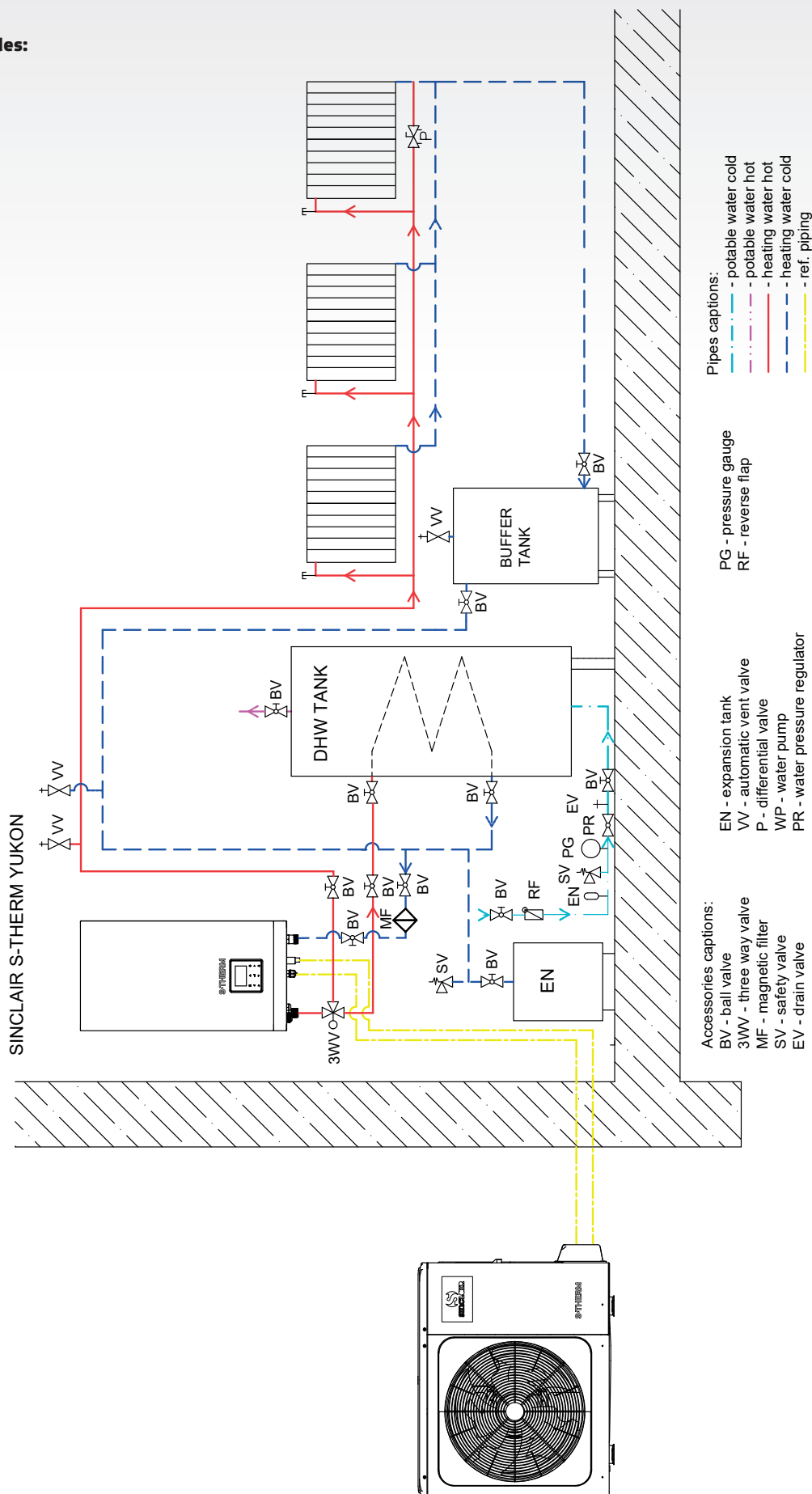
Wiring examples:



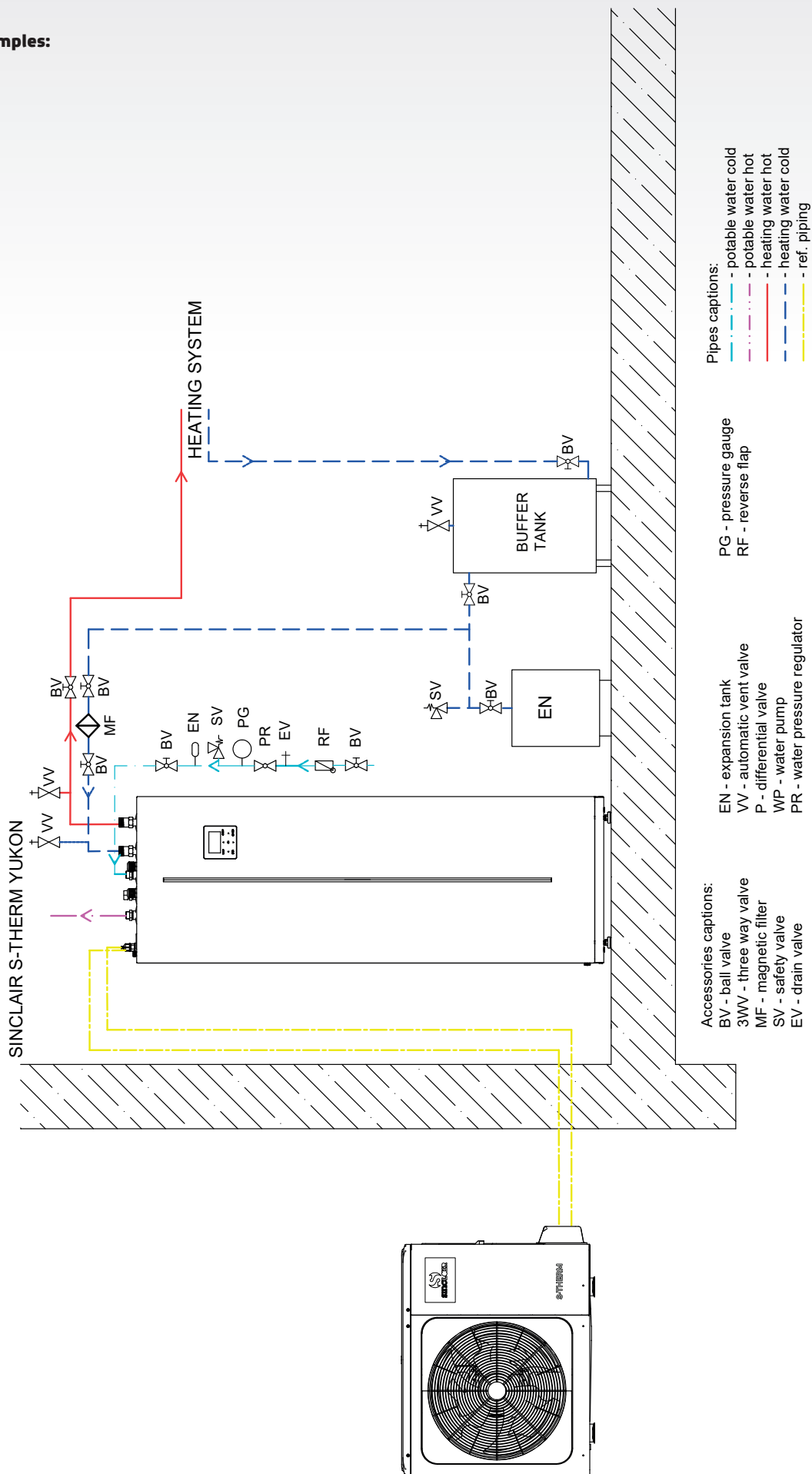
Wiring examples:

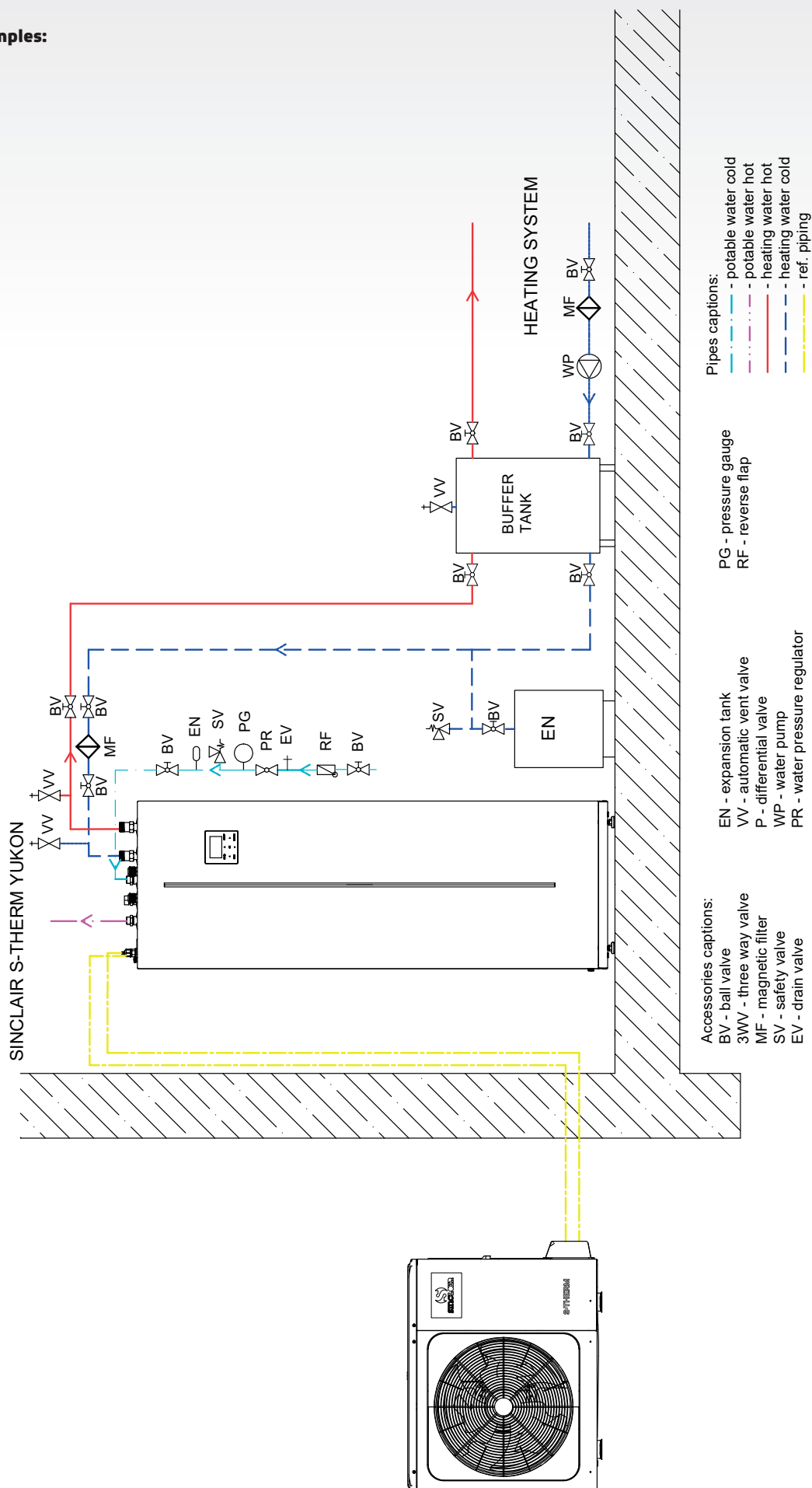
Wiring examples:

Wiring examples:

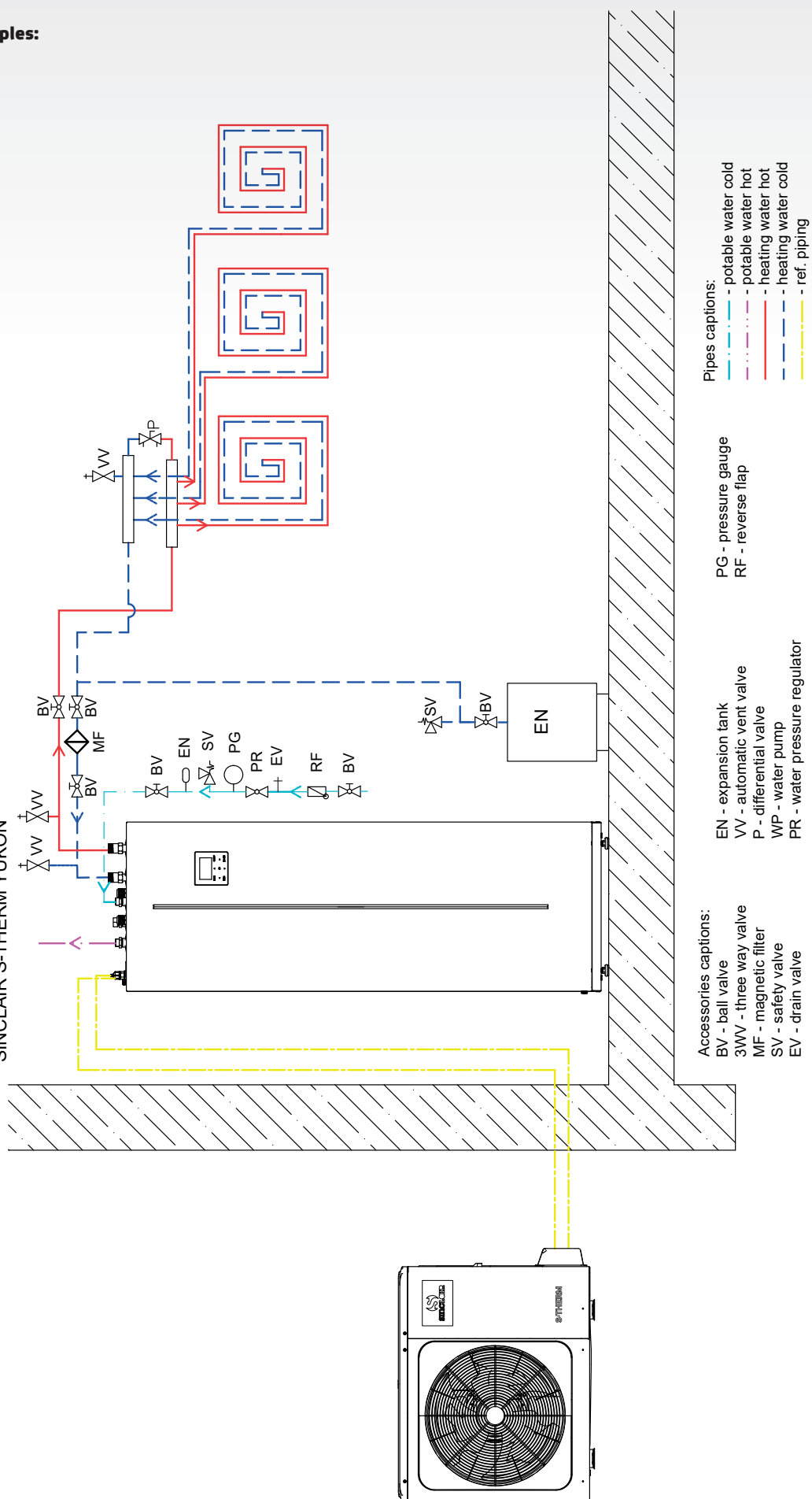
Wiring examples:

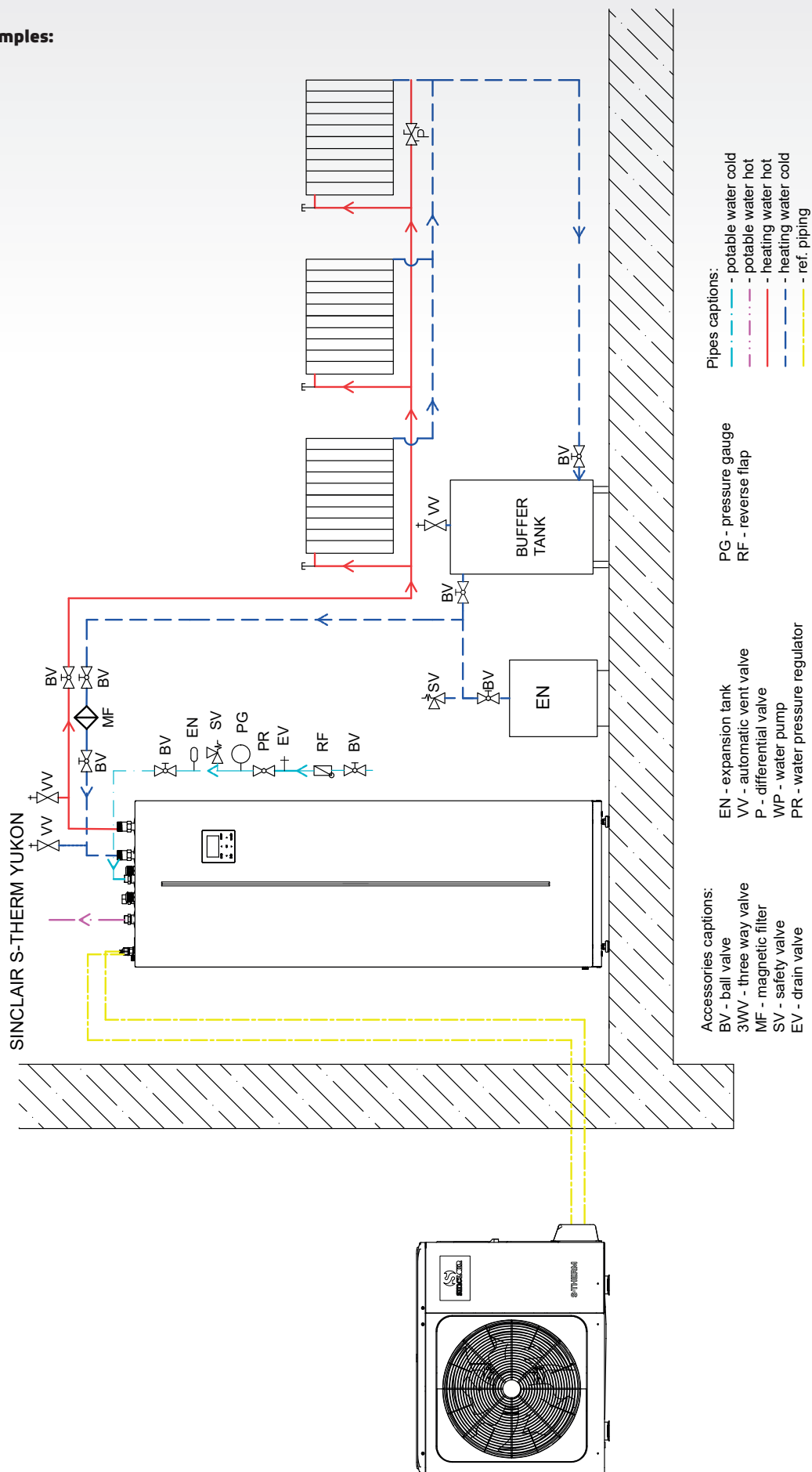
Wiring examples:



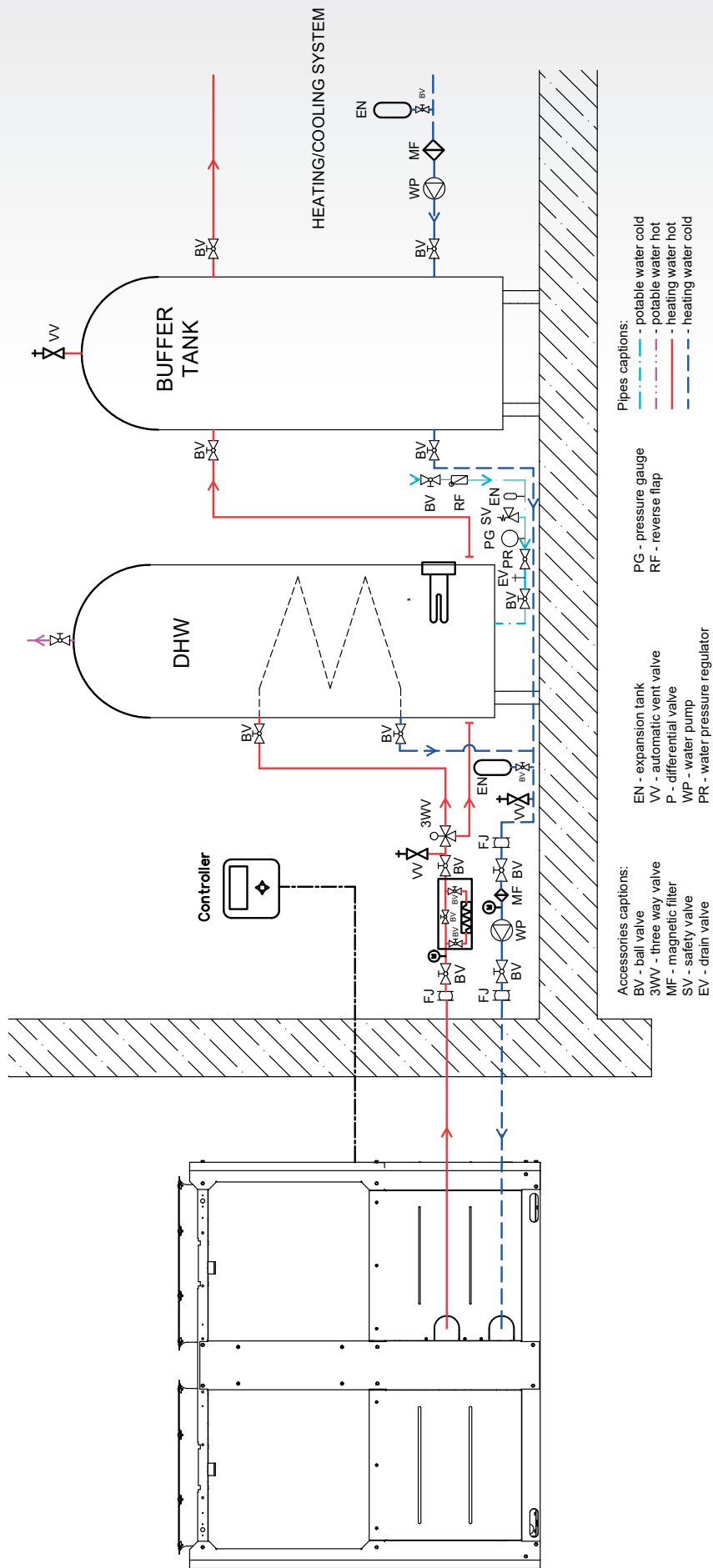
Wiring examples:

