1 Features

- Cost effective alternative to a fossil fuel boiler
- Low energy bills and low CO2 emissions
- Easy to install
- Total solution for year round comfort

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				EKHBH016AA + ERHQ011AAV3	EKHBH016AA + ERHQ014AAV3	EKHBH016AA + ERHQ016AAV3
Outdoor units				ERHQ011AAV3	ERHQ014AAV3	ERHQ016AAV3
Nominal input (Indoor only)			W	230	230	230
Casing	Colour			RAL9010		
	Material			Epoxy polyester painted galvanised steel		
Dimensions	Packing	Height	mm	1225	1225	1225
		Width	mm	660	660	660
		Depth	mm	610	610	610
	Unit	Height	mm	922	922	922
		Width	mm	502	502	502
		Depth	mm	361	361	361
Weight	Unit		kg	55	55	55
	Packed Unit		kg	65	65	65
Packing	Material			EPS		
				Wood		
				Carton		
				PP (Straps)		
	Weight		kg	10	10	10
Main components	Pump	Type		Water cooled		
		Nr. of speed		2	2	2
Pump	Nominal ESP unit	Heating	kPa	52.5	43.5	35.0
Main components	Pump	Power input	W	210	210	210
	Water side Heat exchanger	Type		Brazed plate		
		Qty		1	1	1
		Water volume	l	1.01	1.01	1.01
		Water flow rate Min.	l/min	16	16	16
Water side Heat exchanger	Water flow rate Nom.	Heating	l/min	32.1	40.1	45.9
Main components	Water side Heat exchanger	Water flow rate Max.	l/min	58	58	58
		Insulation material		Polyurethane foam		
	Expansion vessel	Volume	l	10	10	10
		Max. water pressure	bar	3	3	3
		Pre pressure	bar	1	1	1
	Water filter	Diameter perforations	mm	1	1	1
		Material		Brass		
Water circuit	Piping connections diameter		inch	1-1/4" MBSP		
	Piping		inch	1-1/4"		
	Safety valve		bar	3	3	3
	Manometer			Yes		
	Drain valve / Fill valve			Yes		
	Shut off valve			Yes		
	Air purge valve			Yes		
	Total water volume (6)		l	5.5	5.5	5.5
Refrigerant Circuit	Gas side diameter		mm	15,9		
	Liquid side diameter		mm	9,52		
Sound Level	Sound Pressure		dBA	28	28	28
Operation range	Ambient	Heating	xC	-20~35		
	Waterside	Heating	xC	15~55		

2 Specifications

2-1 TECHNICAL SPECIFICATIONS	EKHBH016AA + ERHQ011AAV3	EKHBH016AA + ERHQ014AAV3	EKHBH016AA + ERHQ016AAV3
Notes	With option kit EKHBDP installed: Height=936mm		
	Tamb 35xC - LWE 7xC (DT=5xC)		
	DB/WB 7xC/6xC-LWC 35xC(DT=5xC)		
	The sound pressure level is measured via a microphone at 1m from the unit. It is a relative acoustic environment. The sound pressure level mentioned is valid for pump medium speed.		
	15xC-25xC: BUH only, no Heatpump operation=during commissioning.		
	Including piping+PHE+backup heater/excluding expansion vessel.		

2-2 ELECTRICAL SPECIFICATIONS				EKHBH016AA + ERHQ011AAV3	EKHBH016AA + ERHQ014AAV3	EKHBH016AA + ERHQ016AAV3
Electric heater	Type			No backup heater		
Current	Z-max	List		No requirements		
	Zmax electric heater + booster heater (EKSWW* Models)	List		No requirements		
Electric heater	Type			3V3		
	Power Supply	Phase		1	1	1
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Current	Running Current	A	13	13	13
Electric heater	Voltage range	Minimum		-10%		
		Maximum		+10%		
Wiring connections	For power supply backup heater	Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
Electric heater	Type			6V3		
	Power Supply	Phase		1	1	1
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Current	Running Current	A	26	26	26
Current	Z-max	Text		0.25 + j0.15		
	Zmax electric heater + booster heater (EKSWW* Models)	Text		0.15 + j0.09		
Electric heater	Voltage range	Minimum		-10%		
		Maximum		+10%		
Wiring connections	For power supply backup heater	Quantity of wires		3G		
		Type of wires		Select diameter and type according to national and local regulations		
Electric heater	Type			6WN		
	Power Supply	Phase		3	3	3
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Current	Running Current	A	8.7	8.7	8.7
Current	Z-max	List		No requirements		
	Zmax electric heater + booster heater (EKSWW* Models)	List		No requirements		
Electric heater	Voltage range	Minimum		-10%		
		Maximum		+10%		

2 Specifications

2-2 ELECTRICAL SPECIFICATIONS				EKHBH016AA + ERHQ011AAV3	EKHBH016AA + ERHQ014AAV3	EKHBH016AA + ERHQ016AAV3
Wiring connections	For power supply backup heater	Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
Electric heater	Type			6T1		
	Power Supply	Phase		3	3	3
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Current	Running Current	A	15.1	15.1	15.1
Current	Z-max	List		Out of scope		
	Zmax electric heater + booster heater (EKSWW* Models)	List		Out of scope		
Electric heater	Voltage range	Minimum		-10%		
		Maximum		+10%		
Wiring connections	For power supply backup heater	Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
Electric heater	Type			9WN		
	Power Supply	Phase		3	3	3
		Frequency	Hz	50	50	50
		Voltage	V	400	400	400
	Current	Running Current	A	13	13	13
Electric heater	Voltage range	Minimum		-10%		
		Maximum		+10%		
Wiring connections	For power supply backup heater	Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
Electric heater	Type			9T1		
	Power Supply	Phase		3	3	3
		Frequency	Hz	50	50	50
		Voltage	V	230	230	230
	Current	Running Current	A	22.6	22.6	22.6
Current	Z-max	List		Out of scope		
	Zmax electric heater + booster heater (EKSWW* Models)	List		Out of scope		
Electric heater	Voltage range	Minimum		-10%		
		Maximum		+10%		
Wiring connections	For power supply backup heater	Quantity of wires		4G		
		Type of wires		Select diameter and type according to national and local regulations		
	Connection type			For power supply connection to Optional Warm Water Tank + Q2L		
	Quantity of wires			3G		
	Type of wires			Select diameter and type according to national and local regulations		
	Type of wires			For more details of the voltage range and current refer to installation manual EKHBH/X016AA*		
	Connection type			For connection with R5T		
	Quantity of wires			Wire included in option EKSWW*		
	Type of wires			Wire included in option EKSWW*		
	Connection type			For connection with A3P		
	Quantity of wires			Depends on thermostat type, refr to installation manual EKHBH/X016AA*		
	Type of wires			Select diameter and type according to national and local regulations		
	Type of wires			Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²		

