

the better way to heat



Air/Water Heat Pumps
Dual / Outdoor Installation

Supplement to Operating Manual

Device Information

LWD 50A/(R)SX, LWD 70A/(R)SX

83062500dUK – Translation into English of the original German operating manual





Please read first

The “Model Device Information” is an integral part of the product. It supplements the operating manual “Air/Water Heat Pump, Outdoor Installation”. In addition to this “Model Device Information”, the operating manual “Air/Water Heat Pumps, Outdoor Installation” must also be available to you.

Since this “Model Device Information” was written for several different models of the unit, always comply with the parameters for the respective model.

The “Model Device Information” is intended only for persons assigned to work on or operate the unit. Treat all constituent parts confidentially. The information contained herein is protected by copyright. No part of this information may be reproduced, transmitted, copied, stored in electronic data systems or translated into another language, either wholly or in part, without the express written permission of the manufacturer.



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CIRCUIT DIAGRAMS

LWD 50ASX/ARSX, LWD 70ASX/ARSX 14



Technical data/scope of delivery

Heat pump type	Brine/water Air/water Water/water	• applicable — not applicable
Installation location	Indoors Outdoors	• applicable — not applicable
Conformity		CE
Performance data	Heating capacity/COP at	
	A7/W35 Standard point acc. to EN14511 2 compressors 1 compressor	"kW ... kW ..."
	A7/W45 Standard point to EN14511 2 compressors 1 compressor	"kW ... kW ..."
	A2/W35 Operating point to EN14511 2 compressors 1 compressor	"kW ... kW ..."
	A10/W35 Operating point to EN14511 2 compressors 1 compressor	"kW ... kW ..."
	A-7/W35 Operating point to EN14511 2 compressors 1 compressor	"kW ... kW ..."
	A-15/W65 2 compressors 1 compressor	"kW ... kW ..."
Limits of application	Heating circuit	°C
	Heat source	°C
	additional operating points	°C
Sound	Sound pressure level inside (measured in free field at 1m distance around the machine)	dB(A)
	External sound pressure level (averaged in free field at 1m distance around air connections)	dB(A)
	Sound power inside	dB
	Sound power outside	dB
Heat source	Air volume flow at maximum external pressure	m³/h
	Maximum external pressure	Pa
Heating circuit	Volume flow: minimum flow rate nominal flow rate A7/W35 EN14511 maximum flow rate	l/h
	Heat pump pressure loss Δp volume flow	bar l/h
	Free compression heat pump Δp volume flow	bar l/h
	Content of buffer tank	l
	3-way valve, heating/hot water	...
General unit data	Dimensions (see dimensional drawing for the specified unit size)	unit size
	Total weight	kg
	Connections Heating circuit	...
	Domestic hot water circuit	...
	Refrigerant Refrigerant type Quantity	... kg
	Free cross section, air ducts	mm
	Cross section, condensate water hose / length from unit	mm m
Electrics	Voltage code three-phase circuit breaker heat pump **) see hydraulic module	... A
	Voltage code circuit breaker control voltage **) see hydraulic module	... A
	Voltage code circuit breaker electric heating element **) see hydraulic module	... A
Heat pump	Effective power consumption in standard point Az/W35 to EN14511: Power consumption current consumption $\cos\phi$	kW A ...
	Maximum device current within the limits of application	A
	Starting current: direct with soft starter	A A
	Protection type	IP
	Output electric heating element 3 2 1-phase	kW kW kW
Components	Heating circuit circulating pump at nominal flow rate: max. power consumption current consumption	kW A
Safety equipment	Safety assembly heating circuit Safety assembly heat source	in scope of delivery: • yes — no
Heating and heat pump regulator		Included in scope of delivery: • yes — no
Control and sensor wire		Included in scope of delivery: • yes — no
Power cable to unit		Included in scope of delivery: • yes — no
Electronic soft starter		integrated: • yes — no
Expansion vessels	Heating circuit: Scope of delivery Volume Initial pressure	• yes — no bar
Overflow valve		integrated: • yes — no
Vibration decouplers	Heating circuit	Included in scope of delivery: • yes — no

UK813517 *) depending on component tolerances and flow **) comply with local regulations n.n. = not detectable w.w. = optional
 1) hot water return flow 2) hot water forward flow



	LWD 50ASX	LWD 70ASX
	— • —	— • —
	— •	— •
	•	•
	—	—
	7,4 4,79	9,3 4,24
	—	—
	6,84 3,79	8,9 3,51
	—	—
	5,94 3,87	7,4 3,49
	—	—
	7,0 4,76	10,3 4,58
	—	—
	4,5 3,00	6,2 2,70
	—	—
	—	—
	20 ¹ – 60 ²	20 ¹ – 60 ²
	-20 – 35	-20 – 35
	A> -7 / 70 ²	A> -7 / 70 ²
	—	—
	46	46
	—	—
	58	58
	3000	3000
	—	—
	900 1200 1500	1200 1600 2000
	0,066 1200	0,055 1600
	— —	— —
	—	—
	—	—
	—	—
	141	146
	G1 ¹	G1 ¹
	—	—
	R290 0,95	R290 1,1
	—	—
	— —	
	—	—
	—	—
	1,5 10,9 0,6	2,2 15,9 0,6
	14	18
	— 45	— 45
	24	24
	— — —	— — —
	— —	— —
	— —	— —
	—	—
	•	•
	•	•
	•	•
	— — —	— — —
	—	—
	—	—
	813543b	813544b