SINCLAIR S-THERM YUKON



Wiring examples:

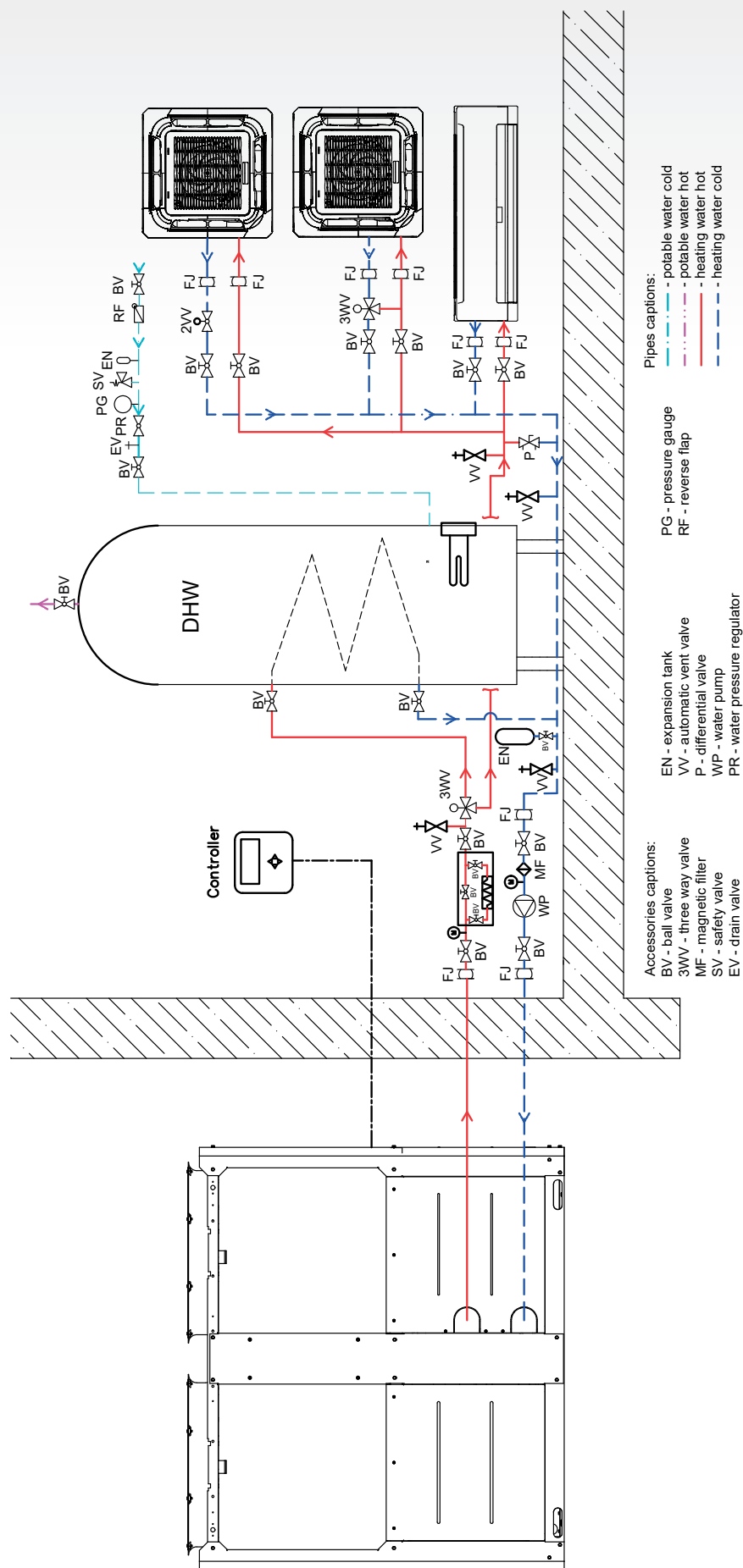
Wiring examples:

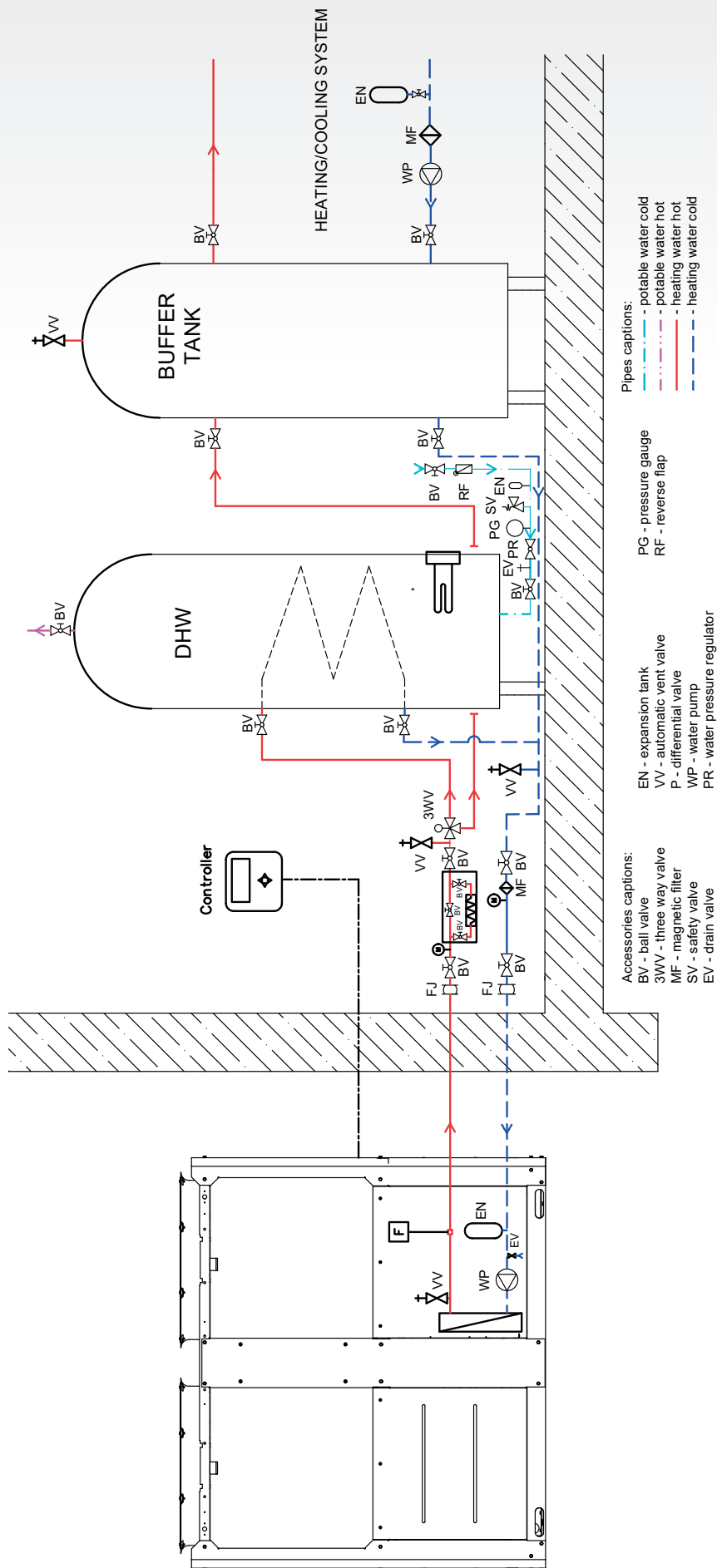


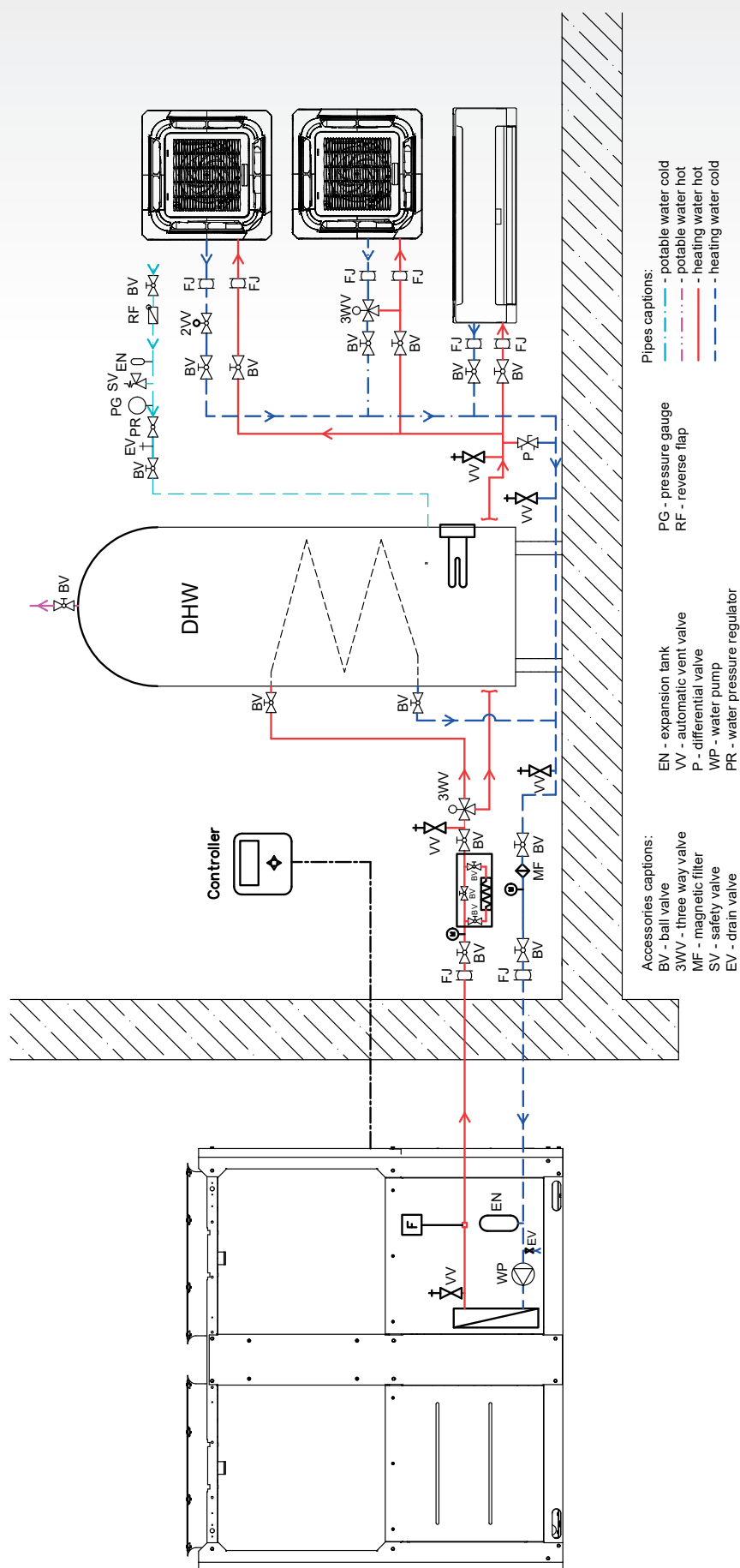
YUKON SERIES - HEATING SYSTEM

COMMERCIAL MONOBLOC R32

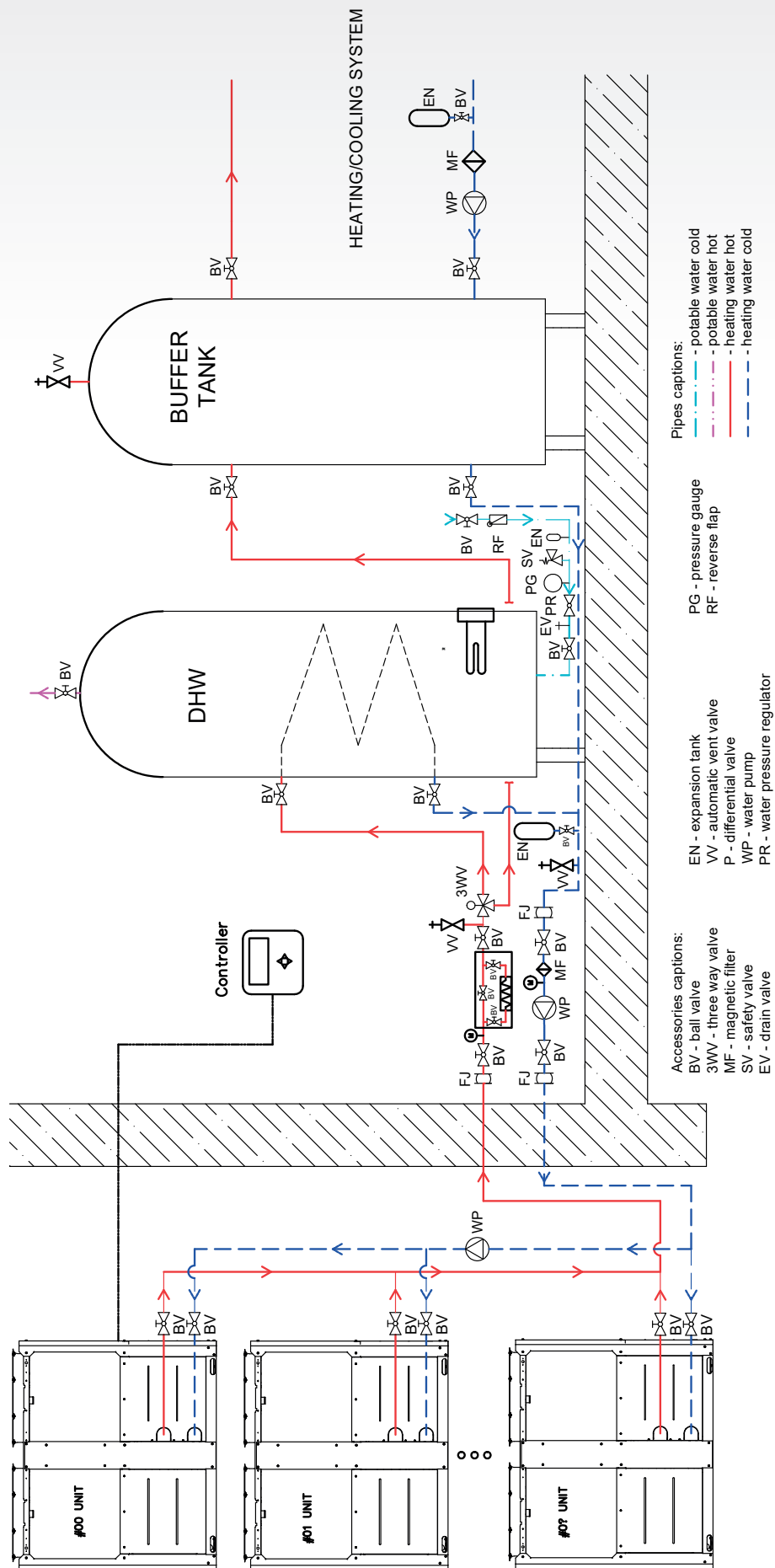
Wiring examples:



Wiring examples:

Wiring examples:

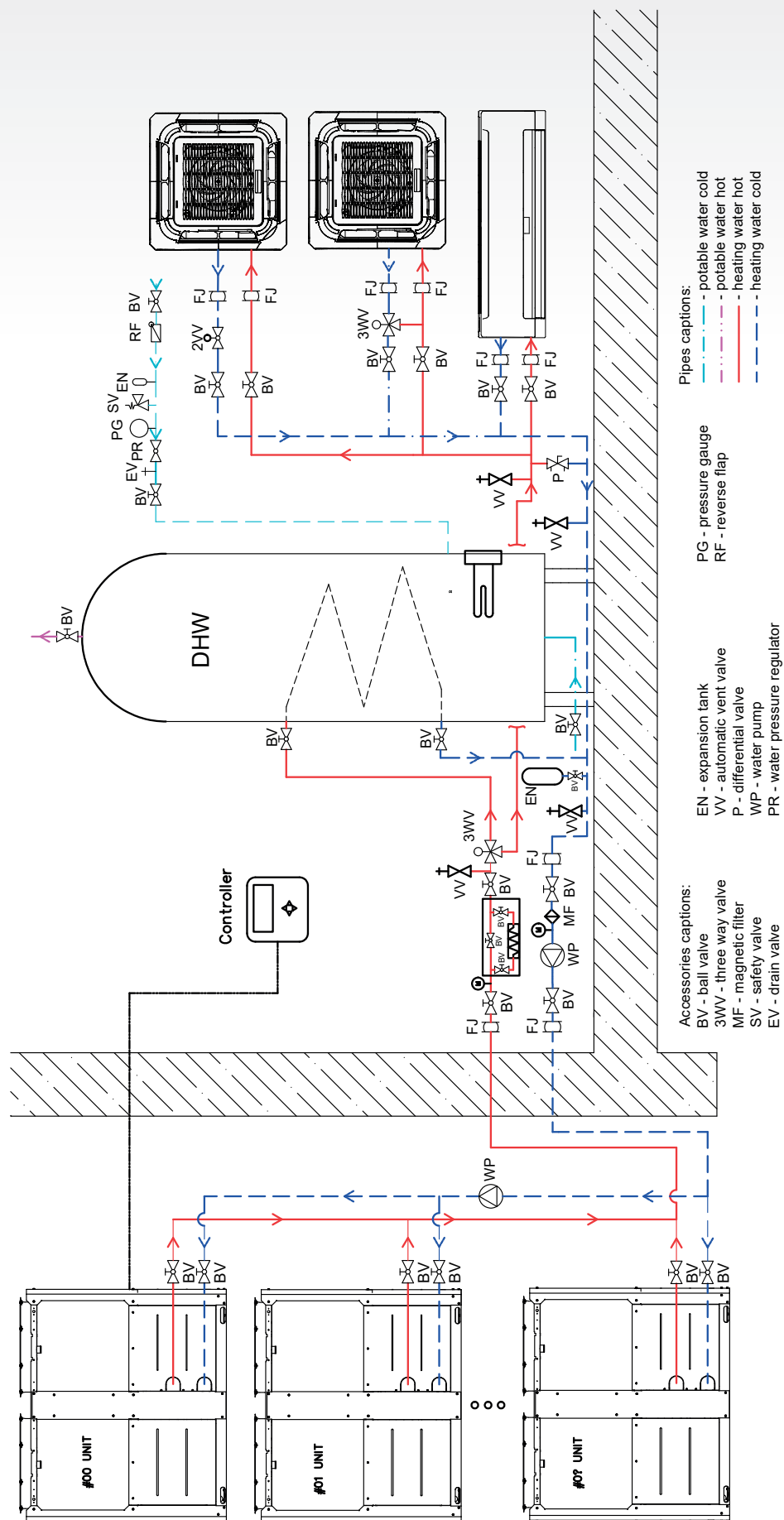
Wiring examples:



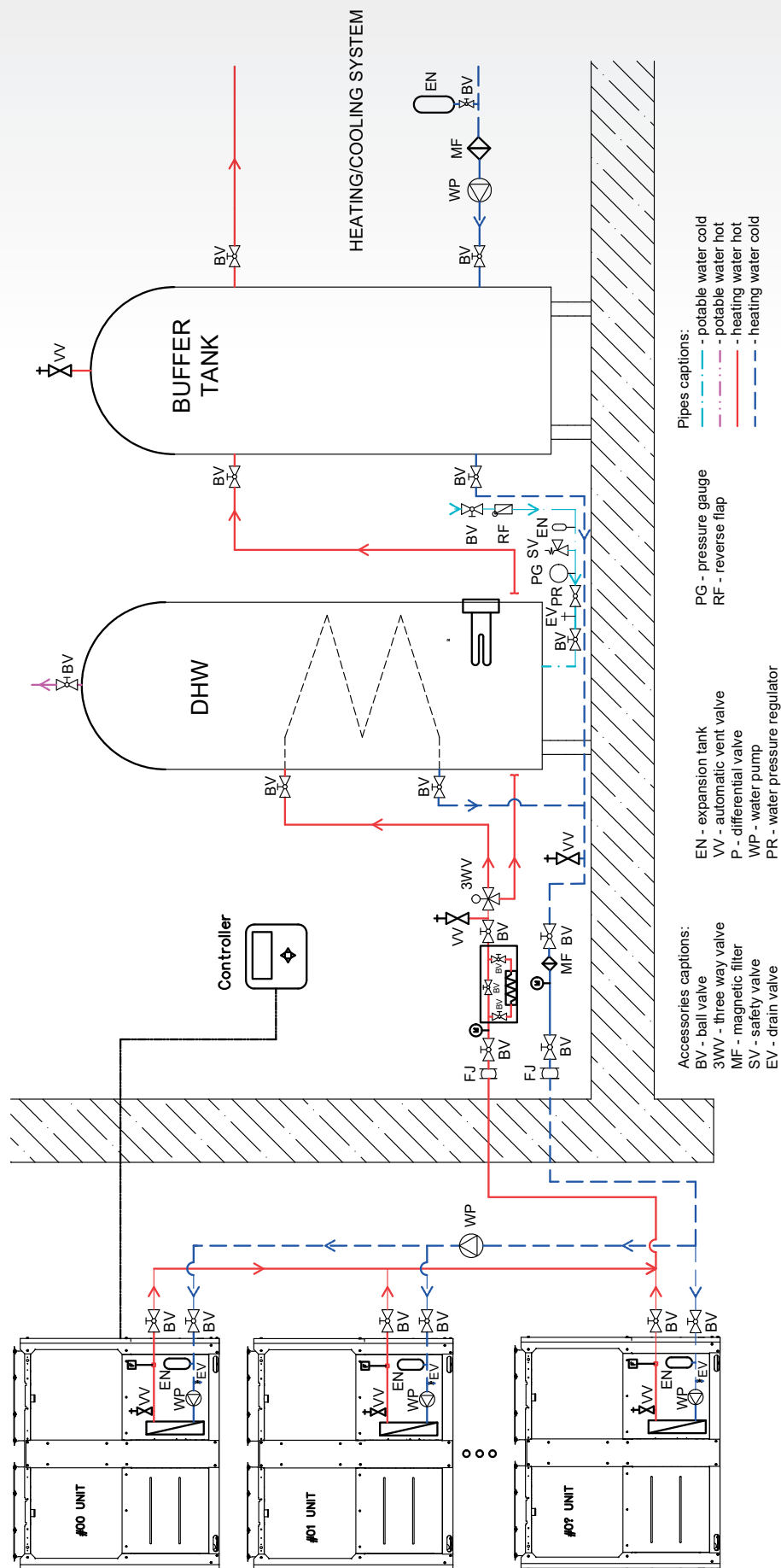
YUKON SERIES - HEATING SYSTEM

COMMERCIAL MONOBLOC R32 - CASCADE

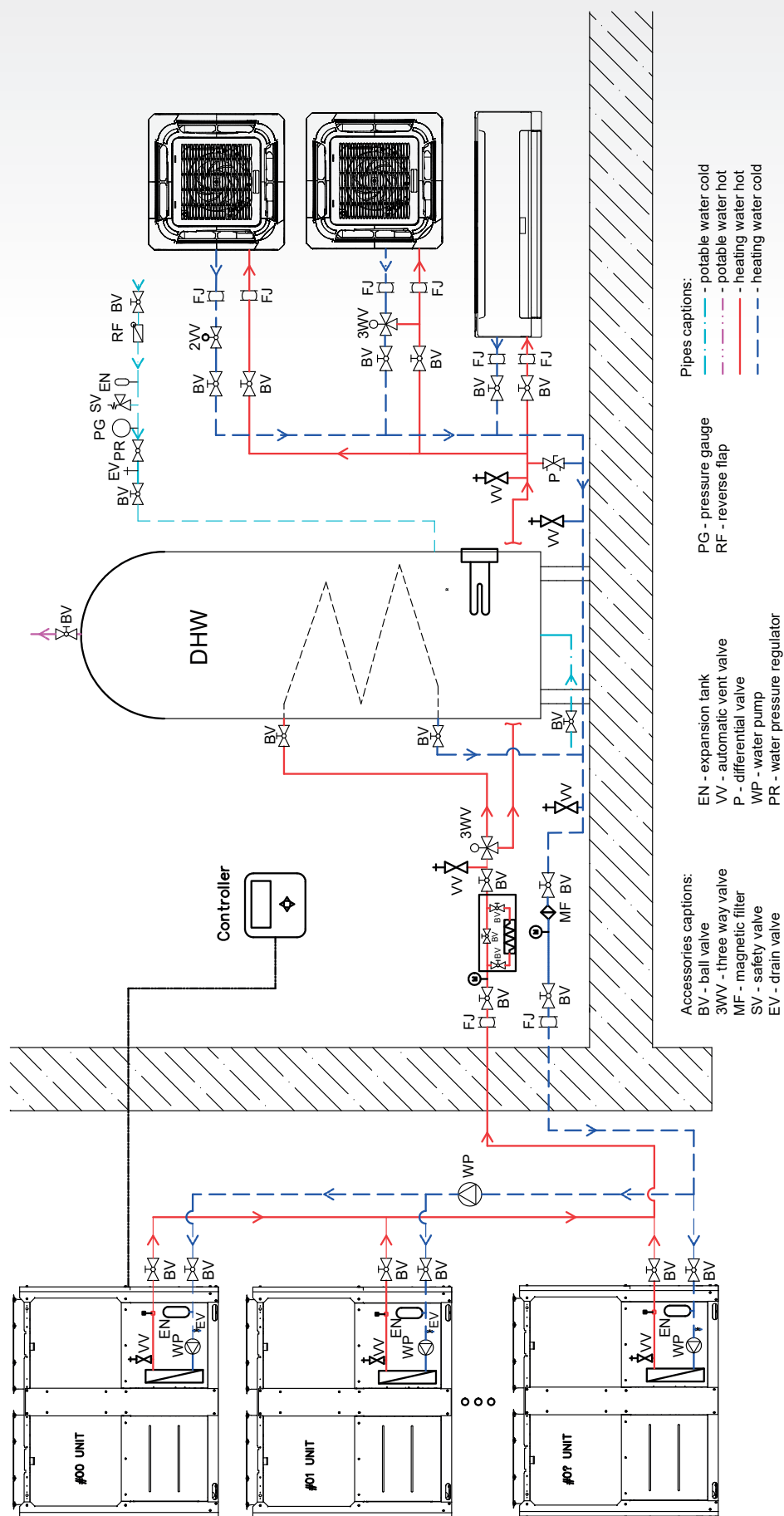
Wiring examples:



Wiring examples:

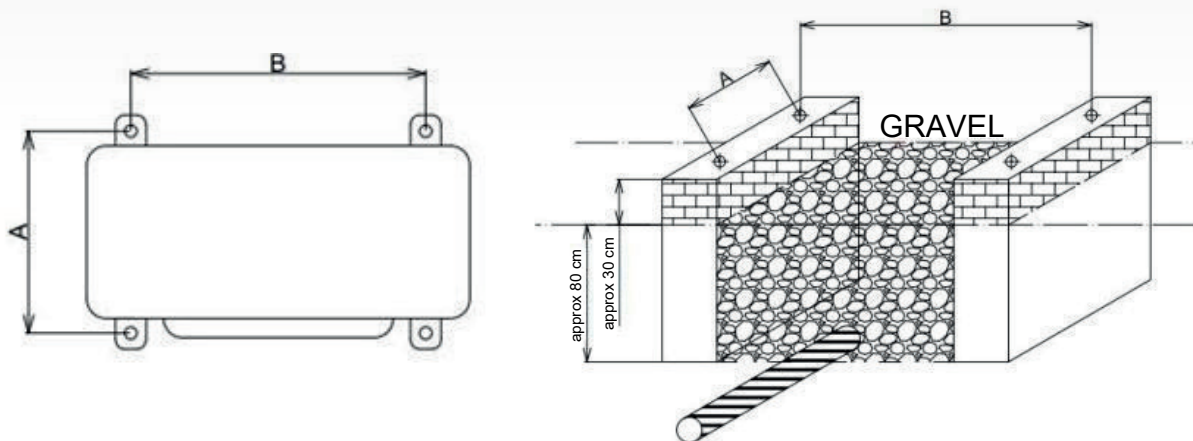


Wiring examples:



Base for outdoor units:**Split**

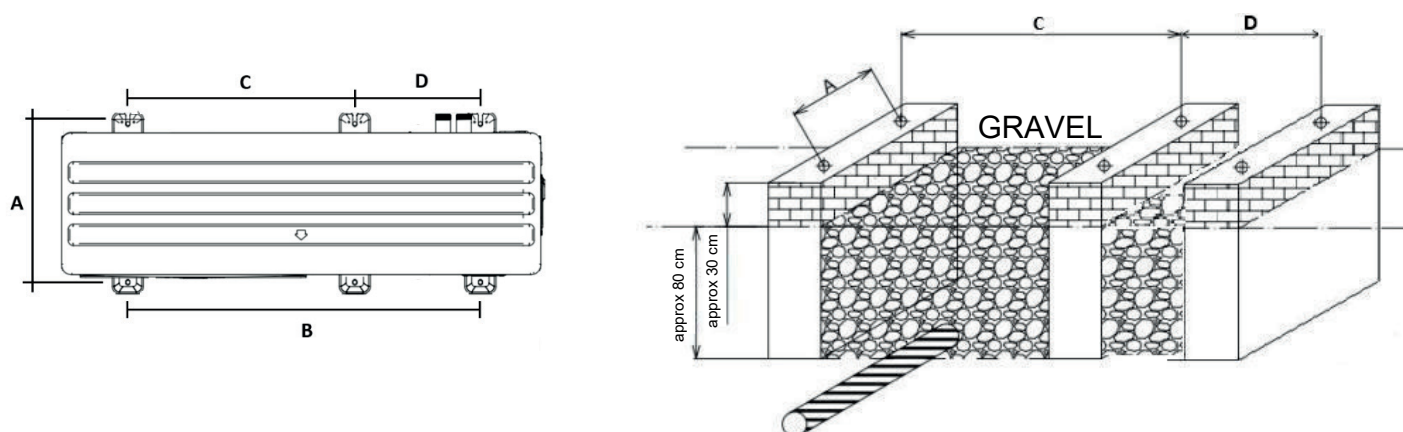
Outdoor unit model	A [mm]	B [mm]
MSH-60EB	375	663
MSH-80EB, MSH-100EB, MSH-120EB-3, MSH-140EB-3, MSH-160EB-3	456	656



Optional condensate drain

Monobloc

Monobloc model	A [mm]	B [mm]	C [mm]	D [mm]
SMHM-60B, SMHM-60B/3	375	1023	644	379
SMHM-80B, SMHM-100B, SMHM-120B-3, SMHM-140B-3, SMHM-160B-3, SMHM-80B/3, SMHM-100B/3, SMHM-120B-3/9, SMHM-140B-3/9, SMHM-160B-3/9	458	1019	656	363
SMHM-180B-3, SMHM-220B-3, SMHM-260B-3, SMHM-300B-3	494	874	668	206
SMHM-60P, SMHM-60P/3	375	1023	644	379
SMHM-80P, SMHM-100P, SMHM-120P-3, SMHM-140P-3, SMHM-160P-3, SMHM-80P/3, SMHM-100P/3, SMHM-120P-3/9, SMHM-140P-3/9, SMHM-160P-3/9	456	1019	656	363
SMHM-260P-3, SMHM-300P-3, SMHM-350P-3	453	1019	656	363



Optional condensate drain

SPLIT WATER HEATERS

SPLIT WATER HEATERS

MODEL			SWH-35ERA2				
Twater inlet 15°C Twater outlet 55°C T ambient 20°C	Nominal heating power	kW	3,5 (1,8-3,7)				
	Nominal rated input	kW	0,83(0,36-0,91)				
	COP	°C	4,1				
Domestic hot water profile		-	L				
COP for DHW (A7/W10)		-	3,08				
Energy class		-	A+				
Water heating efficiency		%	≤130				
Annual electricity consumption (for average climate conditions)		kWh	795				
Max. rated input		W	2000+1500 E-heater				
Water output temperature		°C	35-55				
Power supply		-	220-240 V~, 50 Hz				
Insulation layer		-	I				
Degree of coverage		-	IPX4				
Refrigerant	Type	-	R410A				
	Ammount	kg	1,4				
Dimension of unit	W×D×H	mm	842×320×591				
Dimension of package	W×D×H	mm	948×363×660				
Weight brutto/netto		kg	44,5/38,5				
Acoustic power level		dB(A)	63				
Acoustic pressure level in 1 meter		dB(A)	52				
Addition of refrigerant over 10 m		g/m	22				
Maximum elevation		m	5				
Standard pipe length		m	10				
Maximum pipe length		m	20				
Operating range		°C	-25-45				
Power supply cable		mm²	2,5				
Circuit breaker		A	16				

MODEL			SWH-200DE				
Volume		l	185				
Power supply of E-heater		-	220-240 V~, 50 Hz				
Power of E-heater		W	1500				
Dimension of unit (W×D×H)		mm	462×462×2000				
Dimension of package (W×D×H)		mm	2108×583×565				
Weight brutto/netto		kg	83/72,5				
Outer diameter of connecting pipe	Gas	inch	3/8"				
	Liquid		15/64"				
Pipe diameter (water) - outlet			1/2"				
Tank material		-	enamel				
STANDARD ACCESSORIES							
Installation and user manual		-	Yes				
Wired controller		-	Yes				
Cable of controller		-	Yes				
Cover for controller		-	Yes				
Copper piping with insulation		-	Yes				
Drain hose adapter		-	Yes				
Drain hose		-	Yes				
Temperature sensor of DHW		-	Yes				

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R410A ((50% HFC-32, 50% HFC-125), GWP of refrigerant used: 2088.

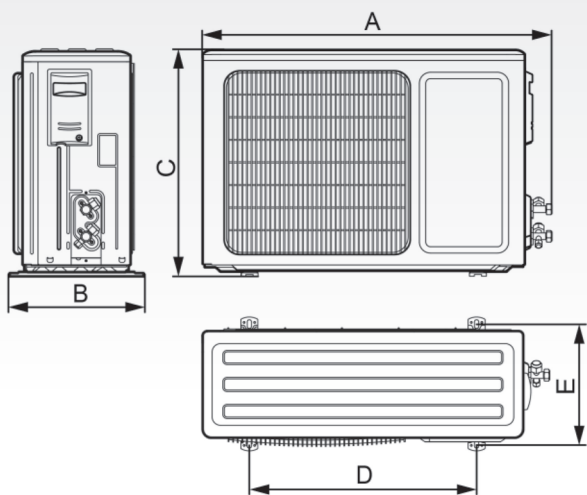
Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

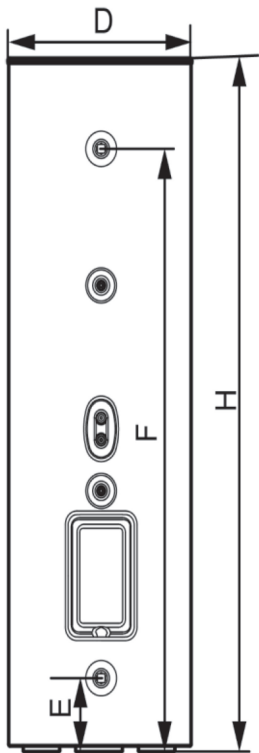
APPEARANCE AND DIMENSIONS OF SPLIT WATER HEATERS

SWH-35ERA2



Model	A	B	C	D	E
SWH-35ERA2	842	320	591	540	286

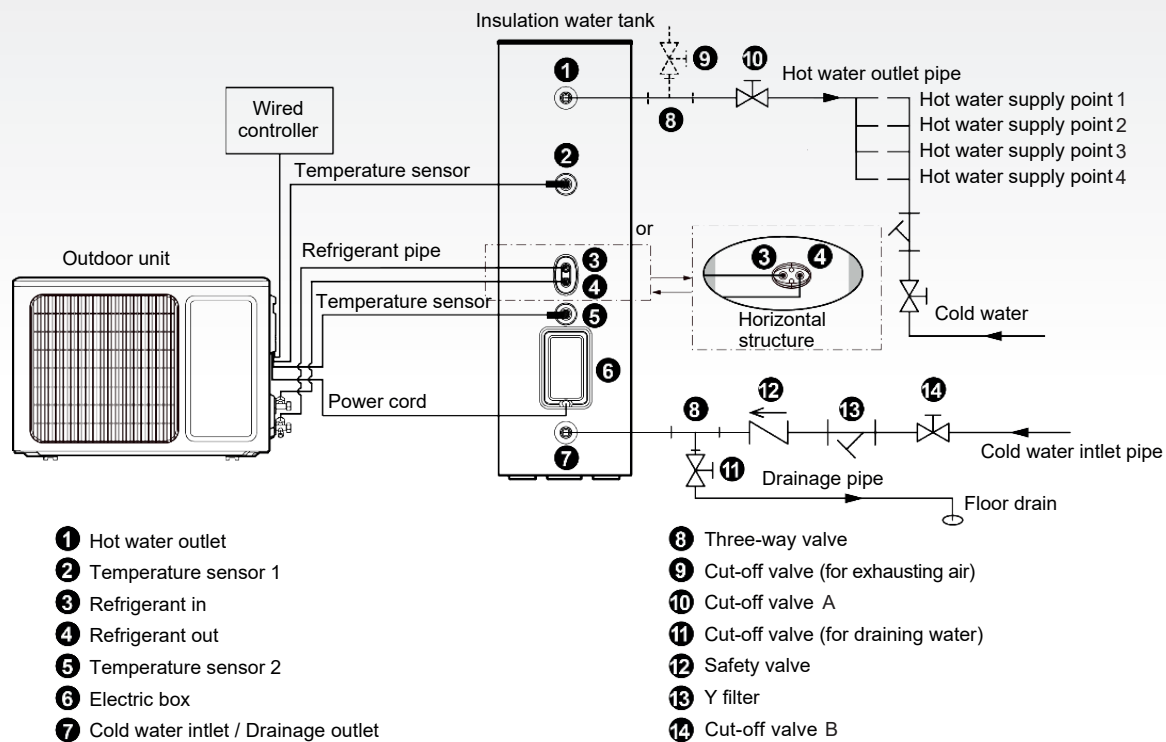
SWH-200DE



Parameter	
D	462
H	2000
F	1797
E	166
Water inlet (internal thread)	G1/2
Water outlet (internal thread)	G1/2
Gas (internal thread)	Ø9,52
Liquid (internal thread)	Ø6

SPLIT WATER HEATERS - WIRING DIAGRAM

SWH-35ERA2+SWH-200DE



MONOBLOC WATER HEATERS

MONOBLOC WATER HEATERS

MODEL			SWH-190IRE2	SWH-190IRES2	SWH-300IRE2	SWH-300IRES2	
Mode			Hybrid/E-heater				
Operating temperature range (Hybrid)		°C	-7 ~ 43				
Operating temperature range (E-heater)		°C	-20 ~ 43				
Output water temperature		°C	38 ~ 70				
Power supply		V/Ph/Hz	220-240 / 1 / 50				
Max. current		A	9,1		9,8		
Max. Rated input		kW	2,1		2,25		
Twater inlet 15°C Twater outlet 45°C T ambient 15°C	Power of water heating	kW	1,62		2,3		
	COP	-	3,86		4,34		
	Rated input	kW	0,42		0,53		
Starting current		A	22,2		33,7		
Energy class		-	A+				
Dimension of unit (d x h)		mm	Ø610 x 1830		Ø700 x 1930		
Dimension of package (w x h x d)		mm	680 x 2070 x 680		775 x 2200 x 745		
Weight		kg	114	131	138	158	
Acoustic pressure in 1 meter		dB (A)	36,6		38,2		
Compressor type		-	Rotary ON/OFF				
Refrigerant		type / ammount / t Eq. CO ₂	R134a / 1,1 / 1,57		R134a / 1,5 / 2,00		
Ammount of oil		ml	350				
Tank design pressure		MPa	1				
Type of expansion valve		-	Electronic				
Type of fan		-	Radial				
Available pressure head		Pa	25		45		
Air flow		m³ / h	270		414		
Pipe diameter at inlet		inch	3/4"				
Pipe diameter at outlet							
Solar exchanger input							
Solar exchanger output							
Max. solar heat exchanger pressure		MPa	1				
Solar exchanger area		m²	-	1,1	-	1,3	
Solar exchanger material		-	enamel				
Power of E-heater		kW	1,5				
Tank volume		l	176	168	284	272	
Tank material		-	enamel				
Isolation material		-	Polyurethane foam				
Insulation thickness		mm	50				
Maximum operating pressure		MPa	1				
Hot water heating time		h/min	3/53		4/22		
Colder climate	Domestic hot water profile	-	L		XL		
	η _{wh}	%	99		95		
	Annual consumption AEC	kWh	1032		1759		
	Daily consumption	kWh	4,93		8,24		
	COP EN 16147	-	2,36		2,32		
Average climate	Domestic hot water profile	-	L		XL		
	η _{wh}	%	115		123		
	Annual consumption AEC	kWh	890		1361		
	Daily consumption	kWh	4,24		6,4		
	COP EN 16147	-	2,76		3,01		
Warmer climate	Domestic hot water profile	-	L		XL		
	η _{wh}	%	130		148		
	Annual consumption AEC	kWh	785		1131		
	Daily consumption	kWh	3,72		5,32		
	COP EN 16147	-	3,13		3,59		
STANDARD ACCESSORIES							
Installation and owner's manual			yes				
OPTIONAL ACCESSORIES							
Cables and connectors for solar connection			SWH2-CBL				

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R134a (single component refrigerant HFC-134a), GWP of refrigerant used: 1430.

