Technische Beschreibung

*Kanal-Splitklimageräte **MD***

Modelle Kühlung / Wärmepumpe

Innenteile:

MD 33

MD 38

MD 50

Außenteile:

GC 33/33 RC

GC 38/38 RC

GC 50/50 RC

1019/0606

Airwell

MD Multi-duct cassettes

CONTENTS

MD Multi-duct cassettes

PRESENTATION

These units are optimised for operating with chlorine-free **R-407C** refrigerant having no harmful effects on the ozone layer and they meet the requirements of both current legislation and of care for the environment.

The **«Multi-Duct Cassettes»** range meets the air conditioning needs of all sizes of residential and tertiary installations.
The 3 models, with capacities ranging from 8790 to 14500 W, comprise two separate elements:
The **MD indoors unit** for air distribution via a duct network.
The **GC outdoors unit** for air treatment.
This range is offered with two options:

- **Cooling Only**
  Standard Cooling function with electric heating as an option.
- **Heatpump**
  Standard Cooling and thermodynamic Heating as standard with additional electric heating as an option.

1. INDOORS UNIT

This unit incorporates highly sophisticated technical qualities with particularly well designed aesthetics and ease of installation.
Its low height (300 mm) enables it to be easily integrated into a suspended ceiling.
It can also be installed in corridors (width: 850 mm)
It incorporates three different ventilation fan speeds.
With air blowing orifices located on both sides and air pressure available for connection to a duct network, it is capable of air conditioning up to 6 separate rooms.
Adaptors for flexible ducting (8" to 12") are supplied with the unit.

It is equipped with:

- An infra red receiver, linked to the unit via a 7 m cable enabling all air conditioning functions to be selected by way of the Liquid Crystal Display infra red control (see page 41).
- A turbine with very low noise levels.
- An air intake grille (supplied as an accessory) fitted with an acoustic attenuator.
- A condensates lift pump (factory fitted) with a 600 mm lift height for condensates drainage.
- An electrical connection box on a sliding chassis for easy access to all electrical connections.
- Complete access to all components via the bottom of the unit.
- 2 installation options:
  – Mounting plate and suspension rails.
  – Brackets for attachment to threaded rods (not supplied).
- Reusable air filters.

MD Multi-duct cassettes

2. OUTDOORS UNIT

Of compact design, taking up very little floor area, this unit houses the «Scroll» compressor, the fan-condenser assembly and the electrical box.

Two installation possibilities:
- Direct floor installation.
- Wall hanging with accessory (not supplied).

3. REFRIGERATION CIRCUIT

Both the indoors and outdoors units are equipped with **«FLARE»** connectors, enabling the use of **«FLARE»** refrigeration pipes (refrigeration quality copper pipe)
Depending on the model, pipe lengths can extend up to 50 m.
Heatpump models are equipped with a cooling cycle inversion system enabling them to operate in an **AIR/AIR** thermodynamic heating mode down to outside temperatures as low as –10° C.
A good coefficient of performance (COP) for the transfer of calories from the outside to the premises to be air conditioned is achieved.

4. OPTIONS

The **Cooling only** and **Heatpump models** can be equipped with:
- Electric heating
- New air intake
- Manual treated airflow gate
- Centralised system control possible with **RCW-2** wall mounted remote control.

5. DOCUMENTATION

Each unit is supplied with general wiring and connection diagrams and specific installation and operation instructions.
Each accessory (or kit) is accompanied by technical specifications for fitting and adjustment as required.

MD Multi-duct cassettes

TECHNICAL SPECIFICATIONS

Models		MD 35	MD 38	MD 50
R-407C refrigerant		•	•	•
Power supply		1~230 V - 50 Hz		
Nominal cooling capacity (1)	W	9100	11260	
Nominal power input in cooling mode	W	3580	3950	
Nominal heating capacity (1)	W	9140	11100	
Nominal power input in heating mode	W	3150	3985	
Cœfficient of performances (COP)	W/W	2.9	2.76	
Power supply		3N~400 V - 50 Hz		
Nominal cooling capacity (1)	W	8790	10400	12600
Nominal power input in cooling mode	W	3370	3850	5185
Nominal heating capacity (1)	W	8790	11100	14500
Nominal power input in heating mode	W	3030	3940	5180
Cœfficient of performances (COP)	W/W	2.9	3.82	2.8

INDOOR UNIT

Noise levels (3)				
• LS - Low Speed	dBA	51.3	54.8	54.8
• MS - Medium Speed	dBA	54.8	56	56
• HS - High Speed	dBA	57.2	57.2	59.3
Airflow				
• LS - Low Speed	m³/h	1040	1180	1180
• MS - Medium Speed	m³/h	1180	1475	1475
• HS - High Speed	m³/h	1700	1700	2000
Dimensions				
• Length x Depth x Height	mm	1025 x 760 x 300		
Weight	kg	43	44	44
Packed dimensions				
• Length x Depth x Height	mm	1125 x 975 x 360		

OUTDOOR UNIT

Noise levels	dBA	69	65	65
Airflow	m³/h	3100	4150	4150
Dimensions				
• Length x Depth x Height	mm	900 x 340 x 860	900 x 340 x 970	900 x 350 x 970
Weight	kg	82	95	95
Packed dimensions				
• Length x Depth x Height	mm	985 x 406 x 906	985 x 406 x 1020	985 x 406 x 1020

ACCESSORIES & OPTIONS

Air intake grille		•	•	•
Electric heating	W	2 x 750	2 x 1500	2 x 1500
New air intake		•	•	•
Manual treated air gate		•	•	•
RCW-2 Wall mounted remote control		•	•	•

(1) Test conditions for operating in Cooling mode
Temperature of recycled intake air to be treated: 27° (DBT) / 19 C (WBT)
Outdoor air intake temperature: 35° C (DBT)
Nominal airflow at the evaporator and at the condenser.

(2) Test conditions for operating in Heating mode
Temperature of recycled intake air to be treated: 20° (DBT)
Outdoor air intake temperature: 7° C (DBT) / 6°C (WBT)
Nominal airflow at the evaporator and at the condenser.

(3) Noise levels
Global acoustic pressure in dBA at nominal conditions.
Indoors unit:
Installation in average size room (LS – 0.5 s reverberation at a distance of 1 m)
Outdoors unit:
In open area against a reflecting surface.

These characteristics are provided for information purposes only and are subject to change without prior notice.

MD Multi-duct cassettes

OPERATING LIMITS

The **MD indoors units** and the **GC outdoors units** operate within the following limits:

COOLING mode

Low limits		
Indoor temperature	DBT °C	21
	WBT °C	15
Outdoor temperature	DBT °C	21

High limits		
Indoor temperature	DBT °C	32
	WBT °C	23
Outdoor temperature	DBT °C	46

HEATING mode

Low limits		
Indoor temperature	DBT °C	20
Outdoor temperature	DBT °C	–9
	WBT °C	–10

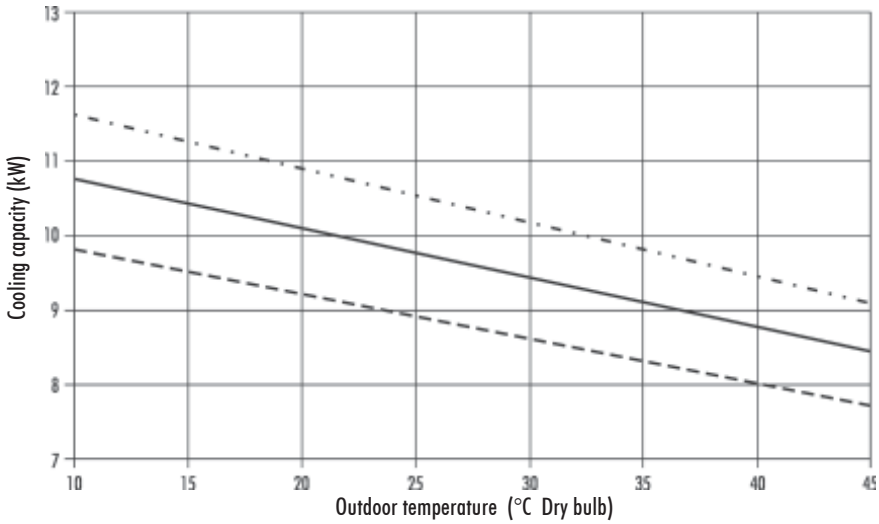
High limits		
Indoor temperature	DBT °C	27
Outdoor temperature	DBT °C	24
	WBT °C	18

DBT: Dry Bulb temperature (° C)
WBT: Wet Bulb temperature (° C)