Technical data/scope of delivery

Heat pump type	Brine/water Air/water Water/water	• applicable — not applicable
Installation location	Indoors Outdoors	• applicable — not applicable
Conformity		CE
Performance data	Heating capacity/COP at	
	A7/W35 Standard point to EN14511 1 compressor	kW ...
	A7/W45 Standard point to EN14511 1 compressor	kW ...
	A2/W35 Operating point to EN14511 1 compressor	kW ...
	A10/W35 Operating point to EN14511 1 compressor	kW ...
	A-7/W35 Operating point to EN14511 1 compressor	kW ...
Performance data	Cooling capacity/EER cool optimised at	
	A27/W18 Operating point to EN14511 1 compressor	kW ...
	A27/W7 Operating point to EN14511 1 compressor	kW ...
	A35/W18 Operating point to EN14511 1 compressor	kW ...
	A35/W7 Operating point to EN14511 1 compressor	kW ...
Limits of application	Heating circuit °C	
	Heat source °C	
	additional operating points °C	
Limits of application	Cooling circuit °C	
	thermal sink °C	
Sound	Sound pressure level outside (averaged in open space at 1 m distance from the machine) dB(A)	
	Sound power level, outside dB	
Heat source	Air volume flow at maximum external pressure m³/h	
	Maximum external pressure Pa	
Heating circuit	Volume flow: minimum flow rate nominal flow rate A7/W35 EN14511 maximum flow rate l/h	
	Heat pump pressure loss Δp volume flow bar l/h	
	Free compression heat pump Δp volume flow bar l/h	
	Content of buffer tank l	
	3-way valve, heating/hot water ...	
General unit data	Dimensions (see dimensional drawing for the specified unit size) unit size	
	Total weight kg	
	Connections Heating circuit ...	
	Domestic hot water circuit ...	
	Refrigerant Refrigerant type Quantity ... kg	
	Free cross section, air ducts mm	
	Cross section, condensate water hose / length from unit mm m	
Electrics	Voltage code three-phase circuit breaker heat pump **) see hydraulic module ... A	
	Voltage code circuit breaker control voltage **) see hydraulic module ... A	
	Voltage code circuit breaker electric heating element **) see hydraulic module A	
Heat pump	Effective power consumption in standard point Az/W35 to EN14511: Power consumption current consumption $\cos\phi$ kW A ...	
	Maximum device current within the limits of application A	
	Starting current: direct with soft starter A A	
	Protection type IP	
	Output electric heating element 3 2 1-phase kW kW kW	
Safety equipment	Safety assembly heating circuit Safety assembly heat source in scope of delivery: • yes — no	
Heating and heat pump regulator	Included in scope of delivery: • yes — no	
Control and sensor wire	Included in scope of delivery: • yes — no	
Power cable to unit	Included in scope of delivery: • yes — no	
Electronic soft starter	integrated: • yes — no	
Expansion vessels	Heating circuit: Scope of delivery Volume Initial pressure • yes — no bar	
Overflow valve	integrated: • yes — no	
Vibration decouplers	Heating circuit Included in scope of delivery: • yes — no	

DE813506c *) depending on component tolerances and flow **) comply with local regulations n.n. = not detectable w.w. = optional

1) hot water return flow 2) hot water forward flow

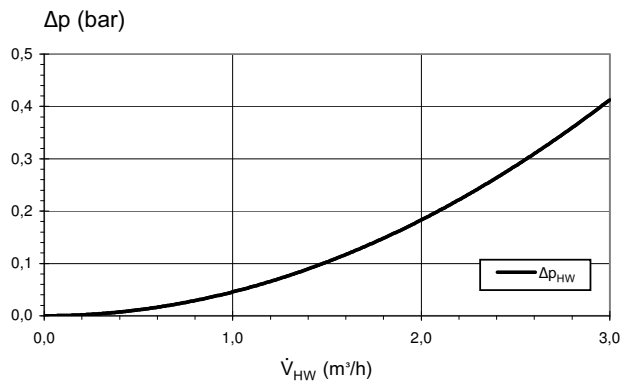
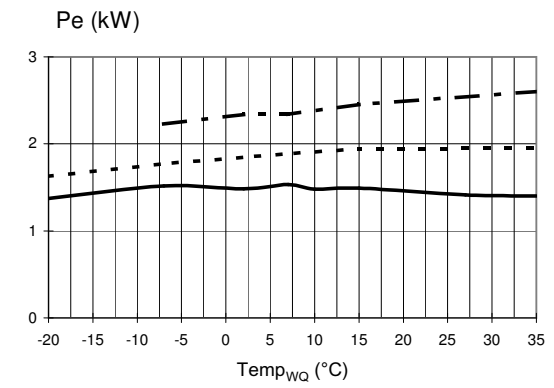
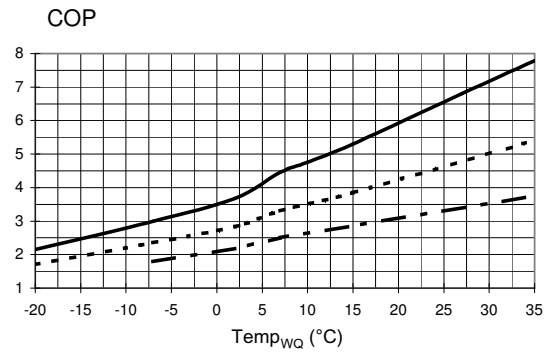
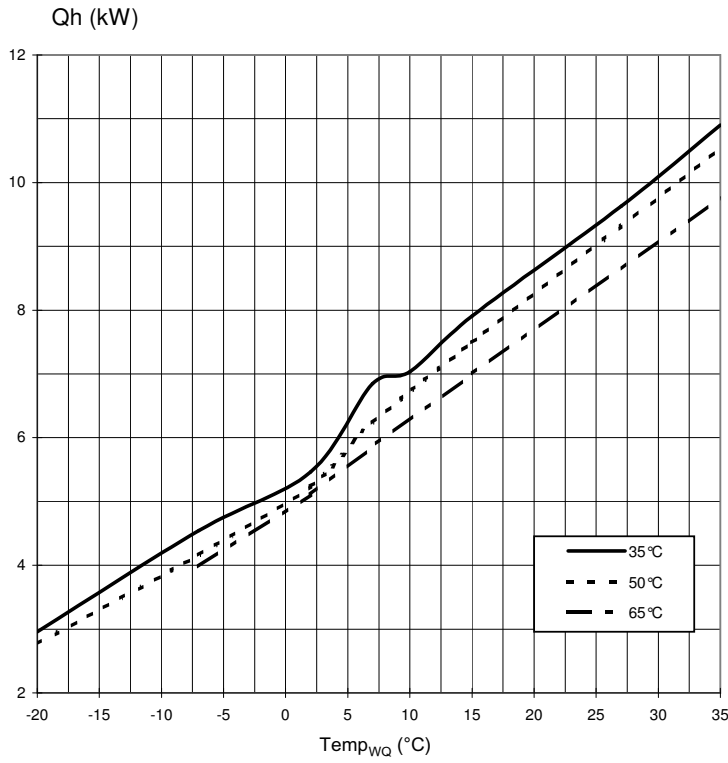


