DAIKIN

Chillers

Commercial and Technical Data

Air Cooled Multiple Scroll Chillers

- **Multiple compressors per circuit**
- **Reliable and efficient scroll with high EER values**
- **Easy 'plug and play' installation**
- **Safety valves in each circuit**
- **Electronic expansion valve**
- **True dual plate brazed plate heat exchanger**
- **Separate switchbox for easy access**

ECDEN12-405

HYDROCUBE

R-410A

EWAQ-DAYN
EWYQ-DAYN

Daikin Europe N.V.

About Daikin

Daikin has a worldwide reputation based on over 85 years' experience in the successful manufacture of high quality air conditioning equipment for industrial, commercial and residential use. Daikin's much envied quality quite simply stems from the close attention paid to design, production and testing, as well as aftersales support. To this end, every component is carefully selected and rigorously tested to verify its contribution to product quality and reliability.

Introduction

The Daikin Hydrocube multiple scroll chiller represents a combination of technological innovation and control strategy within a single chilled water package. The unit offers a comprehensive and energy efficient solution capable of adapting to meet the needs of the most exacting project requirements. The unit is reliable and efficient due to its multiple compressors and refrigerant circuits running on R-410A and features electronic expansion valves and a low noise level. Installation is easy by virtue of its integrated hydronics. Furthermore, electronic control of the unit is considerably improved by the new control platform plus its connectivity to the Daikin Intelligent manager and I-touch controller.

Air cooled chillers

In the chilled water market, chillers of the air cooled type are most frequently used. Out of its wide range of chillers in cooling only or heat pump version, with of without integrated hydronic components, Daikin always offers you a chiller fitting your application needs.

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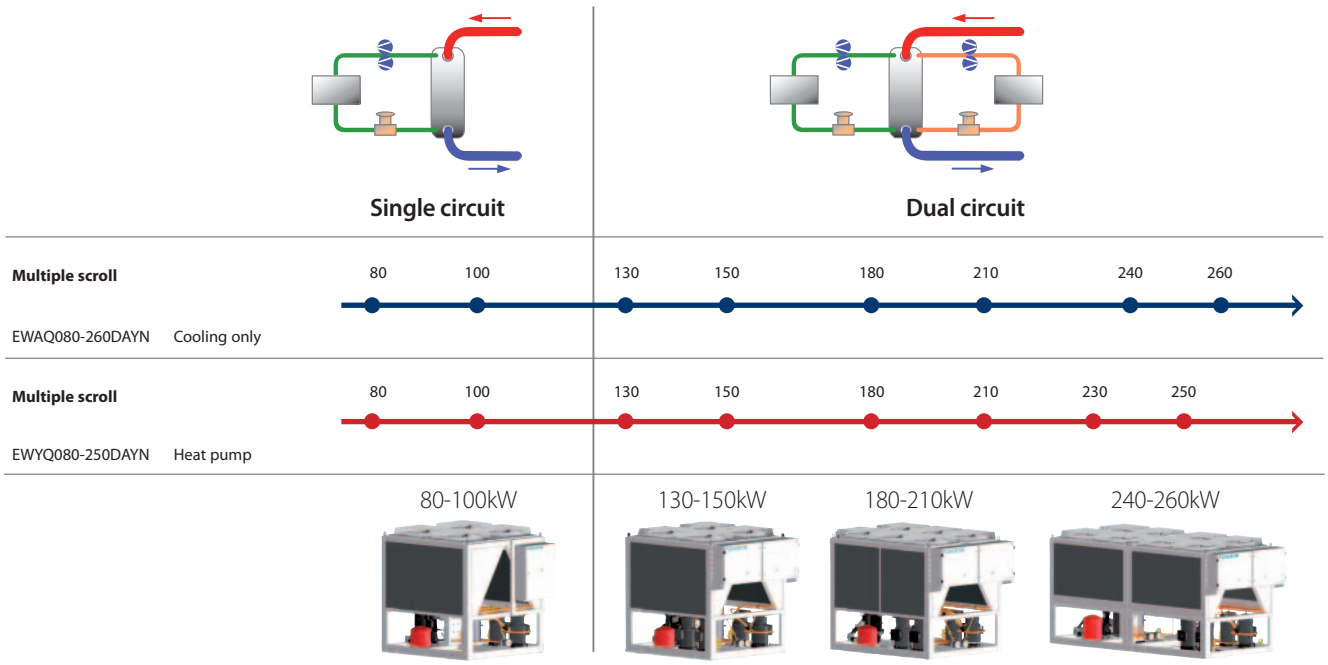
Air Cooled Multiple Scroll Chillers

Wide application range

Cooling only versions and heat pump versions are available between 80 and 260 kW



EWAQ-DAYN **N** = Standard model

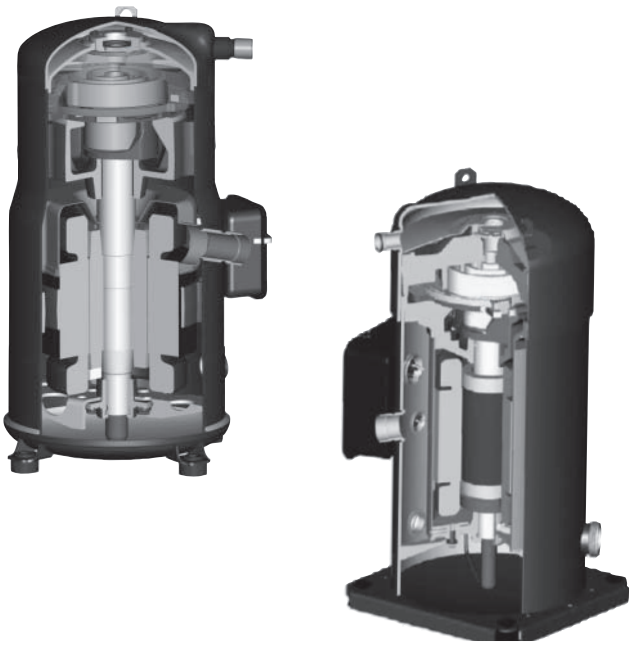
EWAQ-DAYN **P** = Standard model + single pump (OPSP)

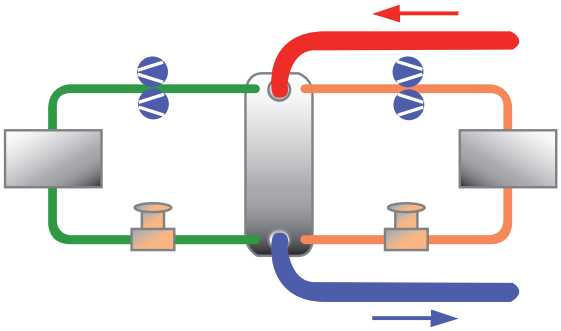
EWAQ-DAYN **B** = Standard model + single pump (OPSP) + buffer tank (OPBT)

Increased reliability and efficiency via multiple refrigerant circuits and multiple compressors per circuit

Multiple scroll compressors

Multiple scroll compressors per unit increase reliability and improve partial load efficiency. A high partial load efficiency with an average ESEER of 4.16 is feasible over the whole range. The unit incorporates highly reliable and efficient scroll compressors (average EER = 2.8), for outstanding performance at a low sound level over a wide range of operating conditions.





Multiple refrigerant circuits

Tandem scroll compressors on fully independent refrigerant circuits ensure high reliability: if one refrigerant circuit breaks down, the remaining circuits keep operating. A dual circuit heat exchanger (from >100kW) provides excellent part load conditions.

Electronic expansion valves as standard

The advanced electronic expansion valve reacts quickly to changes in conditions within the unit's wide operating range. Direct control of the system superheat maximises usage of the evaporator at much lower condensing temperatures. This leads to optimised energy consumption at low ambient or partload operation.

Integrated hydronics

The multiple scroll chillers come with various associated hydronic component packages to suit customer requirements. Standard fitted hydronics – water filter, air purge and flow switch – are fully integrated within the chiller unit and additional space is available for further optional components. Unit layout is such that all hydronic components can be accessed easily from 3 sides for maintenance purposes.

Integration of the optional components enables the chiller to be made operational in the shortest possible time without the need to add pumps, buffer tanks and expansion tanks etc.

Optional hydronics

Various pump options are available comprising different modular concepts providing flexibility in customer choice.

> **Single pump** (OPSP) – available ESP at nominal flow rate of 120kPa, shut-off valves on the water side and water manometer. A 35 or 50 litre expansion tank is also included.

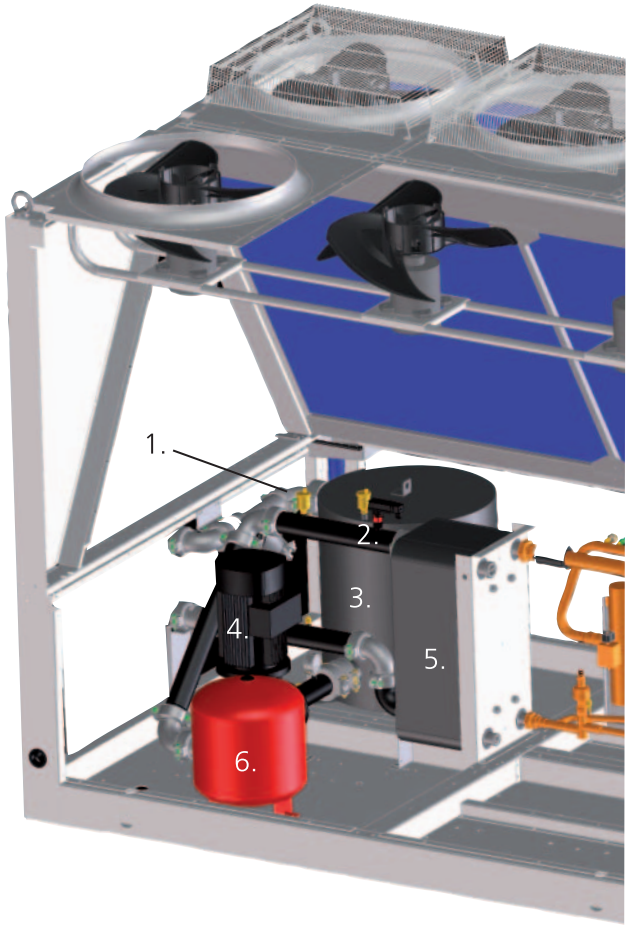
> **High ESP pump** (OPHP) – available ESP at nominal flow rate of 200kPa.

> **Twin pump** (OPTP) – twin pump motors with a single housing.

> **Built-in buffer tank** (OPBT) – includes a 200 litre buffer tank and is based on the OPSP or higher specification. The choice of this option substantially reduces chiller installation time.

> **Regulating valve** – included with pump options to enable the control of the water flow rate in the system.

> **Low temperature options**
- Low LWE down to -10°C (OPZL)
- Evaporator heater tape for low ambient climates (OP10)



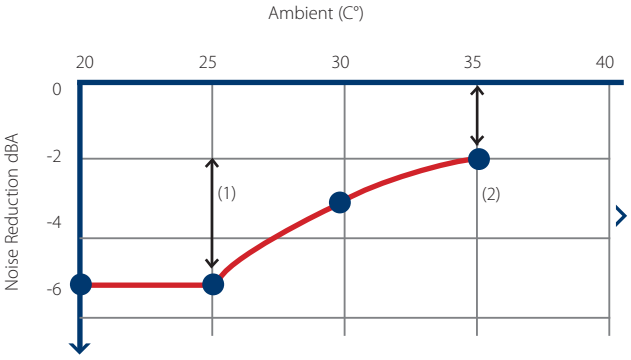
1. Air vent
2. Flow Switch
3. Buffer tank
4. Pump
5. Brased plate heat exchanger
6. Expansion vessel

Low operational sound level

Sound suppression is given high priority by Daikin.
For those particularly sound sensitive applications where the standard average sound level of 89 dBA does not offer the desired sound level, OPLN (option low noise) further reduces the operational sound level by 5 dBA. Particular attention has been given to any component that can generate sound or vibration.

Option low noise consists of compressor jackets, insulated cabinet and inverter fans.
Inverter fans offer a linear sound reduction in function of the ambient.

Inverter fans (OPIF):



(1) Reduction of fan noise
(2) Reduction of compressor noise

In addition, the inverter fans offer stable condensing pressure at low ambient temperatures, allowing more efficient partload operation of the unit.

Easy installation and maintenance

All hydronics can be accessed simply from three sides, while the separate switchbox is also easily accessible from the side of the unit, facilitating the maintenance of the chiller.

The compactness of the unit allows it to be easily transported and manoeuvred into its final position. Due to the integrated hydronic components, the chiller can be easily connected to the system.

High corrosion resistance

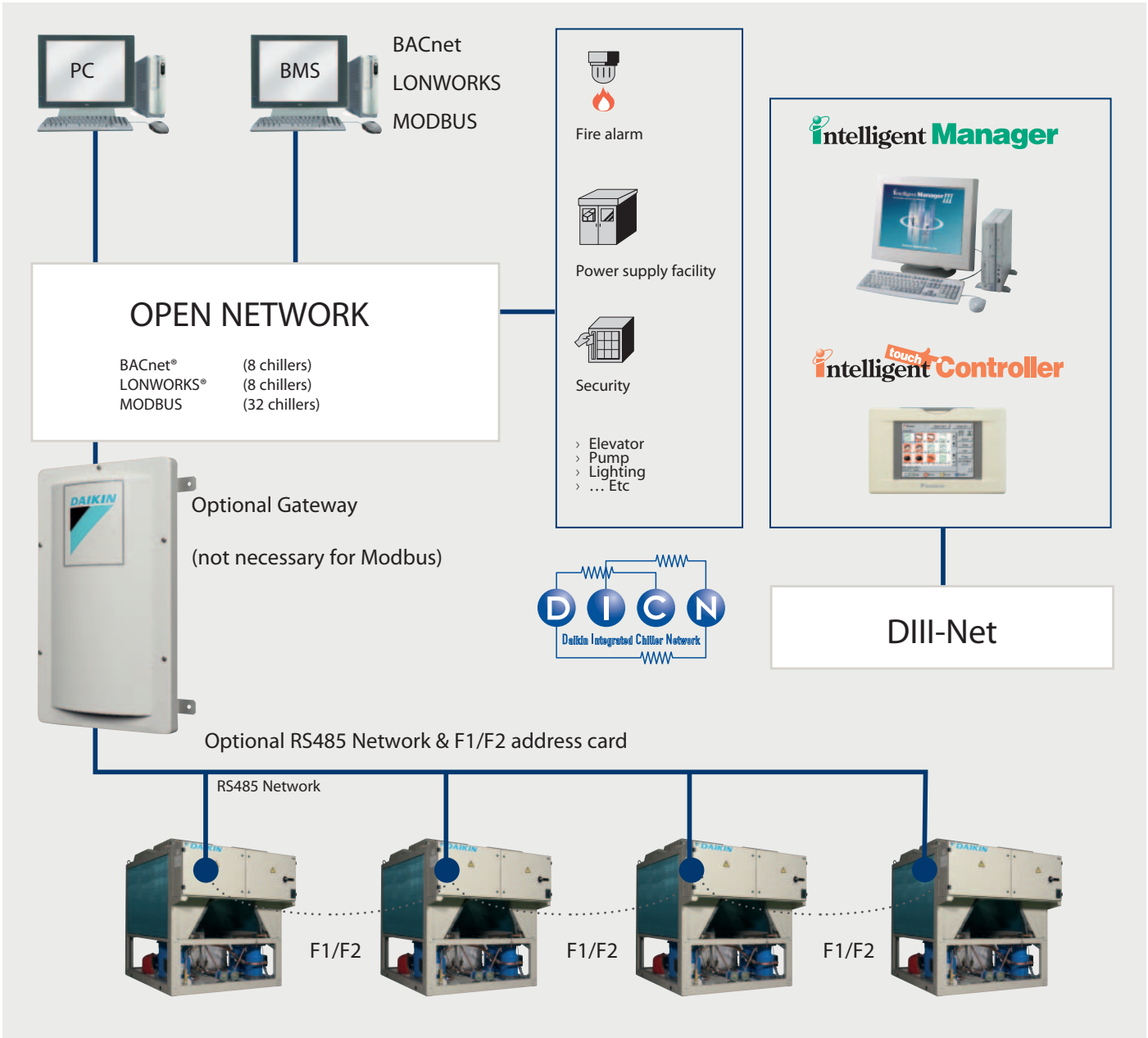
The robust all-weather chassis can stand up to demanding urban and industrial environments. The high-quality Daikin plate work consists of a galvanized steel plate with a zinc phosphate coating, and is epoxy powder painted. Condensers are standard PE treated, increasing resistance to acid rain and saline corrosion.

R-410A refrigerant

R-410A was the logical choice for the Daikin multiple scroll chiller because today it is one of the most promising refrigerants in terms of efficiency, stability and environmental impact.

R-410A offers a small swept volume, a good heat exchange capacity and leads to reduced component sizes of items such as heat exchangers and tubing.- Evaporator heater tape for low ambient climates (OP10)

Electronic Control



Integration in building management systems

The PCASO control platform can be integrated into various Building Management Systems. An RS485 supervisiory network, more commonly known as MODBUS, can control up to 32 chillers. By using an optional gateway for either BACnet or LONWORKS, a maximum of 8 chillers per gateway can be controlled.

Protocols are:
- BACnet
- LONWORKS
- MODBUS

Communication with other Daikin units (DIII-Net)

For easy integration with Daikin DX products, the chillers can communicate via the F1/F2 terminals on DIII-net. In addition communication to Daikin D-BACS devices such as Intelligent Manager and I-Touch controller is possible.

New control platform

The Multiple Scroll Chiller incorporates the latest Daikin controller (PCAS0) with a new powerful LCD interface, offering accurate control of all functional parameters in an extremely user-friendly way.

Daikin integrated chiller network (DICN)

The Daikin in-house developed hardware and software offers the possibility of DICN functionality, allowing simultaneous operation of up to 4 chillers. By using the optional address card EKACPG (one per integrated chiller), the DICN enables you to operate a 1.1 megaWatt chiller from a single controller.

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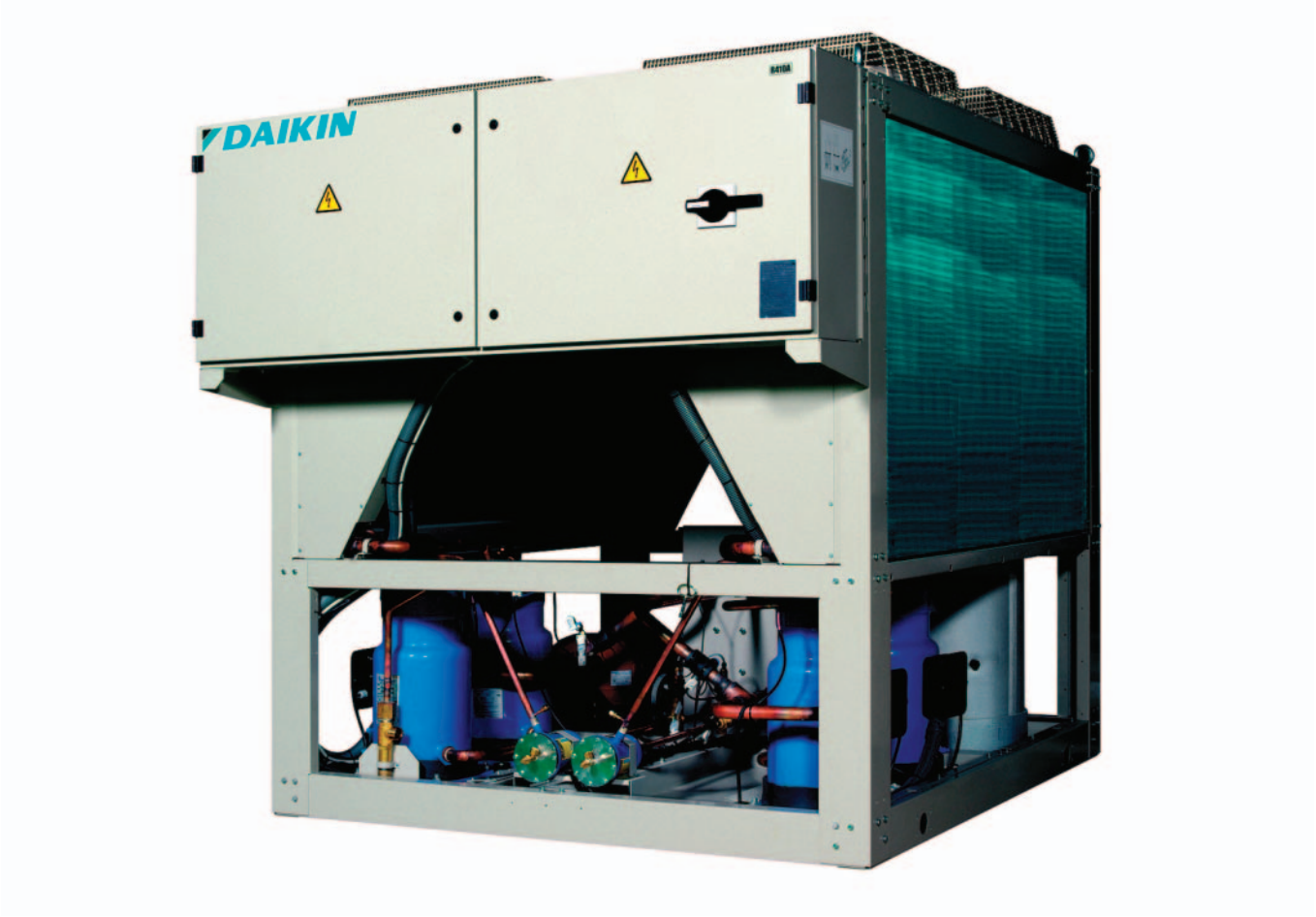
EWAQ-DAYN

1 Features

- Wide capacity range: 80 to 260kW with 8 cooling only models
- Optimised for use with R-410A
- Multiple refrigerant circuits and multiple compressors per circuit
- Reliable and efficient scroll with high EER values
- Anti-corrosion treated aluminium coils
- Low operating sound level
- Easy 'plug and play' installation
- Unit dimensions allow easy transportation
- Fans protected against abnormal operation (4 to 8 fans depending on unit size)
- Safety valves in each circuit
- Electronic circuit breakers
- Electronic expansion valve
- True dual plate brazed plate heat exchanger
- Sight glass
- All hydronics can be accessed easily from 3 sides (no surrounding cabinet)
- Separate switchbox for easy access
- Compressors and controls at unit side
- Increased reliability via 2 independent refrigerant circuits
- Double circuit heat exchanger (from 100kW onwards)
- Non hermetic filter/dryer
- Daikin Pcaso controller with user friendly and powerful LCD interface



2 Specifications

2-1 Technical Specifications					EWAQ080DAYN	EWAQ100DAYN	EWAQ130DAYN	EWAQ150DAYN	EWAQ180DAYN	EWAQ210DAYN	EWAQ240DAYN	EWAQ260DAYN
Cooling capacity	Nom.			kW	79.4 (1) / 81.0 (2)	104 (1) / 106 (2)	130 (1) / 133 (2)	151 (1) / 154 (2)	181 (1) / 184 (2)	208 (1) / 211 (2)	234 (1) / 238 (2)	252 (1) / 256 (2)
Capacity steps				%	0-50-100		0-25-50-75-100		21/29-43/50/ 57-71/79-100	0-25-50-75-100	22/28-40/50/ 56-72/78-100	0-25-50-75-100
Power input	Cooling	Nom.		kW	27.0 (1) / 27.6 (2)	36.9 (1) / 37.2 (2)	47.4 (1) / 48.1 (2)	57.2 (1) / 57.8 (2)	65.6 (1) / 66.5 (2)	75.9 (1) / 76.6 (2)	84.4 (1) / 84.5 (2)	95.8 (1) / 95.8 (2)
EER					2.94 (1) / 2.93 (2)	2.82 (1) / 2.85 (2)	2.74 (1) / 2.77 (2)	2.64 (1) / 2.66 (2)	2.76 (1) / 2.77 (2)	2.74 (1) / 2.75 (2)	2.77 (1) / 2.82 (2)	2.63 (1) / 2.67 (2)
ESEER					3.88 (1) / 3.82 (2)	3.79 (1) / 3.83 (2)	4.03 (1) / 3.97 (2)	3.95 (1) / 3.96 (2)	4.04 (1) / 4.02 (2)	4.00 (1) / 4.02 (2)	3.89 (1) / 4.00 (2)	3.73 (1) / 3.84 (2)
Casing	Material				Polyester painted galvanised steel plate							
Dimensions	Unit	Height		mm	2,311							
		Width		mm	2,000							
		Depth		mm	2,566		2,631		3,081		4,850	
Weight	Unit			kg	1,350	1,400	1,500	1,550	1,800	1,850	3,150	3,250
	Operation weight			kg	1,365	1,415	1,517	1,569	1,825	1,877	3,189	3,292
	Packed unit			kg	1,400	1,450	1,550	1,600	1,850	1,900	3,200	3,300
Water heat exchanger	Type				Brazed plate							
	Filter	Type			Strainer galvanized							
		Diameter perforations		mm	1.0							
	Minimum water volume in the system			l	358 (5)	470 (5)	295 (5)	341 (5)	408 (5)	468 (5)	529 (5)	569 (5)
	Water flow rate	Min.		l/min	115	151	188	218	261	300	339	364
		Max.		l/min	459	602	754	871	1,043	1,198	1,355	1,456
	Nominal water flow	Cooling		l/min	229	301	377	436	522	599	677	728
	Nominal water pressure drop	Cooling	Total	kPa	59	58	52	49	52	53	51	47
	Insulation material				Foamed synthetic elastomer							
	Model	Type			PT120		DV47		DV58			
		Quantity			1							
Air heat exchanger	Type				Cross fin coil/Hi-Xss tubes and poly ethylene coated waffle fins							
	Rows	Quantity			2		3					
	Stages	Quantity			56		48	56			48	
	Fin pitch			mm	1.8							
	Face area			m²	2.46		2.11	2.46	3.02		2.11	
	Coils	Quantity			4						8	
Hydraulic components	Unit water volume			l	15.0 @ 0		17.0 @ 0	19.0 @ 0	25.0 @ 0	27.0 @ 0	39.0 @ 0	42.0 @ 0
	Nominal water pressure drop unit	Cooling		kPa	66	67	64	63	72	79	83	85
Fan	Quantity				4				6		8	
	Air flow rate	Nom.		m³/min	780		800	860	1,290		1,600	
	Discharge direction				Vertical							
	Speed			rpm	880		900	970			900	
Fan motor	Output			W	500		600	700			600	
	Quantity				4				6		8	
	Drive				Direct drive							
Sound power level	Cooling	Nom.		dBA	86		88	89	90		91	
Compressor	Type				Scroll compressor							
	Quantity				2		4		2	4	2	4
	Model				SJ180	SJ240	SJ161	SJ180		SJ240		SJ300
	Speed			rpm	2,900							
	Oil	Charged volume		l	6.7		3.3	6.7				
Compressor 2	Model				-				SJ240	-	SJ300	-
	Quantity				-				2	-	2	-
	Speed			rpm	-				2,900	-	2,900	-
	Oil	Charged volume		l	-				6.7	-	6.7	-
Operation range	Water side	Cooling	Min.	ºCDB	-10							
			Max.	ºCDB	25							
	Air side	Cooling	Min.	ºCDB	-15							
			Max.	ºCDB	43							

2 Specifications

2-1 Technical Specifications				EWAQ080DAYN	EWAQ100DAYN	EWAQ130DAYN	EWAQ150DAYN	EWAQ180DAYN	EWAQ210DAYN	EWAQ240DAYN	EWAQ260DAYN
Refrigerant	Type			R-410A							
	Control			Electronic expansion valve							
	Circuits	Quantity		1	2						
Refrigerant circuit	Charge		kg	33	19	23	31	30	40	39	
Refrigerant circuit 2	Charge		kg	-	19	23	31	30	40	39	
Refrigerant oil	Type			FVC68D							
Piping connections	Water heat exchanger inlet / outlet			3" OD						3"	
	Water heat exchanger drain			1/2"G							
Safety devices	Item	01		High pressure switch							
		02		Pressure relief valve							
		03		Low pressure safety							
		04		Freeze up protection							
		05		Flowswitch							
		06		Discharge temperature protector							
		07		Reverse phase protector							
		08		Electronic protection module compressors (only for SJ180, SJ240)		Electronic protection module compressors (only for SJ180)		Electronic protection module compressors (only for SJ180, SJ240)		Electronic protection module compressors	
		09		Overcurrent relays for compressors and fans							

2-2 Electrical Specifications				EWAQ080DAYN	EWAQ100DAYN	EWAQ130DAYN	EWAQ150DAYN	EWAQ180DAYN	EWAQ210DAYN	EWAQ240DAYN	EWAQ260DAYN
Compressor	Starting current		A	195	215	158	195		215		260
	Nominal running current (RLA)		A	25	31	19	25		31		40
	Maximum running current		A	39	51	35	39		51		65
	Starting method			Direct on line							
	Crankcase heater		W	75		65	75				
Compressor 2	Starting current		A	-				215	-	260	-
	Nominal running current (RLA)		A	-				31	-	40	-
	Maximum running current		A	-				51	-	65	-
	Starting method			-				Direct on line	-	Direct on line	-
	Crankcase heater		W	-				75	-	75	-
Power supply	Phase			3~							
	Frequency		Hz	50							
	Voltage		V	400							
	Voltage range	Min.	%	-10							
		Max.	%	10							
Unit	Starting current		A	201	221	161	199	221		266	
	Maximum starting current		A	240	272	269	320	357	368	426	468
	Current	Zmax	List	No requirements							
	Nominal running current (RLA)	Cooling	A	60	72	88	113	131	144	162	181
	Maximum running current		A	96	120	160	177	209	233	262	290
	Recommended fuses according to IEC standard 269-2			3 x 125gL	3 x 160gL	3 x 200gL		3 x 250gL		3 x 300gL	3 x 355gL
Fans	Starting method			Direct on line							
	Maximum running current		A	1.5		1.4	2.1			1.6	
Control circuit	Phase			1~							
	Frequency		Hz	50							
	Voltage		V	230 (6)							

Notes

(1) For -N models (standard)
(2) For -P models (with optional pump / + OPSP) and for -B models (with optional pump and buffertank / + OPSP + OPBT)
(3) Nominal cooling capacity according EN14511:2011 conditions: Evaporator 12ºC/7ºC; ambient 35ºC
(4) Nominal cooling power input according EN14511:2011 conditions: Evaporator 12ºC/7ºC; ambient 35ºC
(5) Minimum required water volume for standard thermostat settings and at nominal conditions.
(6) Initial starting current = maximum running current 4 fans + starting current 1 compressor
(7) Maximum starting current = maximum running current 4 fans + maximum running current 1 compressor + starting current 1 compressor
(8) Supplied by factory installed transformers
(9) See separate drawing for operation range
(10) Initial starting current = maximum running current 2 fans (1 circuit) + starting current 1 compressor
(11) Maximum starting current = maximum running current 4 fans + maximum running current 3 compressors + starting current 1 compressor
(12) Initial starting current = maximum running current 3 fans (1 circuit) + starting current 1 compressor
(13) Maximum starting current = maximum running current 6 fans + maximum running current 3 compressors + starting current 1 compressor
(14) Maximum starting current = maximum running current 8 fans + maximum running current 3 compressors + starting current 1 compressor

3 Options

3 - 1 Options

Optional equipment for EWAQ-DAYN

Capacity: 080-260 kW

EWAQ080DAYNN EWAQ150DAYNN EWAQ240DAYNN
EWAQ100DAYNN EWAQ180DAYNN EWAQ260DAYNN
EWAQ130DAYNN EWAQ210DAYNN

Option number	Option description	Unit size								Availability
		080	100	130	150	180	210	240	260	
	Standard unit	o	o	o	o	o	o	o	o	
OPSC	Single pump contactor	o	o	o	o	o	o	o	o	Factory mounted
OPTC	Twin pump contactor	o	o	o	o	o	o	o	o	Factory mounted
OPSP	Single pump	o	o	o	o	o	o	o	o	Factory mounted
OPTP	Twin pump (1 pump house, dual motor)	o	o	o	o	o	o	o	o	Factory mounted
OPHP	high ESP pump (single pump only)	o	o	o	o	o	o	o	o	Factory mounted
OPBT	Buffer tank	o	o	o	o	o	o	o	o	Factory mounted
OPIF	Inverter fans for low ambient (-15 °C)	o	o	o	o	o	o	o	o	Factory mounted
OPZL	Glycol 0°C/-10°C	o	o	o	o	o	o	o	o	Factory mounted
OP03	Dual pressure relief valve	o	o	o	o	o	o	o	o	Factory mounted
OP10	evaporator heater tape	o	o	o	o	o	o	o	o	Factory mounted
OP12	option valves (discharge-, liquid line- and suction stop valve)	o (S)	o (S)	o (S)	o (S)	o (S)	o (S)	o (S)	o (S)	Factory mounted
OP57	A-meter, V-meter	o	o	o	o	o	o	o	o	Factory mounted
OPLN	Low noise = OPIF + compressorhousing	o	o	o	o	o	o	o	o	Factory mounted
OPCG	Condenser protection grilles	o	o	o	o	o	o	o	o	Factory mounted
	Available kits									
EKLONPG	Gateway for LON*	o	o	o	o	o	o	o	o	Kit
EKBNPG	Gateway for BACNET*	o	o	o	o	o	o	o	o	Kit
EKACPG	Adress card including	o	o	o	o	o	o	o	o	Kit
	Daikin Integrated Chiller Network (DICN)									
	Serial Communication (Modbus)									
EKRUPG	Remote user interface	o	o	o	o	o	o	o	o	Kit
EKGN210	Waterpipe kit	o	o	o	o	o	o	-	-	Kit
EKGN260	Waterpipe kit	-	-	-	-	-	-	o	o	Kit

Notes

o Available

\- Not available

(S) option required for swedish national law SNFS1992:16

* To install EKLONPG & EKBNPG => EKACPG needs to be installed on the unit.
For the EKLONPG & EKBNPG design guide, please contact your local dealer.

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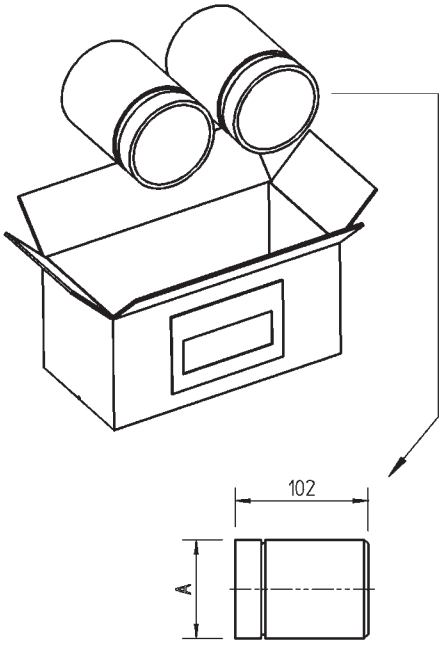
3 Options

3 - 1 Options

Content :2 counterpipes for welding onto fieldpiping



	Weight
EKGN210	2.0 kg
EKGN260	2.5 kg

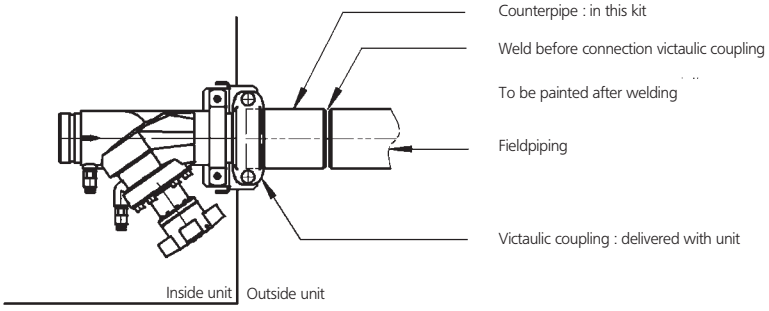
Box : 200 x 100 x 100

* Material : Blank steel
* Ps = 10 bar

	Ø	A
EKGN210	3" OD	76.1
EKGN260	3"	88.9

EWA/YQ080DAYN*	3" OD
EWA/YQ100DAYN*	
EWA/YQ130DAYN*	
EWA/YQ150DAYN*	
EWA/YQ180DAYN*	
EWA/YQ210DAYN*	
EWAQ240DAYN*	3"
EWAQ260DAYN*	
EWYQ230DAYN*	
EWYQ250DAYN*	

Mounting instructions :



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3 Options

3 - 1 Options

EWAQ080-100DAYN

TECHNICAL SPECIFICATIONS OPTIONS								
OPSP						**OPSP + OPBT**		
Units			**EWAQ080DAYN**	**EWAQ100DAYN**		**EWAQ080DAYN**	**EWAQ100DAYN**	
Weight	Additional machine weight	kg	250			300		
	Additional operation weight	kg	283			523		
	Additional gross weight	kg	250			300		
Pump	Type		Single stage in line pumps			Single stage in line pumps		
	Quantity		1			1		
	Manufacturer		Grundfos			Grundfos		
	Model		TP50-240/2			TP50-240/2		
	Efficiency		85.9%			85.9%		
	Efficiency level		IE3			IE3		
	Rated speed	rpm	2890-2910			2890-2910		
	Nominal static height unit	kPa	142	133		142	133	
Hydraulic components	Buffertank	l	-			190		
	Additional unit water volume	l	33			223		
	Expansion vessel	l	35			35		
	Pre-charge pressure exp. vessel	bar	1.5			1.5		
	Safety valve	bar	3			3		
OPHP						**OPTP**		
Units			**EWAQ080DAYN**	**EWAQ100DAYN**		**EWAQ080DAYN**	**EWAQ100DAYN**	
Pump	Type		Single stage in line pumps			Single stage in line pumps		
	Quantity		1			1		
	Manufacturer		Grundfos			Grundfos		
	Model		TP50-430/2			TP50-240/2		
	Efficiency		89.2%			85.9%		
	Efficiency level		IE3			IE3		
	Rated speed	rpm	2920-2940			2890-2910		
	Nominal static height unit	kPa	337	322		See OPSP		

3TW57571-1F

EWAQ080-100DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWAQ080DAYN**	**EWAQ100DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	2.2	
	Maximum running current	A	4.5	
	Starting current	A	42	
OPHP				
Units			**EWAQ080DAYN**	**EWAQ100DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	5.5	
	Maximum running current	A	11.2	
	Starting current	A	131	
OP10				
Units			**EWAQ080DAYN**	**EWAQ100DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

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3 Options

3 - 1 Options

EWAQ130-150DAYN

TECHNICAL SPECIFICATIONS OPTIONS						
OPSP					**OPSP + OPBT**	
Units			**EWAQ130DAYN**	**EWAQ150DAYN**	**EWAQ130DAYN**	**EWAQ150DAYN**
Weight	Additional machine weight	kg	250		300	
	Additional operation weight	kg	286		526	
	Additional gross weight	kg	250		300	
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-230/2		TP65-230/2	
	Efficiency		87.1%		87.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2900-2920		2900-2920	
	Nominal static height unit	kPa	134	126	134	126
Hydraulic components	Buffertank	l	-		190	
	Additional unit water volume	l	36		226	
	Expansion vessel	l	35		35	
	Pre-charge pressure exp. vessel	bar	1.5		1.5	
	Safety valve	bar	3		3	
OPHP					**OPTP**	
Units			**EWAQ130DAYN**	**EWAQ150DAYN**	**EWAQ130DAYN**	**EWAQ150DAYN**
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-340/2		TPD65-230/2	
	Efficiency		89.2%		87.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2920-2940		2900-2920	
	Nominal static height unit	kPa	253	248	See OPSP	

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EWAQ130-150DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWAQ130DAYN**	**EWAQ150DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	3	
	Maximum running current	A	6.3	
	Starting current	A	58	
OPHP				
Units			**EWAQ130DAYN**	**EWAQ150DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	5.5	
	Maximum running current	A	11.2	
	Starting current	A	131	
OP10				
Units			**EWAQ130DAYN**	**EWAQ150DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

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3 Options

3 - 1 Options

EWAQ180-210DAYN

TECHNICAL SPECIFICATIONS OPTIONS						
OPSP					**OPSP + OPBT**	
Units			**EWAQ180DAYN**	**EWAQ210DAYN**	**EWAQ180DAYN**	**EWAQ210DAYN**
Weight	Additional machine weight	kg	250		300	
	Additional operation weight	kg	286		526	
	Additional gross weight	kg	250		300	
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-260/2		TP65-260/2	
	Efficiency		88.1%		88.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2920-2940		2920-2940	
	Nominal static height unit	kPa	142	120	142	120
Hydraulic components	Buffertank	l	-		190	
	Additional unit water volume	l	36		226	
	Expansion vessel	l	35		35	
	Pre-charge pressure exp. vessel	bar	1.5		1.5	
	Safety valve	bar	3		3	
OPHP					**OPTP**	
Units			**EWAQ180DAYN**	**EWAQ210DAYN**	**EWAQ180DAYN**	**EWAQ210DAYN**
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-410/2		TPD65-260/2	
	Efficiency		90.4%		88.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2910-2920		2920-2940	
	Nominal static height unit	kPa	296	278	See OPSP	

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EWAQ180-210DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWAQ180DAYN**	**EWAQ210DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	4	
	Maximum running current	A	8	
	Starting current	A	98	
OPHP				
Units			**EWAQ180DAYN**	**EWAQ210DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	7.5	
	Maximum running current	A	15.2	
	Starting current	A	169	
OP10				
Units			**EWAQ180DAYN**	**EWAQ210DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

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3 Options

3 - 1 Options

EWAQ240-260DAYN

TECHNICAL SPECIFICATIONS OPTIONS						
OPSP					**OPSP + OPBT**	
Units			**EWAQ240DAYN**	**EWAQ260DAYN**	**EWAQ240DAYN**	**EWAQ260DAYN**
Weight	Additional machine weight	kg	250		300	
	Additional operation weight	kg	271		511	
	Additional gross weight	kg	250		300	
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-260/2		TP65-260/2	
	Efficiency		88.1%		88.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2920-2940		2920-2940	
	Nominal static height unit	kPa	126	117	126	117
Hydraulic components	Buffertank	l	-		190	
	Additional unit water volume	l	21		211	
	Expansion vessel	l	50		50	
	Pre-charge pressure exp. vessel	bar	1.5		1.5	
	Safety valve	bar	3		3	
OPHP					**OPTP**	
Units			**EWAQ240DAYN**	**EWAQ260DAYN**	**EWAQ240DAYN**	**EWAQ260DAYN**
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-410/2		TPD65-260/2	
	Efficiency		90.4%		88.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2910-2920		2920-2940	
	Nominal static height unit	kPa	288	280	See OPSP	

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EWAQ240-260DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWAQ240DAYN**	**EWAQ260DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	4	
	Maximum running current	A	8	
	Starting current	A	98	
OPHP				
Units			**EWAQ240DAYN**	**EWAQ260DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	7.5	
	Maximum running current	A	15.2	
	Starting current	A	169	
OP10				
Units			**EWAQ240DAYN**	**EWAQ260DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

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4 Capacity tables

4 - 1 Cooling Capacity Tables

EWAQ-DAYNN

STANDARD N-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
4	080	83.0	20.9	79.3	22.6	75.6	24.5	71.6	26.7	67.3	29.1	64.6	30.8
	100	109	27.8	105	30.3	100	33.1	94.1	36.2	88.2	39.8	84.4	42.1
	130	137	35.6	131	38.8	125	42.4	118	46.3	110	50.7	105	53.7
	150	163	43.1	155	47.0	146	51.4	137	56.3	128	61.8	121	65.4
	180	190	49.6	181	54.1	173	59.0	163	64.6	153	70.8	146	74.9
	210	223	58.1	213	62.8	201	68.0	189	74.5	176	81.8	168	86.6
	240	250	63.9	239	69.6	227	75.9	213	82.9	199	90.7	190	95.9
	260	265	73.0	254	79.3	242	86.3	229	94.1	214	103	204	108
7	080	91.7	21.2	87.8	22.9	83.8	24.9	79.4	27.0	74.7	29.5	71.7	31.1
	100	121	28.5	116	30.9	110	33.8	104	36.9	97.7	40.5	93.5	42.8
	130	152	36.7	145	39.9	138	43.5	130	47.4	122	51.8	116	54.8
	150	179	44.1	171	48.0	161	52.4	151	57.2	141	62.9	134	66.5
	180	210	50.7	201	55.1	191	60.1	181	65.6	170	71.9	162	76.0
	210	245	59.6	233	64.2	221	69.4	208	75.9	193	83.3	184	88.1
	240	275	65.3	262	71.0	249	77.3	234	84.4	219	92.3	209	97.4
	260	293	74.5	281	80.8	267	87.9	252	95.8	236	105	225	110
10	080	101	21.5	97.0	23.3	92.6	25.2	87.8	27.4	82.7	29.9	79.4	31.5
	100	133	29.2	128	31.7	122	34.5	115	37.7	108	41.2	103	43.5
	130	167	37.8	160	41.1	152	44.6	143	48.6	134	53.1	128	56.0
	150	197	45.2	187	49.2	177	53.6	166	58.6	154	64.2	146	67.8
	180	232	51.8	222	56.3	211	61.2	200	66.8	187	73.1	179	77.2
	210	267	61.2	255	65.8	241	71.0	227	77.5	212	84.9	202	89.7
	240	301	66.9	288	72.6	273	78.9	257	86.0	240	94.0	229	99.2
	260	323	76.1	309	82.5	294	89.6	278	97.6	259	106	248	112
13	080	112	21.9	107	23.7	102	25.7	96.9	27.9	91.2	30.3	87.6	31.9
	100	147	30.1	140	32.6	133	35.3	126	38.5	118	42.0	113	44.3
	130	184	39.0	176	42.3	167	45.9	157	49.9	147	54.4	140	57.3
	150	215	46.3	205	50.4	193	55.0	181	60.0	168	65.6	160	69.3
	180	255	53.1	244	57.6	232	62.6	220	68.2	206	74.5	197	78.6
	210	292	63.0	278	67.6	263	72.8	248	79.3	231	86.7	220	91.5
	240	330	68.6	315	74.3	299	80.7	281	87.9	262	95.8	250	101.0
	260	355	77.8	339	84.3	323	91.6	305	99.6	285	108	272	114
16	080	122	22.3	117	24.1	112	26.1	106	28.3	100	30.8	96.3	32.4
	100	160	31.1	153	33.5	146	36.3	138	39.4	129	42.9	124	45.2
	130	202	40.2	193	43.6	183	47.2	172	51.2	160	55.7	153	58.7
	150	234	47.6	223	51.8	210	56.4	197	61.5	183	67.2	95	33.3
	180	280	54.6	268	59.0	255	64.0	241	69.7	226	76.0	216	80.1
	210	317	65.1	302	69.6	286	74.7	269	81.2	251	88.6	239	93.4
	240	360	70.5	344	76.3	326	82.7	307	89.9	286	97.8	273	103.0
	260	389	79.7	372	86.3	353	93.6	333	101.7	311	111	297	116
20	080	138	23.0	133	24.8	127	26.8	120	29.1	113	31.5	59.2	15.7
	100	180	32.6	172	34.9	164	37.7	155	40.8	145	44.2	75.8	22.0
	130	227	41.9	216	45.4	205	49.1	193	53.2	180	57.7	93.4	28.6
	150	261	49.5	248	53.8	234	58.6	219	63.8	203	69.5	105	34.4
	180	314	56.7	301	61.2	286	66.2	270	71.9	253	78.2	132	38.8
	210	353	68.1	336	72.5	318	77.6	300	84.1	279	91.4	145	45.4
	240	403	73.4	385	79.1	365	85.6	343	92.8	320	100.8	167	50.0
	260	437	82.5	417	89.2	396	96.6	373	105	349	114	181	56.4

NOTES

1. Cooling capacity (kW)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. Additional ESP can be added to the fans discharge. The following impact on the performance has to be considered

ESP (Pa)	CC %	PI %
25	99	101
50	98	103
75	96	105

where
ESP = External static pressure applied at nominal unit airflow.

