



Air Conditioners

Technical Data

VRV[®]

Heating only hydrobox for VRV[®]



EEDEN11-204

HXHD-A



Air Conditioners

Technical Data



Heating only hydrobox for VRV®



EEDEN11-204

HXHD-A

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HXHD-A

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2 Specifications

2-1 Technical Specifications				HXHD125A				
Heating capacity	Nom.		kW		14.0 (1)			
Casing	Colour			Metallic grey				
	Material			Precoated sheet metal				
Dimensions	Unit	Height	mm		705			
		Width	mm		600			
		Depth	mm		695			
	Packed unit	Height	mm		860			
		Width	mm		680			
		Depth	mm		800			
Weight	Unit		kg		92			
	Packed unit		kg		103			
Packing	Material			EPS Cardboard MDF Wood (pallet) Metal				
	Weight			kg		8.75		
Pump	Type			DC motor				
	Nr of speeds			Inverter controlled				
Expansion vessel	Volume		l		7			
	Max. water pressure		bar		3			
	Pre pressure		bar		1			
Sound pressure level	Nom.		dBA		42 (5) 43 (6)			
	Night quiet mode	Level 1		dBA		38 (5)		
Operation range	Heating	Ambient	Min.	°C		-20		
			Max.	°C		20 24 (11)		
		Water side	Min.	°C		25		
			Max.	°C		80		
	Domestic hot water	Ambient	Min.	°CDB		-20		
			Max.	°CDB		43		
		Water side	Min.	°C		45		
			Max.	°C		75		
Refrigerant	Type			R-134a				
	Charge		kg		2			
Refrigerant circuit	Gas side diameter		mm		12.7			
	Liquid side diameter		mm		9.52			
	High pressure side	Design pressure		bar		38		
Water circuit	Piping connections diameter		inch		G 1" (female)			
	Piping		inch		1"			
	Safety valve		bar		3			
	Manometer			Yes				
	Drain valve / fill valve			Yes				
	Shut off valve			Yes				
	Air purge valve			Yes				
	Heating water system	Water volume	Min.	l		20		
			Max.	l		200		
	Refrigerant oil	Type			FVC50K			
		Charged volume		l		0.75		
Refrigerant side heat exchanger	Type			Plate heat exchanger				
	Quantity			1				
	Plates	Quantity		66				
	Material			AISI 316				
	Insulation material			Felt type				
Water side Heat exchanger	Water flow rate	Min.	l/min		5			
		Heating	Nom.	l/min		40.1 (2)		
	Heating	Type			Plate heat exchanger			
		Quantity			1			
		Plates	Quantity		72			
		Material			AISI 316			
		Water volume		l		2.2		
		Insulation material			Felt type			

2 Specifications

2-1 Technical Specifications			HXHD125A
Water filter	Diameter perforations	mm	1
	Material		Brass
Cascade compressor	Quantity		1
	Motor	Type	Hermetically sealed swing compressor
		Starting method	
Installation place			Indoor

2-2 Electrical Specifications			HXHD125A	
Power supply	Phase		1~	
	Frequency		Hz	
	Voltage		V	
	Voltage range	Min.	%	-10
		Max.	%	6
Current	Zmax	Text	0.46	
	Minimum Ssc value		kVa	
	Maximum running current	Heating	A	
	Recommended fuses		A	
Wiring connections	For power supply	Quantity	2G	
		Type of wires		Select diameter and type according to national and local regulations
	Benefit kWh rate power supply installations	Quantity	2G+2G	
		Type of wires		Select diameter and type according to national and local regulations
	For power supply multi tenant	Quantity	2G	
		Remark		Select diameter and type according to national and local regulations
	For connection with outdoor unit	Quantity	2	
Remark		F1 + F2		
Power supply intake			Both indoor and outdoor unit	
Multi tenant	Power supply	Voltage	V	
		Voltage range	Min.	%
			Max.	%
	Current	Maximum running current	A	
		Recommended fuses	A	

Notes

- (1) Heating: entering condenser water temp. 40°C; leaving condenser water temp. 45°C; ambient air temp. 7°CDB, 6°CWB; standard: Eurovent
- (2) Maximum water flow rate for Dt: 5°C
- (3) Sound level is valid in free field condition because it is measured in a semi-anechoic room. Measured value under actual installation conditions will be higher due to environmental noise and sound reflections.
- (4) Values are sound pressure values measured at all sides (front, back, left, right, top) at 1m distance. The values do not occur simultaneously on all mentioned sides.
- (5) Sound levels are measured at: EW 55°C; LW 65°C
- (6) Sound levels are measured at: EW 70°C; LW 80°C
- (7) In accordance with EN/IEC 61000-3-11, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (system impedance) ≤ Zmax
- (8) Ssc: Short-circuit power
- (9) European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≤ 75A.
- (10) Zsys: system impedance
- (11) Field setting
- (12) At 60°C
- (13) 230VAC

3 Selection procedure

3 - 1 Selection Procedure

HXHD125A
REYAQ-P

I. Definitions

Index definition of HXHD125A

- 1) Index for selecting *pipng*, calculating *refrigerant charge* and *total connection ratio*
→ Index = 125 (see installation manual & technical specs 3TW60651-1)
- 2) Index for performing unit *capacity* calculation/selection
→ Index depends on leaving water temperature ≠ 125 (details are explained below)

Selection procedure

- Outdoor unit heating capacity (design point conditions) = **HC_o** [kW] ▶ See heating capacity table outdoor unit
- Outdoor unit power input (design point conditions) = **PI_o** (kW) ▶ See heating capacity table outdoor unit
- HXHD125A capacity calculation index = **R** ▶ To be looked up (see table below)
- VRV DX indoor capacity index total = **S** ▶ To be looked up (depends on VRV DX indoor unit type)
- Total indoor capacity index = index VRV DX connected
- + HXHD125A capacity calculation index = S + R = J ▶ To be calculated
- HXHD125A heating capacity (design point conditions) = **HC** (kW) ▶ To be calculated
- HXHD125A power input* (design point conditions) = **PI** (kW) ▶ To be calculated
- HXHD125A cascade step power input = **P** (kW) ▶ To be looked up
- ▶ $HC = HC_o / J * 112$

