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## EUWA\*40-200K(A)X

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# 1

## Features



The Daikin packaged air-cooled water chillers EUWA(\*)-K(A)X series are designed for outdoor installation and used for cooling applications only.

The units are provided with different features depending on the country in which they will be installed:

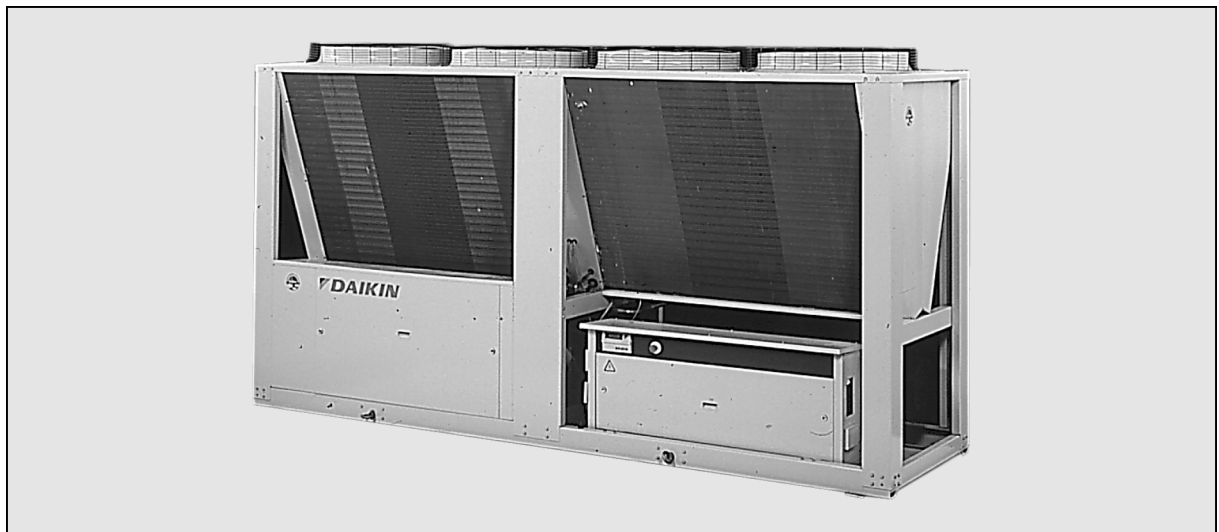
- Italy: EUWAB-K(A)X (ISPESL)
- France: EUWAM-K(A)X (SdM)
- Germany: EUWAT-K(A)X (TüV)
- Sweden: EUWAS-K(A)X (AB-Statens)
- The Netherlands: EUWAD-K(A)X (RLK Law)
- Finland: EUWAK-K(A)X (TTK)
- Poland: EUWAQ-K(A)X (UDT)

The units are available in 9 standard sizes.

The EUWA(\*)-K(A)X units can be combined with Daikin fan coil units or air handling units for air conditioning purposes.

They can also be used for supplying chilled water for process cooling.

- Daikin single screw compressor
- Optimised design for use with R-134a refrigerant
- Low operating sound level - extra low noise option available
- Electronic DDC controller
- High energy efficiency ratio
- Modular design
- High quality, anti-corrosion treated components as standard
- Moisture indicator as standard
- Victaulic joints as standard
- Victaulic joints for plate heat exchangers
- Pre mounted, 5 inch piping for easier field connection (from 160hp onwards)



## 2 Specifications



NOMINAL CAPACITY, CAPACITY STEPS and NOMINAL INPUT							
UNITS			EUWA*40KAX	EUWA*50KAX	EUWA*60KAX	EUWA*80KAX	EUWA*100KAX
NOMINAL CAPACITY (1)	Cooling	kW	111 (109)	140 (136)	166 (158)	211 (208)	276 (266)
CAPACITY STEPS		%	100 - 75 - 55 - 0			100 - 88 - 76 - 63 - 50 - 38 - 25	
NOMINAL INPUT	Cooling	kW	39.1 (39.8)	53.7 (55.4)	64.0 (66.6)	79.0 (80.3)	110 (113)

TECHNICAL SPECIFICATIONS								
UNITS				EUWA*40KAX	EUWA*50KAX	EUWA*60KAX	EUWA*80KAX	EUWA*100KAX
DIMENSIONS	Unit	H	mm	2,135	2,135	2,135	2,156	2,156
		W	mm	3,980	3,980	3,980	3,980	3,980
		D	mm	1,110	1,110	1,110	2,210	2,210
WEIGHT	Machine weight	kg	1,391 (1,458)	1,600 (1,666)	1,705 (1,770)	2,710 (2,842)	3,210 (3,340)	
	Operation weight	kg	1,439 (1,506)	1,655 (1,721)	1,798 (1,863)	2,790 (2,922)	3,344 (3,475)	
MATERIAL				Polyester coated galvanised steel plate				
COLOUR				Ivory white / Munsell code 5Y7.5/1				
SOUND LEVEL (2)	Sound pressure	dB(A)	-	-	-	-	-	
	Sound power	dB(A)	91 (86)	97 (90)	95 (88)	94 (89)	100 (93)	
FAN	Air flow rate	m <sup>3</sup> /min	1,065 (920)	1,200 (960)	1,200 (960)	2,130 (1,840)	2,400 (1,920)	
	Speed	rpm	750 (750/550)	880 (700)	880 (700)	750 (750/550)	880 (700)	
	Type		Direct drive propeller					
	Qty x model		4 (2+2)	4	4	8 (4+4)	8	
	No. of motors x output	W	4 x 500 (2x500 + 2x220)	4 x 1,200 (4 x 500)	4 x 1,200 (4 x 500)	8 x 500 (4x500 + 4x220)	8 x 1,200 (8 x 500)	
	Discharge		Vertical					
WATER HEAT EXCHANGER	Type		2 pass, 1 circuit, shell & tube dry expansion					
	Qty x model		1 x ES185	1 x ES220	1 x ES270	1 x ED360	1 x ED420	
	Minimum water volume in the system	l	1,450	1,850	2,200	1,300	1,650	
	Water flow rate (min/max)	l/min	150/600	200/715	235/950	300/1,165	395/1,580	
	Nominal water pressure drop	kPa	13	20	11	14	13	
	Insulation material		PVC nitril foam					
AIR HEAT EXCHANGER	Type		Cross fin coil / Hi-X tubes and chromate coated waffle louver fins					
	Rows x stages x fin pitch	mm	2 x 50 x 2	3 x 50 x 2	3 x 50 x 2	2 x 50 x 2	3 x 50 x 2	
	Face area	m <sup>2</sup>	8.4	8.4	8.4	16.8	16.8	
REFRIGERANT CIRCUIT	Refrigerant type		R-134a					
	Refrigerant charge	kg	30 (27)	45 (41)	50 (45)	2 x 36 (2 x 32)	2 x 47 (2 x 42)	
	No. of circuits		1	1	1	2	2	
	Refrigerant control		Thermostatic expansion valve					
COMPRESSOR	Type		Semi-hermetic single screw					
	Qty x model	Y1	1 x ZHA5LLFLYE	1 x ZHA7SLFLYE	1 x ZHA7MLFLYE	2 x ZHA5LLFLYE	2 x ZHA7SLFLYE	
		T1	1 x ZHA5LLFLTE	1 x ZHA7SLFLTE	1 x ZHA7MLFLTE	2 x ZHA5LLFLTE	2 x ZHA7SLFLTE	
	No. of compressors		1	1	1	2	2	
	Speed	rpm	2,880	2,880	2,880	2,880	2,880	
	Refrigerant oil type		IDEMITSU FVC68D					
	Refrigerant oil charge	l	10	13	13	2 x 10	2 x 13	
	Crankcase heater	W	150	150	150	2 x 150	2 x 150	
PIPING CONNECTIONS	Evap. water in/outlet		Flexible joint ø 114.3	Flexible joint ø 114.3	Flexible joint ø 141.3	Flexible joint ø 141.3	Flexible joint ø 168.3	
	Evaporator water drain		1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	1/2" FPT	
	Relief device outlet		Compressor: 1" NPT	Compressor: 1" NPT	Compressor: 1" NPT	Compressor: 1" NPT	Compressor: 1" NPT	
SAFETY DEVICES			Double TÜV approved high pressure switches / Low pressure protection / Pressure relief valve on compressor / Compressor motor thermal protector / Compressor motor overcurrent relay / Discharge temperature controller / Freeze-up protection / Recycling and guard timer / Digital display controller with electronic temperature control / Reverse phase protector					

## 2 Specifications



NOMINAL CAPACITY, CAPACITY STEPS and NOMINAL INPUT						
UNITS			EUWA*120KAX	EUWA*160KX	EUWA*180KX	EUWA*200KX
NOMINAL CAPACITY (1)	Cooling	kW	316 (300)	400	438	475
CAPACITY STEPS		%	100-88-76-63-50-38-25	100-87-74-61-48-42-36-18-0	100-88-74-62-48-43-36-20-0	100-87-74-61-48-42-36-18-0
NOMINAL INPUT	Cooling	kW	130 (135)	164	178	191

TECHNICAL SPECIFICATIONS							
UNITS				EUWA*120KAX	EUWA*160KX	EUWA*180KX	EUWA*200KX
DIMENSIONS	Unit	H	mm	2,156	2,156	2,156	2,156
		W	mm	3,980	5,906	5,906	5,906
		D	mm	2,210	2,238	2,238	2,238
WEIGHT	Machine weight		kg	3,260 (3,390)	5,400	5,450	5,500
	Operation weight		kg	3,385 (3,515)	5,488	5,544	5,603
MATERIAL				Polyester coated galvanised steel plate			
COLOUR				Ivory white / Munsell code 5Y7.5/1			
SOUND LEVEL (2)	Sound pressure		dBA	-	-	-	-
	Sound power		dBA	98 (91)	99	100	100
FAN	Air flow rate		m <sup>3</sup> /min	2,400 (1,920)	2,880	2,880	2,880
	Speed		rpm	880 (700)	900	900	900
	Type			Direct drive propeller			
	Qty x model			8	12	12	12
	No. of motors x output		W	8 x 1,200 (8 x 500)	12 x 1,200	12 x 1,200	12 x 1,200
	Discharge			Vertical			
WATER HEAT EXCHANGER	Type			2 pass, 1 circuit, shell & tube dry expansion	Brased plate heat exchanger, one per circuit		
	Qty x model			1 x ED470	2 x AC250Q-NP128	1 x AC250Q-NP162/ 1 x AC250Q-NP128	2 x AC250Q-NP162
	Minimum water volume in the system		l	1,900	1,720	2,040	2,040
	Water flow rate (min/max)		l/min	455/1,665	570/2,300	625/2,500	700/2,700
	Nominal water pressure drop		kPa	16	22	24	26
	Insulation material			PVC nitril foam			
AIR HEAT EXCHANGER	Type			Cross fin coil / Hi-X tubes and chromate coated waffle louvre fins			
	Rows x stages x fin pitch		mm	3 x 50 x 2	3 x 50 x 2	3 x 50 x 2	3 x 50 x 2
	Face area		m <sup>2</sup>	16.8	25.2	25.2	25.2
REFRIGERANT CIRCUIT	Refrigerant type			R-134a			
	Refrigerant charge		kg	2 x 48 (2 x 43)	2 x 69	67+69	2 x 67
	No. of circuits			2	2	2	2
	Refrigerant control			Thermostatic expansion valve			
COMPRESSOR	Type			Semi-hermetic single screw			
	Qty x model		Y1	2 x ZHA7MLFLYE	2 x ZHA9SLFLYE	1 x ZHA9LLFLYE/ 1 x ZHA9SLFLYE	2 x ZHA9LLFLYE
			T1	2 x ZHA7MLFLTE	-	-	-
	No. of compressors			2	2	2	2
	Speed		rpm	2,880	2,880	2,880	2,880
	Refrigerant oil type			IDEMITSU FVC68D			
	Refrigerant oil charge		l	2 x 13	2 x 18	2 x 18	2 x 18
	Crankcase heater		W	2 x 150	2 x 150	2 x 150	2 x 150
PIPING CONNECTIONS	Evap. water in/outlet			Flexible joint $\phi$ 168.3	Flexible coupling 5"		
	Evaporator water drain			1/2" FPT	Field installation		
	Relief device outlet			Compressor: 1"NPT	Compressor: 2 x (2 x 1"NPT)		
SAFETY DEVICES				Double TÜV approved high pressure switches / Low pressure protection / Pressure relief valve on compressor / Compressor motor thermal protector / Compressor motor overcurrent relay / Discharge temperature controller / Freeze-up protection / Recycling and guard timer / Digital display controller with electronic temperature control / Reverse phase protector			

## 2 Specifications



ELECTRICAL SPECIFICATIONS												
UNITS			EUWA*40KAX		EUWA*50KAX		EUWA*60KAX		EUWA*80KAX		EUWA*100KAX	
POWER SUPPLY			Y1	T1	Y1	T1	Y1	T1	Y1	T1	Y1	T1
NOMINAL DISTRIBUTION SYSTEM VOLTAGE	Phase		3~		3~		3~		3~		3~	
	Frequency	Hz	50		50		50		50		50	
	Voltage	V	400	230	400	230	400	230	400	230	400	230
	Voltage tolerance	%	± 10		± 10		± 10		± 10		± 10	
UNIT	Starting current	A	172	363	193	400	250	504	172	363	193	400
	Nominal running current	A	76	130	104	186	114	205	152	260	208	372
	Maximum running current	A	100	168	125	235	148	270	200	336	250	470
	Recommended fuses according to IEC standard 269-2	aM	3 x 125	3 x 200	3 x 160	3 x 250	3 x 160	3 x 315	3 x 200	3 x 400	3 x 250	3 x 500
COMPRESSOR	Phase		3~		3~		3~		3~		3~	
	Voltage	V	400	230	400	230	400	230	400	230	400	230
	Starting current	A	172	363	193	400	250	504	172	363	193	400
	Nominal running current	A	62	107	89	161	99	180	62	107	89	161
	Maximum running current	A	86.5	145	111	210	133	245	86.5	145	111	210
	Starting method		Star-delta									
	Recommended fuses		Factory installed									
CONTROL CIRCUIT	Phase		1~									
	Voltage	V	230									
	Recommended fuses		Factory installed									

**3**
**2**

## 2 Specifications


**3**
**2**

ELECTRICAL SPECIFICATIONS						
UNITS			EUWA*120KAX		EUWA*160KX	EUWA*180KX
POWER SUPPLY			Y1	T1	Y1	Y1
NOMINAL DISTRIBUTION SYSTEM VOLTAGE	Phase		3~		3~	3~
	Frequency	Hz	50		50	50
	Voltage	V	400	230	400	400
	Voltage tolerance	%	± 10		± 10	± 10
UNIT	Starting current	A	250	504	177	254
	Nominal running current	A	228	410	313	359
	Maximum running current	A	296	540	451	484
	Recommended fuses according to IEC standard 269-2	aM	3 x 315	3 x 630	2x(3x315gL)/ 3x500gL(op52)	(3x400gL)+(3x315gL)/ 3x500gL(op52)
						2x(3x400gL)/ 3x630gL(op52)
COMPRESSOR	Phase		3~		3~	3~
	Voltage	V	400	230	400	400
	Starting current	A	250	504	177	254 / 177
	Nominal running current	A	99	180	134	157 / 134
	Maximum running current	A	133	245	203	236 / 203
	Starting method		Star-delta			
	Recommended fuses		Factory installed			
CONTROL CIRCUIT	Phase		1~		1~	1~
	Voltage	V	230		230	230
	Recommended fuses		Factory installed			

### NOTES

- Nominal cooling capacity is based on the following conditions: evaporator: 12°C/7°C; ambient: 35°C.
- The sound pressure level is measured via a microphone at a certain distance from the unit. It is a relative value, depending on the distance and acoustic environment.  
The sound power level is an absolute value indicating the "power" which a sound source generates.
- ( ) shows value in case of low noise option