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

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4 Capacity tables

4 - 1 Cooling Capacity Tables

EWAQ-DAYNN

OPZL N-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
-10	080	52.2	19.8	49.1	21.6	46.1	23.6	43.2	25.8	40.1	28.4		
	100	67.0	25.5	63.6	28.0	60.2	30.7	56.6	33.8	52.8	37.2		
	130	87.3	31.8	83.0	35.0	78.5	38.5	73.8	42.4	68.7	47.0		
	150	99	39.7	92.7	43.5	86.8	47.8	80.9	52.7	74.7	58.3		
	180	116	46.3	110	50.7	103	55.6	97.1	61.0	90.5	67.2		
	210	142	53.3	134	57.8	127	62.9	118	69.1	110	76.1		
	240	161	59.2	153	64.6	144	70.6	135	77.3	125	84.8		
	260	168	67.9	160	73.8	152	80.3	143	87.7	133	96		
-7	080	57.4	20.0	54.3	21.8	51.3	23.7	48.2	25.9	45.0	28.4		
	100	74.4	25.9	70.8	28.4	67.1	31.1	63.3	34.2	59.2	37.7		
	130	95.9	32.5	91.4	35.7	86.7	39.1	81.6	43.1	76.1	47.6		
	150	111	40.2	104	44.0	98.1	48.3	91.6	53.2	84.9	58.7		
	180	129	46.8	122	51.2	116	56.1	109	61.6	102	67.8		
	210	157	54.1	149	58.7	140	63.8	132	70.1	122	77.2		
	240	177	60.1	169	65.5	159	71.6	150	78.4	139	86.0		
	260	185	68.8	177	74.8	168	81.4	158	88.9	147	97		
-5	080	61.3	20.1	58.2	21.9	55.1	23.8	51.9	26.0	48.5	28.5	46.4	30.1
	100	79.9	26.2	76.1	28.7	72.2	31.4	68.2	34.5	63.8	38.0	61.0	40.3
	130	102	33.0	97.5	36.1	92.6	39.6	87.3	43.6	81.4	48.1	77.7	51.1
	150	133	40.6	113	44.4	106	48.7	99	53.6	92.0	59.1	87.4	62.8
	180	138	47.2	132	51.6	125	56.6	118	62.1	110	68.2	105	72.3
	210	168	54.7	159	59.3	150	64.5	141	70.8	131	78.0	125	82.7
	240	189	60.7	180	66.2	170	72.3	160	79.1	149	86.7	142	91.8
	260	197	69.4	189	75.5	179	82.2	169	89.7	158	98	150	104
-2	080	67.8	20.3	64.5	22.1	61.2	24.0	57.8	26.2	54.2	28.7	52.0	30.3
	100	88.8	26.6	84.8	29.1	80.6	31.9	76.1	35.1	71.3	38.6	68.1	40.9
	130	113	33.8	108	37.0	102	40.4	96.5	44.4	90.1	48.8	86.0	51.9
	150	133	41.3	126	45.2	119	49.4	111	54.3	103	59.8	98.0	63.4
	180	154	47.9	147	52.3	139	57.3	131	62.8	123	69.0	118	73.1
	210	185	55.7	176	60.4	166	65.5	156	72.0	145	79.2	138	83.9
	240	207	61.6	198	67.2	187	73.3	176	80.3	164	88.0	156	93.0
	260	218	70.5	208	76.6	198	83.4	187	91.1	175	100	167	105
2	080	77.5	20.7	74.1	22.4	70.5	24.4	66.7	26.5	62.7	29.0	60.2	30.6
	100	102	27.3	97.7	29.9	92.9	32.7	87.8	35.8	82.3	39.4	78.7	41.7
	130	129	35.0	123	38.2	117	41.7	110	45.6	103	50.1	98.5	53.1
	150	152	42.4	145	46.3	137	50.6	128	55.4	119	60.9	113	64.6
	180	177	49.0	169	53.4	161	58.4	152	63.9	143	70.2	136	74.3
	210	210	57.3	200	61.9	189	67.1	178	73.6	165	80.9	158	85.7
	240	235	63.1	224	68.7	213	75.0	200	81.9	187	89.8	178	94.9
	260	248	72.1	238	78.4	226	85.3	214	93.0	200	102	191	107

NOTES

1. Cooling capacity (kW)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. Usage of glycol and other anti-freeze
   Correction factors for CC and PI are applicable according type and concentration of the used anti-freeze

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

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4 Capacity tables

4 - 1 Cooling Capacity Tables

EWAQ-DAYNP
EWAQ-DAYNB

STANDARD P/B-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
4	080	84.6	21.5	80.9	23.2	77.2	25.1	73.2	27.3	68.9	29.7	66.2	31.3
	100	111	28.0	107	30.5	102	33.3	96.1	36.5	90.2	40.1	86.4	42.4
	130	140	36.3	134	39.6	127	43.1	120	47.0	113	51.5	108	54.4
	150	165	43.6	157	47.6	149	51.9	140	56.8	130	62.3	124	66.0
	180	193	50.5	185	54.9	176	59.9	166	65.4	156	71.7	150	75.8
	210	226	58.8	216	63.4	205	68.6	193	75.2	180	82.5	171	87.3
	240	254	64.1	243	69.7	230	76.0	217	83.0	203	90.9	194	96.0
	260	269	73.0	258	79.3	246	86.3	232	94.1	218	103	208	108
7	080	93.3	21.8	89.4	23.5	85.4	25.5	81.0	27.6	76.3	30.1	73.3	31.7
	100	123	28.7	118	31.2	112	34.0	106	37.2	99.6	40.7	95.4	43.1
	130	154	37.4	148	40.6	140	44.2	133	48.1	124	52.6	118	55.5
	150	182	44.6	173	48.6	164	53.0	154	57.8	143	63.4	136	67.1
	180	213	51.5	204	56.0	194	60.9	184	66.5	173	72.8	165	76.9
	210	248	60.2	236	64.9	224	70.1	211	76.6	197	84.0	188	88.8
	240	278	65.5	266	71.1	253	77.5	238	84.5	223	92.4	212	97.6
	260	297	74.5	285	80.8	271	87.9	256	95.8	240	105	229	110
10	080	103	22.1	98.6	23.9	94.2	25.8	89.4	28.0	84.3	30.4	81.0	32.0
	100	135	29.5	130	32.0	123	34.8	117	37.9	110	41.5	105	43.8
	130	170	38.5	162	41.8	154	45.3	146	49.3	136	53.8	130	56.7
	150	199	45.7	190	49.7	179	54.2	168	59.2	157	64.7	149	68.4
	180	235	52.7	225	57.1	214	62.1	203	67.7	190	74.0	182	78.1
	210	271	61.9	258	66.5	245	71.7	230	78.2	215	85.6	205	90.4
	240	305	67.0	292	72.7	277	79.1	261	86.2	244	94.1	233	99.3
	260	327	76.1	313	82.5	298	89.7	281	97.6	263	106	252	112
13	080	113	22.5	109	24.3	104	26.3	98.5	28.4	92.8	30.9	89.2	32.5
	100	148	30.4	142	32.8	135	35.6	128	38.8	120	42.3	115	44.6
	130	186	39.7	178	43.0	169	46.6	160	50.6	149	55.1	142	58.0
	150	218	46.9	207	51.0	196	55.5	184	60.5	171	66.2	162	69.8
	180	258	54.0	247	58.4	235	63.4	223	69.0	209	75.3	200	79.4
	210	295	63.7	281	68.3	267	73.4	251	80.0	234	87.3	223	92.2
	240	334	68.8	319	74.5	303	80.9	285	88.0	266	96.0	254	101.2
	260	359	77.8	343	84.3	327	91.6	309	99.6	289	108	276	114
16	080	124	22.9	119	24.7	114	26.7	108	28.9	102	31.4	97.9	33.0
	100	162	31.4	155	33.8	148	36.5	140	39.7	131	43.2	126	45.5
	130	204	40.9	195	44.3	185	47.9	174	52.0	163	56.5	155	59.4
	150	237	48.1	225	52.3	213	57.0	200	62.1	185	67.7	97	33.8
	180	283	55.4	271	59.9	258	64.9	244	70.5	229	76.8	219	80.9
	210	320	65.7	305	70.2	290	75.4	273	81.9	254	89.3	243	94.1
	240	364	70.7	348	76.4	330	82.8	311	90.0	290	98.0	277	103.2
	260	393	79.7	376	86.3	357	93.6	337	101.7	315	111	301	116
20	080	140	23.6	134	25.4	128	27.4	122	29.7	115	32.1	60.8	16.3
	100	182	32.8	174	35.2	166	37.9	157	41.0	147	44.5	77.7	22.3
	130	229	42.7	218	46.1	207	49.8	195	53.9	182	58.4	95.7	29.3
	150	264	50.0	251	54.4	237	59.1	222	64.3	206	70.1	108	34.9
	180	317	57.6	304	62.1	289	67.1	273	72.7	256	79.0	135	39.7
	210	356	68.7	340	73.2	322	78.3	303	84.8	283	92.1	149	46.1
	240	407	73.5	389	79.3	369	85.7	347	92.9	324	100.9	170	50.2
	260	441	82.5	421	89.2	400	96.6	377	105	353	114	185	56.4

NOTES

1. Cooling capacity (kW)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. Additional ESP can be added to the fans discharge. The following impact on the performance has to be considered

ESP (Pa)	CC %	PI %
25	99	101
50	98	103
75	96	105

where
ESP = External static pressure applied at nominal unit airflow.

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

3TW57572-1E

4 Capacity tables

4 - 1 Cooling Capacity Tables

EWAQ-DAYNP
EWAQ-DAYNB

OPZL P/B-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
-10	080	53.8	20.4	50.7	22.2	47.7	24.2	44.8	26.4	41.8	28.9		
	100	68.9	25.8	65.5	28.3	62.1	31.0	58.5	34.0	54.8	37.4		
	130	89.5	32.5	85.3	35.7	80.8	39.2	76.1	43.1	71.0	47.7		
	150	101	40.2	95.2	44.0	89.3	48.3	83.3	53.2	77.2	58.8		
	180	119	47.1	113	51.6	107	56.4	100.2	61.9	93.6	68.0		
	210	145	53.9	138	58.5	130	63.5	122	69.8	113	76.8		
	240	165	59.4	157	64.8	148	70.8	139	77.5	129	85.0		
	260	172	67.9	164	73.8	156	80.3	147	87.7	137	96		
-7	080	59.1	20.6	55.9	22.3	52.9	24.3	49.8	26.5	46.6	29.0		
	100	76.3	26.2	72.7	28.7	69.1	31.4	65.2	34.5	61.1	37.9		
	130	98.1	33.2	93.7	36.4	88.9	39.9	83.9	43.8	78.4	48.3		
	150	113	40.7	107	44.6	100.5	48.9	94.1	53.7	87.3	59.2		
	180	132	47.7	125	52.1	119	57.0	112	62.5	105	68.7		
	210	160	54.8	152	59.4	144	64.5	135	70.8	126	77.9		
	240	181	60.2	172	65.7	163	71.7	153	78.5	143	86.1		
	260	189	68.8	181	74.8	172	81.4	162	88.9	151	97		
-5	080	62.9	20.7	59.8	22.5	56.7	24.4	53.5	26.6	50.1	29.1	48.0	30.7
	100	81.8	26.4	78.0	28.9	74.2	31.7	70.1	34.8	65.7	38.3	62.9	40.6
	130	104	33.7	99.8	36.9	94.9	40.3	89.5	44.3	83.7	48.8	80.0	51.8
	150	135	41.2	115	45.0	108	49.3	102	54.1	94.5	59.6	89.8	63.3
	180	142	48.1	135	52.5	128	57.4	121	62.9	113	69.1	108	73.2
	210	171	55.4	162	60.0	154	65.1	144	71.5	134	78.6	128	83.3
	240	193	60.8	183	66.3	174	72.4	164	79.2	153	86.9	145	91.9
	260	201	69.5	193	75.5	183	82.2	173	89.7	162	98	154	104
-2	080	69.4	20.9	66.1	22.7	62.8	24.6	59.4	26.8	55.9	29.3	53.6	30.9
	100	90.7	26.9	86.7	29.4	82.5	32.2	78.0	35.3	73.2	38.8	70.1	41.1
	130	115	34.5	110	37.7	105	41.2	98.8	45.1	92.4	49.6	88.3	52.6
	150	135	41.9	128	45.7	121	50.0	114	54.8	106	60.3	100.5	64.0
	180	157	48.8	150	53.2	142	58.1	135	63.6	126	69.9	121	74.0
	210	188	56.4	179	61.0	169	66.2	159	72.6	148	79.8	141	84.6
	240	211	61.8	201	67.3	191	73.5	180	80.4	168	88.1	160	93.2
	260	222	70.5	212	76.6	202	83.4	191	91.1	179	100	171	105
2	080	79.2	21.3	75.7	23.0	72.1	24.9	68.3	27.1	64.3	29.5	61.8	31.2
	100	104	27.6	99.6	30.1	94.8	32.9	89.7	36.1	84.2	39.6	80.6	42.0
	130	131	35.7	125	38.9	119	42.4	113	46.3	105	50.8	100.7	53.8
	150	155	42.9	147	46.8	139	51.1	131	56.0	122	61.5	116	65.1
	180	180	49.9	172	54.3	164	59.2	155	64.8	146	71.0	140	75.1
	210	213	57.9	203	62.6	192	67.8	181	74.3	169	81.5	161	86.3
	240	239	63.3	228	68.9	217	75.1	204	82.1	191	89.9	182	95.0
	260	252	72.1	242	78.4	230	85.3	218	93.0	204	102	195	107

NOTES

1. Cooling capacity (kW)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. Usage of glycol and other anti-freeze
   Correction factors for CC and PI are applicable according type and concentration of the used anti-freeze

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

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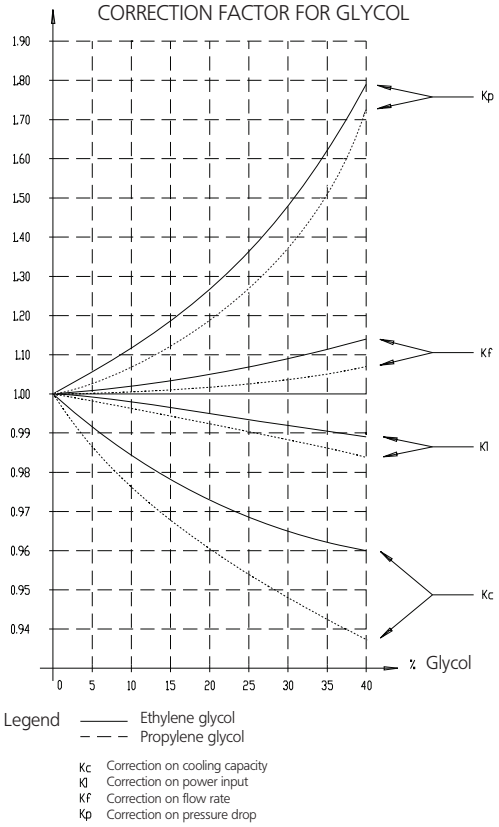
4 Capacity tables

4 - 2 Capacity Correction Factor

Required glycol concentration

Type	Concentration (wt%)	0	10	20	30	40
Ethylene glycol	Freezing point °C	0	-4	-9	-16	-23
	Minimum LWE °C	4	2	0	-5	-11
Propylene glycol	Freezing point °C	0	-3	-7	-13	-22
	Minimum LWE °C	4	3	-2	-4	-10



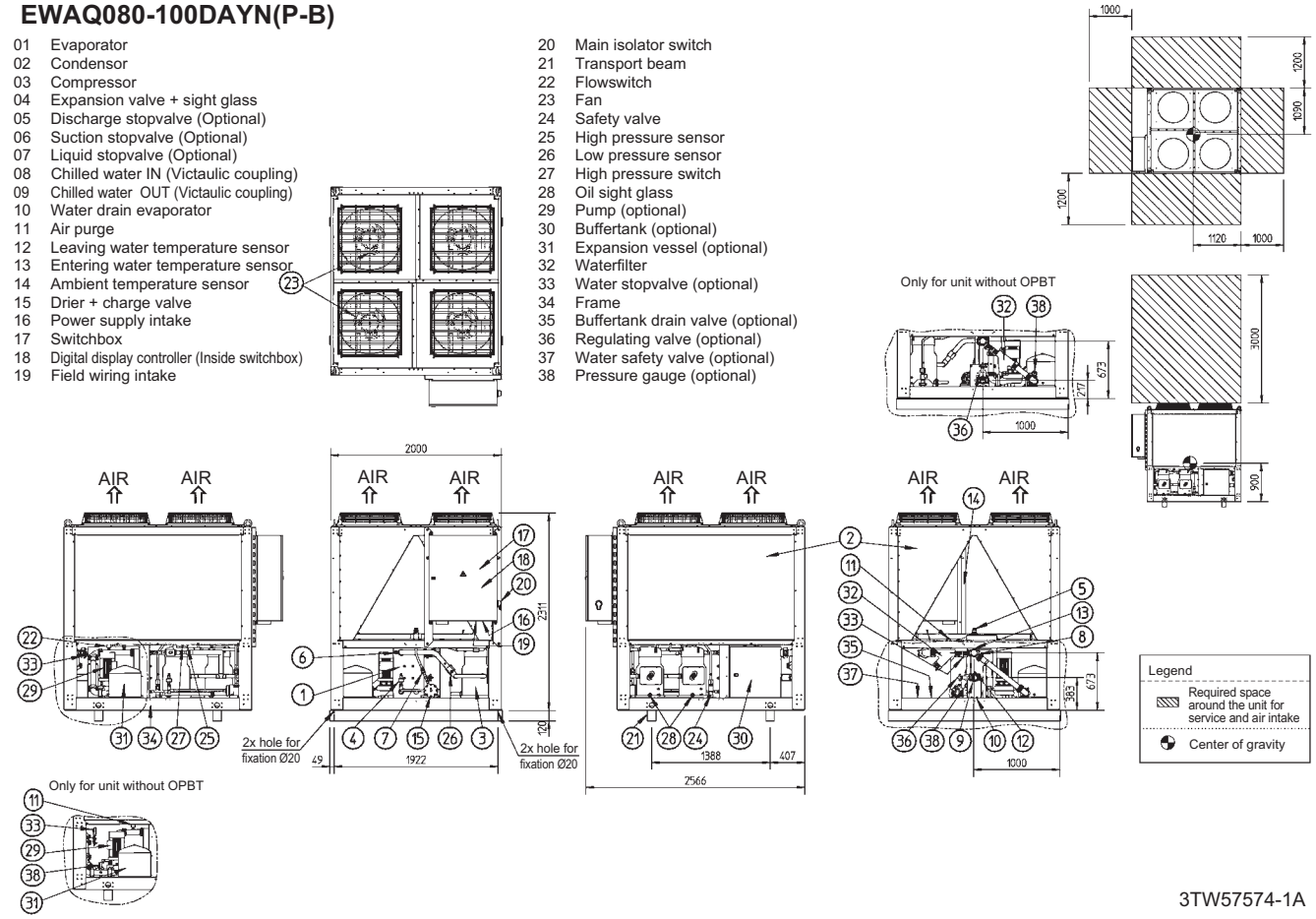
4TW50689-8

5 Dimensional drawings

5 - 1 Dimensional Drawings

EWAQ080-100DAYN(P-B)

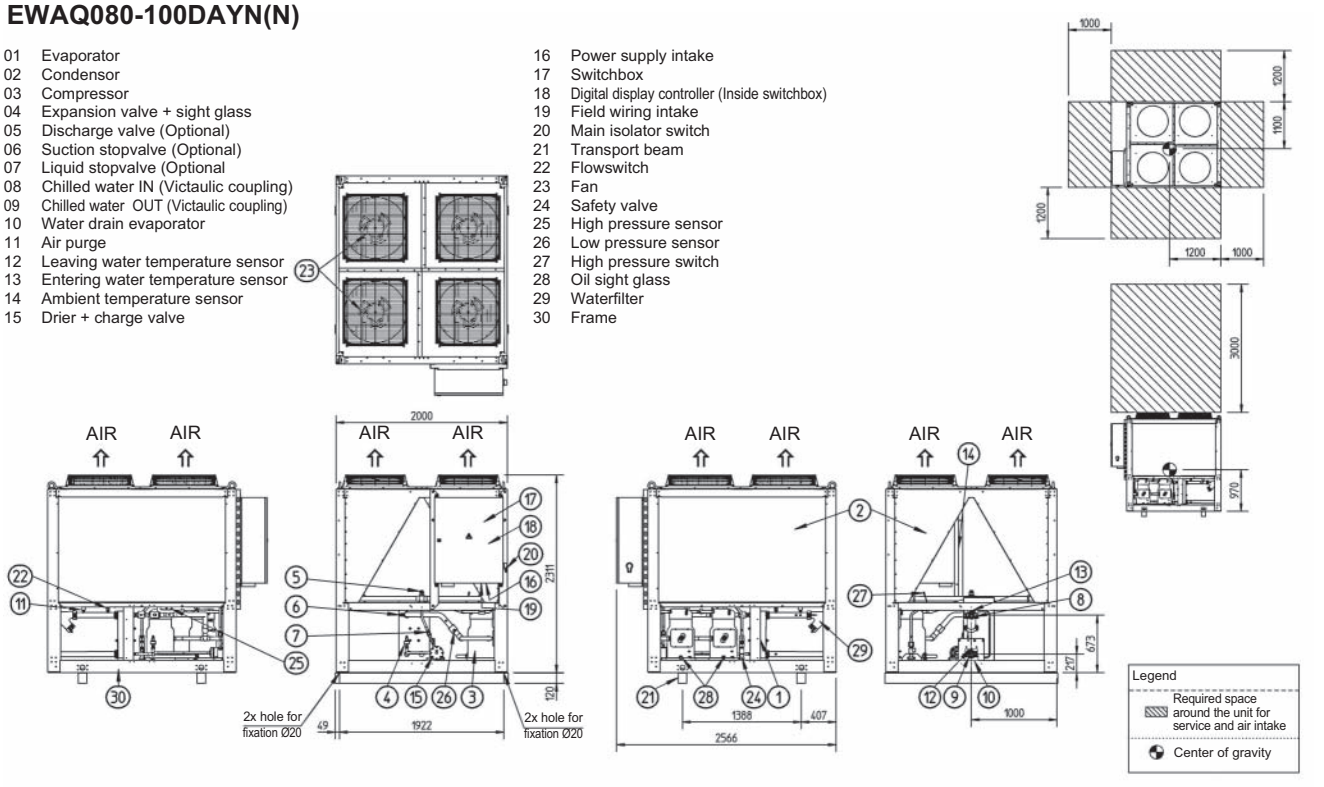
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Pump (optional)
30 Buffertank (optional)
31 Expansion vessel (optional)
32 Waterfilter
33 Water stopvalve (optional)
34 Frame
35 Buffertank drain valve (optional)
36 Regulating valve (optional)
37 Water safety valve (optional)
38 Pressure gauge (optional)



3TW57574-1A

EWAQ080-100DAYN(N)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge valve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame



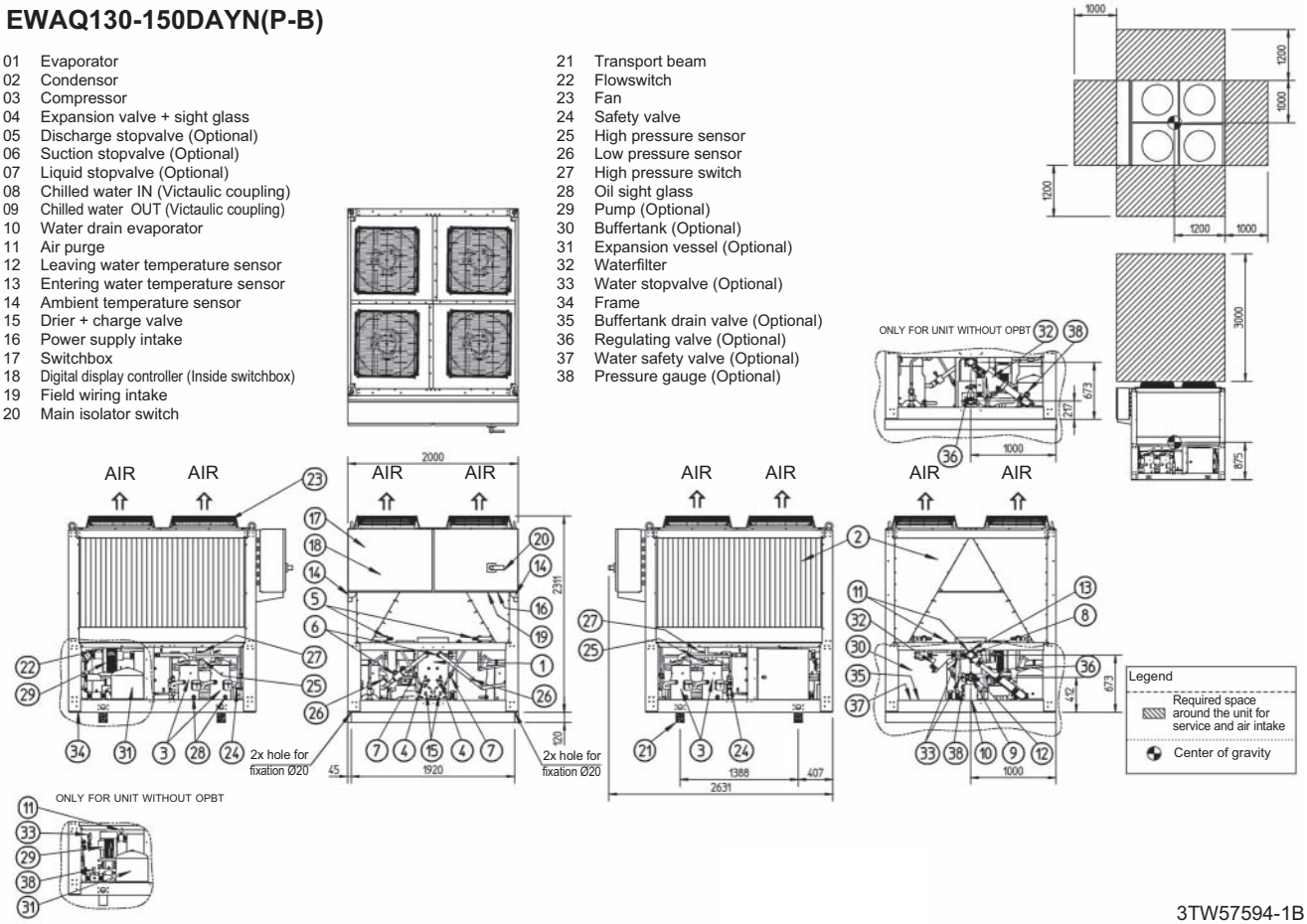
3TW57574-2A

5 Dimensional drawings

5 - 1 Dimensional Drawings

EWAQ130-150DAYN(P-B)

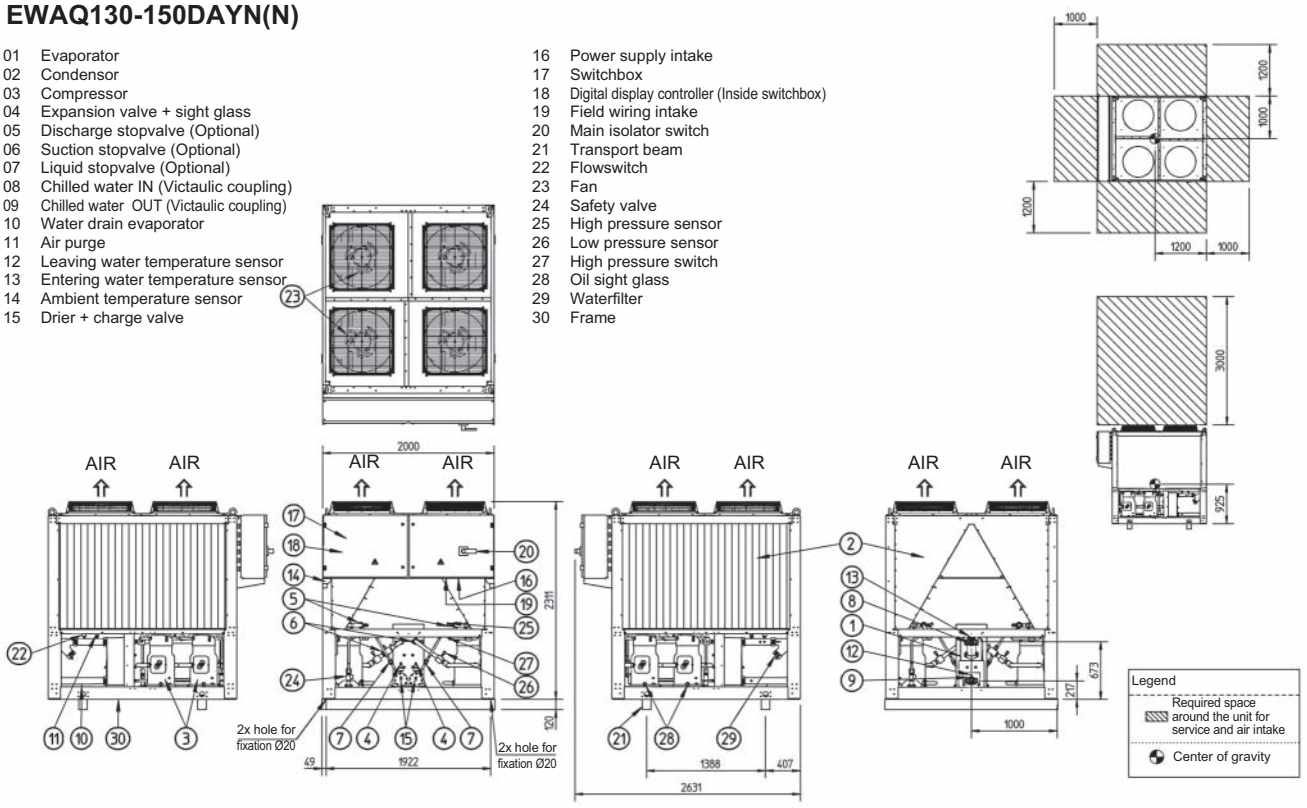
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Pump (Optional)
30 Buffertank (Optional)
31 Expansion vessel (Optional)
32 Waterfilter
33 Water stopvalve (Optional)
34 Frame
35 Buffertank drain valve (Optional)
36 Regulating valve (Optional)
37 Water safety valve (Optional)
38 Pressure gauge (Optional)



3TW57594-1B

EWAQ130-150DAYN(N)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame



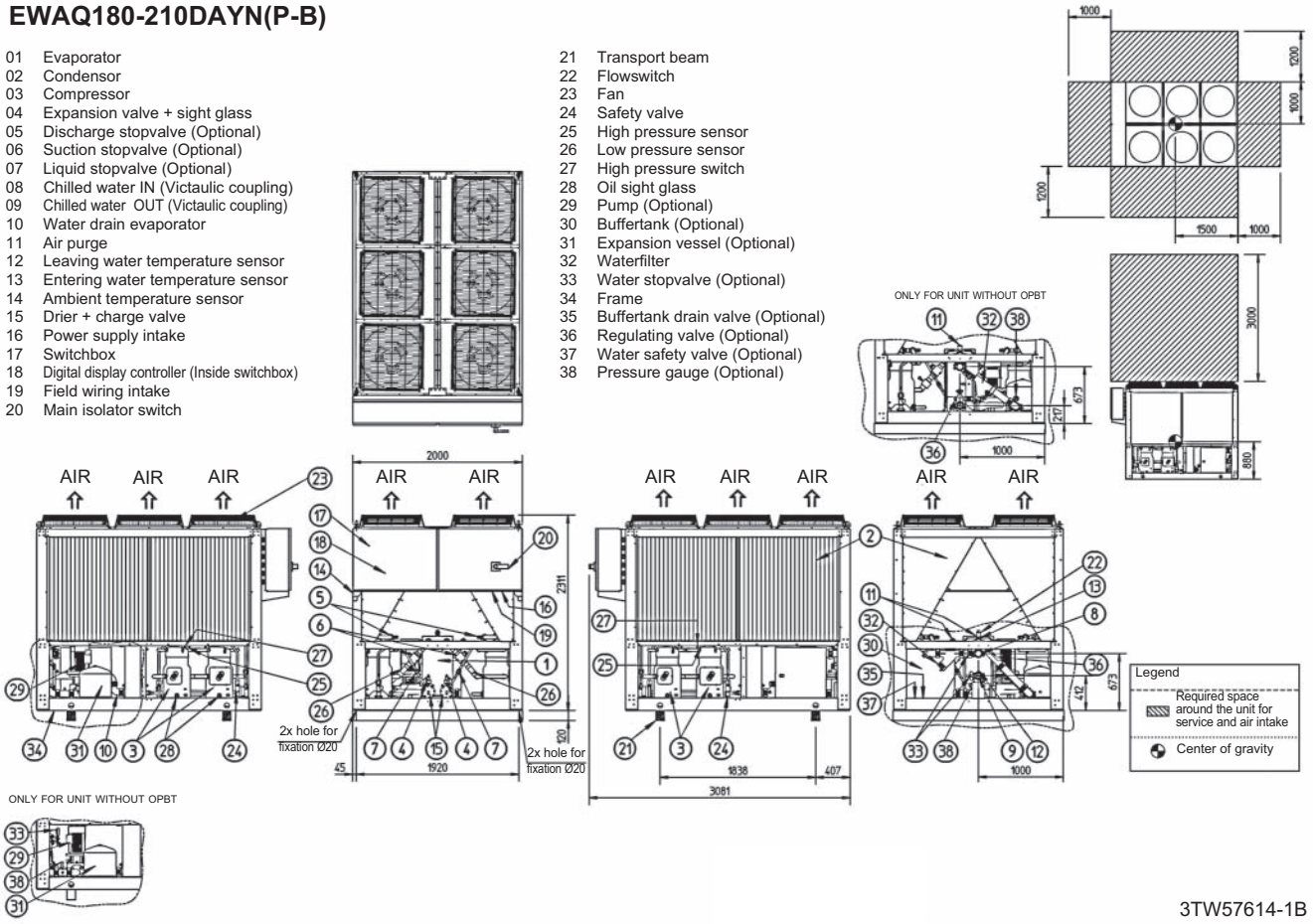
3TW57594-2A

5 Dimensional drawings

5 - 1 Dimensional Drawings

EWAQ180-210DAYN(P-B)

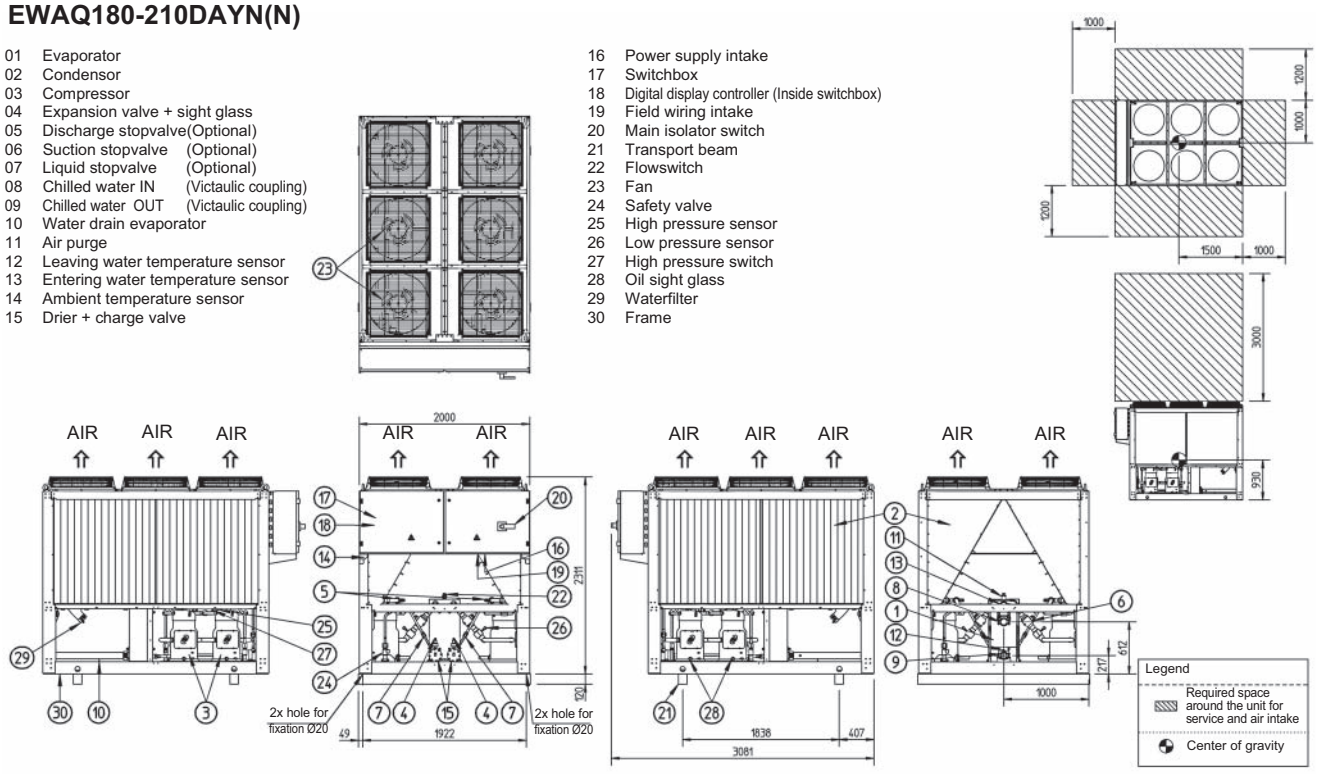
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Pump (Optional)
30 Buffertank (Optional)
31 Expansion vessel (Optional)
32 Waterfilter
33 Water stopvalve (Optional)
34 Frame
35 Buffertank drain valve (Optional)
36 Regulating valve (Optional)
37 Water safety valve (Optional)
38 Pressure gauge (Optional)



3TW57614-1B

EWAQ180-210DAYN(N)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve(Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame



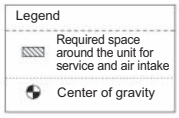
3TW57614-2A

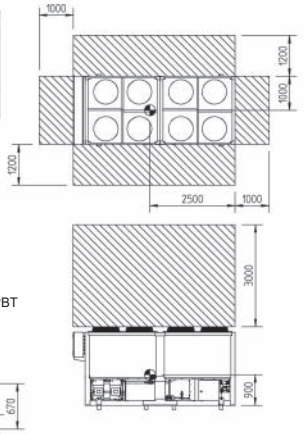
5 Dimensional drawings

5 - 1 Dimensional Drawings

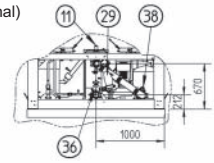
EWAQ240-260DAYN(P-B)

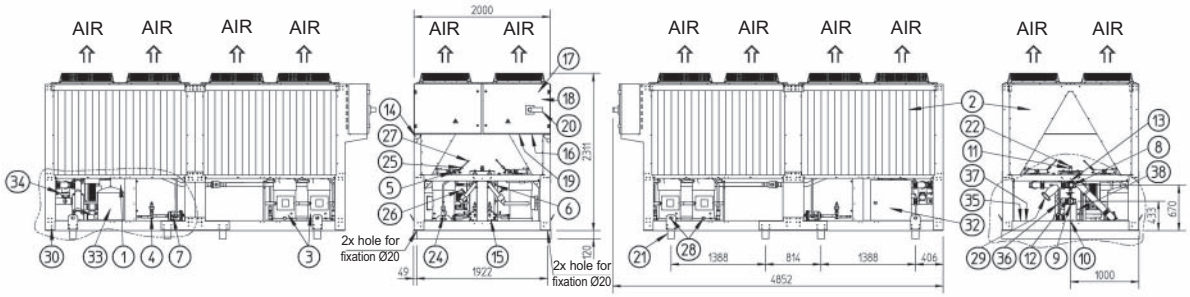
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 Pump (optional)
32 Buffertank (optional)
33 Expansion vessel (optional)
34 Water stopvalve (optional)
35 Buffertank drain valve (optional)
36 Regulating valve (optional)
37 Water safety valve (optional)
38 Pressure gauge (optional)



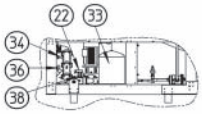


Only for unit without OPBT





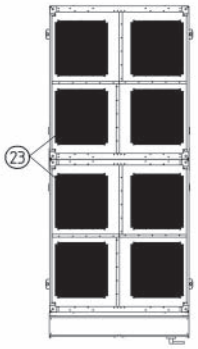
Only for unit without OPBT

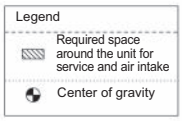


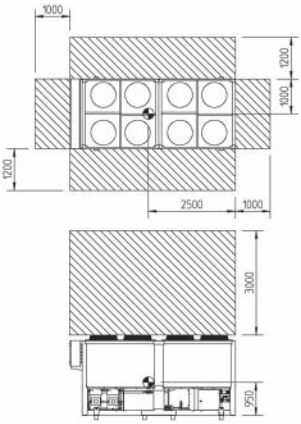
3TW57634-1

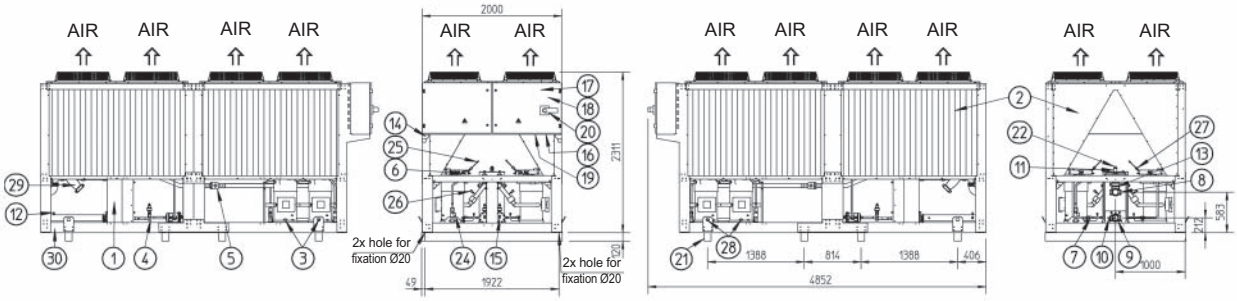
EWAQ240-260DAYN(N)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame







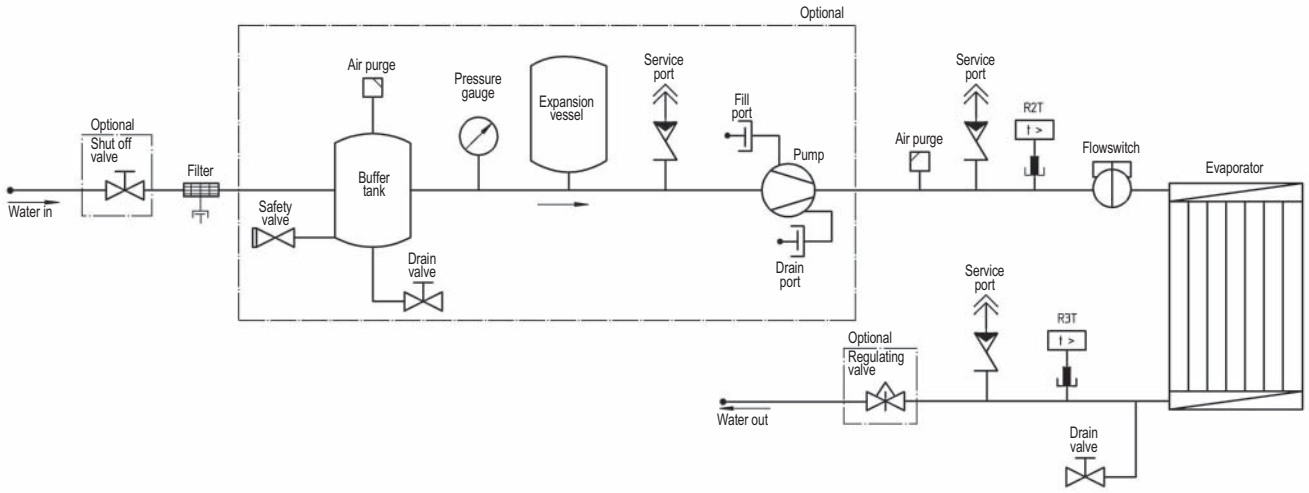


3TW57634-2

6 Piping diagrams

6 - 1 Piping Diagrams

EWAQ-EWYQ-DAYN(N-P-B)(water piping diagram)



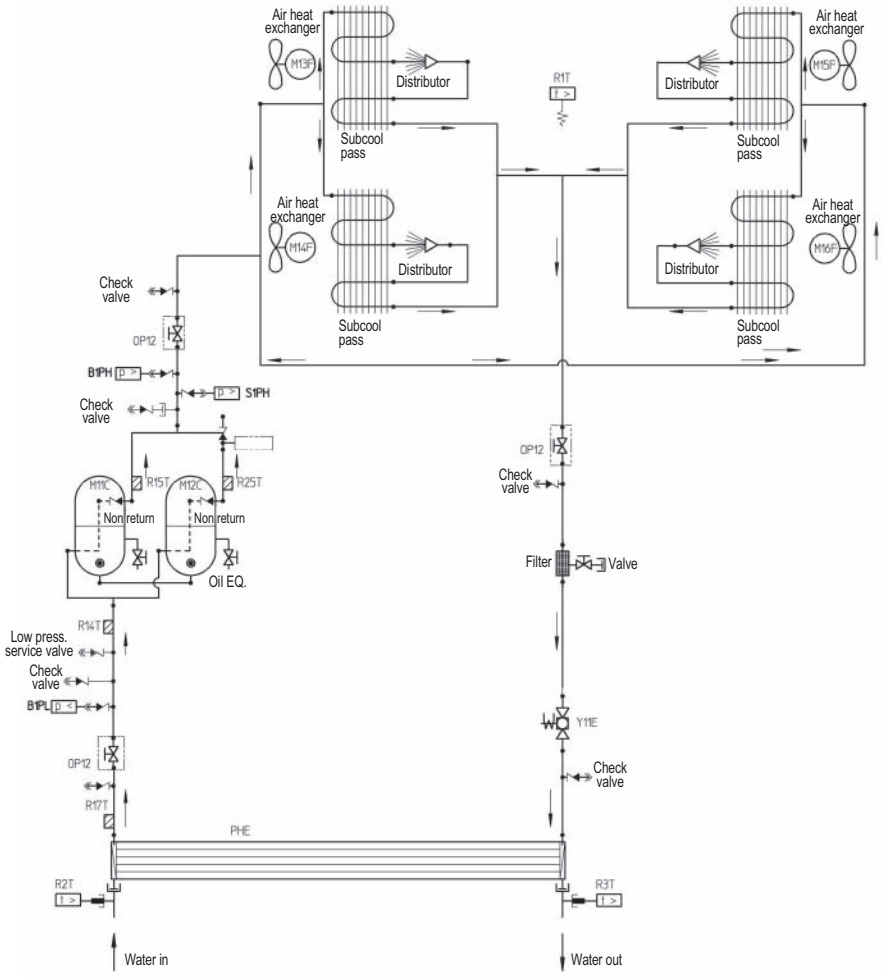
: Check valve
: Flare Conn.
: Screw conn.
: Flange conn.
: Pinched pipe
: Spinned pipe