2 Specifications

2-2 ELECTRICAL SPECIFICATIONS		EKHBH016AA + ERHQ011AAV3	EKHBH016AA + ERHQ014AAV3	EKHBH016AA + ERHQ016AAV3
	Connection type	For connection with M2S		
	Quantity of wires	3G		
	Type of wires	Select diameter and type according to national and local regulations		
	Type of wires	Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²		
	Connection type	For connection with M3S		
	Quantity of wires	3G or 4G		
	Type of wires	Select diameter and type according to national and local regulations		
	Type of wires	Voltage: 230V/Maximum current: 100mA/Minimum 0,75 mm²		

3 Features

4 Options

EKHBH(X)016

Factory mounted optional equipment for EKHB(H/X)016AA**

Reference		Description												
		Heating only model EKHBH016A....	A3V3		A6V3		A6WN		A6T1		A9WN		A9T1	
		Reversible model EKHBX016A....		A3V3		A6V3		A6WN		A6T1		A9WN		A9T1
**														
3V3		Back up heater 3kW 1~230V	0	0	-	-	-	-	-	-	-	-	-	-
6V3		Back up heater 6kW 1~230V	-	-	0	0	-	-	-	-	-	-	-	-
6WN		Back up heater 6kW 3~400V	-	-	-	-	0	0	-	-	-	-	-	-
6T1		Back up heater 6kW 3~230V	-	-	-	-	-	-	0	0	-	-	-	-
9WN		Back up heater 9kW 3~400V	-	-	-	-	-	-	-	-	0	0	-	-
9T1		Back up heater 9kW 3~230V	-	-	-	-	-	-	-	-	-	-	0	0

Outdoor combination table for EKHB(H/X)016AA**

Reference	Description	ERHQ011AAV3	ERHQ014AAV3	ERHQ016AAV3
EKHBH016AA*	Heating only indoor unit	0	0	0
EKHBX016AA*	Reversible indoor unit	0	0	0

Kit availability for EKHB(H/X)016AA*

Reference	Description												
	Heating only model EKHBH016A....	A3V3		A6V3		A6WN		A6T1		A9WN		A9T1	
	Reversible indoor unit		A3V3		A6V3		A6WN		A6T1		A9WN		A9T1
EKSWW150V3	Sanitary warm water tank 150l 1~230V	0	0	0	0	0(*)	0(*)	0	0	0(*)	0(*)	0	0
EKSWW200V3	Sanitary warm water tank 200l 1~230V	0	0	0	0	0(*)	0(*)	0	0	0(*)	0(*)	0	0
EKSWW300V3	Sanitary warm water tank 300l 1~230V	0	0	0	0	0(*)	0(*)	0	0	0(*)	0(*)	0	0
EKSWW200Z2	Sanitary warm water tank 200l 2~400V	-	-	-	-	0	0	-	-	0	0	-	-
EKSWW300Z2	Sanitary warm water tank 300l 2~400V	-	-	-	-	0	0	-	-	0	0	-	-
EKSWWU150V3	Sanitary warm water tank 150l 1~230V	0	0	0	0	0(*)	0(*)	0	0	0(*)	0(*)	0	0
EKSWWU200V3	Sanitary warm water tank 200l 2~230V	0	0	0	0	0(*)	0(*)	0	0	0(*)	0(*)	0	0
EKSWWU300V3	Sanitary warm water tank 300l 2~230V	0	0	0	0	0(*)	0(*)	0	0	0(*)	0(*)	0	0
EKHBDP	Option kit for condensate free cooling operation	-	0	-	0	-	0	-	0	-	0	-	0

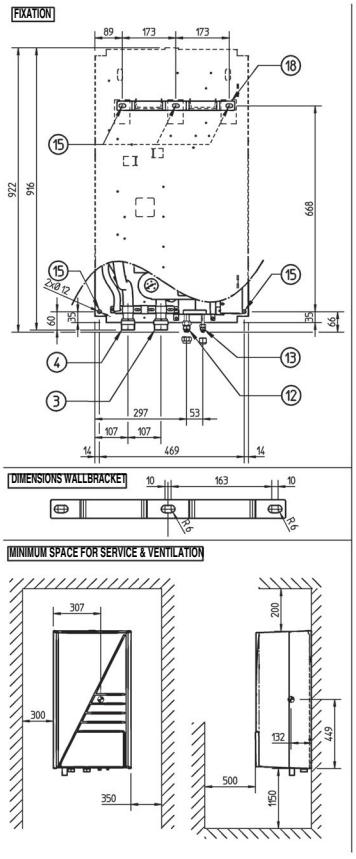
*if neutral line is available

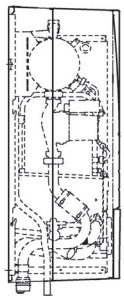
3TW57759-2A

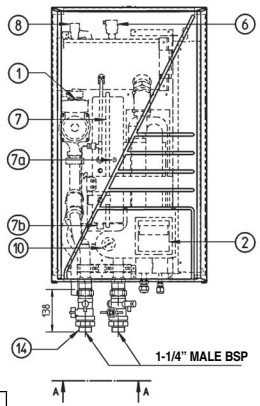
5 Dimensional drawing & centre of gravity

