

OUTDOOR UNITS

Mini series MVD V4+ Super DC Inverter

WIDE RANGE CAPACITY

The new Mini Inverter MVD V4 + units offer a wide range of capacities, from 8 to 45 kW, which offer the possibility of connecting from 4 to 14 indoor units respectively.

Note: in outdoor units with a power of less than 20 kW, when two or more units are connected, the maximum power of each indoor unit can not exceed 8 kW.

Model	Max. quantity indoor unit.
80	4
105	5
120	6
140	6
160	7
180	9
200	10
224	11
260	12
400/450	14



COMPRESSOR AND FAN MOTORS DC INVERTER

All range equipments include compressors and fan motors DC Inverter, in this way the performance for medium frequency system is improved and it ensures a more sensitive and effective control.



WIDE OPERATION RANGE

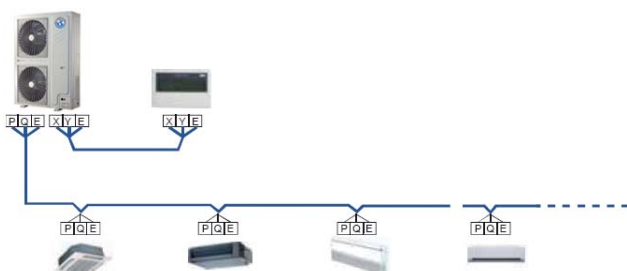
The V4+ equipment can operate in extreme temperature conditions, in heating mode up to an outdoor temperature of -15 °C and in cooling mode up to 46 °C.

AUTO ROUTING

The outdoor unit can assign address to the indoor units automatically. Wireless controls and wiring KJR-29B, can also configure, query and modify the addresses of the indoor units.

SIMPLIFIED COMMUNICATION CONNECTION

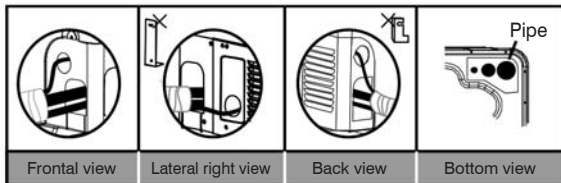
The installation of the communication wiring is simpler because in case you need to install a centralized control, it is not necessary to wire a second communication bus between the indoor units and the central control. You can connect the central control directly to the outdoor unit and perform manual routing for the control to detect all indoor units connected to that outdoor unit. Subsequently we can modify the addresses manually with the individual control of each equipment.



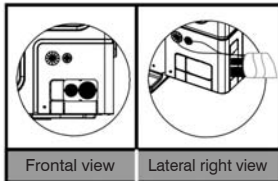
MINI SERIES MVD V4+

EASY CONNECTION OF PIPES

80 to 180 models



Models 200 to 260



It offers four possibilities for pipes and cables connection to satisfy the different needs of installation.

SAVE OF SPACE

The mini MVD drives are more compact, which means a significant saving of space required for its installation. They are especially suitable for small offices, hotels, shops, etc.

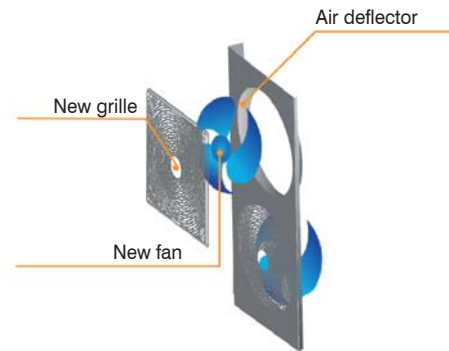
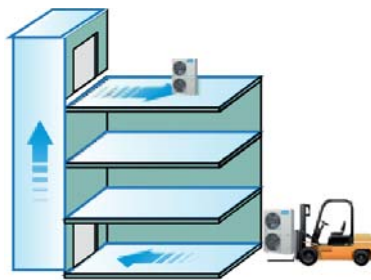


DESIGN TO ENJOY OF LOW OPERATING SOUND DURING OPERATION

The optimal fan design and the new design of the outlet air grill and the baffle allow a higher air flow and a minor sound level during operation.

EASY INSTALLATION

The mini MVD can be transported by a forklift. Its small size greatly facilitates installation and effectively reduces the time and the necessary personnel.



