

Heating Technical Data

Daikin Altherma High temperature



EEDEN13-726

ERSQ-AV1

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ERSQ-AV1

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1 Features

- Outdoor unit extracts heat from the outdoor air, even at -20°C
- Easy replacement of existing boiler, without changing heating pipes

1



Inverter

2 Specifications

CONNECTABLE INDOOR UNITS						
2-1 Nominal Capacity And Nominal Input				EKHBRD011ACV1/ERSQ011AV1	EKHBRD014ACV1/ERSQ014AV1	EKHBRD016ACV1/ERSQ016AV1
Heating capacity	Nom.		kW	11 (1) / 11 (2) / 11 (3)	14 (1) / 14 (2) / 14 (3)	16 (1) / 16 (2) / 16 (3)
Power input	Heating	Nom.	kW	3.57 (1) / 4.40 (2) / 2.61 (3)	4.66 (1) / 5.65 (2) / 3.55 (3)	5.57 (1) / 6.65 (2) / 4.31 (3)
COP				3.08 (1) / 2.50 (2) / 4.22 (3)	3.00 (1) / 2.48 (2) / 3.94 (3)	2.88 (1) / 2.41 (2) / 3.72 (3)

Notes

- (1) EW 55°C; LW 65°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB
- (2) EW 70°C; LW 80°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB
- (3) EW 30°C; LW 35°C; Dt 5°C; ambient conditions: 7°CDB/6°CWB

2-2 Technical Specifications				ERSQ011AV1	ERSQ014AV1	ERSQ016AV1	
Capacity control	Method			Inverter controlled			
Casing	Colour			Daikin White			
	Material			Painted galvanized steel plate			
Dimensions	Unit	Height	mm	1,345			
		Width	mm	900			
		Depth	mm	320			
	Packed unit	Height	mm	1,524			
		Width	mm	980			
		Depth	mm	420			
Weight	Unit		kg	120			
	Packed unit		kg	130			
Packing	Material			Wood / EPS / Cardboard			
	Weight			kg	8		
Heat exchanger	Length		mm	857			
	Rows	Quantity		2			
	Fin pitch		mm	2			
	Passes	Quantity		10			
	Face area		m ²	1.131			
	Stages	Quantity		60			
	Empty tubeplate hole	Quantity		0			
	Tube type			Hi-XSS			
	Fin	Type		Non-symmetric waffle louvre			
		Treatment		Corrosion resistant			
Fan	Type			Propeller fan			
	Quantity			2			
	Discharge direction			Horizontal			
Fan motor	Quantity			2			
	Model			Brushless DC motor			
	Output	W		70			
	Drive			Direct drive			
Compressor	Quantity			1			
	Type			Hermetically sealed scroll compressor			
	Starting method			Direct on line			
	Motor	Crankcase heater	Quantity	1			
			Output	W	33		
Operation range	Heating	Min.	°CWB	-20			
		Max.	°CWB	20			
	Domestic hot water	Min.	°CDB	-20			
		Max.	°CDB	35			
Refrigerant	Type			R-410A			
	Charge			kg	4.5		
	Control			Expansion valve (electronic type)			
	Circuits	Quantity		1			
Refrigerant oil	Type			Daphne FVC68D			
	Charged volume			l	1.5		

2 Specifications

2

2-2 Technical Specifications				ERSQ011AV1	ERSQ014AV1	ERSQ016AV1	
Piping connections	Liquid	Quantity		1			
		Type		Flare connection			
		OD	mm	9.52			
	Gas	Quantity		1			
		Type		Flare connection			
		OD	mm	15.9			
	Drain	Quantity		3			
		OD	mm	26x3			
	Piping length	OU - IU	Max.	m	50		
		System	Equivalent	m	63		
			Chargeless	m	10		
	High pressure side	Design pressure		bar	40		
Additional refrigerant charge				kg/m	See installation manual		
Level difference	IU - OU	Max.	m	30			
Heat insulation		Both liquid and gas pipes					
Sound power level	Heating	Nom.	dBA	68	69	71	
Sound pressure level	Heating	Nom.	dBA	52	53	55	
Defrost method		Reversed cycle					
Defrost control		Sensor for outdoor heat exchanger temperature					
Safety devices	Item	01	High pressure switch				
		02	Fan motor thermal protection				
		03	Inverter overload protector				
		04	PC board fuse				

2-3 Electrical Specifications				ERSQ011AV1	ERSQ014AV1	ERSQ016AV1
Power supply	Name		V1			
	Phase		1~			
	Frequency		Hz	50		
	Voltage		V	220-440		
	Voltage range	Min.	%	-10		
		Max.	%	10		
Current	Zmax	Text		0.28		
	Maximum running current	Heating	A	23.8		
	Recommended fuses		A	25		
Wiring connections	For power supply	Quantity		2G		
		Remark		Select diameter and type according to national and local regulations		
	For connection with indoor	Quantity		2		
		Remark		F1,F2		
Power supply intake		Both indoor and outdoor unit				

