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Compressor-Condensing Unit with Heat-Pump Function

GCH100-140CD4 GCH125-250CD1
TECHNICAL DATA



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- The GCH system provides optimal air conditions for fresh air supply and humidity regulation and can be used in small warehouses, exhibition halls and offices.
- Large selection of FläktGroup units offers maximum possibilities for users and operators as well as flexible regulation options.
- Each combination requires a control box and a mountable expansion valve set together with an air handling unit.
- Both options are designed for indoor and outdoor installation and can be secured on a wall.



Fig. 1: GCH



Fig. 2: Control switch box and expansion kit

Unit types				GCH100CD4	GCH125CD4	GCH140CD4	
Rated capacity	Cooling	Standard	[kW]	11.2	14.0	15.5	
	Heating	Standard	[kW]	12.5	16.0	18.0	
For combination of indoor and outdoor units	EER	Cooling		3.99	3.99	3.42	
	COP	Cooling/heating		4.56	4.15	3.94	
Performance Range			[PS]	4	5	6	
PED category				Category 1			
Casing	Color			White			
	Material			Painted galvanized sheet steel			
Dimensions	Unit	Height	[mm]	1.345	1.345	1.345	
		Width	[mm]	900	900	900	
		Depth	[mm]	320	320	320	
	Sealing	Height	[mm]	1.524	1.524	1.524	
		Width	[mm]	980	980	980	
		Depth	[mm]	420	420	420	
Weight	Unit weight		[kg]	120	120	120	
	Gross Weight		[kg]	130	130	130	
Packaging	Material			Cardboard. timber as environmentally friendly materials			
	Weight			[kg]	8	8	8
				[kg]	8	8	8
Heat exchanger	Dimensions	Length	[mm]	857	857	857	
		Number of rows			2	2	2
		Fin spacing	[mm]	2	2	2	
		Number of cycles			10	10	10
		Front surface	[m ²]	1.131	1.131	1.131	
		Number of speeds			60	60	60
	Hose type			Hi-XSS(8)			
	Fin	Type		Asymmetric ribbed fin			
		Treatment		Corrosion protected			
	Fan	Type			Blade fan		
Discharge direction			Horizontal				
Qty			2	2	2		
Air volume flow (rated)		Cooling	[m ³ /min]	106	106	106	
		Heating	[m ³ /min]	102	105	105	
Motor		Qty		2	2	2	
	Model			Brushless DC motor			
Motor	Speed (rated at 230 V)	Cooling	[RPM]	850/815			
		Heating	[RPM]	820/785	840/805	840/805	
Fan	Motor	Output	[W]	70	70	70	
		Drive			Direct driven		
Compressors	Qty			1	1	1	
	Motor	Model			JT100G-VDL		
		Type			Hermetic scroll compressor		
		Speed	[RPM]	6.480			
		Motor capacity	[W]	2.5	3.0	3.5	
		Start type			Direct start		
Crankcase heating		[W]	33	33	33		

Unit types				GCH100CD4	GCH125CD4	GCH140CD4
Operating range	Cooling	Min.	[°C] Dry bulb	-5	-5	-5
		Max.	[°C] Dry bulb	46	46	46
	Heating	Min.	[°C] Dry bulb	-20	-20	-20
		Max.	[°C] Dry bulb	15.5	15.5	15.5
Sound level (rated)		Sound power	[dBA]	66	67	69
	Cooling	Sound pressure	[dBA]	50	51	53
	Heating	Sound pressure	[dBA]	52	53	55
Refrigerant	Type			R-410A		
	Filling quantity		[kg]	4.0	4.0	4.0
	Controls			Electronic Expansion valve		
	Number of circuits			1	1	1
Refrigerant oil	Type			Daphne FVC68D		
	Charged volume		[l]	1.5	1.5	1.5
Pipework connections	Liquid (AD)	Type		Flange connection		
		Diameter (AD)	[mm]	9.52	9.52	9.52
	Gas	Type		Flange connection		Solder connection
		Diameter (AD)	[mm]	15.9	15.9	19.1
	Drainage	Qty		3	3	3
		Diameter (AD)	[mm]	26x3		
	Line length	Maximum	[m]	55	55	55
	Thermal insulation			Liquid and gas lines		
Defrost method				Process inversion		
Defrost regulation				Temperature sensor for external heat exchanger		
Method of capacity regulation				Inverter controlled		
Capacity regulation	Cooling	Minimum	[%]	24		
		Maximum	[%]	100		
Protective devices				High-pressure switch		
				Thermal protection for fan motor		
				Inverter overload protection		
				Fuse for printed circuit board		
Standard accessories	Element			Installation manual		
	Qty			1	1	1
	Element			Operation Manual		
	Qty			1	1	1
	Element			Connection pipes		
Qty			3			
<p>Notices</p> <p><i>Rated cooling duty is based on: room temperature: 27 °C TK, 19 °C WB; outside temperature: 35 °C DB; equivalent refrigerant line: 7.5 m; height difference: 0 m.</i></p> <p><i>Rated cooling duty is based on: room temperature: 20 °C TK, outside temperature: 7 °C TK/6 °C FW; equivalent refrigerant line: 7.5 m; height difference: 0 m.</i></p> <p><i>Sound power level is an absolute value representing a noise source.</i></p> <p><i>The sound pressure level is a relative value the depends on the distance and acoustic features of the environment. Refer to drawings with sound level for further information.</i></p> <p><i>Acoustic values are measured in a semi-soundproof room.</i></p>						

Tab. 1: General technical data

Unit types				GCH100CD4	GCH125CD4	GCH140CD4
Electrical Power Supply	Phase			1N~		
	Frequency		[Hz]	50	50	50
	Voltage			220-240		
	Voltage Range	Min.	[V]	198	198	198
		Max.	[V]	264	264	264
El.current	Rated operating current (RLA)	Cooling	[A]	15.9	20.2	22.2
	Starting current (cooling/heating)		[A]	15.9	20.2	22.2
	Minimum value of short-circuit power		[kVA]	The system meets requirements of the EN/IEC 61000-3-12		
	Minimum circuit amperage (MCA)		[A]	27.0	27.0	27.0
	Maximum fuse amperage (MFA)		[A]	32.0	32.0	32.0
	Full load amplifier (FLA)		[A]	0.3+0.3 (fan motor)		
Wiring connections	Power supply unit	Qty		3	3	3
		Remark		including earthing cable		
	For connection to controller casing	Qty		2	2	2
		Remark		F1+F2		
Fault current circuit breaker provided by others			[mA]	300	300	300
Power supply connection				Outdoor unit and controller		

Notices	<p><i>RLA is calculated for the following conditions: room temperature: outside temperature: 27 °C dry bulb/19 °C wet bulb 35 °C dry bulb</i></p> <p><i>Voltage range: the units can operated with electric systems where the voltage on unit terminals does not exceed or fall below specified limit values.</i></p> <p><i>The maximum allowed imbalance of the voltage range between phases amounts to 2 %.</i></p> <p><i>Select the cable type according to the MSA data.</i></p> <p><i>Instead of a fuse use a circuit breaker. Use the MFA to select the circuit breaker and earth fault breaker (fault current circuit breaker).</i></p> <p><i>Maximum starting current (MSC) specifies a maximum current when a compressor is started.</i></p> <p><i>In accordance with the EN/IEC 61000-3-11¹ and EN/IEC 61000-3-12² it may be necessary to contact our sales office in order to ensure that the system is connected to only one power supply with $Z_{sys}^3 \leq Z_{max}$, according to short circuit power \leq minimum short circuit power.</i></p> <p>¹ European/international regulations establish limit values to a rated current of 75 A for changeover contacts, voltage changes, voltage imbalance and deviation in public low voltage systems.</p> <p>² European/international regulations establish limit values for current deviations generated by a unit which is connected to a public low voltage system with an input current > 16 A and \leq 75 A per phase.</p> <p>³ System impedance</p>					
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Tab. 2: Electrical data

Unit types				GCH125CD1	GCH200CD1	GCH250CD1	
Rated capacity	Cooling	Standard	[kW]	14.0	22.4	28.0	
	Heating	Standard	[kW]	16.0	25.0	31.5	
Power consumption	Cooling	Standard	[kW]	3.52	5.22	7.42	
	Heating	Standard	[kW]	4.00	5.56	7.70	
For combination of indoor and outdoor units	EER	Cooling		3.98	4.29	3.77	
	COP	Cooling/heating		4.00	4.50	4.09	
Performance Range			[PS]	5	8	10	
PED category				2	2	2	
Casing	Color			White			
	Material			Painted galvanized sheet steel			
Dimensions	Unit	Height	[mm]	1.680	1.680	1.680	
		Width	[mm]	635	930	930	
		Depth	[mm]	765	765	765	
	Sealing	Height	[mm]	1.855	1.855	1.855	
		Width	[mm]	796	1.055	1.055	
		Depth	[mm]	860	860	860	
Weight	Unit weight		[kg]	159	187	240	
	Gross Weight		[kg]	181.65	217.35	273.00	
Packaging	Material			Cardboard box			
	Weight		[kg]	3.80	4.02	4.02	
	Material			Timber			
	Weight		[kg]	19.15	20.85	20.85	
	Material			Plastic			
	Weight		[kg]	0.215	0.265	0.265	
Heat exchanger	Dimensions	Length	[mm]	1.483	1.778	1.778	
		Number of rows			54	54	54
		Fin spacing	[mm]	2	2	2	
		Number of cycles			8	18	18
		Front surface	[m ²]	1.762	2.112	2.112	
		Number of speeds			2	2	2
	Hose type			Hi-XSS(8)			
	Fin	Type			Asymmetric ribbed fin		
		Treatment			Hydrophilic and corrosion-proof		
	Fan	Type			Blade fan		
Discharge direction			Vertical				
Qty			1	1	1		
Air volume flow (rated)		Cooling	[m ³ /min]	95	171	185	
		Heating	[m ³ /min]	95	171	185	
External static pressure (MAX)			[Pa]	78 Pa for high static pressure			
Motor		Qty			1	1	1
		Model			Brushless DC motor		
	Output		[W]	350	750	750	
Compressors	Qty			1	1	2	
	Motor	Model			Inverter		
		Type			Hermetic scroll compressor		
		Speed	[RPM]	6.300	7.980	6.300	
		Motor capacity	[W]	2.8	3.8	1.2	
		Crankcase heating	[W]	33	33	33	
		Model			ON OFF		
		Type			Hermetic scroll compressor		
		Speed	[RPM]			2.900	
		Motor capacity	[W]			4.5	
		Crankcase heating	[W]			33	

Unit types				GCH125CD1	GCH200CD1	GCH250CD1
Operating range	Cooling	Min.	[°C] dry bulb	-5.0	-5.0	-5.0
		Max.	[°C] dry bulb	43.0	43.0	43.0
	Heating	Min.	[°C] dry bulb	-20	-20	-20
		Max.	[°C] dry bulb	15	15	15
Sound level (rated)	Sound power		[dBA]	72	78	78
	Sound pressure		[dBA]	54	57	58
Refrigerant	Type			R-410A		
	Filling quantity		[kg]	6.2	7.7	8.4
	Controls			Electronic Expansion valve		
	Number of circuits			1	1	1
Refrigerant oil	Type			Synthetic oil (Ether)		
	Charged volume		[l]	1.7	2.1	4.3
Pipework connections	Liquid (AD)	Type		Solder connection		
		Diameter (AD)	[mm]	9.52	9.52	9.52
	Gas	Type		Solder connection		
		Diameter (AD)	[mm]	15.9	19.1	22.2
Thermal insulation			Liquid and gas lines			
Defrost method				Process inversion		
Defrost regulation				Temperature sensor for external heat exchanger		
Method of capacity regulation				Inverter controlled		
Capacity regulation	Cooling	Max.		100 %		
Protective devices				High-pressure switch		
				Fan motor overload protection		
				Overload relay		
				Inverter overload protection		
				Fuse for printed circuit board		
Standard accessories	Element			Installation manual		
	Qty			1	1	1
	Element			Operation Manual		
	Qty			1	1	1
	Element			Connection pipes		
Qty			4	4	4	
Notices	<i>Rated cooling duty is based on: room temperature: 27 °C DB, 19 °C WB; outside temperature: 35 °C dry bulb; equivalent refrigerant line: 7.5 m; height difference: 0 m.</i>					
	<i>Rated cooling duty is based on: room temperature: 20 °C DB, outside temperature: 7 °C DB/6 °C WB; equivalent refrigerant line: 7.5 m; height difference: 0 m.</i>					
	<i>Sound power level is an absolute value representing a noise source.</i>					
	<i>The sound pressure level is a relative value the depends on the distance and acoustic features of the environment. Refer to drawings with sound level for further information.</i>					
	<i>Acoustic values are measured in a semi-soundproof room.</i>					
<i>Compressor output capacity stands for a duty generated by the compressor motor at a rated operating point (rated duty).</i>						

Tab. 3: General technical data

Unit types				GCH125CD1	GCH200CD1	GCH250CD1
Electrical Power Supply	Phase			3N~		
	Frequency		[Hz]	50	50	50
	Voltage		[V]	400	400	400
	Voltage Range	Min.	[V]	-10%		
		Max.	[V]	+10%		
El.current	Rated operating current (RLA)	Cooling	[A]	5.1	7.5	11.3
		Heating	[A]	5.8	8.2	11.1
	Starting current (cooling/heating)		[A]			74
	Minimum value of short-circuit power		[kVA]		889	842
	Minimum circuit amperage (MCA)		[A]	11.9	18.5	21.6
	Maximum fuse amperage (MFA)		[A]	16	25	25
	Total overload current amperage (TOCA)		[A]	15.6	16.5	31.5
	Full load amplifier (FLA)		[A]	0.4	0.7	0.9
Wiring connections	Power supply unit	Qty		5	5	5
		Remark		including earthing cable		
	For connection with an indoor unit	Qty		2	2	2
		Remark		F1 - F2		
Power supply connection				Indoor and outdoor unit		
Notices	<p><i>MCA/MFA: $MCA = 1.25 \times \text{maximum RLA number} + \text{other RLA number} + EA FLA$; MFA is smaller or equals $2.25 \times \text{maximum RLA number} + \text{other RLA number} + EA FLA$, next low standard fusing nominal value at least 16A</i></p> <p><i>Use the MFA to select the circuit breaker and earth fault breaker.</i></p> <p><i>Maximum starting current (MSC) specifies a maximum current when a compressor is started.</i></p> <p><i>The maximum allowed imbalance of the voltage range between phases amounts to 2 %.</i></p> <p><i>RLA is calculated for the following conditions: room temperature: outside temperature: 27 °C dry bulb/19 °C wet bulb 35 °C dry bulb</i></p> <p><i>Select the line size on the basis of MCA or TOCA values.</i></p> <p><i>TOCA stands for a total of all overcurrent values.</i></p> <p><i>Voltage range: the units can operated with electric systems where the voltage on unit terminals does not exceed or fall below specified limit values.</i></p> <p><i>FLA stands for an amperage of a fan motor at full load.</i></p> <p><i>In accordance with the EN/IEC 61000-3-11¹ and EN/IEC 61000-3-12² it may be necessary to contact our sales office in order to ensure that the system is connected to only one power supply with $Z_{sys}^3 \leq Z_{max}$, according to short circuit power \leq minimum short circuit power.</i></p> <p>¹ European/international regulations establish limit values to a rated current of 75 A for changeover contacts, voltage changes, voltage imbalance and deviation in public low voltage systems.</p> <p>² European/international regulations establish limit values for current deviations generated by a unit which is connected to a public low voltage system with an input current > 16 A and \leq 75 A per phase.</p> <p>³ System impedance</p>					

Tab. 4: Electrical data

				GZCH-3BOX.E15
Casing	Color			White grey
	Material			Resin
Dimensions	Unit	Height	[mm]	132
		Width	[mm]	400
		Depth	[mm]	200
	Sealing	Height	[mm]	215
		Width	[mm]	495
		Depth	[mm]	310
Weight	Unit weight		[kg]	3.9
	Gross Weight		[kg]	4.9
Packaging	Material			Cardboard box
				EPS
				Plastic
Operating range	Cooling	Min.	[°C] dry bulb	-10.0
		Max.	[°C] dry bulb	40.0
Standard accessories	Element			Thermistor (R2T/R3T)
	Qty			2
	Element			Insulating mat
	Qty			2
	Element			Rubber sheet
	Qty			2
	Element			Cable-to-cable spliced joint
	Qty			4
	Element			Operation Manual
	Qty			1
	Element			Screw nut
	Qty			7
	Element			Cable strap
	Qty			6
	Element			Power adapter
	Qty			7
	Element			Stop (terminal) position
	Qty			2

Tab. 5: General technical data

				GZCH-3BOX.E15
Electrical Power Supply	Phase			1~
	Frequency		[Hz]	50
	Voltage		[V]	230
	Voltage Range	Min.	[V]	-10%
Max.		[V]	+10%	
Wiring connections	Power supply unit	Qty		3
		Remark		including earthing cable
	For connection with an indoor unit	Qty		2
		Remark		F1-F2
	For remote control	Quantity		2
		Remark		P1,P2 (for service)
	For expansion valve kit	Quantity		6
		Remark		Y1~Y6
	Liquid line of thermistors	Quantity		2
		Remark		R1,R2
	Gas line of thermistors	Quantity		2
		Remark		R3,R4
	ON/OFF	Quantity		2
		Remark		T1,T2
	Error signal	Quantity		2
		Remark		C1,C2
	Status signal	Quantity		2
		Remark		C3,C4
	Capacity stage	Quantity		2
		Remark		C5,C6
Fan ON/OFF	Quantity		2	
	Remark		C7,C8	
Defroster signal	Quantity		2	
	Remark		C9,C10	
Power supply connection				Floor

Tab. 6: Electrical data

				GZCH063 CD.R12	GZCH080 CD.R12	GZCH100 CD.R12	GZCH125 CD.R12	GZCH140 CD.R12	GZCH200 CD.R12	GZCH250 CD.R12	
Casing	Color			White							
	Material			Metal							
Dimensions	Unit	Height	[mm]	401	401	401	401	401	401	401	
		Width	[mm]	215	215	215	215	215	215	215	
		Depth	[mm]	78	78	78	78	78	78	78	
	Sealing	Height	[mm]	457	457	457	457	457	457	457	
		Width	[mm]	270	270	270	270	270	270	270	
		Depth	[mm]	120	120	120	120	120	120	120	
Weight	Unit weight		[kg]	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	Gross Weight		[kg]	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
Packaging	Material			Cardboard box							
	Weight		[kg]	0.29	0.29	0.29	0.29	0.29	0.29	0.29	
	Material			EPS							
	Weight		[kg]	0.066	0.066	0.066	0.066	0.066	0.066	0.066	
Operating range	Cooling	Min.	[°C] dry bulb temperature	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	
		Max.	[°C] dry bulb temperature	46.0	46.0	46.0	46.0	46.0	46.0	46.0	
Sound level (rated)	Sound pressure		[dBA]	45.0	45.0	45.0	45.0	45.0	45.0	45.0	
Pipework connections	Liquid (AD)	Type			Solder connection						
		Diameter (AD)	[mm]	9.52	9.52	9.52	9.52	9.52	9.52	9.52	
	Line length	Min.	[m]	Refer to the manual, depending on the outdoor unit							
		Max.	[m]	Refer to the manual, depending on the outdoor unit							
		Equivalent	[m]	Refer to the manual, depending on the outdoor unit							
		Without charge	[m]	Refer to the manual, depending on the outdoor unit							
	Difference in installation height	Max.	[m]	Refer to the manual, depending on the outdoor unit							
	Max. level difference indoor unit		[m]	Refer to the manual, depending on the outdoor unit							
Thermal insulation			Intake and discharge								

Notes: The sound pressure refers to a maximum value that is measured at a distance of around 10 cm from the motor.

Tab. 7: Technical data

Each direct evaporator requires a valve set (GZCH-CD.R12) and a switch box (GZCH-3BOX.E15). In order to cover the entire capacity spectrum of the GCH units - a number of valve sets is available. Refer to the following table (Table 8) and consider the combination variants:

		Switchboard	Valve set						
Class	Outer	GZCH-3BOX.E15	GZCH063 CD.R12	GZCH080 CD.R12	GZCH100 CD.R12	GZCH125 CD.R12	GZCH140 CD.R12	GZCH200 CD.R12	GZCH250 CD.R12
100	GCH100CD4	P	P	P	P	P	–	–	–
125	GCH125CD4	P	P	P	P	P	P	–	–
140	GCH140CD4	P	–	P	P	P	P	–	–
125	GCH125CD1	P	P	P	P	P	P	–	–
200	GCH200CD1	P	–	–	P	P	P	P	P
250	GCH250CD1	P	–	–	–	P	P	P	P

Tab. 8

P: Pair: Combination depends on the coil volume of an AHU (refer to capacity table for details)

The selection of the valve set (GZCH-CD.R12) depends on the capacity and volume of evaporator. The technical specifications in the following table (Table 9) must be adhered to:

Valve set	Allowed volume of heat exchanger [dm ³]		Allowed capacity of heat exchanger [kW]	
	min.	max.	min.	max.
63	1.66	2.08	6.3	7.8
80	2.09	2.64	7.9	9.9
100	2.65	3.30	10.0	12.3
125	3.31	4.12	12.4	15.4
140	4.13	4.62	15.5	17.6
200	4.63	6.60	17.7	24.6
250	6.61	8.25	24.7	30.8

Tab. 9: Heat exchanger

Saturated suction temperature (SST) = 6 °C, superheating (SH = 5 K) Air temperature =27 °C dry bulb/19 °C wet bulb
In case of a contradictory result - the selected capacity takes priority over the volume.

Cooling

Outdoor unit Temp. °C DB	Load for evaporator by others											
	100 %		90 %		80 %		70 %		60 %		50 %	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
10.0	11.20	1.50	10.10	1.33	8.96	1.17	7.84	1.01	6.72	0.86	5.60	0.71
12.0	11.20	1.53	10.10	1.36	8.96	1.19	7.84	1.02	6.72	0.87	5.60	0.73
14.0	11.20	1.56	10.10	1.38	8.96	1.21	7.84	1.04	6.72	0.89	5.60	0.74
16.0	11.20	1.59	10.10	1.41	8.96	1.23	7.84	1.06	6.72	0.90	5.60	0.75
18.0	11.20	1.62	10.10	1.44	8.96	1.26	7.84	1.08	6.72	0.92	5.60	0.76
20.0	11.20	1.70	10.10	1.47	8.96	1.28	7.84	1.10	6.72	0.93	5.60	0.77
21.0	11.20	1.77	10.10	1.52	8.96	1.29	7.84	1.11	6.72	0.94	5.60	0.78
23.0	11.20	1.89	10.10	1.62	8.96	1.38	7.84	1.15	6.72	0.96	5.60	0.80
25.0	11.20	2.02	10.10	1.74	8.96	1.47	7.84	1.23	6.72	1.01	5.60	0.81
27.0	11.20	2.17	10.10	1.86	8.96	1.57	7.84	1.31	6.72	1.07	5.60	0.86
29.0	11.20	2.31	10.10	1.98	8.96	1.68	7.84	1.40	6.72	1.14	5.60	0.92
31.0	11.20	2.47	10.10	2.11	8.96	1.79	7.84	1.49	6.72	1.21	5.60	0.97
33.0	11.20	2.63	10.10	2.25	8.96	1.90	7.84	1.58	6.72	1.29	5.60	1.03
35.0	11.20	2.81	10.10	2.40	8.96	2.02	7.84	1.68	6.72	1.37	5.60	1.09
37.0	11.20	3.00	10.10	2.56	8.96	2.15	7.84	1.79	6.72	1.45	5.60	1.16
39.0	11.20	3.19	10.10	2.72	8.96	2.29	7.84	1.90	6.72	1.54	5.60	1.22

Tab. 10: Room temperature 27 °C dry bulb / 19 °C wet bulb

Heating

Outdoor unit Temp.		Load for condenser by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-19.8	-20	10.00	3.99	10.00	4.15	10.00	4.31	8.75	3.66	7.50	3.02	6.25	2.43
-18.8	-19	10.30	4.04	10.30	4.20	10.00	4.17	8.75	3.52	7.50	2.91	6.25	2.34
-16.7	-17	10.90	4.14	10.90	4.28	10.00	3.87	8.75	3.27	7.50	2.71	6.25	2.19
-14.7	-15	11.60	4.22	11.30	4.19	10.00	3.60	8.75	3.05	7.50	2.54	6.25	2.06
-12.6	-13	12.20	4.29	11.30	3.92	10.00	3.37	8.75	2.86	7.50	2.39	6.25	1.94
-10.5	-11	12.50	4.21	11.30	3.67	10.00	3.17	8.75	2.70	7.50	2.25	6.25	1.84
-9.5	-10	12.50	4.08	11.30	3.56	10.00	3.08	8.75	2.62	7.50	2.19	6.25	1.79
-8.5	-9.1	12.50	3.97	11.30	3.47	10.00	3.00	8.75	2.56	7.50	2.14	6.25	1.75
-7.0	-7.6	12.50	3.80	11.30	3.33	10.00	2.88	8.75	2.46	7.50	2.06	6.25	1.69
-5.0	-5.6	12.50	3.58	11.30	3.15	10.00	2.73	8.75	2.34	7.50	1.96	6.25	1.61
-3.0	-3.7	12.50	3.42	11.30	3.00	10.00	2.61	8.75	2.23	7.50	1.88	6.25	1.54
0.0	-0.7	12.50	3.17	11.30	2.79	10.00	2.43	8.75	2.08	7.50	1.76	6.25	1.45
3.0	2.2	12.50	2.97	11.30	2.62	10.00	2.28	8.75	1.96	7.50	1.66	6.25	1.37
5.0	4.1	12.50	2.85	11.30	2.51	10.00	2.19	8.75	1.89	7.50	1.60	6.25	1.33
7.0	6.0	12.50	2.74	11.30	2.42	10.00	2.11	8.75	1.82	7.50	1.55	6.25	1.28
9.0	7.9	12.50	2.64	11.30	2.33	10.00	2.04	8.75	1.76	7.50	1.50	6.25	1.24
11.0	9.8	12.50	2.54	11.30	2.25	10.00	1.97	8.75	1.70	7.50	1.45	6.25	1.21
13.0	11.8	12.50	2.45	11.30	2.17	10.00	1.90	8.75	1.65	7.50	1.40	6.25	1.17
15.0	13.7	12.50	2.37	11.30	2.10	10.00	1.84	8.75	1.60	7.50	1.36	6.25	1.14

Tab. 11: Room temperature 20 °C dry bulb

Symbols:

DB: Dry bulb temperature
WB: Wet bulb temperature[°dry bulb]
[°wet bulb]TC: Total Coolin capacity [kW]
PI: Power consumption [kW]
(compressor + outdoor unit fan motor)
(power consumption of indoor unit not included)**Important notes on capacity data in tables:**

Power consumption and power output are based on the following conditions: all values are specified without internal fans, the power consumption is only related to the inverter condensing unit.

- Superheating 5 [K]
- Subcooling 3 [K]
- Piping length 7.5 [m]

Direct interpolation is allowed. Extrapolation should be avoided. The correctional factors for line lengths must be considered and adhered to. All data are based on the following conditions:

- The capacity tables specify the maximum output of a condensing unit at full load and its relevant power consumption.
- The capacity tables are identical for any evaporation temperature between 2 and 8 °C. Where necessary, the inverter regulation restricts capacity output of the unit in order to ensure the system safety.