	LWD 50A/RSX	LWD 70A/RSX
	— • —	— • —
	— •	— •
	•	•
	6,8 4,46	9,3 4,24
	6,5 3,56	8,9 3,51
	5,5 3,68	7,4 3,49
	7,0 4,76	10,3 4,58
	4,5 3,00	6,2 2,70
	7,9 4,98	11,1 4,59
	5,9 3,78	8,0 3,57
	7,4 3,97	10,1 3,64
	5,1 2,89	7,0 2,74
	20° – 62°	20° – 62°
	-20 – 35	-20 – 35
	A> -7 / 70 ²	A> -7 / 70 ²
	7 ² – 20 ²	7 ² – 20 ²
	15 – 45	15 – 45
	47	47
	62	62
	3000	3000
	—	—
	900 1200 1500	1200 1600 2000
	0,066 1200	0,055 1600
	— —	— —
	—	—
	—	—
	—	—
	146	151
	G1 ⁴	G1 ⁴
	—	—
	R290 2,1	R290 2,2
	—	—
	— —	— —
	—	—
	—	—
	1,5 10,9 0,6	2,2 15,9 0,6
	14	18
	— 45	— 45
	24	24
	— — —	— — —
	— —	— —
	—	—
	•	•
	•	•
	•	•
	— — —	— — —
	—	—
	—	—
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LWD 50ASX

Performance curves



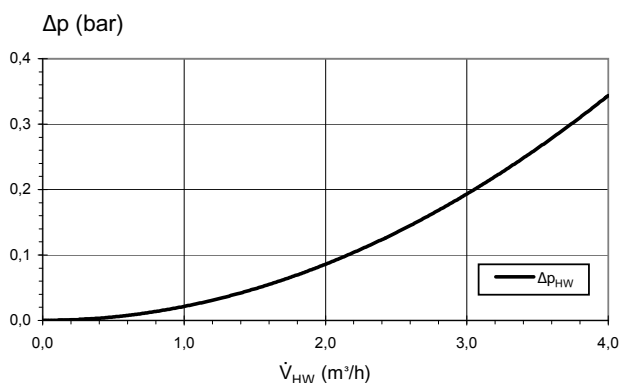
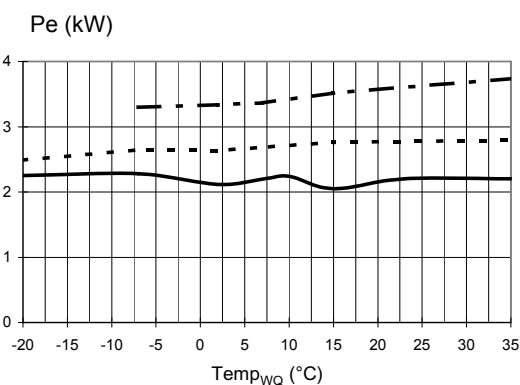
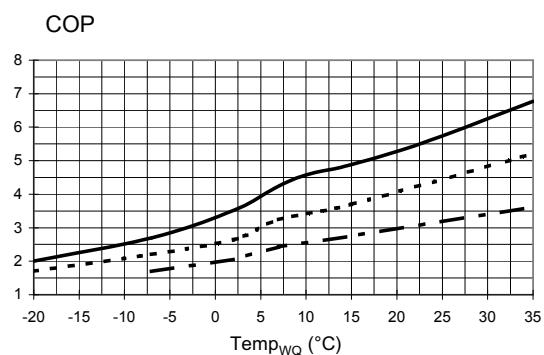
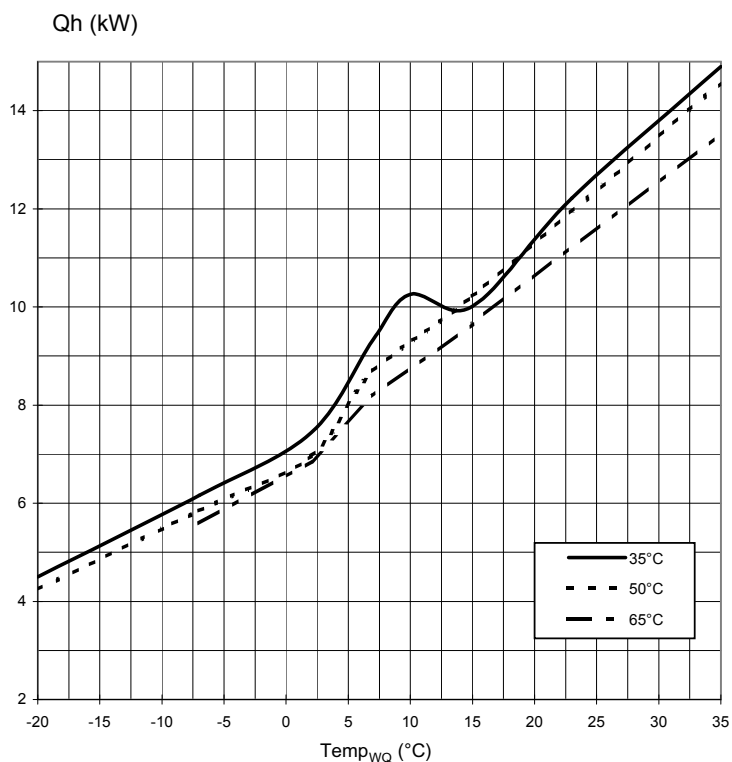
823167

