



# X3 VRF SLIM AND MINI

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VRF All DC Inverter systems

# X3 VRF MINI AND SLIM

## THE ADVANTAGES

The structure of the high-pressure chamber can increase the performance at high and medium frequency

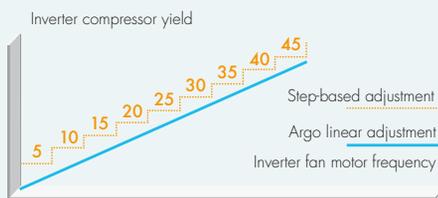
The new DC motor (concentrated winding) increases the performance at low frequency



### ALL DC INVERTER COMPRESSORS

The use of all inverter compressors guarantees excellent efficiency of the system in both full-load conditions and during operation with partial load. The high-efficiency permanent magnet synchronous motor is adapted to guarantee improved performance compared to a traditional DC inverter compressor.

In this VRF system only DC inverter compressors are used. The system is able to directly absorb the gas to reduce the loss of overheating and improve efficiency.



### DC INVERTER SENSORLESS FAN MOTOR

The linear adjustment of the speed varies between 5 and 44 Hz. Compared to traditional inverter motors, it is more efficient from an energy saving perspective.

The SENSORLESS control technology guarantees improved silence, less vibrations and more uniform operation.

#### GMV5 MINI



#### GMV5 SLIM



### WIDE OPERATING RANGE

The unit employs the DC motor with a more accurate control of the high pressure, which effectively solves the problem of controlling high pressures in cooling conditions with low ambient temperature. In this way, the operating range in cooling mode is wider.

### LOW NOISE LEVEL OF THE OUTDOOR UNIT

- Thanks to the advanced technology for controlling undercooling, the noise of the liquid flowing inside the indoor unit can be reduced when the latter operates in cooling mode.
- The noise level of the outdoor unit can be reduced to 45 dB thanks to the optimised design of the fan system and of the compressor, and thanks to the various silent modes of the outdoor unit itself.



## VRF ALL DC INVERTER SYSTEMS

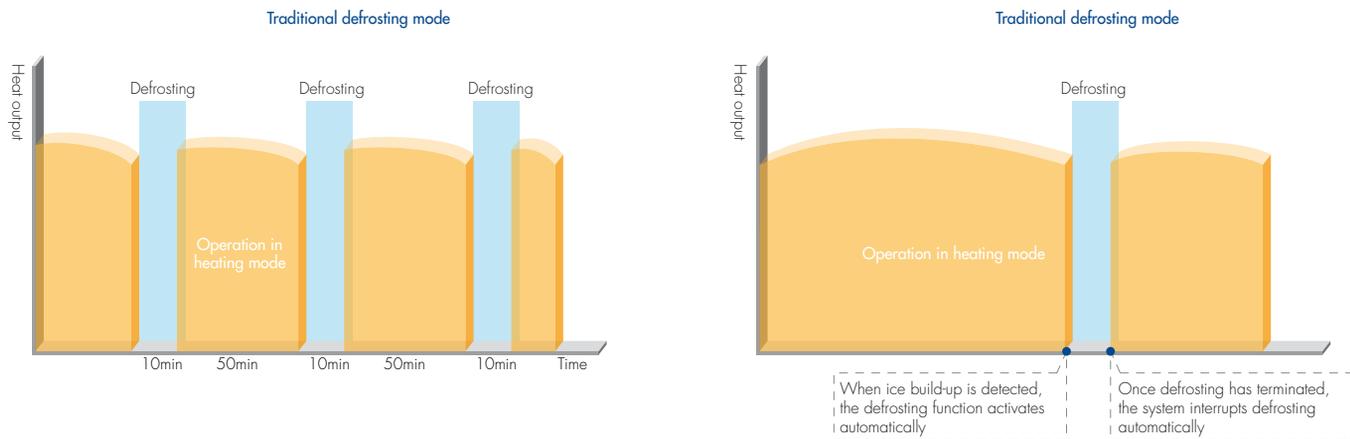
The X3 VRF MINI range and the X3 VRF SLIM range feature low noise levels and compact outdoor units with reduced dimensions, ideal for being installed in any environment and whenever high power levels and low bulk are required. The units have compressors with high energy efficiency levels and a wide operating range (-20 °C / +52 °C), which makes them perform optimally even in extreme conditions.