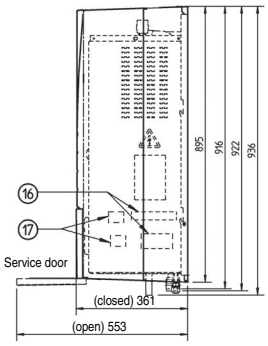
5 - 1 Dimensional drawing

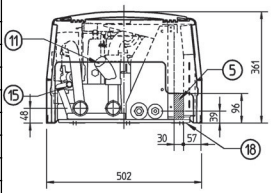
EKHBH016A

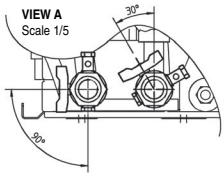








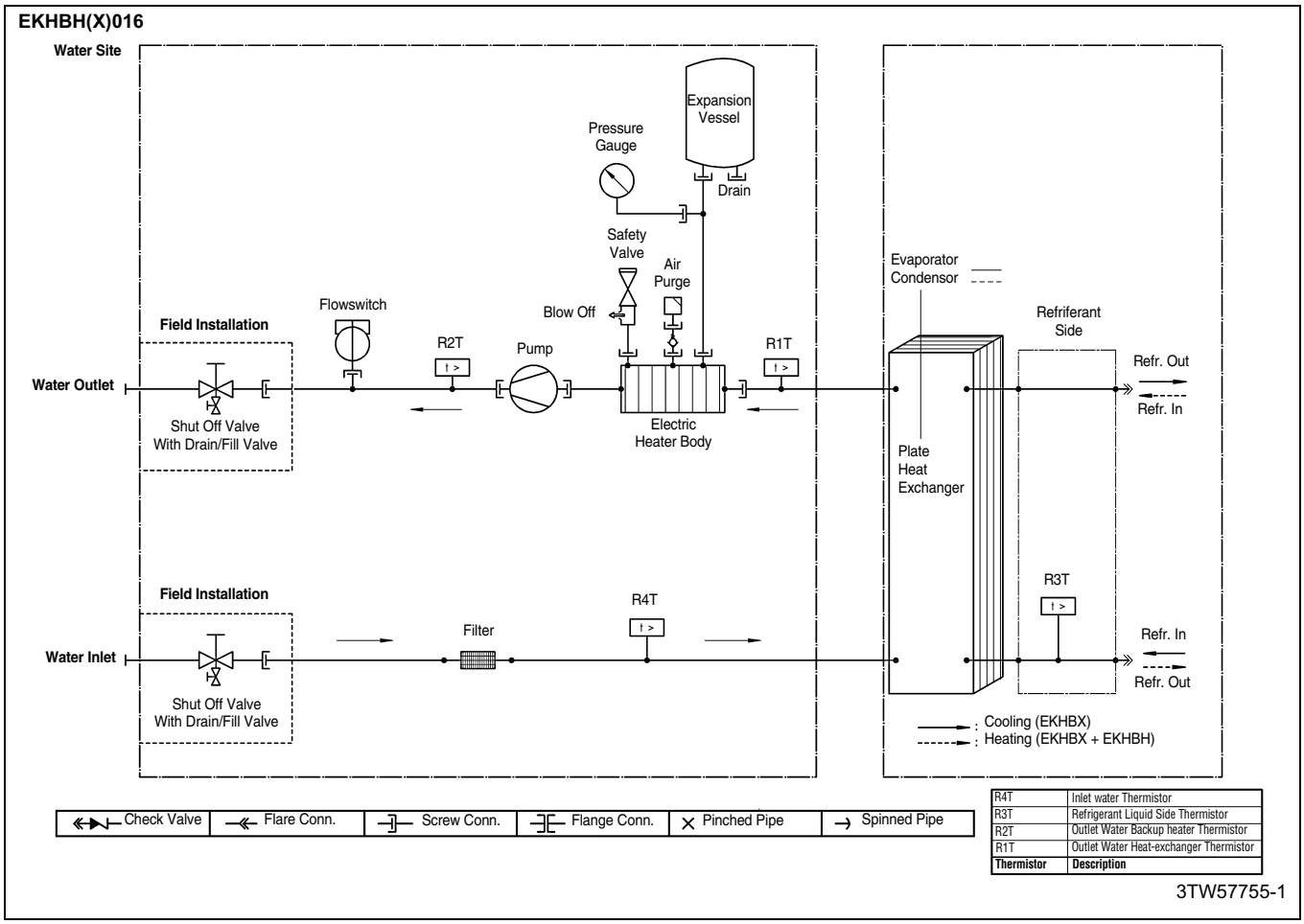




◔	Center of gravity
1	Pump + switch for speed setting
2	Remocon
3	Water IN connection 1-1/4" M BSP
4	Water OUT connection 1-1/4" M BSP
5	Power supply intake (+ sanitary warm water tank)
6	Air purge
7	Expansion vessel +(7a)nipple +(7b)drain
8	Blow off valve
9	Blow off drain (flexible hose ∅20)
10	Pressure gauge
11	Waterfilter
12	Suction pipe connection ∅15.9 flare connection
13	Liquid pipe connection ∅9.52 flare connection
14	Shut off valves with drain/fill valve (accessory delivered with unit)
15	Holes for fixation
16	Switchbox terminals
17	Switchbox terminals option sanitary warm water tank
18	Wallbracket