Legend:	UK823129L/170408
\dot{V}_{HW}	Volume flow, heating water
Temp _{wQ}	Temperature, heat source
Qh	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp _{HW}	Pressure loss heat pump
VD	Compressor(s)



Performance curves

LWD 70ASX



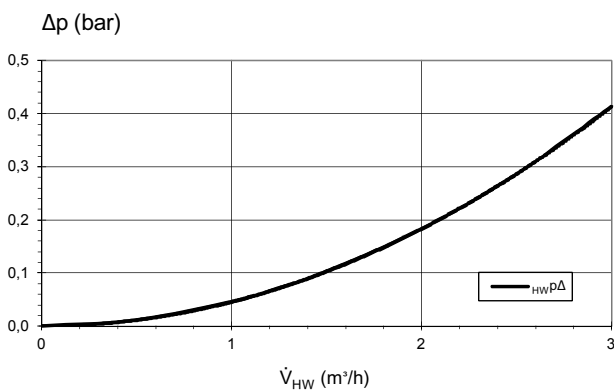
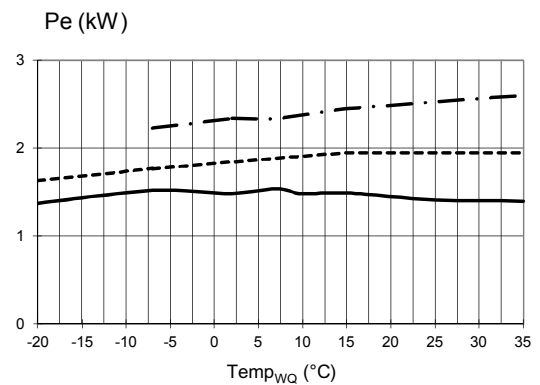
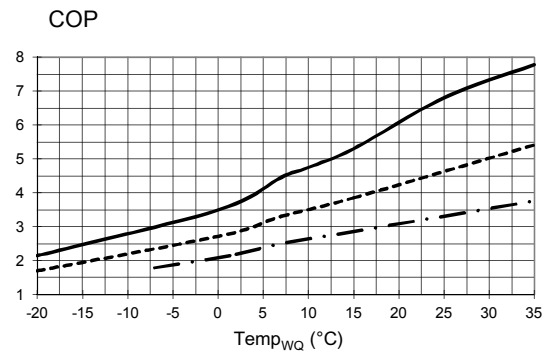
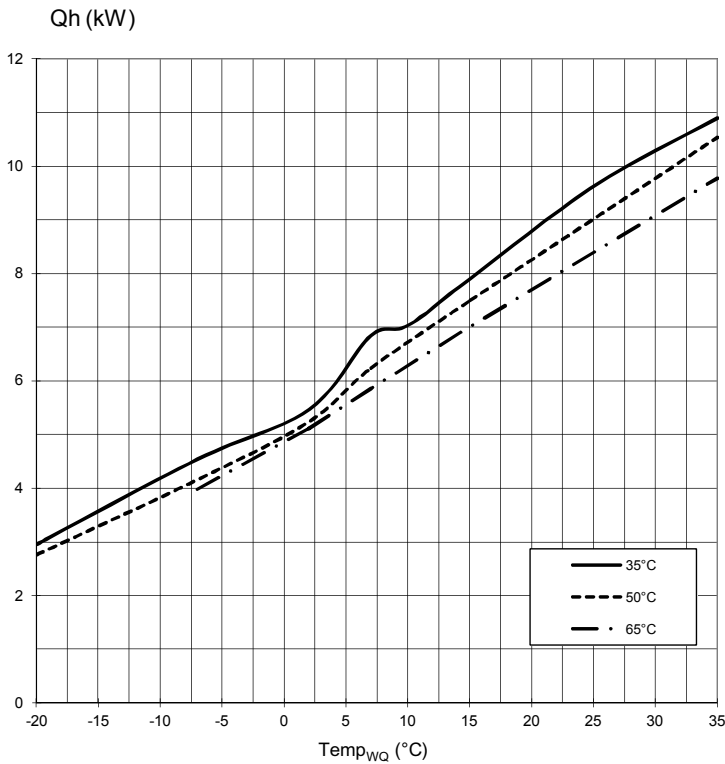
823168