MD Multi-duct cassettes

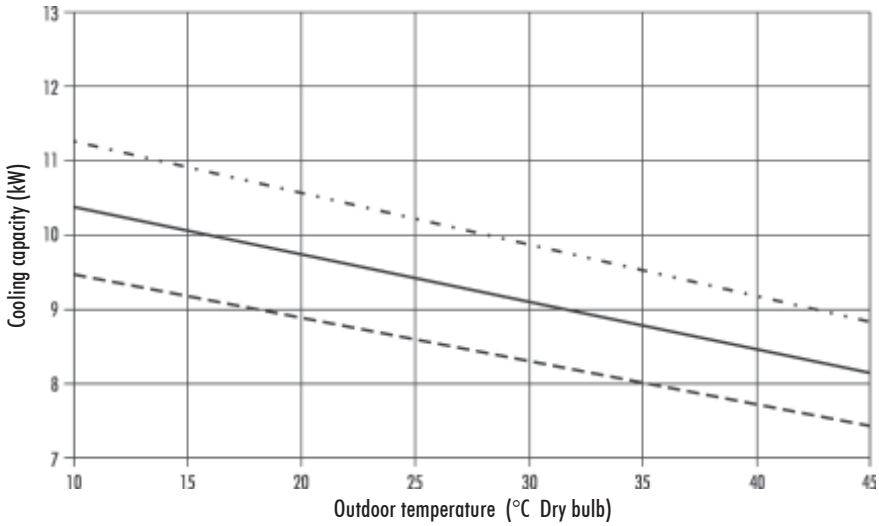
COOLING CAPACITY

Model MD 35
single phase



Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

Model MD 35
Three phase

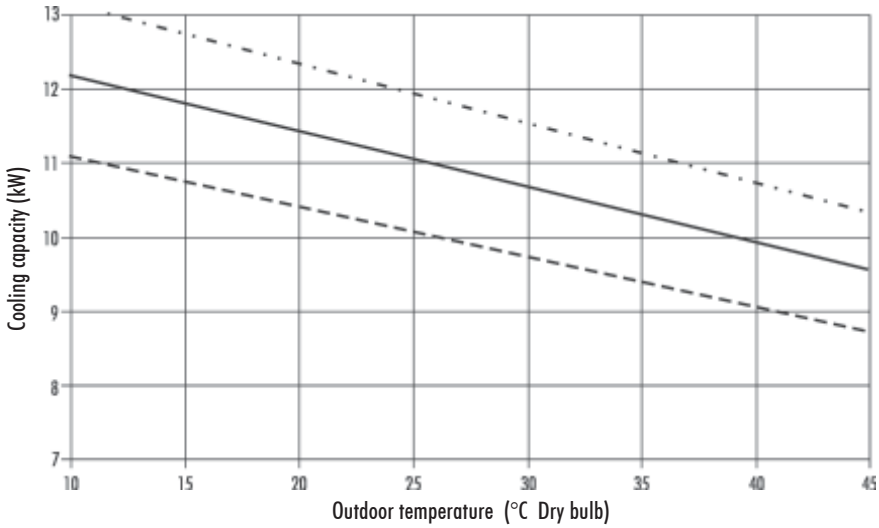


Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

MD Multi-duct cassettes

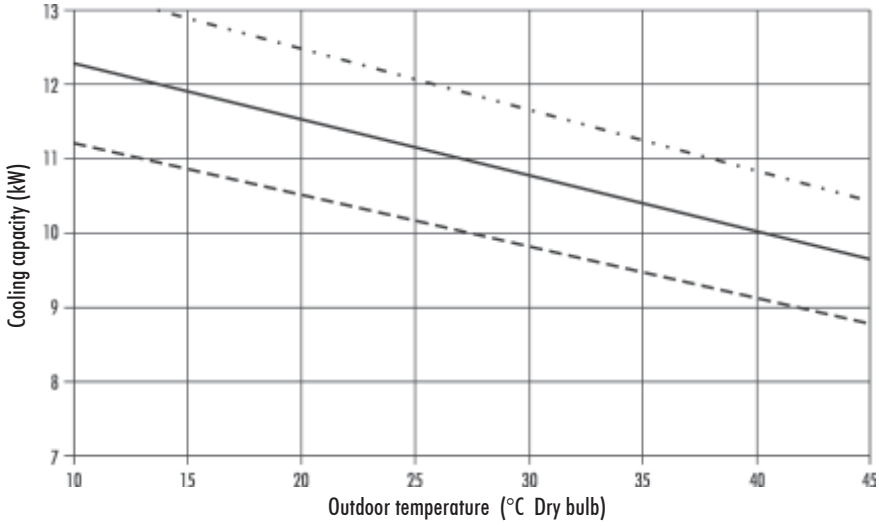
COOLING CAPACITY

Model MD 38
single phase



Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

Model MD 38
three phase

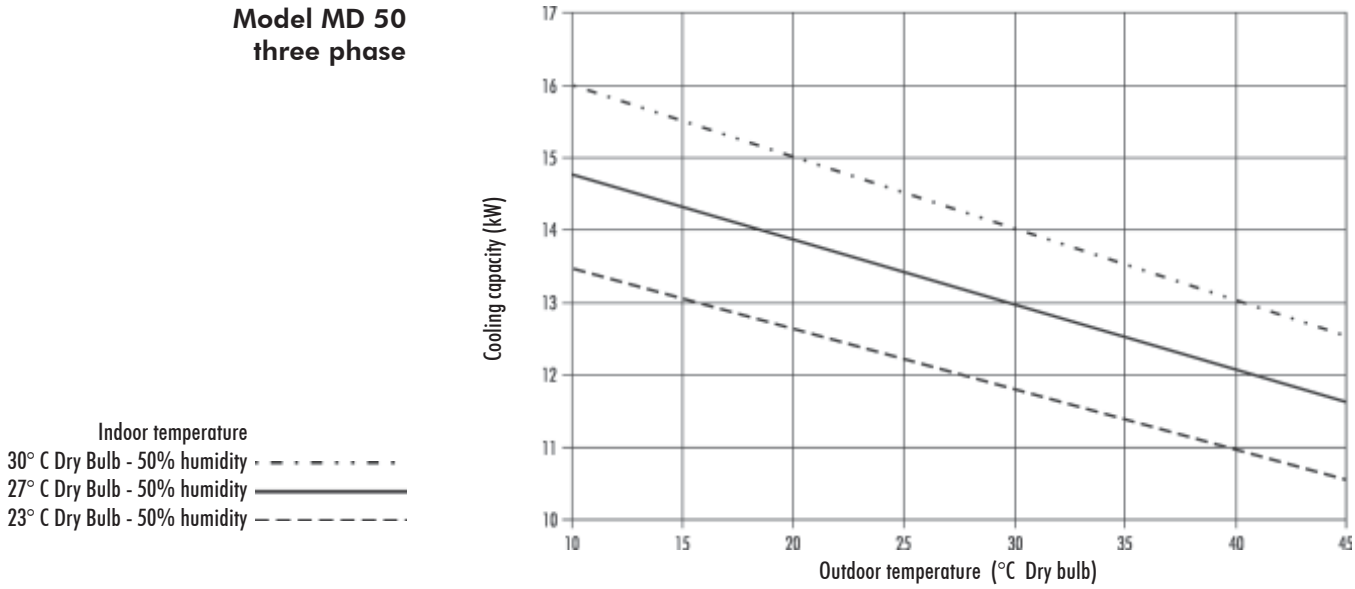


Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

MD Multi-duct cassettes

COOLING CAPACITY

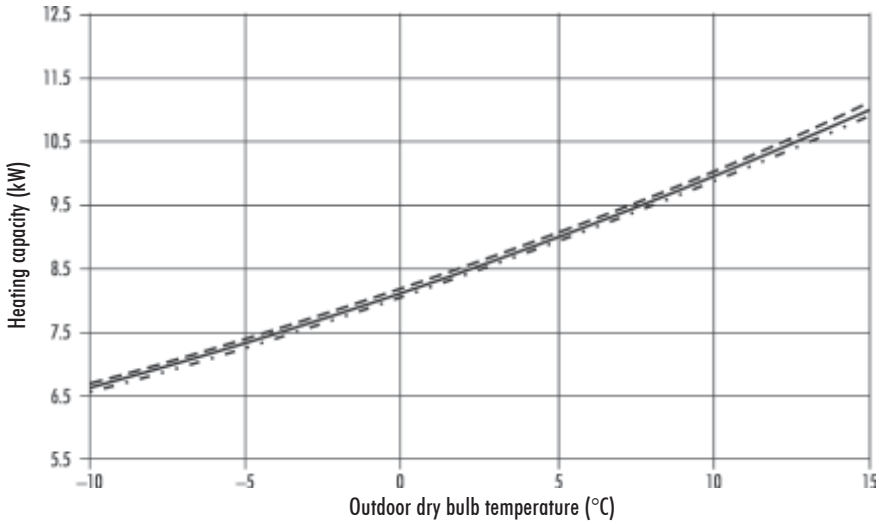
Model MD 50
three phase



MD Multi-duct cassettes

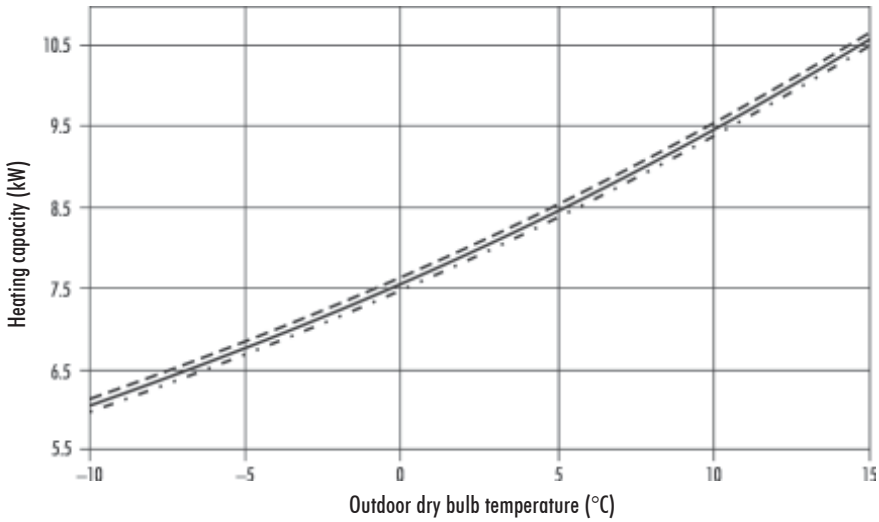
HEATING CAPACITY

Model MD 35 single phase



Indoor temperature
20°C Dry bulb
18°C Dry bulb
15°C Dry bulb

Model MD 35 three phase

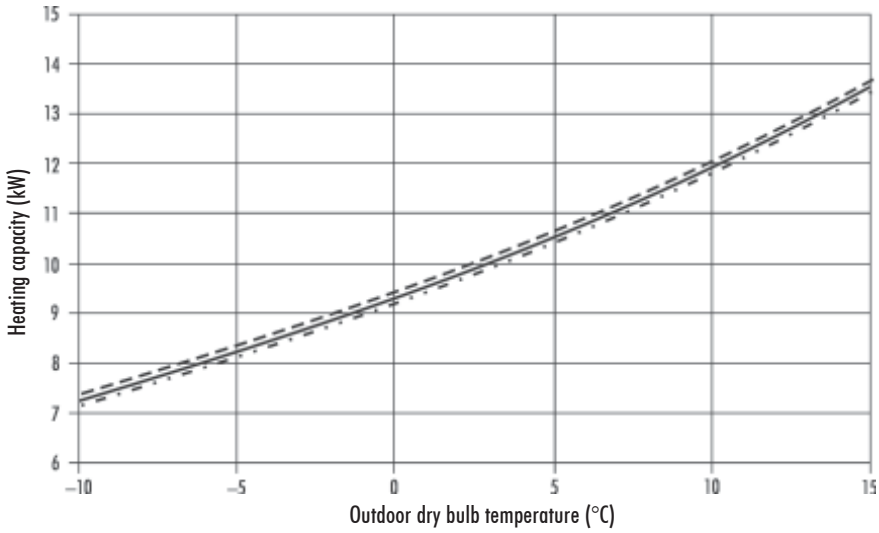


Indoor temperature
20°C Dry bulb
18°C Dry bulb
15°C Dry bulb

MD Multi-duct cassettes

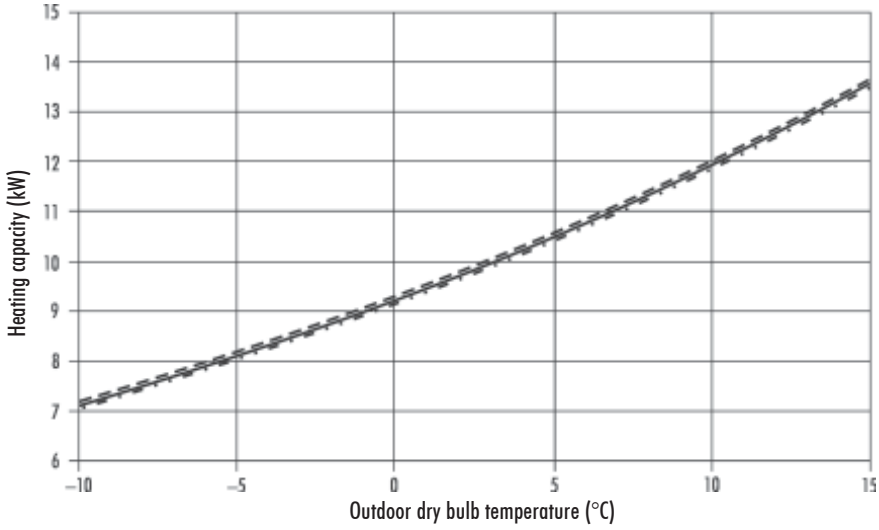
HEATING CAPACITY