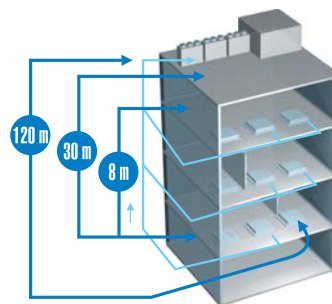
EASY SERVICING

The forced cooling button causes the outdoor unit to operate in cooling mode in any state, so it is very easy to load refrigerant into the system when needed. The self-diagnosis function detects malfunctions at the main system locations and displays the type of error and its location. This allows more efficient servicing and maintenance operations.



PIPE TOTAL LENGTH

Mini MVD V4+ system admits a maximum pipe length of 100 m (8 to 18 kW); 120m (20, 22 and 26 kW), 250 m (40 and 45 kW). With a height difference of 20 m or even 30 m in case the outdoor unit is installed lower than the indoor units.



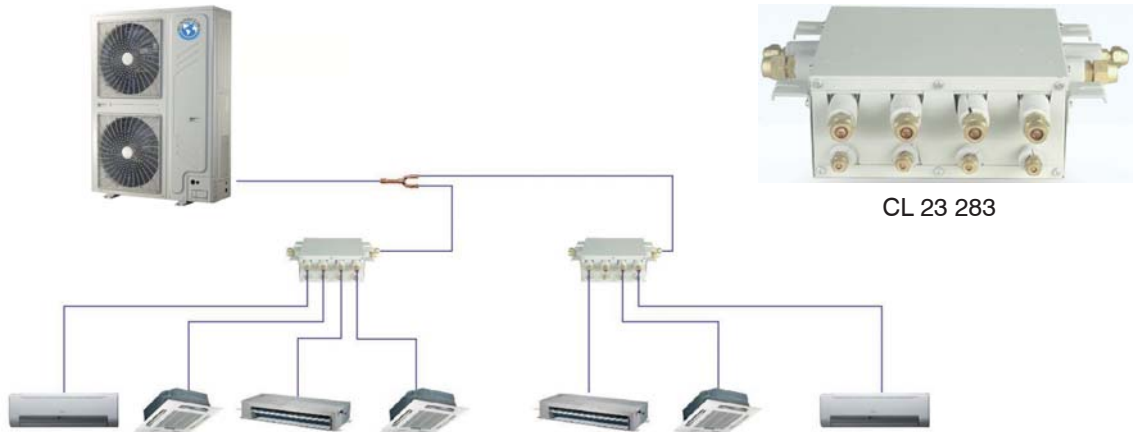
- 120m:** Maximum equivalent length between the outdoor unit and the furthest indoor unit (at 40 and 45 kW); 70 m (12 to 26 kW), 50 m (8 and 10 kW).
- 30 m:** Difference of maximum height between indoor and outdoor unit.
- 8 m:** Height difference among indoor units.

SINGLE PHASE UNITS		Maximal value (m)	
PIPE LENGTH	Pipe total length	100	
	Max. distance (L) (Between outdoor ut. and farthest indoor ut.)	Total length	45 (80 and 105 models)
		Equivalent length	60 (120 to 160 models)
	Equivalent pipe length between the furthest indoor unit and the first distributor.		50 (80 and 105 models)
	Equivalent pipe length between the indoor unit and the nearest distributor.		70 (120 to 160 models)
HIGHT DIFFERENCE	Height difference between indoor and outdoor units	Unit Higher outdoor unit	20
		Unit Lower outdoor unit	30
	Height difference between indoor units		8

MINI SERIES MVD V4+

THREEPHASIC UNITS			Maximal value (m)
PIPE LENGTH	Pipe total length		100 / 120 (for 20, 22.4 and 26 kW) 250 (for 40 et 45 kW)
	Maximum distance (L) (bt. outdoor and furthest indoor unit)	Total length	60 / 100 (for 40 and 45 kW)
		Equivalent length	70 / 120 (for 40 and 45 kW)
	Equivalent pipe length between the furthest indoor unit and the first distributor.		20 / 40 (for 40 and 45 kW)
Equivalent pipe length between the indoor unit and the nearest distributor.		15	
HIGHT DIFFERENCE	Height difference between indoor and outdoor units	Unit Higher outdoor unit	20
		Unit Lower outdoor unit	30
	Height difference between indoor units		8

