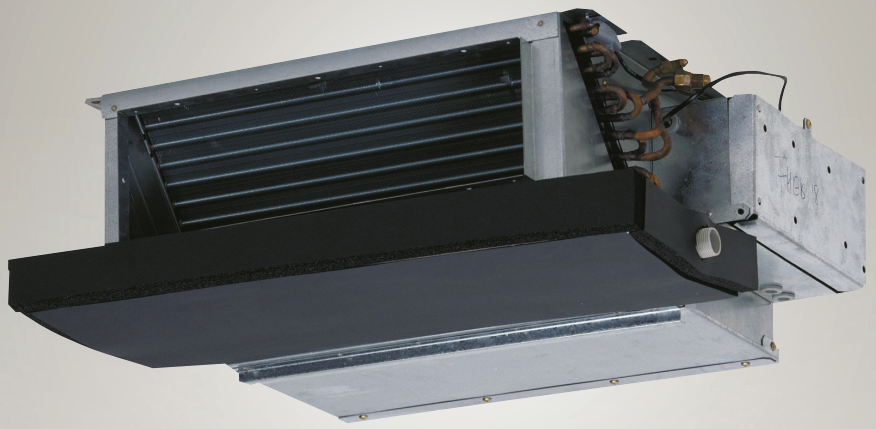
DAIKIN

Air Conditioners

Technical Data

VRV®

Concealed Ceiling Unit (Small)



EEDEN11-204

FXDQ-M9

DAIKIN

Air Conditioners

Technical Data

VRV®

Concealed Ceiling Unit (Small)

EEDEN11-204

FXDQ-M9

TABLE OF CONTENTS

FXDQ-M9

1 Specifications

1-1 Technical Specifications					FXDQ20M9V3B	FXDQ25M9V3B
Cooling capacity	Nom.			kW	2.2 (1)	2.8 (1)
Heating capacity	Nom.			kW	2.5 (2)	3.2 (2)
Power input - 50Hz	Cooling	Nom.		kW	0.050 (1)	
	Heating	Nom.		kW	0.050 (2)	
Casing	Colour				Unpainted	
	Material				Galvanised steel	
Dimensions	Unit	Height		mm	230	
		Width		mm	502	
		Depth		mm	652	
	Packed unit	Height		mm	301	
		Width		mm	584	
		Depth		mm	753	
Required ceiling void				mm	250	
Weight	Unit			kg	17	
	Packed unit			kg	18	
Heat exchanger	Length			mm	430	
	Rows	Quantity			2	
	Fin pitch			mm	1.4	
	Passes	Quantity			2	
	Face area			m²	0.108	
	Stages	Quantity			12	
	Empty tubeplate hole	Quantity			4	0
	Tube type				ø7 Hi-XSS	
	Fin	Type			Symmetric waffle louvre	
		Treatment			Hydrophilic	
Fan	Type				Sirocco fan	
	Quantity				1	
	Air flow rate - 50Hz	Cooling	High	m³/min	6.7	7.4
			Low	m³/min	5.2	5.8
		Heating	High	m³/min	6.7	7.4
			Low	m³/min	5.2	5.8
Fan motor	Quantity				1	
	Model				Step motor	
	Speed	Steps			3	
	Output	High		W	10	
	Drive				Direct drive	
Sound power level	Cooling	Nom.		dBA	50	
Sound pressure level	Cooling	High		dBA	37	
		Low		dBA	32	
	Heating	High		dBA	37	
		Low		dBA	32	
Refrigerant	Type				R-410A	
	Control				Electronic expansion valve	
Piping connections	Liquid	Type			Flare connection	
		OD		mm	6.35	
	Gas	Type			Flare connection	
		OD		mm	12.7	
	Drain				I.D. 21.6, O.D. 27.2	
Temperature control					Microprocessor thermostat for cooling and heating	
Air direction control					Up and downwards	
Air filter					Resin net with mold resistance	
Safety devices	Item	01			PC board fuse	
		02			Fan motor thermal protection	

1 Specifications

1-2 Electrical Specifications				FXDQ20M9V3B	FXDQ25M9V3B
Power supply	Name			V1	
	Phase			1~	
	Frequency		Hz	50	
	Voltage		V	230	
Voltage range	Min.		%	-10	
	Max.		%	10	
Current - 50Hz	Zmax	List		No requirements	
	Minimum circuit amps (MCA)		A	0.2	
	Maximum fuse amps (MFA)		A	16	
	Full load amps (FLA)	Total	A	0.1	

Notes

(1) Cooling: indoor temp. 27ºCDB, 19ºCWB; outdoor temp. 35ºCDB; equivalent piping length: 8m; level difference: 0m

(2) Heating: indoor temp. 20ºCDB; outdoor temp. 7ºCDB, 6ºCWB; equivalent refrigerant piping: 8m; level difference: 0m

(3) Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

(4) Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.

