DAIKIN

technical data

air conditioning systems

CMSQ-A7W1B

R-410A

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CMSQ-A7W1B

R-410A

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CMSQ-A7W1B

1 Features

- Especially developed for light commercial applications (shops, restaurants, small offices) where multi systems are required
- High efficiency: COP ranges up to 4.1
- These outdoor units can be mounted easily on a roof, placed against an outside wall or can even be installed indoors
- Maximum piping length up to 200m and level difference (outdoor unit - indoor unit) up to 30m
- Assymetric combination is allowed: combination of different indoor units with different capacities is possible
- Individual control: up to 4 indoor units can be controlled individually

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				CMSQ200A7W1B	CMSQ250A7W1B
Capacity	Cooling	kW		20.0	25.0
	Heating	kW		22.4	28.0
COP	Cooling			3.03	3.71
	Heating			3.86	4.10
Capacity range			HP	8	10
Power input (nominal)(50Hz)	Cooling		kW	6.60	6.74
	Heating		kW	5.80	6.83
PED category				Category II	
Max n° of indoor units to be connected				4	
Indoor index connection	Minimum			100	125
	Maximum			200	250
Casing	Colour			Daikin White	
	Material			Painted galvanised steel	
Dimensions	Packing	Height	mm	1,855	
		Width	mm	796	1,055
		Depth	mm	860	
	Unit	Height	mm	1,680	
		Width	mm	635	930
		Depth	mm	765	
Weight	Unit		kg	159	187
	Packed Unit		kg	182	217
Packing	Material			Carton	
	Weight		kg	3.80	4.02
	Material			Wood	
	Weight		kg	19.15	20.85
	Material			Plastic	
	Weight		kg	0.215	0.265
Heat Exchanger	Dimensions	Length	mm	1,483	1,778
		Nr of Rows		54	
		Fin Pitch	mm	2.00	
		Nr of Passes		8	18
		Face Area	m²	1.762	2.112
		Nr of Stages		2	
	Tube type			Hi-XSS (8)	
	Fin	Fin type		Non-symmetric waffle louvre	
		Treatment		Hydrophylic and anti corrosion resistant	
Fan	Type			Propeller	
	Quantity			1	
Air Flow Rate (nominal at 230V)	Cooling	m³/min		95	171
	Heating	m³/min		95	171
Fan	External static pressure		Pa	50 Pa in high static pressure	
	Discharge direction			Vertical	
	Motor	Quantity		1	1
		Model		Brushless DC	
		Output motor	W	350	750
Compressor	Quantity			1	
	Motor	Quantity		1	
		Model		Inverter	
		Type		Hermetically sealed scroll compressor	
		Speed	rpm	6,300	7,980
		Motor Output	kW	2.8	3.8
		Crankcase Heater	W	33	
Cooling	Standard	Min	°CDB	-5.0	
Operation Range	Cooling	Max	°CDB	43.0	
	Heating	Min	°CWB	-20.0	
		Max	°CWB	15.0	

2 Specifications

2-1 TECHNICAL SPECIFICATIONS				CMSQ200A7W1B	CMSQ250A7W1B
Sound level	Cooling	Sound Power (Nominal)	dBA	78	81
		Sound Pressure (Nominal)	dBA	57	59
	Night quiet	Level 1 / level 2 / level 3	dBA	55 / 50 / 45	
Refrigerant	Name			R-410A	
	Charge		kg	6.2	7.7
	Control			Expansion valve (electronic type)	
	Nr of Circuits			1	
Refrigerant Oil	Name			Synthetic (ether) oil	
	Charged Volume		l	1.7	2.1
Piping connections	Liquid (OD)	Type		Braze connection	
		Diameter (OD)	mm	9.52	
	Gas	Type		Braze connection	
		Diameter (OD)	mm	15.9	19.1
	Heat Insulation			Both liquid and gas pipes	
	Max total length		m	200	
Defrost Method				Reversed cycle	
Defrost Control				Sensor for outdoor heat exchanger temperature	
Capacity Control Method				Inverter controlled	
Capacity Control				~ 100	
Safety devices				HPS	
				Fan motor driver overload protector	
				Over current relay	
				Inverter overload protector	
				PC board fuse	
Standard Accessories	Standard Accessories			Installation manual	
	Quantity			1	
	Standard Accessories			Operation manual	
	Quantity			1	
	Standard Accessories			Connection pipes	
	Quantity			4	
Notes				Nominal cooling capacities are based on : indoor temperature : 27°CDB, 19°CWB, outdoor temperature : 35°CDB, equivalent refrigerant piping : 7.5m, level difference : 0m.	
				Nominal heating capacities are based on : indoor temperature : 20°CDB, outdoor temperature : 7°CDB, 6°CWB, equivalent refrigerant piping : 7.5m, level difference : 0m	
				Sound pressure	
				Sound values	
				Sound values are measured in a semi-anechoic room.	

2 Specifications

2-2 ELECTRICAL SPECIFICATIONS				CMSQ200A7W1B	CMSQ250A7W1B
Power Supply	Name			W1	
	Phase			3N~	
	Frequency		Hz	50	
	Voltage		V	400	
Current	Nominal running current (RLA)	Cooling	A	9.53	9.73
		Heating	A	8.38	9.86
	Minimum Ssc value		kVa		1,218
	Minimum circuit amps (MCA)		A	11.9	18.5
	Maximum fuse amps (MFA)		A	16	25
	Total overcurrent amps (TOCA)		A	15.6	16.5
	Full load amps (FLA)		A	0.4	0.7
Voltage range	Minimum		V	360	
	Maximum		V	440	
Wiring connections	For Power Supply	Quantity		5	
		Remark		Earth wire include	
	For connection with indoor	Quantity		2	
		Remark		F1 - F2	
Power Supply Intake				Both indoor and outdoor unit	
Notes				MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker)	
				MSC means the maximum current during start up of the compressor	
				Maximum allowable voltage range variation between phases is 2%	
				RLA is based on following conditions : indoor temperature : 27°CDB/19°CWB , outdoor temperature : 35°CDB	
				Select wire size based on the value of MCA or TOCA	
				TOCA means the total value of each OC set	
				Voltage range : units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits	

3 Electrical data

	Minimum Ssc value [kVA]	Z^{max} [Ω]
CMSQ200	-	-
CMSQ250	1218	-

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Notes:

1. In accordance with EN/IEC 61000-3-11 (1), respectively EN/IEC 61000-3-12 (2), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys (4) ≦ Zmax, respectively Ssc (3) ≧ minimum Ssc value.
2. (1) European/international technical standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated ≦ 75A.

   (2) European/international technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current > 16A ≦ 75A per phase.

   (3) Short-circuit power

   (4) System impedance

4 Options

Nr	Item	CMSQ200	CMSQ250
1	Refnet header	KHRQ22M29H	
2	Refnet joint	KHRQ22M20T	
		-	KHRQ22M29T9
3	Central drain pan kit	KWC26B160	KWC26B280

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Notes:

1. All options are kits.
2. The option should be installed inside the outdoor unit.

5 Selection procedure

CMSQ200-250A

INTEGRATED HEATING CAPACITY COEFFICIENT

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress. The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows:

Formula:

Integrated heating capacity = A

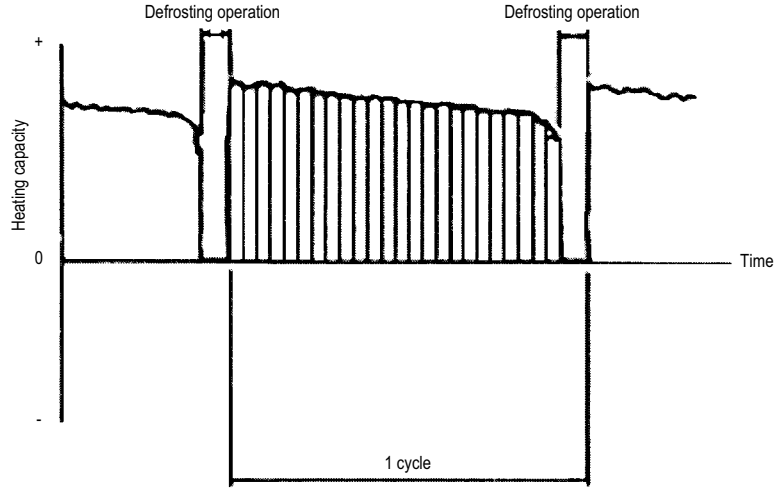
Value given in table of capacity characteristics = B

Integrating correction factor for frost accumulation (kW) = C

A = B x C

Integrating correction factor for finding integrated heating capacity

Inlet port temperature of heat exchanger (°C/RH 85%)	-7	-5	-3	0	3	5	7
Integrating correction factor for frost accumulation	0.96	0.93	0.87	0.81	0.83	0.89	1.0



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NOTE

1 The figure shows that the integrated heating capacity expresses the integrated capacity for a single cycle (from defrost operation to defrost operation) in terms or time.

Please note that, when there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, there will always be a temporary reduction in capacity, although this will of course vary in degree in accordance with a number of other factors, such as the outdoor temperature (°CDB), relative humidity (RH) and the amount of frosting which occurs.

6 Capacity tables

6 - 1 Cooling capacity tables

Cooling CMSQ200A

Combination (%) Capacity index

100% 20,00 kW

90% 18,00 kW

80% 16,00 kW

Outdoor air temp. °CDB	Indoor air temp.: °CWB															
	14,0		16,0		18,0		19,0		20,0		22,0		24,0			
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI		
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW		
10	13,50	2,27	16,1	2,76	18,7	3,27	20,0	3,53	21,3	3,80	23,9	4,34	25,3	4,49		
12	13,50	2,31	16,1	2,81	18,7	3,33	20,0	3,60	21,3	3,87	23,9	4,42	25,0	4,47		
14	13,50	2,36	16,1	2,86	18,7	3,39	20,0	3,67	21,3	3,94	23,9	4,51	24,6	4,44		
16	13,50	2,40	16,1	2,91	18,7	3,46	20,0	3,74	21,3	4,02	23,8	4,57	24,3	4,52		
18	13,50	2,44	16,1	2,97	18,7	3,53	20,0	3,81	21,3	4,10	23,5	4,71	24,0	4,75		
20	13,50	2,49	16,1	3,03	18,7	3,63	20,0	4,00	21,3	4,39	23,2	4,94	23,7	4,98		
21	13,50	2,51	16,1	3,09	18,7	3,76	20,0	4,15	21,3	4,55	23,0	5,06	23,5	5,09		
23	13,50	2,58	16,1	3,26	18,7	4,03	20,0	4,44	21,3	4,88	22,7	5,29	23,2	5,33		
25	13,50	2,75	16,1	3,49	18,7	4,31	20,0	4,76	21,3	5,22	22,4	5,52	22,8	5,56		
27	13,50	2,93	16,1	3,72	18,7	4,61	20,0	5,09	21,3	5,59	22,0	5,75	22,5	5,80		
29	13,50	3,12	16,1	3,97	18,7	4,92	20,0	5,43	21,2	5,93	21,7	5,98	22,2	6,03		
31	13,50	3,32	16,1	4,23	18,7	5,25	20,0	5,80	20,9	6,16	21,4	6,22	21,9	6,27		
33	13,50	3,53	16,1	4,51	18,7	5,60	20,0	6,19	20,6	6,40	21,1	6,45	21,5	6,51		
35	13,50	3,76	16,1	4,80	18,7	5,97	20,0	6,60	20,2	6,63	20,7	6,69	21,2	6,75		
37	13,50	3,99	16,1	5,10	18,7	6,36	19,7	6,83	19,9	6,86	20,4	6,92	20,9	6,99		
39	13,50	4,24	16,1	5,43	18,7	6,77	19,3	7,07	19,6	7,10	20,1	7,16	20,6	7,23		
10	12,15	2,04	14,5	2,48	16,8	2,90	18,0	3,13	19,2	3,36	21,5	3,84	23,9	4,33		
12	12,15	2,07	14,5	2,50	16,8	2,95	18,0	3,19	19,2	3,43	21,5	3,91	23,9	4,41		
14	12,15	2,11	14,5	2,54	16,8	3,01	18,0	3,25	19,2	3,49	21,5	3,99	23,9	4,49		
16	12,15	2,14	14,5	2,59	16,8	3,06	18,0	3,31	19,2	3,56	21,5	4,07	23,8	4,57		
18	12,15	2,18	14,5	2,64	16,8	3,12	18,0	3,37	19,2	3,63	21,5	4,15	23,5	4,71		
20	12,15	2,22	14,5	2,69	16,8	3,19	18,0	3,44	19,2	3,76	21,5	4,46	23,2	4,94		
21	12,15	2,24	14,5	2,72	16,8	3,24	18,0	3,56	19,2	3,90	21,5	4,62	23,0	5,06		
23	12,15	2,29	14,5	2,83	16,8	3,47	18,0	3,81	19,2	4,18	21,5	4,95	22,7	5,29		
25	12,15	2,41	14,5	3,02	16,8	3,71	18,0	4,08	19,2	4,47	21,5	5,30	22,3	5,52		
27	12,15	2,56	14,5	3,22	16,8	3,96	18,0	4,36	19,2	4,78	21,5	5,67	22,0	5,75		
29	12,15	2,73	14,5	3,43	16,8	4,23	18,0	4,65	19,2	5,10	21,3	5,94	21,7	5,98		
31	12,15	2,90	14,5	3,66	16,8	4,51	18,0	4,96	19,2	5,45	20,9	6,17	21,4	6,22		
33	12,15	3,08	14,5	3,89	16,8	4,80	18,0	5,29	19,2	5,81	20,6	6,40	21,0	6,45		
35	12,15	3,27	14,5	4,14	16,8	5,11	18,0	5,64	19,2	6,19	20,3	6,63	20,7	6,69		
37	12,15	3,47	14,5	4,40	16,8	5,44	18,0	6,01	19,2	6,60	20,0	6,87	20,4	6,92		
39	12,15	3,68	14,5	4,67	16,8	5,79	18,0	6,39	19,2	7,03	19,6	7,10	20,1	7,16		
10	10,80	1,81	12,88	2,16	15,0	2,54	16,0	2,74	17,0	2,94	19,1	3,35	21,2	3,78		
12	10,80	1,84	12,88	2,20	15,0	2,59	16,0	2,79	17,0	2,99	19,1	3,41	21,2	3,85		
14	10,80	1,87	12,88	2,24	15,0	2,64	16,0	2,84	17,0	3,05	19,1	3,48	21,2	3,92		
16	10,80	1,90	12,88	2,28	15,0	2,68	16,0	2,89	17,0	3,11	19,1	3,55	21,2	4,00		
18	10,80	1,93	12,88	2,32	15,0	2,74	16,0	2,95	17,0	3,17	19,1	3,62	21,2	4,06		
20	10,80	1,97	12,88	2,37	15,0	2,79	16,0	3,01	17,0	3,23	19,1	3,75	21,2	4,36		
21	10,80	1,98	12,88	2,39	15,0	2,82	16,0	3,04	17,0	3,30	19,1	3,88	21,2	4,52		
23	10,80	2,02	12,88	2,43	15,0	2,95	16,0	3,24	17,0	3,53	19,1	4,16	21,2	4,84		
25	10,80	2,09	12,88	2,59	15,0	3,15	16,0	3,46	17,0	3,77	19,1	4,45	21,2	5,19		
27	10,80	2,22	12,88	2,76	15,0	3,36	16,0	3,69	17,0	4,03	19,1	4,76	21,2	5,55		
29	10,80	2,36	12,88	2,94	15,0	3,59	16,0	3,94	17,0	4,30	19,1	5,08	21,2	5,93		
31	10,80	2,50	12,88	3,13	15,0	3,82	16,0	4,19	17,0	4,59	19,1	5,42	20,9	6,16		
33	10,80	2,66	12,88	3,32	15,0	4,07	16,0	4,47	17,0	4,89	19,1	5,79	20,6	6,39		
35	10,80	2,82	12,88	3,53	15,0	4,32	16,0	4,75	17,0	5,20	19,1	6,17	20,2	6,63		
37	10,80	2,99	12,88	3,75	15,0	4,60	16,0	5,06	17,0	5,54	19,1	6,57	19,9	6,86		
39	10,80	3,16	12,88	3,98	15,0	4,89	16,0	5,38	17,0	5,90	19,1	7,00	19,6	7,10		

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: The above table shows the average value of conditions which may occur.