# 3 Capacity tables

## 3-1 Cooling capacities for air conditioning applications



AMBIENT TEMPERATURE (°CDB)		15		20		25		30		35		40		43	
LWE (°C)	MODEL	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
4	40	126	28.6	120	30.8	113	33.1	107	35.3	100	37.6	93	39.8	89	41.1
	50	158	39.5	150	42.5	142	45.4	134	48.4	126	51.4	118	54.3	114	56.1
	60	190	46.4	180	50.0	169	53.6	158	57.1	148	60.7	137	64.3	131	66.5
	80	227	58.6	217	62.9	207	67.1	197	71.4	187	75.6	177	79.9	170	82.5
	100	310	82.7	293	88.2	277	93.6	261	99.1	244	105.0	228	110.0	218	113.0
	120	362	96.7	342	104.0	322	111.0	302	117.0	282	124.0	261	131.0	249	135.0
	160	421	122.0	405	130.0	388	138.0	372	149.0	356	160.0	339	173.0	329	181.0
	180	483	130.0	458	138.0	432	148.0	407	160.0	382	173.0	356	188.0	341	198.0
	200	545	138.0	510	146.0	476	157.0	442	170.0	407	185.0	373	202.0	353	214.0
7	40	141	29.8	134	32.1	126	34.4	119	36.8	111	39.1	104	41.4	99	42.8
	50	175	41.8	166	44.8	158	47.7	149	50.7	140	53.7	132	56.7	127	58.5
	60	214	49.2	202	52.9	190	56.6	178	60.3	166	64.0	154	67.7	110	52.5
	80	253	61.6	242	65.9	232	70.3	221	74.6	211	79.0	200	83.3	194	86.0
	100	344	88.0	327	93.5	310	99.0	293	105.0	276	110.0	259	116.0	249	119.0
	120	407	104.0	384	111.0	361	117.0	339	124.0	316	130.0	293	137.0	210	105.0
	160	475	127.0	456	135.0	437	143.0	419	153.0	400	164.0	381	177.0	370	185.0
	180	547	136.0	520	144.0	492	153.0	465	165.0	438	178.0	410	193.0	393	203.0
	200	619	144.0	583	152.0	546	163.0	511	176.0	475	191.0	438	208.0	415	220.0
10	40	155	31.3	147	33.8	139	36.2	131	38.6	123	41.0	115	43.4	110	44.9
	50	190	44.3	181	47.3	173	50.3	164	53.3	155	56.3	146	59.3	141	61.1
	60	238	52.0	225	55.8	211	59.7	198	63.5	185	67.4	172	71.2	123	55.1
	80	282	65.0	271	69.3	259	73.7	247	78.0	236	82.3	224	86.7	217	89.2
	100	378	92.7	360	98.2	343	104.0	325	110.0	307	115.0	290	121.0	279	124.0
	120	450	110.0	426	117.0	401	123.0	377	130.0	353	136.0	328	142.0	235	110.0
	160	529	134.0	508	141.0	486	150.0	465	159.0	444	170.0	423	183.0	411	191.0
	180	602	143.0	572	151.0	541	160.0	512	171.0	482	185.0	452	200.0	434	210.0
	200	674	151.0	635	160.0	596	170.0	558	183.0	519	199.0	481	216.0	457	228.0
16	40	182	34.4	173	37.1	164	39.7	156	42.4	147	45.1	139	47.8	100	37.0
	50	214	49.4	207	52.6	199	55.8	191	59.0	183	62.2	176	65.4	128	50.5
	60	276	58.2	264	62.2	251	66.2	239	70.2	225	74.2	160	58.7	154	60.5
	80	337	71.8	325	76.5	312	81.1	299	85.7	286	90.4	274	95.0	200	73.4
	100	431	105.0	415	110.0	399	116.0	383	122.0	367	127.0	351	133.0	217	102.0
	120	525	124.0	501	130.0	477	137.0	454	143.0	430	149.0	305	116.0	294	119.0
	160	646	152.0	621	159.0	595	168.0	569	178.0	543	190.0	518	203.0	382	172.0
	180	725	161.0	691	170.0	656	180.0	622	192.0	587	206.0	483	192.0	405	181.0
	200	803	170.0	760	180.0	717	191.0	674	205.0	631	221.0	447	181.0	428	190.0

### SYMBOLS

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

### NOTES

- Cooling capacity (CAP)**  
 CAP = Cool. Cap. from table (kW)  
 NOTE: Capacity is for chilled water range Dt = 3-8°C
- Power input (PC)**  
 PI = Power input from table (kW)  
 NOTE: Power input is total input: compressor + fans + control circuit + pumps
- Water flow rate (WFR)**  
 $WFR = (860 \times CAP) / (60 \times Dt)$  (l/min)  
 CAP = From above calculation  
 Dt = Chilled water temperature rise within 3-8°C  
 NOTE: WFR should always be within the limits
- Water pressure drop through the evaporator (PDw)**  
 PDw = Water pressure drop from water pressure drop curve at above calculated WFR.
- CAP and PI are according to the Eurovent rating standard 6/C/003-96.
- Min. water volume system applicable at nominal conditions

Shows nominal cooling capacities

# 3 Capacity tables



## 3-2 Cooling capacities with glycol for process cooling application

3

3

3-2

AMBIENT TEMPERATURE (°CDB)		15		20		25		30		35		40		43	
LWE (°C)	MODEL	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI	CC	PI
-10	40	56	23.0	53	24.7	51	26.5	48	28.3	-	-	-	-	-	-
	50	79	28.8	74	31.8	68	34.7	63	37.7	-	-	-	-	-	-
	60	79	33.3	75	36.3	71	39.3	67	42.4	-	-	-	-	-	-
	80	106	44.6	98	48.5	91	52.4	83	56.3	-	-	-	-	-	-
	100	151	58.0	137	63.3	124	68.5	110	73.8	-	-	-	-	-	-
	120	152	62.2	144	71.1	136	79.9	128	88.8	-	-	-	-	-	-
	160	147	114.0	142	121.0	135	130.0	131	141.0	-	-	-	-	-	-
	180	199	122.0	184	130.0	168	140.0	154	152.0	-	-	-	-	-	-
	200	251	130.0	226	139.0	201	150.0	178	164.0	-	-	-	-	-	-
-5	40	81	25.0	77	26.9	73	28.8	69	30.8	65	32.7	-	-	-	-
	50	107	32.6	101	35.6	95	38.5	88	41.5	82	44.5	-	-	-	-
	60	119	38.0	112	41.2	106	44.4	100	47.7	93	50.9	-	-	-	-
	80	149	49.6	140	53.6	132	57.7	124	61.7	115	65.7	-	-	-	-
	100	208	66.8	193	72.2	179	77.5	164	82.8	150	88.1	-	-	-	-
	120	227	74.5	214	82.7	202	90.8	190	99.0	178	107.0	-	-	-	-
	160	243	117.0	234	124.0	224	133.0	215	143.0	206	155.0	-	-	-	-
	180	300	125.0	281	133.0	262	143.0	244	155.0	226	168.0	-	-	-	-
	200	357	133.0	329	142.0	300	153.0	274	166.0	246	181.0	-	-	-	-
0	40	106	27.0	101	29.1	95	31.1	90	33.3	84	35.4	79	37.4	-	-
	50	135	36.4	128	39.4	121	42.3	114	45.3	106	48.3	99	51.3	-	-
	60	158	42.7	150	46.1	141	49.5	132	52.9	124	56.3	115	59.8	-	-
	80	192	54.6	183	58.7	174	62.9	164	67.1	155	71.3	146	75.4	-	-
	100	265	75.6	249	81.1	233	86.4	218	91.9	202	97.2	187	103.0	-	-
	120	302	86.8	285	94.3	268	102.0	252	109.0	235	117.0	218	124.0	-	-
	160	340	120.0	327	127.0	313	136.0	300	146.0	287	158.0	273	171.0	-	-
	180	401	128.0	379	136.0	356	145.0	335	157.0	312	171.0	290	186.0	-	-
	200	463	136.0	431	144.0	400	155.0	369	168.0	338	183.0	306	201.0	-	-
2	40	116	27.8	110	29.9	104	32.1	98	34.3	92	36.4	86	38.6	82	40.0
	50	147	38.0	139	41.0	132	43.9	124	46.9	116	49.9	109	52.9	104	54.7
	60	174	44.5	165	48.0	155	51.5	145	55.0	136	58.5	126	62.0	120	64.1
	80	210	56.6	200	60.8	191	65.0	181	69.2	171	73.5	161	77.7	155	80.2
	100	287	79.2	271	84.6	255	90.0	239	95.5	223	101.0	207	106.0	198	110.0
	120	332	91.8	313	99.0	295	106.0	277	113.0	258	120.0	240	128.0	229	132.0
	160	378	121.0	364	128.0	348	137.0	334	147.0	319	159.0	304	172.0	295	181.0
	180	442	129.0	418	137.0	394	146.0	371	158.0	347	172	323	187.0	308	197.0
	200	506	137.0	473	145.0	439	156.0	407	169.0	374	184.0	341	202.0	321	213.0

### SYMBOLS

CC	: Cooling capacity (kW)
PI	: Power input (kW)
LWE	: Leaving Water Evaporator (°C)
-	: Out of range

### NOTES

- Cooling capacity (CAP)**  
CAP = Cool. Cap. from table (kW)  
NOTE: Capacity is for chilled water range Dt = 3-8°C
- Power input (PC)**  
PI = Power input from table (kW)  
NOTE: Power input is total input: compressor + fans + control circuit + pumps
- Water flow rate (WFR)**  
 $WFR = (860 \times CAP) / (60 \times Dt)$  (l/min)  
CAP = From above calculation  
Dt = Chilled water temperature rise within 3-8°C  
NOTE: WFR should always be within the limits
- Water pressure drop through the evaporator (PDw)**  
PDw = Water pressure drop from water pressure drop curve at above calculated WFR.
- CAP and PI are according to the Eurovent rating standard 6/C/003-96.
- Min. water volume system applicable at nominal conditions