(5) Maximum allowable voltage range variation between phases is 2%.

(6) MCA/MFA: MCA = 1.25 x FLA

(7) MFA < 4 x FLA

(8) Next lower standard fuse rating minimum 16A

(9) Select wire size based on the value of MCA

(10) Instead of a fuse, use a circuit breaker

2 Safety device settings

2 - 1 Safety Device Settings

		FXDQ20M9	FXDQ25M9
FAN MOTOR THERMAL PROTECTOR	°C	OFF:$135^{\pm 8}$, (ON:$87^{\pm 15}$)	
PC BOARD FUSE		250V 10A	

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3 Options

3 - 1 Options

FXDQ20-25M9

Options

Nr.	Item	Type	FXDQ20,25
1	Wiring adapter (Hour meter)		EKRP1B2 *1

Operation Control

Nr.	Item			Type	FXDQ20,25
1	Remote	Wired type			BRC1D52 / BRC1E51A *4
		Wireless type	H/P		BRC4C62
			C/O		BRC4C64
2	Simplified remote control				BRC2A51
3	Remote control for hotel use				BRC3A61
4	Adapter for wiring				KRP1B61
5.1	Wiring adapter for electrical appendices (1)				KRP2A51
5.2	Wiring adapter for electrical appendices (2)				KRP4A51
6	Remote sensor				KRCS01-1
7	Installation box for adapter PCB				---
8	Central remote control				DCS302C51
8.1	Electrical box with earth terminal (3 blocks)				KJB311A
9	Unified ON/OFF controller				DCS301B51
9.1	Electrical box with earth terminal (2 blocks)				KJB212A
9.2	Noise filter (For electromagnetic interface use only)				KEK26-1A
10	Schedule timer				DST301B51
11	External adapter for outdoor unit (installation on indoor unit)				DTA104A61
11	Multi Tenant option				EKMTAC *3

*1 Fixing box is KRP1A90
*2 All options are supplied as kit.
*3 This kit contains parts to connect with 10 multi tenant indoor units.
*4 Included languages are: English, German, French, Dutch, Spanish, Italian, Greek, Portuguese, Russian and Turkish.

Contents of accessory bags

Description	Quantity
Installation and operation manual	1
Glass tube fuse 10A	1
Service instruction label	1

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4 Capacity tables

4 - 1 Cooling Capacity Tables

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TC: Total capacity;kW – SHC: Sensible capacity;kW

Unit size	Nominal capacity	Outdoor air temp.	Indoor air temperature													
			14.0WB		16.0WB		18.0WB		19.0WB		20.0WB		22.0WB		24.0WB	
			20.0DB		23.0DB		26.0DB		27.0DB		28.0DB		30.0DB		32.0DB	
		°CDB	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
20	2.2	10.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.9	1.9
		12.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.9	1.9
		14.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.8	1.9
		16.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.8	1.8
		18.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.7	1.8
		20.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.7	1.8
		21.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.7	1.8
		23.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.9	2.6	1.7
		25.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.6	1.8	2.6	1.7
		27.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.5	1.8	2.6	1.7
		29.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.5	1.8	2.5	1.7
		31.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.4	1.8	2.5	1.7
		33.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.9	2.4	1.8	2.5	1.7
		35.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.4	1.7
		37.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.3	1.8	2.3	1.8	2.4	1.7
		39.0	1.5	1.4	1.8	1.6	2.1	1.7	2.2	1.8	2.2	1.8	2.3	1.7	2.3	1.6
25	2.8	10.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.4	2.3	3.7	2.3
		12.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.4	2.3	3.6	2.2
		14.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.4	2.3	3.6	2.2
		16.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.4	2.3	3.5	2.2
		18.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.4	2.3	3.5	2.2
		20.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.4	2.3	3.4	2.1
		21.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.4	2.3	3.4	2.1
		23.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.3	2.2	3.4	2.1
		25.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.3	2.2	3.3	2.1
		27.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.2	2.2	3.3	2.1
		29.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.2	2.2	3.2	2.0
		31.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.1	2.1	3.2	2.0
		33.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.1	2.1	3.1	2.0
		35.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	3.0	2.2	3.0	2.1	3.1	2.0
		37.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	2.9	2.2	3.0	2.1	3.0	2.0
		39.0	1.9	1.7	2.3	1.9	2.6	2.0	2.8	2.1	2.9	2.2	2.9	2.1	3.0	2.0