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6 Capacity tables

6 - 1 Cooling capacity tables

Cooling CMSQ200A

Combination (%) Capacity index	Outdoor air temp. °CDB	Indoor air temp.: °CWB															
		14,0		16,0		18,0		19,0		20,0		22,0		24,0			
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI		
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW		
70% 14,00 kW	10	9,45	1,59	11,27	1,89	13,09	2,20	14,00	2,37	14,9	2,53	16,7	2,88	18,6	3,24		
	12	9,45	1,61	11,27	1,92	13,09	2,24	14,00	2,41	14,9	2,58	16,7	2,93	18,6	3,30		
	14	9,45	1,64	11,27	1,95	13,09	2,28	14,00	2,45	14,9	2,63	16,7	2,99	18,6	3,36		
	16	9,45	1,66	11,27	1,98	13,09	2,32	14,00	2,50	14,9	2,67	16,7	3,04	18,6	3,43		
	18	9,45	1,69	11,27	2,02	13,09	2,36	14,00	2,54	14,9	2,73	16,7	3,10	18,6	3,49		
	20	9,45	1,72	11,27	2,05	13,09	2,41	14,00	2,59	14,9	2,78	16,7	3,17	18,6	3,59		
	21	9,45	1,74	11,27	2,07	13,09	2,43	14,00	2,62	14,9	2,81	16,7	3,22	18,6	3,72		
	23	9,45	1,77	11,27	2,11	13,09	2,48	14,00	2,70	14,9	2,94	16,7	3,44	18,6	3,98		
	25	9,45	1,80	11,27	2,19	13,09	2,65	14,00	2,89	14,9	3,14	16,7	3,68	18,6	4,26		
	27	9,45	1,90	11,27	2,34	13,09	2,82	14,00	3,06	14,9	3,35	16,7	3,93	18,6	4,55		
	29	9,45	2,02	11,27	2,48	13,09	3,00	14,00	3,28	14,9	3,57	16,7	4,19	18,6	4,86		
	31	9,45	2,14	11,27	2,64	13,09	3,19	14,00	3,49	14,9	3,80	16,7	4,47	18,6	5,19		
	33	9,45	2,27	11,27	2,80	13,09	3,39	14,00	3,71	14,9	4,05	16,7	4,76	18,6	5,53		
	35	9,45	2,40	11,27	2,97	13,09	3,61	14,00	3,95	14,9	4,31	16,7	5,07	18,6	5,90		
	37	9,45	2,54	11,27	3,15	13,09	3,83	14,00	4,20	14,9	4,58	16,7	5,40	18,6	6,28		
	39	9,45	2,69	11,27	3,34	13,09	4,07	14,00	4,46	14,9	4,87	16,7	5,74	18,6	6,69		
60% 12,00 kW	10	8,10	1,38	9,66	1,62	11,22	1,88	12,00	2,01	12,78	2,15	14,3	2,43	15,9	2,72		
	12	8,10	1,40	9,66	1,65	11,22	1,91	12,00	2,04	12,78	2,18	14,3	2,47	15,9	2,77		
	14	8,10	1,42	9,66	1,67	11,22	1,94	12,00	2,08	12,78	2,22	14,3	2,52	15,9	2,82		
	16	8,10	1,44	9,66	1,70	11,22	1,97	12,00	2,12	12,78	2,26	14,3	2,56	15,9	2,87		
	18	8,10	1,47	9,66	1,73	11,22	2,01	12,00	2,15	12,78	2,30	14,3	2,61	15,9	2,93		
	20	8,10	1,49	9,66	1,76	11,22	2,04	12,00	2,19	12,78	2,35	14,3	2,66	15,9	2,99		
	21	8,10	1,50	9,66	1,77	11,22	2,06	12,00	2,21	12,78	2,37	14,3	2,69	15,9	3,02		
	23	8,10	1,52	9,66	1,80	11,22	2,10	12,00	2,26	12,78	2,41	14,3	2,79	15,9	3,21		
	25	8,10	1,55	9,66	1,84	11,22	2,18	12,00	2,37	12,78	2,57	14,3	2,98	15,9	3,43		
	27	8,10	1,61	9,66	1,95	11,22	2,32	12,00	2,52	12,78	2,73	14,3	3,18	15,9	3,66		
	29	8,10	1,70	9,66	2,07	11,22	2,47	12,00	2,68	12,78	2,91	14,3	3,39	15,9	3,90		
	31	8,10	1,80	9,66	2,19	11,22	2,62	12,00	2,85	12,78	3,09	14,3	3,61	15,9	4,16		
	33	8,10	1,91	9,66	2,32	11,22	2,78	12,00	3,03	12,78	3,29	14,3	3,84	15,9	4,43		
	35	8,10	2,02	9,66	2,46	11,22	2,95	12,00	3,22	12,78	3,49	14,3	4,08	15,9	4,71		
	37	8,10	2,13	9,66	2,61	11,22	3,13	12,00	3,41	12,78	3,71	14,3	4,34	15,9	5,01		
	39	8,10	2,25	9,66	2,76	11,22	3,32	12,00	3,62	12,78	3,94	14,3	4,61	15,9	5,33		
50% 10,00 kW	10	6,75	1,19	8,05	1,37	9,35	1,57	10,00	1,68	10,65	1,78	11,95	2,00	13,25	2,23		
	12	6,75	1,20	8,05	1,39	9,35	1,60	10,00	1,70	10,65	1,81	11,95	2,04	13,25	2,27		
	14	6,75	1,22	8,05	1,41	9,35	1,62	10,00	1,73	10,65	1,84	11,95	2,07	13,25	2,31		
	16	6,75	1,24	8,05	1,44	9,35	1,65	10,00	1,76	10,65	1,87	11,95	2,11	13,25	2,35		
	18	6,75	1,25	8,05	1,46	9,35	1,67	10,00	1,79	10,65	1,90	11,95	2,14	13,25	2,39		
	20	6,75	1,27	8,05	1,48	9,35	1,70	10,00	1,82	10,65	1,94	11,95	2,18	13,25	2,44		
	21	6,75	1,28	8,05	1,49	9,35	1,72	10,00	1,83	10,65	1,96	11,95	2,20	13,25	2,46		
	23	6,75	1,30	8,05	1,52	9,35	1,75	10,00	1,87	10,65	1,99	11,95	2,25	13,25	2,52		
	25	6,75	1,32	8,05	1,54	9,35	1,78	10,00	1,91	10,65	2,05	11,95	2,36	13,25	2,69		
	27	6,75	1,34	8,05	1,60	9,35	1,88	10,00	2,03	10,65	2,18	11,95	2,51	13,25	2,86		
	29	6,75	1,42	8,05	1,69	9,35	1,99	10,00	2,15	10,65	2,32	11,95	2,67	13,25	3,05		
	31	6,75	1,50	8,05	1,79	9,35	2,11	10,00	2,28	10,65	2,46	11,95	2,84	13,25	3,24		
	33	6,75	1,58	8,05	1,89	9,35	2,24	10,00	2,42	10,65	2,61	11,95	3,01	13,25	3,45		
	35	6,75	1,67	8,05	2,00	9,35	2,37	10,00	2,57	10,65	2,77	11,95	3,20	13,25	3,67		
	37	6,75	1,76	8,05	2,12	9,35	2,51	10,00	2,72	10,65	2,93	11,95	3,40	13,25	3,89		
	39	6,75	1,86	8,05	2,24	9,35	2,65	10,00	2,88	10,65	3,11	11,95	3,60	13,25	4,13		

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: The above table shows the average value of conditions which may occur.

3TW31342-1

6 Capacity tables

6 - 1 Cooling capacity tables

Cooling CMSQ250A

Combination (%) Capacity index	Outdoor air temp. °CDB	Indoor air temp.: °CWB													
		14,0		16,0		18,0		19,0		20,0		22,0		24,0	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
100% 25,00 kW	10	16,8	2,32	20,1	2,62	23,4	3,34	25,0	3,80	26,8	3,88	28,9	4,43	31,6	4,98
	12	16,8	2,36	20,1	2,67	23,4	3,40	25,0	3,87	26,8	3,95	28,9	4,51	31,2	4,56
	14	16,8	2,41	20,1	2,92	23,4	3,46	25,0	3,74	26,8	4,03	28,9	4,60	30,8	4,54
	16	16,8	2,46	20,1	2,98	23,4	3,53	25,0	3,82	26,8	4,10	28,9	4,66	30,4	4,61
	18	16,8	2,49	20,1	3,03	23,4	3,60	25,0	3,89	26,8	4,19	28,4	4,81	30,0	4,65
	20	16,8	2,54	20,1	3,08	23,4	3,71	25,0	4,09	26,8	4,40	28,0	5,05	29,6	5,06
	21	16,8	2,57	20,1	3,12	23,4	3,84	25,0	4,23	26,8	4,85	28,8	5,16	29,4	5,20
	23	16,8	2,63	20,1	3,33	23,4	4,11	25,0	4,54	26,8	4,90	28,4	5,40	29,0	5,44
	25	16,8	2,81	20,1	3,56	23,4	4,40	25,0	4,86	26,8	5,33	27,9	5,63	28,8	5,68
	27	16,8	3,00	20,1	3,80	23,4	4,70	25,0	5,19	26,8	5,71	27,9	5,87	28,1	5,92
	29	16,8	3,19	20,1	4,05	23,4	5,02	25,0	5,55	26,5	6,06	27,1	6,11	27,7	6,16
	31	16,8	3,39	20,1	4,32	23,4	5,38	25,0	5,92	26,1	6,29	26,7	6,35	27,3	6,40
	33	16,8	3,61	20,1	4,60	23,4	5,72	25,0	6,32	25,7	6,53	26,3	6,59	26,9	6,64
	35	16,8	3,84	20,1	4,90	23,4	6,09	25,0	6,74	25,3	6,77	25,9	6,83	26,5	6,88
	37	16,8	4,08	20,1	5,21	23,4	6,49	24,6	6,98	24,9	7,01	25,5	7,07	26,1	7,13
	39	16,8	4,33	20,1	5,54	23,4	6,91	24,2	7,22	24,5	7,25	25,1	7,32	25,7	7,38
90% 22,50 kW	10	15,2	2,09	18,1	2,51	21,0	2,96	22,5	3,18	24,0	3,43	26,0	3,92	28,8	4,42
	12	15,2	2,11	18,1	2,55	21,0	3,01	22,5	3,25	24,0	3,50	26,0	4,00	28,8	4,50
	14	15,2	2,15	18,1	2,60	21,0	3,07	22,5	3,32	24,0	3,58	26,0	4,07	28,8	4,59
	16	15,2	2,19	18,1	2,65	21,0	3,13	22,5	3,38	24,0	3,63	26,0	4,15	28,8	4,67
	18	15,2	2,23	18,1	2,70	21,0	3,19	22,5	3,45	24,0	3,71	26,0	4,23	29,4	4,81
	20	15,2	2,27	18,1	2,76	21,0	3,25	22,5	3,51	24,0	3,84	26,0	4,55	29,0	5,04
	21	15,2	2,29	18,1	2,79	21,0	3,31	22,5	3,64	24,0	3,98	26,0	4,71	28,7	5,16
	23	15,2	2,33	18,1	2,89	21,0	3,54	22,5	3,90	24,0	4,28	26,0	5,06	28,3	5,40
	25	15,2	2,46	18,1	3,09	21,0	3,78	22,5	4,17	24,0	4,58	26,0	5,41	27,9	5,63
	27	15,2	2,62	18,1	3,29	21,0	4,04	22,5	4,45	24,0	4,88	26,0	5,79	27,5	5,87
	29	15,2	2,79	18,1	3,51	21,0	4,32	22,5	4,75	24,0	5,21	26,0	6,06	27,1	6,11
	31	15,2	2,99	18,1	3,73	21,0	4,60	22,5	5,07	24,0	5,56	26,2	6,33	26,7	6,35
	33	15,2	3,14	18,1	3,97	21,0	4,90	22,5	5,40	24,0	5,93	25,8	6,54	26,3	6,59
	35	15,2	3,34	18,1	4,23	21,0	5,22	22,5	5,76	24,0	6,32	25,4	6,77	25,9	6,83
	37	15,2	3,54	18,1	4,49	21,0	5,56	22,5	6,13	24,0	6,74	24,9	7,01	25,5	7,07
	39	15,2	3,76	18,1	4,77	21,0	5,91	22,5	6,53	24,0	7,18	24,5	7,25	25,1	7,31
80% 20,00 kW	10	13,5	1,89	16,1	2,21	18,7	2,60	20,0	2,80	21,3	3,00	23,9	3,42	26,5	3,89
	12	13,5	1,88	16,1	2,25	18,7	2,64	20,0	2,85	21,3	3,06	23,9	3,48	26,5	3,83
	14	13,5	1,91	16,1	2,29	18,7	2,69	20,0	2,90	21,3	3,11	23,9	3,55	26,5	4,09
	16	13,5	1,94	16,1	2,33	18,7	2,74	20,0	2,96	21,3	3,17	23,9	3,62	26,5	4,09
	18	13,5	1,97	16,1	2,37	18,7	2,79	20,0	3,01	21,3	3,24	23,9	3,69	26,5	4,16
	20	13,5	2,01	16,1	2,42	18,7	2,85	20,0	3,07	21,3	3,30	23,9	3,83	26,5	4,49
	21	13,5	2,02	16,1	2,44	18,7	2,88	20,0	3,10	21,3	3,37	23,9	3,97	26,5	4,61
	23	13,5	2,06	16,1	2,48	18,7	3,02	20,0	3,30	21,3	3,61	23,9	4,25	26,5	4,89
	25	13,5	2,13	16,1	2,68	18,7	3,22	20,0	3,53	21,3	3,85	23,9	4,55	26,5	5,30
	27	13,5	2,27	16,1	2,82	18,7	3,44	20,0	3,77	21,3	4,12	23,9	4,86	26,5	5,67
	29	13,5	2,41	16,1	3,00	18,7	3,66	20,0	4,02	21,3	4,39	23,9	5,19	26,5	6,06
	31	13,5	2,56	16,1	3,18	18,7	3,90	20,0	4,28	21,3	4,69	23,9	5,54	26,1	6,39
	33	13,5	2,71	16,1	3,38	18,7	4,15	20,0	4,56	21,3	4,99	23,9	5,91	25,7	6,93
	35	13,5	2,88	16,1	3,60	18,7	4,42	20,0	4,86	21,3	5,31	23,8	6,30	25,3	6,77
	37	13,5	3,06	16,1	3,83	18,7	4,70	20,0	5,17	21,3	5,69	23,8	6,71	24,9	7,01
	39	13,5	3,25	16,1	4,06	18,7	4,99	20,0	5,50	21,3	6,02	23,8	7,15	24,5	7,25
70% 17,50 kW	10	11,8	1,82	14,1	1,93	16,4	2,29	17,5	2,42	18,6	2,59	20,8	2,94	23,2	3,31
	12	11,8	1,85	14,1	1,96	16,4	2,29	17,5	2,48	18,6	2,63	20,8	2,99	23,2	3,37
	14	11,8	1,87	14,1	1,99	16,4	2,33	17,5	2,53	18,6	2,68	20,8	3,05	23,2	3,43
	16	11,8	1,70	14,1	2,02	16,4	2,37	17,5	2,58	18,6	2,73	20,8	3,11	23,2	3,50
	18	11,8	1,73	14,1	2,06	16,4	2,41	17,5	2,63	18,6	2,78	20,8	3,17	23,2	3,57
	20	11,8	1,76	14,1	2,10	16,4	2,48	17,5	2,65	18,6	2,84	20,8	3,23	23,2	3,67
	21	11,8	1,77	14,1	2,12	16,4	2,48	17,5	2,67	18,6	2,87	20,8	3,26	23,2	3,80
	23	11,8	1,80	14,1	2,16	16,4	2,53	17,5	2,76	18,6	3,00	20,8	3,51	23,2	4,07
	25	11,8	1,84	14,1	2,24	16,4	2,70	17,5	2,95	18,6	3,21	20,8	3,76	23,2	4,35
	27	11,8	1,94	14,1	2,33	16,4	2,88	17,5	3,14	18,6	3,42	20,8	4,01	23,2	4,65
	29	11,8	2,06	14,1	2,54	16,4	3,06	17,5	3,35	18,6	3,68	20,8	4,28	23,2	4,97
	31	11,8	2,18	14,1	2,69	16,4	3,26	17,5	3,56	18,6	3,88	20,8	4,56	23,2	5,30
	33	11,8	2,31	14,1	2,88	16,4	3,47	17,5	3,79	18,8	4,13	20,8	4,86	23,2	5,65
	35	11,8	2,45	14,1	3,03	16,4	3,68	17,5	4,03	18,8	4,40	20,8	5,18	23,2	6,02
	37	11,8	2,59	14,1	3,22	16,4	3,91	17,5	4,29	18,8	4,67	20,8	5,51	23,2	6,41
	39	11,8	2,74	14,1	3,41	16,4	4,15	17,5	4,55	18,8	4,97	20,8	5,86	23,2	6,83

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: The above table shows the average value of conditions which may occur.