# THE ADVANTAGES

## COMFORTABLE HEATING

The system is equipped with a smart defrosting system. This mode chooses the best defrosting method on the basis of the outdoor temperature and operating conditions to produce smart defrosting, thus improving the heating efficacy and efficiency. The traditional defrosting mode instead relies on a system based on regular intervals that reduces both the comfort and the energy efficiency.



## COMPACT SIZE: X3 VRF SLIM

X3 VRF slim is designed with reduced and compact dimensions, but with the same capacity as the modular version.



# LINE-UP OF OUTDOOR UNITS

## X3 VRF MINI SINGLE-PHASE

Code	Model	Size (HP)
398800001	AEG04MMIH	4
398800002	AEG05MMIH	5
398800003	AEG06MMIH	6

## X3 VRF MINI THREE-PHASE

Code	Model	Size (HP)
398800004	AEG04MMIH3	4
398800005	AEG05MMIH3	5
398800006	AEG06MMIH3	6

## X3 VRF SLIM

Code	Model	Size (HP)
398800007	AEG08MSIH3	8
398800008	AEG10MSIH3	10
398800009	AEG12MSIH3	12

# TECHNICAL DATA X3 VRF MINI SINGLE-PHASE

Model	Unit	AEG04MMIH	AEG05MMIH	AEG06MMIH
Size	HP	4	5	6
Nominal cooling capacity*	kW	12.10	14.00	16.00
Nominal heating capacity*	kW	14.00	16.50	18.50
EER*	kW/kW	3.99	3.90	3.37
COP*	kW/kW	4.28	4.18	3.87
Space cooling seasonal efficiency*	$\eta_{s,c}$ - %	325.0	330.0	315.0
Space heating seasonal efficiency*	$\eta_{s,h}$ - %	175.0	175.0	180.0
Compressor modulation range	%	10-100	10-100	10-100
Min-max total capacity range of indoor units compared to the outdoor unit capacity	%	50 – 135	50 – 135	50 – 135
Air flow rate	m <sup>3</sup> /h	6000	6300	6600
Power supply	V/Ph/Hz	220-240 – /1/50/60	220-240 – /1/50/60	220-240 – /1/50/60
Power input in cooling mode	kW	3.03	3.59	4.75
Power input in heating mode	kW	3.27	3.95	4.65
Current in cooling mode	A	16.20	19.20	25.40
Current in heating mode	A	17.50	21.10	24.80
Sound power level	dB(A)	72	72	72
Sound pressure level (distance 1 m)	dB(A)	57	58	58
Compressor	type/No.	Inverter Rotary/1	Inverter Rotary/1	Inverter Rotary/1
Refrigerant type		R410A	R410A	R410A
GWP of refrigerant	kg/T.CO <sub>2</sub> eq.	2088	2088	2088
Standard refrigerant charge	kg	3.3	3.3	3.3
Piping diameter	Gas pipe	mm	ø9.52	ø9.52
	Liquid pipe	mm	ø15.09	ø15.09
Net dimensions	Width	mm	900	900
	Depth	mm	340	340
	Height	mm	1,345	1,345
Dimensions with packaging	Width	mm	998	998
	Depth	mm	458	458
	Height	mm	1,500	1,500
Net weight	kg	112	112	112
Gross weight	kg	123	123	123
Maximum no. of connectable indoor units	no.	7	8	9
Maximum total length of pipes	m	300	300	300
Maximum length of the OU/IU connection	m	120	120	120
Maximum height difference (outdoor unit on top)	m	50	50	50
Maximum height difference (between indoor units)	m	15	15	15
Operating limits	cooling	°C	-5 – 52	-5 – 52
	heating	°C	-20 – 27	-20 – 27

\* Nominal data tested according to the EN14511 standard and certified by EUROVEN .