Informational remark

▶ $PI = PI_o / J * R + P$

*: total power input required to operate the cascade system = fraction of outdoor unit power input + HXHD cascade step power input

Ila. Cascade step power input and HXHD-A capacity calculation index

EWT [°C]	40	45	55	65
LWT [°C]	40	55	65	75
P [kW]	1.79	1.83	2.33	3.25
R	100	100	96	88

RWT = return water temperature
LWT = leaving water temperature

Ilb. Integrated heating capacity correction coefficient for REYAQ

		Inlet port temperature of heat exchanger (°C/RH 85%)						
		-7	-5	-3	0	3	5	7
β	REYAQ10/12P	0.97	0.95	0.90	0.86	0.87	0.92	1.00
	REYAQ14/16P	0.96	0.94	0.89	0.85	0.86	0.91	1.00

Integrated heating capacity = A [kW]
Value given in table of capacity characteristics = B [kW]
Integrated correction factor for frost accumulation = β
 $A = B * β$

III. Example

A. Make clear design point

- Required capacity for building: 33kW
- Outdoor ambient temperature design point: -7°CDB/-7.6°CWB
- Indoor ambient temperature design point: 20°C
→ REYAQ14P
- Select leaving water temperature HXHD125: 65°C
→ P & R

A1. Calculate total indoor capacity index

- VRV indoor units: 3 * "80" type + 1 * "20" type: S
- HXHD125A: R
→ J = R + S

A2. HXHD specifications at design point

- $HC = HC_o / J * 112$
- $PI = PI_o / J * R + P$

B. Check connection ratio

At least 1HXHD-A			OK
DX connection ratio: 50% ≤ x ≤ 130 %	260/350	74%	OK
HXHD-A connection ratio ≤ 100%	125/350	36%	OK
Total connection ratio: 80% ≤ x ≤ 200%	385/350	110%	OK

HC _o [kW]	33.3
PI _o [kW]	10.4

R	96
P [kW]	2.33

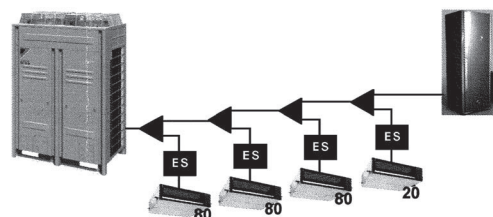
S	260
R	96
J	356

HC [kW]	10.5
PI [kW]	5.13

Look up in heating capacity table [=f (Ta indoor; Ta outdoor; HP)]
Look up in heating capacity table [=f (Ta indoor; Ta outdoor; HP)]
→ Decide outdoor unit HP class

Look up table above [=f (leaving water temperature)]
Look up table above [=f (leaving water temperature)]

Depends on DX indoor unit selection
See above
Σ



3TW60669-2

4 Combination table

4 - 1 Combination Table

HXHD-A REYAAQ-P					
I. Outdoor/Indoor combination table					
Heating only hydrobox indoor unit	Outdoor unit	REYAAQ10P	REYAAQ12P	REYAAQ14	REYAAQ16P
HXHD125A		0	0	0	0
II. Kit availability					
1. Kits connected to the outdoor unit					
Reference	Description	REYAAQ10P	REYAAQ12P	REYAAQ14P	REYAAQ16P
KHRQ(M)22M29H8	Refnet header	0	0	0	0
KHRQ(M)22M64H8	Refnet header		0	0	0
KHRQ(M)22M75H8	Refnet joint			0	0
KHRQ(M)22M20H8	Refnet joint	0	0	0	0
KHRQ(M)22M29H9	Refnet joint	0	0	0	0
KHRQ(M)22M64H8	Refnet joint		0	0	0
KHRQ(M)22M75H8	Refnet joint			0	0
KHRQ(M)23M29H8	Refnet header	0	0	0	0
KHRQ(M)23M64H8	Refnet header		0	0	0
KHRQ(M)23M75H8	Refnet joint			0	0
KHRQ(M)23M20T8	Refnet joint	0	0	0	0
KHRQ(M)23M29T9	Refnet joint	0	0	0	0
KHRQ(M)23M64T8	Refnet joint		0	0	0
KHRQ(M)23M75T8	Refnet joint			0	0
KWC25C450	Drain pan kit (1)	0	0	0	0
BSVQ100P8		0 (Δ2)	0 (Δ2)	0 (Δ2)	0 (Δ2)
BSVQ160P8	BSVQ box for Heat Recovery (Individual Branch Selector)	0 (Δ2)	0 (Δ2)	0 (Δ2)	0 (Δ2)
BSVQ250P8		0 (Δ2)	0 (Δ2)	0 (Δ2)	0 (Δ2)
BSV4Q100PV	BSVQ box for Heat Recovery (Multi Branch Selector)	0 (Δ2)	0 (Δ2)	0 (Δ2)	0 (Δ2)
BSV6Q100PV		0 (Δ2)	0 (Δ2)	0 (Δ2)	0 (Δ2)
EKBSVQLNP	Sound reduction kit for individual BSVQ box (Δ1)	0	0	0	0
BHGP26A1	Digital Pressure gauge kit	0	0	0	0
(Δ1): Only available for individual BSVQ boxes (not possible for Central BSV4Q/BSV6Q). (Δ2): - Multi tenant is possible - Need connect option-PCB DTA114A61 to each BSVQ-box & need compatible indoor unit. Allows to reduce operating sound of BSVQ-box (requires 1 sound kit per BSVQ - box) - Not required for hydro box HXHD125A, only for connection of DX indoor units.					
2. Kits connected to the indoor unit					
Reference	Description	Indoor Unit			
		HXHD125A			
EKHTS200[AC]	Stainless domestic hot water tank 200 l	0			
EKHTS260[AC]	Stainless domestic hot water tank 260 l	0			
EKHTSU200[AC]	Stainless domestic hot water tank 260 l UK - version	0			
EKHTSU260[AC]	Stainless domestic hot water tank 260 l UK - version	0			
EKHWP300A	PP tank	0			
EKHWP500A	PP tank	0			
EKRP1HBAA	Digital I/O PCB	0			
EKRP1AHTA	Demand PCB (3)	0			
EKRUAHTB	Remote user interface [remocon] (4)	0			
EKRTWA	Wired Room thermostat (2)	0			
EKTR1	Wireless Room thermostat (2)	0			
EKRTETS	Remote sensor for Room thermostat (2)	0			
3. Kits connected to the domestic hot water tank					
Reference	Description	Domestic hot water tank			
		EKHTS		EKHTSU	
		200A	260A	200AA	260AA
EKUHWHTA	Option kit for UK EKHTSU200-260A	-	-	0	0
EKFMAHTB (5)	Option kit for floor mounted tank	0	0	0	0
Remark: Other combinations are not guaranteed. (1) For allowed installation, see Installation Manual (2) Requires Demand PCB EKRP1AHTA (3) Requires to install to be able to connect Roomthermostat (4) Same controller as supplied with Cascade unit can be mounted parallel or on other location. If 2 controllers are installed, the installer needs to select 1 master & 1 slave (5) Only required if tank is NOT mounted on top of cascade indoor unit					
NOTES					
1 To one outdoor unit, multiple hydrobox units can be connected (≤100% connection ratio; further information, see technical data)					
2 All VRV indoor units can be connected.					