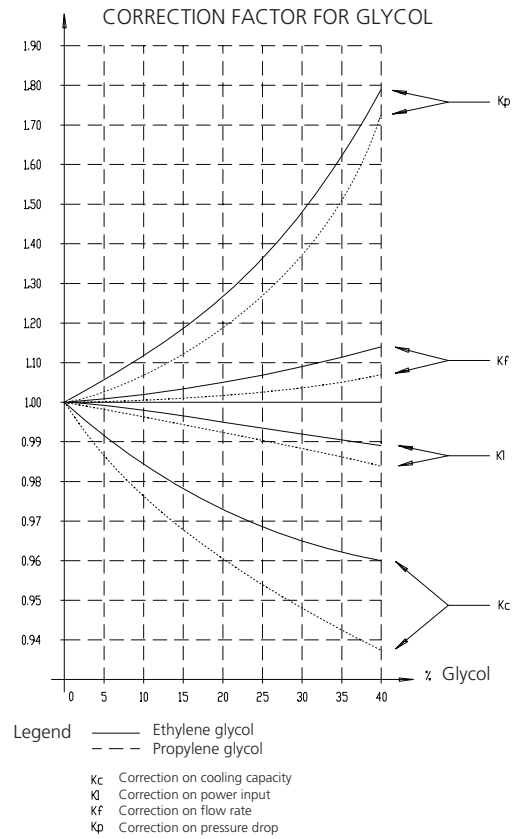
## 3 Capacity tables

### 3-2 Cooling capacities with glycol for process cooling application

3  
3  
3-2

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

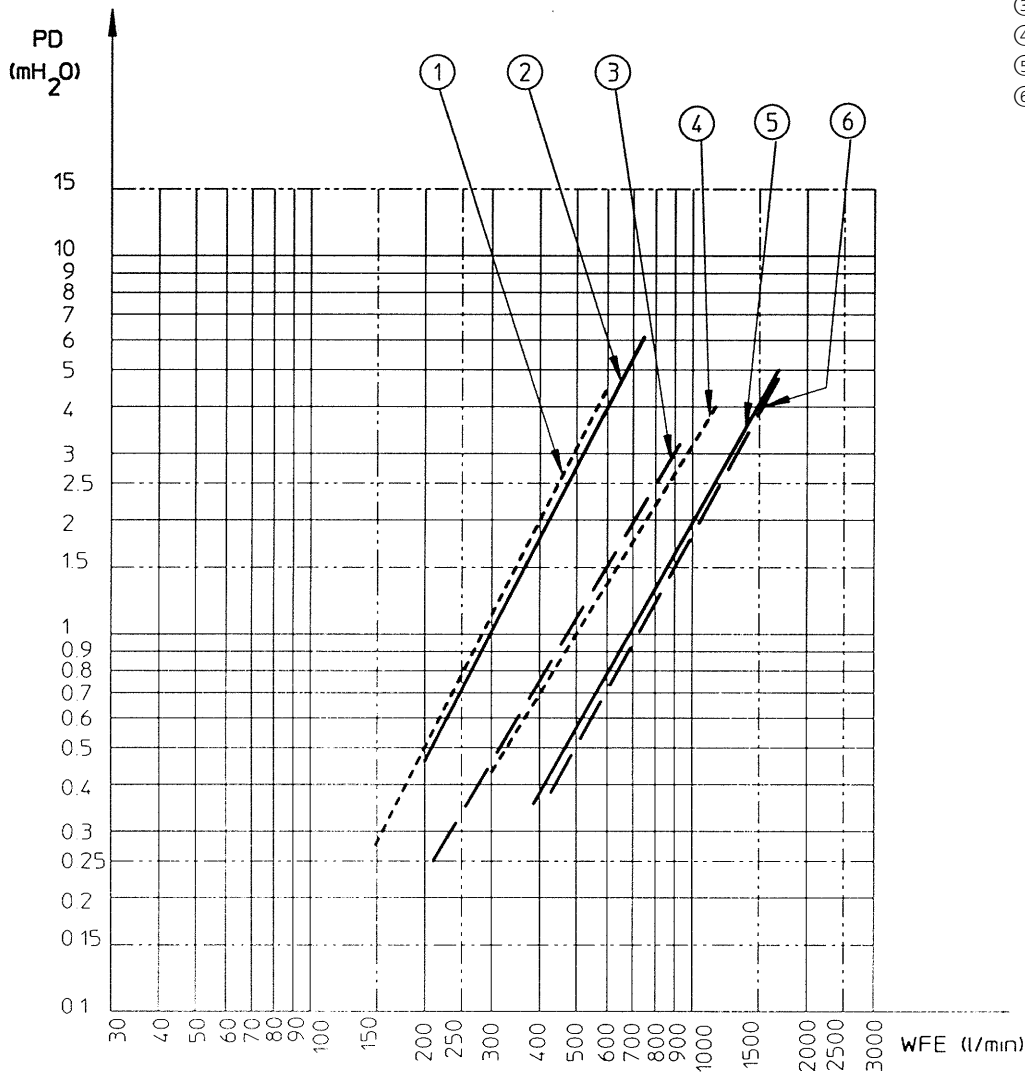


4TW50689-8

## 4 Water pressure drop curve



EUWA\*40-120KAX



- ① EUWA\*40KAX
- ② EUWA\*50KAX
- ③ EUWA\*60KAX
- ④ EUWA\*80KAX
- ⑤ EUWA\*100KAX
- ⑥ EUWA\*120KAX

### SYMBOLS

PD: Pressure drop through evaporator  
WFE: Evaporator waterflow rate

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

4TW50899-2C

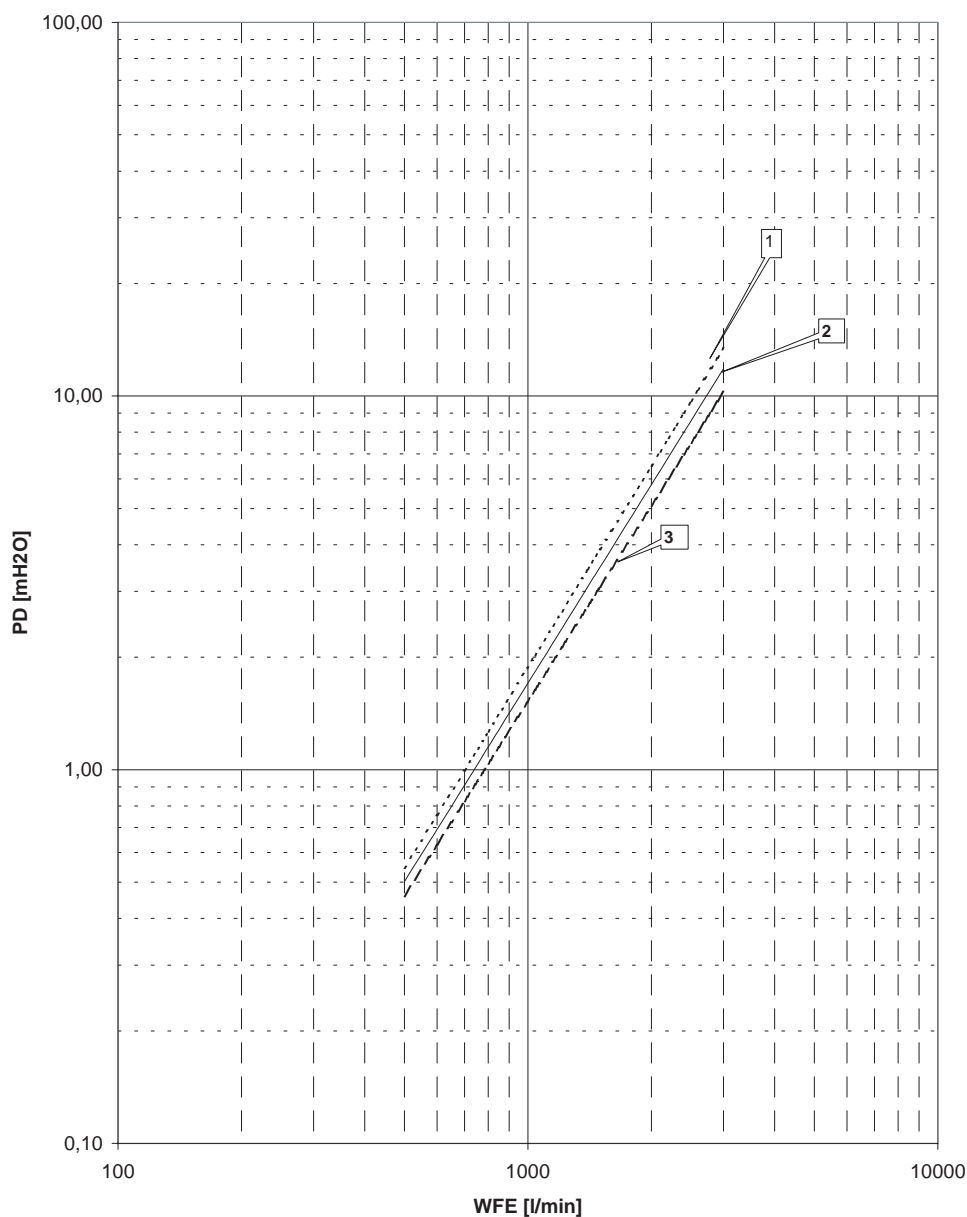
## 4 Water pressure drop curve



3

4

EUWA\*160-200KX



- ① EUWA\*160KX
- ② EUWA\*180KX
- ③ EUWA\*200KX

### SYMBOLS

PD: Pressure drop through evaporator  
WFE: Evaporator waterflow rate

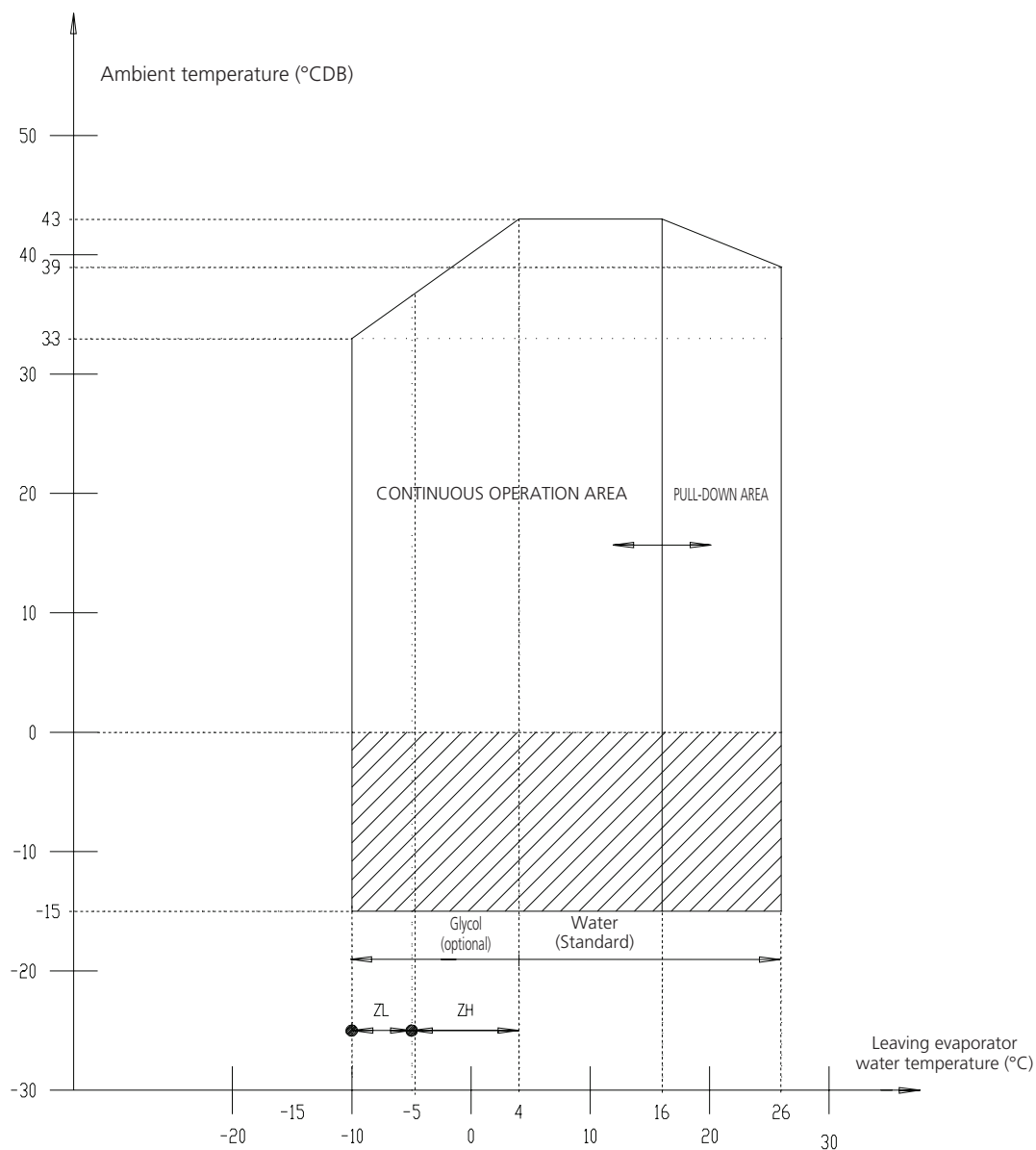
**Warning:** Selecting a flow outside the curves can cause damage to or malfunction of the unit. See also minimum and maximum allowed water flowrate in the technical specifications.

4TW52099-2A

## 5 Operation range



EUWA\*40-200K(A)X



\* Protect the water circuit against freezing by:  
 – or heater tape (optional)  
 – or filling up the system with a glycol solution

Same application range is applicable for EUWAB/M/T/D40-200K(A)X  
 For the EUWAS 40 - 200 K(A)X the maximum ambient temperature is 38 degr. C.

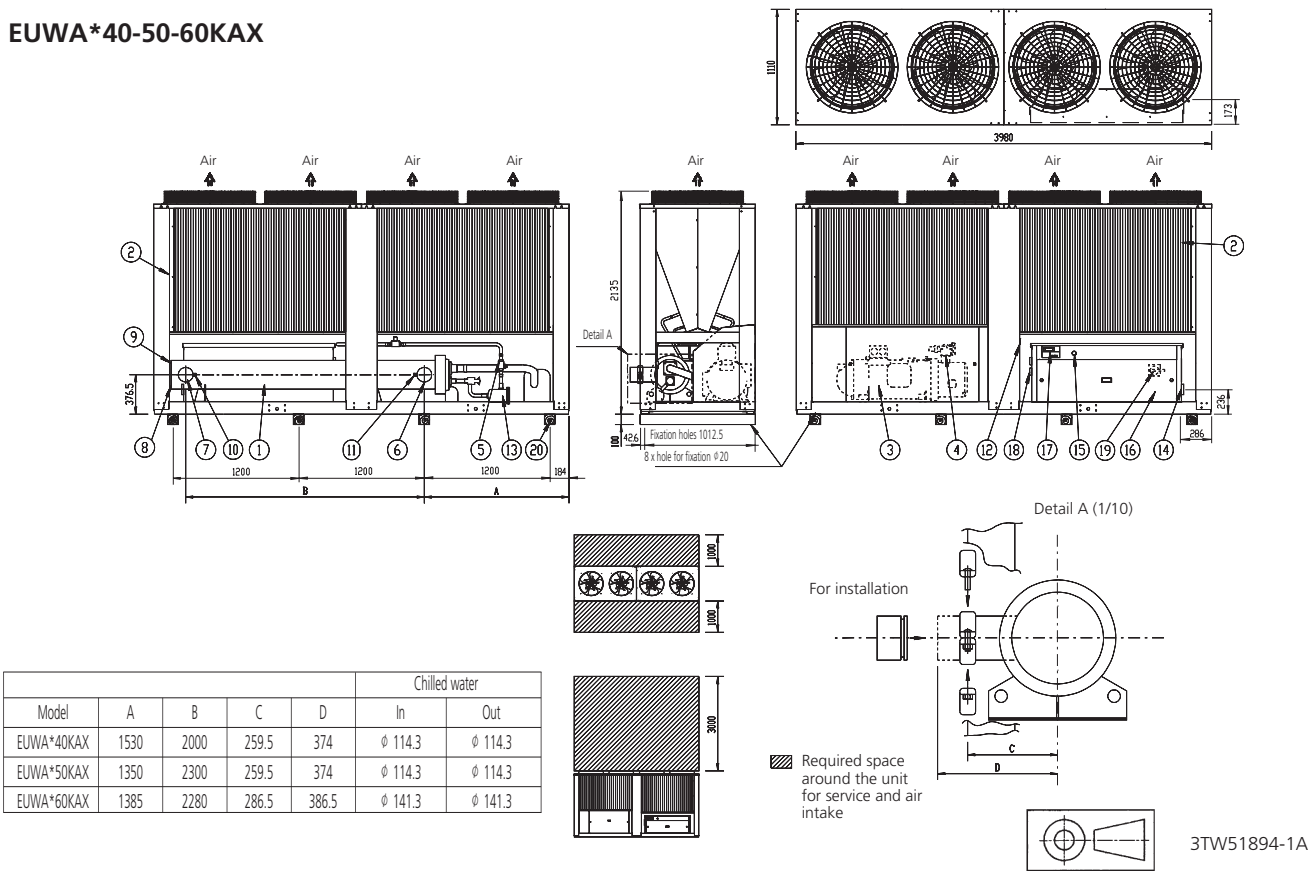
4TW51893-1

## 6 Dimensional drawings



3  
6

### EUWA\*40-50-60KAX

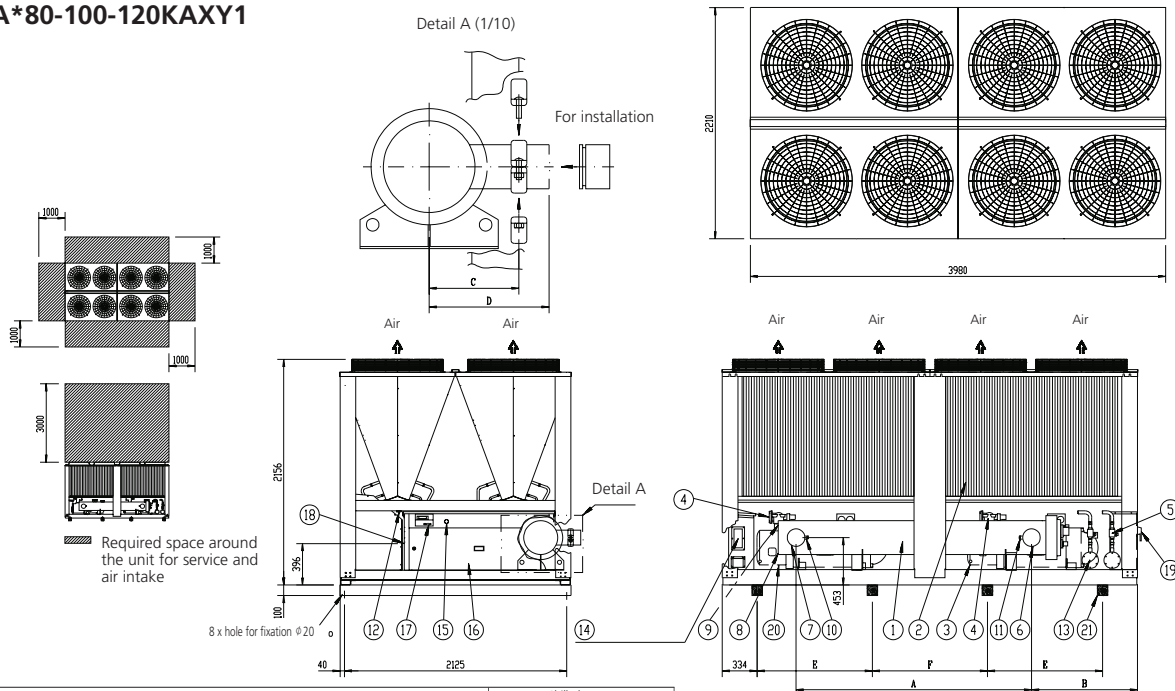


- |   |                                      |
|---|--------------------------------------|
| 1 Evaporator  | 11 Entering water temperature sensor |
| 2 Condenser   | 12 Ambient temperature sensor        |
| 3 Compressor with pressure relief valve                 | 13 Drier + charge valve              |
| 4 Discharge stop valve<br>(Suction stop valve optional) | 14 Power supply intake               |
| 5 Liquid stop valve                                     | 15 Emergency stop                    |
| 6 Chilled water in (flexible joint)                     | 16 Switch box                        |
| 7 Chilled water out (flexible joint)                    | 17 Digital display control (DDC)     |
| 8 Water drain evaporator                                | 18 Field wiring intake               |
| 9 Air purge evaporator                                  | 19 Main isolator switch (optional)   |
| 10 Leaving water temperature sensor                     | 20 Transport beam                    |

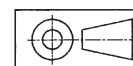
## 6 Dimensional drawings



### EUWA\*80-100-120KAXY1



Model	A	B	C	D	E	F	Chilled water	
							In	Out
EUWA*80KAXY1	2280	998	287	387	1100	1100	$\phi 141.3$	$\phi 141.3$
EUWA*100KAXY1	2280	998	287	387	950	1400	$\phi 168.3$	$\phi 168.3$
EUWA*120KAXY1	2250	1013	362	512	950	1400	$\phi 168.3$	$\phi 168.3$



3TW51924-1A

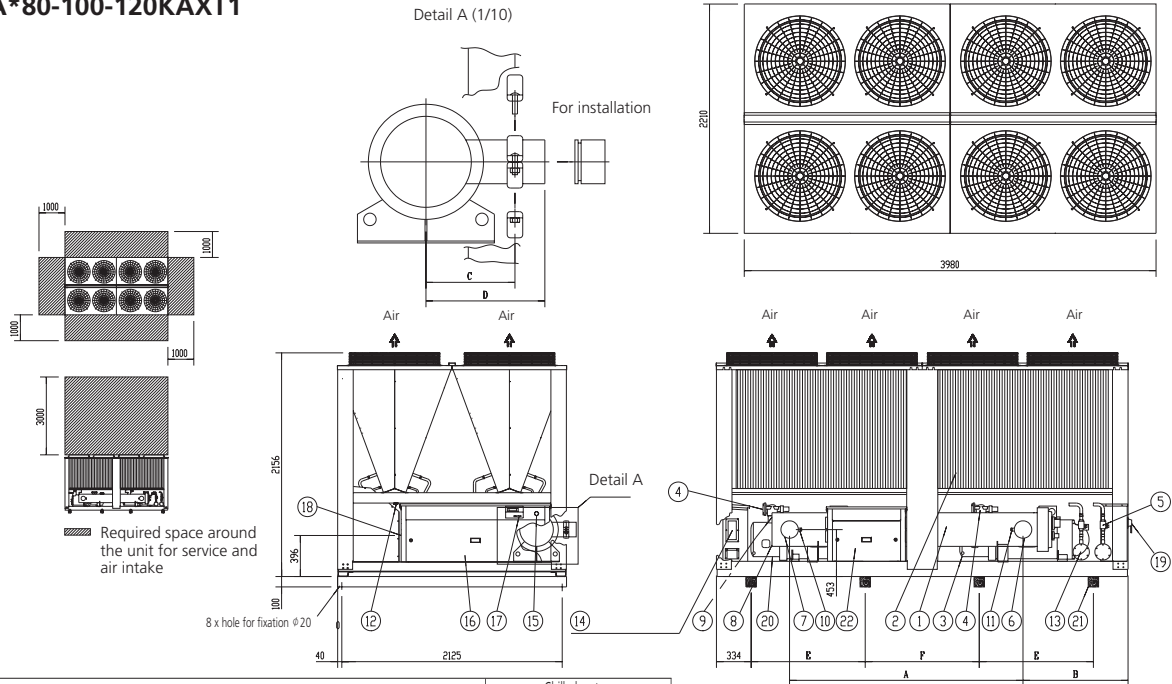
- |   |  |
|---|--|
| 1 Evaporator  | 12 Ambient temperature sensor              |
| 2 Condenser   | 13 Drier + charge valve                    |
| 3 Compressor 1 with pressure relief valve               | 14 Power supply intake                     |
| 4 Discharge stop valve<br>(Suction stop valve optional) | 15 Emergency stop                          |
| 5 Liquid stop valve                                     | 16 Switch box                              |
| 6 Chilled water in                                      | 17 Digital display control (DDC)           |
| 7 Chilled water out                                     | 18 Field wiring intake                     |
| 8 Water drain evaporator                                | 19 Main isolator switch (optional)         |
| 9 Air purge evaporator                                  | 20 Compressor 2 with pressure relief valve |
| 10 Leaving water temperature sensor                     | 21 Transport beam                          |
| 11 Entering water temperature sensor                    |  |

## 6 Dimensional drawings

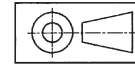


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### EUWA\*80-100-120KAXT1



Model	A	B	C	D	E	F	Chilled water	
							In	Out
EUWA*80KAXY1	2280	998	287	387	1100	1100	∅ 141.3	∅ 141.3
EUWA*100KAXY1	2280	998	287	387	950	1400	∅ 168.3	∅ 168.3
EUWA*120KAXY1	2250	1013	362	512	950	1400	∅ 168.3	∅ 168.3



