



Air Conditioning Technical Data

Concealed ceiling unit with inverter driven fan



EEDEN12-102

FMDQ-B

TABLE OF CONTENTS

FMDQ-B

1	Features	2
2	Specifications	3
	Technical Specifications	3
	Electrical Specifications	4
3	Electrical data	5
	Electrical Data	5
4	Safety device settings	6
	Safety Device Settings	6
5	Options	7
	Options	7
6	Dimensional drawings	8
	Dimensional Drawings	8
7	Centre of gravity	10
	Centre of Gravity	10
8	Piping diagrams	11
	Piping Diagrams	11
9	Wiring diagrams	12
	Wiring Diagrams - Single Phase	12
10	Sound data	13
	Sound Power Spectrum	13
	Sound Pressure Spectrum	15
11	Fan characteristics	17
	Fan Characteristics	17
12	Installation	20
	Installation Method	20
	Filter Installation Method	21
	Switch Box Connection	22

1 Features

- Reduction in power consumption thanks to DC inverter fans
- Improved comfort thanks to 3-step air flow control
- Up to 120Pa external static pressure facilitates using flexible ducts of varying lengths: ideal for shops and medium size offices
- Possibility to change ESP via wired remote control allows optimisation of the supply air volume
- Blends unobtrusively with any interior décor: only the suction and discharge grilles are visible
- Standard air filter removes airborne dust particles to ensure a steady supply of clean air
- Easy installation thanks to automatic air flow adjustment towards nominal air flow rate
- Whisper quiet operation: down to 29dBA sound pressure level
- Standard built-in drain pump increases reliability of the drain system
- Home leave operation maintains the indoor temperature at your specified comfort level during absence, thus saving energy



3 steps



standard

2 Specifications

2-1 Technical Specifications				FMDQ50B	FMDQ60B	FMDQ71B	FMDQ100B	FMDQ125B	
Cooling capacity	Nom.		kW	5.0 (1)	6.0 (1)	7.1 (1)	10.0 (1)	12.5 (1)	
Heating capacity	Nom.		kW	5.6 (2)	6.7 (2)	8.0 (2)	12.5 (2)	14.0 (2)	
Power input	Cooling	Nom.	kW	0.097	0.074	0.118	0.117	0.185	
	Heating	Nom.	kW	0.085	0.062	0.106	0.105	0.173	
Casing	Colour			Unpainted					
	Material			Galvanised steel					
Dimensions	Unit	Height/Width/Depth	mm	300/700/700	300/1,000/700		300/1,400/700		
	Packed unit	Height/Width/Depth	mm	355/920/900	355/1,220/900		355/1,620/900		
Required ceiling void >			mm	350					
Weight	Unit		kg	26	35		46		
	Packed unit		kg	32	42		54		
Decoration panel	Model			BYBS45DJW1	BYBS71DJW1		BYBS125DJW1		
	Colour			White (10Y9/0.5)					
	Dimensions	Height/Width/Depth	mm	55/800/500	55/1,100/500		55/1,500/500		
	Weight			kg	3.5	4.5		6.5	
Heat exchanger	Length		mm	440	740		1,140		
	Rows	Quantity		3					
	Fin pitch		mm	1.75					
	Passes	Quantity		4	7		11		
	Face area		m ²	0.148	0.249		0.383		
	Stages	Quantity		16					
	Empty tubeplate hole	Quantity		0					
	Tube type			ø7 Hi-XSS					
	Fin	Type		Symmetric waffle louvre					
		Treatment		Hydrophilic					
	Fan	Type			Sirocco fan				
Quantity			1	2		3			
Air flow rate		Cooling	High	m ³ /min	16	19.5	25	32	39
			Low	m ³ /min	11	16	20	23	28
		Heating	High	m ³ /min	16	19.5	25	32	39
			Low	m ³ /min	11	16	20	23	28
External static pressure		High		Pa	100		120		
	Nom.		Pa	30		40			
Fan motor	Quantity			1					
	Model			Brushless DC motor					
	Drive			Direct drive					
	Speed	Steps		10	8				
		Cooling	High/Low	rpm	1,186/875	975/840	1,161/960	1,060/813	1,218/920
			Heating	High/Low	rpm	1,186/875	975/840	1,161/960	1,060/813
	Output	High		W	140	350			
Sound power level	Cooling	Nom.	dBA	63	59	63	61	66	
Sound pressure level	Cooling	High/Low	dBA	37/29	37/30	38/32		40/33	
	Heating	Super high/High/Low	dBA	-37/29	-37/30	-38/32		-40/33	
Refrigerant	Type			R-410A					
	Control			Electronic expansion valve					
Piping connections	Liquid	Type/OD	mm	Flare connection/6.35	Flare connection/9.52				
	Gas	Type/OD	mm	Flare connection/12.7	Flare connection/15.9				
	Drain			VP25 (O.D. 32 / I.D. 25)					
	Heat insulation			Both liquid and gas pipes					

2 Specifications

2-1 Technical Specifications			FMDQ50B	FMDQ60B	FMDQ71B	FMDQ100B	FMDQ125B
Air filter	Type		Resin net with mold resistance				
Drain-up height		mm	625				
Safety devices	Item	01/02/03	PC board fuse/PC board fuse (fan driver)/Drain pump fuse				

2

2-2 Electrical Specifications			FMDQ50B	FMDQ60B	FMDQ71B	FMDQ100B	FMDQ125B
Power supply	Name		VE				
	Phase		1~				
	Frequency	Hz	50/60				
	Voltage	V	220-240/220				
Voltage range	Min.	%	-10				
	Max.	%	10				
Current - 50Hz	Minimum circuit amps (MCA)	A	1.2	1.1	1.3	1.4	1.9
	Maximum fuse amps (MFA)	A	16				
Current - 60Hz	Nominal running current	A	-				

Notes

- (1) Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB; equivalent piping length: 5m; level difference: 0m
- (2) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 5m; level difference: 0m
- (3) Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- (4) The sound pressure values are mentioned for a unit installed with rear suction.
- (5) Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
- (6) Maximum allowable voltage range variation between phases is 2%.
- (7) Select wire size based on the value of MCA
- (8) Instead of a fuse, use a circuit breaker

3 Electrical data

3 - 1 Electrical Data

FMDQ-B

Units						Power supply	
Model	Type	Hz	Voltage range	Min.	Max.	MCA	MFA
FMDQ50	VE	50/60	220~240/ 220V	-10%	+10%	1.2	16
FMDQ60						1.1	16
FMDQ71						1.3	16
FMDQ100						1.4	16
FMDQ125						1.9	16

Symbols:

MCA: Min. Circuit Amps. (A)

MFA: Max. Fuse Amps. (A) (see note 4)

NOTES

- 1 Voltage range
The units are suitable for use on electrical systems where the voltage supplied to the unit terminals is not below or above listed range limits.
- 2 The maximum allowable voltage variation between phases is 2%.
- 3 Select a wire size based on the MCA.
- 4 Instead of a fuse, use a circuit breaker.

4TW31521-2A

4 Safety device settings

4 - 1 Safety Device Settings

Safety devices		50	60	71	100	125
FMDQ	PC Board Fuse	250V 3.15A	250V 3.15A	250V 3.15A	250V 3.15A	250V 3.15A
	PC Board Fuse (Fan Driver)	250V 5A	250V 6.3A	250V 6.3A	250V 6.3A	250V 6.3A
	Fan Motor Thermal Protector	°C	—	—	—	—
	Drain Pump Fuse	°C	145	145	145	145

4

5 Options

5 - 1 Options

FMDQ-B

OPTIONS

Item	Type	FMDQ50	FMDQ60,71	FMDQ100,125
Panel related	Decoration panel (*4)	BYBS45D	BYBS71D	BYBS125D
Air inlet and air discharge outlet related	Air discharge adapter for round duct	KDAJ25K56A	KDAJ25K71A	KDAJ25K140A
Panel related	Decoration panel option		EBYBSD	

OPERATION CONTROL

Item	Type	FMDQ50	FMDQ60,71	FMDQ100,125
Remote controller	Wired type	BRC1D528 / BRC1E51A *5 / BRC1E52A7 *6 / BRC1E5287 *7		
	Infrared type	BRC4C65		
Simplified remote controller		BRC2C51		
Remote controller for hotel use		BRC3A61		
Option PCB for external electrical heater, humidifier and/or hour meter *1, *2, *3		EKRP1B2A		
Wiring adapter for electrical appendices *1, *2, *3		KRP2A51		
Wiring adapter for electrical appendices *2, *3		KRP4A51		
Remote sensor		KRC501-4B		
Central remote controller		DCS302CA51		
Electrical box with earth terminal (3 blocks)		KIB311A		
Unified ON/OFF controller		DCS301BA51		
Electrical box with earth terminal (2 blocks)		KIB212A		
Schedule timer		DST301BA51		
External adaptor for outdoor unit (installation on indoor unit) *3		DTA104A61		
Mounting plate for adapter PCB		KRP4A96		

*1 Electrical heater and humidifier are field supply. These parts should not be installed inside the equipment. (Refer to installation manual EKR1B2A).
 *2 If installing an electrical heater, an option PCB for external electrical heater (EKRP1B2) for each indoor unit is required.
 *3 Mounting plate KRP4A96 is required for these options. Maximum 2 option PCB's can be mounted.
 *4 Decoration panel option EBYBSD is required for direct mounting of the decoration panel on the unit.
 *5 Included languages are: English, German, French, Dutch, Spanish, Italian, Greek, Portuguese, Russian and Turkish.
 *6 Included languages are: English, German, French, Dutch, Spanish, Italian, Greek, Portuguese, Russian and Polish.
 *7 Included languages are: English, German, Albanian, Bulgarian, Croatian, Czech, Hungarian, Romanian, Serbian, Slovak and Slovenian.

