

Air Conditioners

Technical Data

Concealed ceiling unit with inverter driven fan



EEDEN12-100

FBQ-C8

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FBQ-C8

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1 Features

1

- Seasonal efficiency, optimized for all seasons.
- Seasonal efficiency gives an indication on how efficient an air conditioner operates over an entire heating or cooling season.
- Blends unobtrusively with any interior décor: only the suction and discharge grilles are visible
- Reduction in power consumption thanks to DC inverter fans
- Improved comfort thanks to 3-step air flow control
- Whisper quiet operation: down to 29dBA sound pressure level
- Possibility to change ESP via wired remote control allows optimisation of the supply air volume
- Up to 120Pa external static pressure facilitates using flexible ducts of varying lengths: ideal for shops and medium size offices
- Standard air filter removes airborne dust particles to ensure a steady supply of clean air
- No optional adapter needed for DIII-connection: standard plug and play connection with centralised control systems, intelligent touch controller, intelligent manager, ...
- During start up, the room can be cooled down or heated very quickly; once the temperature in the room has reached its set point, the low power operation starts to save energy.
- Easy installation thanks to automatic air flow adjustment towards nominal air flow rate
- 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



optional



standard



2 Specifications

2-1 Technical Specifications				FBQ35C8VEB	FBQ50C8VEB	FBQ60C8VEB	FBQ71C8VEB	FBQ100C8VEB	FBQ125C8VEB	FBQ140C8VEB		
Cooling capacity	Nom.			kW	3.4 (1)	5.0 (1)	5.7 (1)	7.1 (1)	10.0 (1)	12.5 (1)	13.4 (1)	
Heating capacity	Nom.			kW	4.0 (2)	5.5 (2)	7.0 (2)	8.0 (2)	11.2 (2)	14.0 (2)	15.5 (2)	
Power input	Cooling	Nom.	kW	0.140			0.350					
	Heating	Nom.	kW	0.140			0.350					
Casing	Colour			Not painted (galvanised)								
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	25		34		45				
	Packed unit		kg	28		41		53				
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		4.5		6			
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		18		32		39	
			Low	m ³ /min	11		15		23		28	
		Heating	High	m ³ /min	16		18		32		39	
			Low	m ³ /min	11		15		23		28	
	External static pressure	High		Pa	100				120			
Nom.		Pa	30				40		50			
Fan motor	Quantity			1								
	Model			Brushless DC motor								
	Drive			Direct drive								
	Speed	Steps		10		8		9				
		Cooling	High/Low	rpm	1,186/875		942/823		1,060/813		1,218/920	
			Heating	High/Low	rpm	1,186/875		942/823		1,060/813		1,218/920
Output		High	W	140		350						
Sound power level	Cooling	Nom.	dBA	63		57		61		66		
Sound pressure level	Cooling	High/Low	dBA	37/29				38/32		40/33		
	Heating	Super high/High/Low	dBA	-37/29				-38/32		-40/33		
Refrigerant	Type			R-410A								
Piping connections	Liquid	Type/OD	mm	Flare connection/6.35			Flare connection/9.52					
	Gas	Type/OD	mm	Flare connection/9.5	Flare connection/12.7			Flare connection/15.9				
	Drain			VP25 (O.D. 32 / I.D. 25)								
	Heat insulation			Both liquid and gas pipes								
Air filter			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 Specifications

2-2 Electrical Specifications			FBQ35C8VEB	FBQ50C8VEB	FBQ60C8VEB	FBQ71C8VEB	FBQ100C8VEB	FBQ125C8VEB	FBQ140C8VEB
Power supply	Name	VE							
	Phase	1~							
	Frequency	Hz	50/60						
	Voltage	V	220-240/220						
Current - 60Hz	Nominal running current	A	-						

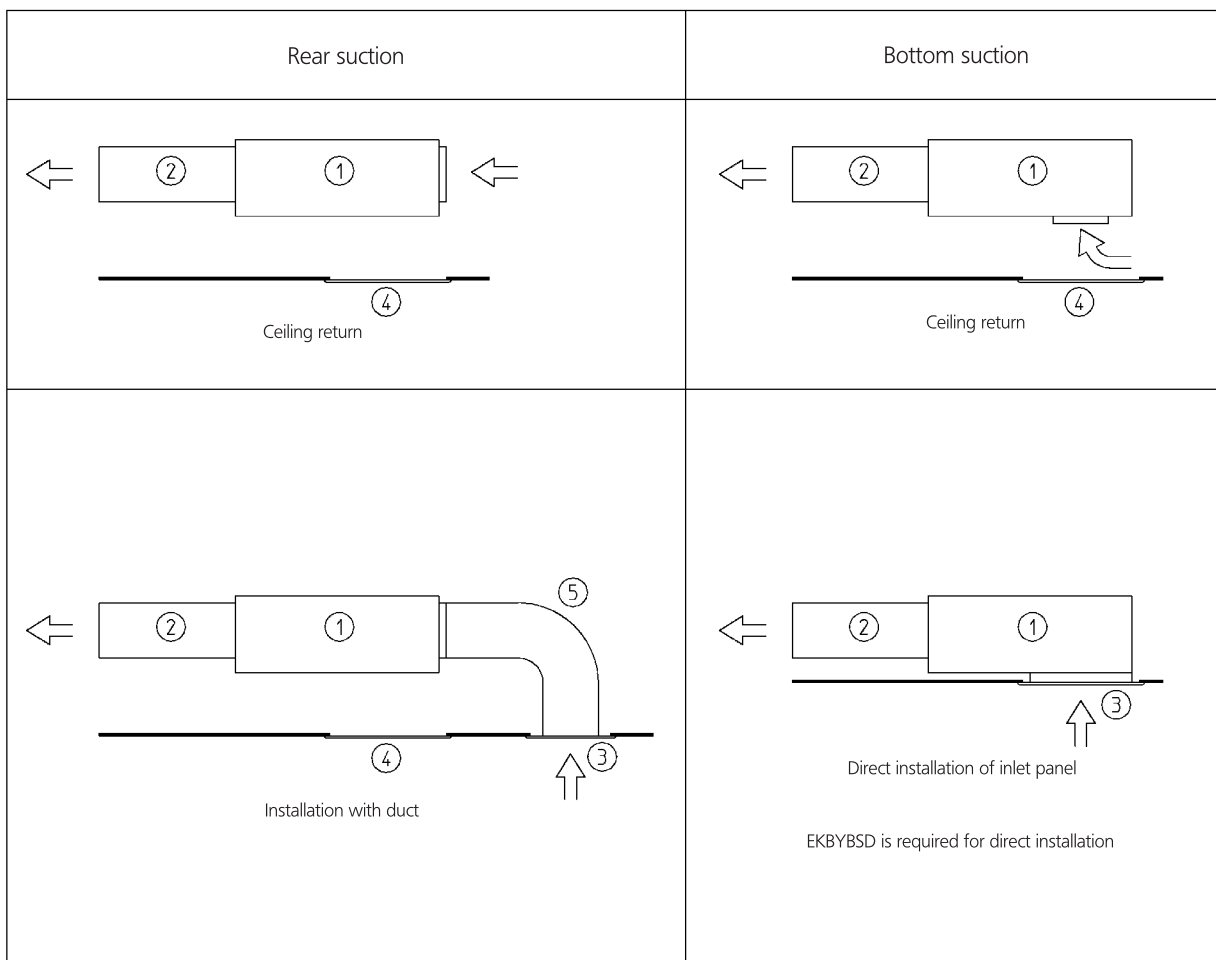
Notes

- (1) Cooling: indoor temp. 27°CDB, 19.0°CWB; outdoor temp. 35°CDB; equivalent piping length: 7.5m; level difference: 0m
- (2) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; equivalent refrigerant piping: 7.5m; 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) PED unit category: Art3§3: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC

3 General Characteristics

3 - 1 General characteristics

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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

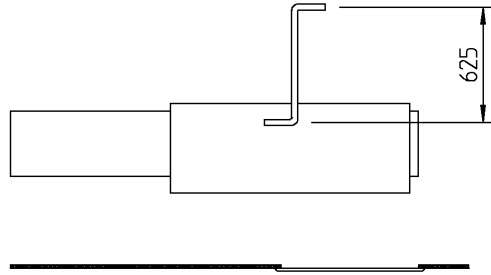
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3 General Characteristics

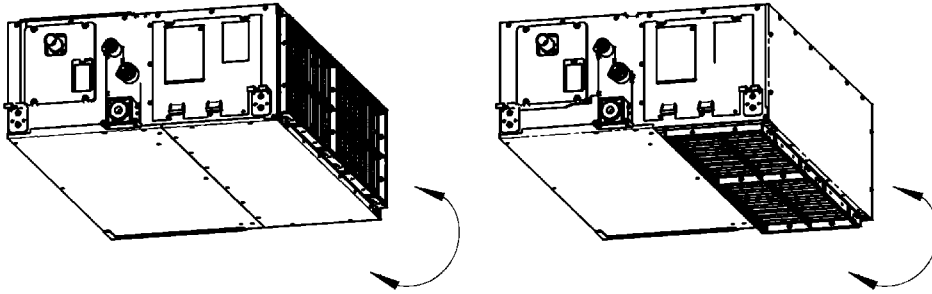
3 - 1 General characteristics

3

FBQ-C8



Drain pump up height



Easy modification from rear to bottom suction

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4 Safety device settings

4 - 1 Safety Device Settings

FBQ-C8

Model	Safety devices	35	50	60	71	100	125	140
FBQ	PC board fuse	250V 3,15A	250V 3,15A	250V 3,15A	250V 3,15A	250V 3,15A	250V 3,15A	250V 3,15A
	PC board fuse (Fan driver)	250V 5A	250V 5A	250V 6,3A	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	145	145	145

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5 Options

5 - 1 Options

5

FBQ-C8

OPTIONS

Item		FBQ35,50	FBQ60,71	FBQ100,125,140
Panel related	Decoration panel (*4)	BYB545D	BYB571D	BYB5125D
Air inlet and air discharge outlet related	Air discharge adapter for round duct	KDAI25K56A	KDAI25K71A	KDAI25K140A
Panel related	Decoration panel option		EKBVBS0	

OPERATION CONTROL

Item		FBQ35,50	FBQ60,71	FBQ100,125,140
Remote controller	Wired type		BRC10528 / BRC1E52A7 (*5) / BRC1E52B7 (*6)	
	Infrared type		HP	BRC4C65
			CO	BRC4C66
Option PCB for external electrical heater, humidifier and/or hour meter (*1) (*3)				EKRP1B2A
Adapter for wiring (interlock for fresh air intake fan) (*3)				KRP1C64
Wiring adapter for electrical appendices (*3)				KRP4A51
Remote sensor				KRCS01-4B
Central remote controller				DCC302CA51
Unified ON/OFF controller				DCC301BA51
Schedule timer				DST301BA51
Remote ON/OFF and FORCED OFF kit				EKROR03
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 EKRP1B2A).
 (*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 EKBVBS0 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, Turkish and Polish.
 (*6) Included languages are: English, German, Albanian, Bulgarian, Croatian, Czech, Hungarian, Romanian, Serbian, Slovak and Slovenian.