Cooling

Outdoor unit Temp. °C DB		Load for evaporator by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
10.0		14.00	1.88	12.60	1.66	11.20	1.46	9.80	1.26	8.40	1.07	7.00	0.89
12.0		14.00	1.91	12.60	1.69	11.20	1.48	9.80	1.28	8.40	1.09	7.00	0.91
14.0		14.00	1.95	12.60	1.73	11.20	1.51	9.80	1.30	8.40	1.11	7.00	0.92
16.0		14.00	1.99	12.60	1.76	11.20	1.54	9.80	1.33	8.40	1.13	7.00	0.94
18.0		14.00	2.03	12.60	1.79	11.20	1.57	9.80	1.35	8.40	1.15	7.00	0.95
20.0		14.00	2.13	12.60	1.83	11.20	1.60	9.80	1.38	8.40	1.17	7.00	0.97
21.0		14.00	2.20	12.60	1.89	11.20	1.62	9.80	1.39	8.40	1.18	7.00	0.98
23.0		14.00	2.36	12.60	2.03	11.20	1.72	9.80	1.44	8.40	1.20	7.00	0.99
25.0		14.00	2.53	12.60	2.17	11.20	1.84	9.80	1.54	8.40	1.26	7.00	1.01
27.0		14.00	2.70	12.60	2.32	11.20	1.96	9.80	1.64	8.40	1.34	7.00	1.08
29.0		14.00	2.89	12.60	2.47	11.20	2.09	9.80	1.74	8.40	1.43	7.00	1.14
31.0		14.00	3.08	12.60	2.64	11.20	2.23	9.80	1.86	8.40	1.52	7.00	1.21
33.0		14.00	3.29	12.60	2.81	11.20	2.38	9.80	1.97	8.40	1.61	7.00	1.29
35.0		14.00	3.51	12.60	3.00	11.20	2.53	9.80	2.10	8.40	1.71	7.00	1.26
37.0		14.00	3.74	12.60	3.19	11.20	2.69	9.80	2.23	8.40	1.82	7.00	1.44
39.0		14.00	3.99	12.60	3.40	11.20	2.86	9.80	2.37	8.40	1.93	7.00	1.53

Tab. 12: Room temperature 27 °C dry bulb / 19 °C wet bulb

Heating

Outdoor unit Temp.		Load for condenser by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-19.8	-20	10.90	4.14	10.80	4.36	10.80	4.59	10.73	4.81	9.60	4.25	8.00	3.42
-18.8	-19	11.20	4.21	11.20	4.43	11.10	4.64	11.06	4.86	9.60	4.10	8.00	3.30
-16.7	-17	11.90	4.34	11.80	4.54	11.80	4.74	11.20	4.60	9.60	3.82	8.00	3.08
-14.7	-15	12.50	4.45	12.50	4.64	12.40	4.84	11.20	4.30	9.60	3.57	8.00	2.90
-12.6	-13	13.20	4.56	13.10	4.74	12.80	4.75	11.20	4.03	9.60	3.36	8.00	2.73
-10.5	-11	13.80	4.65	13.80	4.82	12.80	4.47	11.20	3.80	9.60	3.17	8.00	2.59
-9.5	-10	14.20	4.69	14.10	4.86	12.80	4.34	11.20	3.69	9.60	3.09	8.00	2.52
-8.5	-9.1	14.50	4.73	14.40	4.89	12.80	4.23	11.20	3.60	9.60	3.01	8.00	2.46
-7.0	-7.6	14.90	4.79	14.40	4.69	12.80	4.06	11.20	3.46	9.60	2.90	8.00	2.37
-5.0	-5.6	15.60	4.86	14.40	4.44	12.80	3.85	11.20	3.29	9.60	2.76	8.00	2.27
-3.0	-3.7	16.00	4.82	14.40	4.23	12.80	3.67	11.20	3.14	9.60	2.64	8.00	2.17
0.0	-0.7	16.00	4.47	14.40	3.93	12.80	3.42	11.20	2.94	9.60	2.48	8.00	2.04
3.0	2.2	16.00	4.18	14.40	3.69	12.80	3.21	11.20	2.76	9.60	2.34	8.00	1.93
5.0	4.1	16.00	4.02	14.40	3.54	12.80	3.09	11.20	2.66	9.60	2.25	8.00	1.87
7.0	6.0	16.00	3.86	14.40	3.42	12.80	2.98	11.20	2.57	9.60	2.18	8.00	1.81
9.0	7.9	16.00	3.72	14.40	3.29	12.80	2.87	11.20	2.48	9.60	2.11	8.00	1.75
11.0	9.8	16.00	3.58	14.40	3.17	12.80	2.78	11.20	2.40	9.60	2.04	8.00	1.70
13.0	11.8	16.00	3.45	14.40	3.06	12.80	2.68	11.20	2.32	9.60	1.98	8.00	1.65
15.0	13.7	16.00	3.34	14.40	2.96	12.80	2.60	11.20	2.25	9.60	1.92	8.00	1.61

Tab. 13: Room temperature 20 °C dry bulb

Symbols:

DB : Dry bulb temperature
WB: Wet bulb temperature

[°dry bulb]
[°wet bulb]

TC: Total Coolin capacity [kW]
PI: Power consumption [kW]
(compressor + outdoor unit fan motor)
(power consumption of indoor unit not included)

Important notes on capacity data in tables:

Power consumption and power output are based on the following conditions: all values are specified without internal fans, the power consumption is only related to the inverter condensing unit.
- Superheating 5 [K]
- Subcooling 3 [K]
- Piping length 7.5 [m]

Direct interpolation is allowed. Extrapolation should be avoided. The correctional factors for line lengths must be considered and adhered to. All data are based on the following conditions:
- The capacity tables specify the maximum output of a condensing unit at full load and its relevant power consumption.
- The capacity tables are identical for any evaporation temperature between 2 and 8 °C. Where necessary, the inverter regulation restricts capacity output of the unit in order to ensure the system safety.

Cooling

Outdoor unit Temp. °C DB	Load for evaporator by others											
	100 %		90 %		80 %		70 %		60 %		50 %	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
10.0	15.50	2.42	14.00	2.15	12.40	1.88	10.90	1.62	9.30	1.38	7.75	1.15
12.0	15.50	2.47	14.00	2.19	12.40	1.91	10.90	1.65	9.30	1.40	7.75	1.17
14.0	15.50	2.52	14.00	2.23	12.40	1.95	10.90	1.68	9.30	1.43	7.75	1.19
16.0	15.50	2.56	14.00	2.27	12.40	1.99	10.90	1.71	9.30	1.45	7.75	1.21
18.0	15.50	2.62	14.00	2.32	12.40	2.02	10.90	1.74	9.30	1.48	7.75	1.23
20.0	15.50	2.75	14.00	2.36	12.40	2.06	10.90	1.78	9.30	1.51	7.75	1.25
21.0	15.50	2.85	14.00	2.44	12.40	2.09	10.90	1.80	9.30	1.52	7.75	1.26
23.0	15.50	3.05	14.00	2.62	12.40	2.22	10.90	1.86	9.30	1.55	7.75	1.28
25.0	15.50	3.26	14.00	2.80	12.40	2.37	10.90	1.98	9.30	1.63	7.75	1.31
27.0	15.50	3.49	14.00	2.99	12.40	2.53	10.90	2.11	9.30	1.73	7.75	1.39
29.0	15.50	3.73	14.00	3.19	12.40	2.70	10.90	2.25	9.30	1.84	7.75	1.48
31.0	15.50	3.98	14.00	3.41	12.40	2.88	10.90	2.40	9.30	1.96	7.75	1.57
33.0	15.50	4.25	14.00	3.63	12.40	3.07	10.90	2.55	9.30	2.08	7.75	1.66
35.0	15.50	4.53	14.00	3.87	12.40	3.26	10.90	2.71	9.30	2.21	7.75	1.76
37.0	15.50	4.83	14.00	4.12	12.40	3.47	10.90	2.88	9.30	2.34	7.75	1.86
39.0	15.50	5.13	14.00	4.39	12.40	3.69	10.90	3.06	9.30	2.49	7.75	1.97

Tab. 14: Room temperature 27 °C dry bulb / 19 °C wet bulb

Heating

Outdoor unit Temp.		Load for condenser by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-19.8	-20	11.10	4.03	11.00	4.30	11.00	4.56	10.92	4.82	10.80	5.03	9.00	4.05
-18.8	-19	11.40	4.12	11.40	4.37	11.30	4.63	11.26	4.88	10.80	4.85	9.00	3.91
-16.7	-17	12.10	4.27	12.00	4.51	12.00	4.75	11.92	4.99	10.80	4.52	9.00	3.65
-14.7	-15	12.70	4.40	12.70	4.63	12.60	4.86	12.59	5.08	10.80	4.23	9.00	3.43
-12.6	-13	13.40	4.52	13.40	4.74	13.30	4.96	12.60	4.78	10.80	3.98	9.00	3.23
-10.5	-11	14.10	4.63	14.00	4.84	14.00	5.04	12.60	4.50	10.80	3.76	9.00	3.06
-9.5	-10	14.40	4.68	14.40	4.88	14.30	5.09	12.60	4.37	10.80	3.65	9.00	2.98
-8.5	-9.1	14.70	4.73	14.70	4.92	14.40	5.01	12.60	4.27	10.80	3.57	9.00	2.92
-7.0	-7.6	15.20	4.80	15.20	4.99	14.40	4.80	12.60	4.10	10.80	3.43	9.00	2.81
-5.0	-5.6	15.90	4.88	15.80	5.07	14.40	4.56	12.60	3.89	10.80	3.27	9.00	2.68
-3.0	-3.7	16.50	4.96	16.20	5.01	14.40	4.35	12.60	3.72	10.80	3.13	9.00	2.57
0.0	-0.7	17.50	5.07	16.20	4.66	14.40	4.05	12.60	3.48	10.80	2.93	9.00	2.42
3.0	2.2	18.00	4.95	16.20	4.37	14.40	3.80	12.60	3.27	10.80	2.77	9.00	2.29
5.0	4.1	18.00	4.75	16.20	4.19	14.40	3.66	12.60	3.15	10.80	2.67	9.00	2.21
7.0	6.0	18.00	4.57	16.20	4.04	14.40	3.53	12.60	3.04	10.80	2.58	9.00	2.14
9.0	7.9	18.00	4.40	16.20	3.89	14.40	3.40	12.60	2.94	10.80	2.49	9.00	2.08
11.0	9.8	18.00	4.24	16.20	3.75	14.40	3.29	12.60	2.84	10.80	2.42	9.00	2.01
13.0	11.8	18.00	4.09	16.20	3.62	14.40	3.18	12.60	2.75	10.80	2.34	9.00	1.95
15.0	13.7	18.00	3.96	16.20	3.51	14.40	3.08	12.60	2.67	10.80	2.27	9.00	1.90

Tab. 15: Room temperature 20 °C dry bulb

Symbols:

DB: Dry bulb temperature
WB: Wet bulb temperature[°dry bulb]
[°wet bulb]TC: Total Coolin capacity [kW]
PI: Power consumption [kW]
(compressor + outdoor unit fan motor)
(power consumption of indoor unit not included)**Important notes on capacity data in tables:**

Power consumption and power output are based on the following conditions: all values are specified without internal fans, the power consumption is only related to the inverter condensing unit.

- Superheating 5 [K]
- Subcooling 3 [K]
- Piping length 7.5 [m]

Direct interpolation is allowed. Extrapolation should be avoided. The correctional factors for line lengths must be considered and adhered to. All data are based on the following conditions:

- The capacity tables specify the maximum output of a condensing unit at full load and its relevant power consumption.
- The capacity tables are identical for any evaporation temperature between 2 and 8 °C. Where necessary, the inverter regulation restricts capacity output of the unit in order to ensure the system safety.

Cooling

Outdoor unit Temp. °C DB		Load for evaporator by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
10.0		14.00	1.88	12.60	1.67	11.20	1.46	9.80	1.26	8.40	1.07	7.00	0.89
12.0		14.00	1.92	12.60	1.70	11.20	1.49	9.80	1.28	8.40	1.09	7.00	0.91
14.0		14.00	1.95	12.60	1.73	11.20	1.51	9.80	1.31	8.40	1.11	7.00	0.92
16.0		14.00	1.99	12.60	1.76	11.20	1.54	9.80	1.33	8.40	1.13	7.00	0.94
18.0		14.00	2.03	12.60	1.80	11.20	1.57	9.80	1.36	8.40	1.15	7.00	0.95
20.0		14.00	2.13	12.60	1.84	11.20	1.60	9.80	1.38	8.40	1.17	7.00	0.97
21.0		14.00	2.21	12.60	1.90	11.20	1.62	9.80	1.40	8.40	1.18	7.00	0.98
23.0		14.00	2.37	12.60	2.03	11.20	1.73	9.80	1.44	8.40	1.20	7.00	1.00
25.0		14.00	2.54	12.60	2.18	11.20	1.84	9.80	1.54	8.40	1.26	7.00	1.02
27.0		14.00	2.71	12.60	2.32	11.20	1.97	9.80	1.64	8.40	1.35	7.00	1.08
29.0		14.00	2.90	12.60	2.48	11.20	2.10	9.80	1.75	8.40	1.43	7.00	1.15
31.0		14.00	3.09	12.60	2.65	11.20	2.24	9.80	1.86	8.40	1.52	7.00	1.22
33.0		14.00	3.30	12.60	2.82	11.20	2.38	9.80	1.98	8.40	1.62	7.00	1.29
35.0		14.00	3.52	12.60	3.01	11.20	2.54	9.80	2.11	8.40	1.72	7.00	1.37
37.0		13.80	3.64	12.60	3.20	11.20	2.70	9.80	2.24	8.40	1.82	7.00	1.45
39.0		13.50	3.77	12.60	3.41	11.20	2.87	9.80	2.38	8.40	1.93	7.00	1.53

Tab. 16: Room temperature 27 °C dry bulb / 19 °C wet bulb

Heating

Outdoor unit Temp.		Load for condenser by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-19.8	-20	10.40	3.91	10.30	4.14	10.30	4.37	10.20	4.60	9.60	4.41	8.00	3.54
-18.8	-19	10.70	3.98	10.60	4.20	10.60	4.43	10.50	4.65	9.60	4.24	8.00	3.42
-16.7	-17	11.30	4.11	11.20	4.32	11.20	4.53	11.20	4.74	9.60	3.95	8.00	3.20
-14.7	-15	11.90	4.23	11.90	4.43	11.80	4.63	11.20	4.46	9.60	3.70	8.00	3.00
-12.6	-13	12.50	4.34	12.50	4.53	12.50	4.71	11.20	4.18	9.60	3.48	8.00	2.83
-10.5	-11	13.20	4.43	13.10	4.61	12.80	4.63	11.20	3.94	9.60	3.29	8.00	2.68
-9.5	-10	13.50	4.48	13.40	4.65	12.80	4.50	11.20	3.83	9.60	3.20	8.00	2.61
-8.5	-9.1	13.80	4.52	13.70	4.69	12.80	4.38	11.20	3.73	9.60	3.12	8.00	2.55
-7.0	-7.6	14.20	4.58	14.20	4.74	12.80	4.20	11.20	3.59	9.60	3.01	8.00	2.46
-5.0	-5.6	14.90	4.65	14.40	4.60	12.80	3.99	11.20	3.41	9.60	2.86	8.00	2.35
-3.0	-3.7	15.50	4.72	14.40	4.38	12.80	3.80	11.20	3.26	9.60	2.74	8.00	2.25
0.0	-0.7	16.00	4.63	14.40	4.08	12.80	3.55	11.20	3.04	9.60	2.57	8.00	2.12
3.0	2.2	16.00	4.34	14.40	3.82	12.80	3.33	11.20	2.86	9.60	2.42	8.00	2.00
5.0	4.1	16.00	4.16	14.40	3.67	12.80	3.20	11.20	2.76	9.60	2.34	8.00	1.94
7.0	6.0	16.00	4.00	14.40	3.53	12.80	3.09	11.20	2.66	9.60	2.26	8.00	1.87
9.0	7.9	16.00	3.85	14.40	3.40	12.80	2.98	11.20	2.57	9.60	2.18	8.00	1.82
11.0	9.8	16.00	3.71	14.40	3.29	12.80	2.88	11.20	2.49	9.60	2.12	8.00	1.76
13.0	11.8	16.00	3.58	14.40	3.17	12.80	2.78	11.20	2.41	9.60	2.05	8.00	1.71
15.0	13.7	16.00	3.46	14.40	3.07	12.80	2.69	11.20	2.33	9.60	1.99	8.00	1.66

Tab. 17: Room temperature 20 °C dry bulb

Symbols:

DB : Dry bulb temperature
WB: Wet bulb temperature

[°dry bulb]
[°wet bulb]

TC: Total Coolin capacity [kW]
PI: Power consumption [kW]
(compressor + outdoor unit fan motor)
(power consumption of indoor unit not included)

Important notes on capacity data in tables:

Power consumption and power output are based on the following conditions: all values are specified without internal fans, the power consumption is only related to the inverter condensing unit.
- Superheating 5 [K]
- Subcooling 3 [K]
- Piping length 7.5 [m]

Direct interpolation is allowed. Extrapolation should be avoided. The correctional factors for line lengths must be considered and adhered to. All data are based on the following conditions:
- The capacity tables specify the maximum output of a condensing unit at full load and its relevant power consumption.
- The capacity tables are identical for any evaporation temperature between 2 and 8 °C. Where necessary, the inverter regulation restricts capacity output of the unit in order to ensure the system safety.

Cooling

Outdoor unit Temp. °C DB	Load for evaporator by others											
	100 %		90 %		80 %		70 %		60 %		50 %	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
10.0	22.40	2.79	20.20	2.47	17.90	2.17	15.70	1.87	13.40	1.59	11.20	1.33
12.0	22.40	2.84	20.20	2.52	17.90	2.21	15.70	1.9	13.40	1.62	11.20	1.35
14.0	22.40	2.90	20.20	2.57	17.90	2.25	15.70	1.94	13.40	1.64	11.20	1.37
16.0	22.40	2.96	20.20	2.62	17.90	2.29	15.70	1.97	13.40	1.67	11.20	1.39
18.0	22.40	3.01	20.20	2.67	17.90	2.33	15.70	2.01	13.40	1.70	11.20	1.41
20.0	22.40	3.17	20.20	2.72	17.90	2.38	15.70	2.05	13.40	1.73	11.20	1.44
21.0	22.40	3.28	20.20	2.82	17.90	2.40	15.70	2.07	13.40	1.75	11.20	1.45
23.0	22.40	3.51	20.20	3.02	17.90	2.56	15.70	2.14	13.40	1.78	11.20	1.48
25.0	22.40	3.76	20.20	3.23	17.90	2.73	15.70	2.28	13.40	1.87	11.20	1.51
27.0	22.40	4.02	20.20	3.45	17.90	2.92	15.70	2.43	13.40	2.00	11.20	1.60
29.0	22.40	4.30	20.20	3.68	17.90	3.11	15.70	2.59	13.40	2.12	11.20	1.70
31.0	22.40	4.59	20.20	3.93	17.90	3.32	15.70	2.76	13.40	2.26	11.20	1.81
33.0	22.40	4.89	20.20	4.19	17.90	3.53	15.70	2.94	13.40	2.40	11.20	1.91
35.0	22.40	5.22	20.20	4.46	17.90	3.76	15.70	3.12	13.40	2.54	11.20	2.03
37.0	22.00	5.40	20.20	4.75	17.90	4.00	15.70	3.32	13.40	2.70	11.20	2.15
39.0	21.70	5.59	20.20	5.06	17.90	4.26	15.70	3.52	13.40	2.86	11.20	2.28

Tab. 18: Room temperature 27 °C dry bulb / 19 °C wet bulb

Heating

Outdoor unit Temp.		Load for condenser by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-19.8	-20	15.90	5.26	15.80	5.58	15.80	5.90	15.70	6.22	15.00	6.12	12.50	4.93
-18.8	-19	16.40	5.36	16.30	5.67	16.30	5.98	16.20	6.29	15.00	5.90	12.50	4.75
-16.7	-17	17.40	5.54	17.30	5.83	17.20	6.12	17.10	6.42	15.00	5.50	12.50	4.44
-14.7	-15	18.30	5.70	18.20	5.98	18.20	6.26	17.50	6.19	15.00	5.15	12.50	4.17
-12.6	-13	19.30	5.85	19.20	6.11	19.10	6.38	17.50	5.81	15.00	4.84	12.50	3.94
-10.5	-11	20.20	5.99	20.20	6.24	20.00	6.44	17.50	5.47	15.00	4.57	12.50	3.73
-9.5	-10	20.70	6.05	20.60	6.29	20.00	6.25	17.50	4.32	15.00	4.45	12.50	3.63
-8.5	-9.1	21.20	6.10	21.10	6.34	20.00	6.09	17.50	5.19	15.00	4.34	12.50	3.55
-7.0	-7.6	21.90	6.19	21.80	6.42	20.00	5.84	17.50	4.99	15.00	4.18	12.50	3.42
-5.0	-5.6	22.80	6.29	22.50	6.39	20.00	5.54	17.50	4.74	15.00	3.98	12.50	3.26
-3.0	-3.7	23.70	6.38	22.50	6.09	20.00	5.29	17.50	4.53	15.00	3.81	12.50	3.12
0.0	-0.7	25.00	6.44	22.50	5.67	20.00	4.93	17.50	4.23	15.00	3.57	12.50	2.94
3.0	2.2	25.00	6.03	22.50	5.31	20.00	4.63	17.50	3.98	15.00	3.37	12.50	2.79
5.0	4.1	25.00	5.78	22.50	5.10	20.00	4.45	17.50	3.83	15.00	3.25	12.50	2.69
7.0	6.0	25.00	5.56	22.50	4.91	20.00	4.29	17.50	3.70	15.00	3.14	12.50	2.61
9.0	7.9	25.00	5.35	22.50	4.73	20.00	4.14	17.50	3.57	15.00	3.04	12.50	2.52
11.0	9.8	25.00	5.16	22.50	4.57	20.00	4.00	17.50	3.46	15.00	2.94	12.50	2.45
13.0	11.8	25.00	4.98	22.50	4.41	20.00	3.86	17.50	3.34	15.00	2.85	12.50	2.38
15.0	13.7	25.00	4.81	22.50	4.27	20.00	3.74	17.50	3.24	15.00	2.77	12.50	2.31

Tab. 19: Room temperature 20 °C dry bulb

Symbols:

DB: Dry bulb temperature
WB: Wet bulb temperature[°dry bulb]
[°wet bulb]TC: Total Cooling capacity [kW]
PI: Power consumption [kW]
(compressor + outdoor unit fan motor)
(power consumption of indoor unit not included)

Important notes on capacity data in tables:

Power consumption and power output are based on the following conditions: all values are specified without internal fans, the power consumption is only related to the inverter condensing unit.

- Superheating 5 [K]
- Subcooling 3 [K]
- Piping length 7.5 [m]

Direct interpolation is allowed. Extrapolation should be avoided. The correctional factors for line lengths must be considered and adhered to. All data are based on the following conditions:

- The capacity tables specify the maximum output of a condensing unit at full load and its relevant power consumption.
- The capacity tables are identical for any evaporation temperature between 2 and 8 °C. Where necessary, the inverter regulation restricts capacity output of the unit in order to ensure the system safety.

Cooling

Outdoor unit Temp. °C DB		Load for evaporator by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
10.0		28.00	3.97	25.20	3.52	22.40	3.08	19.60	2.66	16.80	2.26	14.00	1.89
12.0		28.00	4.04	25.20	3.58	22.40	3.14	19.60	2.71	16.80	2.30	14.00	1.91
14.0		28.00	4.12	25.20	3.65	22.40	3.19	19.60	2.75	16.80	2.34	14.00	1.95
16.0		28.00	4.20	25.20	3.72	22.40	3.25	19.60	2.81	16.80	2.38	14.00	1.98
18.0		28.00	4.28	25.20	3.79	22.40	3.32	19.60	2.86	16.80	2.42	14.00	2.01
20.0		28.00	4.50	25.20	3.87	22.40	3.38	19.60	2.91	16.80	2.47	14.00	2.04
21.0		28.00	4.66	25.20	4.00	22.40	3.42	19.60	2.94	16.80	2.49	14.00	2.06
23.0		28.00	4.99	25.20	4.29	22.40	3.64	19.60	3.04	16.80	2.54	14.00	2.10
25.0		28.00	5.35	25.20	4.59	22.40	3.89	19.60	3.25	16.80	2.66	14.00	2.14
27.0		28.00	5.72	25.20	4.90	22.40	4.14	19.60	3.46	16.80	2.84	14.00	2.28
29.0		28.00	6.11	25.20	5.23	22.40	4.42	19.60	3.69	16.80	3.02	14.00	2.42
31.0		28.00	6.52	25.20	5.58	22.40	4.71	19.60	3.92	16.80	3.21	14.00	2.57
33.0		28.00	6.96	25.20	5.96	22.40	5.02	19.60	4.17	16.80	3.41	14.00	2.72
35.0		28.00	7.42	25.20	6.34	22.40	5.34	19.60	4.44	16.80	3.62	14.00	2.88
37.0		27.50	7.68	25.20	5.75	22.40	5.69	19.60	4.72	16.80	3.84	14.00	3.05
39.0		27.10	7.94	25.20	7.19	22.40	6.05	19.60	5.01	16.80	4.07	14.00	3.23

Tab. 20: Room temperature 27 °C dry bulb / 19 °C wet bulb

Heating

Outdoor unit Temp.		Load for condenser by others											
		100 %		90 %		80 %		70 %		60 %		50 %	
°C DB	°C WB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
-19.8	-20	20.00	7.59	19.90	8.05	19.80	8.51	19.70	8.97	18.90	8.90	15.80	7.14
-18.8	-19	20.30	7.67	20.20	8.13	20.10	8.58	20.00	9.03	18.90	8.71	15.80	7.00
-16.7	-17	21.10	7.85	21.00	8.29	20.90	8.73	20.80	9.16	18.90	8.31	15.80	6.69
-14.7	-15	21.90	8.04	21.90	8.46	21.80	8.88	21.70	9.30	18.90	7.90	15.80	6.37
-12.6	-13	22.90	8.23	22.80	8.63	22.70	9.03	22.10	9.03	18.90	7.49	15.80	6.06
-10.5	-11	24.00	8.42	23.90	8.80	23.80	9.19	22.10	8.53	18.90	7.09	15.80	5.75
-9.5	-10	24.60	8.52	24.50	8.89	24.40	9.26	22.10	8.28	18.90	6.89	15.80	5.60
-8.5	-9.1	25.10	8.60	25.00	8.97	24.90	9.33	22.10	8.06	18.90	6.72	15.80	5.46
-7.0	-7.6	26.00	8.74	25.90	9.10	25.20	9.07	22.10	7.71	18.90	6.43	15.80	5.24
-5.0	-5.6	27.40	8.93	27.30	9.26	25.20	8.52	22.10	7.26	18.90	6.07	15.80	4.96
-3.0	-3.7	28.70	9.10	28.40	9.27	25.20	8.02	22.10	6.85	18.90	5.74	15.80	4.70
0.0	-0.7	31.00	9.35	28.40	8.41	25.20	7.30	22.10	6.25	18.90	5.26	15.80	4.33
3.0	2.2	31.50	8.70	28.40	7.66	25.20	6.67	22.10	5.73	18.90	4.84	15.80	3.99
5.0	4.1	31.50	8.18	28.40	7.22	25.20	6.29	22.10	5.42	18.90	4.58	15.80	3.79
7.0	6.0	31.50	7.70	28.40	6.80	25.20	5.94	22.10	5.12	18.90	4.34	15.80	3.61
9.0	7.9	31.50	7.25	28.40	6.41	25.20	5.61	22.10	4.85	18.90	4.12	15.80	3.43
11.0	9.8	31.50	6.84	28.40	6.06	25.20	5.31	22.10	4.60	18.90	3.92	15.80	3.27
13.0	11.8	31.50	6.44	28.40	5.71	25.20	5.02	22.10	4.35	18.90	3.72	15.80	3.11
15.0	13.7	31.50	6.08	28.40	5.41	25.20	4.76	22.10	4.13	18.90	3.54	15.80	2.97

Tab. 21: Room temperature 20 °C dry bulb

Symbols:

DB : Dry bulb temperature
WB: Wet bulb temperature

[°dry bulb]
[°wet bulb]

TC: Total Coolin capacity [kW]
PI: Power consumption [kW]
(compressor + outdoor unit fan motor)
(power consumption of indoor unit not included)

Important notes on capacity data in tables:

Power consumption and power output are based on the following conditions: all values are specified without internal fans, the power consumption is only related to the inverter condensing unit.
- Superheating 5 [K]
- Subcooling 3 [K]
- Piping length 7.5 [m]

Direct interpolation is allowed. Extrapolation should be avoided. The correctional factors for line lengths must be considered and adhered to. All data are based on the following conditions:
- The capacity tables specify the maximum output of a condensing unit at full load and its relevant power consumption.
- The capacity tables are identical for any evaporation temperature between 2 and 8 °C. Where necessary, the inverter regulation restricts capacity output of the unit in order to ensure the system safety.