Model MD 38 single phase



Indoor temperature
20°C Dry bulb
18°C Dry bulb
15°C Dry bulb

Model MD 38 three phase

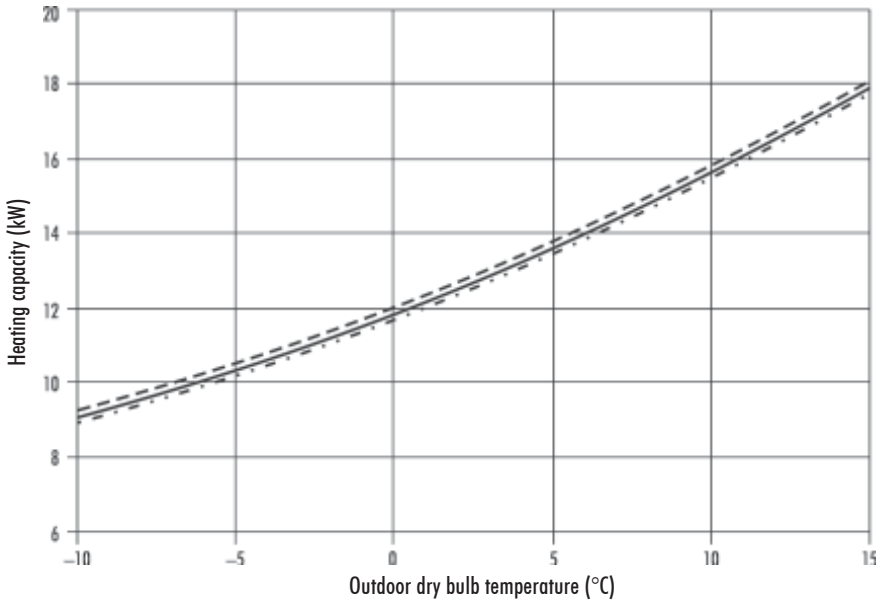


Indoor temperature
20°C Dry bulb
18°C Dry bulb
15°C Dry bulb

MD Multi-duct cassettes

HEATING CAPACITY

Model MD 50
three phase

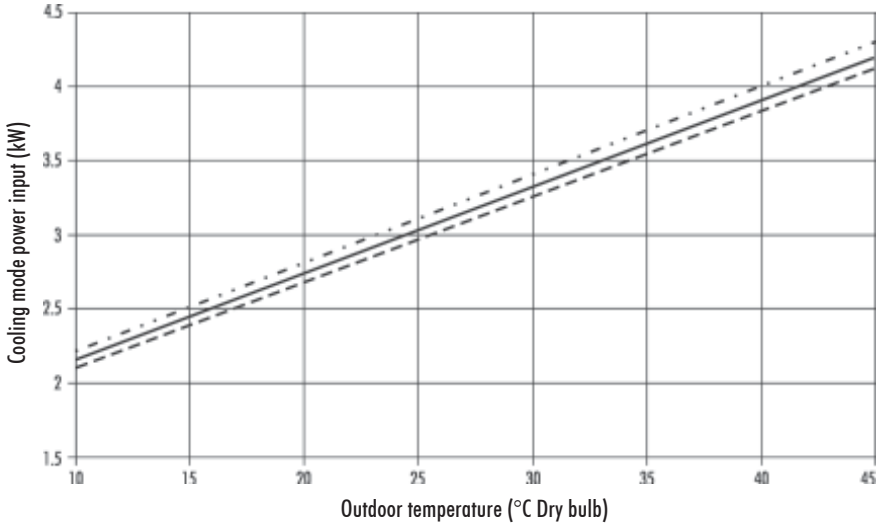


Indoor temperature
20°C Dry bulb
18°C Dry bulb
15°C Dry bulb

MD Multi-duct cassettes

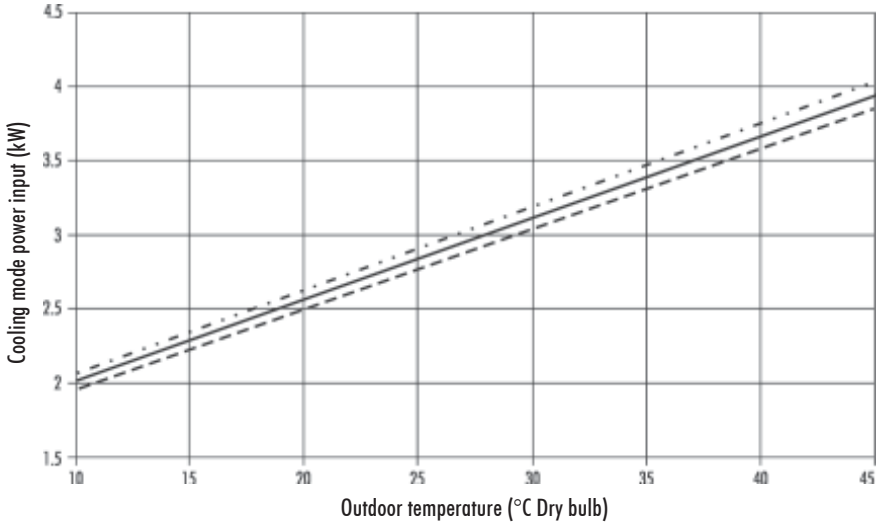
COOLING MODE POWER UNIT

Model MD 35 single phase



Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

Model MD 35 three phase

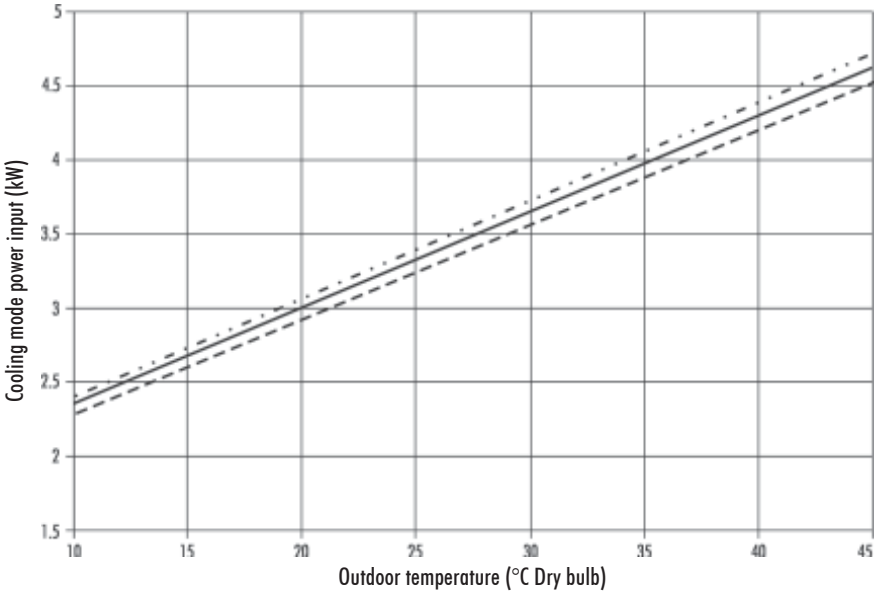


Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

MD Multi-duct cassettes

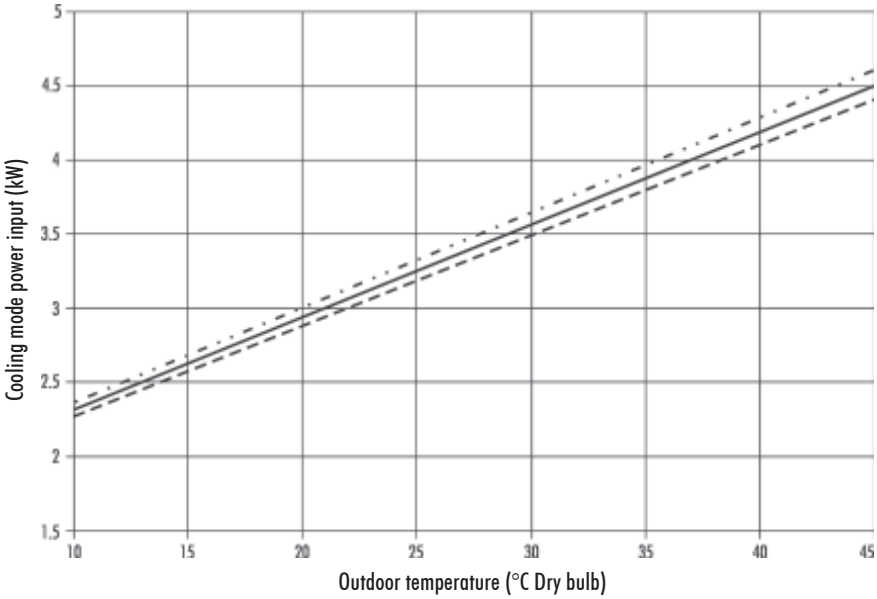
COOLING MODE POWER UNIT

Model MD 38 single phase



Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

Model MD 38 three phase

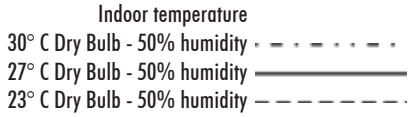


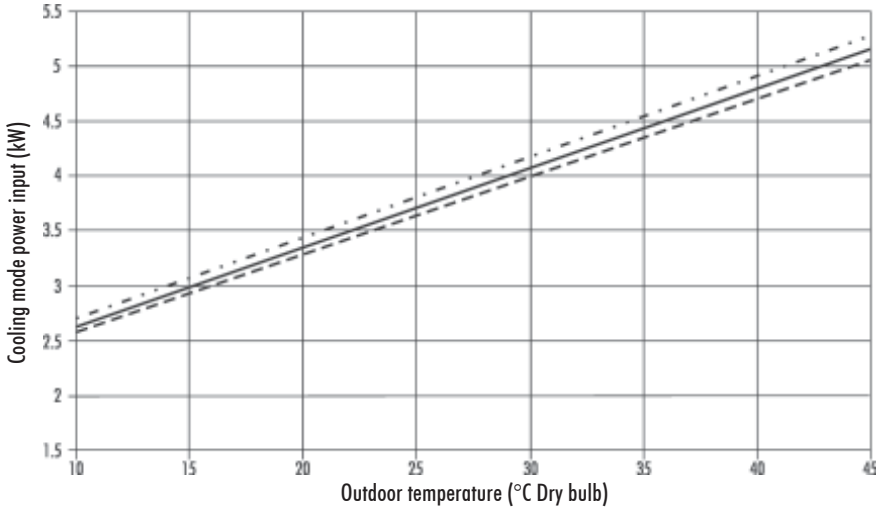
Indoor temperature
30° C Dry Bulb - 50% humidity
27° C Dry Bulb - 50% humidity
23° C Dry Bulb - 50% humidity