CONTENTS OF ACCESSORY BAG

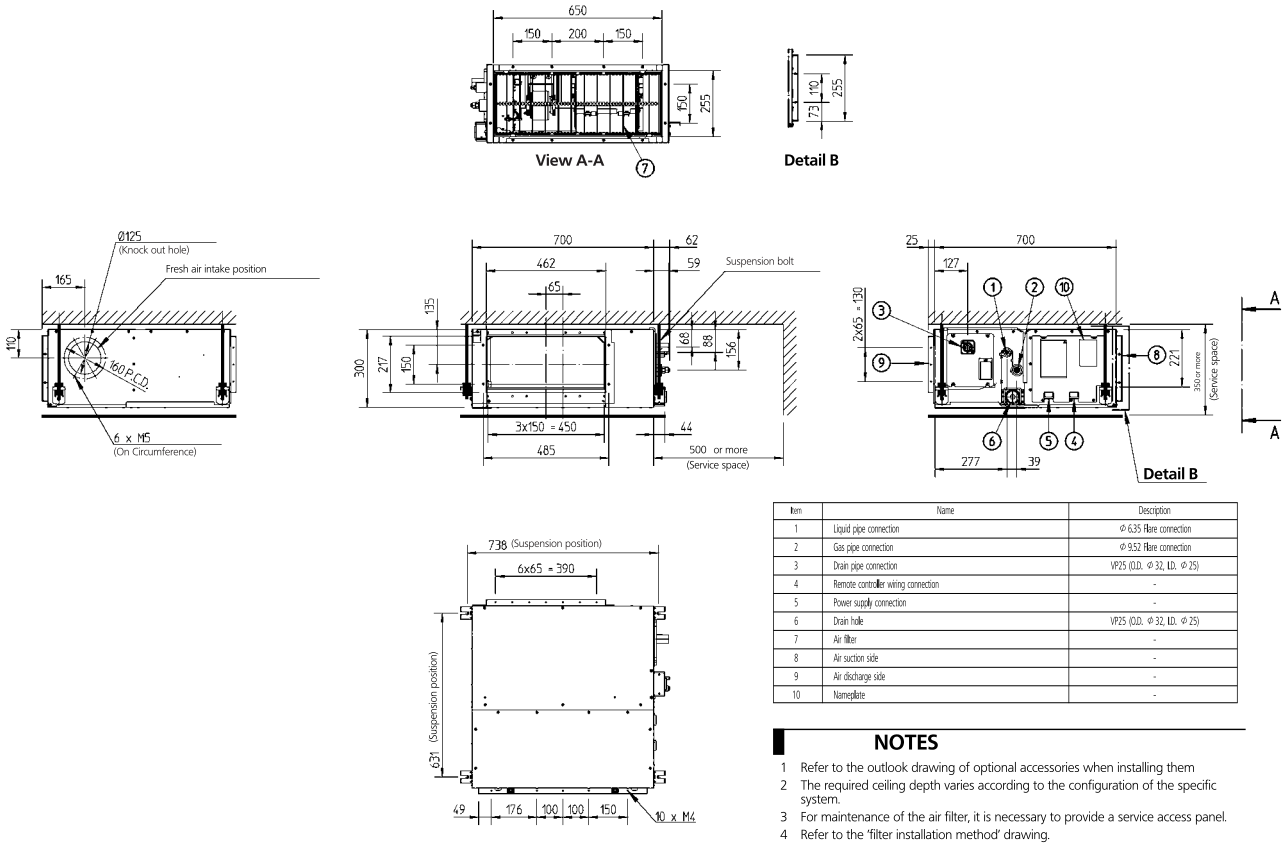
Description	Quantity	
	FBQ35,50,60,71,100,125,140	
Hexagon tapping screw (M5x16)	16	
Round plain washer for wood	8	
Installation and operation manual	1	
Hose band	1	
Insulation for joint (Gas)	1	
Insulation for joint (Liquid)	1	
Drain hose	1	
Drain hose sealing material	1	
Sealing material	2	

3TW31279-3E

6 Dimensional drawings

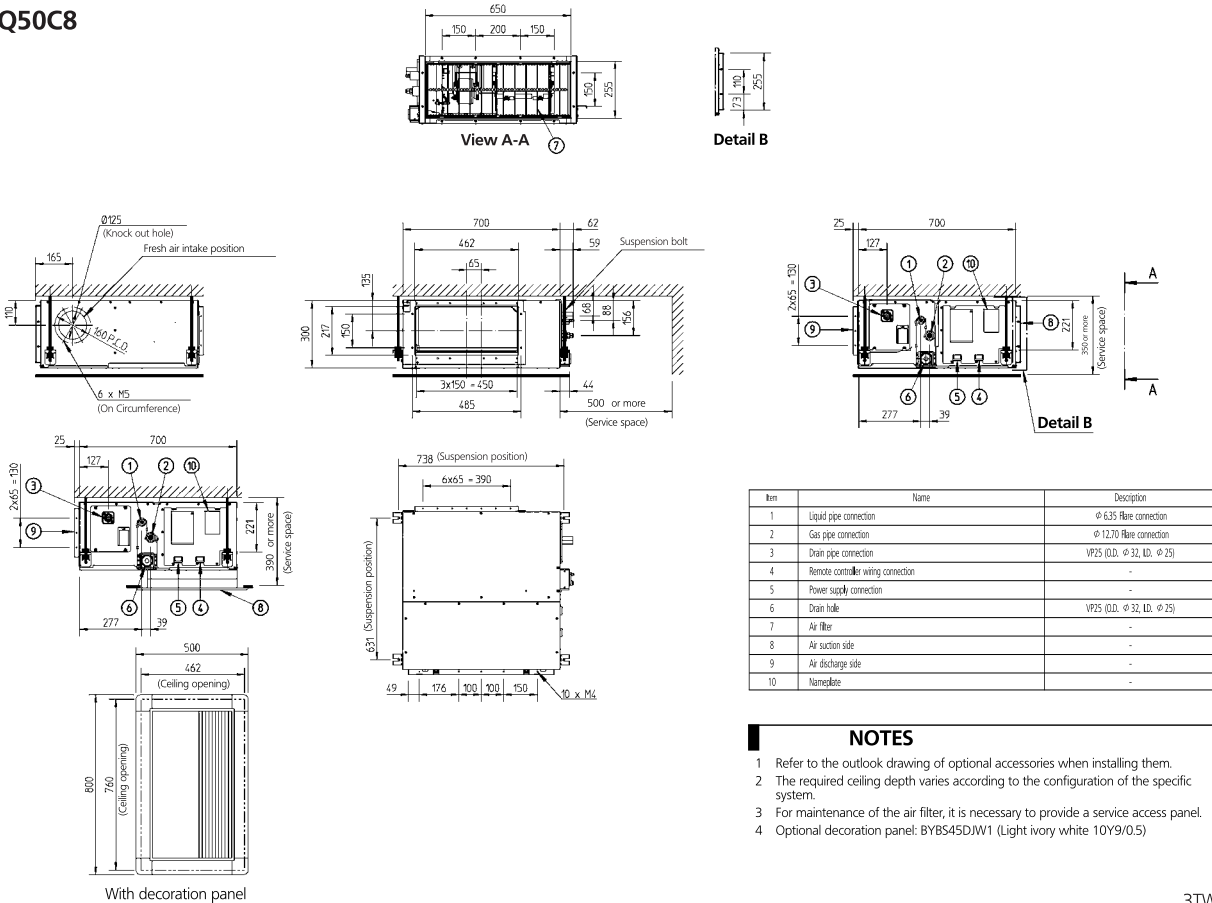
6 - 1 Dimensional Drawings

FBQ35C8



3TW31274-1A

FBQ50C8



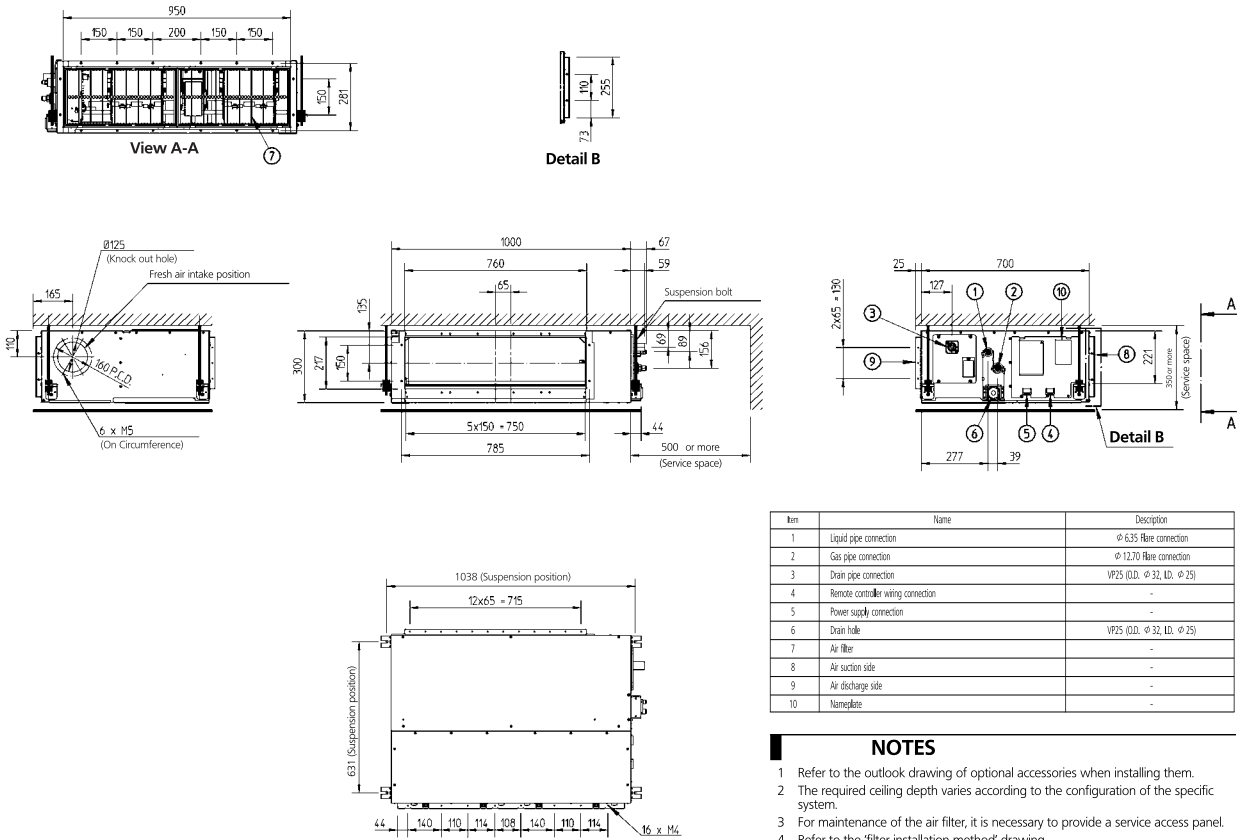
3TW31214-1B

6 Dimensional drawings

6 - 1 Dimensional Drawings

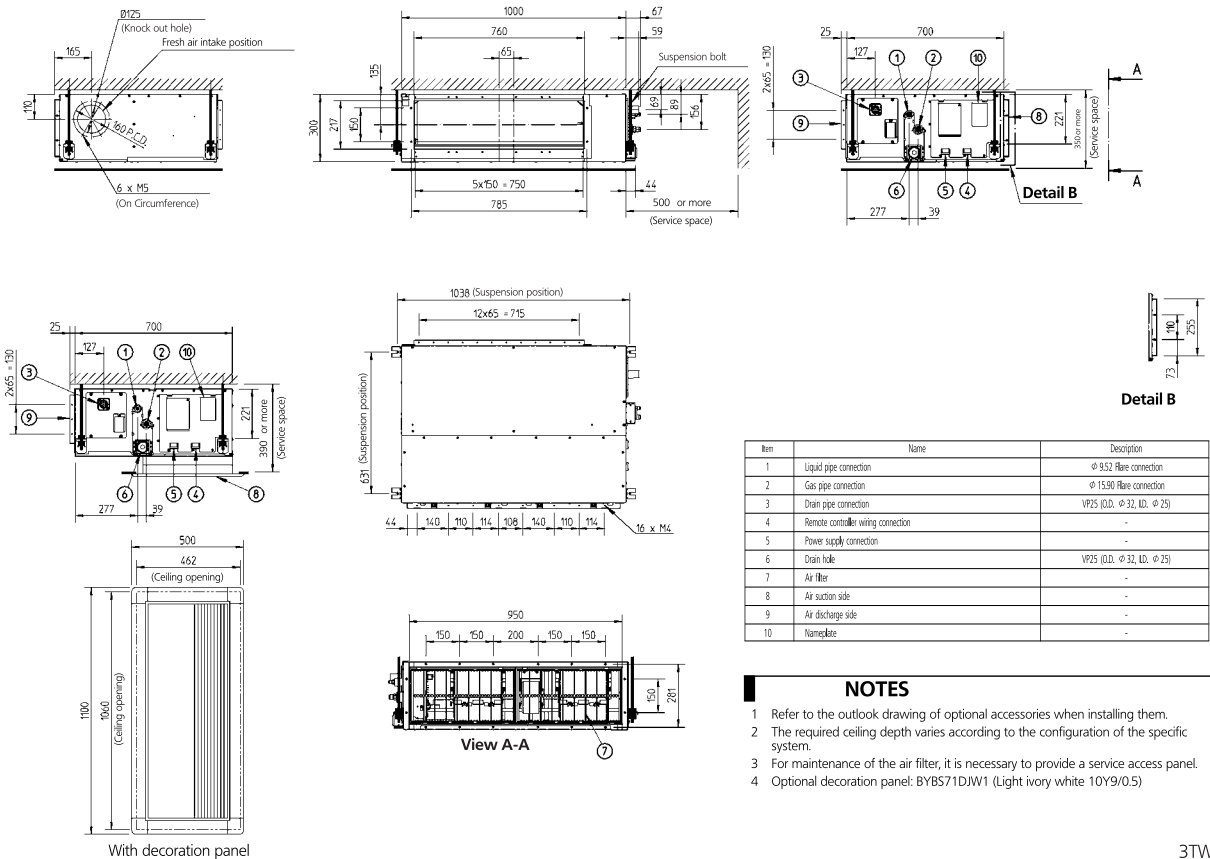
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FBQ60C8