Notes

- (1) See separate drawing for operation range
- (2) Zmax: 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
- (3) EN/IEC 61000-3-11: European/international technical standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated ≤ 75A
- (4) Minimum Ssc (=Short-circuit power) value: Equipment complying with EN/IEC 61000-3-12: European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16A and ≤ 75A per phase

3 Capacity tables

3 - 1 Heating Capacity Tables

ERSQ-AAV1
EKHBRD*(V1/Y1)

Capacity table

Peak	Ta[°CDB]	LW [°C]		LW [°C]		LW [°C]		LW [°C]		LW [°C]	
		45		55		65		75		80	
		HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
EKHBRD 011	-20	11,0	5,07	11,0	5,10	11,0	5,55	11,0	6,04	11,0	6,35
	-15	11,0	4,82	11,0	4,91	11,0	5,39	11,0	5,98	11,0	6,32
	-7	11,0	4,11	11,0	4,24	11,0	4,71	11,0	5,31	11,0	5,67
	-2	11,0	3,66	11,0	3,80	11,0	4,24	11,0	4,81	11,0	5,15
	2	11,0	3,35	11,0	3,50	11,0	3,93	11,0	4,47	11,0	4,80
	7	11,0	3,03	11,0	3,18	11,0	3,57	11,0	4,12	11,0	4,40
	12	11,0	2,75	11,0	2,90	11,0	3,31	11,0	3,82	11,0	4,13
15	11,0	2,61	11,0	2,77	11,0	3,17	11,0	3,67	11,0	3,96	
EKHBRD 014	-20	12,2	5,59	12,1	5,57	12,0	5,86	12,1	6,56	12,0	6,81
	-15	13,5	5,80	13,4	5,84	13,4	6,20	13,5	6,97	13,3	7,29
	-7	14,0	5,41	14,0	5,53	14,0	5,98	14,0	6,76	14,0	7,20
	-2	14,0	4,92	14,0	5,07	14,0	5,50	14,0	6,30	14,0	6,72
	2	14,0	4,50	14,0	4,66	14,0	5,09	14,0	5,87	14,0	6,27
	7	14,0	4,07	14,0	4,23	14,0	4,66	14,0	5,42	14,0	5,65
	12	14,0	3,72	14,0	3,91	14,0	4,34	14,0	5,09	14,0	5,47
15	14,0	3,55	14,0	3,73	14,0	4,16	14,0	4,89	14,0	5,27	
EKHBRD 016	-20	12,6	5,85	12,5	5,80	12,5	6,15	12,1	6,50	11,9	6,76
	-15	14,1	6,14	14,1	6,14	14,0	6,52	13,5	6,92	13,3	7,24
	-7	15,9	6,24	15,9	6,34	15,8	6,78	15,6	7,50	15,3	7,81
	-2	16,0	5,82	16,0	5,97	16,0	6,48	16,0	7,33	15,9	7,69
	2	16,0	5,39	16,0	5,55	16,0	6,08	16,0	6,92	16,0	7,33
	7	16,0	4,83	16,0	5,01	16,0	5,57	16,0	6,35	16,0	6,65
	12	16,0	4,48	16,0	4,66	16,0	5,17	16,0	5,98	16,0	6,40
15	16,0	4,29	16,0	4,47	16,0	4,99	16,0	5,78	16,0	6,20	

EW = 40°C EW = 45°C EW = 55°C EW = 65°C EW = 70°C
 ΔT = 5°C ΔT = 10°C ΔT = 10°C ΔT = 10°C ΔT = 10°C

Symbols:

- HC Heating capacity [kW]
- PI Power input [kW]
- LW Leaving water temperature
- EW Entering water temperature

Conditions:

- ΔT (Leaving water temperature - Entering water temperature)
- Piping length: R410A Refrigerant piping length=5m
- No pump power input is included
- if Ta < 3°C and unit has bottom plate heater, 95 W has to be added to PI value
- Ta < 0°C: RH=75%
- Ta > 0°C: RH=85%

flowrate [l/min]	*011*	*014*	*016*
ΔT = 15°C	10,5	13,4	15,3
ΔT = 10°C	15,8	20,1	22,9
ΔT = 5°C	31,5	40,1	45,9

Remark:
 Capacity table is only valid for EKHBRD*AC* + ER(R/S)Q*.
 For EKHBRD*AC* + EMRQ* see capacity table EMRQ*.