3TW31342-1

6 Capacity tables

6 - 1 Cooling capacity tables

Cooling CMSQ250A

Combination (%) Capacity index	Outdoor air temp. °CDB	Indoor air temp.: °CWB													
		14,0		16,0		18,0		19,0		20,0		22,0		24,0	
		TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
60% 15,00 kW	10	10,1	1,41	12,1	1,66	14,0	1,92	15,0	2,05	16,0	2,18	17,9	2,48	19,9	2,78
	12	10,1	1,43	12,1	1,68	14,0	1,95	15,0	2,09	16,0	2,23	17,9	2,52	19,9	2,83
	14	10,1	1,45	12,1	1,71	14,0	1,98	15,0	2,12	16,0	2,27	17,9	2,57	19,9	2,88
	16	10,1	1,47	12,1	1,74	14,0	2,02	15,0	2,16	16,0	2,31	17,9	2,62	19,9	2,94
	18	10,1	1,50	12,1	1,77	14,0	2,05	15,0	2,20	16,0	2,35	17,9	2,67	19,9	2,99
	20	10,1	1,52	12,1	1,80	14,0	2,09	15,0	2,24	16,0	2,40	17,9	2,72	19,9	3,05
	21	10,1	1,53	12,1	1,81	14,0	2,11	15,0	2,26	16,0	2,42	17,9	2,74	19,9	3,08
	23	10,1	1,56	12,1	1,84	14,0	2,15	15,0	2,30	16,0	2,46	17,9	2,85	19,9	3,20
	25	10,1	1,58	12,1	1,88	14,0	2,23	15,0	2,42	16,0	2,62	17,9	3,04	19,9	3,50
	27	10,1	1,64	12,1	1,99	14,0	2,37	15,0	2,58	16,0	2,79	17,9	3,25	19,9	3,74
	29	10,1	1,74	12,1	2,11	14,0	2,52	15,0	2,74	16,0	2,97	17,9	3,46	19,9	3,99
	31	10,1	1,94	12,1	2,24	14,0	2,68	15,0	2,91	16,0	3,16	17,9	3,68	19,9	4,25
	33	10,1	1,95	12,1	2,37	14,0	2,84	15,0	3,10	16,0	3,36	17,9	3,92	19,9	4,52
	35	10,1	2,06	12,1	2,51	14,0	3,02	15,0	3,29	16,0	3,57	17,9	4,17	19,9	4,81
	37	10,1	2,18	12,1	2,66	14,0	3,20	15,0	3,48	16,0	3,78	17,9	4,43	19,9	5,12
	39	10,1	2,30	12,1	2,82	14,0	3,39	15,0	3,70	16,0	4,02	17,9	4,71	19,9	5,45
50% 12,50 kW	10	8,44	1,21	10,1	1,40	11,7	1,61	12,5	1,71	13,3	1,82	14,9	2,04	16,6	2,28
	12	8,44	1,23	10,1	1,42	11,7	1,63	12,5	1,74	13,3	1,85	14,9	2,08	16,6	2,32
	14	8,44	1,25	10,1	1,44	11,7	1,66	12,5	1,77	13,3	1,88	14,9	2,11	16,6	2,36
	16	8,44	1,26	10,1	1,47	11,7	1,68	12,5	1,80	13,3	1,91	14,9	2,15	16,6	2,40
	18	8,44	1,28	10,1	1,49	11,7	1,71	12,5	1,83	13,3	1,94	14,9	2,19	16,6	2,44
	20	8,44	1,30	10,1	1,51	11,7	1,74	12,5	1,86	13,3	1,98	14,9	2,23	16,6	2,49
	21	8,44	1,31	10,1	1,52	11,7	1,75	12,5	1,87	13,3	2,00	14,9	2,25	16,6	2,52
	23	8,44	1,33	10,1	1,55	11,7	1,78	12,5	1,91	13,3	2,03	14,9	2,29	16,6	2,57
	25	8,44	1,35	10,1	1,57	11,7	1,82	12,5	1,96	13,3	2,10	14,9	2,41	16,6	2,74
	27	8,44	1,37	10,1	1,63	11,7	1,92	12,5	2,07	13,3	2,23	14,9	2,56	16,6	2,92
	29	8,44	1,45	10,1	1,73	11,7	2,03	12,5	2,20	13,3	2,37	14,9	2,73	16,6	3,11
	31	8,44	1,53	10,1	1,83	11,7	2,16	12,5	2,33	13,3	2,51	14,9	2,90	16,6	3,31
	33	8,44	1,62	10,1	1,93	11,7	2,29	12,5	2,47	13,3	2,67	14,9	3,08	16,6	3,52
	35	8,44	1,70	10,1	2,05	11,7	2,42	12,5	2,62	13,3	2,83	14,9	3,27	16,6	3,74
	37	8,44	1,80	10,1	2,16	11,7	2,56	12,5	2,77	13,3	3,00	14,9	3,47	16,6	3,98
	39	8,44	1,90	10,1	2,28	11,7	2,71	12,5	2,94	13,3	3,19	14,9	3,68	16,6	4,22

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: The above table shows the average value of conditions which may occur.

3TW31342-1

6 Capacity tables

6 - 2 Heating capacity tables

Heating CMSQ200A

Combination (%)	Outdoor air temp. (°CDB)	Outdoor air temp. (°CWB)	Indoor air temp.: °CDB 16,0 TC kW	16,0 PI kW	18,0 TC kW	18,0 PI kW	20,0 TC kW	20,0 PI kW	21,0 TC kW	21,0 PI kW	22,0 TC kW	22,0 PI kW	24,0 TC kW	24,0 PI kW
	−19,8	−20,0	12,7	3,91	12,6	4,02	12,6	4,24	12,6	4,34	12,5	4,45	12,5	4,67
	−18,8	−19,0	13,0	3,92	13,0	4,13	13,0	4,34	12,9	4,44	12,9	4,55	12,9	4,76
	−16,7	−17,0	13,8	4,14	13,8	4,33	13,7	4,53	13,7	4,63	13,7	4,73	13,6	4,92
100% 22,4 kW	−13,7	−15,0	14,5	4,33	14,5	4,51	14,5	4,70	14,4	4,79	14,4	4,89	14,4	5,07
	−11,8	−13,0	15,3	4,50	15,3	4,68	15,2	4,85	15,2	4,94	15,2	5,03	15,1	5,21
	−9,8	−11,0	16,1	4,66	16,0	4,82	16,0	4,99	16,0	5,08	15,9	5,16	15,9	5,33
	−8,5	−10,0	16,4	4,73	16,4	4,89	16,4	5,06	16,3	5,14	16,3	5,22	16,3	5,38
	−8,3	−9,1	16,8	4,79	16,7	4,95	16,7	5,11	16,7	5,19	16,7	5,27	16,6	5,43
	−7,0	−7,6	17,3	4,89	17,3	5,05	17,3	5,20	17,2	5,28	17,2	5,36	17,2	5,51
	−5,0	−5,6	18,1	5,01	18,1	5,16	18,0	5,31	18,0	5,38	18,0	5,46	17,9	5,61
	−3,0	−3,7	18,8	5,12	18,8	5,26	18,7	5,40	18,7	5,48	18,7	5,55	18,7	5,69
	0,0	−0,7	19,9	5,27	19,9	5,41	19,9	5,54	19,8	5,61	19,8	5,68	19,5	5,69
	3,0	2,2	21,0	5,41	21,0	5,53	21,0	5,66	20,9	5,72	20,9	5,79	19,5	5,33
	5,0	4,1	21,8	5,49	21,7	5,61	21,7	5,73	21,7	5,79	21,0	5,57	19,5	5,13
	7,0	6,0	22,5	5,56	22,4	5,68	22,4	5,80	21,7	5,58	21,0	5,36	19,5	4,93
	9,0	7,9	23,2	5,63	23,2	5,75	22,4	5,58	21,7	5,37	21,0	5,16	19,5	4,76
	11,0	9,8	23,9	5,70	23,8	5,80	22,4	5,39	21,7	5,18	21,0	4,98	19,5	4,59
	13,0	11,8	24,7	5,77	23,8	5,59	22,4	5,19	21,7	5,00	21,0	4,81	19,5	4,43
	15,0	13,7	25,3	5,79	23,8	5,40	22,4	5,02	21,7	4,83	21,0	4,65	19,5	4,29
	−19,8	−20,0	12,6	4,18	12,6	4,38	12,5	4,57	12,5	4,67	12,5	4,76	12,4	4,96
	−18,8	−19,0	13,0	4,29	12,9	4,48	12,9	4,66	12,9	4,76	12,9	4,85	12,8	5,04
	−16,7	−17,0	13,7	4,48	13,7	4,66	13,7	4,84	13,6	4,92	13,6	5,01	13,6	5,19
90% 20,2 kW	−13,7	−15,0	14,5	4,66	14,4	4,82	14,4	4,99	14,4	5,07	14,4	5,16	14,3	5,32
	−11,8	−13,0	15,2	4,81	15,2	4,97	15,2	5,13	15,1	5,21	15,1	5,29	15,1	5,44
	−9,8	−11,0	16,0	4,95	16,0	5,10	15,9	5,25	15,9	5,33	15,9	5,40	15,8	5,55
	−8,5	−10,0	16,4	5,02	16,3	5,16	16,3	5,31	16,3	5,39	16,3	5,46	16,2	5,61
	−8,3	−9,1	16,7	5,07	16,7	5,22	16,6	5,36	16,6	5,43	16,6	5,51	16,6	5,65
	−7,0	−7,6	17,3	5,16	17,2	5,30	17,2	5,44	17,2	5,51	17,2	5,58	17,1	5,72
	−5,0	−5,6	18,0	5,27	18,0	5,41	18,0	5,54	17,9	5,61	17,9	5,67	17,8	5,65
	−3,0	−3,7	18,7	5,37	18,7	5,50	18,7	5,63	18,7	5,69	18,6	5,75	17,8	5,39
	0,0	−0,7	19,9	5,51	19,8	5,63	19,8	5,75	19,5	5,69	18,9	5,46	17,8	5,03
	3,0	2,2	21,0	5,63	20,9	5,74	20,2	5,54	19,5	5,33	18,9	5,12	17,8	4,72
	5,0	4,1	21,7	5,70	21,5	5,73	20,2	5,32	19,5	5,12	18,9	4,93	17,8	4,54
	7,0	6,0	22,4	5,77	21,5	5,51	20,2	5,12	19,5	4,93	18,9	4,74	17,8	4,38
	9,0	7,9	22,8	5,69	21,5	5,31	20,2	4,94	19,5	4,75	18,9	4,58	17,8	4,22
	11,0	9,8	22,8	5,48	21,5	5,12	20,2	4,77	19,5	4,59	18,9	4,42	17,8	4,08
	13,0	11,8	22,8	5,29	21,5	4,94	20,2	4,60	19,5	4,43	18,9	4,27	17,8	3,94
	15,0	13,7	22,8	5,11	21,5	4,78	20,2	4,45	19,5	4,29	18,9	4,13	17,8	3,82
	−19,8	−20,0	12,5	4,91	12,5	4,73	12,5	4,80	12,4	4,99	12,4	5,09	12,4	5,25
	−18,8	−19,0	12,9	4,65	12,9	4,82	12,8	4,99	12,8	5,07	12,8	5,15	12,8	5,32
	−16,7	−17,0	13,7	4,83	13,6	4,99	13,6	5,14	13,6	5,22	13,5	5,30	13,5	5,45
80% 17,9 kW	−13,7	−15,0	14,4	4,98	14,4	5,13	14,3	5,28	14,3	5,35	14,3	5,43	14,3	5,58
	−11,8	−13,0	15,2	5,12	15,1	5,26	15,1	5,40	15,1	5,47	15,1	5,54	15,0	5,68
	−9,8	−11,0	15,9	5,25	15,9	5,38	15,9	5,51	15,8	5,58	15,8	5,65	15,6	5,68
	−8,5	−10,0	16,3	5,30	16,3	5,44	16,2	5,57	16,2	5,63	16,2	5,70	15,6	5,52
	−8,3	−9,1	16,6	5,35	16,6	5,48	16,6	5,61	16,6	5,68	16,5	5,74	15,6	5,39
	−7,0	−7,6	17,2	5,43	17,2	5,56	17,1	5,68	17,1	5,74	16,8	5,63	15,6	5,18
	−5,0	−5,6	18,0	5,53	17,9	5,65	17,9	5,77	17,3	5,56	16,8	5,35	15,6	4,92
	−3,0	−3,7	18,7	5,62	18,6	5,73	17,9	5,52	17,3	5,31	16,8	5,10	15,6	4,70
	0,0	−0,7	19,8	5,74	19,1	5,53	17,9	5,14	17,3	4,95	16,8	4,76	15,6	4,39
	3,0	2,2	20,2	5,56	19,1	5,19	17,9	4,83	17,3	4,65	16,8	4,48	15,6	4,13
	5,0	4,1	20,2	5,34	19,1	4,99	17,9	4,64	17,3	4,48	16,8	4,31	15,6	3,98
	7,0	6,0	20,2	5,14	19,1	4,80	17,9	4,47	17,3	4,31	16,8	4,15	15,6	3,84
	9,0	7,9	20,2	4,95	19,1	4,63	17,9	4,32	17,3	4,16	16,8	4,01	15,6	3,71
	11,0	9,8	20,2	4,78	19,1	4,47	17,9	4,17	17,3	4,02	16,8	3,88	15,6	3,59
	13,0	11,8	20,2	4,61	19,1	4,32	17,9	4,03	17,3	3,89	16,8	3,75	15,6	3,47
	15,0	13,7	20,2	4,47	19,1	4,18	17,9	3,91	17,3	3,77	16,8	3,63	15,6	3,37

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: is shown as reference.
When selecting the unit models, avoid the outdoor air temperature range shown by
Note2: The above table shows the average value of conditions which may occur.

3TW31342-2

6 Capacity tables

6 - 2 Heating capacity tables

Heating CMSQ200A

Combination (%)	Outdoor air temp.		Indoor air temp.: °CDB											
			16,0		18,0		20,0		21,0		22,0		24,0	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	(°CDB)	(°CWB)	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
	−19,8	−20,0	12,5	4,94	12,4	5,09	12,4	5,24	12,4	5,31	12,4	5,39	12,34	5,54
	−18,8	−19,0	12,8	5,02	12,8	5,17	12,8	5,31	12,8	5,38	12,7	5,46	12,72	5,60
	−16,7	−17,0	13,6	5,17	13,6	5,31	13,5	5,45	13,5	5,51	13,5	5,58	13,47	5,72
70% 15,7 kW	−13,7	−15,0	14,3	5,31	14,3	5,44	14,3	5,57	14,3	5,63	14,3	5,70	13,66	5,47
	−11,8	−13,0	15,1	5,43	15,1	5,55	15,0	5,68	15,0	5,74	14,7	5,60	13,66	5,15
	−9,8	−11,0	15,8	5,54	15,8	5,66	15,7	5,71	15,2	5,49	14,7	5,28	13,66	4,96
	−9,5	−10,0	16,2	5,59	16,2	5,71	15,7	5,55	15,2	5,34	14,7	5,13	13,66	4,73
	−8,5	−9,1	16,6	5,64	16,5	5,75	15,7	5,41	15,2	5,21	14,7	5,01	13,66	4,62
	−7,0	−7,6	17,1	5,71	16,7	5,60	15,7	5,20	15,2	5,01	14,7	4,81	13,66	4,44
	−5,0	−5,6	17,7	5,70	16,7	5,31	15,7	4,94	15,2	4,76	14,7	4,58	13,66	4,23
	−3,0	−3,7	17,7	5,43	16,7	5,07	15,7	4,72	15,2	4,55	14,7	4,38	13,66	4,05
	0,0	−0,7	17,7	5,07	16,7	4,74	15,7	4,41	15,2	4,25	14,7	4,10	13,66	3,79
	3,0	2,2	17,7	4,76	16,7	4,45	15,7	4,15	15,2	4,01	14,7	3,86	13,66	3,57
	5,0	4,1	17,7	4,58	16,7	4,29	15,7	4,00	15,2	3,86	14,7	3,72	13,66	3,45
	7,0	6,0	17,7	4,41	16,7	4,13	15,7	3,86	15,2	3,72	14,7	3,59	13,66	3,33
	9,0	7,9	17,7	4,26	16,7	3,99	15,7	3,73	15,2	3,60	14,7	3,47	13,66	3,22
	11,0	9,8	17,7	4,11	16,7	3,86	15,7	3,61	15,2	3,48	14,7	3,36	13,66	3,12
	13,0	11,8	17,7	3,97	16,7	3,73	15,7	3,49	15,2	3,37	14,7	3,25	13,66	3,02
	15,0	13,7	17,7	3,85	16,7	3,62	15,7	3,38	15,2	3,27	14,7	3,16	13,66	2,93
	−19,8	−20,0	12,4	5,31	12,4	5,44	12,33	5,57	12,32	5,64	12,31	5,70	11,71	5,42
	−18,9	−19,0	12,8	5,39	12,7	5,51	12,71	5,63	12,70	5,70	12,58	5,68	11,71	5,22
	−16,7	−17,0	13,5	5,52	13,5	5,63	13,44	5,73	13,01	5,51	12,58	5,30	11,71	4,88
60% 13,44 kW	−13,7	−15,0	14,3	5,63	14,2	5,74	13,44	5,37	13,01	5,17	12,58	4,97	11,71	4,58
	−11,8	−13,0	15,0	5,74	14,3	5,43	13,44	5,05	13,01	4,86	12,58	4,68	11,71	4,32
	−9,8	−11,0	15,2	5,49	14,3	5,12	13,44	4,77	13,01	4,59	12,58	4,42	11,71	4,08
	−9,5	−10,0	15,2	5,34	14,3	4,98	13,44	4,64	13,01	4,47	12,58	4,30	11,71	3,98
	−8,5	−9,1	15,2	5,21	14,3	4,86	13,44	4,53	13,01	4,37	12,58	4,20	11,71	3,89
	−7,0	−7,6	15,2	5,00	14,3	4,68	13,44	4,36	13,01	4,20	12,58	4,05	11,71	3,74
	−5,0	−5,6	15,2	4,76	14,3	4,45	13,44	4,15	13,01	4,00	12,58	3,86	11,71	3,57
	−3,0	−3,7	15,2	4,55	14,3	4,26	13,44	3,97	13,01	3,83	12,58	3,69	11,71	3,42
	0,0	−0,7	15,2	4,25	14,3	3,98	13,44	3,72	13,01	3,59	12,58	3,47	11,71	3,22
	3,0	2,2	15,2	4,00	14,3	3,75	13,44	3,51	13,01	3,39	12,58	3,27	11,71	3,04
	5,0	4,1	15,2	3,86	14,3	3,62	13,44	3,39	13,01	3,27	12,58	3,16	11,71	2,94
	7,0	6,0	15,2	3,72	14,3	3,49	13,44	3,27	13,01	3,16	12,58	3,06	11,71	2,84
	9,0	7,9	15,2	3,60	14,3	3,38	13,44	3,17	13,01	3,06	12,58	2,96	11,71	2,75
	11,0	9,8	15,2	3,48	14,3	3,27	13,44	3,07	13,01	2,97	12,58	2,87	11,71	2,67
	13,0	11,8	15,2	3,37	14,3	3,17	13,44	2,97	13,01	2,87	12,58	2,78	11,71	2,59
	15,0	13,7	15,2	3,27	14,3	3,07	13,44	2,89	13,01	2,79	12,58	2,70	11,71	2,52
	−19,8	−20,0	12,31	5,69	11,92	5,53	11,20	5,14	10,84	4,95	10,48	4,76	9,76	4,39
	−18,8	−19,0	12,64	5,71	11,92	5,53	11,20	4,95	10,84	4,77	10,48	4,59	9,76	4,24
	−16,7	−17,0	12,64	5,53	11,92	4,80	11,20	4,63	10,84	4,47	10,48	4,30	9,76	3,97
50% 11,20 kW	−13,7	−15,0	12,64	5,00	11,92	4,67	11,20	4,35	10,84	4,20	10,48	4,04	9,76	3,74
	−11,8	−13,0	12,64	4,70	11,92	4,40	11,20	4,11	10,84	3,96	10,48	3,82	9,76	3,53
	−9,8	−11,0	12,64	4,45	11,92	4,16	11,20	3,89	10,84	3,75	10,48	3,62	9,76	3,35
	−9,5	−10,0	12,64	4,33	11,92	4,05	11,20	3,79	10,84	3,65	10,48	3,52	9,76	3,27
	−8,5	−9,1	12,64	4,23	11,92	3,96	11,20	3,70	10,84	3,57	10,48	3,45	9,76	3,20
	−7,0	−7,6	12,64	4,07	11,92	3,82	11,20	3,57	10,84	3,45	10,48	3,32	9,76	3,09
	−5,0	−5,6	12,64	3,88	11,92	3,64	11,20	3,41	10,84	3,29	10,48	3,18	9,76	2,95
	−3,0	−3,7	12,64	3,71	11,92	3,49	11,20	3,27	10,84	3,16	10,48	3,06	9,76	2,84
	0,0	−0,7	12,64	3,48	11,92	3,28	11,20	3,07	10,84	2,97	10,48	2,87	9,76	2,67
	3,0	2,2	12,64	3,29	11,92	3,10	11,20	2,91	10,84	2,81	10,48	2,72	9,76	2,53
	5,0	4,1	12,64	3,18	11,92	2,99	11,20	2,81	10,84	2,72	10,48	2,63	9,76	2,45
	7,0	6,0	12,64	3,07	11,92	2,89	11,20	2,72	10,84	2,63	10,48	2,55	9,76	2,38
	9,0	7,9	12,64	2,97	11,92	2,80	11,20	2,63	10,84	2,55	10,48	2,47	9,76	2,31
	11,0	9,8	12,64	2,88	11,92	2,72	11,20	2,56	10,84	2,48	10,48	2,40	9,76	2,24
	13,0	11,8	12,64	2,79	11,92	2,63	11,20	2,48	10,84	2,40	10,48	2,33	9,76	2,18
	15,0	13,7	12,64	2,71	11,92	2,56	11,20	2,41	10,84	2,34	10,48	2,27	9,76	2,12

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: shaded cells are shown as reference.
When selecting the unit models, avoid the outdoor air temperature range shown by shaded cells.