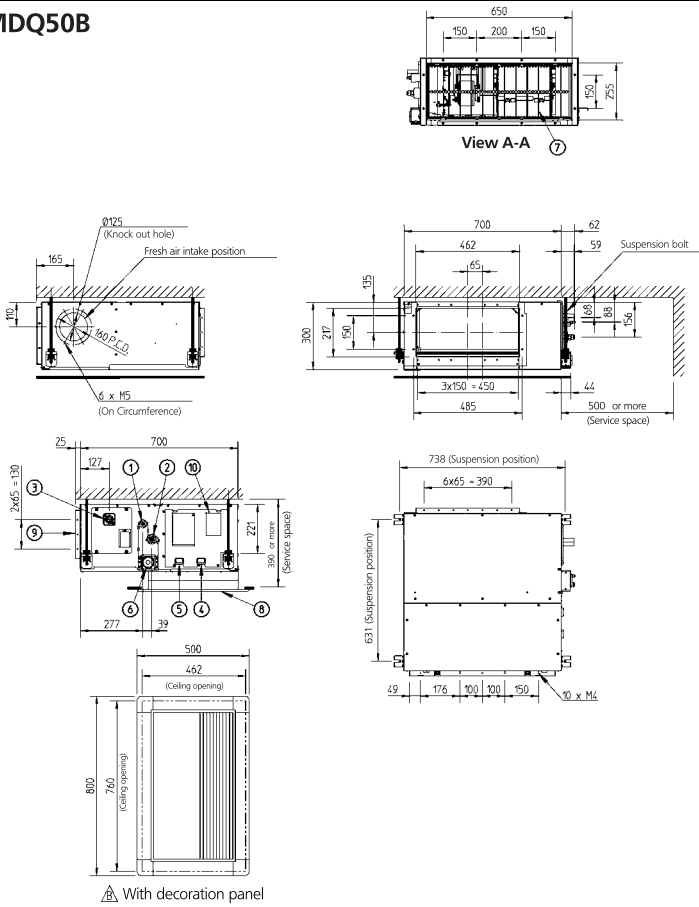
3TW31529-3D

6 Dimensional drawings

6 - 1 Dimensional Drawings

6

FMDQ50B



Detail B

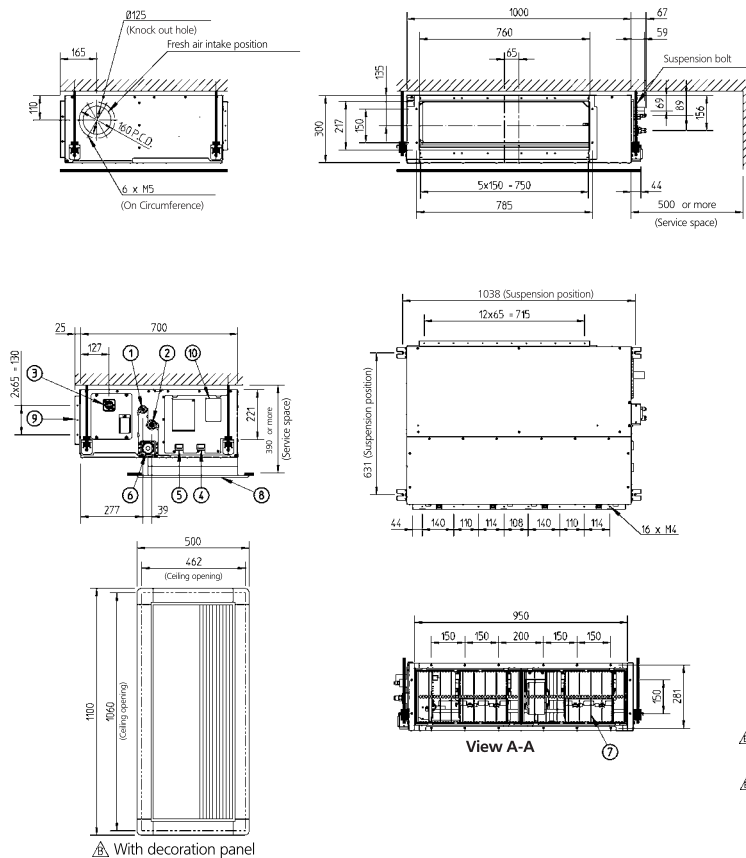
Item	Name	Description
1	Liquid pipe connection	Ø 6.35 Flare connection
2	Gas pipe connection	Ø 12.70 Flare connection
3	Drain pipe connection	VP25 (O.D. Ø 32, I.D. Ø 25)
4	Remote controller wiring connection	-
5	Power supply connection	-
6	Drain hole	VP25 (O.D. Ø 32, I.D. Ø 25)
7	Air filter	-
8	Air suction side	-
9	Air discharge side	-
10	Nameplate	-

NOTES

- 1 Refer to the outlook drawing of optional accessories when installing them.
- 2 The required ceiling depth varies according to the configuration of the specific system.
- 3 For maintenance of the air filter, it is necessary to provide a service access panel.
- 4 Optional decoration panel: BYB545D/W1 (Light ivory white 10Y9/0.5)

3TW31214-1B

FMDQ60-71B



Detail B

Item	Name	Description
1	Liquid pipe connection	Ø 9.52 Flare connection
2	Gas pipe connection	Ø 15.90 Flare connection
3	Drain pipe connection	VP25 (O.D. Ø 32, I.D. Ø 25)
4	Remote controller wiring connection	-
5	Power supply connection	-
6	Drain hole	VP25 (O.D. Ø 32, I.D. Ø 25)
7	Air filter	-
8	Air suction side	-
9	Air discharge side	-
10	Nameplate	-

NOTES

- 1 Refer to the outlook drawing of optional accessories when installing them.
- 2 The required ceiling depth varies according to the configuration of the specific system.
- 3 For maintenance of the air filter, it is necessary to provide a service access panel.
- 4 Optional decoration panel: BYB571D/W1 (Light ivory white 10Y9/0.5)