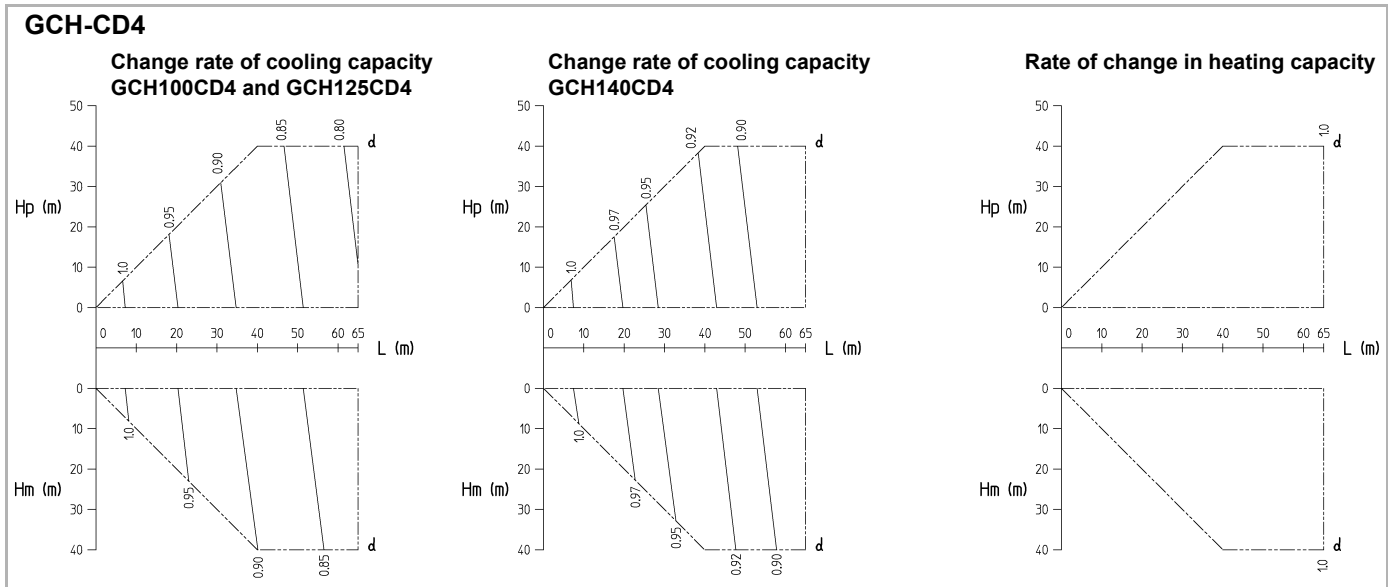


Fig. 3

Note:

- 1 These drawings represent the relationship in system capacity changes at highest load and under normal conditions. The deviation from the above presented rate of change in capacity under part load conditions is only marginal.
- 2 Calculation method for the cooling capacity (maximum capacity) = cooling capacity from the key figure table for cooling capacity x capacity correction factor
- 3 Calculation method for the heating capacity (maximum capacity) = heating capacity from the key figure table for heating capacity x capacity correction factor

Explanation of symbols:

- Hp Height difference (in m) between indoor and outdoor units with an indoor unit below an outdoor unit
- Hm Height difference (in m) between indoor and outdoor units with an indoor unit above an outdoor unit
- L Equivalent line lengths (m)
- d Capacity correction factor

Line diameter:		
Model	Suction gas	Liquid
GCH100	∅ 15.9	∅ 9.5
GCH125	∅ 15.9	∅ 9.5
GCH140	∅ 19.1	∅ 9.5

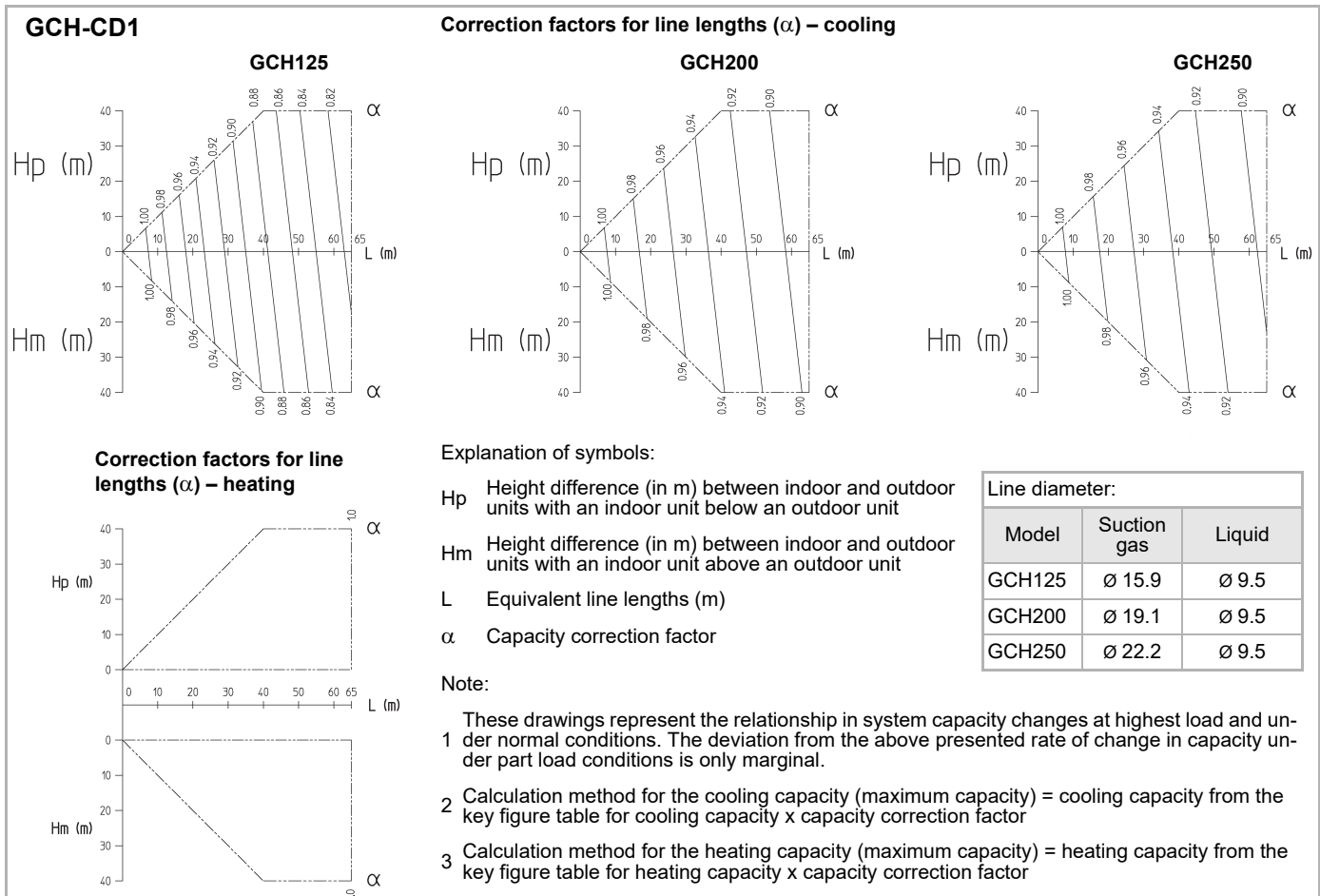


Fig. 4

Explanation of symbols:

- Hp Height difference (in m) between indoor and outdoor units with an indoor unit below an outdoor unit
- Hm Height difference (in m) between indoor and outdoor units with an indoor unit above an outdoor unit
- L Equivalent line lengths (m)
- α Capacity correction factor

Line diameter:		
Model	Suction gas	Liquid
GCH125	∅ 15.9	∅ 9.5
GCH200	∅ 19.1	∅ 9.5
GCH250	∅ 22.2	∅ 9.5

Note:

- 1 These drawings represent the relationship in system capacity changes at highest load and under normal conditions. The deviation from the above presented rate of change in capacity under part load conditions is only marginal.
- 2 Calculation method for the cooling capacity (maximum capacity) = cooling capacity from the key figure table for cooling capacity x capacity correction factor
- 3 Calculation method for the heating capacity (maximum capacity) = heating capacity from the key figure table for heating capacity x capacity correction factor