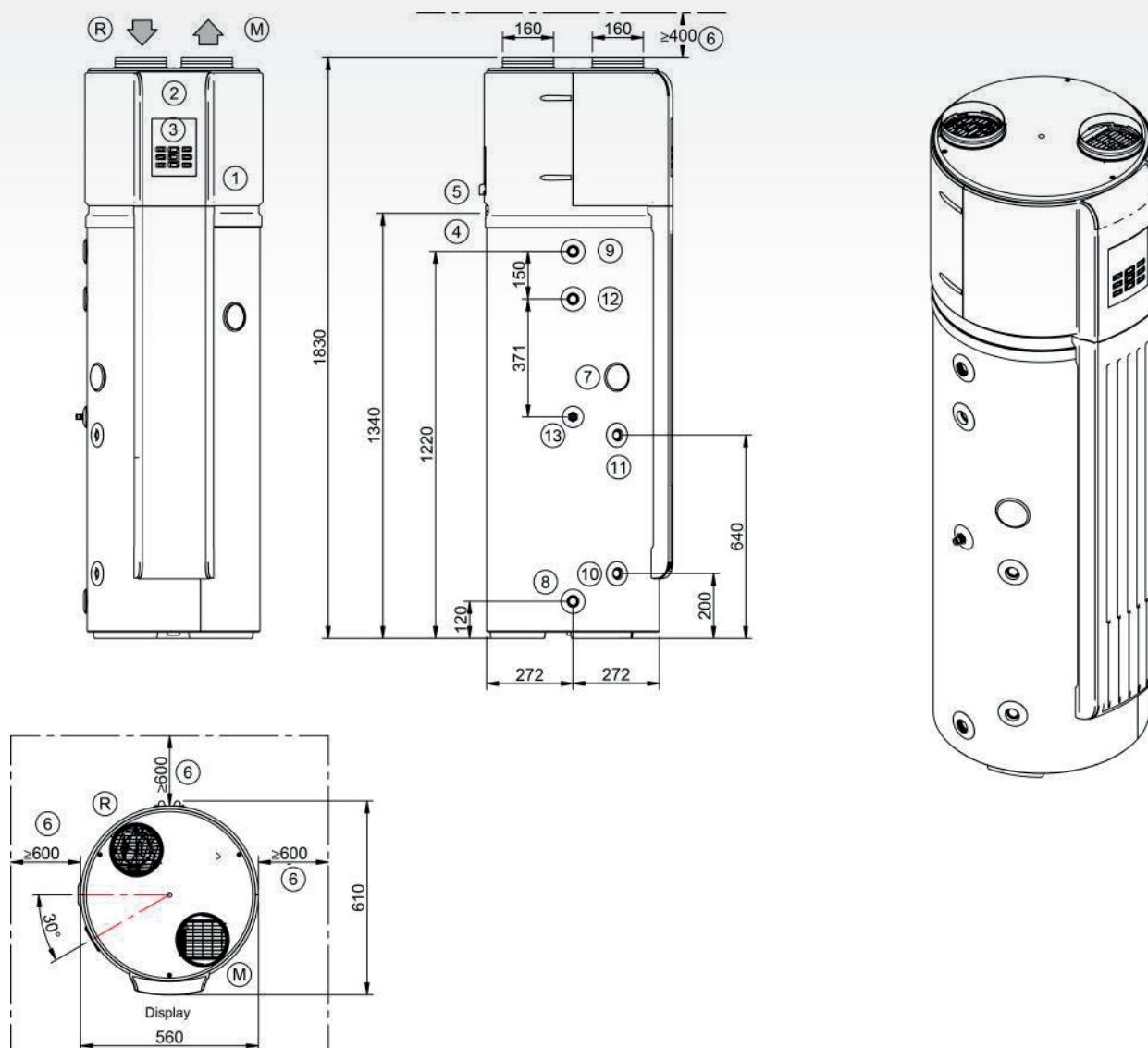
Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF MONOBLOC WATER HEATERS

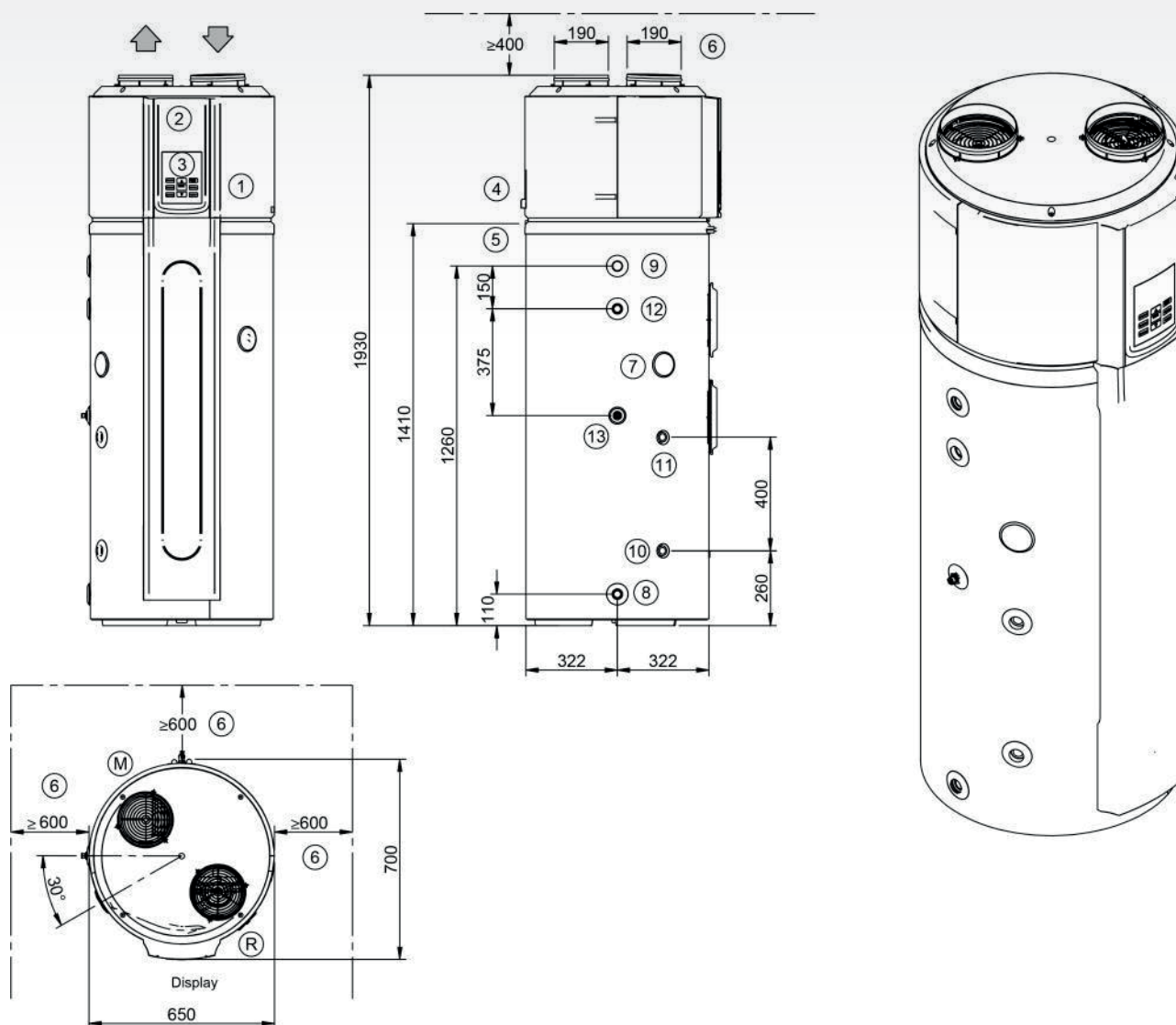
SWH-190IRE2, SWH-190IRES2



1	Compressor compartment	6	Functional spaces	11	Solar outlet 3/4" F (only 190S)
2	Electric panel	7	Anode	12	Domestic hot water recirculation (only 190S)
3	Unit keypad	8	Water inlet 3/4" F	13	Probe sump for solar
4	Electric line input	9	Water outlet 3/4" F	R	Air inlet
5	Condensate drain	10	Solar inlet 3/4" F (only 190S)	M	Air supply

APPEARANCE AND DIMENSIONS OF MONOBLOC WATER HEATERS

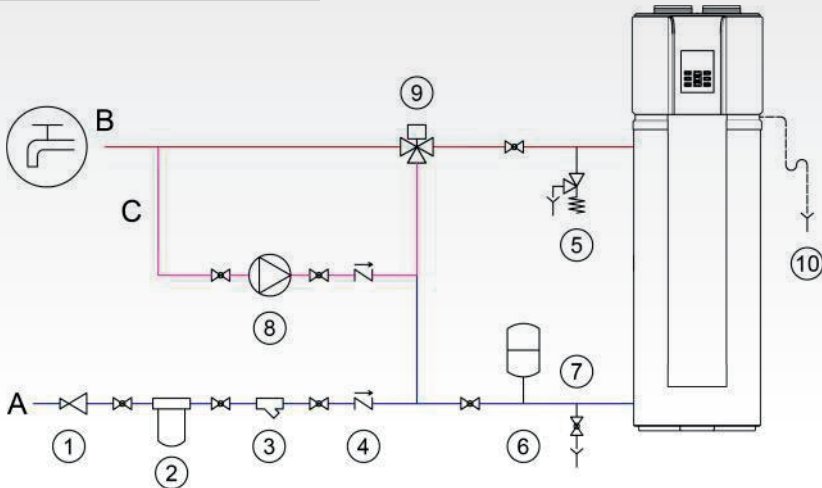
SWH-300IRE2, SWH-300IRES2



1	Compressor compartment	6	Functional spaces	11	Solar outlet 3/4" F (pouze 300S)
2	Electric panel	7	Anode	12	Domestic hot water recirculation (only 300S)
3	Unit keypad	8	Water inlet 3/4" F	13	Probe sump for solar
4	Electric line input	9	Water outlet 3/4" F	R	Air inlet
5	Condensate drain	10	Solar inlet 3/4" F (pouze 300S)	M	Air supply

MONOBLOC WATER HEATERS - WIRING DIAGRAM

SWH-190IRE2, SWH-300IRE2



Indicative plumbing diagram

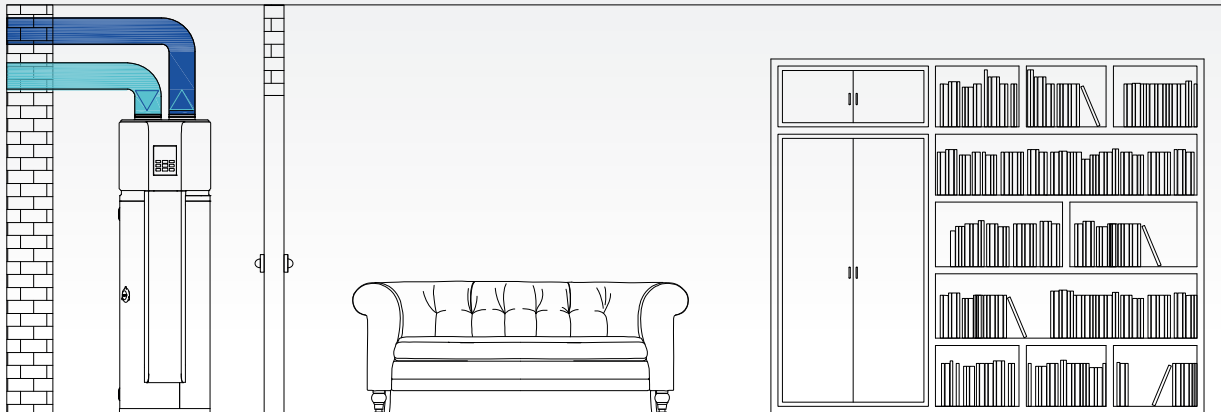
The system components must be defined by Designer and Installer (ex. expansion tanks, vents, taps, calibration/safety valves etc.)

1	Pressure reducing valve	2	Water treatment devices (water softener, etc.)	3	Filter Y
4	Non-return valve	5	Domestic hot water safety valve with discharge	6	DHW expansion vessel
7	Storage drain	8	Hot water circulator (recirculation) with check valve	9	Mixing valve thermostatic
10	Condensate drain	A	Aqueduct inlet	B	DHW
C	DHW recirculation				

MONOBLOC WATER HEATERS - AIR WIRING DIAGRAM

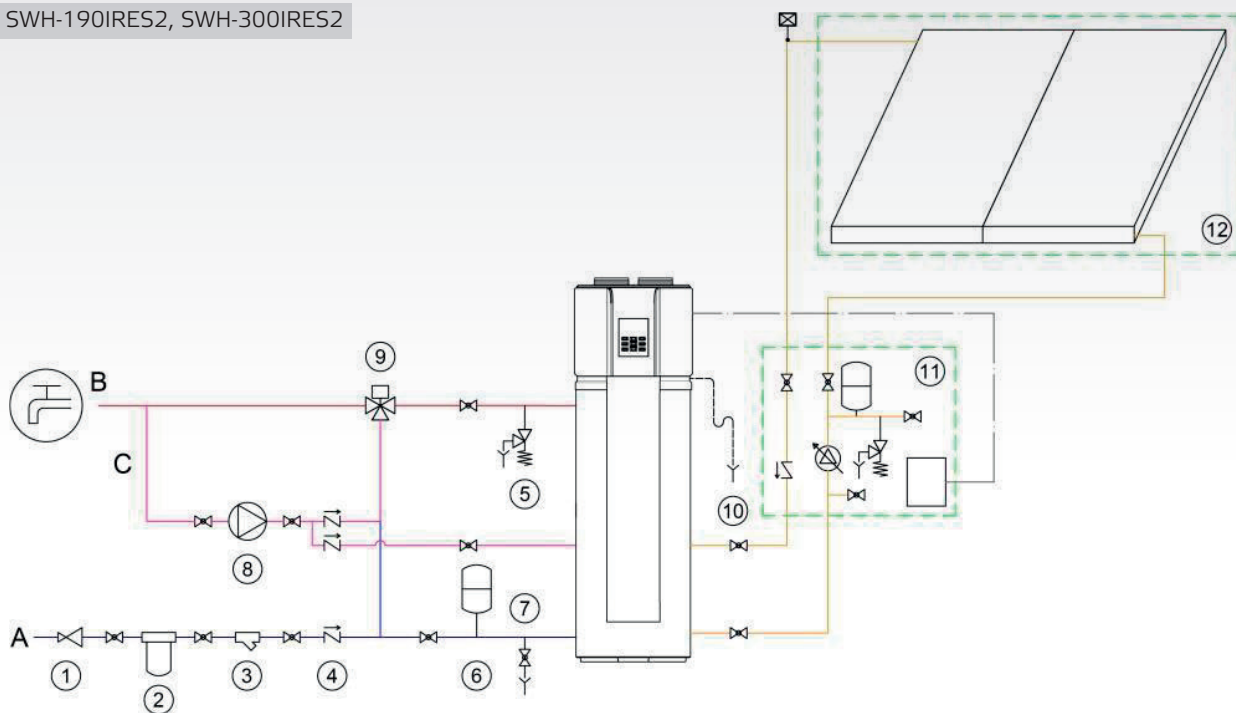
SWH-190IRE2, SWH-300IRE2

SWH-190IRES2, SWH-300IRES2



MONOBLOC WATER HEATERS - WIRING DIAGRAM

SWH-190IRES2, SWH-300IRES2



Indicative plumbing diagram

The system components must be defined by Designer and Installer (ex. expansion tanks, vents, taps, calibration/safety valves etc.)

1	Pressure reducing valve	2	Water treatment devices (water softener, etc.)	3	Filter Y
4	Non-return valve	5	Domestic hot water safety valve with discharge	6	DHW expansion vessel
7	Storage drain	8	Hot water circulator (recirculation) with check valve	9	Mixing valve thermostatic
10	Condensate drain	11	Solar circulation unit (not supplied)	12	Solar panels (not supplied)
A	Aqueduct inlet	B	DHW	C	DHW recirculation

MONOBLOC WATER HEATERS

MONOBLOC WATER HEATERS R290

MODEL NAME			SWH-190P	SWH-300P		
Power supply			220-240 / 1 / 50			
Mode			Heat pump / E-heater			
Running ambient temperature	Heat pump	°C	-7 ~43			
	E-heater		-20 ~46			
Storage size		l	185	275		
Maximum inlet water pressure		Mpa	0,7			
Net/gross weight		kg	91 / 112	123 / 148		
Dimension of unit (d×h) (panel overlap)		mm	Φ560×1730 (35)	Φ660×1895 (35)		
Dimension of package (w×d×h)		mm	675×655×1945	775×745×2210		
Max. Hot water temperature with heat pump		°C	65			
Max. Hot water temperature additional electric heater		°C	70			
Tank	Material	-	Enameled steel			
	Cathodic protection (Optional item)	-	Mg rod anode (Electronic anode)			
	Insulating type	-	Polyurethane			
	Insulation thickness	mm	42	46		
	Water inlet pipe	inch	3/4"			
	Water outlet pipe	inch				
	Drainage pipe	inch				
Electrical data (Heat pump+electric heater)	Max. pressure (safety valve)	MPa	0,85			
	Maximum heat pump power input	W	600	710		
	E-heater	W	1640			
	Maximum power input	W	2240	2400		
Refrigerant pressure max./operating	Maximum current input	A	10,5	11		
		MPa	2,7 / 1,1			
Air circuit	Fan type	-	DC motor			
	Air volume flow rate	m³ / h	350	450		
	Available external static max pressure	Pa	20	80		
	Ducts diameter	mm	160	190		
Refrigerant circuit	Compressor	-	Rotary			
	Refrigerant	-	R290			
	Refrigerant charge	g	150			
	Evaporator	-	Copper-aluminum finned coil			
	Condenser	-	Aluminum tube wound outside tank			
Data according to EN 16147: 2017 standard for AVERAGE climate (unit in ECO mode, Hot water setpoint = 54 ° C; Inlet water = 10 ° C; Inlet air temp = 7 ° C DB / 6 ° C WB) * according to European regulation 812/2013	Load profile	-	L	XL		
	Water heating energy efficiency class	-	A+			
	Water heating energy efficiency - η	%	131,1	132		
	COPDHW	-	3,1	3,25		
	Annual electricity consumption-AEC	kWh	780,8	1267		
Data according to EN 12102-2: 2019 ECO mode with Inlet air temp = 7 ° C DB / 6 ° C WB	Stand-by power input(Pes)	W	27	19,1		
	Sound power level	dB(A)	56	54		
STANDARD ACCESSORIES						
Safety and owner's manual		-	Yes			
Filter		-	Yes			
Air duct connectors		-	Yes			
Fixing strip		-	Yes			
2x Condensate drain pipe		-	Yes			
One way valve		-	Yes			

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R290 (100% CH₃CH₂CH₃), GWP of refrigerant used: 3.

Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

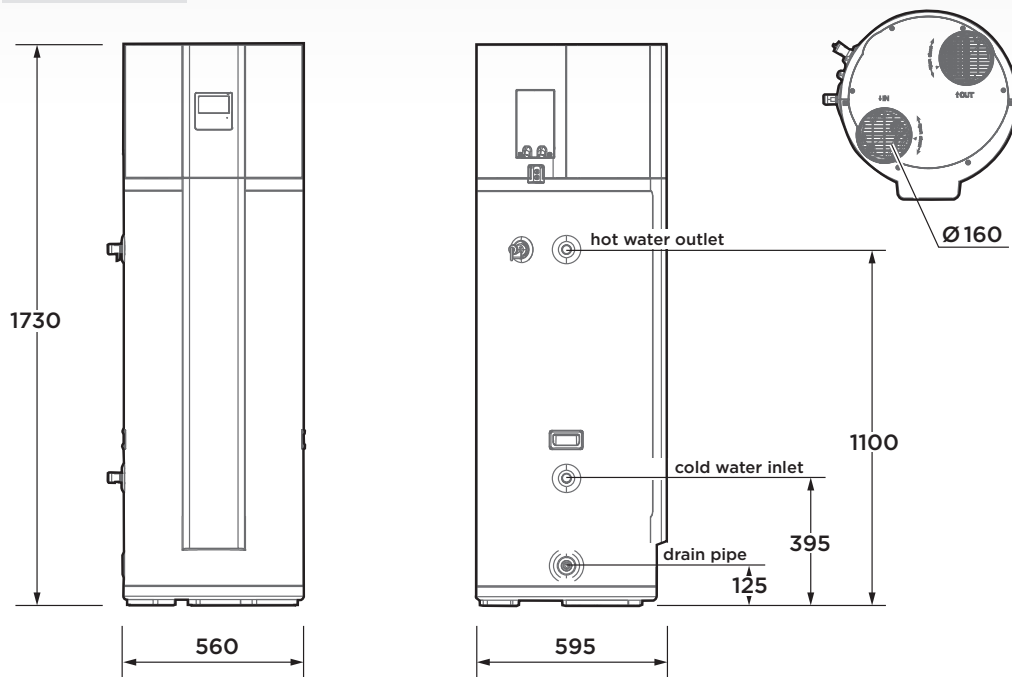
Cross-section of each wire must correspond to the IEC 60364.