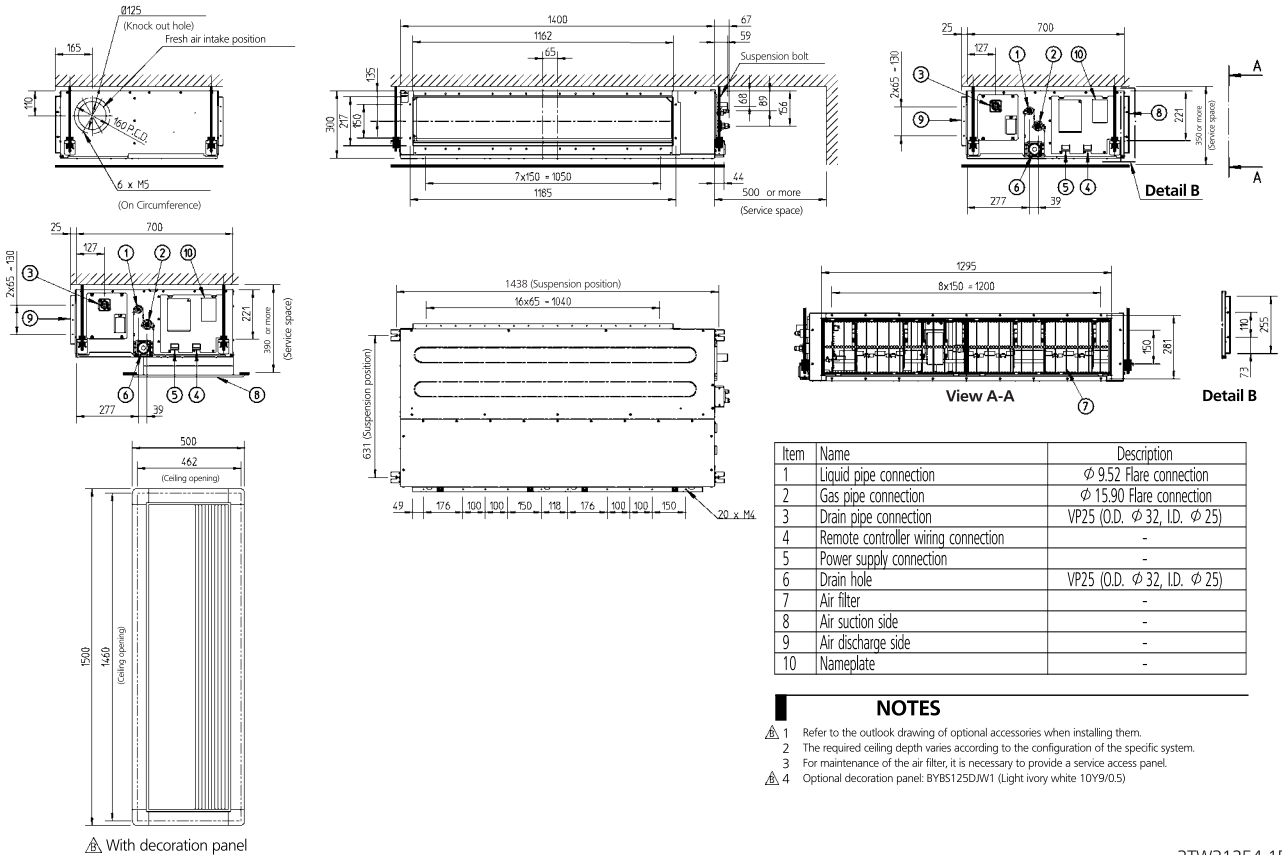
3TW31234-1B

8

6 Dimensional drawings

6 - 1 Dimensional Drawings

FMDQ100-125B



Item	Name	Description
1	Liquid pipe connection	ϕ 9.52 Flare connection
2	Gas pipe connection	ϕ 15.90 Flare connection
3	Drain pipe connection	VP25 (O.D. ϕ 32, I.D. ϕ 25)
4	Remote controller wiring connection	-
5	Power supply connection	-
6	Drain hole	VP25 (O.D. ϕ 32, I.D. ϕ 25)
7	Air filter	-
8	Air suction side	-
9	Air discharge side	-
10	Nameplate	-

NOTES

- 1 Refer to the outlook drawing of optional accessories when installing them.
- 2 The required ceiling depth varies according to the configuration of the specific system.
- 3 For maintenance of the air filter, it is necessary to provide a service access panel.
- 4 Optional decoration panel: BYBS125DJW1 (Light ivory white 10Y9/0/5)

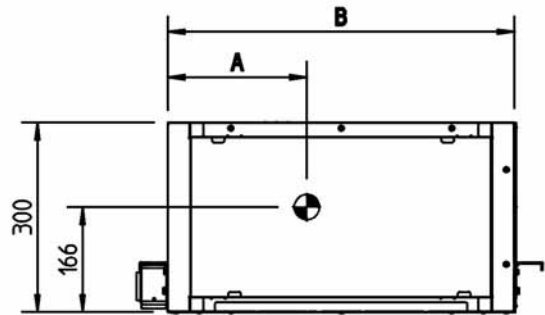
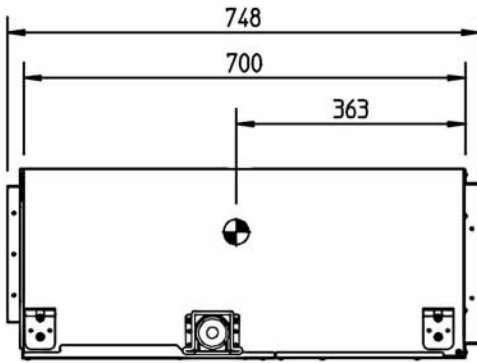
3TW31254-1B