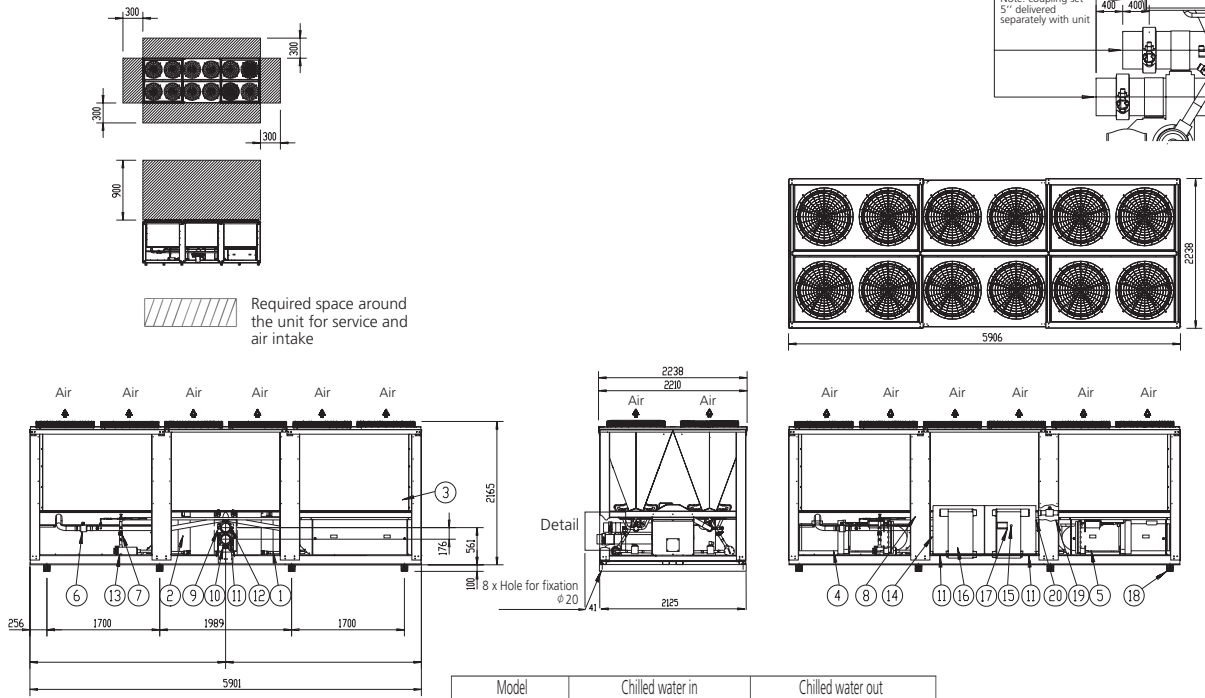
3TW51924-2A

- |   |  |
|---|--|
| 1 Evaporator  | 12 Ambient temperature sensor              |
| 2 Condenser   | 13 Drier + charge valve                    |
| 3 Compressor 1 with pressure relief valve               | 14 Power supply intake                     |
| 4 Discharge stop valve<br>(Suction stop valve optional) | 15 Emergency stop                          |
| 5 Liquid stop valve                                     | 16 Switch box 1                            |
| 6 Chilled water in                                      | 17 Digital display control (DDC)           |
| 7 Chilled water out                                     | 18 Field wiring intake                     |
| 8 Water drain evaporator                                | 19 Main isolator switch (optional)         |
| 9 Air purge evaporator                                  | 20 Compressor 2 with pressure relief valve |
| 10 Leaving water temperature sensor                     | 21 Transport beam                          |
| 11 Entering water temperature sensor                    | 22 Switch box 2                            |

## 6 Dimensional drawings



### EUWA\*160-200KX



- 1 Evaporator 1
- 2 Evaporator 2
- 3 Condenser
- 4 Compressor 1
- 5 Compressor 2
- 6 Discharge stop valve
- 7 Liquid stop valve
- 8 Suction stop valve (optional)
- 9 Chilled water in
- 10 Chilled water out

- 11 Leaving water temperature sensor
- 12 Entering water temperature sensor
- 13 Drier
- 14 Power supply intake
- 15 Emergency stop
- 16 Switch box
- 17 Digital display control (DDC)
- 18 Transport beam
- 19 Ambient temperature sensor
- 20 Field wiring intake

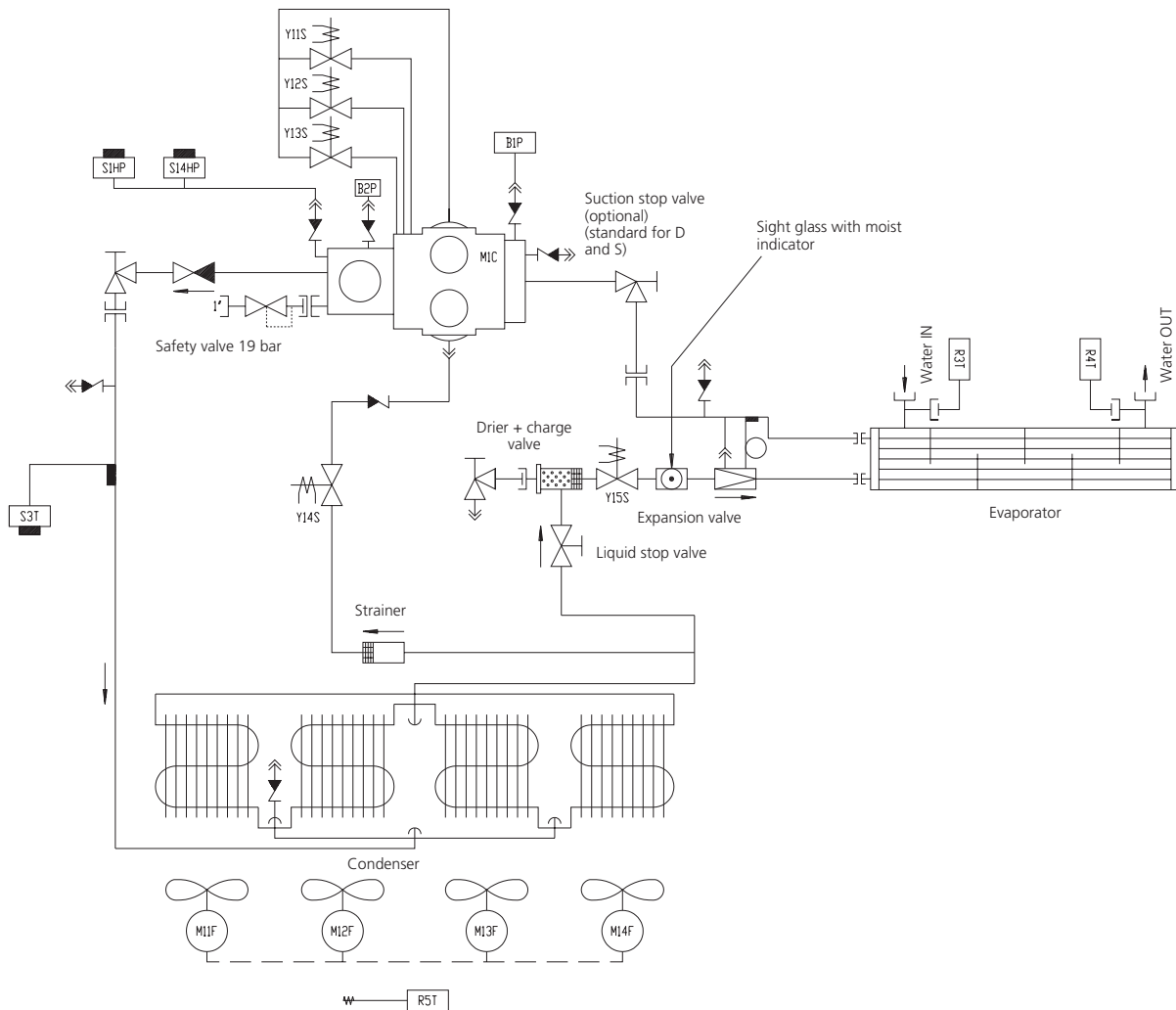


# 7 Piping diagrams



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7

EUWA\*40-50-60KAX



M11F	Fan motor
M12F	Fan motor
M13F	Fan motor
M14F	Fan motor
M1C	Compressor motor 1
S1HP	High pressure switch
S14HP	High pressure switch
S3T	Discharge temperature controller
R3T	Inlet water evap. temp. sensor
R4T	Outlet water evap. temp. sensor
R5T	Ambient temperature sensor
B1P	Low pressure transmitter
B2P	High pressure transmitter
Y11S	Unloader solenoid valve
Y12S	Unloader solenoid valve
Y13S	Unloader solenoid valve
Y14S	Liquid injection solenoid valve
Y15S	Liquid line solenoid valve

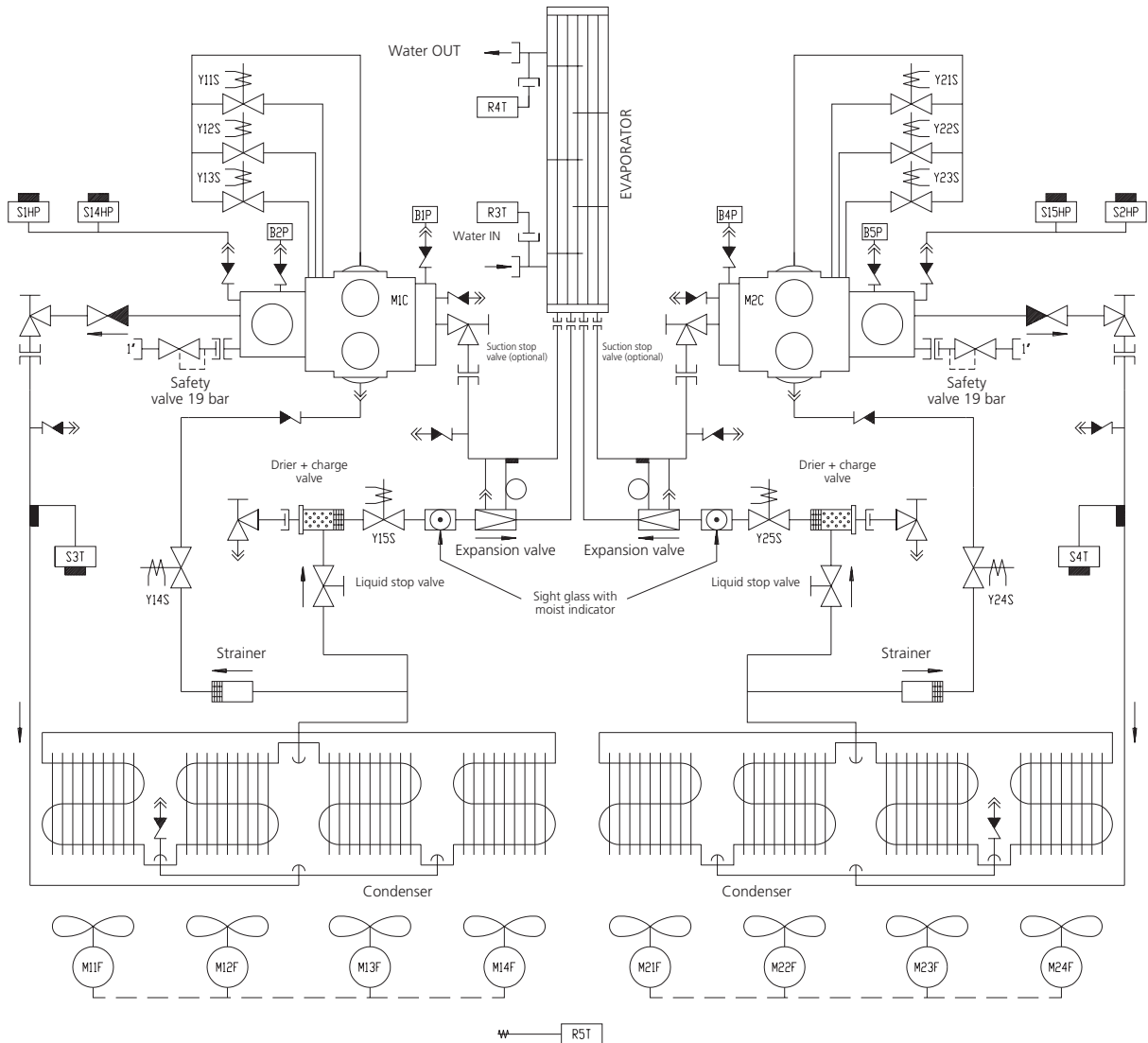
↔	Check valve
↗	Flare connection
⌵	Screw connection
⌵	Flange connection
×	Pinched pipe
→	Spinned pipe

3TW51895-1A

# 7 Piping diagrams

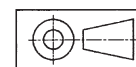


## EUWA\*80-100-120KAX



- M11,-14F Condenser fan motor
- M21,-24F Condenser fan motor
- M1C,M2C Compressor motor
- S1,2HP High pressure switch
- S14,15HP High pressure switch
- S3,4T Discharge temperature controller
- R3T Inlet water evap. temp. sensor
- R4T Outlet water evap. temp. sensor
- R5T Ambient temperature sensor
- B1,4P Low pressure transmitter
- B2,5P High pressure transmitter
- Y11,12,13S Unloader solenoid valve
- Y21,22,23S Unloader solenoid valve
- Y14,24S Liquid injection solenoid valve
- Y15,25S Liquid line solenoid valve

- ↔ Check valve
- ↘ Flare connection
- ⌵ Screw connection
- ⌵ Flange connection
- ✕ Pinched pipe
- Spinned pipe



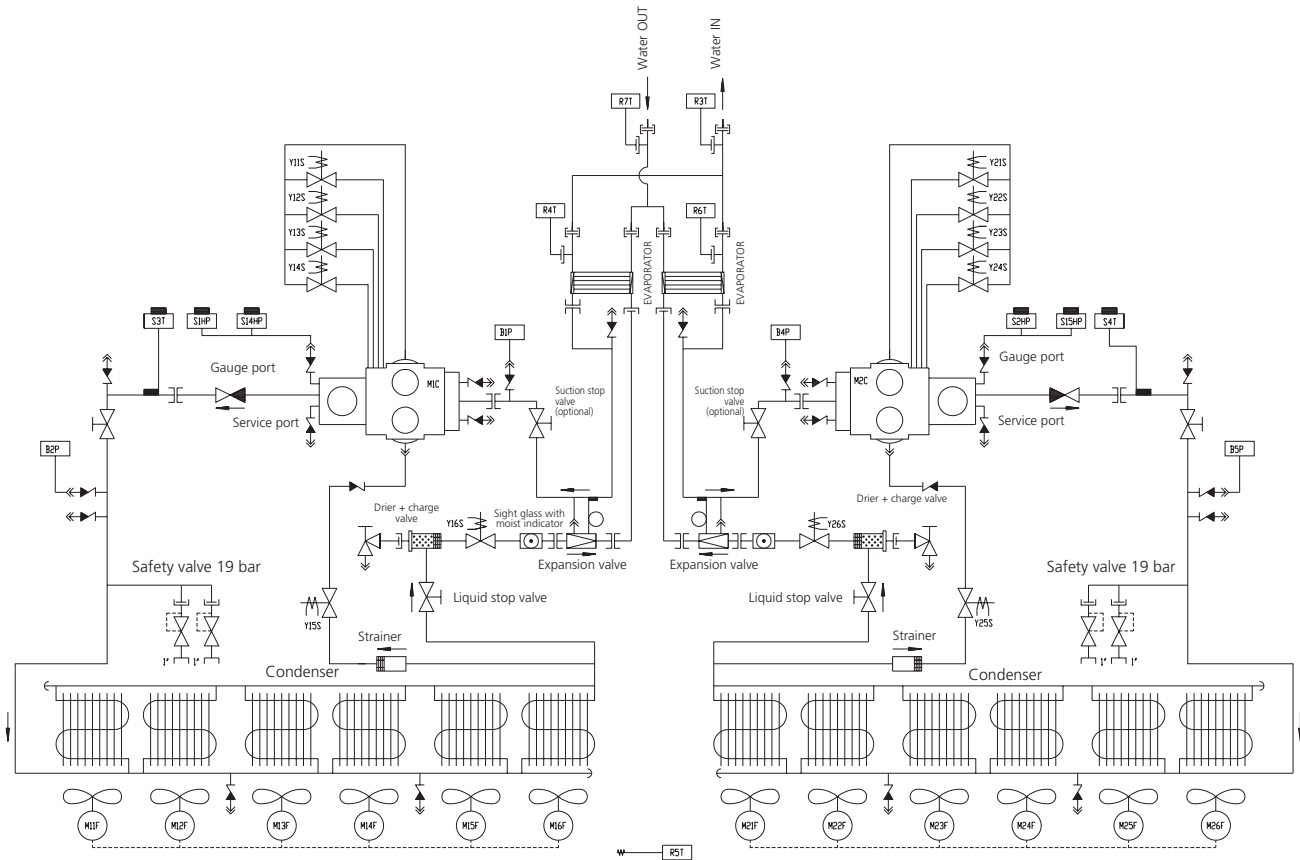
3TW51925-1A

# 7 Piping diagrams



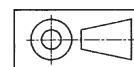
3  
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## EUWA\*160-200KX