3TW57754-1

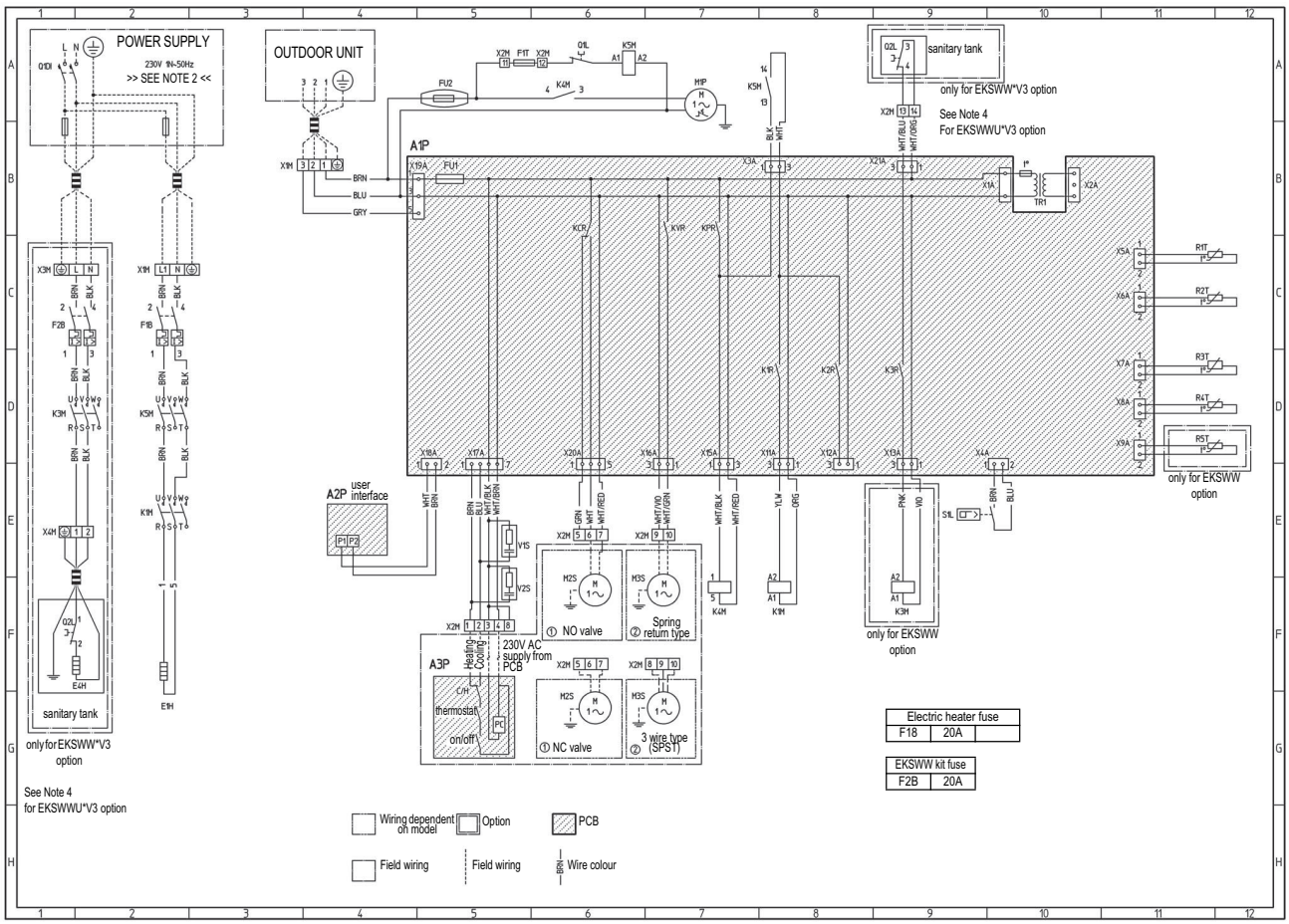
6 Piping diagram



7 Wiring diagram

7 - 1 Wiring diagram

EKHBH(X)016 3V3



F1T	Thermal fuse backup heater	R4T	Inlet water thermistor	K5M	Contactor for backup heater all pole disconnection
X1M-X4M	Terminal strips	R3T	Refrigerant liquid side thermistor	K4M	Pump relay
V1S, V2S	Spark suppression 1, 2	R2T	Outlet water backup heater thermistor	K3M	Contactor booster heater
FU2	Fuse 5A T 250V for pump	R1T (A1P)	Outlet water heat exchanger thermistor	K1M	Contactor backup heater
FU1	Fuse 3.15A T 250V for PCB	S1L	Flowswitch	F2B	Fuse booster heater
Q1DI	Earth leakage protector	E4H	Booster heater (3kW)	F1B	Fuse backup heater
Q2L	Thermal protector booster heater	E1H	Backup heater element 1 (3kW)	A3P	Thermostat (field supply) (PC power circuit)
Q1L	Thermal protector backup heater	M3S	3way valve: floorheating/Sanitary warm water	A2P	User interface PCB
TR1	Transformer 24V for PCB	M2S	2way valve for cooling mode	A1P	Main PCB
R5T	Sanitary warm water thermistor	M1P	Pump		

□□□□	: Terminal strip	NO/NC	Normal open/ normal closed	Colors:	BLK:	Black	PNK: Pink
⊡	: Connector	SPST	Single pole single throw		BLU:	Blue	RED: Red
⏚	: Protective earth				BRN:	Brown	WHT: White
—○—	: Terminal				ORG:	Orange	YLW: Yellow
▬▮▬	: Field wiring				GRY:	Grey	GRN: Green
					VIO:	Violet	