7 Centre of gravity

7 - 1 Centre of Gravity

7

FMDQ50-125B

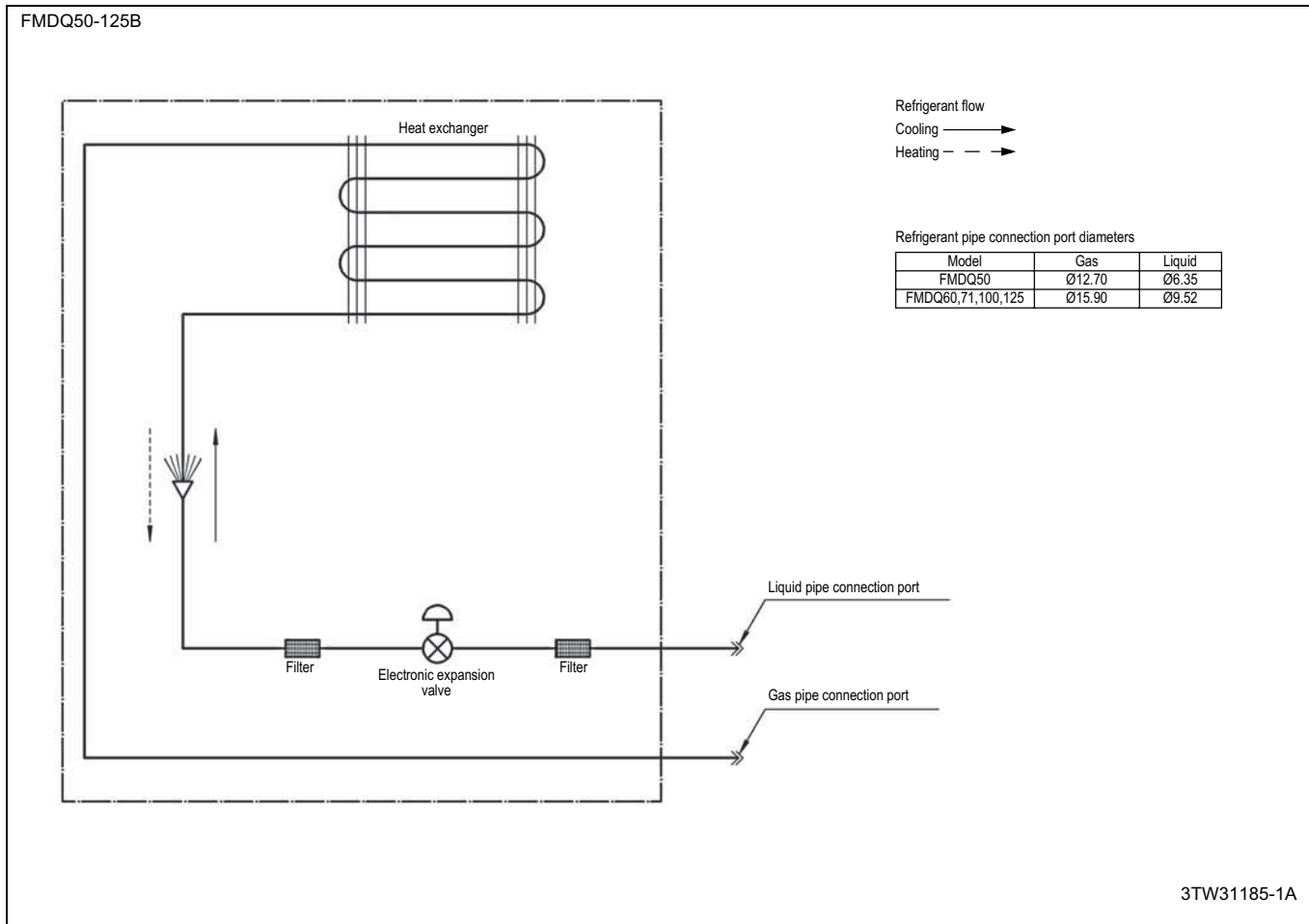


Model	A	B
FMDQ50	283	700
FMDQ60,71	441	1000
FMDQ100,125	619	1400

4TW31189-1B

8 Piping diagrams

8 - 1 Piping Diagrams



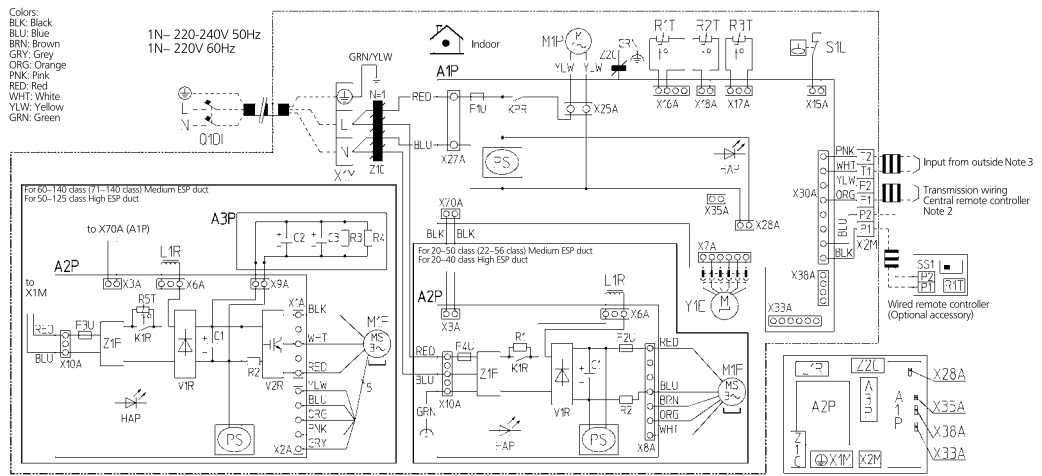
9 Wiring diagrams

9 - 1 Wiring Diagrams - Single Phase

9

FMDQ50B

- Indoor unit**
- A1P : Printed circuit board
 - A2P : Printed circuit board (Fan)
 - A3P : Printed circuit board (Capacitor)
 - C1,C2,C3 : Capacitor
 - F1U : Fuse (T, 3.15A, 250V)
 - F2U : Fuse (T, 5A, 250V)
 - F3U : Fuse (T, 6.3A, 250V)
 - F4U : Fuse (T, 6.3A, 250V)
 - H4P : Light emitting diode (Service monitor-green)
 - KPR,K1R : Magnetic relay
 - L1R : Reactor
 - M1P : Motor (Fan)
 - M1P : Motor (Drain pump)
 - PS : Switching power supply
 - Q1DI : Earth leak detector
 - R1 : Resistor (current limiting)
 - R2 : Current sensing device
 - R3,R4 : Resistor (Electric discharge)
 - R1T : Thermistor (Suction air)
 - R2T : Thermistor (liquid)
 - R3T : Thermistor (Gas)
 - R5T : Thermistor NTC (current limiting)
 - S1L : Float switch
 - V1R : Diode bridge
 - V2R : Power module
 - X1M : Terminal strip (Power supply)
 - X2M : Terminal strip (control)
 - Y1E : Electronic expansion valve
 - Z1C,Z2C : Noise filter (Ferrite core)
 - Z1F : Noise filter
- Connector optional accessory**
- X28A : Connector (Power supply for wiring)
 - X33A : Connector (for wiring)
 - X35A : Connector (Adapter)
 - X38A : Connector (for wiring)
- Wired remote controller**
- R1T : Thermistor (air)
 - SS1 : Selector switch (main/sub)



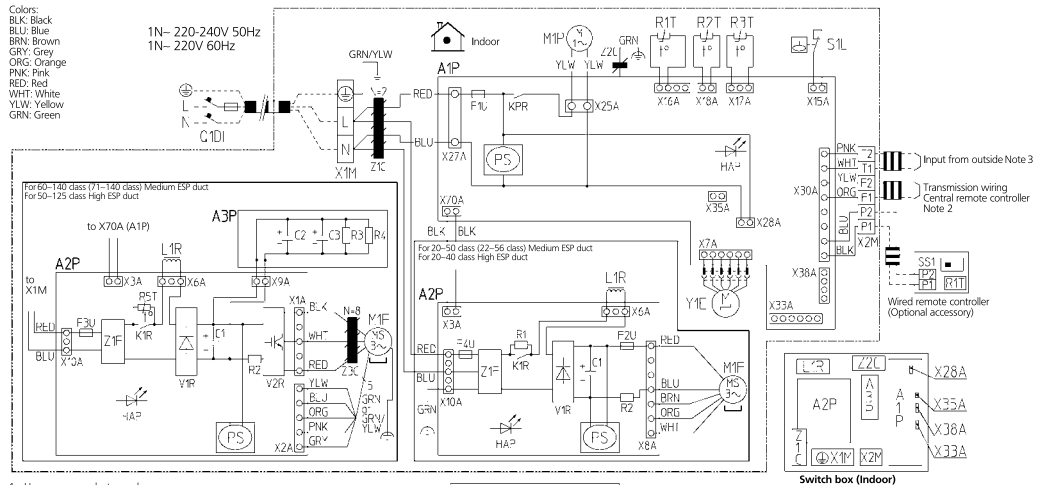
- 1 Use copper conductors only.
- 2 When using the central remote controller, see manual for connection to the unit.
- 3 When connecting the input wires from outside, forced OFF or ON/OFF operation can be selected by the remote controller. See installation manual for more details.

L : Live
N : Neutral
⊞ : Connector
⊞ : Wire clamp
⊞ : Protective earth (screw)

2TW32656-1

FMDQ60-125B

- Indoor unit**
- A1P : Printed circuit board
 - A2P : Printed circuit board (Fan)
 - A3P : Printed circuit board (Capacitor)
 - C1,C2,C3 : Capacitor
 - F1U : Fuse (T, 3.15A, 250V)
 - F2U : Fuse (T, 5A, 250V)
 - F3U : Fuse (T, 6.3A, 250V)
 - F4U : Fuse (T, 6.3A, 250V)
 - H4P : Light emitting diode (Service monitor-green)
 - KPR,K1R : Magnetic relay
 - L1R : Reactor
 - M1P : Motor (Fan)
 - M1P : Motor (Drain pump)
 - PS : Switching power supply
 - Q1DI : Earth leak detector
 - R1 : Resistor (current limiting)
 - R2 : Current sensing device
 - R3,R4 : Resistor (Electric discharge)
 - R1T : Thermistor (Suction air)
 - R2T : Thermistor (liquid)
 - R3T : Thermistor (Gas)
 - R5T : Thermistor NTC (current limiting)
 - S1L : Float switch
 - V1R : Diode bridge
 - V2R : Power module
 - X1M : Terminal strip (Power supply)
 - X2M : Terminal strip (control)
 - Y1E : Electronic expansion valve
 - Z1C,Z2C,Z3C : Noise filter (Ferrite core)
 - Z1F : Noise filter
- Connector optional accessory**
- X28A : Connector (Power supply for wiring)
 - X33A : Connector (for wiring)
 - X35A : Connector (Adapter)
 - X38A : Connector (for wiring)
- Wired remote controller**
- R1T : Thermistor (air)
 - SS1 : Selector switch (main/sub)



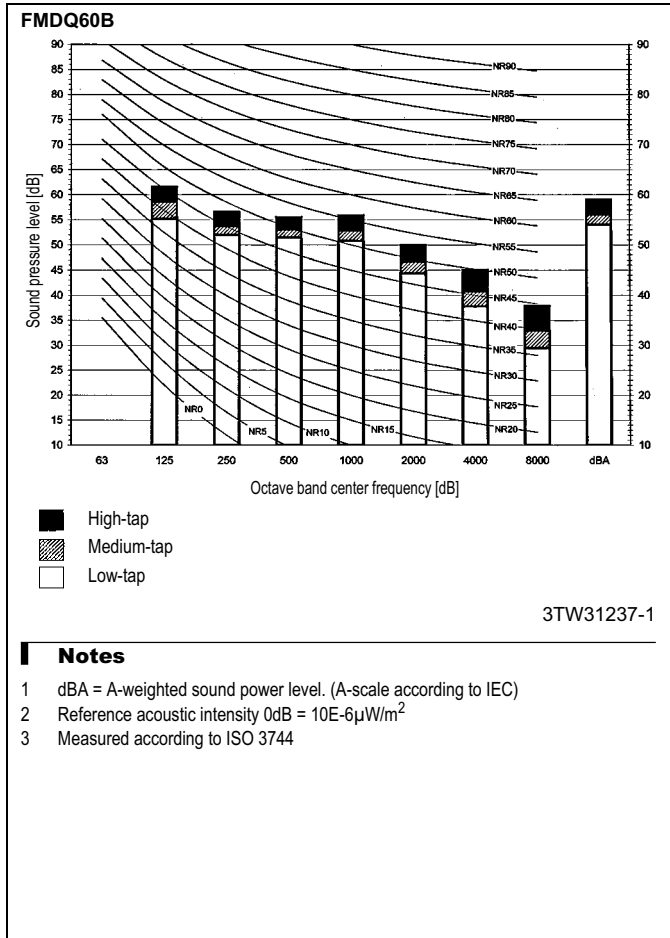
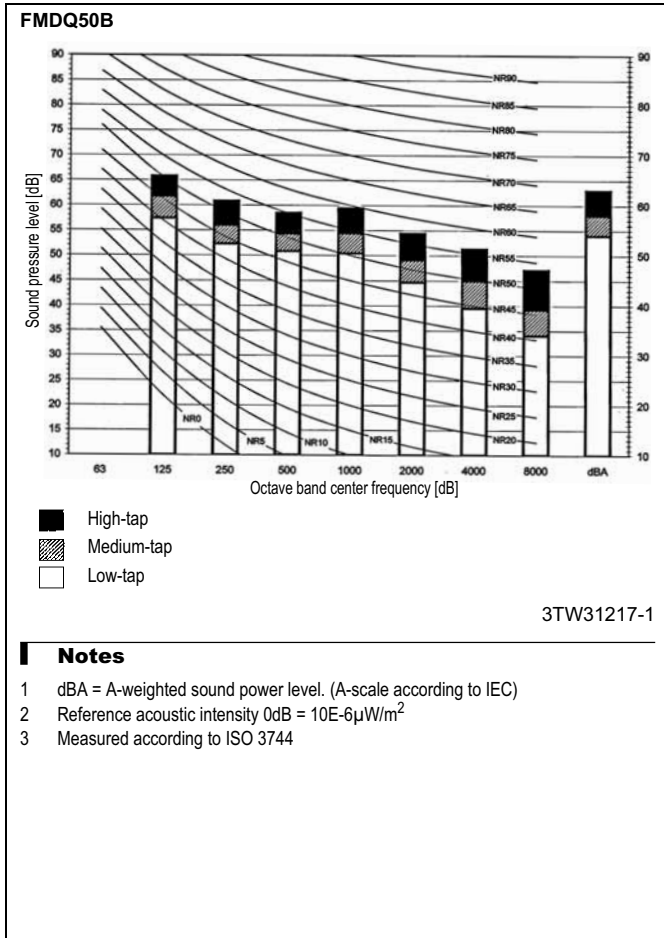
- 1 Use copper conductors only.
- 2 When using the central remote controller, see manual for connection to the unit.
- 3 When connecting the input wires from outside, forced OFF or ON/OFF operation can be selected by the remote controller. See installation manual for more details.