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FBQ71C8

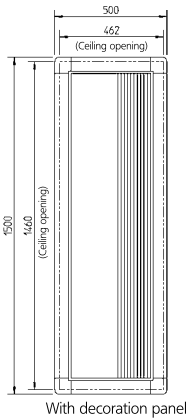
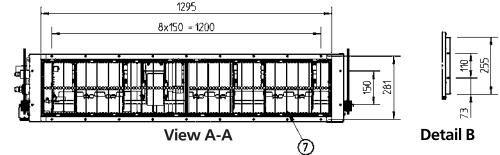
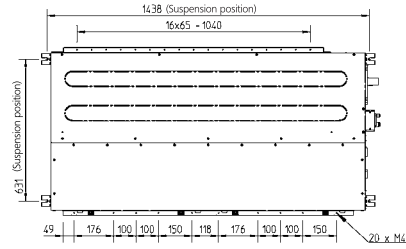
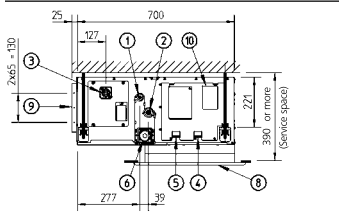
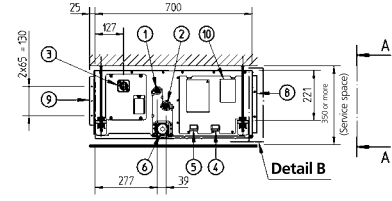
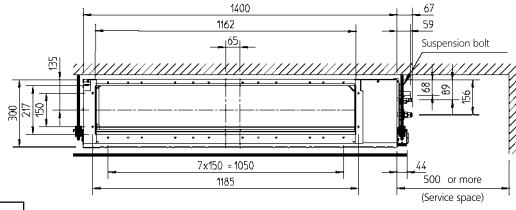
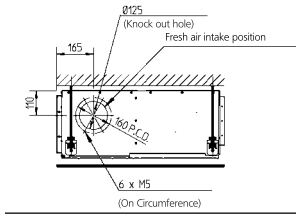


3TW31234-1B

6 Dimensional drawings

6 - 1 Dimensional Drawings

FBQ100-125-140C8



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

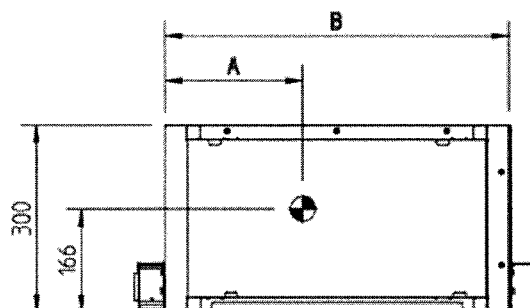
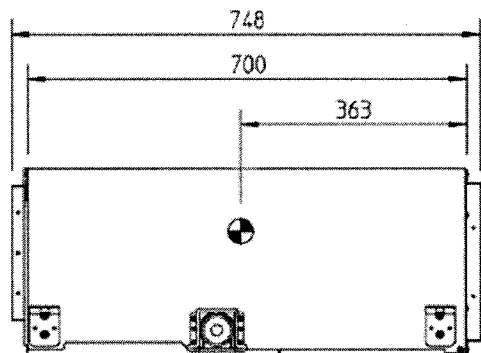
- 1 Refer to the outlook drawing of optional accessories when installing them.
- 2 The required ceiling depth varies according to the configuration of the specific system.
- 3 For maintenance of the air filter, it is necessary to provide a service access panel.
- 4 Optional decoration panel: BYBS125DJW1 (Light ivory white 10Y9/0.5)

3TW31254-1B

7 Centre of gravity

7 - 1 Centre of Gravity

FBQ-C8

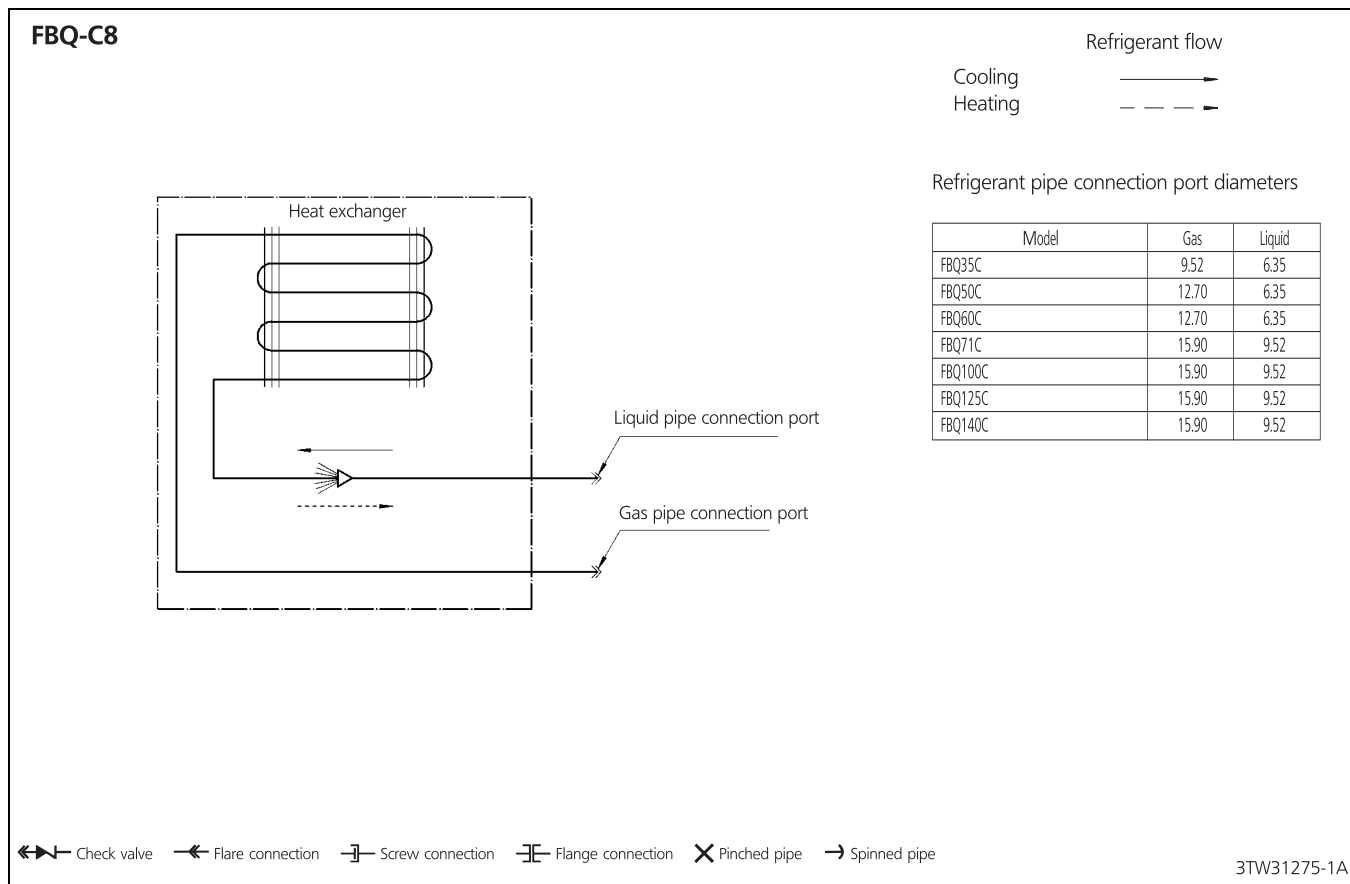


Model	A	B
FBQ35,50	283	700
FBQ60,71	441	1000
FBQ100~140	619	1400

4TW31189-1B

8 Piping diagrams

8 - 1 Piping Diagrams

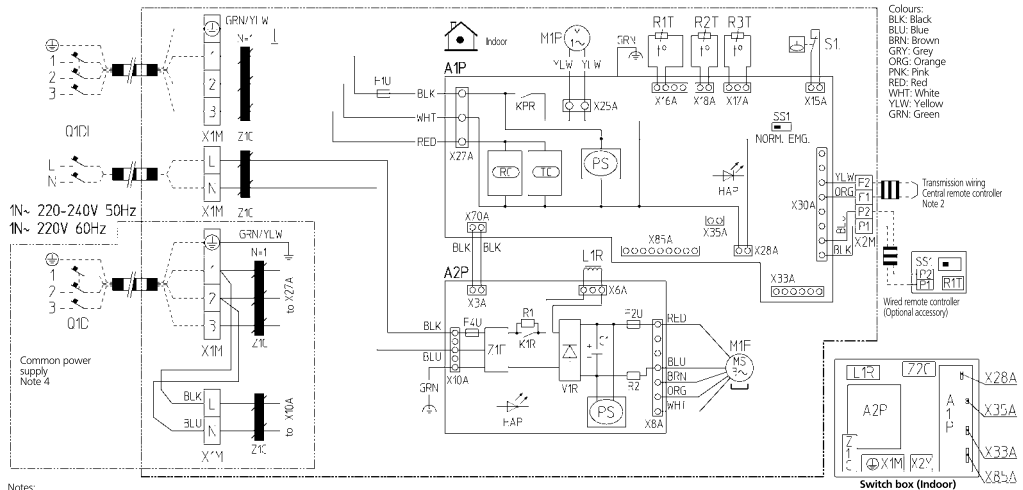


9 Wiring diagrams

9 - 1 Wiring Diagrams - Single Phase

FBQ35-50C

- Indoor unit
- A1P : Printed circuit board
 - A2P : Printed circuit board (Fan)
 - C1 : Capacitor
 - F1U,F2U : Fuse (T, 5A, 250V)
 - F4U : Fuse (T, 6.3A, 250V)
 - H4P : Light emitting diode (Service monitor-green)
 - KPR,K1R : Magnetic relay
 - L1R : Reactor
 - M1F : Motor (Fan)
 - M1P : Motor (Drain pump)
 - PS : Switching power supply
 - Q1DI : Earth leak detector
 - R1 : Resistor (current limiting)
 - R2 : Current sensing device
 - R1T : Thermistor (Suction air)
 - R2T : Thermistor (liquid)
 - R3T : Thermistor (coil)
 - S1 : Selector switch (emergency)
 - S1L : Float switch
 - V1R : Diode bridge
 - X1M : Power module
 - X2M : Terminal strip (Power supply)
 - Z1C : Terminal strip (control)
 - Z1F : Noise filter (Ferrite core)
 - Z1P : Noise filter
 - Z1R : Signal receiver circuit
- Connector optional accessory
- X2BA : Connector (Power supply for wiring)
 - X3BA : Connector (for wiring)
 - X3SA : Connector (Adapter)
 - X8SA : Connector (For multi zoning)
- Wired remote controller
- R1T : Thermistor (air)
 - SS1 : Selector switch (main/sub)

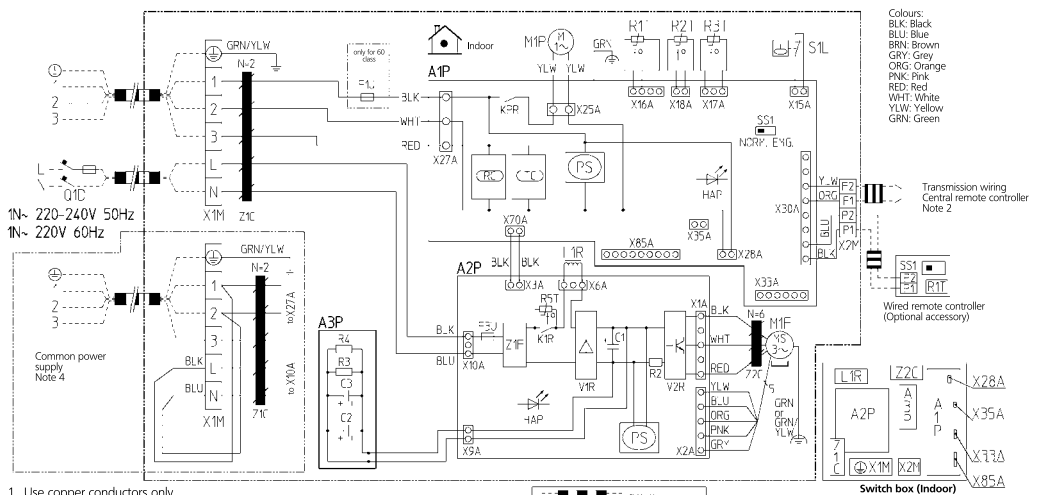


- Notes:
1. Use copper conductors only.
 2. When using the central remote controller, see manual for connection to the unit.
 3. The remote controller model varies according to the combination system. See technical materials and catalogues, etc. before connecting.
 4. Refer to installation manual.