Note2: The above table shows the average value of conditions which may occur.

3TW31342-2

6 Capacity tables

6 - 2 Heating capacity tables

Heating CMSQ250A

Combination (%)	Outdoor air temp. (°CDB)	Outdoor air temp. (°CWB)	Indoor air temp.: °CDB 16,0 TC kW	16,0 PI kW	18,0 TC kW	18,0 PI kW	20,0 TC kW	20,0 PI kW	21,0 TC kW	21,0 PI kW	22,0 TC kW	22,0 PI kW	24,0 TC kW	24,0 PI kW
	-10,8	-20,0	15,6	4,40	15,6	4,74	15,7	4,99	15,7	5,11	15,7	5,24	15,6	5,49
	-13,8	-19,0	16,3	4,62	16,2	4,87	16,2	5,11	16,2	5,23	16,1	5,36	16,1	5,60
	-16,7	-17,0	17,2	4,87	17,2	5,10	17,1	5,33	17,1	5,45	17,1	5,57	17,0	5,80
100% 28,0 kW	-13,7	-15,0	18,2	5,10	18,1	5,32	18,1	5,54	18,1	5,64	18,0	5,75	18,0	5,97
	-11,8	-13,0	19,1	5,30	19,1	5,51	19,0	5,72	19,0	5,82	19,0	5,92	18,9	6,13
	-9,8	-11,0	20,1	5,48	20,0	5,68	20,0	5,88	19,9	5,98	19,9	6,08	19,9	6,27
	-9,5	-10,0	20,5	5,57	20,5	5,76	20,4	5,95	20,4	6,05	20,4	6,15	20,3	6,34
	-8,5	-9,1	21,0	5,64	20,9	5,83	20,9	6,02	20,8	6,11	20,8	6,21	20,8	6,40
	-7,0	-7,6	21,7	5,76	21,6	5,94	21,6	6,12	21,6	6,22	21,5	6,31	21,5	6,49
	-5,0	-5,6	22,6	5,90	22,6	6,08	22,5	6,25	22,5	6,34	22,5	6,43	22,4	6,60
	-3,0	-3,7	23,5	6,03	23,5	6,20	23,4	6,36	23,4	6,45	23,4	6,53	23,3	6,70
	0,0	-0,7	24,9	6,21	24,9	6,37	24,8	6,53	24,8	6,60	24,8	6,68	24,4	6,70
	3,0	2,2	26,3	6,37	26,3	6,52	26,2	6,67	26,2	6,74	26,2	6,82	24,4	6,28
	5,0	4,1	27,2	6,46	27,2	6,61	27,1	6,75	27,1	6,82	26,2	6,56	24,4	6,04
	7,0	6,0	28,1	6,55	28,0	6,69	28,0	6,83	27,1	6,57	26,2	6,31	24,4	5,81
	9,0	7,9	29,0	6,63	28,9	6,77	28,0	6,58	27,1	6,33	26,2	6,08	24,4	5,60
	11,0	9,8	29,9	6,71	29,8	6,83	28,0	6,34	27,1	6,10	26,2	5,87	24,4	5,41
	13,0	11,8	30,8	6,79	29,8	6,58	28,0	6,11	27,1	5,89	26,2	5,66	24,4	5,22
	15,0	13,7	31,6	6,81	29,8	6,36	28,0	5,91	27,1	5,69	26,2	5,48	24,4	5,05
	-10,8	-20,0	15,7	4,90	15,7	5,15	15,6	5,38	15,6	5,50	15,6	5,61	15,6	5,84
	-13,8	-19,0	16,2	5,05	16,2	5,27	16,1	5,49	16,1	5,60	16,1	5,71	16,0	5,93
	-16,7	-17,0	17,2	5,28	17,1	5,49	17,1	5,69	17,0	5,80	17,0	5,90	17,0	6,11
90% 25,2 kW	-13,7	-15,0	18,1	5,48	18,1	5,68	18,0	5,88	18,0	5,97	18,0	6,07	17,9	6,27
	-11,8	-13,0	19,0	5,66	19,0	5,85	19,0	6,04	18,9	6,13	18,9	6,22	18,9	6,41
	-9,8	-11,0	20,0	5,83	19,9	6,01	19,9	6,19	19,9	6,27	19,9	6,36	19,8	6,54
	-9,5	-10,0	20,5	5,91	20,4	6,09	20,4	6,25	20,3	6,34	20,3	6,43	20,3	6,60
	-8,5	-9,1	20,9	5,97	20,8	6,14	20,8	6,31	20,8	6,40	20,7	6,48	20,7	6,65
	-7,0	-7,6	21,6	6,08	21,5	6,24	21,5	6,41	21,5	6,49	21,5	6,57	21,4	6,74
	-5,0	-5,6	22,5	6,21	22,5	6,37	22,4	6,52	22,4	6,60	22,4	6,68	22,0	6,65
	-3,0	-3,7	23,4	6,32	23,4	6,47	23,3	6,63	23,3	6,70	23,3	6,78	22,0	6,35
	0,0	-0,7	24,8	6,49	24,8	6,63	24,8	6,77	24,4	6,69	23,6	6,43	22,0	5,92
	3,0	2,2	26,2	6,63	26,2	6,76	25,2	6,52	24,4	6,28	23,6	6,03	22,0	5,56
	5,0	4,1	27,1	6,72	26,8	6,75	25,2	6,27	24,4	6,03	23,6	5,80	22,0	5,35
	7,0	6,0	28,0	6,80	26,8	6,49	25,2	6,03	24,4	5,81	23,6	5,59	22,0	5,15
	9,0	7,9	28,4	6,70	26,8	6,25	25,2	5,81	24,4	5,60	23,6	5,39	22,0	4,97
	11,0	9,8	28,4	6,46	26,8	6,03	25,2	5,61	24,4	5,41	23,6	5,20	22,0	4,81
	13,0	11,8	28,4	6,22	26,8	5,81	25,2	5,41	24,4	5,22	23,6	5,02	22,0	4,64
	15,0	13,7	28,4	6,02	26,8	5,63	25,2	5,24	24,4	5,05	23,6	4,87	22,0	4,50
	-10,8	-20,0	15,6	5,37	15,6	5,57	15,6	5,77	15,6	5,88	15,5	5,98	15,5	6,18
	-13,8	-19,0	16,1	5,48	16,1	5,68	16,0	5,87	16,0	5,97	16,0	6,07	16,0	6,26
	-16,7	-17,0	17,1	5,60	17,0	5,87	17,0	6,05	17,0	6,15	16,9	6,24	16,9	6,42
80% 22,4 kW	-13,7	-15,0	18,0	5,87	18,0	6,04	17,9	6,22	17,9	6,30	17,9	6,39	17,9	6,57
	-11,8	-13,0	19,0	6,03	18,9	6,20	18,9	6,36	18,9	6,44	18,8	6,53	18,8	6,69
	-9,8	-11,0	19,9	6,18	19,9	6,34	19,8	6,49	19,8	6,57	19,8	6,65	19,5	6,68
	-9,5	-10,0	20,4	6,25	20,3	6,40	20,3	6,55	20,3	6,63	20,3	6,71	19,5	6,50
	-8,5	-9,1	20,8	6,31	20,8	6,46	20,7	6,61	20,7	6,68	20,7	6,76	19,5	6,34
	-7,0	-7,6	21,5	6,40	21,5	6,55	21,4	6,69	21,4	6,76	21,0	6,83	19,5	6,10
	-5,0	-5,6	22,4	6,52	22,4	6,66	22,4	6,80	21,7	6,55	21,0	6,29	19,5	5,79
	-3,0	-3,7	23,3	6,62	23,3	6,75	22,4	6,90	21,7	6,25	21,0	6,01	19,5	5,53
	0,0	-0,7	24,8	6,77	23,8	6,52	22,4	6,06	21,7	5,83	21,0	5,61	19,5	5,17
	3,0	2,2	25,3	6,55	23,8	6,11	22,4	5,69	21,7	5,48	21,0	5,27	19,5	4,87
	5,0	4,1	25,3	6,29	23,8	5,88	22,4	5,47	21,7	5,27	21,0	5,07	19,5	4,69
	7,0	6,0	25,3	6,05	23,8	5,66	22,4	5,27	21,7	5,08	21,0	4,89	19,5	4,52
	9,0	7,9	25,3	5,83	23,8	5,46	22,4	5,08	21,7	4,90	21,0	4,72	19,5	4,37
	11,0	9,8	25,3	5,63	23,8	5,27	22,4	4,91	21,7	4,74	21,0	4,57	19,5	4,23
	13,0	11,8	25,3	5,43	23,8	5,09	22,4	4,75	21,7	4,58	21,0	4,41	19,5	4,09
	15,0	13,7	25,3	5,26	23,8	4,93	22,4	4,60	21,7	4,44	21,0	4,28	19,5	3,97

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: is shown as reference.
When selecting the unit models, avoid the outdoor air temperature range shown by

Note2: The above table shows the average value of conditions which may occur.

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6 Capacity tables

6 - 2 Heating capacity tables

Heating CMSQ250A

Combination (%)	Outdoor air temp. (°CDB)	Outdoor air temp. (°CWB)	Indoor air temp.: °CDB 16,0 TC kW	16,0 PI kW	18,0 TC kW	18,0 PI kW	20,0 TC kW	20,0 PI kW	21,0 TC kW	21,0 PI kW	22,0 TC kW	22,0 PI kW	24,0 TC kW	24,0 PI kW
	−19,8	−20,0	15,6	5,81	15,3	5,99	15,3	6,17	15,3	6,26	15,5	6,34	15,4	6,52
	−18,8	−19,0	16,0	5,91	16,0	6,08	16,0	6,25	15,9	6,34	15,9	6,43	15,9	6,60
	−16,7	−17,0	17,0	6,09	16,9	6,25	16,9	6,41	16,9	6,49	16,9	6,57	16,8	6,74
70% 19,6 kW	−13,7	−15,0	17,9	6,25	17,9	6,40	17,9	6,56	17,8	6,63	17,8	6,71	17,1	6,45
	−11,8	−13,0	18,9	6,39	18,8	6,54	18,8	6,68	18,8	6,76	18,3	6,59	17,1	6,06
	−9,8	−11,0	19,8	6,52	19,8	6,66	19,6	6,72	19,0	6,47	18,3	6,22	17,1	5,72
	−9,5	−10,0	20,3	6,58	20,3	6,72	19,6	6,53	19,0	6,29	18,3	6,04	17,1	5,57
	−8,5	−9,1	20,7	6,64	20,7	6,77	19,6	6,37	19,0	6,13	18,3	5,90	17,1	5,43
	−7,0	−7,6	21,4	6,72	20,9	6,59	19,6	6,12	19,0	5,90	18,3	5,67	17,1	5,23
	−5,0	−5,6	22,1	6,71	20,9	6,26	19,6	5,82	19,0	5,61	18,3	5,39	17,1	4,98
	−3,0	−3,7	22,1	6,40	20,9	5,97	19,6	5,56	19,0	5,36	18,3	5,16	17,1	4,76
	0,0	−0,7	22,1	5,97	20,9	5,58	19,6	5,20	19,0	5,01	18,3	4,83	17,1	4,46
	3,0	2,2	22,1	5,60	20,9	5,24	19,6	4,89	19,0	4,72	18,3	4,55	17,1	4,21
	5,0	4,1	22,1	5,39	20,9	5,05	19,6	4,71	19,0	4,54	18,3	4,38	17,1	4,06
	7,0	6,0	22,1	5,20	20,9	4,87	19,6	4,54	19,0	4,39	18,3	4,23	17,1	3,92
	9,0	7,9	22,1	5,01	20,9	4,70	19,6	4,39	19,0	4,24	18,3	4,09	17,1	3,79
	11,0	9,8	22,1	4,85	20,9	4,54	19,6	4,25	19,0	4,10	18,3	3,98	17,1	3,67
	13,0	11,8	22,1	4,68	20,9	4,39	19,6	4,11	19,0	3,97	18,3	3,83	17,1	3,56
	15,0	13,7	22,1	4,54	20,9	4,26	19,6	3,98	19,0	3,85	18,3	3,72	17,1	3,46
	−19,8	−20,0	15,3	6,26	15,4	5,41	15,4	6,26	15,4	6,64	15,4	6,71	14,6	6,38
	−18,8	−19,0	15,9	6,34	15,9	6,49	15,9	6,64	15,9	6,71	15,7	6,69	14,6	6,15
	−16,7	−17,0	16,9	6,50	16,9	6,63	16,8	6,75	16,3	6,49	15,7	6,24	14,6	5,74
60% 16,8 kW	−13,7	−15,0	17,8	6,63	17,8	6,76	16,8	6,32	16,3	6,08	15,7	5,85	14,6	5,39
	−11,8	−13,0	18,8	6,76	17,9	6,40	16,8	5,95	16,3	5,73	15,7	5,51	14,6	5,08
	−9,8	−11,0	19,0	6,46	17,9	6,03	16,8	5,61	16,3	5,41	15,7	5,21	14,6	4,81
	−9,5	−10,0	19,0	6,28	17,9	5,87	16,8	5,46	16,3	5,26	15,7	5,07	14,6	4,68
	−8,5	−9,1	19,0	6,13	17,9	5,73	16,8	5,33	16,3	5,14	15,7	4,95	14,6	4,58
	−7,0	−7,6	19,0	5,89	17,9	5,51	16,8	5,13	16,3	4,95	15,7	4,77	14,6	4,41
	−5,0	−5,6	19,0	5,60	17,9	5,24	16,8	4,89	16,3	4,71	15,7	4,54	14,6	4,21
	−3,0	−3,7	19,0	5,35	17,9	5,01	16,8	4,68	16,3	4,51	15,7	4,35	14,6	4,03
	0,0	−0,7	19,0	5,01	17,9	4,69	16,8	4,38	16,3	4,23	15,7	4,08	14,6	3,79
	3,0	2,2	19,0	4,71	17,9	4,42	16,8	4,14	16,3	3,99	15,7	3,86	14,6	3,58
	5,0	4,1	19,0	4,54	17,9	4,26	16,8	3,99	16,3	3,85	15,7	3,72	14,6	3,46
	7,0	6,0	19,0	4,38	17,9	4,12	16,8	3,85	16,3	3,73	15,7	3,60	14,6	3,35
	9,0	7,9	19,0	4,24	17,9	3,98	16,8	3,73	16,3	3,61	15,7	3,48	14,6	3,24
	11,0	9,8	19,0	4,10	17,9	3,85	16,8	3,61	16,3	3,49	15,7	3,38	14,6	3,15
	13,0	11,8	19,0	3,97	17,9	3,73	16,8	3,50	16,3	3,39	15,7	3,27	14,6	3,05
	15,0	13,7	19,0	3,85	17,9	3,62	16,8	3,40	16,3	3,29	15,7	3,18	14,6	2,97
	−19,8	−20,0	15,4	6,70	14,9	6,51	14,0	6,01	13,6	5,83	13,1	5,60	12,2	5,17
	−18,8	−19,0	15,8	6,73	14,9	6,28	14,0	5,84	13,6	5,62	13,1	5,41	12,2	4,99
	−16,7	−17,0	15,8	6,28	14,9	5,85	14,0	5,46	13,6	5,26	13,1	5,06	12,2	4,68
50% 14,0 kW	−13,7	−15,0	15,8	5,88	14,9	5,50	14,0	5,13	13,6	4,94	13,1	4,76	12,2	4,40
	−11,8	−13,0	15,8	5,54	14,9	5,18	14,0	4,83	13,6	4,66	13,1	4,49	12,2	4,16
	−9,8	−11,0	15,8	5,24	14,9	4,90	14,0	4,58	13,6	4,42	13,1	4,26	12,2	3,95
	−9,5	−10,0	15,8	5,10	14,9	4,77	14,0	4,46	13,6	4,30	13,1	4,15	12,2	3,85
	−8,5	−9,1	15,8	4,98	14,9	4,66	14,0	4,36	13,6	4,21	13,1	4,06	12,2	3,77
	−7,0	−7,6	15,8	4,79	14,9	4,49	14,0	4,20	13,6	4,06	13,1	3,92	12,2	3,64
	−5,0	−5,6	15,8	4,57	14,9	4,29	14,0	4,01	13,6	3,87	13,1	3,74	12,2	3,48
	−3,0	−3,7	15,8	4,37	14,9	4,11	14,0	3,85	13,6	3,72	13,1	3,59	12,2	3,34
	0,0	−0,7	15,8	4,10	14,9	3,86	14,0	3,62	13,6	3,50	13,1	3,38	12,2	3,15
	3,0	2,2	15,8	3,88	14,9	3,65	14,0	3,42	13,6	3,31	13,1	3,20	12,2	2,98
	5,0	4,1	15,8	3,74	14,9	3,52	14,0	3,31	13,6	3,20	13,1	3,10	12,2	2,89
	7,0	6,0	15,8	3,62	14,9	3,41	14,0	3,20	13,6	3,10	13,1	3,00	12,2	2,80
	9,0	7,9	15,8	3,50	14,9	3,30	14,0	3,10	13,6	3,00	13,1	2,91	12,2	2,72
	11,0	9,8	15,8	3,39	14,9	3,20	14,0	3,01	13,6	2,92	13,1	2,82	12,2	2,64
	13,0	11,8	15,8	3,29	14,9	3,10	14,0	2,92	13,6	2,83	13,1	2,74	12,2	2,56
	15,0	13,7	15,8	3,20	14,9	3,02	14,0	2,84	13,6	2,75	13,1	2,67	12,2	2,50

Symbols:
TC : Total capacity cooling: kW
PI : Power input: kW (Comp. + outdoor fan motor)

Note1: is shown as reference.
When selecting the unit models, avoid the outdoor air temperature range shown by
Note2: The above table shows the average value of conditions which may occur.