5 Dimensional drawings

5 - 1 Dimensional Drawings

HXHD-A

Detail A
Scale 1/3

If required (e.g. Wall fixation)
Pressure gauge can be removed from waterfilter, maximum distance between waterfilter and pressure gauge ± 600 mm

Left Installation Right installation

1	Remote control (delivered as accessory) Installation location is outside the unit
2	Discharge pipe connection ø12.7 solder (R410a)
3	Liquid pipe connection ø9.5 solder (R410a)
4	R134a Service ports 5/16" flare (2x)
5	Pressure gauge
6	Blow off valve
7	Drain valve water circuit
8	Air purge
9	Shut-off valves (2x)
10	Water filter
11	Water in connection G 1" (female)
12	Water out connection G 1" (female)
13	Control wiring intake (knock-out hole ø37)
14	Power supply wiring intake (knock-out hole ø37)
15	Knock-out holes for refrigerant piping and water piping
16	Levelling feet
17	Discharge stop valve ø12.7 solder (R410a)
18	Liquid stop valve ø9.5 solder (R410a)

3TW59914-1B(1)

HXHD-A

Left Installation Right installation Upwiring

Model	A	B	C
HXHD-A	355	270	300

(Space required for switch box removal)

Min. 600

694

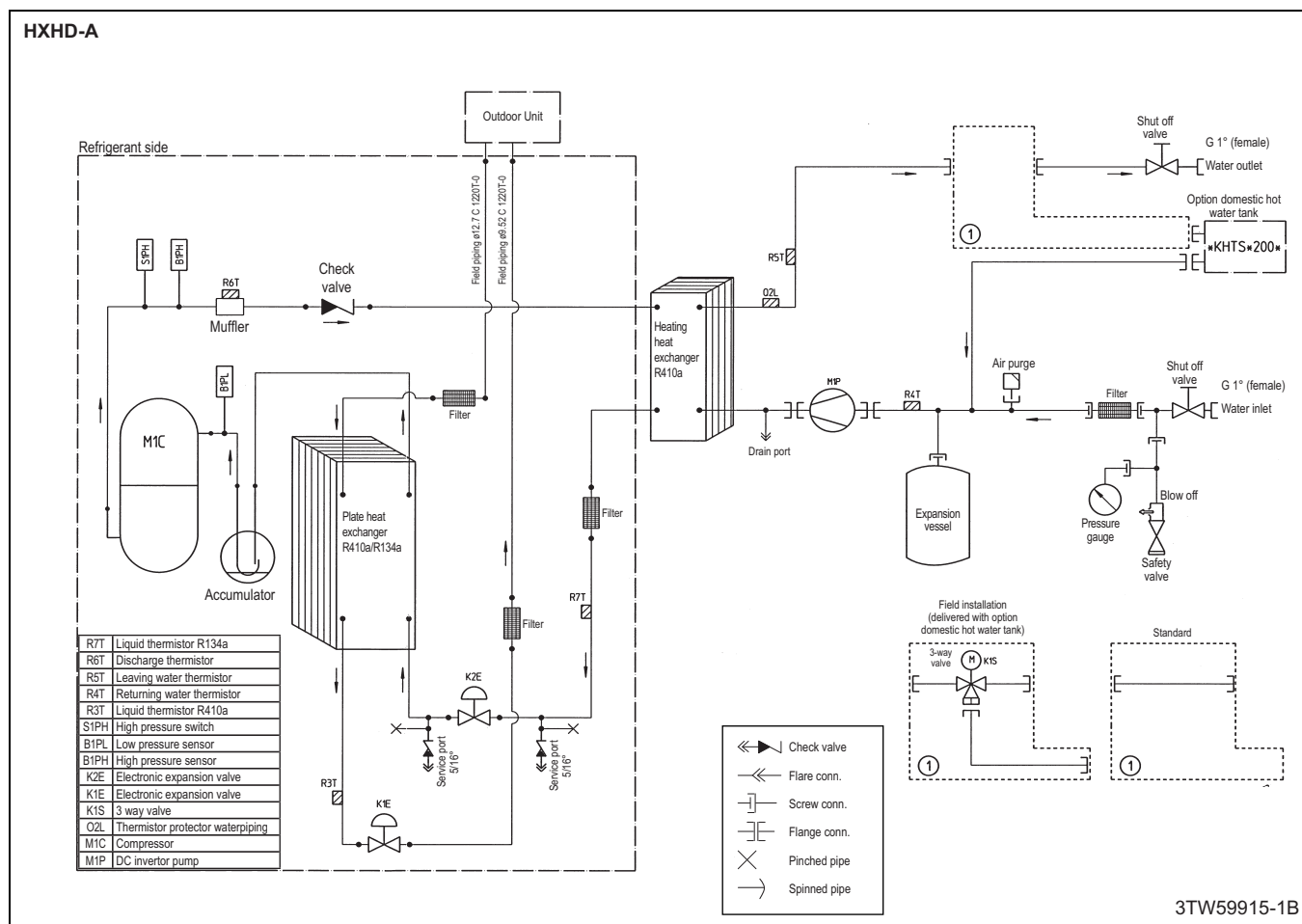
600

708

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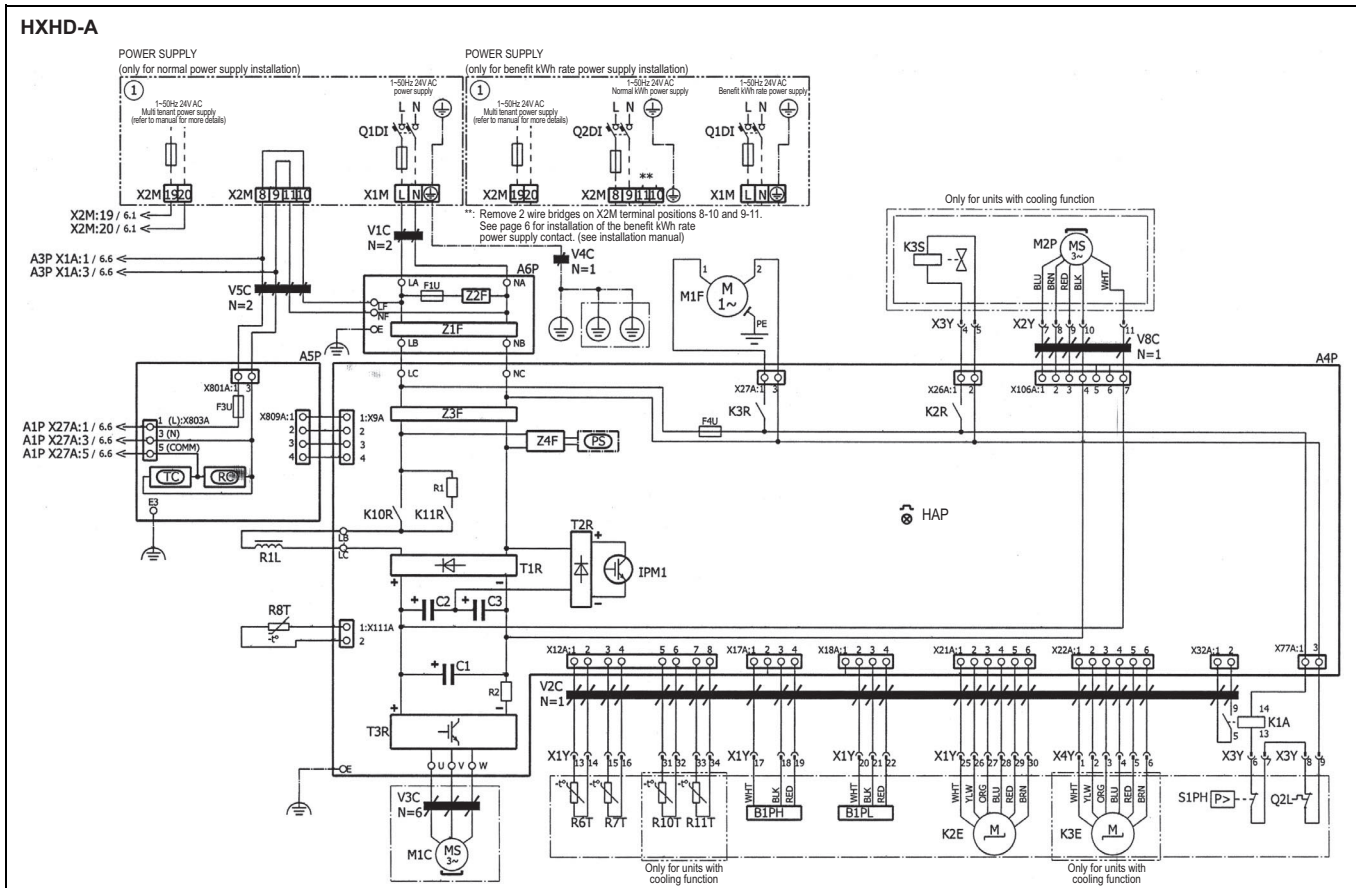
6 Piping diagrams

6 - 1 Piping Diagrams



7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase



Part Nr	Description	Part Nr	Description	Part Nr	Description
A1P	Main PCB	K1E-K3E	Electronic expansion valve	R7T	Liquid thermistor R134a
A2P	User interface PCB	K*R (A*P)	PCB relay	R8T	Fin thermistor
A3P	Control PCB	K1S	* 3-way valve	R9T	Leaving water thermistor (cooling)