MD Multi-duct cassettes

COOLING MODE POWER UNIT

Model MD 50 three phase

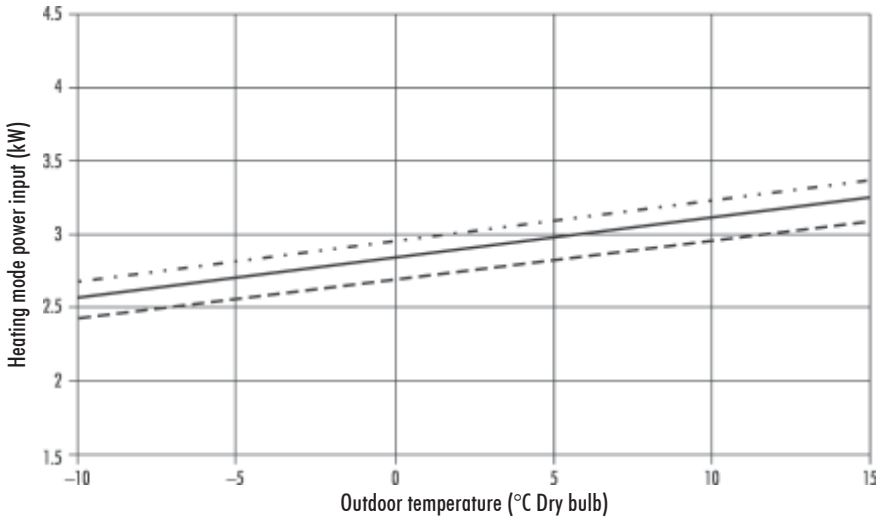




MD Multi-duct cassettes

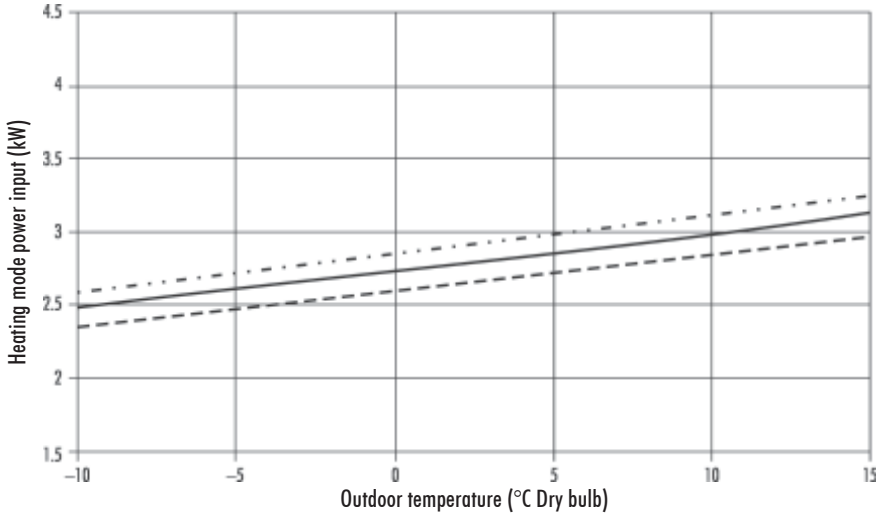
HEATING MODE POWER UNIT

Model MD 35 single phase



Indoor temperature
20°C Dry Bulb
18°C Dry Bulb
15°C Dry Bulb

Model MD 35 three phase

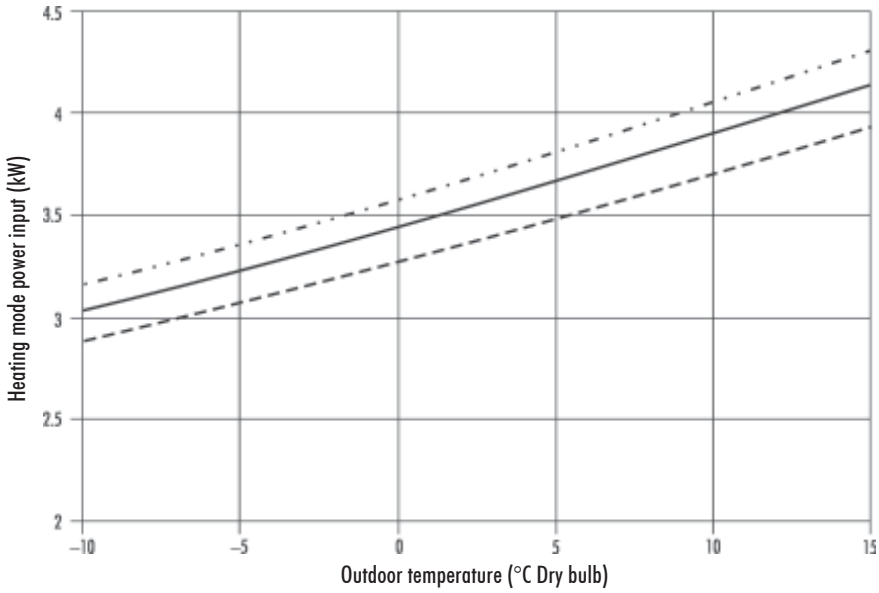


Indoor temperature
20°C Dry Bulb
18°C Dry Bulb
15°C Dry Bulb

MD Multi-duct cassettes

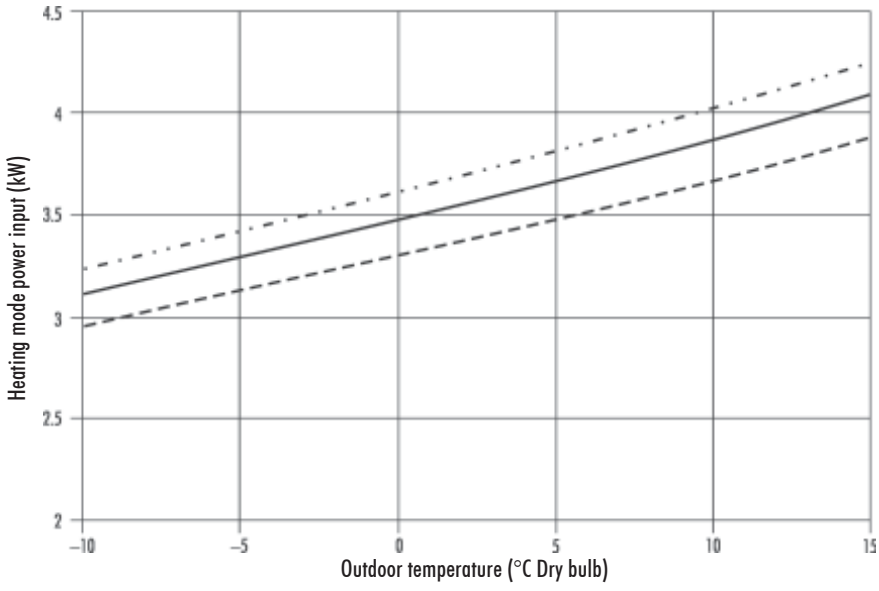
HEATING MODE POWER UNIT

Model MD 38 single phase



Indoor temperature
20°C Dry Bulb
18°C Dry Bulb
15°C Dry Bulb

Model MD 38 three phase

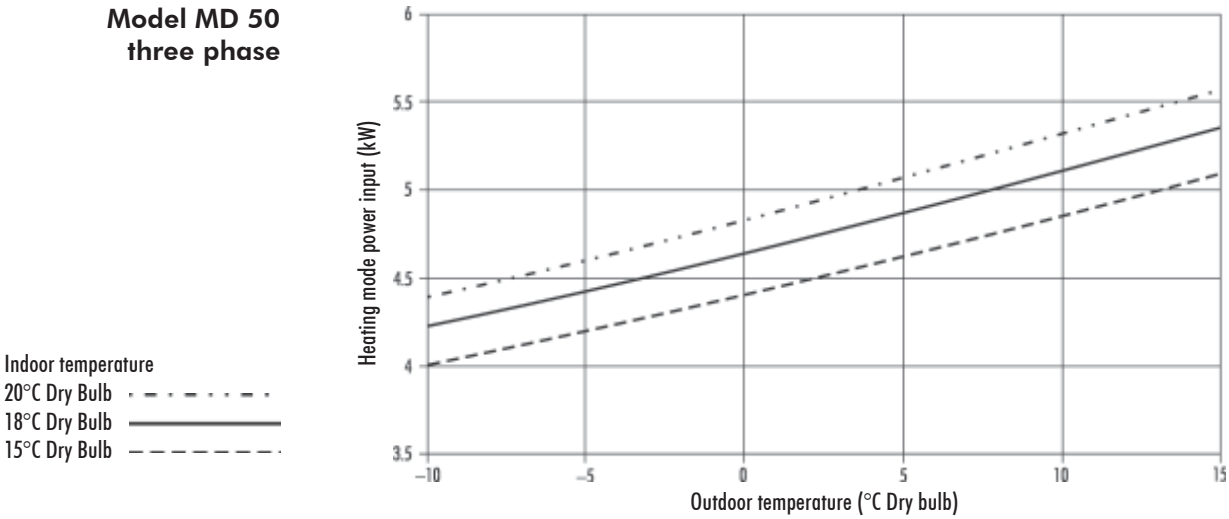


Indoor temperature
20°C Dry Bulb
18°C Dry Bulb
15°C Dry Bulb

MD Multi-duct cassettes

HEATING MODE POWER UNIT

Model MD 50 three phase

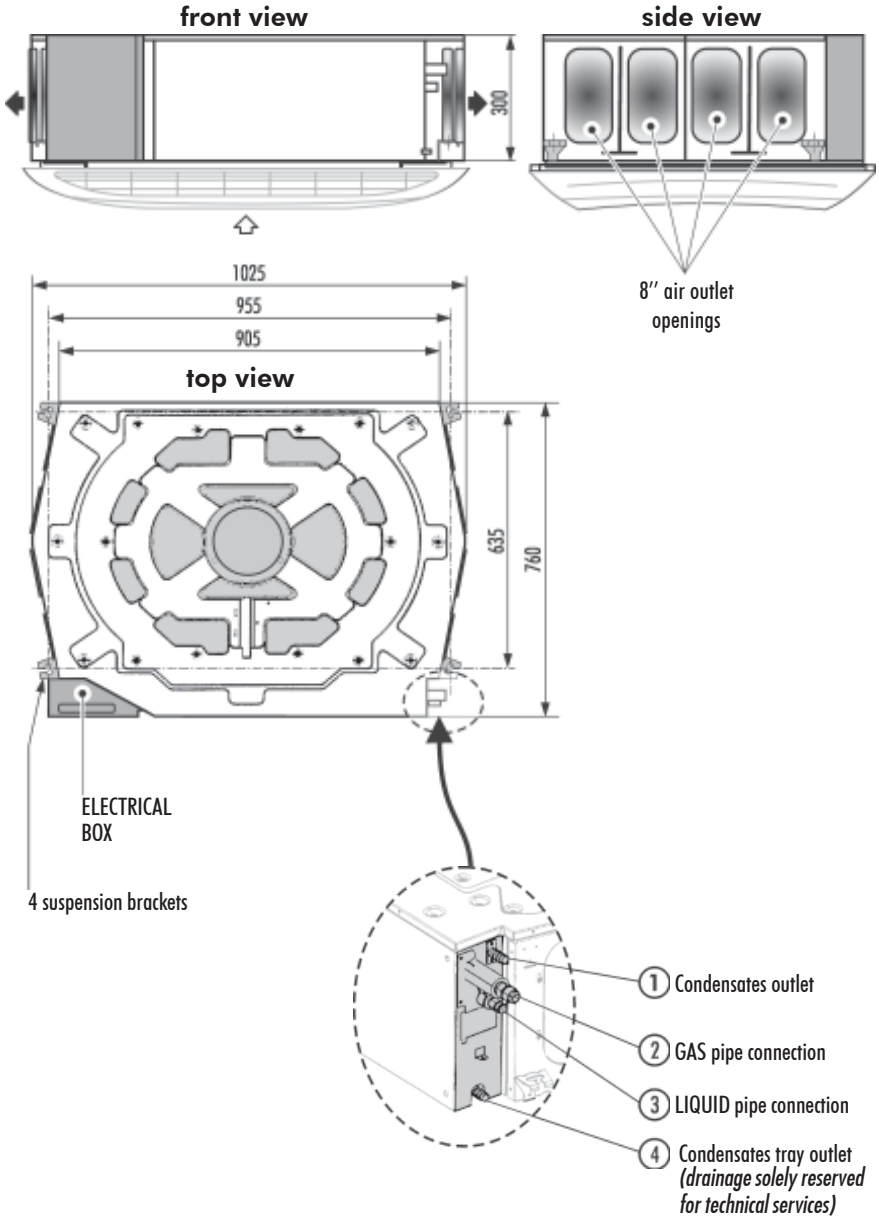


MD Multi-duct cassettes

DIMENSIONS

Dimensions in mm

Indoors units
MD 35
MD 38
MD 50



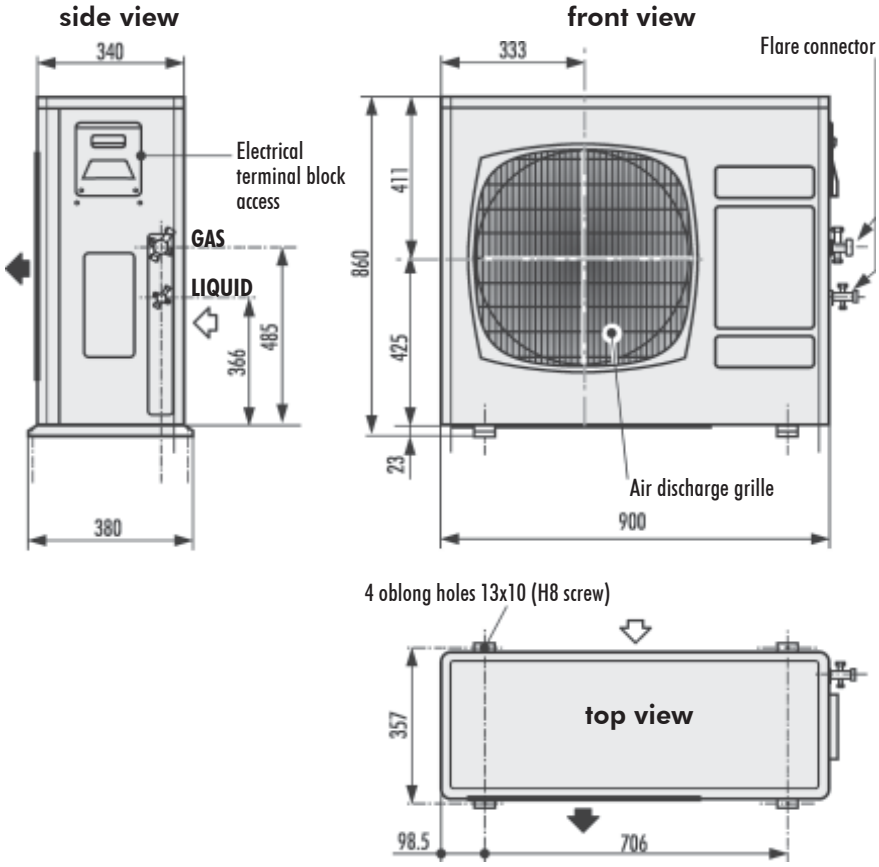
⇨**INTAKE**
➡**DISCHARGE**

MD Multi-duct cassettes

DIMENSIONS

Dimensions in mm

Outdoor unit
GC MD 35



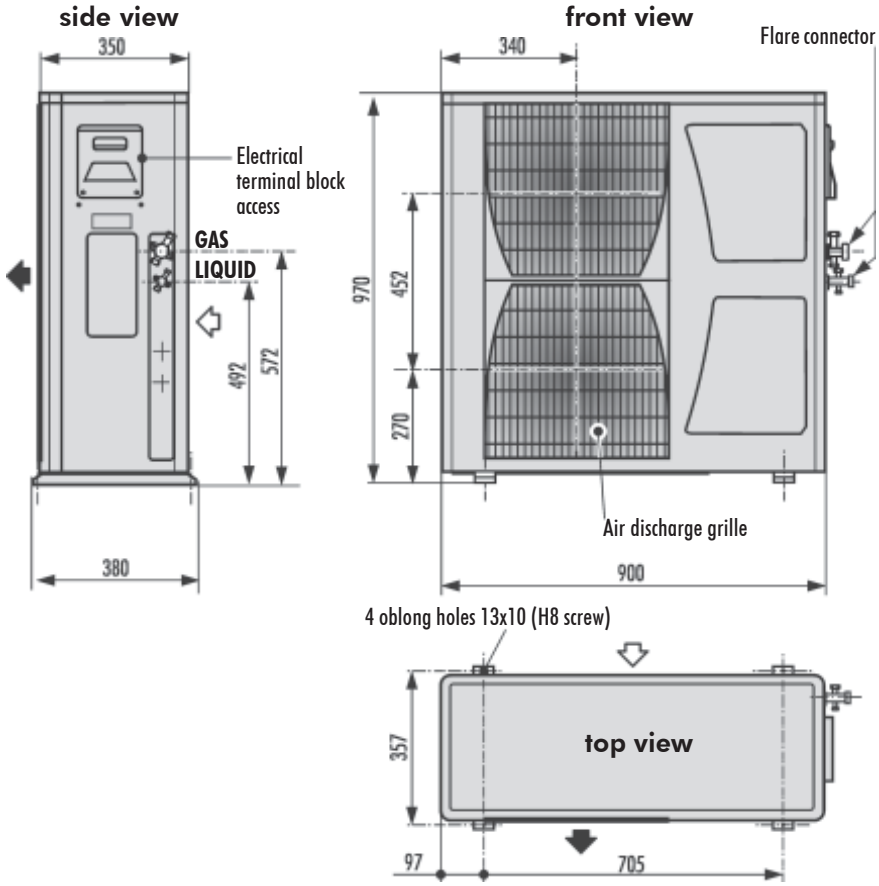
⇨**INTAKE**
➡**DISCHARGE**

MD Multi-duct cassettes

DIMENSIONS

Dimensions in mm

Outdoors units
GC MD 38
GC MD 50



⇨**INTAKE**
➡**DISCHARGE**

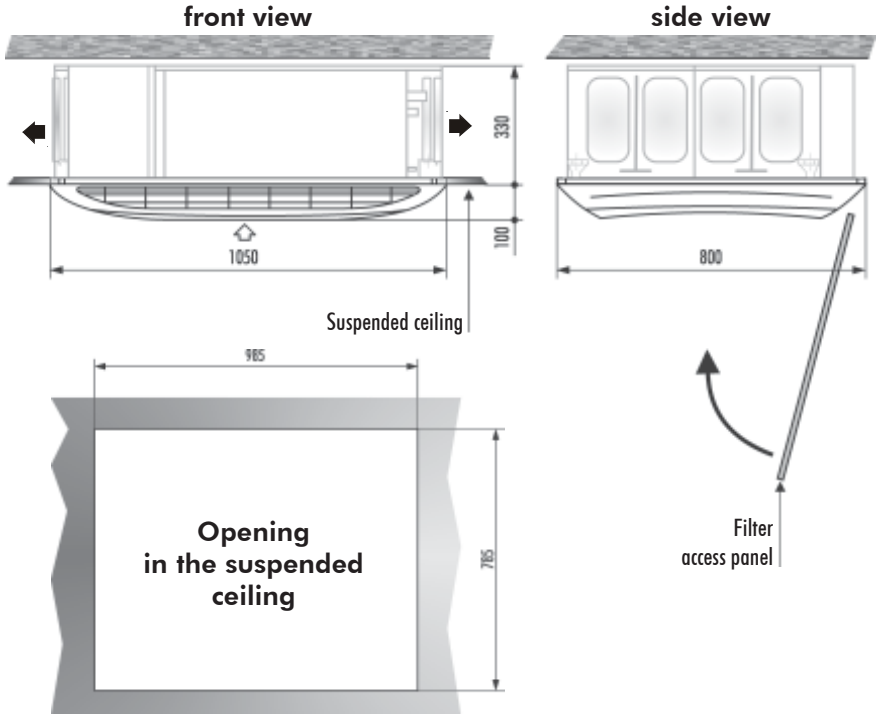
MD Multi-duct cassettes

INDOOR UNIT INSTALLATION

Dimensions in mm

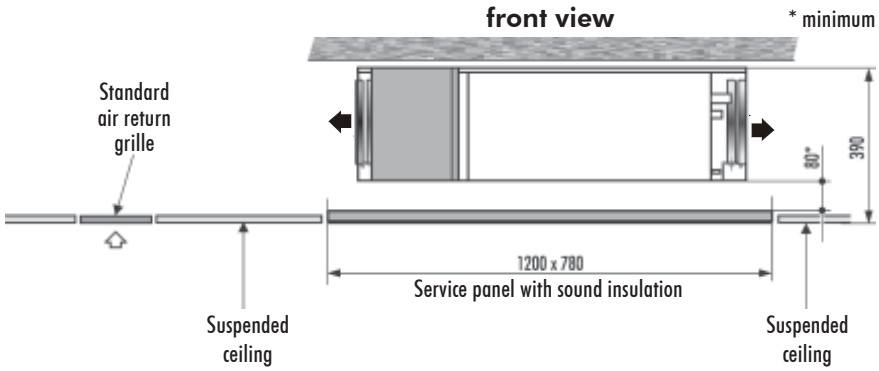
The unit slots into a suspended ceiling:

There are 2 types of installation:
1°) With recycled air intake grille



⇨**INTAKE**
➡**DISCHARGE**

2°) With service panel in suspended ceiling