Legend:	UK823129L/170408
\dot{V}_{HW}	Volume flow, heating water
$Temp_{wQ}$	Temperature, heat source
Q_h	Heating capacity
P_e	Power consumption
COP	Coefficient of performance / efficiency rating
Δp_{HW}	Pressure loss heat pump
VD	Compressor(s)



LWD 50A/RX Heating mode

Performance curves



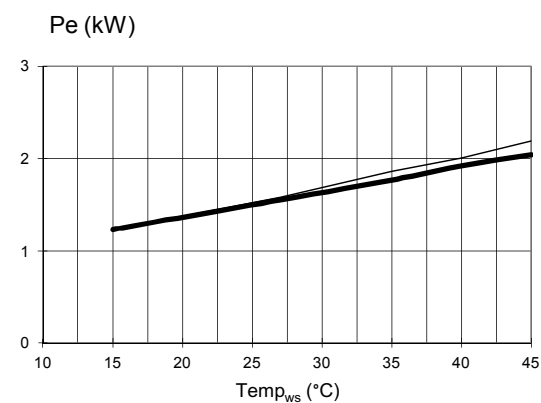
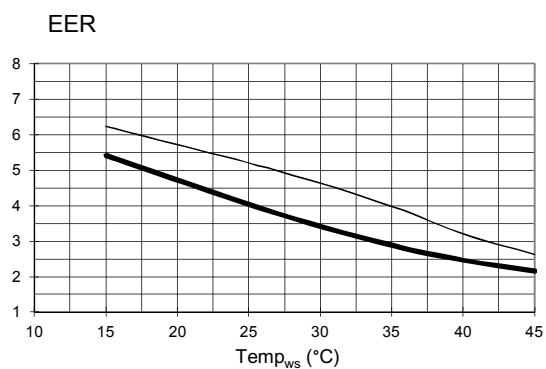
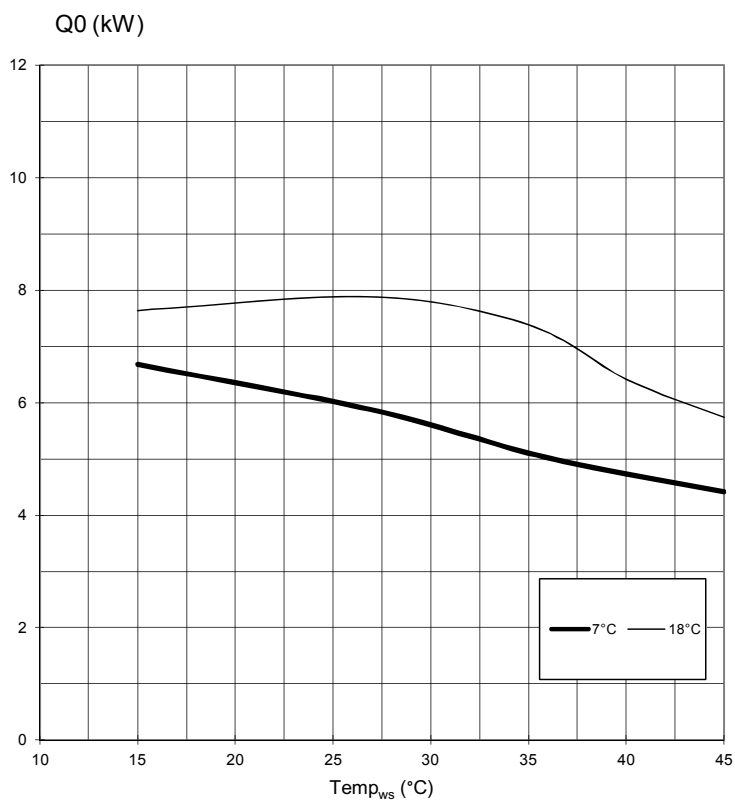
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Legend:	UK823129L/170408
\dot{V}_{HW}	Volume flow, heating water
Temp _{wQ}	Temperature, heat source
Q _h	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp_{HW}	Pressure loss heat pump
VD	Compressor(s)