APPEARANCE AND DIMENSIONS OF MONOBLOC WATER HEATERS R290

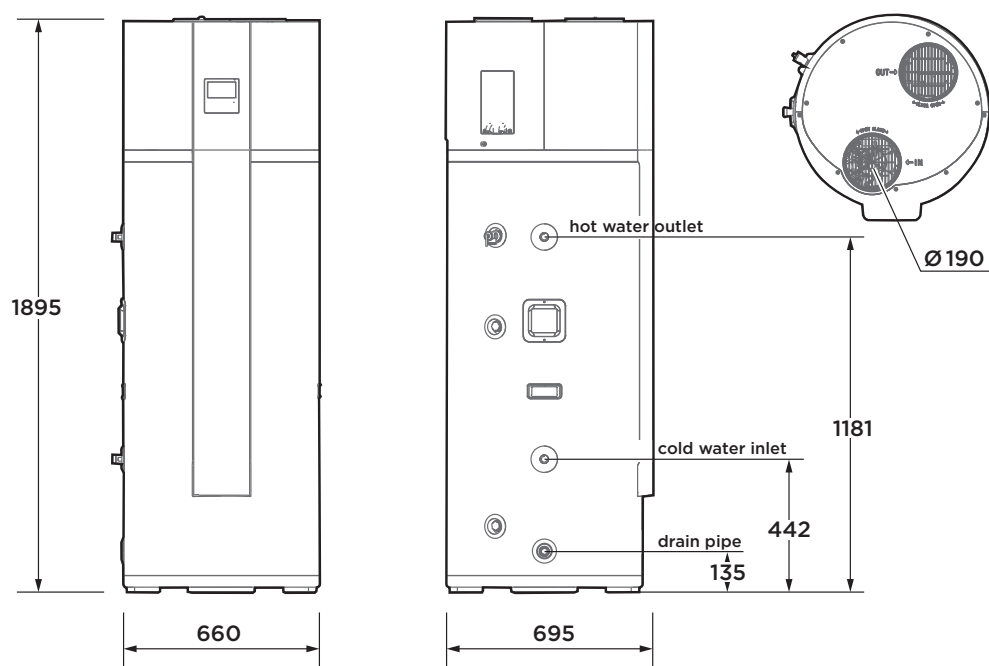
SWH-190P, SWH-300P

connector	spec.
hot water outlet	R3/4"
cold water inlet	R3/4"
PTR valve	RC3/4"
drain pipe	NPT3/4"

SWH-190P

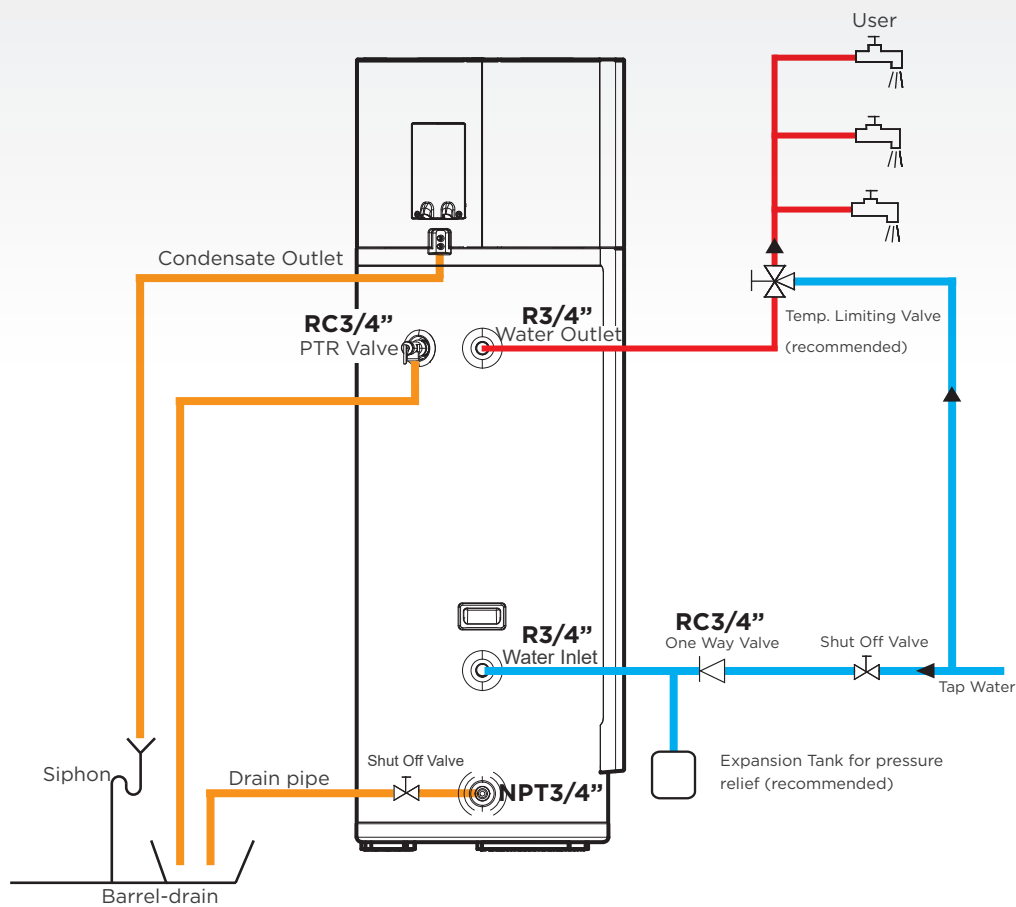


SWH-300P

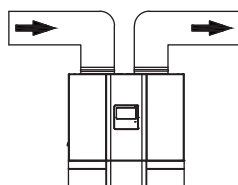


MONOBLOC WATER HEATERS R290 - WIRING DIAGRAM

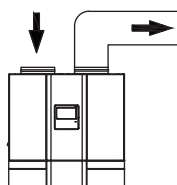
SWH-190P, SWH-300P



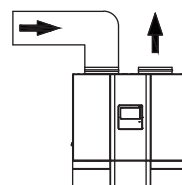
Different ways of air ducts connection



1. Air inlet and outlet with ducts.

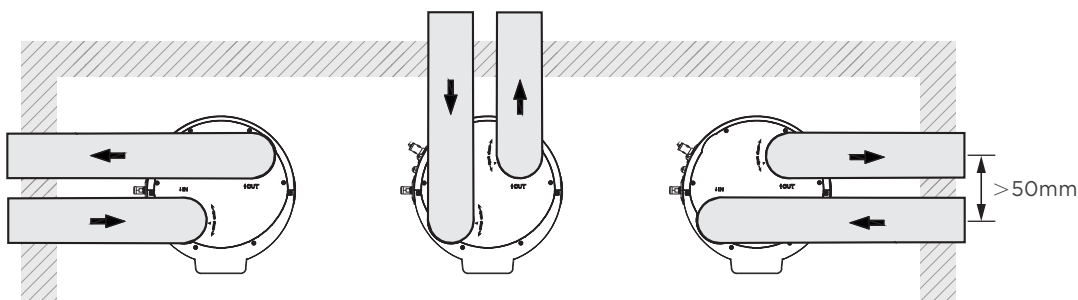


2. Air outlet connects to duct, air inlet without ducts.



3. Air inlet connects to duct, air outlet without ducts.

Different directions of air ducts connection



WALL-MOUNTED MONOBLOC WATER HEATERS R290

MODEL NAME		SWH-80P	SWH-100P	SWH-150P		
Mode		Heat pump / E-heater				
Capacity of E-heater		1,5				
Operating temperature range (Heat pump)		-7~43				
Operating temperature range (E-heater)		-20~45				
Output water temperature (Heat pump)		38~65				
Output water temperature (E-heater)		38~70				
Power supply		220-240 / 1 / 50				
Max. current		9		10,5		
Max. Power input		1,95		2,25		
Twater inlet 15°C Twater outlet 45°C T ambient 15°C	Power of water heating	0,95	0,98	1,3		
	COP	3,8	3,8	3,7		
	Water heating energy efficiency - η	112	111	122		
	Energy class	A+				
Dimension of unit (d x h) (panel overlap)		Φ500×1196 (48)	Φ500×1360 (48)	Φ500×1707 (48)		
Dimension of package (w x h x d)		620×1295×585	620×1450×585	620×1785×585		
Net/gross weight		57/63	62/68	80/87		
Sound power level		54		56		
Compressor type		Rotary				
Compressor capacity		1,14		1,71		
Refrigerant		R290 / 0,15 kg / 0,45				
Refrigerant pressure max./operating		3,0/1,2				
Oil Type / Ammount		XS-601C1 / 140 ml				
Throttling type		Electric expansion valve				
Tank design pressure		0,8				
Type of fan		ZKFP-34-10-1(DC)				
Air flow		190	200	240		
Pipe diameter at inlet	inch	1/2"				
Pipe diameter at outlet						
Tank volume		78	98	145		
Tank material		Galvanized steel plate				
Isolation material		Enamel				
Insulation thickness		0.15-0.5				
Maximum operating pressure		1				
STANDARD ACCESSORIES						
Installation, safety and owner's manual		Yes				
4x Expansion screw		Yes				
Safety valve 0,75 Mpa		Yes				

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.

R290 (100% CH₃CH₂CH₃), GWP of refrigerant used: 3.

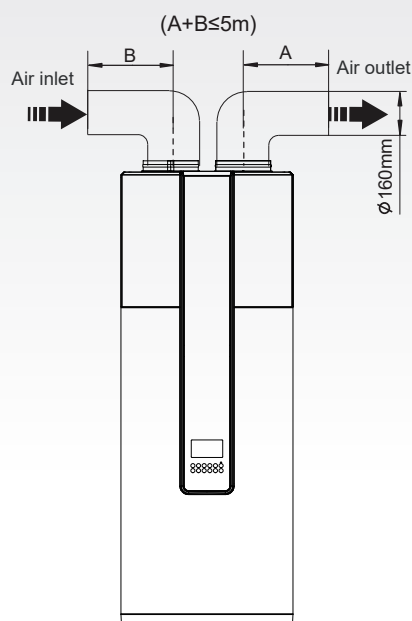
Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

Explanatory notes on the very last page of the catalogue.

Cross-section of each wire must correspond to the IEC 60364.

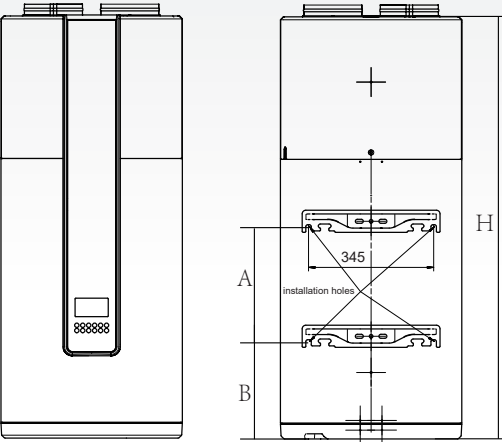
WALL-MOUNTED MONOBLOC WATER HEATERS R290 - WIRING DIAGRAM

SWH-80P, SWH-100P, SWH-150P

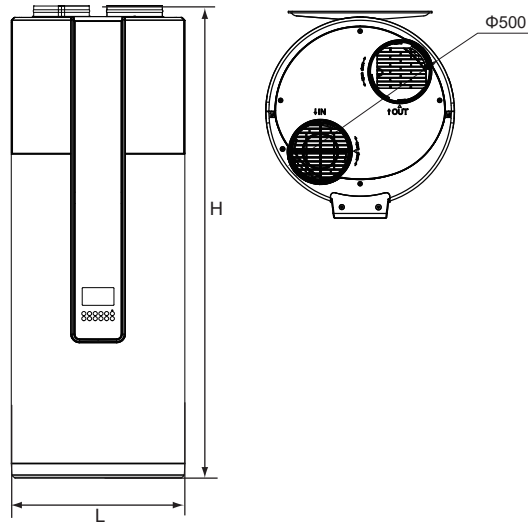


APPEARANCE AND DIMENSIONS OF WALL-MOUNTED MONOBLOC WATER HEATERS R290

SWH-80P, SWH-100P, SWH-150P



Model	A	B	H
SWH-80P	317	270	1167
SWH-100P	415	277	1333
SWH-150P	558	475	1675

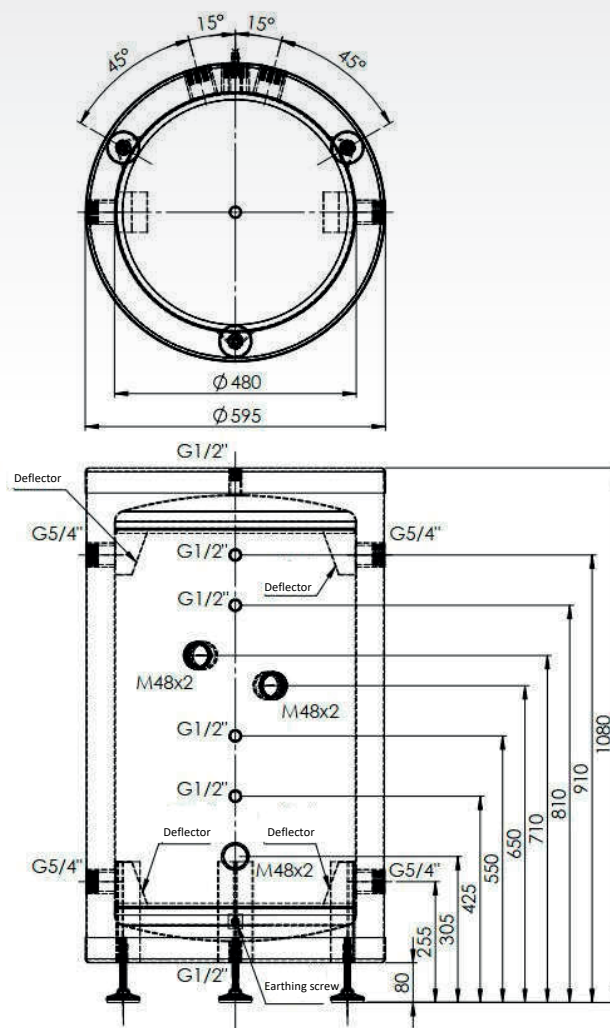


Model	Dimension
SWH-80P	500 (L) × 1199 (H)
SWH-100P	500 (L) × 1365 (H)
SWH-150P	500 (L) × 1707 (H)

BUFFER TANKS

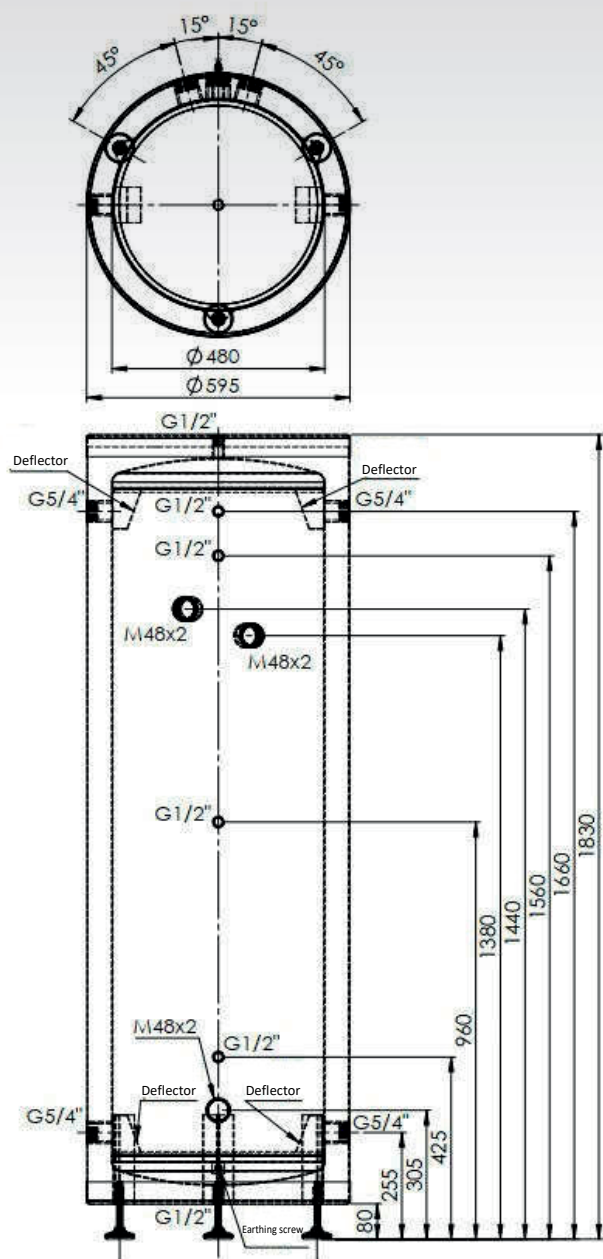
The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label. Explanatory notes on the very last page of the catalogue.

AKU ST 50 S



APPEARANCE AND DIMENSIONS OF BUFFER TANKS

AKU ST 300 S



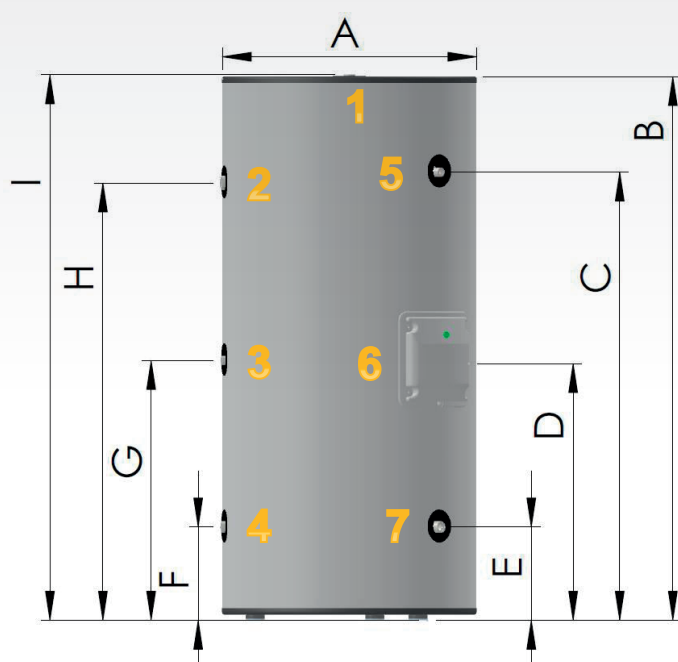
DHW TANKS

MODEL			ST-300DS	ST-250DE	ST-300DE	ST-500DE	
Volume of tank		l	270	234	286	469	
Volume of exchanger		l	-	17	21	39	
Material		-	Stainless steel	Enamelled			
Power supply of E-heater		V/f/Hz	230/1/50	-			
Power input of E-heater		kW	1,5				
Exchanger Heating Surface		m²	2,6	2,5	3,2	6,4	
Max. pressure (tank/exchanger)		MPa / bar	0,6 / 6 / 0,8 / 8	1,0 / 10 / 1,0 / 10			
Test pressure (tank/exchanger)		MPa / bar	1,2 / 12 / 1,2 / 12	1,45 / 14,5 / 1,45 / 14,5			
Max. temperature (tank/exchanger)		°C	90 / 90	80 / 110			
Medium (tank/exchanger)		-	Heating water / DHW				
Intlet/Outlet connection		mm	DN20	DN25			
Dimensions (h x d)		mm	1540 x 580	1535 x 584	1580 x 670	1914 x 700	
Weight		kg	60	119	133	223	
Isolation thickness		mm	50				
Isolation material		-	Polyurethane (PUR) foam				
OPTIONAL ACCESSORIES							
Optional E-heater		-	-	TJ 6/4* 3,3 kW			

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Explanatory notes on the very last page of the catalogue.

APPEARANCE AND DIMENSIONS OF DHW TANKS

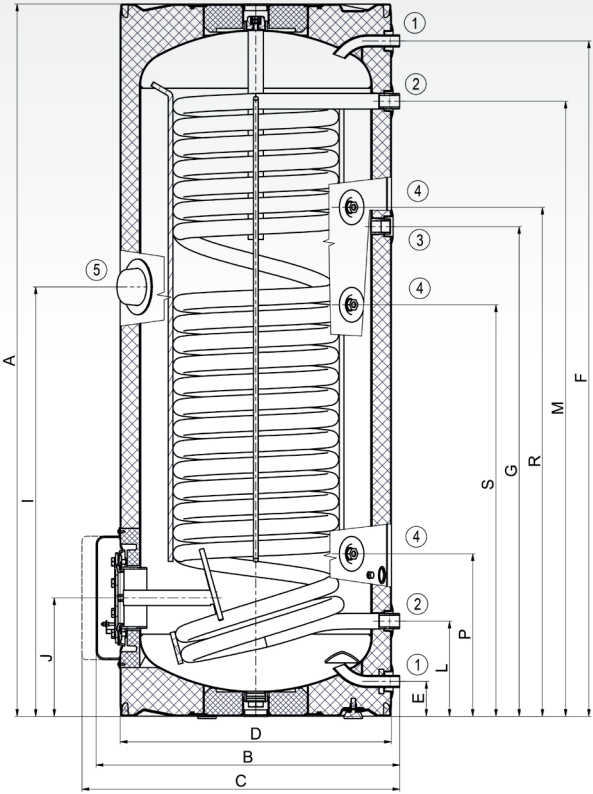
ST-300DS



	Ø and type of connection	ST-300DS mm	Description
A	—	580	Diameter
B	—	1540	Height
C	G ½ " M(5)	1295	Temp. sensor
D	G 1" ½ " F (6)	595	Electrical Heater
E	G ¾ " F (7)	215	Cold Water
F	G ¾ " F (4)	215	Heat Exchanger Outlet
G	G ½ " F (3)	595	Recirculation
H	G ¾ " F (2)	1055	Heat Exchanger Inlet
I	G ¾ " F (1)	1540	Hot Water