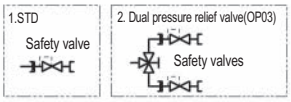
3TW57575-2A

6 Piping diagrams

6 - 1 Piping Diagrams

EWAQ080-100DAYN(N-P-B) (piping diagram)





BRAND	DESIGNATION		
M11-12C	Compressor motors	B1PH	High pressure sensor
M13-16F	Fan motors	B1PL	Low pressure sensor
R14T	Suction temperature sensor	Y11E	Electronic expansion valve cooling
R17T	Refrigerant piping temperature sensor	R1T	Ambient temperature sensor
S1PH	High pressure switch	R2T	Evaporator inlet water temperature sensor
R15T, R25T	Discharge temperature sensor	R3T	Evaporator outlet water temperature sensor

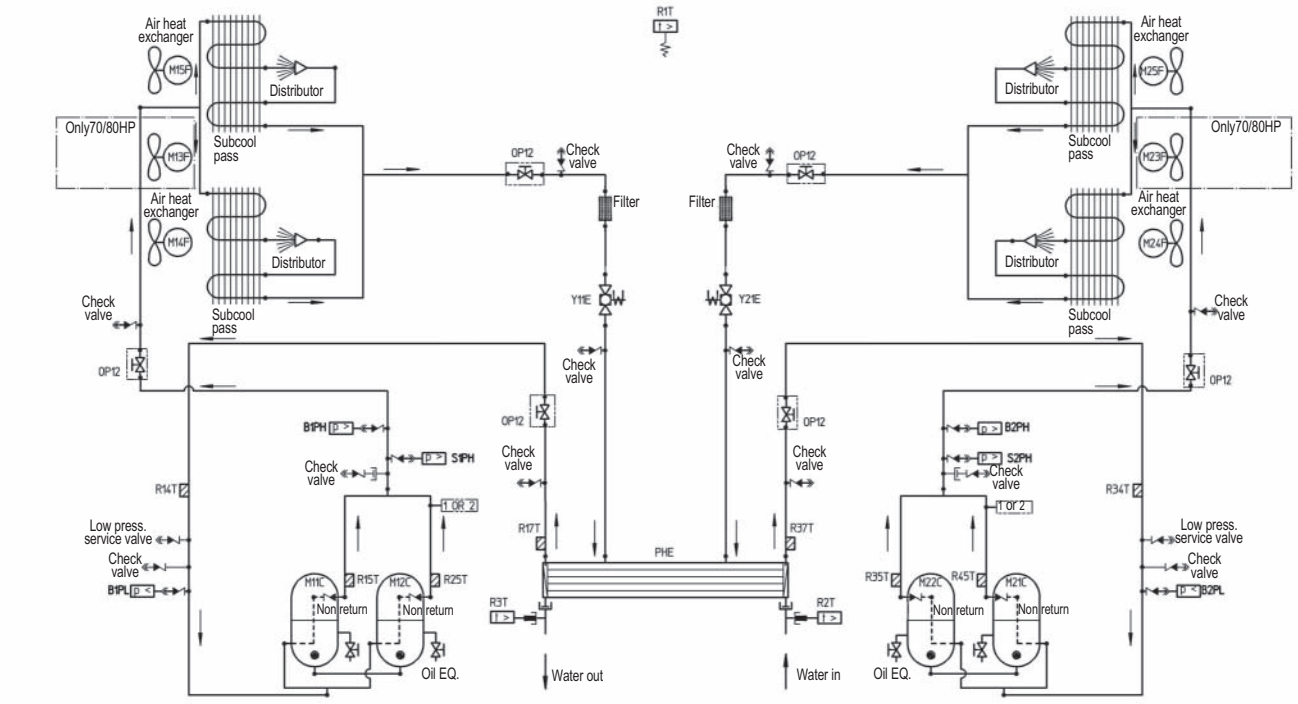
: Check valve
: Flare Conn.
: Screw conn.
: Flange conn.
: Pinched pipe
: Spinned pipe

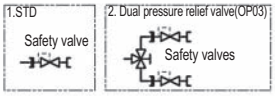
3TW57575-1

6 Piping diagrams

6 - 1 Piping Diagrams

EWAQ130-210DAYN(N-P-B)(piping diagram)





BRAND	DESIGNATION		
M11-12C	Compressor motors circuit 1	M23-25F	Fan motors circuit 2
M13-15F	Fan motors circuit 1	R34T	Suction temperature sensor circuit 2
R14T	Suction temperature sensor circuit 1	R37T	Refrigerant piping temperature sensor circuit 2
R17T	Refrigerant piping temperature sensor circuit 1	S2PH	High pressure switch circuit 2
S1PH	High pressure switch circuit 1	R35T, R35T	Discharge temperature sensor circuit 2
R15T, R25T	Discharge temperature sensor circuit 1	B2PH	High pressure sensor circuit 2
B1PH	High pressure sensor circuit 1	B2PL	Low pressure sensor circuit 2
B1PL	Low pressure sensor circuit 1	Y21E	Electronic expansion valve cooling circuit 2
Y11E	Electronic expansion valve cooling circuit 1	R1T	Ambient temperature sensor
M21-22C	Compressor motors circuit 2	R2T	Evaporator inlet water temperature sensor
		R3T	Evaporator outlet water temperature sensor

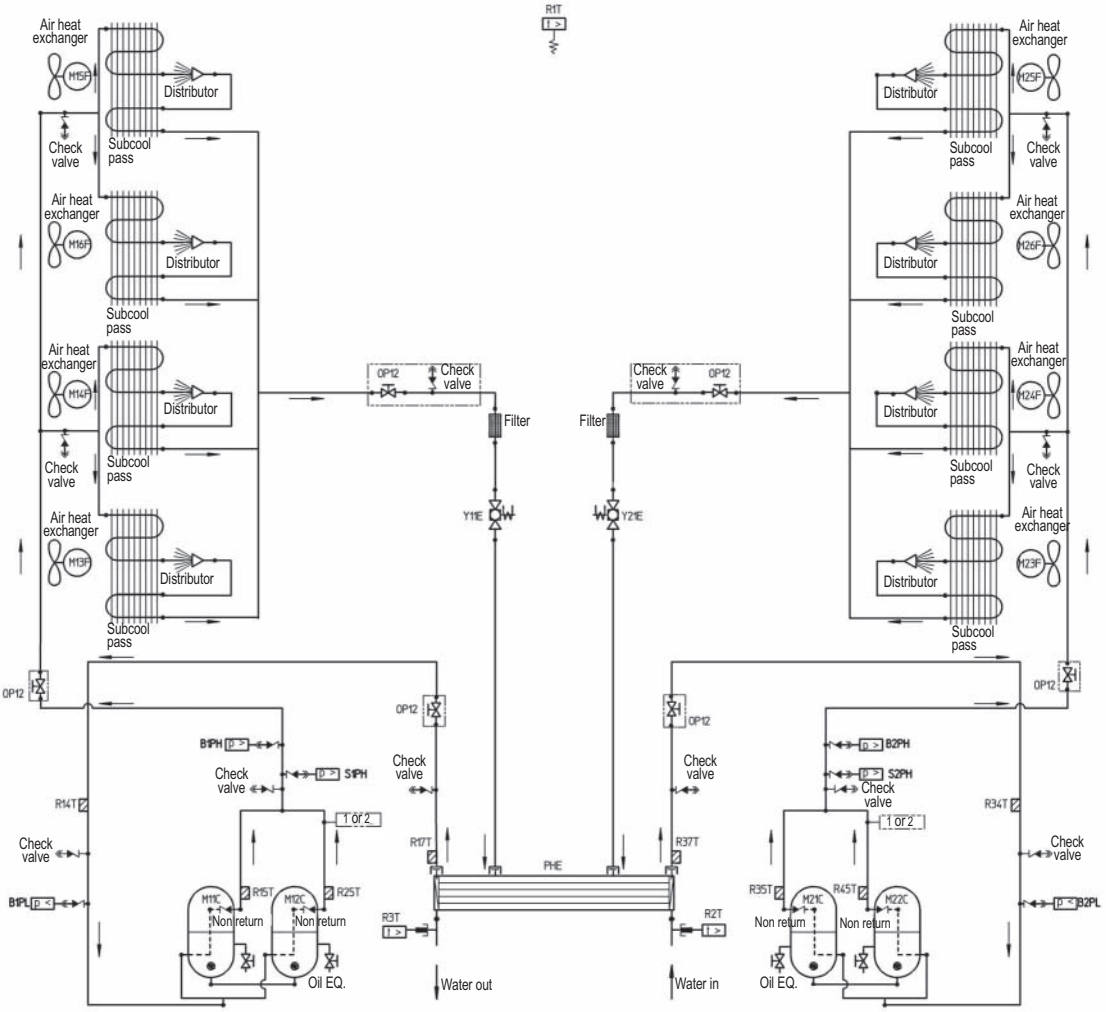
: Check valve
: Flare Conn.
: Screw conn.
Flange conn.
: Pinched pipe
: Spinned pipe

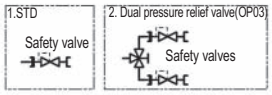
2TW57595-1

6 Piping diagrams

6 - 1 Piping Diagrams

EWAQ240-260DAYN(N-P-B)(piping diagram)





BRAND	DESIGNATION		
M11-12C	Compressor motors circuit 1	M23-26F	Fan motors circuit 2
M13-16F	Fan motors circuit 1	R34T	Suction temperature sensor circuit 2
R14T	Suction temperature sensor circuit 1	R37T	Refrigerant piping temperature sensor circuit 2
R17T	Refrigerant piping temperature sensor circuit 1	S2PH	High pressure switch circuit 2
S1PH	High pressure switch circuit 1	R35T, R35T	Discharge temperature sensor circuit 2
R15T, R25T	Discharge temperature sensor circuit 1	B2PH	High pressure sensor circuit 2
B1PH	High pressure sensor circuit 1	B2PL	Low pressure sensor circuit 2
B1PL	Low pressure sensor circuit 1	Y21E	Electronic expansion valve cooling circuit 2
Y11E	Electronic expansion valve cooling circuit 1	R1T	Ambient temperature sensor
M21-22C	Compressor motors circuit 2	R2T	Evaporator inlet water temperature sensor
		R3T	Evaporator outlet water temperature sensor

: Check valve
: Flare Conn.
: Screw conn.
Flange conn.
: Pinched pipe
: Spinned pipe

2TW57635-1

7 External connection diagrams

7 - 1 External Connection Diagrams

LEGEND

Translation of this legend can be found in the installation manual.

	Not included with standard unit	
	Not possible as option	Possible as option
Obligatory	#	##
Not obligatory	*	**

: Field wiring

: Several wiring possibilities

: Dipswitch set on left position

Part number		Description
A02P	**	Communication PCB (EKACPG)
A4P		PCB wired remote control
A5P	**	PCB wired remote control (EKRUPG)
E5H	*	fieldheater
F1,F2,F3	#	main fuses
F4,F5	#	fuses for heaters
H11,12,21,22P		indication lamp: operation compressor
H1P	*	indication lamp: alarm signal (default NO)
H2,3,4,5,6P	*	indication lamp for changeable digital outputs
K1P	##	pump contactor (Only OPSP/OPHP/OPSC/OPTP/OPTC)
K2P	**	pump contactor (Only for OPTP/OPTC)
K1S	*	overcurrent relay pump (P/B unit or OPSC)
M1P	*	pump motor 1 (Only OPSP/ OPHP/OPSC/OPTP/OPTC)
M2P	*	pump motor 2 (Only for OPTP/OPTC)
R8T	*	temperature sensor for changeable analog input
S1M		main isolator switch
S1,2,3,4,5S	*	switch for changeable digital input
S2M	#	heatertape isolator switch
V2C	**	ferrite core (EKACPG)

Options (factory installed)	
OPSP	=Single pump
OPTP	=Twin pump
OPSC	=Single pump contactor
OPTC	=Twin pump contactor
OPHP	=Hi ESP pump
OPIF	=Inverter fans

Options (user installed)	
EKACPG	=Address card including
	-RS 485 (Integrated modbus)
	-F1,F2 (DCIN+DBACS connection)
EKRUPG	=Remote user interface

N-Model	=unit with no options included
Ch.	=Changeable

Changeable I/O possible functions

Refer to the installation manual for instructions how to configure changeable I/O

Changeable digital input (4 available)
-None
-Status
-Dual setpoint
-Remote on-off
-Capacity limitation 25%,50%,75% or setting
-Low noise (only for OPIF)
-Free cooling signal
-Fan forced on

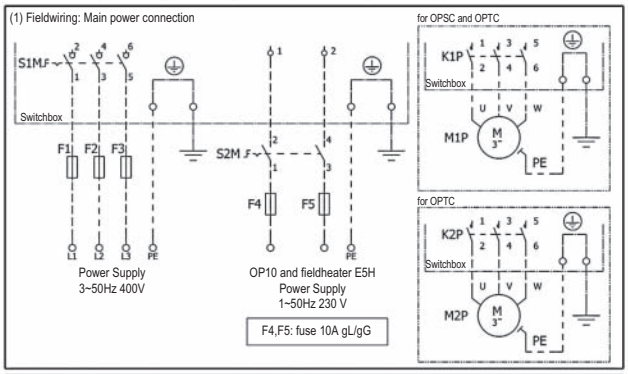
Changeable analog output (1 available)
-None
-Unit Capacity (mA,V)
-Details of types
Type mA: 0..20mA/4..20mA
Type V: 0-1V/0-5V/0-10V

Changeable digital output (6 or 5 available depending on unit)
-None
-Closed
-2nd pump
-100% capacity
-Full capacity
-Free cooling
-General operation
-Safety+warning NO
-Safety+warning NC (only for Ch.DO1)
-Safety NO (excluding warning)
-Safety NC (excluding warning) (only for Ch.DO1)
-C1,C2 Safety NO
-Warning NO
-C1,C2 operation
-Cooling (only EWYQ)
-Heating (only EWYQ)
-Defrost (only EWYQ

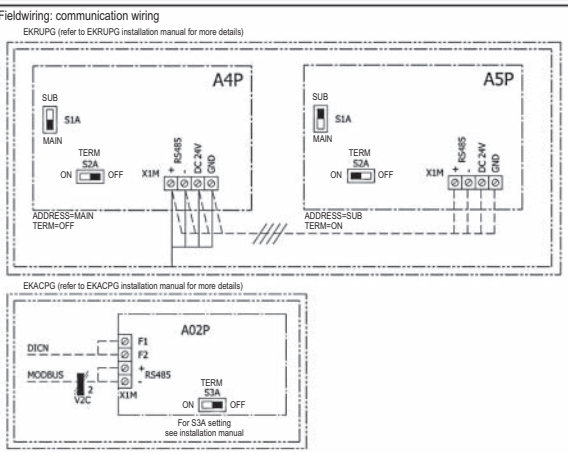
Changeable analog input (4 available)
-None
-Status (mA,V,NTC*,DI)
-Floating setpoint (mA, V, NTC*)
-Water temperature measurement (NTC*)
-Changeable DI, refer to Ch DI for possibilities (DI)
-Details of types:
Type mA: 0..20mA/4..20mA
(internal 5V or external power supply)
Type V: 0-1V/0-5V/0-10V
Type DI: DI (5V detection)

*: for allowed NTC types and how to configure the software please contact your local dealer.

(1) Fieldwiring: Main power connection

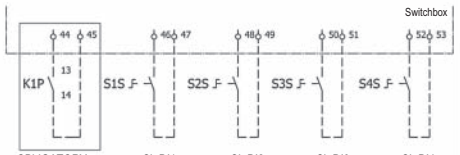


(1) Fieldwiring: communication wiring

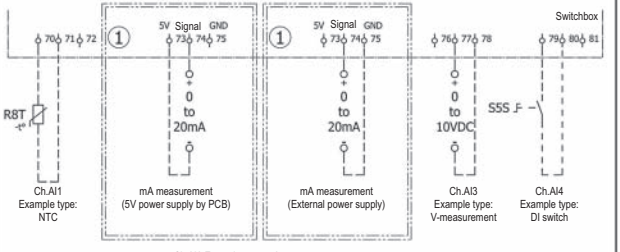


Description: Connection diagram | Drawing number: 4TW57579-2 | Revision: B | Page: 1 | Unit name: EWAQ/EWYQ 80-260

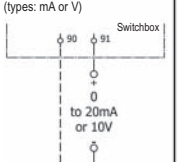
(3) Fieldwiring: Digital input terminals



(4) Fieldwiring: Analog input terminals
(connection is depending on type setting: NTC or mA or V or DI)

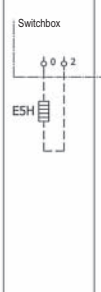


(5) Fieldwiring:
Analog output terminals
(types: mA or V)

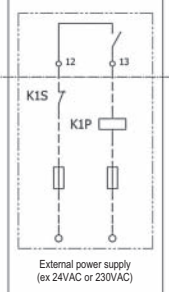


(6) Fieldwiring: Output terminals

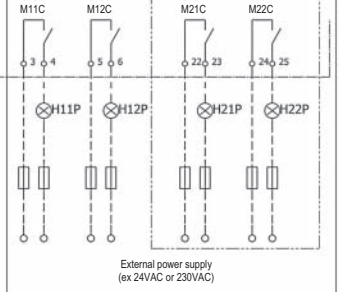
Fieldheater contact (max 1kW resistive, 230 VAC)



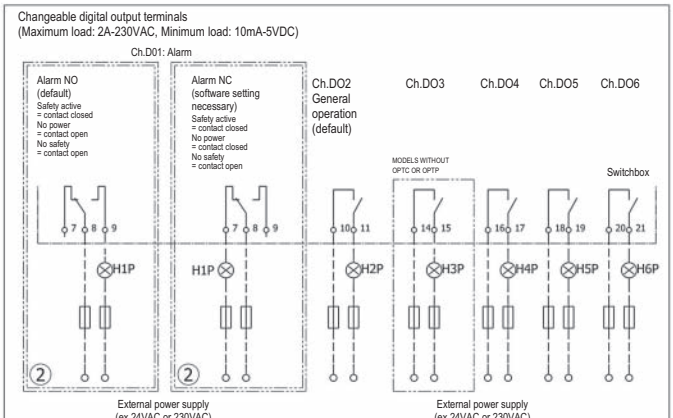
Pump contact for models without OPSC/OPTC/OPSP/ OPTP/OPHP (Maximum load: 2A-230VAC) Minimum load: 10mA-5VDC)



Operation compressor contact
AC15 (max 3A, 230VAC)



Changeable digital output terminals
(Maximum load: 2A-230VAC, Minimum load: 10mA-5VDC)



Description: Connection diagram | Drawing number: 4TW57579-2 | Revision: B | Page: 2 | Unit name: EWAQ/EWYQ 80-260

8 Sound data

8 - 1 Sound Power Spectrum

EWAQ-EWYQ-DAYN(N-P-B)

STD - Units LWE= 7°C / Tamb = 35°C	Sound power Lw per Octave band (dBA)								Total (dBA)
	63	125	250	500	1000	2000	4000	8000	LwA
EW(A/Y)Q080DAYN*	64	69	72	82	81	77	71	62	86
EW(A/Y)Q100DAYN*	62	66	71	79	82	80	74	64	86
EW(A/Y)Q130DAYN*	64	70	73	81	85	80	72	61	88
EW(A/Y)Q150DAYN*	65	74	75	85	84	80	74	65	89
EW(A/Y)Q180DAYN*	70	75	79	85	86	82	75	64	90
EW(A/Y)Q210DAYN*	67	74	79	85	86	83	76	64	90
EW(A/Y)Q(230/240)DAYN*	71	72	77	87	86	83	77	67	91
EW(A/Y)Q(250/260)DAYN*	71	72	77	87	86	83	77	67	91

OPLN - Units LWE= 7°C / Tamb = 35°C	Sound power Lw per Octave band (dBA)								Total (dBA)
	63	125	250	500	1000	2000	4000	8000	LwA
EW(A/Y)Q080DAYN*	62	67	70	80	79	75	69	60	84
EW(A/Y)Q100DAYN*	60	64	69	77	80	78	72	62	84
EW(A/Y)Q130DAYN*	61	67	70	78	82	77	69	58	85
EW(A/Y)Q150DAYN*	62	71	72	82	81	77	71	62	86
EW(A/Y)Q180DAYN*	68	73	77	83	84	80	73	62	88
EW(A/Y)Q210DAYN*	65	72	77	83	84	81	74	62	88
EW(A/Y)Q(230/240)DAYN*	68	69	74	84	83	80	74	64	88
EW(A/Y)Q(250/260)DAYN*	68	69	74	84	83	80	74	64	88

OPLN - Units LWE= 7°C / Tamb = 25°C	Sound power Lw per Octave band (dBA)								Total (dBA)
	63	125	250	500	1000	2000	4000	8000	LwA
EW(A/Y)Q080DAYN*	61	66	69	79	78	74	68	59	83
EW(A/Y)Q100DAYN*	59	63	68	76	79	77	71	61	83
EW(A/Y)Q130DAYN*	60	66	69	77	81	76	68	57	84
EW(A/Y)Q150DAYN*	60	69	70	80	79	75	69	90	84
EW(A/Y)Q180DAYN*	66	71	75	81	82	79	72	60	86
EW(A/Y)Q210DAYN*	63	70	75	81	82	79	72	60	86
EW(A/Y)Q(230/240)DAYN*	67	68	73	83	82	79	73	63	87
EW(A/Y)Q(250/260)DAYN*	67	68	73	83	82	79	73	63	87

NOTES

1 Values of Sound power according to ISO9614-2

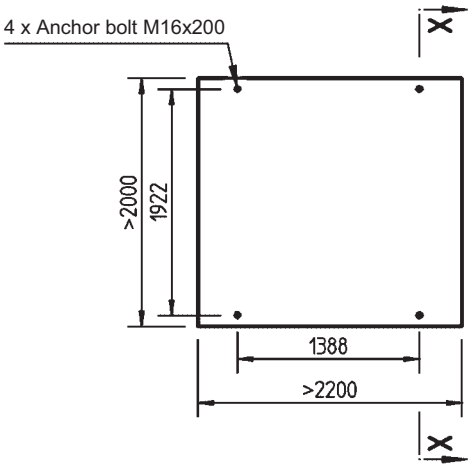
2 LWE= Leaving Water Evaporator temperature (°C)
Tamb= Ambient temperature

4TW57577-1C

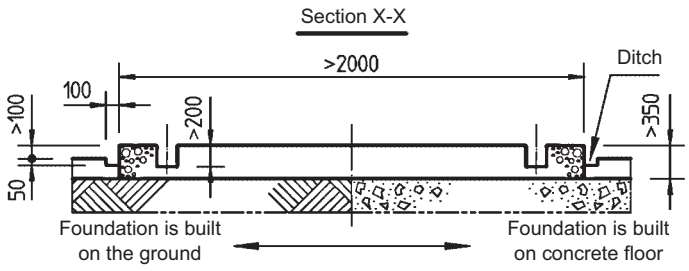
9 Installation

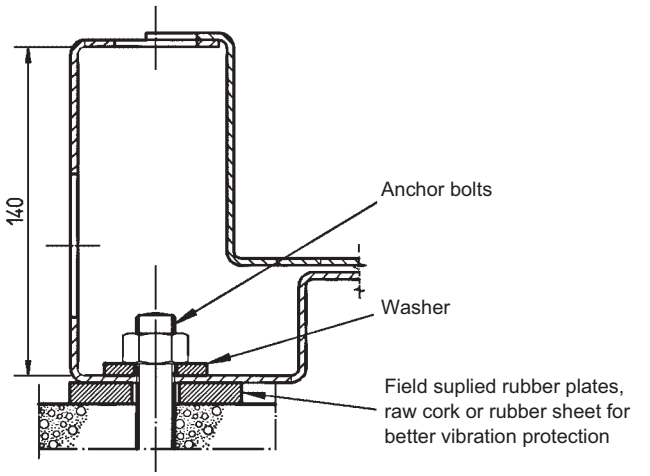
9 - 1 Fixation and Foundation of Units

EWAQ-EWYQ080-150DAYN(N-P-B)



Fix anchor bolts into the concrete foundation. The concrete foundation should be higher than the floor level by approximately 100 mm for ease of plumbing work and better drain. Further, strength of the floor should be sufficient to support the weights of concrete foundation and unit.
Be certain that foundation surface is even and flat.





NOTES

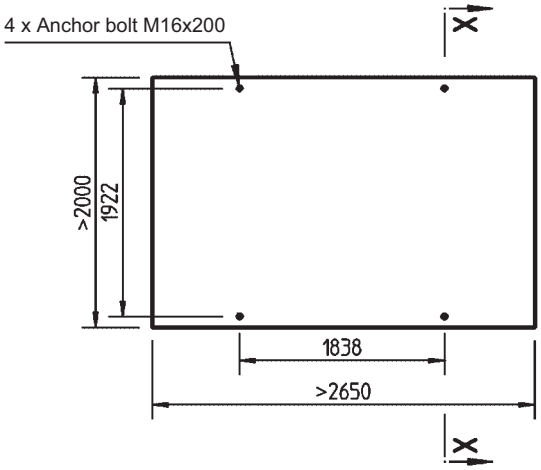
1 The measurement tabulated is based on the fact the base is made in the ground or on a concrete floor. In case the base is made on a concrete floor. In case the base is made on a rigid concrete floor, it is possible to include thickness of concrete floor, in that of the base.
2 In case a base is made on concrete floor, be sure to provide a ditch as shown. It is important to extract drainage regardless of wether a base is made in the ground or on the concrete floor. (Ditch → Sewerage).
3 Ingredient ratio of the concrete is cement: 1, sand: 2, gravel: 3, which is standard and insert iron bars of ∅10 at every interval of 300mm. The edge of the concrete base should be planed.

4TW57599-1

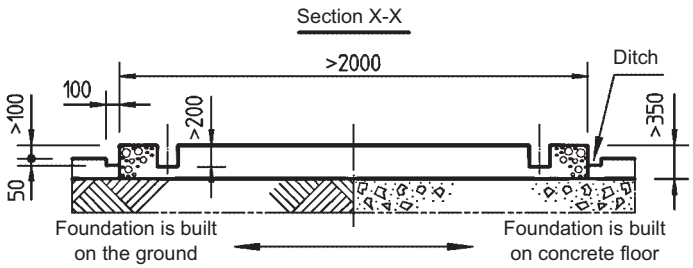
9 Installation

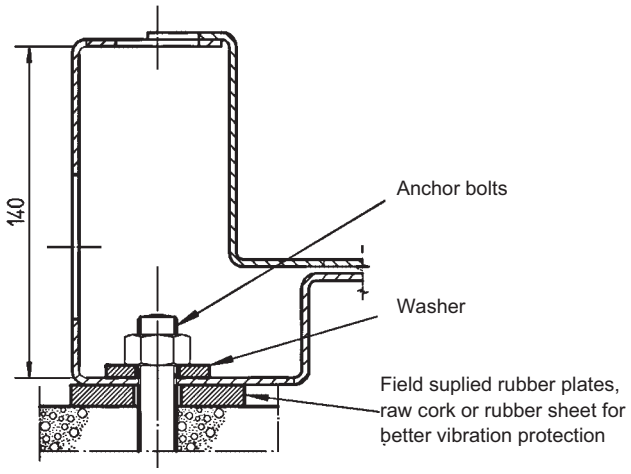
9 - 1 Fixation and Foundation of Units

EWAQ-EWYQ180-210DAYN(N-P-B)



Fix anchor bolts into the concrete foundation. The concrete foundation should be higher than the floor level by approximately 100 mm for ease of plumbing work and better drain. Further, strength of the floor should be sufficient to support the weights of concrete foundation and unit.
Be certain that foundation surface is even and flat.





NOTES

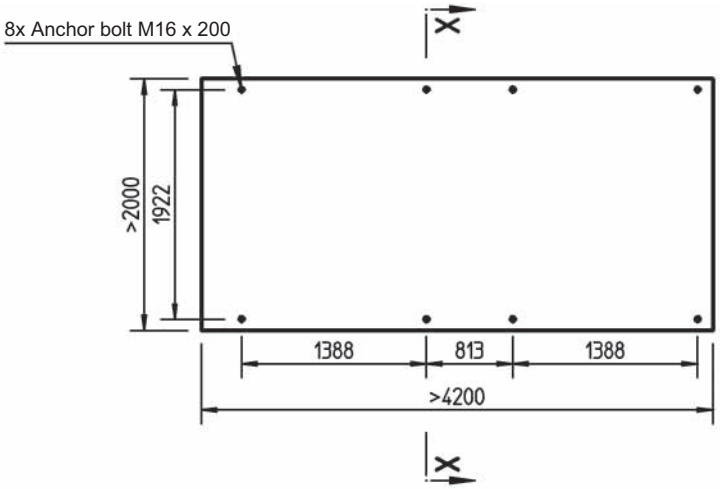
1 The measurement tabulated is based on the fact the base is made in the ground or on a concrete floor. In case the base is made on a concrete floor. In case the base is made on a rigid concrete floor, it is possible to include thickness of concrete floor, in that of the base.
2 In case a base is made on concrete floor, be sure to provide a ditch as shown. It is important to extract drainage regardless of wether a base is made in the ground or on the concrete floor. (Ditch → Sewerage).
3 Ingredient ratio of the concrete is cement: 1, sand: 2, gravel: 3, which is standard and insert iron bars of ∅10 at every interval of 300mm. The edge of the concrete base should be planed.

4TW57619-1

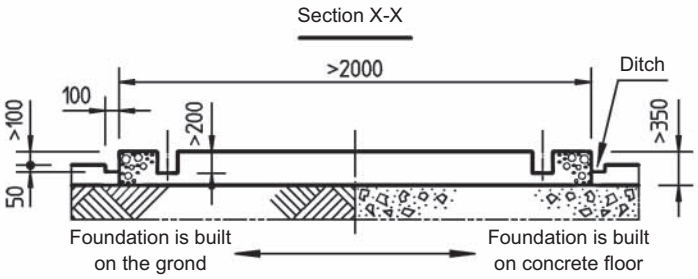
9 Installation

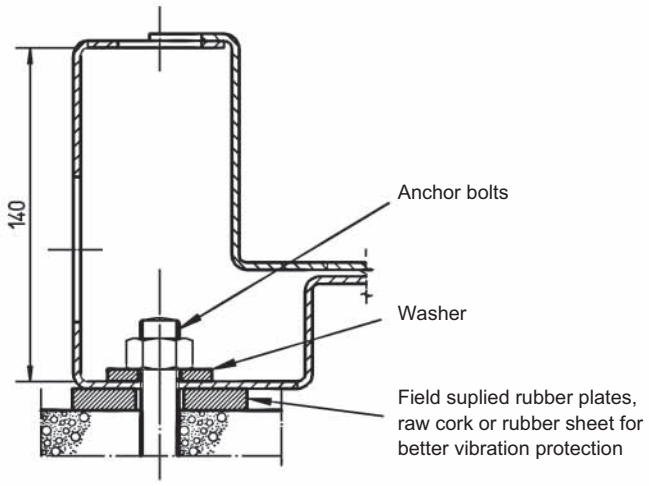
9 - 1 Fixation and Foundation of Units

EWAQ240-260DAYN(N-P-B)_EWYQ230-250DAYN(N-P-B)



Fix anchor bolts into the concrete foundation.
The concrete foundation should be higher than the floor level by approximately 100 mm for ease of plumbing work and better drain.
Further, strength of the floor should be sufficient to support the weights of concrete foundation and unit.
Be certain that foundation surface is even and flat.





NOTES

1 The measurement tabulated is based on the fact the base is made in the ground or on a concrete floor. In case the base is made on a rigid concrete floor, it is possible to include thickness of concrete floor in that of the base.

2 In case a base is made on concrete floor, be sure to provide a ditch as shown. It is important to extract drainage regardless of wether a base is made in the ground or on the concrete floor. (Ditch → Sewerage).

3 Ingredient ratio of the concrete is cement: 1, sand:2, gravel:3, which is standard and insert iron bars of ∅10 at every interval of 300mm. The edge of the concrete base should be planed.

4TW57639-1

ITEMS (1) (5)			Cooling water (3)			Cooled water		Heated water (2)				Tendency if out of criteria
			Circulating system		Once flow			Low temperature		High temperature		
			Circulating water	Supply water (4)	Flowing water	Circulating water [Below 20°C]	Supply water (4)	Circulating water [20°C ~ 60°C]	Supply water (4)	Circulating water [60°C ~ 80°C]	Supply water (4)	
Items to be controlled:	pH	at 25°C	6.5~8.2	6.0~8.0	6.8~8.0	6.8~8.0	6.8~8.0	7.0~8.0	7.0~8.0	7.0~8.0	7.0~8.0	Corrosion + scale
	Electrical conductivity	[mS/m] at 25°C	Below 80	Below 30	Below 40	Below 40	Below 30	Below 30	Below 30	Below 30	Below 30	Corrosion + scale
		(μS/cm) at 25°C (1)	(Below 800)	(Below 300)	(Below 400)	(Below 400)	(Below 300)	(Below 300)	(Below 300)	(Below 300)	(Below 300)	Corrosion + scale
	Chloride ion	[mgCl^-/l]	Below 200	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 30	Below 30	Corrosion
	Sulfate ion	[mgSO^{2-}_4/l]	Below 200	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 30	Below 30	Corrosion
	M-alkalinity (pH4.8)	[mg$CaCO_3$/l]	Below 100	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Scale
	Total hardness	[mg$CaCO_3$/l]	Below 200	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Scale
	Calcium hardness	[mg$CaCO_3$/l]	Below 150	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Scale
	Silica ion	[mgSiO_2/l]	Below 50	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Scale
Items to be referred to:	Iron	[mgFe/l]	Below 1.0	Below 0.3	Below 1.0	Below 1.0	Below 0.3	Below 1.0	Below 0.3	Below 1.0	Below 0.3	Corrosion + scale
	Copper	[mgCu/l]	Below 0.3	Below 0.1	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 0.1	Below 1.0	Below 0.1	Corrosion
	Sulfite ion	[mgS^{2-}/l]	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Corrosion
	Ammonium ion	[mgNH^+_4/l]	Below 1.0	Below 0.1	Below 1.0	Below 1.0	Below 0.1	Below 0.3	Below 0.1	Below 0.1	Below 0.1	Corrosion
	Remaining chloride	[mgCL/l]	Below 0.3	Below 0.3	Below 0.3	Below 0.3	Below 0.3	Below 0.25	Below 0.3	Below 0.1	Below 0.3	Corrosion
	Free carbide	[mgCO_2/l]	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 0.4	Below 4.0	Below 0.4	Below 4.0	Corrosion
	Stability index		6.0~7.0	---	---	---	---	---	---	---	---	Corrosion + scale

3TW50179-1

1 Names, definitions and units are according to JIS K 0101. Units and figures between brackets are old units published as reference only.

2 In case of using heated water (more than 40°C), corrosion is generally noticeable.
Especially when the iron material is in direct contact with water without any protection shields, it is desireable to give the valid measures for corrosion. e.g. chemical measure.

3 In the cooling water using hermetic cooling tower, dosed circuit water is according to heated water standard, and scattered water is according to cooling water standard.

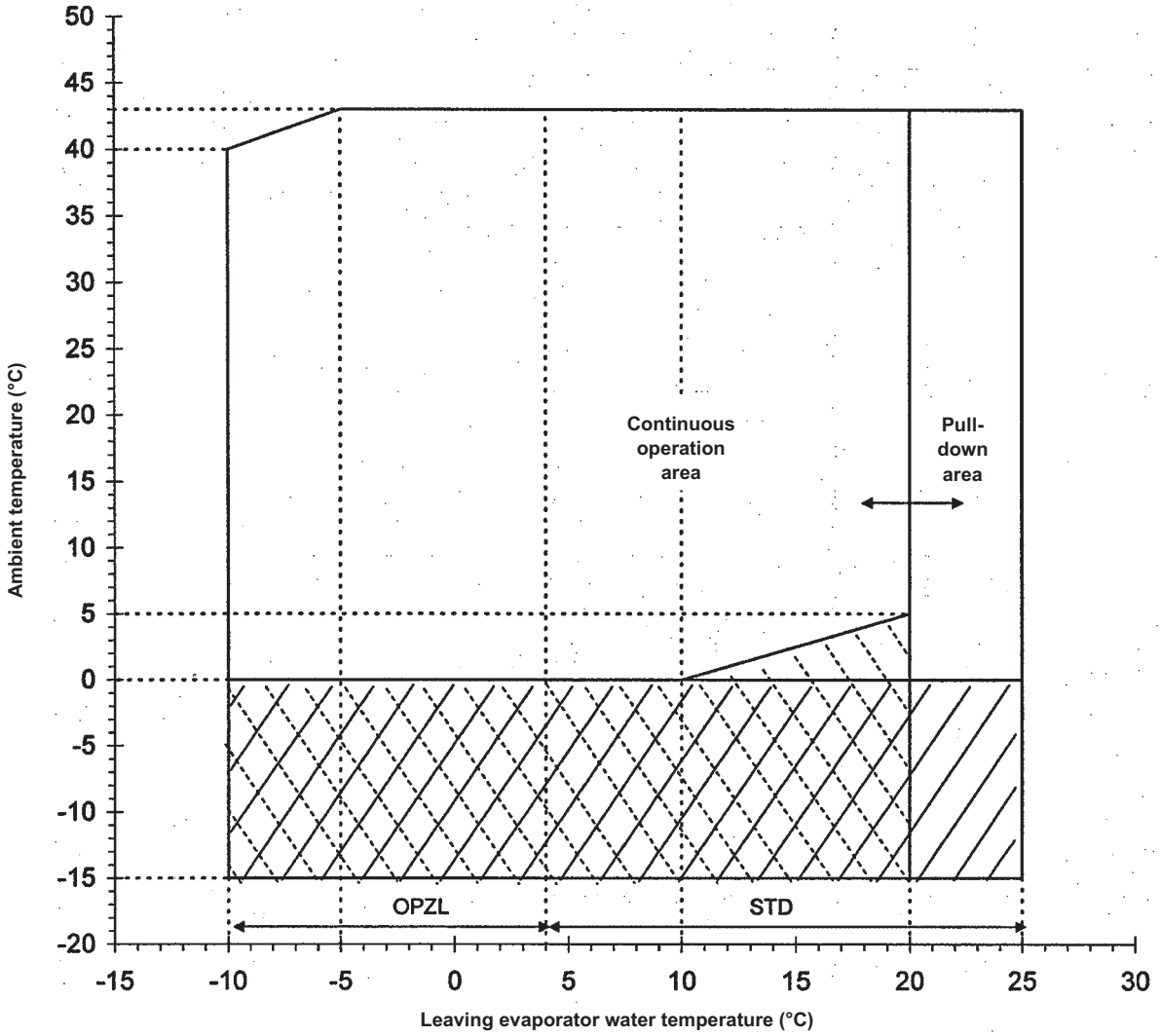
4 Supply water is considered drink water, industrial water and ground water except for genuine water, neutral water and soft water.

5 The above mentioned items are representable items in corrosion and scale cases.

10 Operation range

10 - 1 Operation Range

EWAQ080-100-180-210-240-260DAYN(N-P-B)



STD: Standard unit

OPZL: Leaving water evaporator from -10 to 4°C by use of glycol

Protect the water circuit against freezing by:

* OR OP10: heater tape

* Or filling up the system with a glycol solution

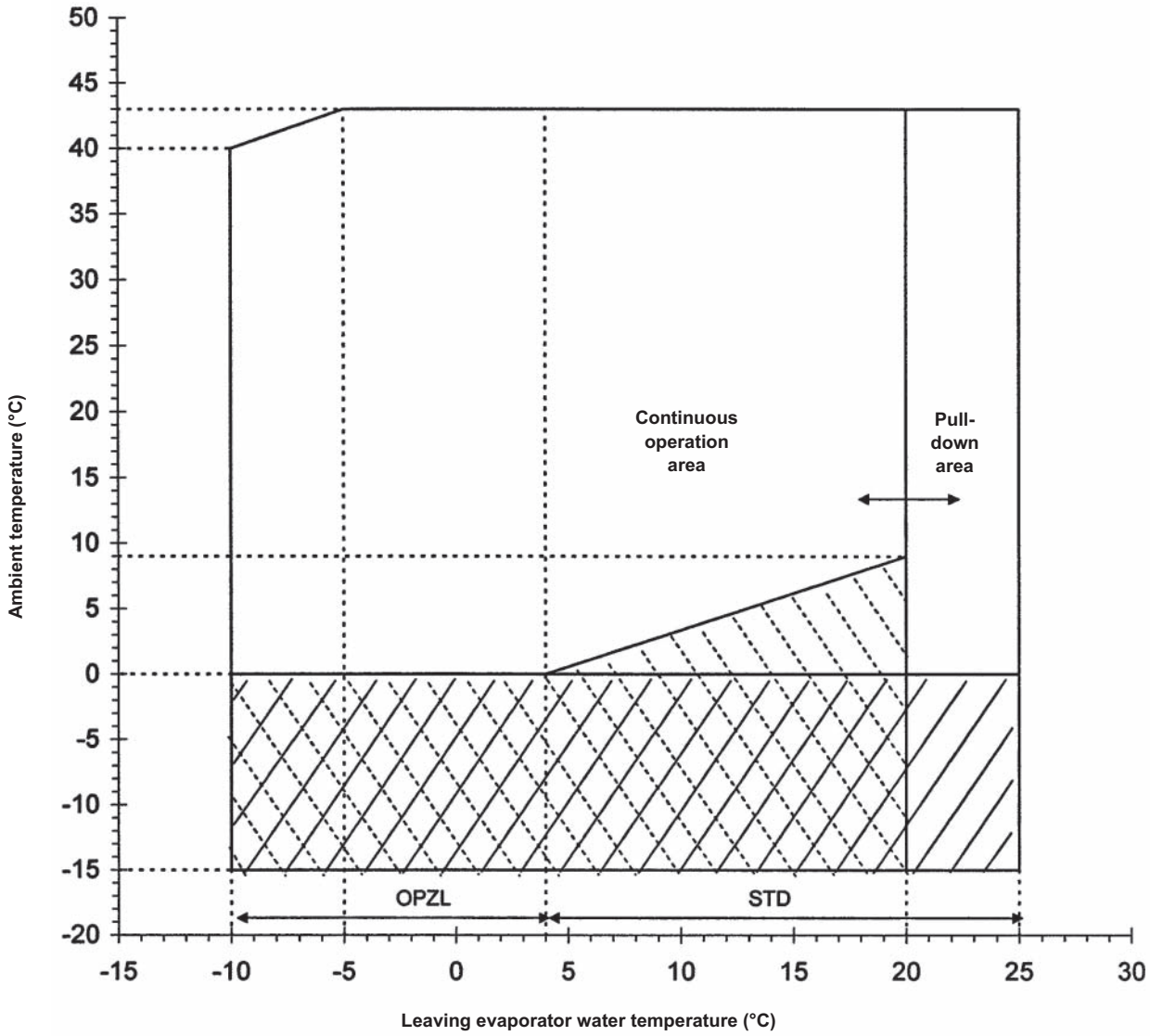
OPIF Option Inverter Fans EWAQ080-100-180-210-240-260

4TW57593-1B

10 Operation range

10 - 1 Operation Range

EWAQ130-150DAYN(N-P-B)



STD: Standard unit

OPZL: Leaving water evaporator from -10 to 4°C by use of glycol

Protect the water circuit against freezing by:

* OR OP10: heater tape
* Or filling up the system with a glycol solution

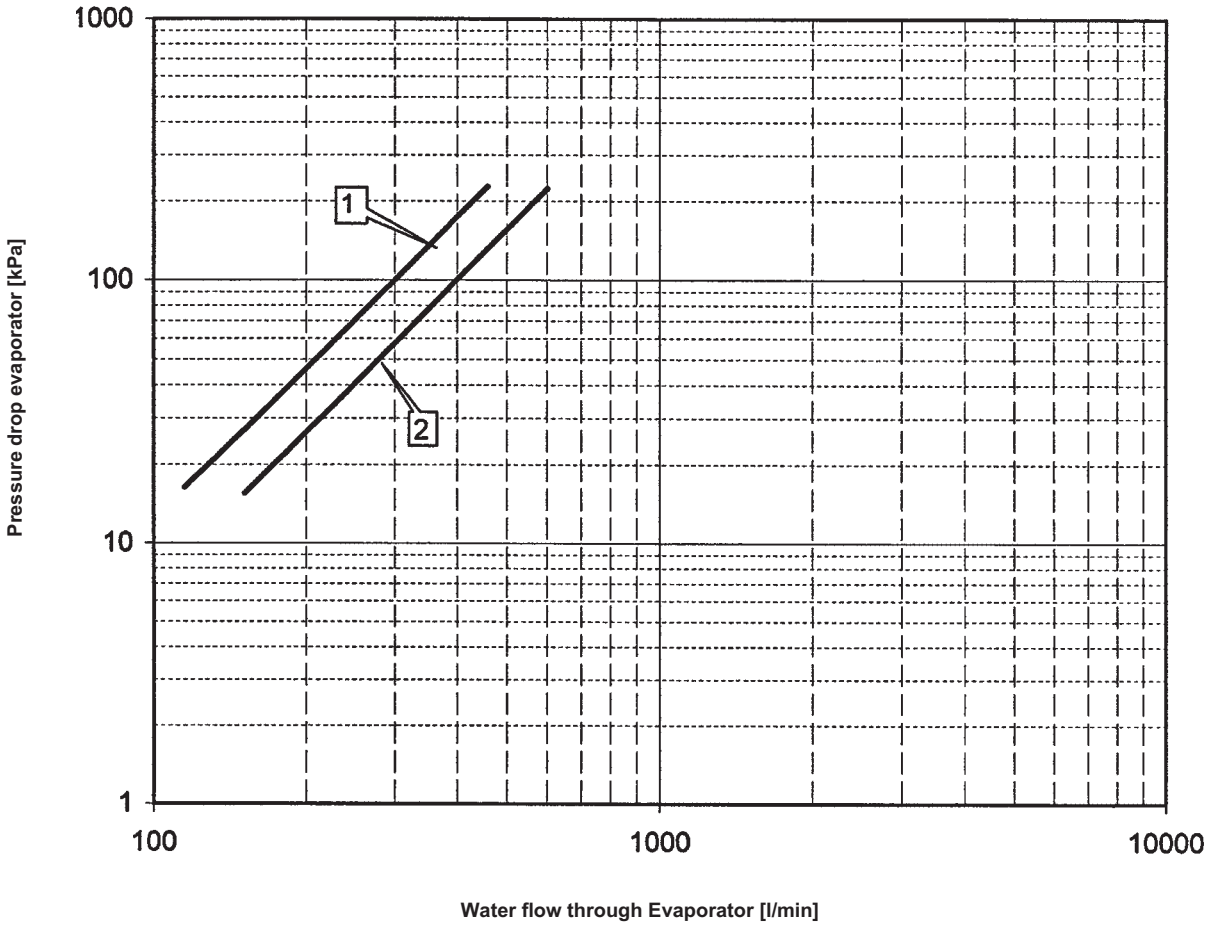
OPIF Option Inverter Fans EWAQ130-150

4TW57603-1A

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWAQ080-100DAYN(N-P-B)