A4P	Inverter PCB	K2S	3-way valve	R10T	Liquid thermistor (cooling)
A5P	QA PCB	K3S	2-way valve	R11T	Suction thermistor (cooling)
A6P	Filter PCB	K4S	# 2-way valve	RC (A*P)	Receiver circuit
A7P	* Digital I/O PCB	M1C	Compressor	S1PH	High pressure switch
A8P	* Demand PCB	M1F	Switch box cooling fan	S1S	# Benefit kWh rate power supply contact
A9P	* Multi tenant PCB	M1P-M2P	DC inverter pump	S3S	# Input multiple setpoint 1
A10P	* Thermostat PCB	PC (A11P)	* Power circuit	S4S	# Input multiple setpoint 2
A11P	* Receiver PCB	PHC1 (A7P)	* Optocoupler input circuit	SS1 (A1P)	Selector switch (emergency)
B1PH	High pressure sensor	PS (A*P)	Switching power supply	SS1 (A2P)	Selector switch (master slave)
B1PL	Low pressure sensor	Q1DI-Q2DI	# Earth leakage protector	SS1 (A7P)	* Selector switch
C1-C3	Filter capacitor	Q2L	Thermal protector water piping	TC (A*P)	Transmitter circuit
C1-C3 (A4P)	PCB capacitor	R1-R2 (A4P)	Resistance	T1R-T2R (A*P)	Diode bridge
DS1 (A*P)	Dip switch	R1L	Reactor	T3R	Power module
F1U	Fuse (T, 3.2A, 250V)	R1H (A10P)	* Humidity sensor	V1C-V8C	Ferrite core noise filter
F1U (A1P, A3P, A9P)	Fuse (T, 3.15A, 250V)	R1T (A10P)	* Ambient sensor	X1M-X3M	Terminal strip
F1U (A6P)	Fuse (T, 6.3A, 250V)	R2T	* Domestic hot water tank thermistor	X*M (A*P)	* PCB terminal strip
F1U-F2U (A7P)	* Fuse (5A, 250V)	R2T	* External sensor (floor or ambient)	X1Y-X4Y	Connector
F3U-F4U (A*P)	Fuse (T, 6.3A, 250V)	R3T	Liquid thermistor R410A	Z1F-Z5F (A*P)	Noise filter
HAP (A*P)	PCB LED	R4T	Returning water thermistor		
IPM1	Integrated power module	R5T	Leaving water thermistor (heating)		
K1A-K3A	Interface relay	R6T	Discharge thermistor		