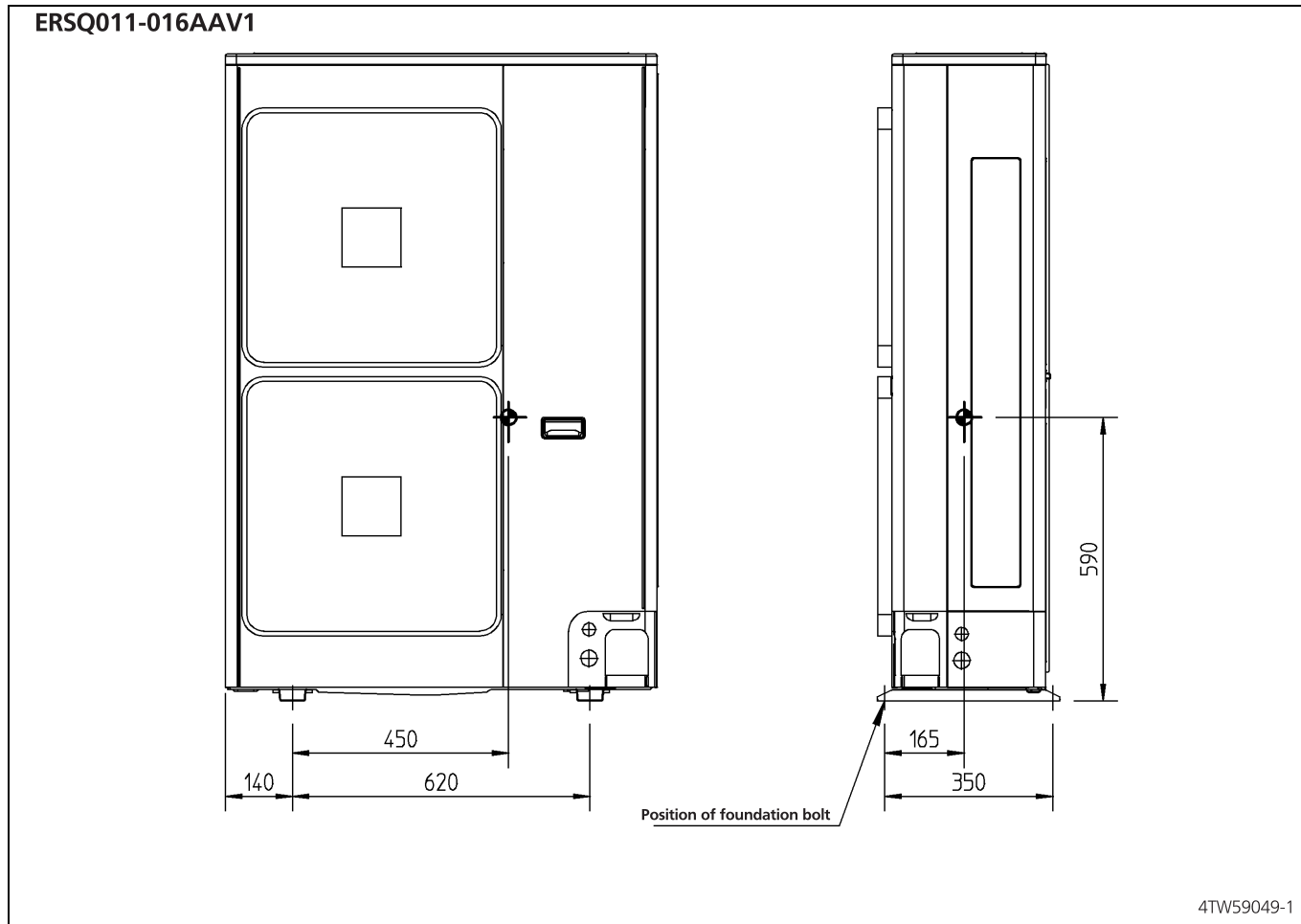
Integrated	Ta[°CDB]	LW [°C]		LW [°C]		LW [°C]		LW [°C]		LW [°C]	
		45		55		65		75		80	
		HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
EKHBRD 011	-20	9,18	4,31	9,23	4,34	9,30	4,72	9,39	5,18	9,43	5,49
	-15	9,71	4,57	9,77	4,65	9,84	5,11	10,0	5,69	10,0	6,05
	-7	9,54	4,06	9,60	4,19	9,69	4,65	9,86	5,27	9,91	5,65
	-2	9,48	3,59	9,54	3,72	9,62	4,16	9,75	4,74	9,79	5,09
	2	9,47	3,31	9,53	3,45	9,62	3,88	9,76	4,42	9,80	4,75
	7	11,0	3,03	11,0	3,18	11,0	3,57	11,0	4,12	11,0	4,40
	12	11,0	2,75	11,0	2,90	11,0	3,31	11,0	3,82	11,0	4,13
15	11,0	2,61	11,0	2,77	11,0	3,17	11,0	3,67	11,0	3,96	
EKHBRD 014	-20	9,82	4,31	9,92	4,57	10,0	4,86	10,1	5,40	10,1	5,76
	-15	10,9	4,80	10,9	4,90	11,0	5,23	11,1	5,86	11,2	6,24
	-7	11,7	5,00	11,8	5,12	11,9	5,53	12,1	6,31	12,1	6,73
	-2	11,8	4,73	11,8	4,87	12,0	5,31	12,2	6,12	12,2	6,54
	2	11,8	4,41	11,8	4,56	11,9	4,99	12,1	5,78	12,2	6,19
	7	14,0	4,07	14,0	4,23	14,0	4,66	14,0	5,42	14,0	5,65
	12	14,0	3,72	14,0	3,91	14,0	4,34	14,0	5,09	14,0	5,47
15	14,0	3,55	14,0	3,73	14,0	4,16	14,0	4,89	14,0	5,27	
EKHBRD 016	-20	10,2	4,83	10,3	4,83	10,4	5,14	10,1	5,50	10,0	5,71
	-15	11,3	5,05	11,3	5,07	11,4	5,43	11,2	5,84	11,1	6,09
	-7	12,5	5,34	12,6	5,43	12,7	5,88	12,6	6,46	12,6	6,76
	-2	13,0	5,31	13,1	5,44	13,3	5,93	13,3	6,64	13,3	6,99
	2	13,2	5,06	13,3	5,29	13,5	5,80	13,6	6,59	13,6	6,99
	7	16,0	4,83	16,0	5,01	16,0	5,57	16,0	6,35	16,0	6,65
	12	16,0	4,48	16,0	4,66	16,0	5,17	16,0	5,98	16,0	6,40
15	16,0	4,29	16,0	4,47	16,0	4,99	16,0	5,78	16,0	6,20	