3TW57746-4B

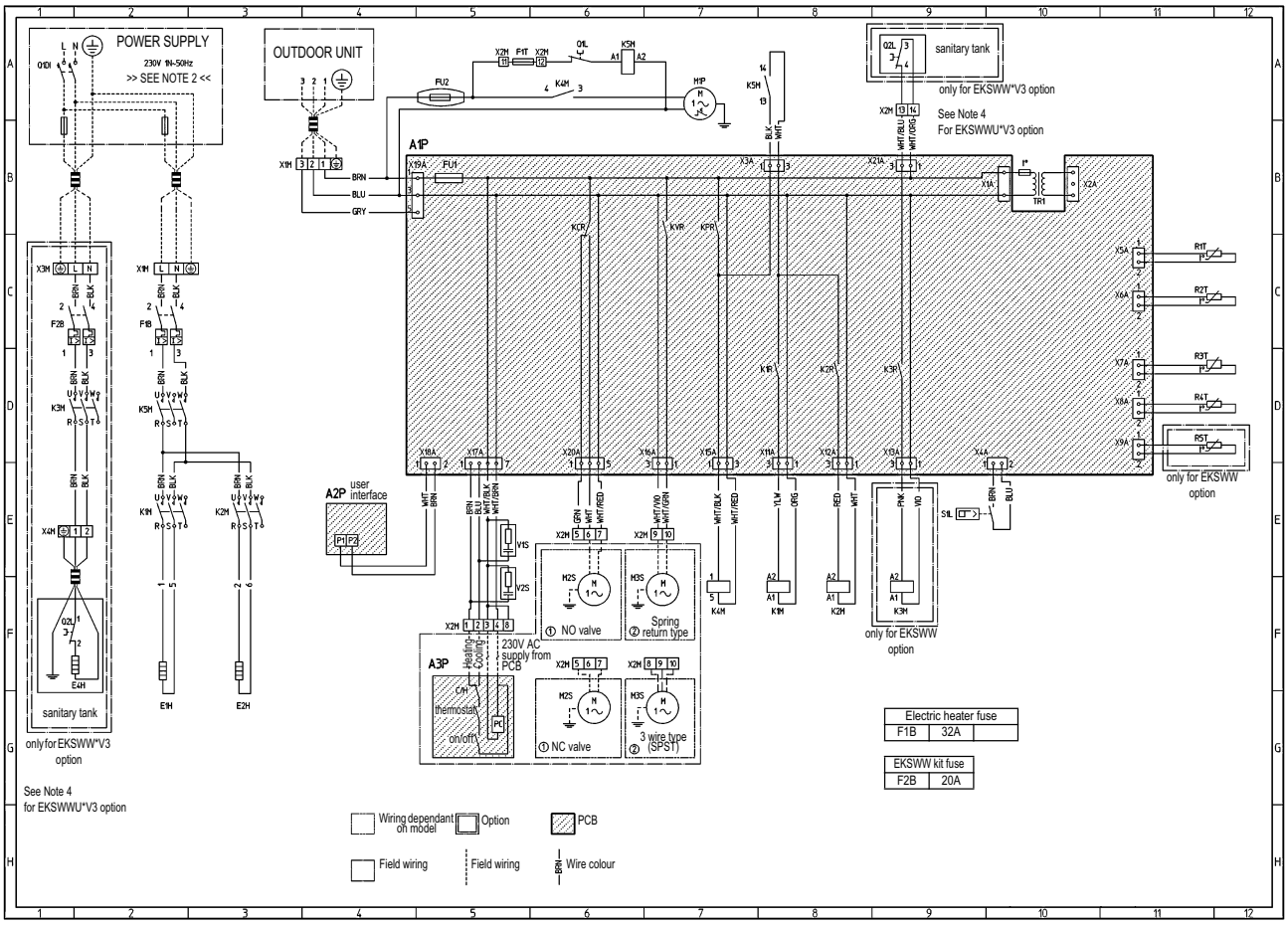
NOTES

1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor unit, outdoor unit and EKSWW option.
3 Do not operate the unit by short-circuiting any protection device.
4 For EKSWWU*V3, refer to option manual.

7 Wiring diagram

7 - 1 Wiring diagram

EKHBH(X)016 6V3



F1T	Thermal fuse backup heater	R4T	Inlet water thermistor	M1P	Pump
X1M-X4M	Terminal strips	R3T	Refrigerant liquid side thermistor	K5M	Contactor for backup heater all pole disconnection
V1S, V2S	Spark suppression1, 2	R2T	Outlet water backup heater thermistor	K4M	Pump relay
FU2	Fuse 5A T 250V for pump	R1T (A1P)	Outlet water heat exchanger thermistor	K3M	Contactor booster heater
FU1	Fuse 3.15A T 250V for PCB	S1L	Flowswitch	K1M/K2M	Contactor backup heater step 1/2
Q1DI	Earth leakage protector	E4H	Booster heater (3kW)	F2B	Fuse booster heater
Q2L	Thermal protector booster heater	E2H	Backup heater element 2 (3kW)	F1B	Fuse backup heater
Q1L	Thermal protector backup heater	E1H	Backup heater element 1 (3kW)	A3P	Thermostat (field supply) (PC = power circuit)
TR1	Transformer 24V for PCB	M3S	3way valve: floorheating/Sanitary warm water	A2P	User interface PCB
R5T	Sanitary warm water thermistor	M2S	2way valve for cooling mode	A1P	Main PCB

: Terminal strip
: Connector
: Protective earth
: Terminal
: Field wiring

NO/NC Normal open/ normal closed
SPST Single pole single throw

Colours:
BLK: Black
BLU: Blue
BRN: Brown
ORG: Orange
GRY: Grey
VIO: Violet
PNK: Pink
RED: Red
WHT: White
YLW: Yellow
GRN: Green

3TW57746-5B

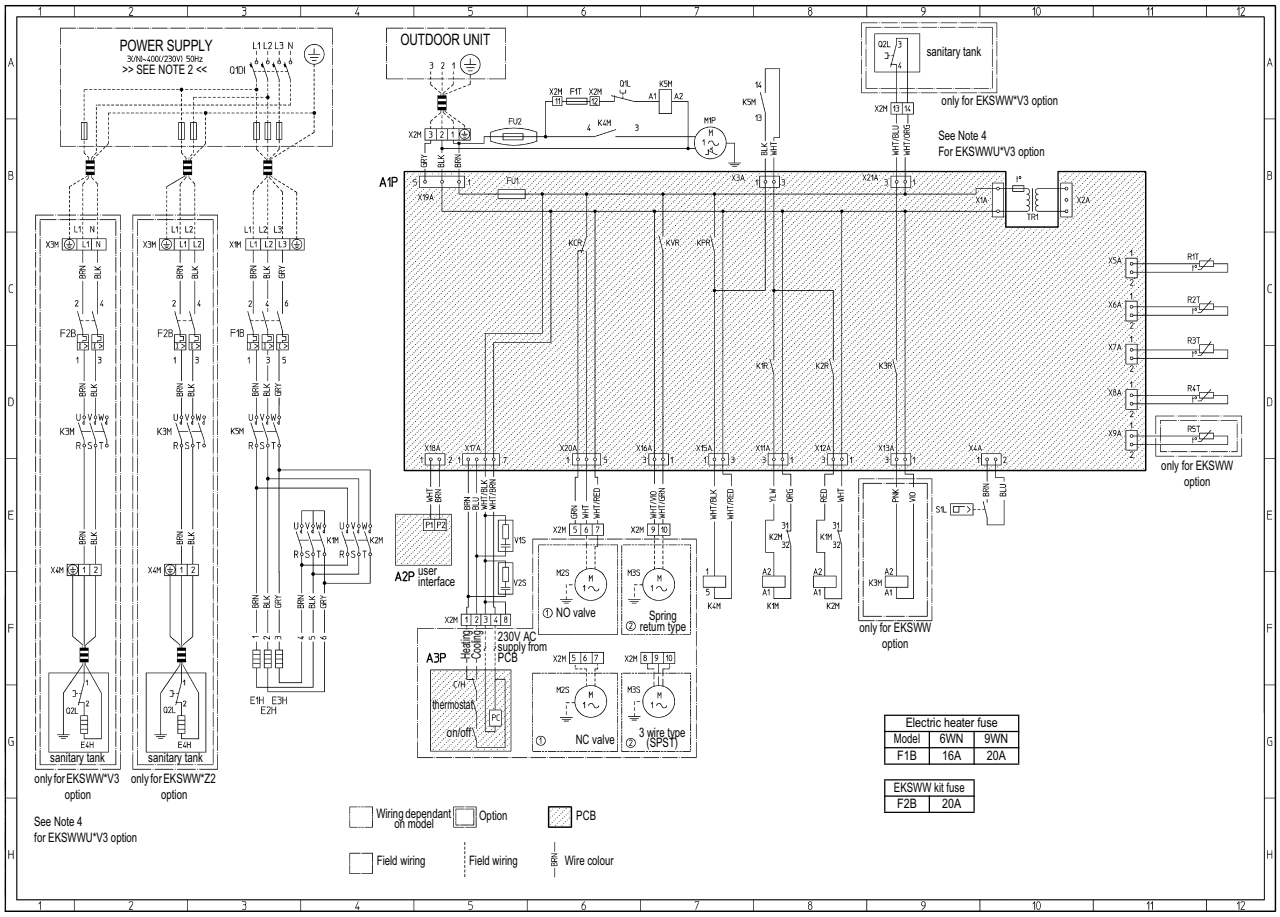
NOTES

1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor unit, outdoor unit and EKSWW option.
3 Do not operate the unit by short-circuiting any protection device.
4 For EKSWWU*V3, refer to option manual.