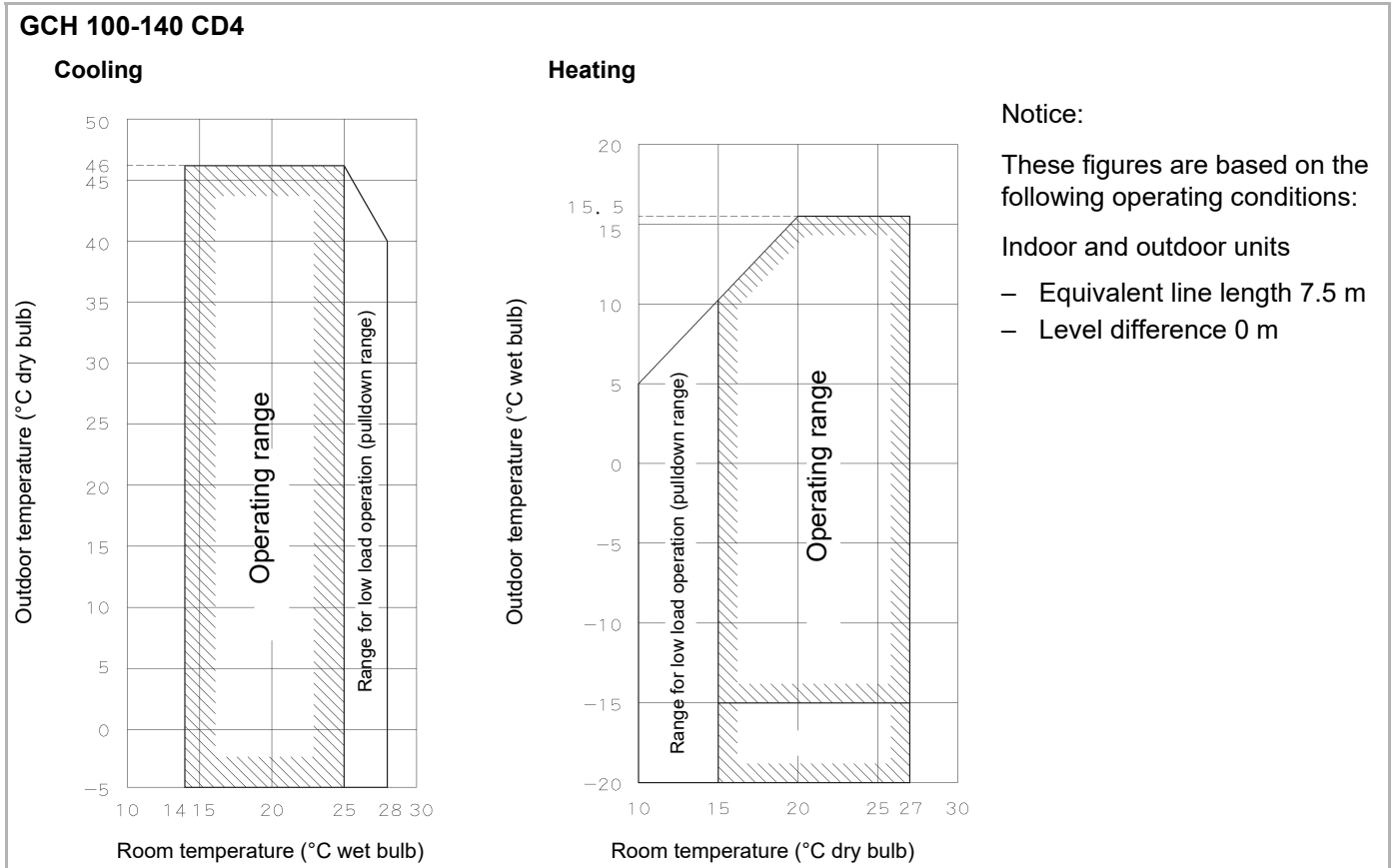


Fig. 5: Operating limits GCH-CD4

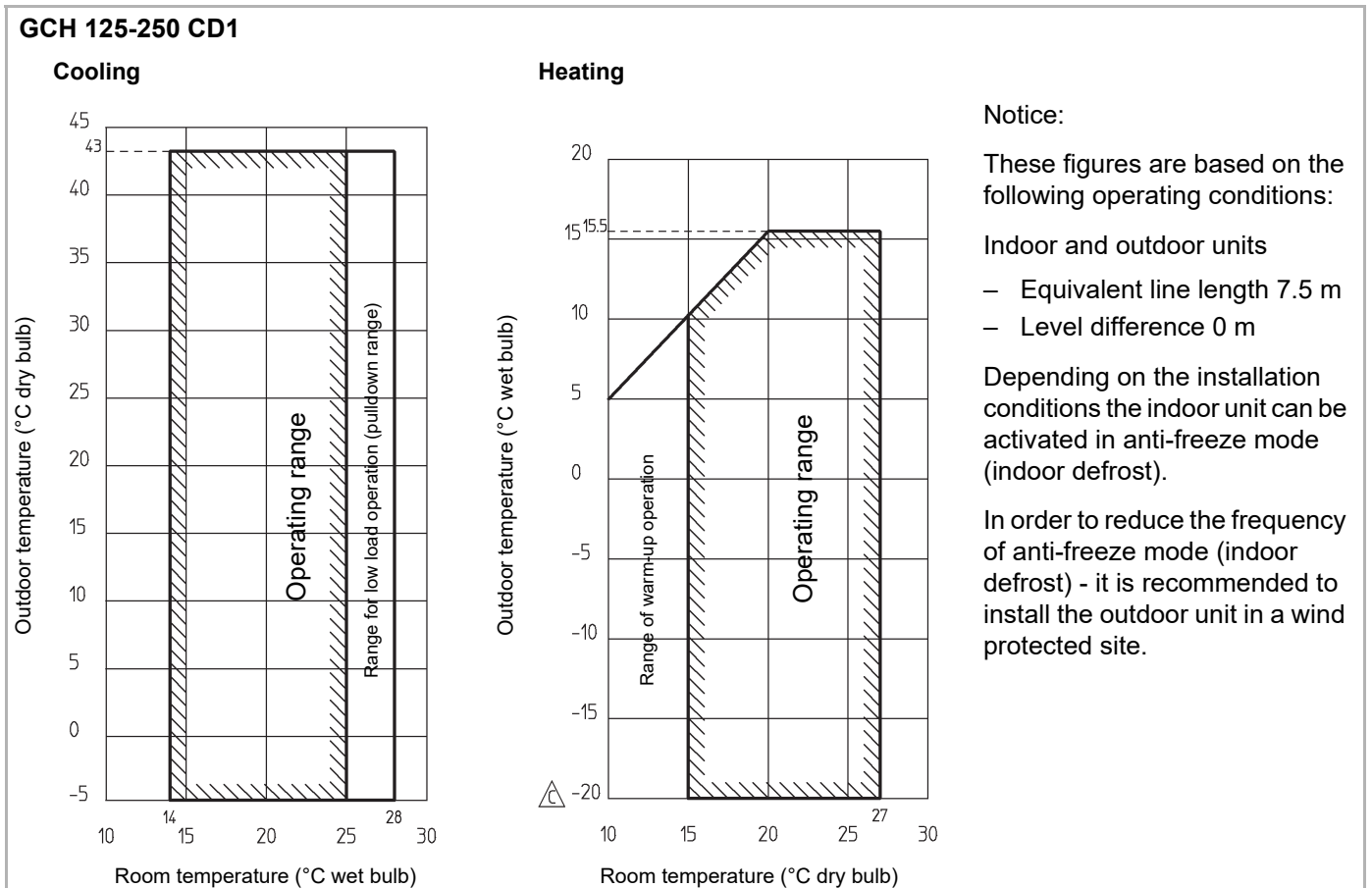


Fig. 6: Operating limits GCH-CD1

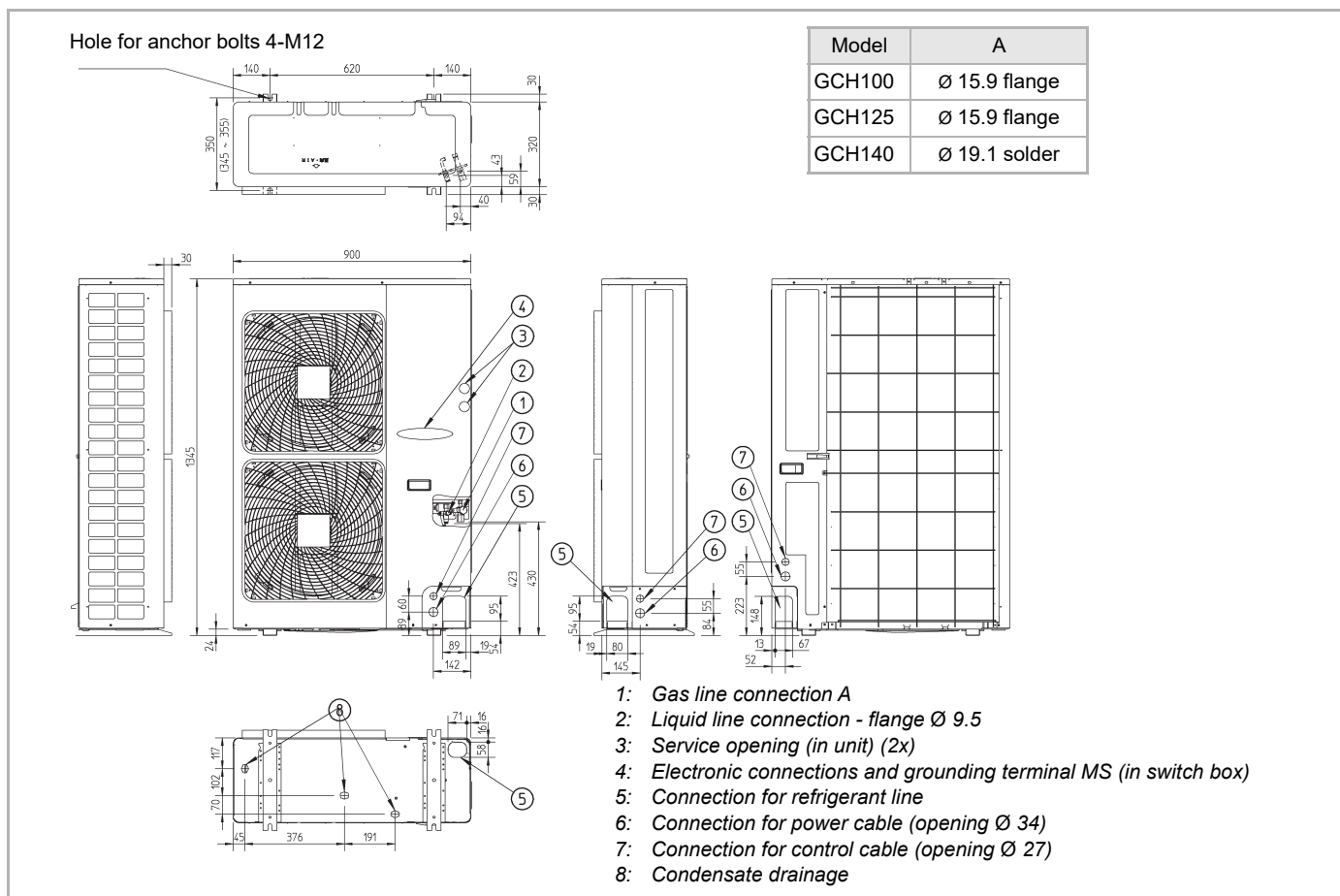


Fig. 7: Dimensions GCH-CD4

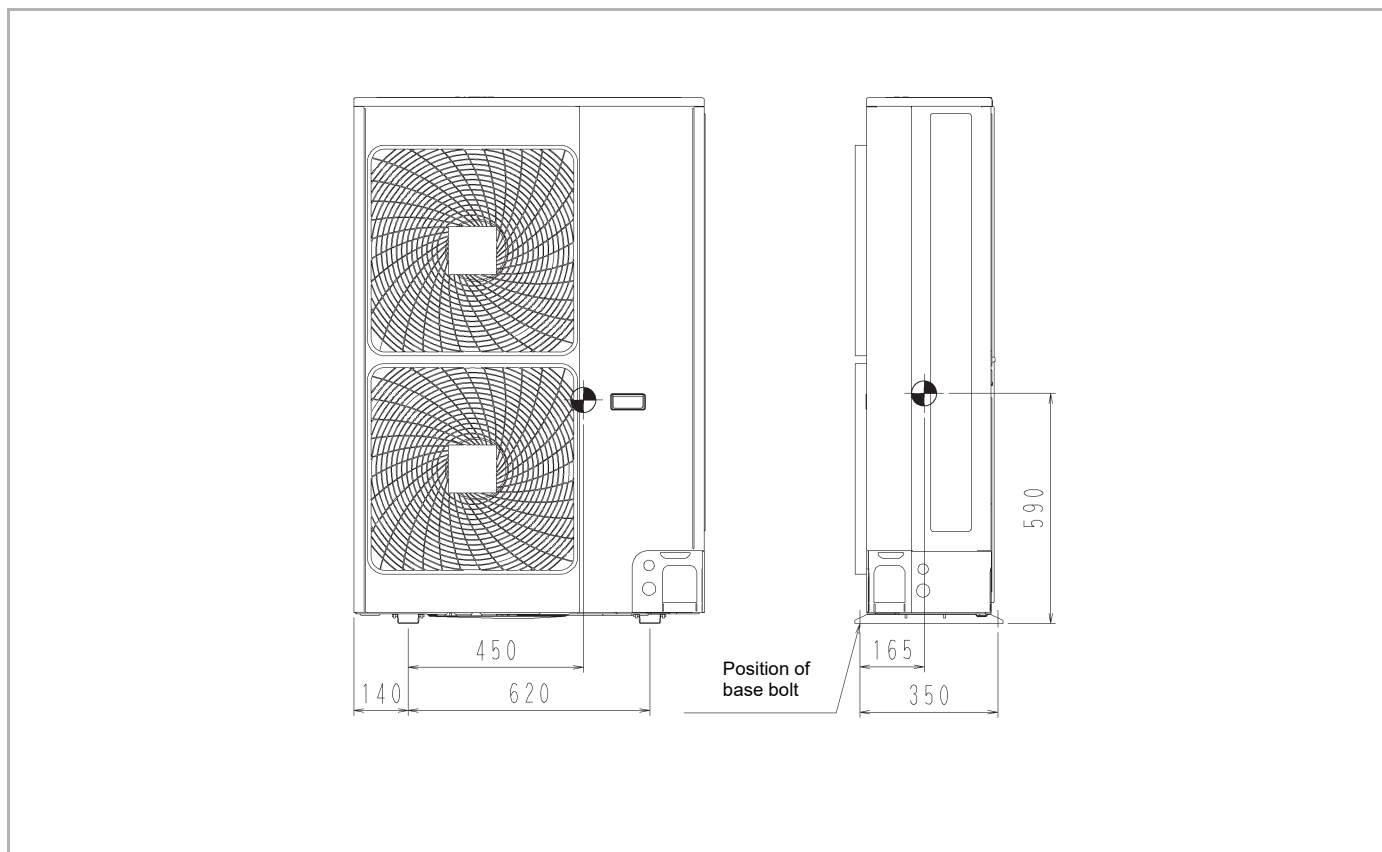


Fig. 8: Centre of gravity of GCH-CD4

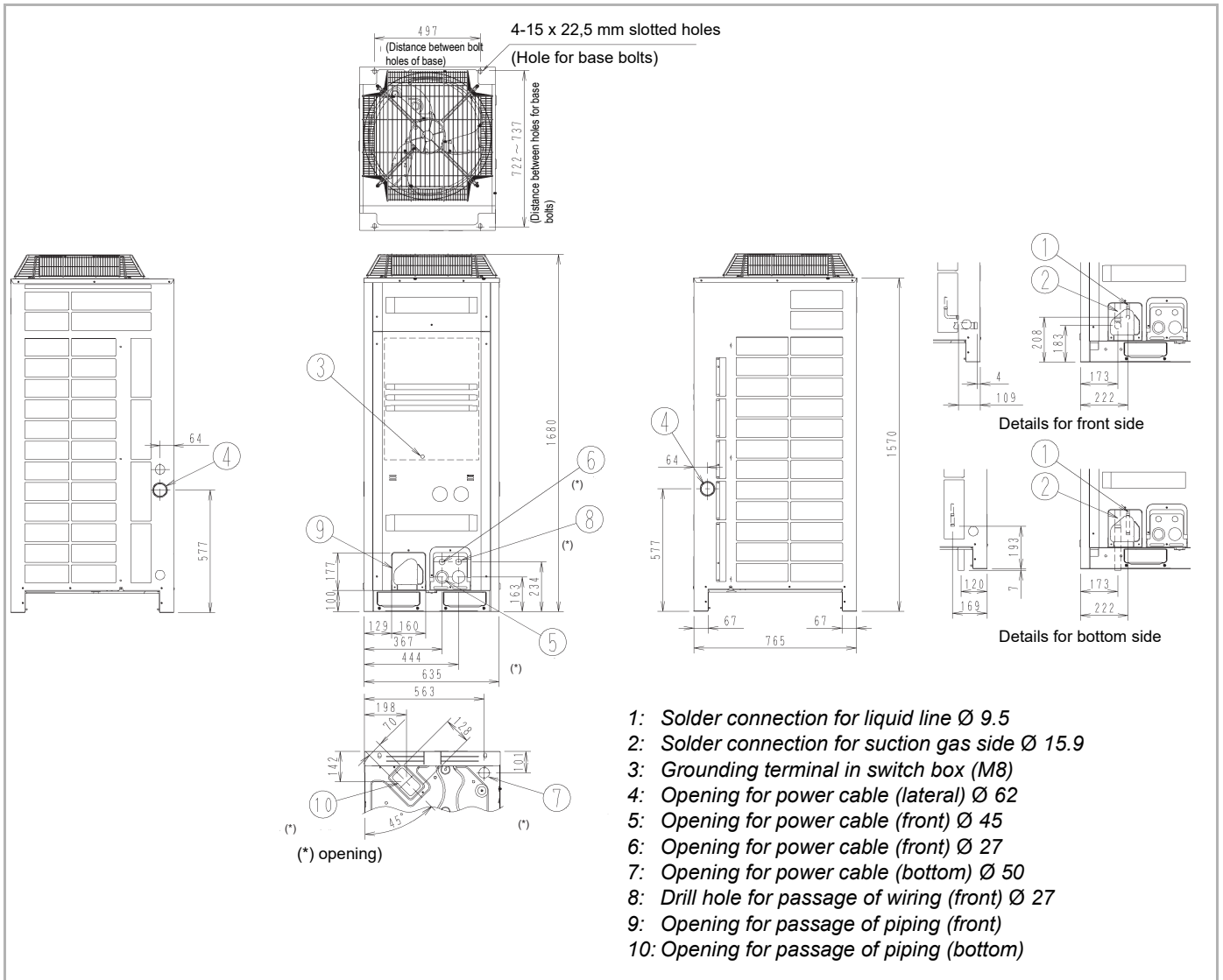


Fig. 9: Dimensions of GCH 125 CD1

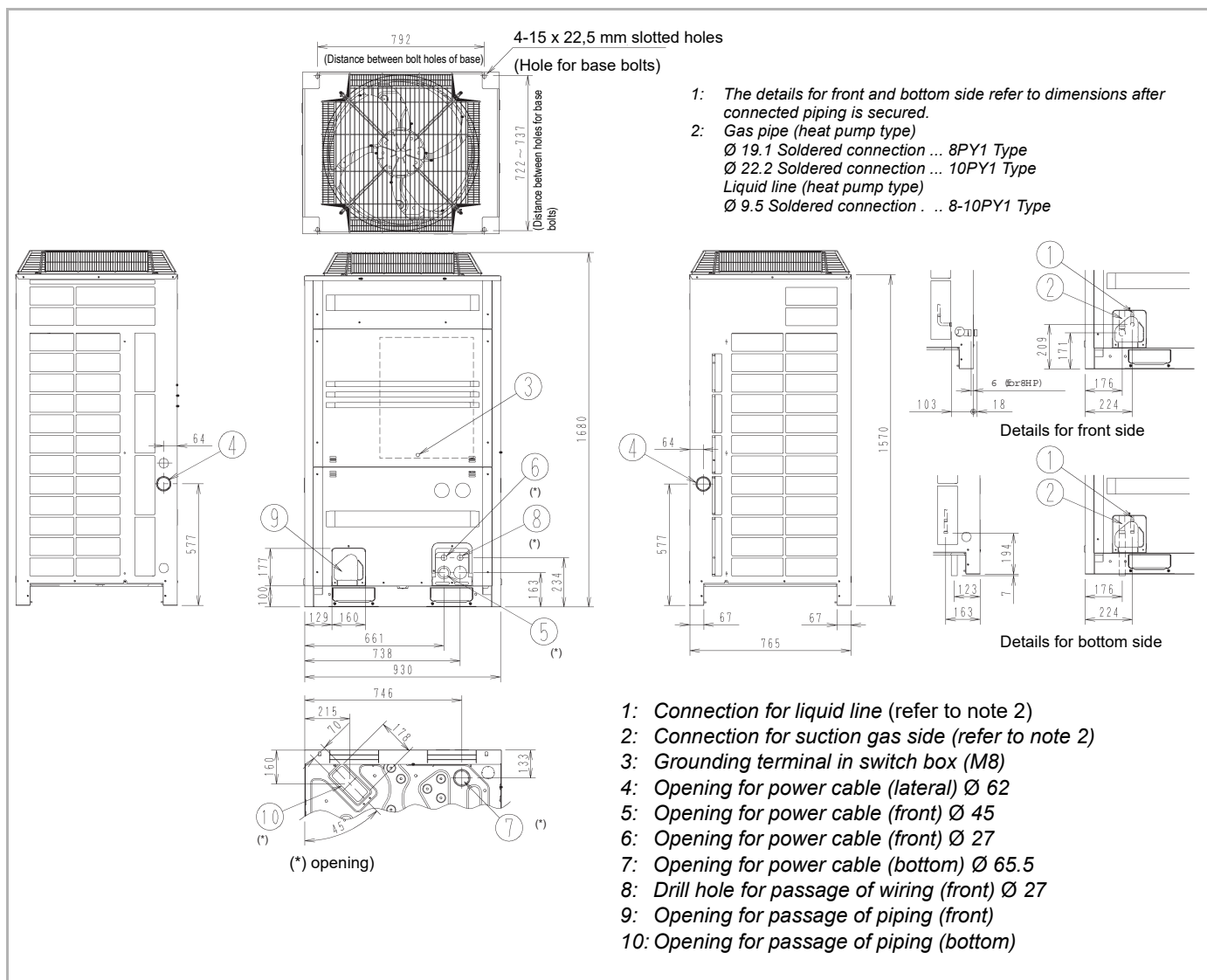


Fig. 10: Dimensions of GCH 200-250 CD1

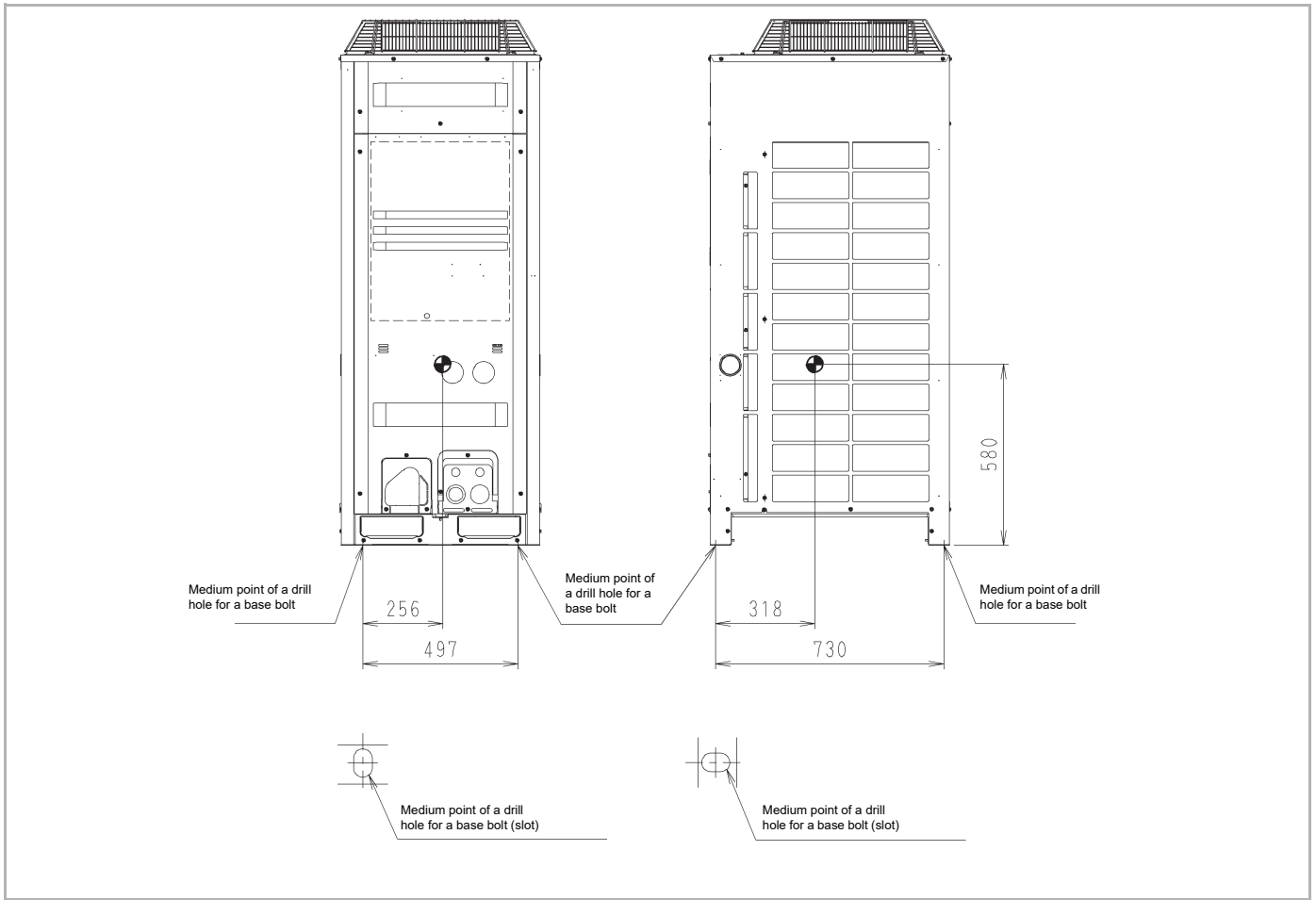


Fig. 11: Centre of Gravity of GCH 125 CD1

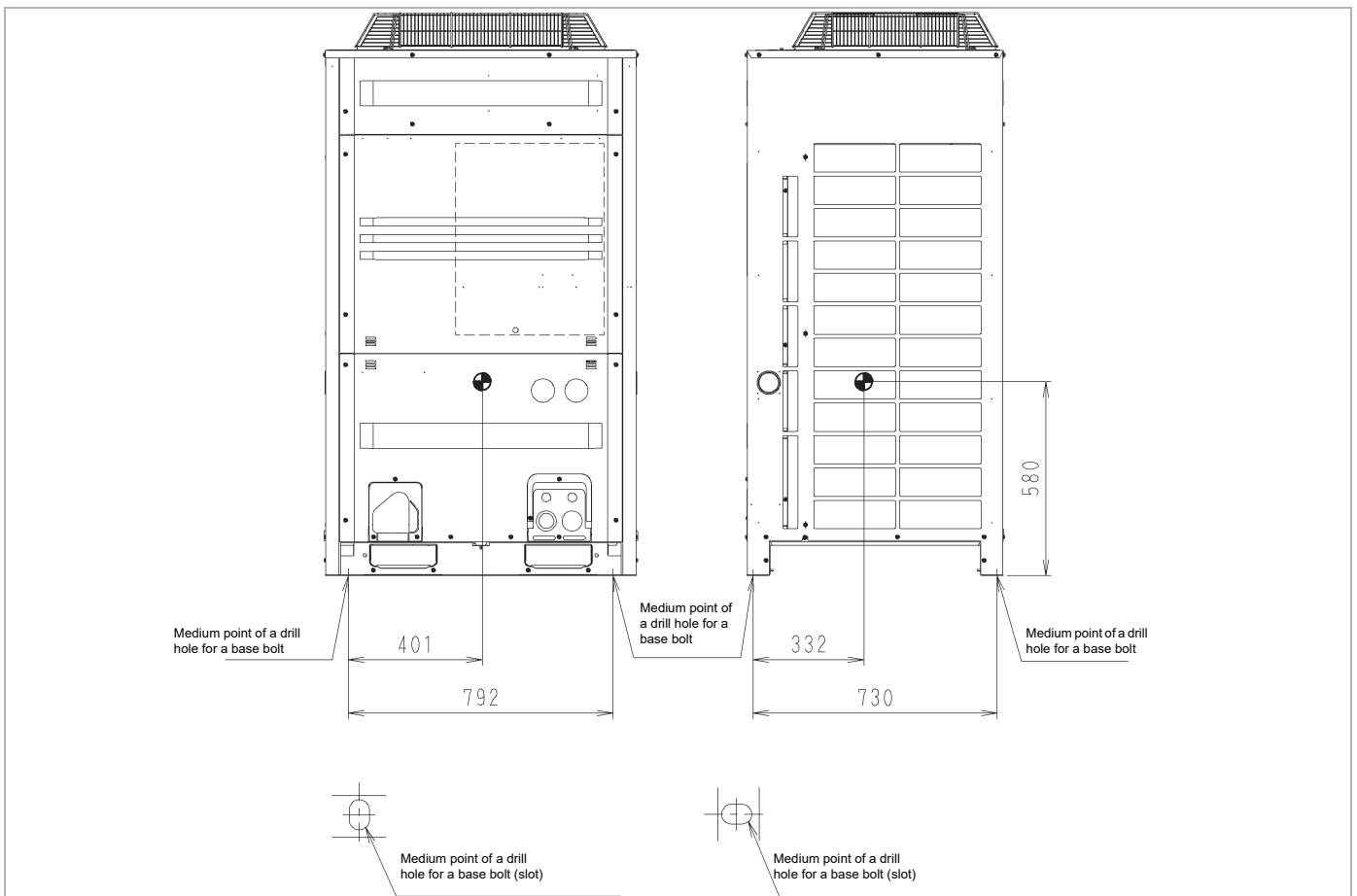


Fig. 12: Centre of Gravity of GCH 200 CD1

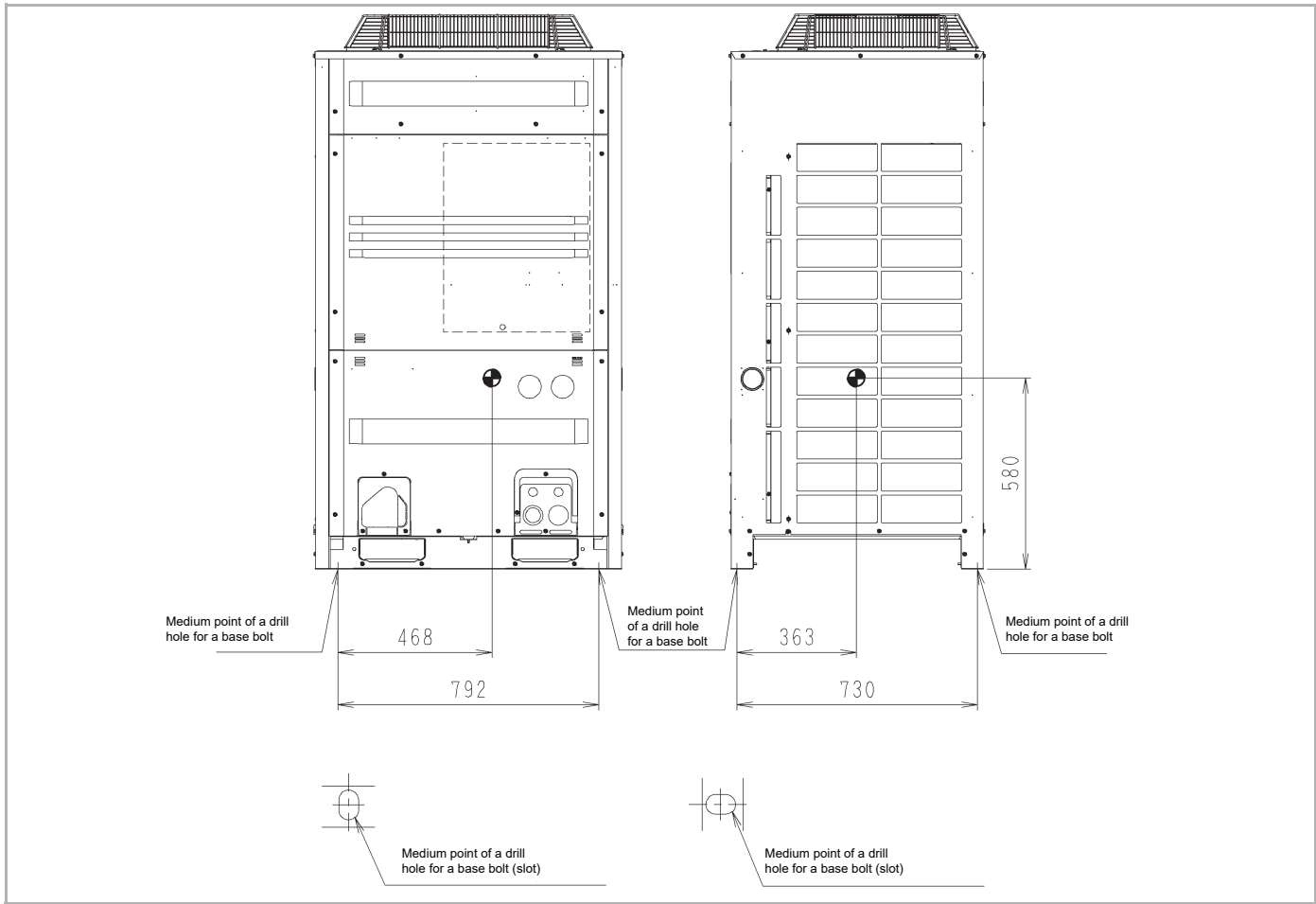


Fig. 13: Centre of Gravity of GCH 250 CD1

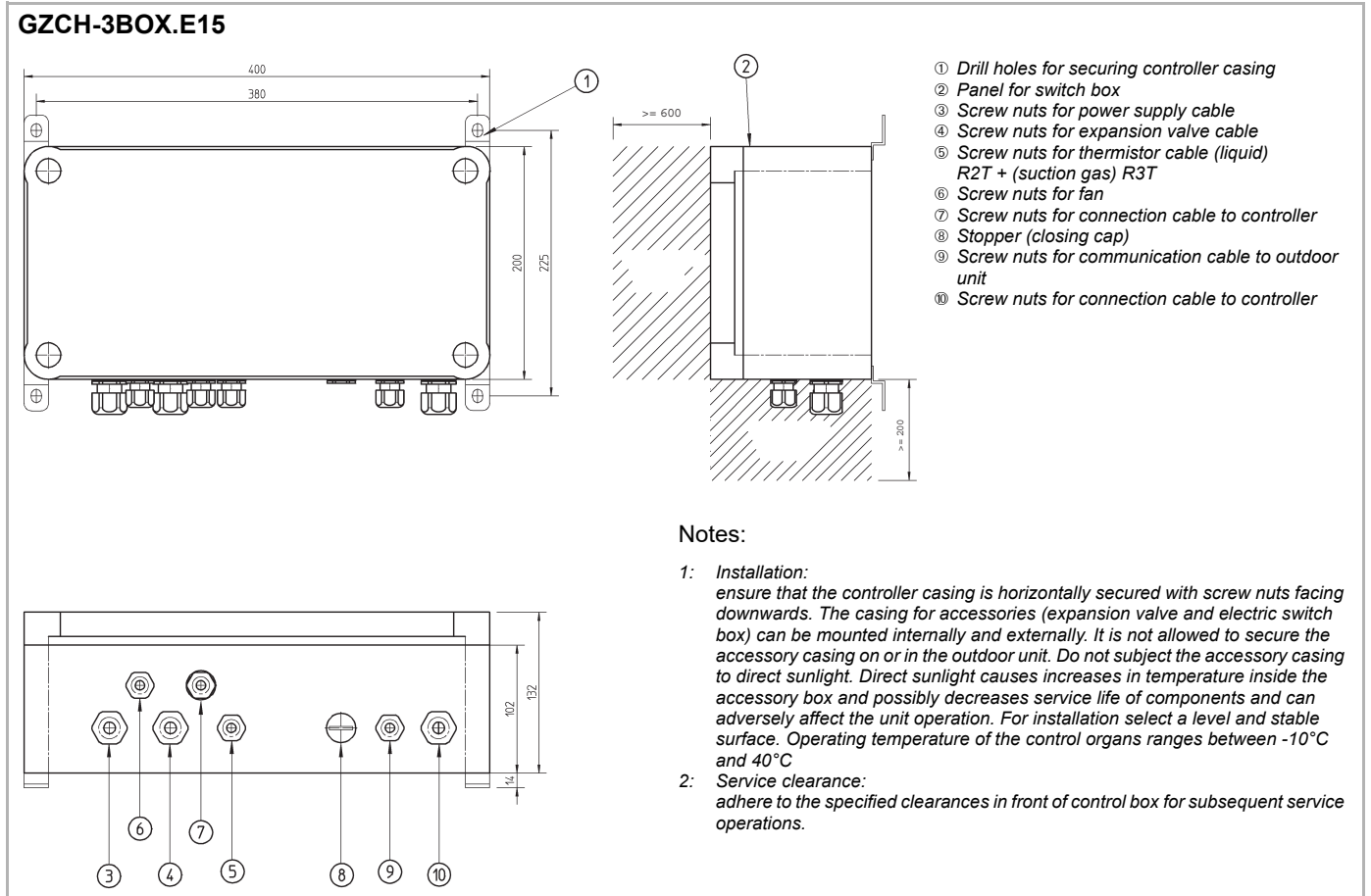


Fig. 14: Dimension of control box

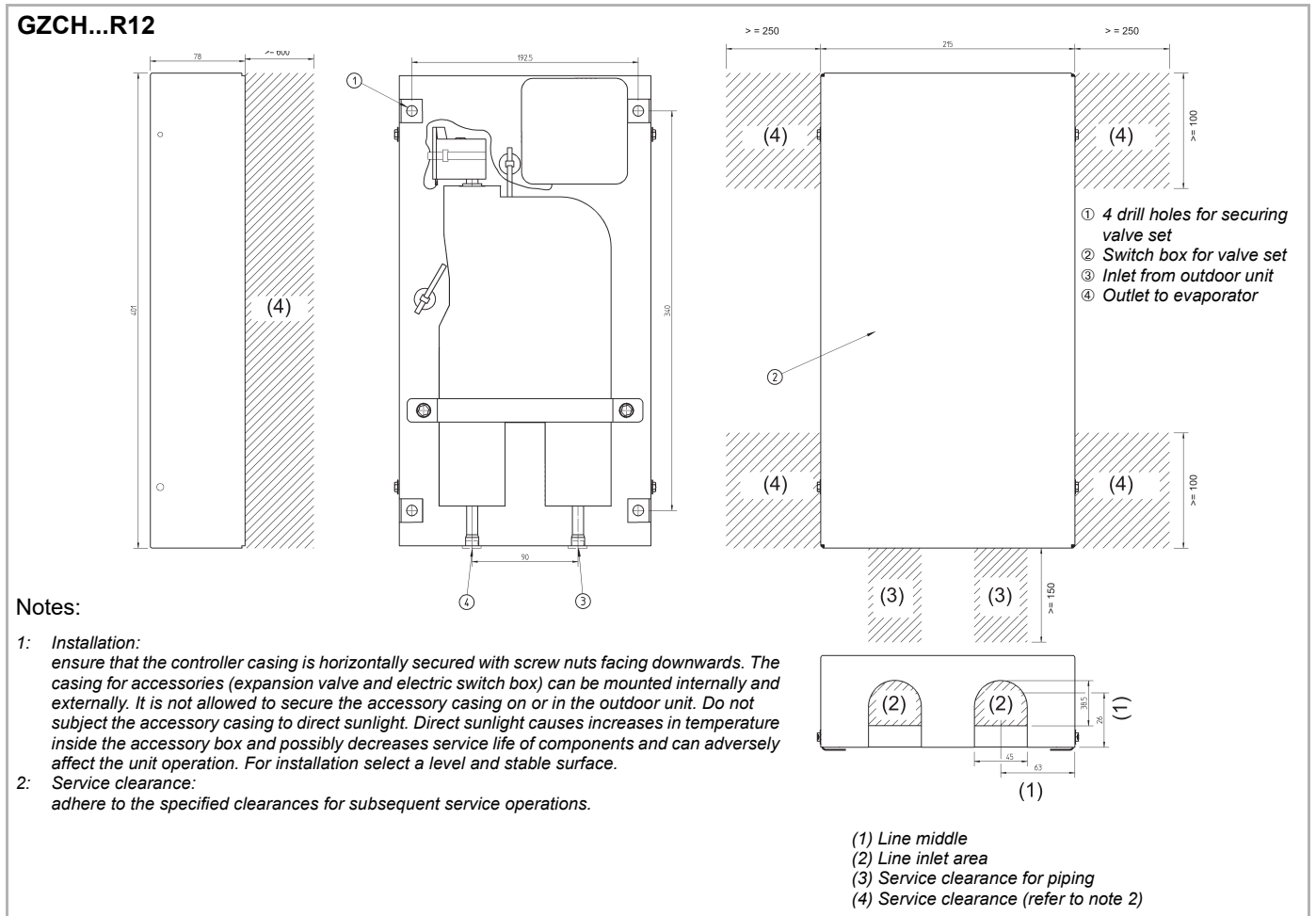


Fig. 15: Dimensions of expansion kit

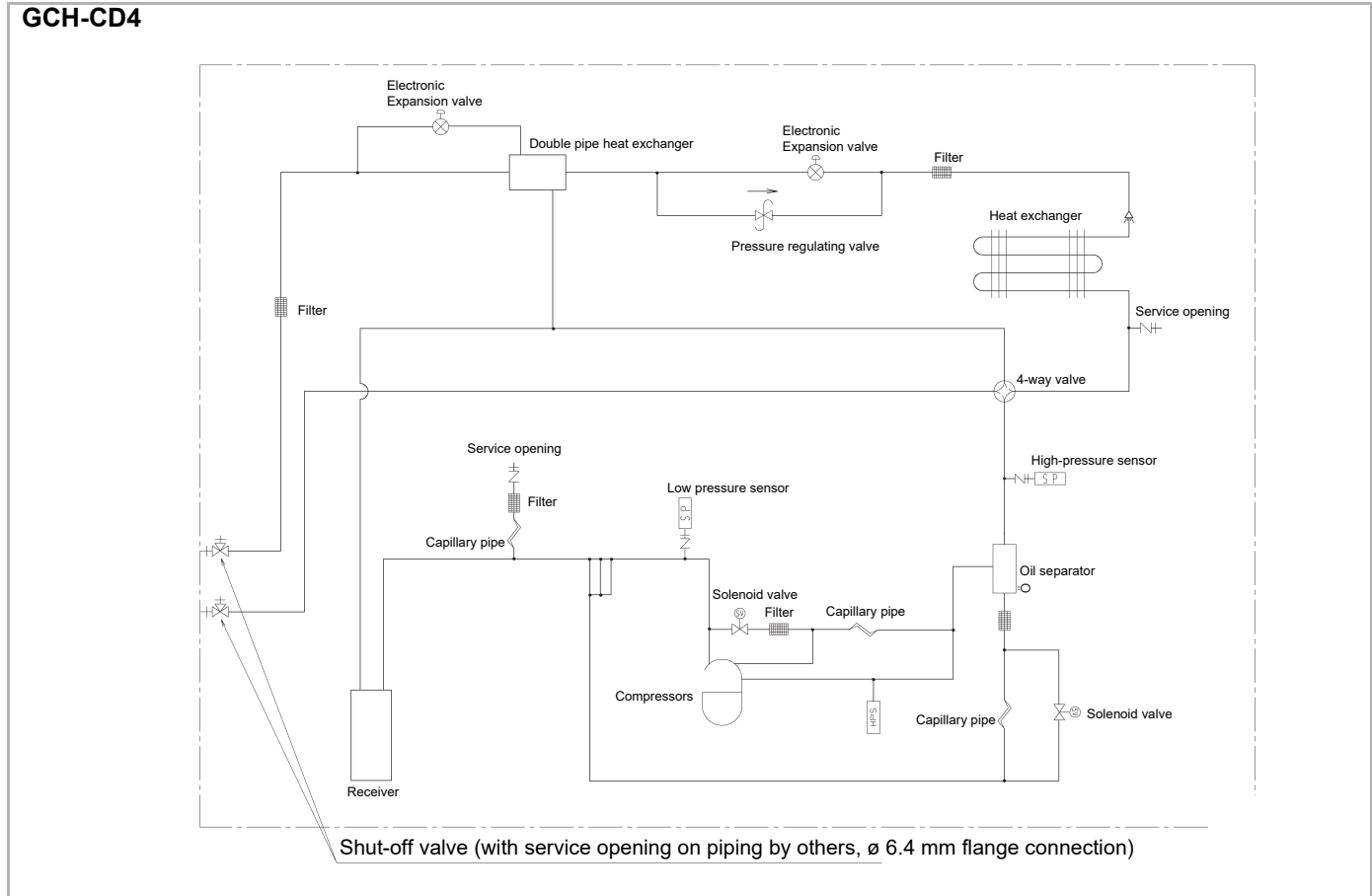


Fig. 16: Piping Scheme GCH 100-140 CD4

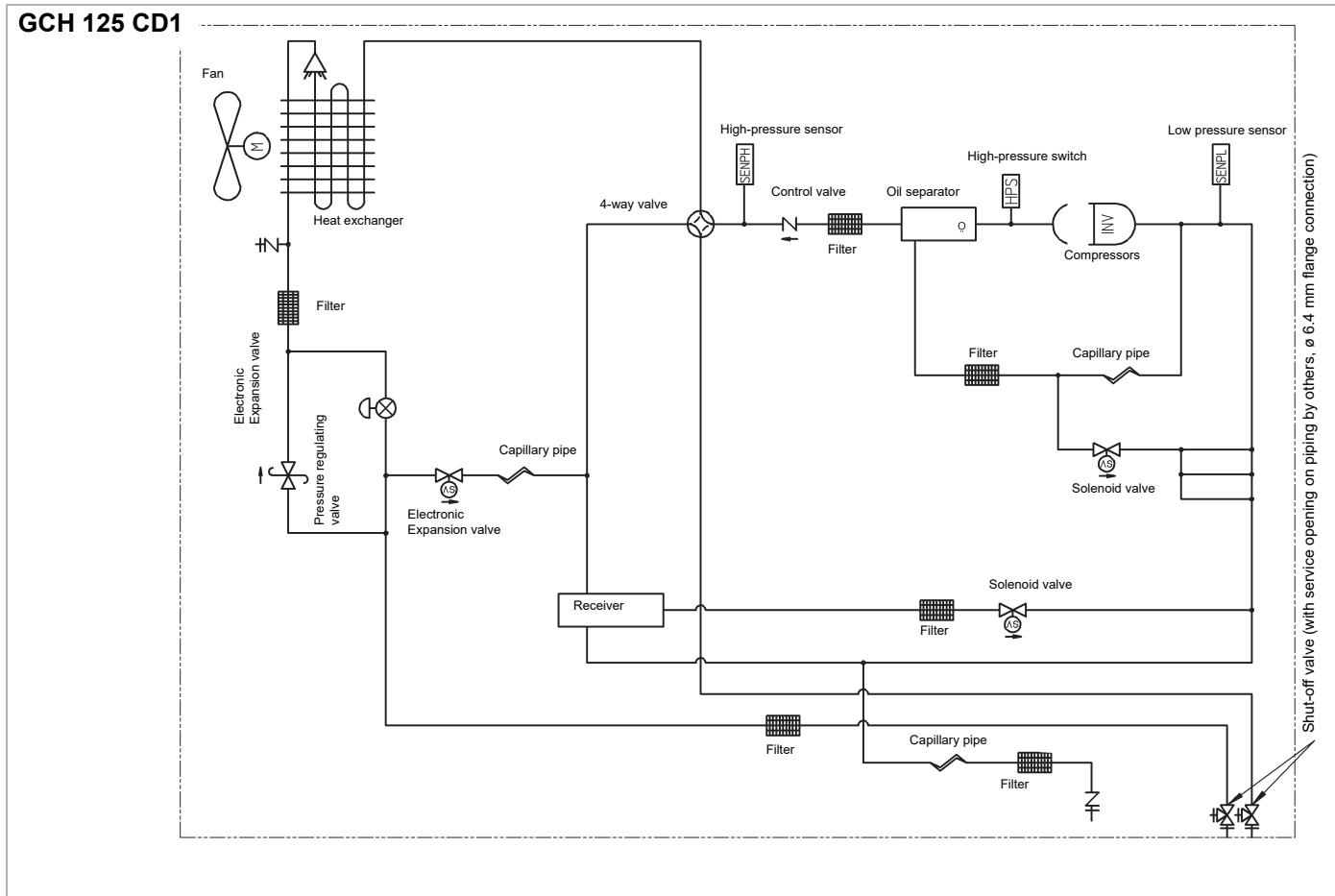


Fig. 17: Piping scheme GCH 125 CD1

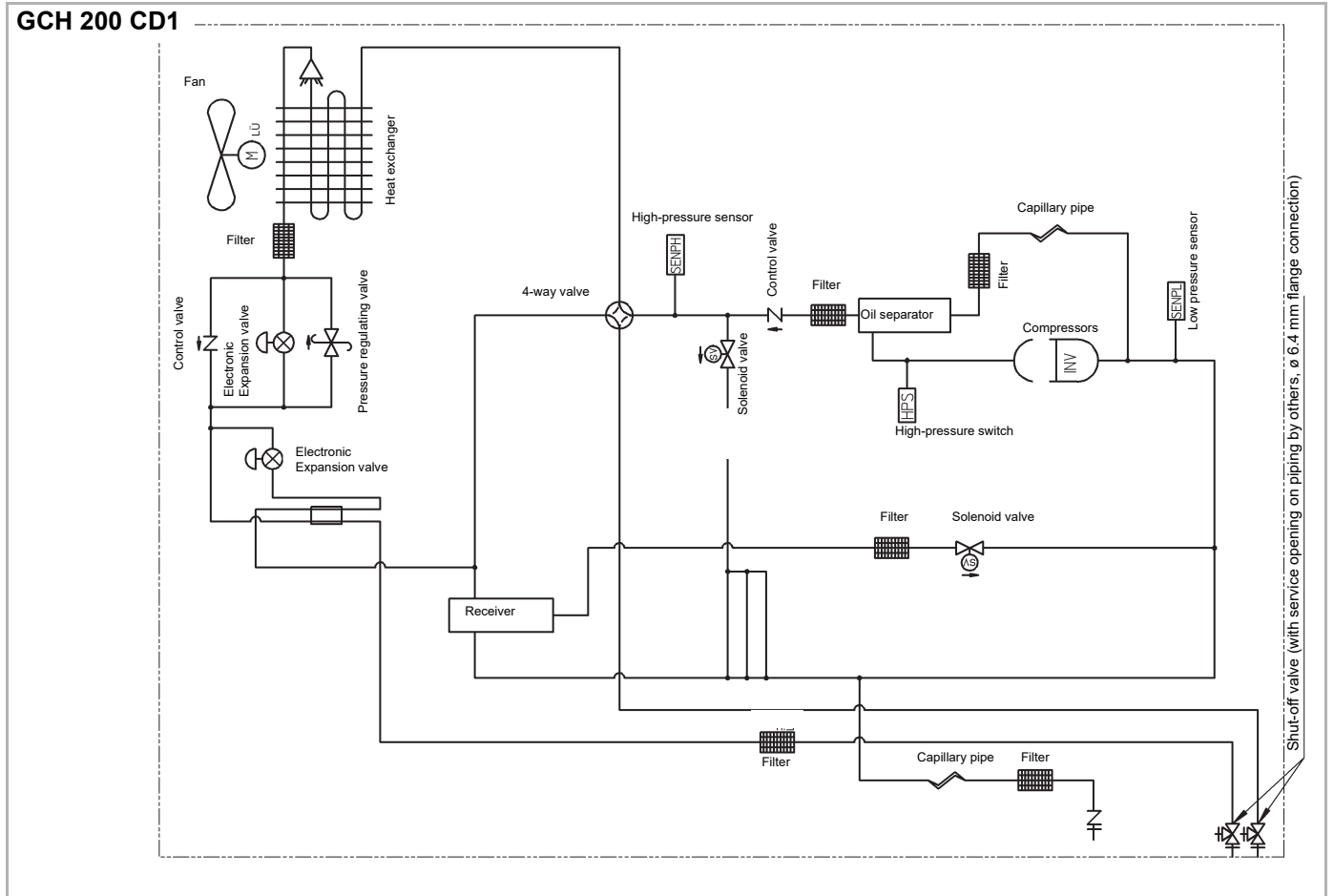


Fig. 18: Piping scheme GCH 200 CD1

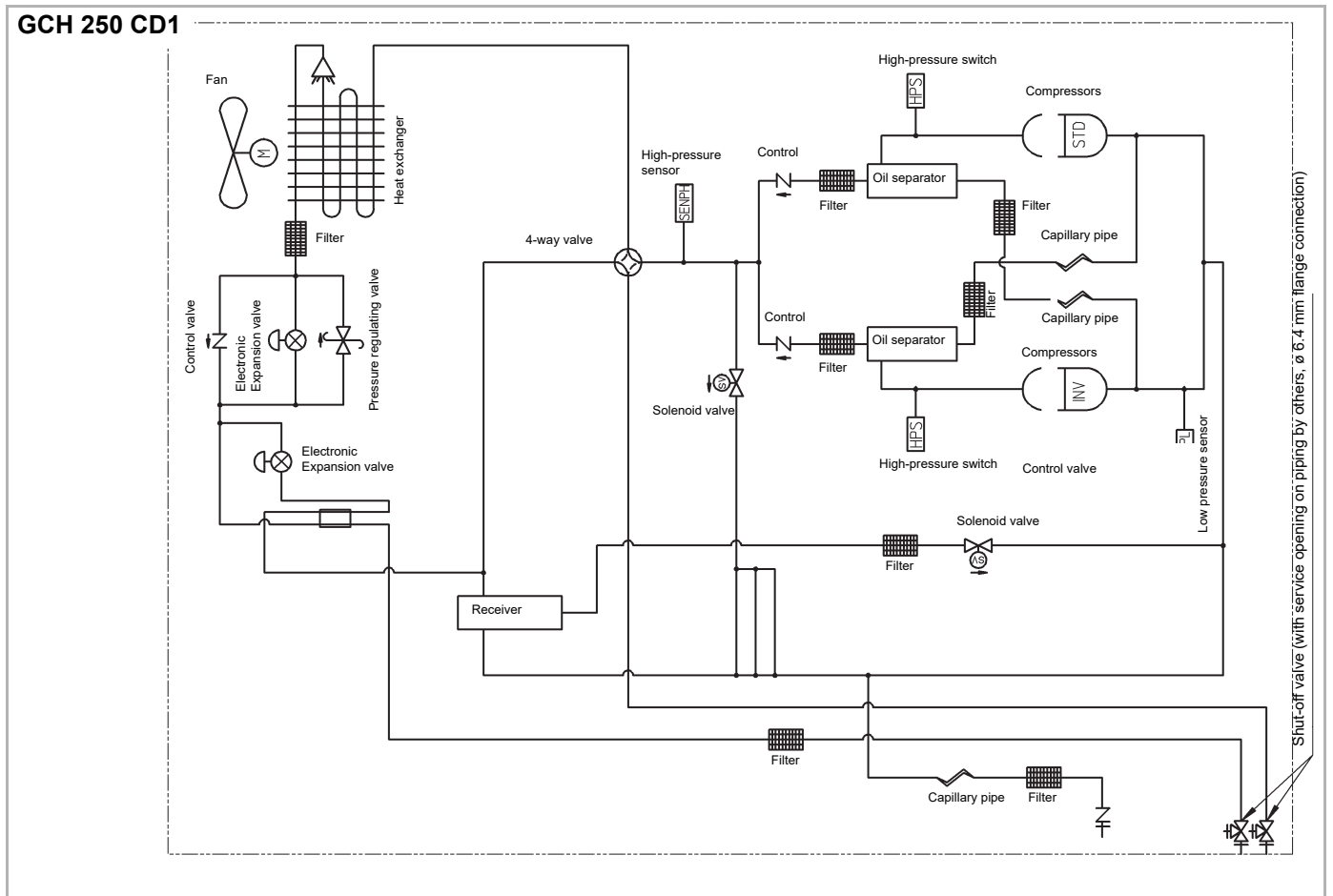
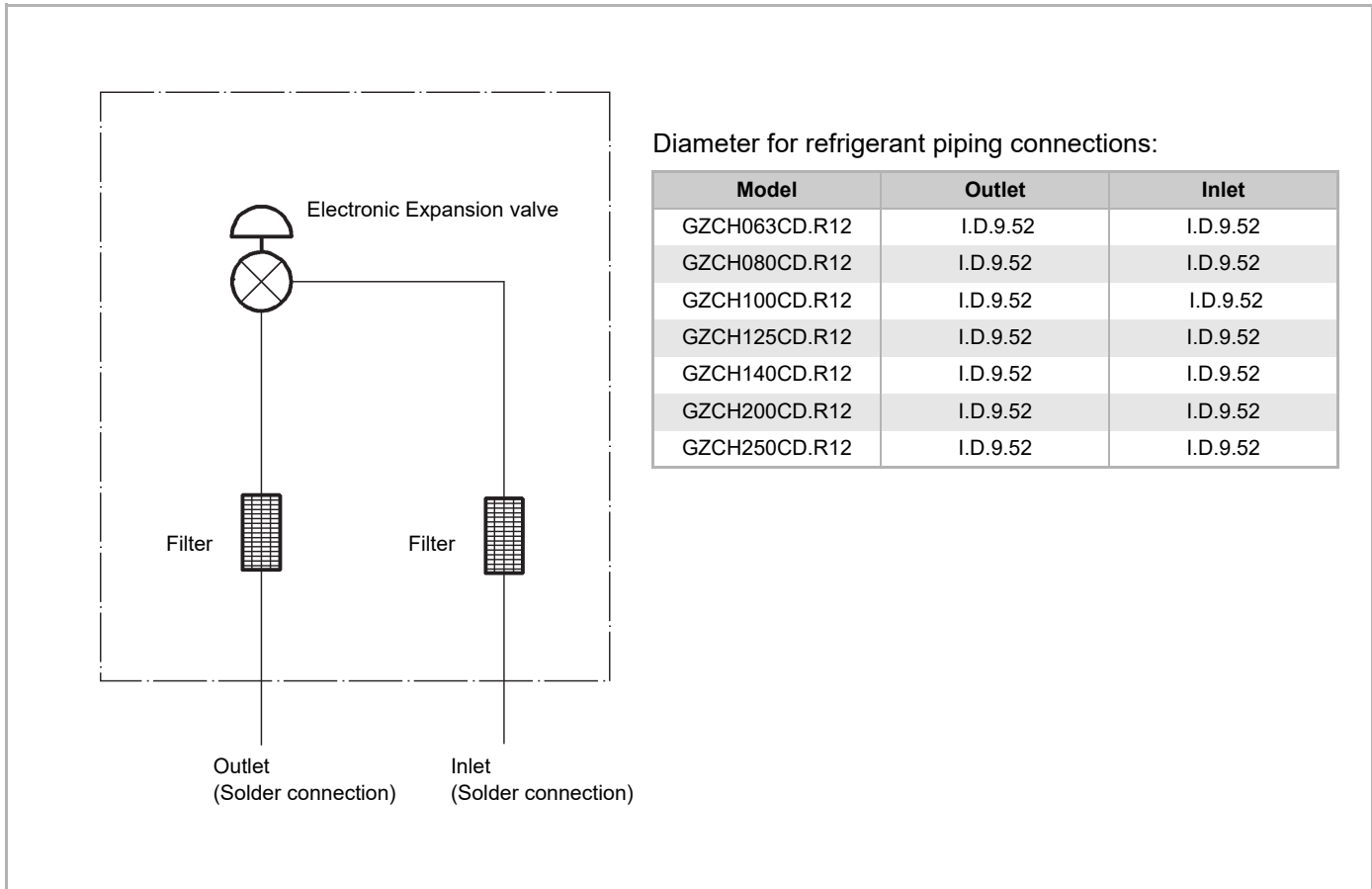


Fig. 19: Piping scheme GCH 250 CD1



Diameter for refrigerant piping connections:

Model	Outlet	Inlet
GZCH063CD.R12	I.D.9.52	I.D.9.52
GZCH080CD.R12	I.D.9.52	I.D.9.52
GZCH100CD.R12	I.D.9.52	I.D.9.52
GZCH125CD.R12	I.D.9.52	I.D.9.52
GZCH140CD.R12	I.D.9.52	I.D.9.52
GZCH200CD.R12	I.D.9.52	I.D.9.52
GZCH250CD.R12	I.D.9.52	I.D.9.52

Tab. 22: Piping scheme of expansion kit

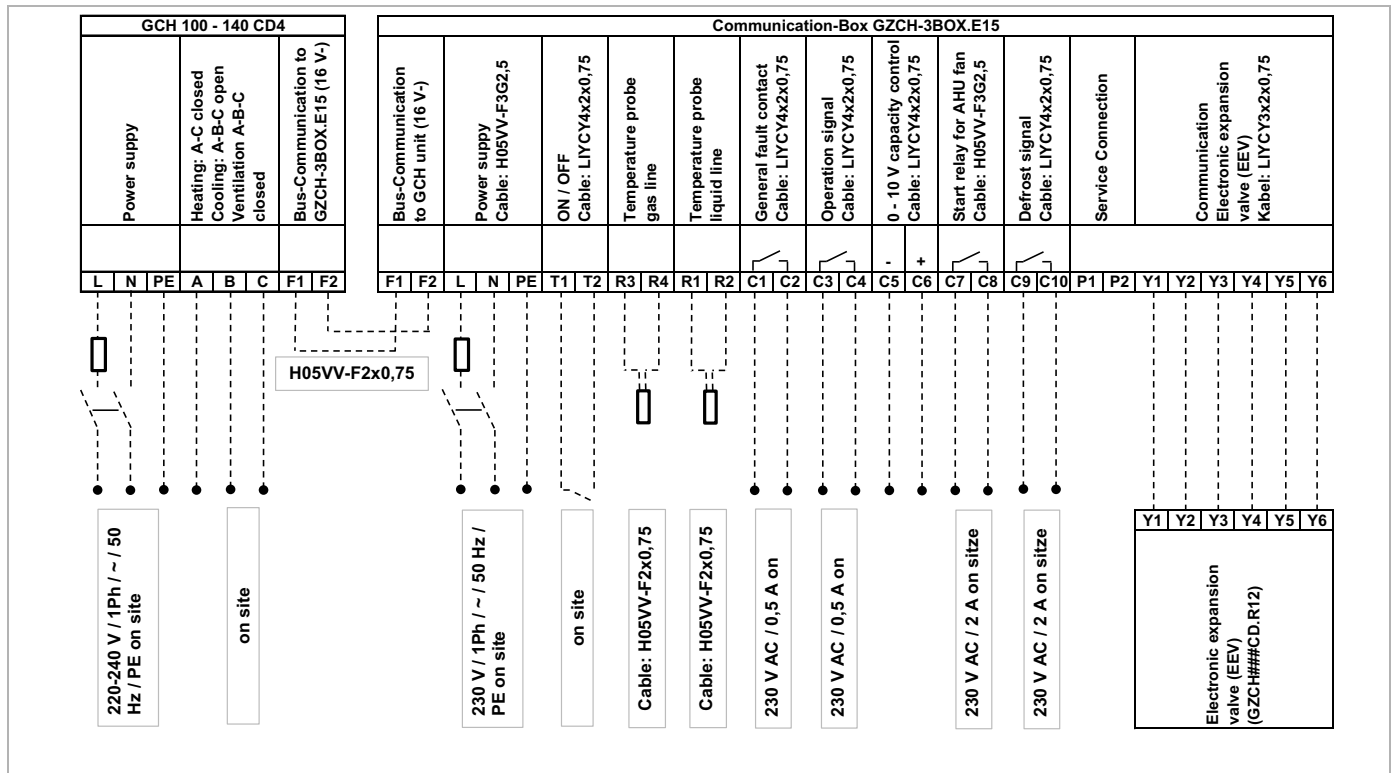


Fig. 20: Wiring example for 230V units (GCH___CD4)

Electrical connection of components:

Compressor-Condenser unit GCH
Control box GZCH-3BOX.E15
E.Valve GZCH063-250.R12

Terminals: L, N, PE
F1, F2
A, B, C

Y1-Y6
R3, R4
R1, R2
P1, P2
T1, T2
C1, C2
C3, C4
C5, C6
C7, C8
C9, C10

Power supply by others
Communication between GCH unit and control box GZCH-3BOX.E15