EW = 40°C EW = 45°C EW = 55°C EW = 65°C EW = 70°C
 ΔT = 5°C ΔT = 10°C ΔT = 10°C ΔT = 10°C ΔT = 10°C

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5 Centre of gravity

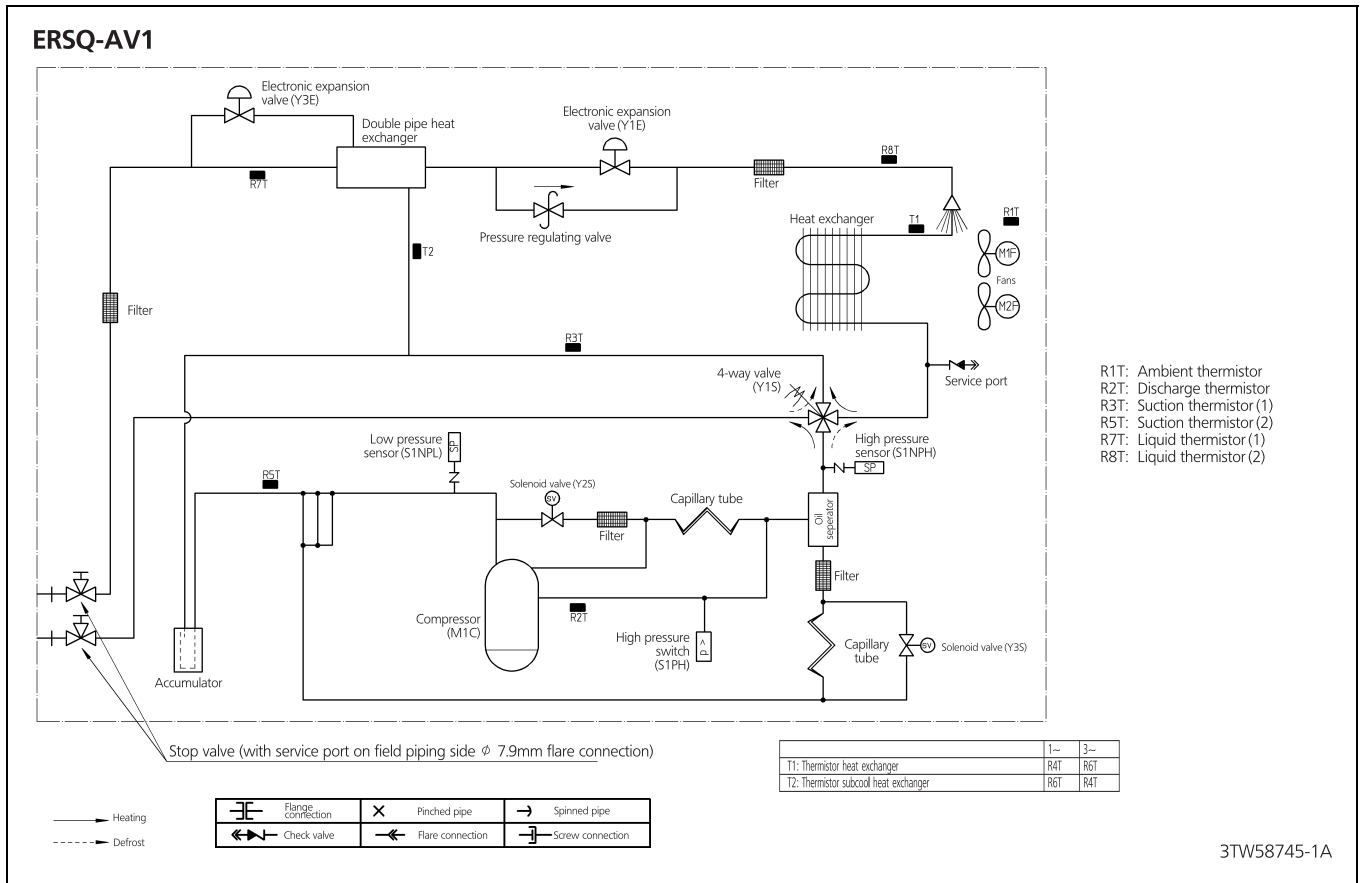
5 - 1 Centre of Gravity