APPEARANCE AND DIMENSIONS OF DHW TANKS

ST-250DE

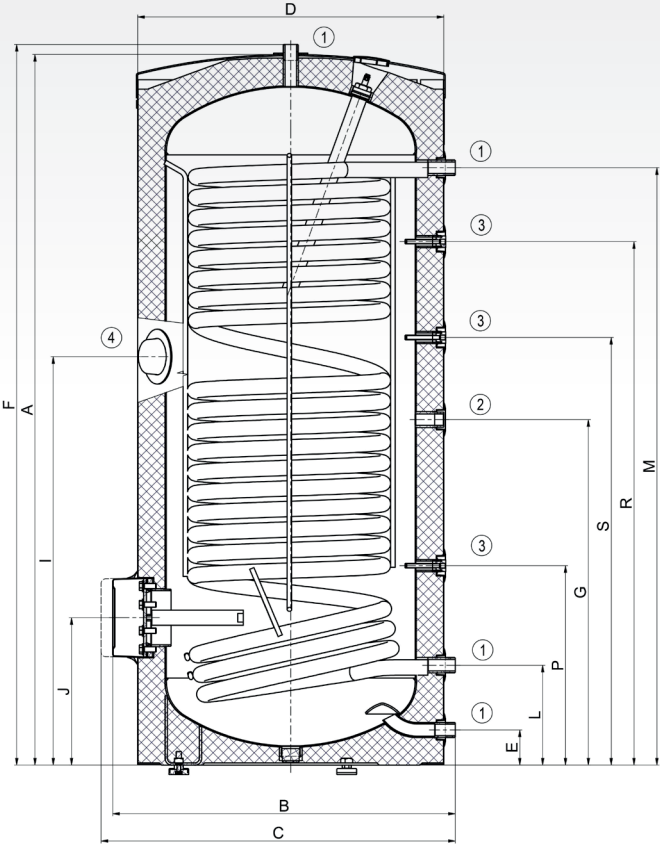


A	1535
B	660
C	710
D	584
E	75
F	1455
G	1055
I	925
J	255
L	205
M	1325
P	350
R	1095
S	885

①	3/4" external
②	1" external
③	3/4" internal
④	1/2" internal
⑤	6/4" internal

APPEARANCE AND DIMENSIONS OF DHW TANKS

ST-300DE

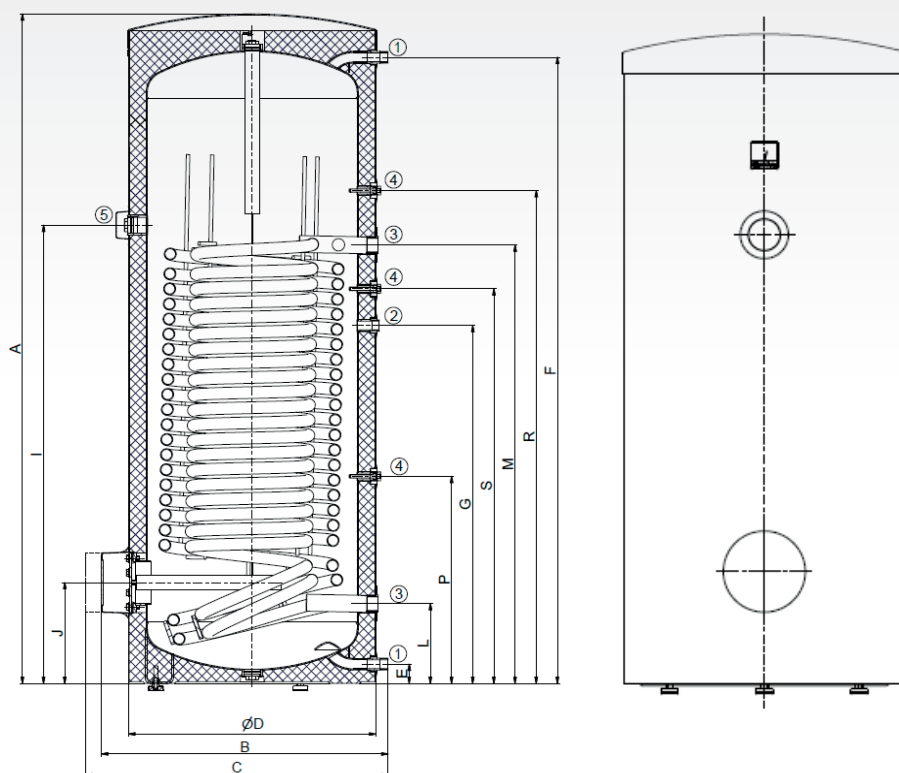


A	1558
B	750
C	775
D	670
E	77
F	1579
G	760
I	895
J	325
L	219
M	1309
P	438
R	1148
S	937

①	1" external
②	3/4" external
③	1/2" internal
④	6/4" internal

APPEARANCE AND DIMENSIONS OF DHW TANKS

ST-500DE



A	1914
B	812
C	852
D	700
E	55
F	1790
G	1023
I	1310
J	288
L	228
M	1253
P	592
R	1409
S	1128

①	1" external
②	3/4" internal
③	5/4" internal
④	1/2" internal
⑤	6/4" internal

ACCESSORIES

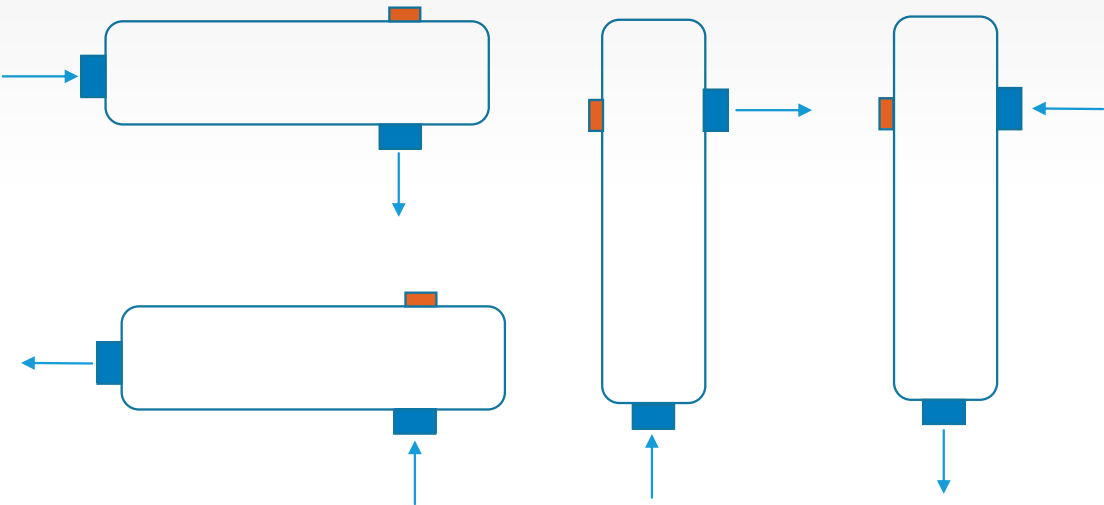
MODEL			EH-SMH
Water connection		inch	2 x 1", 1 x 3/8"
Material		-	Stainless steel
Isolation Material		-	NBR-PVC foam
Isolation thickness		mm	10
Protecting rating		-	IP45
Power supply		V/f/Hz	400/3/50
Power input		kW	9
Max. pressure		MPa/bar	1/10
Weight		kg	3,13
OPTIONAL ACCESSORIES			
Temperature sensor TCO +85°C		-	9BBSI102ANEP002C

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.
Explanatory notes on the very last page of the catalogue.

INSTALLATION

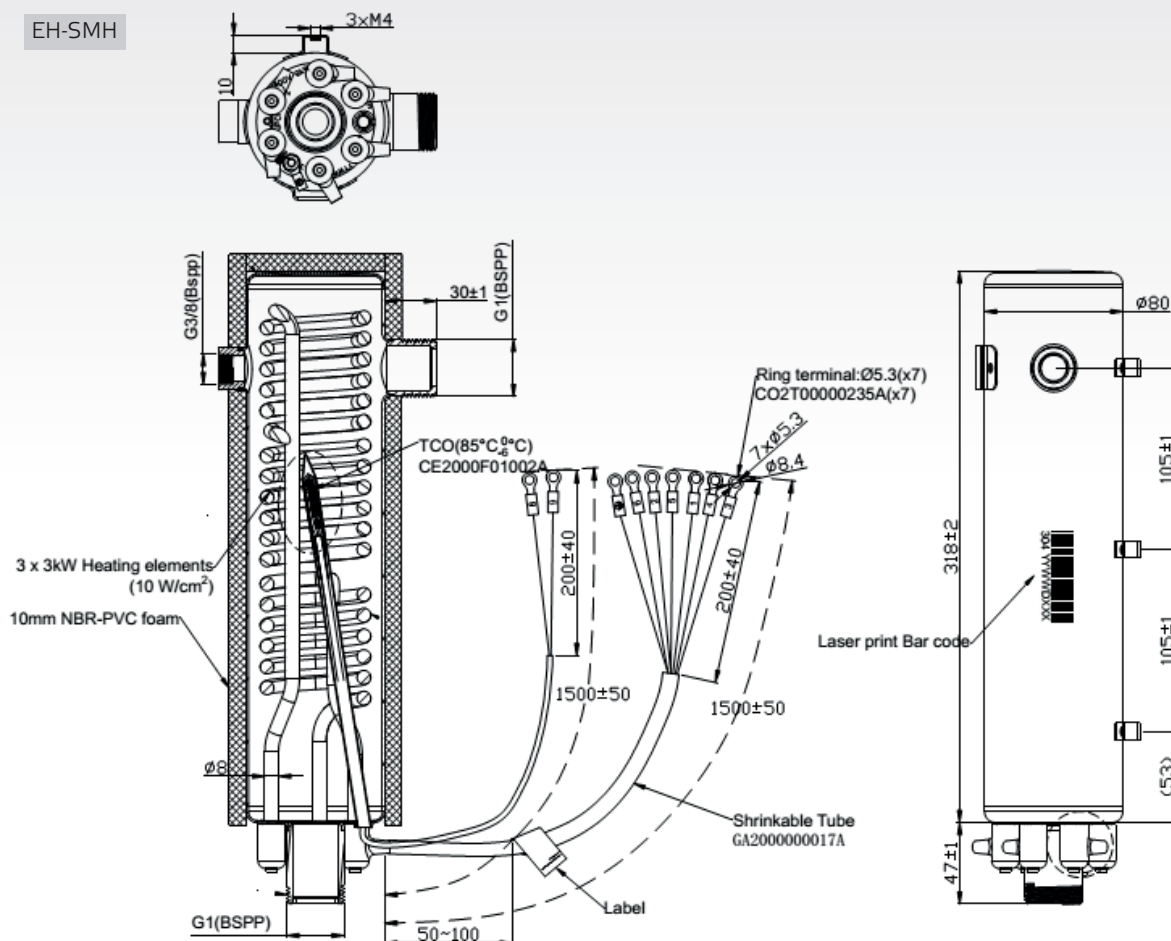
EH-SMH

The bivalent source is included in the heating circuit of the heat pump and at the hot water outlet. For water connection, it has an inlet and outlet of size G 1", the opening G 3/8" can be used for venting and you can supplement it with a venting valve. Possible connection methods with the direction of water flow marked are listed below.



APPEARANCE AND DIMENSIONS

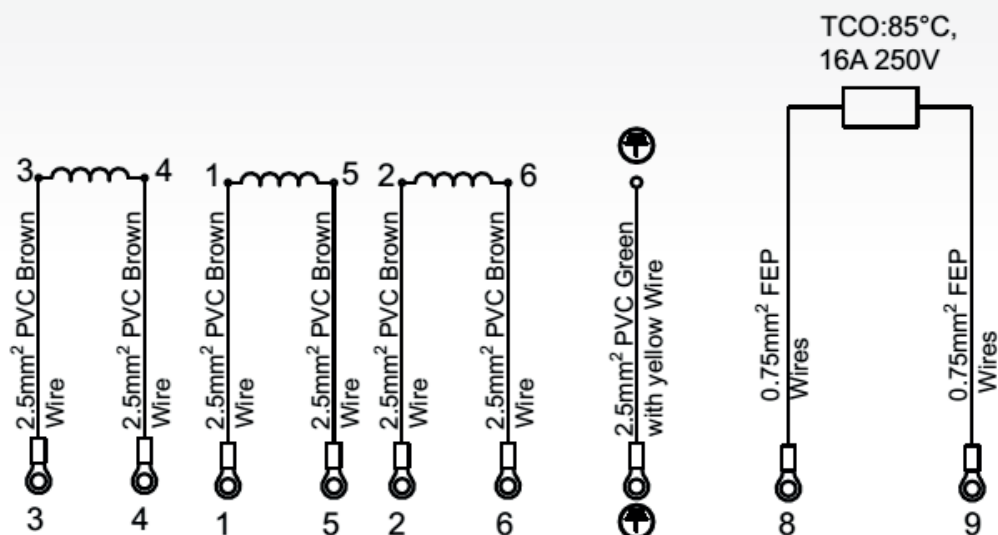
EH-SMH



CONNECTION

EH-SMH

Installation is possible in a triangle-type electrical connection 3x3 kW/400 V (L1: contact 1, 4; L2: contact 2, 5; L3: contact: 3, 6) or star 3x1 kW/ 230 V (L1: contact 1; L2: contact 2; L3: contact 3, contacts 4, 5, 6 connect). Always connect the grounding - protective conductor PE.



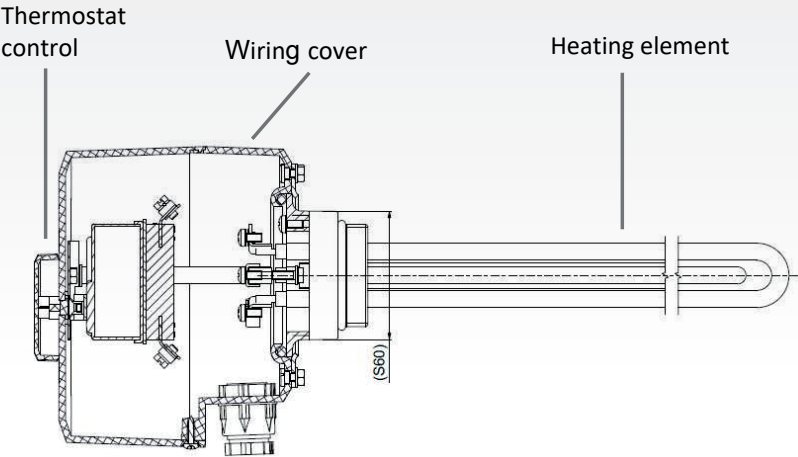
ACCESSORIES

MODEL			TJ 6/4" 3,3 kW
Connection		inch	6/4"
Power input		kW	3,3
Power supply		V/f/Hz	400/3/50
Set temperature range		°C	5-47
Built-in body length		mm	325
Weight		kg	1,7

The specification of products is subject to change based on further development of the units by the producer and can be changed without prior notice. Refer to rating label.
Explanatory notes on the very last page of the catalogue.

APPEARANCE

TJ 6/4" 3,3 kW

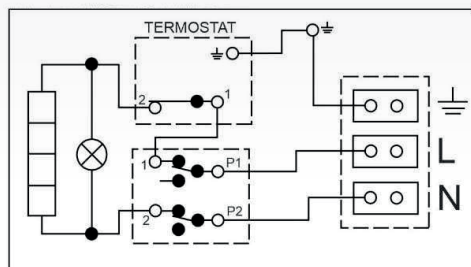


CONNECTION

TJ 6/4" 3,3 KW

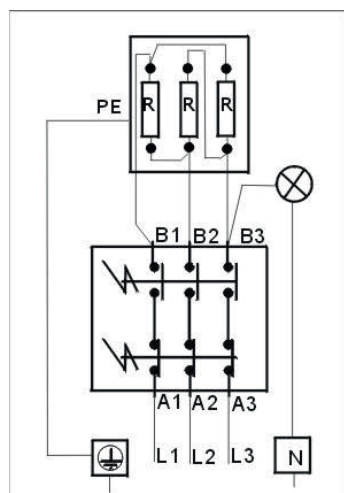
TJ 6/4" - 2

TJ 6/4" - 2,5



TJ 6/4" - 7,5

TJ 6/4" - 9



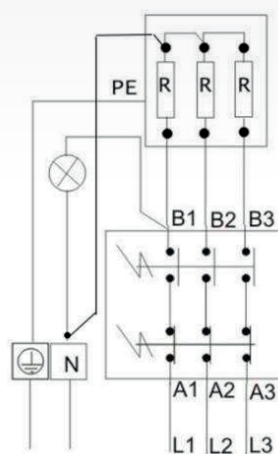
COMBISTAT

TJ 6/4" - 3,3

TJ 6/4" - 3,75

TJ 6/4" - 4,5

TJ 6/4" - 6



COMBISTAT

No.	Full name	Displayed name	Error code
1	Ambient temperature sensor error	Ambient sensor	F4
2	Defrosting temperature sensor error	Defrost sensor	d6
3	Discharge temperature sensor error	Discharge sensor	F7
4	Suction temperature sensor error	Suction sensor	F5
5	Economizer inlet temperature sensor error	Econ. in sens.	F2
6	Economizer outlet temperature sensor error	Econ. out sens.	F6
7	Outdoor fan error	Outdoor fan	EF
8	High-pressure protection	High pressure	E1
9	Low-pressure protection	Low pressure	E3
10	Compressor discharge high-pressure protection	Hi-discharge	E4
11	Capacity DIP switch error	Capacity DIP	C5
12	Communication error between the outdoor and indoor main boards	ODU-IDU Com.	E6
13	Communication error between the outdoor main board and the drive board	Drive-main com.	P6
14	Communication error between the display panel and indoor main board	IDU Com.	E6
15	High-pressure sensor error	HI-pre. sens.	Fc
16	Outlet water temperature sensor error at the plate heat exchanger of the heat pump	Temp-HELW	F9
17	Leaving water temperature sensor error at auxiliary electric heater of the heat pump	Temp-AHLW	dH
18	Inlet water temperature sensor error at the plate heat exchanger of the heat pump	Temp-HEEW	It does not have an error code but is displayed on the control panel
19	Water tank temperature sensor error ("NA" for mini chillers)	Tank sens.	FE
20	External room temperature sensor error	T-Remote Air	F3
21	Heat pump flow switch protection	HP-Water Switch	Ec
22	Overheating protection of the auxiliary electric heater 1 of the heat pump	Auxi. heater 1	EH
23	Overheating protection of the auxiliary electric heater 2 of the heat pump	Auxi. heater 2	EH
24	Overheating protection of the water tank e-heater	Auxi. -WTH	EH
25	DC bus under-voltage or voltage drop protection	DC under-vol.	PL
26	DC bus over-voltage protection	DC over-vol.	PH
27	AC current protection (input side)	AC curr. pro.	PA
28	Defective IPM	IPM defective	H5
29	Defective PFC	PFC defective	Hc
30	Start failure	Start failure	Lc
31	Phase loss	Phase loss	Ld
32	Jumper cup error	Jumper cap error	C5
33	Driver resetting	Driver reset	P0
34	Compressor overcurrent	Com. over-cur.	P5
35	Overspeed	Overspeed	LF
36	Current sensing circuit error or current sensor error	Current sen.	Pc
37	Desynchronization	Desynchronize	H7
38	Compressor stalling	Comp. stalling	LE
39	The radiator of IPM or PFC over-temperature	Overtemp.-mod.	P8

No.	Full name	Displayed name	Error code
40	The radiator of IPM or PFC temperature sensor error	T mod. sensor	P7
41	Charging circuit error	Charge circuit	Pu
42	AC input voltage error	AC voltage	PP
43	Ambient temperature sensor error at the drive board	Temp driver	PF
44	AC contactor protection or input over zero error	AC contactor	P9
45	Temperature drift protection	Temp. drift	PE
46	Protection in case of incorrect sensor connection (current sensor is not connected to the appropriate U or V phase)	Sensor con.	Pd
47	Communication error between the display panel and outdoor unit	ODU Com.	E6
48	Refrigerant gas pipe temperature sensor error	Temp RGL	F0
49	Refrigerant liquid pipe temperature sensor error	Temp RLL	F1
50	4 way valve error	4 way valve	U7

ONTARIO MONOBLOC 5TH GENERATION

Code Indication	Error Name	Source of Error Signal	Control Description
F4	Outdoor environment temp sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
d6	Defrost temp sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F7	Discharge temp sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F5	Suction temp sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
EF	Outdoor fan error	The mainboard of outdoor unit is damaged. The wire connecting the wiring terminals of the mainboard breaks.	If it occurs for 6 times during one hour, it is cleared by de-energization. If it occurs for less than 6 times, it will be automatically cleared.
E1	Comp High-pressure protection	The compressor high-pressure switch is broken or the wiring is loose. The water in the tank is not enough. The installation of tank temp sensor is not correct. The gas valve and liquid valve are not fully open. The electronic expansion valve can not work normally.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
E3	Comp Low- pressure protection	Comp Low-pressure switch is broken or the wiring is loose. The system has leaked. The fans stop running or reverse.	It will be cleared if the malfunction is removed after the unit has been turned off.
E4	Comp Discharge temp protection	The resistance of temperature sensor is not correct. The electronic expansion valve is blocked. The system has leaked. Mainboard of outdoor unit is damaged.	It will be cleared if the discharge temp is lower than 92°C.
C5	Cpacity switch error	The jumper trips off.	De-energize the unit and then energize it again. If the malfunction is removed, the code will be cleared.

ONTARIO MONOBLOC 5TH GENERATION

Code Indication	Error Name	Source of Error Signal	Control Description
E6	Communication malfunction(between outdoor and indoor mainboard0.	The communication line of the unit is not connected. The communication line is not through. The communication line of the unit is not connected correctly. The two ends of communication line are not mounted with magnetic ring. The outdoor unit is not electrically powered	It will be cleared once communication recovers or it will be shown all the time
E6	Communication malfunction(between outdoor mainboard and wired controller)	The communication line of the unit is not connected. The communication line is not through. The communication line of the unit is not connected correctly. The two ends of communication line are not mounted with magnetic ring. The outdoor unit is not electrically powered	It will be cleared once communication recovers or it will be shown all the time
Fc	High pressure switch error	The sensor is damaged. The wire of the sensor is loose. The position of the sensor is wrong	It will be automatically cleared after the failure is removed.
F9	Outlet temperature sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
dH	Backup outlet temperature sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F1	Liquid pipe temperature sensor Inside refrigerant error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
FE	The first sanitary water tank temperature sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F3	Gas pipe temperature sensor inside refrigerant error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.
F0	Remote room temperature sensor error	The plug on temperature sensor is not correctly connected to the socket on mainboard. The resistance of temperature sensor is not correct.	It will be automatically cleared after the failure is removed.

ONTARIO MONOBLOC 5TH GENERATION

Code Indication	Error Name	Source of Error Signal	Control Description
Ec	Water switch error	The switch is damaged. The wire of the switch is loose. The position of the switch is wrong	It will be cleared after the unit is turned off.
E2	Indoor anti-frozen protection	The resistance of temperature sensor is not correct. The electronic expansion valve can not work normally.	It will be cleared once malfunction is removed or it will be shown all the time; but it will be cleared immediately when switching operation mode.
Ed	outlet temperature High-temp protection	The resistance of temperature sensor is not correct. The plug on temperature sensor is not correctly connected to the socket on mainboard. Mainboard of outdoor unit is damaged.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
EH	the first internal electric heater connection Malfunction	The AC contactor is damaged.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
EH	second internal electric heater connection Malfunction	The AC contactor is damaged.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.
EH	sanitary water tank electric heater connection Malfunction	The AC contactor is damaged.	De-energize the unit and then, energize it again. If the malfunction is removed, the code will be cleared.