2TW31276-1A

FBQ60-140C

- Indoor unit
- A1P : Printed circuit board
 - A2P : Printed circuit board (Fan)
 - A3P : Printed circuit board (Capacitor)
 - C1,C2,C3 : Capacitor
 - F1U : Fuse (T, 5A, 250V)
 - F3U : Fuse (T, 6.3A, 250V)
 - H4P : Light emitting diode (Service monitor-green)
 - KPR,K1R : Magnetic relay
 - L1R : Reactor
 - M1F : Motor (Fan)
 - M1P : Motor (Drain pump)
 - PS : Switching power supply
 - Q1DI : Earth leak detector
 - R2 : Current sensing device
 - R2BP : Resistor (Electric discharge)
 - R1T : Thermistor (Suction air)
 - R2T : Thermistor (Liquid)
 - R3T : Thermistor (coil)
 - R5T : Thermistor NTC (current limiting)
 - S1 : Selector switch (emergency)
 - S1L : Float switch
 - V1R : Diode bridge
 - V2R : Power module
 - X1M : Terminal strip (Power supply)
 - X2M : Terminal strip (Control)
 - Z1C,Z2C : Noise filter (Ferrite core)
 - Z1F : Noise filter
 - Z1R : Signal receiver circuit
- Connector optional accessory
- X2BA : Connector (Power supply for wiring)
 - X3BA : Connector (for wiring)
 - X3SA : Connector (Adapter)
 - X8SA : Connector (For multi zoning)
- Wired remote controller
- R1T : Thermistor (air)
 - SS1 : Selector switch (main/sub)

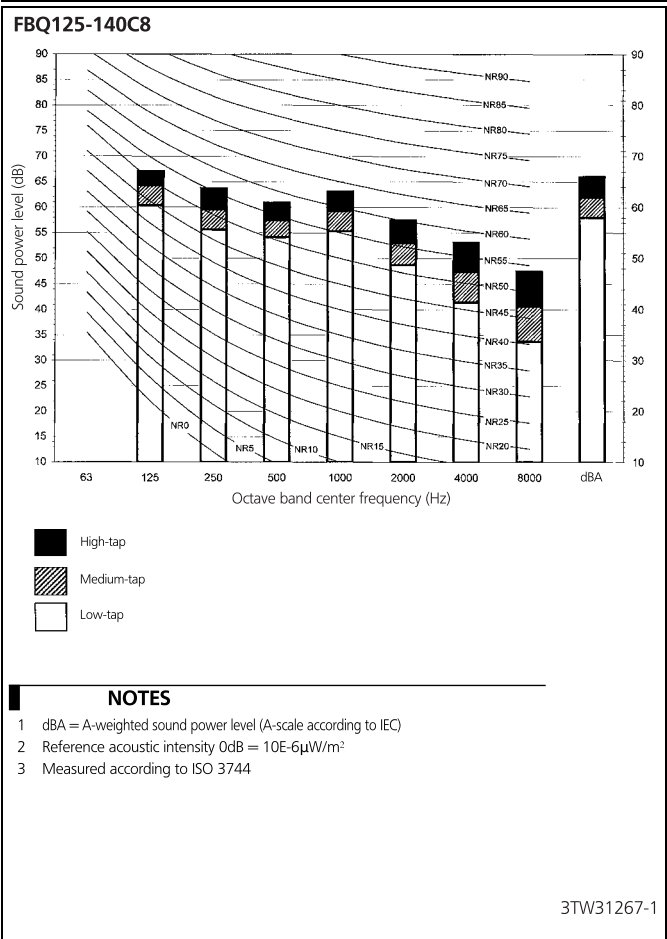
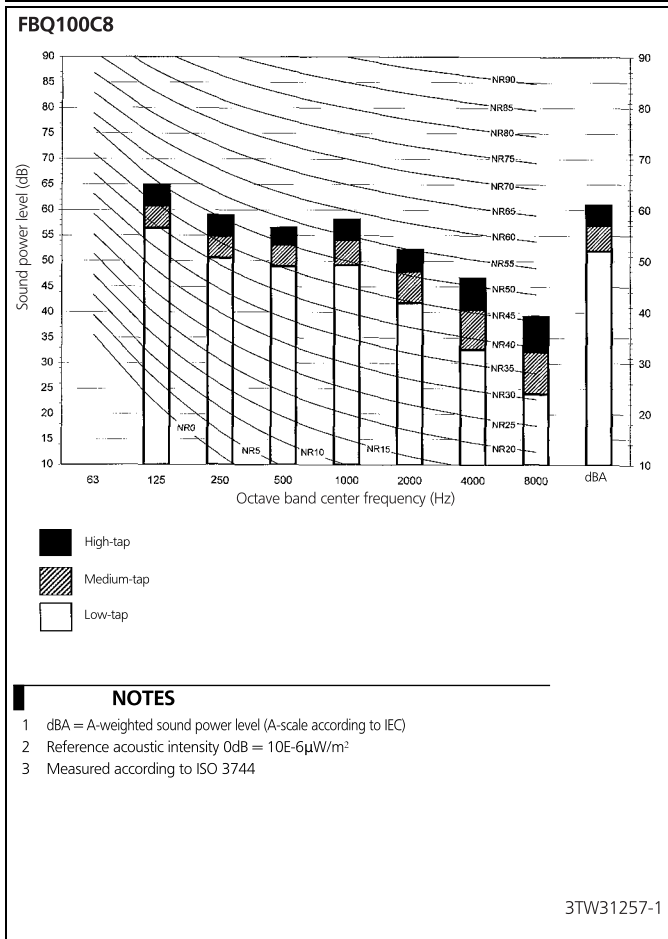
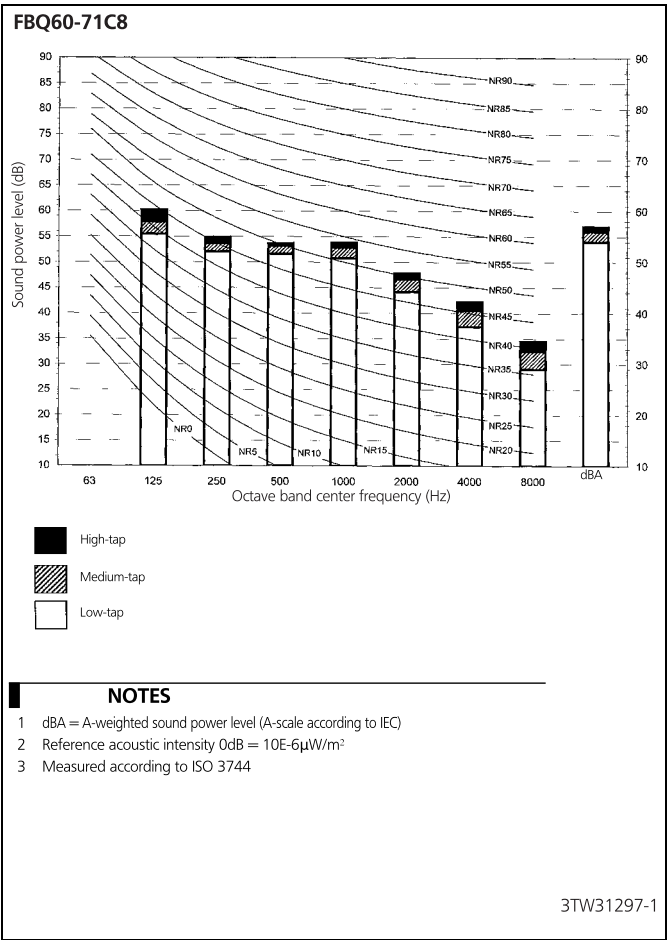
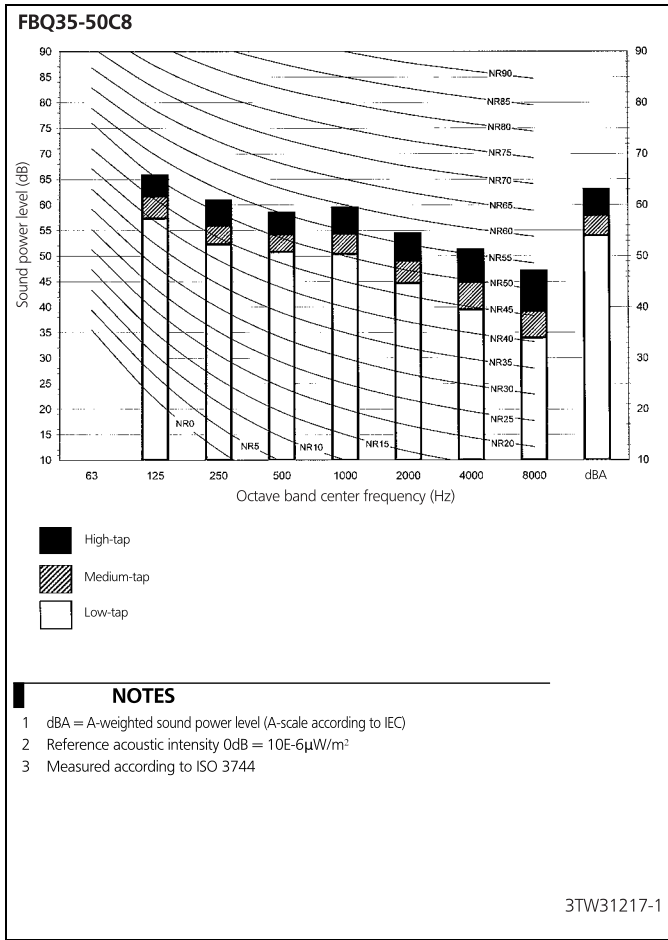


- Notes:
1. Use copper conductors only.
 2. When using the central remote controller, see manual for connection to the unit.
 3. The remote controller model varies according to the combination system. See technical materials and catalogues, etc. before connecting.
 4. Refer to installation manual.