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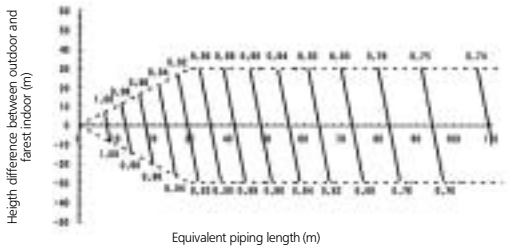
6 Capacity tables

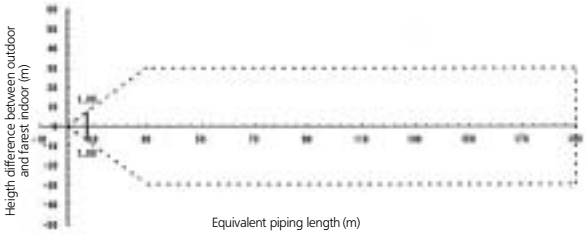
6 - 3 Capacity correction factor

CMSQ200A

Correction ratio for cooling capacity



Correction ratio for heating capacity



Notes

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. **Method of calculating the capacity of the outdoor units**
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   X Correction ratio of piping to farest indoor

   Condition: Indoor connection ratio exceeds 100%

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   X Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe lengh is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

model	Gas pipe	Liquid pipe
CMSQ200	19.1	9.5

5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
   Diameter of main pipes (standard size)

model	Gas pipe	Liquid pipe
CMSQ200	15.9	9.5

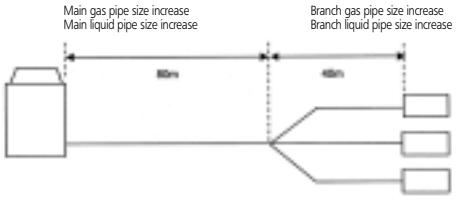
6. Equivalent length used in the above figures is based upon the following equivalent length

   Equivalent piping length =
   Equivalent length of main pipe X Correction factor
   +
   Equivalent length of branch pipes X Correction factor

   Choose the correction factor from the following table.
   When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (Gas pipe)	1.0	0.5
Heating (Liquid pipe)	1.0	0.5

Example



In the above case
(Cooling) Overall equivalent length = 80mx0.5 + 40mx1.0 = 80m
(Heating) Overall equivalent length = 80mx1.0 + 40mx1.0 = 120m

The rate of change in:
Cooling capacity when heigth difference = 0 is thus approximately 0.78.
Heating capacity when heigth difference = 0 is thus approximately 1.0

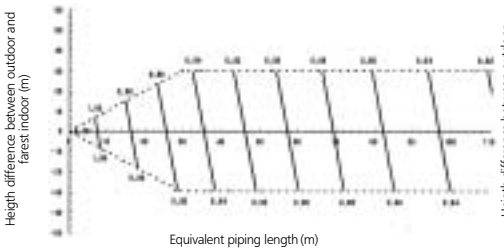
3TW31342-6

6 Capacity tables

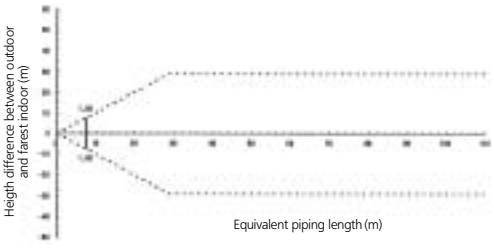
6 - 3 Capacity correction factor

CMSQ250A

Correction ratio for cooling capacity



Correction ratio for heating capacity



Notes

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. **Method of calculating the capacity of the outdoor units**
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.

   Condition: Indoor connection ratio does not exceed 100%

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   X Correction ratio of piping to farest indoor

   Condition: Indoor connection ratio exceeds 100%

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   X Correction ratio of piping to farest indoor
4. When level difference is 50m or more and equivalent pipe lengh is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased.
   For new diameters, see below.

model	Gas pipe	Liquid pipe
CMSQ250	22.2	12.7

5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
   Diameter of main pipes (standard size)

model	Gas pipe	Liquid pipe
CMSQ250	19.1	9.5

6. Equivalent length used in the above figures is based upon the following equivalent length

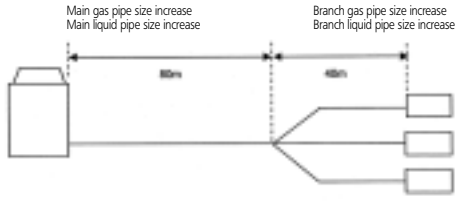
   Equivalent piping length =

   Equivalent length of main pipe X Correction factor
   +
   Equivalent length of branch pipes X Correction factor

   Choose the correction factor from the following table.
   When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (Gas pipe)	1.0	0.5
Heating (Liquid pipe)	1.0	0.5

Example



In the above case
(Cooling) Overall equivalent length = 80mx0.5 + 40mx1.0 = 80m
(Heating) Overall equivalent length = 80mx0.5 + 40mx1.0 = 120m

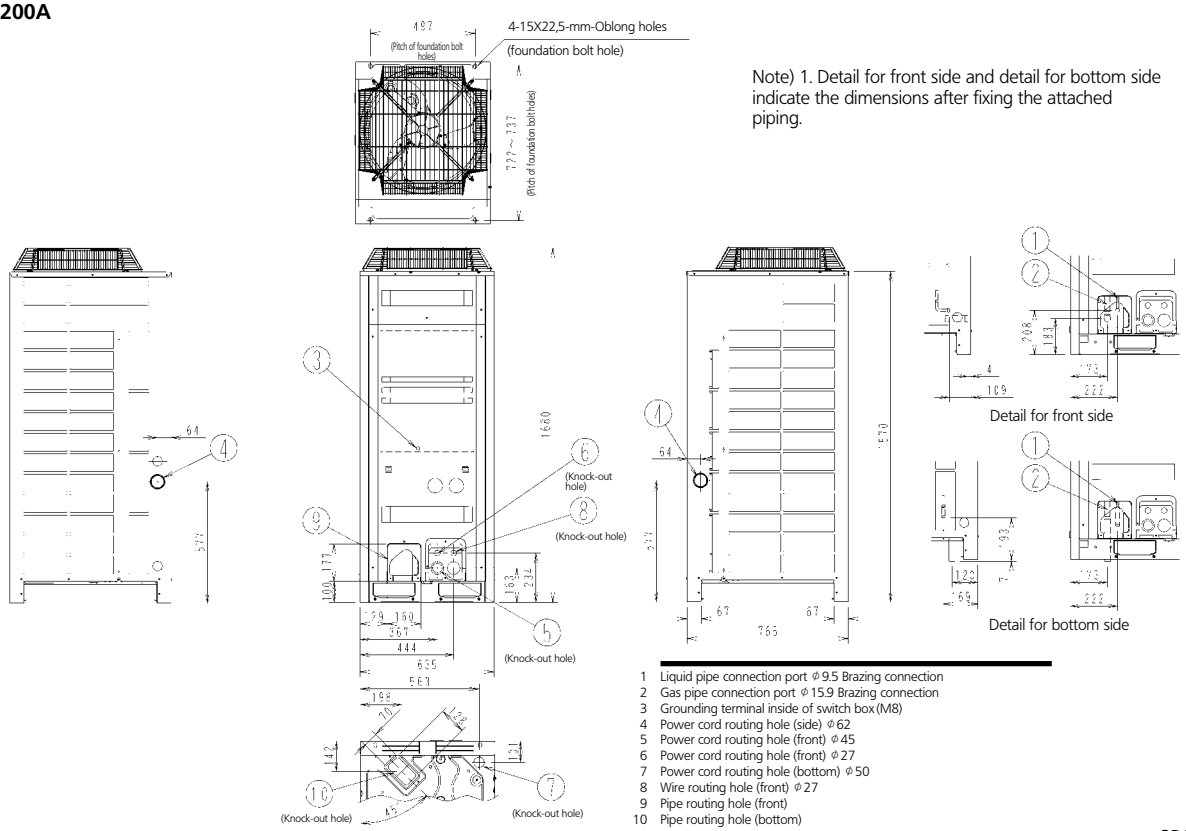
The rate of change in:
Cooling capacity when heigth difference = 0 is thus approximately 0.80.
Heating capacity when heigth difference = 0 is thus approximately 1.0

3TW31342-6

7 Dimensional drawing & centre of gravity

7 - 1 Dimensional drawing

CMSQ200A

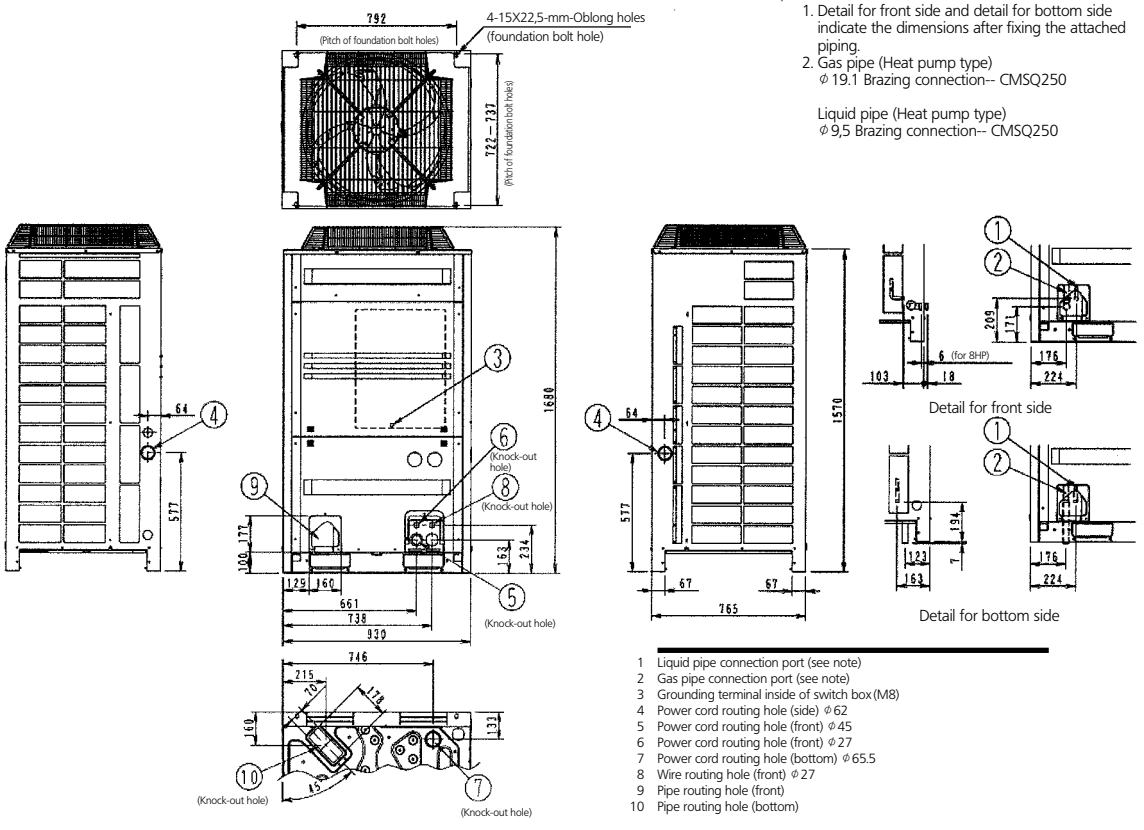


Note) 1. Detail for front side and detail for bottom side indicate the dimensions after fixing the attached piping.

1 Liquid pipe connection port Φ9.5 Brazing connection
2 Gas pipe connection port Φ15.9 Brazing connection
3 Grounding terminal inside of switch box (M8)
4 Power cord routing hole (side) Φ62
5 Power cord routing hole (front) Φ45
6 Power cord routing hole (front) Φ27
7 Power cord routing hole (bottom) Φ50
8 Wire routing hole (front) Φ27
9 Pipe routing hole (front)
10 Pipe routing hole (bottom)

3D051448B

CMSQ250A



Note)
1. Detail for front side and detail for bottom side indicate the dimensions after fixing the attached piping.
2. Gas pipe (Heat pump type)
Φ19.1 Brazing connection-- CMSQ250

Liquid pipe (Heat pump type)
Φ9,5 Brazing connection-- CMSQ250

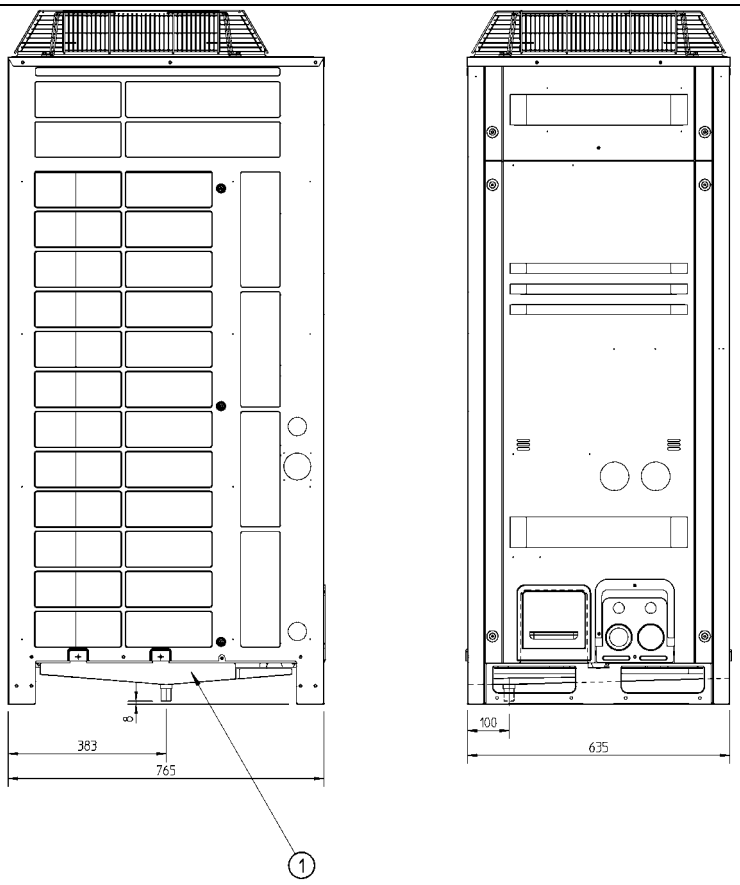
1 Liquid pipe connection port (see note)
2 Gas pipe connection port (see note)
3 Grounding terminal inside of switch box (M8)
4 Power cord routing hole (side) Φ62
5 Power cord routing hole (front) Φ45
6 Power cord routing hole (front) Φ27
7 Power cord routing hole (bottom) Φ65.5
8 Wire routing hole (front) Φ27
9 Pipe routing hole (front)
10 Pipe routing hole (bottom)