6 Piping diagrams

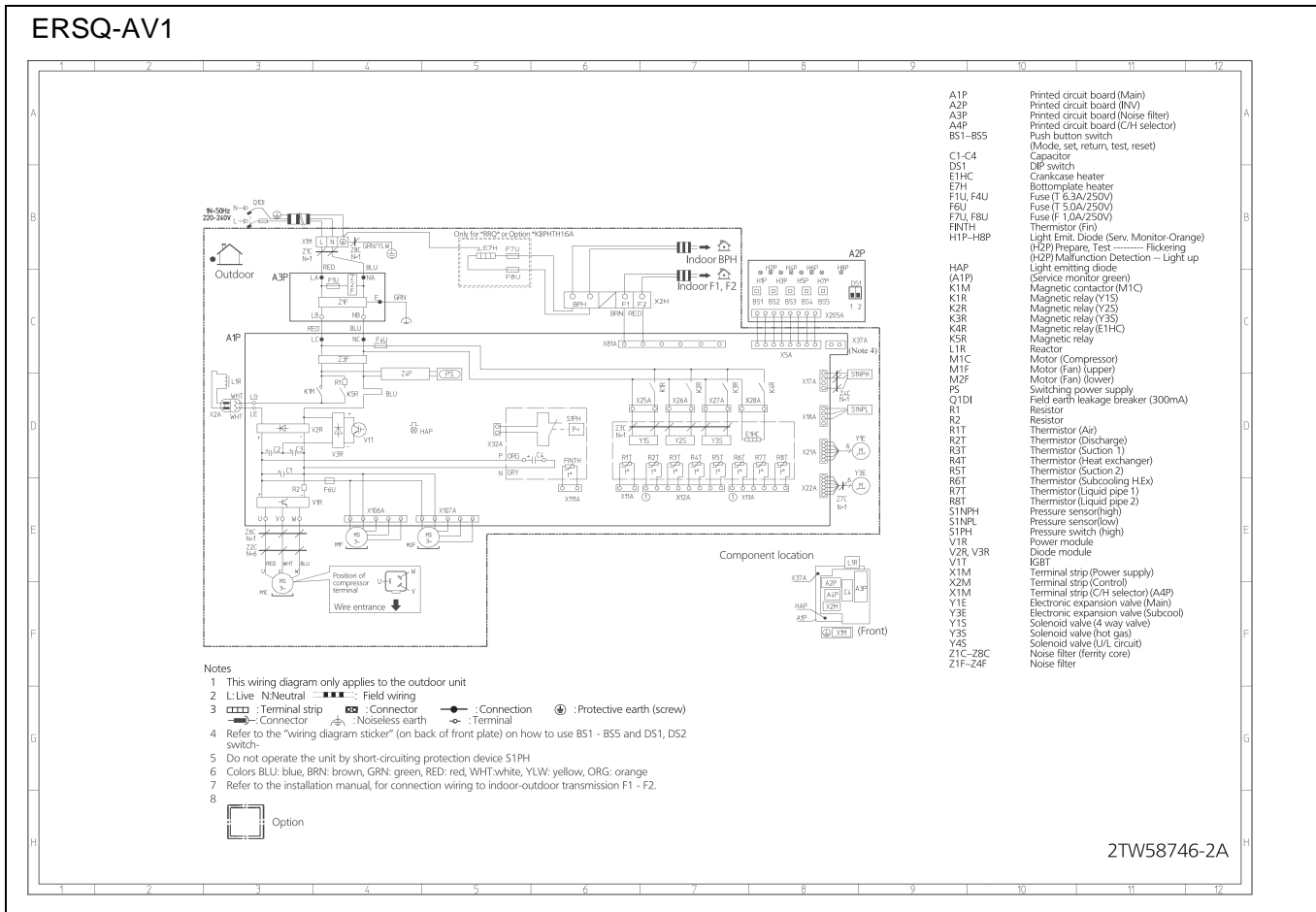
6 - 1 Piping Diagrams

6



7 Wiring diagrams

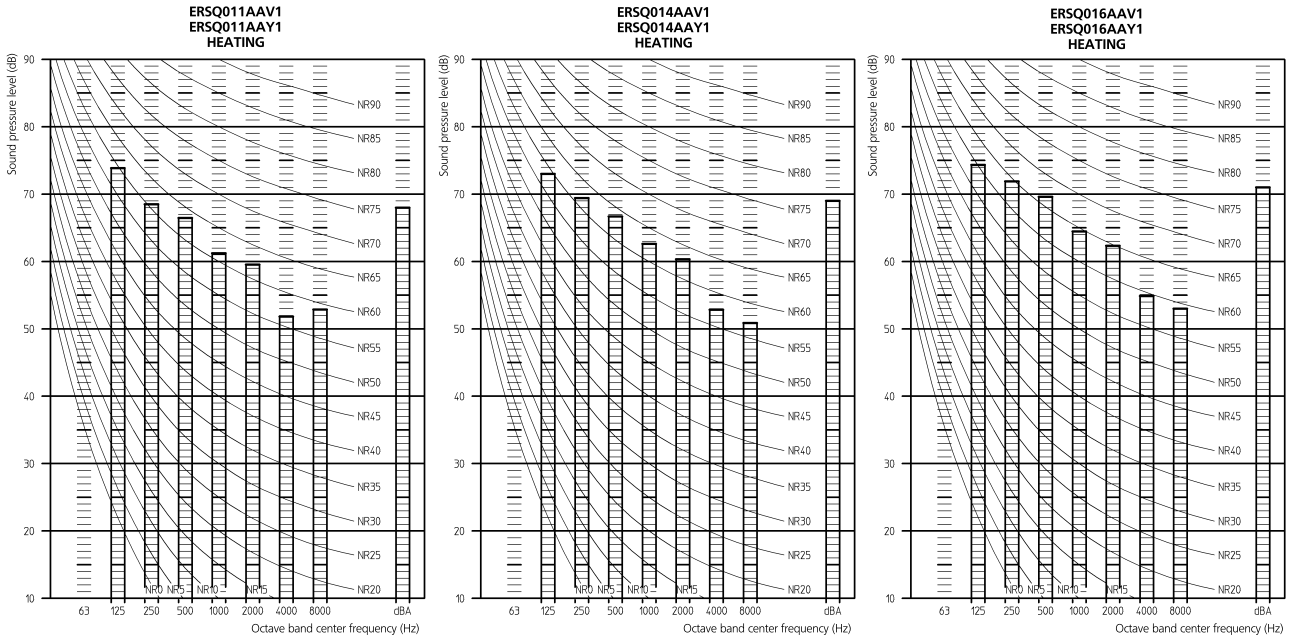
7 - 1 Wiring Diagrams - Single Phase



8 Sound data

8 - 1 Sound Power Spectrum

8



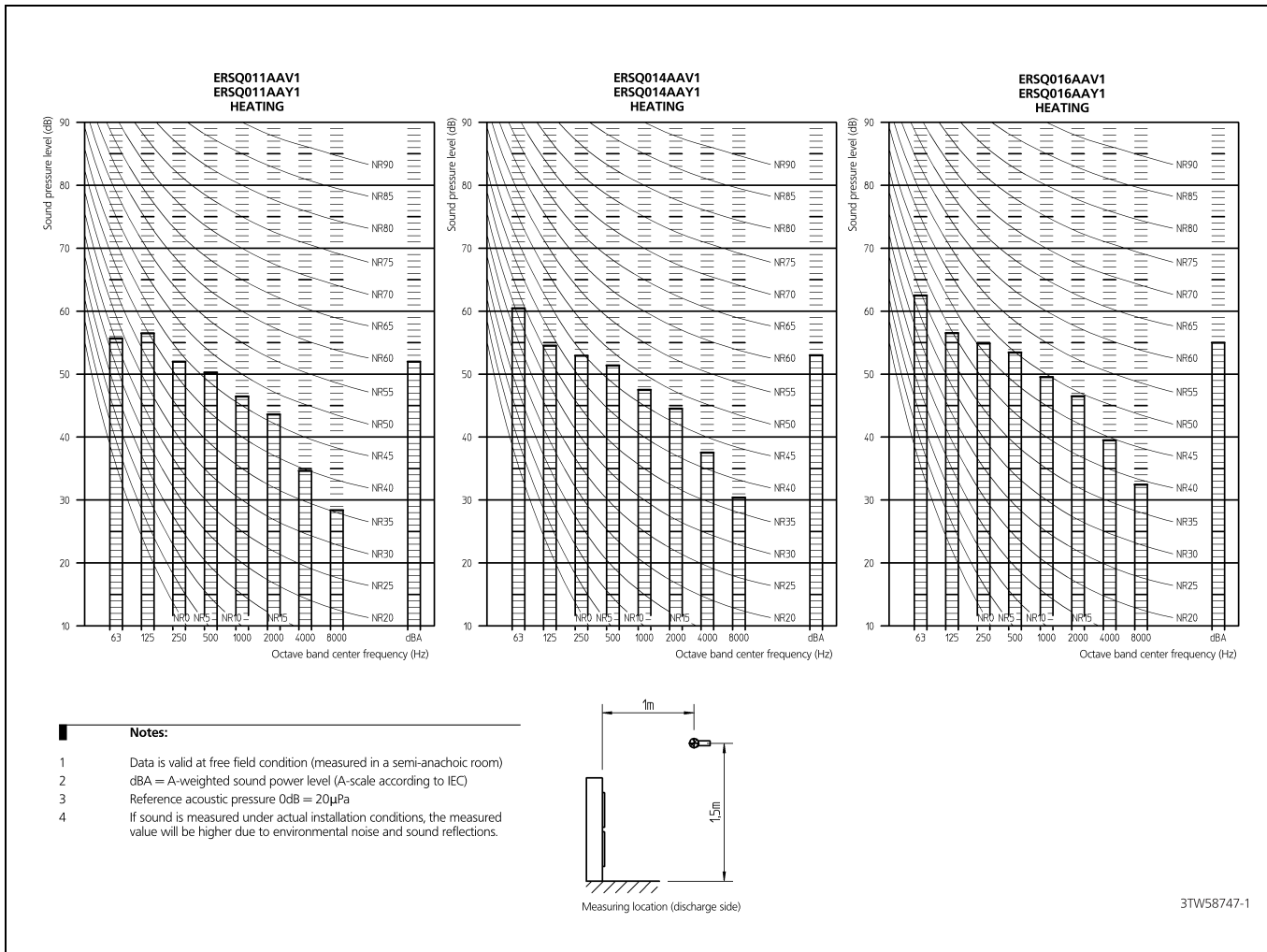
Notes:

- 1 dBA = A-weighted sound power level (A-scale according to IEC)
- 2 Reference acoustic pressure 0dB = 20μPa
- 3 Measured according to ISO 3744

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8 Sound data

8 - 2 Sound Pressure Spectrum - Heating



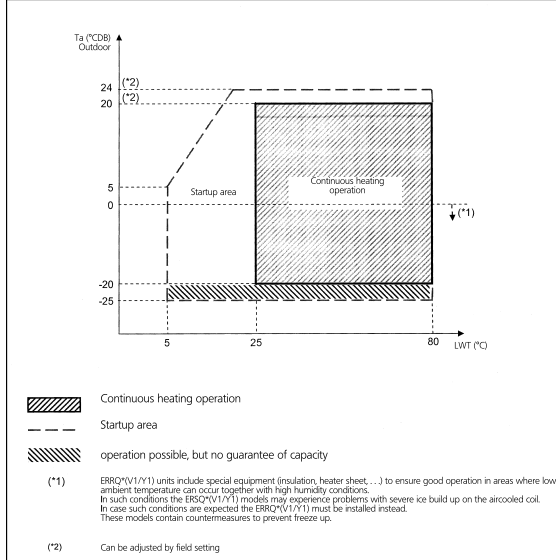
9 Operation range

9 - 1 Operation Range

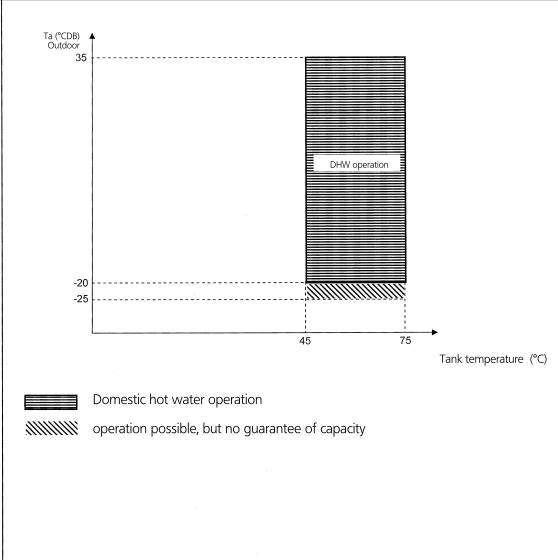
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EKHBRD-ACV1

Space heating mode

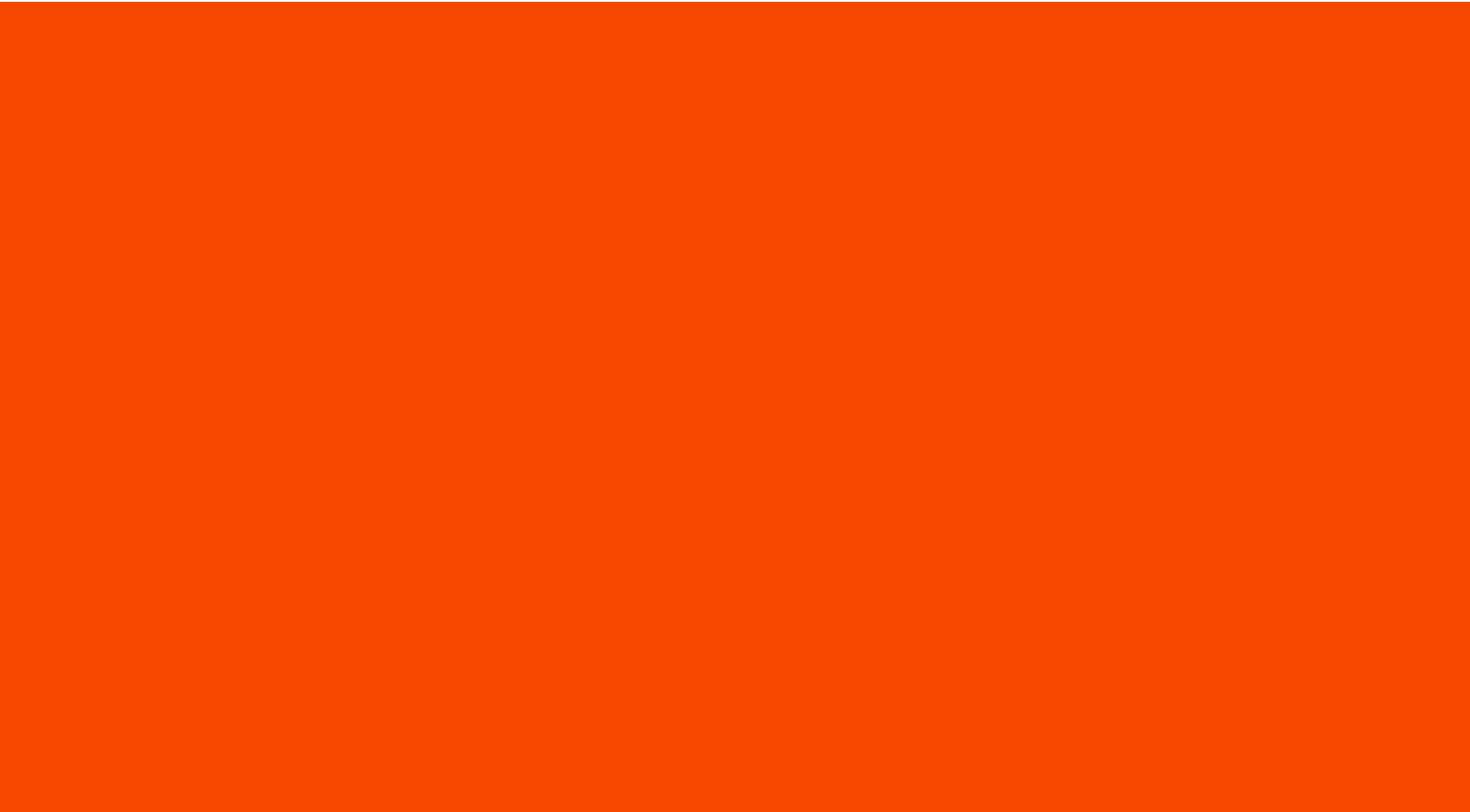


Domestic hot water mode



Remark:
 Operation range is only valid for EKHBRD*AC* + ER(R/S)Q*.
 For EKHBRD*AC* + EMRQ* see operation range EMRQ*.

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