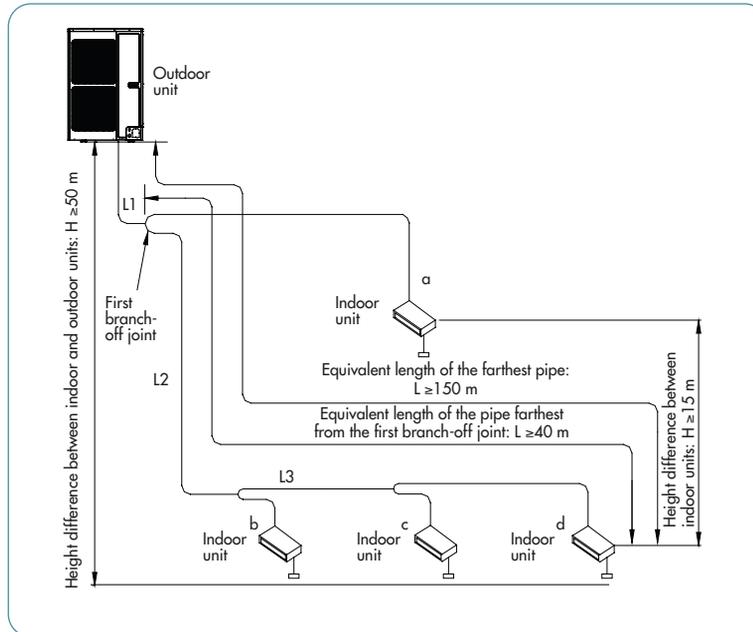
- Test conditions of the nominal cooling capacity: indoor unit 27 °C DB/19 °C VWB, outdoor unit 35 °C DB; length of the connecting pipe: 5 m, without any height difference between the units
- Test conditions of the nominal heating capacity: indoor unit 20 °C DB, outdoor unit 7 °C DB/6 °C VWB; length of the connecting pipe: 5 m, without any height difference between the units
- The sum of capacities of the indoor units connected must fall within the capacity range (50%-135%) of the outdoor units. The pertinent parameters can be corrected by referring to the capacity correction table of the units.
- The parameters indicated above were tested on the basis of the standard length of the connecting pipe. In the actual project, the parameters must be corrected by referring to the capacity correction for the long connecting pipe of the units.

# PIPING REQUIREMENTS

## PIPE LENGTH LIMITS AND HEIGHT DIFFERENCE BETWEEN INDOOR AND OUTDOOR UNITS

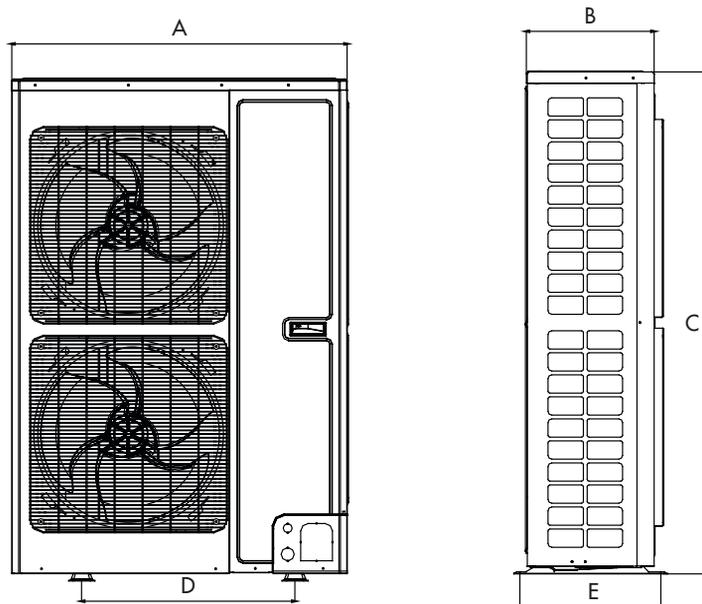
To connect the indoor and outdoor units a Y-shaped branch-off joint is used. The figure below shows the connection scheme.

Note: the equivalent length of a Y-shaped branch-off joint is 0.5 m.



Lengths and height differences		Limit value (m)	Piping
Total length (actual) of piping		300	$L1+L2+L3+a+b+c+d$
Length of farthest pipe	Actual length	120	$L1+L2+L3+d$
	Equivalent length	150	
Equivalent length of the pipe farthest from the first branch-off joint		40	$L2+L3+d$
Height difference between indoor and outdoor units	Outdoor unit installed on top	50	—
	Outdoor unit installed on bottom	40	—
Height difference between indoor units		15	—

# DIMENSIONAL DRAWINGS AND INSTALLATION SPACES



	MODEL	A	B	C	D	E
MINI SINGLE-PHASE	AEG04MMIH	900	340	1345	572	378
	AEG05MMIH					
	AEG06MMIH					
MINI THREE-PHASE	AEG04MMIH3					
	AEG05MMIH3					
	AEG06MMIH3					
SLIM	AEG08MSIH3	940	320	1430	632	350
	AEG10MSIH3	940	460	1615	610	486
	AEG12MSIH3					

