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EUWA*40-200LZ



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Features



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- Daikin single screw compressor
- All components optimised for use with R-407C refrigerant
- Electronic DDC controller
- Modular format
- Standard operating range down to -15°C ambient
- High quality, anti-corrosion treated components as standard
- Moisture indicator as standard
- Victaulic joints as standard
- Chilled water temperatures down to 4°C (down to -10°C with ZL option and glycol)
- Optional BMS and DICN connection available
- Double refrigeration circuits (from 160hp on)
- Pre-mounted, 5 inch piping for easier field connection



2 Specifications



NOMINAL CAPACITY, CAPACITY STEPS and NOMINAL INPUT							
UNITS			EUWA*40LZ	EUWA*50LZ	EUWA*60LZ	EUWA*80LZ	EUWA*100LZ
NOMINAL CAPACITY (1)	Cooling	kW	97	129 (123)	155 (150)	203	274 (265)
CAPACITY STEPS		%	100 - 74 - 48 - 0	100 - 74 - 47 - 0		100 - 74 - 48 - 0	
NOMINAL INPUT	Cooling	kW	42	55 (54)	66 (65)	86	112 (111)

TECHNICAL SPECIFICATIONS								
UNITS				EUWA*40LZ	EUWA*50LZ	EUWA*60LZ	EUWA*80LZ	EUWA*100LZ
DIMENSIONS	Unit	H	mm	2,160	2,160	2,160	2,165	2,165
		W	mm	2,340	2,340	2,340	4,280	4,280
		D	mm	2,238	2,238	2,238	2,238	2,238
WEIGHT	Machine weight		kg	1,346 (1,466)	1,610 (1,730)	1,637 (1,757)	2,286 (2,426)	2,565 (2,705)
	Operation weight		kg	1,354 (1,475)	1,623 (1,743)	1,653 (1,773)	2,306 (2,446)	2,592 (2,732)
MATERIAL				Polyester painted galvanised steel plate				
COLOUR				Ivory white / Munsell code 5Y7.5/1				
SOUND LEVEL (2)	Sound pressure		dB(A)	-	-	-	-	-
	Sound power		dB(A)	91 (88)	94 (88)	95 (89)	95 (92)	98 (92)
FAN	Air flow rate		m³/min	960	960 (800)	960 (800)	1,920	1,920 (1,600)
	Speed		rpm	750	900 (750)	900 (750)	750	900 (750)
	Type			Direct drive propeller				
	Qty.			4	4	4	8	8
	No. of motors x output		W	4 x 500	4 x 1,200 (4 x 500)	4 x 1,200 (4 x 500)	8 x 500	8 x 1,200 (8 x 500)
	Discharge			Vertical				
WATER HEAT EXCHANGER	Type			Brased plate heat exchanger, one per circuit				
	Qty x model			1 x AC120EQ-NP80	1 x AC120EQ-NP120	1 x AC120EQ-NP156	1 x AC250EQ-NP96	1 x AC250EQ-NP128
	Minimum water volume in the system		l	1,100	1,450	1,780	2,300	3,050
	Water flow rate (min/max)		l/min	140/560	185/740	220/890	290/1,160	390/1,570
	Nominal water pressure drop		kPa	37	35	32	30	29
	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		m²	8.4	8.4	8.4	16.8	16.8
REFRIGERANT CIRCUIT	Refrigerant type			R-407C				
	Refrigerant charge		kg	32	49 (45)	49 (45)	60	97
	No. of circuits			1	1	1	1	1
	Refrigerant control			Thermostatic expansion valve				
COMPRESSOR	Type			Semi-hermetic single screw				
	Qty x model		Y1	1 x ZHC3LSFYE	1 x ZHC5MLFYE	1 x ZHC5LLFYE	1 x ZHC7SLFYE	1 x ZHC7LLFYE
	No. of compressors			1	1	1	1	1
	Speed		rpm	2,880	2,880	2,880	2,880	2,880
	Refrigerant oil type			FVC68D				
	Refrigerant oil charge		l	7.5	10	10	13	13
	Crankcase heater		W	1 x 150	1 x 150	1 x 150	1 x 150	1 x 150
PIPING CONNECTIONS	Evap. water in/outlet			Flexible coupling 3"				
	Evaporator water drain			Field installation	Field installation	Field installation	1/4"G	1/4"G
	Relief device outlet			Compressor: 1"NPT	Compressor: 1"NPT	Compressor: 1"NPT	Compressor: 1"NPT	Compressor: 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


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NOMINAL CAPACITY, CAPACITY STEPS and NOMINAL INPUT						
UNITS			EUWA*120LZ	EUWA*160LZ	EUWA*180LZ	EUWA*200LZ
NOMINAL CAPACITY (1)	Cooling	kW	321 (310)	419 (410)	479 (463)	539 (516)
CAPACITY STEPS		%	100-74-48-36-0	100-87-74-61-48-24-0	100-89-74-63-48-27-0 (100hp compressor leads)	100-87-74-61-48-24-0
NOMINAL INPUT	Cooling	kW	140 (141)	171	202 (203)	232 (239)

TECHNICAL SPECIFICATIONS							
UNITS				EUWA*120LZ	EUWA*160LZ	EUWA*180LZ	EUWA*200LZ
DIMENSIONS	Unit	H	mm	2,165	2,165	2,165	2,165
		W	mm	4,280	5,906	5,906	5,906
		D	mm	2,238	2,238	2,238	2,238
WEIGHT	Machine weight		kg	2,808 (2,948)	5,002 (5,282)	5,044 (5,324)	5,086 (5,366)
	Operation weight		kg	2,842 (2,982)	5,076 (5,356)	5,125 (5,405)	5,174 (5,454)
MATERIAL				Polyester painted galvanised steel plate			
COLOUR				Ivory white / Munsell code 5Y7.5/1			
SOUND LEVEL (2)	Sound pressure		dB(A)	–	–	–	–
	Sound power		dB(A)	99 (93)	100 (95)	101 (96)	102 (97)
FAN	Air flow rate		m³/min	1,920 (1,600)	2,880 (2,400)	2,880 (2,400)	2,880 (2,400)
	Speed		rpm	900 (750)	900 (750)	900 (750)	900 (750)
	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 500)	12 x 1,200 (12 x 500)	12 x 1,200 (12 x 500)
	Discharge			Vertical			
WATER HEAT EXCHANGER	Type			Brased plate heat exchanger, one per circuit			
	Qty x model			1 x AC250EQ-NP162	1 x AC250EQ-NP96	1 x AC250Q-NP128/ 1 x AC250EQ-NP96	AC250EQ-NP128
	Minimum water volume in the system		l	2,700	2,400	3,090	3,090
	Water flow rate (min/max)		l/min	460/1,850	600/2,400	690/2,750	770/3,090
	Nominal water pressure drop		kPa	29	36	37	39
	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		m²	16.8	25.2	25.2	25.2
REFRIGERANT CIRCUIT	Refrigerant type			R-407C			
	Refrigerant charge		kg	94	2 x 79 (2 x 77)	71 + 79 (77 + 67)	2 x 71 (2 x 67)
	No. of circuits			1	2	2	2
	Refrigerant control			Thermostatic expansion valve			
COMPRESSOR	Type			Semi-hermetic single screw			
	Qty x model		Y1	1 x ZHC9SLFYE	2 x ZHC7SLFYE	1 x ZHC7LLFYE/1 x ZHC7SLFYE	2 x ZHC7LLFYE
	No. of compressors			1	2	2	2
	Speed		rpm	2,880	2,880	2,880	2,880
	Refrigerant oil type			FVC68D			
	Refrigerant oil charge		l	13	2 x 13	2 x 13	2 x 13
	Crankcase heater		W	1 x 150	2 x 150	2 x 150	2 x 150
PIPING CONNECTIONS	Evap. water in/outlet			Flexible coupling 3"	Flexible coupling 5"		
	Evaporator water drain			1/4"G			
	Relief device outlet			Compressor: 2 x 1"NPT	Compressor: 2 x (1"NPT)	Compressor: 1 x (1"NPT) + 1 x (2 x 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*40LZ	EUWA*50LZ	EUWA*60LZ	EUWA*80LZ	EUWA*100LZ	
POWER SUPPLY			Y1	Y1	Y1	Y1	Y1	
NOMINAL DISTRIBUTION SYSTEM VOLTAGE	Phase		3~	3~	3~	3~	3~	
	Frequency	Hz	50	50	50	50	50	
	Voltage	V	400	400	400	400	400	
	Voltage tolerance	%	± 10	± 10	± 10	± 10	± 10	
UNIT	Starting current		A	158	193	250	248	316
	Nominal running current	Cooling	A	78	97 (99)	110 (116)	154	191 (197)
	Maximum running current		A	112	135	160	221	277
	Recommended fuses according to IEC standard 269-2		aM	3 x 125gL	3 x 160gL	3 x 160gL	3 x 250gL	3 x 300gL
COMPRESSOR	Phase			3~	3~	3~	3~	3~
	Voltage	V		400	400	400	400	400
	Starting current		A	158	193	250	248	316
	Nominal running current		A	65	81 (83)	94 (99)	125	160 (166)
	Maximum running current		A	99	119	144	195	247
	Starting method			Star-delta				
	Recommended fuses			Factory installed				
CONTROL CIRCUIT	Phase			1~				
	Voltage	V		230				
	Recommended fuses			Factory installed				

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2 Specifications


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ELECTRICAL SPECIFICATIONS							
UNITS			EUWA*120LZ	EUWA*160LZ	EUWA*180LZ	EUWA*200LZ	
POWER SUPPLY			Y1	Y1	Y1	Y1	
NOMINAL DISTRIBUTION SYSTEM VOLTAGE	Phase		3~	3~	3~	3~	
	Frequency	Hz	50	50	50	50	
	Voltage	V	400	400	400	400	
	Voltage tolerance	%	± 10	± 10	± 10	± 10	
UNIT	Starting current		A	289	248	316/248	316
	Nominal running current	Cooling	A	239 (252)	297	331 (333)	365 (376)
	Maximum running current		A	341	434	486	541
	Recommended fuses according to IEC standard 269-2		aM	3 x 400gL	2x(3x315gL)(=std); 3x500gL(=op52)	3x400gL + (3x315gL)(=std); 3x500gL (=op52)	2x(3x400gL)(=std); 3x630gL (=op52)
COMPRESSOR	Phase		3~	3~	3~	3~	
	Voltage	V	400	400	400	400	
	Starting current	A	289	248	316 / 248	316	
	Nominal running current	A	208 (218)	125 (129)	159 / 125 (180 / 129)	159 (180)	
	Maximum running current	A	310	195	247 / 195	247	
	Starting method		Star-delta				
	Recommended fuses		Factory installed				
CONTROL CIRCUIT	Phase		1~	1~	1~	1~	
	Voltage	V	230	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 (°C)		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	116	30	110	32	103	35	96	38	87	41	79	45	53	35
	50	152	41	145	43	136	46	127	49	116	53	105	57	98	59
	60	183	48	173	51	163	55	153	59	141	64	129	69	89	55
	80	243	62	227	66	211	71	196	77	180	84	164	91	114	72
	100	316	81	300	86	283	92	266	99	249	108	231	118	161	94
	120	369	109	349	109	329	116	309	125	290	135	270	147	188	114
	160	467	125	449	132	429	141	406	152	380	165	353	180	335	190
	180	538	143	515	152	491	164	465	178	436	194	356	179	339	190
7	200	610	161	582	173	553	187	523	204	492	223	359	179	344	189
	40	126	31	120	33	113	36	105	39	97	42	88	46	60	36
	50	168	42	159	45	150	48	140	51	129	55	118	59	81	46
	60	198	50	188	53	178	57	167	62	155	66	143	72	98	56
	80	268	65	251	69	235	74	219	80	203	86	138	70	131	74
	100	344	84	327	89	310	95	292	103	274	112	255	122	178	96
	120	402	105	382	112	361	120	341	129	321	140	219	112	210	117
	160	511	130	492	138	470	147	446	158	419	171	391	186	291	143
10	180	586	149	562	159	536	171	509	185	479	202	393	185	335	169
	200	661	168	632	180	602	195	571	212	539	232	394	184	378	195
	40	138	32	131	35	124	37	115	40	107	44	97	48	67	37
	50	183	44	175	47	165	50	155	53	143	57	131	61	90	47
	60	214	52	204	55	193	59	182	64	170	69	114	56	108	58
	80	292	67	275	72	259	77	242	83	225	89	154	73	147	76
	100	373	88	355	93	337	99	319	107	299	116	280	126	196	99
	120	436	109	415	116	394	124	373	133	352	144	242	115		
16	160	556	136	536	144	513	153	488	165	461	178	432	194	322	148
	180	634	156	609	166	582	178	554	193	524	210	431	192	368	175
	200	713	176	683	188	652	203	620	221	586	241	431	191	414	202
	40	162	35	155	37	146	40	138	43	128	47	86	37	82	39
	50	216	49	206	51	196	54	185	58	173	62	117	49	111	51
	60	245	56	235	60	224	64	212	69	199	74	135	60	129	62
	80	341	73	323	78	306	83	289	90	271	97	188	77	180	81
	100	433	96	414	101	394	108	374	116	354	125	333	135	234	106
	120	503	117	480	124	458	132	436	142	302	112	286	121		
	160	649	150	627	158	603	168	576	180	547	194	402	152	387	159
	180	735	172	707	183	678	196	648	211	540	191	453	180	437	189
	200	820	195	787	208	754	224	719	242	533	189	505	207	487	218