* Included in option kit
Field supplied

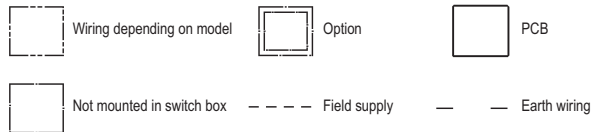
NOTES to go through before starting the unit:

X1M: Main terminal
X2M: Field wiring terminal for high voltage
X3M: Field wiring terminal for low voltage

— **/12.2: Connection **continues on page 12 column 2

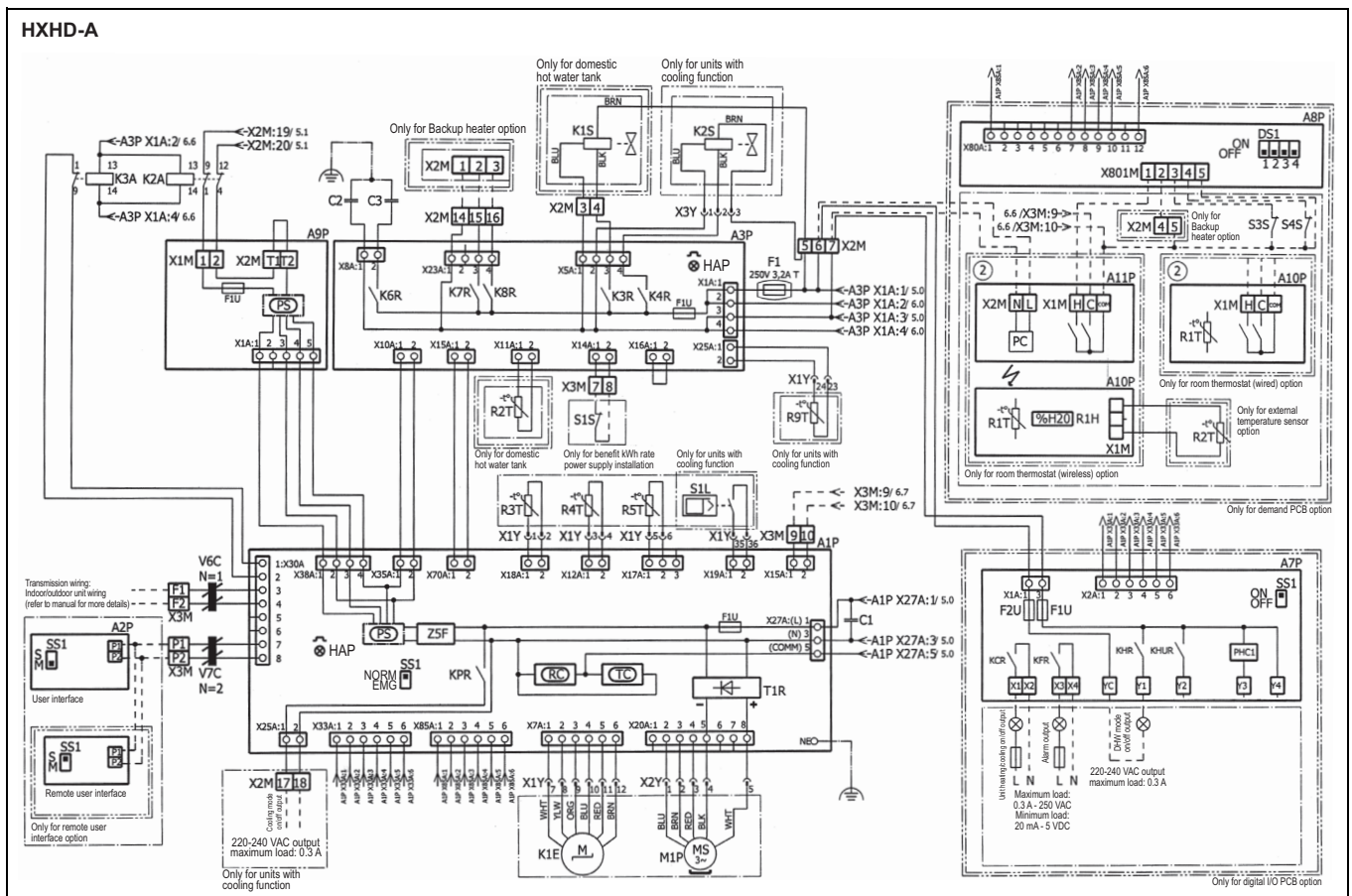
①: Several wiring possibilities

- User installed options:
- Backup heater (includes wiring diagram of option)
 - Domestic hot water tank
 - Room thermostat (wired)
 - Room thermostat (wireless)
 - External temperature sensor
 - Remote user interface
 - Digital I/O PCB
 - Demand PCB