7 Wiring diagram

7 - 1 Wiring diagram

EKHBH(X)016 6WN/9WN



F1T	Thermal fuse backup heater	R3T	Refrigerant liquid side thermistor	M1P	Pump
X1M-X4M	Terminal strips	R2T	Outlet water backup heater thermistor	K5M	Contactor for backup heater all pole disconnection
V1S, V2S	Spark suppression1, 2	R1T (A1P)	Outlet water heat exchanger thermistor	K4M	Pump relay
FU2	Fuse 5A T 250V for pump	S1L	Flowswitch	K3M	Contactor booster heater
FU1	Fuse 3.15A T 250V for PCB	E4H	Booster heater (3kW)	K1M/K2M	Contactor backup heater step 1/2
Q1DI	Earth leakage protector	E3H	Backup heater element 3 (6WN:2kW/9WN:3kW)	F2B	Fuse booster heater
Q2L	Thermal protector booster heater	E2H	Backup heater element 2 (6WN:2kW/9WN:3kW)	F1B	Fuse backup heater
Q1L	Thermal protector backup heater	E1H	Backup heater element 1 (6WN:2kW/9WN:3kW)	A3P	Thermostat (field supply) (PC = power circuit)
TR1	Transformer 24V for PCB	M3S	3way valve: floorheating/Sanitary warm water	A2P	User interface PCB
R5T	Sanitary warm water thermistor	M2S	2way valve for cooling mode	A1P	Main PCB
R4T	Inlet water thermistor				

				Colours:			
□□□□	: Terminal strip	NO/NC	Normal open/ normal closed		BLK:	Black	PNK: Pink
⊡	: Connector	SPST	Single pole single throw		BLU:	Blue	RED: Red
⏚	: Protective earth				BRN:	Brown	WHT: White
—○—	: Terminal				ORG:	Orange	YLW: Yellow
▬▮▮▬	: Field wiring				GRY:	Grey	GRN: Green
					VIO:	Violet	

3TW57746-2A

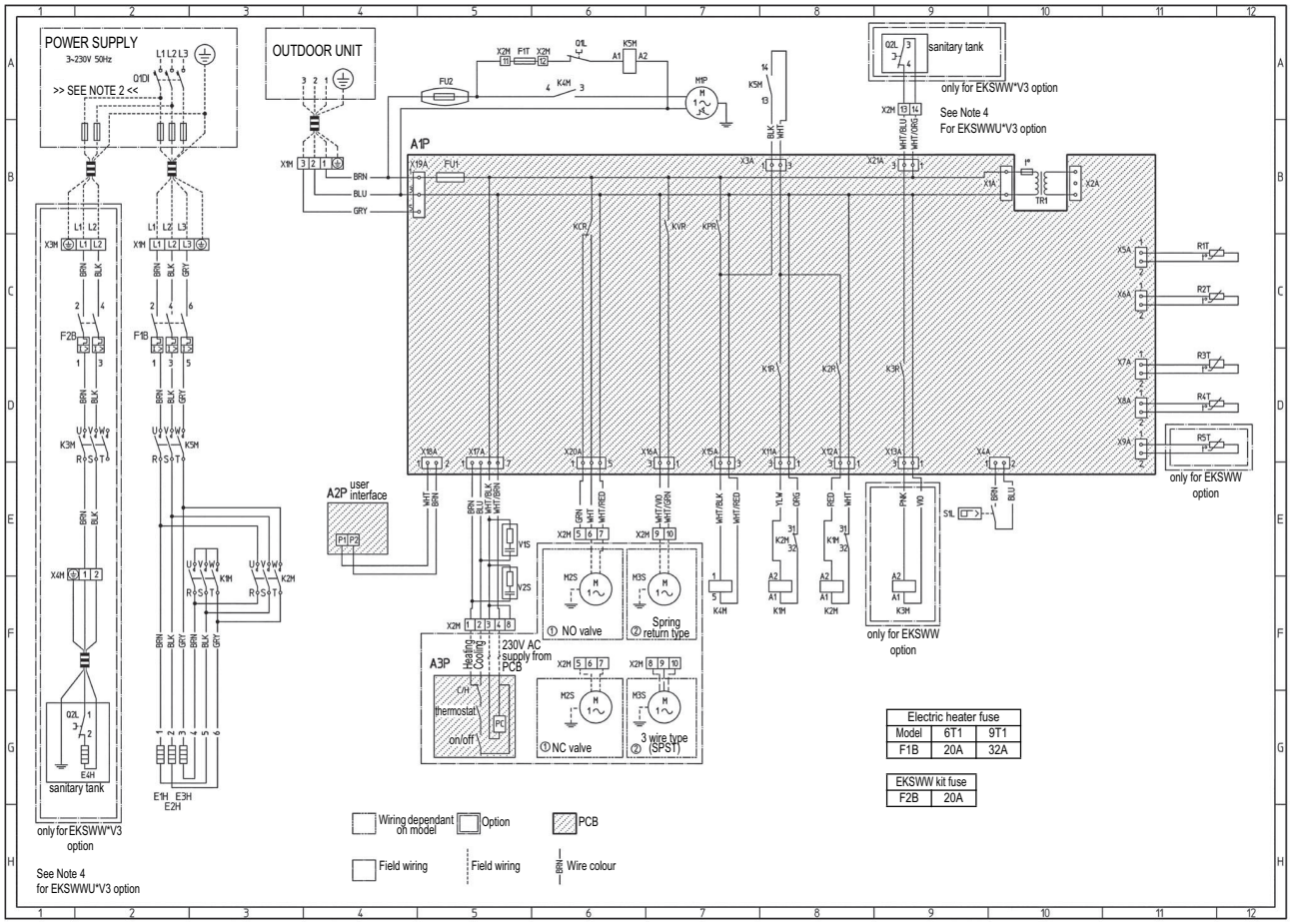
NOTES

1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor unit, outdoor unit and EKSWW option.
3 Do not operate the unit by short-circuiting any protection device.
4 For EKSWWU*V3, refer to option manual.