L : Live
N : Neutral
⊞ : Connector
⊞ : Wire clamp
⊞ : Protective earth (screw)

2TW32656-2

10 Sound data

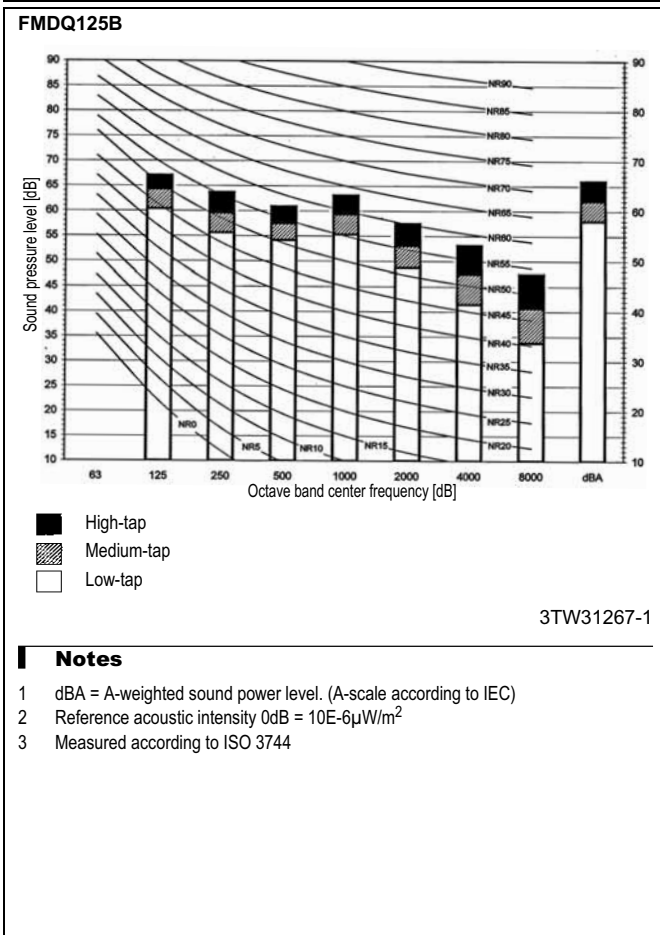
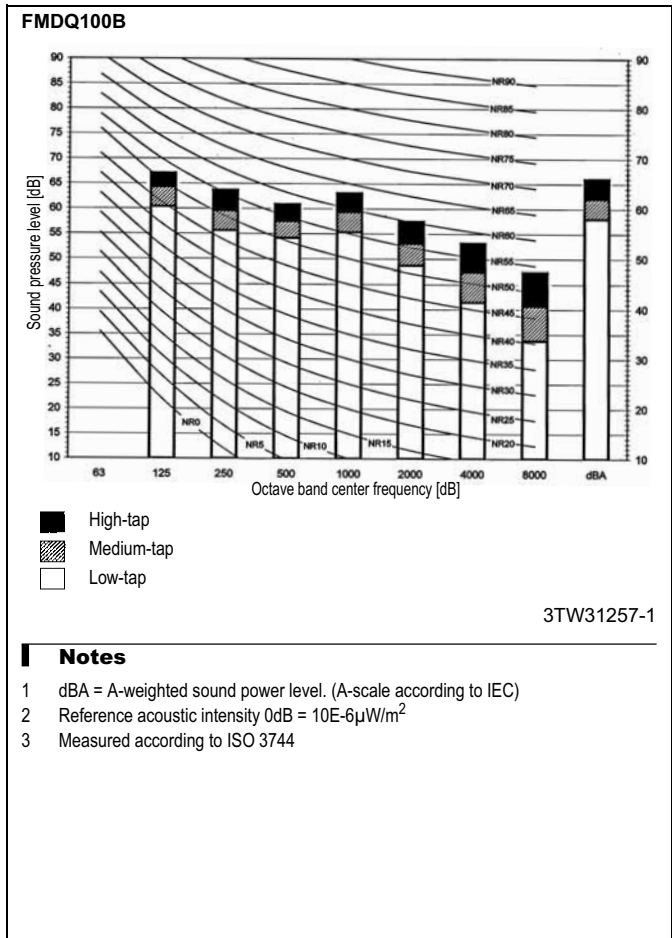
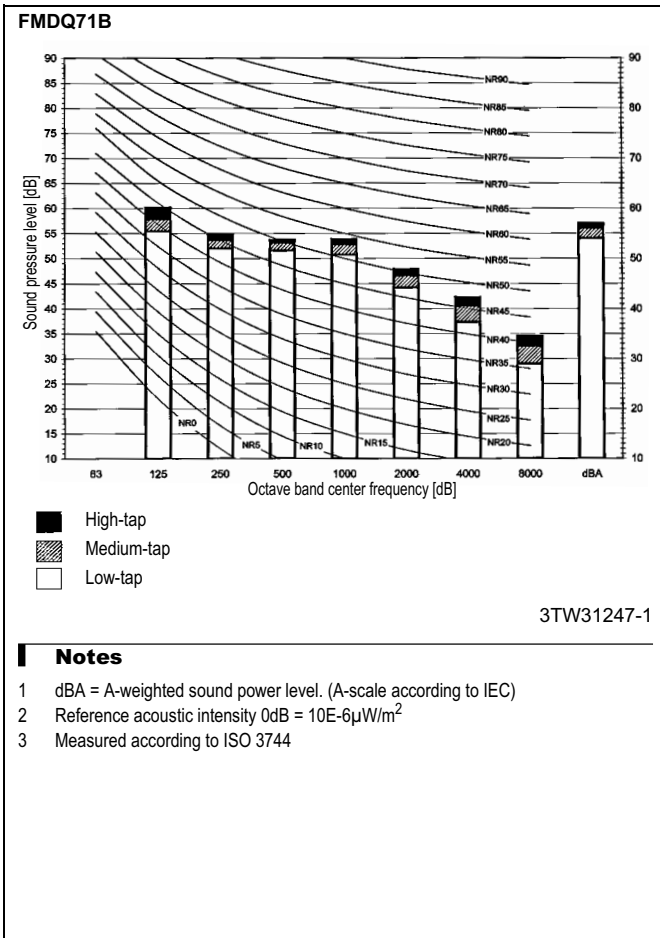
10 - 1 Sound Power Spectrum