Performance curves

LWD 50A/RX Cooling mode



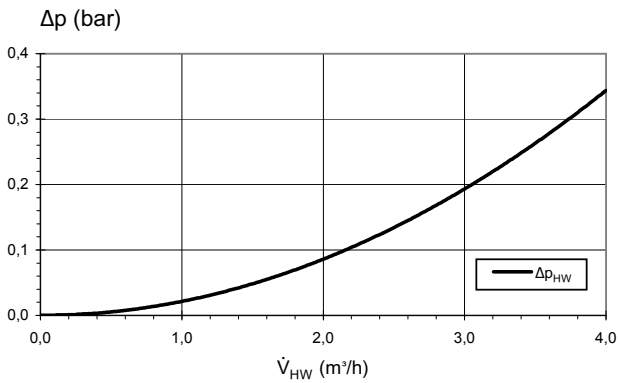
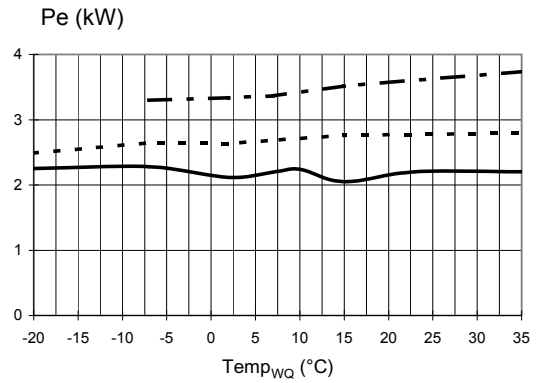
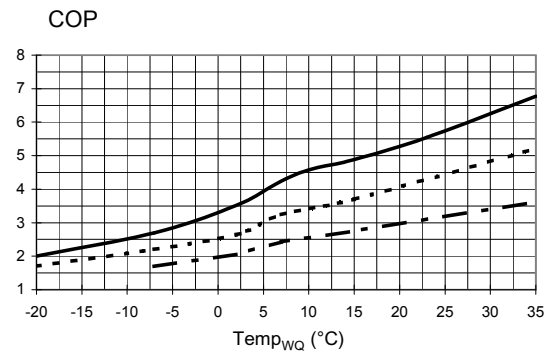
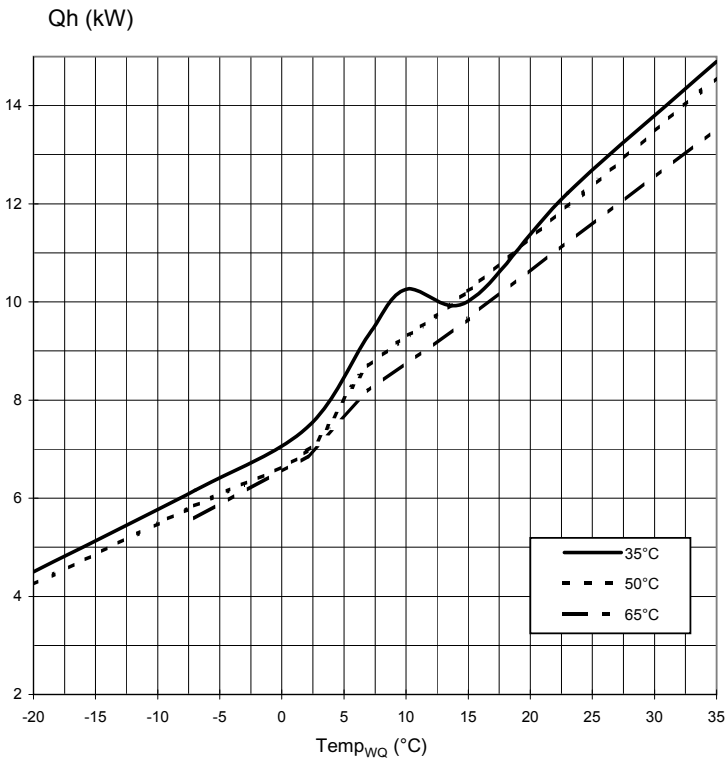
823164

Legend:	UK823134L/190313
\dot{V}_{KW}	Volume flow cooling water
Temp _{WS}	Heat sink temperature
Q0	Cooling capacity
Pe	Power consumption
EER	Energy efficiency ratio / cooling capacity rate
Δp_{HW}	Pressure loss heat pump
VD	Compressor(s)



LWD 70A/RX Heating mode

Performance curves



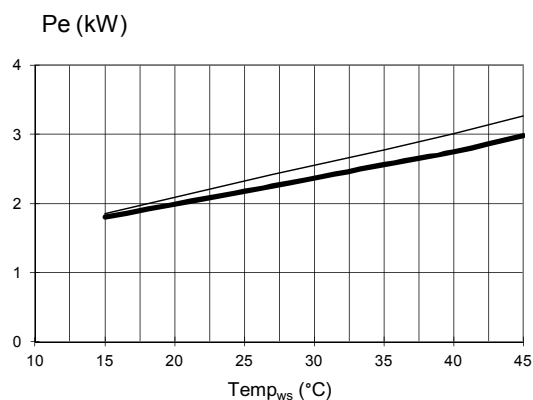
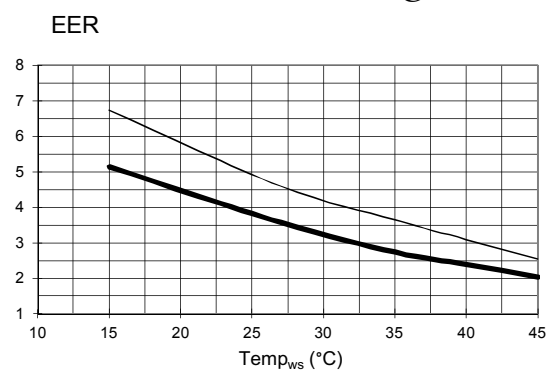
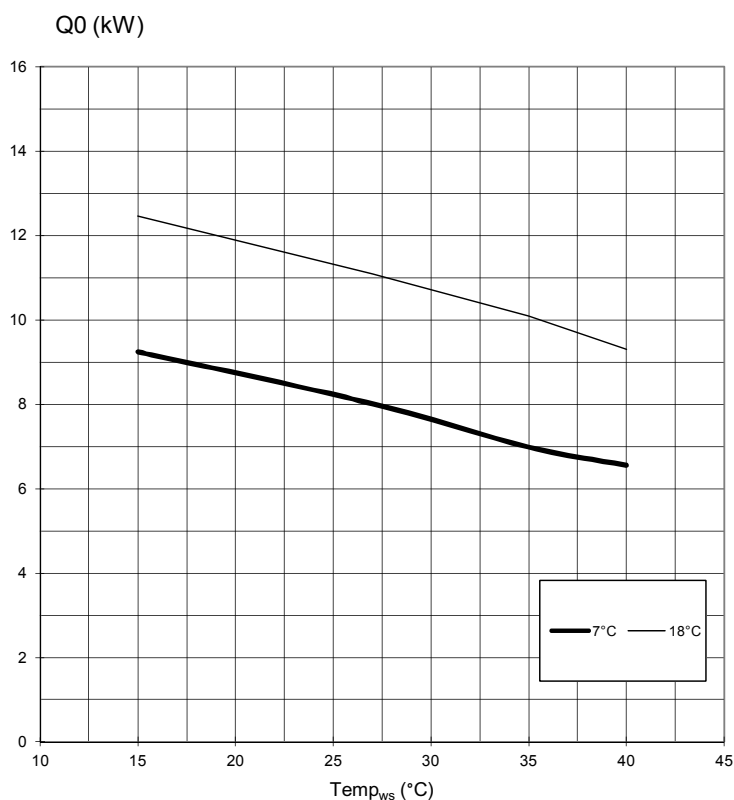
823168