1. EWAQ080DAYN*

2. EWAQ100DAYN*

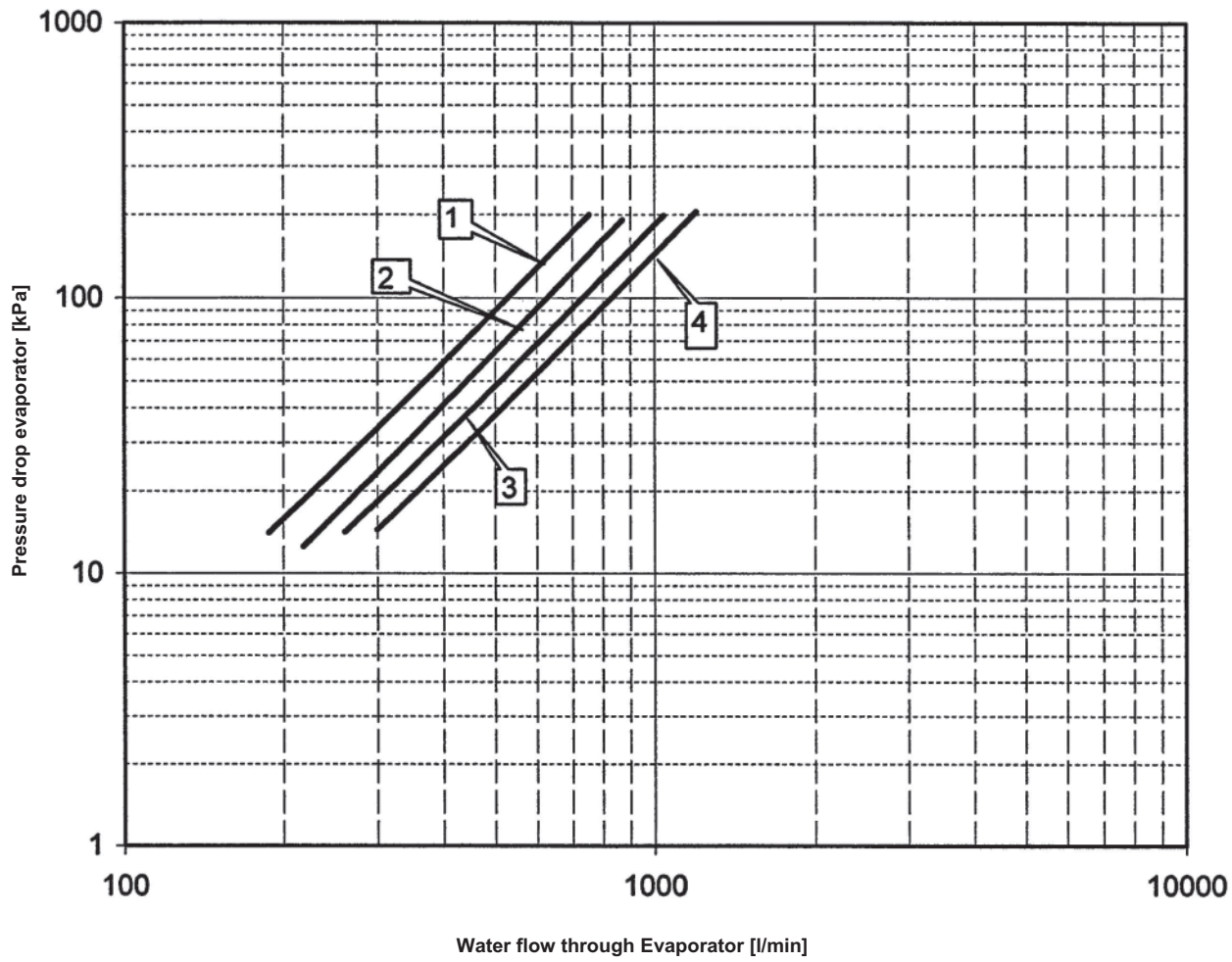
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57579-5

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWAQ130-210DAYN(N-P-B)



1. **EWAQ130DAYN***
2. **EWAQ150DAYN***
3. **EWAQ180DAYN***
4. **EWAQ210DAYN***

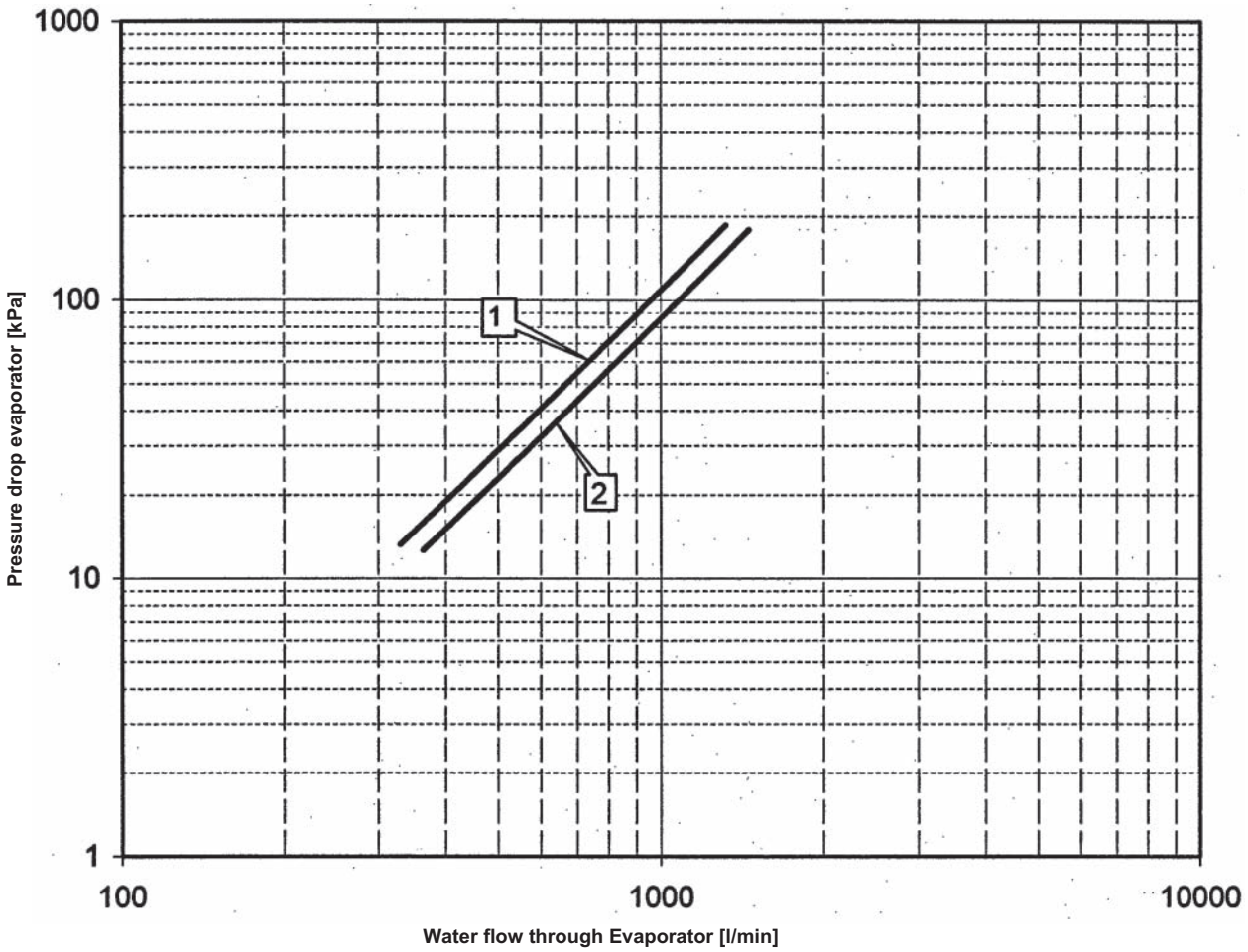
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57599-5

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWAQ240-260DAYN(N-P-B)



1. EWAQ240DAYN*

2. EWAQ260DAYN*

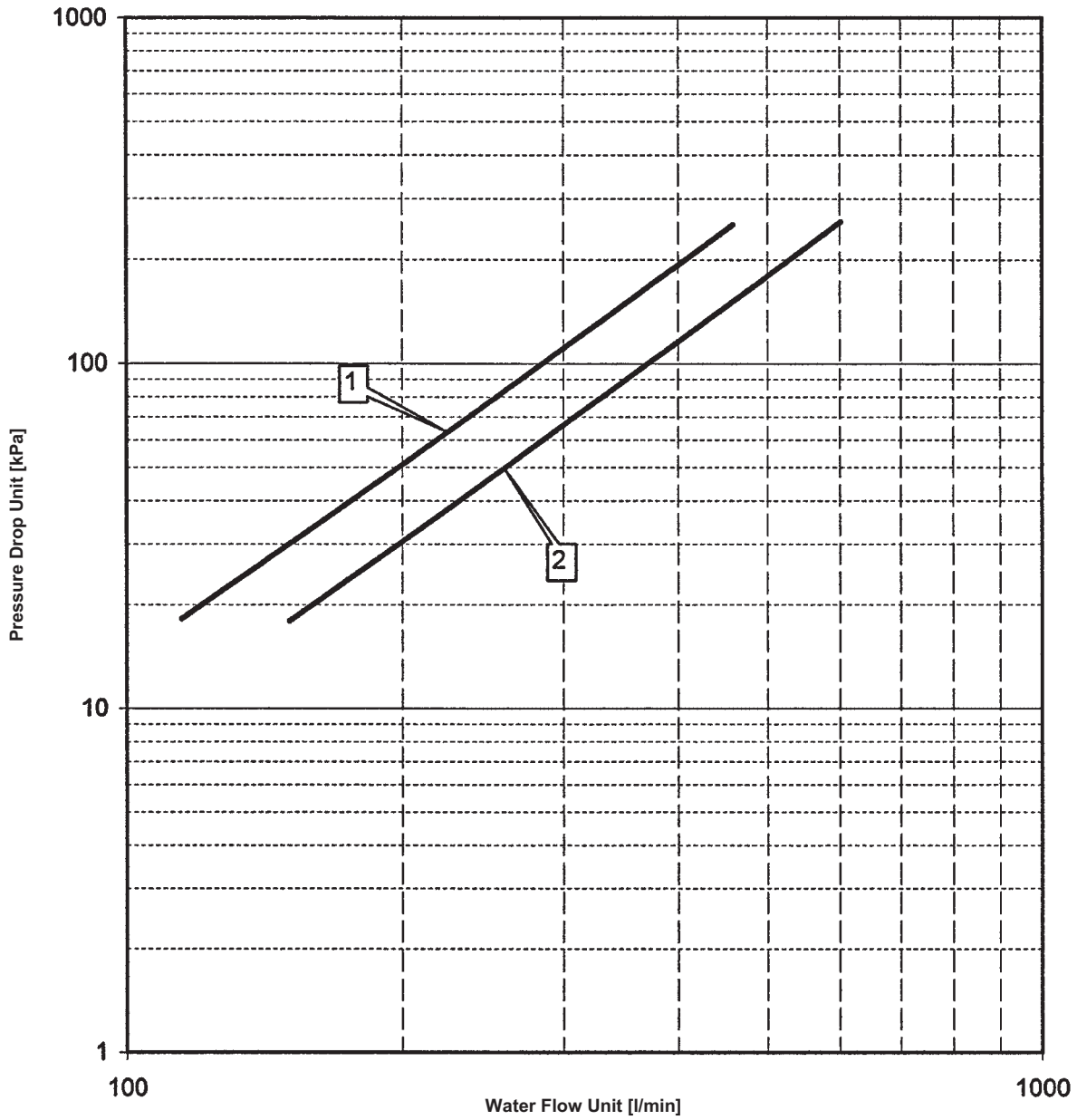
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57639-5

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ080-100DAYN(N)



1. EWAQ080DAYN* Standard model

2. EWAQ100DAYN* Standard model

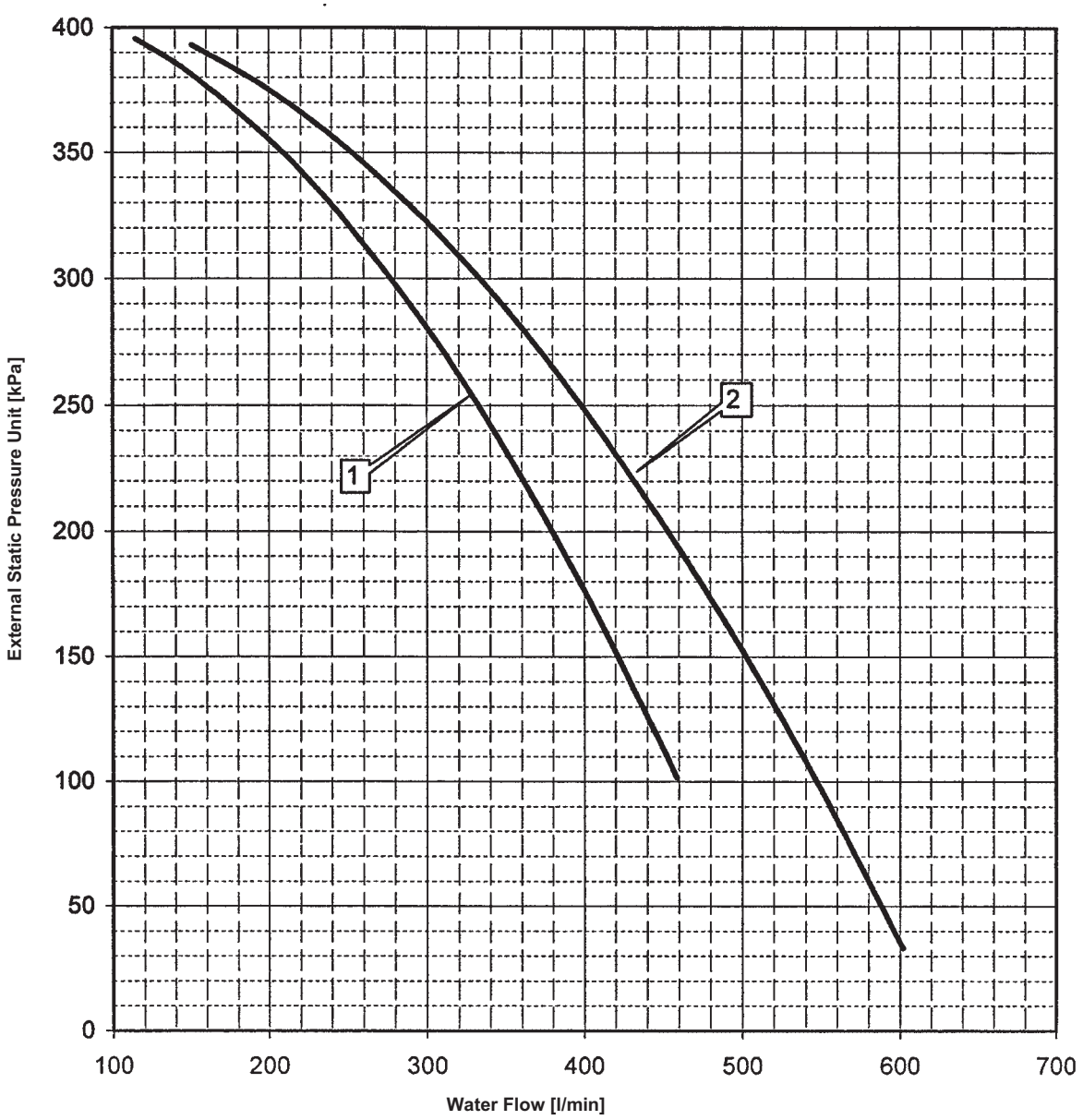
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57579-7.

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ080-100DAYN(OPHP)



1. EWAQ080DAYN* + OPHP

2. EWAQ100DAYN* + OPHP

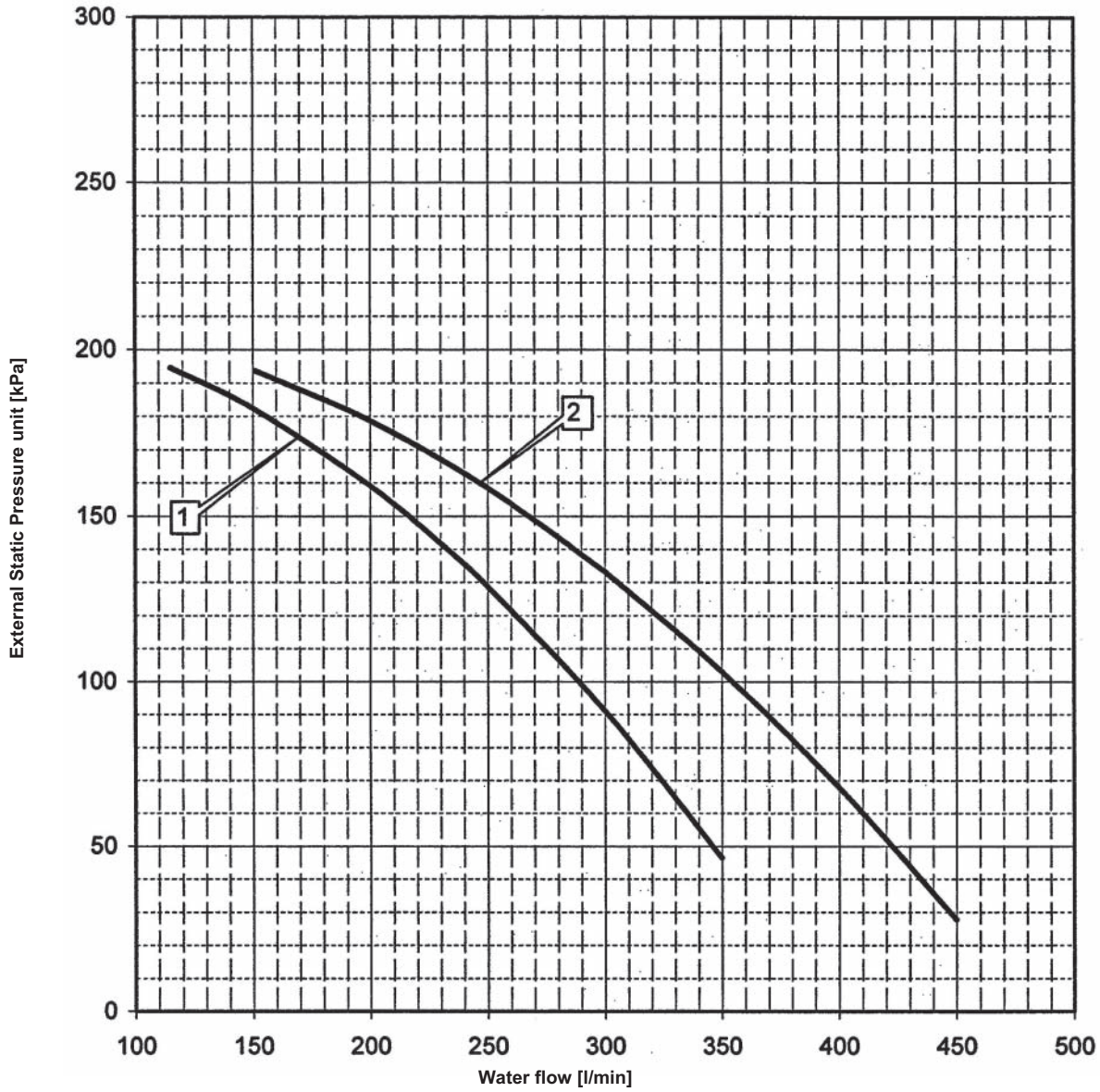
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57579-9.

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ080-100DAYN*



1. EWAQ080DAYN* + OPSP/OPTP

2. EWAQ100DAYN* + OPSP/OPTP

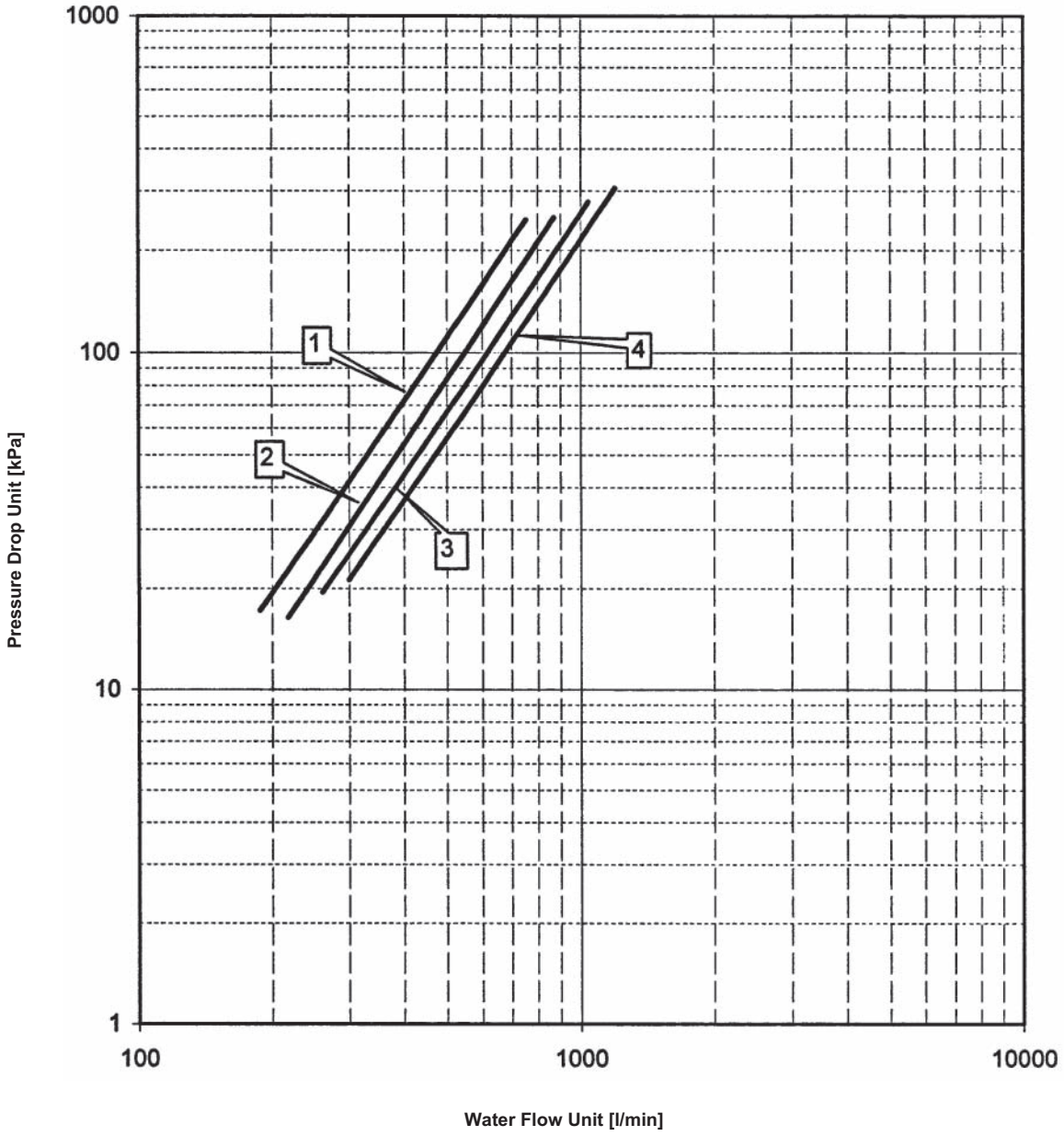
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57579-4A

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ130-210DAYN(N)



1. EWAQ130DAYN* Standard model
2. EWAQ150DAYN* Standard model
3. EWAQ180DAYN* Standard model
4. EWAQ210DAYN* Standard model

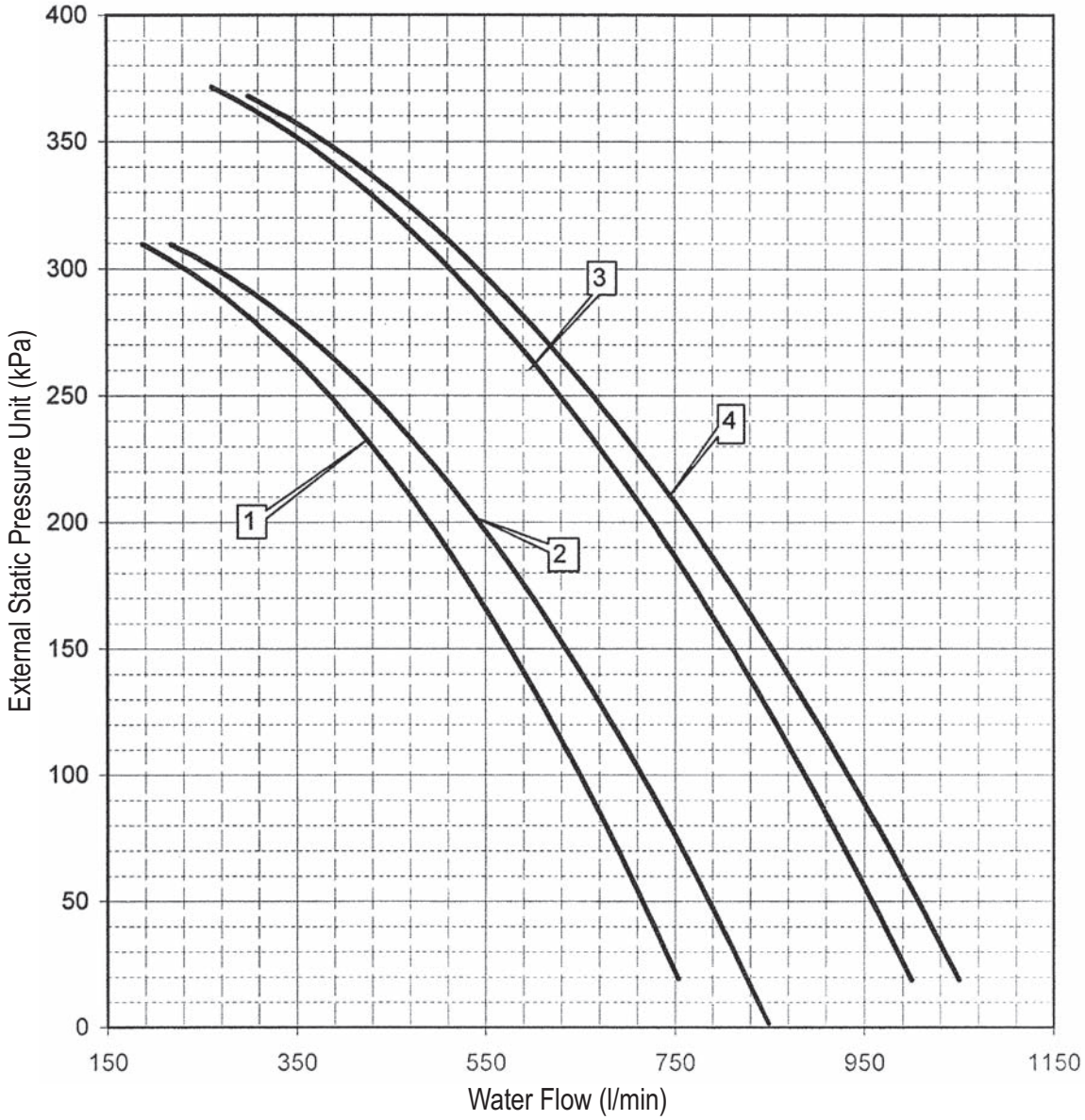
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57599-7

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ-DAYN



4TW57599-9

NOTES

1. EWAQ130DAYN* + OPHP
2. EWAQ150DAYN* + OPHP
3. EWAQ180DAYN* + OPHP
4. EWAQ210DAYN* + OPHP

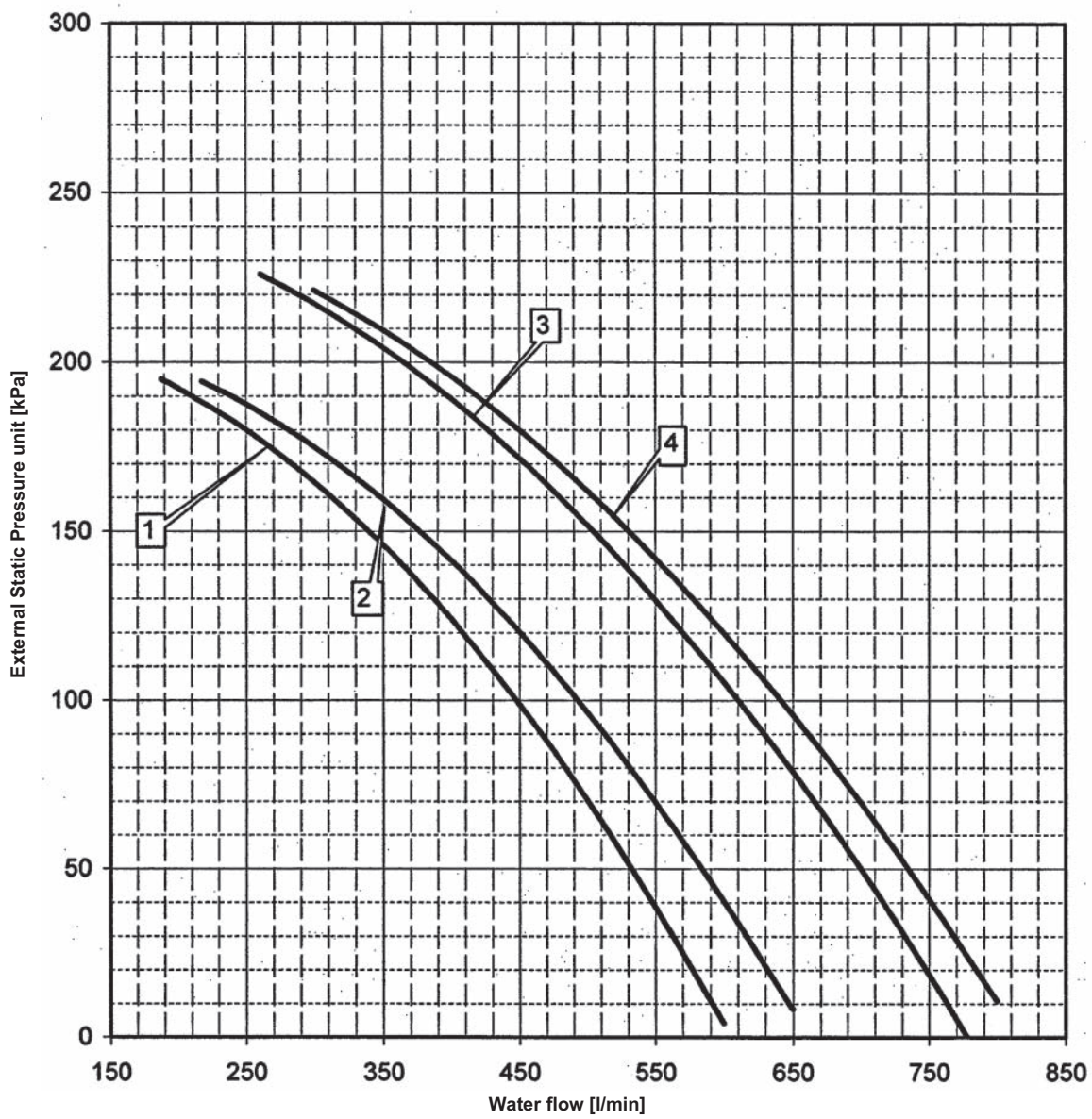
WARNING

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.

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ130-210DAYN*



1. **EWAQ130DAYN* + OPSP/OPTP**
2. **EWAQ150DAYN* + OPSP/OPTP**
3. **EWAQ180DAYN* + OPSP/OPTP**
4. **EWAQ210DAYN* + OPSP/OPTP**

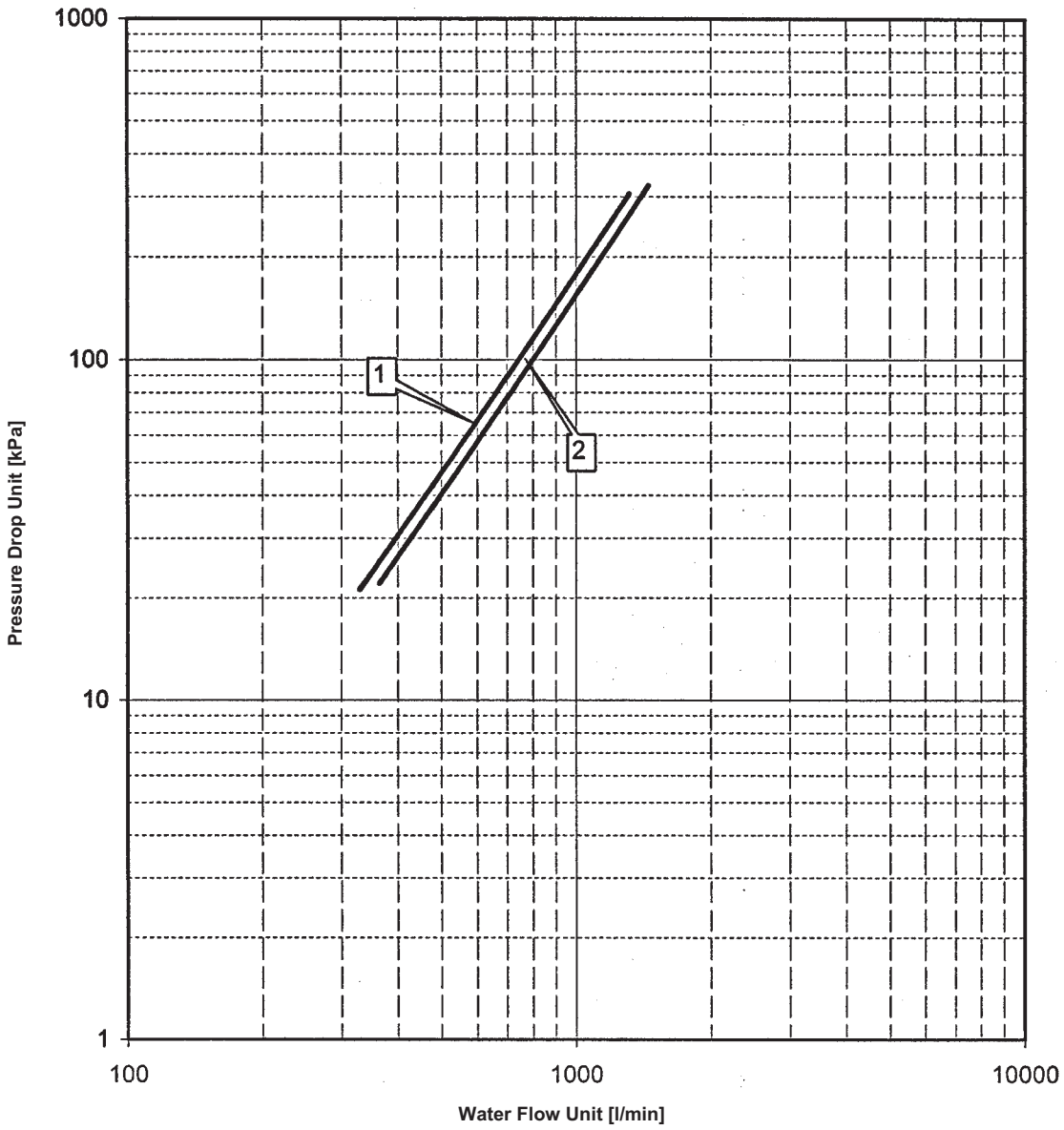
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57599-4A.

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ240-260DAYN(N)



1. EWAQ240DAYN* Standard model

2. EWAQ260DAYN* Standard model

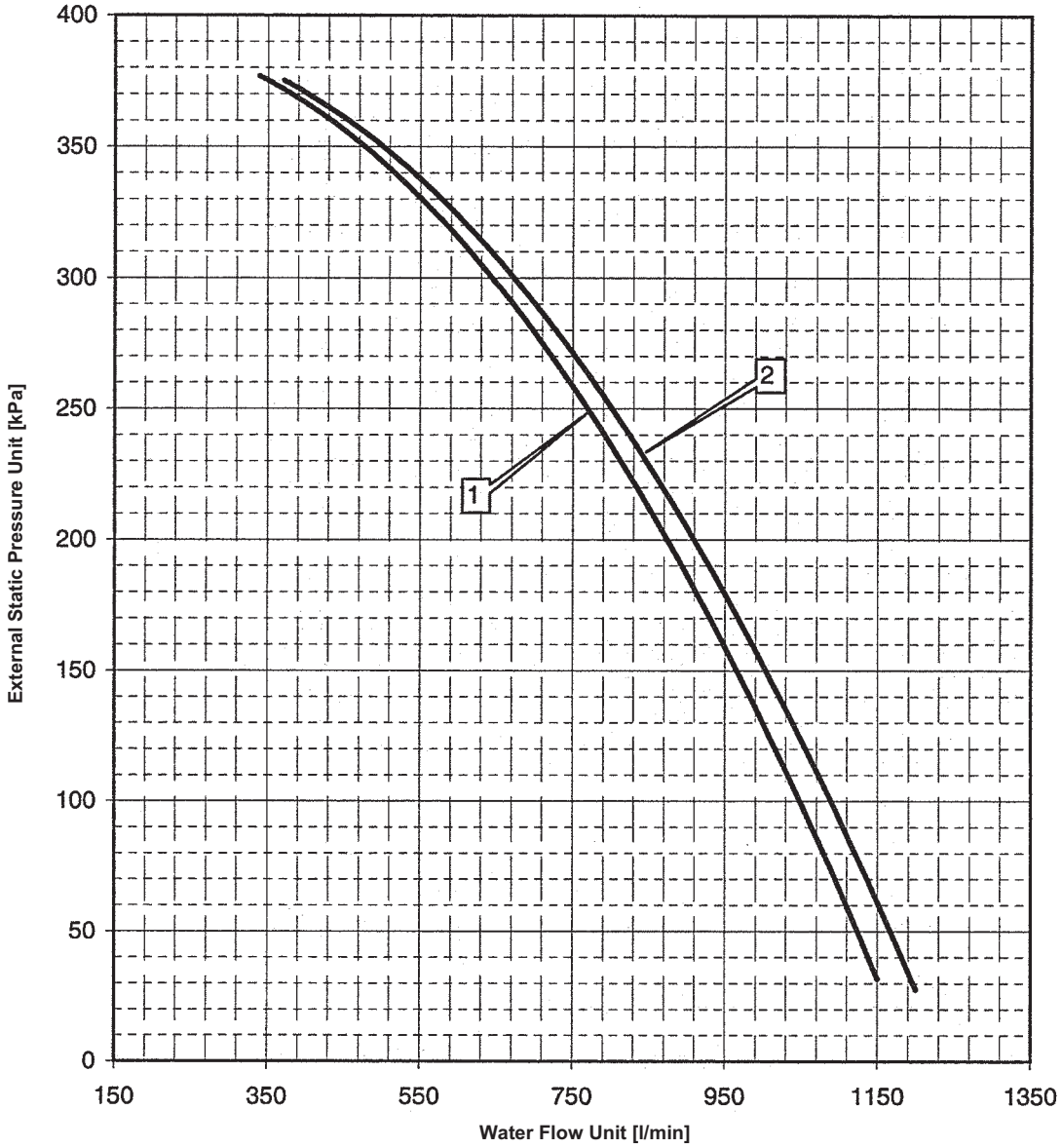
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57639-7

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ240-260DAYN(OPHP)



1. EWAQ240DAYN* + OPHP

2. EWAQ260DAYN* + OPHP

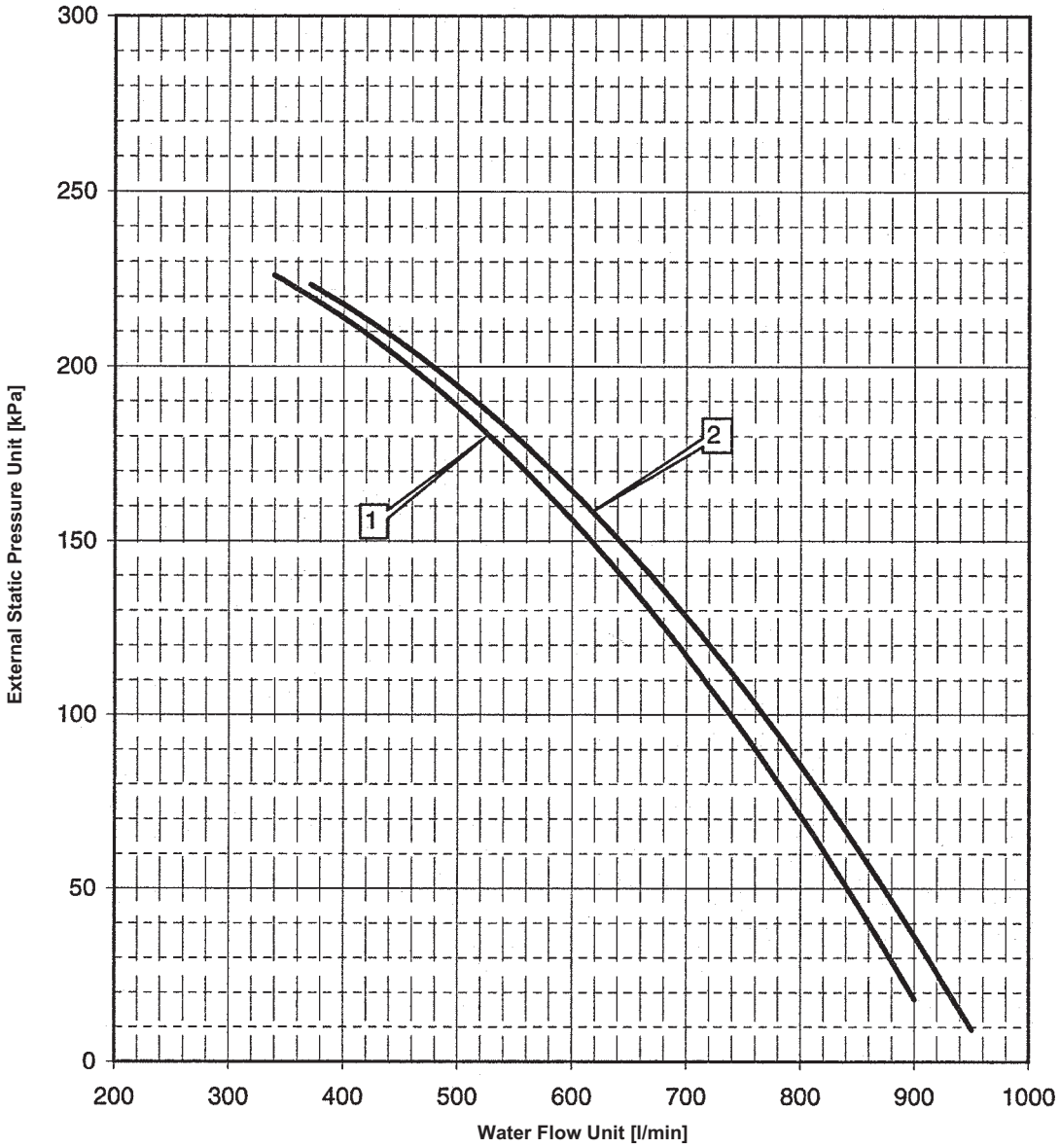
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57639-9A

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWAQ240-260DAYN*



1. EWAQ240DAYN* + OPSP/OPTP

2. EWAQ260DAYN* + OPSP/OPTP

Warning:
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.