Refer to detailed fitting instructions in the installation manual supplied with the equipment.

MD Multi-duct cassettes

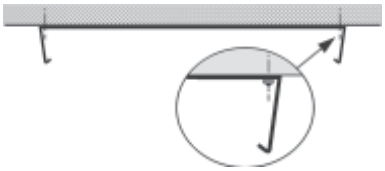
INDOOR UNIT INSTALLATION

Dimensions in mm

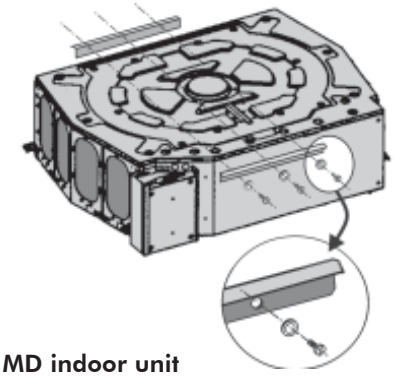
Attachments There are **2 options** :

1°) With a mounting plate

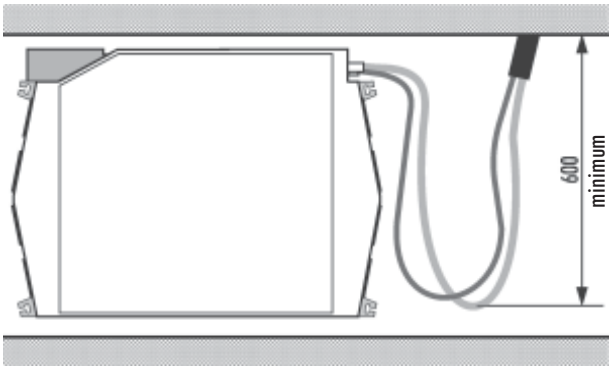
installation of the mounting plate in the suspended ceiling



installation of suspensions rails



attachment of the MD indoor unit to the mounting plate



preparation for connecting with use of the mounting plate

MD Multi-duct cassettes

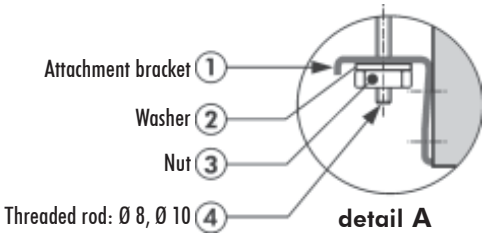
INDOOR UNIT INSTALLATION

Attachments

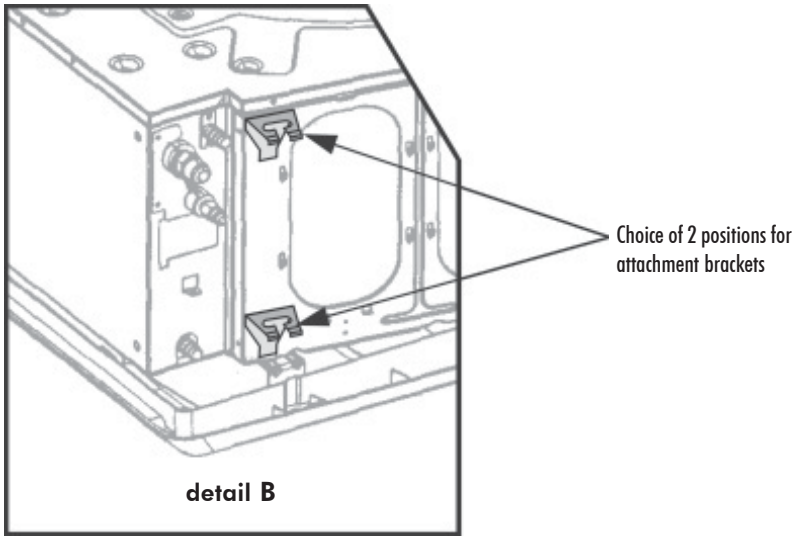
2°) With threaded rods

There are positioning possibilities for the attachment brackets, either on the lower part or the upper part of the cassette (see **detail B**).

detail A



detail A



detail B

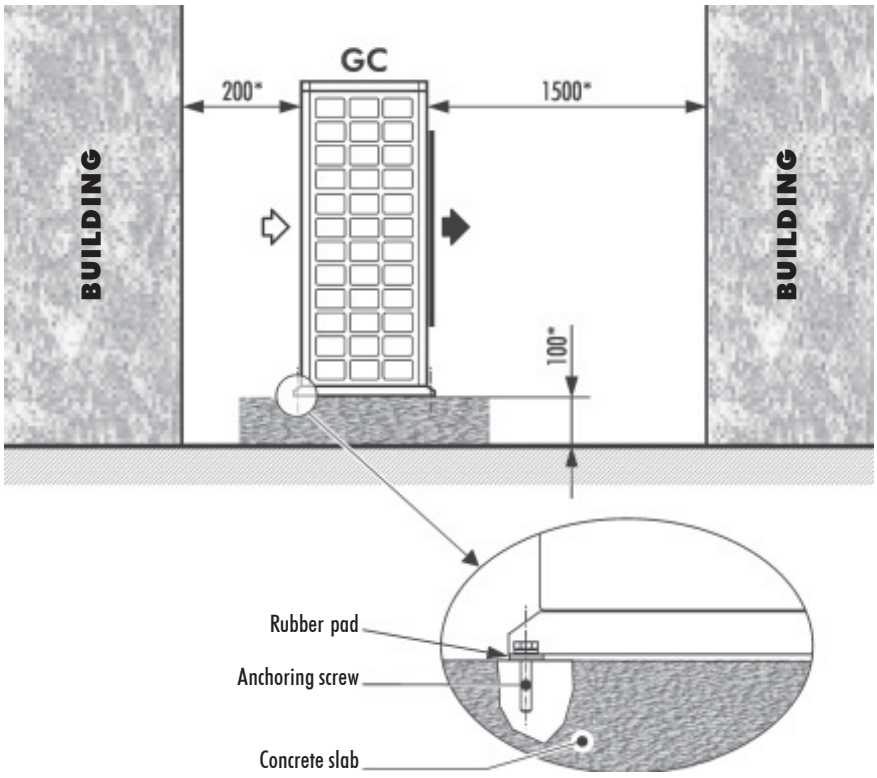
MD Multi-duct cassettes

OUTDOOR UNIT INSTALLATION

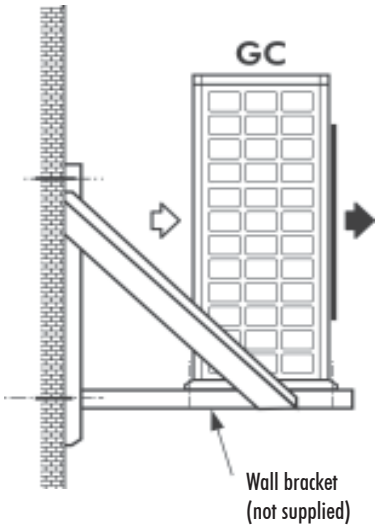
Dimensions in mm
* minimum

There are 2 mounting systems:

1°) Floor mounting



2°) Suspended mounting

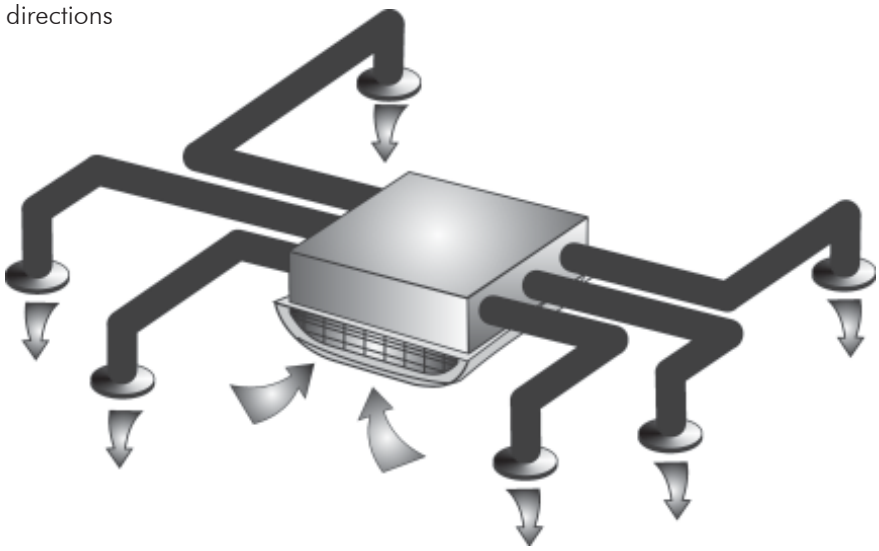


⇨**INTAKE**
➡**DISCHARGE**

MD Multi-duct cassettes

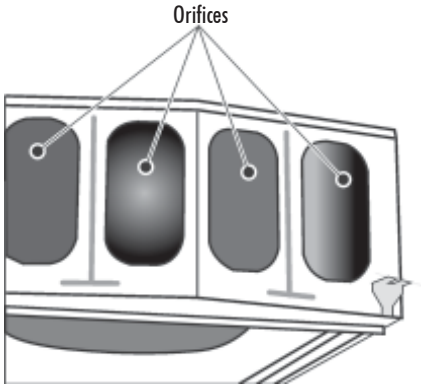
AIR DISTRIBUTION

Air distribution is by way of a duct network providing airflows in two opposite directions

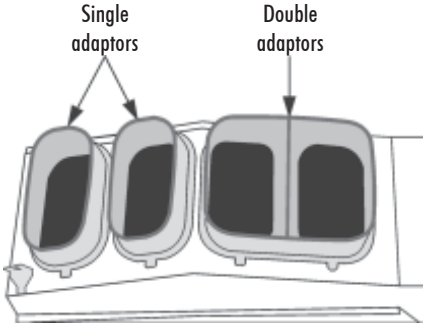


The **MD indoors unit** has 4 air blowing openings on either side of the unit (see **detail A**):

- A maximum of 6 orifices are used with the 6 adaptors supplied, for from 8" to 12" cylindrical ducts (see **detail B**).