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

3 Capacity tables

3-2 Cooling capacities with glycol for process cooling application



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3-2

AMBIENT TEMPERATURE (°C)		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	73	26	69	28	64	30	59	33	53	36	Out of operation range			
	50	95	35	90	37	84	40	76	43	68	46				
	60	117	42	109	45	102	48	93	52	83	56				
	80	144	54	137	57	129	60	120	65	109	71				
	100	196	69	184	73	172	79	159	86	147	95				
	120	244	80	233	86	220	94	206	103	190	112				
	160	285	105	272	111	256	119	238	130	217	142				
	180	337	120	320	129	301	140	280	153	258	168				
-5	200	390	135	368	146	346	160	322	176	298	195				
	40	87	28	83	29	77	32	71	34	65	38	57	41	52	43
	50	115	37	109	39	101	42	94	45	85	49	75	52	69	55
	60	139	44	131	47	122	50	113	54	103	59	92	64	85	67
	80	173	57	166	60	156	64	146	69	134	75	121	82	113	87
	100	234	73	221	77	207	83	193	90	179	99	164	108	155	115
	120	283	84	270	91	256	99	240	108	223	118	205	129	194	137
	160	345	110	331	117	313	125	293	136	271	149	246	163	230	173
0	180	405	126	385	135	364	146	341	160	317	176	290	194	239	173
	200	464	143	440	154	415	167	389	184	362	203	334	225	247	174
	40	103	29	98	31	92	33	85	36	78	39	70	43	65	45
	50	136	39	129	41	121	44	112	47	103	51	93	55	86	57
	60	163	46	154	49	145	53	134	57	124	62	112	67	82	51
	80	205	61	196	64	186	68	175	73	162	80	148	87	139	92
	100	275	77	261	82	246	88	230	95	214	104	198	113	188	120
	120	323	90	309	97	293	105	276	114	258	124	239	136	177	104
2	160	411	117	395	124	375	133	354	144	330	157	303	171	286	181
	180	477	134	456	144	433	155	408	169	381	185	353	203	293	181
	200	543	152	517	163	490	177	462	194	433	213	403	235	299	181
	40	110	30	104	32	98	34	91	37	84	40	75	44	70	46
	50	145	40	138	42	129	45	120	48	111	52	100	56	93	59
	60	172	47	164	51	154	54	143	59	132	63	120	68	88	52
	80	218	62	209	66	199	70	187	75	174	82	160	89	150	94
	100	293	79	277	84	262	90	246	97	229	106	212	116	202	122
	120	340	92	325	99	309	107	291	117	273	127	253	139	188	106
	160	439	121	421	127	402	136	380	147	355	160	328	175	310	185
	180	507	138	485	147	461	159	436	173	409	189	379	207	316	185
	200	576	156	549	167	521	181	492	198	462	218	431	240	321	185

SYMBOLS

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

italic : preliminary

NOTES

- Cooling capacity (CAP)**
 CAP = Cool. Cap. from table (kW)
 NOTE: Capacity is for chilled water range Dt = 3-8°C
- Power input (PI)**
 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



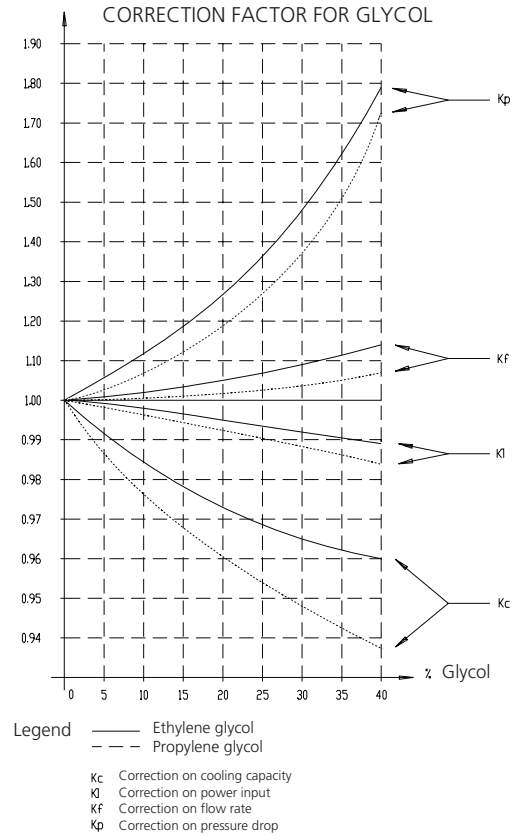
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3-2

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

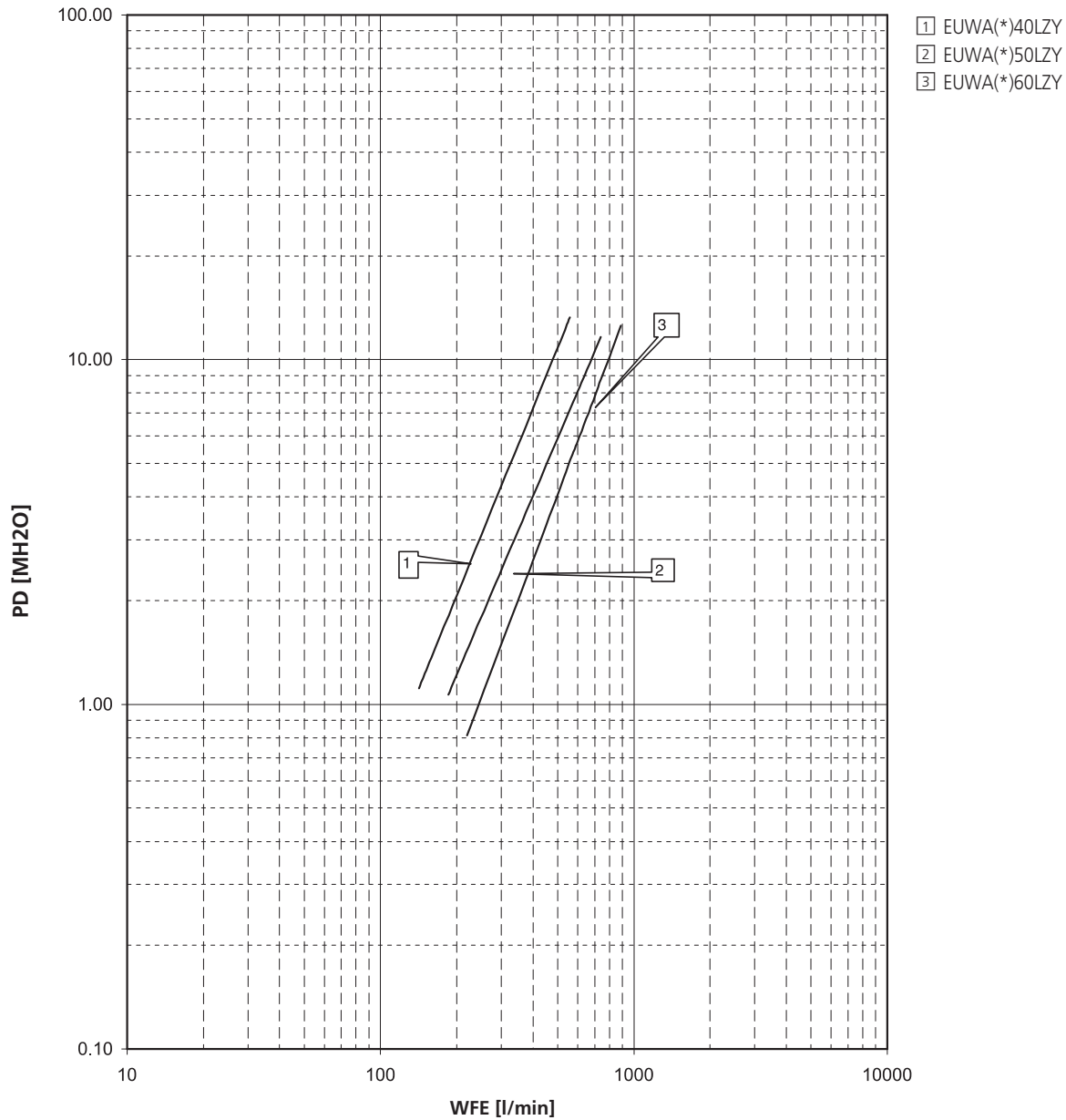


4 Water pressure drop curve

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EUWA*40-60LZ



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.

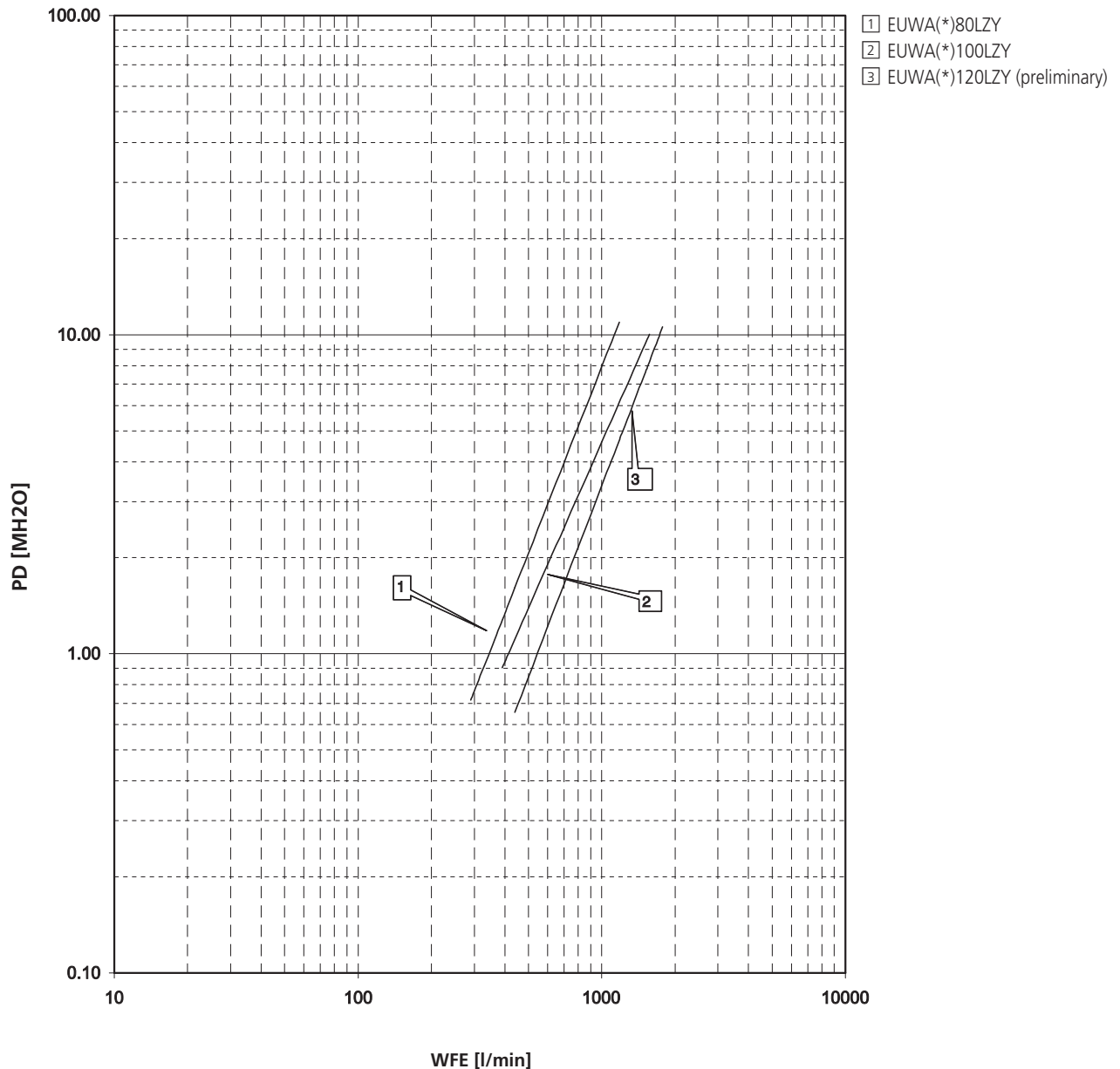
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4 Water pressure drop curve



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EUWA*80-120LZ



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.

4TW53409-2B

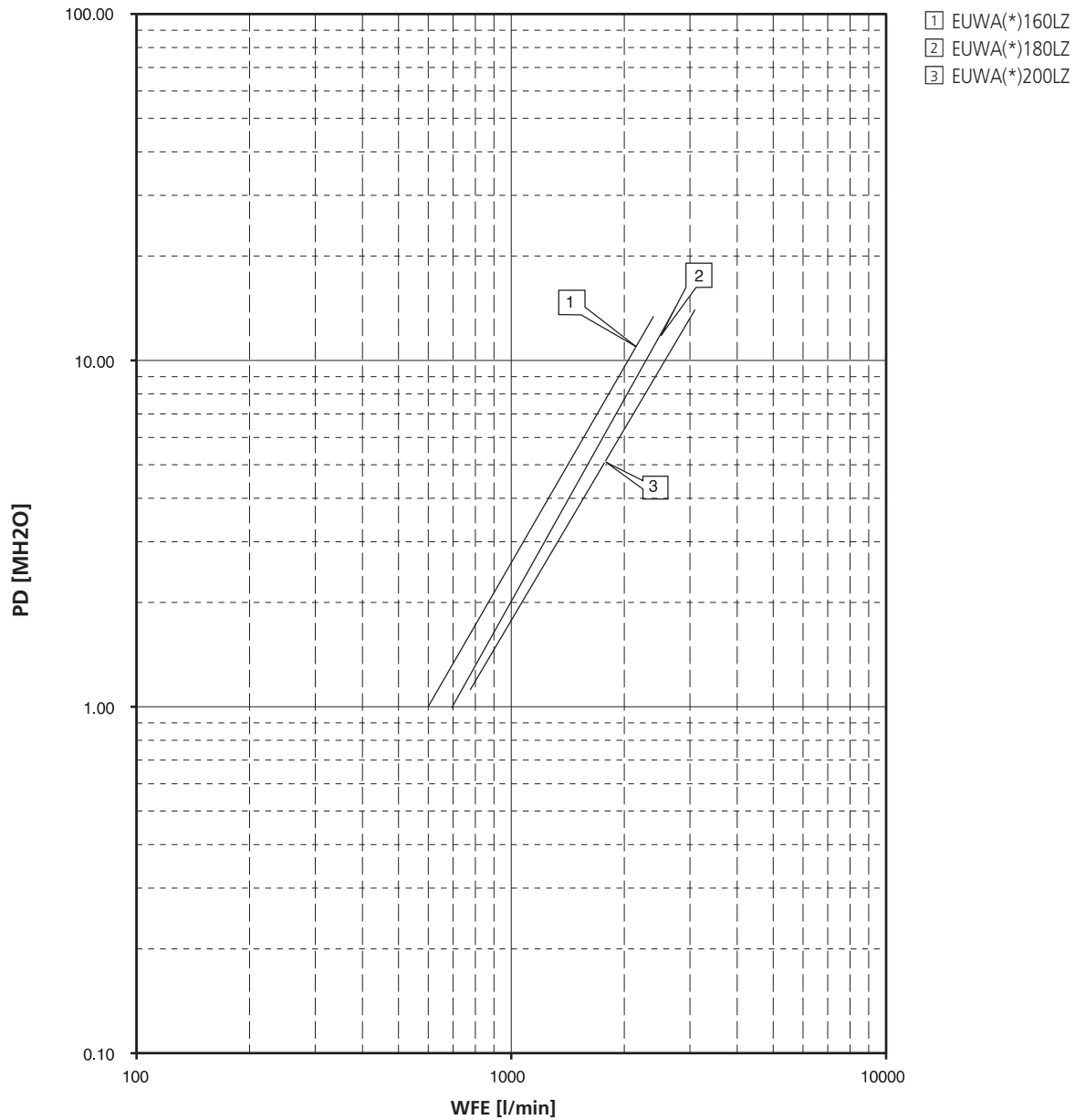
4 Water pressure drop curve



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EUWA*160-200LZ



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.