10 Sound data

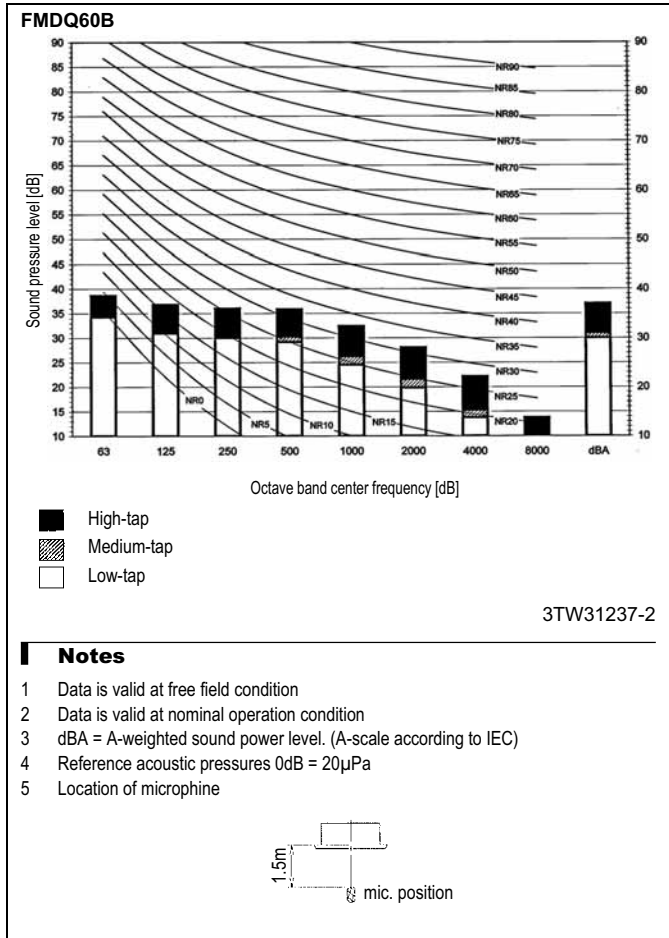
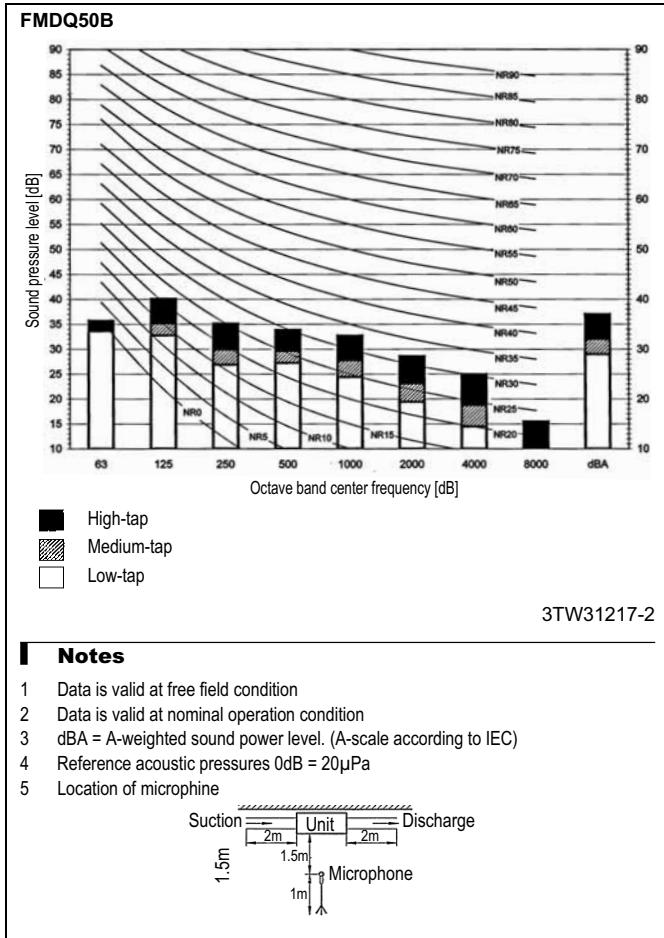
10 - 1 Sound Power Spectrum

10



10 Sound data

10 - 2 Sound Pressure Spectrum

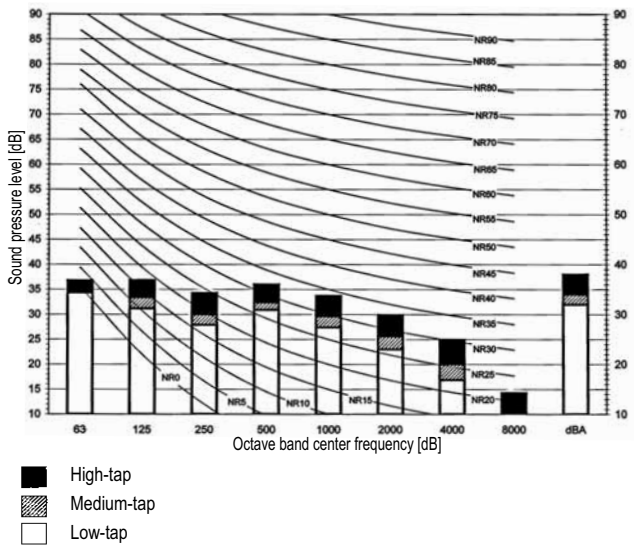


10 Sound data

10 - 2 Sound Pressure Spectrum

10

FMDQ71B

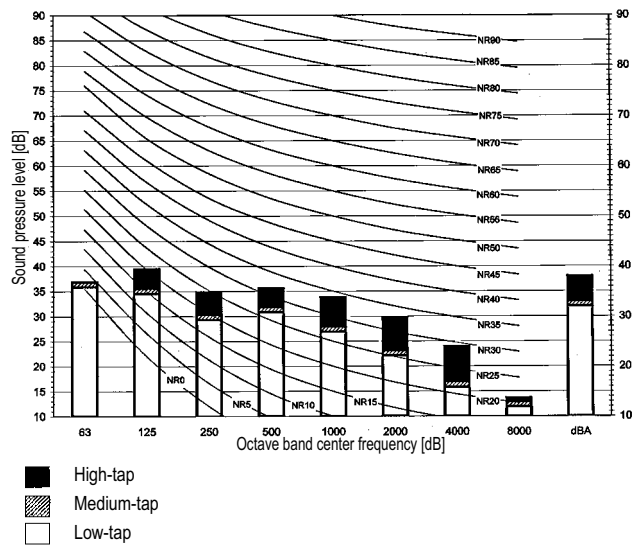


3TW31247-2

Notes

- 1 Data is valid at free field condition
- 2 Data is valid at nominal operation condition
- 3 dBA = A-weighted sound power level. (A-scale according to IEC)
- 4 Reference acoustic pressures 0dB = 20μPa
- 5 Location of microphone

FMDQ100B

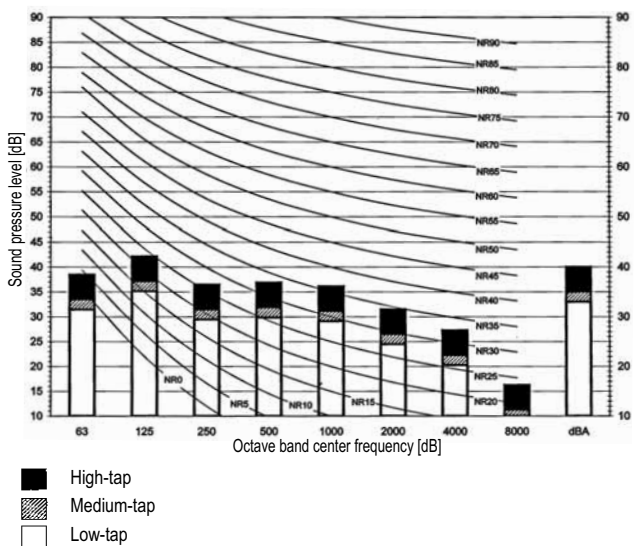


3TW31257-2

Notes

- 1 Data is valid at free field condition
- 2 Data is valid at nominal operation condition
- 3 dBA = A-weighted sound power level. (A-scale according to IEC)
- 4 Reference acoustic pressures 0dB = 20μPa
- 5 Location of microphone

FMDQ125B



3TW31267-2

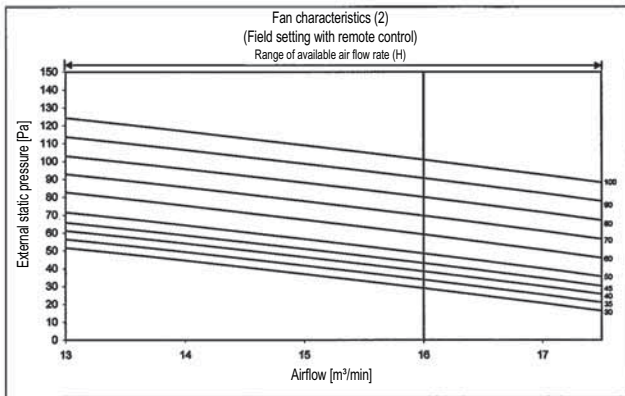
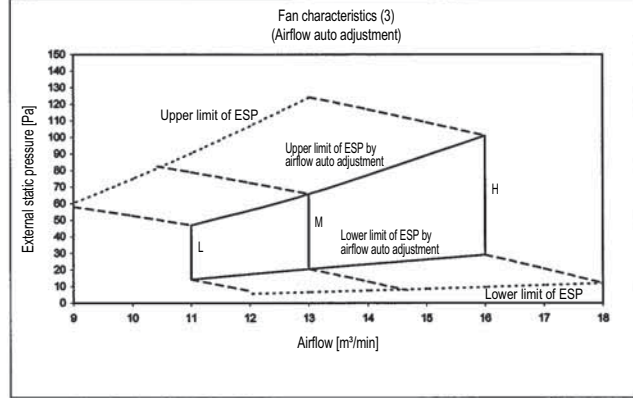
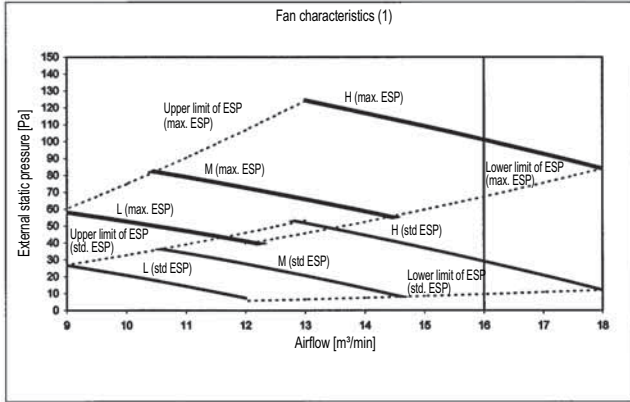
Notes