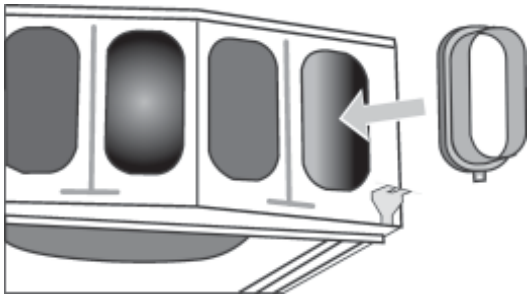
detail A

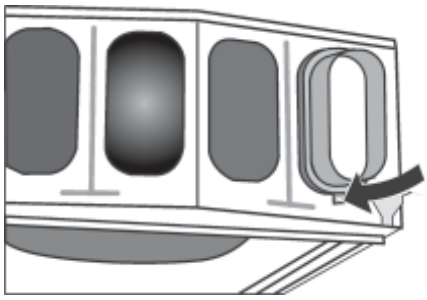


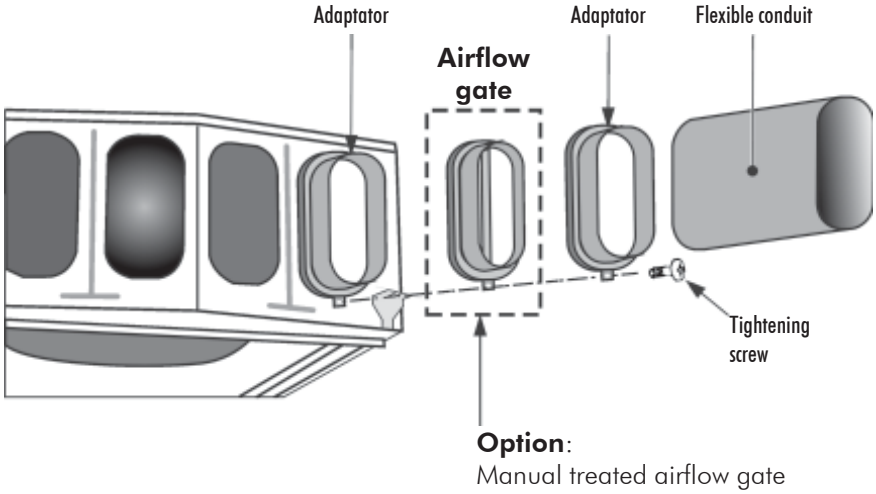
detail B

MD Multi-duct cassettes

AIR DISTRIBUTION





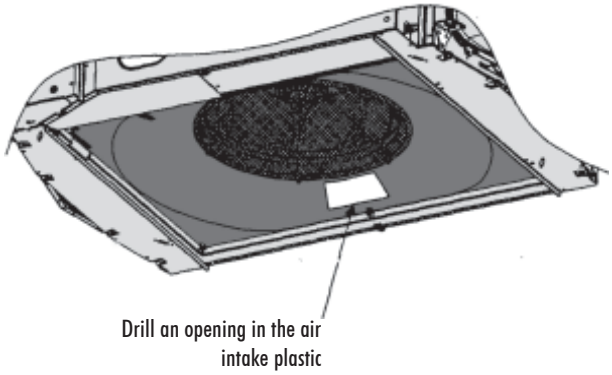


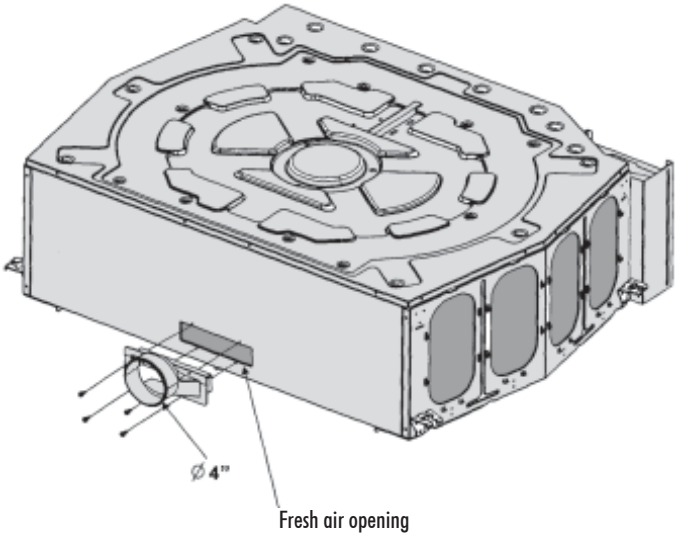
Option:
Manual treated airflow gate

MD Multi-duct cassettes

NEW AIR INTAKE (option)

Connect the fresh air conduit (∅ 4'').

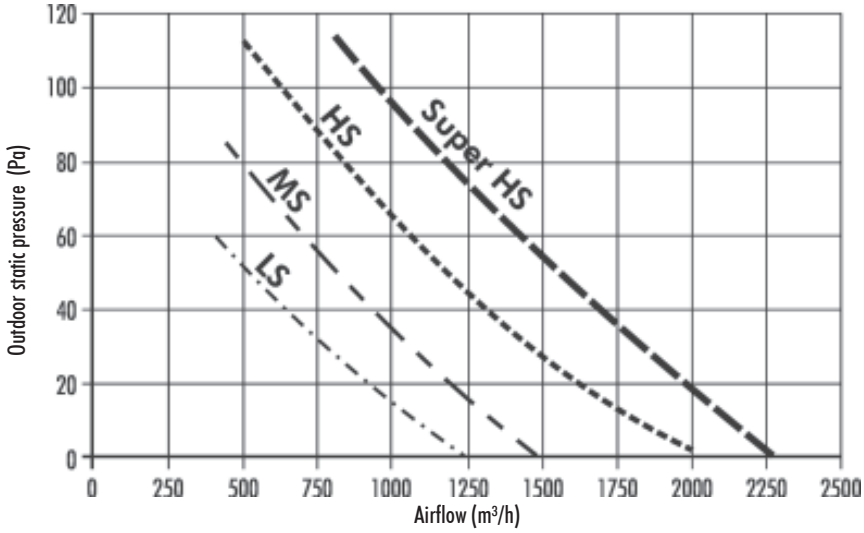




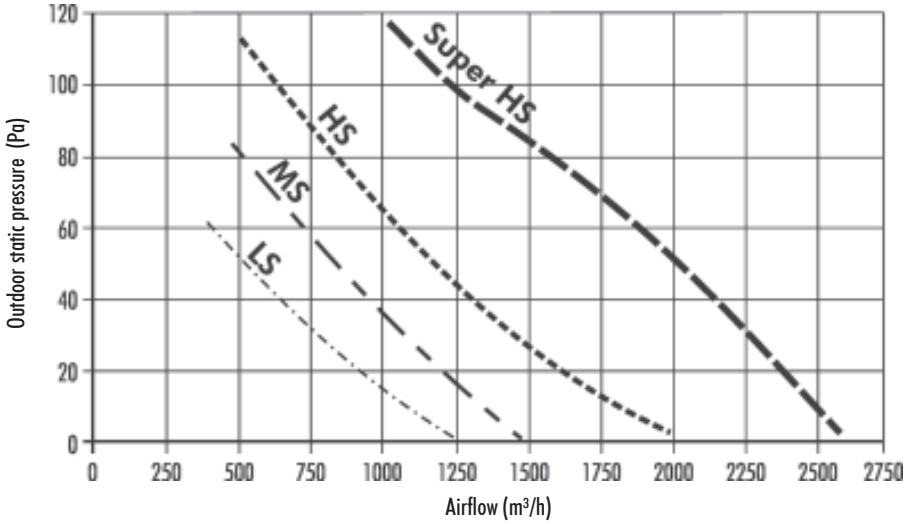
MD Multi-duct cassettes

AERAULIC CHARACTERISTICS

Indoors units
MD 35
MD 38



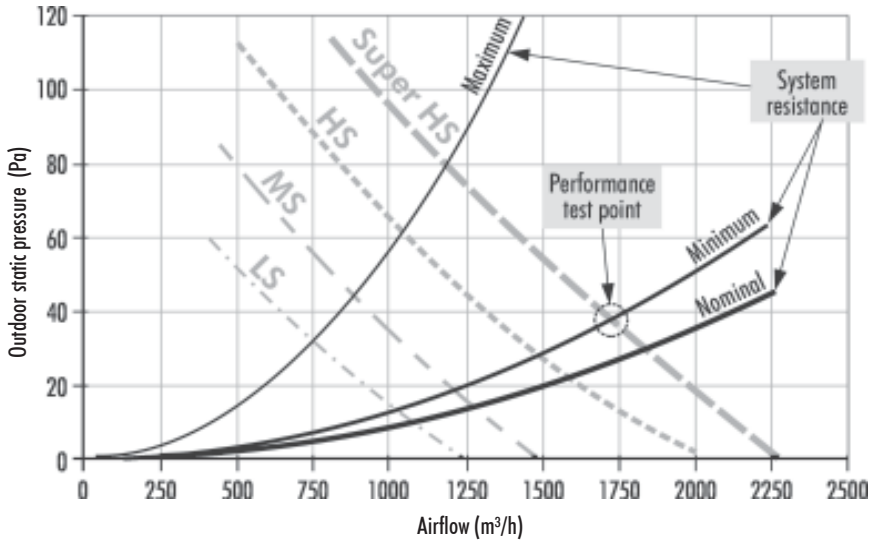
Indoor unit
MD 50



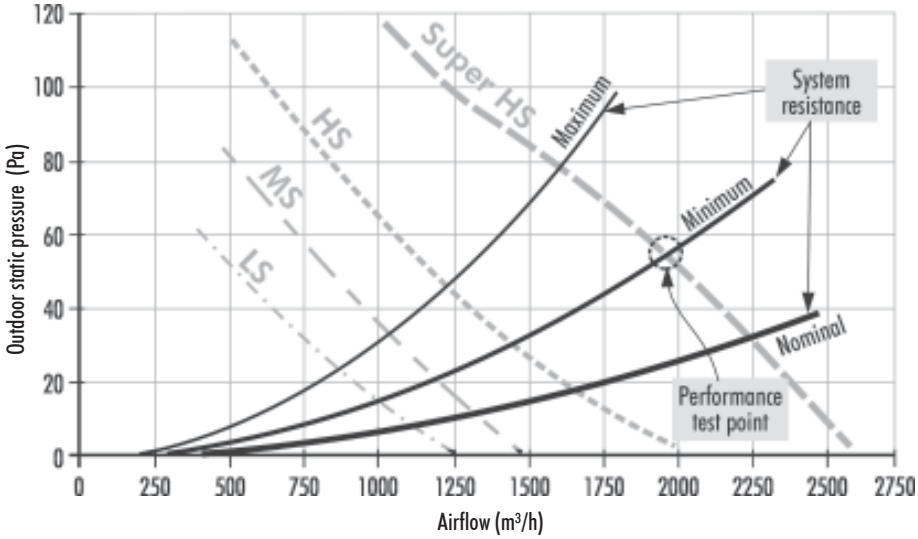
MD Multi-duct cassettes

AERAULIC CHARACTERISTICS

Indoors units
MD 35
MD 38



Indoor unit
MD 50



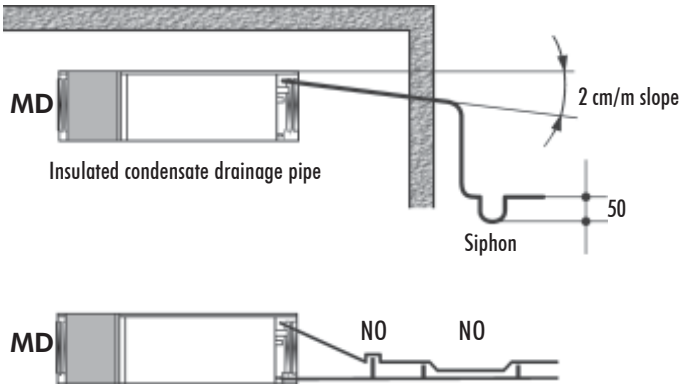
MD Multi-duct cassettes

CONDENSATES DRAINAGE

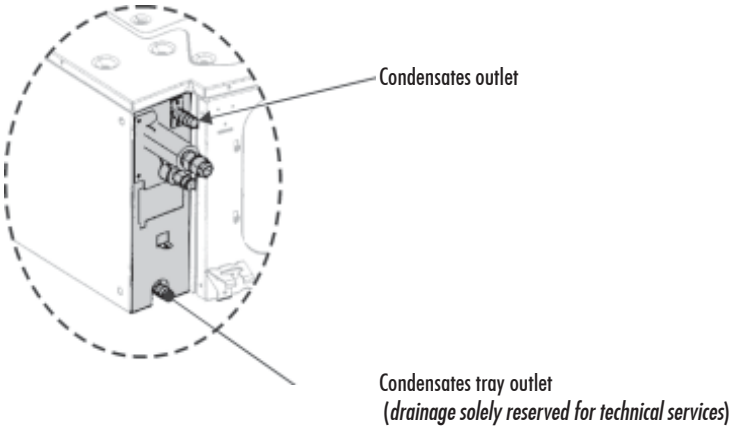
The **MD indoors unit** is equipped with a factory-fitted condensates lift pump with a drainage lift height of 600 mm.