Control Cooling / heating / fan
Cooling - all contacts open
Heating - A/C closed
Fan - A/B/C closed
Control of electric e-valve (cable recommendation LIYCY 3x2x0.75)
Temperature sensor for measuring suction gas temperature on evaporator
Temperature sensor for measuring liquid temperature on evaporator
Connection for service module (only for FläktGroup service technicians)
Remote On/Off Contact for enabling the GCH unit (do not use for temperature control!!)
Collective error message as volt free contact
Status message compressor as volt free contact
0-10V Capacity regulation of compressor condensing unit
Enable contact for fan in AHU
Signal contact with activated defrost switch
Cabling by others

Changeover heating/cooling

A-C
A-C

Contact open, cooling mode
Contact closed, heating operation

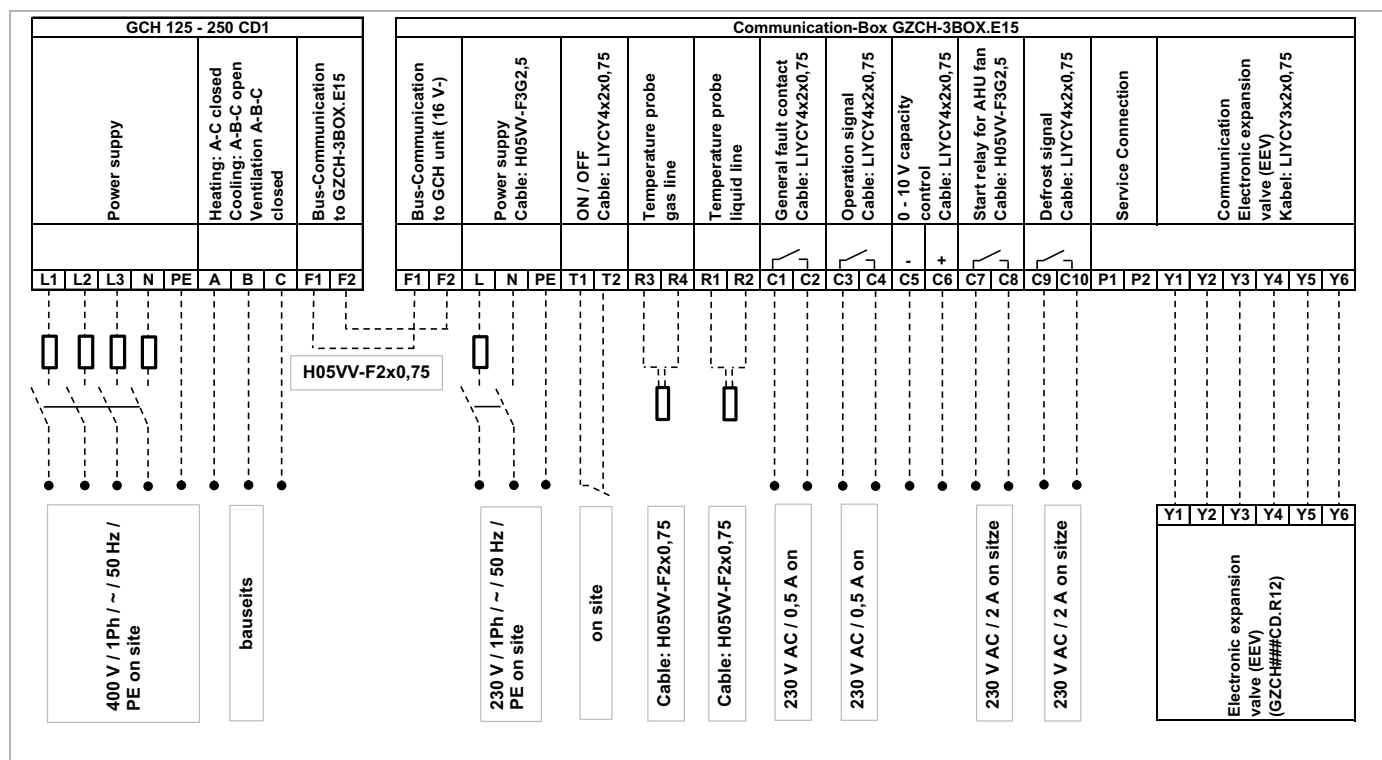


Fig. 21: Wiring example for 400V units (GCH___CD1)

Electrical connection of components: Compressor-Condenser unit GCH
Control box GZCH-3BOX.E15
E.Valve GZCH063-250.R12

- Terminals:
- L1, L2, L3, N, PE Power supply by others
 - F1, F2 Communication between GCH unit and control box GZCH-3BOX.E15
 - A, B, C Control Cooling / heating / fan
 - Cooling - all contacts open
 - Heating - A/C closed
 - Fan - A/B/C closed
 - Y1-Y6 Control of electric e-valve (cable recommendation LIYCY 3x2x0.75)
 - R3, R4 Temperature sensor for measuring suction gas temperature on evaporator
 - R1, R2 Temperature sensor for measuring liquid temperature on evaporator
 - P1, P2 Connection for service module (only for FläktGroup service technicians)
 - T1, T2 Remote On/Off Contact for enabling the GCH unit (do not use for temperature control!)
 - C1, C2 Collective error message as volt free contact
 - C3, C4 Status message compressor as volt free contact
 - C5, C6 0-10V Capacity regulation of compressor condensing unit
 - C7, C8 Enable contact for fan in AHU
 - C9, C10 Signal contact with activated defrost switch
 - Cabling by others