- 1 Data is valid at free field condition
- 2 Data is valid at nominal operation condition
- 3 dBA = A-weighted sound power level. (A-scale according to IEC)
- 4 Reference acoustic pressures 0dB = 20μPa
- 5 Location of microphone

11 Fan characteristics

11 - 1 Fan Characteristics

FMDQ50B

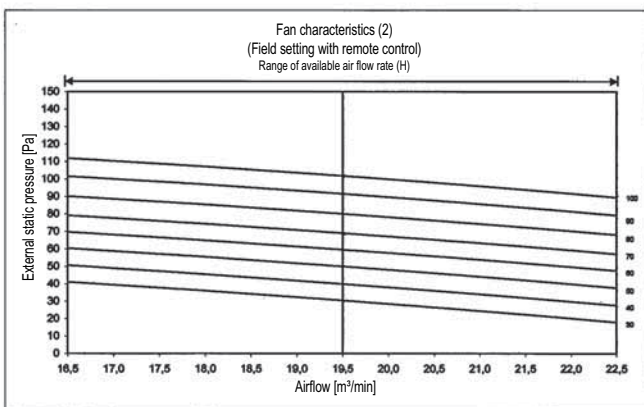
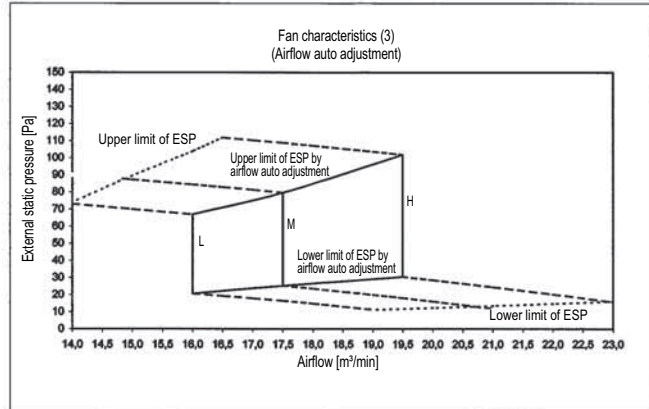
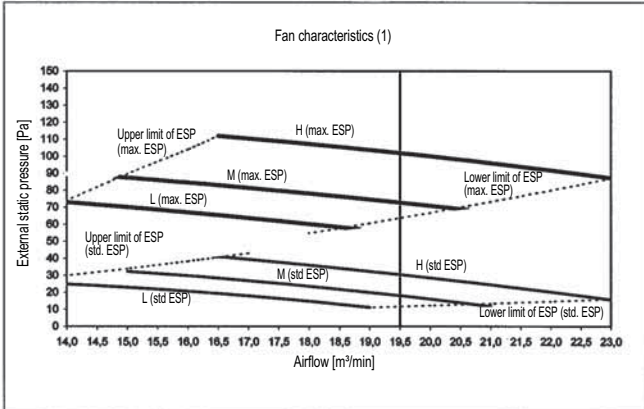


NOTES

- 1 Fan characteristics as shown ar in "fan only" mode.
- 2 ESP: External static pressure

3TW31218-1

FMDQ60B



NOTES

- 1 Fan characteristics as shown ar in "fan only" mode.
- 2 ESP: External static pressure

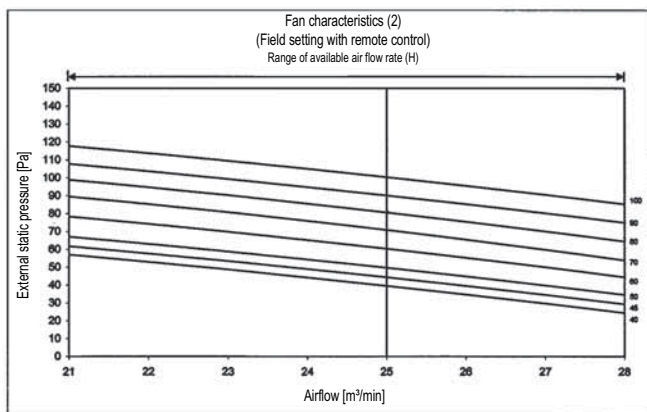
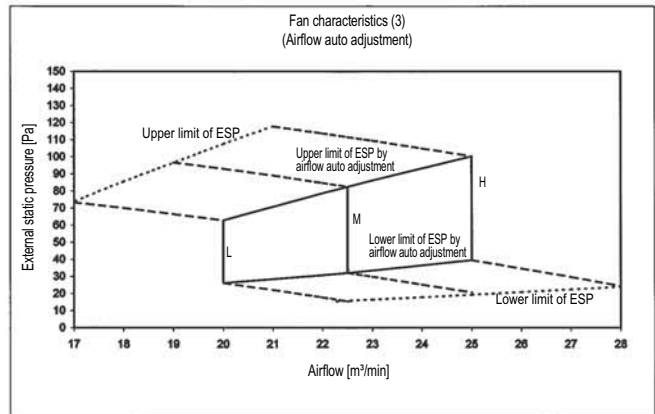
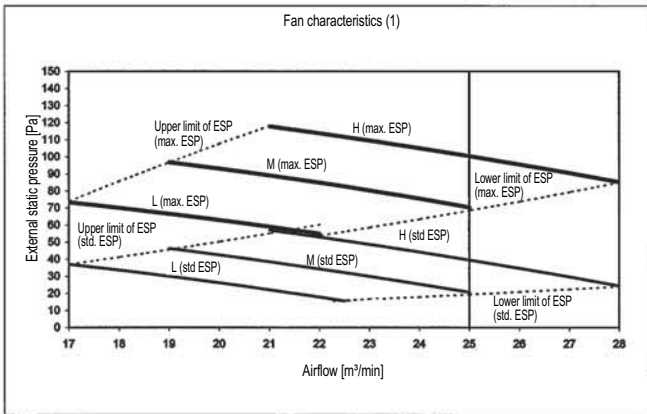
3TW31238-1

11 Fan characteristics

11 - 1 Fan Characteristics

11

FMDQ71B

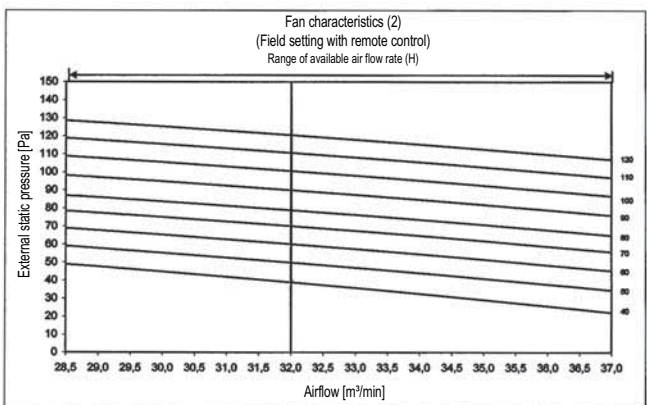
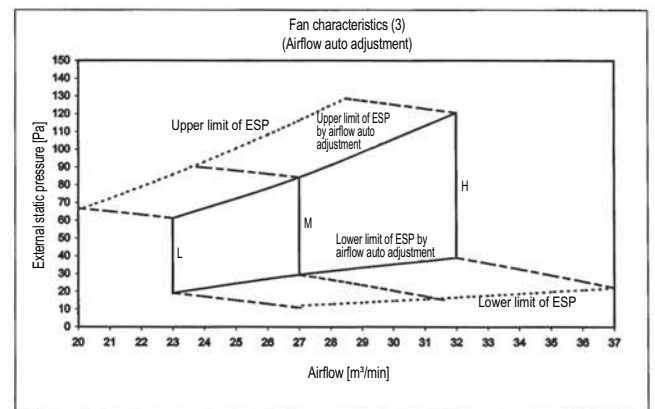
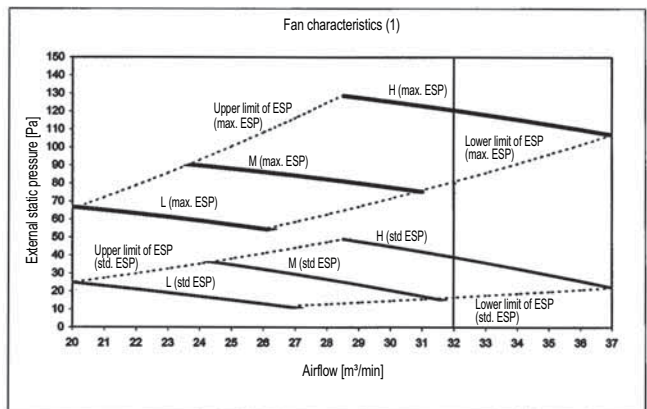


NOTES

- 1 Fan characteristics as shown ar in "fan only" mode.
- 2 ESP: External static pressure

3TW31248-1

FMDQ100B



NOTES

- 1 Fan characteristics as shown ar in "fan only" mode.
- 2 ESP: External static pressure