4TW53159-2

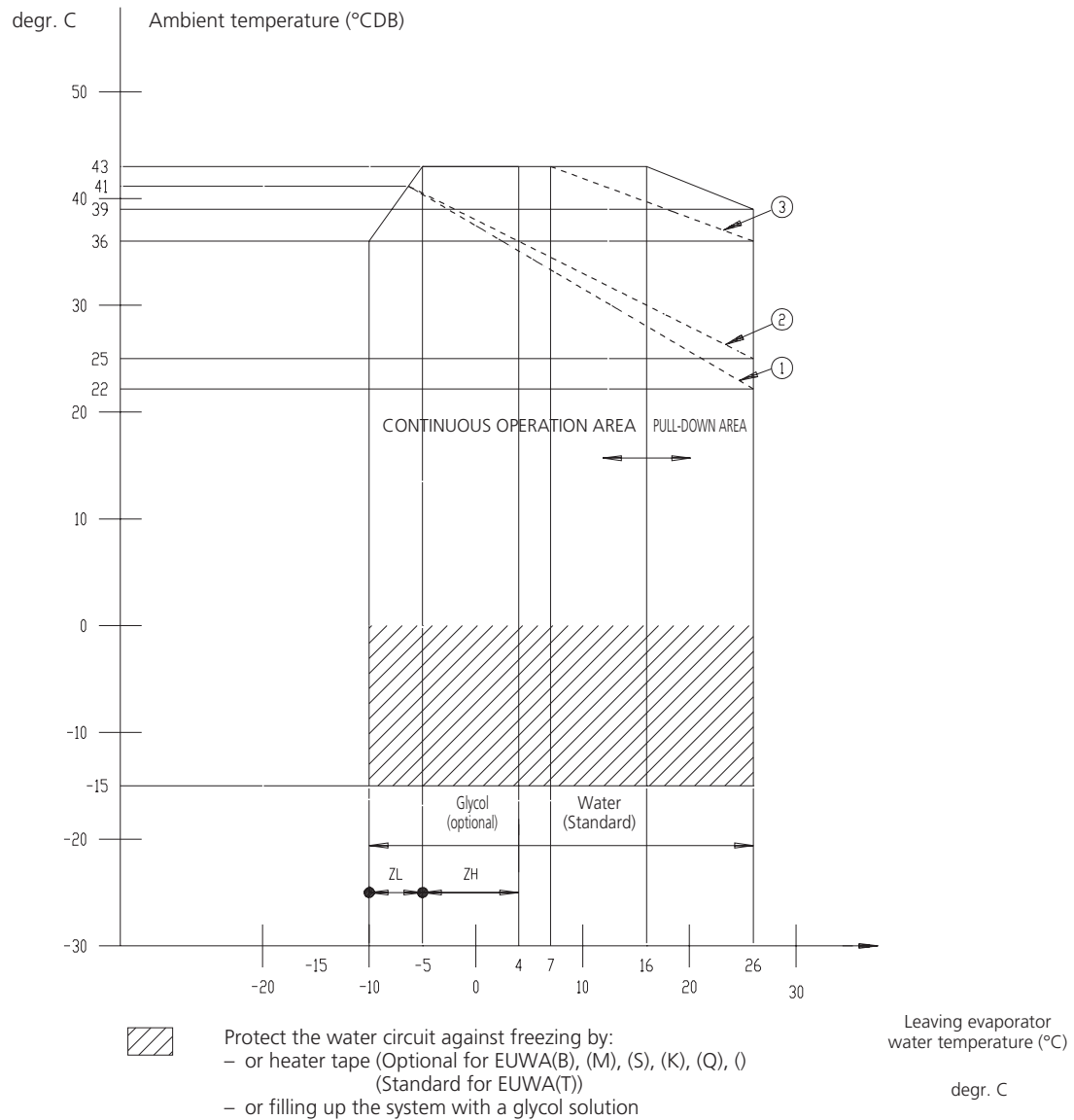
5 Operation range



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EUWA*40-200LZ



The operation range of the units is situated in the area indicated above.
The dotted lines indicate the upper limit of following units.

- ① EUWAS120LZY
- ② EUWAS40-50-60-80-100-160-180-200LZY
- ③ EUWA*120LZY (* = B, K, M, T, Q, D)

4TW53153-1A

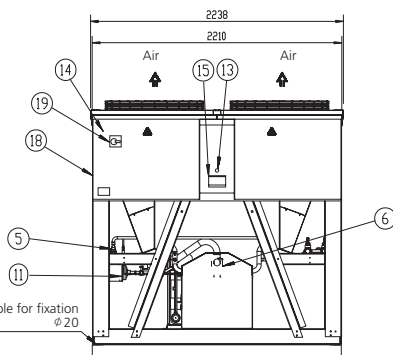
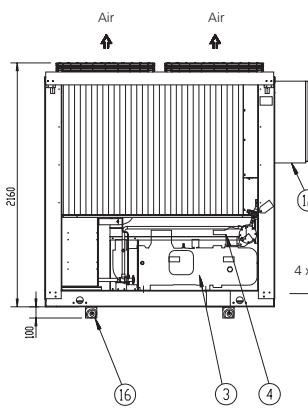
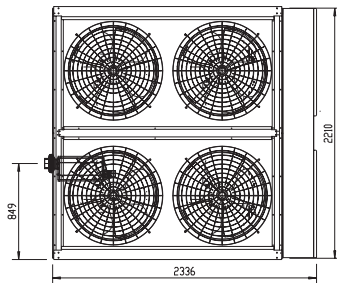
6 Dimensional drawings



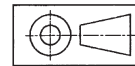
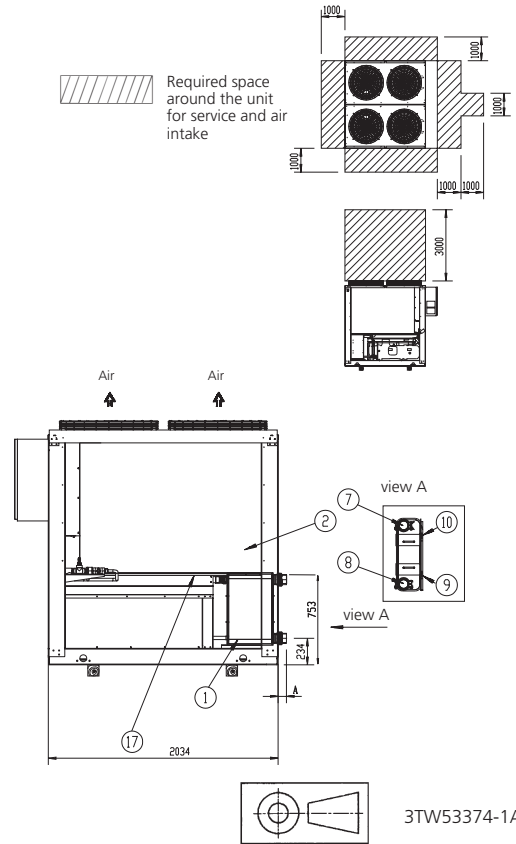
2

6

EUWA*40-50-60LZ



Item	Rev.	Model	A	RCL
1	.	AC 40HP R407C	-97	.
2	.	AC 50HP R407C	-12	.
3	.	AC 60HP R407C	74	.



3TW53374-1A

- | | | | |
|----|-----------------------------------|----|---------------------------------|
| 1 | Evaporator | 11 | Drier |
| 2 | Condenser | 12 | Power supply intake |
| 3 | Compressor | 13 | Emergency stop |
| 4 | Discharge stop valve | 14 | Switch box |
| 5 | Liquid stop valve | 15 | Digital display control (DDC) |
| 6 | Suction stop valve (optional) | 16 | Transport beam |
| 7 | Chilled water in | 17 | Ambient temperature sensor |
| 8 | Chilled water out | 18 | Field wiring intake |
| 9 | Leaving water temperature sensor | 19 | Main isolator switch (optional) |
| 10 | Entering water temperature sensor | | |

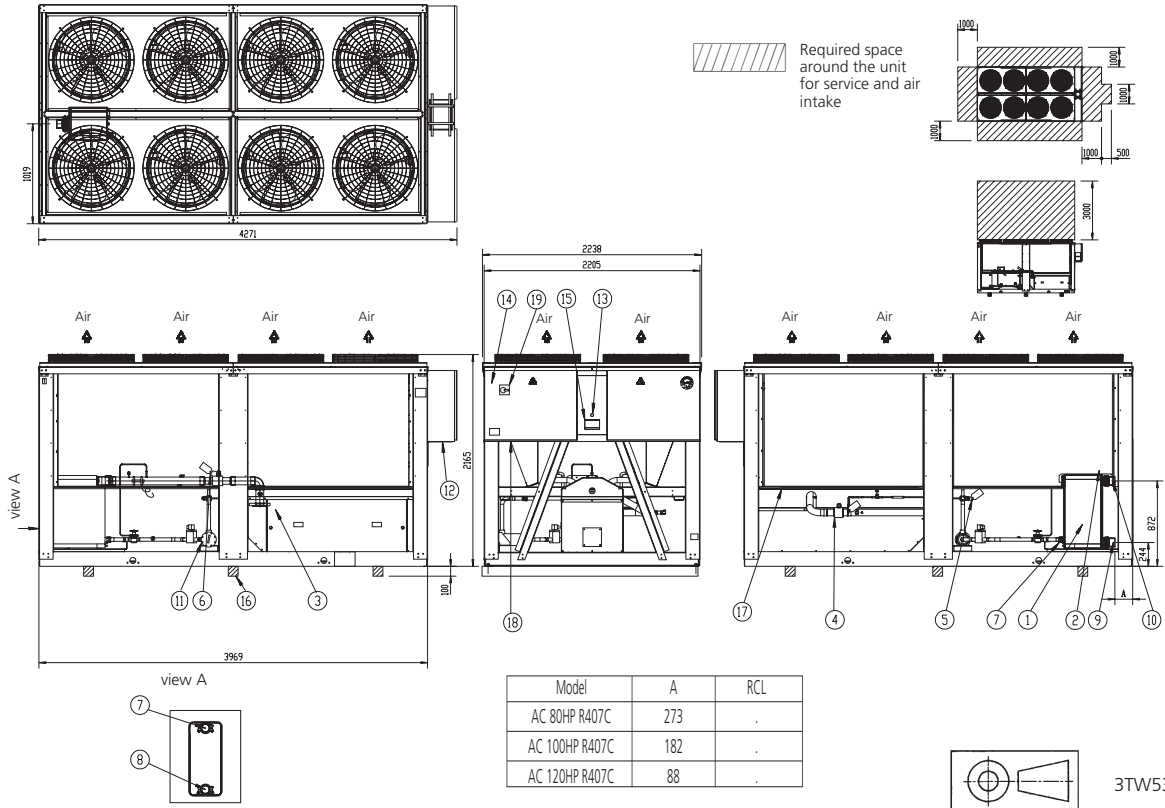
6 Dimensional drawings



2

6

EUWA*80-100-120LZ



- | | |
|--------------------------------------|------------------------------------|
| 1 Evaporator | 11 Drier |
| 2 Condenser | 12 Power supply intake |
| 3 Compressor | 13 Emergency stop |
| 4 Discharge stop valve | 14 Switch box |
| 5 Liquid stop valve | 15 Digital display control (DDC) |
| 6 Suction stop valve (optional) | 16 Transport beam |
| 7 Chilled water in | 17 Ambient temperature sensor |
| 8 Chilled water out | 18 Field wiring intake |
| 9 Leaving water temperature sensor | 19 Main isolator switch (optional) |
| 10 Entering water temperature sensor | |