3TW31354-1

7 Dimensional drawing & centre of gravity

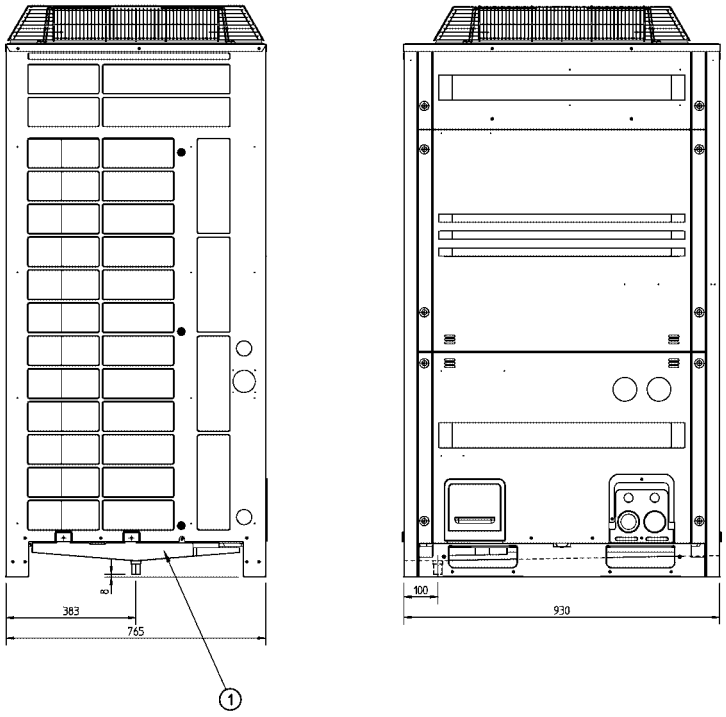
7 - 1 Dimensional drawing

CMSQ200A



3TW27234-1

CMSQ250A



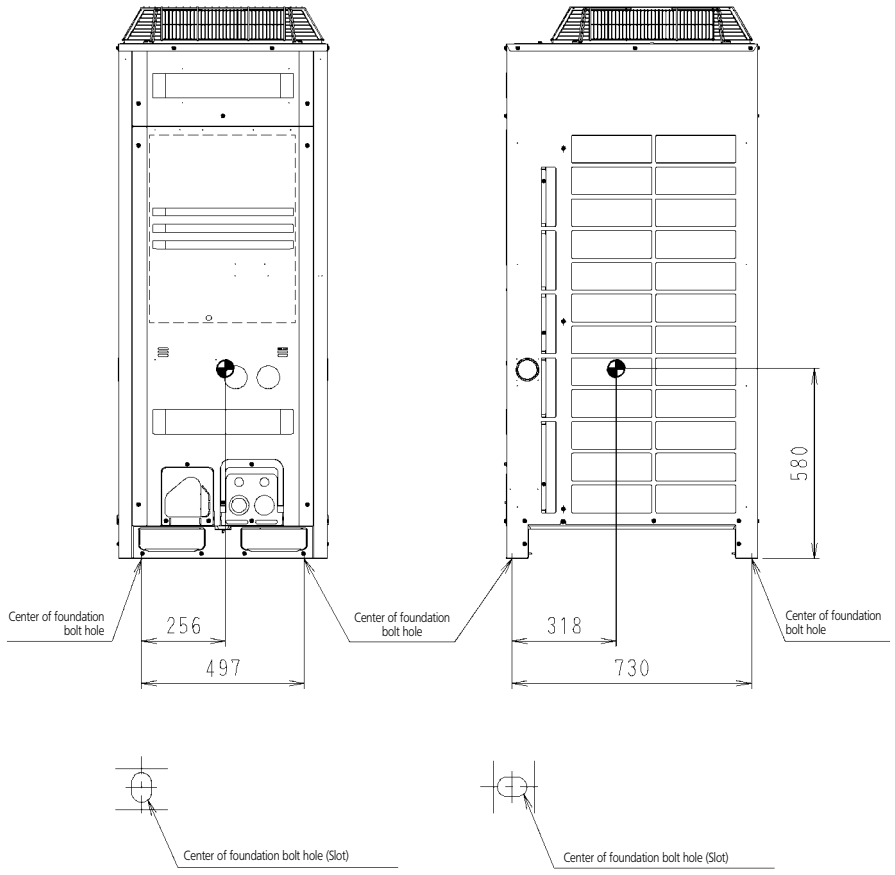
Item	Part name	Remark
1	Central drain pan kit	KWC26B280

3TW27244-1

7 Dimensional drawing & centre of gravity

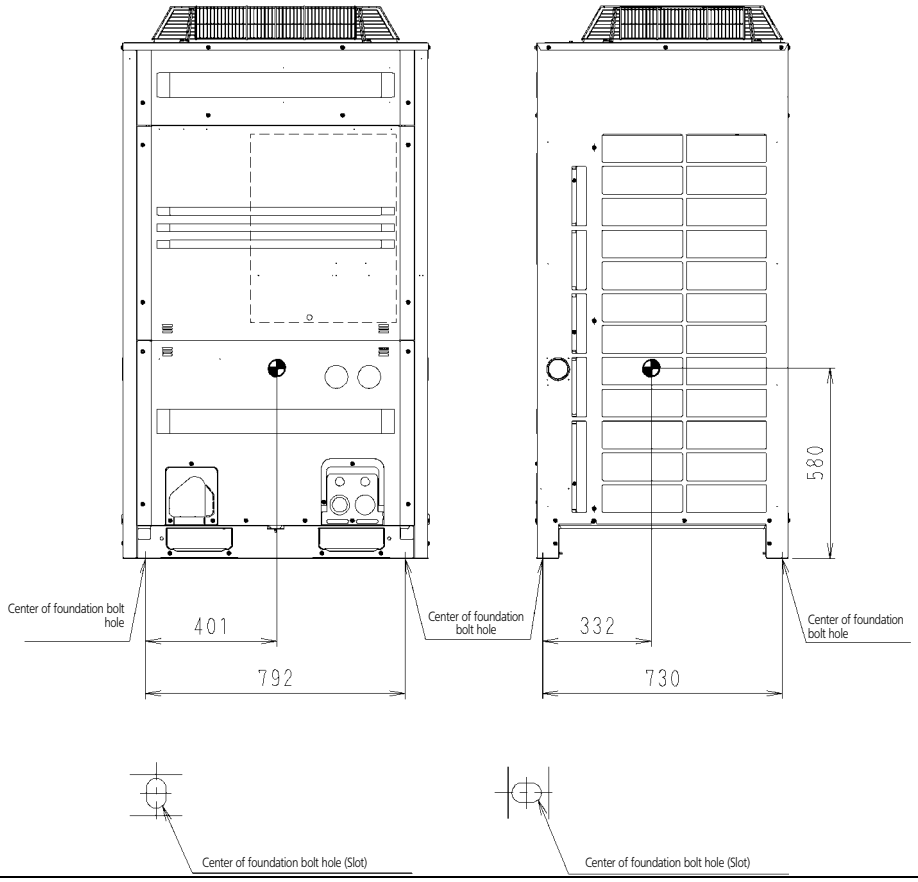
7 - 2 Centre of gravity

CMSQ200A



4D052145D

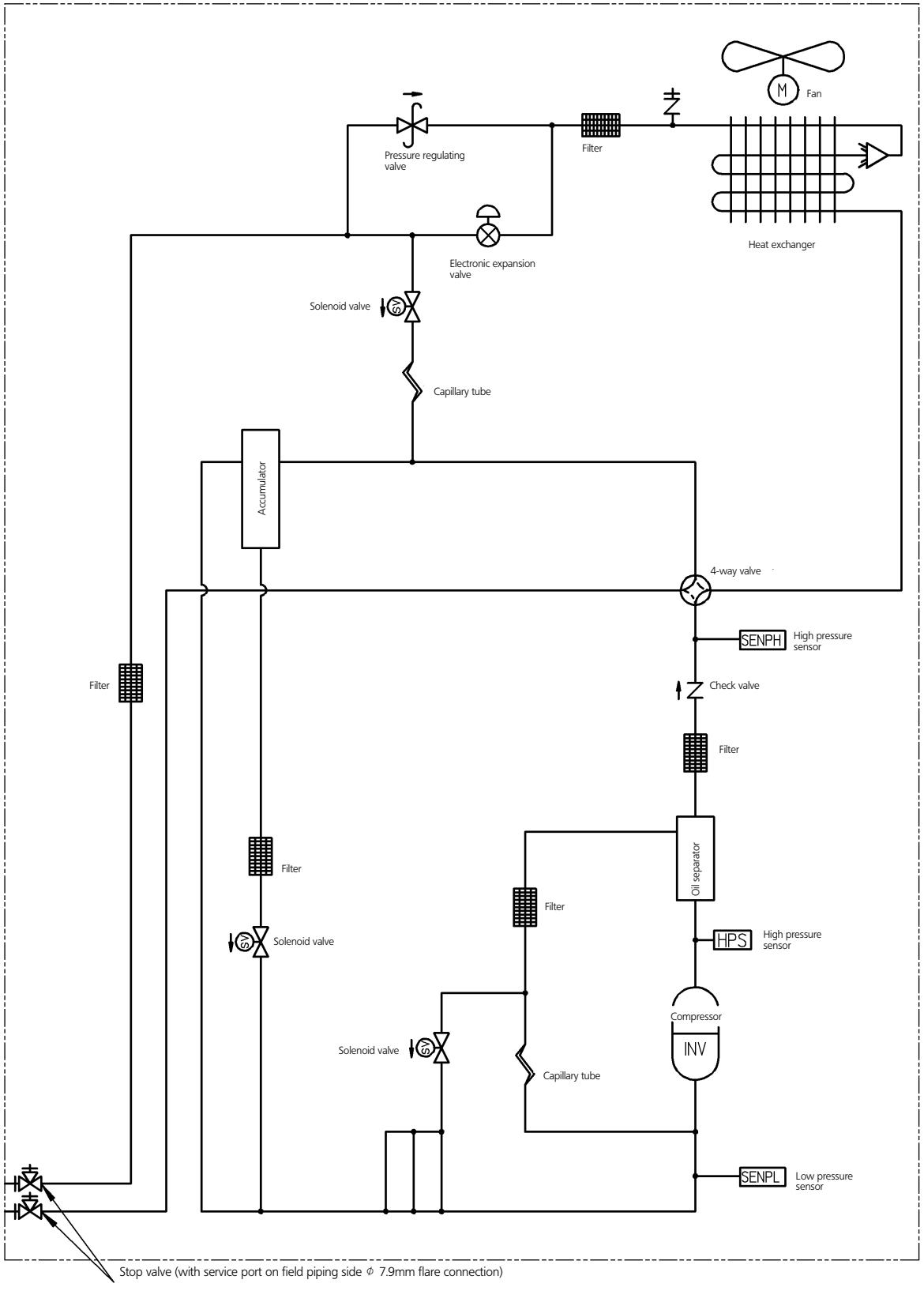
CMSQ250A



4D052146H

8 Piping diagram

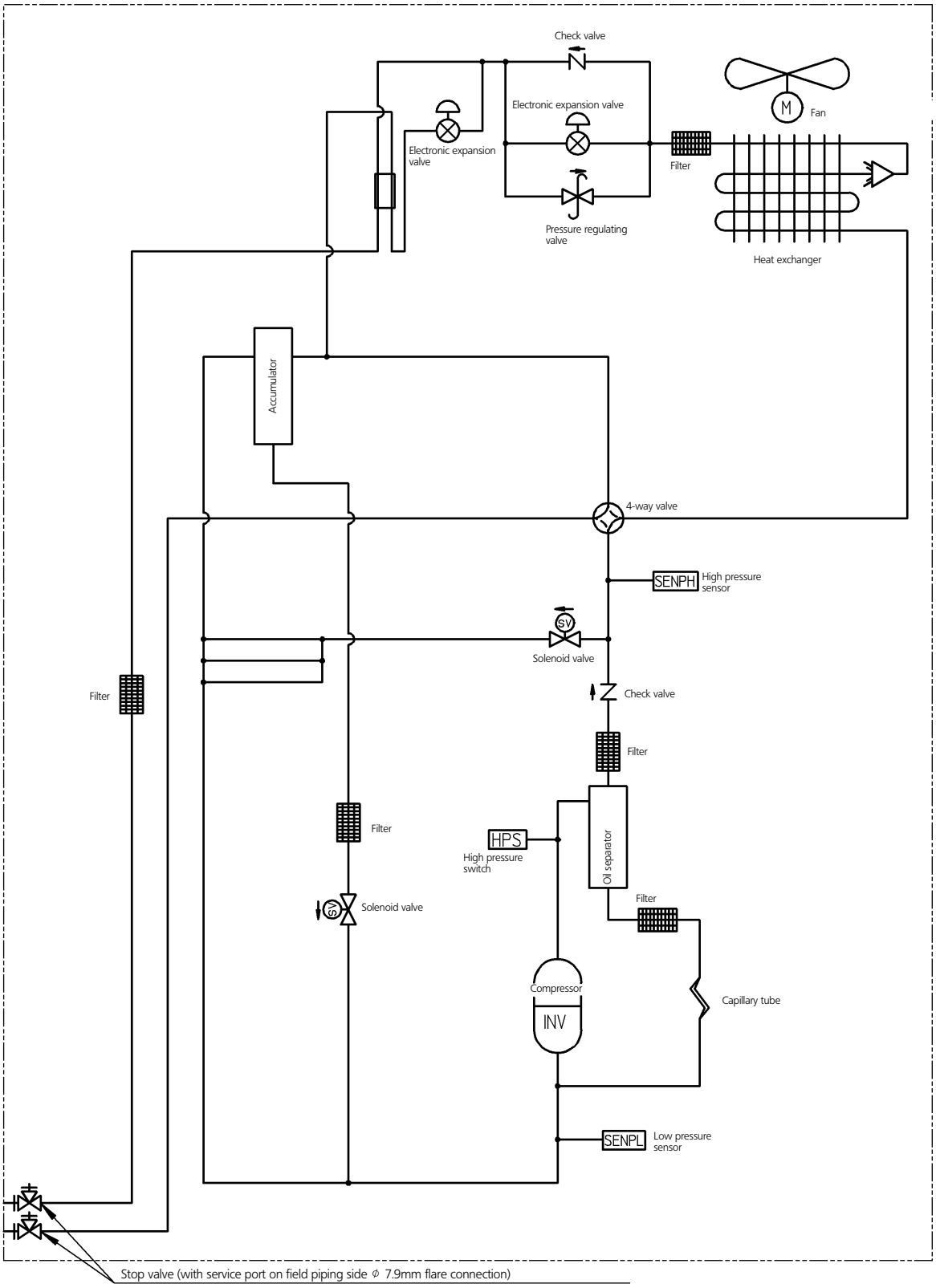
CMSQ200A



4TW31345-1

8 Piping diagram

CMSQ250A



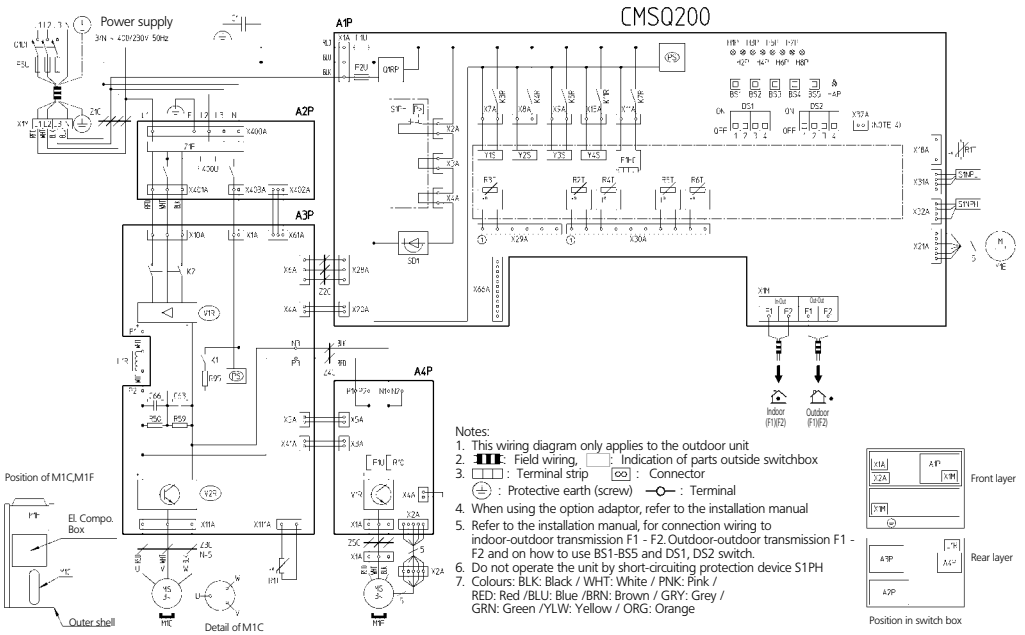
4TW31355-1

9 Wiring diagram

9 - 1 Wiring diagram

CMSQ200A

A1P : Printed circuit board (Main)
A2P : Printed circuit board (Noise filter)
A3P : Printed circuit board (Inverter)
A4P : Printed circuit board (Fan)
BS1–BS5 : Push button switch (Mode, set, return, test, reset)
C1 : Capacitor
C63,C66 : Capacitor
DS1,DS2 : Dip switch
E1HC : Crankcase heater
F1U : Fuse (250V, 8A Ⓑ) (A4P)
F1U,F2U : Fuse (250V, 3.15A Ⓣ) (A1P)
F5U : Field fuse
F400U : Fuse (250V, 6.3A Ⓣ) (A2P)
H1P–H8P : Pilotlamp (service monitor - orange) : Prepare test ---------- Flickering
[H2P] : Malfunction detection--- Light up
HAP : Pilotlamp (service monitor - green)
K1 : Magnetic relay
K2 : Magnetic contactor(M1C)
K3R : Magnetic relay (Y1S)
K4R : Magnetic relay (Y2S)
K5R : Magnetic relay (Y3S)
K7R : Magnetic relay (E1HC)
K11R : Magnetic relay (Y4S)
L1R : Reactor
M1C : Motor (compressor)
M1F : Motor (fan)
PS : Switching power supply (A1P,A3P)
Q1RP : Phase reversal detect circuit
Q1DI : Earth leakage breaker
R10 : Resistor (Current sensor) (A4P)
R50,R59 : Resistor
R95 : Resistor (current limiting)
R1T : Thermistor (air) (A1P)
R1T : Thermistor (Fin) (A3P)
R2T : Thermistor (Suction)
R3T : Thermistor (discharge pipe) (M1C)
R4T : Thermistor (Heat exch. deicer)
R5T : Thermistor (liquid pipe)
R6T : Thermistor (air) (Accumulator)
S1NPH : Pressure sensor (High)
S1NPL : Pressure sensor (Low)
S1PH : Pressure switch (High)
SD1 : Safety devices input
V1R : Power module (A4P)
V1R,V2R : Power module (A3P)
X1A,X2A : Connector (M1F)
X1M : Terminal strip (Power supply)
X1M : Terminal strip (Control) (A1P)
X1M : Terminal strip (A5P)
Y1E : Electronic expansion valve (Main)
Y1S : Solenoid valve (Hot gas)
Y2S : Solenoid valve (oil return)
Y3S : Solenoid valve (4-way valve)
Y4S : Solenoid valve (injection)
Z1C–Z5C : Noise filter (ferrite core)
Z1F : Noise filter (with surge absorber)