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4 Capacity tables

4 - 2 Heating Capacity Tables

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Unit Size	Nominal capacity	Outdoor air temperature		Indoor air temperature °CDB					
				16.0	18.0	20.0	21.0	22.0	24.0
		°CDB	°CWB	kW	kW	kW	kW	kW	kW
20	2.5	-19.8	-20.0	1.5	1.5	1.5	1.5	1.5	1.5
		-18.8	-19.0	1.5	1.5	1.5	1.5	1.5	1.5
		-16.7	-17.0	1.6	1.6	1.6	1.6	1.6	1.6
		-14.7	-15.0	1.7	1.7	1.7	1.7	1.7	1.7
		-12.6	-13.0	1.8	1.8	1.8	1.8	1.8	1.8
		-10.5	-11.0	1.9	1.9	1.9	1.9	1.9	1.9
		-9.5	-10.0	1.9	1.9	1.9	1.9	1.9	1.9
		-8.5	-9.1	2.0	2.0	1.9	1.9	1.9	1.9
		-7.0	-7.6	2.0	2.0	2.0	2.0	2.0	2.0
		-5.0	-5.6	2.1	2.1	2.1	2.1	2.1	2.1
		-3.0	-3.7	2.2	2.2	2.2	2.2	2.2	2.2
		0.0	-0.7	2.3	2.3	2.3	2.3	2.3	2.2
		3.0	2.2	2.5	2.5	2.4	2.4	2.3	2.2
		5.0	4.1	2.5	2.5	2.5	2.4	2.3	2.2
		7.0	6.0	2.6	2.6	2.5	2.4	2.3	2.2
		9.0	7.9	2.7	2.7	2.5	2.4	2.3	2.2
		11.0	9.8	2.8	2.7	2.5	2.4	2.3	2.2
		13.0	11.8	2.8	2.7	2.5	2.4	2.3	2.2
		15.0	13.7	2.8	2.7	2.5	2.4	2.3	2.2
25	3.2	-19.8	-20.0	1.9	1.9	1.9	1.9	1.9	1.9
		-18.8	-19.0	1.9	1.9	1.9	1.9	1.9	1.9
		-16.7	-17.0	2.1	2.1	2.0	2.0	2.0	2.0
		-14.7	-15.0	2.2	2.2	2.2	2.2	2.2	2.1
		-12.6	-13.0	2.3	2.3	2.3	2.3	2.3	2.3
		-10.5	-11.0	2.4	2.4	2.4	2.4	2.4	2.4
		-9.5	-10.0	2.5	2.4	2.4	2.4	2.4	2.4
		-8.5	-9.1	2.5	2.5	2.5	2.5	2.5	2.5
		-7.0	-7.6	2.6	2.6	2.6	2.6	2.6	2.6
		-5.0	-5.6	2.7	2.7	2.7	2.7	2.7	2.7
		-3.0	-3.7	2.8	2.8	2.8	2.8	2.8	2.8
		0.0	-0.7	3.0	3.0	3.0	3.0	3.0	2.8
		3.0	2.2	3.1	3.1	3.1	3.1	3.0	2.8
		5.0	4.1	3.3	3.2	3.2	3.1	3.0	2.8
		7.0	6.0	3.4	3.4	3.2	3.1	3.0	2.8
		9.0	7.9	3.5	3.4	3.2	3.1	3.0	2.8
		11.0	9.8	3.6	3.4	3.2	3.1	3.0	2.8
		13.0	11.8	3.6	3.4	3.2	3.1	3.0	2.6
		15.0	13.7	3.6	3.4	3.2	3.1	3.0	2.8

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4 Capacity tables

4 - 3 Capacity Correction Factor

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		Single module and 2 module systems (not applicable for 3 module systems)						
		20°CDB	23°CDB	26°CDB	27°CDB	28°CDB	30°CDB	32°CDB
		14°CWB	16°CWB	18°CWB	19°CWB	20°CWB	22°CWB	24°CWB
20	TC ratio	0,547	0,564	0,585	0,626	0,663	0,719	0,754
	SHF ratio	1,131	1,224	1,270	1,209	1,163	1,108	1,092
25	TC ratio	0,546	0,570	0,605	0,647	0,681	0,725	0,761
	SHF ratio	1,133	1,221	1,249	1,192	1,153	1,109	1,089

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NOTES - ANMERKUNGEN - Σημειώσεις - NOTAS - REMARQUES - NOTE - OPMERKINGEN - Примечания - NOTLAR

How to use this table - *So verwenden Sie diese Tabelle* - Πώς θα χρησιμοποιήσετε αυτό τον πίνακα - *Cómo utilizar esta tabla* - Utilisation de ce tableau - *Come utilizzare questa tabella* - Gebruik van deze tabel - Как пользоваться этой таблицей - *Bu tablo nasıl kullanılmalı?:*