7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase



Part Nr	Description	Part Nr	Description	Part Nr	Description
A1P	Main PCB	K1E-K3E	Electronic expansion valve	R7T	Liquid thermistor R134a
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A4P	Inverter PCB	K2S	3-way valve	R10T	Liquid thermistor (cooling)
A5P	QA PCB	K3S	2-way valve	R11T	Suction thermistor (cooling)
A6P	Filter PCB	K4S	2-way valve	RC (A*P)	Receiver circuit
A7P	* Digital I/O PCB	M1C	Compressor	S1PH	High pressure switch
A8P	* Demand PCB	M1F	Switch box cooling fan	S1S	# Benefit kWh rate power supply contact
A9P	Multi tenant PCB	M1P-M2P	DC inverter pump	S3S	# Input multiple setpoint 1
A10P	* Thermostat PCB	PC (A11P)	* Power circuit	S4S	# Input multiple setpoint 2
A11P	* Receiver PCB	PHC1 (A7P)	* Optocoupler input circuit	SS1 (A1P)	Selector switch (emergency)
B1PH	High pressure sensor	PS (A*P)	Switching power supply	SS1 (A2P)	Selector switch (master slave)
B1PL	Low pressure sensor	Q1D1-Q2D1	# Earth leakage protector	SS1 (A7P)	* Selector switch
C1-C3	Filter capacitor	Q2L	Thermal protector water piping	TC (A*P)	Transmitter circuit
C1-C3 (A4P)	PCB capacitor	R1-R2 (A4P)	Resistance	T1R-T2R (A*P)	Diode bridge
DS1 (A*P)	Dip switch	R1L	Reactor	T3R	Power module
F1U	Fuse (T, 3.2A, 250V)	R1H (A10P)	* Humidity sensor	V1C-V8C	Ferrite core noise filter
F1U (A1P, A3P, A9P)	Fuse (T, 3.15A, 250V)	R1T (A10P)	* Ambient sensor	X1M-X3M	Terminal strip
F1U (A6P)	Fuse (T, 6.3A, 250V)	R2T	* Domestic hot water tank thermistor	X*M (A*P)	* PCB terminal strip
F1U-F2U (A7P)	* Fuse (5A, 250V)	R2T	* External sensor (floor or ambient)	X1Y-X4Y	Connector
F3U-F4U (A*P)	Fuse (T, 6.3A, 250V)	R3T	Liquid thermistor R410A	Z1F-Z5F (A*P)	Noise filter
HAP (A*P)	PCB LED	R4T	Returning water thermistor		
IPM1	Integrated power module	R5T	Leaving water thermistor (heating)		
K1A-K3A	Interface relay	R6T	Discharge thermistor		

* Included in option kit
Field supplied

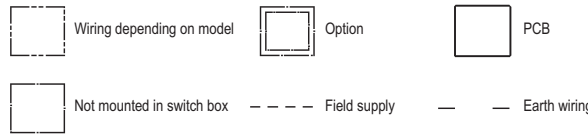
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— **/12.2: Connection **continues on page 12 column 2

①: Several wiring possibilities

- User installed options:
- Backup heater (includes wiring diagram of option)
 - Domestic hot water tank
 - Room thermostat (wired)
 - Room thermostat (wireless)
 - External temperature sensor
 - Remote user interface
 - Digital I/O PCB
 - Demand PCB



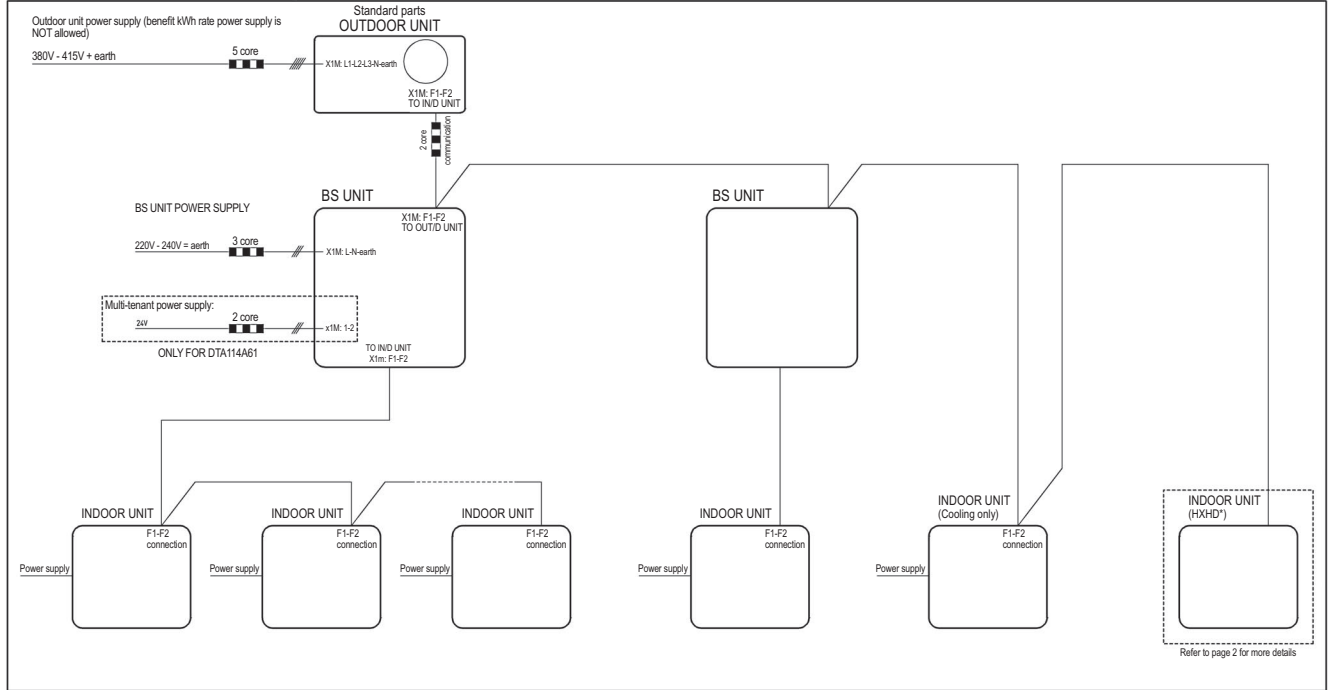
8 External connection diagrams

8 - 1 External Connection Diagrams

HXHD-A REYAQ-P

Electrical connection diagram

For more details please check the wiring diagram of each unit.