- M11,-16F Condenser fan motor
- M21,-26F Condenser fan motor
- M1C,M2C Compressor motor
- S1,2HP High pressure switch
- S14,15HP High pressure switch
- S3,4T Discharge temperature controller
- R3T Inlet water evap. temp. sensor
- R4T Outlet water evap. temp. sensor
- R6T Outlet water evap. temp. sensor
- R7T Mixed outlet water temp. sensor
- R5T Ambient temperature sensor
- B1,4P Low pressure transmitter
- B2,5P High pressure transmitter
- Y11,12,13,14S Unloader solenoid valve
- Y21,22,23,24S Unloader solenoid valve
- Y15,25S Liquid injection solenoid valve
- Y16,26S Liquid line solenoid valve

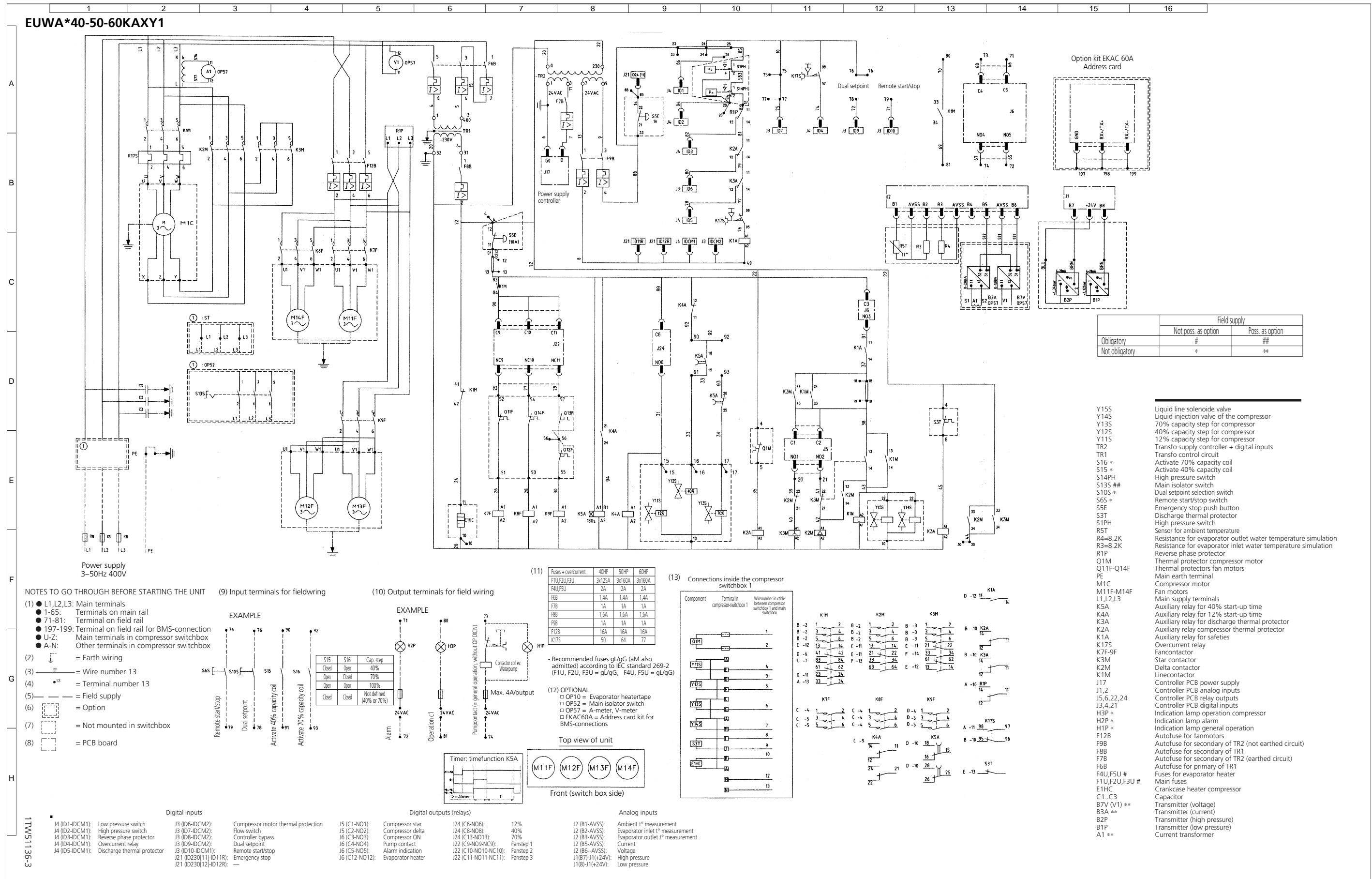
- ↔ Check valve
- ⌋ Flexible connection
- ↖ Flare connection
- ⌋ Screw connection
- ⌋ Flange connection
- ✕ Pinched pipe
- Spinned pipe



3TW52095-1

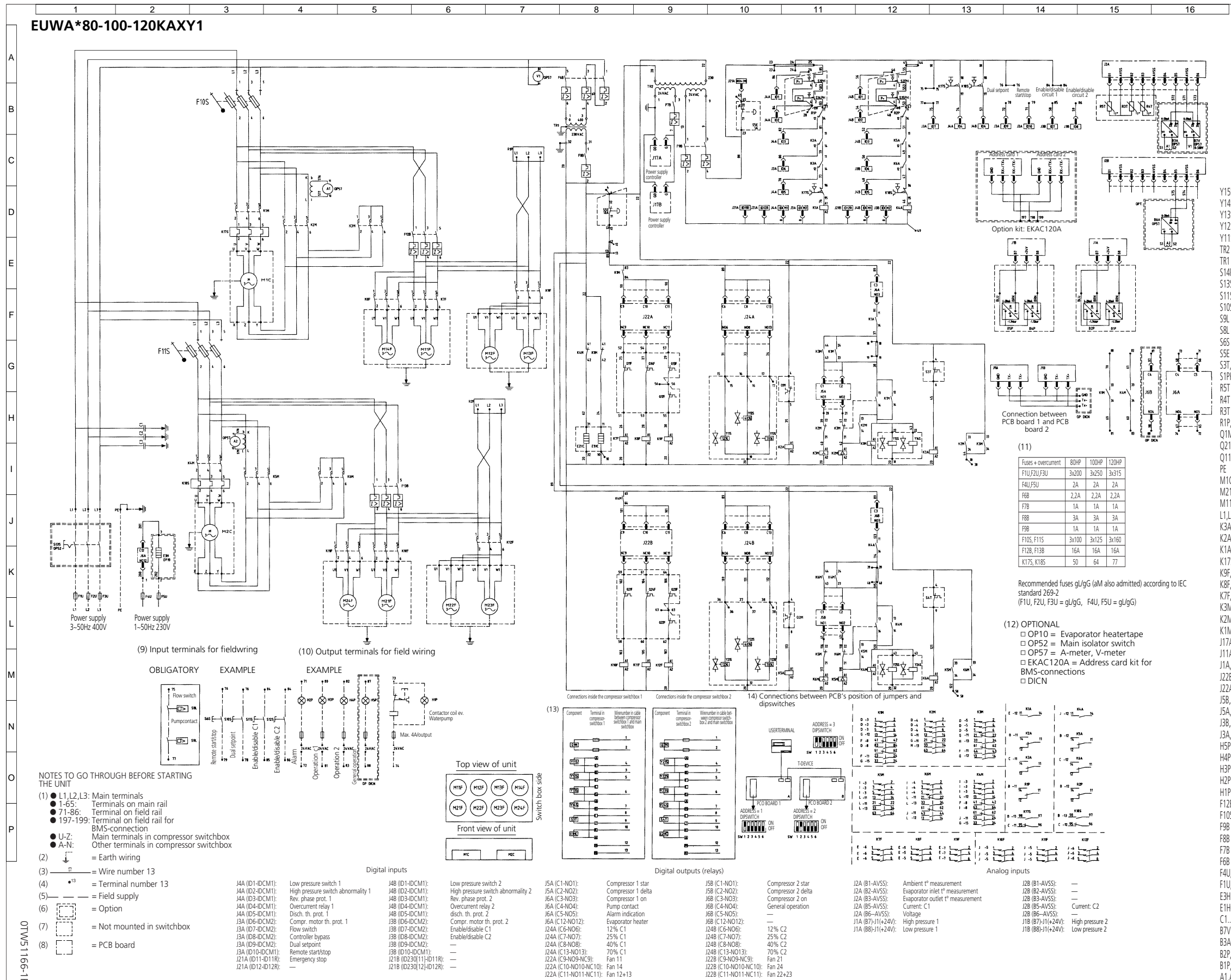


# 8 Wiring diagrams









	Field supply	
	Not poss. as option	Poss. as option
Obligatory	#	##
Not obligatory	*	**

- Y15S, Y25S
- Y14S, Y24S
- Y13S, Y23S
- Y12S, Y22S
- Y11S, Y21S
- TR2
- TR1
- S14PH, S15PH
- S13S \*\*
- S11S, S12S \*
- S10S \*
- S9L #
- S8L #
- S6S \*
- S5E
- S3T, S4T
- S1PH, S2PH
- R5T
- R4T
- R3T
- R1P, R2P
- Q1M, Q2M
- Q21F-Q24F
- Q11F-Q14F
- PE
- M1C, M2C
- M21F-M24F
- M11F-M14F
- L1, L2, L3
- K3A, K6A
- K2A, K5A
- K1A, K4A
- K17S, K18S
- K9F, K12F
- K8F, K11F
- K7F, K10F
- K3M, K6M
- K2M, K5M
- K1M, K4M
- J17A, J17B
- J11A, J11B
- J1A, J2A, J1B, J2B
- J22B, J24B
- J22A, J24A
- J5B, J6B
- J5A, J6A
- J3B, J4B, J21B
- J3A, J4A, J21A
- H5P\*
- H4P \*
- H3P \*
- H2P \*
- H1P \*
- F12B, F13B
- F10S, F11S
- F9B
- F8B
- F7B
- F6B
- F4U, F5U #
- F1U, F2U, F3U #
- E3H \*\*
- E1HC, E2HC
- C1..C6
- B7V (V1) \*\*
- B3A, B6A \*\*
- B2P, B5P
- B1P, B4P
- A1, A2 \*\*

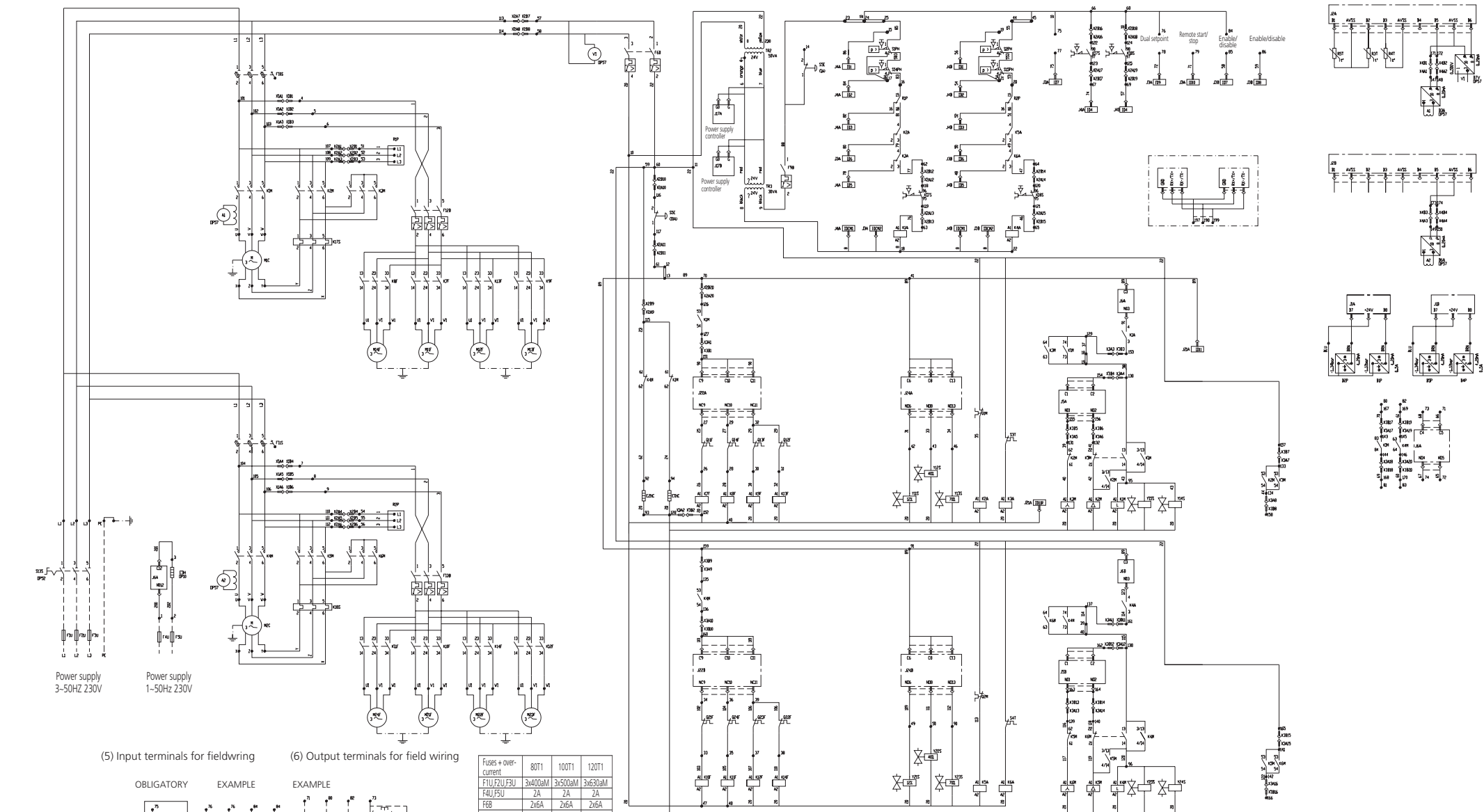
Liquid line solenoid valve circuit 2  
 Liquid injection valve of the compressor circuit 1, circuit 2  
 70% capacity step for compressor circuit 1, circuit 2  
 40% capacity step for compressor circuit 1, circuit 2  
 12% capacity step for compressor circuit 1, circuit 2  
 Transfo supply controller + digital inputs  
 Transfo control circuit  
 High pressure switch circuit 1, circuit 2  
 Main isolator switch  
 Switch that disables circuit 1, circuit 2 when closed  
 Dual setpoint selection switch  
 Contact that closes if the pump is working  
 Flow switch  
 Remote start/stop switch  
 Emergency stop push button  
 Discharge thermal protector circuit 1, circuit 2  
 High pressure switch circuit 1, circuit 2  
 Sensor for ambient temperature  
 Sensor for evaporator outlet water temperature  
 Sensor for evaporator inlet water temperature  
 Reverse phase protector for circuit 1, circuit 2  
 Thermal protector compressor motor circuit 1, circuit 2  
 Thermal protectors fan motors circuit 2  
 Thermal protectors fan motors circuit 1  
 Main earth terminal  
 Compressor motors circuit 1, circuit 2  
 Fan motors circuit 2  
 Fan motors circuit 1  
 Main supply terminals  
 Auxiliary relay for discharge thermal protector circuit 1, circuit 2  
 Auxiliary relay compressor thermal protector circuit 1, circuit 2  
 Auxiliary relay for safeties circuit 1, circuit 2  
 Overcurrent relay circuit 1, circuit 2  
 Fancontactor for circuit 1, circuit 2  
 Fancontactor for circuit 1, circuit 2  
 Fancontactor for circuit 1, circuit 2  
 Starcontactor for circuit 1, circuit 2  
 Delta contactor circuit 1, circuit 2  
 Line contactor circuit 1, circuit 2  
 Controller pcb power supply pcb A, pcb B  
 Connection between PCB A, PCB B  
 Controller pcb analog inputs pcb A  
 Controller pcb relay outputs pcb B  
 Controller pcb relay outputs pcb A  
 Controller pcb relay outputs pcb B  
 Controller pcb relay outputs pcb A  
 Controller pcb digital inputs pcb B  
 Controller pcb digital inputs pcb A  
 Indication lamp general operation  
 Indication lamp operation compressor 2  
 Indication lamp operation compressor 1  
 Indication lamp alarm  
 Indication lamp general operation  
 Autofuse for fanmotors circuit 1, circuit 2  
 Circuit breakers with fuses for circuit 1, circuit 2  
 Autofuse for secondary of TR2 (not earthed circuit)  
 Autofuse for secondary of TR1  
 Autofuse for secondary of TR2 (earthed circuit)  
 Autofuse for primary of TR1  
 Fuses for evaporator heater  
 Main fuses  
 Evaporator heater  
 Crankcase heater compressor circuit 1, circuit 2  
 Capacitor  
 Voltage transmitter  
 Current transmitter for circuit 1, circuit 2  
 High pressure transmitter for circuit 1, circuit 2  
 Low pressure transmitter for circuit 1, circuit 2  
 Current transfo for circuit 1, circuit 2

OTWS1166-1F

# 8 Wiring diagrams



## EUWA\*80-100-120KAXT1



### NOTES TO GO THROUGH BEFORE STARTING THE UNIT

- (1) L1, L2, L3: Main terminals
  - 1-50: Terminals on main rail
  - 51-64: Terminals for fans
  - 71-86: Terminals on field rail
  - U-Z: Main terminals in compressor switchbox
  - A-N: Other terminals in compressor switchbox
- (2) Earth wiring
- (3) Wire number 13
- (4) Terminal number 13