- Legend:
- UK823129L/170408
 - \dot{V}_{HW} Volume flow, heating water
 - Temp_{WQ} Temperature, heat source
 - Q_h Heating capacity
 - Pe Power consumption
 - COP Coefficient of performance / efficiency rating
 - Δp_{HW} Pressure loss heat pump
 - VD Compressor(s)



Performance curves

LWD 70A/RX Cooling mode

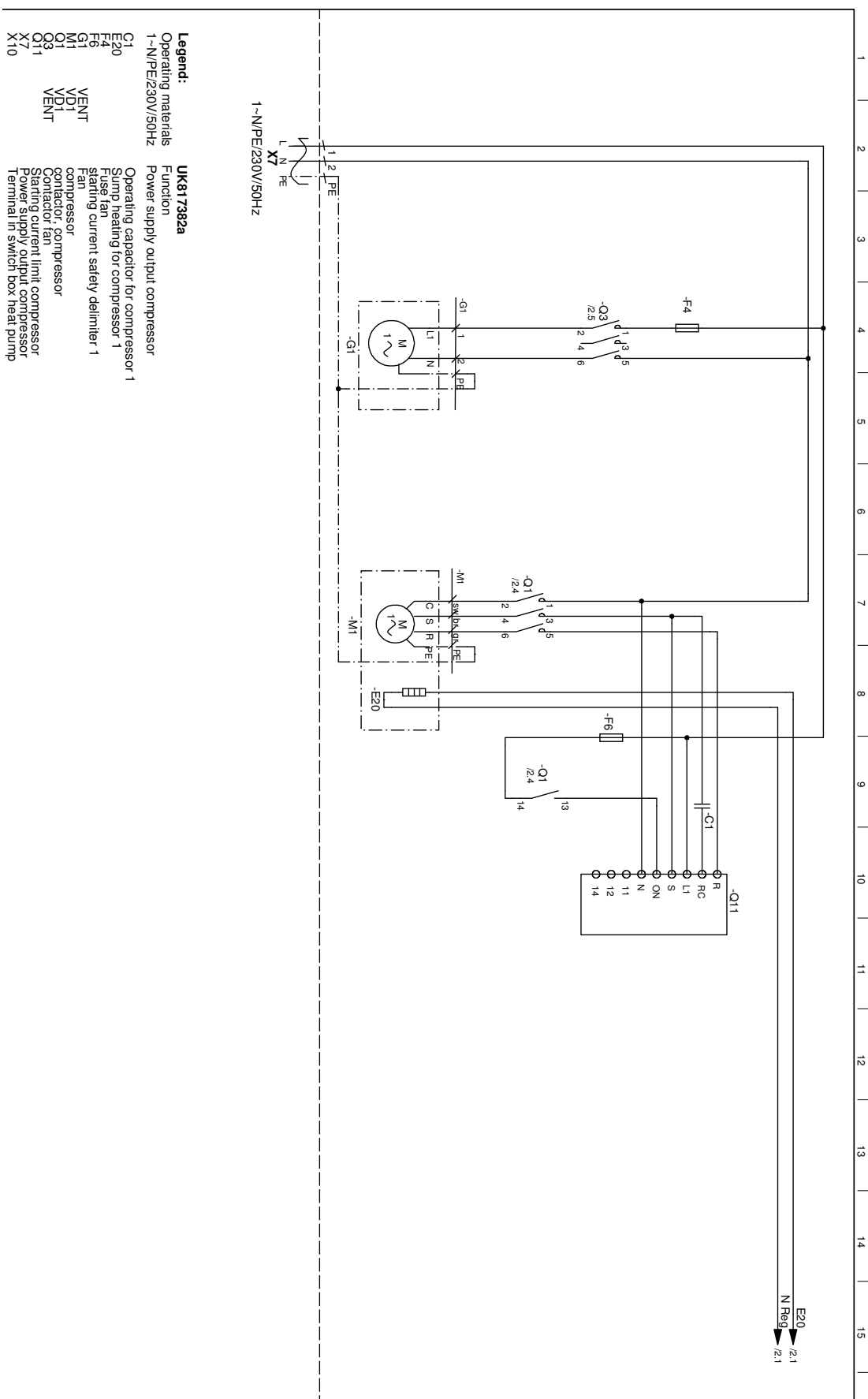


Legend:	UK823134L/190313
\dot{V}_{KW}	Volume flow cooling water
Temp _{WS}	Heat sink temperature
Q0	Cooling capacity
Pe	Power consumption
EER	Energy efficiency ratio / cooling capacity rate
Δp_{HW}	Pressure loss heat pump
VD	Compressor(s)