7 Wiring diagram

7 - 1 Wiring diagram

EKHBH(X)016 6T1/9T1



F1T	Thermal fuse backup heater	R3T	Refrigerant liquid side thermistor	M1P	Pump
X1M-X4M	Terminal strips	R2T	Outlet water backup heater thermistor	K5M	Contactor for backup heater all pole disconnection
V1S, V2S	Spark suppression1, 2	R1T (A1P)	Outlet water heat exchanger thermistor	K4M	Pump relay
FU2	Fuse 5A T 250V for pump	S1L	Flowswitch	K3M	Contactor booster heater
FU1	Fuse 3.15A T 250V for PCB	E4H	Booster heater (3kW)	K1M/K2M	Contactor backup heater step 1/2
Q1DI	Earth leakage protector	E3H	Backup heater element 3 (6T1:2kW/9T1:3kW)	F2B	Fuse booster heater
Q2L	Thermal protector booster heater	E2H	Backup heater element 2 (6T1:2kW/9T1:3kW)	F1B	Fuse backup heater
Q1L	Thermal protector backup heater	E1H	Backup heater element 1 (6T1:2kW/9T1:3kW)	A3P	Thermostat (field supply) (PC = power circuit)
TR1	Transformer 24V for PCB	M3S	3way valve: floorheating/Sanitary warm water	A2P	User interface PCB
R5T	Sanitary warm water thermistor	M2S	2way valve for cooling mode	A1P	Main PCB
R4T	Inlet water thermistor				

: Terminal strip
: Connector
: Protective earth
: Terminal
: Field wiring

NO/NC Normal open/ normal closed
SPST Single pole single throw

Colours:
BLK: Black
BLU: Blue
BRN: Brown
ORG: Orange
GRY: Grey
VIO: Violet
PNK: Pink
RED: Red
WHT: White
YLW: Yellow
GRN: Green

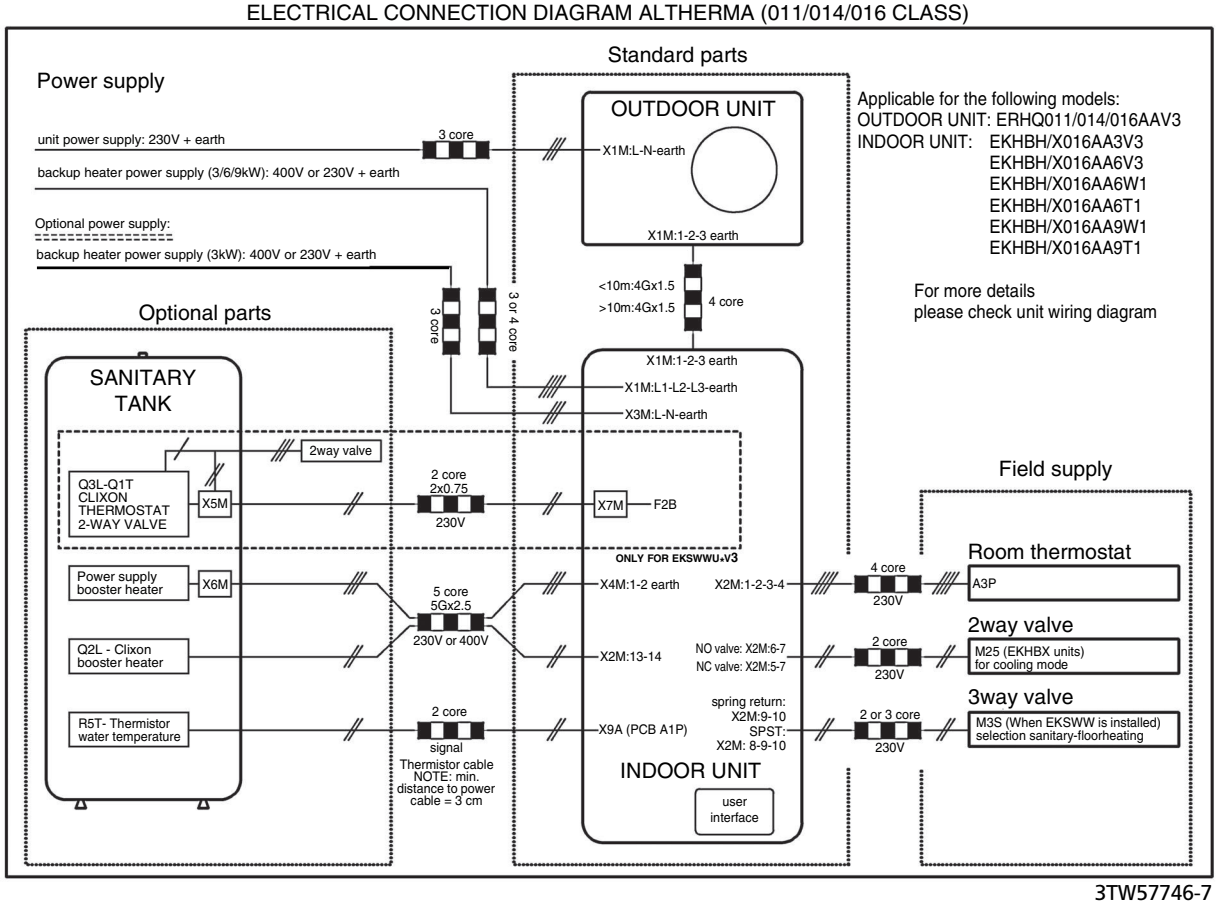
3TW57746-3A

NOTES

1 This wiring diagram only applies to the indoor unit.
2 Use one and same dedicated power supply for indoor unit, outdoor unit and EKSWW option.
3 Do not operate the unit by short-circuiting any protection device.
4 For EKSWWU*V3, refer to option manual.