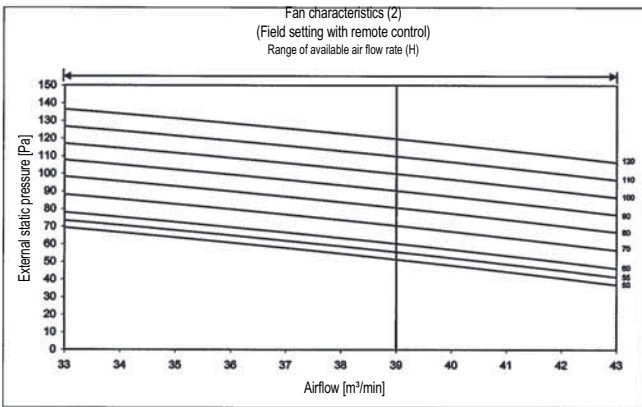
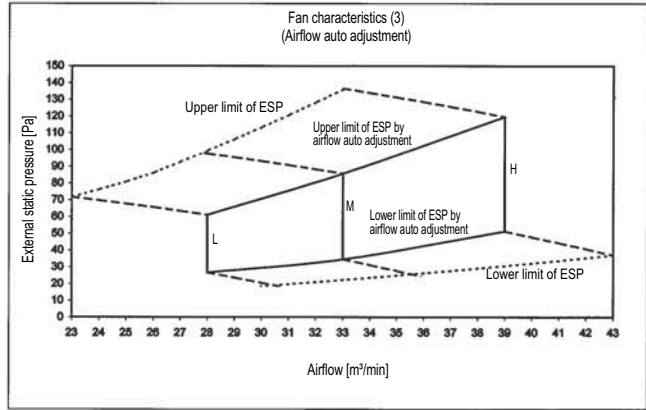
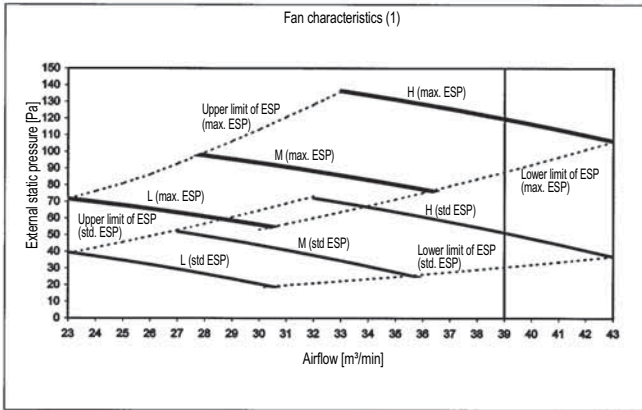
3TW31258-1

18

11 Fan characteristics

11 - 1 Fan Characteristics

FMDQ125B



NOTES

- 1 Fan characteristics as shown ar in "fan only" mode.
- 2 ESP: External static pressure

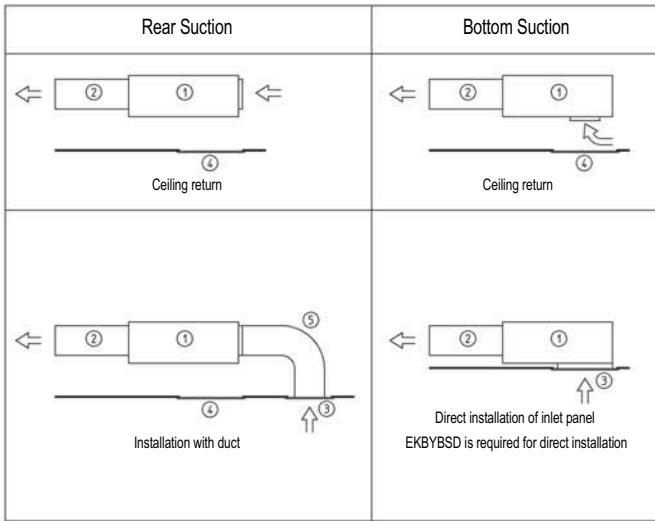
3TW31268-1

12 Installation

12 - 1 Installation Method

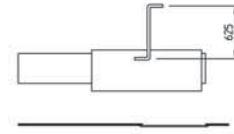
12

FMDQ50-125B

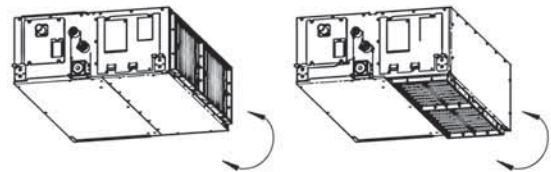


Wide variety of installation methods

Number	Description	
1	Main body	
2	Air outlet duct	Field supply
3	Inlet panel	Optional accessory
4	Access panel	optional accessory
5	Air inlet duct	Field supply



Drain pump up height



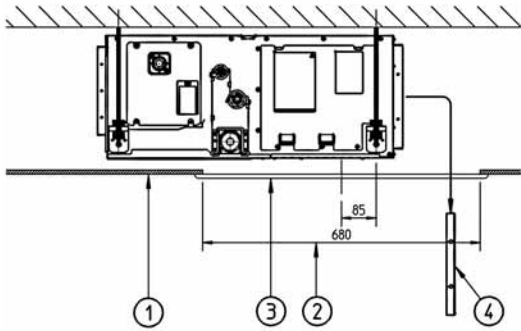
Easy modification from rear to bottom suction

3TW31183-1A

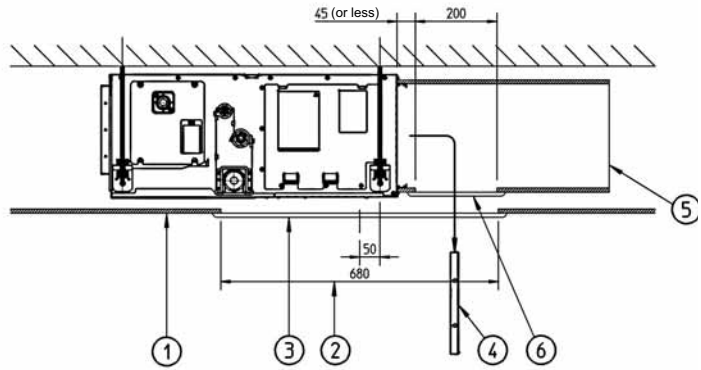
12 Installation

12 - 2 Filter Installation Method

FMDQ50-125B



Installation without air inlet duct

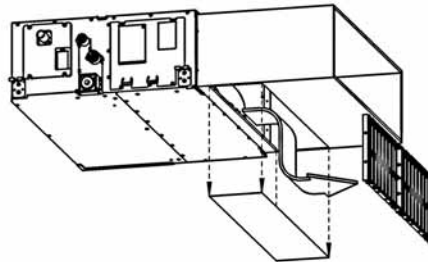


Installation with air inlet duct

Nr.	Description
1	Suspended Ceiling
2	Ceiling opening
3	Service access panel (optional)
4	Air filter
5	Air inlet duct
6	Duct service opening

NOTES

- 1 When installing the unit with rear suction, a service opening is necessary for the maintenance of the air filters.
- 2 When installing the unit with a suction duct. A service opening must be provided in the duct.



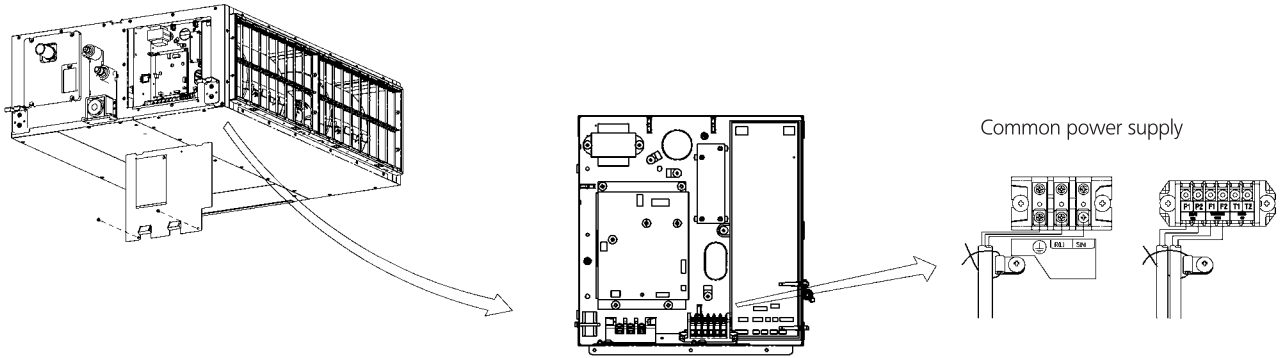
3TW31184-4

12 Installation

12 - 3 Switch Box Connection

FMDQ-B

12



3TW31184-5B



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 intention 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. participates in the Eurovent Certification programme for Air conditioners (AC), Liquid Chilling Packages (LCP) and Fan coil units (FCU). Check on-going validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com

The present leaflet is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V.. Daikin Europe N.V. has compiled the content of this leaflet to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this leaflet. All content is copyrighted by Daikin Europe N.V.

BARCODE

Daikin products are distributed by:

