Daikin Altherma low temperature split Technical Data

ERLA11-16DW1

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ERLA11-16DW1

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1 Features

1 - 1 ERLA11-16DW1

› Outdoor unit extracts heat from the outdoor air, even at -25°C
› Combining with R-32 Bluevolution technology, reduces environmental impact with 68% compared to R-410A, leads directly to lower energy consumption thanks to its high energy efficiency and has up to lower 16% refrigerant charge
› W-LAN Adapter and cartridge connection (optional)
› Black grille hiding the fan from view

-25°
Guaranteed operation down to -25°C

Daikin Residential Controller (optional)

Voice control

2 Specifications

1 - 1 ERLA11-16DW1

Technical specifications				EBVH16SU23D6V + ERLA11DW1	EBVH16SU23D6V + ERLA14DW1	EBVH16SU23D6V + ERLA16DW1
Heating capacity	Nom.		kW	10.6 (1) / 9.82 (2)	12.0 (1) / 12.5 (2)	16.0 (1) / 16.0 (2)
Power input	Heating	Nom.	kW	2.18 (1) / 2.68 (2)	2.46 (1) / 3.42 (2)	3.53 (1) / 4.56 (2)
	Domestic hot water from 10°C to 50°C	Nom.	kWh	3.41		
Heat up time from 10°C to 50°C			hr	1h07min at 7°C ambient temperature		
COP				4.83 (1) / 3.66 (2)	4.87 (1) / 3.64 (2)	4.53 (1) / 3.51 (2)
Water side Heat exchanger	Water flow rate	Heating Nom.	l/min	46.1 (3) / 46.1 (4)		
General	Supplier/ Manufacturer details	Name and address		Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium		
		Name or trademark		Daikin Europe N.V.		
	Product description	Air-to-water heat pump		Yes		
		Brine-to-water heat pump		No		
		Heat pump combination heater		Yes		
		Low-temperature heat pump		No		
		Supplementary heater integrated		Yes		
		Water-to-water heat pump		No		
	LW(A) Sound power level (according to EN14825)	Indoor	dB(A)	44.0 (5)		
LW(A) Sound power level (according to EN14825)	Outdoor		dB(A)	62.0		
Sound condition Ecodesign and energy label				Sound power in heating mode, measured according to the EN12102 under conditions of the EN14825		
Space heating general	Air to water unit	Rated airflow (outdoor)	m^3/h	3,350	4,220	5,100
	Other	Capacity control		Inverter		
		Pck (Crankcase heater mode)	kW	0.000		
		Poff (Off mode)	kW	0.023		
		Psb (Standby mode)	kW	0.023		
		Pto (Thermostat off)	kW	0.023		
Domestic hot water heating	General	Declared load profile		XL		
		Function to fix water heating during off peak hours		No		
Space heating general	Integrated supplementary heater	Psup	kW	6.0		
		Type of energy input		Electrical		
Domestic hot water heating	Average climate	AEC (Annual electricity consumption)	kWh	1,542		
		COPdhw		2.63		
		Heat up time		1h 11min		
		Mixed water at 40°C	l	295.0		
		ηwh (water heating efficiency)	%	109		
		Qelec (Daily electricity consumption)	kWh	7.260		
		Reference hot water temperature	°C	51.5		
		Stand-by power input	W	43.2		
		Water heating energy efficiency class		A		

2 Specifications

1 - 1 ERLA11-16DW1

Technical specifications					EBVH16SU23D6V + ERLA11DW1	EBVH16SU23D6V + ERLA14DW1	EBVH16SU23D6V + ERLA16DW1
Domestic hot water heating	Cold climate	AEC (Annual electricity consumption)		kWh		1,963	
		COPdhw				2.08	
		ηwh (water heating efficiency)		%		85	
		Qelec (Daily electricity consumption)		kWh		9.180	
		Stand-by power input		W		43.1	
	Warm climate	AEC (Annual electricity consumption)		kWh		1,349	
		COPdhw				3.00	
		Heat up time				1h 10min	
		Mixed water at 40°C		l		295.0	
		ηwh (water heating efficiency)		%		124	
		Qelec (Daily electricity consumption)		kWh		6.350	
		Reference hot water temperature		°C		51.5	
		Stand-by power input		W		37.6	
Space heating	Average climate water outlet 55°C	General	Annual energy consumption	kWh	6,405	7,047	7,477
			ηs (Seasonal space heating efficiency)	%	131	126	130
			Prated at -10°C	kW	10	11	12
			Qhe Annual energy consumption (GCV)	Gj	23	25	27
			SCOP		3.23	3.22	3.32
			Seasonal space heating eff. class			A++	
		A Condition (-7°CDB/-8°CWB)	Cdh (Degradation heating)			1.0	
			COPd		1.89	1.80	1.95
			Pdh	kW	7.9	8.5	9.4
			PERd	%	75.6	72.0	78.0
		B Condition (2°CDB/1°CWB)	Cdh (Degradation heating)			1.0	
			COPd		3.25	3.28	3.27
			Pdh	kW	5.4	6.2	6.9
			PERd	%	130.0	131.2	130.8
		C Condition (7°CDB/6°CWB)	Cdh (Degradation heating)			1.0	
			COPd		4.79	4.88	4.93
			Pdh	kW		4.4	
			PERd	%	191.6	195.2	197.2
		D Condition (12°CDB/11°CWB)	Cdh (Degradation heating)			1.0	
			COPd		6.38	6.58	6.60
			Pdh	kW		5.3	
			PERd	%	255.2	263.2	264.0
		Tol (temperature operating limit)	COPd		1.68	1.76	1.50
			Pdh	kW	6.9	7.0	6.0

2 Specifications

1 - 1 ERLA11-16DW1

Technical specifications					EBVH16SU23D6V + ERLA11DW1	EBVH16SU23D6V + ERLA14DW1	EBVH16SU23D6V + ERLA16DW1
Space heating	Average climate water outlet 55°C	Tol (temperature operating limit)	PERd	%	67.2	70.4	60.0
			TOL	°C	-10		
			WTOL	°C	55		
		Rated heat output supplementary capacity	Psup (at Tdesign -10°C)	kW	3.2	4.0	6.1
		Tbiv (bivalent temperature)	COPd		1.96	1.87	2.13
			Pdh	kW	8.2	8.9	10.1
			PERd	%	78.4	74.8	85.2
			Tbiv	°C	-5		
	Cold climate water outlet 55°C	General	Annual energy consumption	kWh	8,083	9,024	9,561
			ηs (Seasonal space heating efficiency)	%	119	117	121
			Prated at -22°C	kW	10	11	12
			Qhe Annual energy consumption (GCV)	Gj	29	32	34
	Warm climate water outlet 55°C	General	Annual energy consumption	kWh	3,262	3,818	3,792
			ηs (Seasonal space heating efficiency)	%	161	166	168
			Prated at 2°C	kW	10	12.1	
			Qhe Annual energy consumption (GCV)	Gj	12	14	
		B Condition (2°CDB/1°CWB)	Cdh (Degradation heating)		1.0		
			COPd		2.23	2.20	2.17
			Pdh	kW	9.0	10.1	9.8
			PERd	%	89.2	88.0	86.8
		C Condition (7°CDB/6°CWB)	Cdh (Degradation heating)		1.0		
			COPd		3.74	3.83	
			Pdh	kW	6.2	7.6	
			PERd	%	149.6	153.2	
		D Condition (12°CDB/11°CWB)	Cdh (Degradation heating)		1.0		
			COPd		5.67	5.69	
			Pdh	kW	5.0		
			PERd	%	226.8	227.6	
		Tbiv (bivalent temperature)	COPd		2.40	2.65	2.40
			Pdh	kW	8.5	11.1	11.0
			PERd	%	96.0	106.0	96.0
			Tbiv	°C	4		3
	Average climate water outlet 35°C	General	Annual energy consumption	kWh	4,479	4,935	5,377
			ηs (Seasonal space heating efficiency)	%	182	181	
			Prated at -10°C	kW	10	11	12
			Qhe Annual energy consumption (GCV)	Gj	16	18	19
			SCOP		4.61	4.60	4.61

2 Specifications

1 - 1 ERLA11-16DW1

Technical specifications					EBVH16SU23D6V + ERLA11DW1	EBVH16SU23D6V + ERLA14DW1	EBVH16SU23D6V + ERLA16DW1
Space heating	Average climate water outlet 35°C	General	Seasonal space heating eff. class		A+++		
		A Condition (-7°CDB/-8°CWB)	COPd		3.03	2.99	2.87
			Pdh	kW	9.2	9.8	11.2
			PERd	%	121.2	119.6	114.8
		B Condition (2°CDB/1°CWB)	Cdh (Degradation heating)		1.0		
			COPd		4.35		4.33
			Pdh	kW	5.5	6.1	6.7
			PERd	%	174.0		173.2
		C Condition (7°CDB/6°CWB)	Cdh (Degradation heating)		1.0		
			COPd		6.69	6.70	6.83
			Pdh	kW	4.6		4.7
			PERd	%	267.6	268.0	273.2
		D Condition (12°CDB/11°CWB)	Cdh (Degradation heating)		1.0		
			COPd		8.47	8.65	8.82
			Pdh	kW	5.4		5.5
			PERd	%	338.8	346.0	352.8
		Tol (temperature operating limit)	COPd		2.72	2.71	2.52
			Pdh	kW	8.4	9.1	10.6
			PERd	%	108.8	108.4	100.8
			TOL	°C	-10		
			WTOL	°C	35		
		Tbiv (bivalent temperature)	COPd		3.01	2.99	2.72
			Pdh	kW	9.2	9.8	11.4
			PERd	%	120.4	119.6	108.8
			Tbiv	°C	-8	-7	-8
		Rated heat output supplementary capacity	Psup (at Tdesign -10°C)	kW	1.6	1.9	1.4
	Cold climate water outlet 35°C	General	Annual energy consumption	kWh	5,964	6,439	7,257
			ηs (Seasonal space heating efficiency)	%	162	165	160
			Prated at -22°C	kW	12	11	12
			Qhe Annual energy consumption (GCV)	Gj	21	23	26
	Warm climate water outlet 35°C	General	Annual energy consumption	kWh	2,228	2,431	2,675
			ηs (Seasonal space heating efficiency)	%	237	239	237
			Prated at 2°C	kW	12	11	12
			Qhe Annual energy consumption (GCV)	Gj	8	9	10
		B Condition (2°CDB/1°CWB)	Cdh (Degradation heating)		1.0		
			COPd		3.80	3.51	3.30
			Pdh	kW	9.2	11.0	11.9
			PERd	%	152.0	140.4	132.0
		C Condition (7°CDB/6°CWB)	Cdh (Degradation heating)		1.0		
			COPd		5.70	5.77	5.64
			Pdh	kW	6.7	7.4	8.1
			PERd	%	228.0	230.8	225.6
		Tbiv (bivalent temperature)	COPd		3.80	3.51	3.30
			Pdh	kW	9.2	11.0	11.9
			PERd	%	152.0	140.4	132.0
			Tbiv	°C	3	2	
		D Condition (12°CDB/11°CWB)	Cdh (Degradation heating)		1.0		
			COPd		7.87	7.73	
			Pdh	kW	5.2		
			PERd	%	314.8	309.2	

(1)Condition: Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) |
(2)Condition: Ta DB/WB 7°C/6°C - LWC 45°C (Dt=5°C) |
(3)Condition 1: cooling Ta 35°C - LWE 18°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 35°C (DT = 5°C) |
(4)Condition 2: cooling Ta 35°C - LWE 7°C (DT = 5°C); heating Ta DB/WB 7°C/6°C - LWC 45°C (DT = 5°C) |

2 Specifications

1 - 1 ERLA11-16DW1

(5)Measured with a pressure drop of 10 kPa in the heating system at an operating condition of leaving water 47-55°C in a room with an ambient of 20°C. DB/WB 7°C/6°. |
Cooling: EW 12°C; LW 7°C; ambient conditions: 35°CDB |
Cooling: EW 23°C; LW 18°C; ambient conditions: 35°CDB |
According to EN14825

Technical Specifications					ERLA11DW1	ERLA14DW1	ERLA16DW1
Casing	Colour				Ivory white		
	Material				Polyester painted galvanised steel plate		
Dimensions	Unit	Height		mm	870		
		Width		mm	1,100		
		Depth		mm	460		
	Packed unit	Height		mm	1,118		
		Width		mm	1,207		
		Depth		mm	682		
Weight	Unit			kg	101		
	Packed unit			kg	120		
Packing	Material				Carton + Wood + EPS		
	Weight			kg	18		
Heat exchanger	Length			mm	1,195		
	Rows	Quantity			3		
	Fin pitch			mm	1.40		
	Passes	Quantity			13		
	Face area			m^2	0.950 /0.970 /1.00		
	Stages	Quantity			38		
	Empty tubeplate hole	Quantity			2		
	Tube type				ø7 Hi-XSL		
	Fin	Type			WF fin		
		Treatment			Anti-corrosion treatment (PE)		
Fan	Type				Propeller fan		
	Quantity				1		
	Air flow rate	Heating	High	m^3/min	55.8	70.4	85.0
		Cooling	High	m^3/min	70.4	85.0	
	Discharge direction				Horizontal		
Fan motor	Quantity				1		
	Model				Brushless DC motor		
	Output			W	234		
	Drive				Direct drive		
	Speed	Steps			8		
		Heating	Nom.	rpm	450	550	650
		Cooling	Nom.	rpm	650		
Compressor	Quantity				1		
	Model				2Y350BPAY1P#C		
Compressor	Type				Hermetically sealed swing inverter compressor		
	Starting method				Inverter driven		
PED	Category				Category II		
Operation range	Heating	Min.		°CDB	-25.0		
		Max.		°CDB	25 (1) / 35 (1)		
	Cooling	Min.		°CDB	10		
		Max.		°CDB	43		
	Domestic hot water	Max.		°CDB	25 (1) / 35 (1)		
		Min.		°CDB	-25		
PED	Most critical part	Name			Accumulator		
		Ps*V		Bar*l	159		
Sound power level	Heating	Nom.		dBA	62.0 (2)		
Sound pressure level	Heating	Nom.		dBA	48.0 (2)		
Refrigerant	Type				R-32		
	GWP				675.0		
	Charge			TCO2Eq	2.57		
	Charge			kg	3.80		
	Control				Electronic expansion valve		
	Circuits	Quantity			1		
Refrigerant oil	Type				FW68DA		
	Charged volume			l	1.4		

2 Specifications

1 - 1 ERLA11-16DW1

Technical Specifications					ERLA11DW1	ERLA14DW1	ERLA16DW1
Piping connections	Liquid	Quantity			1		
		Type			Flare connection		
		OD		mm	9.50		
	Gas	Quantity			1		
		Type			Flare connection		
		OD		mm	15.9		
	Drain	Quantity			8		
		Type			Hole		
		OD		mm	26		
	Piping length	OU - IU	Min.	m	3		
			Max.	m	50		
		System	Chargeless	m	10		
	High pressure side	Design pressure		bar	42		
	Additional refrigerant charge			kg/m	0.05 (for piping length exceeding 10m)		
	Level difference	IU - OU	Max.	m	30.0		
	Heat insulation				Both liquid and gas pipes		
Defrost control					Sensor for outdoor heat exchanger temperature		
Capacity control	Method				Variable (inverter)		
Safety devices	Item	01			High pressure switch		
		02			Low pressure switch		
		03			Fan driver overload protector		
		04			Fuse		
		05			Compressor motor thermal protector		
Defrost method					Reversed cycle		

Electrical Specifications				ERLA11DW1	ERLA14DW1	ERLA16DW1
Power supply	Name			W1		
	Phase			3~		
	Frequency		Hz	50		
	Voltage		V	400		
	Voltage range	Min.	%	-10		
		Max.	%	10		
Current	Maximum running current	Heating	A	14.0		
		Cooling	A	14.0		
	Recommended fuses		A	16		
Wiring connections	For power supply	Quantity		5		
		Remark		Select diameter and type according to national and local regulations		
	For connection with indoor	Quantity		4		
		Remark		1,5mm²		
IP class	IP			IPX4		

(1)For more details, see operation range drawing |
(2)Measured with a pressure drop of 10 kPa in the heating system at an operating condition of leaving water 47-55°C in a room with an ambient of 20°C. DB/WB 7°C/6°.

3 Combination table

3 - 1 Combination Table

ERLA11-16DV3
ERLA11-16DW1

Combination table

Description		ERLA11DAV3	ERLA14DAV3	ERLA16DAV3	ERLA11DAW1	ERLA14DAW1	ERLA16DAW1
EBBH11DF*	Heating only indoor unit	o	---	---	o	---	---
EBBX11DF*	Reversible indoor unit	o	---	---	o	---	---
EBBH16DF*	Heating only indoor unit	---	o	o	---	o	o
EBBX16DF*	Reversible indoor unit	---	o	o	---	o	o

Description		ERLA11DAV3/W1	ERLA14DAV3/W1	ERLA16DAV3/W1
EBVH11S(18/23)DJ*	Heating only indoor unit	o	-	-
EBVX11S(18/23)DJ*	Reversible indoor unit	o	-	-
EBVH16S(18/23)DJ*	Heating only indoor unit	-	o	o
EBVX16S(18/23)DJ*	Reversible indoor unit	-	o	o
EBVZ16S(18/23)DJ*	(Integrated Bizone)	o	o	o
EBVH16SU(18/23)DJ6V	Heating only indoor unit for the UK	o	o	o

Remark Other combinations than mentioned in this combination table are prohibited.

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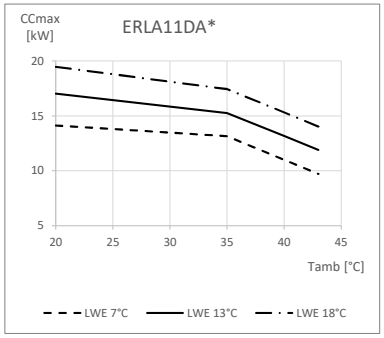
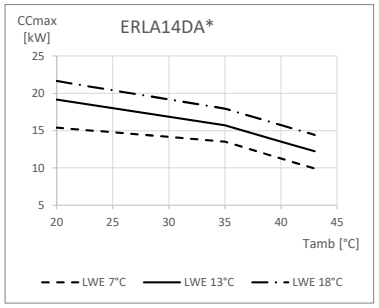
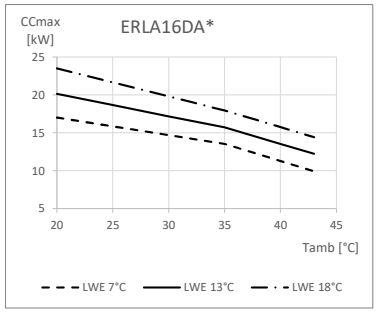
4 Capacity graphs

4 - 1 Cooling Capacity Graphs

ERLA11-16DV3
ERLA11-16DW1 Maximum cooling capacity







Symbols

CC_{max} Cooling capacity at maximum operating frequency, measured according to EN 14511.

LWE Leaving water evaporator temperature [°C]
Tamb Ambient temperature [°C DB]

Conditions

Cooling capacity

Capacity according to standard EN 14511 and valid for chilled water range ΔT = 3~8°C.

Notes

The capacity and power input is valid for ·V3· models at ·230·V and for for ·W1· models at ·400·V.

The capacity and the power input are at maximum operation.

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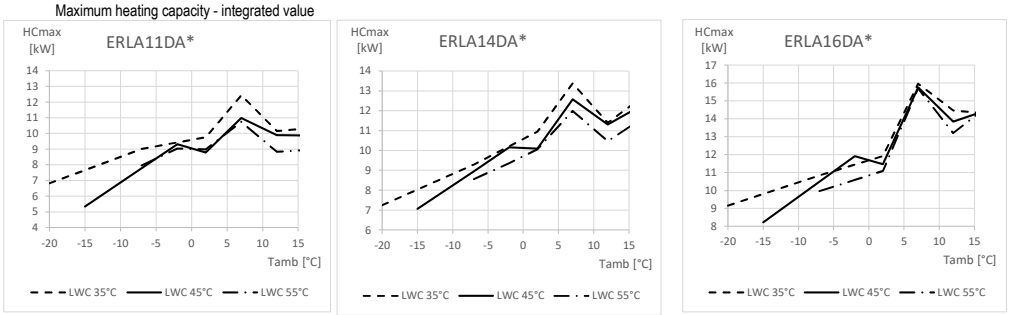
4 Capacity graphs

4 - 2 Heating Capacity Graphs

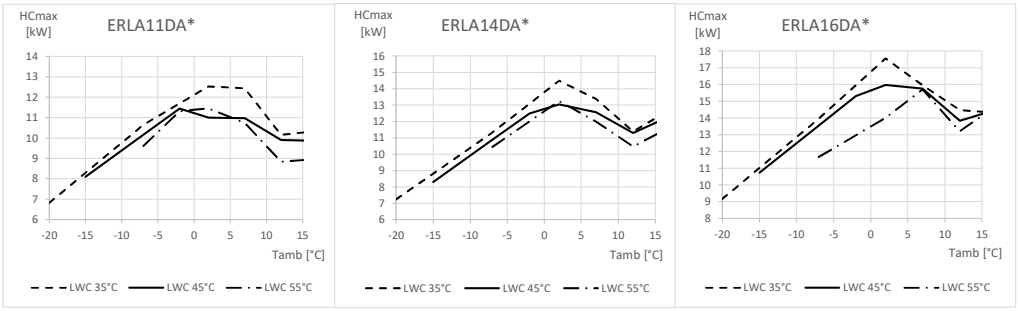
ERLA11-16DV3

ERLA11-16DW1

Maximum heating capacity - integrated value



Maximum heating capacity - peak values



Symbols

HC_{max}	Heating capacity for maximum load, measured according to EN 14511
LWC	Leaving water condensor temperature [°C]
Tamb	Ambient temperature [°C DB]

Conditions

Heating capacity

Capacity according to standard EN 14511 and valid for heated water range ΔT = 3~8°C.

Notes

The capacity and power input is valid for ·V3· models at ·230·V and for for ·W1· models at ·400·V.
The capacity and the power input are at maximum operation.

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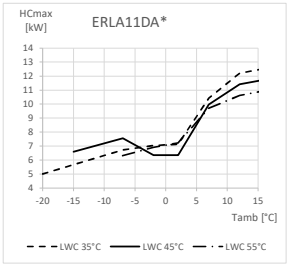
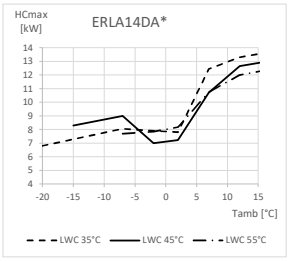
4 Capacity graphs

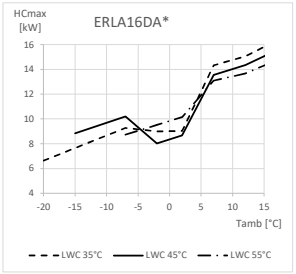
4 - 3 Heating Capacity Graphs - quiet mode

ERLA11-16DV3
ERLA11-16DW1

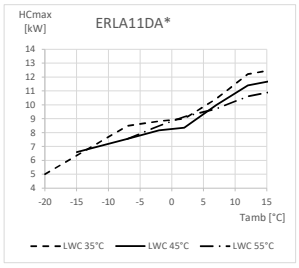
Maximum heating capacity - integrated value

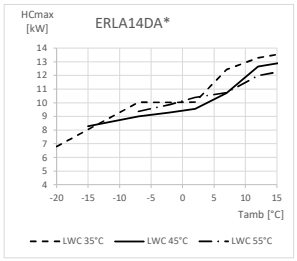


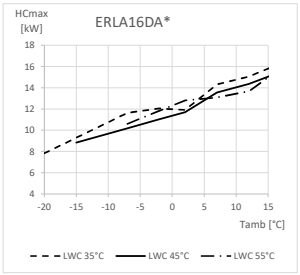




Maximum heating capacity - peak values







Symbols

HC_{max} Heating capacity for maximum load, measured according to EN 14511

LWC Leaving water condensor temperature [°C]

Tamb Ambient temperature [°C DB]

Conditions

Heating capacity

Capacity according to standard EN 14511 and valid for heated water range ΔT = 3~8°C.

Notes

The capacity and power input is valid for ·V3· models at ·230·V and for for ·W1· models at ·400·V.

The capacity and the power input are at maximum operation.

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5 Capacity tables

5 - 1 Certification Programs

ERLA11-16DV3
ERLA11-16DW1

Rated data for certification programmes - heating mode

Tamb [°C]	EWC [°C]	LWC [°C]	ERLA11DAV3 HC [kW]	ERLA11DAV3 COP [-]	ERLA14DAV3 HC [kW]	ERLA14DAV3 COP [-]	ERLA16DAV3 HC [kW]	ERLA16DAV3 COP [-]	ERLA11DAW1 HC [kW]	ERLA11DAW1 COP [-]	ERLA14DAW1 HC [kW]	ERLA14DAW1 COP [-]	ERLA16DAW1 HC [kW]	ERLA16DAW1 COP [-]	Used for:
10/9	30	35	9,20	5,32	9,20	5,32	9,20	5,32	9,20	5,32	9,20	5,32	9,20	5,32	BAFA
7/6	30	35	10,56	4,83	12,00	4,87	16,00	4,53	10,56	4,83	12,00	4,87	16,00	4,53	Keymark, EHPA, BAFA, GET
2/1	(30)	35	9,00	3,65	10,80	3,50	12,00	3,30	9,00	3,65	10,80	3,50	12,00	3,30	EHPA, GET
2/1	(30)	35	6,29	4,01	6,29	4,01	6,29	4,01	6,29	4,01	6,29	4,01	6,29	4,01	BAFA
-7/-8	(30)	35	8,75	2,92	9,30	2,86	10,60	2,70	8,75	2,92	10,50	3,00	12,30	2,87	EHPA, BAFA, GET
7/6	40	45	9,82	3,66	12,45	3,64	16,00	3,51	9,82	3,66	12,45	3,64	16,00	3,51	EHPA
-2/-3	(40)	45	9,32	2,57	10,15	2,58	11,91	2,42	9,32	2,57	10,15	2,58	11,91	2,42	MCS
-7/-8	(40)	45	8,72	2,35	8,98	2,29	10,49	2,10	8,72	2,35	8,98	2,29	10,49	2,10	EHPA
7/6	47	55	10,64	2,94	11,87	2,89	15,63	2,75	10,64	2,94	11,87	2,89	15,63	2,75	Keymark, EHPA, GET
-7/-8	47	55	7,89	1,82	8,47	1,82	8,87	1,78	7,89	1,82	8,47	1,82	8,87	1,78	GET, EHPA

Rated data for certification programmes - cooling mode

Nominal cooling capacity

Tamb [°C]	EWE [°C]	LWE [°C]	ERLA11DA(V3/W1) CC [kW]	ERLA11DA(V3/W1) EER [-]	ERLA14DA(V3/W1) CC [kW]	ERLA14DA(V3/W1) EER [-]	ERLA16DA(V3/W1) CC [kW]	ERLA16DA(V3/W1) EER [-]	Used for:	
35	23	18	11,85	4,7	13,18	4,61	15,72	4,11	General	DACI
35	12	7	11,18	3,22	12,92	2,98	13,63	2,91	Keymark	DAPT

Seasonal data - cooling — LWE 7°C — Low temperature Application

		ERLA11DA(V3/W1)	ERLA14DA(V3/W1)	ERLA16DA(V3/W1)
Pdes	[kW]	11	12,9	13,600
SEER	[-]	5,92	5,89	5,76
$\eta_{s,c}$	[-]	234	233	227
Q_{CE}	[kWh/annum]	1116	1314	1417

Symbols

HC	Heating capacity measured according to EN 14511
CC	Cooling capacity, measured according to ·EN 14511·.
COP/EEF	Coefficient of Performance/Energy efficiency ratio according to EN 14511.
EWC	Entering water condenser temperature [°C]
LWC	Leaving water condensor temperature [°C]
EWE	Entering water evaporator temperature [°C]
LWE	Leaving water evaporator temperature [°C]
Tamb	Ambient temperature [°C DB/WB]
Pdes	Nominal capacity value at design temperature [kW]
SEER	Seasonal energy efficiency ratio according to ·EN14825·
$\eta_{s,c}$	Seasonal space cooling energy efficiency according to ·EN14825·
Q_{CE}	Annual energy consumption for cooling according to ·EN14825·

Rated data for certification programmes - standby power consumption

		ERLA(11/14/16)DA(V3/W1)	Used for:
Standby power input	[W]	23	Taux

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ERLA11-16DV3
ERLA11-16DW1

Rated data for certification programmes - domestic hot water performance

Outdoor unit		ERLA(11/14/16)DAV3		ERLA(11/14/16)DAW1	
Domestic hot water tar		EBV(H/X/Z)(11/16)S18DJ(6V/9W)	EBV(H/X/Z)(11/16)S(U)23DJ(6V/9W)	EBV(H/X/Z)(11/16)S18DJ(6V/9W)	EBV(H/X/Z)(11/16)S(U)23DJ(6V/9W)
Tapping pattern		L	XL	L	XL
Application		Average climate (design temperature: -7·°C)			
COP_{DHW}	[]	2,73	2,63	2,77	2,64
η_{wh}	[%]	115,6%	108,7%	116,4%	109,0%
AEC	[kWh]	886	1542	879	1537
Application		Colder climate (design temperature: -2·°C)			
COP_{DHW}	[]	2,24	2,08	2,26	2,09
η_{wh}	[%]	94,2%	85,3%	94,6%	85,5%
AEC	[kWh]	1087	1963	1082	1959
Application		Warmer climate (design temperature: -14·°C)			
COP_{DHW}	[]	3,26	3,00	3,32	3,02
η_{wh}	[%]	138,8%	124,1%	139,8%	124,5%
AEC	[kWh]	737	1349	732	1345

Indoor Unit		EBS(X/H)(B/-)(11/16)P30DF		EBS(X/H)(B/-)(11/16)P50DF	
Outdoor Unit		ERLA(11/14/16)DAV3	ERLA(11/14/16)DAW1	ERLA(11/14/16)DAV3	ERLA(11/14/16)DAW1
Tapping pattern		L		XL	
Application		Average climate (design temperature: -7·°C)			
COP_{DHW}	[]	2,73	2,75	3,05	3,1
η_{wh}	[%]	115%	116%	126%	128%
AEC	[kWh]	890	887	1329	1313
Application		Colder climate (design temperature: -2·°C)			
COP_{DHW}	[]	2,32	2,33	2,63	2,67
η_{wh}	[%]	97%	98%	109%	110%
AEC	[kWh]	1053	1051	1542	1526
Application		Warmer climate (design temperature: -14·°C)			
COP_{DHW}	[]	3,2	3,24	3,68	3,76
η_{wh}	[%]	136%	137%	153%	155%
AEC	[kWh]	753	750	1094	1078

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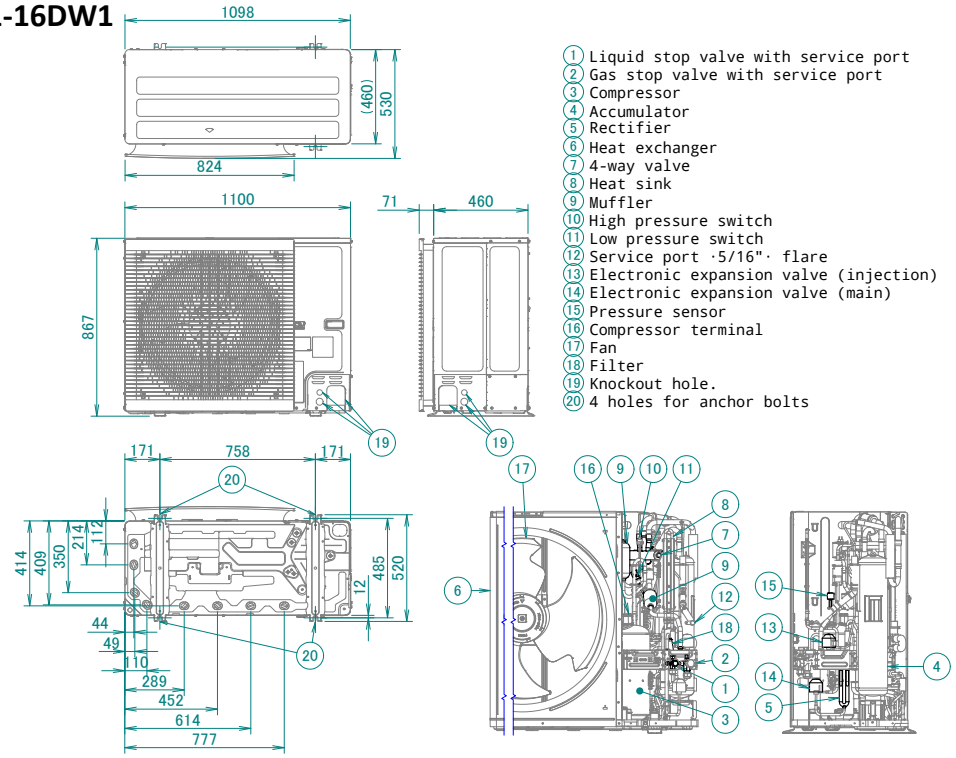
6 Dimensional drawings

6 - 1 Dimensional Drawings

ERLA11-16DV3
ERLA11-16DW1



① Liquid stop valve with service port
② Gas stop valve with service port
③ Compressor
④ Accumulator
⑤ Rectifier
⑥ Heat exchanger
⑦ 4-way valve
⑧ Heat sink
⑨ Muffler
⑩ High pressure switch
⑪ Low pressure switch
⑫ Service port ·5/16"· flare
⑬ Electronic expansion valve (injection)
⑭ Electronic expansion valve (main)
⑮ Pressure sensor
⑯ Compressor terminal
⑰ Fan
⑱ Filter
⑲ Knockout hole.
⑳ 4 holes for anchor bolts

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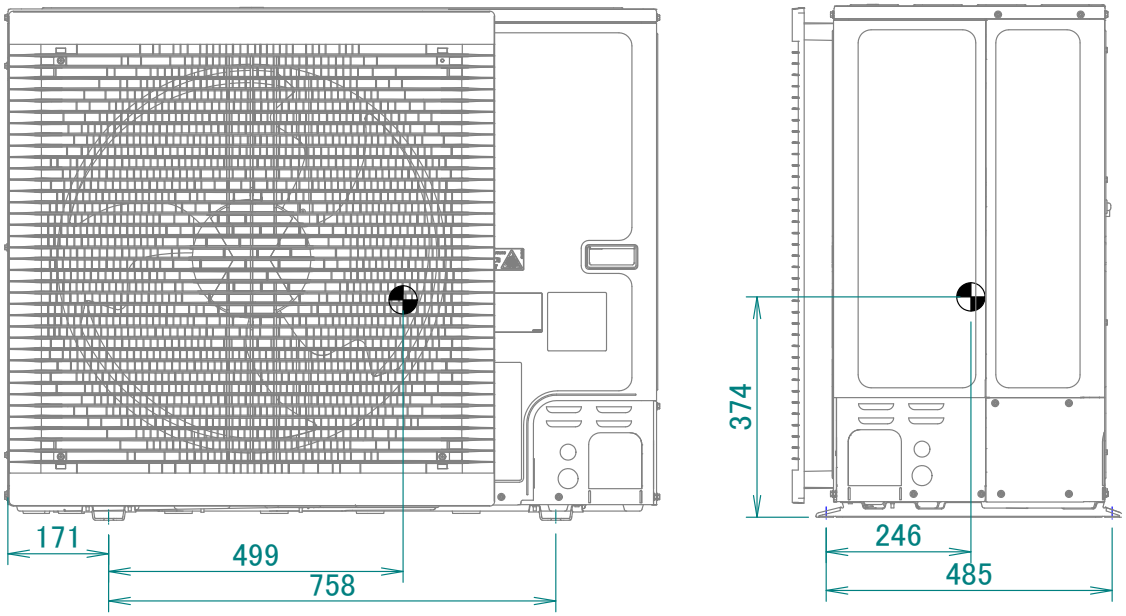
7 Centre of gravity

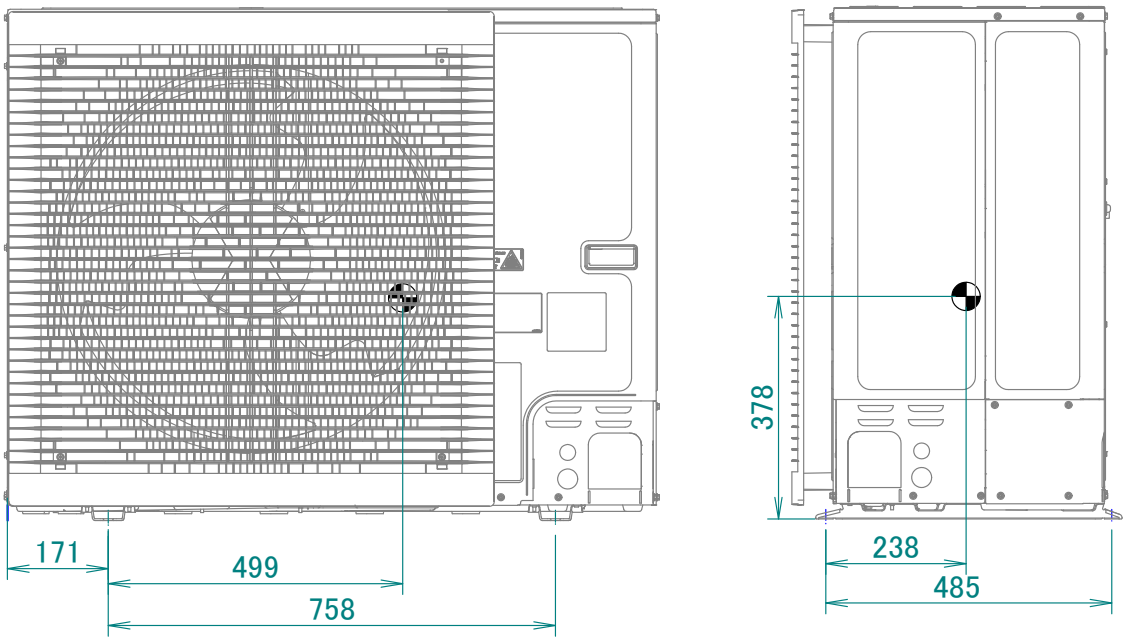
7 - 1 Centre of Gravity

ERLA11-16DV3
ERLA11-16DW1

3~



1~



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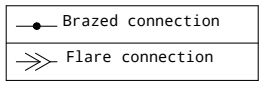
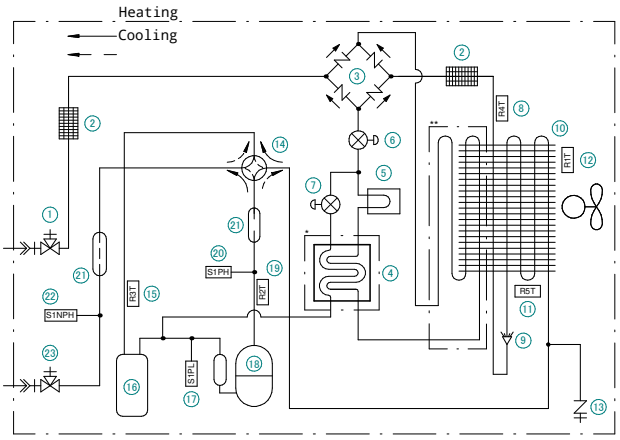
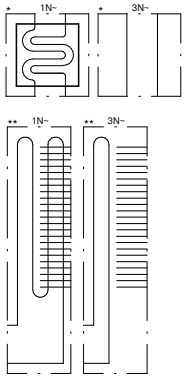
8 Piping diagrams

8 - 1 Piping Diagrams

ERLA11-16DV3
ERLA11-16DW1







1. Liquid stop valve with service port
2. Filter
3. Rectifier
4. Economiser
5. Heat sink
6. Electronic expansion valve (main)
7. Electronic expansion valve (injection)
8. R4T - Thermistor (heat exchanger)
9. Distributor
10. Heat exchanger
11. R5T - Thermistor (heat exchanger middle)
12. R1T - Outdoor air
13. Service port ·5/16"· flare
14. 4-way valve
15. R3T - Thermistor (suction)
16. Accumulator
17. Low pressure switch
18. Compressor
19. R2T - Thermistor (discharge)
20. High pressure switch
21. Muffler
22. Pressure sensor
23. Gas stop valve with service port

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9 Wiring diagrams

9 - 1 Notes & Legend

ERLA11-16DV3 / ERLA11-16DW1

NOTES to go through before starting the unit

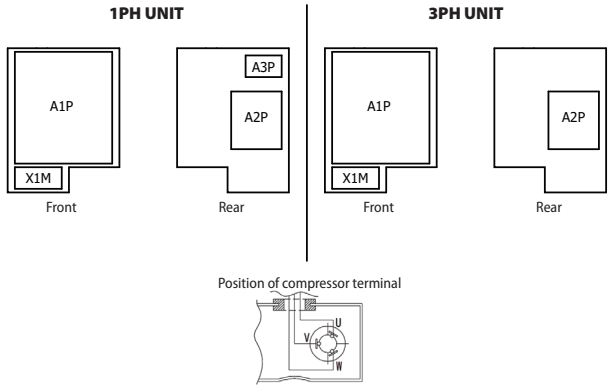
X1M : Main terminal
—— —— —— : Earth wiring
– – – – – – : Field supply
① : Several wiring possibilities

: Option
: Wiring depending on model
: Not mounted in switch box
: PCB

NOTES

1. Refer to the wiring diagram sticker (on the back of the front plate) for how to use the BS1~BS4 and DS1 switches.
2. When operating, do not short-circuit protection device Q1, S1PH and S1PL.
3. Refer to the combination table and the option manual for how to connect the wiring to X6A, X41A and X77A.
4. Colours: BLK: black; RED: red; BLU: blue; WHT: white; GRN: green; BRN: brown; YLW: yellow; ORG: orange
5. Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: OFF

POSITION IN SWITCH BOX



LEGEND

1PH UNIT

Part n°		Description
A1P		Printed circuit board (main)
A2P		Printed circuit board (noise filter)
A3P		Printed circuit board (flash)
C* (A*P)		Capacitor
BS* (A1P)		Push button switch
DS1 (A1P)		Dipswitch
F1U, F3U~F4U (A2P)		Fuse T 6,3 A 250 V
F2U (A2P)		Fuse T 56 A 250 V
F6U (A1P)		Fuse T 5 A 250 V
H1~7P (A1P)		Indication light emitting diode (service monitor is orange)
HAP (A1P)		Light emitting diode (service monitor is green)
K1R (A1P)		Magnetic relay (Y1S)
K10R (A1P)		Magnetic relay
K11M (A1P)		Magnetic relay (Main)
K14~15R (A2P)		Magnetic relay
L*R (A1P)		Reactor
M1C		Compressor motor
M1F		Fan motor
PS (A1P)		Switching power supply
Q1		Thermal overcurrent protector
Q1DI	#	Earth leakage circuit breaker (30mA)
R1~5 (A*P)		Resistor
R1T		Thermistor (air)
R2T		Thermistor (discharge)
R3T		Thermistor (suction)
R4T		Thermistor (distribution pipe)
R5T		Thermistor (heat exchanger middle)
R11T (A1P)		Thermistor (fin)
RC (A2P)		Signal receiver circuit
S1NPH		Pressure sensor
S1PH		High pressure switch
S1PL		Low pressure switch
TC (A2P)		Signal transmission circuit
V*D (A1P)		Diode
V1R (A1P)		Power module
V2R (A1P)		Diode module
V*T (A1P)		IGBT
X1M		Terminal strip
X*A, X*Y (A*P)		Connector
Y1E, Y3E		Electronic expansion valve
Y1S		Solenoid valve (4-way valve)
Z*C		Noise filter (ferrite core)
Z*F (A*P)		Noise filter

3PH UNIT

Part n°		Description
A1P		Printed circuit board (main)
A2P		Printed circuit board (noise filter)
C* (A1P)		Capacitor
BS* (A1P)		Push button switch
DS1 (A1P)		Dipswitch
F1U, F3U (A2P)		Fuse T 6,3 A 250 V
F4U, F5U (A2P)		Fuse T 30 A 500 V
F7U (A1P)		Fuse T 5 A 250 V
HAP (A1P)		Light emitting diode (service monitor is green)
K1R (A1P)		Magnetic relay (Y1S)
K5~8R (A1P)		Magnetic relay
K*M (A1P)		Magnetic relay (Main)
L*R (A*P)		Reactor
M1C		Compressor motor
M1F		Fan motor
PS (A1P)		Switching power supply
Q1		Thermal overcurrent protector
Q1DI	#	Earth leakage circuit breaker (30mA)
R1~9 (A1P)		Resistor
R1T		Thermistor (air)
R2T		Thermistor (discharge)
R3T		Thermistor (suction)
R4T		Thermistor (distribution pipe)
R5T		Thermistor (heat exchanger middle)
R11T (A1P)		Thermistor (fin)
RC (A1P)		Signal receiver circuit
S1NPH		Pressure sensor
S1PH		High pressure switch
S1PL		Low pressure switch
SEG* (A1P)		7-segment display
TC (A1P)		Signal transmission circuit
V*D (A1P)		Diode
V1~2R (A1P)		Diode module
V3~5R (A1P)		Power module
X1M		Terminal strip
X*A, X*Y (A*P)		Connector
Y1E, Y3E		Electronic expansion valve
Y1S		Solenoid valve (4-way valve)
Z*C		Noise filter (ferrite core)
Z*F (A*P)		Noise filter

* : optional #: field supply

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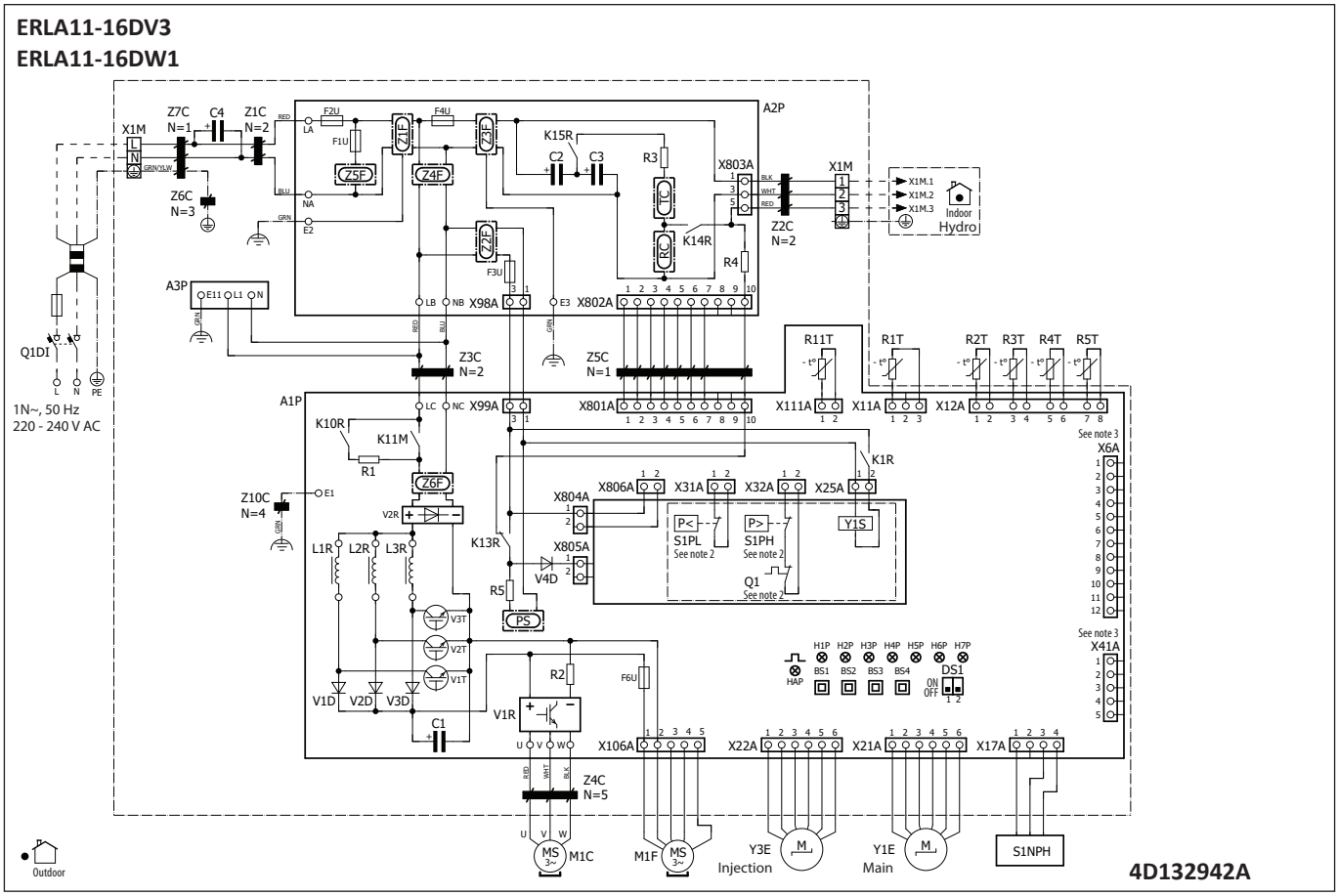
9 Wiring diagrams

9 - 2 Compressor - Single phase

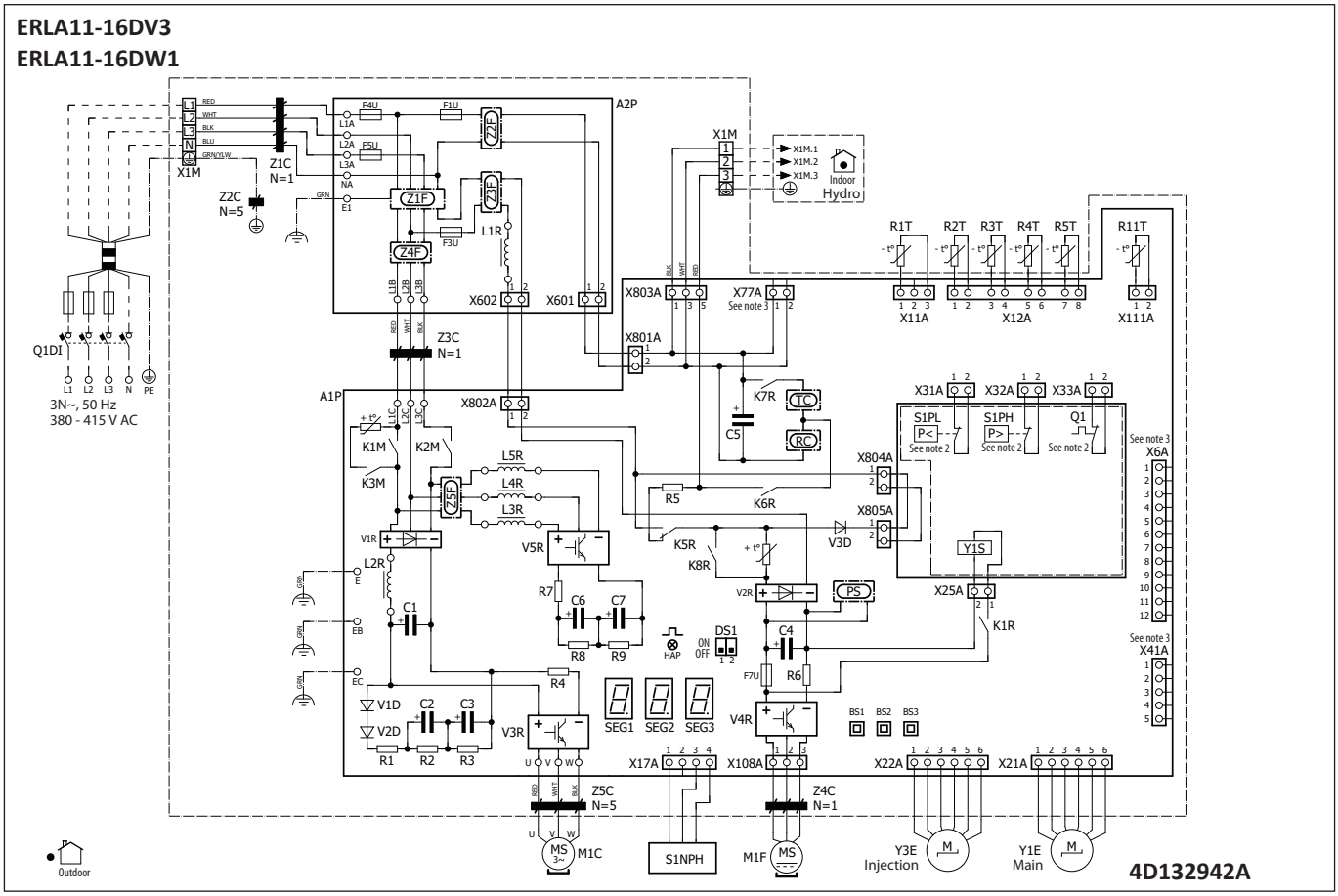
ERLA11-16DV3
ERLA11-16DW1



9 Wiring diagrams

9 - 3 Compressor - Three phase

ERLA11-16DV3
ERLA11-16DW1



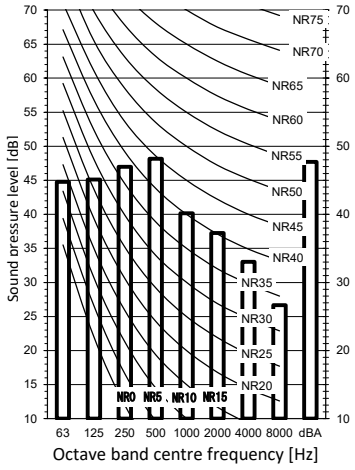
10 Sound data

10 - 1 Sound Pressure Spectrum - Cooling

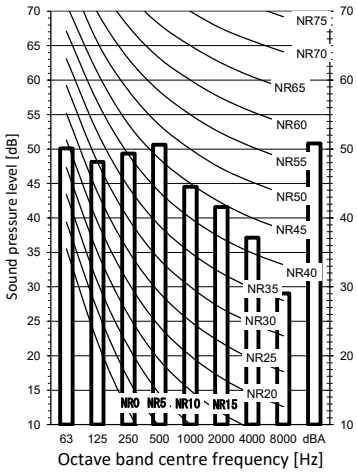
ERLA11-16DV3
ERLA11-16DW1

Cooling Sound

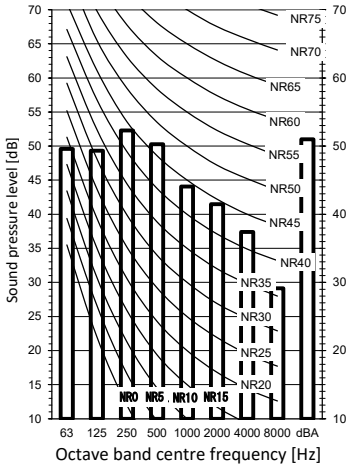
ERLA11*



ERLA14*

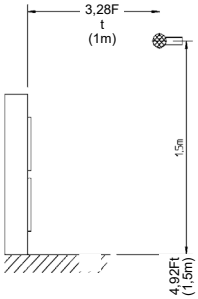


ERLA16*



Notes

1. Data is valid at free field condition.
   Measured in a semi-anechoic chamber
2. Data is valid at nominal operation condition.
3. dBA = A-weighted sound pressure level (A scale according to IEC).
4. Reference acoustic pressure 0 dB = 20 µPa
5. If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location
(discharge side)

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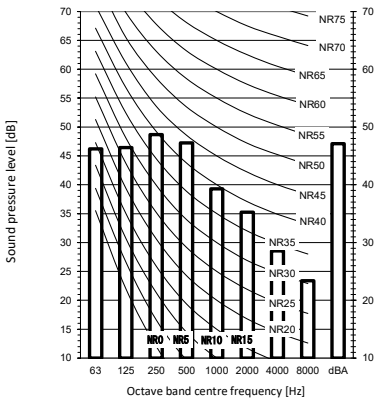
10 Sound data

10 - 2 Sound Pressure Spectrum - Heating

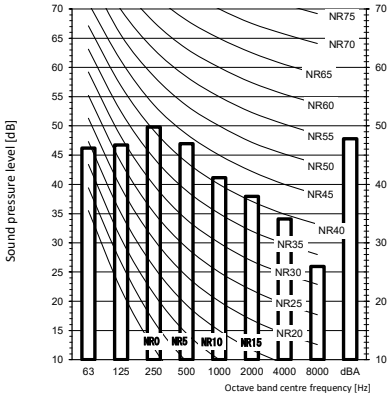
ERLA11-16DV3
ERLA11-16DW1

Heating Sound

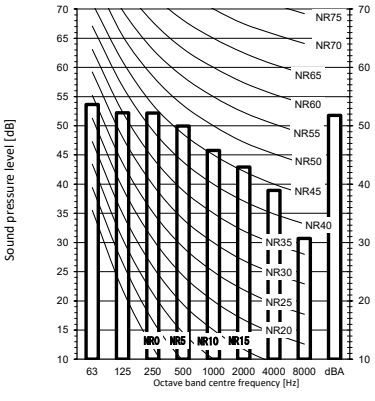
ERLA11*



ERLA14*

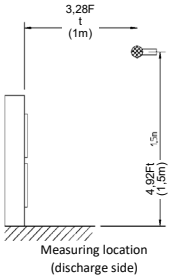


ERLA16*



Notes

1. Data is valid at free field condition.
2. Data is valid at nominal operation condition.
3. dBA = A-weighted sound pressure level (A scale according to IEC).
4. Reference acoustic pressure 0 dB = 20 µPa
5. If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location
(discharge side)

		Maximum sound day			Maximum sound night		
		Sound Power Level [dBA]			Sound Power Level [dBA]		
Maximum sound day	Maximum sound night	ERLA11*	ERLA14*	ERLA16*	ERLA11*	ERLA14*	ERLA16*
Default : Low noise level ·1·	Low noise level ·2·	68	69	73	62	62	62
Full load (maximum fan rps and maximum compressor rps for the dedicated low noise mode)							

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10 Sound data

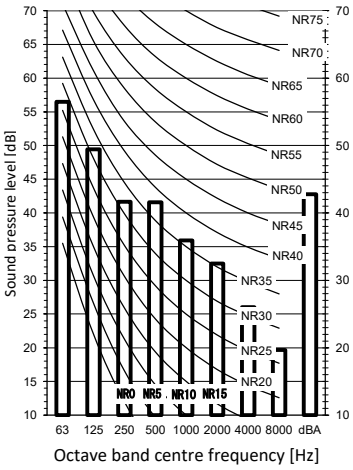
10 - 3 Sound Pressure Spectrum Quiet Mode

10

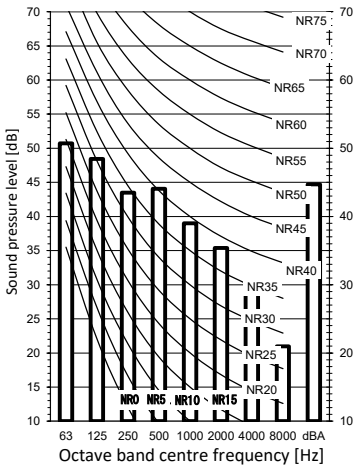
ERLA11-16DV3
ERLA11-16DW1

Cooling : Quiet mode

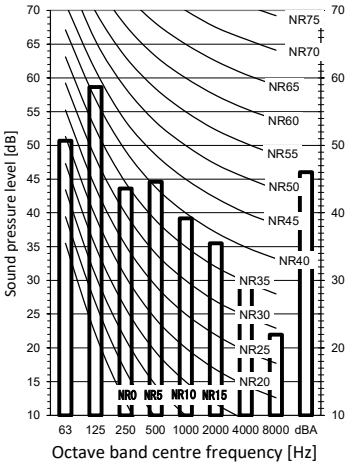
ERLA11*



ERLA14*



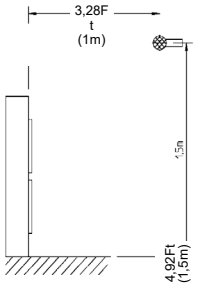
ERLA16*



Notes

1. Data is valid at free field condition.

   Measured in a semi-anechoic chamber
2. Data is valid at nominal operation condition.
3. dBA = A-weighted sound pressure level (A scale according to IEC).
4. Reference acoustic pressure 0 dB = 20 µPa
5. If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.



Measuring location
(discharge side)

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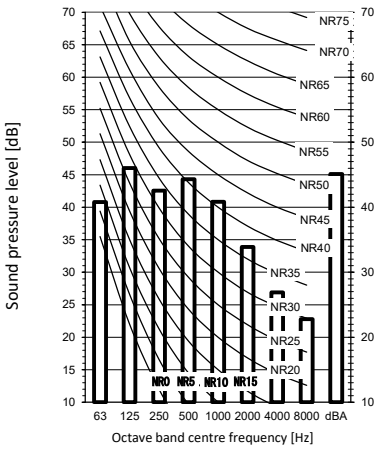
ERLA11-16DV3
ERLA11-16DW1

Heating : Quiet mode

ERLA11*



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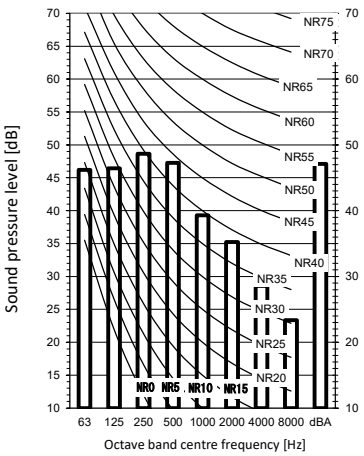

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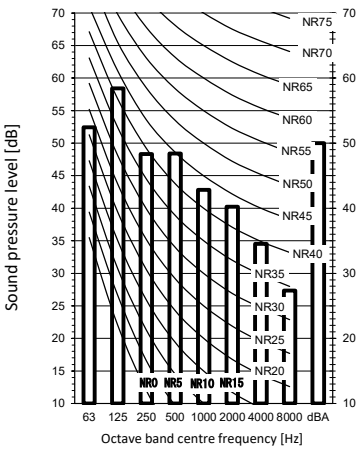
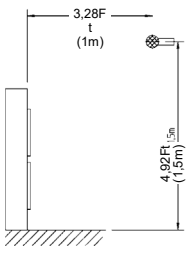


Notes

1. Data is valid at free field condition.
2. Data is valid at nominal operation condition.
3. dBA = A-weighted sound pressure level (A scale according to IEC).
4. Reference acoustic pressure 0 dB = 20 µPa
5. If the sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.

		Maximum sound day			Maximum sound night		
		Sound Power Level [dBA]			Sound Power Level [dBA]		
Maximum sound day	Maximum sound night	ERLA11*	ERLA14*	ERLA16*	ERLA11*	ERLA14*	ERLA16*
Default : Low noise level ·1·	Low noise level ·2·	65	66	68	62	62	62
Full load (maximum fan rps and maximum compressor rps for the dedicated low noise mode)							



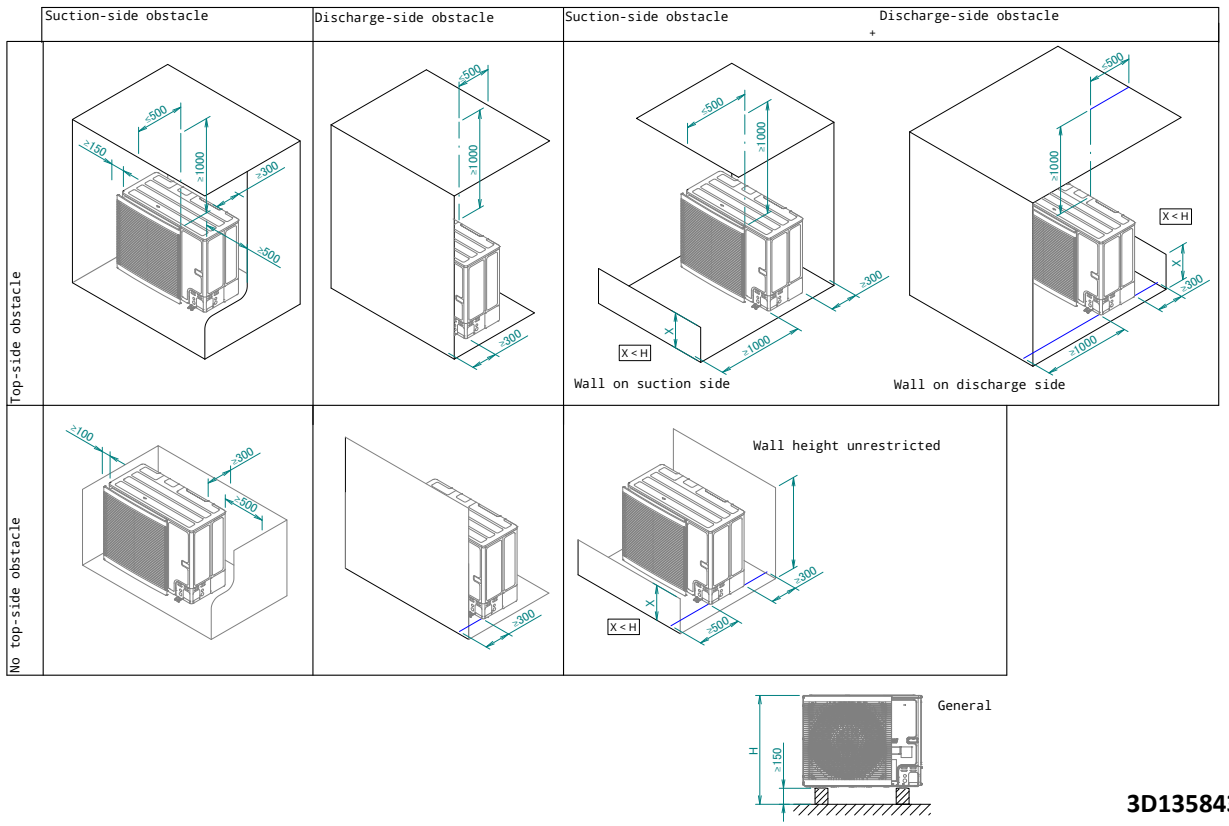
Measuring location
(discharge side)

4D672155A

11 Installation

11 - 1 Installation Method

ERLA11-16DV3
ERLA11-16DW1



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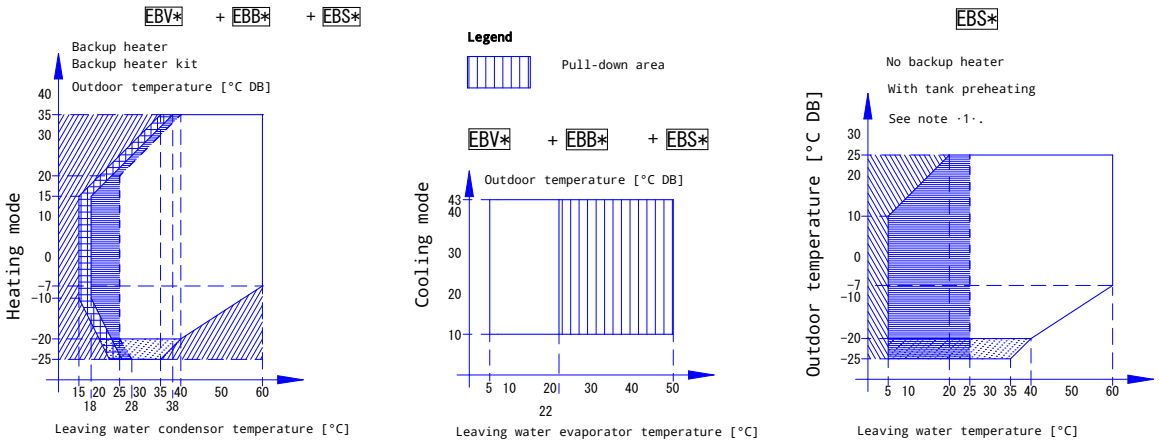
12 Operation range

12 - 1 Operation Range

ERLA11-16DV3
ERLA11-16DW1



Legend

- Backup heater only operation
  No outdoor unit operation
- Heat pump + backup heater operation
  Pull-up area
- Outdoor unit operation if controller setpoint is regulated to minimal leaving water temperature request.
  See dashed lines
- Operation of outdoor unit possible, but with possible capacity reduction.
- Circulation pump operation only

Notes

1. Tank preheating
   For details, see the installer reference guide.
2. In restricted power supply mode, the outdoor unit and backup heater can only operate separately.

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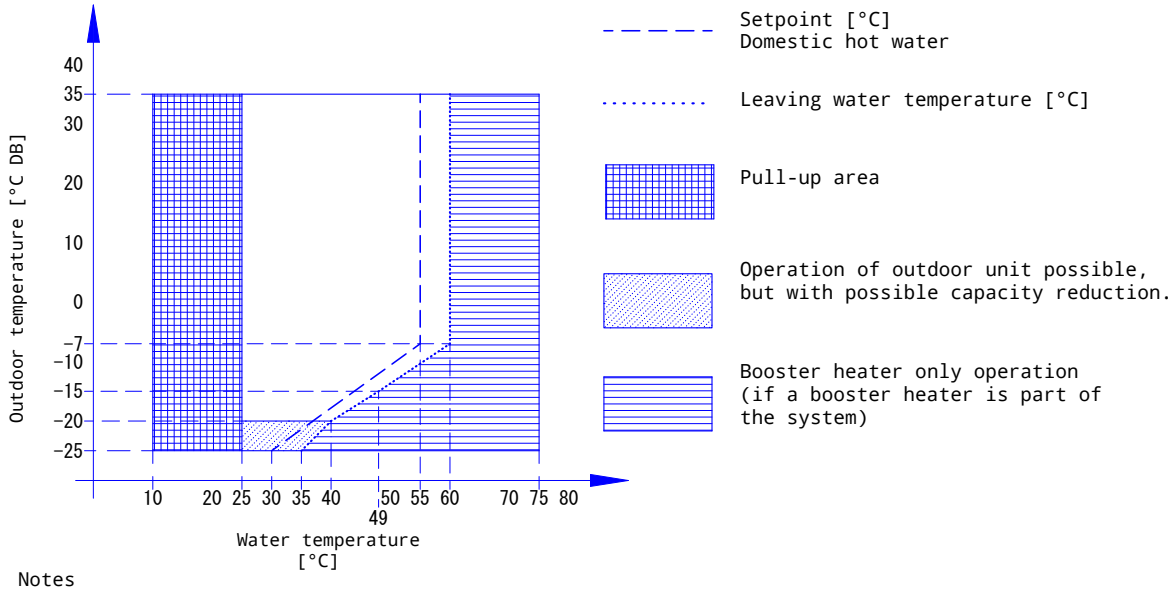
ERLA11-16DV3
ERLA11-16DW1



Notes

1. In restricted power supply mode (·EKHW*· only), the outdoor unit, booster heater and backup heater can only operate separately.
2. Third-party with identical specifications as ·EKHWS*·
   Coil surface >·1.05·m² and <·3.7·m²
   Tank thermistor and booster heater above heat pump coil.
3. If negative ambient temperatures are expected, both in operation or at standstill, take adequate countermeasures against freezing.

   For more information, refer to the installation manual.

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