SIMPLIFIED COOLING INSTALLATION

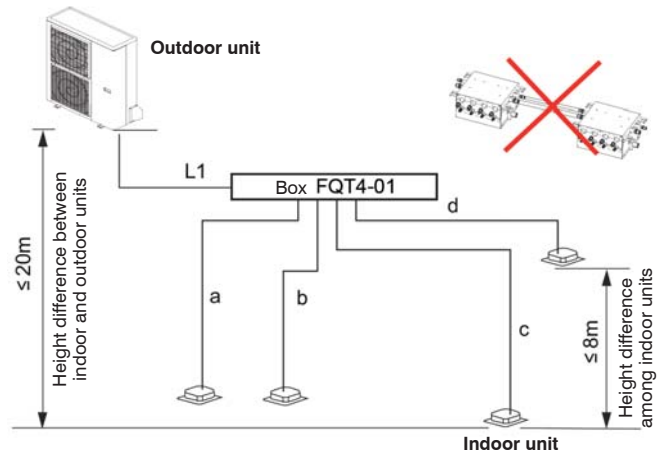
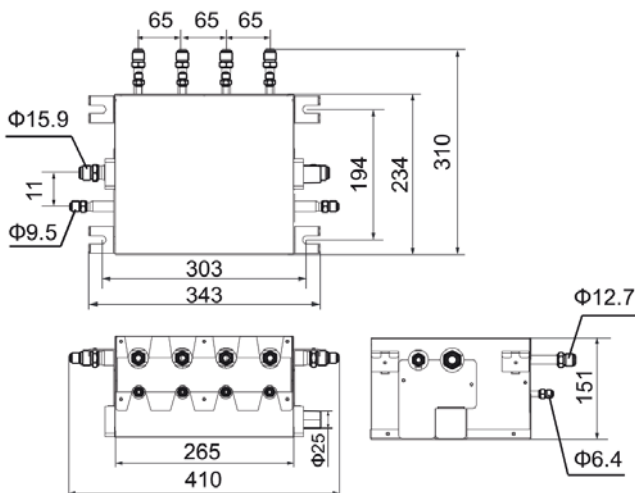


It's possible to realize the refrigerating installation through distributions boxes of 4 exits. It reduces the amount of weldings to perform.

- Flare connections (Outdoor unit side 3/8"-5/8" And indoor unit side 1/4 "-1/2"). Two adapter kits from 1/4" to 3/8" and two others from 1/2" to 5/8" are built-in the box.
- The distribution box doesn't need power supply. However it has to be connected to the drain in order to remove the water.

Note: Only suitable with outdoor units Mini MVD from 8 to 26 kW.

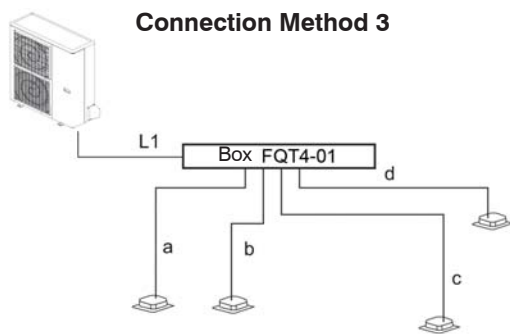
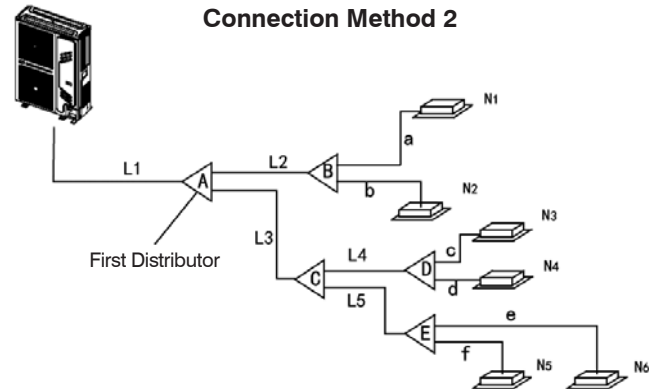
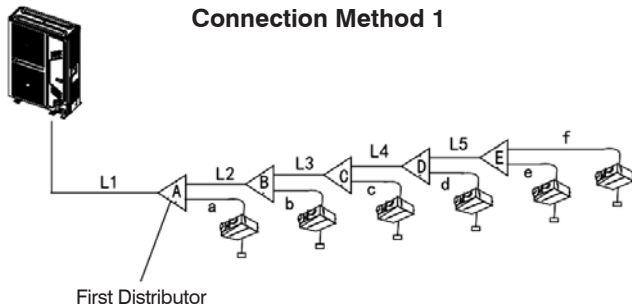
		Max. value	Pipe
PIPE LENGTH	Total pipe length/ vertical	≤100m	L1+a+b+c+d
	Maximum pipe length	≤45m	L1+a, L1+b, L1+c, L1+d
	Pipe length (from the distribution box to one indoor unit)	≤20m	a, b, c, d
HIGHT DIFFERENCE	Height difference between indoor units and the outdoor unit	Outdoor unit upward	≤20m
		Lower outdoor unit	≤20m
	Height difference between indoor units		≤8m