To ensure effective condensates drainage the downward slope should be 2 cm per metre without any restrictions or rising pipe sections (See Fig. 1).
Moreover, a siphon with a height of at least 50 mm must be integrated in the pipe to ensure that no unpleasant odours infiltrate the room.

To avoid condensation accumulating on the drainage pipe it must be insulated with insulating material with a thickness of between 5 to 10 mm, such as polyurethane, propylene or neoprene, in compliance with current regulations.



A ∅ 32 mm opening is to be created for the pipe through the building wall.

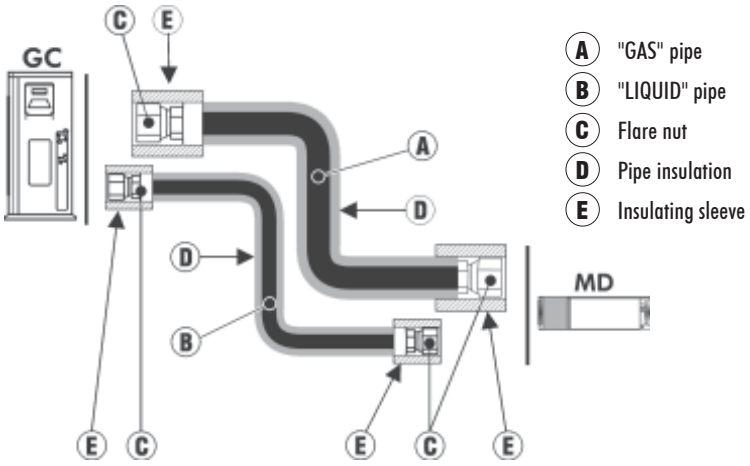


MD Multi-duct cassettes

REFRIGERATION CONNECTIONS

The **MD Multi-Duct Cassettes** are designed for refrigeration connection to the outdoors units by means of pipes with Flare connectors (completely insulated refrigeration quality copper pipes with ends equipped with Flare nuts).
Various lengths of pipes equipped with Flare connectors are available from the factory:

• Fixed lengths: 2.5 – 5 – 8 m.

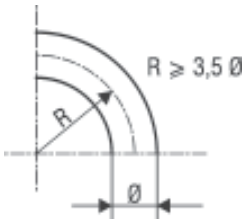


Tightening torque

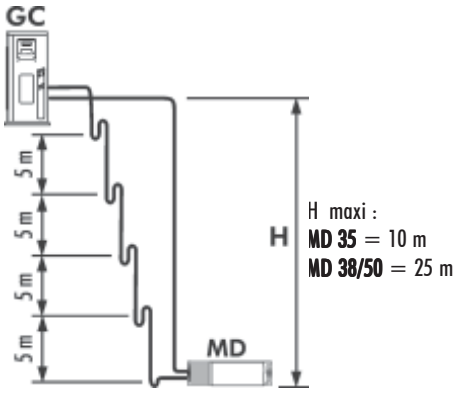
Pipe Ø	Torque
1/4" pipe	15-20 Nm
3/8" pipe	30-35 Nm
1/2" pipe	50-54 Nm
5/8" pipe	70-75 Nm

1 Newton – metre
= 0.1 metre-kilo

Refrigeration pipe bending



When **the Condenser Unit** is installed above **the Air treatment** unit a siphon **MUST** be installed every 5 m along the pipe run.



MD Multi-duct cassettes

REFRIGERANT CHARGE

The **R-407C** charge is only contained in the outdoors unit. The indoors unit contains a small quantity of neutral GAS. For this reason, after having installed the pipe connections, it is imperative to proceed with vacuum draining the connections and the indoors unit.

R-407C charge in relation to refrigerant connection pipe lengths.

Models		Single phase		Three phase		
		MD 35	**MD 38**	**MD 35**	**MD 38**	**MD 50**
GC charge for 7.5 m (factory filled)	g	2520	2400	2530	2800	3900
Maximuù refrigerant pipe lengths	m	30	50	30	50	50
Charge to add depending on pipe length > 7.5 m	g/m	+25	+30	+25	+30	+35
Maximum height difference	m	10	25	10	25	25

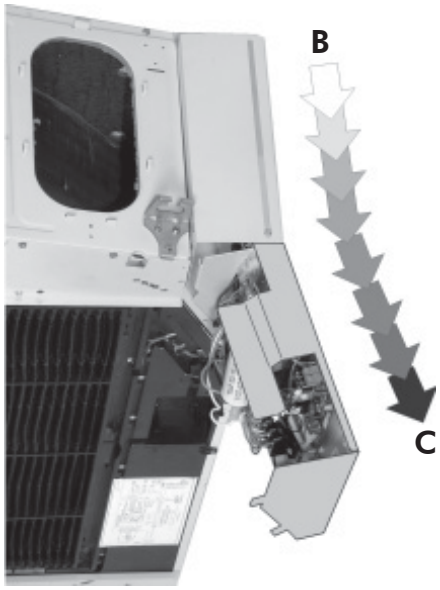
MD Multi-duct cassettes

ELECTRICAL SPECIFICATIONS

Proceed with the following operations to gain access to the electrical box:
A) Remove the screws located on the base of the casing.

B) Slide the electrical box downwards.

C) Remove the box from the rail.



MD Multi-duct cassettes

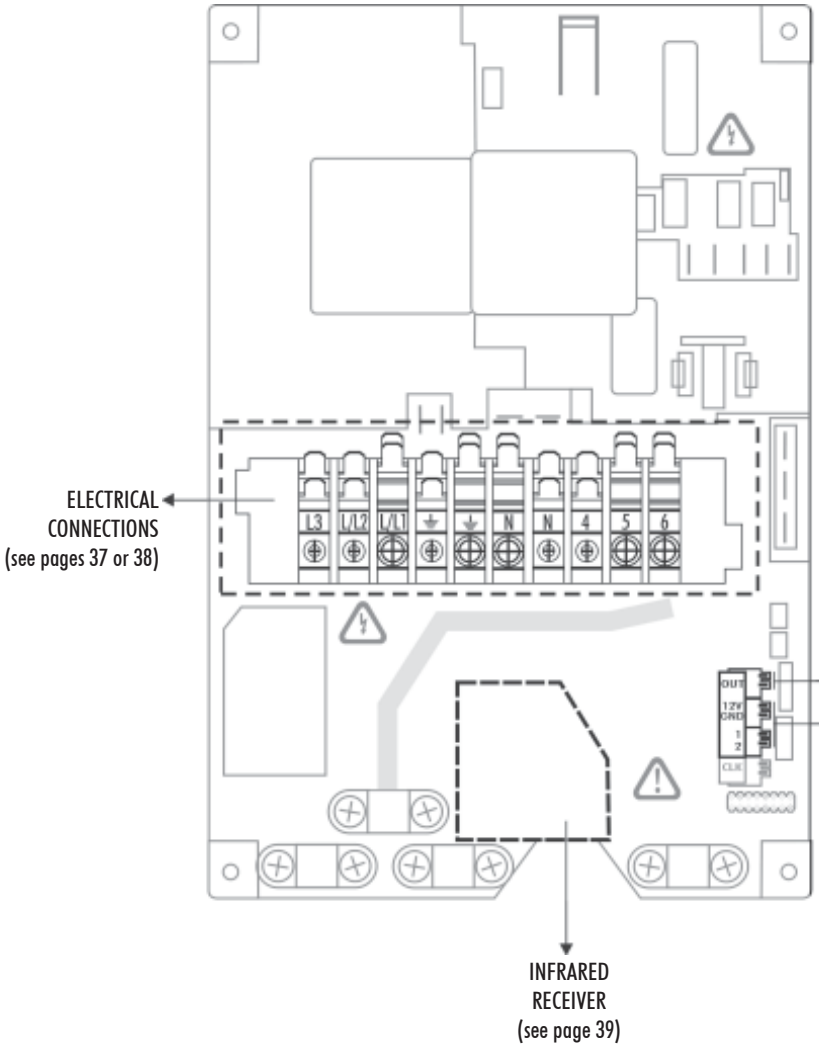
ELECTRICAL SPECIFICATIONS

Models		MD 35 MD 35 RC	MD 38 MD 38 RC
Power supply 1~230 V - 50 Hz		•	•
Nominal current	A	15.7 / 13.7	17.2 / 17.3
Fuse calibre	A	20	25
Cable section	mm²	3 x 4	3 x 4
Links from **MD** to **GC** • Cable section	mm²	6 x 2.5 + 2 x 0.5 (Sensor)	

Models		MD 35 MD 35 RC	MD 38 MD 38 RC	MD 50 MD 50 RC
Power supply 3N~400V - 50 Hz		•	•	•
Nominal current	A	8.9 / 8	10.1 / 10.4	13.6 / 13.6
Fuse calibre	A	10	16	16
Cable section	mm²	5 x 4	5 x 4	5 x 4
Links from **MD** to **GC** • Cable section	mm²	6 x 1.5 +2 x 1.5 (Option heating) + 2 x 0.5 (Sensor)		