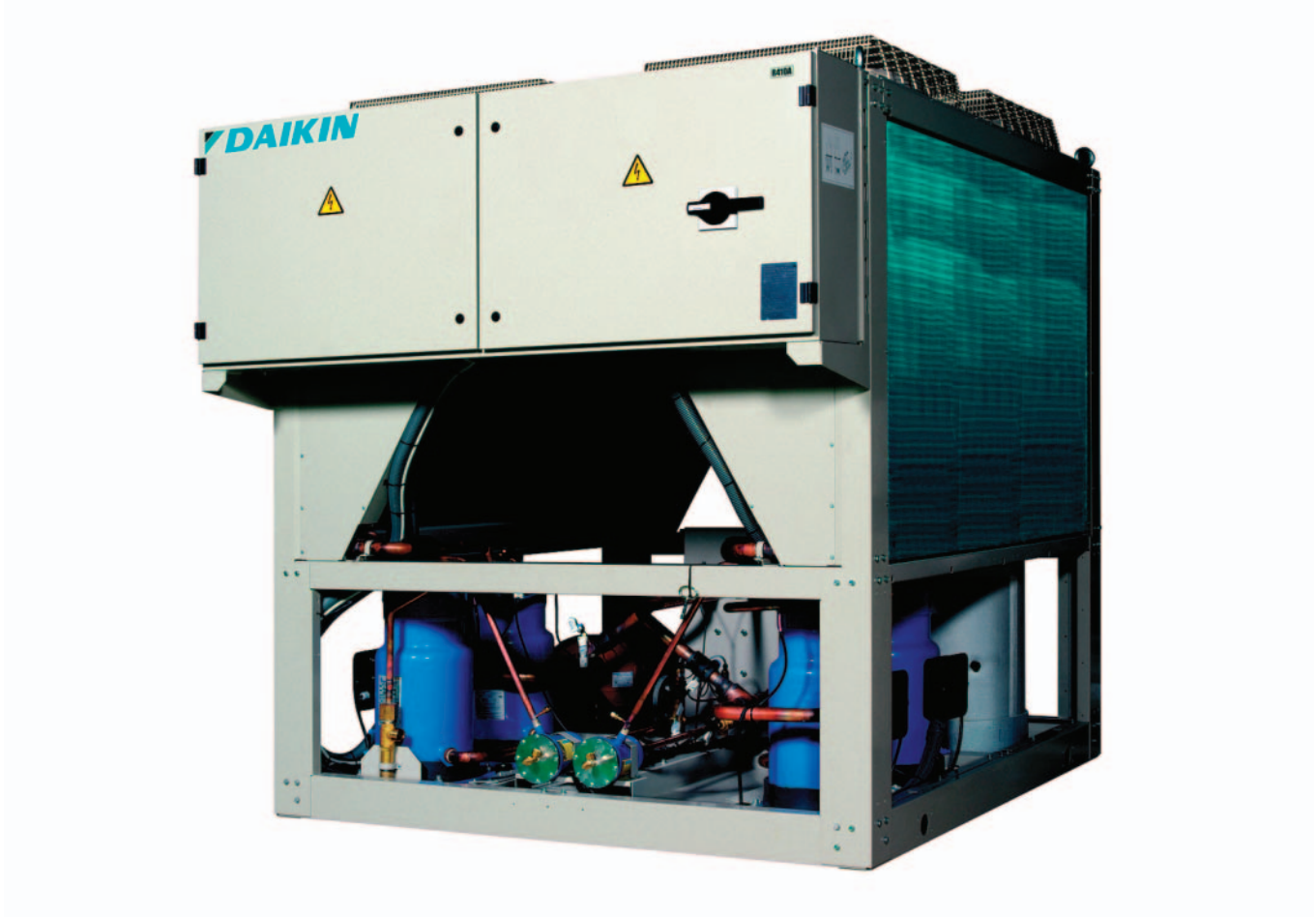
4TW57639-4B

TABLE OF CONTENTS

EWYQ-DAYN

1 Features

- Wide capacity range: 80 to 250kW with 8 heat pump models
- Optimised for use with R-410A
- Multiple refrigerant circuits and multiple compressors per circuit
- Reliable and efficient scroll with high EER values
- Anti-corrosion treated aluminium coils
- Low operating sound level
- Easy 'plug and play' installation
- Unit dimensions allow easy transportation
- Fans protected against abnormal operation (4 to 8 fans depending on unit size)
- Safety valves in each circuit
- Electronic circuit breakers
- Electronic expansion valve
- True dual plate brazed plate heat exchanger
- Sight glass
- All hydronics can be accessed easily from 3 sides (no surrounding cabinet)
- Separate switchbox for easy access
- Compressors and controls at unit side
- Increased reliability via 2 independent refrigerant circuits
- Non hermetic filter/dryer
- Daikin Pcaso controller with user friendly and powerful LCD interface



2 Specifications

2-1 Technical Specifications					EWYQ080DAYN	EWYQ100DAYN	EWYQ130DAYN	EWYQ150DAYN	EWYQ180DAYN	EWYQ210DAYN	EWYQ230DAYN	EWYQ250DAYN
Cooling capacity	Nom.			kW	76.6 (1) / 78.1 (2)	100 (1) / 101 (2)	135 (1) / 138 (2)	144 (1) / 147 (2)	182 (1) / 185 (2)	210 (1) / 213 (2)	229 (1) / 233 (2)	251 (1) / 254 (2)
Heating capacity	Nom.			kW	88.2 (1) / 86.5 (2)	115 (1) / 113 (2)	150 (1) / 148 (2)	166 (1) / 163 (2)	200 (1) / 197 (2)	227 (1) / 223 (2)	260 (1) / 256 (2)	283 (1) / 279 (2)
Capacity steps				%	0-50-100		0-25-50-75-100		21/29-43/50/ 57-71/79-100	0-25-50-75-100	22/28-44/50/ 56-72/78-100	0-25-50-75-100
Power input	Cooling	Nom.		kW	26.8 (1) / 27.5 (2)	36.7 (1) / 37.1 (2)	48.4 (1) / 49.0 (2)	56.5 (1) / 57.1 (2)	64.8 (1) / 65.7 (2)	76.5 (1) / 77.2 (2)	83.6 (1) / 83.8 (2)	95.1 (1) / 95.1 (2)
	Heating	Nom.		kW	30.5 (1) / 31.0 (2)	38.7 (1) / 39.1 (2)	50.5 (1) / 51.1 (2)	59.8 (1) / 60.2 (2)	69.2 (1) / 69.9 (2)	78.5 (1) / 79.1 (2)	85.9 (1) / 86.0 (2)	98.6 (1) / 98.5 (2)
EER					2.86 (1) / 2.84 (2)	2.72 (1) / 2.72 (2)	2.79 (1) / 2.82 (2)	2.55 (1) / 2.57 (2)	2.81 (1) / 2.82 (2)	2.75 (1) / 2.76 (2)	2.74 (1) / 2.78 (2)	2.64 (1) / 2.67 (2)
ESEER					3.84 (1) / 3.76 (2)	3.68 (1) / 3.68 (2)	4.03 (1) / 3.99 (2)	3.84 (1) / 3.84 (2)	4.06 (1) / 4.02 (2)	3.94 (1) / 3.96 (2)	3.93 (1) / 4.04 (2)	3.76 (1) / 3.87 (2)
COP					2.89 (1) / 2.79 (2)	2.97 (1) / 2.89 (2)	2.97 (1) / 2.90 (2)	2.78 (1) / 2.71 (2)	2.89 (1) / 2.82 (2)	2.89 (1) / 2.82 (2)	3.03 (1) / 2.98 (2)	2.87 (1) / 2.83 (2)
Casing	Material				Polyester painted galvanised steel plate							
Dimensions	Unit	Height		mm	2,311							
		Width		mm	2,000							
		Depth		mm	2,566		2,631		3,081		4,850	
Weight	Unit			kg	1,400	1,450	1,550	1,600	1,850	1,900	3,200	3,300
	Operation weight			kg	1,415	1,465	1,567	1,619	1,875	1,927	3,239	3,342
	Packed unit			kg	1,450	1,500	1,600	1,650	1,900	1,950	3,250	3,350
Water heat exchanger	Type				Brazed plate, one per unit							
	Filter	Type			Strainer galvanized							
		Diameter perforations		mm	1.0							
	Minimum water volume in the system			l	393 (7)	511 (7)	334 (7)	370 (7)	446 (7)	504 (7)	578 (7)	629 (7)
	Water flow rate	Min.		l/min	110	143	195	208	262	302	331	361
		Max.		l/min	503	654	854	946	1,141	1,290	1,479	1,611
	Nominal water flow	Cooling		l/min	221	287	390	416	525	605	662	722
		Heating		l/min	251	327	427	473	570	645	740	806
	Nominal water pressure drop	Cooling	Total	kPa	36		43	38	41	44	39	38
		Heating	Total	kPa	47	46	51	49	48	50	48	46
	Insulation material				Foamed synthetic elastomer							
	Model	Type			PT120		DV47HP		DV58HP			
		Quantity			1							
Air heat exchanger	Type				Cross fin coil/Hi-Xss tubes and poly ethylene coated waffle fins							
	Rows	Quantity			2		3					
	Stages	Quantity			56		48	56			48	
	Fin pitch			mm	1.8							
	Face area			m²	2.46		2.11	2.46	3.02		2.11	
	Coils	Quantity			4						8	
Hydraulic components	Unit water volume			l	15.0 @ 0		17.0 @ 0	19.0 @ 0	25.0 @ 0	27.0 @ 0	39.0 @ 0	42.0 @ 0
	Nominal water pressure drop unit	Cooling		kPa	42	43	55	51	61	70		73
		Heating		kPa	53	56	65	66	72	79	86	91
Fan	Quantity				4				6		8	
	Air flow rate	Nom.		m³/min	780		800	860	1,290		1,600	
	Discharge direction				Vertical							
	Speed			rpm	880		900	970			900	
Fan motor	Output			W	500		600	700			600	
	Quantity				4				6		8	
	Drive				Direct drive							
Sound power level	Cooling	Nom.		dBA	86		88	89	90		91	
Compressor	Type				Scroll compressor							
	Quantity				2		4		2	4	2	4
	Model				SJ180	SJ240	SJ161	SJ180		SJ240		SJ300
	Speed			rpm	2,900							
	Oil	Charged volume		l	6.7		3.3	6.7				

2 Specifications

2-1 Technical Specifications					EWYQ080DAYN	EWYQ100DAYN	EWYQ130DAYN	EWYQ150DAYN	EWYQ180DAYN	EWYQ210DAYN	EWYQ230DAYN	EWYQ250DAYN
Compressor 2	Model				-				SJ240	-	SJ300	-
	Quantity				-				2	-	2	-
	Speed			rpm	-				2,900	-	2,900	-
	Oil	Charged volume		l	-				6.7	-	6.7	-
Operation range	Water side	Cooling	Min.	ºCDB	-10							
			Max.	ºCDB	25							
		Heating	Min.	ºCDB	25							
			Max.	ºCDB	50							
	Air side	Cooling	Min.	ºCDB	-15							
			Max.	ºCDB	43							
		Heating	Min.	ºCDB	-10							
			Max.	ºCDB	21							
Refrigerant	Type				R-410A							
	Control				Electronic expansion valve							
	Circuits	Quantity			1		2					
Refrigerant circuit	Charge			kg	33	37	23	26	32		43	
Refrigerant circuit 2	Charge			kg	-		23	26	32		43	
Refrigerant oil	Type				FVC68D							
Piping connections	Water heat exchanger inlet / outlet				3" OD						3"	
	Water heat exchanger drain				1/2"G							
Safety devices	Item	01			Flowswitch		Overcurrent relays for compressors and fans		High pressure switch			
		02			Reverse phase protector		High pressure switch		Pressure relief valve			
		03			High pressure switch		Pressure relief valve		Low pressure protection		Low pressure safety	
		04			Pressure relief valve		Low pressure safety		Freeze up protection			
		05			Low pressure safety		Freeze up protection		Flowswitch			
		06			Freeze up protection		Flowswitch		Discharge temperature protector			
		07			Electronic protection module compressors		Discharge temperature protector		Reverse phase protector			
		08			Overcurrent relays for compressors and fans		Reverse phase protector		Electronic protection module compressors (only for SJ180, SJ240)		Electronic protection module compressors	
		09			Discharge temperature protector		Electronic protection module compressors (only for SJ180, SJ240)		Overcurrent relays for compressors and fans			

2 Specifications

2-2 Electrical Specifications				EWYQ080DAYN	EWYQ100DAYN	EWYQ130DAYN	EWYQ150DAYN	EWYQ180DAYN	EWYQ210DAYN	EWYQ230DAYN	EWYQ250DAYN
Compressor	Starting current		A	195	215	158	195		215		260
	Nominal running current (RLA)		A	25	31	19	25		31		40
	Maximum running current		A	39	51	35	39		51		65
	Starting method			Direct on line							
	Crankcase heater		W	75		65	75				
Compressor 2	Starting current		A	-				215	-	260	-
	Nominal running current (RLA)		A	-				31	-	40	-
	Maximum running current		A	-				51	-	65	-
	Starting method			-				Direct on line	-	Direct on line	-
	Crankcase heater		W	-				75	-	75	-
Power supply	Phase			3~							
	Frequency		Hz	50							
	Voltage		V	400							
	Voltage range	Min.	%	-10							
		Max.	%	10							
Unit	Starting current		A	201	221	161	199	221		266	
	Maximum starting current		A	240	272	269	320	357	368	440	468
	Current	Zmax	List	No requirements							
	Nominal running current (RLA)	Cooling	A	60	72	88	113	131	144	162.0	181
	Maximum running current		A	96	120	160	177	209	233	262	290
	Recommended fuses according to IEC standard 269-2			3 x 125gL	3 x 160gL	3 x 200gL		3 x 250gL		3 x 300gL	3 x 355gL
Fans	Starting method			Direct on line							
	Maximum running current		A	1.5		1.4	2.1			1.6	
Control circuit	Phase			1~							
	Frequency		Hz	50							
	Voltage		V	230 (6)							
	Crankcase heater (E1/2HC)		W	2x75		4x65	4x75				

Notes

(1) For -N models (standard)

(2) For -P models (with optional pump / + OPSP) and for -B models (with optional pump and buffertank / + OPSP + OPBT)

(3) Nominal cooling capacity according EN14511:2011 conditions: Evaporator 12ºC/7ºC; ambient 35ºC

(4) Nominal cooling power input according EN14511:2011 conditions: Evaporator 12ºC/7ºC; ambient 35ºC

(5) Nominal heating capacity according EN14511:2011 conditions: Condenser 40ºC/45ºC; ambient: drybulb 7ºC, wetbulb 6ºC

(6) Nominal heating power input according EN14511:2011 conditions: Condenser 40ºC/45ºC; ambient: drybulb 7ºC, wetbulb 6ºC

(7) Minimum required water volume for standard thermostat settings and at nominal conditions.

(8) Supplied by factory installed transformers

(9) Initial starting current = maximum running current 4 fans (1 circuit) + starting current 1 compressor

(10) Maximum starting current = maximum running current 4 fans + maximum running current 3 compressors + starting current 1 compressor

(11) See separate drawing for operation range

(12) Control circuit voltage: AC (supplied by factory installed transformers)

(13) Initial starting current = maximum running current 2 fans (1 circuit) + starting current 1 compressor

(14) Initial starting current = maximum running current 3 fans (1 circuit) + starting current 1 compressor

(15) Maximum starting current = maximum running current 6 fans + maximum running current 3 compressors + starting current 1 compressor

(16) Control circuit voltage: 24AC (supplied by factory installed transformers)

(17) Maximum starting current = maximum running current 8 fans + maximum running current 3 compressors + starting current 1 compressor

3 Options

3 - 1 Options

Optional equipment for EWAQ-DAYN

Capacity: 080-260 kW

EWAQ080DAYNN EWAQ100DAYNN EWAQ130DAYNN EWAQ150DAYNN EWAQ180DAYNN EWAQ210DAYNN EWAQ240DAYNN EWAQ260DAYNN

Option number	Option description	Unit size								Availability
		080	100	130	150	180	210	240	260	
	Standard unit	o	o	o	o	o	o	o	o	
OPSC	Single pump contactor	o	o	o	o	o	o	o	o	Factory mounted
OPTC	Twin pump contactor	o	o	o	o	o	o	o	o	Factory mounted
OPSP	Single pump	o	o	o	o	o	o	o	o	Factory mounted
OPTP	Twin pump (1 pump house, dual motor)	o	o	o	o	o	o	o	o	Factory mounted
OPHP	high ESP pump (single pump only)	o	o	o	o	o	o	o	o	Factory mounted
OPBT	Buffer tank	o	o	o	o	o	o	o	o	Factory mounted
OPIF	Inverter fans for low ambient (-15 °C)	o	o	o	o	o	o	o	o	Factory mounted
OPZL	Glycol 0°C/-10°C	o	o	o	o	o	o	o	o	Factory mounted
OP03	Dual pressure relief valve	o	o	o	o	o	o	o	o	Factory mounted
OP10	evaporator heater tape	o	o	o	o	o	o	o	o	Factory mounted
OP12	option valves (discharge-, liquid line- and suction stop valve)	o (S)	o (S)	o (S)	o (S)	o (S)	o (S)	o (S)	o (S)	Factory mounted
OP57	A-meter, V-meter	o	o	o	o	o	o	o	o	Factory mounted
OPLN	Low noise = OPIF + compressorhousing	o	o	o	o	o	o	o	o	Factory mounted
OPCG	Condenser protection grilles	o	o	o	o	o	o	o	o	Factory mounted
	Available kits									
EKLONPG	Gateway for LON*	o	o	o	o	o	o	o	o	Kit
EKBNPG	Gateway for BACNET*	o	o	o	o	o	o	o	o	Kit
EKACPG	Adress card including	o	o	o	o	o	o	o	o	Kit
	Daikin Integrated Chiller Network (DICN)									
	Serial Communication (Modbus)									
EKRUPG	Remote user interface	o	o	o	o	o	o	o	o	Kit
EKGN210	Waterpipe kit	o	o	o	o	o	o	-	-	Kit
EKGN260	Waterpipe kit	-	-	-	-	-	-	o	o	Kit

Notes

o Available

\- Not available

(S) option required for swedish national law SNFS1992:16

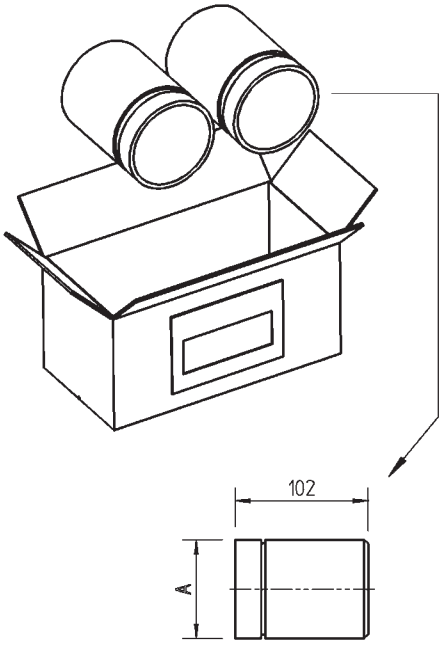
* To install EKLONPG & EKBNPG => EKACPG needs to be installed on the unit.
For the EKLONPG & EKBNPG design guide, please contact your local dealer.

3TW57579-8B

3 Options

3 - 1 Options

Content :2 counterpipes for welding onto fieldpiping



	Weight
EKGN210	2.0 kg
EKGN260	2.5 kg

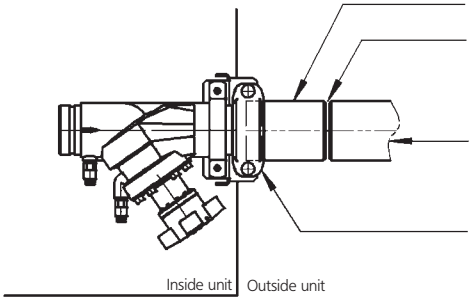
Box : 200 x 100 x 100

* Material : Blank steel
* Ps = 10 bar

	Ø	A
EKGN210	3" OD	76.1
EKGN260	3"	88.9

EWA/YQ080DAYN*	3" OD
EWA/YQ100DAYN*	
EWA/YQ130DAYN*	
EWA/YQ150DAYN*	
EWA/YQ180DAYN*	
EWA/YQ210DAYN*	
EWAQ240DAYN*	3"
EWAQ260DAYN*	
EWYQ230DAYN*	
EWYQ250DAYN*	

Mounting instructions :



Counterpipe : in this kit

Weld before connection victaulic coupling

To be painted after welding

Fieldpiping

Victaulic coupling : delivered with unit

4TW58009-1

3 Options

3 - 1 Options

EWYQ080-100DAYN

TECHNICAL SPECIFICATIONS OPTIONS						
OPSP					**OPSP + OPBT**	
Units			**EWYQ080DAYN**	**EWYQ100DAYN**	**EWYQ080DAYN**	**EWYQ100DAYN**
Weight	Additional machine weight	kg	250		300	
	Additional operation weight	kg	268		508	
	Additional gross weight	kg	250		300	
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP50-240/2		TP50-240/2	
	Efficiency		85.9%		85.9%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2890-2910		2890-2910	
	Nominal static height unit cooling	kPa	173	154	173	154
Hydraulic components	Buffertank	l	-		190	
	Additional unit water volume	l	18		208	
	Expansion vessel	l	35		35	
	Pre-charge pressure exp. vessel	bar	1.5		1.5	
	Safety valve	bar	3		3	
OPHP					**OPTP**	
Units			**EWYQ080DAYN**	**EWYQ100DAYN**	**EWYQ080DAYN**	**EWYQ100DAYN**
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP50-430/2		TPD50-240/2	
	Efficiency		89.2%		85.9%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2920-2940		2890-2910	
	Nominal static height unit cooling	kPa	365	348	See OPSP	

3TW57651-1D

EWYQ080-100DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWYQ080DAYN**	**EWYQ100DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	2.2	
	Maximum running current	A	4.45	
	Starting current	A	42	
OPHP				
Units			**EWYQ080DAYN**	**EWYQ100DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	5.5	
	Maximum running current	A	11.2	
	Starting current	A	131	
OP10				
Units			**EWYQ080DAYN**	**EWYQ100DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

3TW57651-1D

3 Options

3 - 1 Options

EWYQ130-150DAYN

TECHNICAL SPECIFICATIONS OPTIONS						
OPSP					**OPSP + OPBT**	
Units			**EWYQ130DAYN**	**EWYQ150DAYN**	**EWYQ130DAYN**	**EWYQ150DAYN**
Weight	Additional machine weight	kg	250		300	
	Additional operation weight	kg	286		526	
	Additional gross weight	kg	250		300	
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-230/2		TP65-230/2	
	Efficiency		87.1%		87.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2900-2920		2900-2920	
	Nominal static height unit cooling	kPa	141		141	
Hydraulic components	Buffertank	l	-		190	
	Additional unit water volume	l	36		226	
	Expansion vessel	l	35		35	
	Pre-charge pressure exp. vessel	bar	1.5		1.5	
	Safety valve	bar	3		3	
OPHP					**OPTP**	
Units			**EWYQ130DAYN**	**EWYQ150DAYN**	**EWYQ130DAYN**	**EWYQ150DAYN**
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-340/2		TPD65-230/2	
	Efficiency		89.2%		87.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2920-2940		2900-2920	
	Nominal static height unit cooling	kPa	261		See OPSP	

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EWYQ130-150DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWYQ130DAYN**	**EWYQ150DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	3	
	Maximum running current	A	6.3	
	Starting current	A	58	
OPHP				
Units			**EWYQ130DAYN**	**EWYQ150DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	5.5	
	Maximum running current	A	11.2	
	Starting current	A	131	
OP10				
Units			**EWYQ130DAYN**	**EWYQ150DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

3TW57671-1E

3 Options

3 - 1 Options

EWYQ180-210DAYN

TECHNICAL SPECIFICATIONS OPTIONS						
OPSP					**OPSP + OPBT**	
Units			**EWYQ180DAYN**	**EWYQ210DAYN**	**EWYQ180DAYN**	**EWYQ210DAYN**
Weight	Additional machine weight	kg	250		300	
	Additional operation weight	kg	286		526	
	Additional gross weight	kg	250		300	
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-260/2		TP65-260/2	
	Efficiency		88.1%		88.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2920-2940		2920-2940	
	Nominal static height unit cooling	kPa	152	128	152	128
Hydraulic components	Buffertank	l	-		190	
	Additional unit water volume	l	36		226	
	Expansion vessel	l	35		35	
	Pre-charge pressure exp. vessel	bar	1.5		1.5	
	Safety valve	bar	3		3	
OPHP					**OPTP**	
Units			**EWYQ180DAYN**	**EWYQ210DAYN**	**EWYQ180DAYN**	**EWYQ210DAYN**
Pump	Type		Single stage in line pumps		Single stage in line pumps	
	Quantity		1		1	
	Manufacturer		Grundfos		Grundfos	
	Model		TP65-410/2		TPD65-260/2	
	Efficiency		90.4%		88.1%	
	Efficiency level		IE3		IE3	
	Rated speed	rpm	2910-2920		2920-2940	
	Nominal static height unit cooling	kPa	306	286	See OPSP	

3TW57691-1E

EWYQ180-210DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWYQ180DAYN**	**EWYQ210DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	4	
	Maximum running current	A	8	
	Starting current	A	98	
OPHP				
Units			**EWYQ180DAYN**	**EWYQ210DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	7.5	
	Maximum running current	A	15.2	
	Starting current	A	169	
OP10				
Units			**EWYQ180DAYN**	**EWYQ210DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

3TW57691-1E

3 Options

3 - 1 Options

EWYQ230-250DAYN

TECHNICAL SPECIFICATIONS OPTIONS								
OPSP						**OPSP + OPBT**		
Units			**EWYQ230DAYN**	**EWYQ250DAYN**		**EWYQ230DAYN**	**EWYQ250DAYN**	
Weight	Additional machine weight	kg	250			300		
	Additional operation weight	kg	271			511		
	Additional gross weight	kg	250			300		
Pump	Type		Single stage in line pumps			Single stage in line pumps		
	Quantity		1			1		
	Manufacturer		Grundfos			Grundfos		
	Model		TP65-260/2			TP65-260/2		
	Efficiency		88.1%			88.1%		
	Efficiency level		IE3			IE3		
	Rated speed	rpm	2920-2940			2920-2940		
	Nominal static height unit cooling	kPa	143	127		143	127	
Hydraulic components	Buffertank	l	-			190		
	Additional unit water volume	l	21			211		
	Expansion vessel	l	50			50		
	Pre-charge pressure exp. vessel	bar	1.5			1.5		
	Safety valve	bar	3			3		
OPHP						**OPTP**		
Units			**EWYQ230DAYN**	**EWYQ250DAYN**		**EWYQ230DAYN**	**EWYQ250DAYN**	
Pump	Type		Single stage in line pumps			Single stage in line pumps		
	Quantity		1			1		
	Manufacturer		Grundfos			Grundfos		
	Model		TP65-410/2			TPD65-260/2		
	Efficiency		90.4%			88.1%		
	Efficiency level		IE3			IE3		
	Rated speed	rpm	2910-2920			2920-2940		
	Nominal static height unit cooling	kPa	303	290		See OPSP		

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EWYQ230-250DAYN

ELECTRICAL SPECIFICATIONS OPTIONS				
OPSP / OPTP				
Units			**EWYQ230DAYN**	**EWYQ250DAYN**
Std pump	Starting method		Direct on-line	
	Rated power output	kW	4	
	Maximum running current	A	8	
	Starting current	A	98	
OPHP				
Units			**EWYQ230DAYN**	**EWYQ250DAYN**
High ESP pump	Starting method		Direct on-line	
	Rated power output	kW	7.5	
	Maximum running current	A	15.2	
	Starting current	A	169	
OP10				
Units			**EWYQ230DAYN**	**EWYQ250DAYN**
Heater tape	Supply voltage	V	230+/-10%	
	Recommended fuses	A	2x10	
	Power standard model	W	1x300	
	Power model with pump	W	2x300	
	Power model with pump and buffertank	W	2x300 + 1x150	

3TW57711-1E

4 Capacity tables

4 - 1 Cooling Capacity Tables

EWYQ-DAYNN

COOLING N-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
5	080	82.7	20.7	79.1	22.5	75.3	24.5	71.3	26.6	64.4	29.1	59.2	30.7
	100	109	27.3	104	29.9	98.7	32.9	93.1	36.2	83.6	40.0	76.5	42.5
	130	148	36.4	141	39.8	134	43.5	127	47.6	116	52.3	108	55.4
	150	160	42.7	153	46.6	145	51.0	136	55.9	125	61.5	116	65.1
	180	198	49.3	189	53.7	180	58.6	170	64.1	158	71.0	150	75.9
	210	232	57.8	221	63.1	210	68.9	197	75.5	182	83.8	171	89.6
	230	251	64.3	240	69.8	228	75.9	216	82.7	194	90.3	178	95.3
	250	275	73.1	263	79.3	250	86.2	236	94.0	211	103	193	108
7	080	88.7	20.9	84.8	22.7	80.8	24.7	76.6	26.8	69.1	29.3	63.5	30.9
	100	116	27.7	111	30.3	106	33.3	100	36.7	89.4	40.5	81.8	43.0
	130	158	37.1	151	40.5	143	44.2	135	48.4	124	53.0	116	56.2
	150	169	43.2	161	47.2	153	51.6	144	56.5	132	62.1	123	65.7
	180	212	50.0	202	54.4	193	59.3	182	64.8	169	71.7	160	76.6
	210	247	58.8	235	64.0	223	69.9	210	76.5	193	84.8	182	90.6
	230	266	65.2	255	70.7	243	76.8	229	83.6	206	91.2	189	96.2
	250	292	74.0	280	80.3	266	87.3	251	95.1	224	104	205	109
10	080	98.3	21.2	94.1	23.0	89.7	25.0	85.0	27.2	76.7	29.7	70.5	31.3
	100	128	28.4	123	31.1	116	34.1	110	37.4	98.6	41.2	90.2	43.7
	130	174	38.3	166	41.7	158	45.5	149	49.6	136	54.3	127	57.4
	150	184	44.1	176	48.1	167	52.6	157	57.6	144	63.2	134	66.8
	180	234	51.1	223	55.5	213	60.5	201	66.0	187	72.9	177	77.8
	210	270	60.4	257	65.6	244	71.5	229	78.1	212	86.4	200	92.3
	230	291	66.6	279	72.1	265	78.2	251	85.0	226	92.7	207	97.7
	250	319	75.5	306	81.9	290	88.9	274	96.8	245	105	224	111
13	080	109	21.6	104	23.4	99	25.4	94.0	27.6	84.8	30.1	78.0	31.7
	100	141	29.3	135	31.9	128	34.9	121	38.2	108	42.0	99	44.5
	130	191	39.5	183	43.0	173	46.8	163	50.9	149	55.7	139	58.8
	150	202	45.2	193	49.2	183	53.8	172	58.8	157	64.5	147	68.2
	180	257	52.4	246	56.8	234	61.8	221	67.3	205	74.3	194	79.2
	210	294	62.2	281	67.4	266	73.3	250	79.9	231	88.2	218	94.1
	230	317	68.2	304	73.6	289	79.8	274	86.6	246	94.3	226	99.3
	250	348	77.1	333	83.6	316	90.7	298	98.6	267	107	244	113
16	080	120	21.9	115	23.8	109	25.8	104	28.0	93.5	30.5	85.9	32.2
	100	155	30.2	148	32.8	140	35.8	132	39.1	118	42.9	108	45.4
	130	210	40.7	200	44.3	190	48.1	179	52.4	163	57.1	152	60.2
	150	222	46.4	211	50.6	200	55.2	189	60.3	172	66.0	88	32.8
	180	282	53.9	269	58.3	256	63.2	242	68.8	225	75.8	213	80.7
	210	320	64.2	305	69.4	289	75.3	272	81.9	251	90.2	237	96.1
	230	345	69.9	330	75.4	315	81.5	298	88.3	268	96.0	246	101
	250	378	78.9	362	85.4	344	92.6	324	100.6	290	109	266	115
20	080	135	22.5	130	24.4	124	26.4	117	28.7	106	31.3	53.0	15.5
	100	174	31.6	166	34.2	157	37.1	148	40.5	133	44.3	66.3	22.0
	130	236	42.5	225	46.1	213	50.1	200	54.4	182	59.1	92.9	29.3
	150	251	48.4	239	52.7	226	57.4	212	62.6	193	68.4	98.4	33.9
	180	316	56.0	303	60.4	288	65.4	272	71.0	252	78.0	130	39.0
	210	356	67.2	339	72.4	321	78.2	302	84.8	279	93.1	144	46.6
	230	384	72.4	368	77.9	350	84.0	332	90.8	299	98.5	150	48.8
	250	421	81.4	403	88.0	382	95.3	360	103	323	112	161	55.6

NOTES

1. Cooling capacity (CAP)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

3TW57652-1C

4 Capacity tables

4 - 1 Cooling Capacity Tables

EWYQ-DAYNN

COOLING - OPZL N-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
-10	080	49.7	19.8	46.7	21.6	43.8	23.6	41.0	25.8	36.6	28.3	-0.4	0.4
	100	64	25.0	61	27.6	57.6	30.4	54.1	33.6	48.4	37.2	-0.5	0.5
	130	91	32.1	86	35.4	82	39.1	77	43.2	70	48.0	-1	0.8
	150	109	40.0	102	43.8	96	48.1	89	53.0	80	58.5	-1	0.8
	180	117	45.7	111	50.0	104	54.9	98	60.3	90	67.0	-1	1.0
	210	144	52.6	136	57.7	128	63.3	120	69.6	110	77.5	-1	1.3
	230	154	59.3	146	64.6	139	70.5	130	77.0	116	84.4	-1	1.4
	250	170	67.4	161	73.2	153	79.7	143	87.0	128	95	-2	2
-7	080	54.7	19.9	51.7	21.7	48.8	23.7	45.8	25.9	41.1	28.3	-0.4	0.4
	100	71	25.3	68	27.9	64	30.8	61	34.0	54.2	37.7	-0.5	0.5
	130	100	32.8	95	36.1	90	39.8	85	43.9	77	48.6	-1	0.8
	150	118	40.5	112	44.3	105	48.6	98	53.4	88	58.9	-1	0.8
	180	130	46.2	123	50.6	117	55.4	110	60.8	101	67.6	-1	1.0
	210	159	53.4	150	58.5	142	64.3	133	70.7	122	78.6	-1	1.3
	230	171	60.1	162	65.5	154	71.4	145	78.0	130	85.5	-1	1.4
	250	188	68.4	179	74.3	169	80.9	159	88.3	142	97	-2	2
-5	080	58.5	20.0	55.4	21.8	52.4	23.7	49.4	25.9	44.3	28.4	40.6	30.1
	100	77	25.6	73	28.2	69	31.1	65	34.4	58.4	38.0	53.4	40.4
	130	106	33.3	101	36.6	96	40.3	91	44.4	83	49.1	77	52.3
	150	125	40.8	118	44.6	111	48.9	104	53.7	94	59.3	87	62.9
	180	139	46.6	133	51.0	126	55.8	118	61.3	110	68.1	104	72.9
	210	169	54.0	161	59.2	152	64.9	142	71.4	131	79.4	123	85.0
	230	182	60.7	174	66.1	165	72.1	155	78.7	139	86.2	127	91.1
	250	200	69.1	191	75.0	181	81.7	171	89.1	152	97	139	103
-2	080	65	20.2	62	22.0	58	23.9	55.2	26.1	49.7	28.5	45.6	30.2
	100	85	26.0	81	28.6	77	31.6	73	34.9	65	38.6	60	41.0
	130	117	34.1	112	37.5	106	41.1	100	45.2	92	49.9	86	53.1
	150	135	41.3	128	45.1	120	49.4	113	54.3	103	59.8	96	63.5
	180	155	47.3	148	51.7	140	56.5	132	62.0	123	68.8	116	73.7
	210	187	55.0	177	60.2	168	66.0	158	72.5	145	80.6	137	86.3
	230	201	61.7	192	67.1	183	73.1	172	79.8	154	87.4	141	92.3
	250	221	70.2	211	76.2	200	83.0	189	90.5	169	99	154	104
2	080	75	20.5	71	22.3	68	24.2	64	26.4	57.7	28.8	53.0	30.4
	100	98	26.7	94	29.3	89	32.3	84	35.6	75	39.4	69	41.8
	130	134	35.4	128	38.7	121	42.4	115	46.5	105	51.2	98	54.3
	150	149	42.1	141	45.9	134	50.3	126	55.1	115	60.7	107	64.3
	180	178	48.4	170	52.7	162	57.6	153	63.1	142	70.0	135	74.8
	210	212	56.5	202	61.7	191	67.6	179	74.2	165	82.3	156	88.1
	230	228	63.1	218	68.6	208	74.6	196	81.4	176	89.0	161	94
	250	251	71.8	240	77.9	228	84.8	215	92.4	192	101	176	107

NOTES

1. Cooling capacity (kW)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. Usage of glycol and other anti-freeze
   Correction factors for CC and PI are applicable according type and concentration of the used anti-freeze

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

3TW57652-1C

4 Capacity tables

4 - 1 Cooling Capacity Tables

EWYQ-DAYNP
EWYQ-DAYNB

COOLING P/B-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
5	080	84.3	21.4	80.6	23.2	76.9	25.1	72.9	27.3	65.9	29.7	60.7	31.4
	100	111	27.7	106	30.3	100.5	33.3	94.9	36.7	85.3	40.4	78.2	42.9
	130	150	37.1	144	40.5	137	44.1	129	48.3	118	52.9	111	56.1
	150	163	43.3	155	47.2	147	51.6	139	56.5	127	62.0	119	65.7
	180	201	50.2	192	54.6	183	59.5	173	64.9	161	71.8	153	76.7
	210	236	58.5	225	63.7	213	69.6	200	76.2	185	84.4	175	90.3
	230	254	64.5	244	70.0	232	76.0	220	82.9	198	90.5	181	95.5
	250	279	73.2	267	79.4	254	86.3	240	94.1	215	103	197	108
7	080	90.2	21.6	86.4	23.4	82.4	25.3	78.1	27.5	70.7	30.0	65.1	31.6
	100	118	28.1	113	30.8	107	33.8	101	37.1	91.1	40.9	83.6	43.4
	130	160	37.8	153	41.2	146	44.9	138	49.0	126	53.7	118	56.8
	150	172	43.8	164	47.8	156	52.2	147	57.1	134	62.7	125	66.3
	180	215	50.9	205	55.3	196	60.2	185	65.7	172	72.6	163	77.5
	210	250	59.5	239	64.7	226	70.6	213	77.2	197	85.5	186	91.3
	230	270	65.4	259	70.8	247	76.9	233	83.8	210	91.4	193	96.4
	250	296	74.1	284	80.4	270	87.4	254	95.1	228	104	209	109
10	080	99.8	21.9	95.6	23.7	91.2	25.7	86.5	27.9	78.3	30.3	72.1	31.9
	100	130	28.9	124	31.5	118	34.5	112	37.9	100.3	41.7	92.0	44.1
	130	176	38.9	169	42.4	160	46.1	151	50.3	138	55.0	129	58.1
	150	187	44.7	178	48.7	169	53.2	160	58.1	146	63.7	137	67.4
	180	237	52.0	227	56.4	216	61.3	204	66.8	190	73.8	180	78.7
	210	273	61.1	261	66.3	247	72.2	233	78.8	215	87.1	203	93.0
	230	295	66.8	283	72.3	269	78.4	255	85.2	230	92.9	211	97.9
	250	323	75.6	309	82.0	294	89.0	278	96.9	249	106	228	111
13	080	110	22.2	106	24.1	101	26.0	95.5	28.3	86.4	30.7	79.5	32.4
	100	143	29.7	137	32.3	130	35.3	122	38.7	110	42.5	101	45.0
	130	194	40.1	185	43.6	176	47.4	166	51.6	152	56.3	142	59.4
	150	204	45.8	195	49.8	185	54.4	175	59.4	160	65.1	149	68.7
	180	260	53.3	249	57.7	237	62.6	224	68.2	208	75.1	198	80.1
	210	298	62.9	284	68.1	269	74.0	253	80.6	234	88.9	221	94.8
	230	321	68.4	308	73.8	293	79.9	278	86.8	250	94.5	230	99.5
	250	352	77.2	337	83.6	320	90.8	302	98.7	271	107	248	113
16	080	121	22.6	116	24.4	111	26.5	105	28.7	95.0	31.2	87.4	32.8
	100	156	30.6	149	33.3	142	36.2	134	39.6	120	43.4	110	45.9
	130	212	41.4	202	45.0	192	48.8	181	53.0	165	57.8	155	60.9
	150	224	47.0	214	51.2	203	55.8	191	60.9	174	66.6	90	33.4
	180	285	54.7	272	59.1	259	64.1	245	69.6	228	76.6	216	81.6
	210	323	64.9	308	70.1	292	75.9	275	82.6	254	90.9	240	96.8
	230	349	70.1	334	75.5	319	81.7	302	88.5	272	96.2	250	101
	250	382	78.9	366	85.5	348	92.7	328	100.7	294	109	270	115
20	080	137	23.1	131	25.0	125	27.1	119	29.4	107	31.9	54.5	16.2
	100	175	32.0	167	34.6	159	37.6	150	40.9	135	44.7	68.1	22.4
	130	238	43.2	227	46.8	215	50.7	202	55.0	185	59.8	95.2	30.0
	150	253	49.0	241	53.3	229	58.0	215	63.2	196	69.0	100.8	34.5
	180	320	56.9	306	61.3	291	66.3	275	71.8	255	78.8	134	39.9
	210	359	67.9	343	73.0	325	78.9	306	85.5	282	93.8	147	47.3
	230	388	72.6	372	78.1	354	84.2	335	91.0	303	98.7	153	48.9
	250	425	81.5	407	88.1	386	95.4	364	103	327	112	165	55.7

NOTES

1. Cooling capacity (CAP)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

3TW57652-1C

4 Capacity tables

4 - 1 Cooling Capacity Tables

EWYQ-DAYNP
EWYQ-DAYNB

COOLING - OPZL P/B-models

Tamb (°C)		20		25		30		35		40		43	
LWE	Size	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
-10	080	51.3	20.4	48.2	22.2	45.4	24.2	42.5	26.4	38.1	29.0	1.2	1.0
	100	66	25.4	63	28.0	59.4	30.8	55.9	34.0	50.2	37.6	1.3	0.9
	130	93	32.8	89	36.1	84	39.7	79	43.9	72	48.6	2	1.4
	150	111	40.6	105	44.4	98	48.7	91	53.6	82	59.1	2	1.4
	180	120	46.6	114	50.9	107	55.7	101	61.1	93	67.9	2	1.9
	210	147	53.2	139	58.3	131	64.0	123	70.3	113	78.1	2	1.9
	230	158	59.5	150	64.8	142	70.6	134	77.2	120	84.6	2	1.5
	250	173	67.5	165	73.3	156	79.8	147	87.1	132	95	2	2
-7	080	56.3	20.6	53.2	22.3	50.3	24.3	47.4	26.5	42.6	29.0	1.2	1.0
	100	73	25.7	70	28.4	66	31.2	62	34.5	56.0	38.1	1.3	0.9
	130	102	33.5	97	36.8	92	40.4	87	44.6	80	49.3	2	1.4
	150	121	41.1	114	44.9	107	49.2	100	54.0	91	59.5	2	1.4
	180	133	47.1	126	51.4	120	56.3	113	61.7	105	68.5	2	1.9
	210	162	54.0	154	59.2	145	64.9	136	71.3	126	79.3	2	1.9
	230	174	60.3	166	65.6	158	71.6	149	78.2	134	85.7	2	1.5
	250	191	68.4	183	74.4	173	81.0	163	88.4	146	97	2	2
-5	080	60.0	20.7	57.0	22.4	53.9	24.4	50.9	26.6	45.9	29.1	42.2	30.7
	100	78	26.0	75	28.6	71	31.5	67	34.8	60.2	38.4	55.2	40.8
	130	108	34.0	104	37.3	98	41.0	93	45.1	85	49.8	80	53.0
	150	127	41.4	120	45.2	113	49.5	106	54.3	96	59.9	90	63.5
	180	143	47.5	136	51.8	129	56.7	122	62.1	113	68.9	107	73.8
	210	173	54.6	164	59.8	155	65.6	146	72.0	134	80.0	127	85.7
	230	186	60.9	178	66.3	169	72.2	159	78.9	143	86.4	131	91.3
	250	204	69.1	195	75.1	185	81.8	175	89.2	156	98	143	103
-2	080	66	20.9	63	22.6	60	24.6	56.7	26.7	51.2	29.2	47.1	30.8
	100	87	26.4	83	29.1	79	32.0	74	35.3	67	39.0	61	41.4
	130	119	34.8	114	38.1	109	41.8	102	45.9	94	50.6	88	53.8
	150	137	41.9	130	45.7	123	50.0	115	54.9	105	60.4	98	64.1
	180	158	48.2	151	52.5	143	57.4	136	62.9	126	69.7	119	74.5
	210	190	55.6	181	60.8	171	66.7	161	73.2	148	81.3	140	87.0
	230	205	61.9	196	67.3	186	73.3	176	80.0	158	87.6	145	92.5
	250	225	70.2	215	76.3	204	83.0	193	90.6	173	99	158	105
2	080	76	21.2	73	22.9	69	24.9	66	27.0	59.2	29.5	54.5	31.1
	100	100	27.1	95	29.7	91	32.7	86	36.0	77	39.8	71	42.2
	130	136	36.0	130	39.4	124	43.1	117	47.2	107	51.9	100	55.0
	150	151	42.6	144	46.5	136	50.9	128	55.7	117	61.3	109	64.9
	180	182	49.2	174	53.6	165	58.5	156	64.0	145	70.8	138	75.7
	210	215	57.2	205	62.4	194	68.2	183	74.8	169	83.0	159	88.8
	230	232	63.3	222	68.7	212	74.8	200	81.6	180	89.2	165	94
	250	255	71.8	244	78.0	232	84.9	219	92.5	196	101	179	107

NOTES

1. Cooling capacity (kW)
   Capacity is according to EN14511:2011 and valid for chilled water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. Usage of glycol and other anti-freeze
   Correction factors for CC and PI are applicable according type and concentration of the used anti-freeze

SYMBOLS

CC : Cooling capacity (kW)
PI : Power input (kW)
LWE : Leaving Water Evaporator temperature (°C)
Tamb : Ambient temperature (°C)

3TW57652-1C

4 Capacity tables

4 - 2 Heating Capacity Tables

EWYQ-DAYNN

HEATING N-models

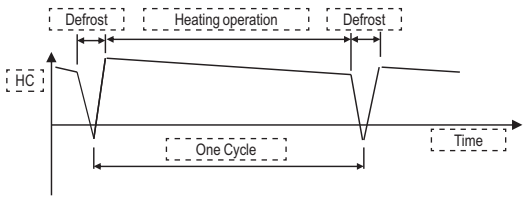
Tamb (°CDB)		-10		-7		-4		0		4		7		10		15		21	
LWC	Size	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
25	080	58.9	20.3	65.1	20.5	71.0	20.6	78.5	20.8	86.5	21.1	92.9	21.4	99.5	21.6	111	22.1	125	22.7
	100	74.7	24.5	82.9	24.8	90.9	25.0	101	25.4	111	25.8	119	26.1	128	26.5	142	27.1	160	27.9
	130	98	32.6	108	33.1	119	33.6	132	34.3	146	35.1	157	35.6	168	36.2	187	37.2	211	38.3
	150	108	40.9	119	41.0	130	41.0	143	41.2	158	41.5	169	41.7	180	41.9	200	42.3	224	42.9
	180	130	45.3	145	45.7	159	46.1	177	46.8	195	47.4	209	48.0	224	48.5	247	49.5	274	50.7
	210	143	52.2	160	52.5	175	52.7	195	53.1	215	53.4	230	53.8	246	54.1	271	54.7	300	55.6
	230	162	56.1	181	56.7	200	57.2	224	58.0	250	58.8	271	59.5	294	60.2	334	61.5	387	63.3
	250	177	64.1	197	64.9	218	65.8	244	66.9	272	68.1	295	69.0	319	69.9	362	71.6	418	73.8
30	080	57.9	22.3	63.9	22.4	70.3	22.5	77.7	22.8	85.5	23.0	91.7	23.3	98.1	23.5	109	24.0	123	24.7
	100	73.8	27.0	81.8	27.3	90.4	27.6	100.1	28.0	110	28.4	118	28.8	126	29.1	140	29.7	158	30.6
	130	97	35.8	107	36.2	118	36.7	131	37.4	145	38.1	155	38.7	166	39.3	185	40.3	208	41.5
	150	107	45.1	118	45.0	130	45.0	143	45.1	157	45.3	168	45.5	179	45.7	198	46.1	222	46.6
	180	128	49.7	143	50.1	158	50.5	176	51.2	193	51.8	207	52.4	221	53.0	244	54.0	270	55.2
	210	142	57.3	158	57.7	175	57.9	194	58.3	214	58.6	229	58.9	244	59.2	269	59.8	298	60.6
	230	160	61.3	179	62.0	199	62.6	222	63.4	248	64.3	268	65.0	290	65.7	329	67.1	380	68.9
	250	175	69.8	195	70.7	217	71.7	243	72.9	270	74.2	292	75.2	315	76.2	357	78.0	411	80.3
35	080	57.1	24.5	62.9	24.6	69.2	24.7	77.0	24.9	84.6	25.2	90.6	25.4	96.8	25.7	108	26.2	121	26.9
	100	73.1	29.7	81.0	30.1	89.3	30.4	99.6	30.9	109	31.3	117	31.7	125	32.1	139	32.7	155	33.6
	130	96	39.3	106	39.7	117	40.2	130	40.9	143	41.6	154	42.2	164	42.7	182	43.8	205	45.0
	150	106	49.6	117	49.4	128	49.4	143	49.4	156	49.5	167	49.7	178	49.9	197	50.3	220	50.8
	180	127	54.5	141	55.0	156	55.4	174	56.1	192	56.8	205	57.3	218	57.9	241	59.0	266	60.3
	210	141	62.9	157	63.4	174	63.7	194	64.1	213	64.4	228	64.7	243	65.0	267	65.5	295	66.2
	230	159	67.1	177	67.9	196	68.6	221	69.5	246	70.5	266	71.2	287	71.9	324	73.3	373	75.2
	250	174	76.2	194	77.3	215	78.3	242	79.6	268	81.0	289	82.1	312	83.2	352	85.1	404	87.6
40	080	56.7	27.0	62.2	27.0	68.2	27.1	76.4	27.3	83.7	27.6	89.4	27.8	95.4	28.1	106	28.6	119	29.4
	100	72.7	32.8	80.3	33.2	88.3	33.6	99.1	34.1	109	34.6	116	35.0	124	35.4	137	36.1	153	36.9
	130	95	43.4	105	43.7	115	44.2	130	44.8	142	45.5	152	46.1	162	46.6	179	47.7	201	49.0
	150	106	54.7	117	54.4	128	54.3	143	54.2	156	54.3	166	54.4	177	54.6	195	55.0	218	55.5
	180	126	60.0	140	60.5	154	60.9	173	61.6	190	62.3	203	62.9	215	63.5	237	64.6	262	66.0
	210	141	69.2	157	69.7	173	70.1	195	70.5	213	70.9	227	71.2	242	71.5	265	71.9	293	72.5
	230	158	73.7	175	74.5	194	75.3	220	76.3	244	77.4	263	78.1	283	78.9	318	80.4	366	82.3
	250	173	83.5	192	84.7	213	85.8	241	87.2	266	88.7	286	89.8	308	91.0	346	93.1	395	95.7
45	080					67.4	29.9	75.2	30.0	82.8	30.3	88.2	30.5	93.9	30.8	104	31.1	116	31.3
	100					87.4	37.2	97.7	37.8	108	38.3	115	38.7	122	39.1	134	39.9	150	40.8
	130					114	48.8	128	49.3	141	50.0	150	50.5	160	51.1	176	52.1	197	53.5
	150					128	59.9	142	59.7	156	59.7	166	59.8	176	59.9	194	60.2	216	60.8
	180					153	67.2	171	67.9	188	68.6	200	69.2	212	69.9	233	71.0	257	72.4
	210					173	77.3	193	77.8	213	78.2	227	78.5	240	78.8	264	79.2	290	79.8
	230					192	82.9	217	84.0	242	85.1	260	85.9	278	86.8	312	88.3	357	90.3
	250					211	94.2	237	95.8	264	97.4	283	98.6	303	99.8	339	102	386	105
50	080							73.9	33.2	81.9	33.4	86.9	33.6	92.2	33.9	102	34.4	113	35.2
	100							96.3	41.9	107	42.5	113	42.9	120	43.3	132	44.1	147	45.0
	130							126	54.6	139	55.2	148	55.7	157	56.3	173	57.3	192	58.6
	150							141	65.9	156	65.8	166	65.8	176	65.9	192	66.2	213	66.8
	180							168	74.9	186	75.7	198	76.3	209	76.9	229	78.1	252	79.5
	210							192	86.0	213	86.4	226	86.7	239	87.0	261	87.5	287	88.0
	230							214	92.7	239	93.8	256	94.7	274	95.6	306	97.2	348	99
								234	105	261	107	279	108	297	110	331	112	375	115

NOTES

1. Heating capacity (CAP)
   Capacity is according to EN14511:2011 and valid for heated water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. HC tabulated does not include capacity drop during frosting period and defrost.
   The integrated Heating Capacity takes into consideration the capacity drop during frosting period and defrosting operation.
   ($HC_{integrated}$) = (HC) * (Integrated correction factor during frosting period)
   - Integrated heating capacity means the heating capacity during one cycle (between defrosting period and defrosting period) which is integrated and converted to heating capacity per hour.
   - Integrated correction factor :

Tamb [°C] RH 85%	-10	-7	-4	0	4	7
Correction factor	0.96	0.95	0.92	0.87	0.90	1.00

   - Integrated heating capacity graph :



4. In case the surface of the heat exchanger is covered with snow, heating capacity drops temporarily although it differs with outdoor temperature (°CDB), relative humidity (RH) and frosting volume.