Troubleshooting for the Drive

Item		Display on Nixie Tube of the Unit	Display on Wired Controller	Others
Inverter Drive Failure	Reset of Drive System	P0	Reset of Drive System	
	Startup Failure of Compressor	Lc	Startup Failure of Compressor	
	Phase Protection	Ld	Phase Protection	
	Current protection of compressor	P5	Current protection of compressor	
	Communication failure	P6	Communication failure	
	Sensor failure of heat sink	P7	Sensor failure of heat sink	
	Overheat protection of heat sink	P8	Overheat protection of heat sink	
	AC current protection (input side)	PA	AC current protection (input side)	
	Current sensor failure	Pc	Current sensor failure	
	Connection protection of sensor	Pd	Connection protection of sensor	
	Overvoltage protection	PH	Overvoltage protection	
	Under-voltage protection	PL	Under-voltage protection	
	Abnormality of input AC voltage	PP	Abnormality of input AC voltage	
	Charge circuit failure	PU	Charge circuit failure	
	IPM protection	H5	IPM protection	
	Desynchronizing of motor	H7	Desynchronizing of motor	
	PFC abnormality	Hc	PFC abnormality	

ERROR CODE	MALFUNCTION OR PROTECTION	FAILURE CAUSE AND CORRECTIVE ACTION
<i>E0</i>	Water flow fault(after 3 times E8)	1.The wire circuit is short connected or open. Reconnect the wire correctly. 2.Water flow rate is too low. 3. Water flow switch is failed, switch is open or close continuously, change the water flow switch.
<i>E2</i>	Communication fault between controller and indoor unit	1.Wire doesn't connect between wired controller and unit. connect the wire. 2.Communication wire sequence is not right. Reconnect the wire in the right sequence. 3.Whether there is a high magnetic field or high power interfere, such as lifts, large power transformers, etc.. To add a barrier to protect the unit or to move the unit to the other place.
<i>E3</i>	Final outlet water temp.sensor(T1) fault	1.Check the resistance of the sensor 2.The T1 sensor connector is loosen. Reconnect it. 3.The T1 sensor connector is wet or there is water in. remove the water, make the connector dry. Add waterproof adhesive. 4.The T1 sensor failure, change a new sensor.
<i>E4</i>	water tank temp.sensor (T5) fault	1.Check the resistance of the sensor 2.The T5 sensor connector is loosen. Reconnect it. 3.The T5 sensor connector is wet or there is water in. remove the water, make the connector dry. Add waterproof adhesive 4.The T5 sensor failure, change a new sensor. 5.If you want to close the domestic water heating when T5 sensor do not connected to the system, then T5 sensor can not be detected, refer to 9.5.1 "DHW MODE SETTING"
<i>E8</i>	Water flow failure	Check that all shut off valves of the water circuit are completely open. 1. Check if the water filter needs cleaning. 2. Refer to "8.6 Filling water" 3. Make sure there is no air in the system(purge air). 4. Check on the manometer that there is sufficient water pressure. The water pressure must be >1 bar. 5. Check that the pump speed setting is on the highest speed. 6. Make sure that the expansion vessel is not broken. 7. Check that the resistance in the water circuit is not too high for the pump (refer to "9.4 Setting the pump"). 8. If this error occurs at defrost operation (during space heating or domestic water heating), make sure that the backup heater power supply is wired correctly and that fuses are not blown. 9. Check that the pump fuse and PCB fuse are not blown.
<i>E4</i>	Inlet water temp.sensor (Tw_in) malfunction	1.Check the resistance of the sensor 2. The Tw_in sensor connector is loosen. Re connect it. 3.The Tw_in sensor connector is wet or there is water in. remove the water, make the connector dry. Add waterproof adhesive 4. The Tw_in sensor failure, change a new sensor.

ERROR CODE	MALFUNCTION OR PROTECTION	FAILURE CAUSE AND CORRECTIVE ACTION
<i>EE</i>	Indoor unit EEPROM failure	1. The EEPROM parameter is error, rewrite the EEPROM data. 2. EEPROM chip part is broken, change a new EEPROM chip part. 3. main control board of indoor unit is broken, change a new PCB.
<i>HO</i>	Communication fault between indoor unit and outdoor unit	1. wire doesn't connect between outdoor unit and main control board of indoor unit. connect the wire. 2. Communication wire sequence is not right. Reconnect the wire in the right sequence. 3. Whether there is a high magnetic field or high power interfere, such as lifts, large power transformers, etc.. To add a barrier to protect the unit or to move the unit to the other place.
<i>H2</i>	Refrigerant liquid temp.sensor(T2) fault	1. Check the resistance of the sensor 2. The T2 sensor connector is loosen. Re connect it. 3. The T2 sensor connector is wet or there is water in. remove the water, make the connector dry. Add waterproof adhesive 4. The T2 sensor failure, change a new sensor.
<i>H3</i>	Refrigerant gas temp.sensor(T2B) fault	1. Check the resistance of the sensor 2. The T2B sensor connector is loosen. Reconnect it. 3. The T2B sensor connector is wet or there is water in. remove the water, make the connector dry. Add waterproof adhesive 4. The T2B sensor failure, change a new sensor.
<i>H5</i>	Room temp.sensor(Ta) fault	1. Check the resistance of the sensor 2. The Ta sensor is in the interface; 3. The Ta sensor failure, change a new sensor or change a new interface, or reset the Ta, connect a new Ta from the indoor unit PCB
<i>H9</i>	Outlet water for zone 2 temp.sensor (Tw2) fault	1. Check the resistance of the sensor 2. The T1B sensor connector is loosen. Reconnect it. 3. The T1B sensor connector is wet or there is water in. Remove the water, make the connector dry. add waterproof adhesive 4. The T1B sensor failure, change a new sensor.
<i>HA</i>	Outlet water temp.sensor(Tw_out) fault	1. The TW_out sensor connector is loosen. Reconnect it. 2. The TW_out sensor connector is wet or there is water in. remove the water, make the connector dry. add waterproof adhesive 3. The TW_out sensor failure, change a new sensor.
<i>P5</i>	Tw_out - Tw_in value too big protection	1. Check that all shut off valves of the water circuit are completely open. 2. Check if the water filter needs cleaning. 3. Refer to "8.6 Filling water" 4. Make sure there is no air in the system (purge air). 5. Check on the manometer that there is sufficient water pressure. The water pressure must be >1 bar(water is cold). 6. Check that the pump speed setting is on the highest speed. 7. Make sure that the expansion vessel is not broken. 8. Check that the resistance in the water circuit is not too high for the pump. (refer to "9.4 Setting the pump").
<i>Pb</i>	Anti-freeze mode	Unit will return to the normal operation automatically.
<i>PP</i>	Tw_out - Tw_in unusual protection	1. Check the resistance of the two sensor 2. Check the two sensors locations 3. The water inlet/outlet sensor wire connector is loosen. Reconnect it. 4. The water inlet/outlet (TW_in /TW_out) sensor is broken, Change a new sensor. 5. Four-way valve is blocked. Restart the unit again to let the valve change the direction. 6. Four-way valve is broken, change a new valve.

ERROR CODE	MALFUNCTION OR PROTECTION	FAILURE CAUSE AND CORRECTIVE ACTION
<i>Hb</i>	Three times "PP" protection and Tw_out < 7°C	The same to "PP".
<i>E7</i>	Buffer tank up temp.sensor(Tbt1) fault	1.Check the resistance of the sensor. 2.The Tbt1 sensor connector is loosen,reconnect it. 3.The Tbt1 sensor connector is wet or there is water in,remove the water ,make the connector dry.Add waterproof adhesive. 4.The Tbt1 sensor failure,change a new sensor."
<i>Eb</i>	Solar temp.sensor(Tsolar) fault	1.Check the resistance of the sensor. 2.The Tsolar sensor connector is loosen,reconnect it. 3.The Tsolar sensor connector is wet or there is water in,remove the water ,make the connector dry.Add waterproof adhesive. 4.The Tsolar sensor failure,change a new sensor."
<i>Ec</i>	Buffer tank low temp.sensor(Tbt2) fault	1.Check the resistance of the sensor. 2.The Tbt2 sensor connector is loosen,reconnect it. 3.The Tbt2 sensor connector is wet or there is water in,remove the water ,make the connector dry.Add waterproof adhesive. 4.The Tbt2 sensor failure,change a new sensor."
<i>HE</i>	Communication error between main board and thermostat transferboard	RT/Ta PCB is set to be valid on user interface but the thermostat transfer board is not connected or the communication between thermostat transfer board and main board is not effectively connected. If the thermostat transfer board is not needed , set the RT/Ta PCB to invalid. If the thermostat transfer board is needed, please connect it to the main board and make sure the communication wire is connected well and there is no strong electricity or strong magnetic interference.
<i>Hd</i>	Communication fault between hydraulic module parallel	1.The signal wires of slave units and master unit are not effectively connected. After checking all signal wires are well connected, and making sure there is no strong electricity or strong magnetic interference, power on again; 2.There are two or more outdoor unit connected to the wired controller. After removing the excess wired controller and keep only the wired controller of the master unit, power on again; 3.The power-on interval between the master unit and the slave unit is longer than 2min. After ensuring that the interval between the power-on of all the master units and slave units is less than 2min, power on again; 4.The addresses of master unit and slave units are repeated: by pressing the SW2 button on main board once on slave units, the address code of the slave unit will be displayed on the digital tube (Normally address code, one of 1, 2, 3 ... 15 will be shown on main board), check whether there is a duplicate address. If there is a duplicate address code, after powering off the system,set the S4-1 to "ON"on master outdoor unit main board or the slave outdoor unit main board which display "Hd" error(refer to 10.2.1 FUNCTION SEETING).Power on again,all the units last for 5 minutes without "Hd" error, power off again and set the S4-1 to "OFF". The system will recover.

Water circuit error			
Error code	Description	Displayed on	
E0	water flow failure (10 times of E8)	User Interface and Main Control PCB	
E8	water flow protection	User Interface and Main Control PCB	
Communication error			
Error code	Description	Displayed on	
E2	Communication fault between User Interface and Main Control PCB	User Interface and Main Control PCB	
H0	Communication error of Main Control PCB	User Interface and Main Control PCB	
H1	Communication error between Main Control PCB and inverter PCB	User Interface and Main Control PCB	
Hd	Communication fault between master unit and slave unit.	User Interface and Main Control PCB	
Sensor error			
Error code	Description	Displayed on	
E3	T1 Electric Heater/AHS water outlet temperature sensor error	User Interface and Main Control PCB	
E4	T5 Water tank temperature sensor error	User Interface and Main Control PCB	
E5	T3 Outdoor unit heat exchanger bottom temperature sensor error	User Interface and Main Control PCB	
E6	T4 Ambient temperature sensor error	User Interface and Main Control PCB	
E7	Tbt Balance tank temperature sensor/ Final outlet water temperature of cascade system sensor error	User Interface and Main Control PCB	
E9	Th Return-air temperature sensor error	User Interface and Main Control PCB	
EA	Tp Discharge temperature sensor error	User Interface and Main Control PCB	
Eb	Tsolar Solar panel temperature sensor error	User Interface and Main Control PCB	
EC	T5_2 Water tank temperature sensor error (Reserved)	User Interface and Main Control PCB	
Ed	Tw_in Plate heat exchanger inlet water temperature sensor error	User Interface and Main Control PCB	
FC1	TL Outdoor unit heat exchanger outlet temperature sensor error	User Interface and Main Control PCB	
H2	T2 Plate heat exchanger outlet refrigerant temperature sensor error	User Interface and Main Control PCB	
H3	T2B Plate heat exchanger inlet refrigerant temperature sensor error	User Interface and Main Control PCB	
H5	Ta room temperature sensor error	User Interface and Main Control PCB	
H8	H-SEN High pressure sensor error	User Interface and Main Control PCB	
H9	Tw2 Zone 2 water flow temperature sensor error	User Interface and Main Control PCB	
HA	Tw_out Plate heat exchanger outlet water temperature sensor error	User Interface and Main Control PCB	
P21	L-SEN Low pressure sensor error	User Interface and Main Control PCB	
P27	H-SEN and L-SEN connected reversely (Detect when compressor is off)	User Interface and Main Control PCB	
Voltage error			
Error code	Description	Displayed on	
E1	Phase loss or phase reversal	User Interface and Main Control PCB	For 3Ph models
H7	Power overvoltage and Power undervoltage protection	User Interface and Main Control PCB	

Protection code			
Error code	Description	Displayed on	
P0	Low pressure protection	User Interface and Main Control PCB	
P1	High pressure switch protection	User Interface and Main Control PCB	
P3	Overcurrent protection	User Interface and Main Control PCB	
P4	The protection for overhigh discharge temperature of Compressor	User Interface and Main Control PCB	
Pd	The protection for overhigh condensing temperature	User Interface and Main Control PCB	
HP	Low pressure protection in cooling mode	User Interface and Main Control PCB	
bA	T4 sensor out of operation range protection	User Interface and Main Control PCB	
PP	The protection for abnormal temperature difference between outlet water and inlet water	User Interface and Main Control PCB	
Hb	3 times of PP and Twout<7°C	User Interface and Main Control PCB	
P5	The big temperature difference between outlet water temp. and inlet water temp.	User Interface and Main Control PCB	
Inverter module error/ protection			
Error code	Description	Displayed on	
F1	The protection for undervoltage of DC bus	User Interface and Main Control PCB	
C7	Overhigh temperature protection for IPM module	User Interface and Main Control PCB	
H4	3 times of "L1*" in 60 mins	User Interface and Main Control PCB	
L1E	Hardware overcurrent protection	Main Control PCB	
L11	Phase current instantaneous overcurrent protection	Main Control PCB	
L12	Phase current continuous 30s overcurrent protection	Main Control PCB	
L2E	Over-temperature protection	Main Control PCB	
L3E	Bus voltage too low error	Main Control PCB	
L31	Bus voltage too high error	Main Control PCB	
L32	Bus voltage excessively high error	Main Control PCB	
L34	Phase loss error of three-phase power supply	Main Control PCB	For 3Ph models
L43	Abnormal phase current sampling bias	Main Control PCB	
L45	Fan motor code mismatch error	Main Control PCB	
L46	IPM protection (FO)	Main Control PCB	
L47	Module type mismatch	Main Control PCB	
L5E	Motor failed to start	Main Control PCB	
L52	Motor stalling protection	Main Control PCB	
L6E	Phase loss protection	Main Control PCB	
L61	compressor terminals short circuit protection	Main Control PCB	
L65	IPM short circuit protection	Main Control PCB	
LBE	Action of high pressure switch	Main Control PCB	
LB7	PED bH error	Main Control PCB	
LCE	PFC hardware overcurrent protection	Main Control PCB	For 3Ph models
LC1	Instantaneous overcurrent of pfc software protection	Main Control PCB	For 3Ph models
LC2	PFC software continuous 30 s overcurrent protection	Main Control PCB	For 3Ph models
LC3	PFC low voltage protection	Main Control PCB	For 3Ph models
LC4	PFC power factor is less than 0.8	Main Control PCB	For 3Ph models
LC5	PFC valid value overcurrent protection	Main Control PCB	For 3Ph models
LC6	PFC1 channel hardware overcurrent protection	Main Control PCB	For 3Ph models
LC7	PFC2 channel hardware overcurrent protection	Main Control PCB	For 3Ph models

Inverter module error/ protection			
Error code	Description	Displayed on	
LC8	PFC3 channel hardware overcurrent protection	Main Control PCB	For 3Ph models
LC9	Over-temperature protection of PFC module	Main Control PCB	For 3Ph models
LCA	PFC module CBC overcurrent error protection	Main Control PCB	For 3Ph models
LCB	Overvoltage of PFC bus or PFC half bus	Main Control PCB	For 3Ph models
LCC	Short circuit of PFC IGBT	Main Control PCB	For 3Ph models
LCD	Abnormal PFC Ad sampling bias	Main Control PCB	For 3Ph models
H6	Fan failure	User Interface and Main Control PCB	
HH	10 times of H6 in 120mins	User Interface and Main Control PCB	
J1E	Hardware overcurrent protection	Main Control PCB	
J11	Phase current instantaneous overcurrent protection	Main Control PCB	
J12	Phase current continuous 30s overcurrent protection	Main Control PCB	
J2E	Over-temperature protection	Main Control PCB	
J3E	Bus voltage too low error	Main Control PCB	
J31	Bus voltage too high error	Main Control PCB	
J32	Bus voltage excessively high error	Main Control PCB	
J43	Abnormal phase current sampling bias	Main Control PCB	
J45	Fan motor code mismatch error	Main Control PCB	
J46	IPM PROTECTION (FO)	Main Control PCB	
J47	Module type mismatch (after module resistance tested)	Main Control PCB	
J5E	Motor failed to start	Main Control PCB	
J52	Motor stalling protection	Main Control PCB	
J6E	Phase loss protection	Main Control PCB	
J61	Fan terminals short circuit protection	Main Control PCB	
J65	IPM short circuit protection	Main Control PCB	
HF	Outdoor unit EEPROM error	User Interface and Main Control PCB	
Others			
Error code	Description	Displayed on	
Pb	Pb is the indicator that shows the system is running in anti-freezing control	Main Control PCB	
IBH-related error			
Error code	Description	Displayed on	
C2	Relay adhesion on IBH PCB	User Interface and Main Control PCB	For Units with IBH
C3	Current transformer failure or circuit failure of IBH PCB	User Interface and Main Control PCB	For Units with IBH
C4	C3≥3 times	User Interface and Main Control PCB	For Units with IBH

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Water circuit error			
Error code	Description	Displayed on	
E0	water flow failure (10 times of E8)	User Interface and Main Control PCB	
E8	water flow protection	User Interface and Main Control PCB	
Communication error			
Error code	Description	Displayed on	
E2	Communication fault between User Interface and Main Control PCB	User Interface and Main Control PCB	
H0	Communication error of Main Control PCB	User Interface and Main Control PCB	
H1	Communication error between Main Control PCB and inverter PCB	User Interface and Main Control PCB	
Hd	Communication fault between master unit and slave unit.	User Interface and Main Control PCB	
Sensor error			
Error code	Description	Displayed on	
E3	T1 Electric Heater/AHS water outlet temperature sensor error	User Interface and Main Control PCB	
E4	T5 Water tank temperature sensor error	User Interface and Main Control PCB	
E5	T3 Outdoor unit heat exchanger bottom temperature sensor error	User Interface and Main Control PCB	
E6	T4 Ambient temperature sensor error	User Interface and Main Control PCB	
E7	Tbt Balance tank temperature sensor/ Final outlet water temperature of cascade system sensor error	User Interface and Main Control PCB	
E9	Th Return-air temperature sensor error	User Interface and Main Control PCB	
EA	Tp Discharge temperature sensor error	User Interface and Main Control PCB	
Eb	Tsolar Solar panel temperature sensor error	User Interface and Main Control PCB	
EC	T5_2 Water tank temperature sensor error (Reserved)	User Interface and Main Control PCB	
Ed	Tw_in Plate heat exchanger inlet water temperature sensor error	User Interface and Main Control PCB	
FC1	TL Outdoor unit heat exchanger outlet temperature sensor error	User Interface and Main Control PCB	
H2	T2 Plate heat exchanger outlet refrigerant temperature sensor error	User Interface and Main Control PCB	
H3	T2B Plate heat exchanger inlet refrigerant temperature sensor error	User Interface and Main Control PCB	
H5	Ta room temperature sensor error	User Interface and Main Control PCB	
H8	H-SEN High-pressure sensor error	User Interface and Main Control PCB	
H9	Tw2 Zone 2 water flow temperature sensor error	User Interface and Main Control PCB	
HA	Tw_out Plate heat exchanger outlet water temperature sensor error	User Interface and Main Control PCB	
P21	L-SEN Low-pressure sensor error	User Interface and Main Control PCB	
P27	H-SEN and L-SEN connected reversely (Detect when compressor is off)	User Interface and Main Control PCB	
F51	Temperature sensor(T90) fault	User Interface and Main Control PCB	
F31	Temperature sensor(T9I) fault	User Interface and Main Control PCB	
F6	EXV1 fault	User Interface and Main Control PCB	
F61	EXV2 fault	User Interface and Main Control PCB	
F62	EXV3 fault	User Interface and Main Control PCB	
Voltage error			
Error code	Description	Displayed on	
E1	Phase loss or phase reversal.	User Interface and Main Control PCB	For 3Ph units
H7	Power overvoltage and Power under voltage protection	User Interface and Main Control PCB	
FE	Lack of L2 phase fault.	User Interface and Main Control PCB	

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Protection code			
Error code	Description	Displayed on	
P0	Low-pressure protection	User Interface and Main Control PCB	
P1	High-pressure switch protection	User Interface and Main Control PCB	
P3	Overcurrent protection	User Interface and Main Control PCB	
P4	Compressor protection against excessively-high discharge temperature	User Interface and Main Control PCB	
Pd	Protection for over-high condensing temperature in cooling mode	User Interface and Main Control PCB	
HP	Low-pressure protection in cooling mode	User Interface and Main Control PCB	
bA	T4 sensor out of operation range protection	User Interface and Main Control PCB	
PP	Protection for abnormal temperature difference between outlet water and inlet water	User Interface and Main Control PCB	
Hb	PP occurs 3 times in heating/DHW mode	User Interface and Main Control PCB	
P5	The big temperature difference between outlet water temp. and inlet water temp.	User Interface and Main Control PCB	
Inverter module error/ protection			
Error code	Description	Displayed on	
C7	Over-high temperature protection for IPM module	User Interface and Main Control PCB	
H4	3 times of "L1*" in 60 minutes	User Interface and Main Control PCB	
L1E	Hardware overcurrent protection	Main Control PCB	
L11	Phase current instantaneous overcurrent protection	Main Control PCB	
L12	Phase current continuous 30s overcurrent protection	Main Control PCB	
L2E	Over-temperature protection	Main Control PCB	
L3E	Bus voltage too low error	Main Control PCB	
L31	Bus voltage too high error	Main Control PCB	
L32	Bus voltage excessively high error	Main Control PCB	
L34	Phase loss error of three-phase power supply	Main Control PCB	For 3Ph units
L35	L2 phase mismatch fault	Main Control PCB	For 3Ph units
L43	Abnormal phase current sampling bias	Main Control PCB	
L45	Fan motor code mismatch error	Main Control PCB	
L46	IPM protection (FO)	Main Control PCB	
L47	Module type mismatch	Main Control PCB	
L5E	Motor failed to start	Main Control PCB	
L52	Motor stalling protection	Main Control PCB	
L6E	Phase loss protection	Main Control PCB	
L61	compressor terminals short circuit protection	Main Control PCB	
L65	IPM short circuit protection	Main Control PCB	
LBE	Action of high-pressure switch	Main Control PCB	
LB7	PED bH error	Main Control PCB	
H6	Fan 1 failure	User Interface and Main Control PCB	