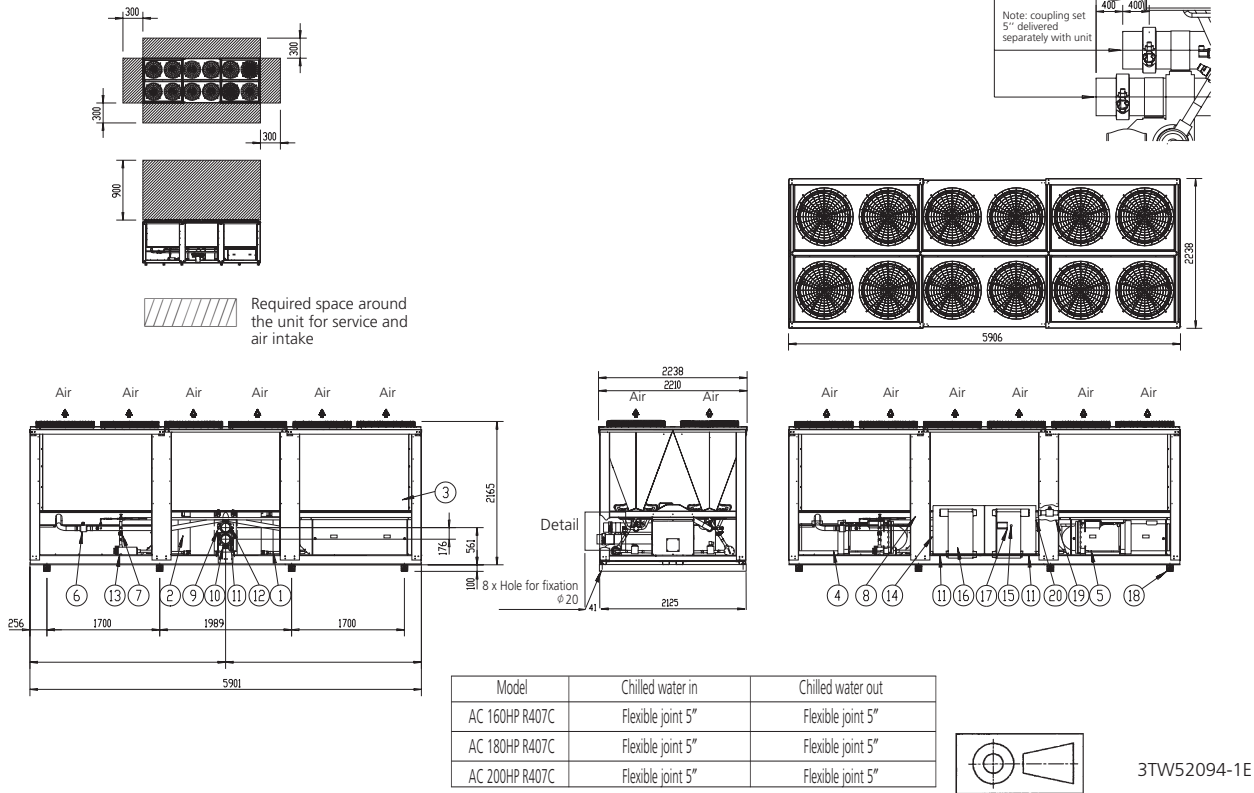
6 Dimensional drawings



2

6

EUWA*160-180-200LZ



- 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

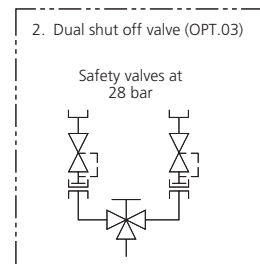
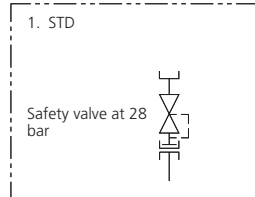
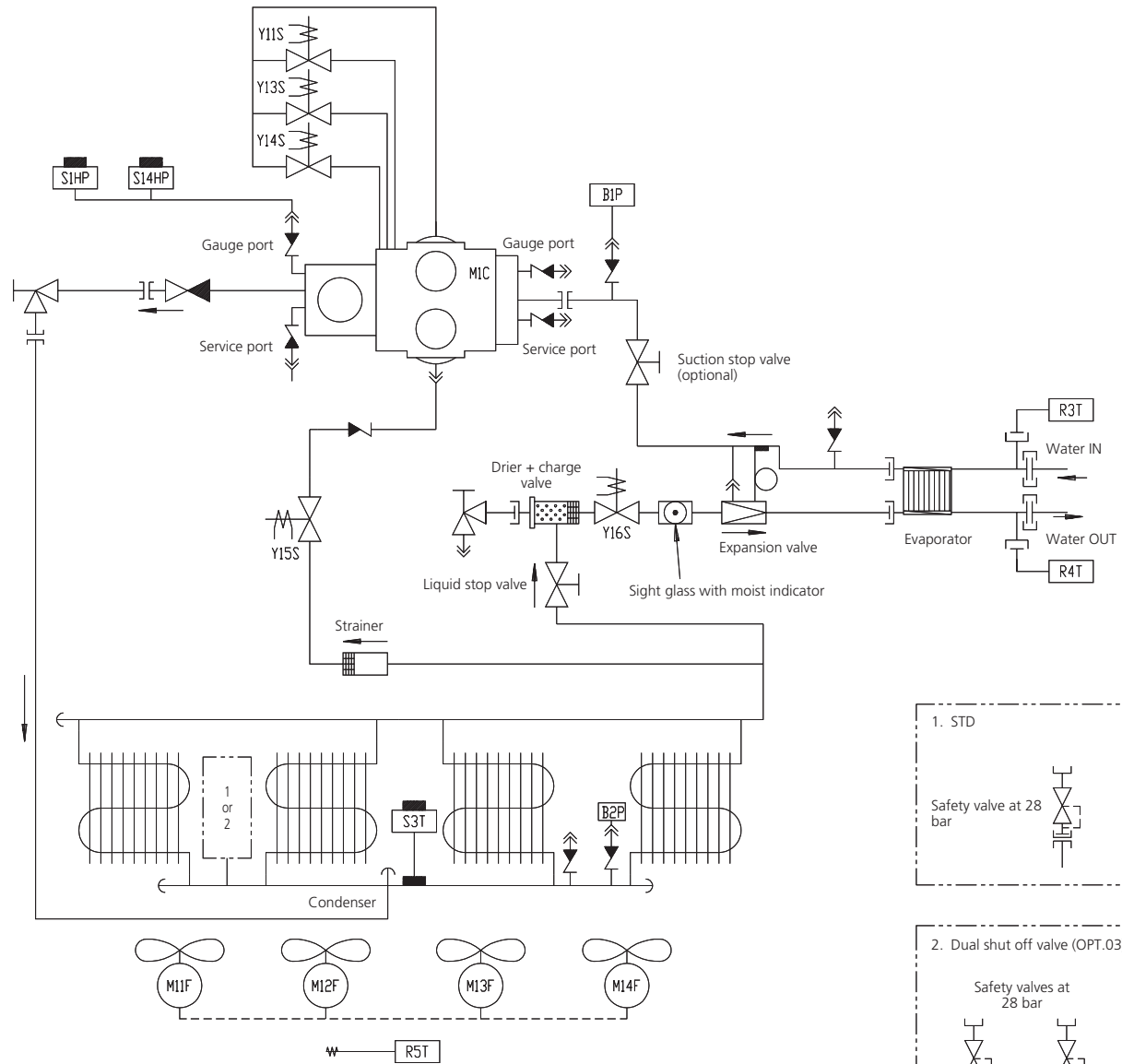
- 11 Leaving water temperature sensor
- 12 Entering water temperature sensor
- 13 Drier
- 14 Power supply intake
- 15 Emergency stop
- 16 Switch box
- 17 Digital display control (DDC)
- 18 Transport beam
- 19 Ambient temperature sensor
- 20 Field wiring intake

7 Piping diagrams



2
7

EUWA*40-50-60LZY



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
Y13S	Unloader solenoid valve
Y14S	Unloader solenoid valve
Y15S	Liquid injection solenoid valve
Y16S	Liquid line solenoid valve

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

3TW53375-1

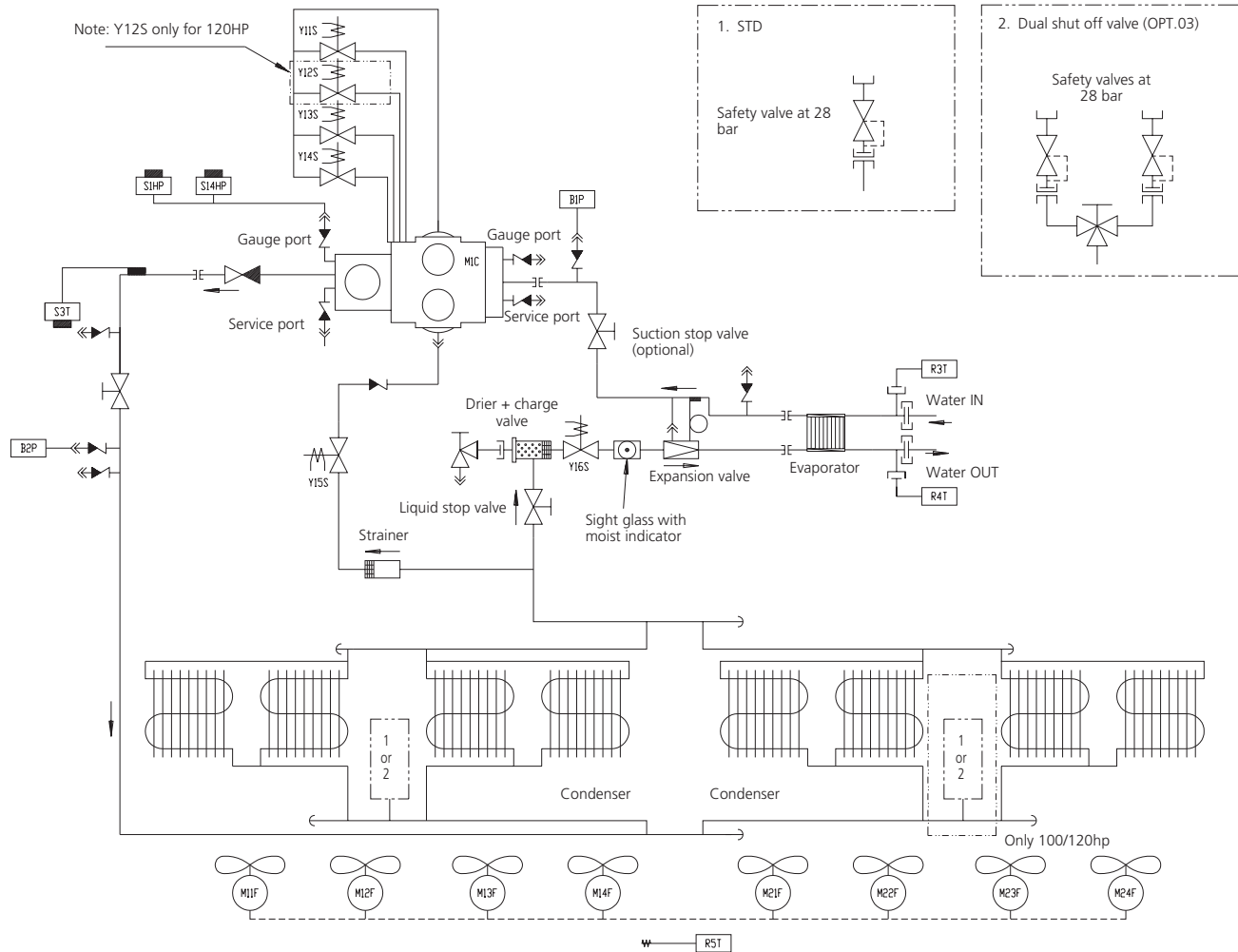
7 Piping diagrams



2

7

EUWA*80-100-120LZY



M11F,-18F Condenser fan motor
M1C Compressor motor
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
Y11,-14S Unloader solenoid valve
Y15S Liquid injection solenoid valve
Y16S Liquid line solenoid valve

↔ Check valve
↔ Flare connection
↔ Screw connection
↔ Flange connection
X Pinched pipe
→ Spinned pipe

3TW53405-1

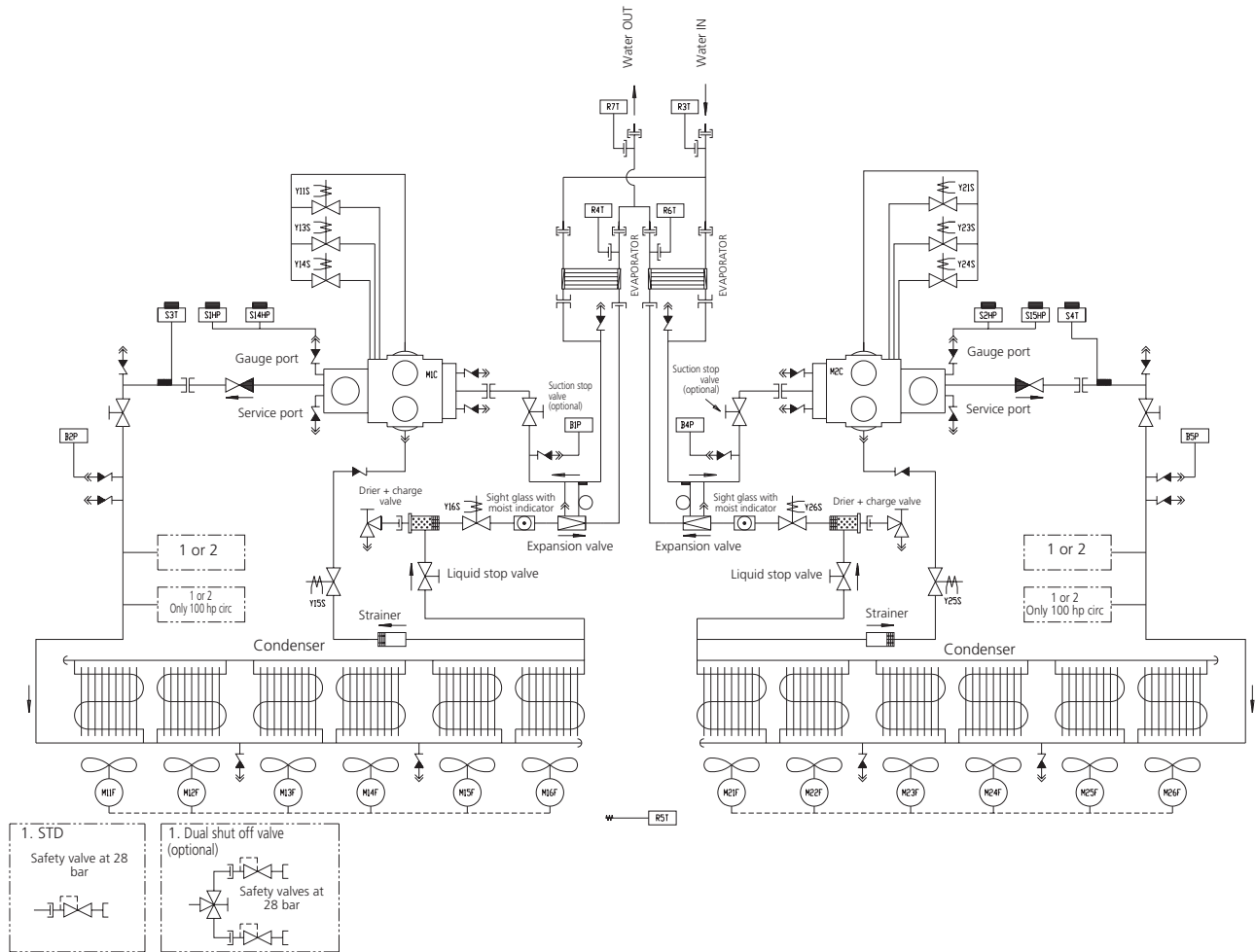
7 Piping diagrams



2

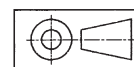
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EUWA*160-180-200LZY