SYMBOLS

HC : Heating capacity (kW)
PI : Power input (kW)
LWC : Leaving Water Condenser temperature (°C)
Tamb : Ambient temperature dry bulb (°C)

3TW57652-1C

4 Capacity tables

4 - 2 Heating Capacity Tables

EWYQ-DAYNP
EWYQ-DAYNB

HEATING P/B-models

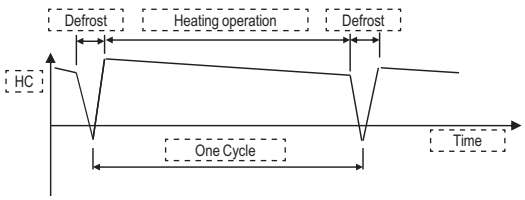
Tamb (°CDB)		-10		-7		-4		0		4		7		10		15		21	
LWC	Size	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI	HC	PI
25	080	57.2	20.8	63.4	21.0	69.3	21.1	76.8	21.4	84.8	21.6	91.2	21.9	97.8	22.1	109	22.6	124	23.2
	100	72.8	24.8	81.1	25.1	89.0	25.4	99	25.7	109	26.1	117	26.5	126	26.8	140	27.4	158	28.2
	130	95	33.2	106	33.7	116	34.2	129	34.9	143	35.6	154	36.2	165	36.8	185	37.7	209	38.9
	150	106	41.4	117	41.4	128	41.5	141	41.7	155	41.9	166	42.1	178	42.4	197	42.8	221	43.3
	180	127	46.0	142	46.4	156	46.9	174	47.5	192	48.2	206	48.7	220	49.3	244	50.3	271	51.5
	210	139	52.8	156	53.1	172	53.3	192	53.7	212	54.0	227	54.4	242	54.7	268	55.3	297	56.2
	230	158	56.1	177	56.7	196	57.3	220	58.0	246	58.8	267	59.5	290	60.2	330	61.5	383	63.3
	250	173	64.0	193	64.9	214	65.7	240	66.9	268	68.0	291	68.9	315	69.9	358	71.6	414	73.8
30	080	56.2	22.8	62.2	22.9	68.6	23.0	76.0	23.3	83.8	23.5	90.0	23.8	96.4	24.0	108	24.5	122	25.2
	100	71.9	27.3	80.0	27.6	88.6	27.9	98.2	28.3	108	28.7	116	29.1	124	29.4	138	30.1	156	30.9
	130	94	36.3	105	36.8	116	37.3	129	38.0	142	38.7	153	39.3	164	39.9	182	40.9	206	42.1
	150	104	45.5	115	45.4	127	45.4	140	45.5	154	45.7	165	45.9	176	46.1	196	46.5	219	47.1
	180	125	50.4	140	50.8	155	51.3	172	51.9	190	52.6	204	53.1	218	53.7	241	54.7	267	56.0
	210	138	57.9	155	58.3	172	58.5	191	58.9	211	59.2	226	59.5	241	59.8	266	60.4	294	61.2
	230	156	61.3	175	62.0	195	62.6	218	63.5	244	64.3	264	65.0	286	65.7	325	67.1	376	68.9
	250	171	69.7	191	70.7	213	71.6	239	72.9	266	74.1	288	75.1	311	76.1	353	77.9	407	80.3
35	080	55.4	25.0	61.2	25.1	67.5	25.2	75.3	25.4	82.9	25.7	88.9	25.9	95.1	26.2	106	26.7	119	27.4
	100	71.3	30.0	79.1	30.4	87.4	30.8	97.7	31.2	108	31.7	115	32.0	123	32.4	137	33.0	153	33.9
	130	93	39.8	103	40.3	114	40.7	128	41.4	141	42.1	151	42.7	162	43.3	180	44.3	202	45.6
	150	104	50.1	114	49.9	126	49.8	140	49.8	154	50.0	164	50.1	175	50.3	194	50.7	217	51.3
	180	124	55.3	138	55.7	153	56.2	171	56.8	188	57.5	202	58.1	215	58.7	237	59.7	263	61.0
	210	138	63.5	154	64.0	171	64.3	191	64.7	210	65.0	225	65.3	239	65.6	264	66.1	292	66.8
	230	155	67.1	173	67.9	192	68.6	217	69.5	242	70.5	262	71.2	283	72.0	320	73.3	369	75.2
	250	170	76.2	190	77.2	211	78.3	238	79.6	264	81.0	285	82.0	308	83.1	347	85.1	399	87.6
40	080	55.0	27.5	60.5	27.5	66.5	27.6	74.7	27.8	82.0	28.1	87.7	28.3	93.7	28.6	104	29.1	117	29.9
	100	70.8	33.1	78.4	33.5	86.4	33.9	97.3	34.4	107	35.0	114	35.3	122	35.7	135	36.4	151	37.3
	130	93	43.9	103	44.3	113	44.7	127	45.3	140	46.0	149	46.6	159	47.2	177	48.2	199	49.5
	150	104	55.2	114	54.9	125	54.7	140	54.7	153	54.7	164	54.9	174	55.0	193	55.4	215	55.9
	180	123	60.7	137	61.2	151	61.7	170	62.3	187	63.1	199	63.7	212	64.3	234	65.4	259	66.7
	210	138	69.8	154	70.3	170	70.7	191	71.1	210	71.5	224	71.8	238	72.1	262	72.5	289	73.1
	230	154	73.7	172	74.5	190	75.3	216	76.3	240	77.4	259	78.1	279	78.9	314	80.4	362	82.3
	250	169	83.5	188	84.6	209	85.7	237	87.2	262	88.7	282	89.8	304	91.0	341	93.0	391	95.7
45	080					65.7	30.4	73.5	30.6	81.1	30.8	86.5	31.0	92.2	31.3	102	31.6	114	31.9
	100					85.5	37.5	95.8	38.1	106	38.6	113	39.1	120	39.5	133	40.2	148	41.1
	130					112	49.3	125	49.9	138	50.6	148	51.1	157	51.7	174	52.7	194	54.0
	150					125	60.3	139	60.2	154	60.1	163	60.2	174	60.3	191	60.7	213	61.2
	180					149	67.9	167	68.6	185	69.3	197	69.9	209	70.6	230	71.7	254	73.1
	210					169	77.9	190	78.4	210	78.8	223	79.1	237	79.4	260	79.8	287	80.4
	230					188	82.9	213	84.0	238	85.1	256	86.0	274	86.8	308	88.3	353	90.3
	250					207	94.2	233	95.8	260	97.3	279	98.5	299	99.8	335	102	382	105
50	080							72.2	33.7	80.2	33.9	85.3	34.1	90.6	34.4	100	34.9	112	35.7
	100							94.4	42.2	105	42.8	112	43.2	118	43.7	130	44.4	145	45.3
	130							123	55.2	137	55.8	146	56.3	155	56.8	170	57.8	190	59.1
	150							139	66.4	154	66.3	163	66.3	173	66.4	190	66.7	211	67.2
	180							165	75.6	183	76.4	194	77.0	206	77.7	226	78.8	249	80.3
	210							189	86.6	210	87.0	223	87.3	236	87.6	258	88.1	284	88.6
	230							210	92.7	235	93.8	252	94.7	270	95.6	302	97.2	344	99
	250							230	105	257	107	275	108	293	110	327	112	371	115

NOTES

1. Heating capacity (CAP)
   Capacity is according to EN14511:2011 and valid for heated water range Dt = 3 - 8°C
2. Power input (kW)
   Power input is total input according to EN14511:2011
3. HC tabulated does not include capacity drop during frosting period and defrost.
   The integrated Heating Capacity takes into consideration the capacity drop during frosting period and defrosting operation.
   ($HC_{Integrated}$) = (HC) * (Integrated correction factor during frosting period)
   - Integrated heating capacity means the heating capacity during one cycle (between defrosting period and defrosting period) which is integrated and converted to heating capacity per hour.
   - Integrated correction factor :

Tamb [°C] RH 85%	-10	-7	-4	0	4	7
Correction factor	0.96	0.95	0.92	0.87	0.90	1.00

   - Integrated heating capacity graph :



4. In case the surface of the heat exchanger is covered with snow, heating capacity drops temporarily although it differs with outdoor temperature (°CDB), relative humidity (RH) and frosting volume.

SYMBOLS

HC : Heating capacity (kW)
PI : Power input (kW)
LWC : Leaving Water Condenser temperature (°C)
Tamb : Ambient temperature dry bulb (°C)

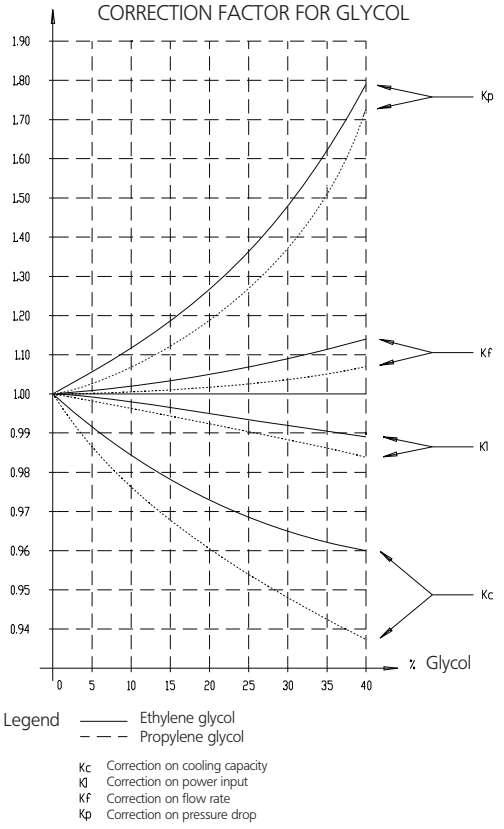
3TW57652-1C

4 Capacity tables

4 - 3 Capacity Correction Factor

Required glycol concentration

Type	Concentration (wt%)	0	10	20	30	40
Ethylene glycol	Freezing point °C	0	-4	-9	-16	-23
	Minimum LWE °C	4	2	0	-5	-11
Propylene glycol	Freezing point °C	0	-3	-7	-13	-22
	Minimum LWE °C	4	3	-2	-4	-10



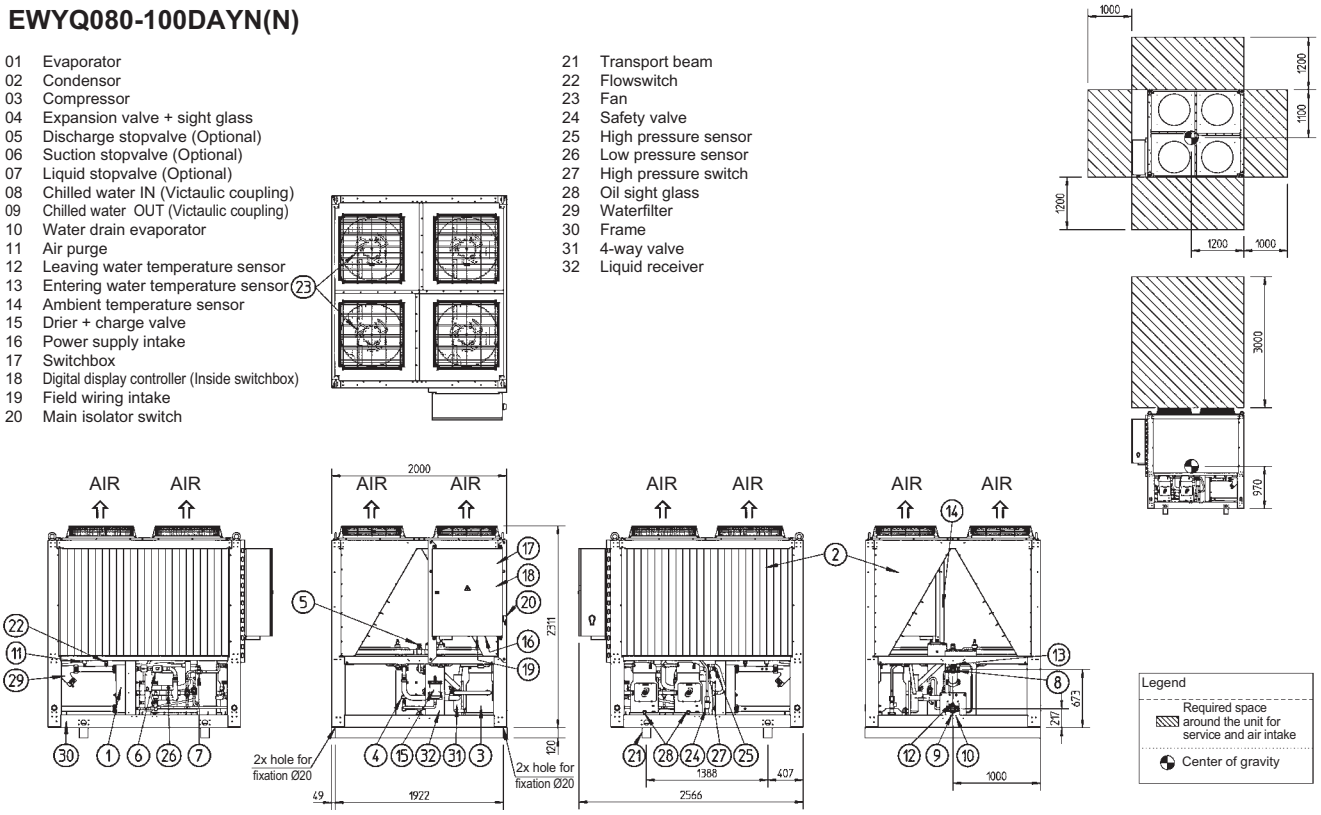
4TW50689-8

5 Dimensional drawings

5 - 1 Dimensional Drawings

EWYQ080-100DAYN(N)

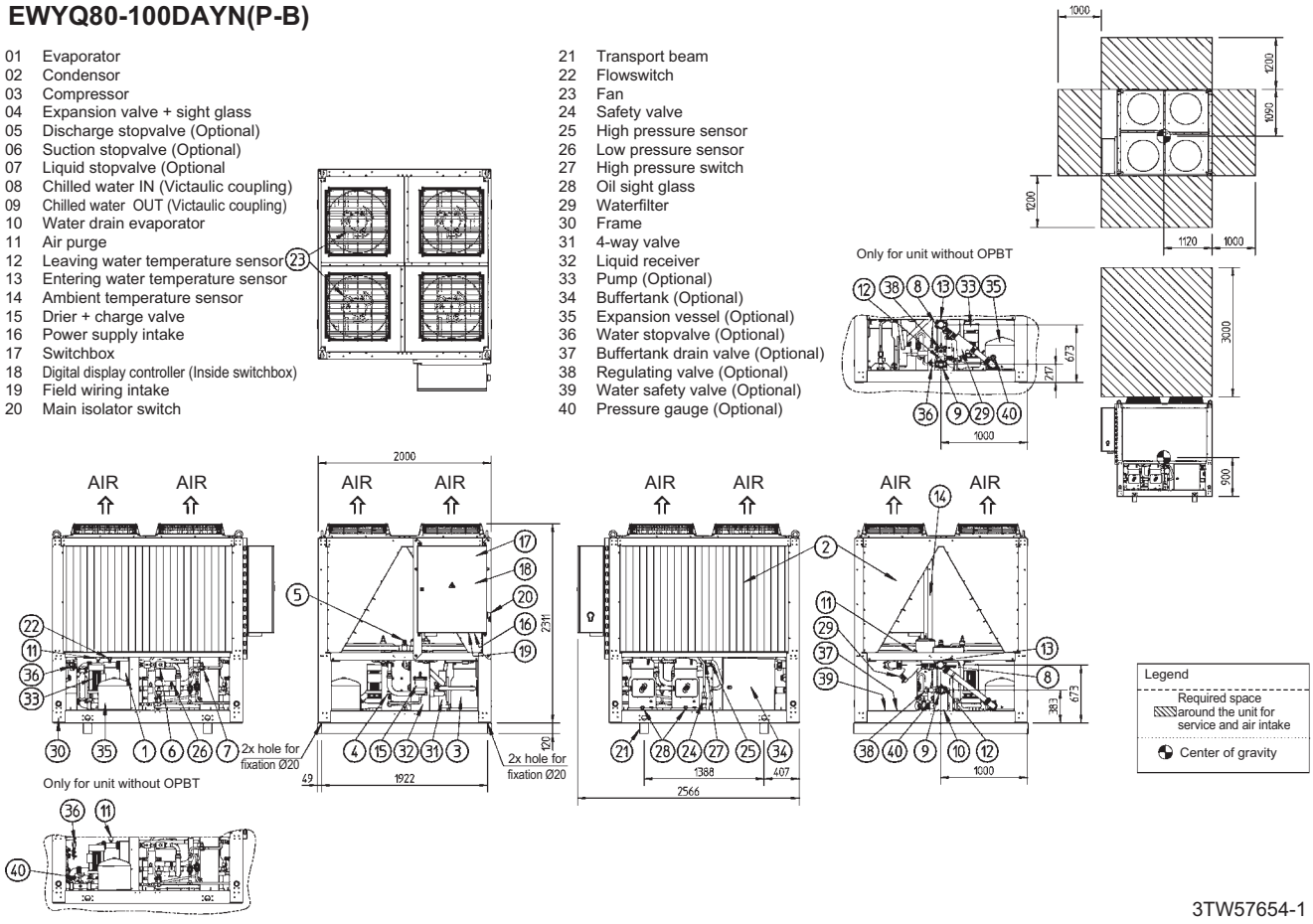
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve
32 Liquid receiver



3TW57654-2

EWYQ80-100DAYN(P-B)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve
32 Liquid receiver
33 Pump (Optional)
34 Buffertank (Optional)
35 Expansion vessel (Optional)
36 Water stopvalve (Optional)
37 Buffertank drain valve (Optional)
38 Regulating valve (Optional)
39 Water safety valve (Optional)
40 Pressure gauge (Optional)



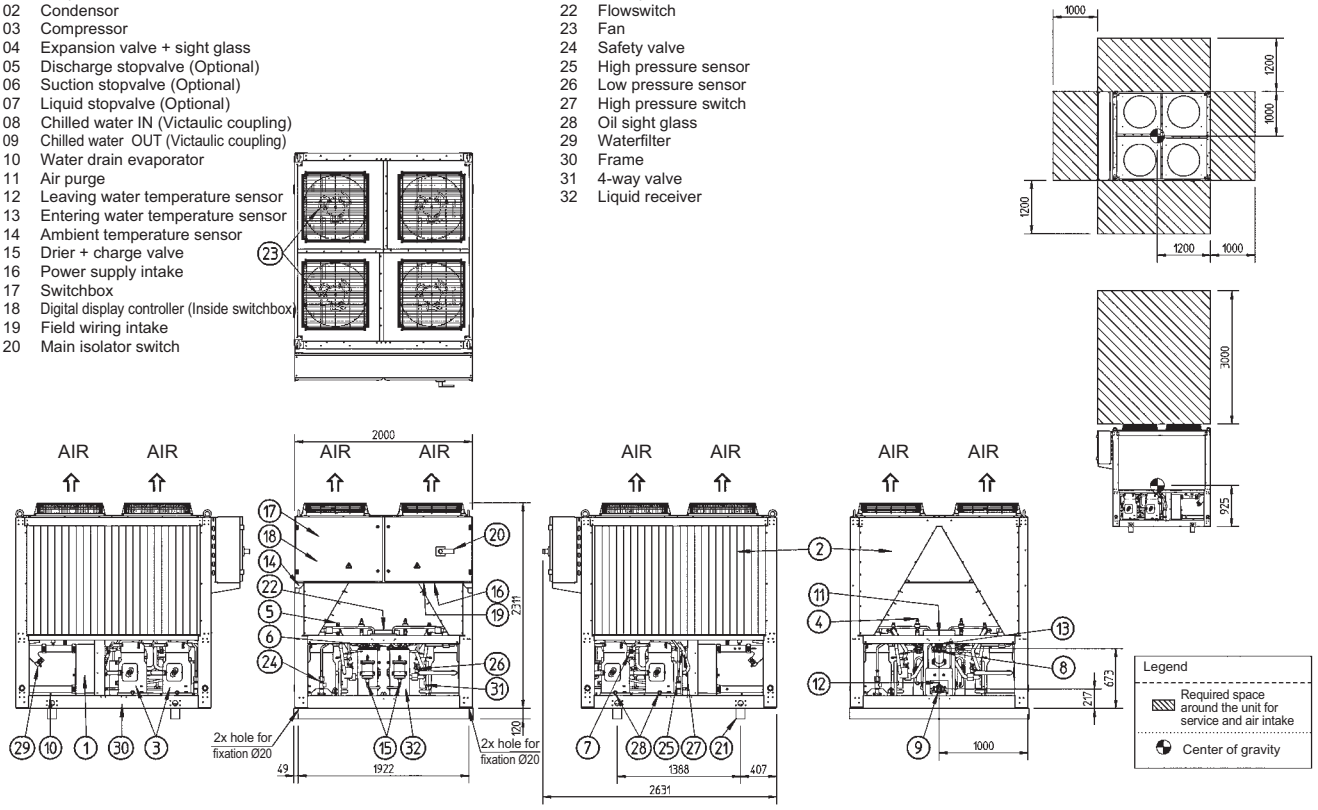
3TW57654-1

5 Dimensional drawings

5 - 1 Dimensional Drawings

EWYQ130-150DAYN(N)

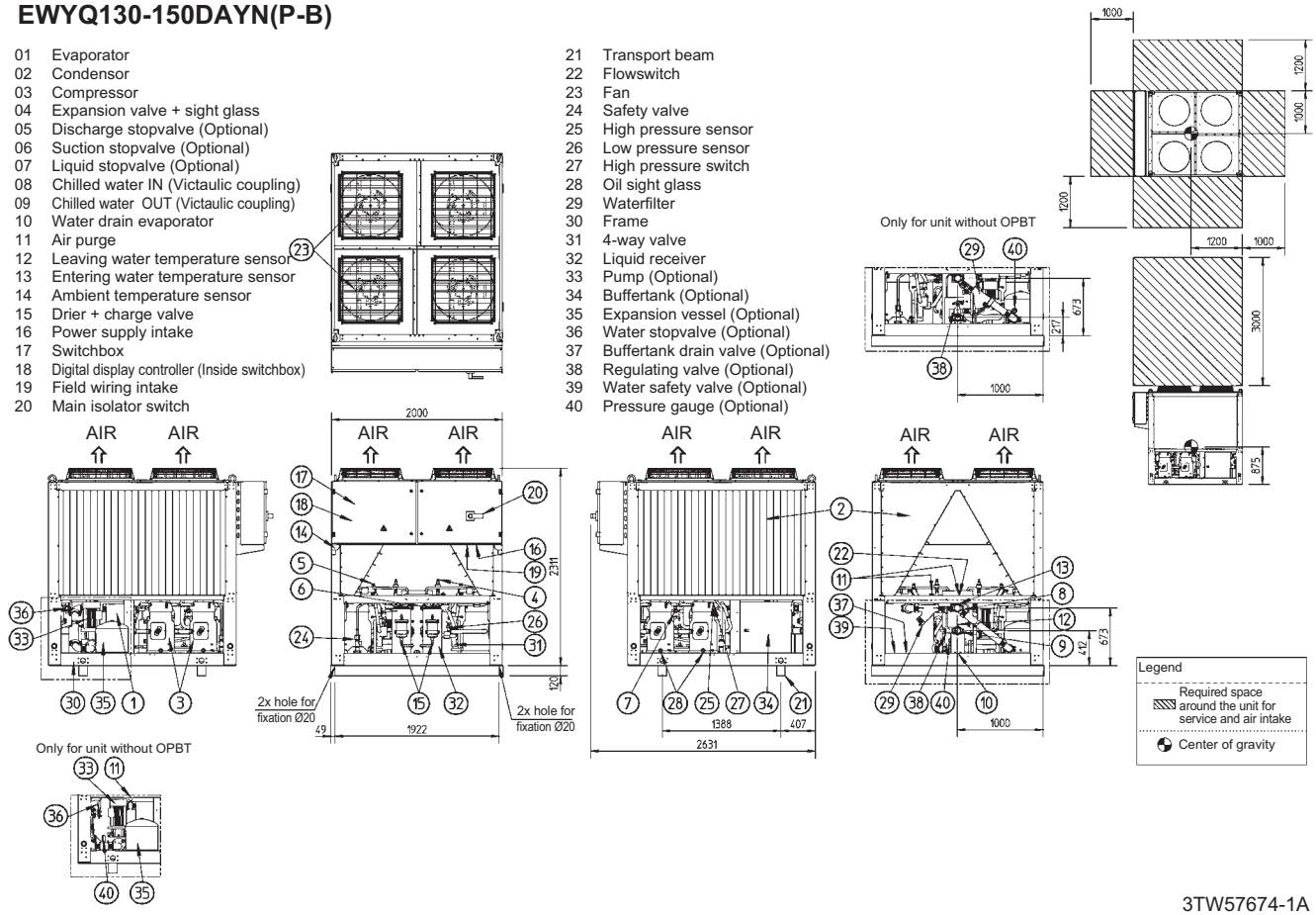
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve
32 Liquid receiver



3TW57674-2A

EWYQ130-150DAYN(P-B)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve
32 Liquid receiver
33 Pump (Optional)
34 Buffertank (Optional)
35 Expansion vessel (Optional)
36 Water stopvalve (Optional)
37 Buffertank drain valve (Optional)
38 Regulating valve (Optional)
39 Water safety valve (Optional)
40 Pressure gauge (Optional)



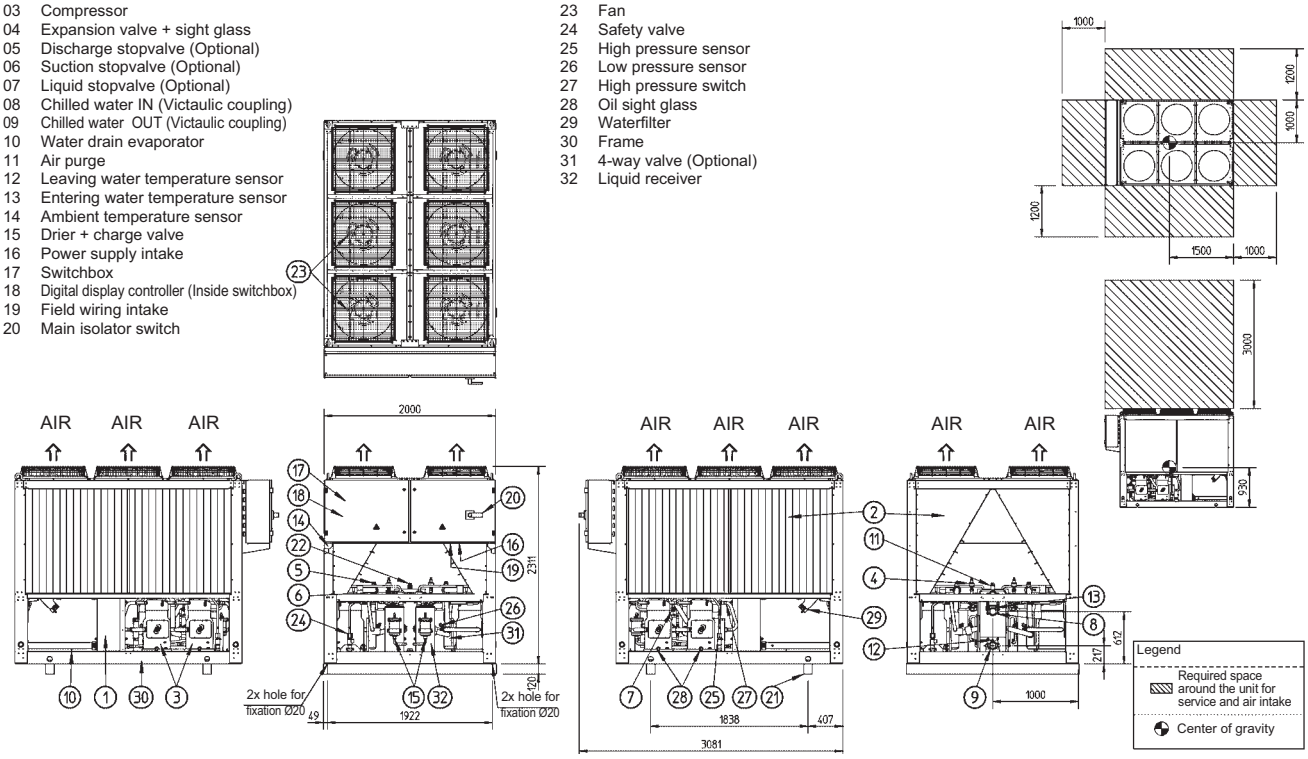
3TW57674-1A

5 Dimensional drawings

5 - 1 Dimensional Drawings

EWYQ180-210DAYN(N)

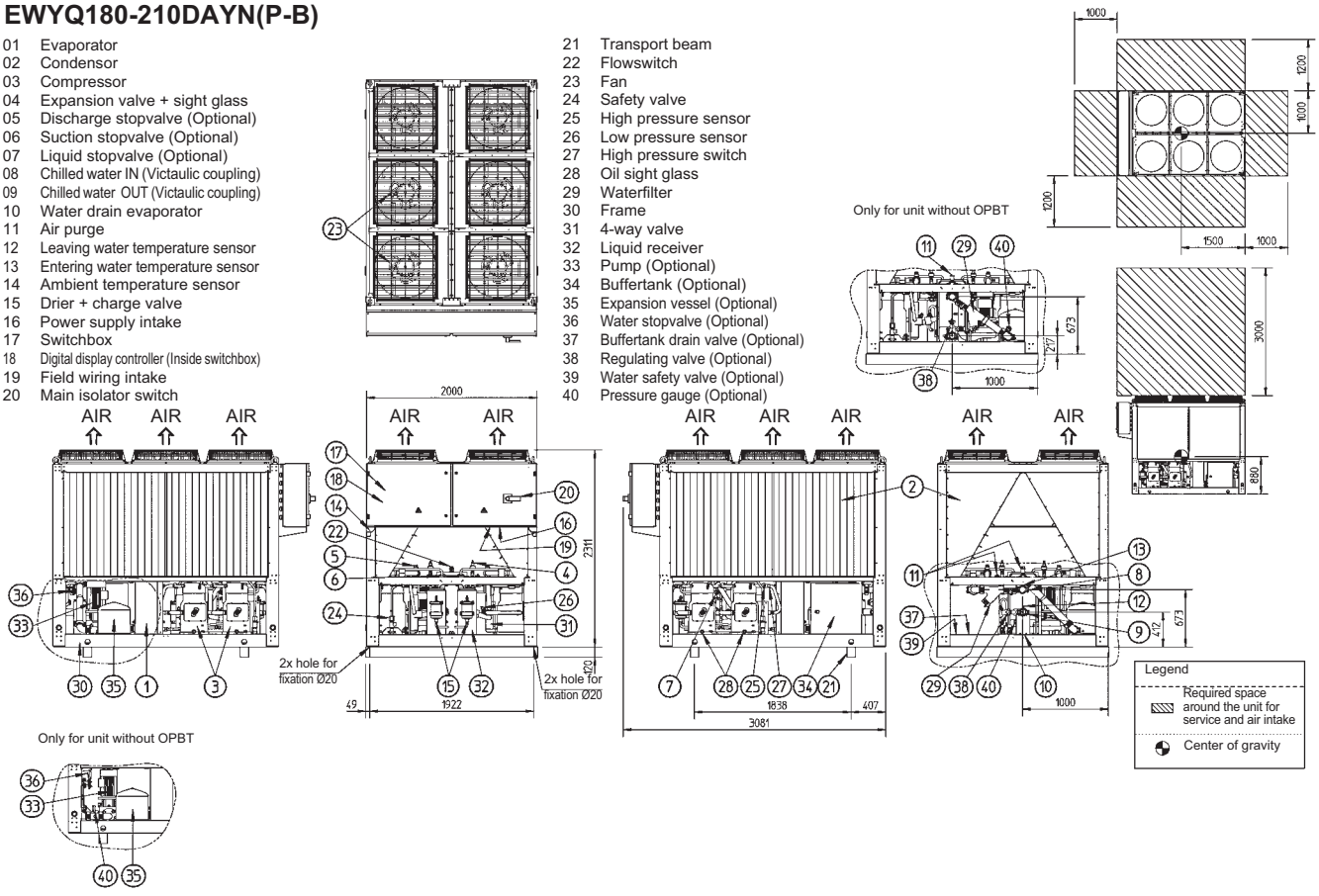
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve (Optional)
32 Liquid receiver



3TW57694-2A

EWYQ180-210DAYN(P-B)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve
32 Liquid receiver
33 Pump (Optional)
34 Buffertank (Optional)
35 Expansion vessel (Optional)
36 Water stopvalve (Optional)
37 Buffertank drain valve (Optional)
38 Regulating valve (Optional)
39 Water safety valve (Optional)
40 Pressure gauge (Optional)



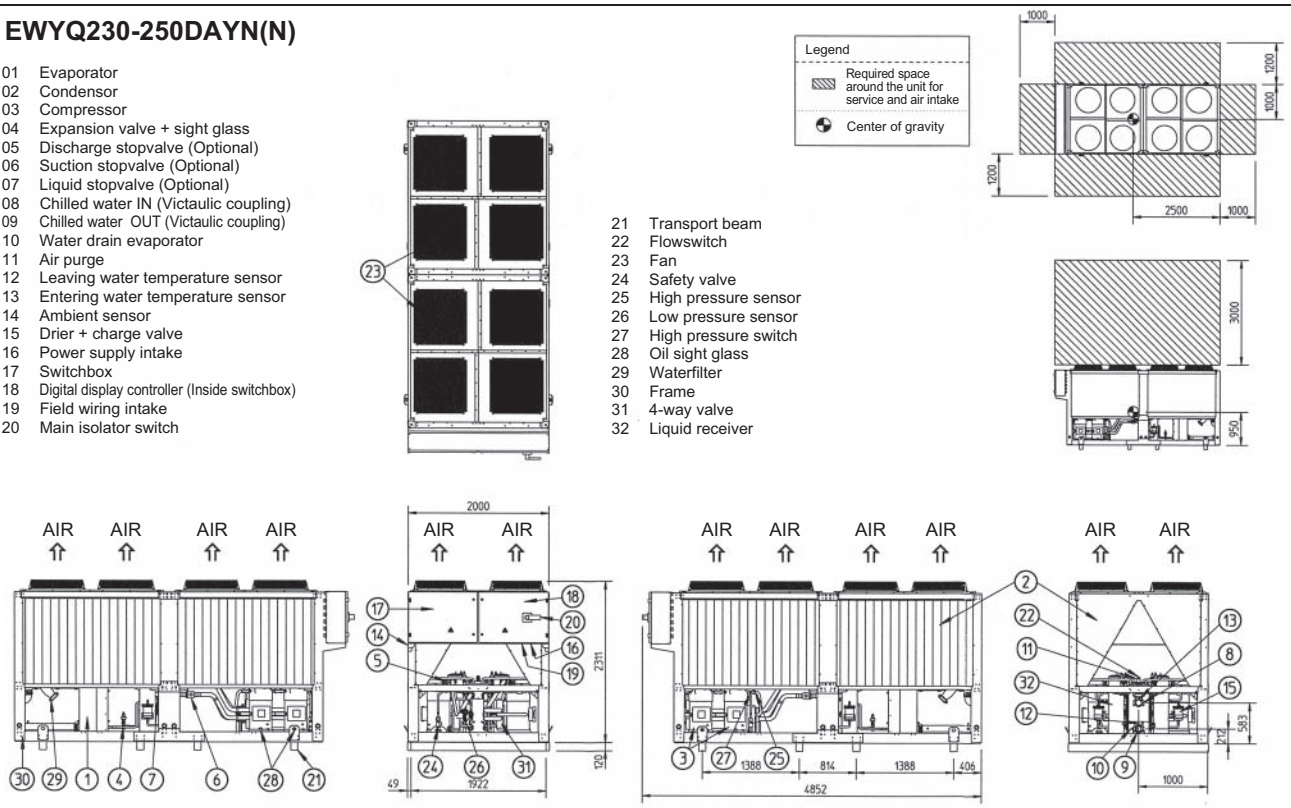
3TW57694-1A

5 Dimensional drawings

5 - 1 Dimensional Drawings

EWYQ230-250DAYN(N)

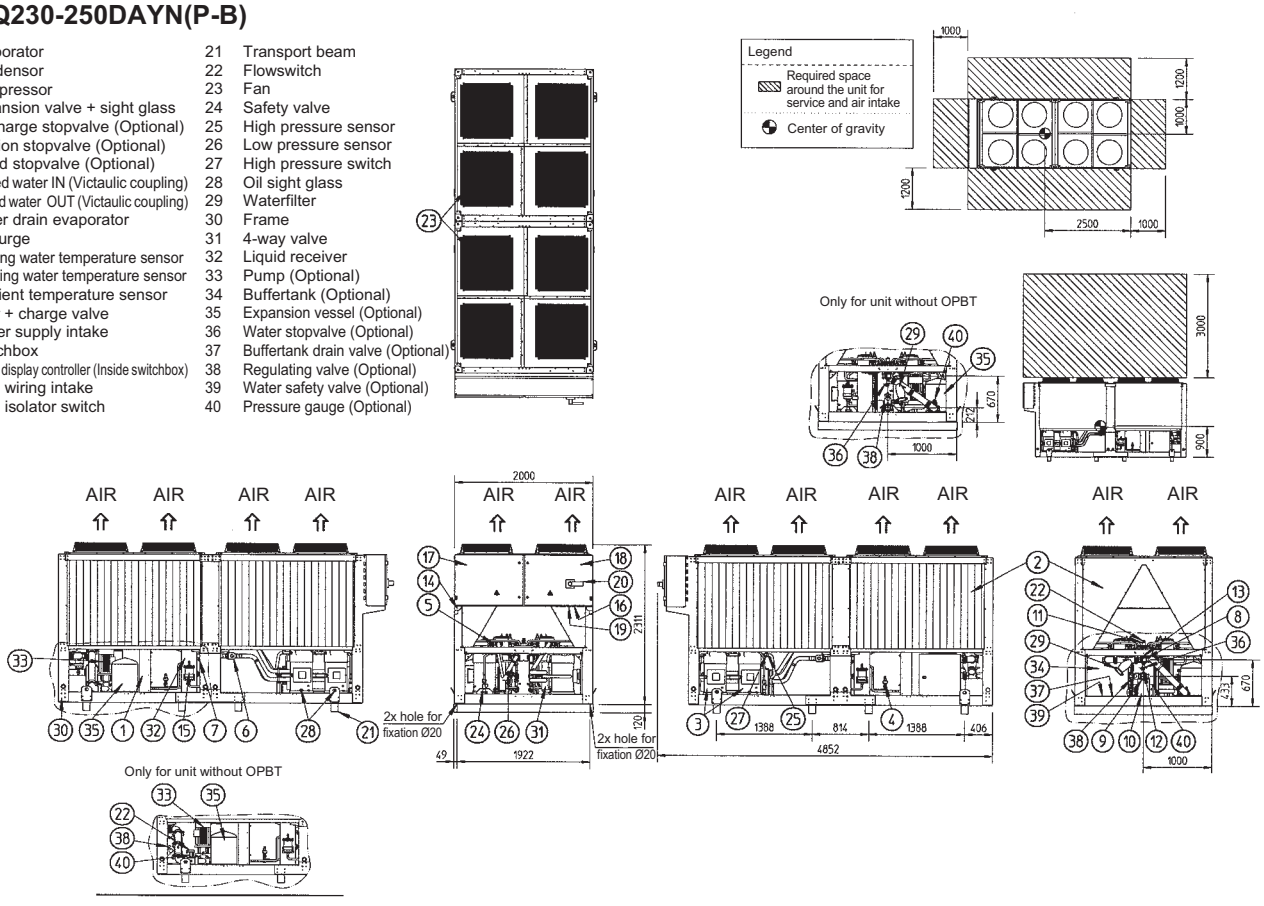
01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve
32 Liquid receiver



3TW57714-2

EWYQ230-250DAYN(P-B)

01 Evaporator
02 Condensor
03 Compressor
04 Expansion valve + sight glass
05 Discharge stopvalve (Optional)
06 Suction stopvalve (Optional)
07 Liquid stopvalve (Optional)
08 Chilled water IN (Victaulic coupling)
09 Chilled water OUT (Victaulic coupling)
10 Water drain evaporator
11 Air purge
12 Leaving water temperature sensor
13 Entering water temperature sensor
14 Ambient temperature sensor
15 Drier + charge valve
16 Power supply intake
17 Switchbox
18 Digital display controller (Inside switchbox)
19 Field wiring intake
20 Main isolator switch
21 Transport beam
22 Flowswitch
23 Fan
24 Safety valve
25 High pressure sensor
26 Low pressure sensor
27 High pressure switch
28 Oil sight glass
29 Waterfilter
30 Frame
31 4-way valve
32 Liquid receiver
33 Pump (Optional)
34 Buffertank (Optional)
35 Expansion vessel (Optional)
36 Water stopvalve (Optional)
37 Buffertank drain valve (Optional)
38 Regulating valve (Optional)
39 Water safety valve (Optional)
40 Pressure gauge (Optional)

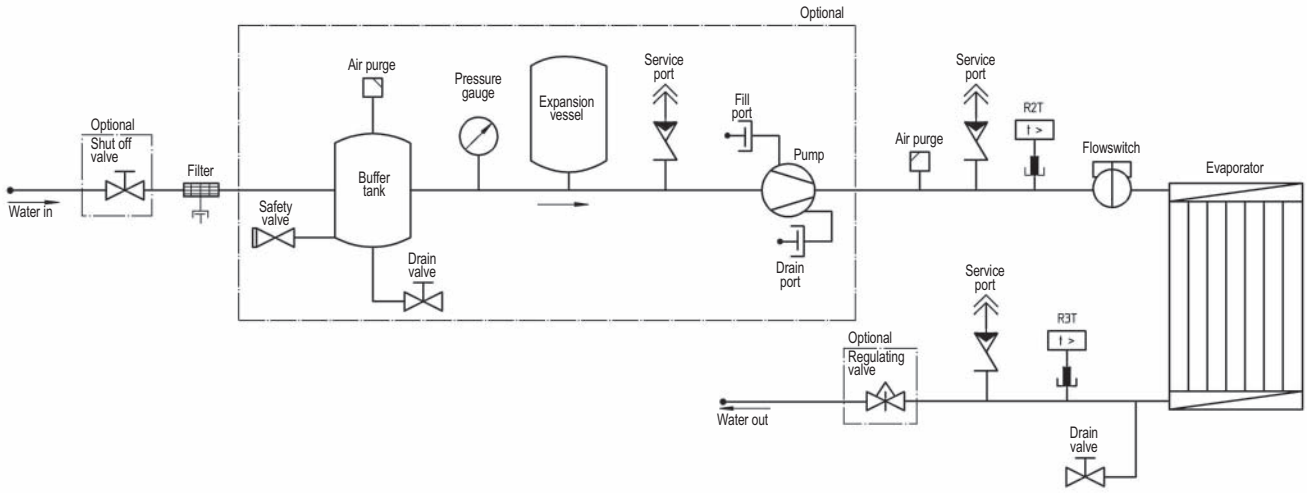


3TW57714-1

6 Piping diagrams

6 - 1 Piping Diagrams

EWAQ-EWYQ-DAYN(N-P-B)(water piping diagram)