J4A (ID1-DCM1): Low pressure switch 1 J4A (ID2-DCM1): High pressure switch abnormality 1 J4A (ID3-DCM1): Rev. phase prot. 1 J4A (ID4-DCM1): Overcurrent relay 1 J4A (ID5-DCM1): Disch. th. prot. 1 J3A (ID6-DCM2): Compr. motor th. prot. 1 J3A (ID7-DCM2): Flow switch J3A (ID8-DCM2): Controller bypass J3A (ID9-DCM2): Dual setpoint J3A (ID10-DCM1): Remote start/stop J21A (ID11-ID11R): Emergency stop J21A (ID12-ID12R): —	J4B (ID1-DCM1): Low pressure switch 2 J4B (ID2-DCM1): High pressure switch abnormality 2 J4B (ID3-DCM1): Rev. phase prot. 2 J4B (ID4-DCM1): Overcurrent relay 2 J4B (ID5-DCM1): Disch. th. prot. 2 J3B (ID6-DCM2): Compr. motor th. prot. 2 J3B (ID7-DCM2): Enable/disable C1 J3B (ID8-DCM2): Enable/disable C2 J3B (ID9-DCM2): — J3B (ID10-DCM1): — J21B (ID11-ID11R): — J21B (ID12-ID12R): —	J5A (C1-NO1): Compressor 1 star J5A (C2-NO2): Compressor 1 delta J6A (C3-NO3): Compressor 1 on J6A (C4-NO4): Pump contact J6A (C5-NO5): Alarm indication J6A (C12-NO12): Evaporator heater J24A (C6-NO6): 12% C1 J24A (C7-NO7): 25% C1 J24A (C8-NO8): 40% C1 J24A (C13-NO13): 70% C1 J22A (C9-NO9-NC9): Fan 11 J22A (C10-NO10-NC10): Fan 14 J22A (C11-NO11-NC11): Fan 12+13	J5B (C1-NO1): Compressor 2 star J5B (C2-NO2): Compressor 2 delta J6B (C3-NO3): Compressor 2 on J6B (C4-NO4): General operation J6B (C5-NO5): — J6B (C12-NO12): 12% C2 J24B (C6-NO6): 12% C2 J24B (C7-NO7): 25% C2 J24B (C8-NO8): 40% C2 J24B (C13-NO13): 70% C2 J22B (C9-NO9-NC9): Fan 21 J22B (C10-NO10-NC10): Fan 24 J22B (C11-NO11-NC11): Fan 22+23
--	---	---	--

	Field supply	
	Not poss. as option	Poss. as option
Obligatory	#	##
Not obligatory	*	**

Y15S, Y25S  
 Y14S, Y24S  
 Y13S, Y23S  
 Y12S, Y22S  
 Y11S, Y21S  
 TR3  
 TR2  
 TR1  
 S14PH, S15PH  
 S13S #  
 S11S, S12S \*  
 S10S \*  
 S9L #  
 S8L #  
 S6S \*  
 S5E  
 S3T, S4T  
 S1PH, S2PH  
 R5T  
 R4T  
 R3T  
 R1P, R2P  
 Q1M, Q2M  
 Q21F, Q24F  
 Q11F, Q14F  
 PE  
 M1C, M2C  
 M21F, M24F  
 M11F, M14F  
 L1, L2, L3  
 K3A, K6A  
 K2A, K5A  
 K1A, K4A  
 K17S, K18S  
 K9F, K12F  
 K8F, K11F  
 K7F, K10F  
 K3M, K6M  
 K2M, K5M  
 K1M, K4M  
 J17A, J17B  
 J1A, J2A, J1B, J2B  
 J22B, J24B  
 J22A, J24A  
 J5B, J6B  
 J5A, J6A  
 J3B, J4B, J21B  
 J3A, J4A, J21A  
 H4P \*  
 H3P \*  
 H2P \*  
 H1P \*  
 F12B, F13B  
 F10S, F11S  
 F9B  
 F8B  
 F6B  
 F4U, F5U #  
 F1U, F2U, F3U #  
 E3H \*\*  
 E1HC, E2HC  
 B7V (V1) \*\*  
 B3A, B6A \*\*  
 B2P, B5P  
 B1P, B4P  
 A1, A2 \*\*

Liquid line solenoid valve circuit 1, circuit 2  
 Liquid injection valve of the compressor circuit 1, circuit 2  
 70% capacity step for compressor circuit 1, circuit 2  
 40% capacity step for compressor circuit 1, circuit 2  
 12% capacity step for compressor circuit 1, circuit 2  
 Transfo digital inputs  
 Transfo supply controller  
 Transfo control circuit  
 High pressure switch circuit 1, circuit 2  
 Main isolator switch  
 Switch that disables circuit 1, circuit 2 when closed  
 Dual setpoint selection switch  
 Contact that closes if the pump is working  
 Flow switch  
 Remote start/stop switch  
 Emergency stop push button  
 Discharge thermal protector circuit 1, circuit 2  
 High pressure switch circuit 1, circuit 2  
 Sensor for ambient temperature  
 Sensor for evaporator outlet water temperature  
 Sensor for evaporator inlet water temperature  
 Reverse phase protector for circuit 1, circuit 2  
 Thermal protector compressor motor circuit 1, circuit 2  
 Thermal protectors fan motors circuit 2  
 Thermal protectors fan motors circuit 1  
 Main earth terminal  
 Compressor motors circuit 1, circuit 2  
 Fan motors circuit 2  
 Fan motors circuit 1  
 Main supply terminals  
 Auxiliary relay for discharge thermal protector circuit 1, circuit 2  
 Auxiliary relay compressor thermal protector circuit 1, circuit 2  
 Auxiliary relay for safeties circuit 1, circuit 2  
 Overcurrent relay circuit 1, circuit 2  
 Fancontactor for circuit 1, circuit 2  
 Fancontactor for circuit 1, circuit 2  
 Fancontactor for circuit 1, circuit 2  
 Starcontactor for circuit 1, circuit 2  
 Delta contactor circuit 1, circuit 2  
 Line contactor circuit 1, circuit 2  
 Controller pcb power supply pcb A, pcb B  
 Controller pcb analog inputs pcb A, pcb B  
 Controller pcb relay outputs pcb B  
 Controller pcb relay outputs pcb A  
 Controller pcb relay outputs pcb B  
 Controller pcb relay outputs pcb A  
 Controller pcb digital inputs pcb B  
 Controller pcb digital inputs pcb A  
 Indication lamp operation compressor 2  
 Indication lamp operation compressor 1  
 Indication lamp alarm  
 Indication lamp general operation  
 Autofuse for fanmotors circuit 1, circuit 2  
 Circuit breakers with fuses for circuit 1, circuit 2  
 Autofuse for secondary of TR3  
 Autofuse for secondary of TR1  
 Autofuse for primary of TR1  
 Fuses for evaporator heater  
 Main fuses  
 Evaporator heater  
 Crankcase heater compressor circuit 1, circuit 2  
 Voltage transmitter  
 Current transmitters for circuit 1, circuit 2  
 High pressure transmitter for circuit 1, circuit 2  
 Low pressure transmitter for circuit 1, circuit 2  
 Current transfo for circuit 1, circuit 2

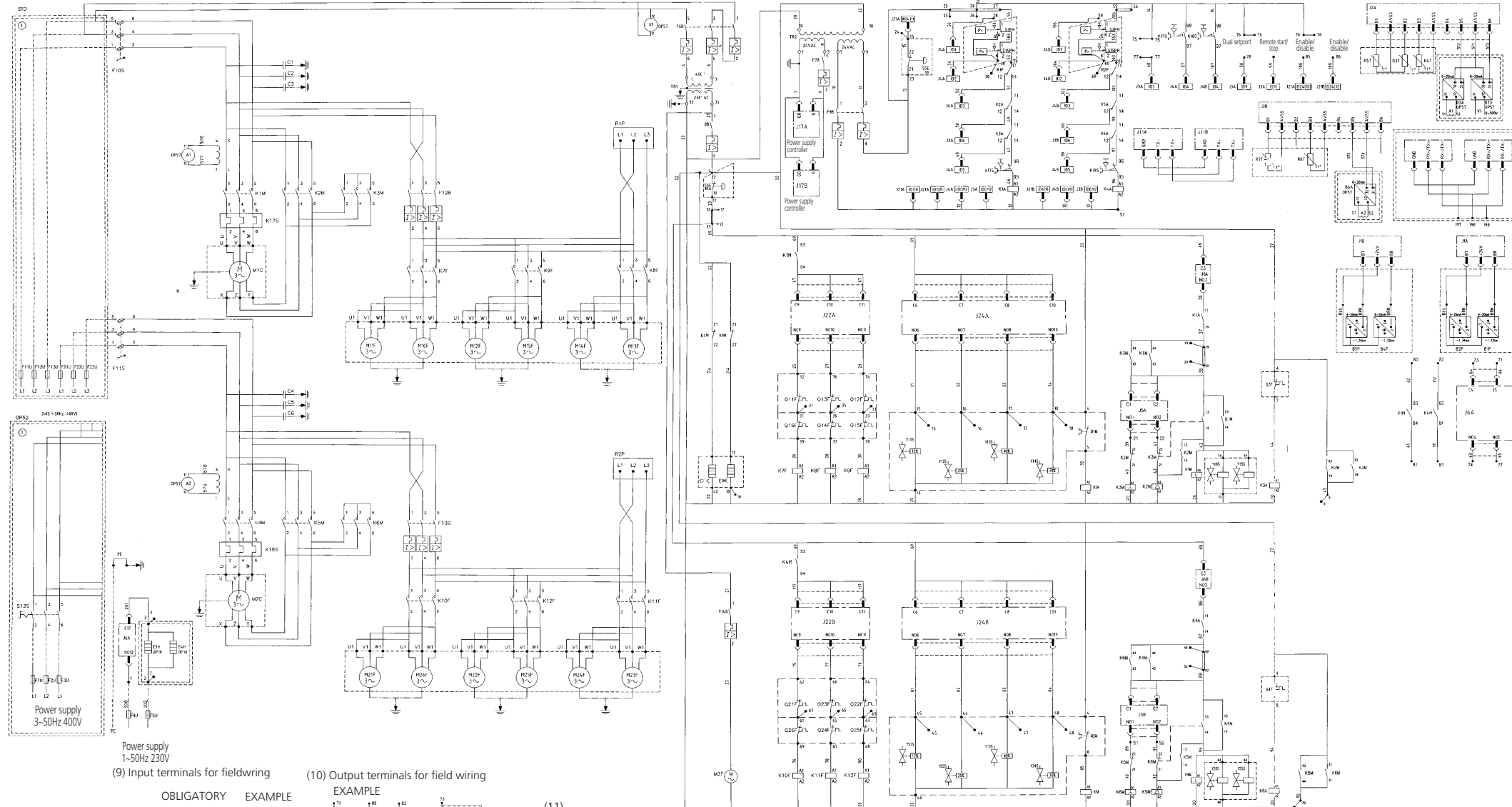
- (8) OPTIONAL
- OP10 = Evaporator heatertape
  - OP52 = Main isolator switch
  - OP57 = A-meter, V-meter



# 8 Wiring diagrams

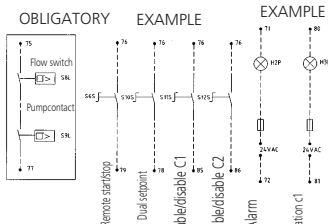


## EUWA\*160-200KXY1



(9) Input terminals for field wiring

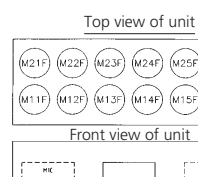
(10) Output terminals for field wiring



Fuses + overcurrent	160Y1	180Y1	200Y1
F1U1/F2U1/F3U1	3x215g	3x400g	3x400g
F2U1/F2U2/F3U2	3x215g	3x215g	3x400g
F1U1/F2U1/F3U1	3x500g	3x500g	3x630g
F4U1/F5U1	4A	4A	4A
F6B	2.2A	2.2A	2.2A
F8B	3A	3A	3A
F9B	1A	1A	1A
F10S	3x250g	3x215g	3x315g
F11S	3x250g	3x250g	3x315g
F12B/F13B	20A	20A	20A
F14B	1A	1A	1A
K17S	117	136	136
K18S	117	117	136

Recommended fuses gL/gG (A) also admitted according to IEC standard 269-2  
(F1U, F2U, F3U = gL/gG, F4U, F5U = gL/gG)  
(F1U, F2U, F3U = gL/gG, F2U, F2U, F2U = gL/gG)

(12) OPTIONAL  
□ OPT0 = Evaporator heater tape  
□ OPT2 = Main isolator switch  
□ OPT5 = A-meter, V-meter  
EKAC 120A = Address card kit for BMS-connections



Digital inputs

J4A (ID1-DCM1): Low pressure switch 1  
J4A (ID2-DCM1): High pressure switch 1  
J4A (ID3-DCM1): Rev. phase prot. 1  
J4A (ID4-DCM1): Overcurrent relay 1  
J4A (ID5-DCM1): Disch. th. prot. 1  
J3B (ID6-DCM2): Comp. motor th. prot. 1  
J3A (ID7-DCM2): Flow switch  
J3A (ID8-DCM2): Controller bypass  
J3A (ID9-DCM2): Dual setpoint  
J3A (ID10-DCM1): Remote start/stop  
J21A (ID11-ID11R): Emergency stop  
J21A (ID12-ID12R): Enable/disable cap. limit C1

Digital outputs (relays)

J5B (C1-NO1): Compressor 1 star  
J5B (C2-NO2): Compressor 1 delta  
J5B (C3-NO3): Compressor 2 on  
J5B (C4-NO4): Pump contact  
J5B (C5-NO5): Alarm indication  
J5B (C12-NO12): Evaporator heater  
J24A (C6-NO6): 12% C1  
J24A (C7-NO7): 25% C1  
J24A (C8-NO8): 40% C1  
J24A (C13-NO13): 70% C1  
J22A (C9-NO9-NC9): Fan 11+16  
J22A (C10-NO10-NC10): Fan 13+14  
J22A (C11-NO11-NC11): Fan 22+25

Analog inputs

J2A (B1-AVSS): Ambient t° measurement  
J2A (B2-AVSS): Evaporator inlet t° measurement  
J2A (B3-AVSS): Evaporator outlet t° measurement  
J2A (B4-AVSS): Current: C1  
J2A (B5-AVSS): Voltage  
J1A (B7-J11+24V): High pressure 1  
J1A (B8-J11+24V): Low pressure 1

Analog outputs

J2B (B1-AVSS): Evaporator mixed outlet t°  
J2B (B2-AVSS): Evaporator outlet t° measurement C2  
J2A (B4-AVSS): Current: C2  
J2A (B5-AVSS): Voltage  
J1A (B7-J11+24V): High pressure 2  
J1A (B8-J11+24V): Low pressure 2

	Field supply	
	Not poss. as option	Poss. as option
Obligatory	#	##
Not obligatory	*	**

Y16S,Y26S  
Y15S,Y25S  
Y14S,Y24S  
Y13S,Y23S  
Y12S,Y22S  
Y11S,Y21S  
TR2  
TR1  
S14PH,S15PH  
S13S #  
S11S,S12S \*  
S10S \*  
S9L #  
S8L #  
S6S \*  
S5E  
S3T,S4T  
S1PH,S2PH  
R7T  
R6T  
R5T  
R4T  
R3T  
R1P,R2P  
Q1M,Q2M  
Q21F-Q26F  
Q11F-Q16F  
PE  
M1C,M2C  
M3F  
M21F-M26F  
M11F-M16F  
K3A,K6A  
K2A,K5A  
K1A,K4A  
K17S,K18S  
K9F,K12F  
K8F,K11F  
K7F,K10F  
K3M,K6M  
K2M,K5M  
K1M,K4M  
J22B,J24B  
J22A,J24A  
J1A,J2A,J1B,J2B  
J17A,J17B  
J11A,J11B  
J5B,J6B  
J5A,J6A  
J3B,J4B,J21B  
J3A,J4A,J21A  
H4P \*  
H3P \*  
H2P \*  
H1P \*  
F14B  
F12B,F13B  
F10S,F11S  
F9B  
F8B  
F7B  
F6B  
F4U,F5U #  
F21U,F23U #  
F11U,F13U #  
F11U,F13U #  
F11U,F13U #  
E3H,E4H \*\*  
E1HC,E2HC  
C1,C3,C4,C6  
B7V (V1) \*\*  
B3A,B6A \*\*  
B2P,B5P  
B1P,B4P  
A1,A2 \*\*