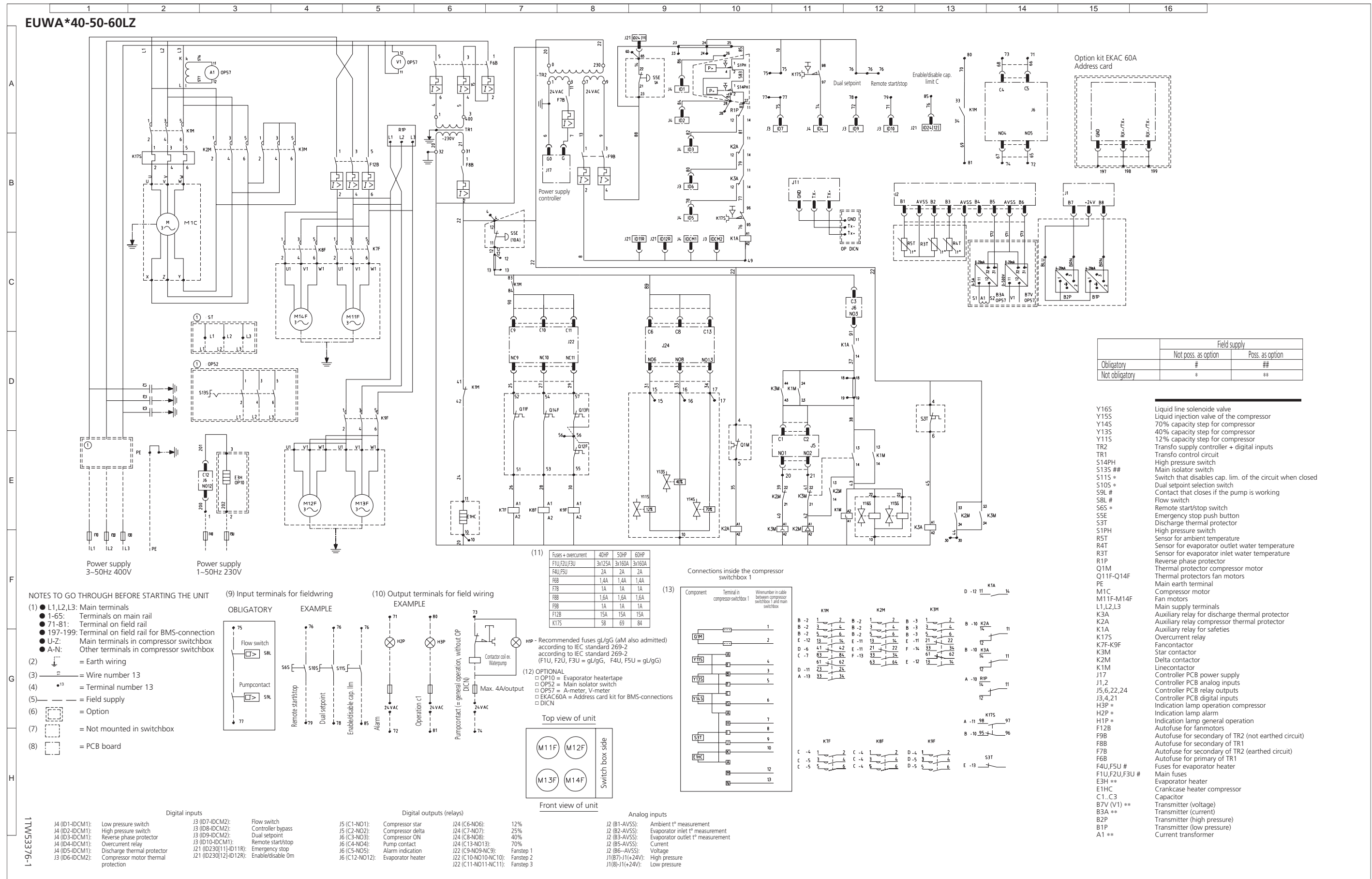
M11,-16F	Condenser fan motor
M21,-26F	Condenser fan motor
M1C,M2C	Compressor motor
S1,2HP	High pressure switch
S14,15HP	High pressure switch
S3,4T	Discharge temperature controller
R3T	Inlet water evap. temp. sensor
R4T	Outlet water evap. temp. sensor
R6T	Outlet water evap. temp. sensor
R7T	Mixed outlet 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

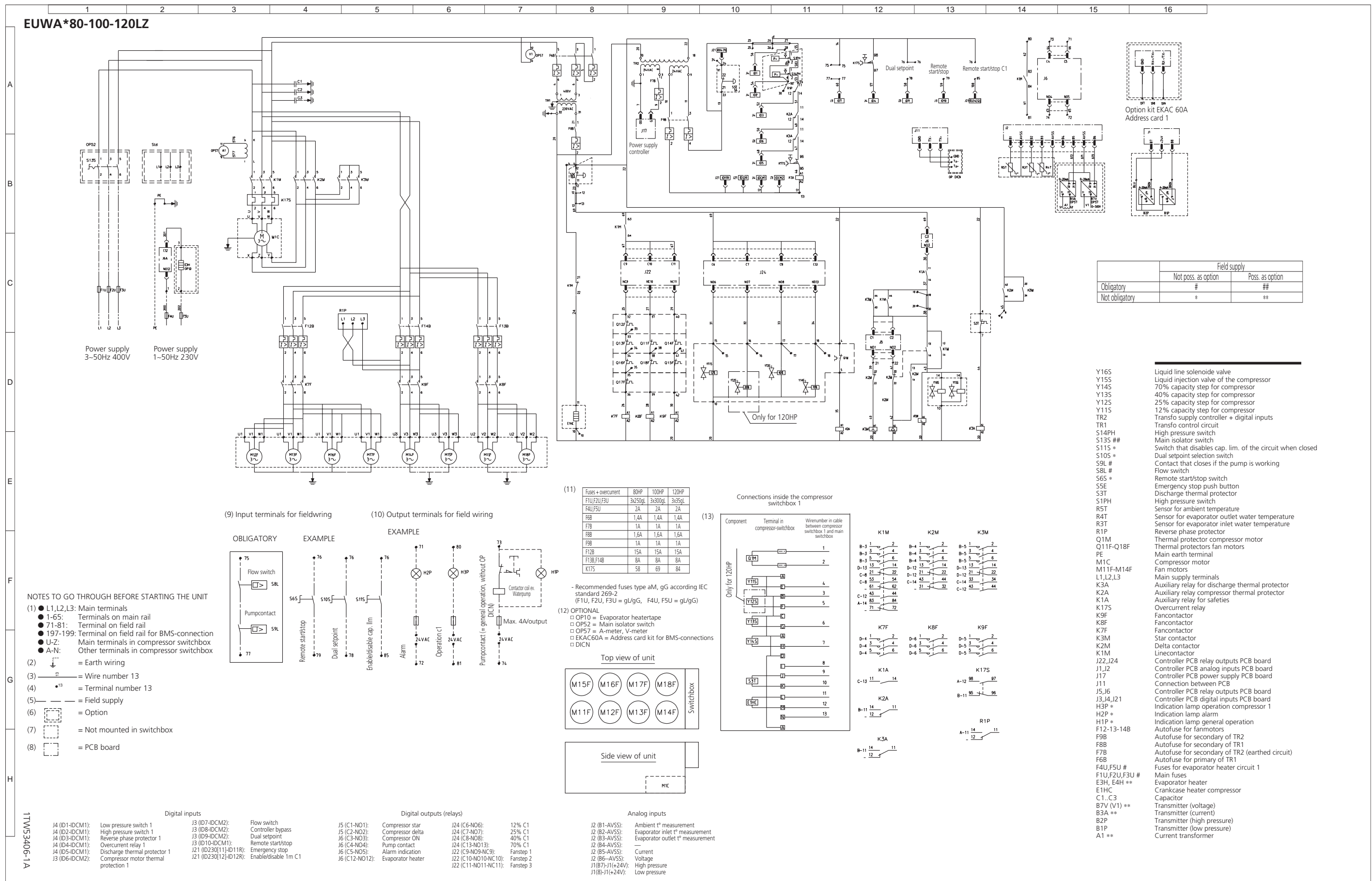


3TW53155-1

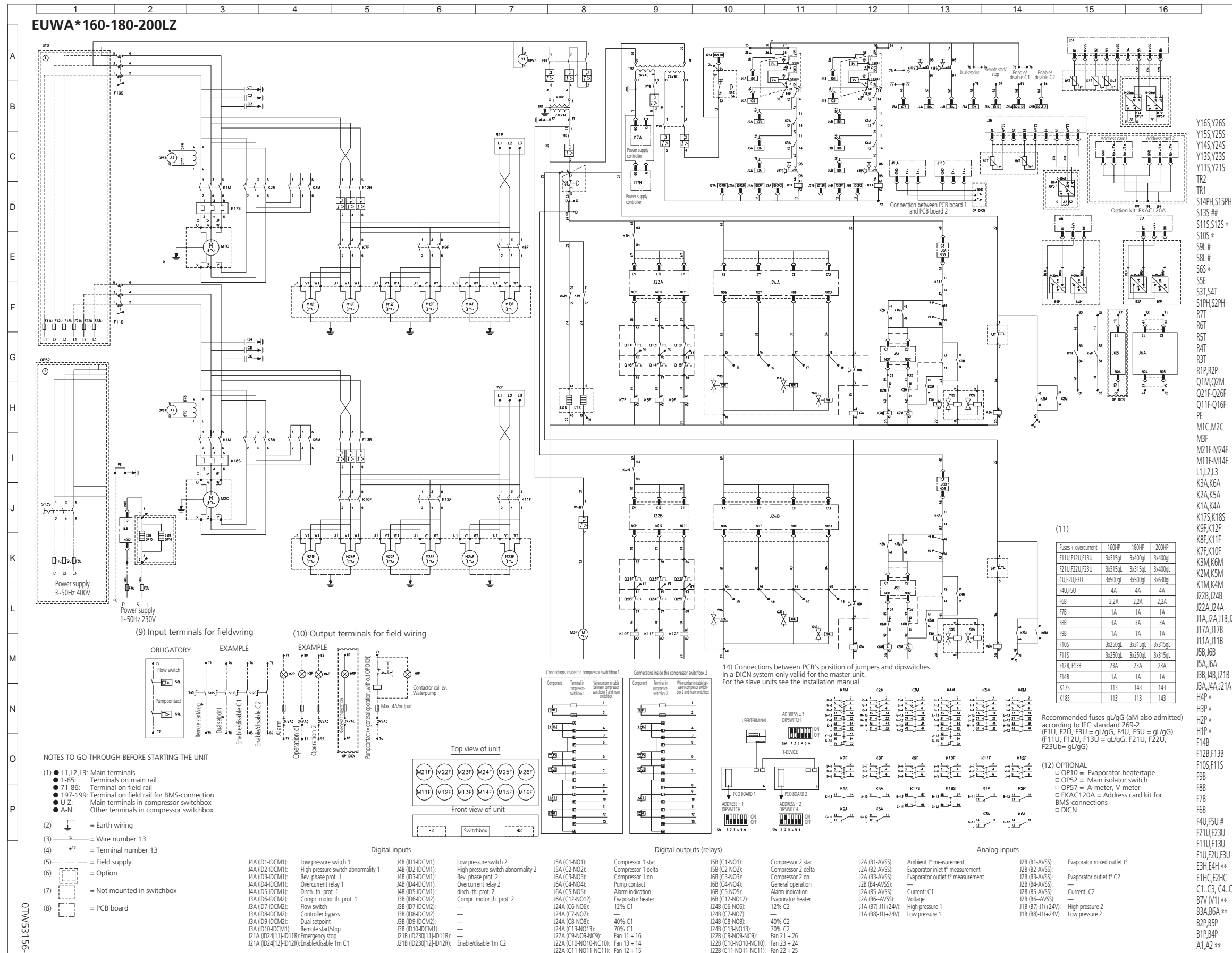
8 Wiring diagrams



8 Wiring diagrams



8 Wiring diagrams



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

Y16S,Y26S
Y15S,Y25S
Y14S,Y24S
Y13S,Y23S
Y11S,Y21S
TR2
TR1
S14PH,S15PH
S13S #
Main isolator switch
S11S,S12S *
S10S *
S9L #
S8L #
Flow switch
S6S *
Remote start/stop switch
S5E
Emergency stop push button
S3T,S4T
S1PH,S2PH
R7T
R6T
Sensor for mixed outlet water temperature
R5T
Sensor for evaporator outlet water temperature circuit 2
R4T
Sensor for evaporator inlet water temperature
R3T
Reverse phase protector for circuit 1, circuit 2
Q1M,Q2M
Q21F-Q26F
Q11F-Q16F
PE
M1C,M2C
M3F
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
J22A,J24A
J1A,J2A,J18,J28
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
Main fuses
Main fuses
Main fuses
E3H,E4H **
E1HC,E2HC
C1,C3,C4,C6
B7V(V1) **
B3A,B6A **
B2P,B5P
B1P,B4P
A1,A2 **

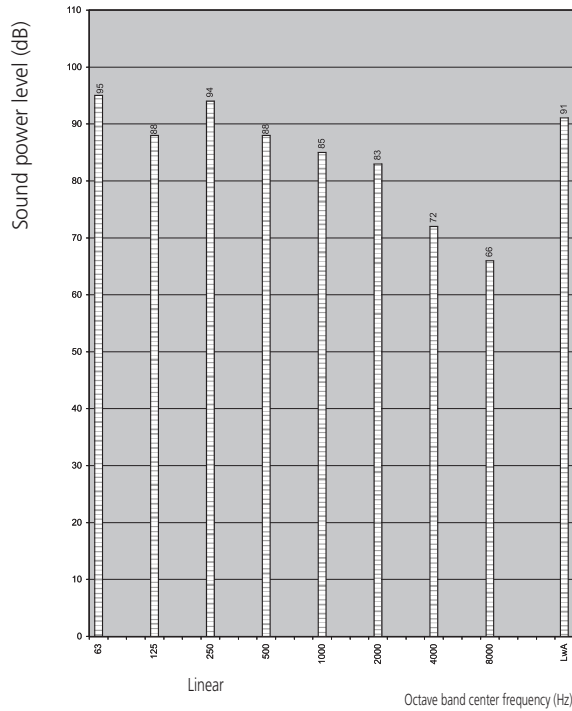
Liquid line solenoid valve circuit 1, circuit 2
Liquid injection valve of the compressor circuit 1, circuit 2
70% capacity step for compressor circuit 1, circuit 2
40% capacity step for compressor circuit 1, circuit 2
12% capacity step for compressor circuit 1, circuit 2
Transfo supply controller + digital 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 temperature
Sensor for evaporator outlet water temperature circuit 2
Sensor for ambient temperature
Sensor for evaporator outlet water temperature circuit 2
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
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 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 (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
Main fuses
Main fuses
Evaporator heater circuit 1, circuit 2
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