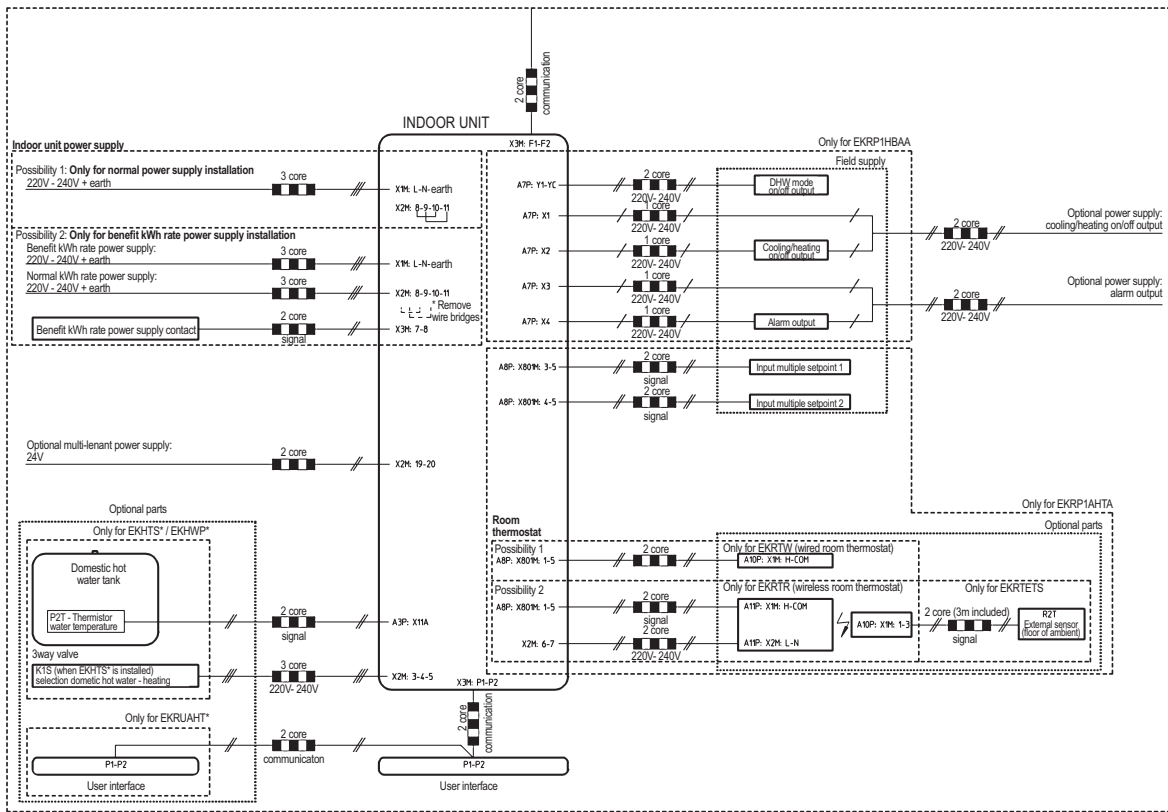


NOTES

In case of signal cable or communication cable. Keep minimum distance to power cables > 25mm.

2TW60656-1(1)

HXHD-A REYAQ-P



Only for HXHD

2TW60656-1(2)

9 Sound data

9 - 1 Sound Power Spectrum

HXHD-A

	Sound Power Lw per Octave band (dB)							Total (dBA)
	125	250	500	1000	2000	4000	8000	LwA
HXHD125A	39	50	51	45	45	43	41	55

NOTES

- Measured according to ISO 3744
- Reference acoustic pressure 0dB = 10e-6 μW/m²
- dBA = A-weighted sound power level

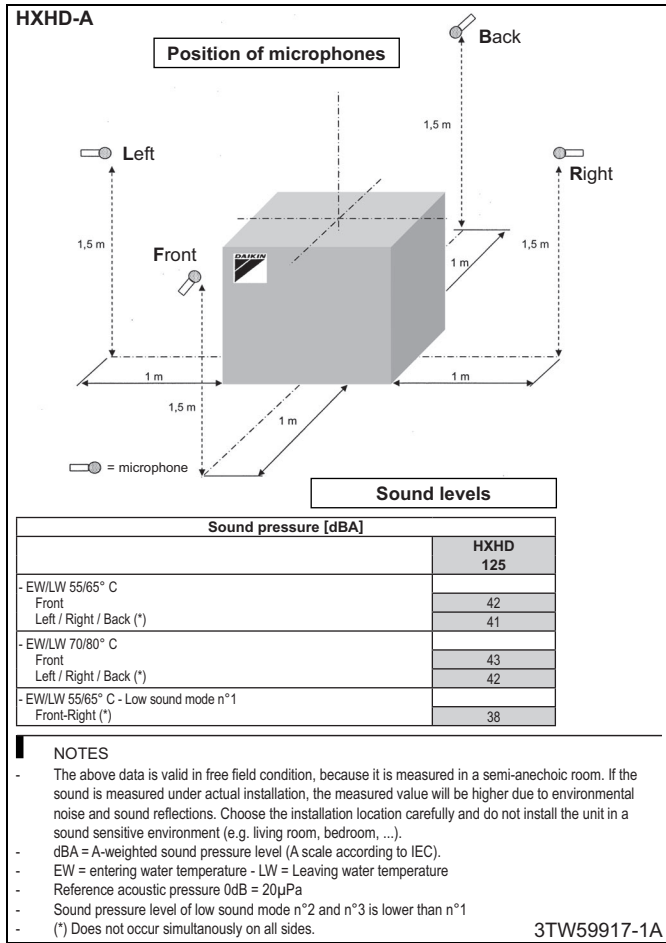
- Unit condition: Ta = 7/6°C - heating setpoint 55/65°C - maximum compressor frequency

- If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections. Choos the installation location carefully and do not install in a sound sensitive environment (e.g. living room, bedroom, ...).