Note: The maximum pluggable capacity to a box output is 7.1 kW. The distribution boxes can not be connected in series.

MINI SERIES MVD V4+

SELECTION OF REFRIGERANT PIPES FOR THE MINI MVD V4 +



Note:
In connection methods 1 and 2, if the distance between the first distributor and the farthest indoor unit is greater than 15m, the connection method 2 must be chosen. The distance between the indoor unit and the nearest distributor must be less than 15 m.

DIAMETERS OF THE MAIN PIPE (L1) AND FIRST DISTRIBUTOR (a)

Outdoor Unit Capacity	Total Pipe <45 m			Total pipe ≥ 45 m		
	Liquid	Gas	First Distributor	Liquid	Gas	First Distributor
TO < 16	9.5 (3/8")	15.9 (5/8")	FQZHN-01D	9.5 (3/8")	19.1 (3/4")	FQZHN-01D
16 A < 23	9.5 (3/8")	19.1 (3/4")	FQZHN-01D	9.5 (3/8")	22.2 (7/8")	FQZHN-02D
23 ≤ to < 33	9.5 (3/8")	22.2 (7/8")	FQZHN-02D	9.5 (3/8")	25.4 (1")	FQZHN-03D
33 ≤ to < 46	12.7 (1/2")	28,6 (1 1/8")	FQZHN-03D	12.7 (1/2")	28,6 (1 1/8")	FQ7HN-03D
46 ≤ to	15.9 (5/8")	28,6 (1 1/8")	FQ7HN-03D	15.9 (5/8")	28,6 (1 1/8")	FQZHN-03D

A = Total capacity of the outdoor unit (kW).

PIPE DIAMETERS (L2 ~ L5) AND DISTRIBUTORS (b ~ e)

Maximum indoor unit capacity	Pipe		First Distributor
	Liquid	Gas	
TO < 16.6	9.5 (3/8")	15.9 (5/8")	FQZHN-01D
16.6 ≤ to < 23	9.5 (3/8")	19.1 (3/4")	FQZHN-01D
23 ≤ to < 33	9.5 (3/8")	22.2 (7/8")	FQZHN-02D
33 ≤ to	12.7 (1/2")	25.4 (1")	FQZHN-03D

A = Total Capacity (kW) of indoor units connected from that distributor.

PIPE DIAMETERS (a ~ f) FOR INDOOR UNITS

Capacity (kW)	Pipe	
	Liquid	Gas
to ≤ 4.5	6.4 (1/4")	12.7 (1/2")
4.5 < to ≤ 16	9.5 (3/8")	15.9 (5/8")
16 < to ≤ 18	9.5 (3/8")	19.1 (3/4")
18 < to	9.5 (3/8")	22.2 (7/8")

A = Capacity (kW) of the unit. Indoor.

MINI SERIES MVD V4+



TECHNICAL SPECIFICATIONS (SINGLEPHASIC UNITS)