2TW31296-3

10 Sound data

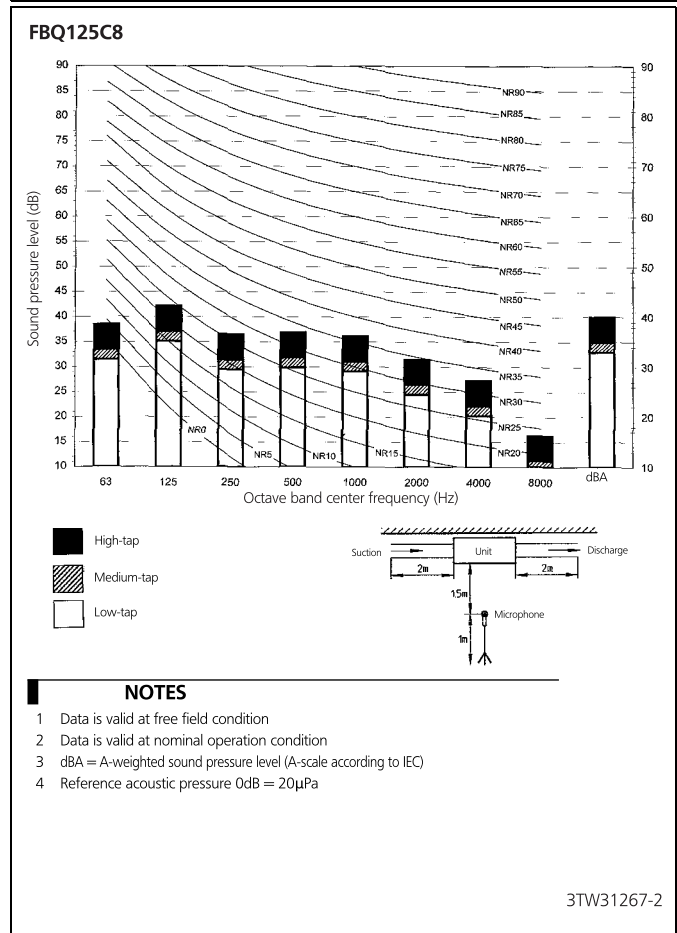
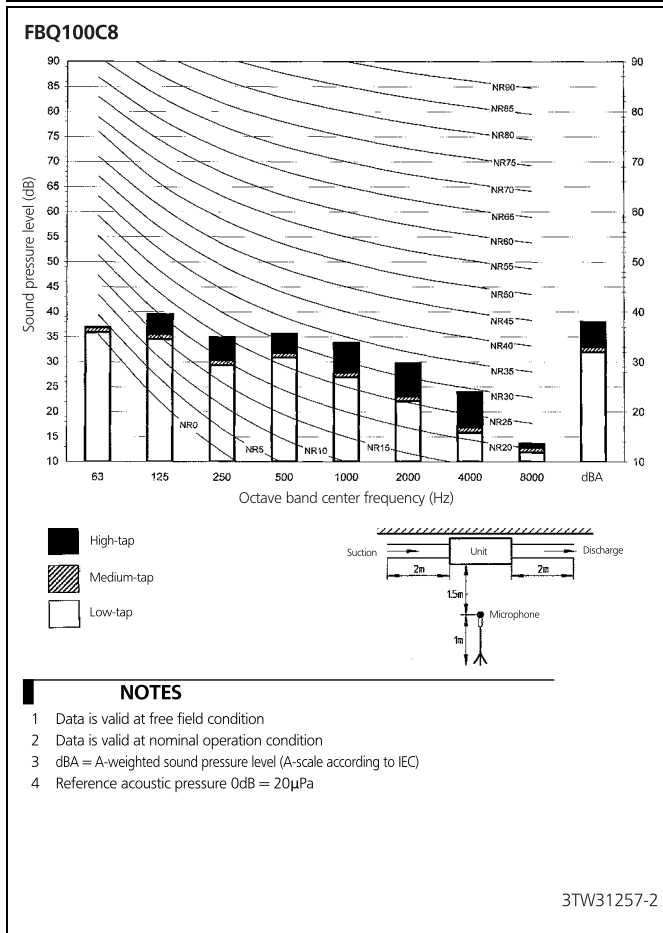
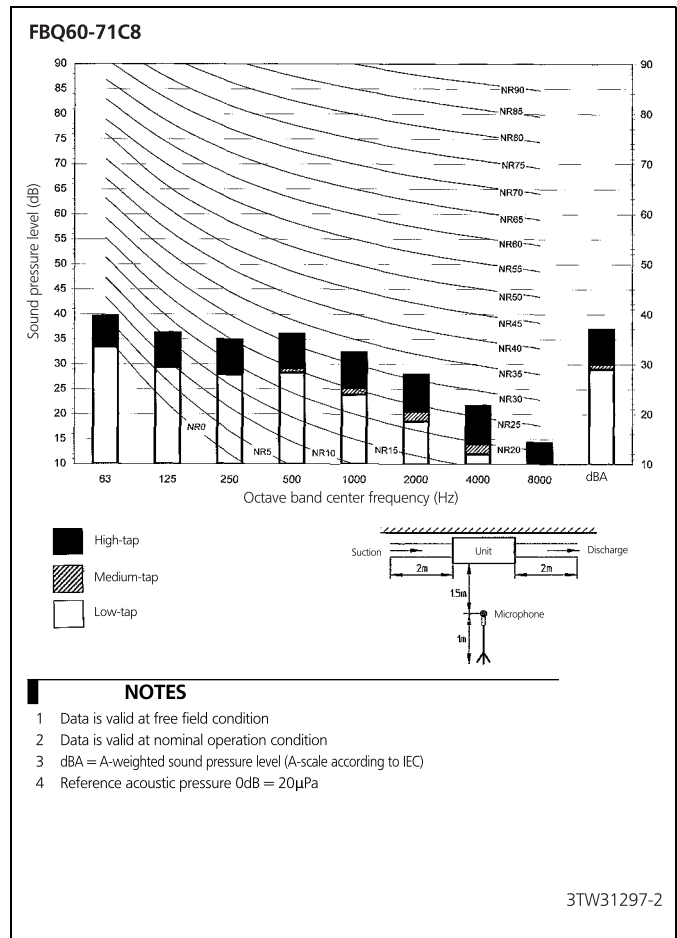
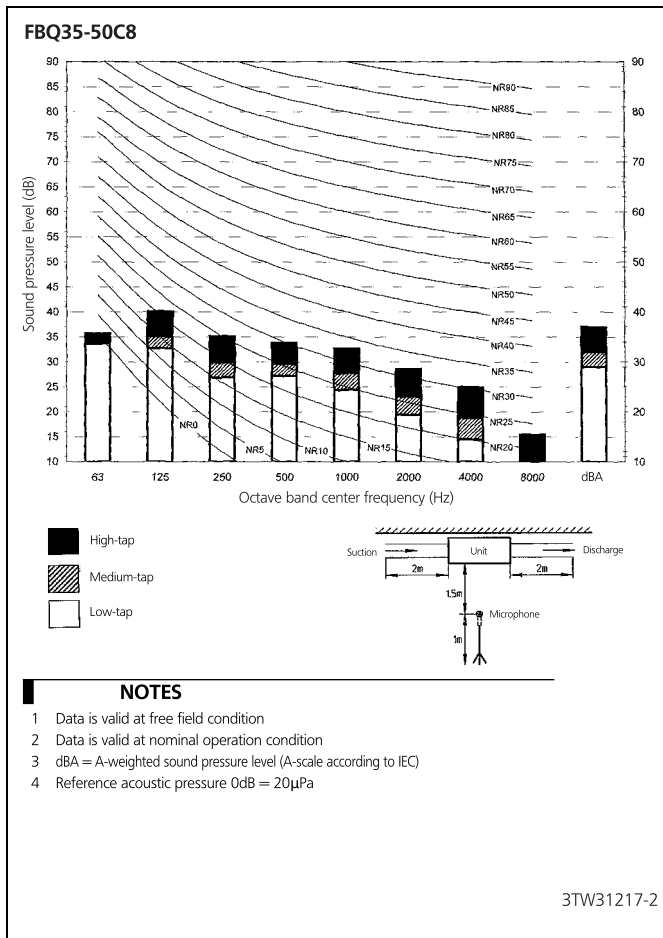
10 - 1 Sound Power Spectrum



10 Sound data

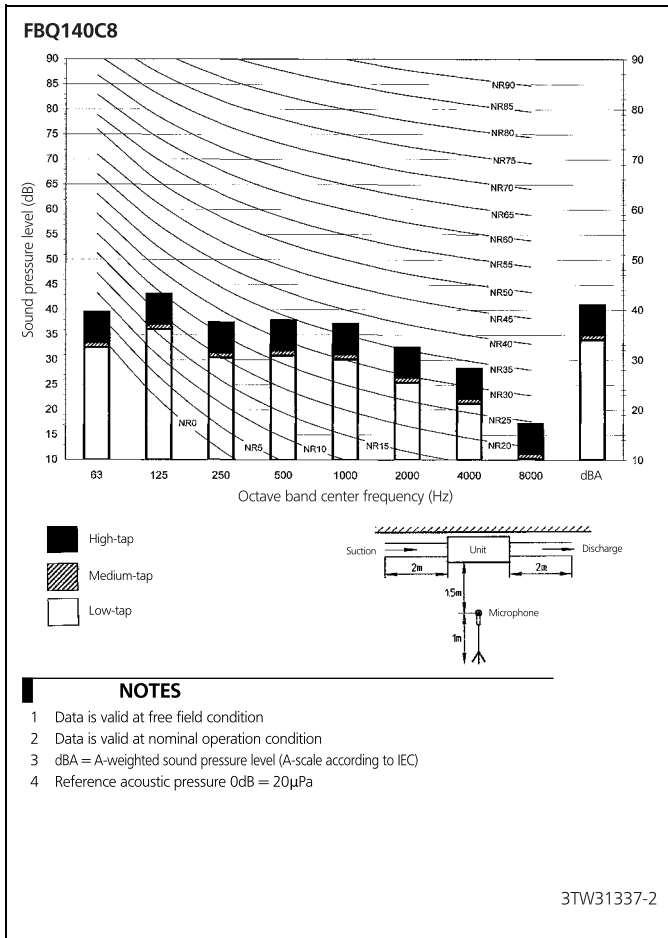
10 - 2 Sound Pressure Spectrum

10



10 Sound data

10 - 2 Sound Pressure Spectrum

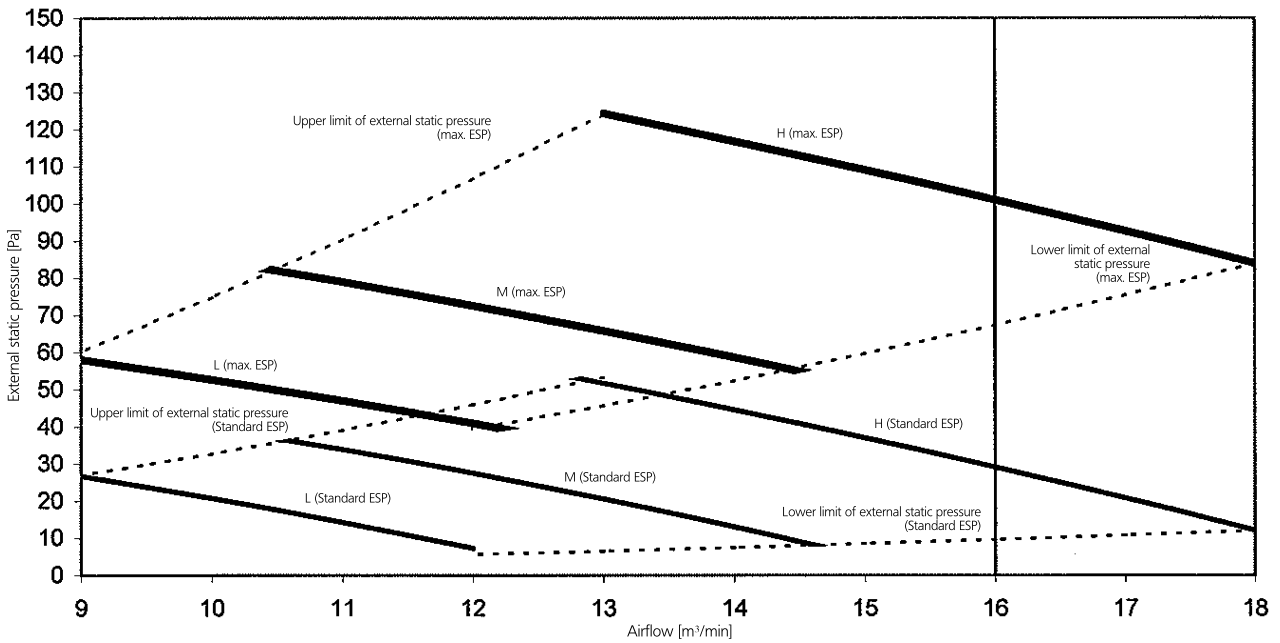


11 Fan characteristics

11 - 1 Fan Characteristics

FBQ35-50C8

Fan characteristics (1)



NOTES

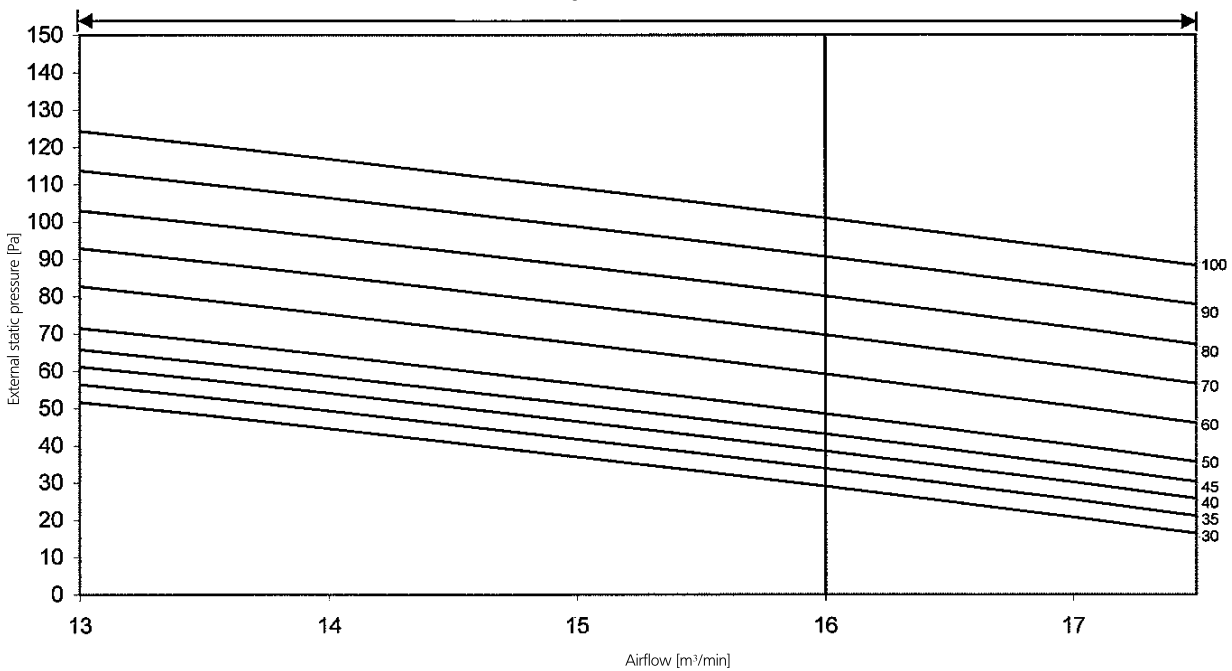
- 1 Fan characteristics as shown are in 'fan only' mode.
- 2 ESP: External static pressure

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FBQ35-50C8

Fan characteristics (2)
(Field setting with remote controller)

Range of available air flow rate (H)