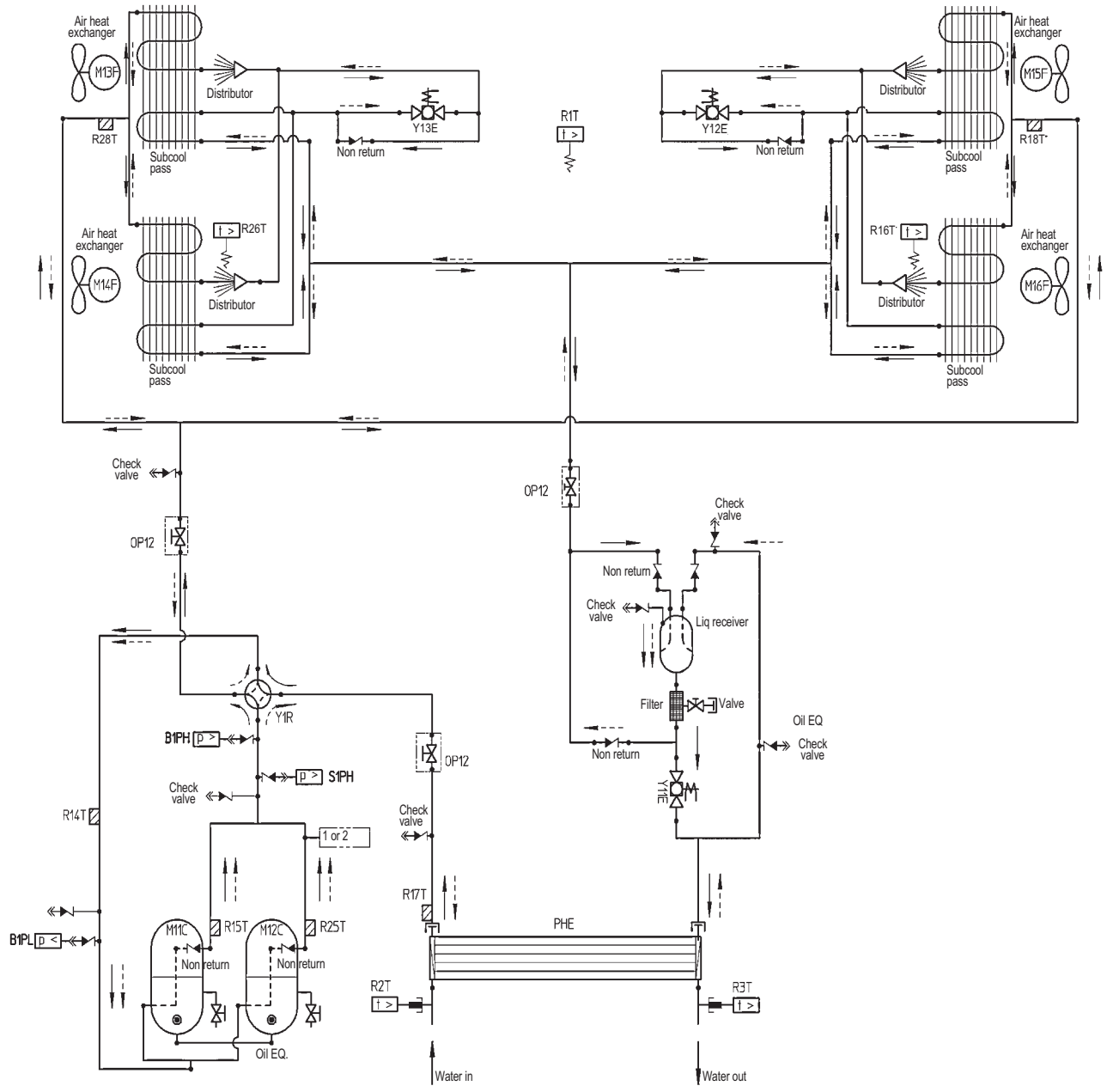
: Check valve
: Flare Conn.
: Screw conn.
: Flange conn.
: Pinched pipe
: Spinned pipe

3TW57575-2A

6 Piping diagrams

6 - 1 Piping Diagrams

EWYQ080-100DAYN (N-P-B)(piping diagram)



Brand	Designation		
M11-12C	Compressor motors	R15T, R25T	Discharge temperature sensor
M13-16F	Fan motors	B1PH	High pressure sensor
R14T	Suction temperature sensor	B1PL	Low pressure sensor
R17T	Refrigerant piping temperature sensor	Y11E	Electronic Expansion valve cooling
R18T, R28T	Heating suction piping temperature sensor	Y12E, Y22E	Electronic expansion valve heating coil 1
R16T, R26T	Coil temperature sensor	R1T	Ambient temperature sensor
S1PH	High pressure switch	R2T	Evaporator inlet water temperature sensor
Y1R	Reverse valve	R3T	Evaporator outlet water temperature sensor

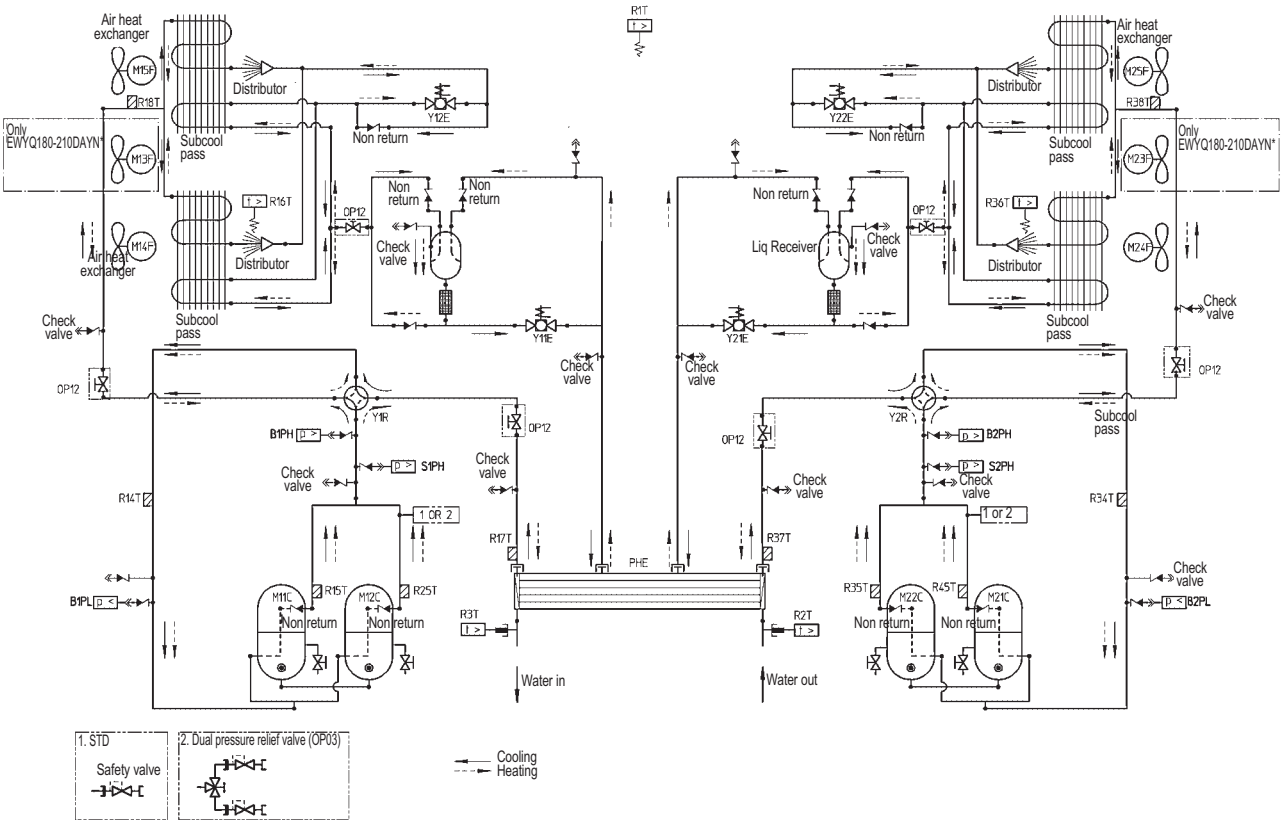
: Check valve
: Flare Conn.
: Screw conn.
: Flange conn.
: Pinched pipe
: Spinned pipe

3TW57655-1C

6 Piping diagrams

6 - 1 Piping Diagrams

EWYQ130-210DAYN (N-P-B)(piping diagram)



Merk	Benaming		
M11-12C	Compressor motors circuit 1	R36T	Coil temperature sensor circuit 2
M13-15F	Fan motors circuit 1	R37T	Refrigerant piping temperature sensor circuit 2
R14T	Suction temperature sensor circuit 1	R38T	Heating suction temp sensor circuit 2
R16T	Coil temperature sensor circuit 1	S2PH	High pressure switch circuit 2
R17T	Regrigerant piping temperature sensor circuit 1	Y2R	Reverse valve circuit 2
R18T	Heating suction temp sensor circuit 1	R35T, R45T	Discharge temperature sensor circuit 2
S1PH	High pressure sensor circuit 1	B2PH	High pressure sensor circuit 2
B1PL	Low pressure sensor circuit 1	B2PL	Low pressure sensor circuit 2
Y11E	Electronic Expansion valve cooling crcuit 1	Y21E	Electronic Expansion valve cooling circuit 2
Y12E	Electronic expansion valve heating circuit 1	Y22E	Electronic expansion valve heating circuit 2
M21-22C	Compressor motors circuit 2	R1T	Ambient temperature sensor
M23-25F	Fan motors crcuit 2	R2T	Evaporator inlet water temperature sensor
R34T	Suction temperature sensor circuit 2	R3T	Evaporator outlet water temperature sensor

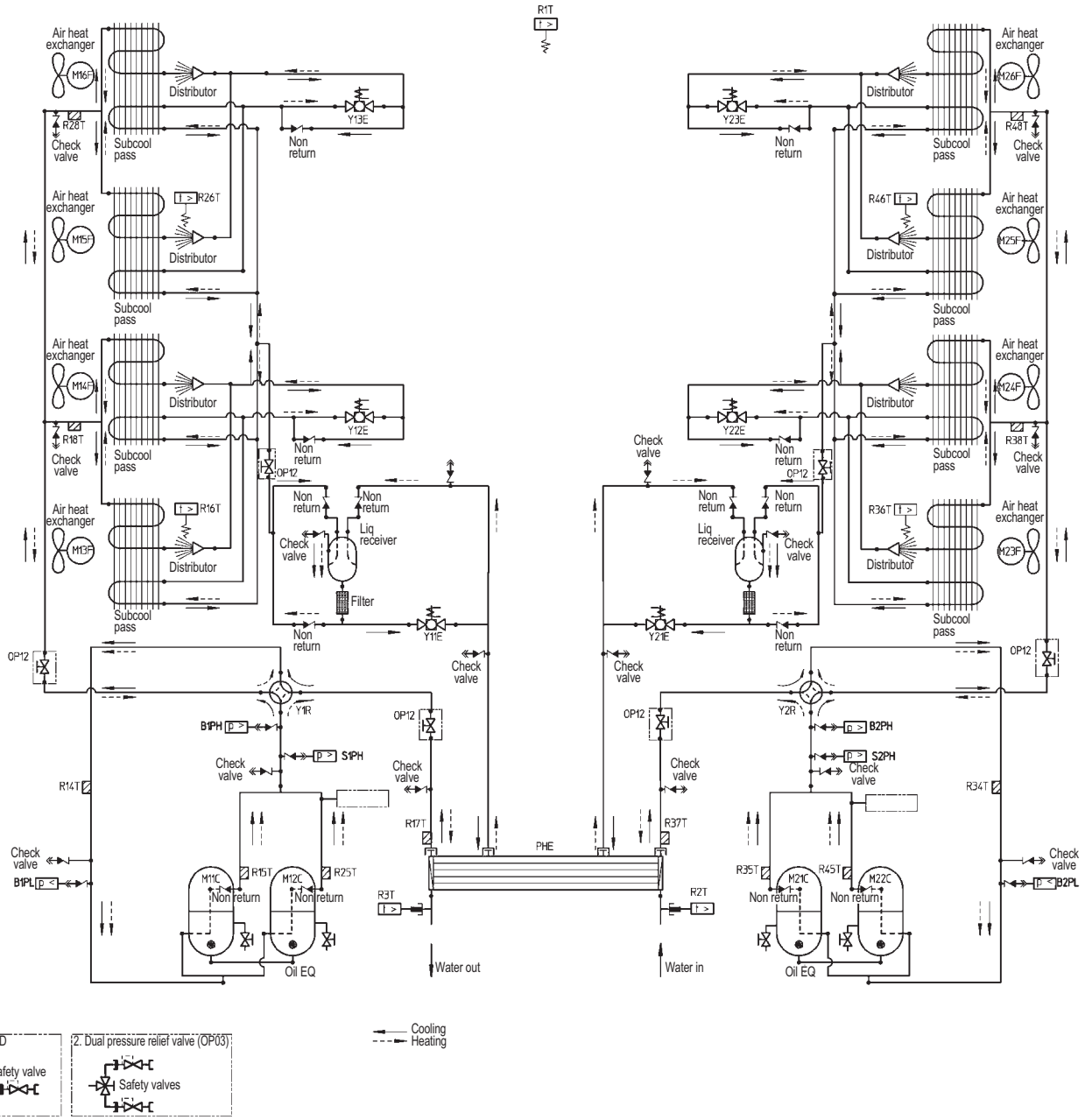
: Check valve
: Flare Conn.
: Screw conn.
: Flange conn.
: Pinched pipe
: Spinned pipe

2TW57675-1A

6 Piping diagrams

6 - 1 Piping Diagrams

EWYQ230-250DAYN(N-P-B) (piping diagram)



MERK	BENAMING		
M11-12C	Compressor motors circuit 1	M23-26F	Fan motors circuit 2
M13-16F	Fan motors circuit 1	R34T	Suction temperature sensor circuit 2
R14T	Suction temperature sensor circuit 1	R36T, R46T	Coil temperature sensor circuit 2
R16T,R26T	Coil temperature sensor circuit 1	R37T	Refrigerant piping temperature sensor circuit 2
R17T	Refrigerant piping temperature sensor circuit 1	S2PH	High pressure switch circuit 2
S1PH	High pressure switch circuit 1	Y2R	Reverse valve circuit 2
Y1R	Reverse valve circuit 1	R35T, R45T	Discharge temperature sensor circuit 2
R15T, R25T	Discharge temperature sensor circuit 1	B2PH	High pressure sensor circuit 2
B1PH	High pressure sensor circuit 1	B2PL	Low pressure sensor circuit 2
B1PL	Low pressure sensor circuit 1	Y21E	Electronic expansion valve cooling circuit 2
Y11E	Electronic expansion valve cooling circuit 1	R38T, R48T	Heating suction temperature sensor circuit 2
R18T, R28T	Heating suction temperature sensor circuit 1	Y22E, Y23E	Electronic expansion valve heating circuit 2
Y12E, Y13E	Electronic expansion valve heating circuit 1	R1T	Ambient temperature sensor
M21-22C	Compressor motors circuit 2	R2T	Evaporator inlet water temperature sensor
		R3T	Evaporator outlet water temperature sensor

: Check valve
: Flare Conn.
: Screw conn.
Flange conn.
: Pinched pipe
: Spinned pipe

2TW57715-1

7 External connection diagrams

7 - 1 External Connection Diagrams

LEGEND

Translation of this legend can be found in the installation manual.

	Not included with standard unit	
	Not possible as option	Possible as option
Obligatory	#	##
Not obligatory	*	**

: Field wiring

: Several wiring possibilities

: Dipswitch set on left position

Part number		Description
A02P	**	Communication PCB (EKACPG)
A4P		PCB wired remote control
A5P	**	PCB wired remote control (EKRUPG)
E5H	*	fieldheater
F1,F2,F3	#	main fuses
F4,F5	#	fuses for heaters
H11,12,21,22P	*	indication lamp: operation compressor
H1P	*	indication lamp: alarm signal (default NO)
H2,3,4,5,6P	*	indication lamp for changeable digital outputs
K1P	##	pump contactor (Only OPSP/OPHP/OPSC/OPTP/OPTC)
K2P	**	pump contactor (Only for OPTP/OPTC)
K1S	*	overcurrent relay pump (P/B unit or OPSC)
M1P	*	pump motor 1 (Only OPSP/ OPHP/OPSC/OPTP/OPTC)
M2P	*	pump motor 2 (Only for OPTP/OPTC)
R8T	*	temperature sensor for changeable analog input
S1M		main isolator switch
S1,2,3,4,5S	*	switch for changeable digital input
S2M	#	heatertape isolator switch
V2C	**	ferrite core (EKACPG)

Options (factory installed)	
OPSP	=Single pump
OPTP	=Twin pump
OPSC	=Single pump contactor
OPTC	=Twin pump contactor
OPHP	=Hi ESP pump
OPIF	=Inverter fans

Options (user installed)	
EKACPG	=Address card including
	-RS 485 (Integrated modbus)
	-F1,F2 (DCIN+DBACS connection)
EKRUPG	=Remote user interface

N-Model	=unit with no options included
Ch.	=Changeable

Changeable I/O possible functions

Refer to the installation manual for instructions how to configure changeable I/O

Changeable digital input (4 available)
-None -Status -Dual setpoint -Remote on-off -Capacity limitation 25%,50%,75% or setting -Low noise (only for OPIF) -Free cooling signal -Fan forced on

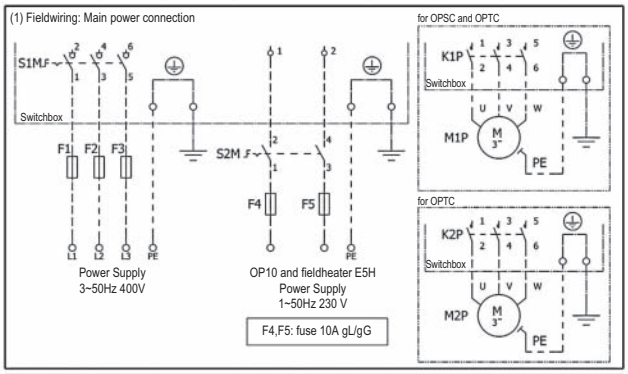
Changeable analog output (1 available)
-None -Unit Capacity (mA,V) -Details of types Type mA: 0..20mA/4..20mA Type V: 0-1V/0-5V/0-10V

Changeable digital output (6 or 5 available depending on unit)
-None -Closed -2nd pump -100% capacity -Full capacity -Free cooling -General operation -Safety+warning NO -Safety+warning NC (only for Ch.DO1) -Safety NO (excluding warning) -Safety NC (excluding warning) (only for Ch.DO1) -C1,C2 Safety NO -Warning NO -C1,C2 operation -Cooling (only EWYQ) -Heating (only EWYQ) -Defrost (only EWYQ

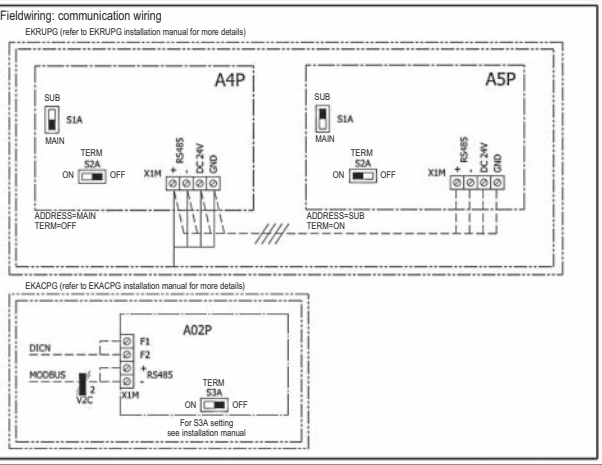
Changeable analog input (4 available)
-None -Status (mA,V,NTC*,DI) -Floating setpoint (mA, V, NTC*) -Water temperature measurement (NTC*) -Changeable DI, refer to Ch DI for possibilities (DI) -Details of types: Type mA: 0..20mA/4..20mA (internal 5V or external power supply) Type V: 0-1V/0-5V/0-10V Type DI: DI (5V detection)

*: for allowed NTC types and how to configure the software please contact your local dealer.

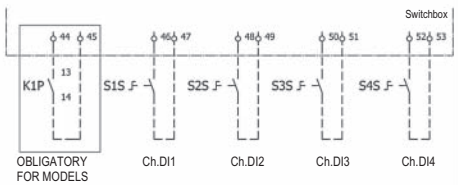
(1) Fieldwiring: Main power connection



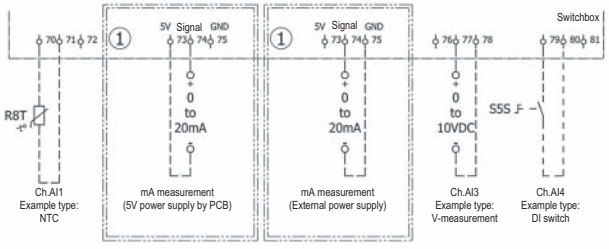
(1) Fieldwiring: communication wiring



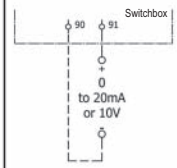
(3) Fieldwiring: Digital input terminals



(4) Fieldwiring: Analog input terminals
(connection is depending on type setting: NTC or mA or V or DI)



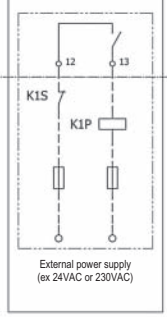
(5) Fieldwiring:
Analog output terminals
(types: mA or V)



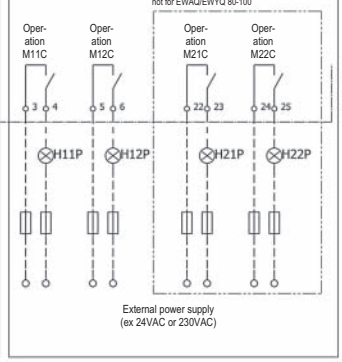
(6) Fieldwiring: Output terminals

Fieldheater contact (max 1kW resistive, 230 VAC)

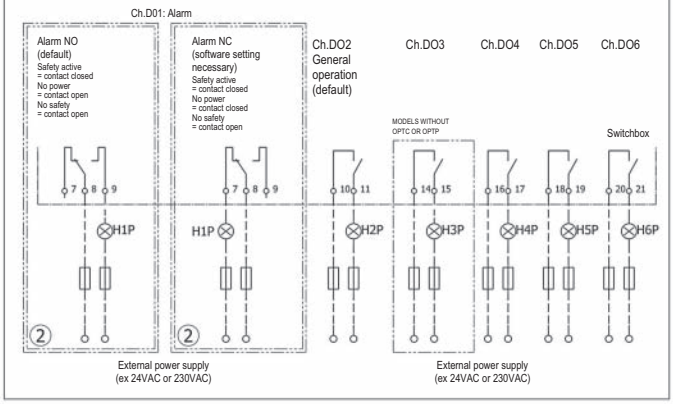
Pump contact for models without OPSC/OPTC/OPSP/ OPTP/OPHP (Maximum load: 2A-230VAC) Minimum load: 10mA-5VDC)



Operation compressor contact AC15 (max 3A, 230VAC)



Changeable digital output terminals
(Maximum load: 2A-230VAC, Minimum load: 10mA-5VDC)



8 Sound data

8 - 1 Sound Power Spectrum

EWAQ-EWYQ-DAYN(N-P-B)

STD - Units LWE= 7°C / Tamb = 35°C	Sound power Lw per Octave band (dBA)								Total (dBA)
	63	125	250	500	1000	2000	4000	8000	LwA
EW(A/Y)Q080DAYN*	64	69	72	82	81	77	71	62	86
EW(A/Y)Q100DAYN*	62	66	71	79	82	80	74	64	86
EW(A/Y)Q130DAYN*	64	70	73	81	85	80	72	61	88
EW(A/Y)Q150DAYN*	65	74	75	85	84	80	74	65	89
EW(A/Y)Q180DAYN*	70	75	79	85	86	82	75	64	90
EW(A/Y)Q210DAYN*	67	74	79	85	86	83	76	64	90
EW(A/Y)Q(230/240)DAYN*	71	72	77	87	86	83	77	67	91
EW(A/Y)Q(250/260)DAYN*	71	72	77	87	86	83	77	67	91

OPLN - Units LWE= 7°C / Tamb = 35°C	Sound power Lw per Octave band (dBA)								Total (dBA)
	63	125	250	500	1000	2000	4000	8000	LwA
EW(A/Y)Q080DAYN*	62	67	70	80	79	75	69	60	84
EW(A/Y)Q100DAYN*	60	64	69	77	80	78	72	62	84
EW(A/Y)Q130DAYN*	61	67	70	78	82	77	69	58	85
EW(A/Y)Q150DAYN*	62	71	72	82	81	77	71	62	86
EW(A/Y)Q180DAYN*	68	73	77	83	84	80	73	62	88
EW(A/Y)Q210DAYN*	65	72	77	83	84	81	74	62	88
EW(A/Y)Q(230/240)DAYN*	68	69	74	84	83	80	74	64	88
EW(A/Y)Q(250/260)DAYN*	68	69	74	84	83	80	74	64	88

OPLN - Units LWE= 7°C / Tamb = 25°C	Sound power Lw per Octave band (dBA)								Total (dBA)
	63	125	250	500	1000	2000	4000	8000	LwA
EW(A/Y)Q080DAYN*	61	66	69	79	78	74	68	59	83
EW(A/Y)Q100DAYN*	59	63	68	76	79	77	71	61	83
EW(A/Y)Q130DAYN*	60	66	69	77	81	76	68	57	84
EW(A/Y)Q150DAYN*	60	69	70	80	79	75	69	90	84
EW(A/Y)Q180DAYN*	66	71	75	81	82	79	72	60	86
EW(A/Y)Q210DAYN*	63	70	75	81	82	79	72	60	86
EW(A/Y)Q(230/240)DAYN*	67	68	73	83	82	79	73	63	87
EW(A/Y)Q(250/260)DAYN*	67	68	73	83	82	79	73	63	87

NOTES

1 Values of Sound power according to ISO9614-2

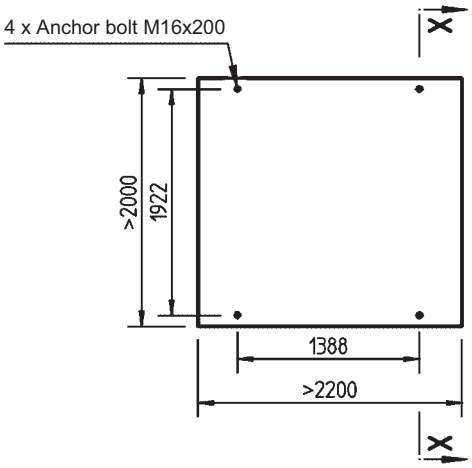
2 LWE= Leaving Water Evaporator temperature (°C)
Tamb= Ambient temperature

4TW57577-1C

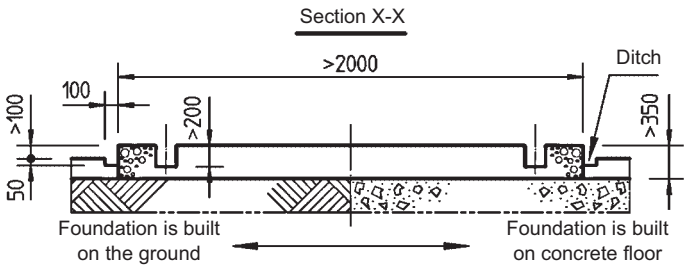
9 Installation

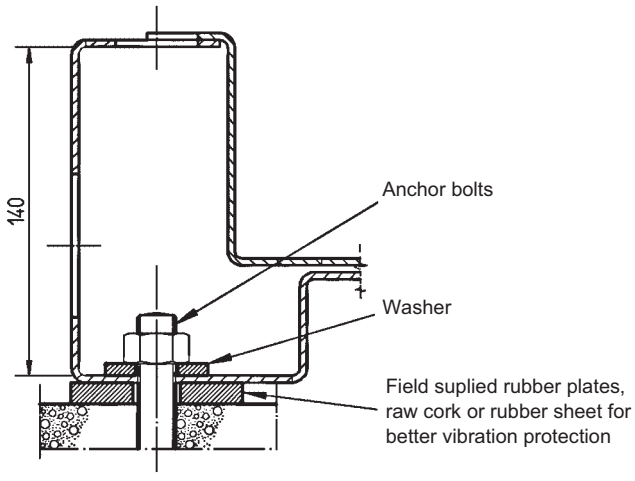
9 - 1 Fixation and Foundation of Units

EWAQ-EWYQ080-150DAYN(N-P-B)



Fix anchor bolts into the concrete foundation. The concrete foundation should be higher than the floor level by approximately 100 mm for ease of plumbing work and better drain. Further, strength of the floor should be sufficient to support the weights of concrete foundation and unit.
Be certain that foundation surface is even and flat.





NOTES

1 The measurement tabulated is based on the fact the base is made in the ground or on a concrete floor. In case the base is made on a concrete floor. In case the base is made on a rigid concrete floor, it is possible to include thickness of concrete floor, in that of the base.

2 In case a base is made on concrete floor, be sure to provide a ditch as shown. It is important to extract drainage regardless of wether a base is made in the ground or on the concrete floor. (Ditch → Sewerage).

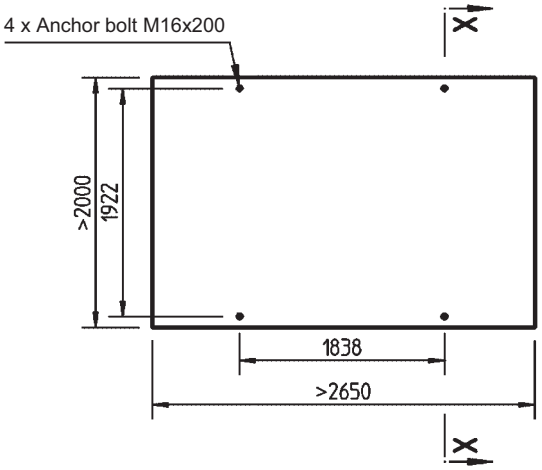
3 Ingredient ratio of the concrete is cement: 1, sand: 2, gravel: 3, which is standard and insert iron bars of ∅10 at every interval of 300mm. The edge of the concrete base should be planed.

4TW57599-1

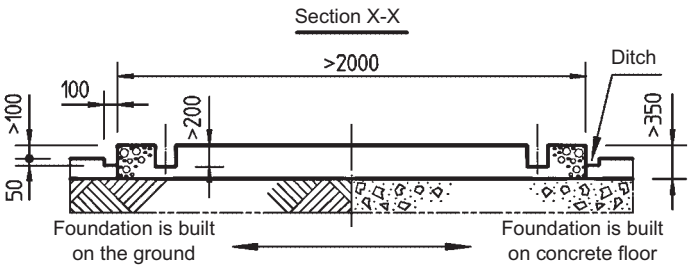
9 Installation

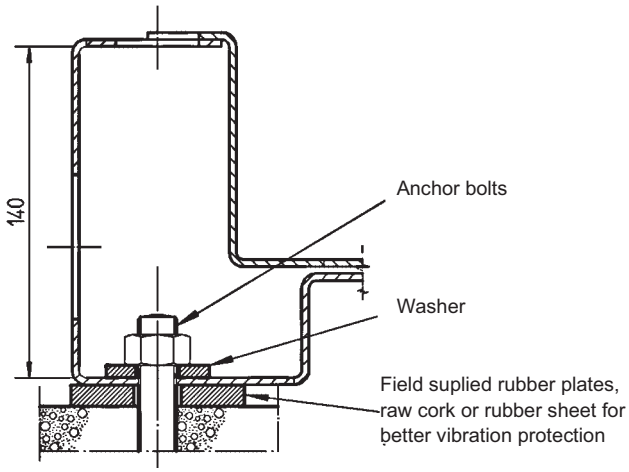
9 - 1 Fixation and Foundation of Units

EWAQ-EWYQ180-210DAYN(N-P-B)



Fix anchor bolts into the concrete foundation.
The concrete foundation should be higher than the floor level by approximately 100 mm for ease of plumbing work and better drain.
Further, strength of the floor should be sufficient to support the weights of concrete foundation and unit.
Be certain that foundation surface is even and flat.





NOTES

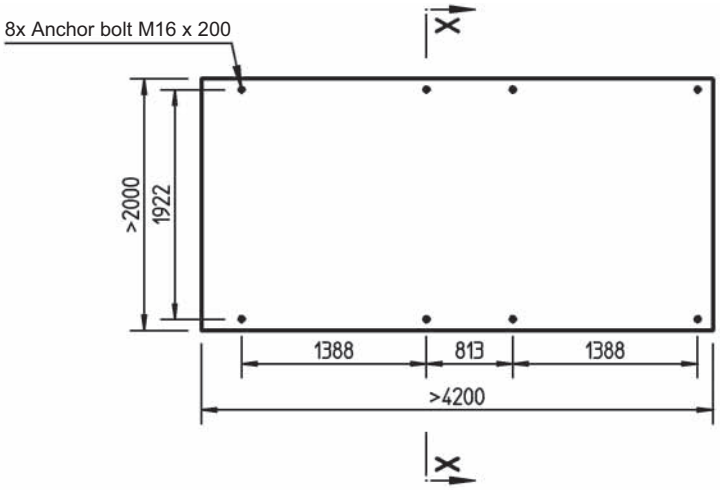
1 The measurement tabulated is based on the fact the base is made in the ground or on a concrete floor. In case the base is made on a concrete floor. In case the base is made on a rigid concrete floor, it is possible to include thickness of concrete floor, in that of the base.
2 In case a base is made on concrete floor, be sure to provide a ditch as shown. It is important to extract drainage regardless of wether a base is made in the ground or on the concrete floor. (Ditch → Sewerage).
3 Ingredient ratio of the concrete is cement: 1, sand: 2, gravel: 3, which is standard and insert iron bars of ∅10 at every interval of 300mm. The edge of the concrete base should be planed.

4TW57619-1

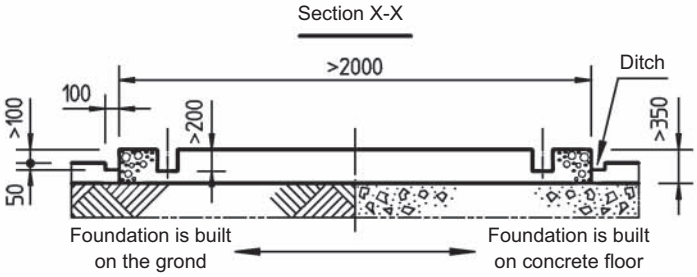
9 Installation

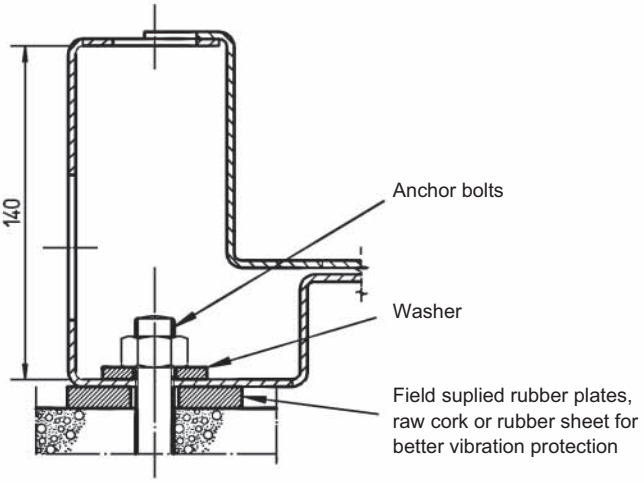
9 - 1 Fixation and Foundation of Units

EWAQ240-260DAYN(N-P-B)_EWYQ230-250DAYN(N-P-B)



Fix anchor bolts into the concrete foundation.
The concrete foundation should be higher than the floor level by approximately 100 mm for ease of plumbing work and better drain.
Further, strength of the floor should be sufficient to support the weights of concrete foundation and unit.
Be certain that foundation surface is even and flat.





NOTES

1 The measurement tabulated is based on the fact the base is made in the ground or on a concrete floor. In case the base is made on a rigid concrete floor, it is possible to include thickness of concrete floor in that of the base.

2 In case a base is made on concrete floor, be sure to provide a ditch as shown. It is important to extract drainage regardless of wether a base is made in the ground or on the concrete floor. (Ditch → Sewerage).

3 Ingredient ratio of the concrete is cement: 1, sand:2, gravel:3, which is standard and insert iron bars of ∅10 at every interval of 300mm. The edge of the concrete base should be planed.

4TW57639-1

ITEMS (1) (5)			Cooling water (3)			Cooled water		Heated water (2)				Tendency if out of criteria
			Circulating system		Once flow			Low temperature		High temperature		
			Circulating water	Supply water (4)	Flowing water	Circulating water [Below 20°C]	Supply water (4)	Circulating water [20°C ~ 60°C]	Supply water (4)	Circulating water [60°C ~ 80°C]	Supply water (4)	
Items to be controlled:	pH	at 25°C	6.5~8.2	6.0~8.0	6.8~8.0	6.8~8.0	6.8~8.0	7.0~8.0	7.0~8.0	7.0~8.0	7.0~8.0	Corrosion + scale
	Electrical conductivity	[mS/m] at 25°C	Below 80	Below 30	Below 40	Below 40	Below 30	Below 30	Below 30	Below 30	Below 30	Corrosion + scale
		(μS/cm) at 25°C (1)	(Below 800)	(Below 300)	(Below 400)	(Below 400)	(Below 300)	(Below 300)	(Below 300)	(Below 300)	(Below 300)	Corrosion + scale
	Chloride ion	[mgCl^-/l]	Below 200	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 30	Below 30	Corrosion
	Sulfate ion	[mgSO^{2-}_4/l]	Below 200	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 30	Below 30	Corrosion
	M-alkalinity (pH4.8)	[mg$CaCO_3$/l]	Below 100	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Scale
	Total hardness	[mg$CaCO_3$/l]	Below 200	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Below 70	Scale
	Calcium hardness	[mg$CaCO_3$/l]	Below 150	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Below 50	Scale
	Silica ion	[mgSiO_2/l]	Below 50	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Below 30	Scale
Items to be referred to:	Iron	[mgFe/l]	Below 1.0	Below 0.3	Below 1.0	Below 1.0	Below 0.3	Below 1.0	Below 0.3	Below 1.0	Below 0.3	Corrosion + scale
	Copper	[mgCu/l]	Below 0.3	Below 0.1	Below 1.0	Below 1.0	Below 1.0	Below 1.0	Below 0.1	Below 1.0	Below 0.1	Corrosion
	Sulfite ion	[mgS^{2-}/l]	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Corrosion
	Ammonium ion	[mgNH^+_4/l]	Below 1.0	Below 0.1	Below 1.0	Below 1.0	Below 0.1	Below 0.3	Below 0.1	Below 0.1	Below 0.1	Corrosion
	Remaining chloride	[mgCL/l]	Below 0.3	Below 0.3	Below 0.3	Below 0.3	Below 0.3	Below 0.25	Below 0.3	Below 0.1	Below 0.3	Corrosion
	Free carbide	[mgCO_2/l]	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 4.0	Below 0.4	Below 4.0	Below 0.4	Below 4.0	Corrosion
	Stability index		6.0~7.0	---	---	---	---	---	---	---	---	Corrosion + scale

3TW50179-1

1 Names, definitions and units are according to JIS K 0101. Units and figures between brackets are old units published as reference only.

2 In case of using heated water (more than 40°C), corrosion is generally noticeable.
Especially when the iron material is in direct contact with water without any protection shields, it is desireable to give the valid measures for corrosion. e.g. chemical measure.

3 In the cooling water using hermetic cooling tower, dosed circuit water is according to heated water standard, and scattered water is according to cooling water standard.

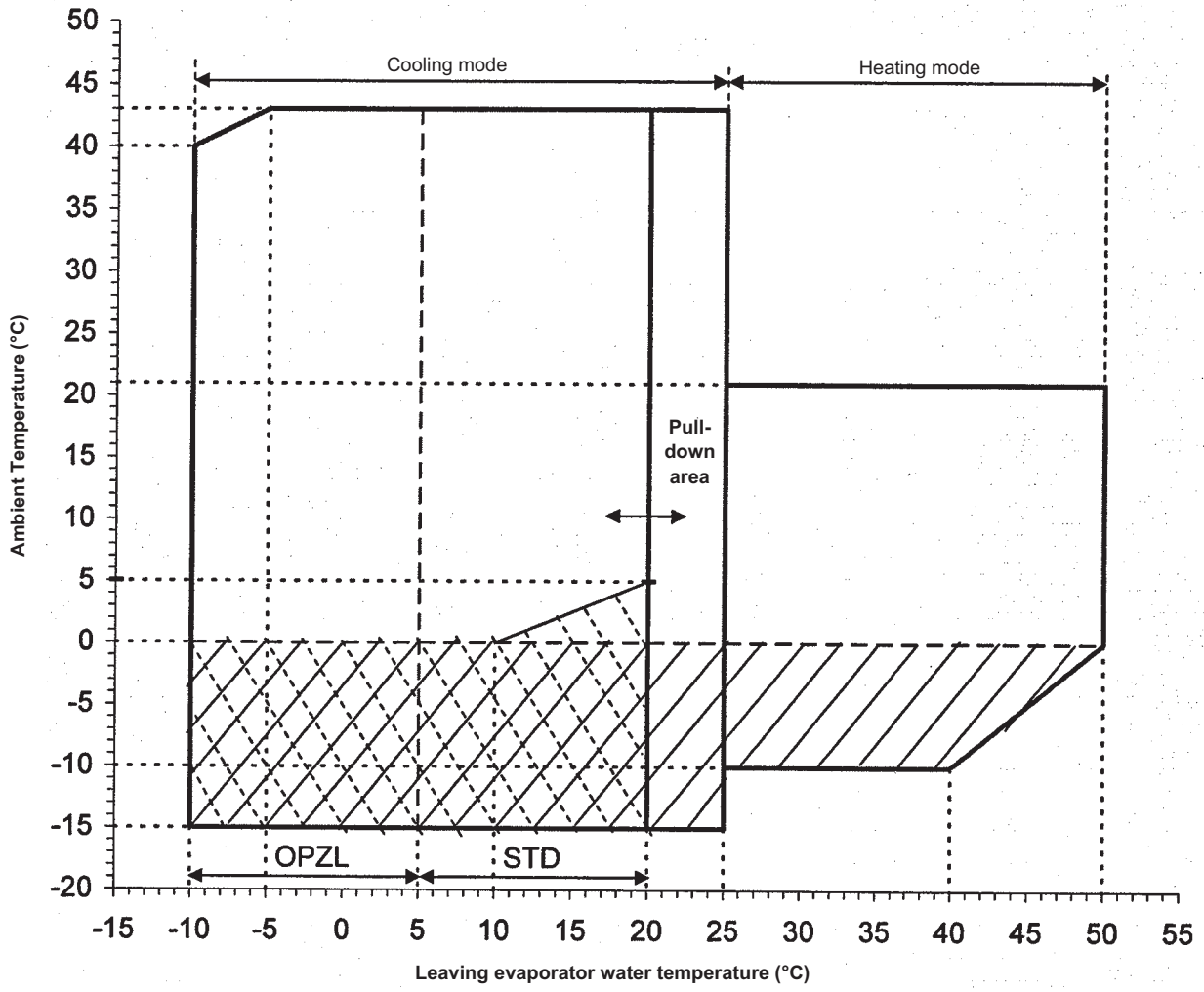
4 Supply water is considered drink water, industrial water and ground water except for genuine water, neutral water and soft water.