7 Wiring diagram

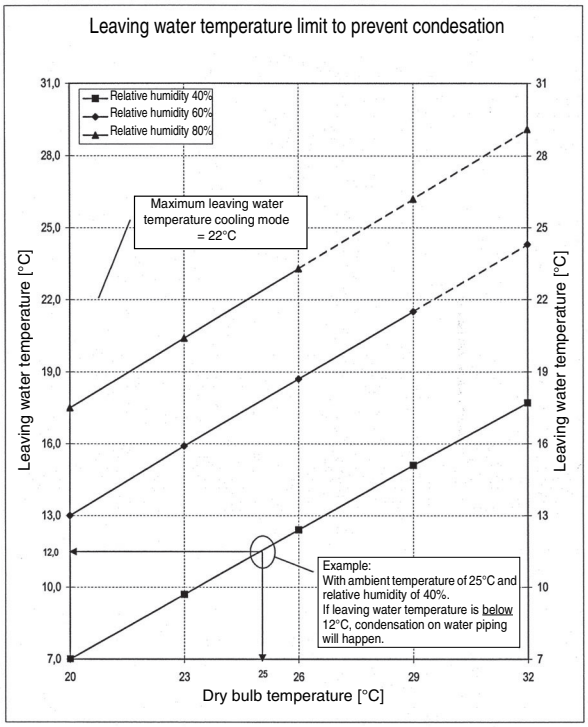
7 - 2 External connection diagram



8 Installation

8 - 1 Drainage instructions

EKHBDP

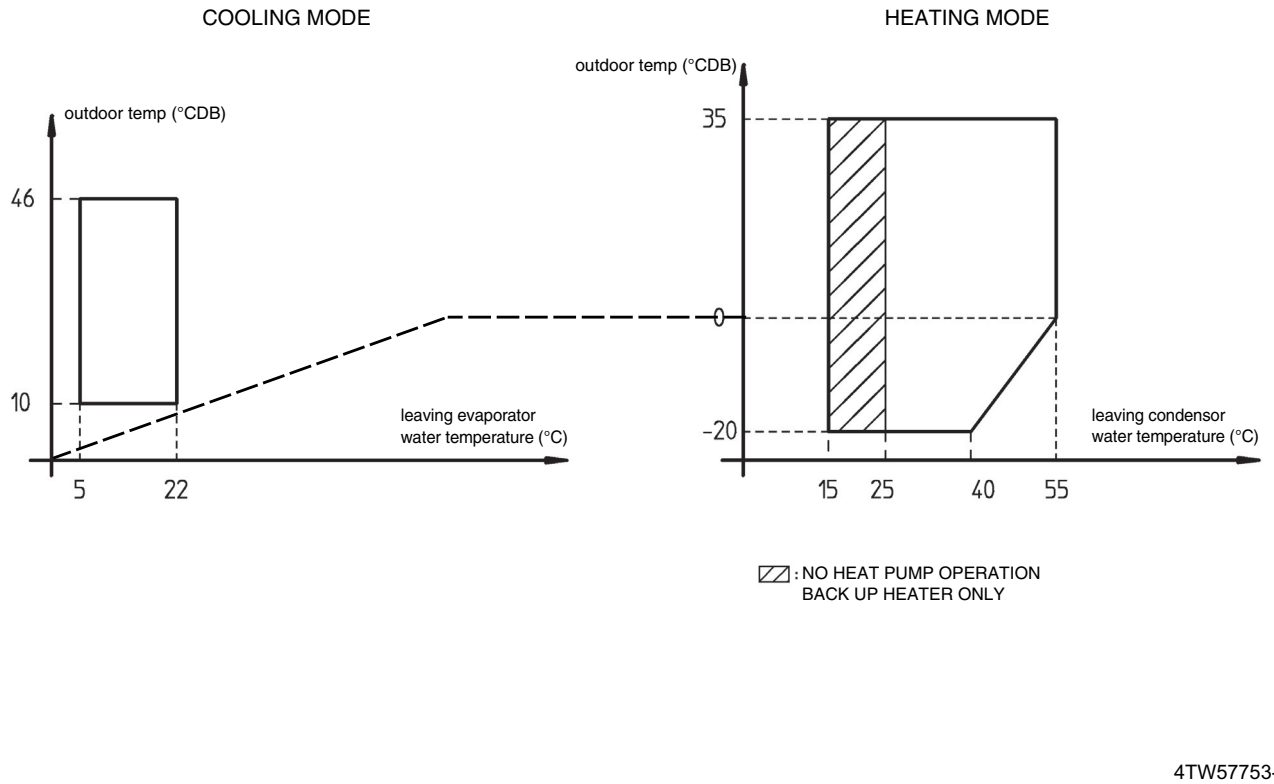


1. Refer to psychometric chart for more information.
2. If condensation is expected, installation of EKHBDP - drainpan kit must be considered.

4TW57759-3

9 Operation range

EKHBH(X)016



10 Hydraulic performance

10 - 1 Static pressure drop unit

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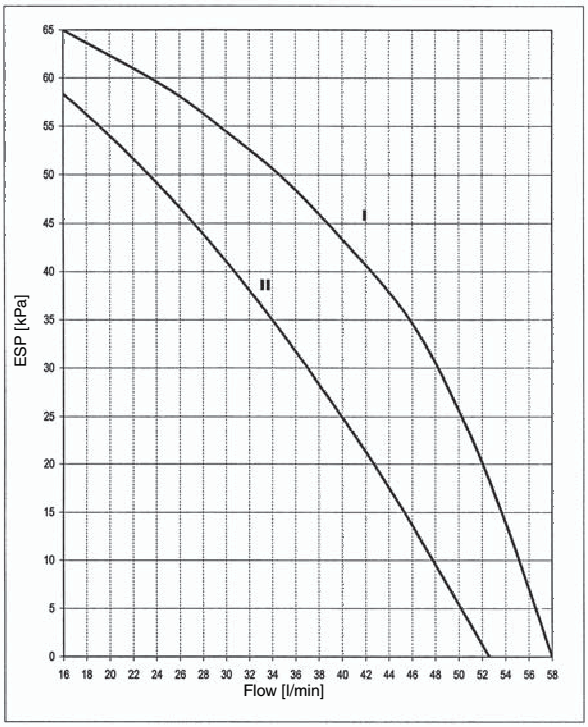

I high speed
II medium speed
ESP: external static pressure
Flow: waterflow through the unit

Warning:
1. Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.
2. Water quality must be according to EN directive EC 98/83 EC.

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