LWD 50ASX/ARSX, LWD 70ASX/ARSX

Circuit diagram 1/2



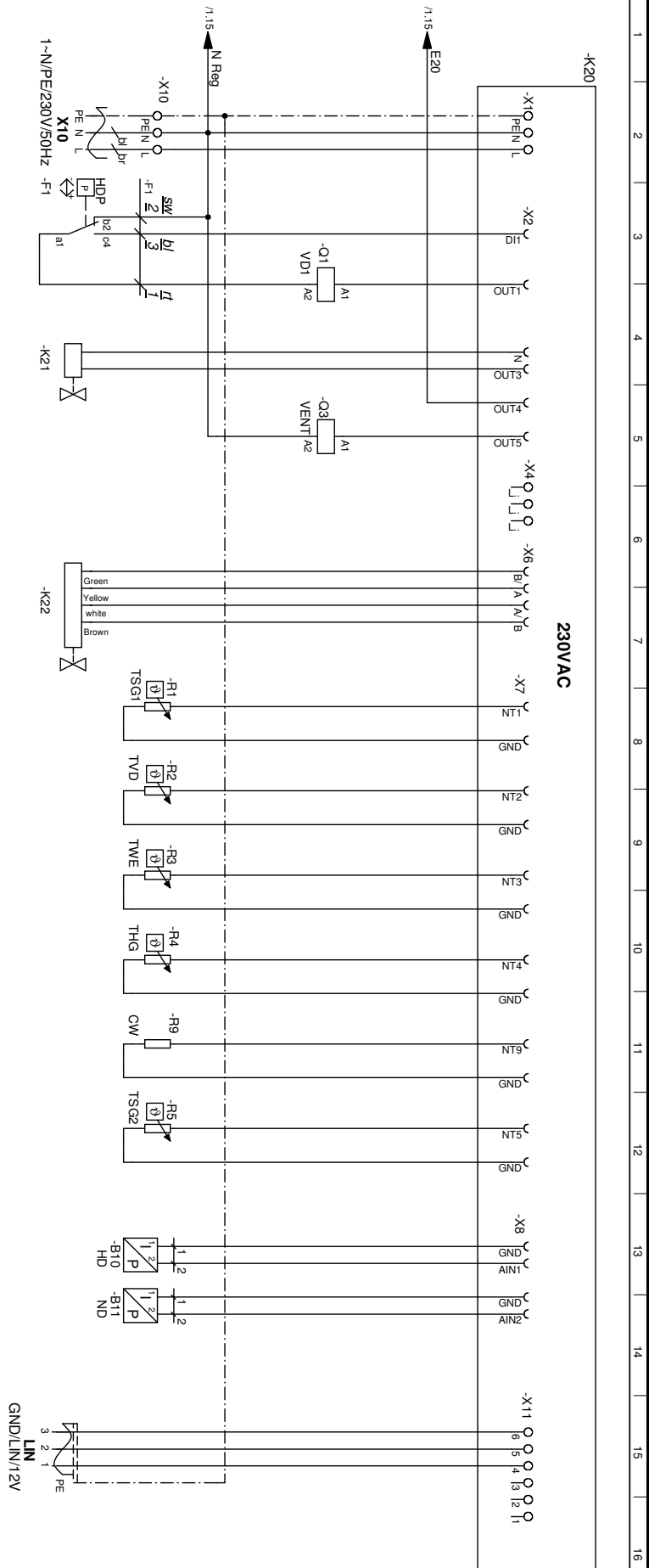


Circuit diagram 2/2

LWD 50ASX/ARSX, LWD 70ASX/ARSX

- Legend:**
- | | | | |
|---------------------|------------|------------|------------------------------------|
| Operating materials | UK817382a | Function | L, N, PE; power supply; controller |
| 1~N/PE/230V/50Hz | 1-2, 1/1,7 | 3-4, 1/1,7 | 5-6, 1/1,7 |
| B10 | HD | 1-2, 1/4 | 3-4, 1/4 |
| E11 | ND | 5-6, 1/4 | |
| K20 | HDP | | |
| K21 | HDP | | |
| K22 | HDP | | |
| O3 | VD1 | | |
| R1 | TSG1 | | |
| R2 | TVD | | |
| R3 | TWE | | |
| R4 | THG | | |
| R5 | TSG2 | | |
| R9 | CW | | |
| X10 | | | |

- Legend:**
- | | | | |
|---------------------|------------|------------|------------------------------------|
| Operating materials | UK817382a | Function | L, N, PE; power supply; controller |
| 1~N/PE/230V/50Hz | 1-2, 1/1,7 | 3-4, 1/1,7 | 5-6, 1/1,7 |
| B10 | HD | 1-2, 1/4 | 3-4, 1/4 |
| E11 | ND | 5-6, 1/4 | |
| K20 | HDP | | |
| K21 | HDP | | |
| K22 | HDP | | |
| O3 | VD1 | | |
| R1 | TSG1 | | |
| R2 | TVD | | |
| R3 | TWE | | |
| R4 | THG | | |
| R5 | TSG2 | | |
| R9 | CW | | |
| X10 | | | |





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