Model			MVD-V80W /DN1	MVD-V105W /DN1	MVD-V120W /DN1	MVD-V140W /DN1	MVD-V160W /DN1(B)
Code			CL 23 260	CL 23 261	CL 23 262	CL 23 263	CL 23 264
Power supply		F, V, Hz	1N-, 230V, 50Hz	1N-, 230V, 50Hz	1N-, 230V, 50Hz	1N-, 230V, 50Hz	1N-, 230V, 50Hz
Cooling ⁽¹⁾	Capacity	kW	7.20 (1.5-8)	9.00 (2 - 10)	12.30	14.00	15.50
	Power consumption	kW	1.82 (0.71-1.80)	2.3 (0.89 - 2.59)	3.25	3.95	4.52
	EER/SEER ⁽⁷⁾		3.95 / 5.30	3.91 / 5.60	3.78 / 5.67	3.54 / 5.92	3.43 / 6.05
Heating ⁽²⁾	Capacity	kW	7.2 (1.6-8.4)	9.0 (2.1 - 10)	13.20	15.40	17.00
	Power consumption	kW	1.76 (0.83-2.11)	2.27 (1.06-2.77)	3.47	4.16	4.77
	COP/SCOP ⁽⁷⁾		4.09 / 3.90	3.97 / 3.80	3.80 / 3.90	3.70 / 3.86	3.56 / 3.64
Nominal current		A	18.50	22.80	24.40	29.80	30.00
Connectivity	Connecting capacity	%	45 - 130	45 - 130	45 - 130	45 - 130	45 - 130
	Max. quantity Unit Indoor		4	5	6	6	7
Compressor	Brand		Mitsubishi Electric				
	Type		DC Inverter - rotating				
	Amount		1	1	1	1	1
	Model		TNB220FLHMC		TNB306FPGMC		LNB42FSCMC
Fan	Type		DC	DC	DC	DC	DC
	Amount		1	1	2	2	2
	Model		WZDK170-38G-1		WZDK100-38G		
	Air flow rate	m ³ /h	5,500	5,500	6,000	6,000	6,000
Sound pressure ⁽³⁾		dB(A)	56	57	57	57	57
Dimensions	Net (W x H x D)	mm	990x966x336			900x1327x320	
	Gross (W x H x D)	mm	1120x1015x435			1030x1456x435	
Weight	Net	kg	75.5	75.5	95.0	95.0	100.0
	Gross	kg	85.5	85.5	106.0	106.0	111.0
Refrigerant	Type / GWP		R410A / 2088	R410A / 2088	R410A / 2088	R410A / 2088	R410A / 2088
	Amount	kg / TCO ₂ eq.	2.95 / 6.16	2.95 / 6.16	3.3 / 6.89	3.9 / 8.14	3.9 / 8.14
Design pressure	High	Mpa	4.40	4.40	4.40	4.40	4.40
	Low	Mpa	2.60	2.60	2.60	2.60	2.60
Pipe length ⁽⁴⁾	Max. Vertical	m	20	20	20	20	20
	Total	m	100	100	100	100	100
Connection pipes ⁽⁵⁾	Liquid Line	mm	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")
	Gas Line	mm	15.9 (5/8")	15.9 (5/8")	15.9 (5/8")	15.9 (5/8")	19.1 (3/4")
Electrical connections ⁽⁶⁾	Power wiring / ICP	mm ² /A	2 x 6 + T / 25	2 x 6 + T / 30		2 x 10 + T / 40	
	Signal wiring	mm ²	3 x 0.75 (shielded)				
Operation Temp. Range Operation	Cooling	°C	-15 to 43	-15 to 43	-15 to 43	-15 to 43	-15 to 43
	Heating	°C	-15 to 27	-15 to 27	-15 to 27	-15 to 27	-15 to 27

Notes:

- ⁽¹⁾ Nominal cooling conditions: Indoor 27 °C DB, 19 °C WB and outdoor 35 °C DB, pipe length of 5 m and a height difference of 0 m.
- ⁽²⁾ Nominal heating conditions: Indoor 20 °C DB, 15 °C WB and outdoor 7 °C DB, pipe length of 5 m and a height difference of 0 m.
- ⁽³⁾ Noise level measured in anechoic chamber at 1m front distance and 1 m height.
- ⁽⁴⁾ Pipe length when outdoor unit is higher installed than the indoor units. Otherwise the maximum distance in vertical can reach 30 m.
- ⁽⁵⁾ Specified diameters of connection pipes are of service valves, this does not mean that the pipe must have this diameter.
- ⁽⁶⁾ Power wiring recommended for L < 20 m, for longer distances it should be calculated.
- ⁽⁷⁾ Data measured in Eurovent EN14825 conditions, at 100% simultaneity.