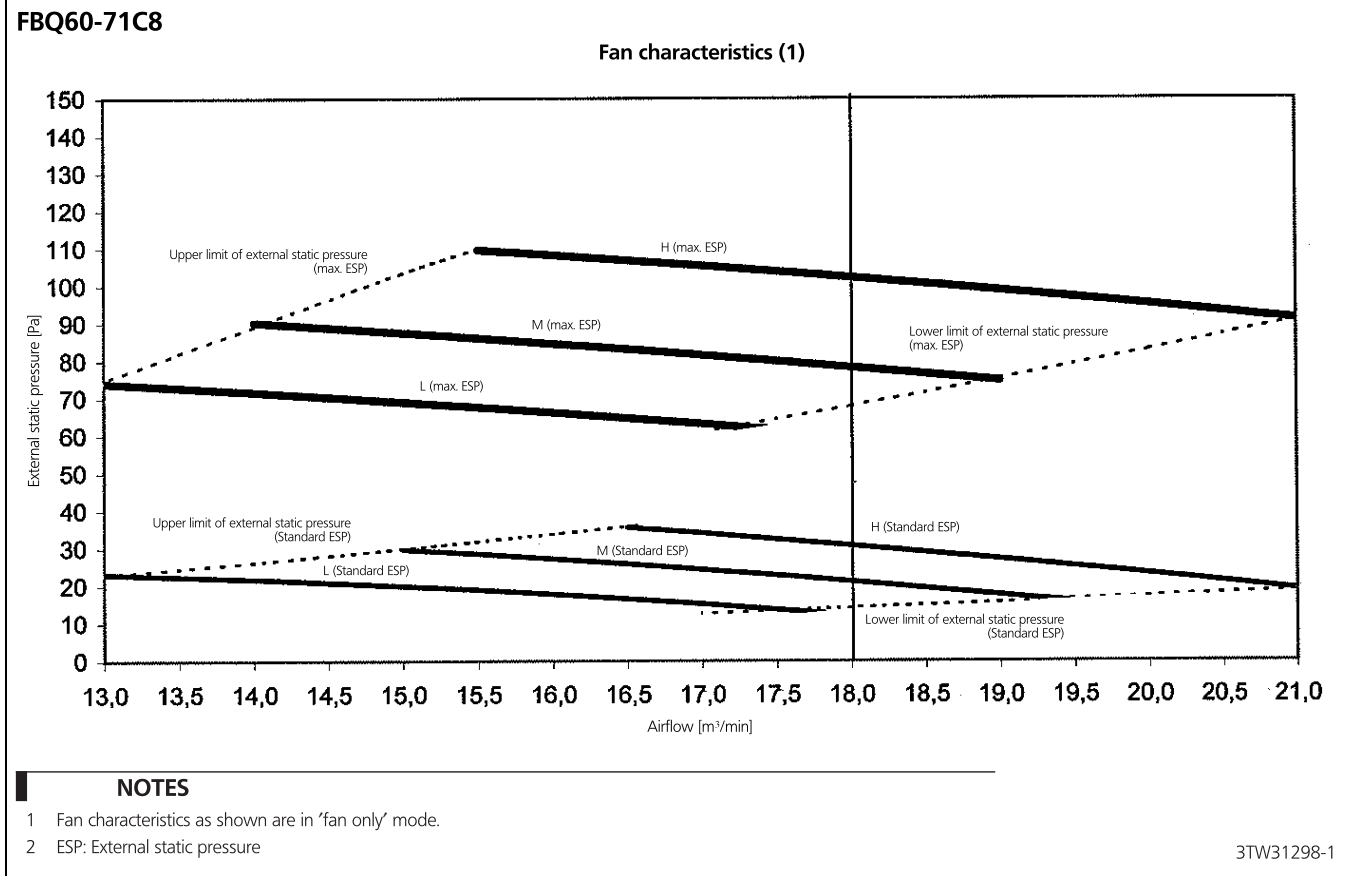
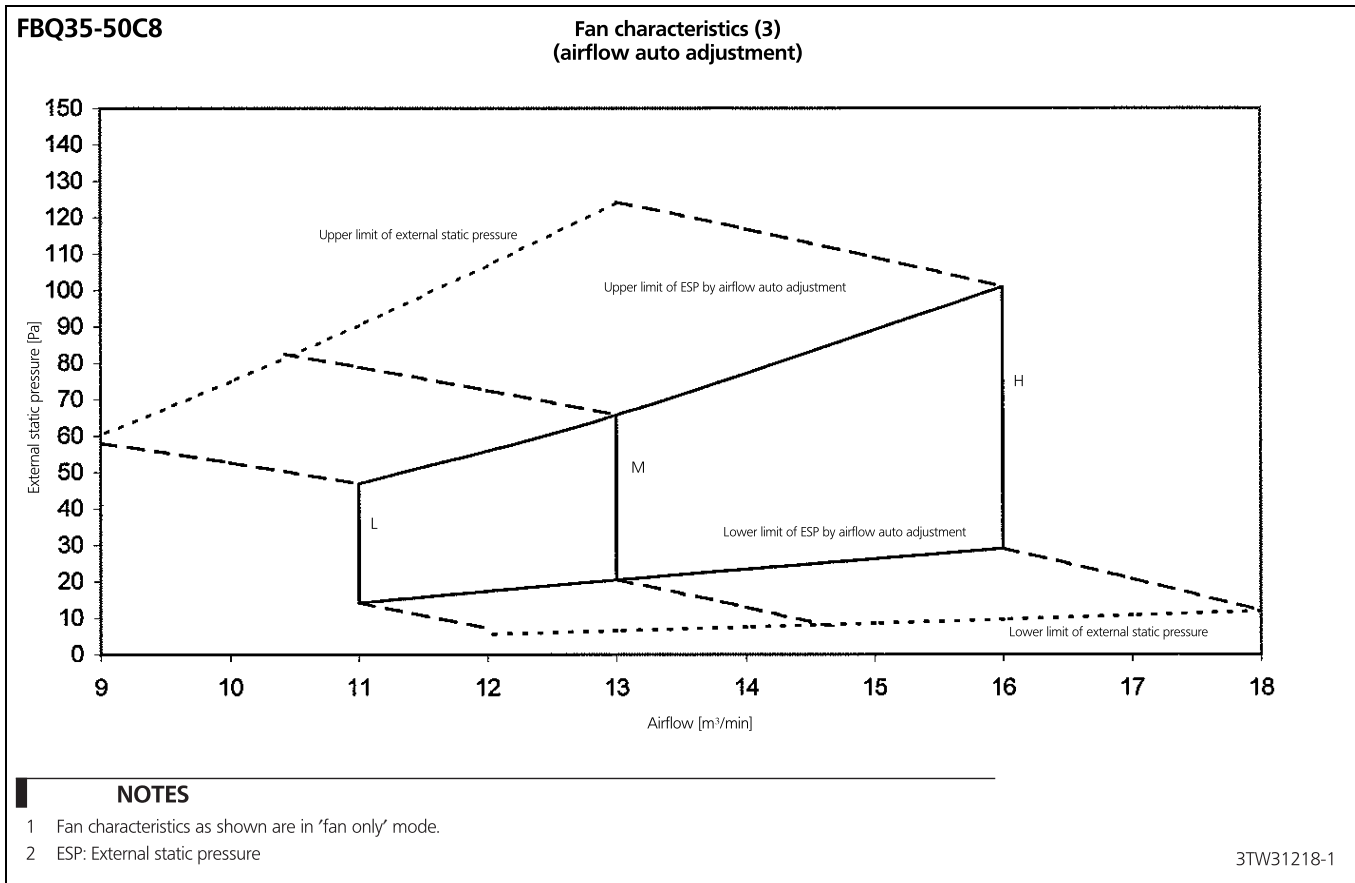
NOTES

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

3TW31218-1

11 Fan characteristics

11 - 1 Fan Characteristics



11 Fan characteristics

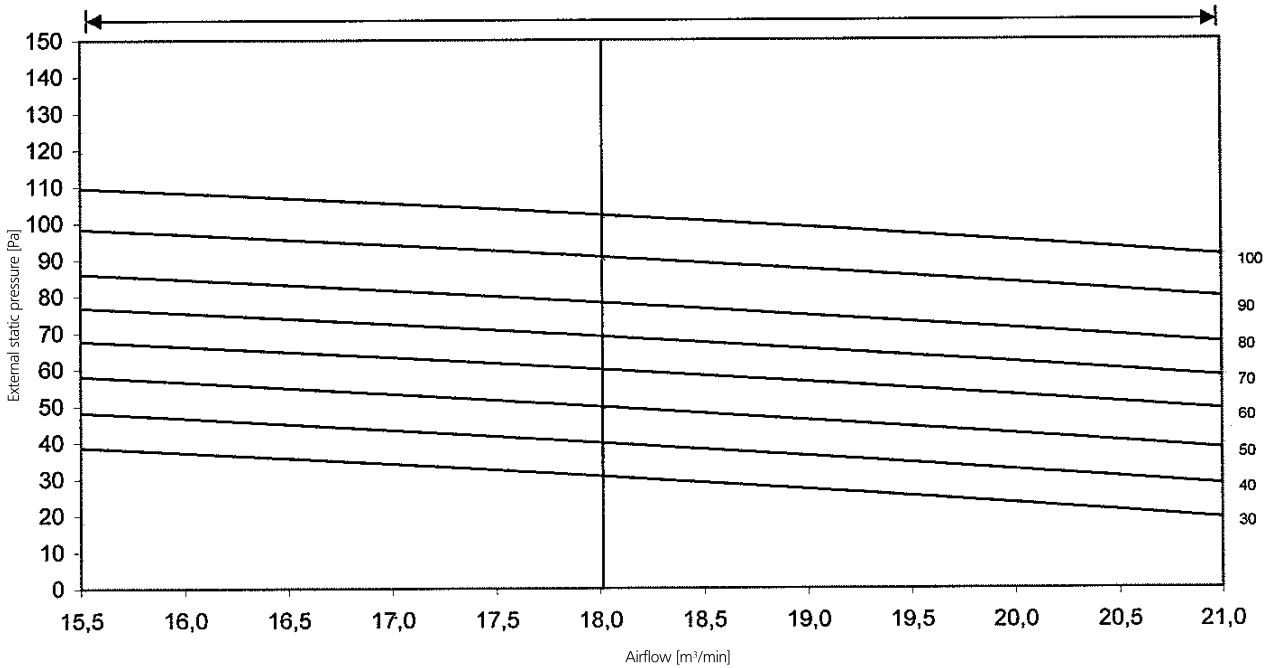
11 - 1 Fan Characteristics

11

FBQ60-71C8

Fan characteristics (2) (Field setting with remote controller)

Range of available air flow rate (H)



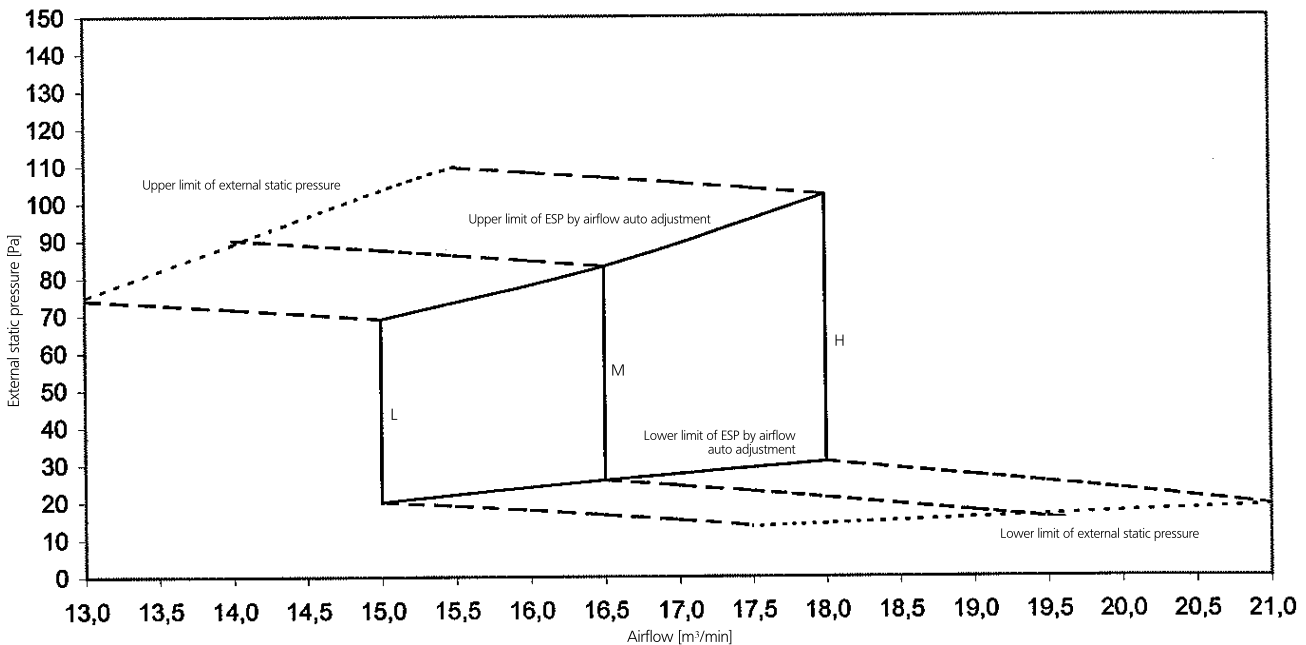
NOTES

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

3TW31298-1

FBQ60-71C8

Fan characteristics (3) (airflow auto adjustment)