3TW59917-2A

9 Sound data

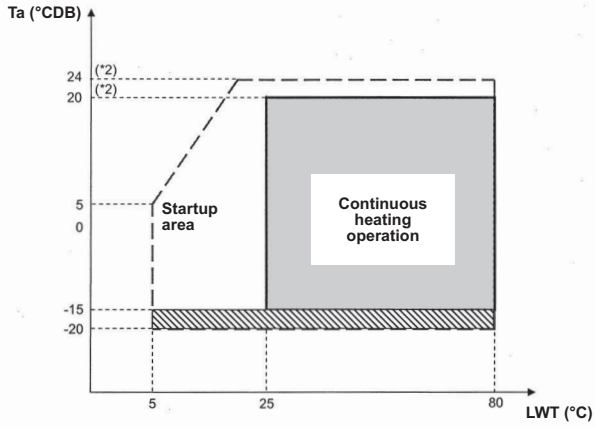
9 - 2 Sound Pressure Spectrum



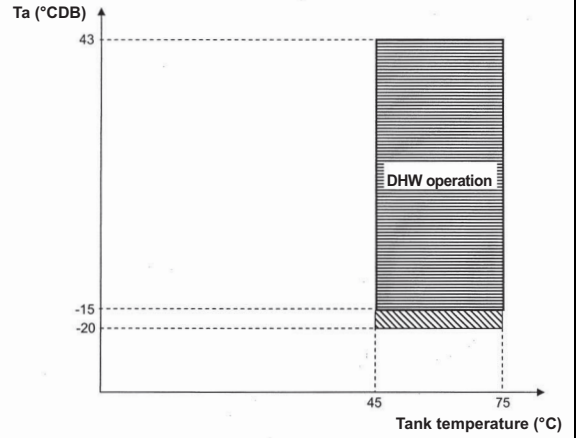
10 Operation range

HXHD-A
REYAQ-P

Space heating mode



Domestic hot water mode



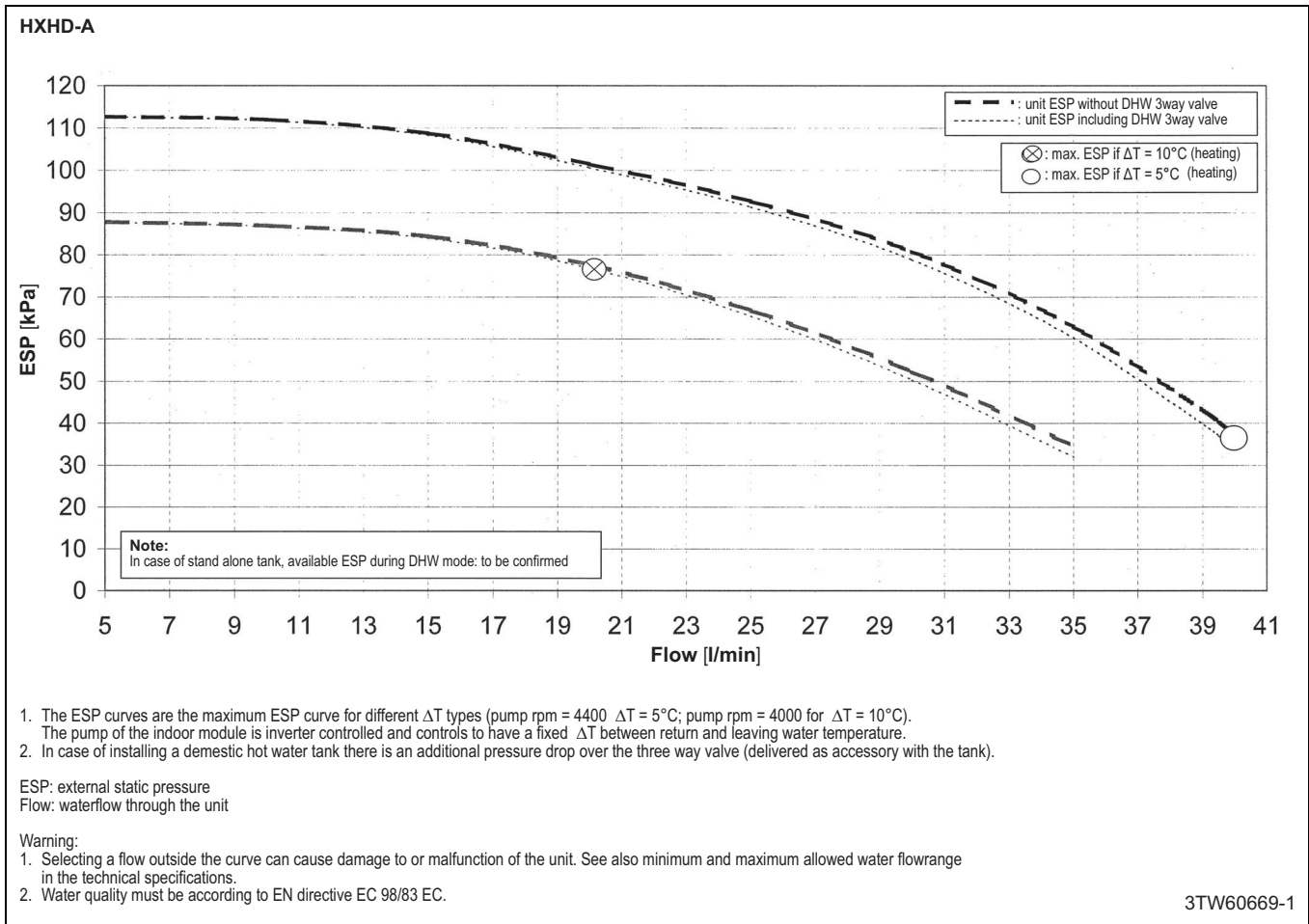
- : Continuous heating operation
- : Startup area
- : Operation possible, but no guarantee of capacity
- (*) : Can be adjusted by field setting

- : Domestic hot water operation
- : Operation possible, but no guarantee of capacity

3TW60653-1A

11 Hydraulic performance

11 - 1 Static Pressure Drop Unit



In all of us,
a green heart



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

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