5 The above mentioned items are representable items in corrosion and scale cases.

10 Operation range

10 - 1 Operation Range

EWYQ080-100-180-210-230-250DAYN(N-P-B)



STD: Standard unit

OPZL: Leaving water evaporator from -10 to 5°C by use of glycol

Protect the water circuit against freezing by:

* OR OP10: heater tape

* Or filling up the system with a glycol solution

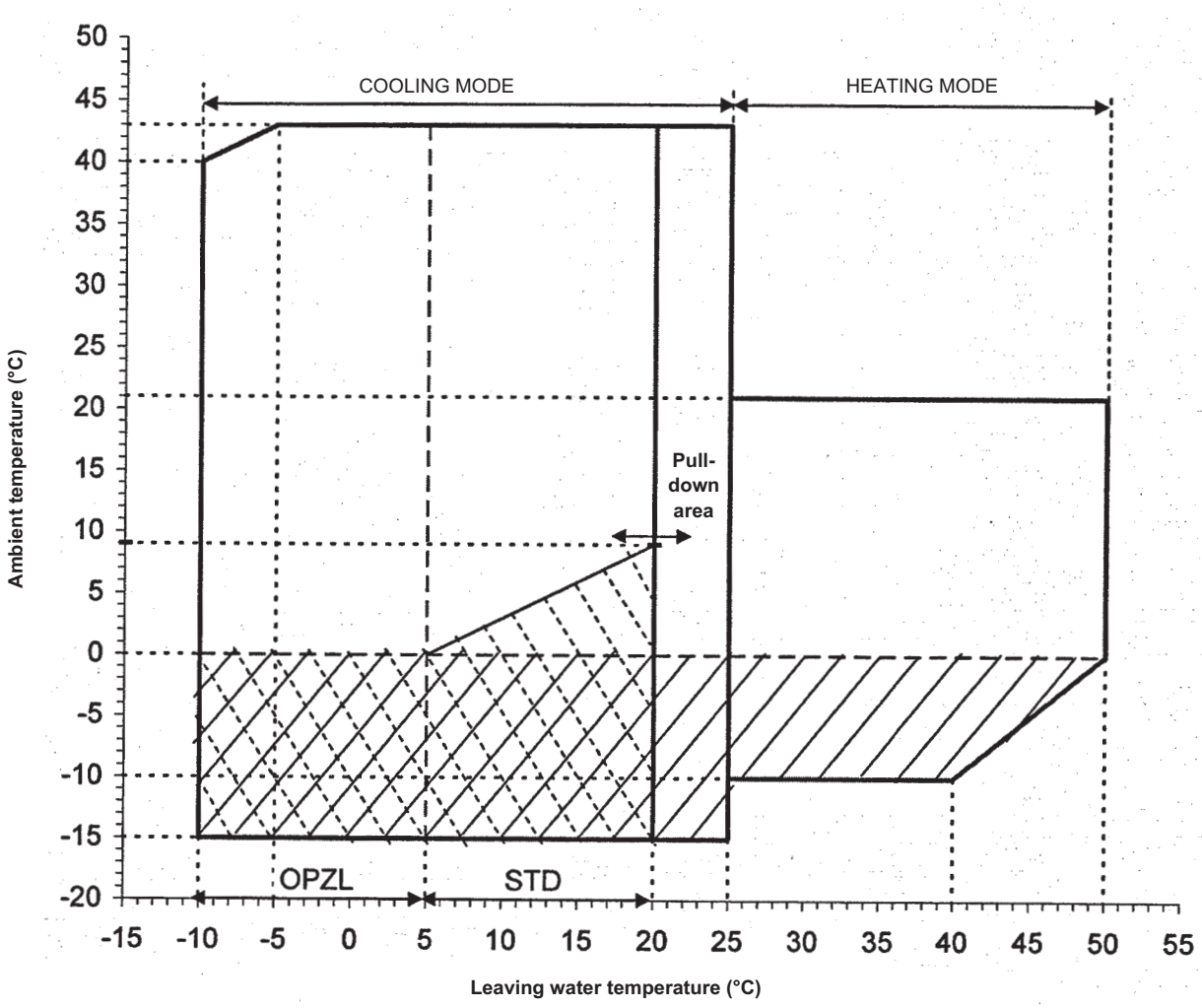
OPIF: Option Inverter Fans EWYQ080-100-180-210-230-250

3TW57703-1A

10 Operation range

10 - 1 Operation Range

EWYQ130-150DAYN(N-P-B)



STD: Standard unit

OPZL: Leaving water evaporator from -10 to 5°C by use of glycol

Protect the water circuit against freezing by:

* OR OP10: heater tape

* Or filling up the system with a glycol solution

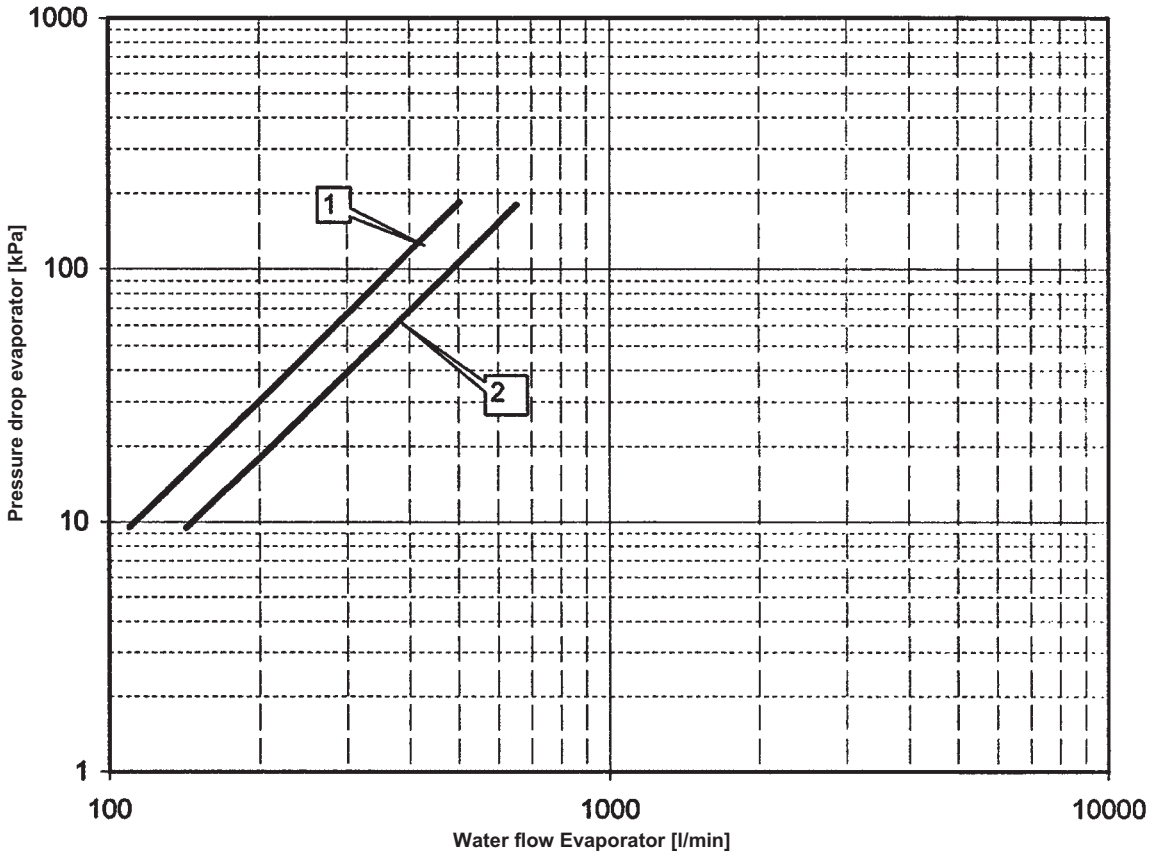
OPIF Option Inverter Fans EWYQ130-150

4TW57673-1

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ80-100DAYN(N-P-B)



1. EWYQ80DAYN*

2. EWYQ100DAYN*

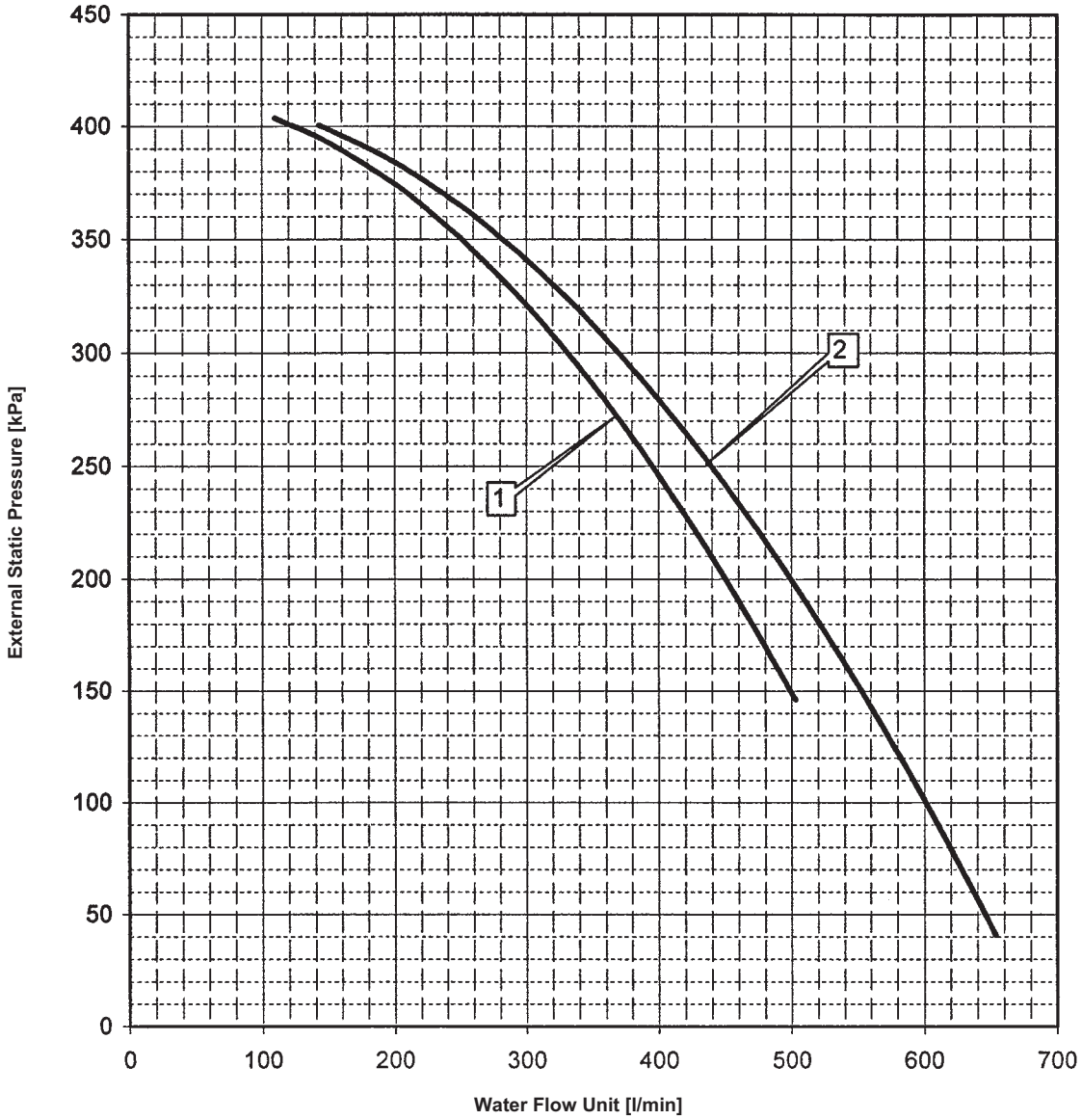
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57659-5

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ080-100DAYN(OPHP)



1. EWYQ080DAYN* + OPHP

2. EWYQ100DAYN* + OPHP

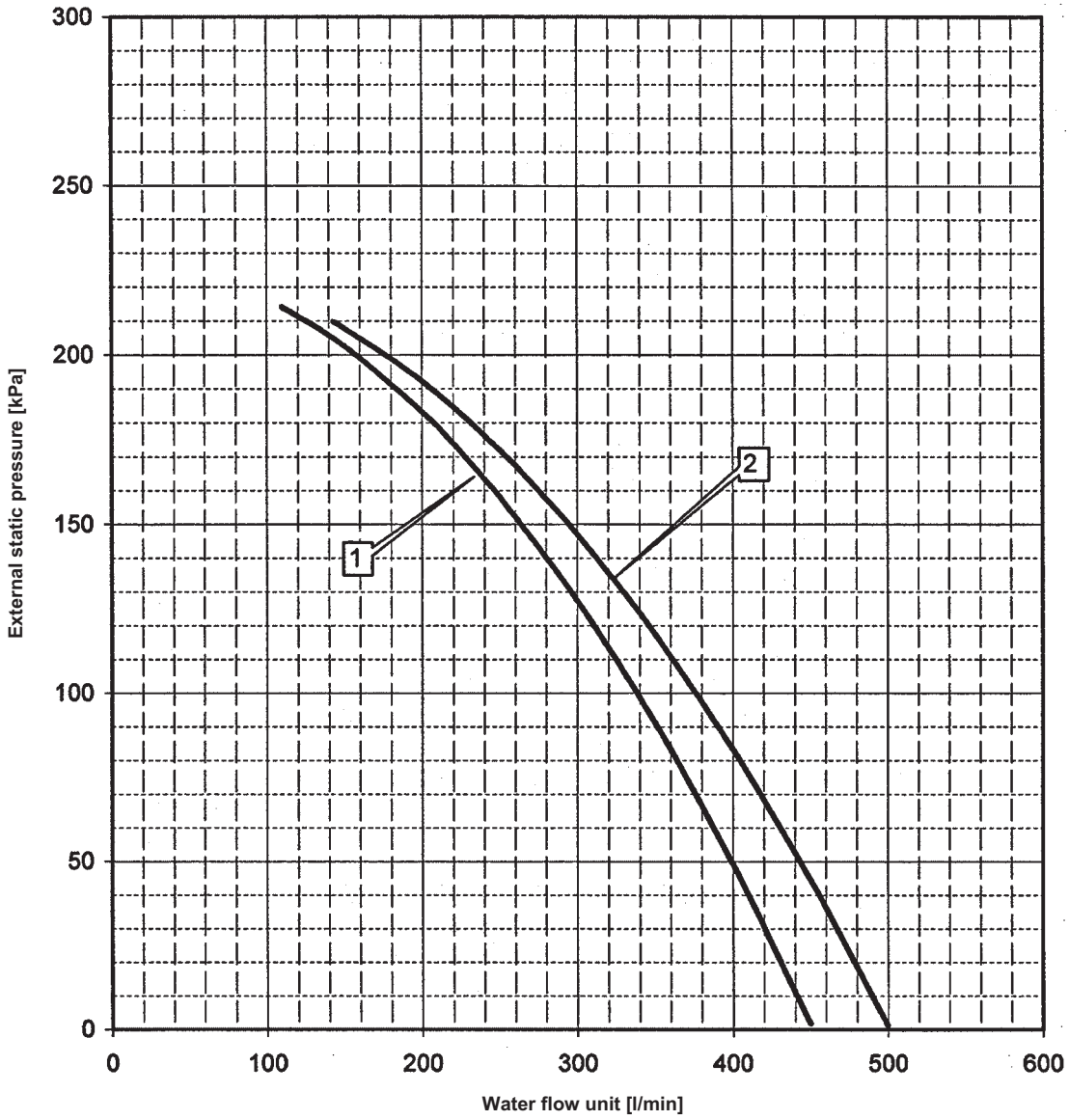
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57659-9

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ080-100DAYN*



1. EWYQ080DAYN* + OPSP/OPTP

2. EWYQ100DAYN* + OPSP/OPTP

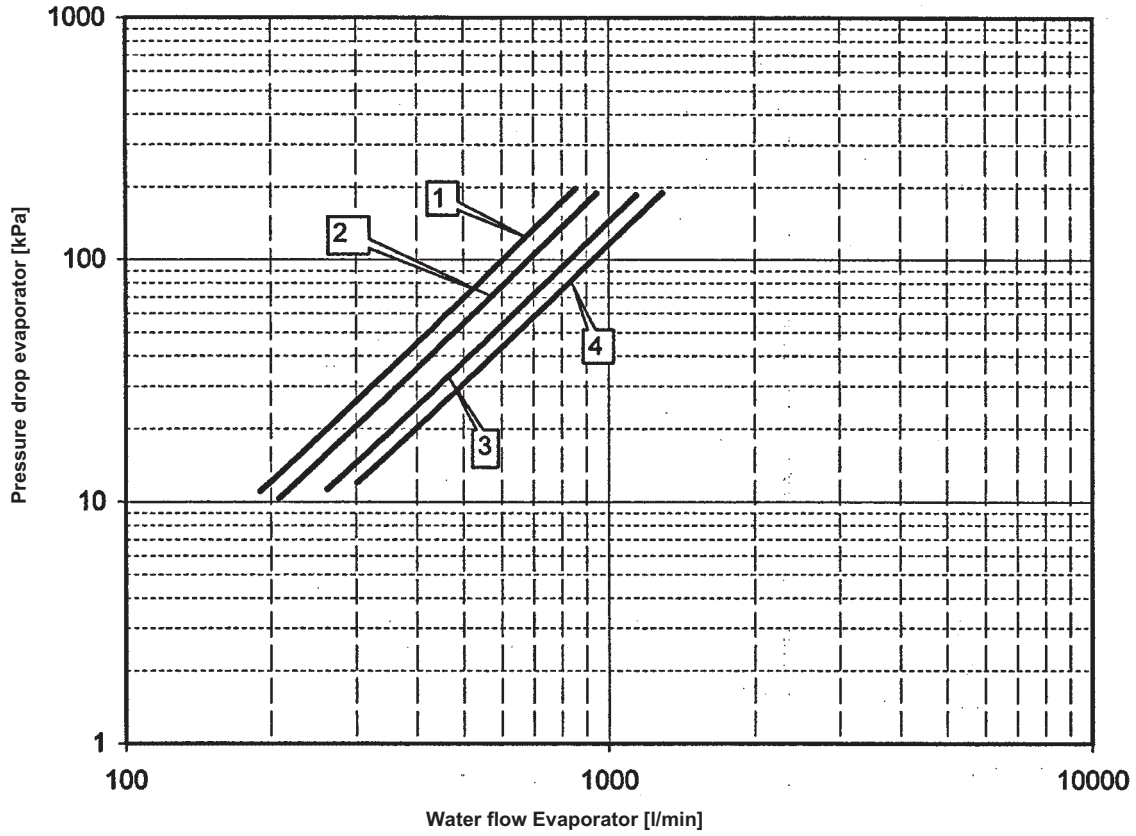
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57659-4A

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ130-210DAYN(N-P-B)



1. EWYQ130DAYN*
2. EWYQ150DAYN*
3. EWYQ180DAYN*
4. EWYQ210DAYN*

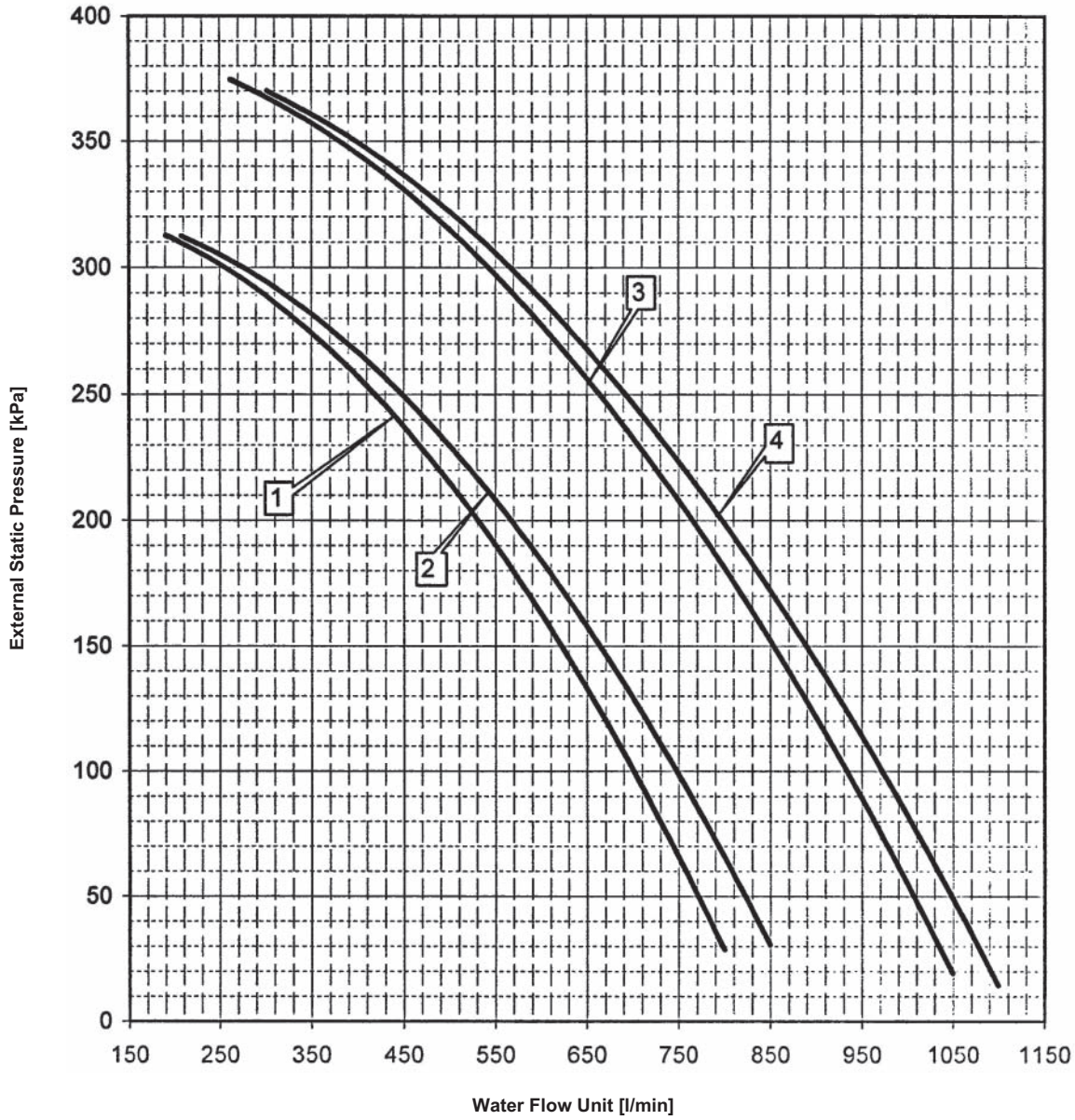
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57679-5

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ130-210DAYN (OPHP)



1. EWYQ130DAYN* + OPHP
2. EWYQ150DAYN* + OPHP
3. EWYQ180DAYN* + OPHP
4. EWYQ210DAYN* + OPHP

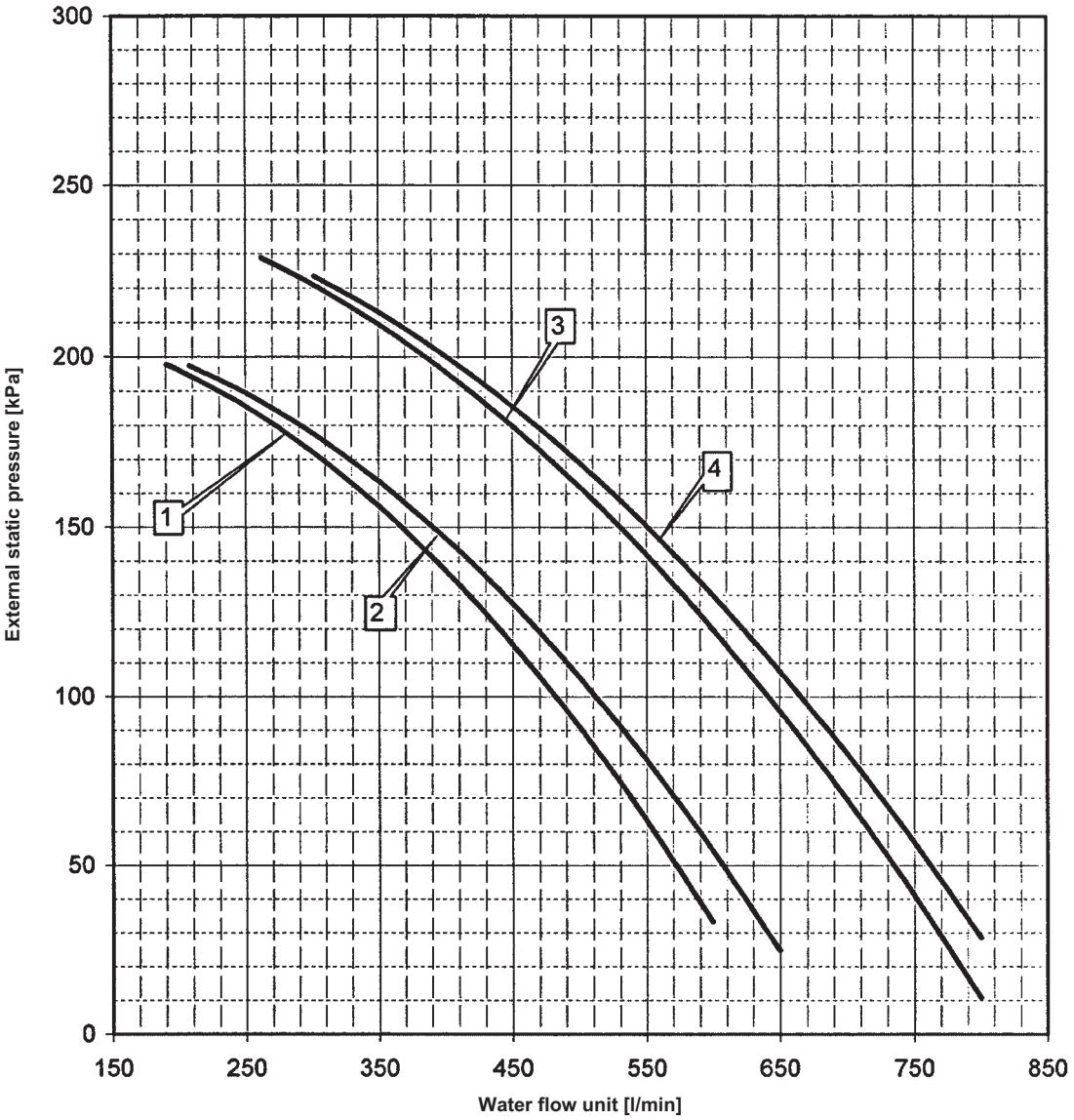
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57679-9

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ130-210DAYN*



1. EWYQ130DAYN* + OPSP/OPTP
2. EWYQ150DAYN* + OPSP/OPTP
3. EWYQ180DAYN* + OPSP/OPTP
4. EWYQ210DAYN* + OPSP/OPTP

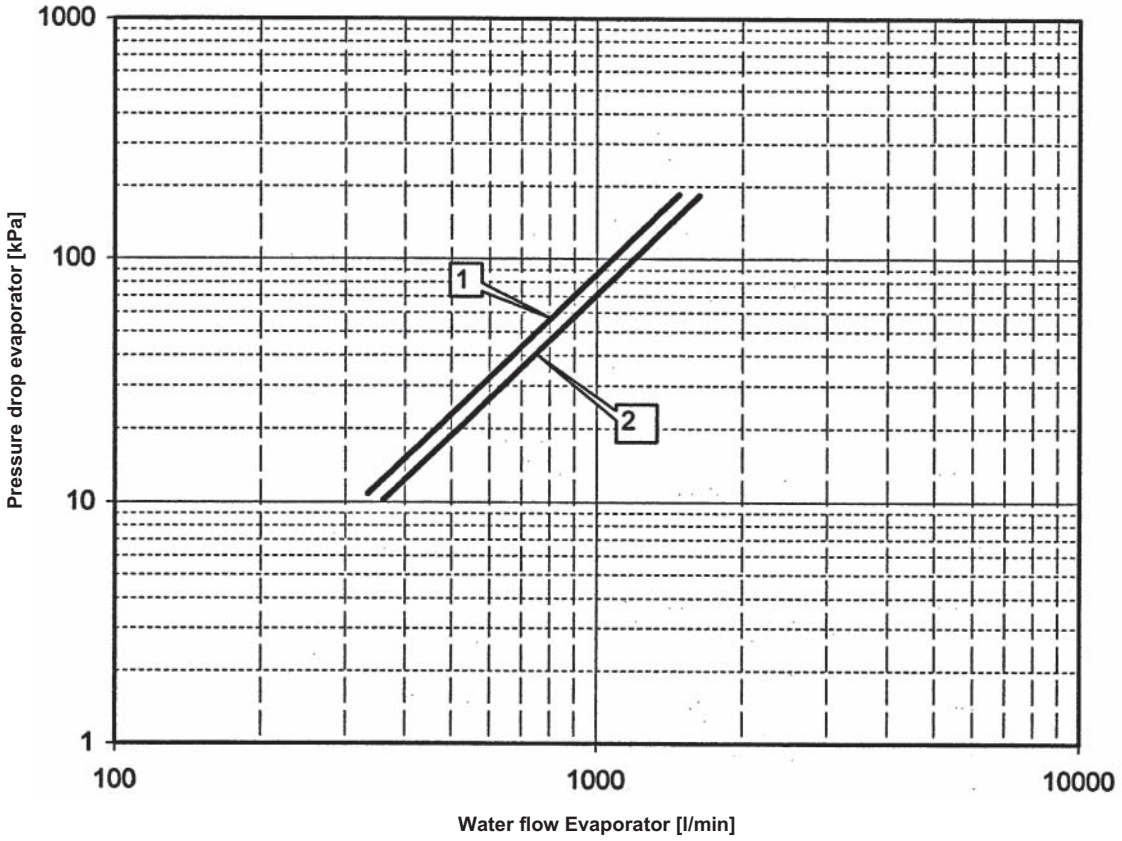
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57679-4A

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ230-250DAYN(N-P-B)



1. EWYQ230DAYN*

2. EWYQ250DAYN*

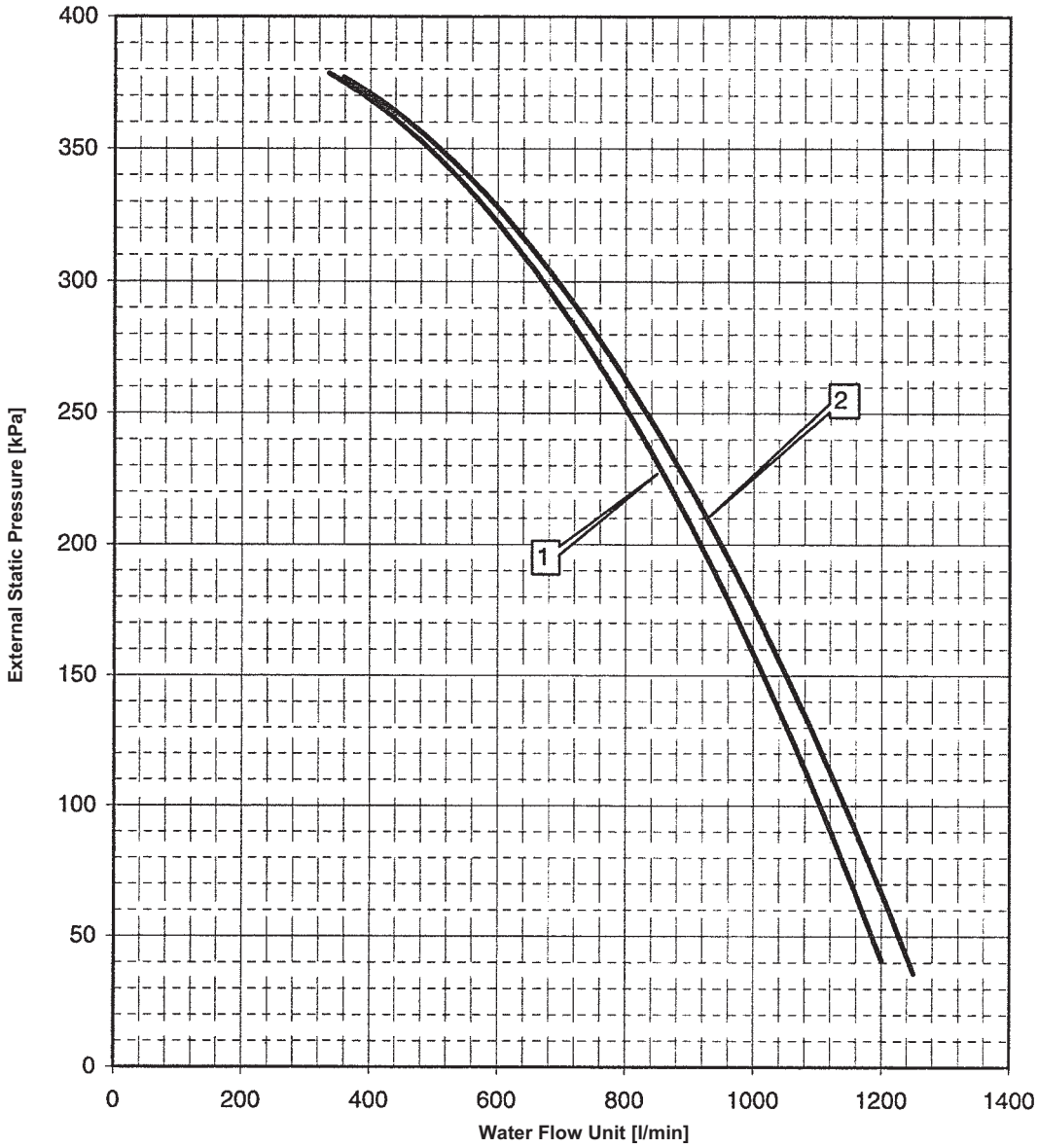
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57719-5

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ230-250DAYN(OPHP)



1. EWYQ230DAYN* + OPHP

2. EWYQ250DAYN* + OPHP

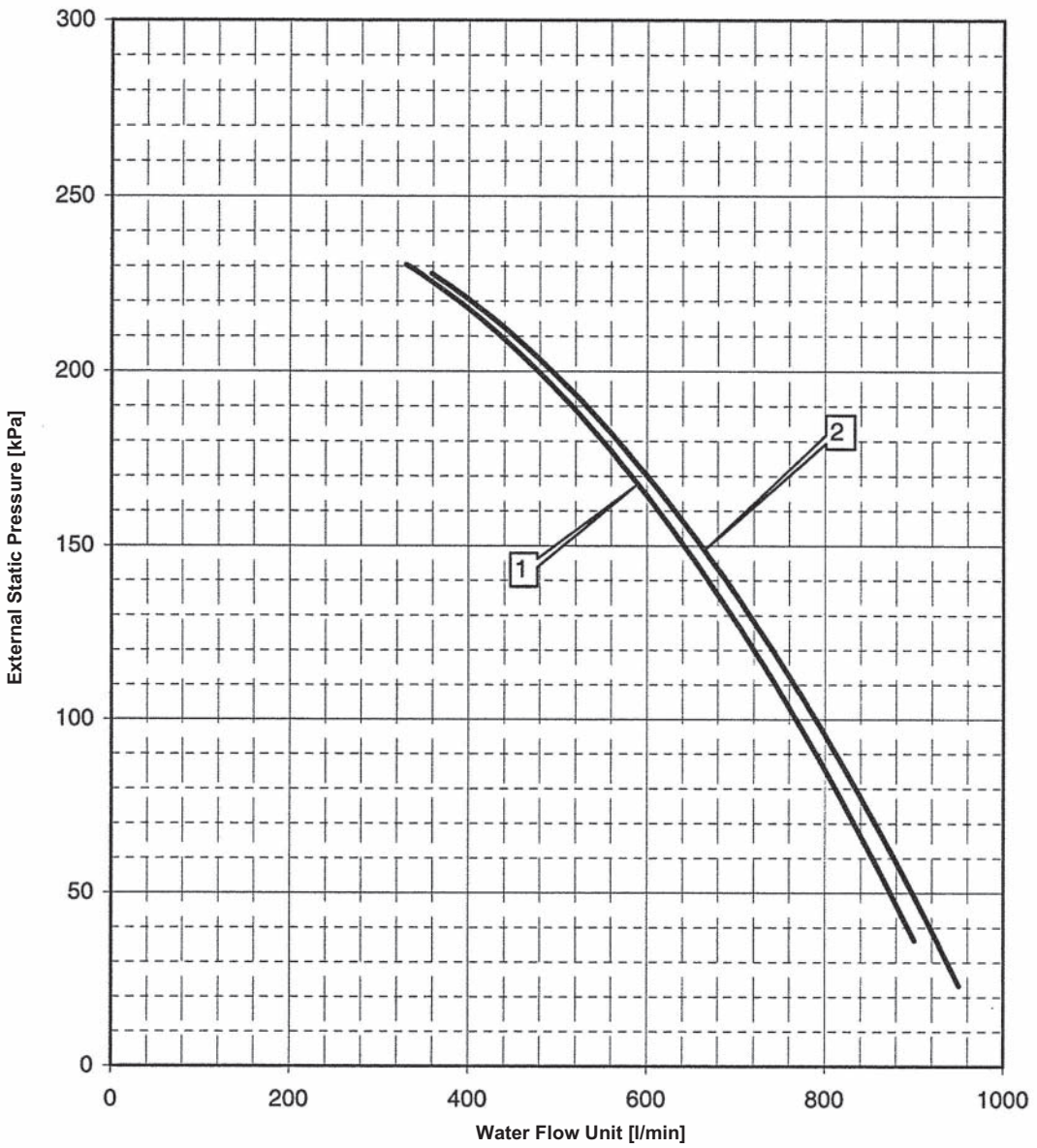
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57719-9A

11 Hydraulic performance

11 - 1 Water Pressure Drop Curve Evaporator

EWYQ230-250DAYN*



1. EWYQ230DAYN* + OPSP/OPTP

2. EWYQ250DAYN* + OPSP/OPTP

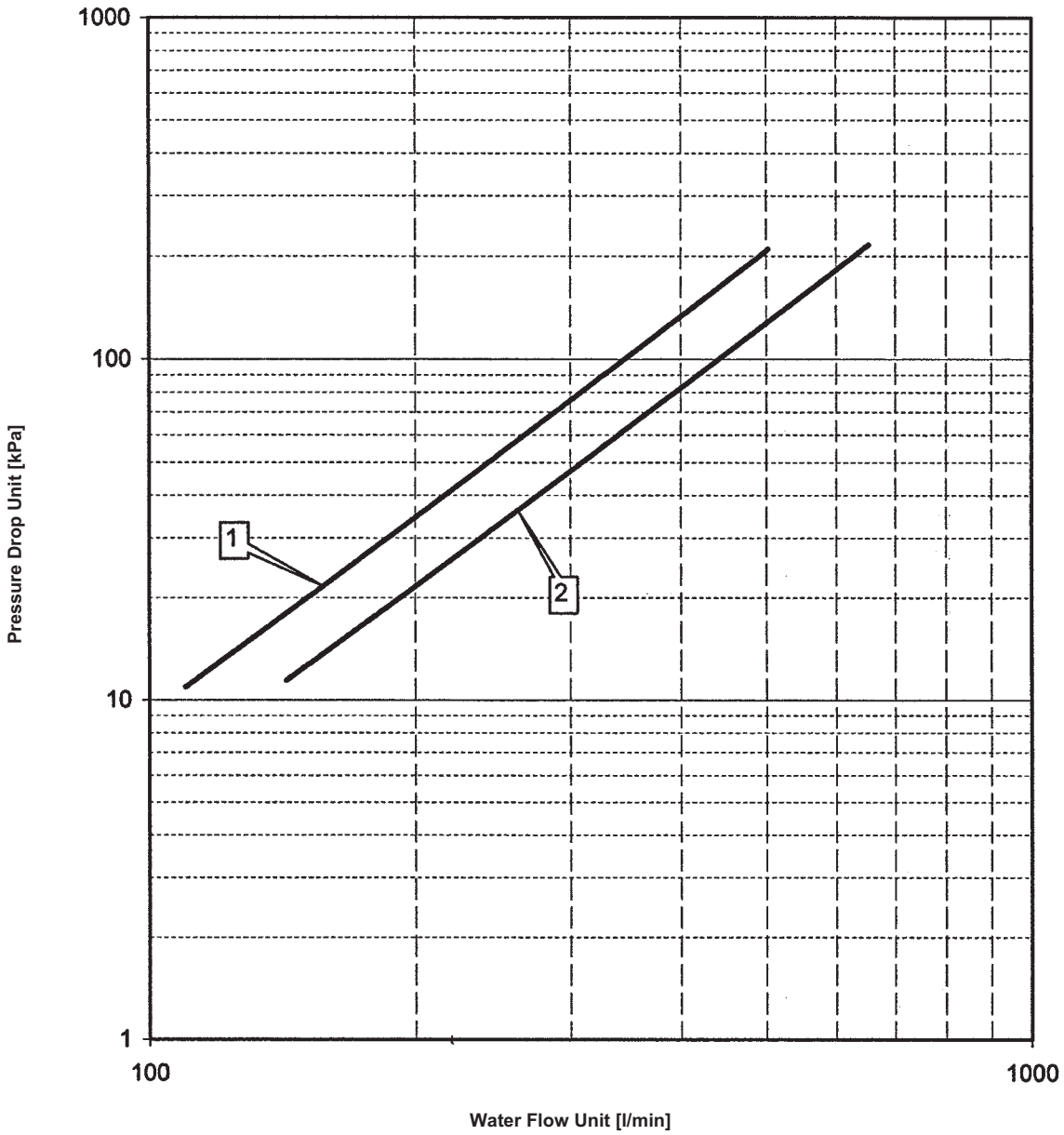
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57719-4B

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWYQ080-100DAYN(N)



1. EWYQ080DAYN* Standard model

2. EWYQ100DAYN* Standard model

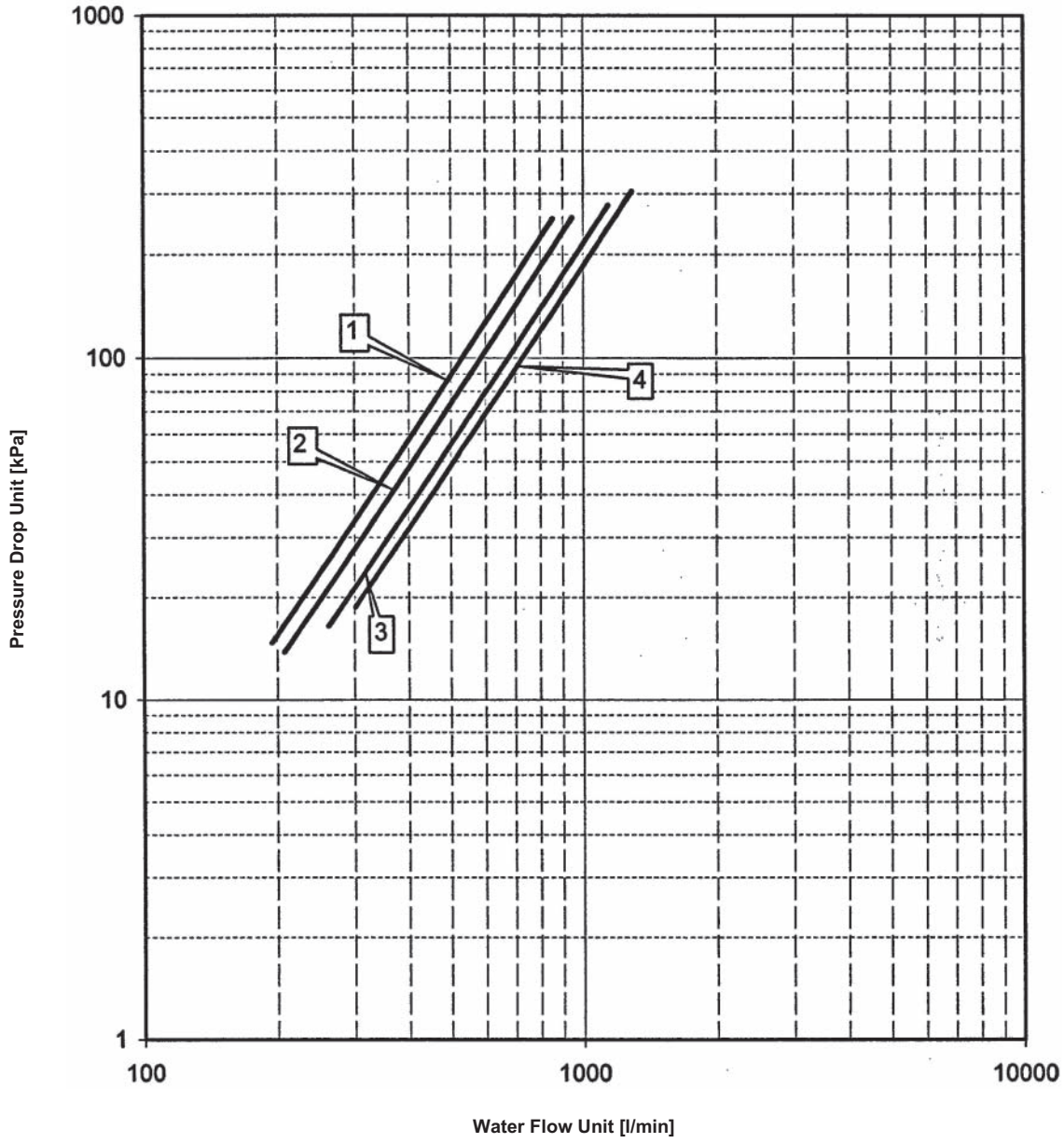
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57659-7

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWYQ130-210DAYN(N)



1. EWYQ130DAYN* Standard model
2. EWYQ150DAYN* Standard model
3. EWYQ180DAYN* Standard model
4. EWYQ210DAYN* Standard model

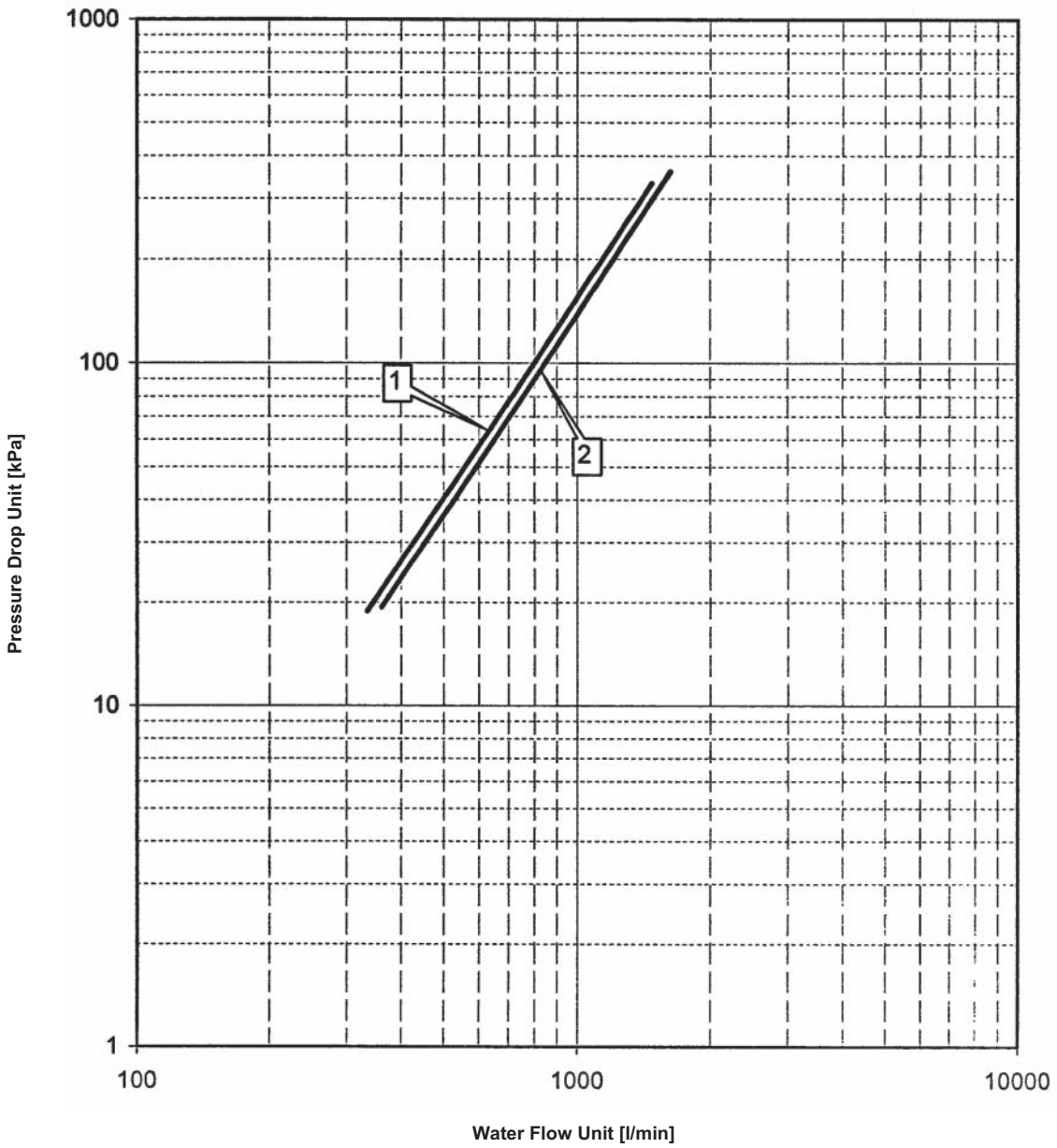
Warning:
Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrange in the technical specifications.

4TW57679-7

11 Hydraulic performance

11 - 2 Static Pressure Drop Unit

EWYQ230-250DAYN(N)



1. EWYQ230DAYN* Standard model

2. EWYQ250DAYN* Standard model

Warning:
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.

4TW57719-7

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.

Daikin products are distributed by:

Daikin Europe N.V. participates in the Eurovent Certification Programme for Air Conditioners (AC), Liquid Chilling Packages (LCP) and Fan Coil Units (FC); the certified data of certified models are listed in the Eurovent Directory. Multi units are Eurovent certified for combinations up to 2 indoor units.

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