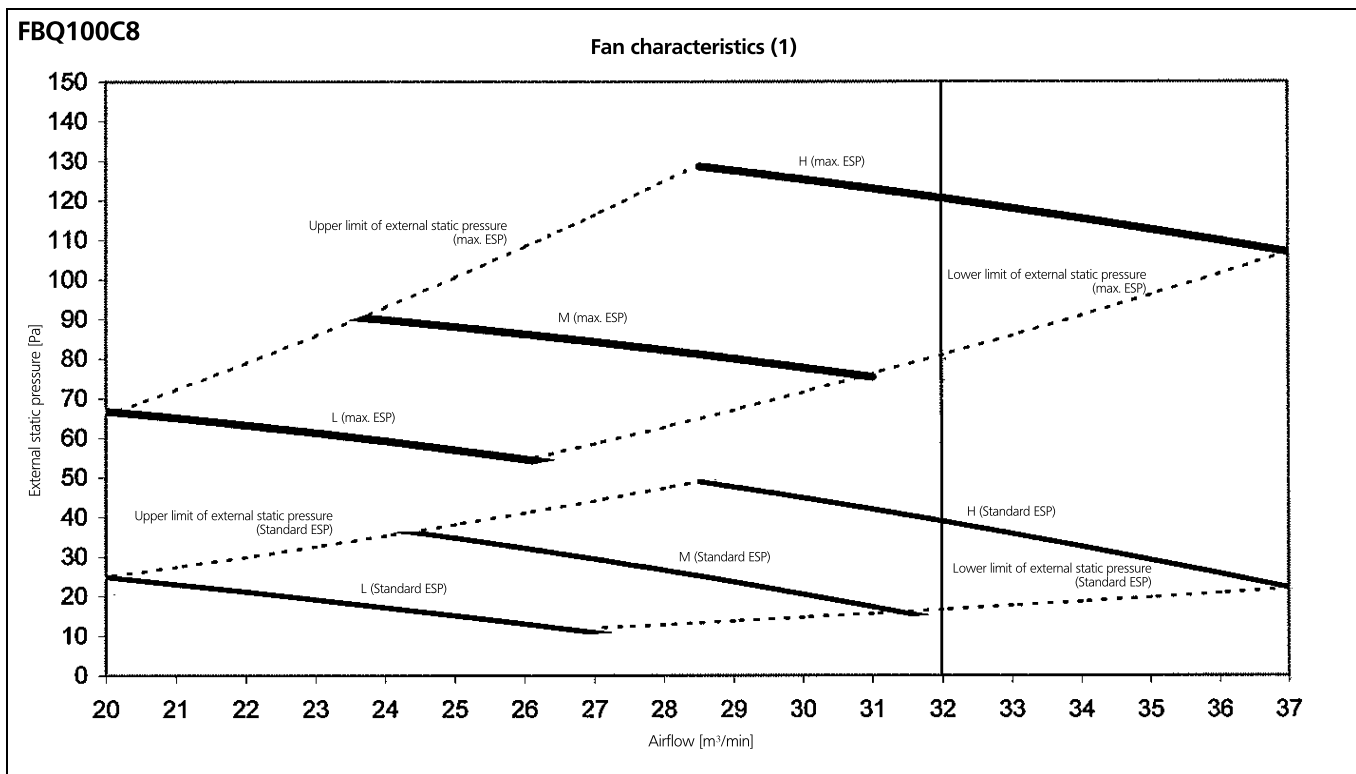
NOTES

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

3TW31298-1

11 Fan characteristics

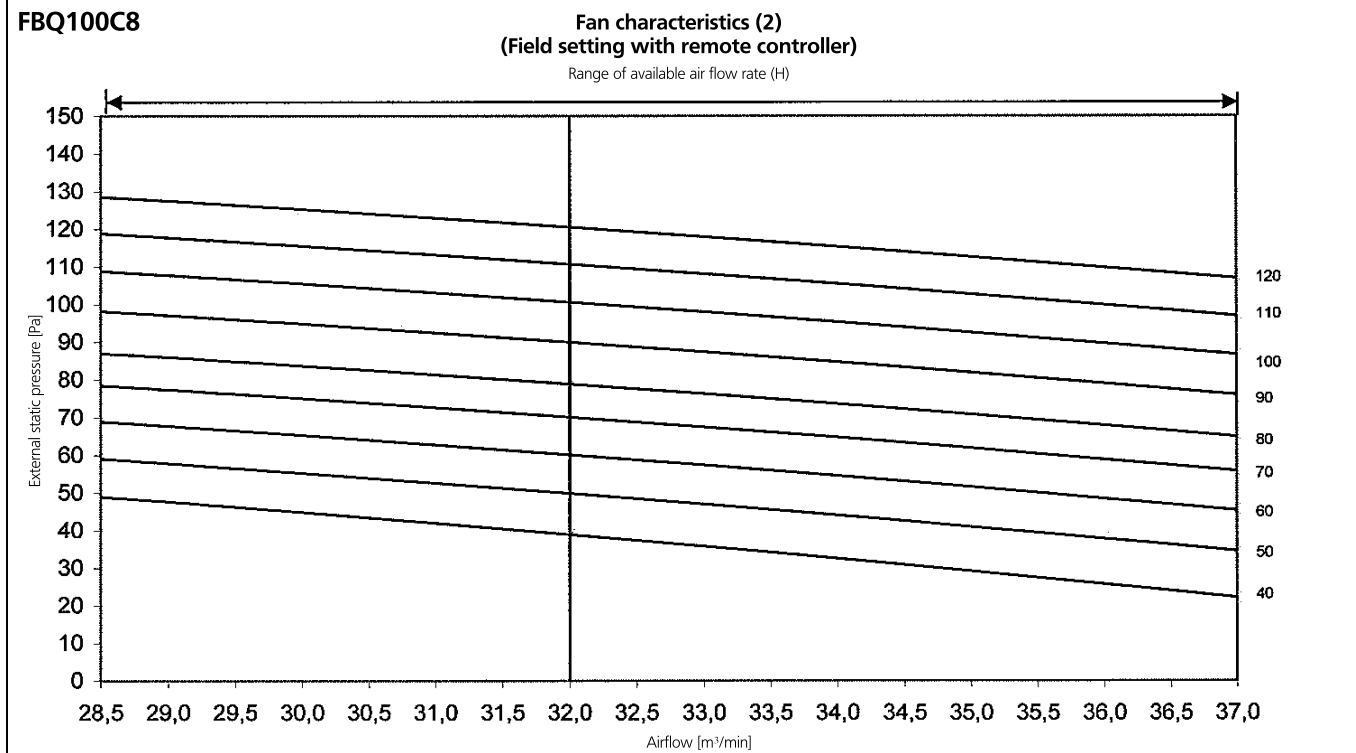
11 - 1 Fan Characteristics



NOTES

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

3TW31258-1



NOTES

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

3TW31258-1

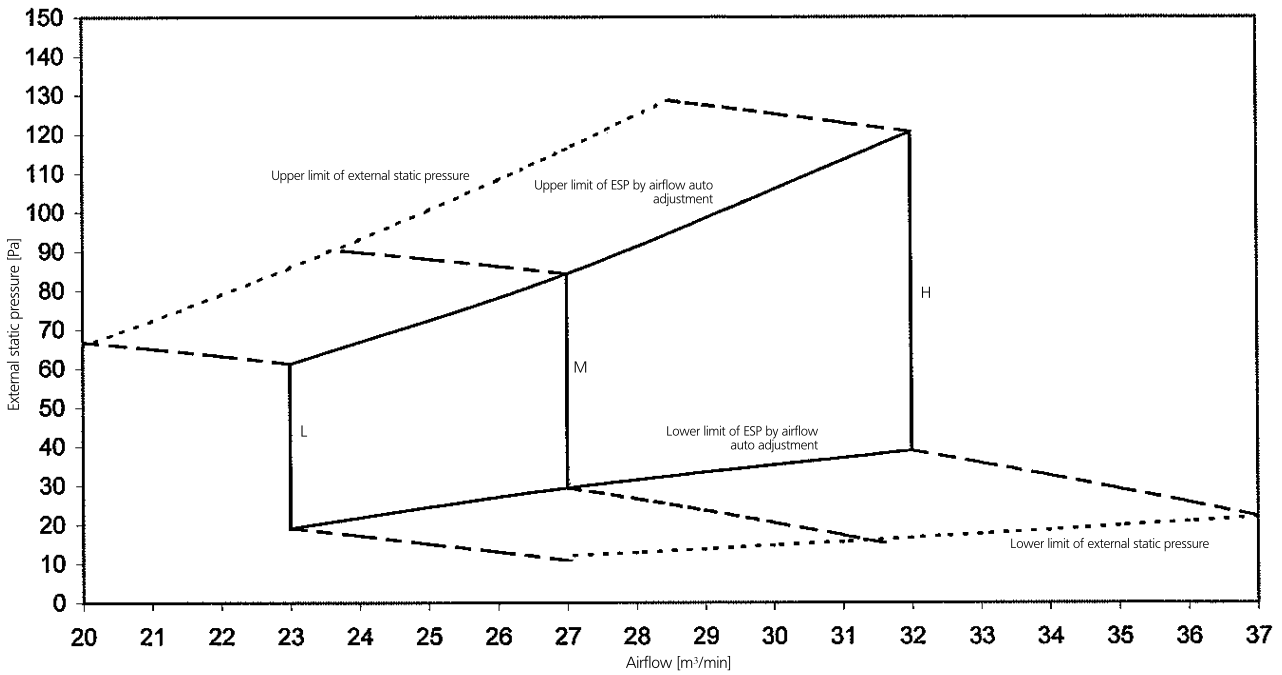
11 Fan characteristics

11 - 1 Fan Characteristics

11

FBQ100C8

Fan characteristics (3) (airflow auto adjustment)



NOTES

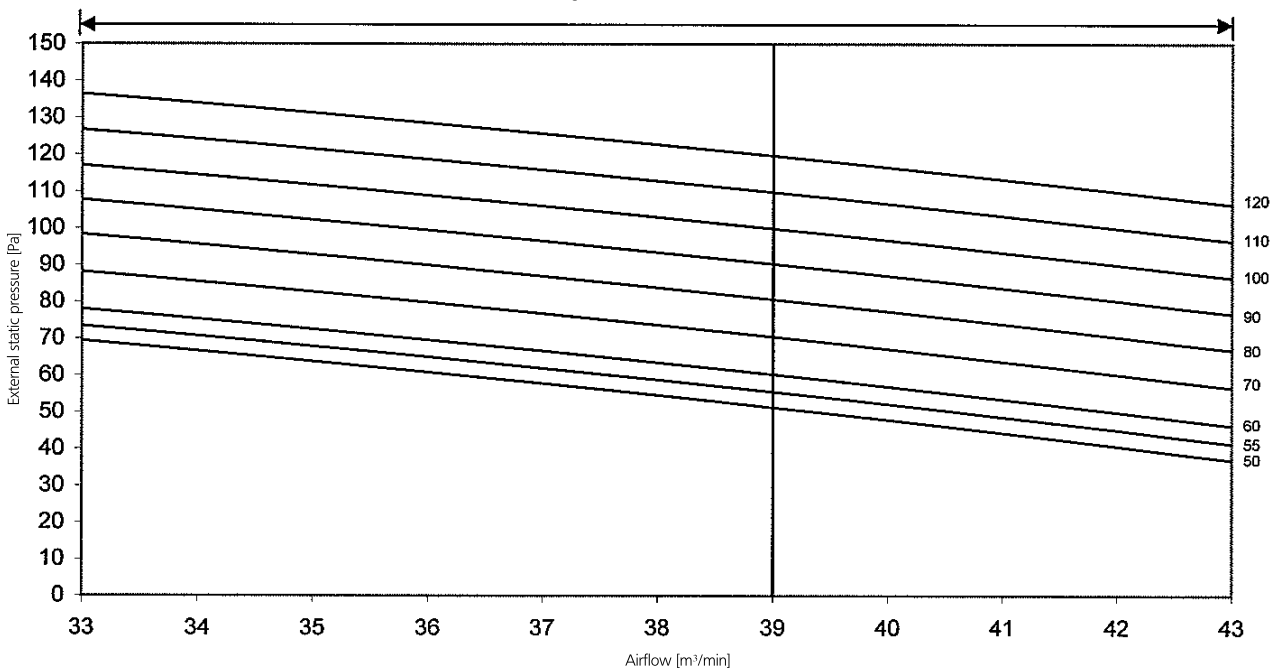
- 1 Fan characteristics as shown are in 'fan only' mode.
- 2 ESP: External static pressure

3TW31258-1

FBQ125-140C8

Fan characteristics (2) (Field setting with remote controller)

Range of available air flow rate (H)