9 Sound power spectrum

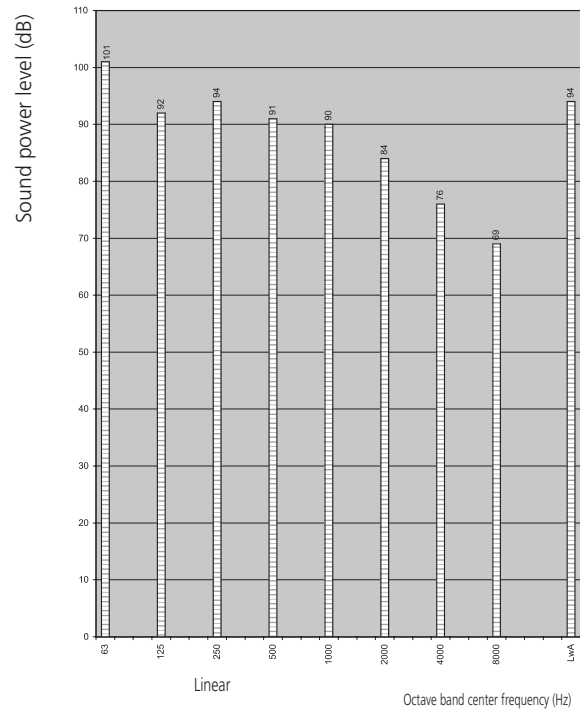
9-1 Sound power spectrum (standard)

EUWA(*)40LZ



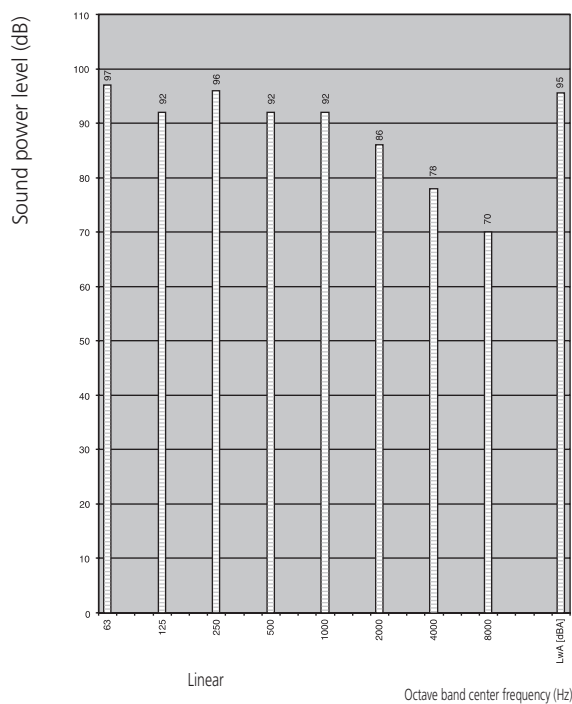
4TW53377-1A

EUWA(*)50LZ



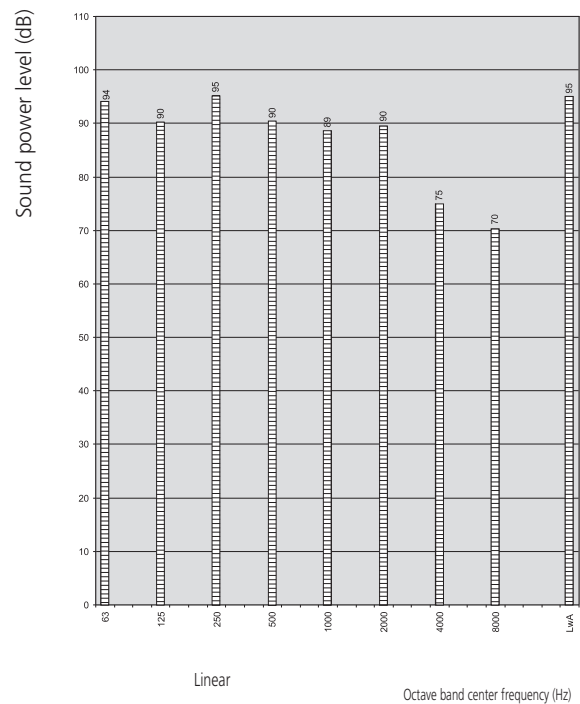
4TW53377-2A

EUWA(*)60LZ



4TW53377-3A

EUWA(*)80LZ



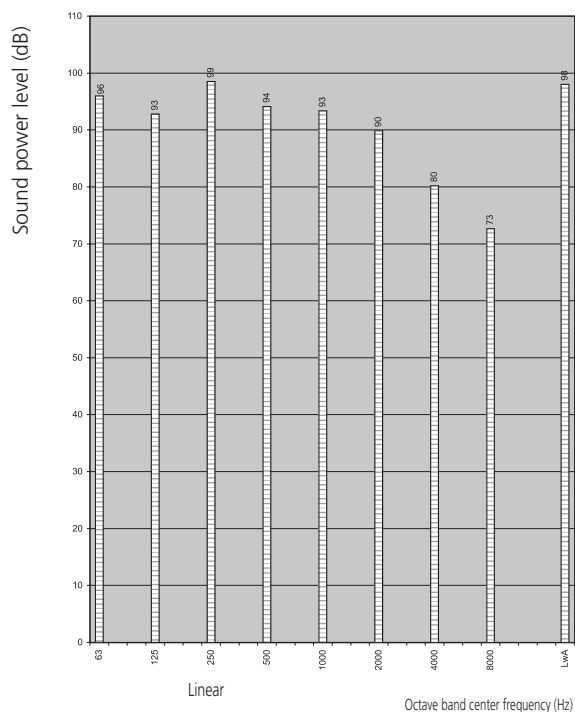
4TW53407-1

9 Sound power spectrum

9-1 Sound power spectrum (standard)

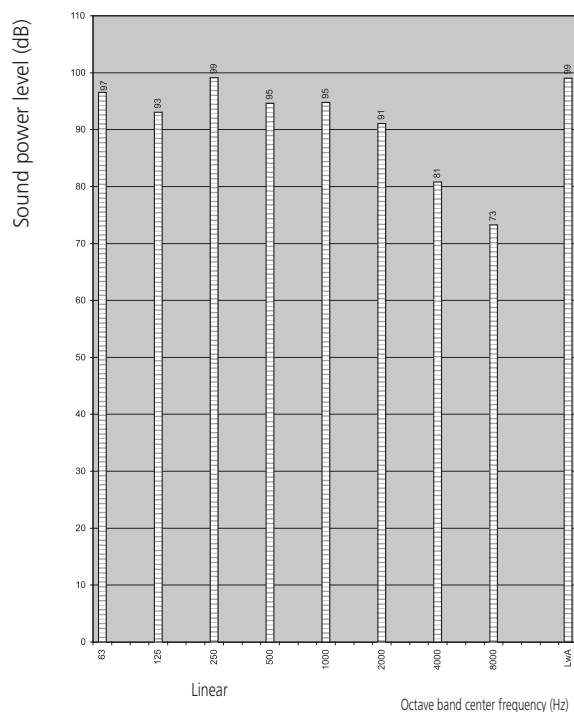


EUWA(*)100LZ



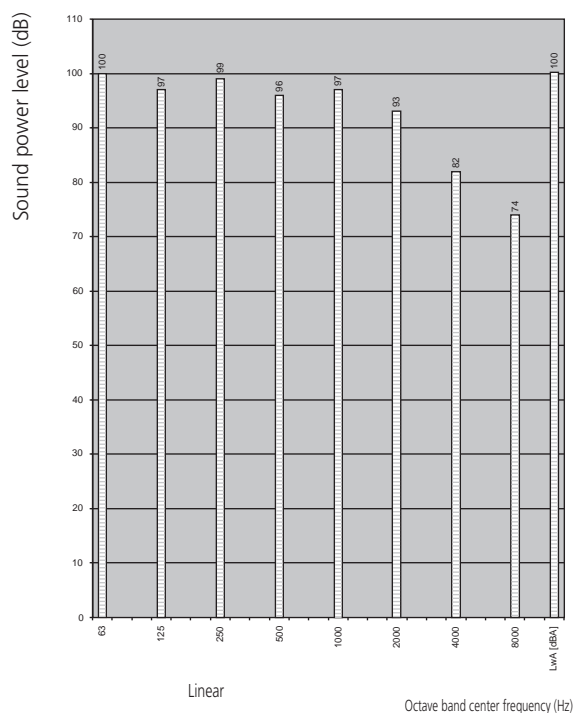
4TW53407-2

EUWA(*)120LZ



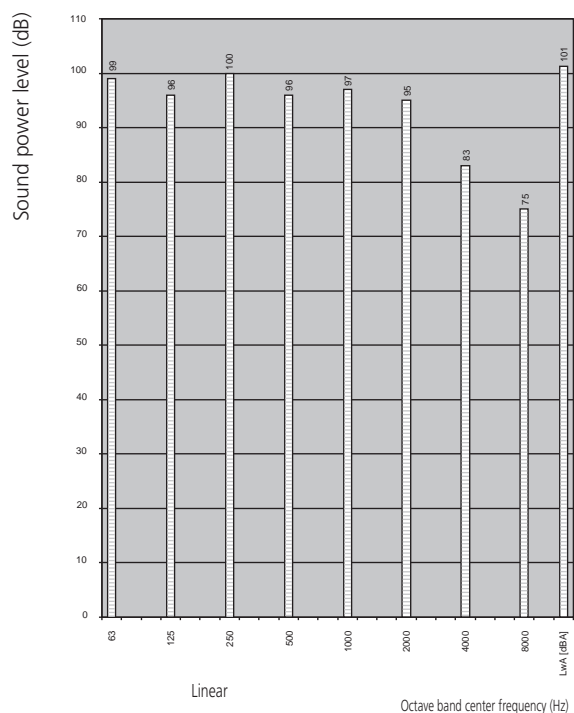
4TW53407-3

EUWA(*)160LZ



4TW53157-1

EUWA(*)180LZ



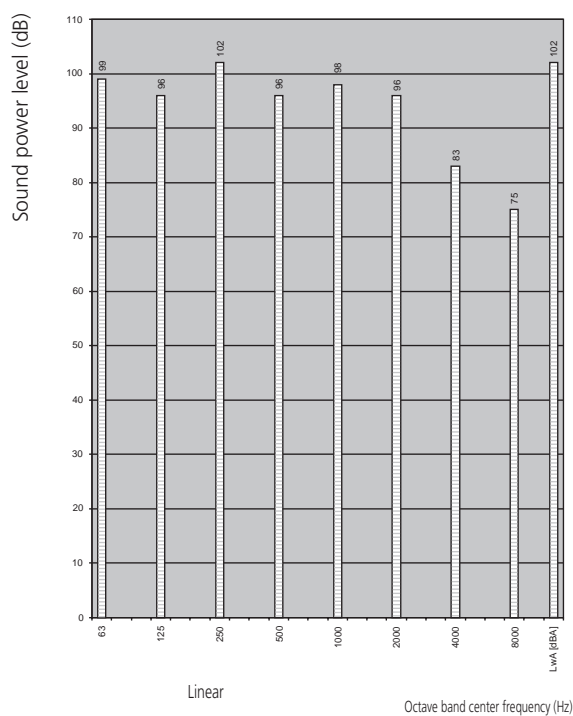
4TW53157-2

9 Sound power spectrum

9-1 Sound power spectrum (standard)



EUWA(*)200LZ



4TW53157-3

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

2

9

9-1

9 Sound power spectrum

9-2 Sound power spectrum (low noise option)

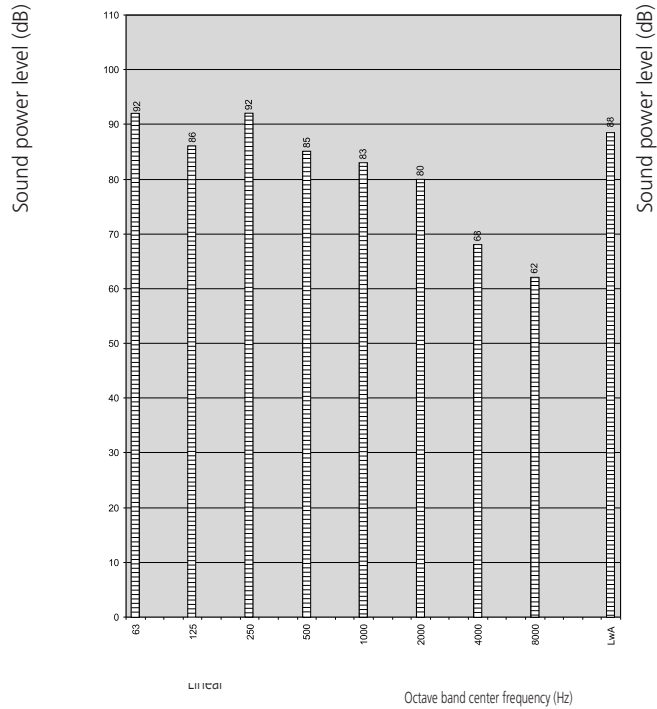


2

9

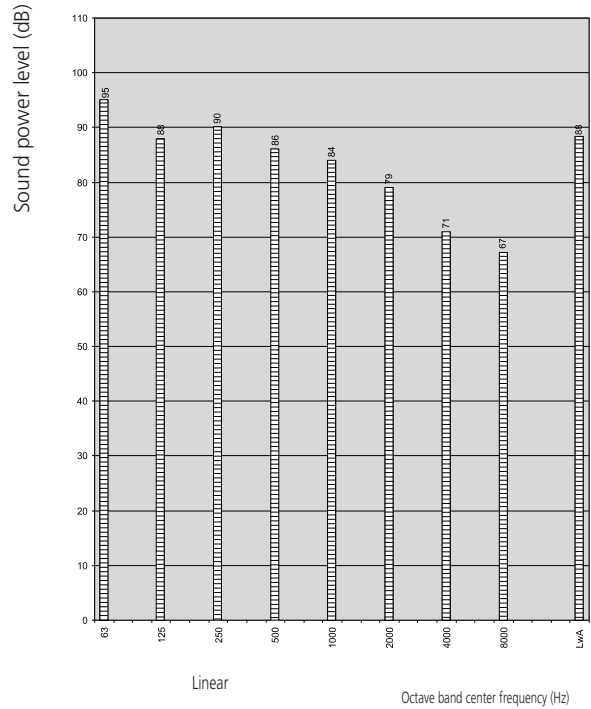
9-2

EUWA(*)40LZ



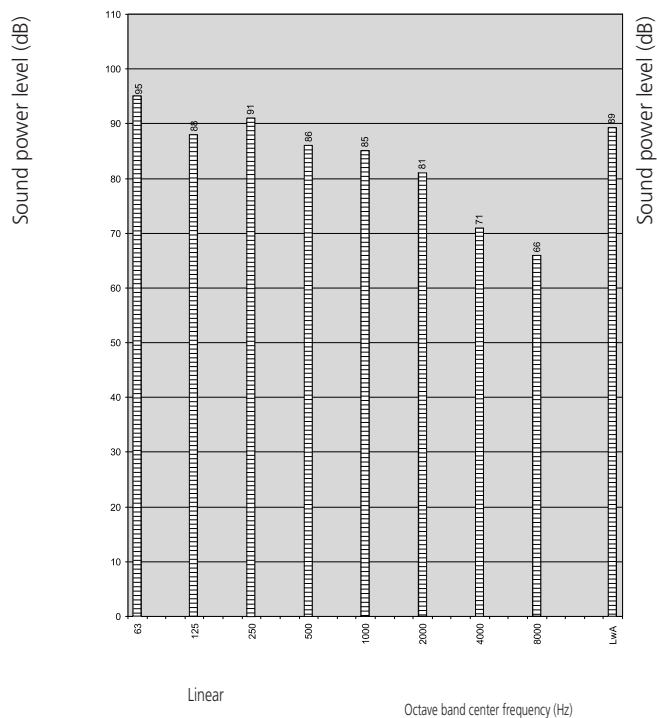
4TW53377-4

EUWA(*)50LZ



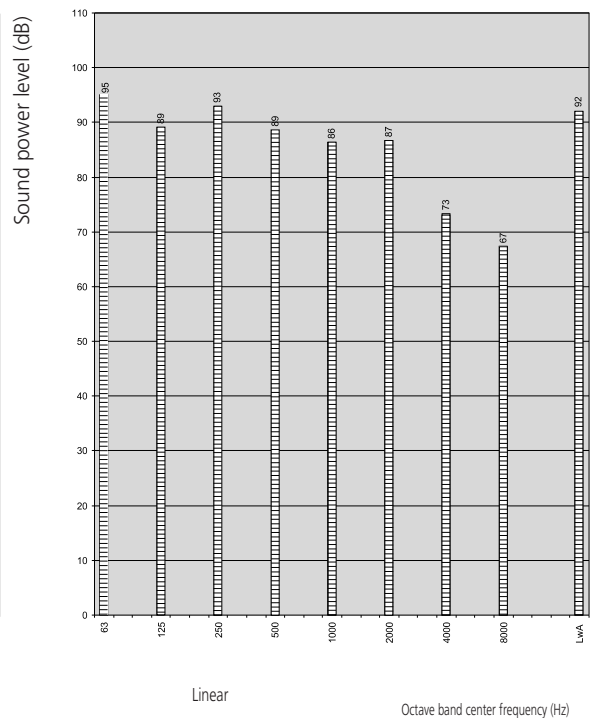
4TW53377-5

EUWA(*)60LZ



4TW53377-6

EUWA(*)80LZ



4TW53407-4

9 Sound power spectrum

9-2 Sound power spectrum (low noise option)

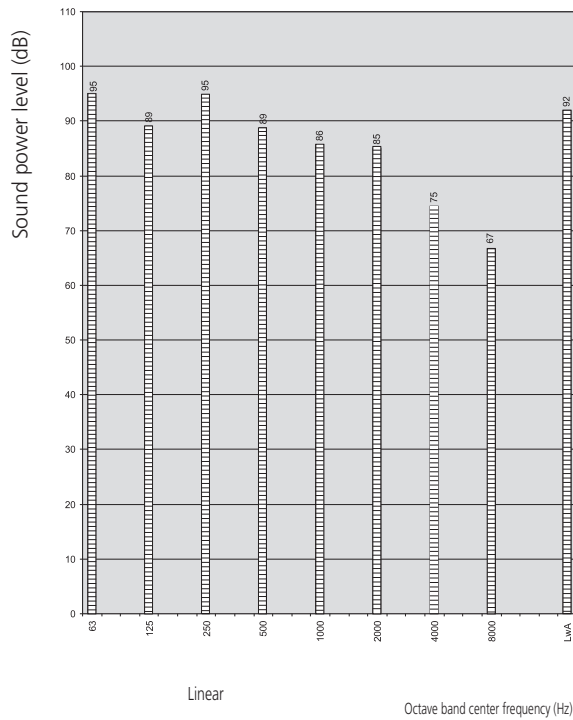


2

9

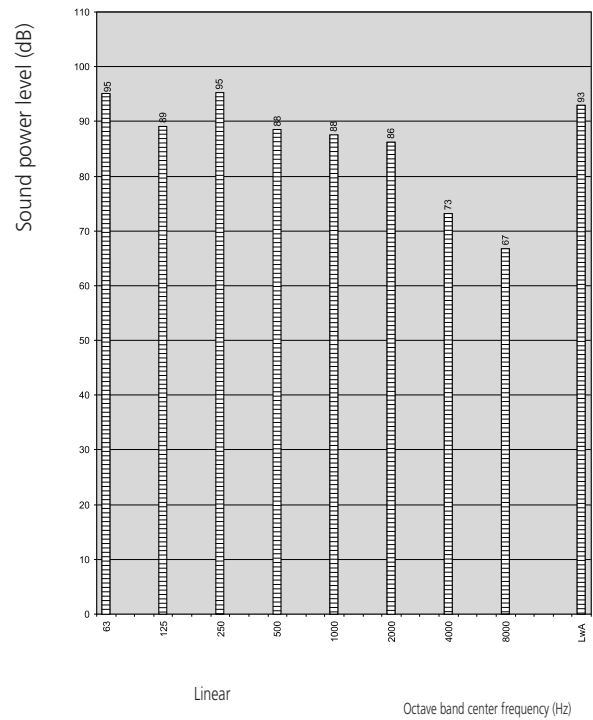
9-2

EUWA(*)100LZ



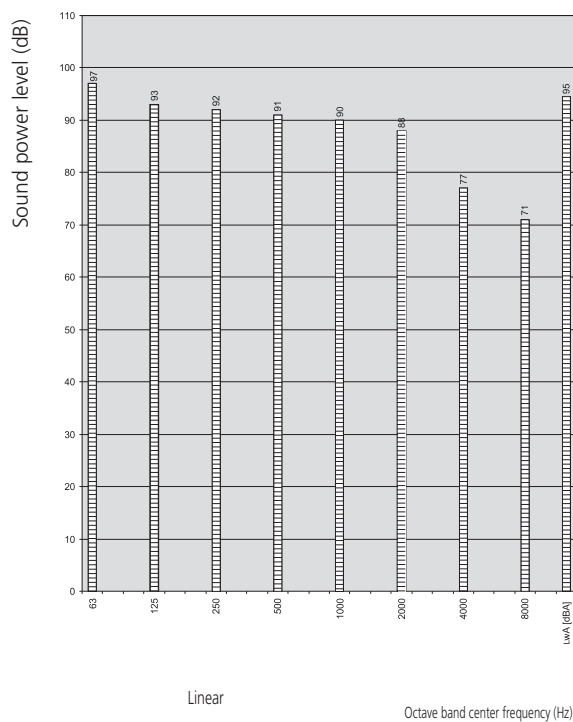
4TW53407-5

EUWA(*)120LZ



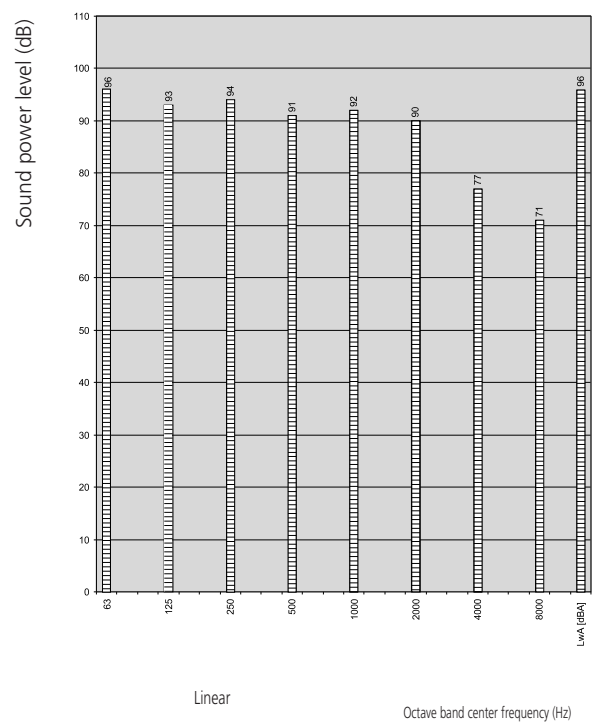
4TW53407-6

EUWA(*)160LZ



4TW53157-4

EUWA(*)180LZ



4TW53157-5

9 Sound power spectrum

9-2 Sound power spectrum (low noise option)

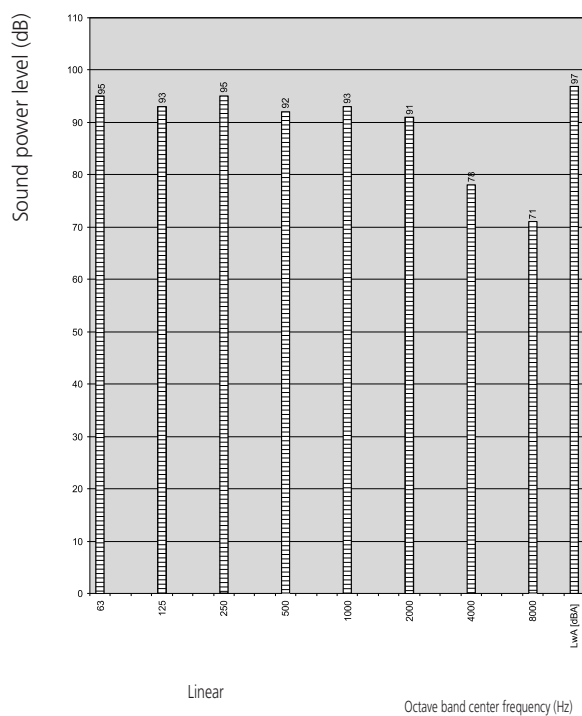


2

9

9-2

EUWA(*)200LZ



4TW53157-6

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



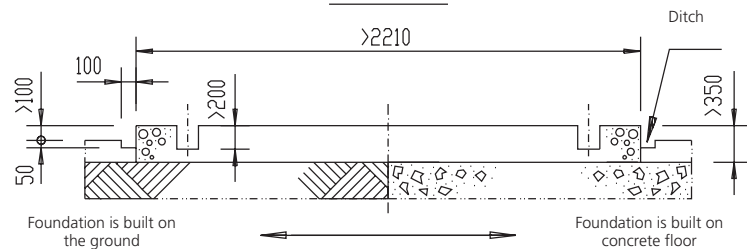
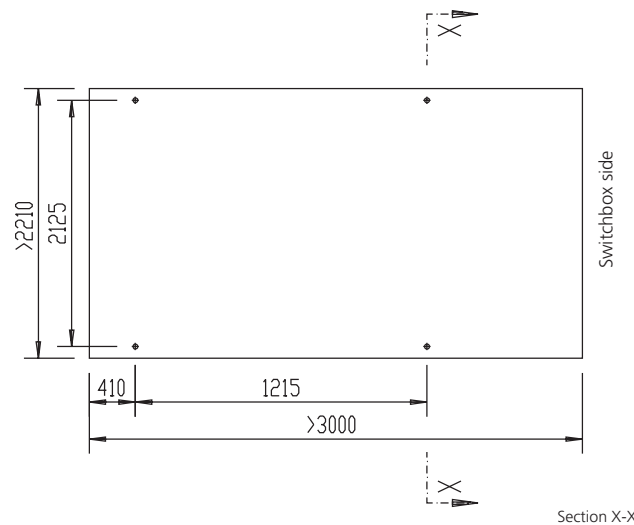
1. The foundation is strong enough to support the weight of the unit and the floor is flat to prevent vibration and noise generation.
2. The space around the unit is adequate for servicing and the minimum space for air inlet and air outlet is available.
3. There is no danger of fire due to leakage of 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.

2

10

10-1

EUWA*40-50-60LZY



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.

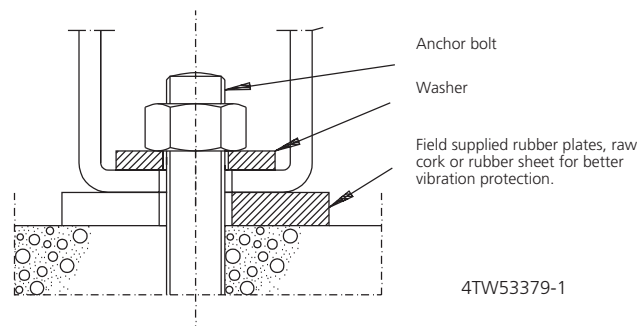
Further, strength of the floor should be sufficient to support the weight of concrete foundation and unit. Make certain that the foundation surface is even and flat.

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.

MODEL	Anchor bolt	
	Size	Qty.
EUWA*40-60LZY	M16 x 200	4

Unit = mm



4TW53379-1

10 Installation

10-1 Fixation + foundation



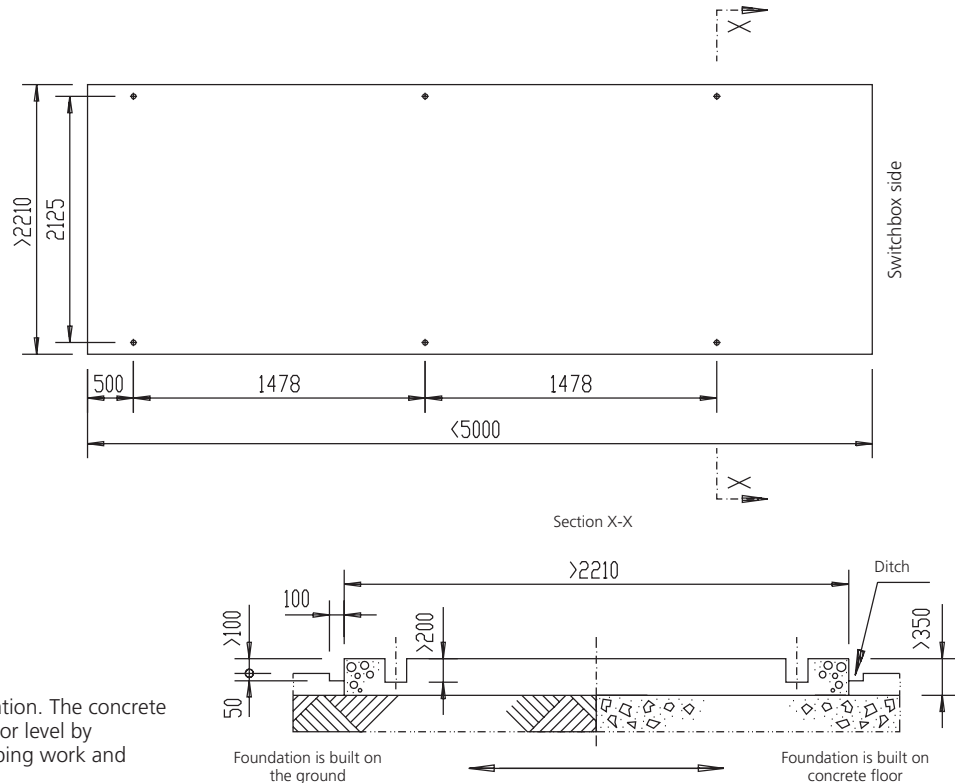
2

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*80-100-120LZY



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.