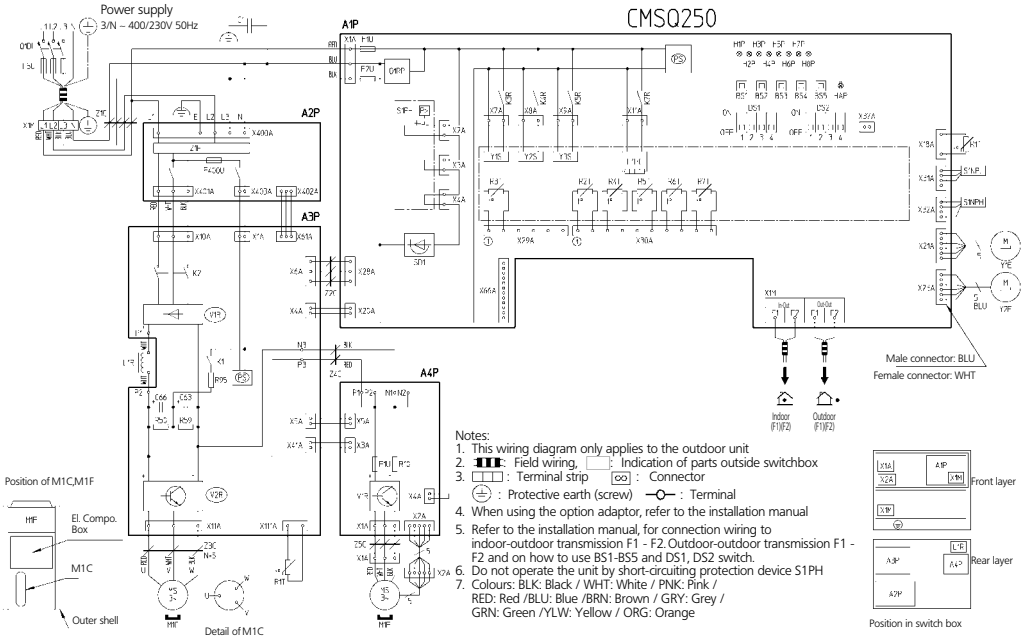


Notes:
1. This wiring diagram only applies to the outdoor unit
2. ▮▮▮: Field wiring, □: Indication of parts outside switchbox
3. □: Terminal strip ∞: Connector
   ⏚: Protective earth (screw) —o—: Terminal
4. When using the option adaptor, refer to the installation manual
5. Refer to the installation manual, for connection wiring to indoor-outdoor transmission F1 - F2. Outdoor-outdoor transmission F1 - F2 and on how to use BS1-BS5 and DS1, DS2 switch.
6. Do not operate the unit by short-circuiting protection device S1PH
7. Colours: BLK: Black / WHT: White / PNK: Pink / RED: Red /BLU: Blue /BRN: Brown / GRY: Grey / GRN: Green /YLW: Yellow / ORG: Orange

2TW31346-1

CMSQ250A

A1P : Printed circuit board (Main)
A2P : Printed circuit board (Noise filter)
A3P : Printed circuit board (Inverter)
A4P : Printed circuit board (Fan)
BS1–BS5 : Push button switch (Mode, set, return, test, reset)
C1 : Capacitor
C63,C66 : Capacitor
DS1,DS2 : Dip switch
E1HC : Crankcase heater
F1U : Fuse (250V, 8A Ⓑ) (A4P)
F1U,F2U : Fuse (250V, 3.15A Ⓣ) (A1P)
F5U : Field fuse
F400U : Fuse (250V, 6.3A Ⓣ) (A2P)
H1P–H8P : Pilotlamp (service monitor - orange) : Prepare test ---------- Flickering
[H2P] : Malfunction detection--- Light up
HAP : Pilotlamp (service monitor - green)
K1 : Magnetic relay
K2 : Magnetic contactor(M1C)
K3R : Magnetic relay (Y1S)
K4R : Magnetic relay (Y2S)
K5R : Magnetic relay (Y3S)
K7R : Magnetic relay (E1HC)
L1R : Reactor
M1C : Motor (compressor)
M1F : Motor (fan)
PS : Switching power supply (A1P,A3P)
Q1RP : Phase reversal detect circuit
Q1DI : Earth leakage breaker
R10 : Resistor (Current sensor) (A4P)
R50,R59 : Resistor
R95 : Resistor (current limiting)
R1T : Thermistor (air) (A1P)
R1T : Thermistor (Fin) (A3P)
R2T : Thermistor (Suction)
R3T : Thermistor (discharge pipe) (M1C)
R4T : Thermistor (Heat exch. deicer)
R5T : Thermistor (Heat exch. outlet)
R6T : Thermistor (liquid pipe)
R7T : Thermistor (Accumulator)
S1NPH : Pressure sensor (High)
S1NPL : Pressure sensor (Low)
S1PH : Pressure switch (High)
SD1 : Safety devices input
V1R : Power module (A4P)
V1R,V2R : Power module (A3P)
X1A,X2A : Connector (M1F)
X1M : Terminal strip (Power supply)
X1M : Terminal strip (Control) (A1P)
X1M : Terminal strip (A5P)
Y1E : Electronic expansion valve (Main)
Y2E : Electronic expansion valve (Subcool)
Y1S : Solenoid valve (Hot gas)
Y2S : Solenoid valve (oil return)
Y3S : Solenoid valve (4-way valve)
Y4S : Solenoid valve (injection)
Z1C–Z5C : Noise filter (ferrite core)
Z1F : Noise filter (with surge absorber)



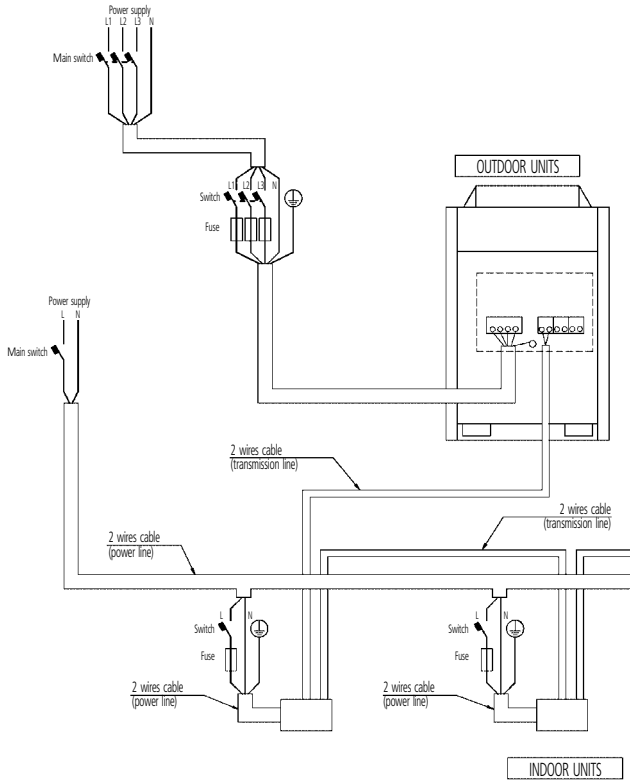
Notes:
1. This wiring diagram only applies to the outdoor unit
2. ▮▮▮: Field wiring, □: Indication of parts outside switchbox
3. □: Terminal strip ∞: Connector
   ⏚: Protective earth (screw) —o—: Terminal
4. When using the option adaptor, refer to the installation manual
5. Refer to the installation manual, for connection wiring to indoor-outdoor transmission F1 - F2. Outdoor-outdoor transmission F1 - F2 and on how to use BS1-BS5 and DS1, DS2 switch.
6. Do not operate the unit by short-circuiting protection device S1PH
7. Colours: BLK: Black / WHT: White / PNK: Pink / RED: Red /BLU: Blue /BRN: Brown / GRY: Grey / GRN: Green /YLW: Yellow / ORG: Orange

2TW31356-1

9 Wiring diagram

9 - 2 External connection diagram

CMSQ200-250A



NOTES

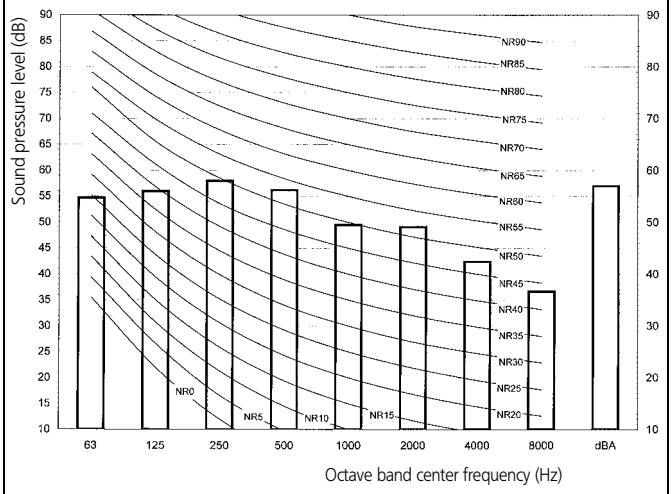
1 All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2 Use copper conductors only.
3 As for details, see wiring diagram.
4 Install circuit breaker for safety.
5 All field wiring and components must be provided by licensed electrician.
6 Unit shall be grounded in compliance with the applicable local and national codes.
7 Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
8 Be sure to install the switch and the fuse to the power line of each equipment.
9 Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
10 If there exists the possibility of reversed phase, lose phase, momentary blackout or the power goes on and off while the product is operating, attach a reversed phase protection circuit locally.
Running the product in reversed phase may break the compressor and other parts.

3D051452B

10 Sound data

10 - 1 Sound pressure spectrum

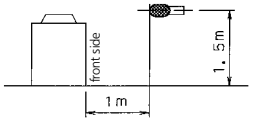
CMSQ200A



NOTES

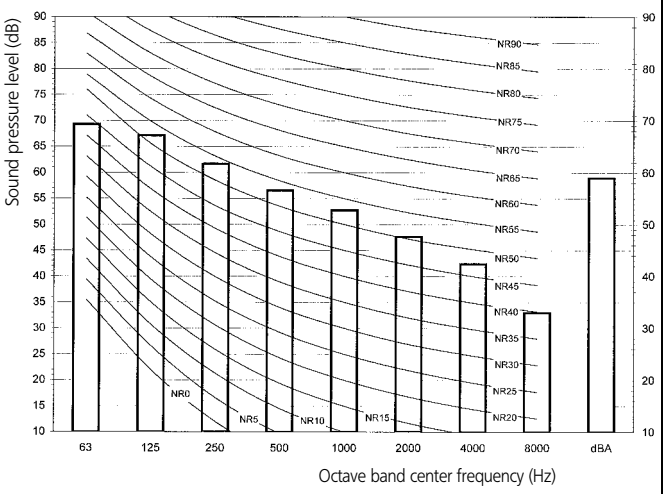
1 Data is valid at free field condition
2 Data is valid at nominal operation condition
3 dB(A) = A-weighted sound pressure level (A-scale according to IEC)
4 Reference acoustic pressure 0dB = 20μPa

Location of microphone



3TW31347-1

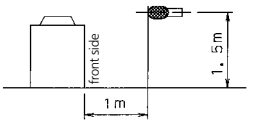
CMSQ250A



NOTES

1 Data is valid at free field condition
2 Data is valid at nominal operation condition
3 dB(A) = A-weighted sound pressure level (A-scale according to IEC)
4 Reference acoustic pressure 0dB = 20μPa

Location of microphone

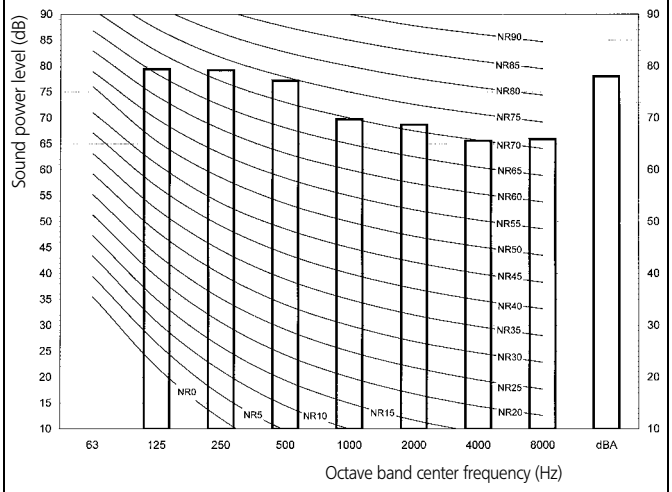


3TW31357-1

10 Sound data

10 - 2 Sound power spectrum

CMSQ200A

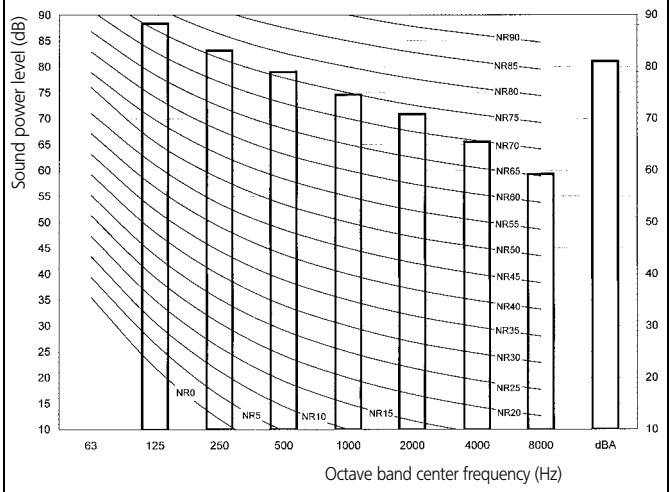


NOTES

1 dBA = A-weighted sound power level (A-scale according to IEC)
2 Reference acoustic intensity 0dB = 10E-6μW/m^2
3 Measured according to ISO 3744

3TW31347-2

CMSQ250A



NOTES

1 dBA = A-weighted sound power level (A-scale according to IEC)
2 Reference acoustic intensity 0dB = 10E-6μW/m^2
3 Measured according to ISO 3744

3TW31357-2

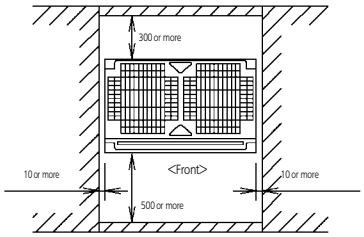
11 Installation

11 - 1 Service space

CMSQ

For single unit installation

<Pattern 1>



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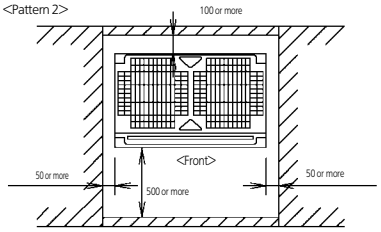
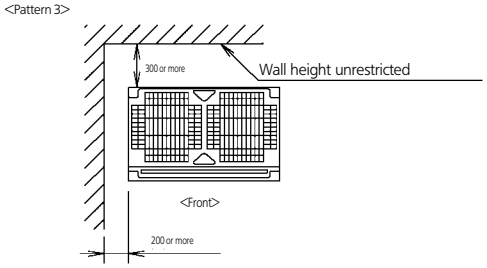
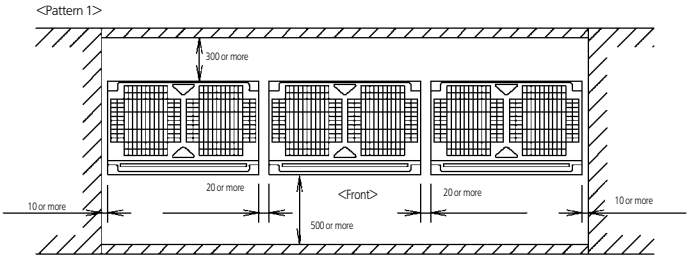


<Pattern 3>

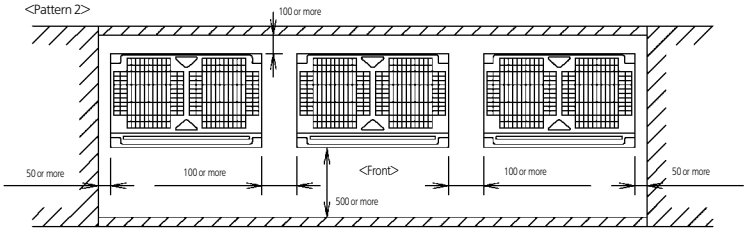


For installation in rows

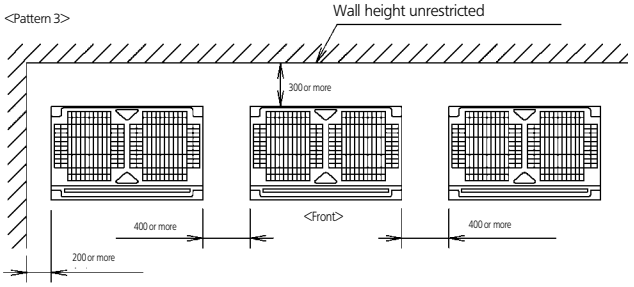
<Pattern 1>



<Pattern 2>



<Pattern 3>



Notes:

1 Heights of walls in case of Patterns 1 and 2:
Front: 1500 mm
suction side: 500 mm
Side: Height unrestricted.
Installation space to be shown in this drawing is based on the cooling operation at 35 degrees outdoor air temperature.
When the design outdoor air temperature exceeds 35 degrees or the load exceeds maximum ability because of much generation load of heat in all outdoor unit, take the suction side space more broadly than the space to be shown in this drawing.

2 If the above wall heights are exceeded then h1/2 and h2/2 should be added to the front and suction side service spaces respectively as shown in the figure on the right.

3 When installing the units most appropriate pattern should be selected from those shown above in order to obtain the best fit in the space available always bearing in mind the need to leave enough space for a person to pass between units and wall and for the air to circulate freely.
(If more units are to be installed than are catered for in the above patterns your layout should take account of the possibility of short circuits.)