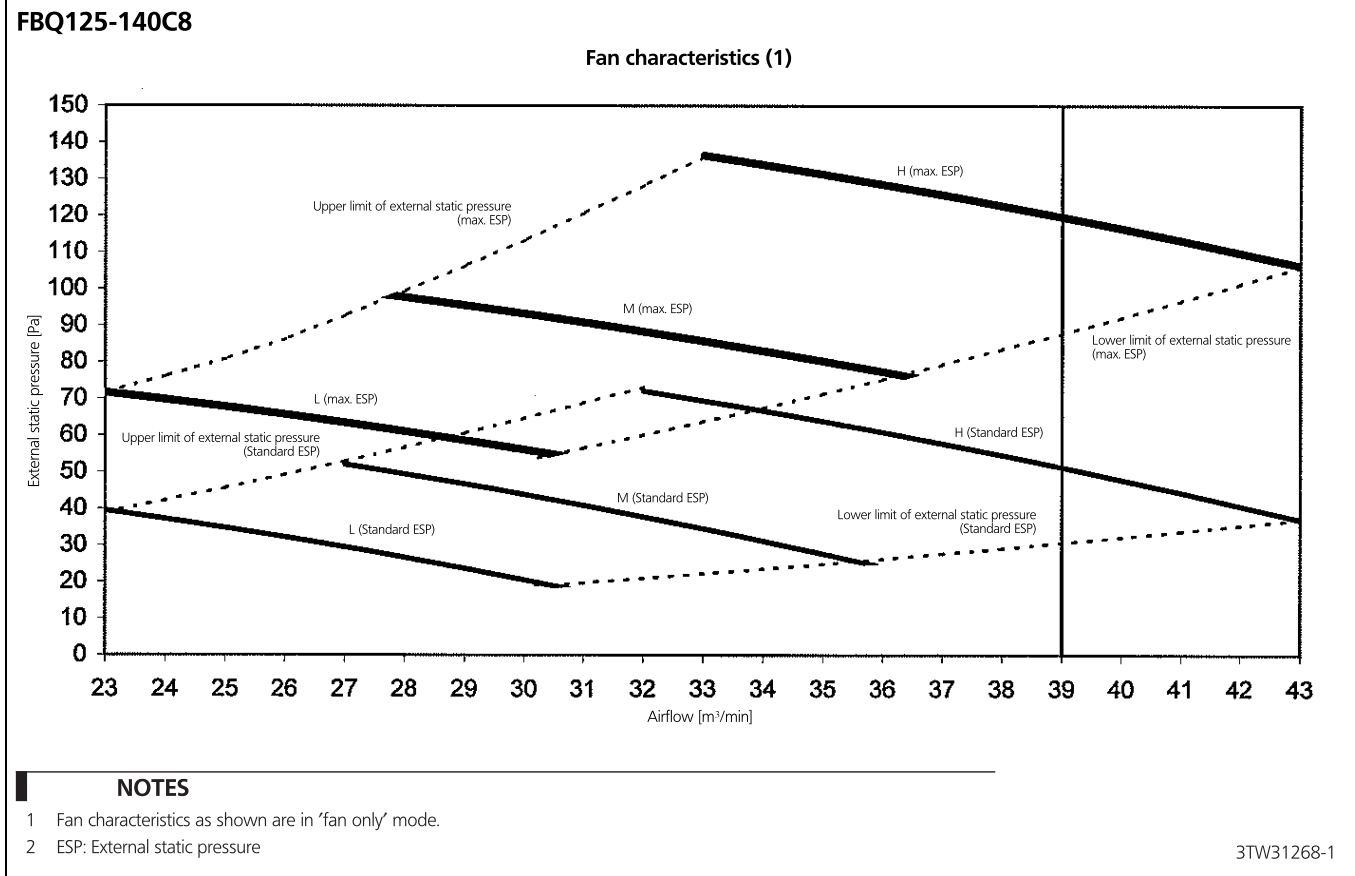
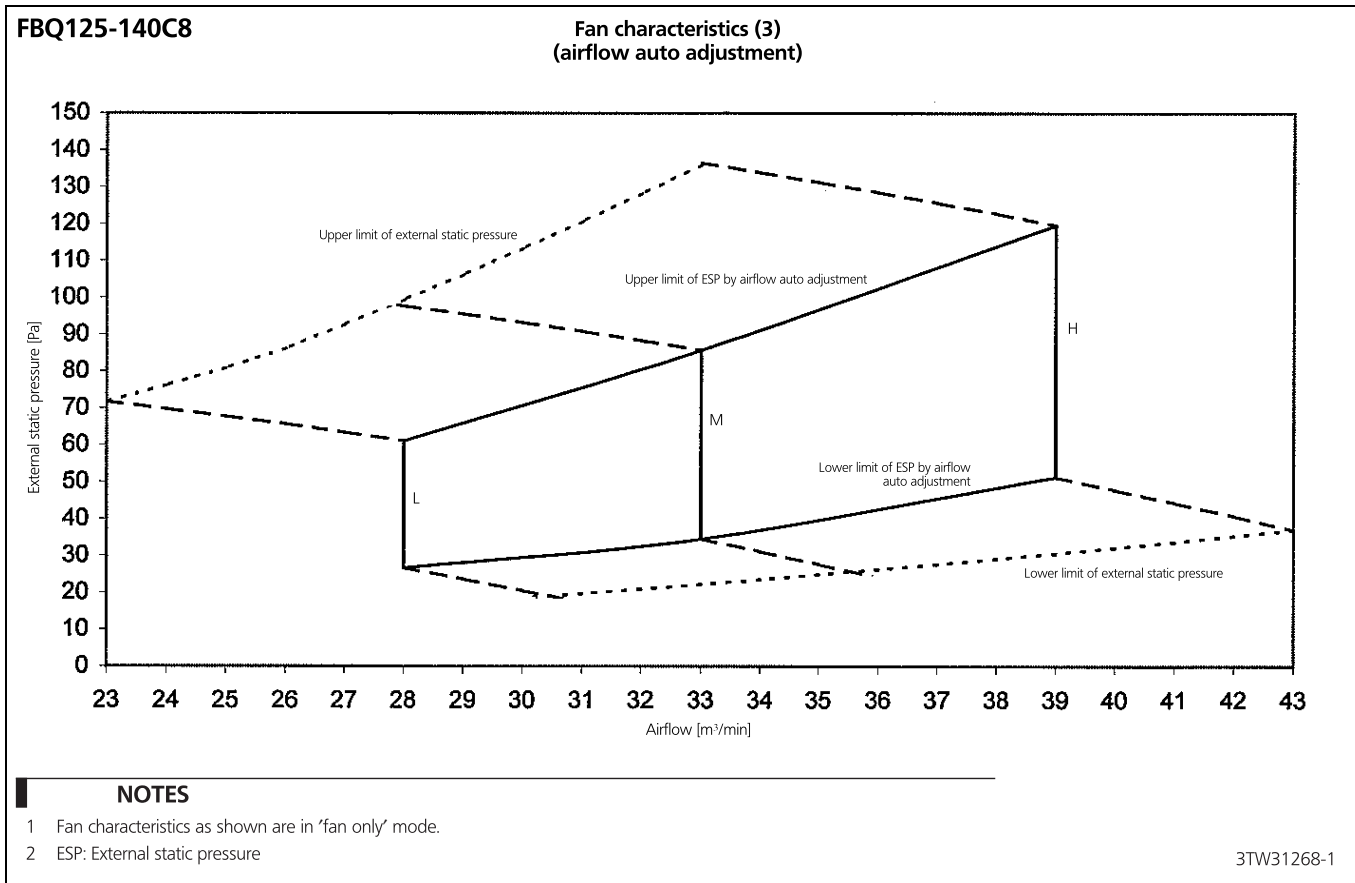
NOTES

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

3TW31268-1

11 Fan characteristics

11 - 1 Fan Characteristics

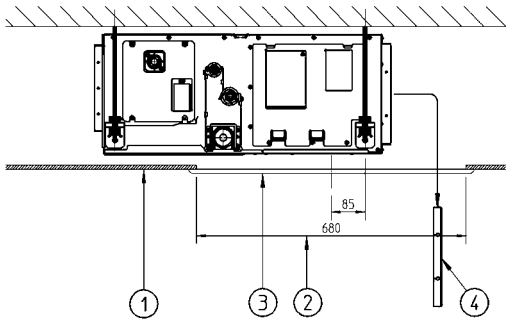


12 Installation

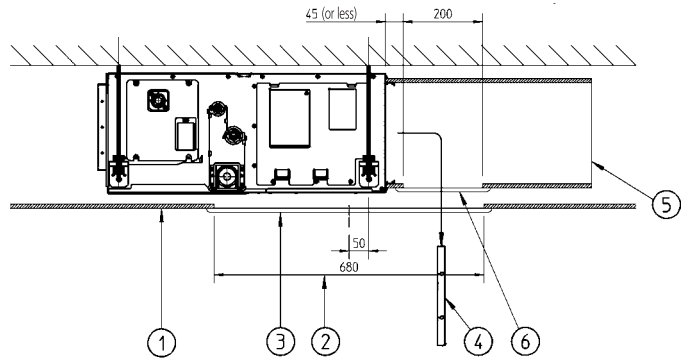
12 - 1 Filter Installation Method

12

FBQ-C8

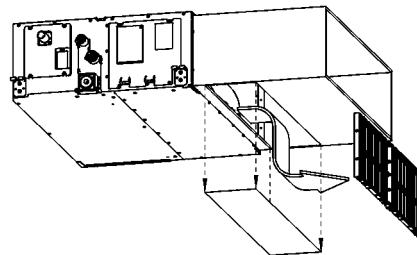


Installation without air inlet duct



Installation with air inlet duct

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



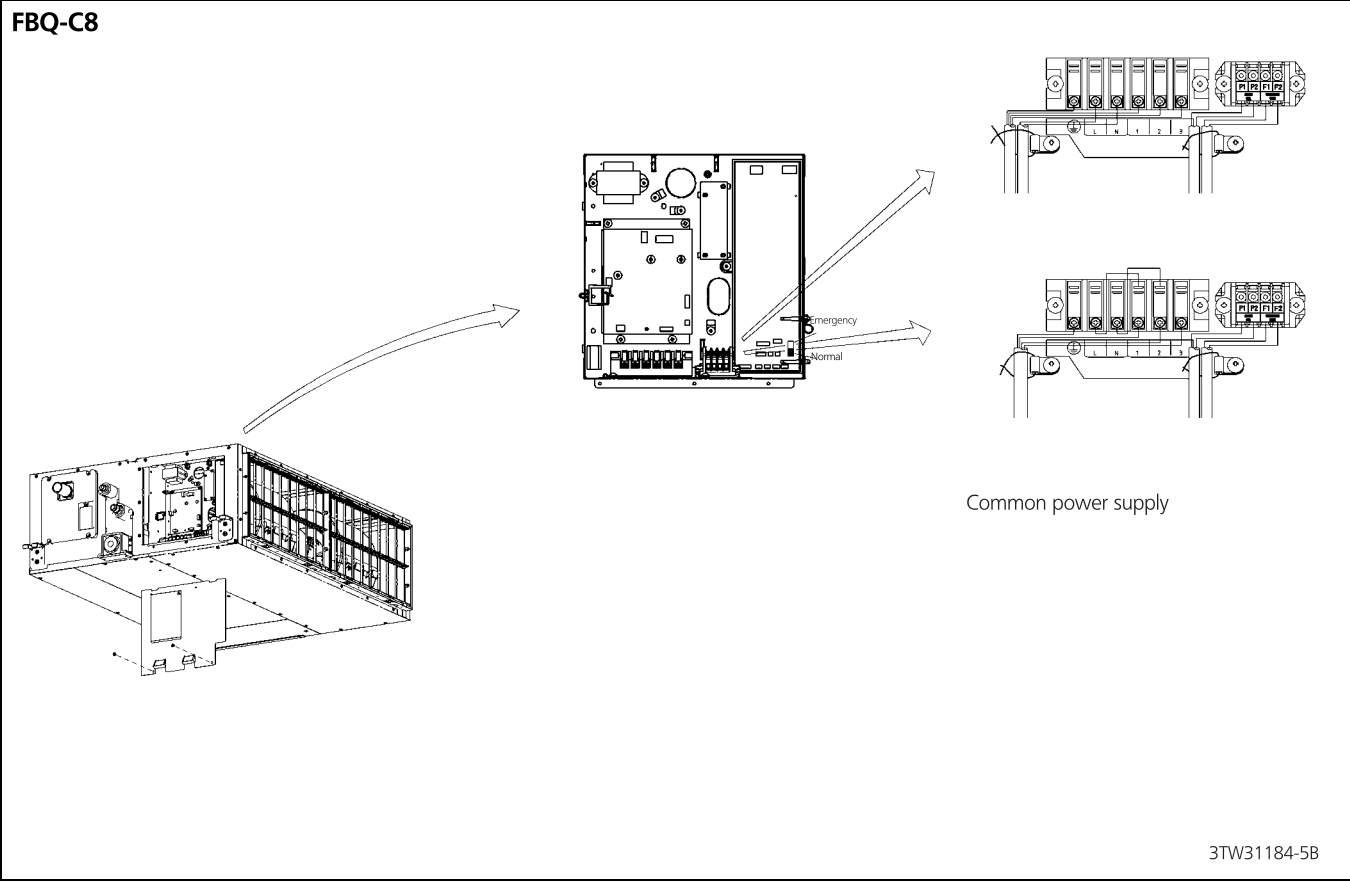
NOTES

- 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 - 2 Switch Box Connection



In all of us,
a green heart



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