MINI SERIES MVD V4+



SPECIFICATIONS (THREE-PHASE)

Model			MVD-V120W /DRN1	MVD-V140W /DRN1	MVD-V160W /DRN1	MVD-V180W /DRN1	MVD-V200W /DRN1	MVD-V224W /DRN1	MVD-V260W /DRN1
Code			CL 23 265	CL 23 266	CL 23 267	CL 23 268	CL 23 269	CL 23 270	CL 23 271
Power supply		F, V, Hz	3N-, 400V, 50Hz	3N-, 400V, 50Hz	3N-, 400V, 50Hz	3N-, 400V, 50Hz	3N-, 400V, 50Hz	3N-, 400V, 50Hz	3N-, 400V, 50Hz
Cooling ⁽¹⁾	Capacity	kW	12.30	14.00	15.50	17.50	20.00	22.40	26.00
	Power consumption	kW	3.25	3.95	4.52	5.30	6.10	6.80	7.60
	EER/SEER ⁽⁷⁾		3.78/5.67	3.54/5.92	3.43/6.05	3.30/5.13	3.28/5.58	3.29/6.07	3.42/5.43
Heating ⁽²⁾	Capacity	kW	13.20	15.40	17.00	19.00	22.00	24.50	28.50
	Power consumption	kW	3.47	4.16	4.77	5.00	6.10	5.90	6.80
	COP/SCOP ⁽⁷⁾		3.80/3.90	3.70/3.86	3.56/3.64	3.80/3.86	3.61/3.64	4.15/3.74	4.19/3.76
Nominal current		A	10.00	11.00	12.00	12.50	14.50	16.20	18.70
Connectivity	Connecting capacity	%	45 - 130	45 - 130	45 - 130	45 - 130	45 - 130	45 - 130	45 - 130
	Max. quantity Unit Indoor		6	6	7	9	10	11	12
Compressor	Brand		Mitsubishi Electric						
	Type		DC Inverter - rotating						
	Amount		1	1	1	1	1	1	1
	Model		TNB306FPNMC		LNB42FSAMC			LNB53FCAMC	
Fan	Type		DC	DC	DC	DC	DC	DC	DC
	Amount		2	2	2	2	2	2	2
	Model		WZDK100-38G	WZDK100-38G	WZDK100-38G	WZDK100-38G	WZDK170-38-G-1	WZDK170-38-G-1	WZDK170-38-G-1
	Air flow rate	m ³ /h	6,000	6,000	6,000	6,800	10,999	10,494	10,494
Sound pressure ⁽³⁾		dB(A)	57	57	57	59	59	59	60
Dimensions	Net (W x H x D)	mm	900 x 1327 x 320				1120 x 1558 x 414		
	Gross (W x H x D)	mm	1030 x 1456 x 435				1270 x 1720 x 565		
Weight	Net	kg	95.0	95.0	102.0	107.0	137.0	146.5	147.0
	Gross	kg	103.0	103.0	113.0	118.0	153.0	165.5	163.0
Refrigerant	Type / GWP		R410A / 2088	R410A / 2088	R410A / 2088	R410A / 2088	R410A / 2088	R410A / 2088	R410A / 2088
	Amount	kg / TCO ₂ eq.	3.3 / 6.89	3.9 / 8.14	3.9 / 8.14	4.5 / 9.4	4.8 / 10.02	6.2 / 12.95	6.2 / 12.95
Design pressure	High	Mpa	4.40	4.40	4.40	4.40	4.40	4.40	4.40
	Low	Mpa	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Pipe length ⁽⁴⁾	Max. Vertical	m	20	20	20	20	20	20	20
	Total	m	100	100	100	100	120	120	120
Connection pipes ⁽⁵⁾	Liquid Line	mm	9.52 (3/8")						
	Gas Line	mm	15.9 (5/8")			19.1 (3/4")			
Electrical connections ⁽⁶⁾	Power wiring / ICP	mm ² /A	4 x 4 + T / 25				4 x 6 + T / 30	4 x 6 + T / 30	4 x 10 + T / 40
	Signal wiring	mm ²	3 x 0.75 (shielded)						
Operation Temp. Range	Cooling	°C	-15 to 43	-15 to 43	-15 to 43	-15 to 43	-15 to 43	-15 to 43	-15 to 43
	Heating	°C	-15 to 27	-15 to 27	-15 to 27	-15 to 27	-15 to 24	-15 to 24	-15 to 24

Notes:

- (1) Nominal cooling conditions: Indoor 27 °C DB, 19 °C WB and outdoor 35 °C DB, pipe length of 5 m and a height difference of 0 m.
- (2) Nominal heating conditions: Indoor 20 °C DB, 15 °C WB and outdoor 7 °C DB, pipe length of 5 m and a height difference of 0 m.
- (3) Sound level measured in semi-anechoic chamber at 1 m distance front and 1.2 m high (1.3 m for models from 20 to 26 kW).
- (4) Pipe length when outdoor unit is higher installed than the indoor units. Otherwise the maximum distance in vertical can reach 30 m.
- (5) Specified diameters of connection pipes are of service valves, this does not mean that the pipe must have this diameter.
- (6) Power wiring recommended for L < 20 m, for longer distances it should be calculated.
- (7) Data measured in Eurovent EN14825 conditions, at 100% simultaneity.

MINI SERIES MVD V4+



SPECIFICATIONS (THREE-PHASE)

Model			MVD-V400W/DRN1	MVD-V450W/DRN1
Code			CL 23 272	CL 23 273
Power supply		F, V, Hz	3N-, 400V, 50Hz	3N-, 400V, 50Hz
Cooling ⁽¹⁾	Capacity	kW	40.00	45.00
	Power consumption	kW	11.90	13.60
	EER/SEER ⁽⁷⁾		3.35/5.08	3.32/5.03
Heating ⁽²⁾	Capacity	kW	45.00	50.00
	Power consumption	kW	11.10	12.70
	COP/SCOP ⁽⁷⁾		4.05/3.51	3.93/3.45
Max. current		A	33.00	44.00
Connectivity	Connecting capacity	%	45 - 130	45 - 130
	Max. quantity Unit Indoor		14	14
Compressor	Brand		Mitsubishi Electric	Mitsubishi Electric
	Type		DC Inverter - rotating	DC Inverter - rotating
	Amount		2	2
	Model		LNB42FSAMC	LNB53FCAMC
Fan	Type		DC	DC
	Amount		2	2
	Model		WZDK560-38G(B)	WZDK560-38G(B)
	Air flow rate	m ³ /h	16,575	16,575
Sound pressure ⁽³⁾		dB(A)	62	62
Dimensions	Net (W x H x D)	mm	1360 x 1650 x 540	1460 x 1650 x 540
	Gross (W x H x D)	mm	1450 x 1785 x 560	1550 x 1785 x 560
Weight	Net	kg	240	275
	Gross	kg	260	290
Refrigerant	Type / GWP		R410A / 2088	R410A / 2088
	Amount	kg / TCO ₂ eq.	9.0 / 18.79	12.0 / 25.06
Design pressure	High	Mpa	4.40	4.40
	Low	Mpa	2.60	2.60
Pipe Length ⁽⁴⁾	Max. Vertical	m	20	20
	Total	m	250	250
Connection pipes ⁽⁵⁾	Liquid Line	mm (inches)	12.7 (1/2")	12.7 (1/2")
	Gas Line	mm (inches)	22.2 (7/8")	25.4 (1")
Electrical connections ⁽⁶⁾	Power wiring / ICP	mm ² /A	4 x 25 + T / 70	4 x 35 + T / 90
	Signal wiring	mm ²	3 x 0.75 (shielded)	3 x 0.75 (shielded)
Operation Temp. Range	Cooling	°C	-5 to 43	-5 to 43
	Heating	°C	-15 to 24	-15 to 24

Notes:

- ⁽¹⁾ Nominal cooling conditions: Indoor 27 °C DB, 19 °C WB and outdoor 35 °C DB, pipe length of 5 m and a height difference of 0 m.
- ⁽²⁾ Nominal heating conditions: Indoor 20 °C DB, 15 °C WB and outdoor 7 °C DB, pipe length of 5 m and a height difference of 0 m.
- ⁽³⁾ Noise level measured in anechoic chamber at 1 m front distance and 1.2 m height.
- ⁽⁴⁾ Pipe length when outdoor unit is higher installed than the indoor units. Otherwise the maximum distance in vertical can reach 30 m.
- ⁽⁵⁾ Specified diameters of connection pipes are of service valves, this does not mean that the pipe must of this diameter.
- ⁽⁶⁾ Power wiring recommended for L < 20 m, for longer distances it should be calculated.
- ⁽⁷⁾ Data measured in Eurovent EN14825 conditions, at 100% simultaneity.