4 The units should be installed to leave sufficient space at the front for the on site refrigerant piping work to be carried out comfortably.

3D051451L

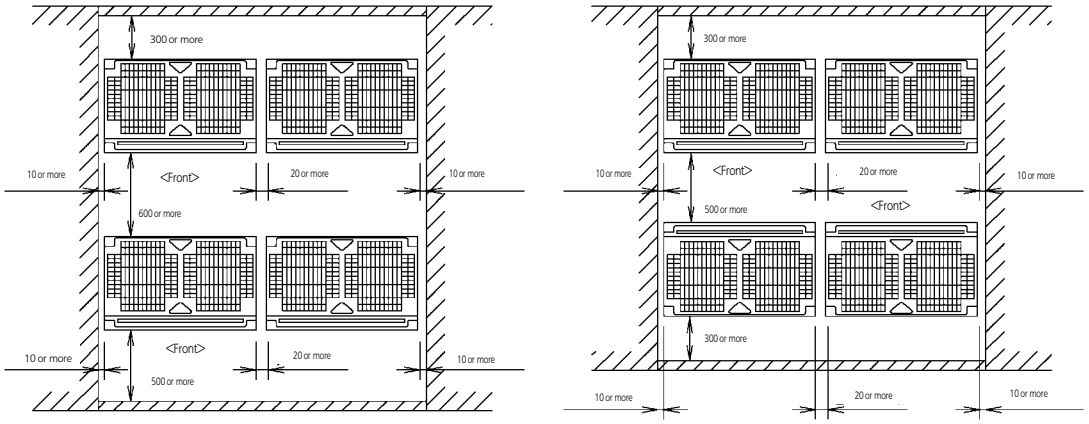
11 Installation

11 - 1 Service space

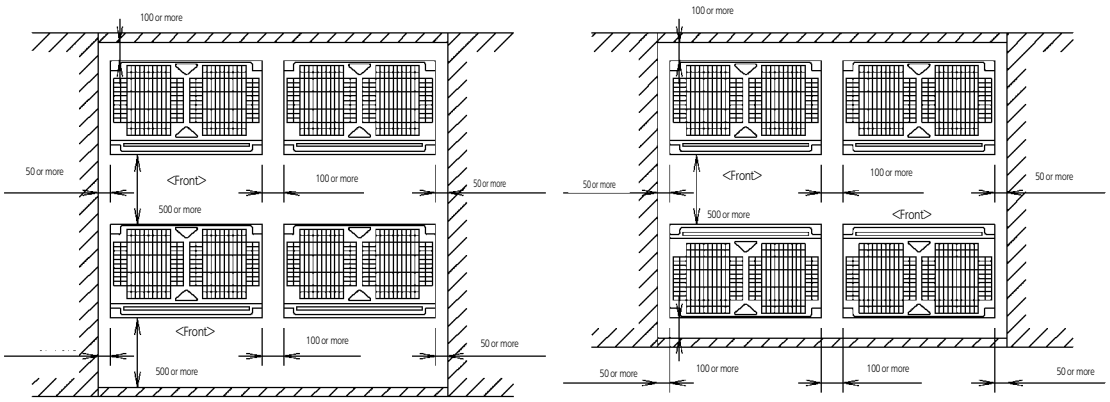
CMSQ

For centralized group layout

<Pattern 1>



<Pattern 2>

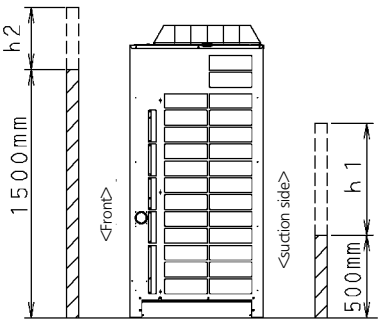


<Unit: mm>

Notes:

1 Heights of walls in case of Patterns 1 and 2:
Front: 1500 mm
suction side: 500 mm
Side: Height unrestricted.
Installation space to be shown in this drawing is based on the cooling operation at 35 degrees outdoor air temperature.
When the design outdoor air temperature exceeds 35 degrees or the load exceeds maximum ability because of much generation load of heat in all outdoor unit, take the suction side space more broadly than the space to be shown in this drawing.

2 If the above wall heights are exceeded then h1/2 and h2/2 should be added to the front and suction side service spaces respectively as shown in the figure on the right.



3 When installing the units most appropriate pattern should be selected from those shown above in order to obtain the best fit in the space available always bearing in mind the need to leave enough space for a person to pass between units and wall and for the air to circulate freely.
(If more units are to be installed than are catered for in the above patterns your layout should take account of the possibility of short circuits.)

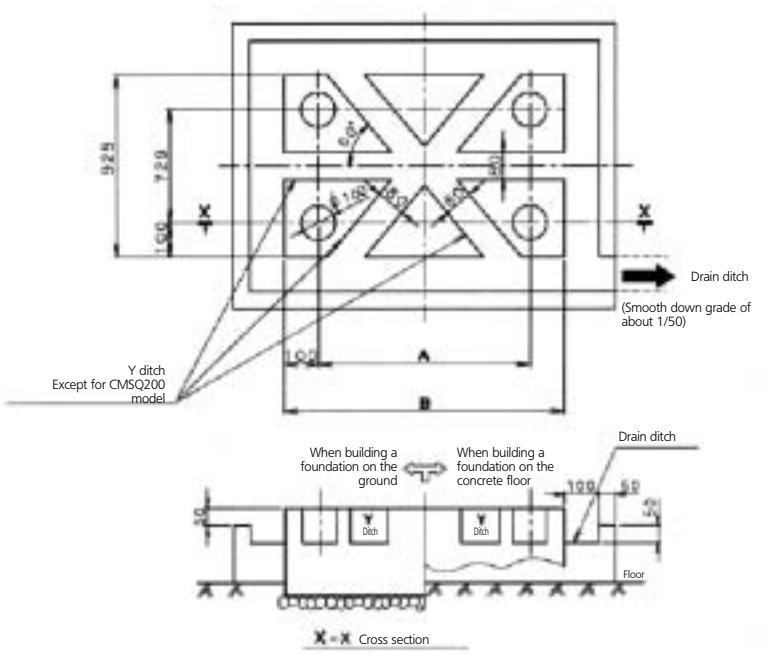
4 The units should be installed to leave sufficient space at the front for the on site refrigerant piping work to be carried out comfortably.

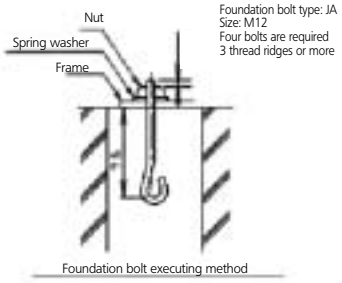
3D051451L

11 Installation

11 - 2 Fixation and foundation of units

CMSQ200-250A





Notes:

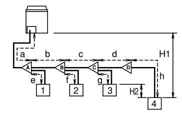
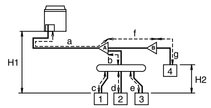
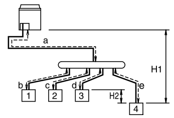
1. The proportions of cement: sand: gravel for the concrete shall be 1:2:4, and the reinforcement bars that their diameter are 10mm, (approx. 300mm intervals) shall be placed.
2. The surface shall be finished with mortar. The corner edges shall be chamfered.
3. When the foundation is built on a concrete floor, rubble is not necessary. However, the surface of the section on which the foundation is built shall have rough finish.
4. A drain ditch shall be made around the foundation to thoroughly drain water from the equipment installation area.
5. When installing the equipment on a roof, the floor strength shall be checked, and water-proofing measures shall be taken.
6. Y ditch is not necessary for CMSQ200 model.

Model	A	B
CMSQ200	497	697
CMSQ250	792	992

3TW31349-6

12 Refrigerant pipe selection

CMSQ200-250A

Example of connection (Connection of 4 indoor units Heat pump system) 1 indoor unit A refnet joint refnet header		One outdoor unit installed	**Branch with refnet joint** 	**Branch with refnet joint and refnet header** 	**Branch with refnet header** 
Maximum allowable length	Between outdoor and indoor units	Actual pipe length	Pipe length between outdoor and indoor units ≤165 m		
			[Example] unit 4: a+b+c+d+h≤165 m	[Example] unit 3: a+b+e≤165 m, unit 4: a+f+g≤165 m	[Example] unit 4: a+e≤165 m
		Equivalent length	Equivalent pipe length between outdoor and indoor units ≤190 m (Assume equivalent pipe length of refnet joint to be 0.5 m and of the refnet header to be 1.0 m. (for calculation purposes))		
		Total extension length	Total piping length from outdoor unit to all indoor units ≤200 m		
Allowable height	Between outdoor and indoor units	Difference in height	Difference in height between outdoor and indoor units (H1)≤30 m		
	Between indoor and indoor units	Difference in height	Difference in height between adjacent indoor units (H2)≤4 m		
Allowable length after the branch		Actual pipe length	Pipe length from first refrigerant branch kit (either refnet joint or refnet header) to indoor unit ≤40 m (See note on next page)		
			[Example] unit 4: b+c+d+h≤40 m	[Example] unit 3: b+e≤40 m, unit 4: f+g≤40 m	[Example] unit 4: e≤40 m
Refrigerant branch kit selection Refrigerant branch kits can only be used with R410A.			**How to select the refnet joint** (see below)		**How to select the refnet header** (see below)
	Example of downstream indoor units		[Example] in case of refnet joint C; indoor units 3+4	[Example] in case of refnet joint B; indoor unit 4, in case of refnet header; indoor units 1+2+3	[Example] in case of refnet header; indoor units 1+2+3+4

How to select the refnet joint

- When using refnet joints at the first branch counted from the outdoor unit side. Choose from the following table in accordance with the capacity of the outdoor unit.

Outdoor unit capacity type	Refrigerant branch kit name
CMSQ200	KHRQ22M20T
CMSQ250	KHRQ22M29T9

- For refnet joints other than the first branch, select the proper branch kit model based on the total capacity index.

Indoor capacity type	Refrigerant branch kit name
<200	KHRQ22M20T
200≤x<250	KHRQ22M29T9

How to select the refnet header

- Choose from the following table in accordance with the total capacity of all the indoor units connected below the refnet header.

Indoor capacity type	Refrigerant branch kit name
50~125	KHRQ22M29H

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12 Refrigerant pipe selection

Pipe size selection

A,B,C. Piping between outdoor unit and refrigerant branch kit

- Choose from the following table in accordance with the outdoor unit total capacity type, connected downstream.

Outdoor unit connection piping size

Outdoor unit capacity type	Piping size (outer diameter) (mm)	
	Gas pipe	Liquid pipe
CMSQ200	Ø15.9	Ø9.5
CMSQ250	Ø19.1	

D. Piping between refrigerant branch kits

- Choose from the following table in accordance with the total capacity of all the indoor units connected below this.
- Do not let the connection piping exceed the refrigerant piping size chosen by general system model name.

Indoor or outdoor unit total capacity	Piping size (outer diameter) (mm)	
	Gas pipe	Liquid pipe
<150	Ø15.9	Ø9.5
150≤x<200	Ø19.1	
200≤x<250	Ø22.2	

E. Piping between refrigerant branch kit and indoor unit

- Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit.

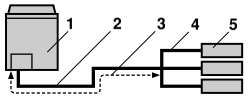
Indoor capacity type	Piping size (outer diameter) (mm)	
	Gas pipe	Liquid pipe
50	Ø12.7	Ø6.4
60~125	Ø15.9	Ø9.5

When the equivalent pipe length between outdoor and indoor units is 90 m or more, the size of the main pipes (both gas side and liquid side) must be increased.
Depending on the length of the piping, the capacity may drop, but even in such a case it is possible to increase the size of the main pipes.

	Gas side	
CMSQ200	Ø15.9 →	Ø19.1
CMSQ250	Ø19.1 →	Ø22.2

	Liquid side	
CMSQ200	Ø9.5	—
CMSQ250	Ø9.5 →	Ø12.7

— Increase is not allowed



1 Outdoor unit
2 Main pipes
3 Increase
4 First refrigerant branch kit
5 Indoor unit

How to calculate the additional refrigerant to be charged
Additional refrigerant to be charged R (kg)
R should be rounded off in units of 0.1 kg

R = [(X1 x **Ø22.2**) x0.37] + [(X2 x **Ø19.1**) x0.26] + [(X3 x **Ø15.9**) x0.18] + [(X4 x **Ø12.7**) x0.12] + [(X5 x **Ø9.5**) x0.059] + [(X6 x **Ø6.4**) x0.022]

X1...6 = Total length (m) of liquid piping size at **Øa**

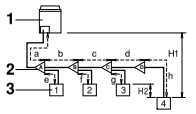
Example for refrigerant branch using refnet joint and refnet header for CMSQ250
If the outdoor unit is CMSQ250 and the piping lengths are as below

a : Ø19.1x30 m	b : Ø15.9x10 m	c : Ø9.5x10 m	d : Ø9.5x10 m	e : Ø9.5x10 m	f : Ø12.7x10 m	g : Ø6.4x10 m

R = [30x0.26]+[10x0.18]+[10x0.12]+[30x0.059]+[10x0.022] = 12.79 ⇒ **R = 12.8 kg**

Note

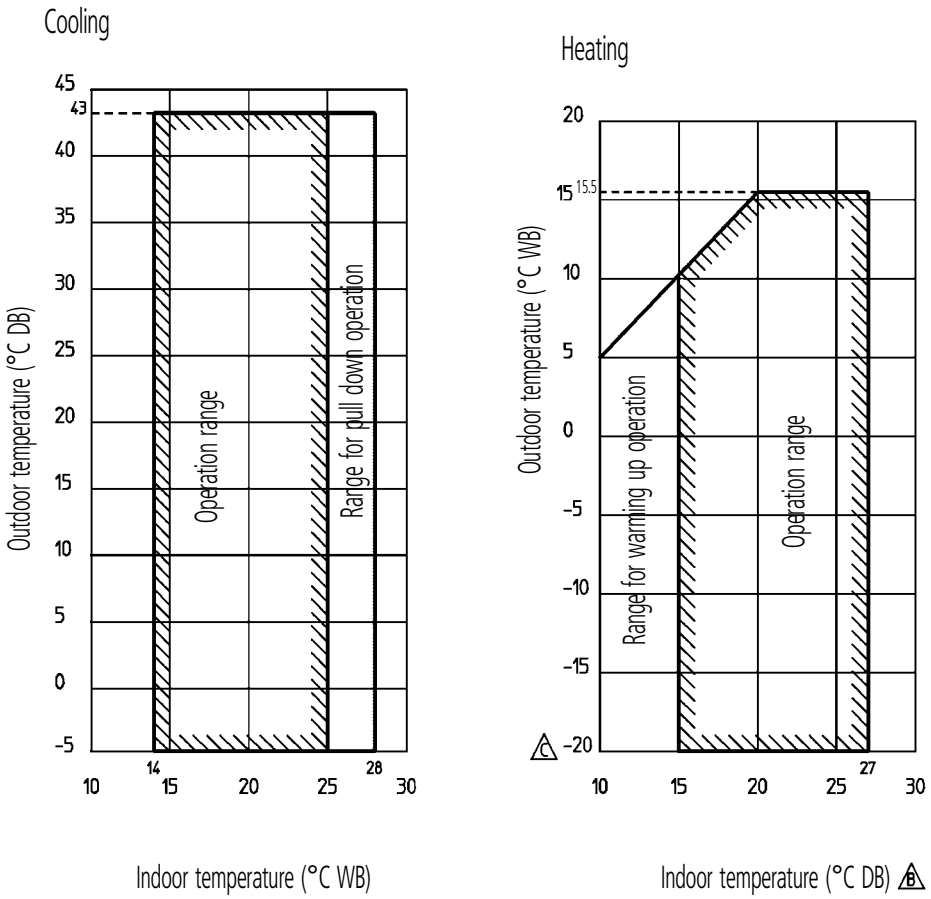
Allowable length after the first refrigerant branch kit to indoor units is 40 m or less, however it can be extended up to 90 m if all the following conditions are fulfilled.

Required conditions	Example drawings	
It is necessary to increase the pipe size of the liquid and the gas pipe if the pipe length between the first and the final branch kit is over 40 m (reducers must be procured on site). If the increased pipe size is larger than the pipe size of the main pipe, then the pipe size of the main pipe needs to be increased as well.	indoor unit **4**: b+c+d≤90 m increase the pipe size of b, c, d	Increase the pipe size as follows Ø9.5 → Ø12.7 Ø15.9 → Ø19.1 Ø22.2 → Ø25.4* Ø12.7 → Ø15.9 Ø19.1 → Ø22.2 * If available on the site. Otherwise it can not be increased.
For calculation of total extension length, the actual length of above pipes must be doubled (except main pipe and the pipes that not increase the pipe size).	a+b*2+c*2+d*2≤200 m	
Indoor unit to the nearest branch kit ≤40 m.	e, f, g, h≤40 m	
The difference between the distance of the outdoor unit to the farthest indoor unit and the distance of the outdoor unit to the nearest indoor unit ≤40 m.	The farthest indoor unit **4** The nearest indoor unit **1** (a+b+c+d)–(a+e)≤40 m	

1 Outdoor unit
2 Refnet joints (A~D)
3 Indoor units (1~4)

13 Operation range

CMSQ200-250A



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NOTES

1 These figures assume the following operation conditions:
indoor and outdoor units:
- equivalent pipe lenght: 7.5 m
- level difference: 0 m

2 Depending on operation and installation conditions, the indoor unit can change over to freeze-up operation (indoor de-icing).

3 To reduce the freeze-up operation (indoor de-icing) frequency it is recommended to install the outdoor unit in a location not exposed to wind.

In all of us, a green heart

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intension to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.

ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.

Daikin units comply with the European regulations that guarantee the safety of the product.

Daikin Europe N.V. is participating in the EUROVENT Certification Programme. Products are as listed in the EUROVENT Directory of Certified Products.

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