Liquid line solenoid valve circuit 1, circuit 2  
Liquid injection valve of the compressor circuit 1, circuit 2  
70% capacity step for compressor circuit 1, circuit 2  
40% capacity step for compressor circuit 1, circuit 2  
25% capacity step for compressor circuit 1, circuit 2  
12% capacity step for compressor circuit 1, circuit 2  
Transfo supply controller + digital inputs  
Transfo control circuit  
High pressure switch circuit 1, circuit 2  
Main isolator switch  
Switch that disables circuit 1, circuit 2 when closed  
Dual setpoint selection switch  
Contact that closes if the pump is working  
Flow switch  
Remote start/stop switch  
Emergency stop push button  
Discharge thermal protector circuit 1, circuit 2  
High pressure switch circuit 1, circuit 2  
Sensor for mixed outlet water t°  
Sensor for evaporator outlet water temperature circuit 2  
Sensor for ambient temperature  
Sensor for evaporator outlet water temperature Circuit 1  
Sensor for evaporator inlet water temperature  
Reverse phase protector for circuit 1, circuit 2  
Thermal protector compressor motor circuit 1, circuit 2  
Thermal protectors fan motors circuit 2  
Thermal protectors fan motors circuit 1  
Main earth terminal  
Compressor motors circuit 1, circuit 2  
Fan motor switchbox  
Fan motors circuit 2  
Fan motors circuit 1  
Auxiliary relay for discharge thermal protector circuit 1, circuit 2  
Auxiliary relay compressor thermal protector circuit 1, circuit 2  
Auxiliary relay for safeties circuit 1, circuit 2  
Overcurrent relay circuit 1, circuit 2  
Fancontact for circuit 1, circuit 2  
Fancontact for circuit 1, circuit 2  
Fancontact for circuit 1, circuit 2  
Starcontact for circuit 1, circuit 2  
Delta contactor circuit 1, circuit 2  
Line contactor circuit 1, circuit 2  
Controller pcb relay outputs pcb B  
Controller pcb relay outputs pcb A  
Controller pcb analog inputs pcb A pcb B  
Controller pcb power supply pcb A, pcb B  
Connection between PCB A, PCB B  
Controller pcb relay outputs pcb B  
Controller pcb relay outputs pcb A  
Controller pcb digital inputs pcb B  
Controller pcb digital inputs pcb A  
Indication lamp operation compressor 2  
Indication lamp operation compressor 1  
Indication lamp alarm  
Indication lamp general operation  
Autofuse for fanmotor switchbox  
Autofuse for fanmotors circuit 1, circuit 2  
Circuit breakers with fuses for circuit 1, circuit 2  
Autofuse for secondary of TR2  
Autofuse for secondary of TR1  
Autofuse for primary of TR1  
Fuses for evaporator heater  
Main fuses  
Main fuses  
Main fuses  
Evaporator heater  
Crankcase heater compressor circuit 1, circuit 2  
Capacitor  
Voltage transmitter  
Current transmitters for circuit 1, circuit 2  
High pressure transmitter for circuit 1, circuit 2  
Low pressure transmitter for circuit 1, circuit 2  
Current transfo for circuit 1, circuit 2

### NOTES TO GO THROUGH BEFORE STARTING THE UNIT

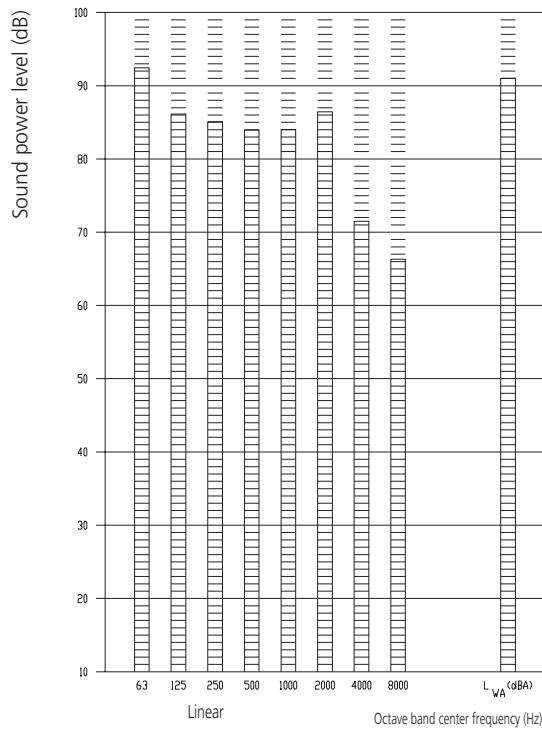
- L1,L2,L3: Main terminals  
● 1-7: Terminals on main rail  
● 71-86: Terminal on field rail  
● 197-199: Terminal on field rail for BMS-connection  
● U-Z: Main terminals in compressor switchbox  
● A-N: Other terminals in compressor switchbox
- ⊥ = Earth wiring
- = Wire number 13
- = Terminal number 13
- = Field supply
- = Option
- = Not mounted in switchbox
- = PCB board

OTW5296G-1

## 9 Sound power spectrum

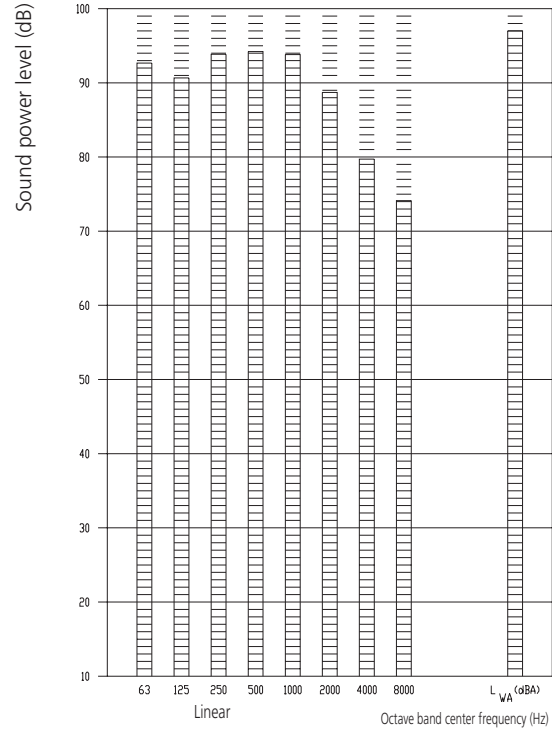


EUWA\*40KAX



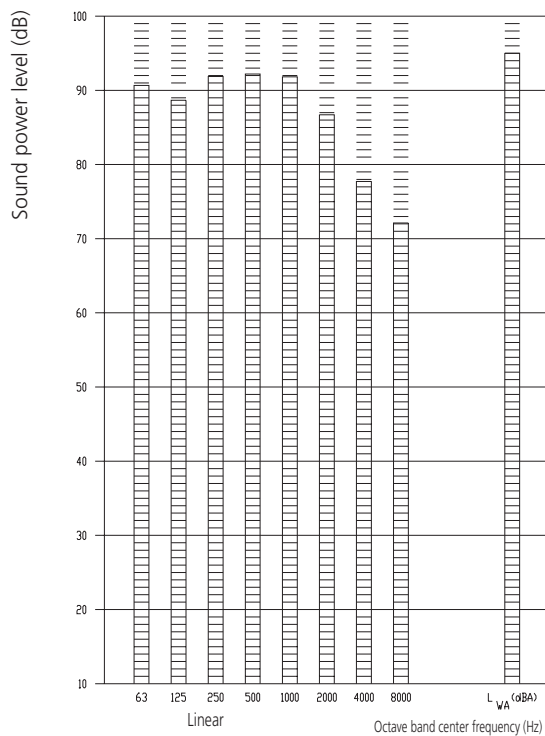
3TW51897-1

EUWA\*50KAX



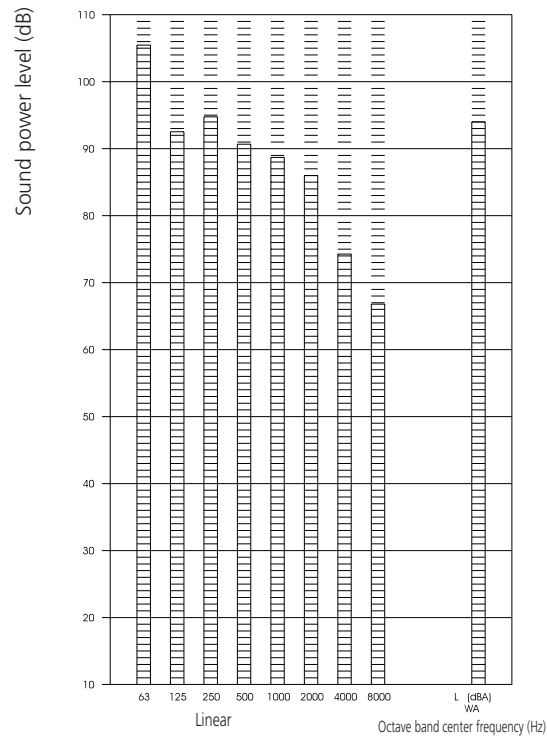
3TW51907-1

EUWA\*60KAX



3TW51917-1

EUWA\*80KAX

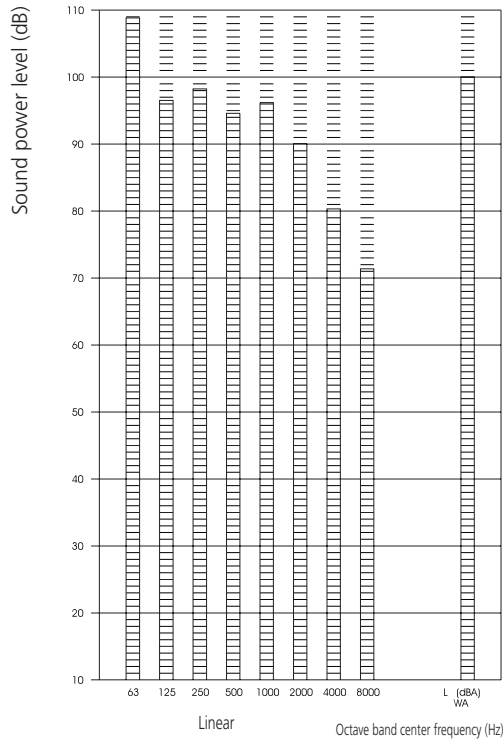


3TW51927-1

# 9 Sound power spectrum

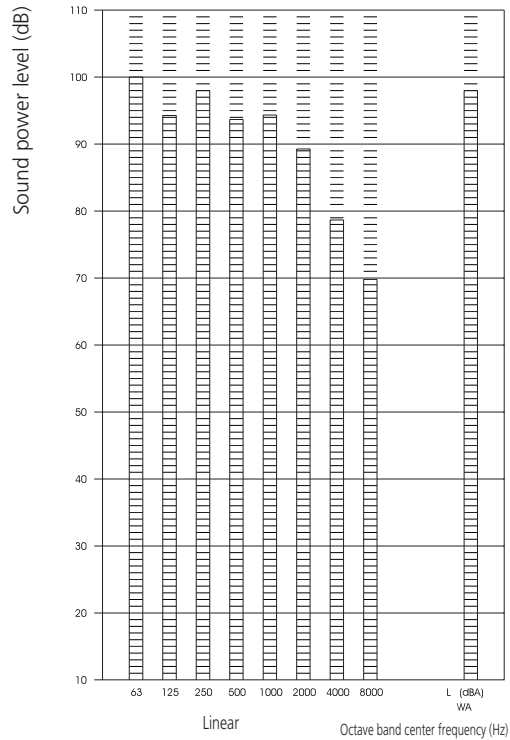


**EUWA\*100KAX**



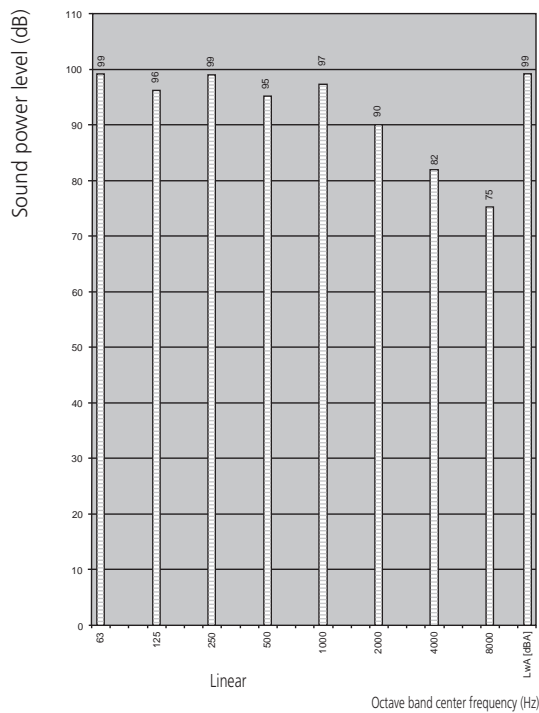
3TW51937-1

**EUWA\*120KAX**



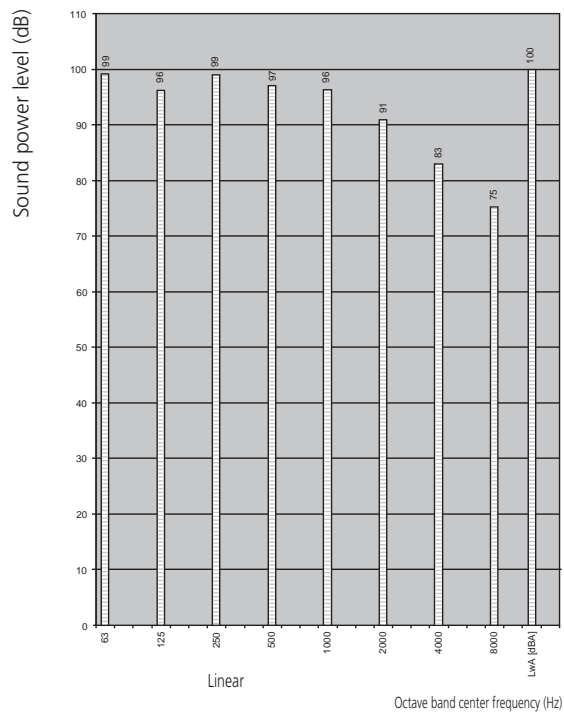
3TW51947-1

**EUWA\*160KX**



4TW52097-1A

**EUWA\*180KX**



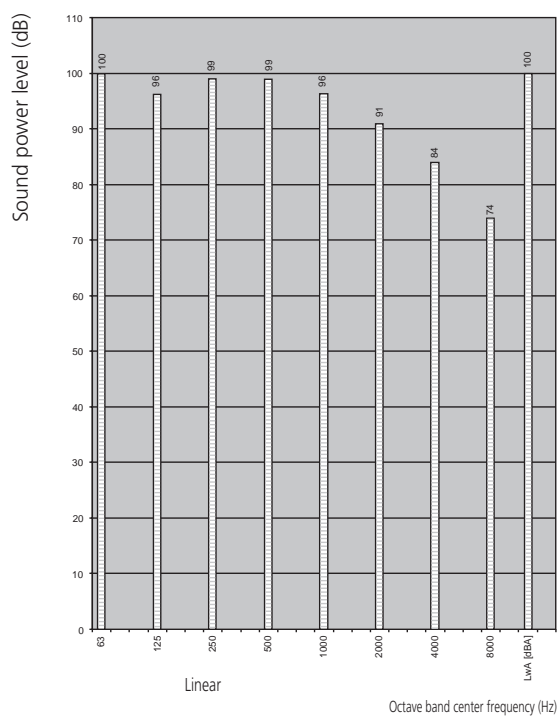
4TW52097-2A

## 9 Sound power spectrum



3  
9

### EUWA\*200KX



4TW52097-3A

### NOTES

- Operation sound levels are valid at nominal operation condition
- dB(A) = A-weighted sound power level (A-scale according to IEC)
- Reference acoustic pressure 0 dB = 1 pW
- Measured according to ISO 3744

# 10 Installation

## 10-1 Fixation + foundation



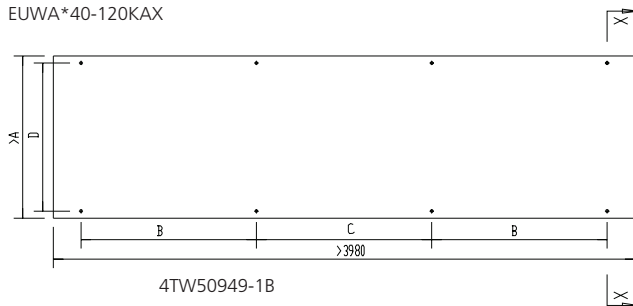
3

10

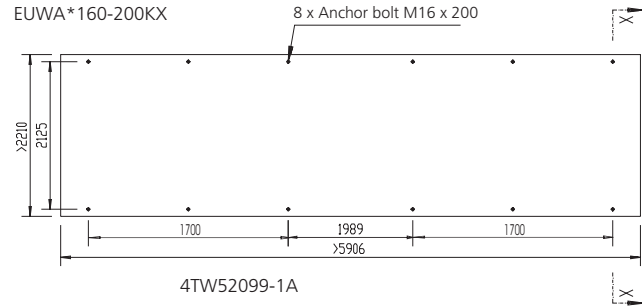
10-1

1. The foundation is strong enough to support the weight of the unit and the floor is flat to prevent vibration and noise generation.
2. The space around the unit is adequate for servicing and the minimum space for air inlet and air outlet is available.
3. There is no danger of fire due to leakage of inflammable gas.
4. Ensure that water cannot cause any damage to the location in case it drips out the unit (e.g. in case of defrost).
5. Select the location of the unit in such a way that neither the discharged air nor the sound generated by the unit disturb anyone.
6. Make sure that the air inlet and outlet of the unit are not positioned towards the main wind direction. Frontal wind will disturb the operation of the unit. If necessary, use a windscreen to block the wind.