Changeover heating/cooling

- A-C Contact open, cooling mode
- A-C Contact closed, heating operation

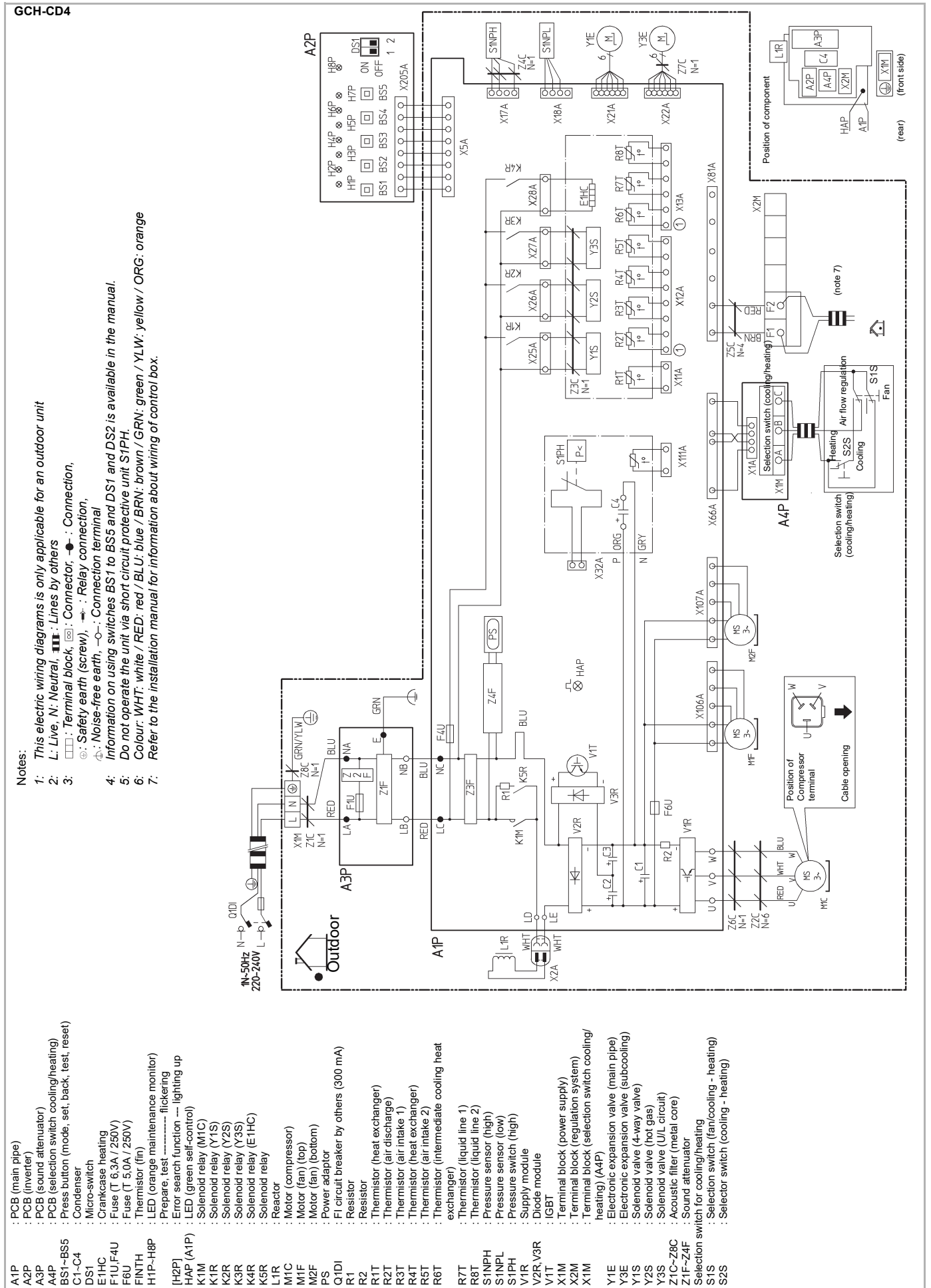


Fig. 22: Electric wiring diagram GCH100-140CD4

GCH 125 CD1

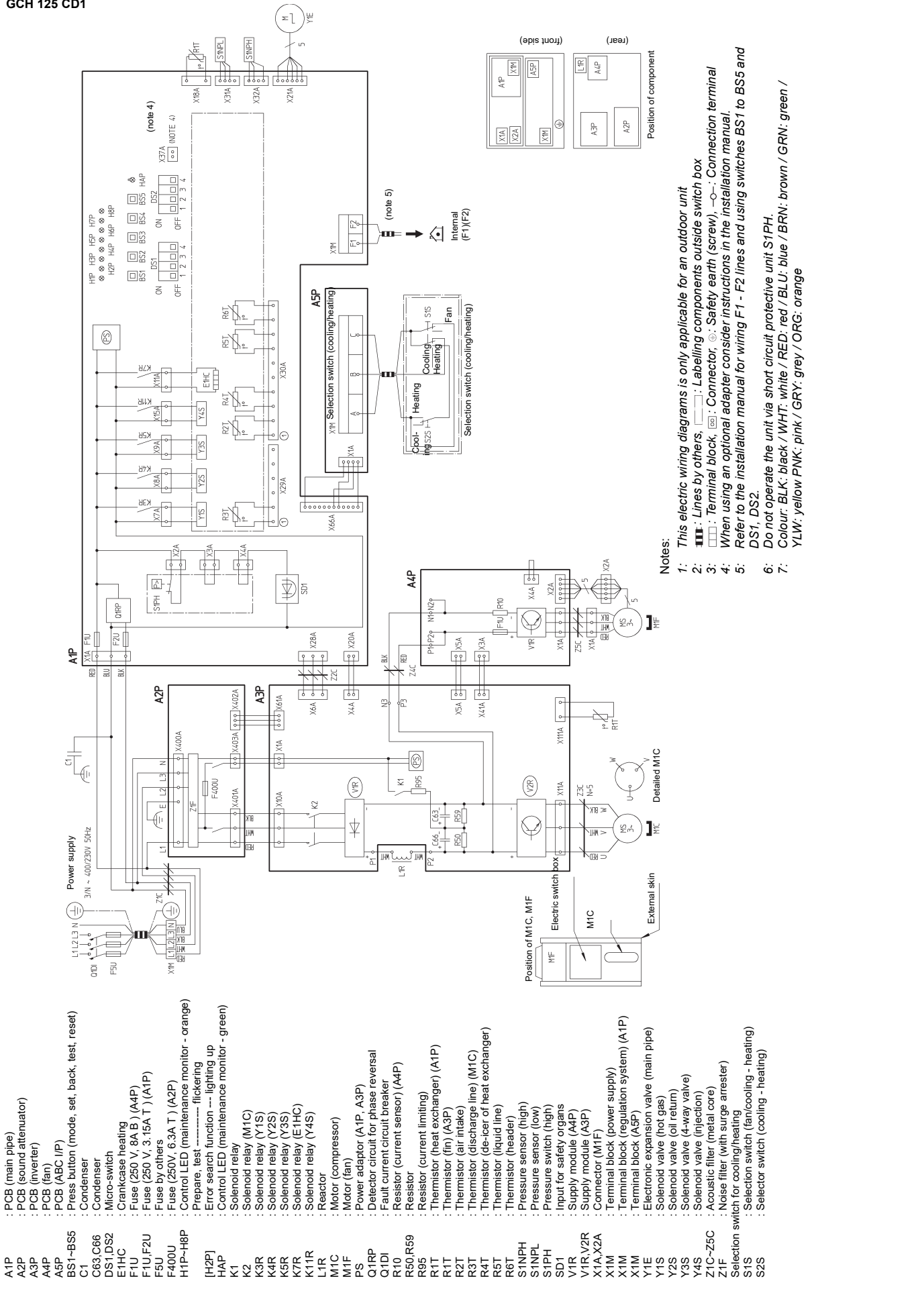
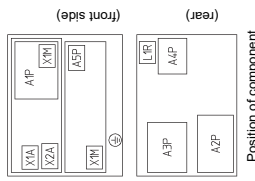


Fig. 23: Electric wiring diagram GCH125CD1

- : PCB (main pipe)
- A1P : PCB (sound attenuator)
- A2P : PCB (inverter)
- A3P : PCB (fan)
- A4P : PCB (ABC I/P)
- ASP : PCB (ABC I/P)
- BS1-BS5 : Press button (mode, set, back, test, reset)
- C1 : Condenser
- C63,C66 : Condenser
- DS1,DS2 : Crankcase heating
- E1HC : Fuse (250 V, 8A B) (A4P)
- F1U,F2U : Fuse (250 V, 3.15A T) (A1P)
- F5U : Fuse by others
- F400U : Fuse (250V, 6.3A T) (A2P)
- H1P-H8P : Control LED (maintenance monitor - orange)
- [H2P] : Prepare, test, flickering
- HAP : Error search function --- lighting up
- H4P : Control LED (maintenance monitor - green)
- K1 : Solenoid relay (M1C)
- K2 : Solenoid relay (Y1S)
- K3R : Solenoid relay (Y2S)
- K4R : Solenoid relay (Y3S)
- K5R : Solenoid relay (E1HC)
- K7R : Solenoid relay (Y4S)
- K11R : Solenoid relay (Y4S)
- L1R : Reactor
- M1C : Motor (compressor)
- M1F : Motor (fan)
- M1F : Power adaptor (A1P, A3P)
- PS : Detector circuit for phase reversal
- Q1R1P : Fault current circuit breaker
- Q1D1 : Resistor (current sensor) (A4P)
- R10 : Resistor
- R50,R59 : Resistor (current limiting)
- R95 : Thermistor (heat exchanger) (A1P)
- R11 : Thermistor (fin) (A3P)
- R1T : Thermistor (air intake)
- R2T : Thermistor (discharge line) (M1C)
- R3T : Thermistor (liquid line)
- R4T : Thermistor (header)
- R5T : Thermistor (heat exchanger)
- R6T : Thermistor (liquid line)
- S1NPH : Pressure sensor (high)
- S1NPL : Pressure sensor (low)
- S1PH : Pressure sensor (high)
- SD1 : Pressure switch (high)
- V1R : Input for safety organs
- V1R,V2R : Supply module (A4P)
- X1A,X2A : Supply module (A3P)
- X1M : Connector (M1F)
- X1M : Terminal block (power supply)
- X1M : Terminal block (regulation system) (A1P)
- X1M : Terminal block (A5P)
- Y1E : Electronic expansion valve (main pipe)
- Y1S : Solenoid valve (hot gas)
- Y2S : Solenoid valve (oil return)
- Y3S : Solenoid valve (4-way valve)
- Y4S : Solenoid valve (injection)
- Z1F : Acoustic filter (metal core)
- Z1F-Z5C : Noise filter (with surge arrester)
- Selection switch for cooling/heating
- S1S : Selection switch (fan/cooling - heating)
- S2S : Selection switch (cooling - heating)

- Notes:**
- 1: This electric wiring diagrams is only applicable for an outdoor unit
 - 2: : Lines by others.
 - 3: : Terminal block, : Safety earth (screw).
 - 4: When using an optional adapter consider instructions in the installation manual.
 - 5: Refer to the installation manual for wiring F1 - F2 lines and using switches BS1 to BS5 and DS1, DS2.
 - 6: Do not operate the unit via short circuit protective unit S1PH.
 - 7: Colour: BLK: black / WHT: white / RED: red / BLU: blue / BRN: brown / GRN: green / YLW: yellow PNK: pink / GRY: grey / ORG: orange



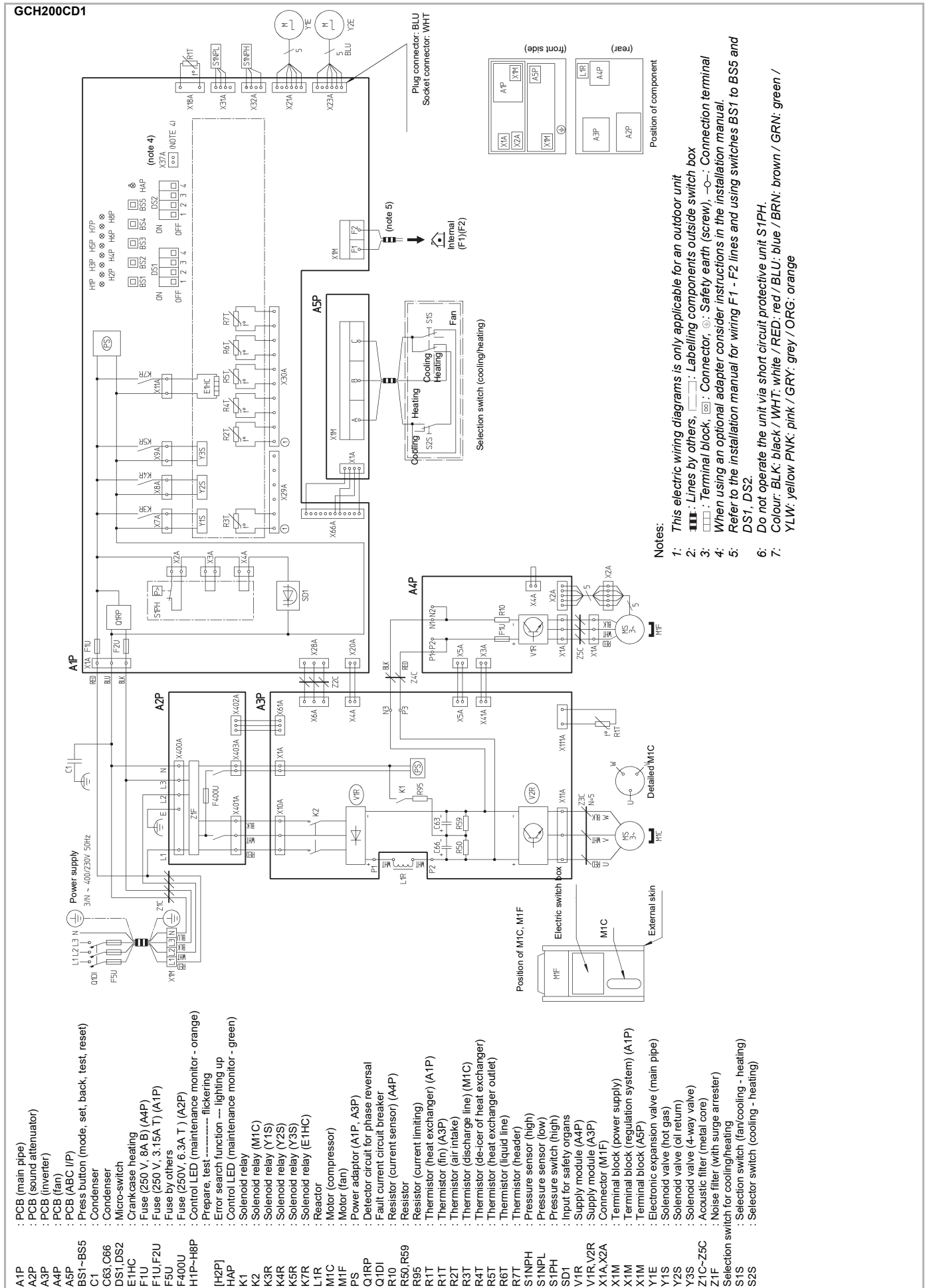


Fig. 24: Electric wiring diagram GCH200CD1

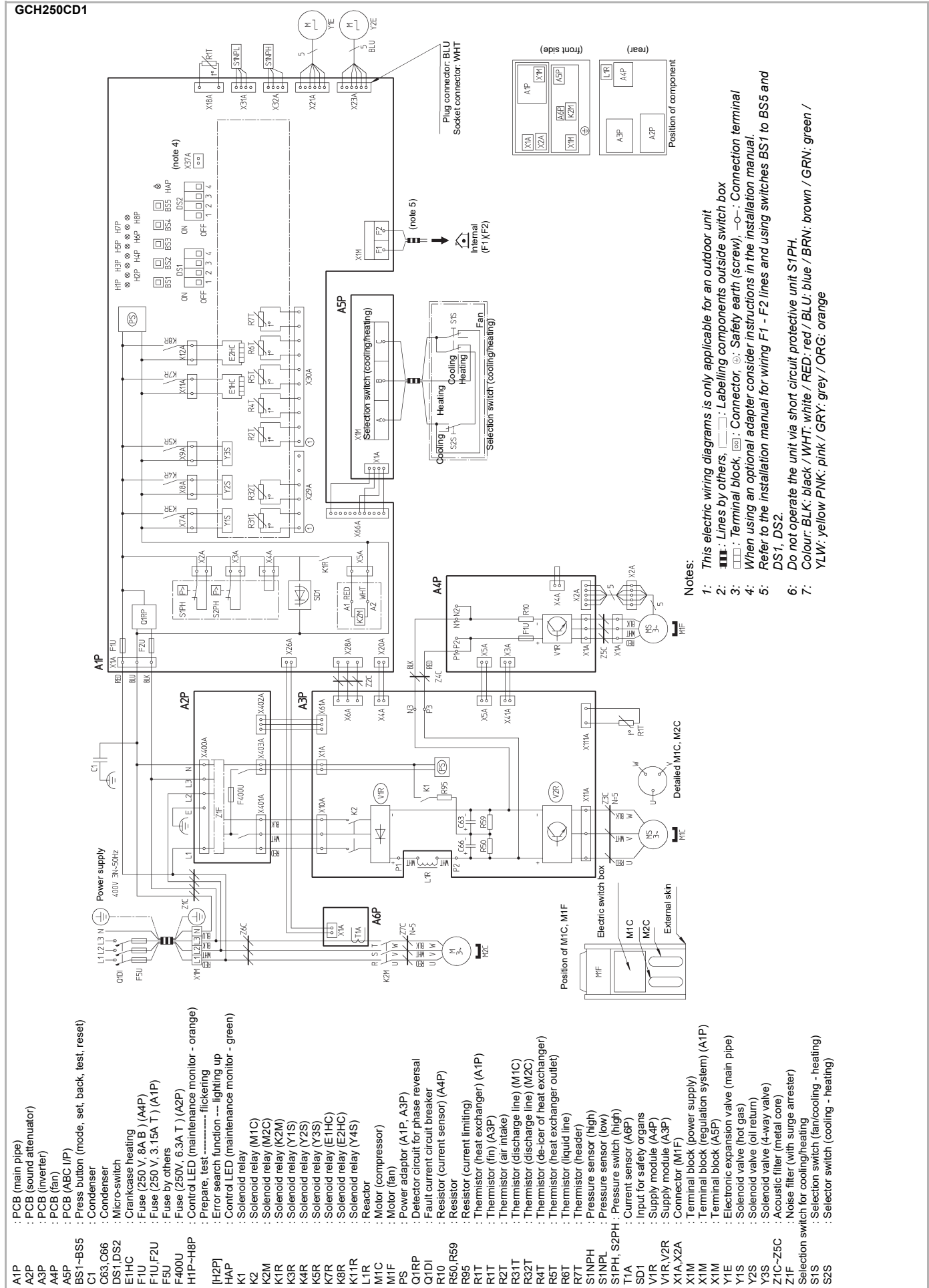
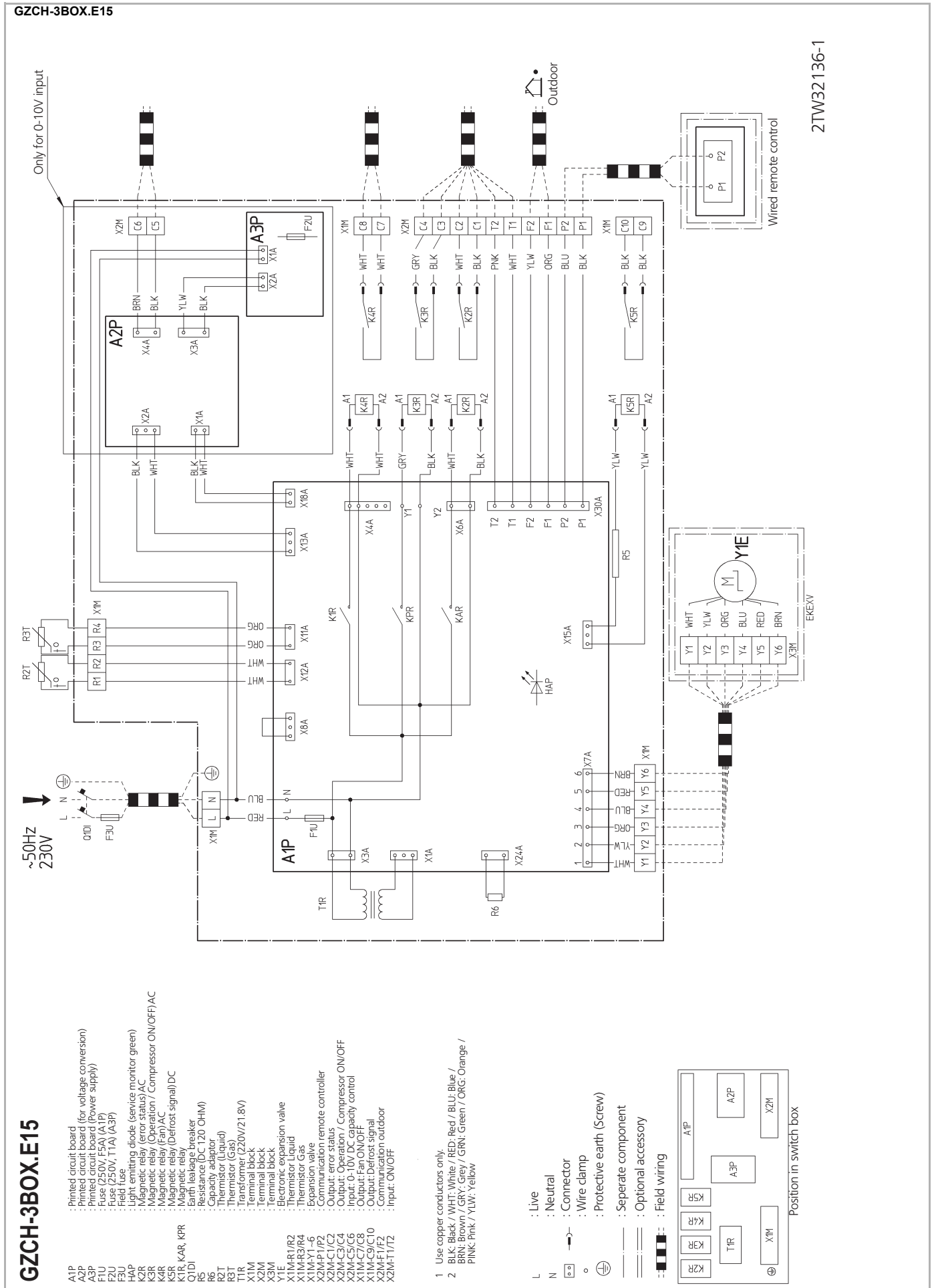