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Inverter module error/ protection			
Error code	Description	Displayed on	
H61	Fan 2 failure	User Interface and Main Control PCB	
HH	10 times of H6 / H61 in 120min	User Interface and Main Control PCB	
J1E	Hardware overcurrent protection	Main Control PCB	
J11	Phase current instantaneous overcurrent protection	Main Control PCB	
J12	Phase current continuous 30s overcurrent protection	Main Control PCB	
J2E	Over-temperature protection	Main Control PCB	
J3E	Bus voltage too low error	Main Control PCB	
J31	Bus voltage too high error	Main Control PCB	
J32	Bus voltage excessively high error	Main Control PCB	
J43	Abnormal phase current sampling bias	Main Control PCB	
J45	Fan motor code mismatch error	Main Control PCB	
J46	IPM Protection (FO)	Main Control PCB	
J47	Module type mismatch (after module resistance tested)	Main Control PCB	
J5E	Motor failed to start	Main Control PCB	
J52	Motor stalling protection	Main Control PCB	
J6E	Phase loss protection	Main Control PCB	
J61	Fan terminals short circuit protection	Main Control PCB	
J65	IPM short circuit protection	Main Control PCB	
HF	Drive does not match model	User Interface and Main Control PCB	
Others			
Error code	Description	Displayed on	
Pb	Pb is the indicator that shows the system is running in anti-freezing control	Main Control PCB	

YUKON COMMERCIAL SERIES R32

No.	Code	Content	Note
1	E0	Main control Model setting error (Other Model Main control EPROM error)	The capability selection is inconsistent with the actual model. Power on again after setting correctly
2	E1	Phase sequence error of main control board check	Recovered upon failure recovery
3	E2	Communication failure between master and the HMI or master and slave 2E2:Communication failure between main board and slave board	Recovered upon failure recovery Recovered upon failure recovery
4	E3	Total water outlet temperature sensor failure (main unit valid)	Recovered upon failure recovery
5	E4	Unit water outlet temperature sensor failure	Recovered upon failure recovery
6	E5	1E5 condenser tube temperature sensor T3A failure 2E5 condenser tube temperature sensor T3B failure	Recovered upon failure recovery Recovered upon failure recovery
7	E6	Water tank temperature sensor T5 failure	Recovered upon failure recovery
8	E7	Ambient temperature sensor failure	Recovered upon failure recovery
9	E8	Power supply phase sequence protector output error	Recovered upon failure recovery
10	E9	Water flow detection failure	Failure locking for 3 times in 60 minutes (Recovered by power off or Wired controller clear fault)
11	Eb	1Eb-->Taf1 the pipe of the tank antifreeze protection sensor failure 2Eb-->Taf2 cooling evaporator low-temperature antifreeze protection sensor failure	Recovered upon failure recovery Recovered upon failure recovery
12	EC	Slave unit module reduction	Recovered upon failure recovery
13	Ed	system discharge temperature sensor failure	Recovered upon failure recovery
14	EE	1EE EVI plate heat exchanger refrigerant temperature T6A sensor failure 2EE EVI plate heat exchanger refrigerant temperature T6B sensor failure	Recovered upon failure recovery Recovered upon failure recovery
15	EF	Unit water return temperature sensor failure	Recovered upon failure recovery
16	EP	Discharge sensor failure alarm	Recovered upon failure recovery
17	EU	Tz sensor failure	Recovered upon failure recovery
18	P0	P0 System high-pressure protection or discharge temperature protection 1P0 Compressor module 1 high pressure protection 2P0 Compressor module 2 high pressure protection	for 3 times in 60 minutes (Recovered by power off) Recovered upon failure recovery Recovered upon failure recovery
19	P1	System low pressure protection (or Severe refrigerant leakage protection)	for 3 times in 60 minutes (Recovered by power off)
20	P3	T4 ambient temperature too high in cooling mode	Recovered upon failure recovery
21	P4	1P4 System A current protection 2P4 System ADC bus current protection	for 3 times in 60 minutes (Recovered by power off)
22	P5	1P5 System B current protection 2P5 System B DC bus current protection	for 3 times in 60 minutes (Recovered by power off)
23	P6	Inverter module failure	Recovered upon error recovery
24	P7	High temperature protection of system condenser	for 3 times in 60 minutes (Recovered by power off)
25	P9	Water inlet and outlet temperature difference protection	Recovered upon failure recovery
26	PA	Abnormal water inlet and outlet temperature difference protection	Recovered upon failure recovery
27	Pb	Winter antifreeze protection	Reminder code, non fault or protection
28	PC	Cooling evaporator pressure too low	Recovered upon error recovery for 3 times in 60 minutes (Recovered by power off)
29	PE	Cooling evaporator low temperature antifreeze protection	Recovered upon error recovery for 3 times in 60 minutes (Recovered by power off)
30	PH	Heating T4 too high temperature protection	Recovered upon error recovery
31	PL	Tfin module temperature too high protection	for 3 times in 100 minutes (Recovered by power off)
32	PU	1PU DC fan A module protection 2PU DC fan B module protection	Recovered upon failure recovery Recovered upon failure recovery
33	bH	1bH:Module 1 relay blocking or 908 chip self-check failed 2bH:Module 2 relay blocking or 908 chip self-check failed	Recovered upon error recovery Recovered upon error recovery
34	H5	Voltage too high or too low	Recovered upon error recovery
35	xH9	1H9 Compressor A inverter module is not matched 2H9 Compressor B inverter module is not matched	Recovered upon error recovery Recovered upon error recovery
36	HC	High pressure sensor failure	Recovered upon error recovery
37	HE	1HE No inset A valve error 2HE No inset B valve error 3HE No inset C valve error	Recovered upon error recovery Recovered upon error recovery Recovered upon error recovery
38	F0	1F0 IPM module A transmission error 2F0 IPM module B transmission error	Recovered upon error recovery Recovered upon error recovery
39	F2	Superheat insufficient	Wait at least 20min before recovering

YUKON COMMERCIAL SERIES R32

No.	Code	Content	Note
40	F4	1F4 module A L0 or L1 protection occurs for 3 times in 60 minutes	Recovered by power off
		2F4 module B L0 or L1 protection occurs for 3 times in 60 minutes	Recovered by power off
41	F6	1F6 A system bus voltage error (PTC)	Recovered upon error recovery
		2F6 B system bus voltage error (PTC)	Recovered upon error recovery
42	Fb	Low pressure sensor error	Recovered upon error recovery
43	Fd	Suction temperature sensor error	Recovered upon error recovery
44	FF	1FF DC fan A error	Recovered by power off
		2FF DC fan B error	Recovered by power off
45	FP	DIP switch inconsistency of multiple water pumps	Recovered by power off
46	C7	If PL occurs 3 times in 100 minutes, the system reports the C7 failure	Recovered by power off or Wired controller clear fault
47	xL0	Compressor inverter module protection (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
48	xL1	low-voltage protection (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
49	xL2	high-voltage protection (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
50	xL4	MCE error (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
51	xL5	zero-speed protection (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
52	xL7	phase loss (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
53	xL8	frequency change over 15Hz (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
54	xL9	frequency phase difference 15Hz (x=1 or 2, 1 for Compressor A, 2 for Compressor B)	Recovered upon error recovery
55	dF	Defrosting prompt	Flash when entering the defrosting
56	L10	Overcurrent protection	Overcurrent fault
	L11	Transient phase current overcurrent protection	
	L12	Phase current overcurrent lasts 30s protection	
57	L20	Module over temperature protection	Over temperature fault
58	L30	Low bus voltage error	Power fault
	L31	High bus voltage error	
	L32	Excessively high bus voltage error	
	L34	Phase loss error	
59	L43	Phase current sampling bias abnormal	hardware fault
	L45	Motor code not match	
	L46	IPM protection	
	L47	Module type not match	
60	L50	Startup failure	Control fault
	L51	Out of step error	
	L52	Zero speed error	
61	L60	Fan motor phase loss protection	Diagnostic fault
	L65	IPM short circuit error	
	L66	FCT detection error	
	L6A	Open circuit of U-phase upper tube	
	L6B	Open circuit of U-phase lower tube	
	L6C	Open circuit of V-phase upper tube	
	L6D	Open circuit of V-phase lower tube	
	L6E	Open circuit of W-phase upper tube	
	L6F	Open circuit of W-phase lower tube	

SPLIT WATER HEATERS

Symptom	Error Description
The water heater stops operation and the wired controller displays E1.	System high pressure protection.
The water heater stops operation and the wired controller displays E3	Refrigerant-lacking protection
The water heater stops operation and the wired controller displays C5	Malfunction of jumper cap
The water heater stops operation and the wired controller displays E4.	Discharge high temperature protection.
The water heater stops operation and the wired controller displays E5	Overload protection of compressor
The water heater stops operation and the wired controller displays E6.	Communication malfunction.
The water heater stops operation and the wired controller displays F3.	Malfunction of outdoor ambient temperature sensor
The water heater stops operation and the wired controller displays F4.	Malfunction of discharge temperature sensor.
The water heater stops operation and the wired controller displays F6.	Malfunction of tube temperature sensor for outdoor heat exchanger.
The water heater stops operation and the wired controller displays Fd.	Malfunction of suction temperature sensor.
The water heater stops operation and the wired controller displays FE.	Malfunction of upper temperature sensor of water tank.
The water heater stops operation and the wired controller displays FL.	Malfunction of lower temperature sensor of water tank.
The water heater stops operation and the wired controller displays L6.	Unit's capacity is insufficient.
The water heater stops operation and the wired controller displays PL	Low voltage protection for drive DC bus bar of inverter compressor or voltage dropping malfunction
The water heater stops operation and the wired controller displays PH	High voltage protection for drive DC bus bar of inverter compressor
The water heater stops operation and the wired controller displays PA	Drive DC current protection of inverter compressor (input side)
The water heater stops operation and the wired controller displays H5	Drive IPM module protection of inverter compressor
The water heater stops operation and the wired controller displays HC	Drive PFC protection of inverter compressor
The water heater stops operation and the wired controller displays Lc	Failure startup of inverter compressor
The water heater stops operation and the wired controller displays Ld	Phase-lacking protection of inverter compressor
The water heater stops operation and the wired controller displays P0	Drive module reset of inverter compressor
The water heater stops operation and the wired controller displays P5	Overcurrent protection of inverter compressor

SPLIT WATER HEATERS

Symptom	Error Description
The water heater stops operation and the wired controller displays LF	Power protection of inverter compressor
The water heater stops operation and the wired controller displays Pc	Detection circuit malfunction of driven circuit of inverter compressor
The water heater stops operation and the wired controller displays H7	Desynchronizing protection of inverter compressor
The water heater stops operation and the wired controller displays P6	Drive communication malfunction between main control and inverter compressor
The water heater stops operation and the wired controller displays P8	High temperature protection of drive module of inverter compressor
The water heater stops operation and the wired controller displays P7	Malfunction of temperature sensor of drive module of inverter compressor
The water heater stops operation and the wired controller displays ee	Malfunction of drive storage chip of inverter compressor
The water heater stops operation and the wired controller displays PU	Malfunction of drive charging loop of inverter compressor
The water heater stops operation and the wired controller displays PP	Abnormal protection of drive DC input voltage of inverter compressor
The water heater stops operation and the wired controller displays PF	Malfunction of temperature sensor of drive electric box of inverter compressor
The water heater stops operation and the wired controller displays P9	Zero-crossing protection of drive AC input of inverter compressor
The water heater stops operation and the wired controller displays AL	Low voltage protection of drive DC bus bar of inverter outdoor unit or voltage dropping malfunction
The water heater stops operation and the wired controller displays AH	High voltage protection of drive DC bus bar of inverter outdoor unit
The water heater stops operation and the wired controller displays AA	AC current protection of inverter outdoor fan (input side)
The water heater stops operation and the wired controller displays A1	Drive IPM module protection of inverter outdoor fan
The water heater stops operation and the wired controller displays AF	Drive PFC protection of inverter outdoor fan
The water heater stops operation and the wired controller displays AC	Failure startup of inverter outdoor fan
The water heater stops operation and the wired controller displays Ad	Phase-lacking protection of inverter outdoor fan
The water heater stops operation and the wired controller displays A0	Drive module reset of inverter outdoor fan
The water heater stops operation and the wired controller displays A0	Overcurrent protection of inverter outdoor fan
The water heater stops operation and the wired controller displays UP	Power protection of inverter fan
The water heater stops operation and the wired controller displays AE	Detection circuit malfunction of driven current of inverter outdoor fan
The water heater stops operation and the wired controller displays AJ	Desynchronizing protection of inverter outdoor fan
The water heater stops operation and the wired controller displays A6	Driven communication malfunction between main control and inverter outdoor fan

MONOBLOC WATER HEATERS

Code	Description	Solution
E0	Error of sensor T5U (upper water temperature sensor)	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E1	Error of sensor T5L(lower water temperature sensor)	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E2	Storage tank and Wired Controller communication error	Maybe the connection between controller and PCB has released or PCB has been broken.
E4	Evaporator temperature sensor T3 error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E5	Ambient temperature sensor T4 error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E6	Compressor discharge temperature sensor TP error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E8	Electric leakage error If PCB current_induction_circuit check the current difference between L,N >14mA, system consider it as "electric leakage error"	Maybe some wires have been broken or bad wire connection. Contact a qualified person to service the unit.
E9	Compressor suction temperature sensor TH error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EE	E-heater open-circuit error IEH (Current difference E-heater on and off)<1A	Maybe the E-heater has been broken or bad wire connection after repair. Contact a qualified person to service the unit.
EF	Clock chip error	Maybe the chip has been broken, but unit can work well without clock-memory, so it is needed to reset clock when power put on again. If necessary, contact a qualified person to service the unit.
Ed	E-EPROM chip error	Contact a qualified person to service the unit.

MONOBLOC WATER HEATERS

Code	Description	Solution
P1	System high pressure protection: Unit 300 : $\geq 3.0\text{MPa}$ active; $\leq 2.4\text{MPa}$ inactive. Unit 190 : P1 error code never appear because pressure switch	Maybe because of system blocked, air or water or more refrigerant in system (after repair), water temperature sensor malfunction, ect. Contact a qualified person to service the unit.
P2	High discharge temperature protection Unit 190/300 : $>115\text{ }^{\circ}\text{C}$ Protection active; $<90\text{ }^{\circ}\text{C}$ Protection inactive	Maybe because of system blocked, air or water or less refrigerant(leakage) in system(after repair), water temperature sensor malfunction, ect. Contact a qualified person to service the unit.
P3	Compressor abnormally stopped protection The discharge temperature is not so higher than evaporator temperature after compressor running a term.	Maybe because of compressor broken or bad connection between PCB and compressor.
P4	Compressor overloaded protection (10 sec after compressor startup, Current checking starts , 1) only compressor running, if it is $>10\text{A}$, the compressor will be stopped and protected.) 2) Compressor + e-heater opened, if it is $>I_{EH}+10$,the compressor will be stopped and protected.) Possible absorption or abnormal activation of the electrical resistance.	Maybe because of compressor broken, system blocked, air or water or more refrigerant in system(after repair), water temperature sensor malfunction, ect. Check that the resistance does not absorb current when the display is turned off. This circumstance is interpreted by the unit as a compressor anomalous absorption. Contact a qualified person to service the unit.
LA	When the ambient temp T4 is out of Heat Pump running range ($-7 \sim 43\text{ }^{\circ}\text{C}$) Heat Pump will stop, unit will show LA on the position of clock on display until T4 back to ($-7 \sim 43\text{ }^{\circ}\text{C}$). Only valid for the unit without e-heater. Unit with e-heater will never show "LA".	It is normal, and no necessary to repair.

Note

⇒ The alarm codes listed above are the most common. If a alarm code not listed above is displayed, contact technical assistance.

⇒ If any of P3/P4/P2/P1 continuously appear 3 times within single heating cycle, system will consider it as "Heat Pump system error".

Contact a qualified person to service the unit.

MONOBLOC WATER HEATERS R290

Code	Content
EH0b	Tank and wired controller communication error.
EH00	EEPROM chip error
EH03	Dc fan fault
PH15	Electric leakage protection
EC54	Compressor discharge temperature sensor TP error.
EH5H	Compressor suction temperature sensor TH error
EC53	Ambient temperature sensor T4 error.
EC52	Evaporator temperature sensor T3 error.
EC5L	Error of sensor T5L (Lower water temperature sensor).
EC5U	Error of sensor T5U (Upper water temperature sensor).
EH5d	E-heater open-circuit error
EHLA	When the ambient temperature T4 is out of the compressor operating range, the compressor stops, and EHLA is displayed until T4 returns to the normal range. Only works on units without electric heaters. Devices with electric heaters will never display "EHLA" It is normal, and no necessary to repair.
EHPH	Heat pump system fault. When PH20, PH21, PC30, PC06 any protection appears 3 times or the protection lasts 1 hour.
PHdH	Dry burning protection
PH20	Compressor abnormally stopped protection
PH21	Compressor overloaded protection
PH24	Anti-freeze protection for low-temperature conditions T5L < 4°C and T4 < 7°C
PC30	System high pressure protection ≥3.0MPa active; ≤2.4Mpa inactive
PC06	High discharge temperature protection.. Tp > 110°C, Protection active. Tp < 90°C, Protection inactive
PH9b	Over-temperature protection The current water temperature exceeds the target temperature by more than 5°C
PH91	Anti-freeze protection for refrigeration status T3 < -30°C lasting for 10s, Protection active. T3 ≥ -30°C, Protection inactive

WALL-MOUNTED MONOBLOC WATER HEATERS R290

Display	Malfunction Description	Corrective action
EH0b	Tank and LCD panel communication error.	Maybe the connection between LCD panel and PCB has released or PCB has been broken.
EH00	Machine working parameters are abnormal.	Contact a qualified person to service the unit.
EH03	Dc fan fault.	Maybe the connection between fan and PCB has released or fan has been broken. Contact a qualified person to service the unit.
PH15	Electric leakage error. If PCB current_induction_circuit check the current difference between L,N >14mA, system consider it as"electric leakage error".	Maybe some wires have been broken or bad wire connection. Contact a qualified person to service the unit.
EC54	Compressor discharge temperature sensor TP error.	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EH5H	Compressor suction temperature sensor TH error.	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EC53	Ambient temperature sensor T4 error.	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EC52	Evaporator temperature sensor T3 error.	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EH5L	Error of sensor T5L(lower water temperature sensor)	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EH5U	Error of sensor T5U(upper water temperature sensor)	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EHLA	When the ambient temperature T4 is out of the compressor operating range, the compressor stops, and EHLA is displayed until T4 returns to the normal range. Only works on units without electric heaters. Devices with electric heaters will never display "EHLA".	It is normal, and no necessary to repair.
EH5d	electric heater open-circuit error	Maybe the electric heater has been broken or bad wire connection after repair.
EHHP	Heat pump system fault. When PH20, PH21, PC30, PC06 any protection appears 3 times or the protection lasts 1 hour.	The compressor works abnormally. Contact a qualified person to service the unit.
PHdH	Dry burning protection.	Ensure that there is water in the water tank before heating.
PH20	Compressor abnormally stopped protection The discharge temperature is not so higher than evaporator temperature after compressor running a term.	Maybe because of compressor broken or bad connection between PCB and compressor. Contact a qualified person to service the unit.
PH21	The working current of the compressor is too large.	Maybe because of compressor broken, system blocked, air or water or more refrigerant in system(after repair), water temperature sensor malfunction, ect. Contact a qualified person to service the unit.
PH24	Frost protection.T5L< 4°C and T4 < 7°C	The cold water temperature is too low, which will affect the water tank. The electric heater will work.
PC30	System high pressure protection ≥3.0MPa active; ≤2.4Mpa inactive	Maybe because of system blocked, air or water or more refrigerant in system(after repair), water temperature sensor malfunction, ect. Contact a qualified person to service the unit.
PC06	High TP protection.Tp>110°C, Protection active Tp<90°C, Protection inactive	Maybe because of system blocked, air or water or less refrigerant(leakage) in system(after repair), water temperature sensor malfunction, ect. Contact a qualified person to service the unit.
PH9b	Overtemperature protection.The current water temperature exceeds the target temperature by more than 5 °C.	The water temperature sensor is faulty or the current water temperature is too high. In case of burns, contact a qualified person to check.
PH91	Low T3 protection.	If the fault persists, Contact a qualified person to service the unit.

EXPLANATORY NOTES

DHW - Domestic hot water

SEER/SCOP was calculated according to European standards contained in EN14825, based on part load classifying and testing conditions given by norm EN14511. Energy label can be downloaded from Sinclair product web page after B2B login.

Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual Operation due to environmental change.

EER/COP - in accordance with EN14511.

R290 - (100% CH₃CH₂CH₃), GWP 3

R32 - (100% HFC-32), GWP 675.

R134a - (100% HFC-134a), GWP 1430

R410A - (50% HFC-32, 50% HFC-125), GWP 2088

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These values can be influenced by local conditions (acoustical bouncing area, the equipment of the room, etc.).

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