MD Multi-duct cassettes

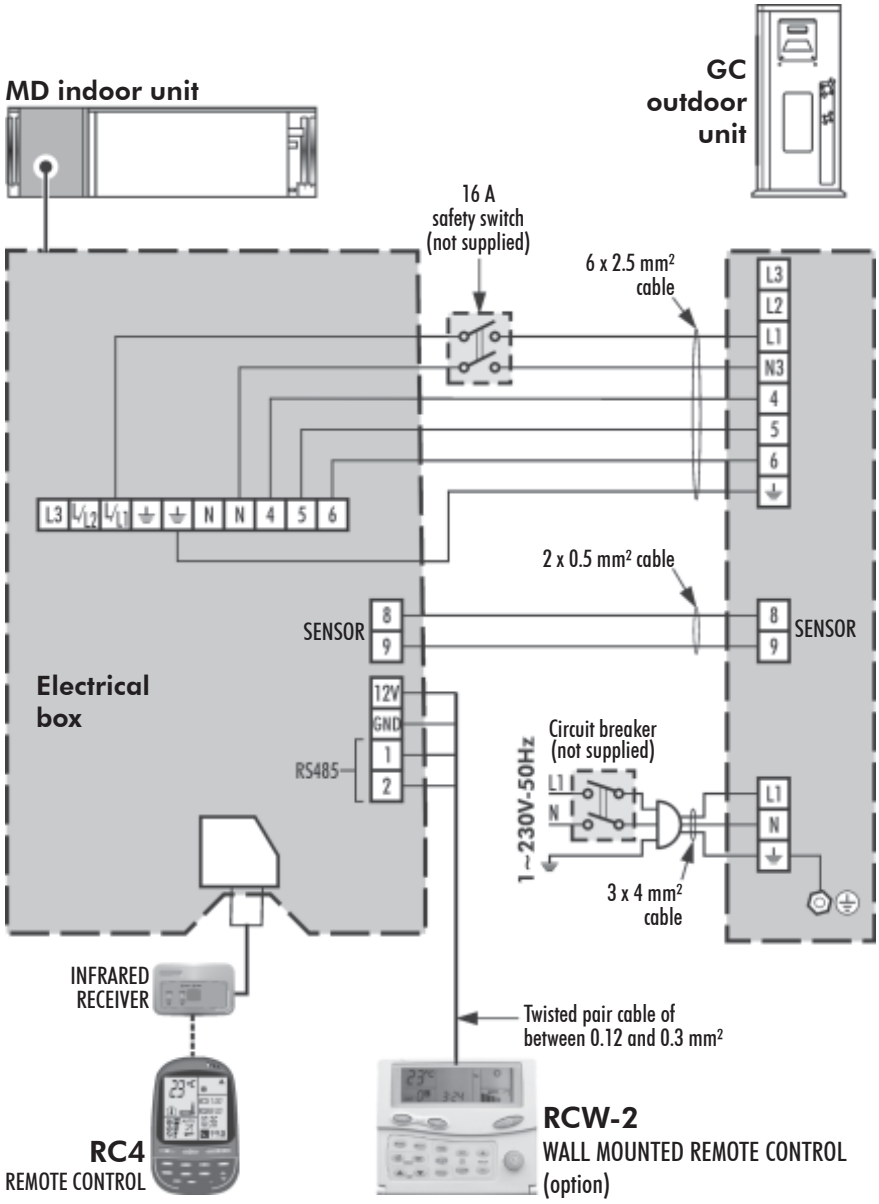
ELECTRICAL CONNECTIONS



MD Multi-duct cassettes

ELECTRICAL CONNECTIONS

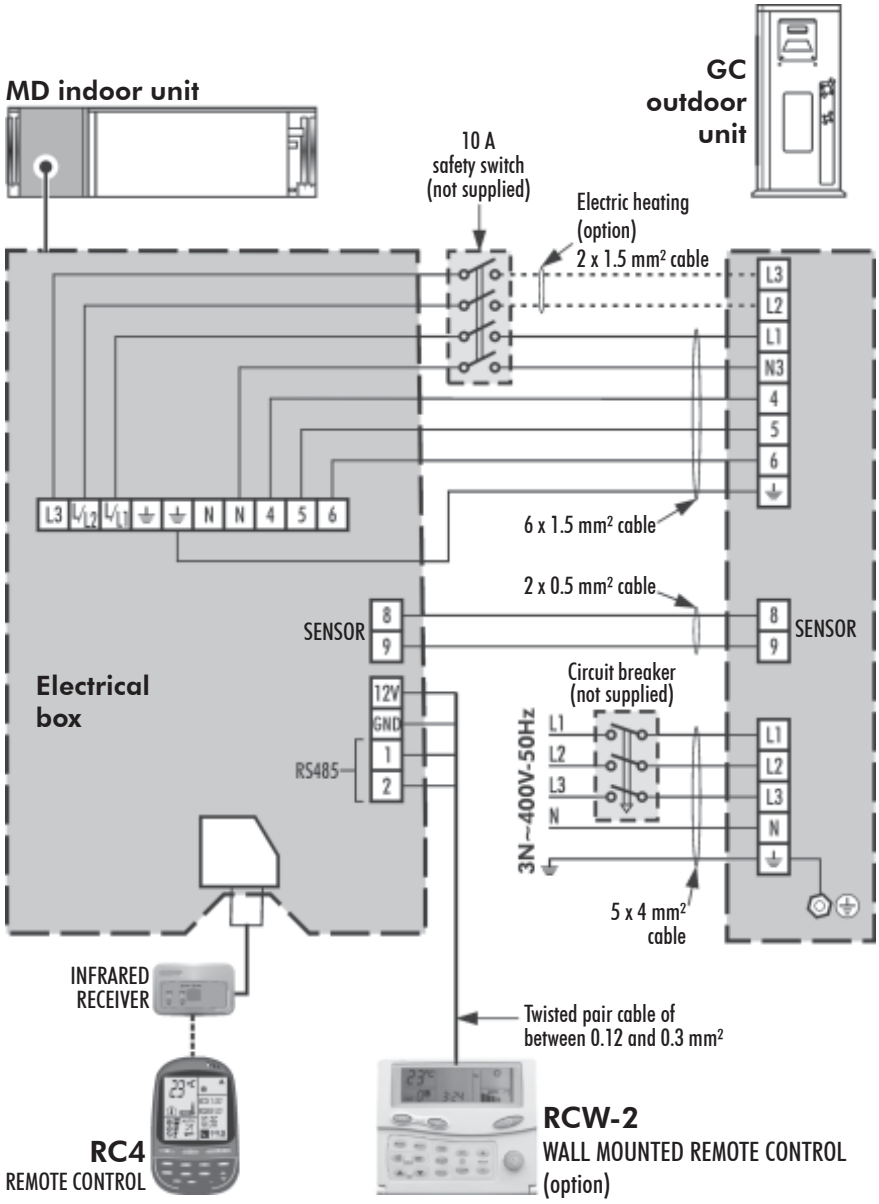
Single phase units



MD Multi-duct cassettes

ELECTRICAL CONNECTIONS

Three phase units



MD Multi-duct cassettes

INFRARED RECEIVER

COOL* ..... COOLING mode light

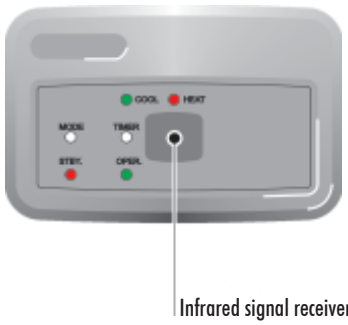
HEAT* ..... HEATING mode light

TIMER ..... Timed programming activated light

STBY ..... Standby light
It lights up when the unit is connected and when it is ready to receive instructions from the remote control.

OPER ..... Operating light
It lights up when the unit is running.
A flashing light confirms that the infra red signal has been received.

MODE ..... Emergency control
Pressing this key enables the COOL and HEAT functions to be selected in the event of the remote control not being available.

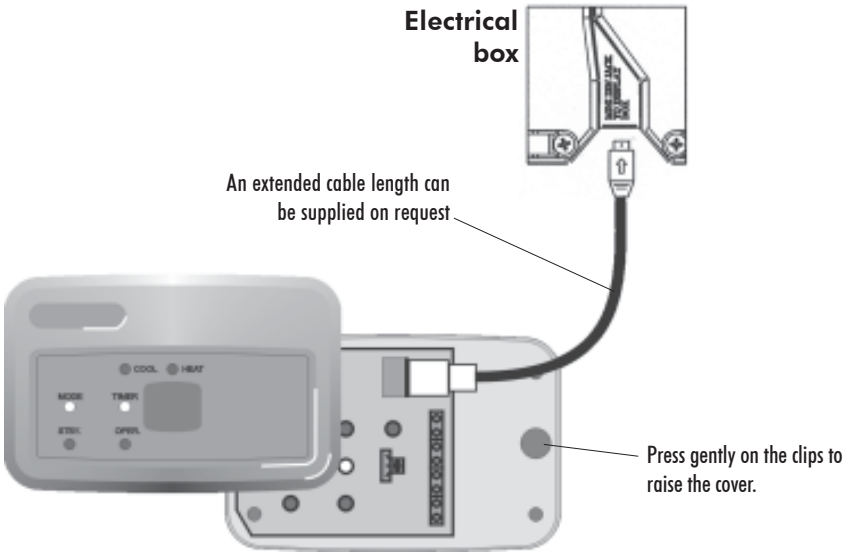


*NOTE:
The **COOL** and **HEAT** lights are activated by actuating the **MODE** function on the receiver.

MD Multi-duct cassettes

INFRARED RECEIVER

Connections between the control panel and the infrared receiver



- The equipment is supplied with a 7m long shielded cable, fitted with connectors at both ends for connecting the electrical box to the infra red receiver.

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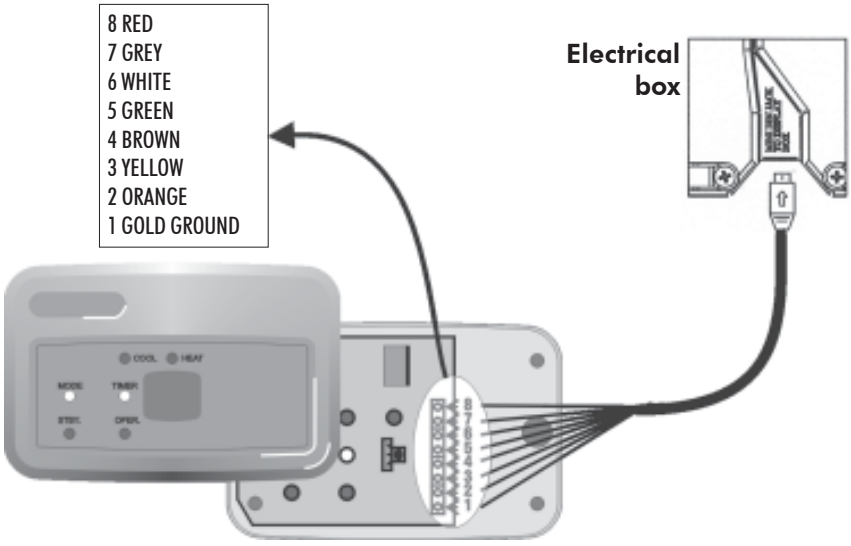
- In the event of difficulties is using the connection cable it is possible to cut the cable and make the connection on the receiver by means of the terminal block.



- In this case, the above colour code should be followed. It corresponds to the colours of the 7 conductors plus the Ground connection that must be connected to the last terminal marked **Gd**.
- To guarantee a good connection, end fittings for 0.25 mm^2 section cable must be fitted to the cable ends.

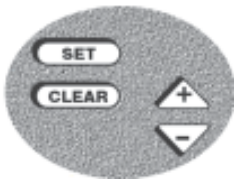
MD Multi-duct cassettes

RC4
INFRARED REMOTE CONTROL

RESET FUNCTION

1. Remove the battery.
2. Simultaneously press these 4 keys until the symbols disappear.
3. Replace the battery.

The 4 keys concerned are:



Note

Flip open the cover/flap to gain access to the controls.

1. START / STOP key
2. Operating mode selection key: COOLING, HEATING, AUTOMATIC COOLING/HEATING REGULATION, VENTILATION, DEHUMIDIFICATION
3. I FEEL key: local temperature sensing
4. VENTILATION SPEED or AUTOMATIC VENTILATION selection key
5. Key for raising ambient temperature
6. Key for lowering ambient temperature
7. SLEEP key
8. Key inactive
9. Key inactive
10. PROGRAMMING mode selection key
11. «+» key for raising set temperature and increasing operating time
12. «-» key for lowering set temperature and decreasing operating time
13. Liquid crystal display
14. I FEEL sensor
15. Infrared signal emitter
16. ROOM key: ambient temperature display
17. SET key for setting the PROGRAMMING STOP and/or START times
18. CLEAR key for erasing the timer parameters
19. LOCK key

MD Multi-duct cassettes

RCW-2
WALL MOUNTED INFRARED REMOTE CONTROL

A wall mounted hardwired remote control is available as an accessory.
It groups together all the air conditioning management functions of your air conditioner.
Possibility to pilot until 10 indoors units.

1. Display screen
2. Keys for raising and lowering the set temperature.
3. Ventilation mode selection:
   - Low Speed
   - Medium Speed
   - High speed

   AUTO: Automatic speed selection.
4. ON / Standby

- SET Accessing the time setting mode.
- \+ Advancing the time setting.
- − Retarding the time setting.
- CLEAR Clearing memory of programmed time settings in programming mode
- LOCAL Day of the week selection key or sending «I feel» local temperature setting.
- PROG Programming mode key.
- «Copy» key, enabling zone parameters to be duplicated for other zones.
- MODE Operating mode selection.
- NIGHT Day /Night key
- ▲ Current zone setting: zone above.
- ▼ Current zone setting: zone below.
- Key inactive.
- Key inactive.

MD Multi-duct cassettes

Vorbehaltlich technischer Änderungen, Satz- und Druckfehler

Der Hersteller ist um ständige Verbesserung seiner Produkte sowie um eine optimale Anpassung an die Gegebenheiten des jeweiligen Anwenderlandes bemüht. Aus diesem Grund behält er sich das Recht vor, ohne Vorankündigung technische Änderungen an den Produkten vorzunehmen.

Das vorliegende Schriftstück dient als allgemeine Richtlinie für die Montage, den Betrieb und die Wartung unserer Produkte. Es kann durchaus sein, dass die darin enthaltenen Angaben nicht in allen Punkten auf ein Gerät zutreffen, wenn dieses den örtlichen Vorschriften oder den Spezifikation einer Bestellung angepaßt wurde. In diesem Fall wenden Sie sich bitte an Ihr zuständiges Verkaufsbüro:

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