Fig. 25: Electric wiring diagram GCH250CD1



Tab. 23: Electric wiring diagram for switch box

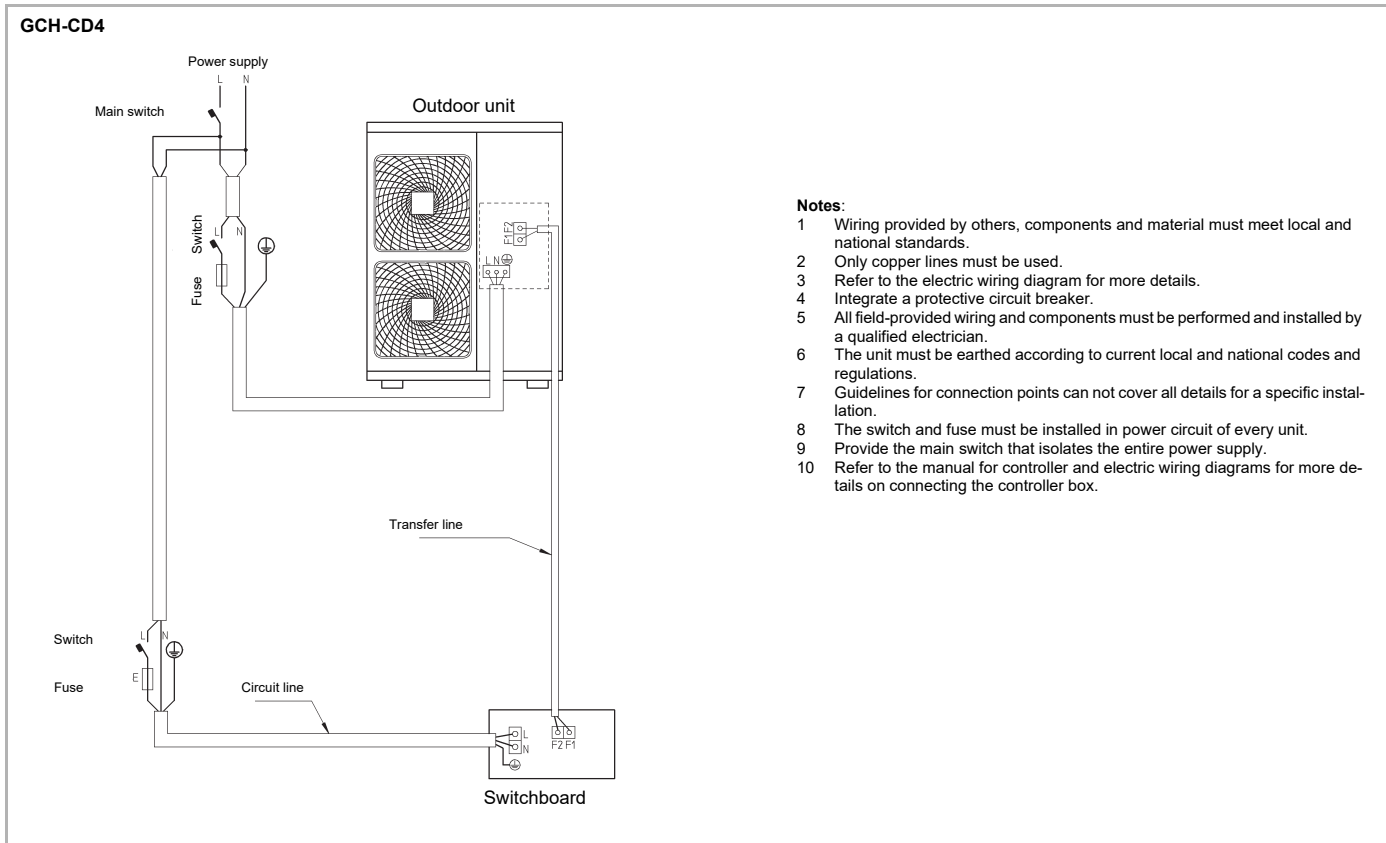


Fig. 26: External wiring diagram GCH 100-140 CD4

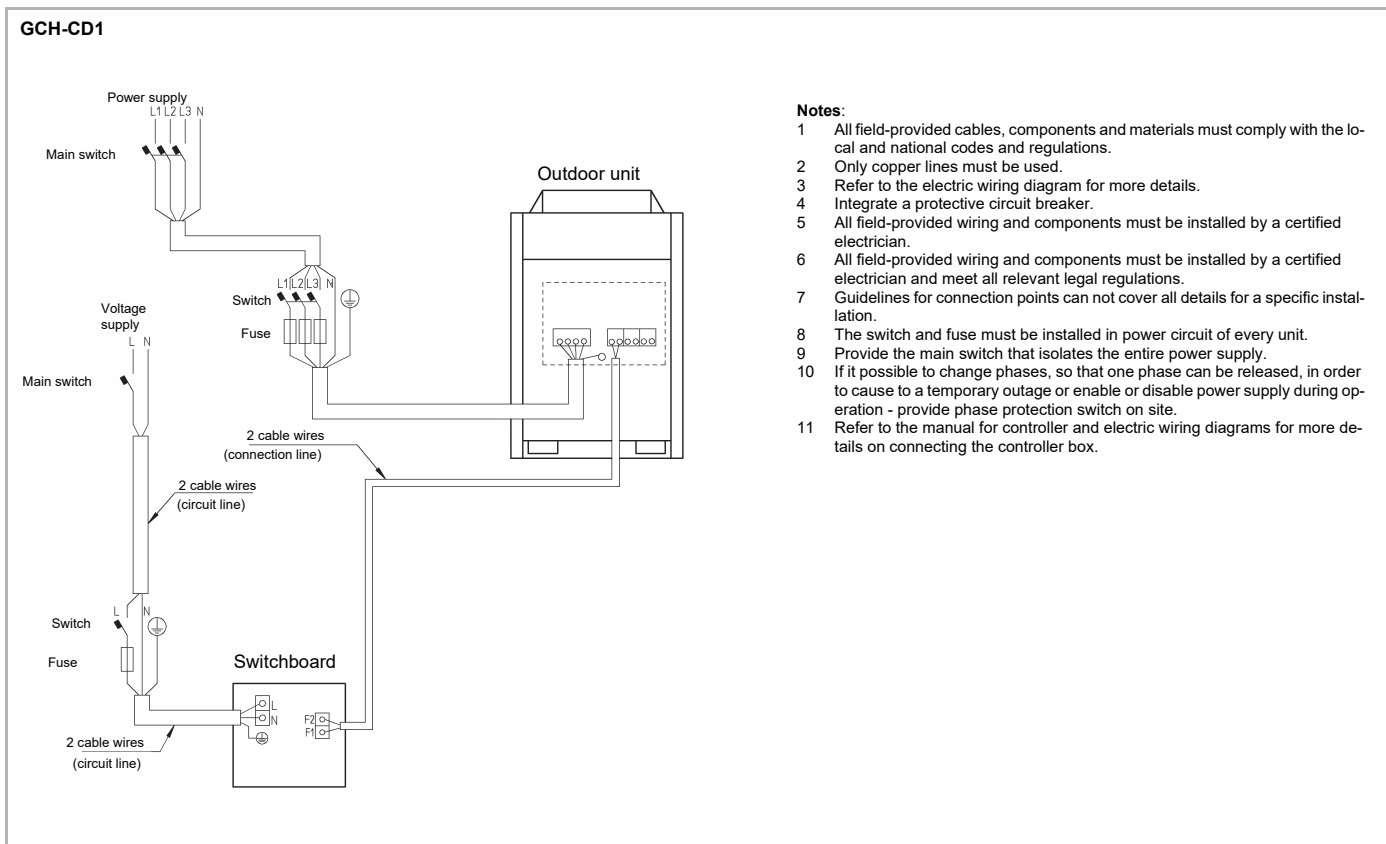


Fig. 27: External wiring diagram GCH 125-250 CD1

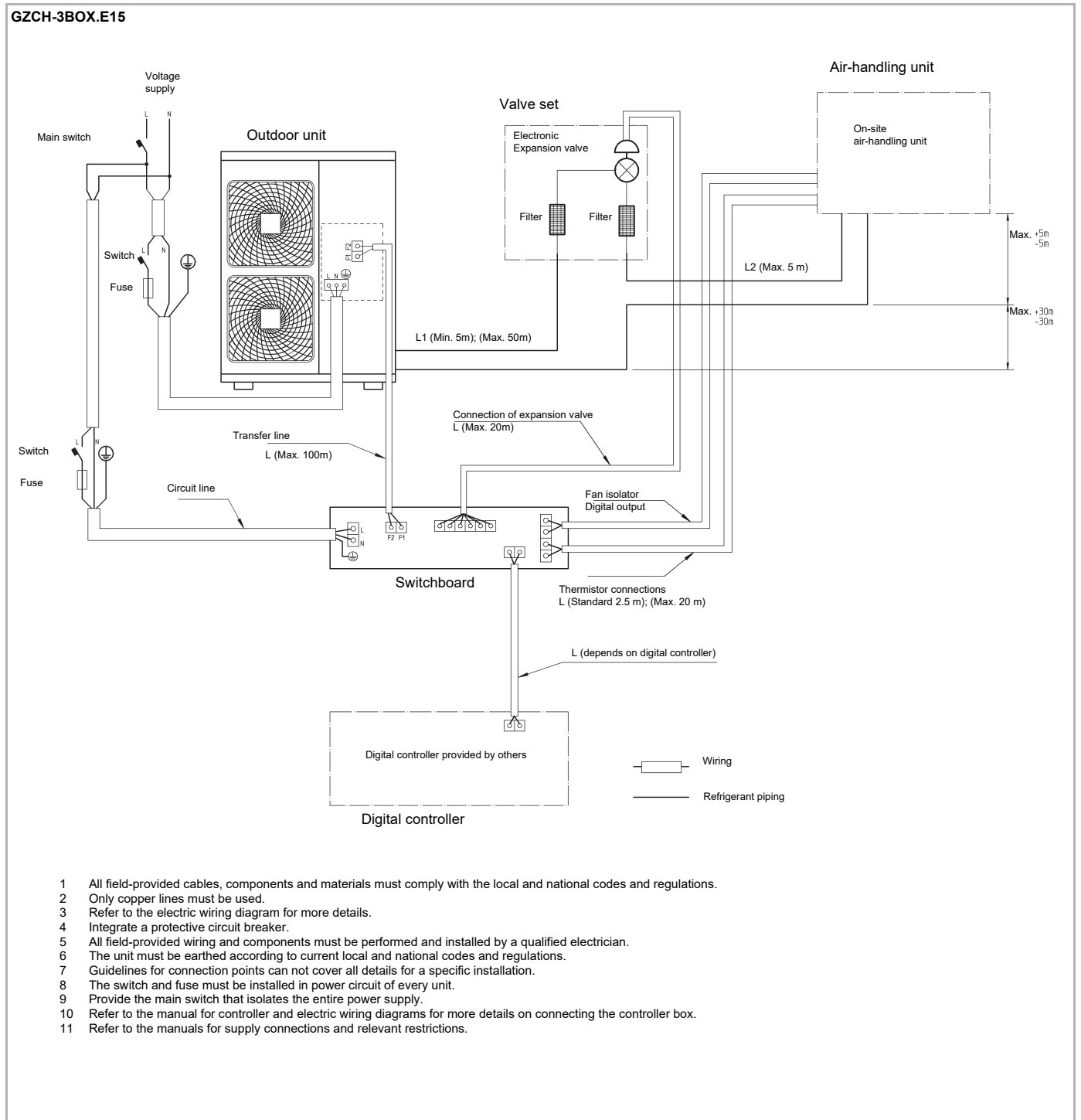
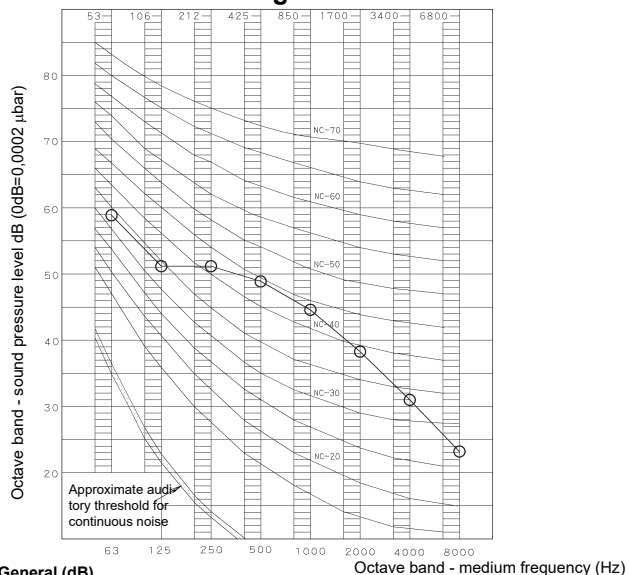


Fig. 28: System structure

GCH 100 CD4 - Cooling



General (dB)

Scale: A 50.0

Scale: C 62.0

(B.G.N is already corrected)
measuring point: sound-proof room

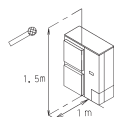
Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

Operating conditions

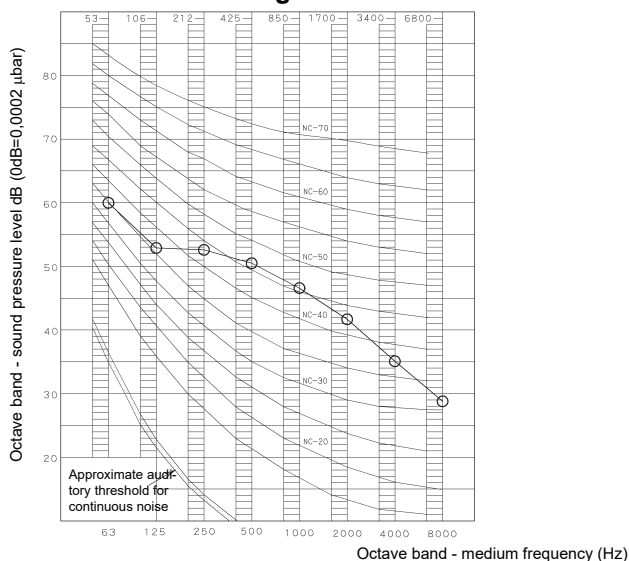
Power source: 220-240 V 50 Hz, 220 V 60 Hz

Cooling:
Internal temperature 27 °C DB, 19 °C WB
Outdoor temperature 35 °C DB, 24 °C WB

Measuring location



GCH 100 CD4 - Heating



General (dB)

Scale: A 52.0

Scale: C 63.5

(B.G.N is already corrected)
measuring point: sound-proof room

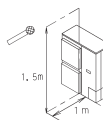
Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

Operating conditions

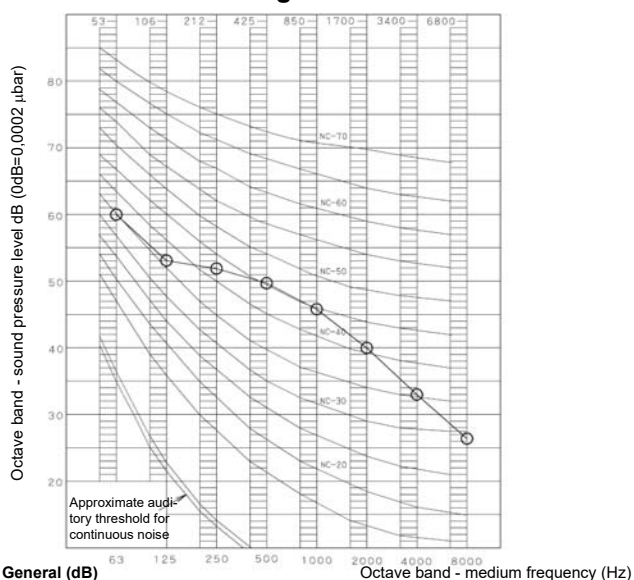
Power source: 220-240 V 50 Hz, 220 V 60 Hz

Heating
Temperature return air: 20 °C dry bulb
Outdoor temperature 7 °C DB, 6 °C WB

Measuring location



GCH 125 CD4 - Cooling



General (dB)

Scale: A 51.0

Scale: C 63.5

(B.G.N is already corrected)
measuring point: sound-proof room

Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

Measuring location

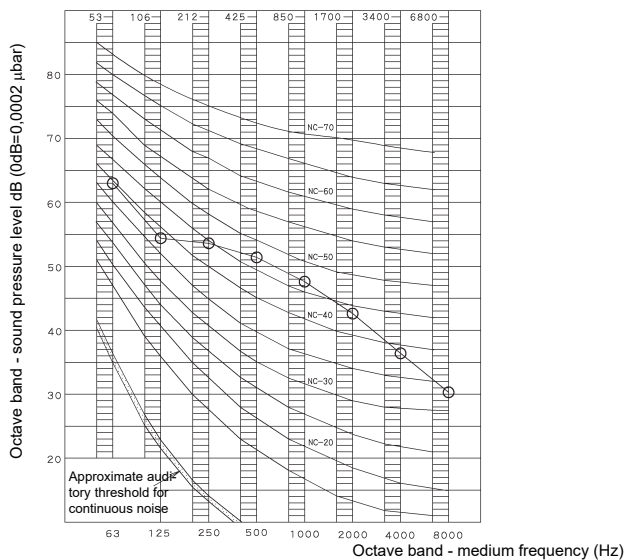
Operating conditions

Power source: 220-240 V 50 Hz, 220 V 60 Hz

Cooling:
Internal temperature 27 °C DB, 19 °C WB
Outdoor temperature 35 °C DB, 24 °C WB



GCH 125 CD4 - Heating



General (dB)

Scale: A 53.0

Scale: C 65.0

(B.G.N is already corrected)
measuring point: sound-proof room

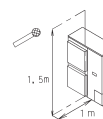
Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

Operating conditions

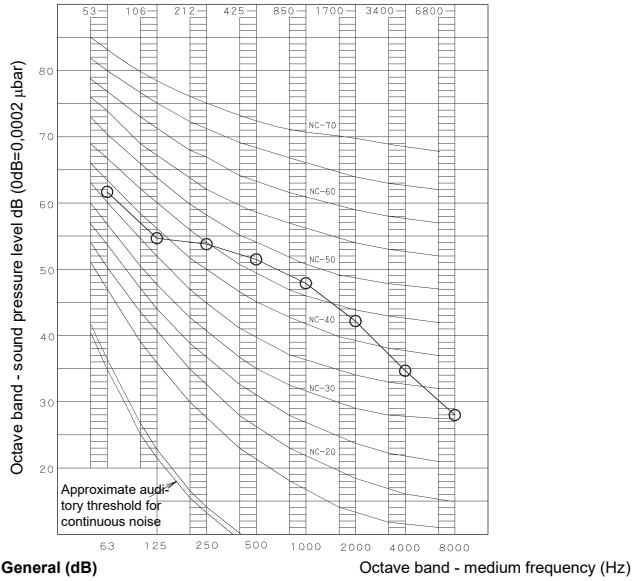
Power source: 220-240 V 50 Hz, 220 V 60 Hz

Heating
Temperature return air: 20 °C dry bulb
Outdoor temperature 7 °C DB, 6 °C WB

Measuring location



GCH 140 CD4 - Cooling



General (dB)

Scale: A 53.0

Scale: C 64.5

(B.G.N is already corrected)
measuring point: sound-proof room

Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

Operating conditions

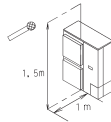
Power source: 220-240 V 50 Hz, 220 V 60 Hz

Cooling:

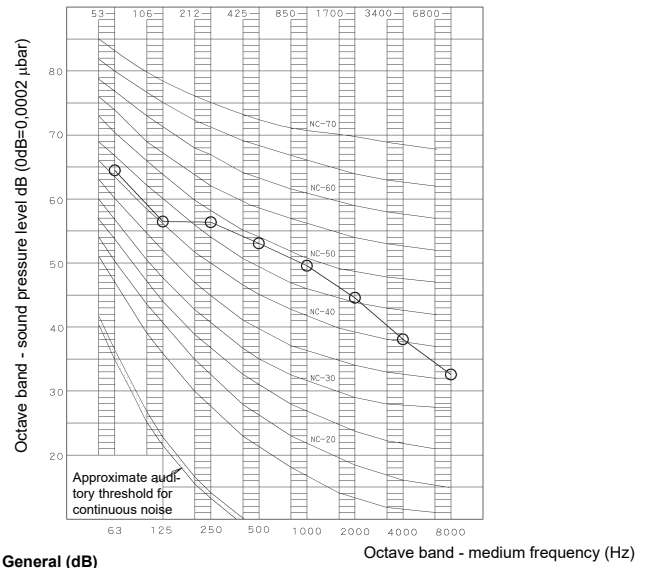
Internal temperature 27 °C DB, 19 °C WB

Outdoor temperature 35 °C DB, 24 °C WB

Measuring location



GCH 140 CD4 - Heating



General (dB)

Scale: A 53.0

Scale: C 65.0

(B.G.N is already corrected)
measuring point: sound-proof room

Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

Operating conditions

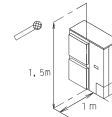
Power source: 220-240 V 50 Hz, 220 V 60 Hz

Heating

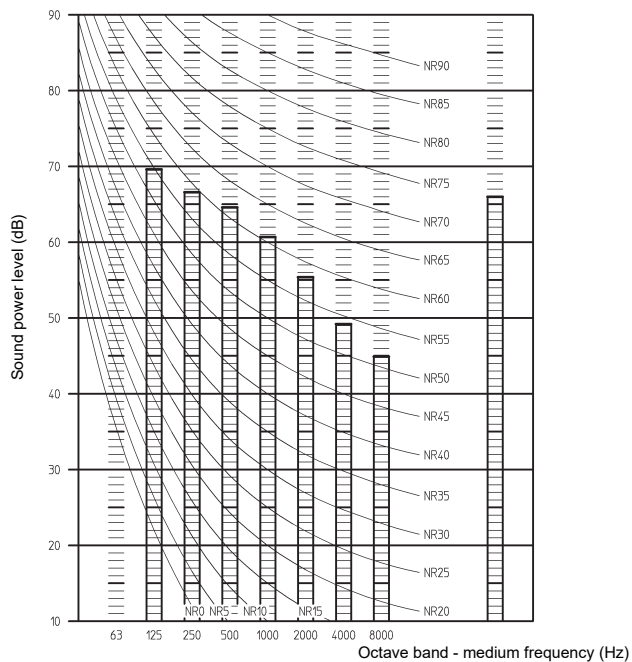
Temperature return air: 20 °C dry bulb

Outdoor temperature 7 °C DB, 6 °C WB

Measuring location



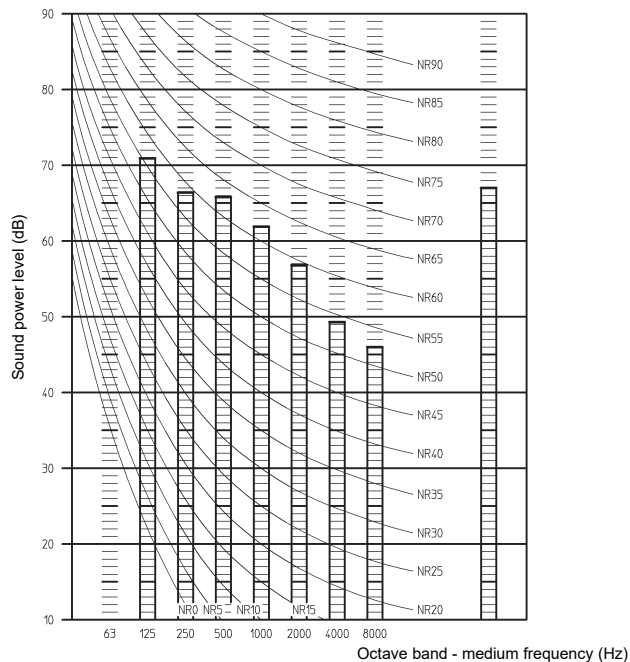
GCH 100 CD4



Note:

- 1: dBA = A-evaluated sound power level (A-scale as of IEC)
- 2: Reference for acoustic intensity 0 dB = 10E-6 μW/m²
- 3: Measured according to ISO 3744.

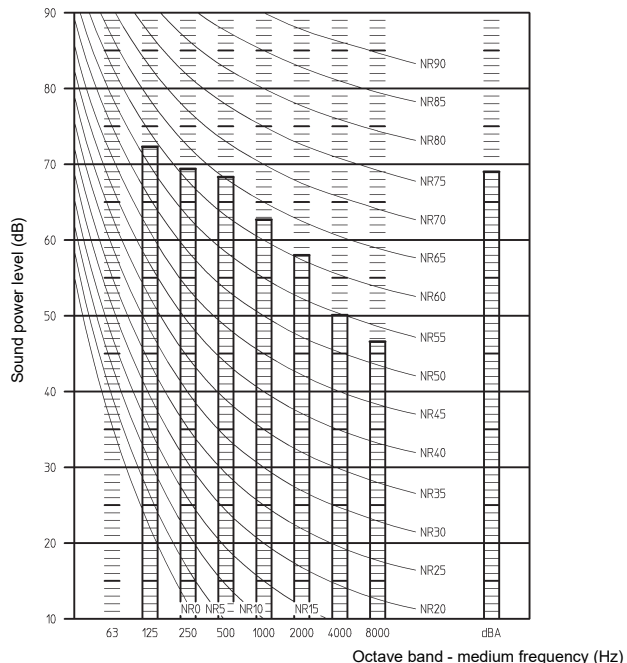
GCH 125 CD4



Note:

- 1: dBA = A-evaluated sound power level (A-scale as of IEC)
- 2: Reference for acoustic intensity 0 dB = 10E-6 μW/m²
- 3: Measured according to ISO 3744.

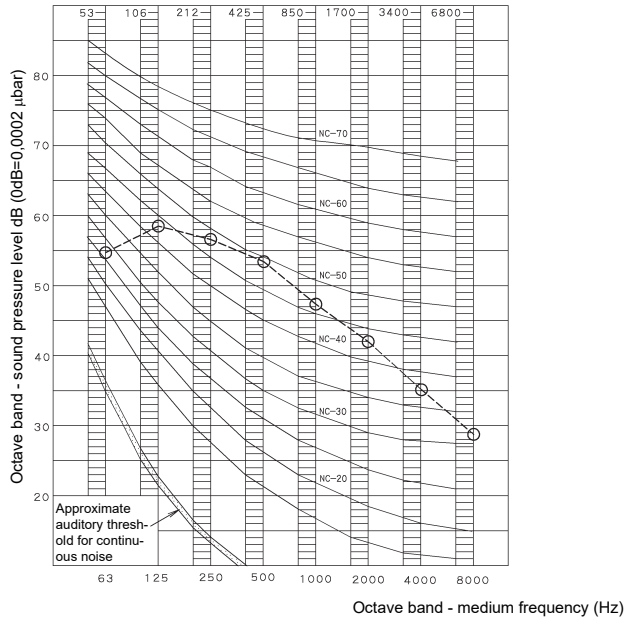
GCH 140 CD4



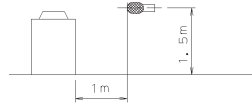
Note:

- 1: dBA = A-evaluated sound power level (A-scale as of IEC)
- 2: Reference for acoustic intensity 0 dB = 10E-6 μW/m²
- 3: Measured according to ISO 3744.

GCH 125 CD1

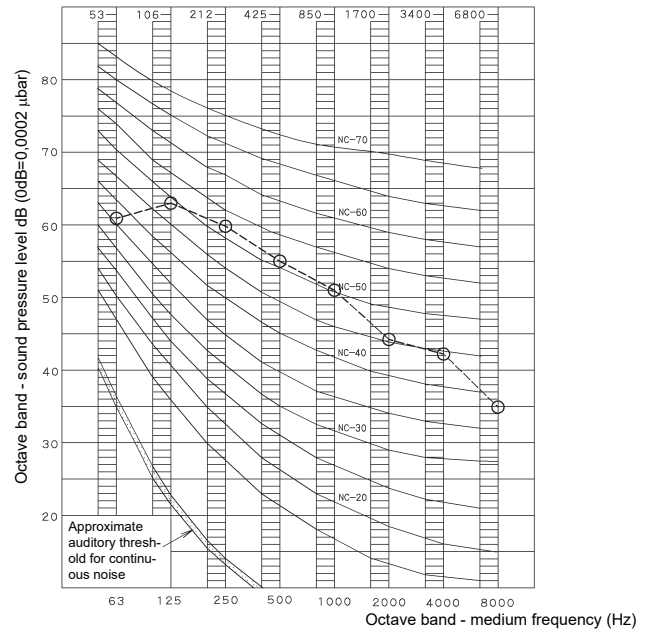


Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

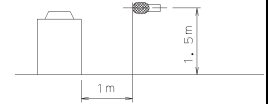


Measuring location

GCH 200 CD1

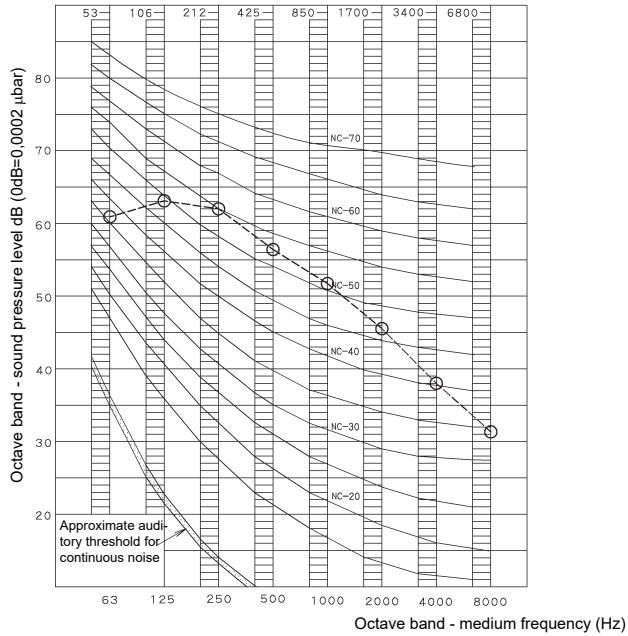


Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.

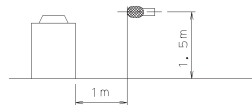


Measuring location

GCH 250 CD1

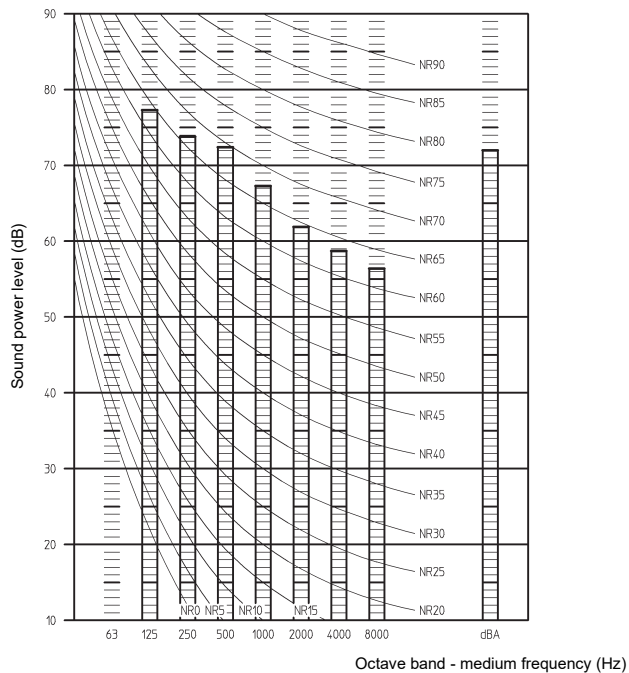


Note: Operating noise is measured in an echo-free chamber under normal installation conditions. As a rule this value exceeds actual noise values because of environmental noise and sound reflections.



Measuring location

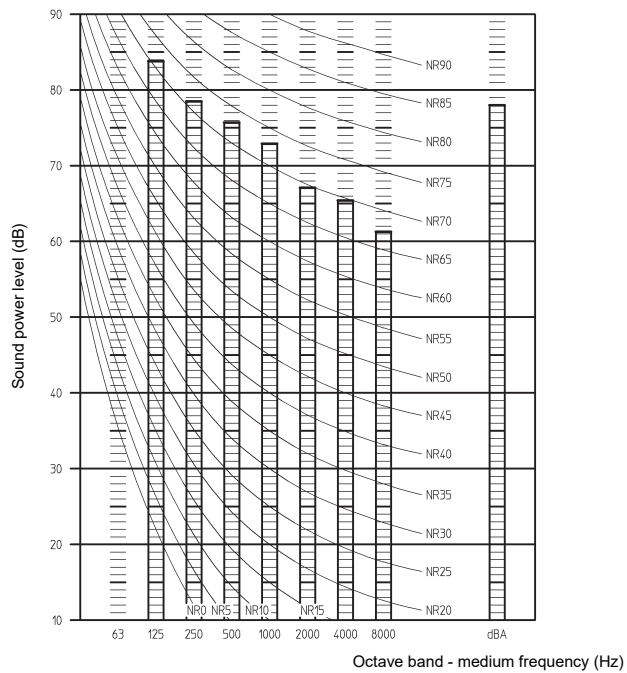
GCH 125 CD1



Note:

- 1: dBA = A-evaluated sound power level (A-scale as of IEC)
- 2: Reference for acoustic intensity 0 dB = 10E-6 μW/m²
- 3: Measured according to ISO 3744.

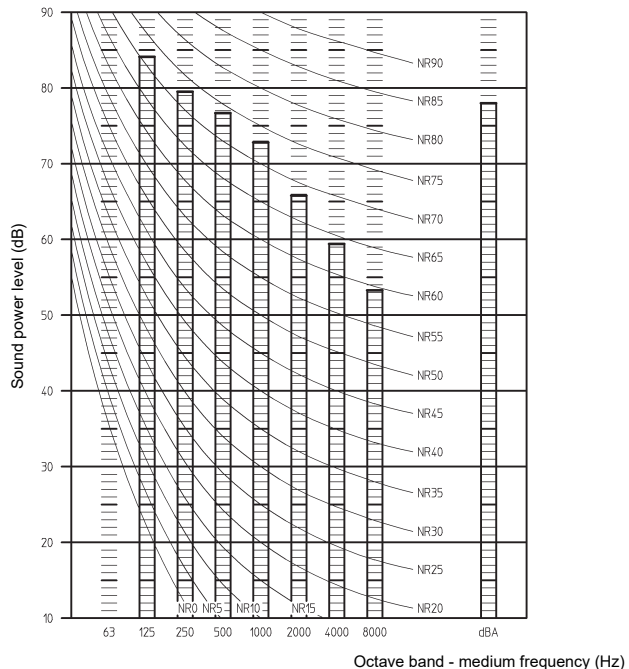
GCH 200 CD1



Note:

- 1: dBA = A-evaluated sound power level (A-scale as of IEC)
- 2: Reference for acoustic intensity 0 dB = 10E-6 μW/m²
- 3: Measured according to ISO 3744.