EUWA\*40-120KAX



EUWA\*160-200KX



MODEL	A	B	C	D	Anchor bolt	
					Size	Qty.
EUWA*40KAX	1110	1200	1200	1013	M16 x 200	8
EUWA*50KAX	1110	1200	1200	1013	M16 x 200	8
EUWA*60KAX	1110	1200	1200	1013	M16 x 200	8
EUWA*80KAX	2210	1100	1100	2125	M16 x 200	8
EUWA*100KAX	2210	950	1400	2125	M16 x 200	8
EUWA*120KAX	2210	950	1400	2125	M16 x 200	8

Unit = mm

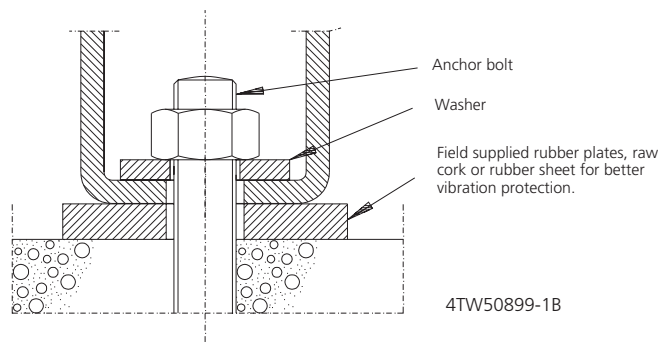
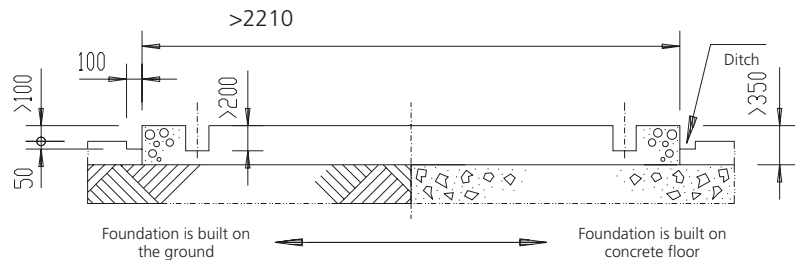
Fix anchor bolts into the concrete foundation. The concrete foundation should be higher than the floor level by approximately 100 mm for ease of plumbing work and better drain.

Further, strength of the floor should be sufficient to support the weight of concrete foundation and unit. Make certain that the 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 whether 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  $\phi 10$  at every interval of 300 mm. The edge of the concrete base should be planed.

Section X-X



# 10 Installation

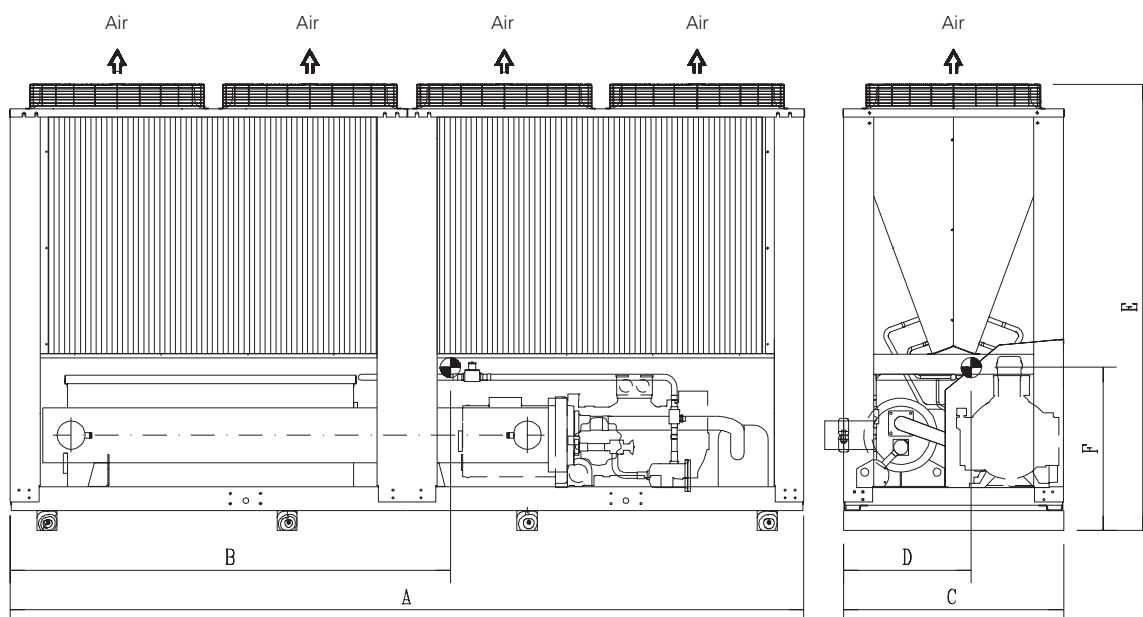
## 10-2 Centre of gravity



3

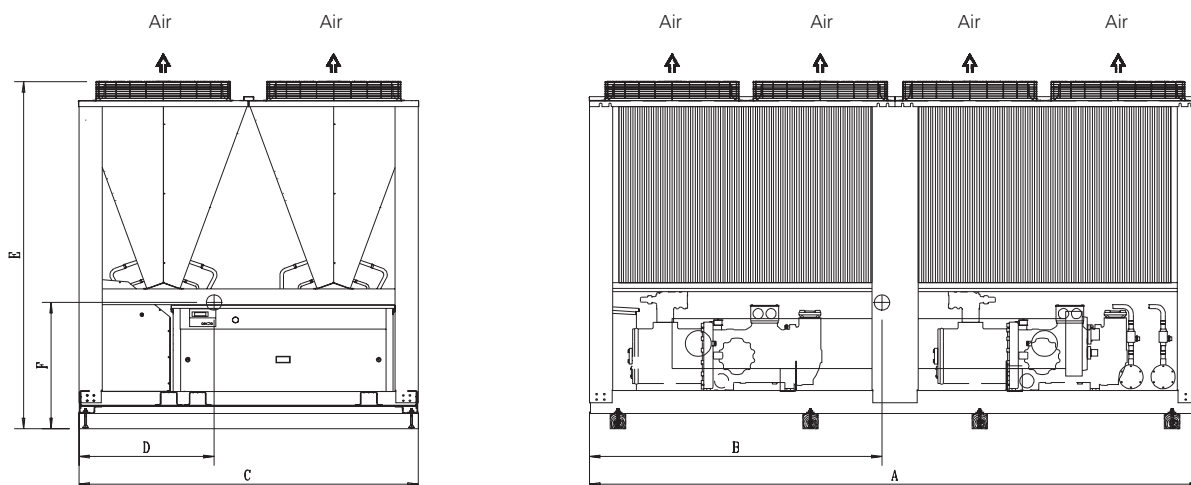
10

10-2



Model	A	B	C	D	E	F
EUWA*40KAX	3980	2026	1110	591	2235	755
EUWA*50KAX	3980	2061	1110	595	2235	740
EUWA*60KAX	3980	2033	1110	577	2235	730

4TW51899-3



Model	A	B	C	D	E	F
EUWA* 80KAX	3980	1896	2210	850	2256	810
EUWA*100KAX	3980	1909	2210	864	2256	825
EUWA*120KAX	3980	1913	2210	871	2256	830

3TW51929-3A

# 10 Installation

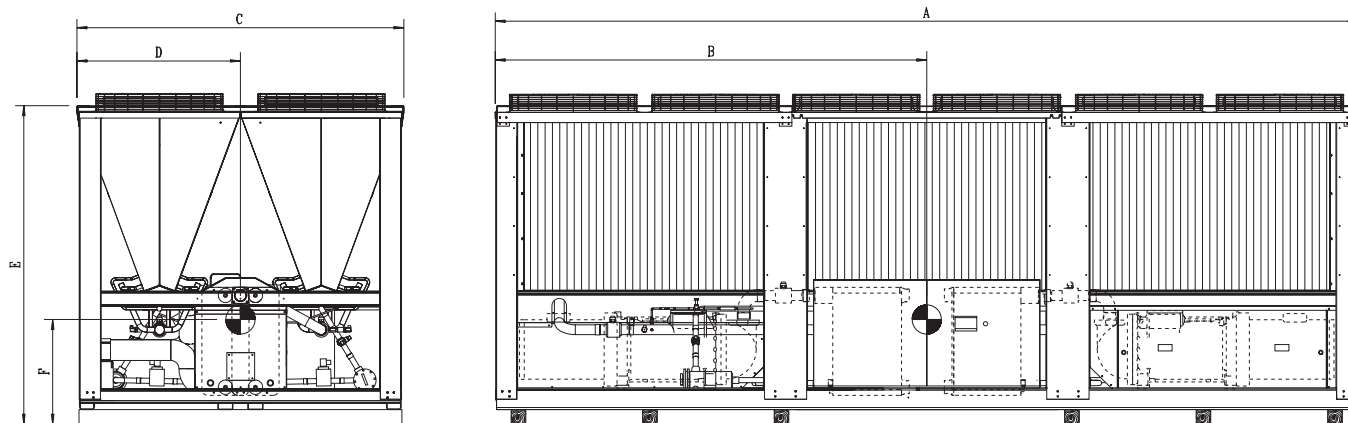
## 10-2 Centre of gravity



3

10

10-2



Model	A	B	C	D	E	F
EUWA*160KX	5906	2953	2270	1167	2256	950
EUWA*180KX	5906	2942	2270	1169	2256	940
EUWA*200KX	5906	2953	2270	1169	2256	930

3TW52099-3

# 10 Installation

## 10-3 Water quality



Be sure the water quality is in accordance with the specifications below:

ITEMS	Evaporator water		Tendency if out of criteria
	Circulating water [<20°C]	Supply water	
<b>Items to be controlled:</b>			
- pH at 25°C	6.8 - 8.0	6.8 - 8.0	Corrosion + scale
- Electrical conductivity (mS/m) at 25°C	Below 40	Below 30	Corrosion + scale
- Chloride ion (mg Cl <sup>-</sup> /l)	Below 50	Below 50	Corrosion
- Sulfate ion (mg SO <sub>4</sub> <sup>2-</sup> /l)	Below 50	Below 50	Corrosion
- M-alkalinity (pH 4.8) (mg SO <sub>3</sub> /l)	Below 50	Below 50	Scale
- Total hardness (mg CaCO <sub>3</sub> /l)	Below 70	Below 70	Scale
- Calcium hardness (mg CaCO <sub>3</sub> /l)	Below 50	Below 50	Scale
- Silica ion (mg SiO <sub>2</sub> /l)	Below 30	Below 30	Scale
<b>Items to be referred to:</b>			
- Iron (mg Fe/l)	Below 1.0	Below 0.3	Corrosion + scale
- Copper (mg Cu/l)	Below 1.0	Below 0.1	Corrosion
- Sulfite ion (mg S <sup>2-</sup> /l)	Not detectable	Not detectable	Corrosion
- ammonium ion (mg NH <sub>4</sub> <sup>+</sup> /l)	Below 1.0	Below 0.1	Corrosion
- Remaining chloride (mg Cl/l)	Below 0.3	Below 0.3	Corrosion
- Free carbide (mg CO <sub>2</sub> /l)	Below 4.0	Below 4.0	Corrosion
- Stability index	—	—	Corrosion + scale

Note:

Provide adequate safeguards in the water circuit to make sure that the water pressure will never exceed the maximum allowable working pressure.

## 10-4 Power circuit and cable requirements

1. The electrical power supply to the unit should be arranged so that it can be switched on or off independently of the electrical supply to other items of the plant and equipment in general.
2. A power supply must be provided for connection of the unit. This circuit must be protected with the required safety devices, i.e. a circuit breaker, a slow blow fuse on each phase and an earth leak detector. Recommended fuses are mentioned on the wiring diagram supplied with the unit.

!! Switch off the main isolator switch before making any connections (switch off the circuit breaker, remove or switch off the fuses).

3

10

10-3



# 10 Installation

## 10-5 Digital controller



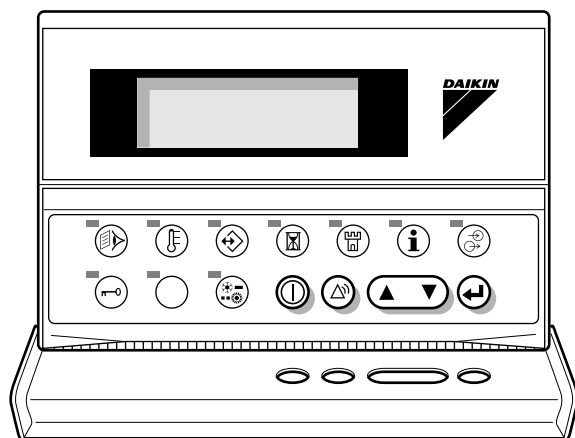
The digital controller consists of an alphanumeric display, labelled keys which you can press, a number of LEDs indicating the selected menu and a hinged cover. When the cover is closed, only the most frequently used keys are accessible.

3





10

10-5










Digital controller



Keys accessible when the cover is closed:

-  Key, to start up or to shut down the unit.
-  Key, to enter the safeties menu or to reset an alarm.
-  Key, to scroll through the screens of a menu (only in case  $\nabla$ ,  $\nabla$  or  $\nabla$  appears) or to raise, respectively lower a setting.
-  Key, to confirm a selection or a setting.

Keys only accessible when the cover is open:

-  Key, to enter the readout menu.
-  Key, to enter the setpoints menu.
-  Key, to enter the user settings menu.
-  Key, to enter the info menu.
-  Key, to enter the input/output status menu.
-  Key, to enter the user password menu.
-  Key, has no effect on EUWA units
-  Key, to enter the timers menu.
-  Key, to enter the history menu.

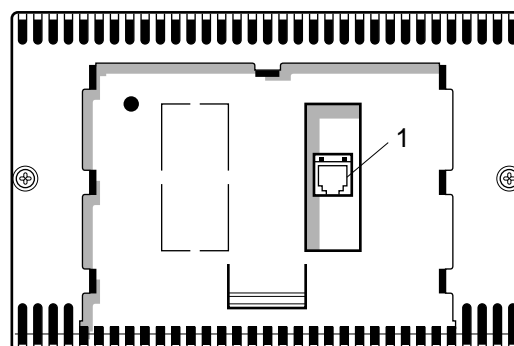
### Note:

- Temperature readout tolerance:  $\pm 1^{\circ}\text{C}$ .
- Legibility of the alphanumeric display may decrease in direct sunlight.

## Connection to the unit

The digital controller is connected to the unit, more specifically to the controller PCB inside the unit, by means of a 6-ray cable and a connector located on the rear side of the controller. A cable length of up to 1,000 metres (EUWA(\*)40-60KAX) or 300 metres (EUWA(\*)80-120KAX / EUWA\*160-200KX) between the digital controller and the unit is allowed. This gives the opportunity to control the unit from a considerable distance. Refer to 'Cable for digital controller' in the installation manual for cable specifications.

Rear side of the controller and its connector (1).



# 11 Accessories & options



Number	Description	Decimal code	Model-type								Unit size								Availability
				b	d	k	m	q	s	t	40	50	60	80	100	120	160	180	
	Standard unit			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	<b>Not completely combinable options</b>	1st digit																	
zh	Glycol application chilled water temperature down to -5°C	12	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
zl	Glycol application chilled water temperature down to -10°C	24	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	<b>Completely combinable options</b>	2nd/3rd digit																	
OP03	Dual pressure relief valve on the condenser	1	—	○	std	○	○	○	○	std	○	○	○	○	○	○	○	○	○
OP10	Evaporator heattape	2	—	○	○	○	○	○	○	std	○	○	○	○	○	○	○	○	○
OP12	Suction stop valve	4	—	○	std	○	○	○	○	std	○	○	○	○	○	○	○	○	○
OP52	Main isolator switch (Y1-model)	8	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OP57	A-meter, V-meter	16	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
oplh	Low noise operation	64	—	○	○	○	○	○	○	○	○	○	○	○	○	○	—	—	○
OPCN	Daikin Integrated Chiller Network	256	—	○	○	○	○	○	○	○	—	—	○	○	○	—	—	—	○
OPCG	Condenser protection grilles	512	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	<b>Available kits</b>																		
EKAC60A	BMS address card for single circuit		—	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	Kit
EKAC120A	BMS card for double circuit		—	○	○	○	○	○	○	○	—	—	○	○	○	○	○	○	Kit
EKBMSMBA	BMS gateway MODBUS protocol		—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Kit
EKBMSBNA	BMS gateway BACNET protocol		—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Kit

## NOTES

- std = standard on unit  
 \* Model type for IPESL approval pressure vessels (B)  
 Model type for RLK approval (Dutch) (D)  
 Model type for TTK approval (Finland) (K)  
 Model type for SdM approval pressure vessels (M)  
 Model type for UDT approval (Q)  
 Model type for SA approval (S)  
 Model type for TUV approval pressure vessels (T)  
 ○ Available  
 — Not available
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