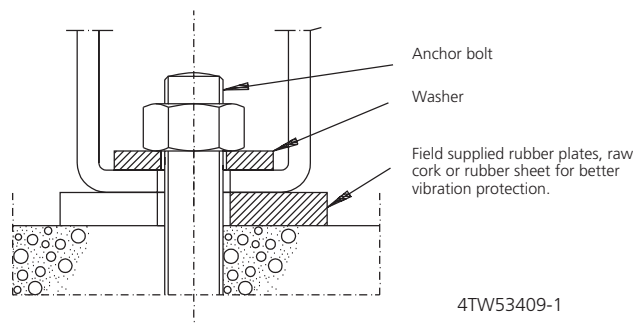
Further, strength of the floor should be sufficient to support the weight of concrete foundation and unit. Make certain that the foundation surface is even and flat.

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.

MODEL	Anchor bolt	
	Size	Qty.
EUWA*80-120LZY	M16 x 200	6

Unit = mm



4TW53409-1

10 Installation

10-1 Fixation + foundation



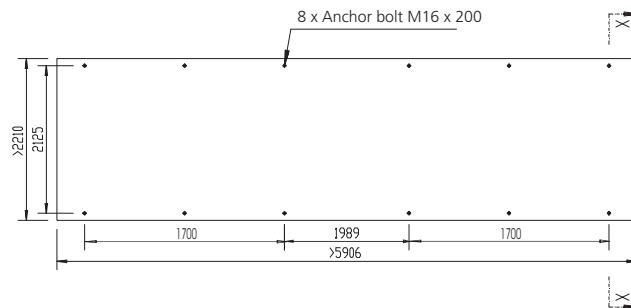
1. The foundation is strong enough to support the weight of the unit and the floor is flat to prevent vibration and noise generation.
2. The space around the unit is adequate for servicing and the minimum space for air inlet and air outlet is available.
3. There is no danger of fire due to leakage of 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.

2

10

10-1

EUWA*160-180-200LZY



MODEL	Anchor bolt	
	Size	Qty.
EUWA*160-200LZY	M16 x 200	8

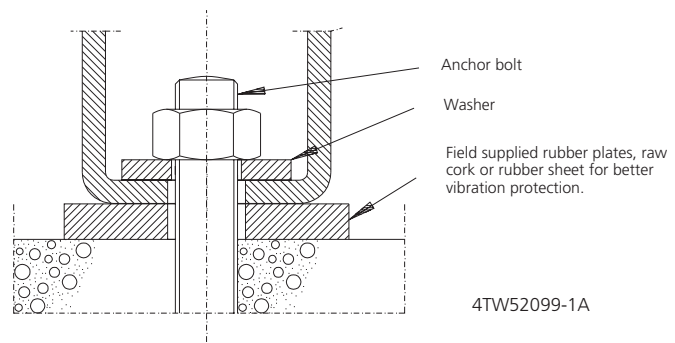
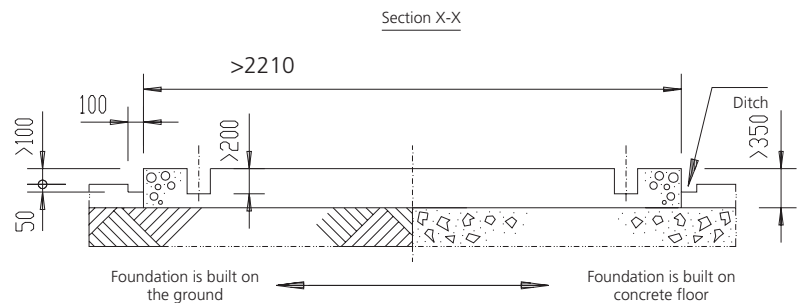
Unit = mm

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.





10 Installation

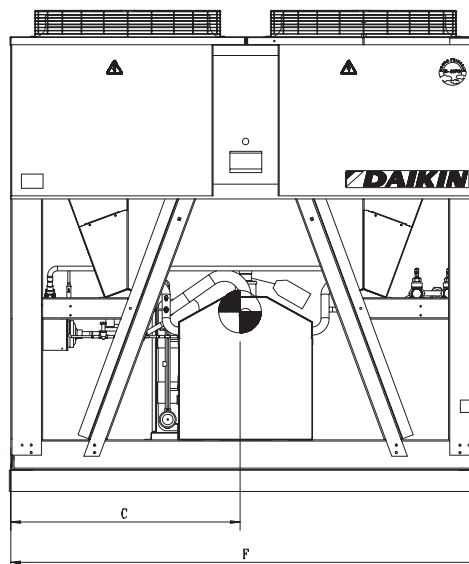
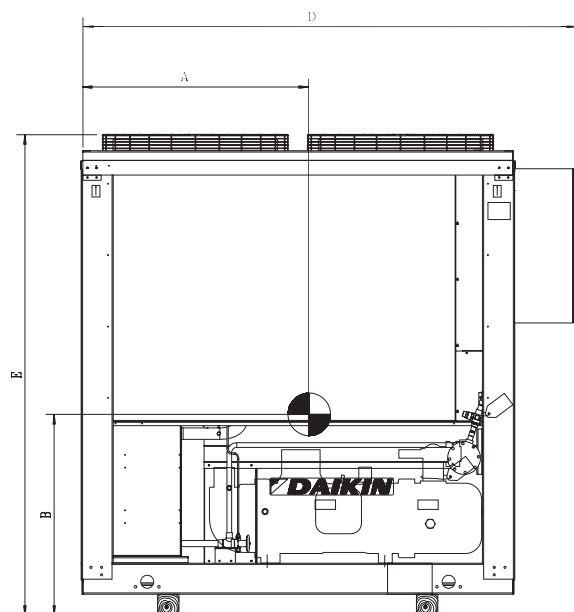
10-2 Centre of gravity

2

10

10-2

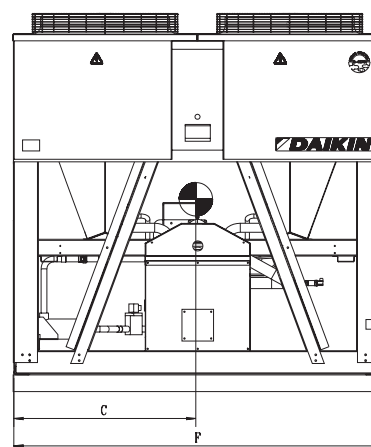
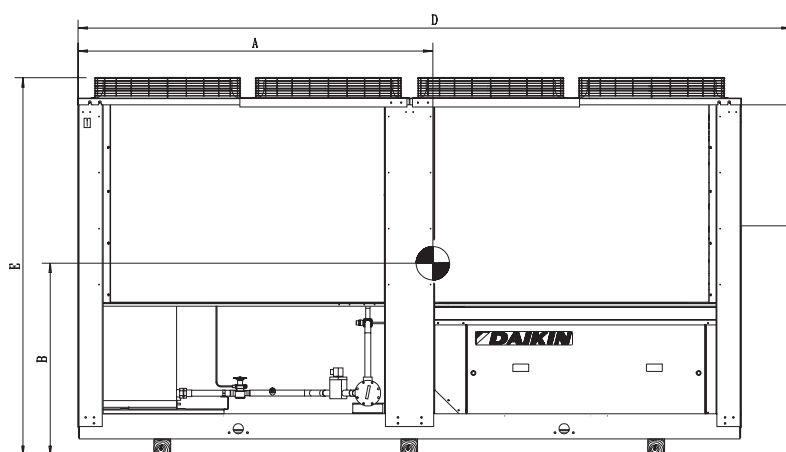
EUWA*40-60LZY



Model	A	B	C	D	E	F
EUWA*40LZY	1050	930	1080	2330	2260	2200
EUWA*50LZY	1070	950	1080	2330	2260	2200
EUWA*60LZY	1070	940	1080	2330	2260	2200

3TW53379-3A

EUWA*80-120LZY



Model	A	B	C	D	E	F
EUWA* 80LZY	2160	1180	1100	4270	2260	2200
EUWA*100LZY	2155	1170	1100	4270	2260	2200
EUWA*120LZY	2175	1130	1100	4270	2260	2200

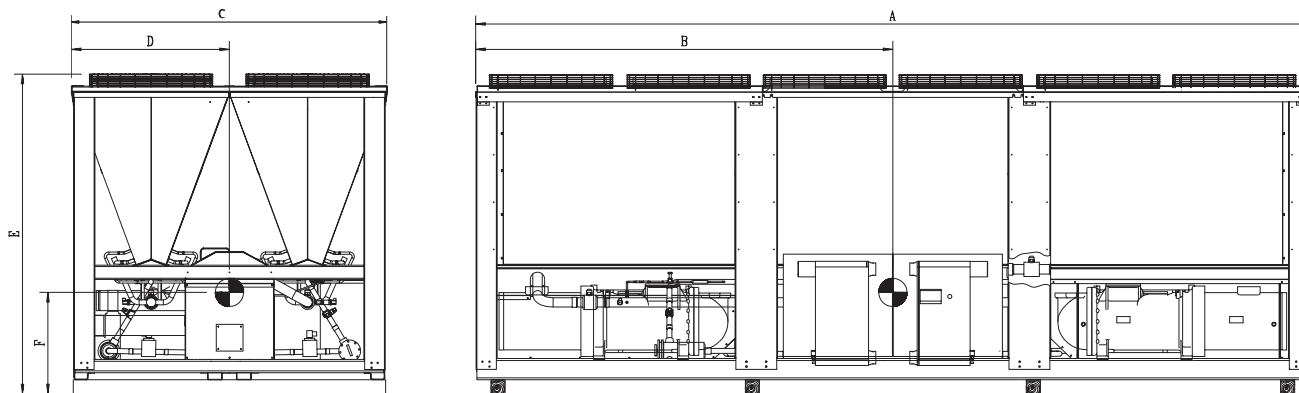
3TW53409-3

10 Installation

10-2 Centre of gravity



EUWA*160-200LZY



2

10

10-2

Model	A	B	C	D	E	F
EUWA*160LZ	5906	2955	2270	1165	2265	980
EUWA*180LZ	5906	2945	2270	1170	2265	980
EUWA*200LZ	5906	2955	2270	1170	2265	980

3TW53159-3



10 Installation

10-3 Water quality

2

10

10-3

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	
Items to be controlled:			
- 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 ⁻ /l)	Below 50	Below 50	Corrosion
- Sulfate ion (mg SO ₄ ²⁻ /l)	Below 50	Below 50	Corrosion
- M-alkalinity (pH 4.8) (mg SO ₃ /l)	Below 50	Below 50	Scale
- Total hardness (mg CaCO ₃ /l)	Below 70	Below 70	Scale
- Calcium hardness (mg CaCO ₃ /l)	Below 50	Below 50	Scale
- Silica ion (mg SiO ₂ /l)	Below 30	Below 30	Scale
Items to be referred to:			
- 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 ²⁻ /l)	Not detectable	Not detectable	Corrosion
- ammonium ion (mg NH ₄ ⁺ /l)	Below 1.0	Below 0.1	Corrosion
- Remaining chloride (mg Cl/l)	Below 0.3	Below 0.3	Corrosion
- Free carbide (mg CO ₂ /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.

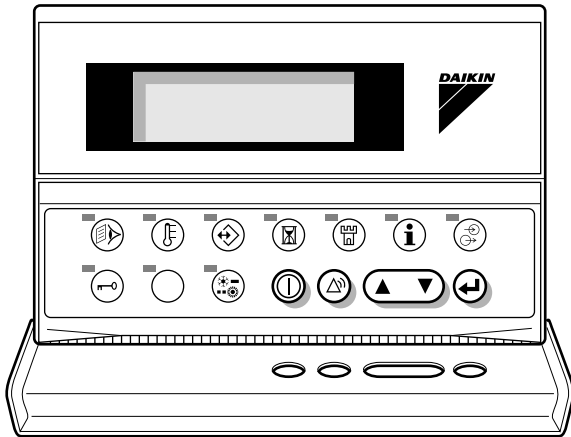
10 Installation

10-4 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.










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 ∇ , ∇ or ∇ 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.

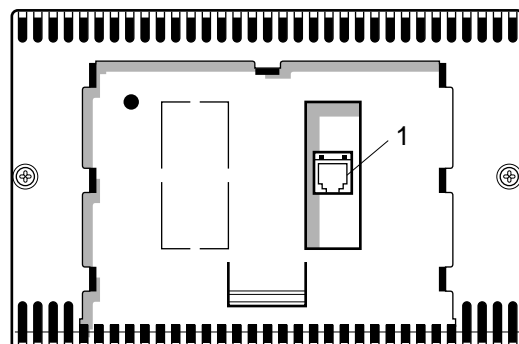
Note:

- 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(*)40-120LZ) or 300 metres (EUWA*160-200LZ) 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

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11

Number	Description	Model-type								Unit size								Availability
			b	d	k	m	q	s	t	40	50	60	80	100	120	160	180	
	Not completely combinable options																	
zh	Glycol application chilled water temperature down to -5°C	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
zl	Glycol application chilled water temperature down to -10°C	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Completely combinable options																	
OP03	Dual pressure relief valve on the condenser	—	○	std	○	○	○	std	○	○	○	○	○	○	○	○	○	○
OP10	Evaporator heatertape	—	○	○	○	○	○	○	std	○	○	○	○	○	○	○	○	○
OP12	Suction stop valve	—	○	std	○	○	○	std	○	○	○	○	○	○	○	○	○	○
OP52	Main isolator switch (Y1-model)	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OP57	A-meter, V-meter	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OPLN	Low noise operation	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OPCN	Option Daikin Integrated Chiller Network	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
OPCG	Condenser protection grilles	—	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Available kits																	
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

Impossible option combinations:
ZH+ZL

SYMBOLS

○ Available
— Not available
std Standard