GCH 250 CD1



Note:

- 1: dBA = A-evaluated sound power level (A-scale as of IEC)
- 2: Reference for acoustic intensity 0 dB = 10E-6 μW/m²
- 3: Measured according to ISO 3744.

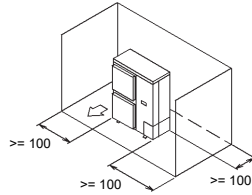
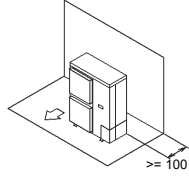
GCH-CD4 Required installation space

All values are indicated in [mm].

(1) Obstacles on intake side (a), no obstacles on top

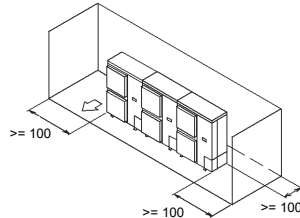
1. Single arrangement

- Obstacle only on the intake side.
- Obstacle on both sides.



2. Serial arrangement (2 or more)

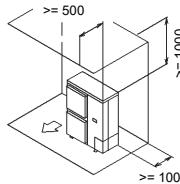
- Obstacle on both sides



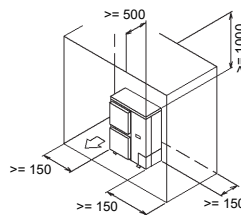
(b) Obstacle on top.

1. Single arrangement

- Obstacle also on intake side.

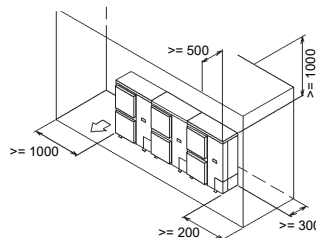


- Obstacle on the intake side and both sides.



2. Serial arrangement (2 or more)

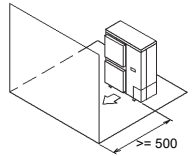
- Obstacle on the intake side and both sides.



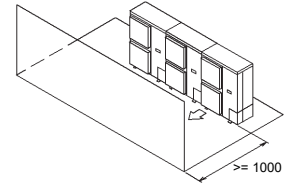
(2) Obstacles on discharge side (a), no obstacle on top

(a), no obstacle on top

1. Single arrangement

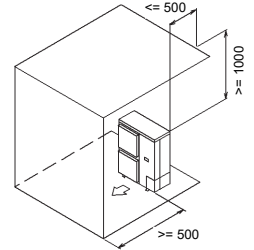


2. Serial arrangement (2 or more)

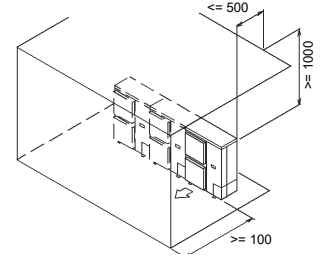


(b) Obstacle on top.

1. Single arrangement



2. Serial arrangement (2 or more)



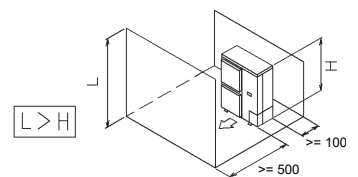
3. Obstacle on intake and discharge side:

Obstacle on discharge side is higher than unit. The height for blockages on the intake side is not limited.

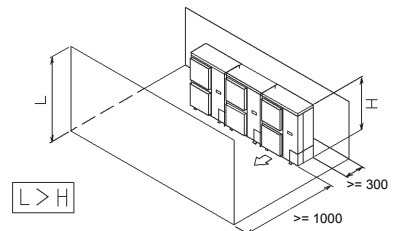
Sample 1

(a) No obstacle on top.

1. Single arrangement



2. Serial arrangement (2 or more)



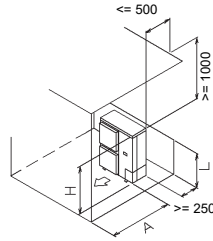
(b) Obstacle on top

1. Single arrangement

Relationship between H, A and L:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	750
	$1/2H < L \leq H$	1000
$H < L$	Adjust mounting bracket: $L \leq H$	

Close the lower panel of the installation frame so that discharge air is not bypassed.

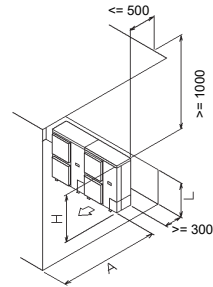


2. Serial arrangement (2 or more)

Relationship between H, A and L:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	1000
	$1/2H < L \leq H$	1250
$H < L$	Adjust mounting bracket: $L \leq H$	

Close the lower panel of the installation frame so that discharge air is not bypassed. In this series only two units can be installed.



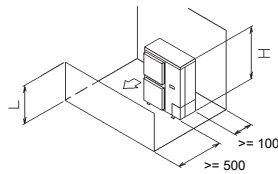
Models 2

Obstacle on discharge side is lower than the unit. There is no height limitation for blockages on intake side.

(a) No obstacle on top.

1 Single arrangement.

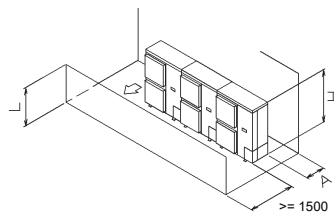
$L \leq H$



2. Serial arrangement (2 or more)

Relationship between H, A and L:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	250
	$1/2H < L \leq H$	300



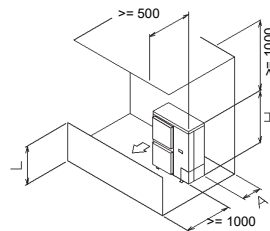
(b) Obstacle on top.

1. Single arrangement

Relationship between H, A and L:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	100
	$1/2H < L \leq H$	200
$H < L$	Adjust mounting bracket: $L \leq H$	

Close the lower panel of the installation frame so that discharge air is not bypassed.

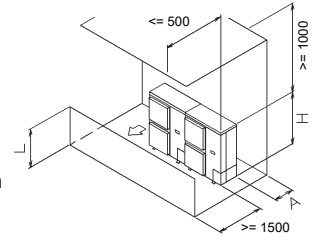


2. Serial installation

Relationship between H, A and L:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	250
	$1/2H < L \leq H$	300
$H < L$	Adjust mounting bracket: $L \leq H$	

Close the lower panel of the installation frame so that discharge air is not bypassed. In this series only two units can be installed.

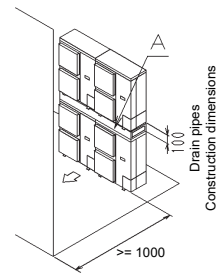


4. Double deck design

(a) Obstacle on discharge side.

- Close the gap A (gap between the upper and lower outdoor unit), so that discharged air is not bypassed.

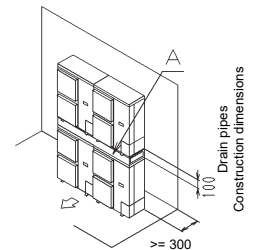
Do not stack more than two units.



(b) Obstacle only on intake side.

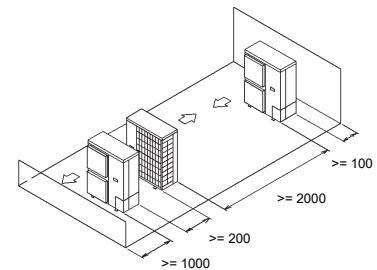
- Close the gap A (gap between the upper and lower outdoor unit), so that discharged air is not bypassed.

Do not stack more than two units.

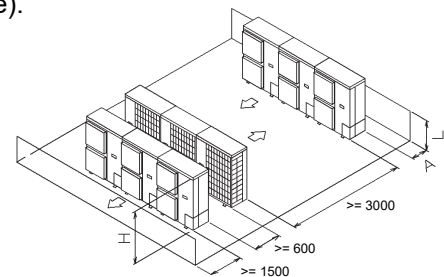


5. Multiple rows in serial arrangement (on the roof, etc.).

(a) One row in single arrangement.



(b) Rows in serial arrangement (2 or more).



Relationship between H, A and L:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	250
	$1/2H < L \leq H$	300
$H < L$	Can not be installed	

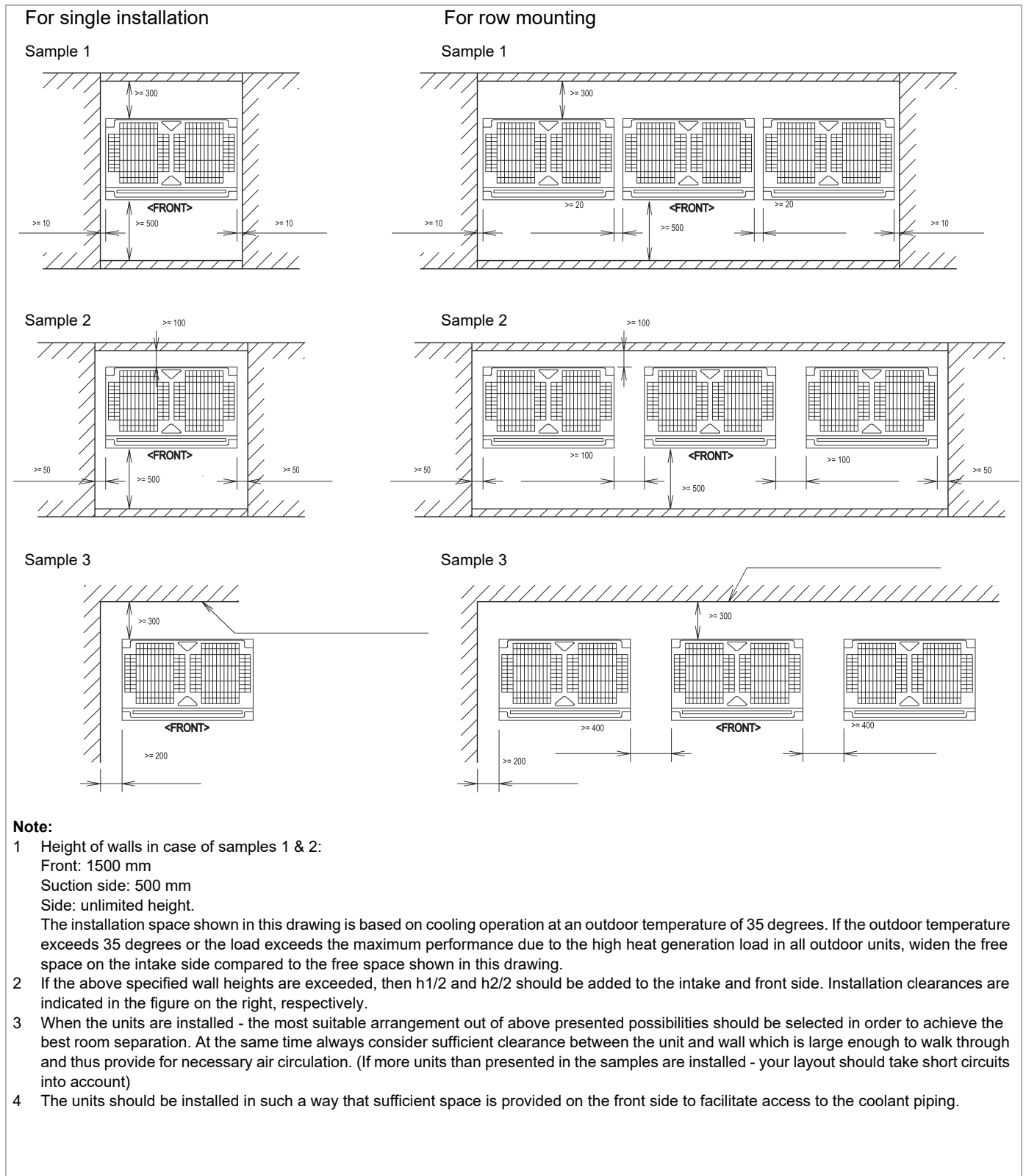
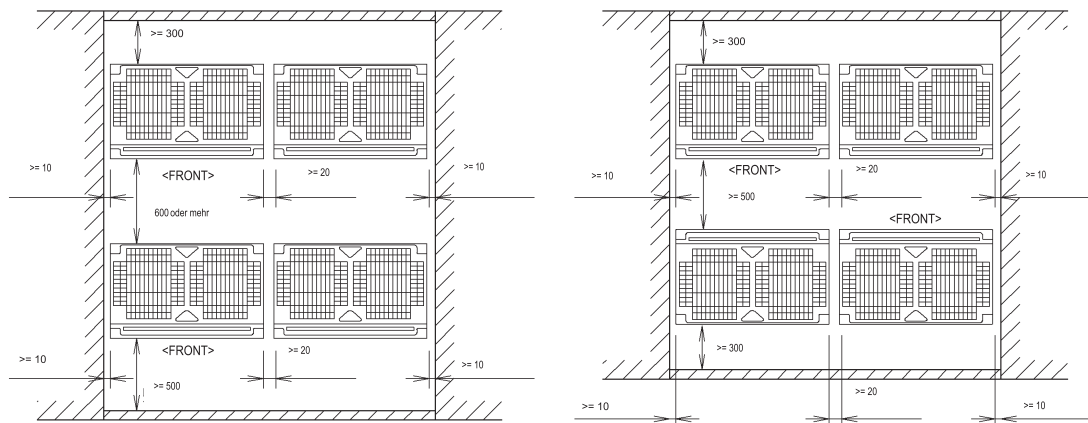


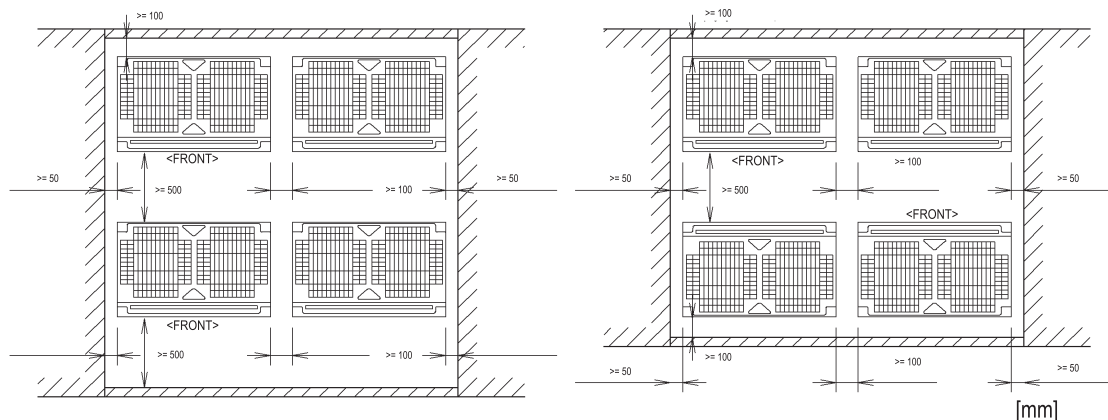
Fig. 29: Installation GCH-CD1

To central group view

Sample 1



Sample 2



[mm]

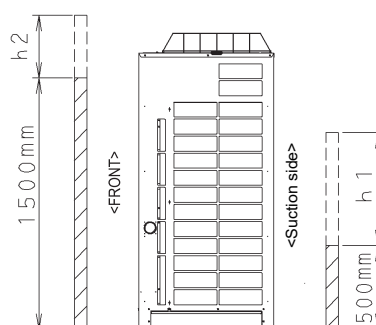


Fig. 30: Installation GCH-CD1

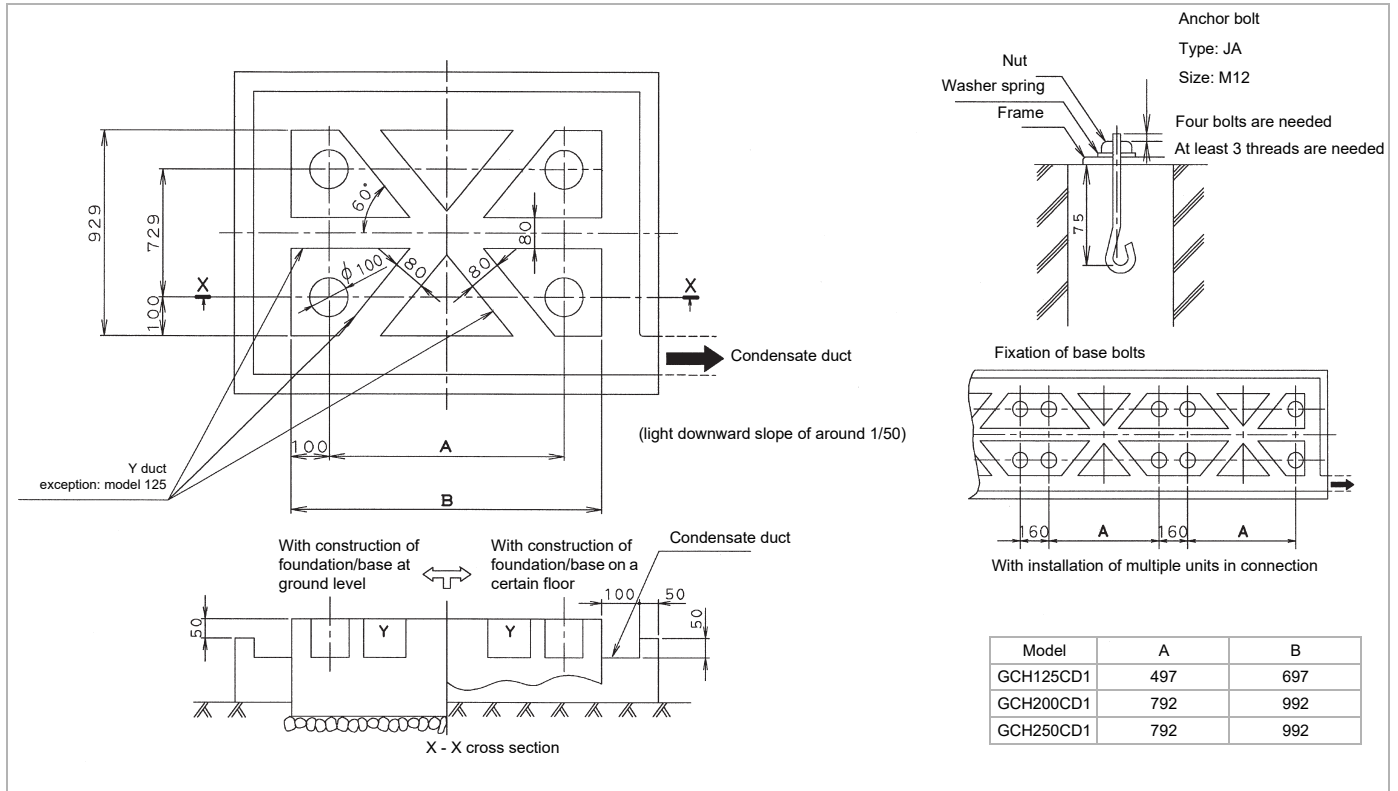
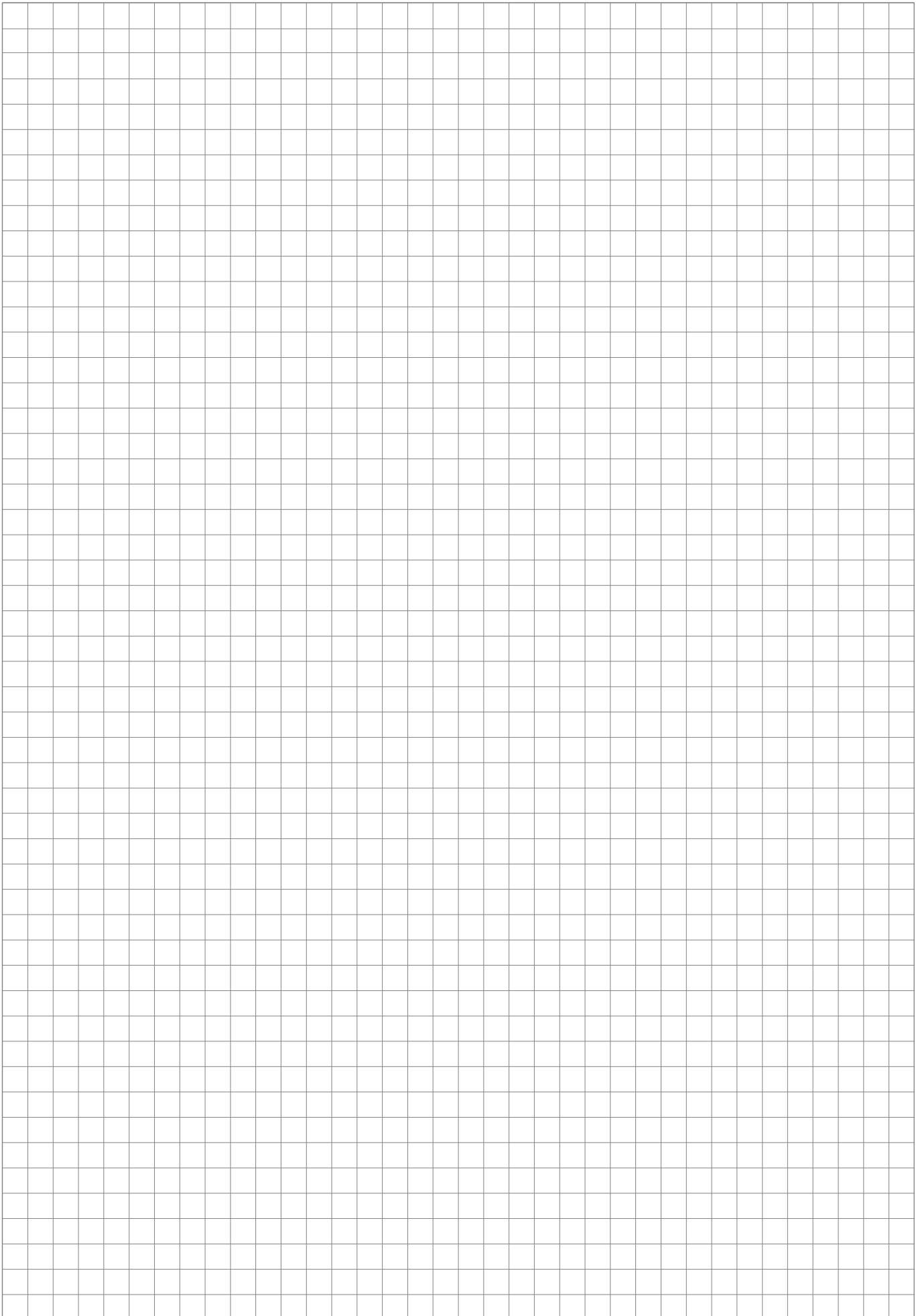
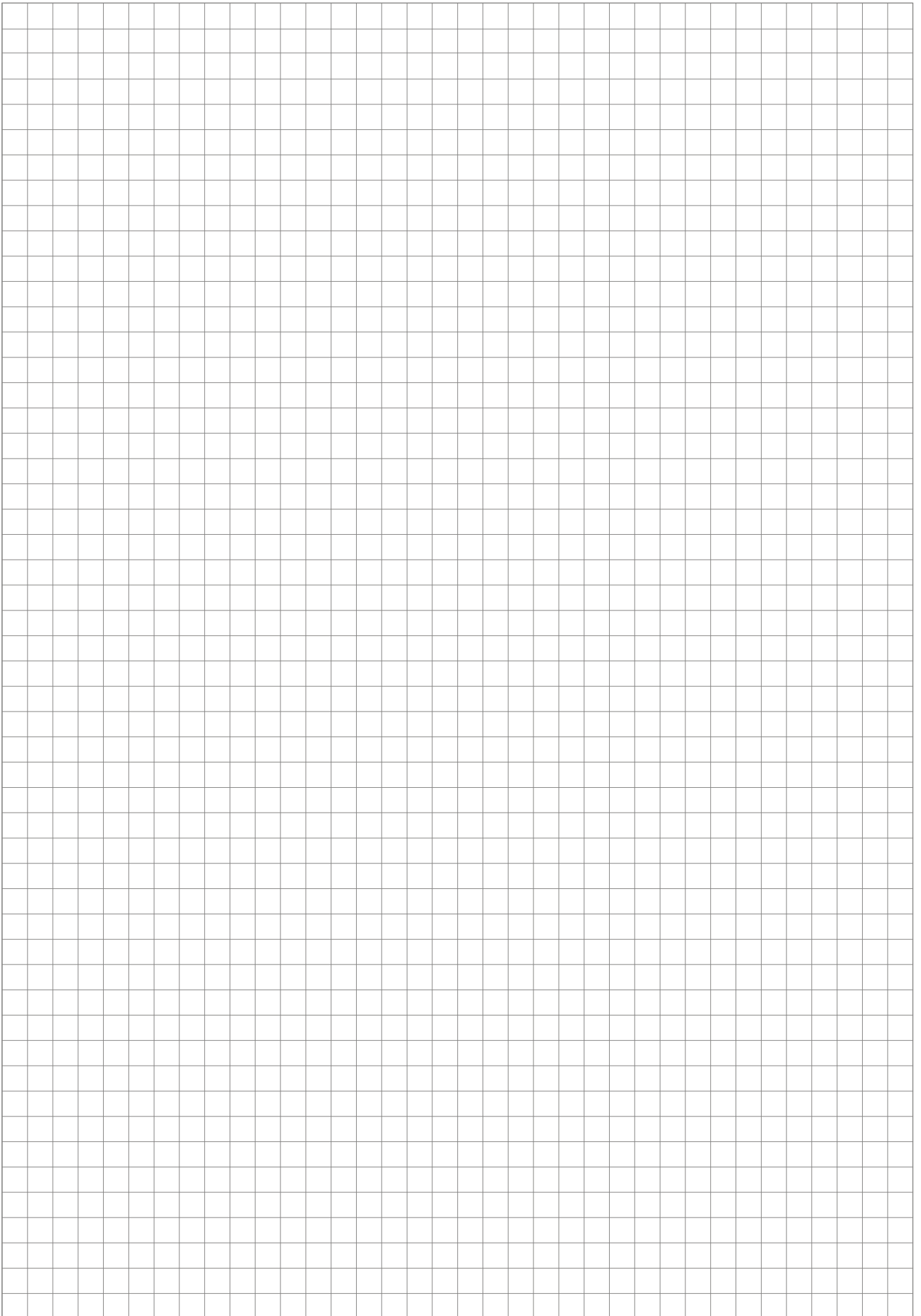


Fig. 31: Base and mounting unit types GCH-CD1

- 1: Concrete should include 1 part of cement, 2 parts of sand and 4 parts of gravel. The reinforcing bars must be 10 mm in diameter and mounted with around 300 mm clearances.
- 2: Mortar should be used to smoothen the surfaces. The edges must be bevelled.
- 3: For base construction on a concrete floor metalling is not necessary. The concrete surface should be mounted anyway.
- 4: Provide a drainage duct around the base to drain water from the installation area.
- 5: If a unit is installed on a roof - the load-bearing capacity of the roof should be checked and regulations on water tightness should be taken into account.
- 6: Y-notch is not necessary for the GCH125CD1 model.





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