1. Capacity : Total capacity for High sensible mode = Total capacity for normal capacity table X TC ratio.
   Leistung: Gesamtleistung für hochfühlbaren Leistungsmodus = Gesamtleistung für normale Leistungstabelle x GL-Verhältnis.
   Απόδοση: Συνολική απόδοση για τη λειτουργία υψηλής ευαισθησίας = Συνολική απόδοση για τον πίνακα κανονικών αποδόσεων X αναλογία TC
   Capacidad: Capacidad total para el modo de alta sensibilidad = Capacidad total para la tabla de capacidad normal X relación TC.
   Capacité sensible (FCS (Facteur de chaleur sensible) – en anglais : SHF) : FCS pour le mode sensibilité élevée (« High ») = FCS du tableau des capacités normales x rapport FCS.
   Capacità: Capacità totale per modalità ad alta capacità sensibile = Capacità totale per tabella capacità normali X rapporto TC.
   Capaciteit: totale capaciteit in modus grote (“High”) gevoeligheid = totale capaciteit uit de tabel met normale capaciteiten x TC-ratio.
   Производительность: Общая производительность для режима с высоким коэфф. ощутимого охлаждения = Общая производительность для нормального режима, таблица X коэфф. TC.
   Kapasite: Yüksek algı modu için toplam kapasite = Normal kapasite tablosundaki toplam kapasite değeri x TC oranı.

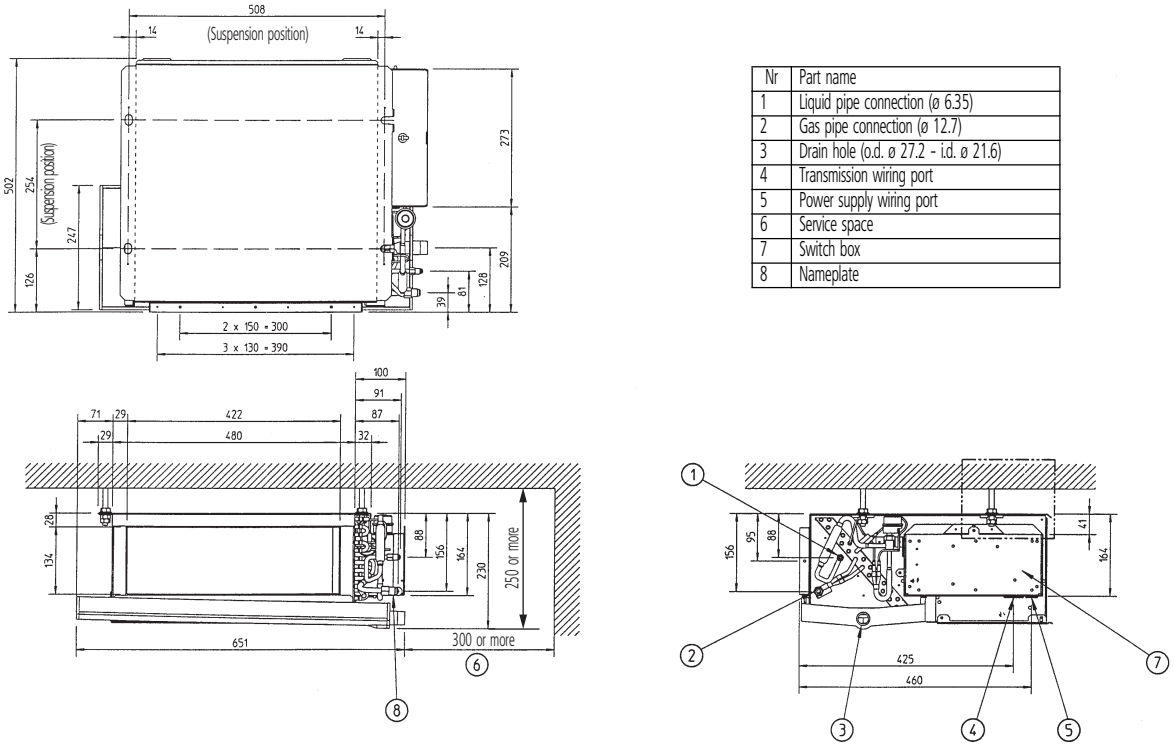
2. Sensible capacity (SHF): SHF for High sensible mode = SHF for normal capacity table X SHF ratio .
   Fühlbare Leistung (SHF): SHF für hochfühlbaren Leistungsmodus = SHF für normale Leistungstabelle x SHF-Verhältnis.
   Αισθητή απόδοση (SHF): SHF για λειτουργία υψηλής ευαισθησίας = SHF για πίνακα κανονικών αποδόσεων X αναλογία SHF .
   Capacidad sensible (FCS): SHF para el modo de alta sensibilidad = SHF para la tabla de capacidad normal X relación SHF.
   Capacité sensible (FCS (Facteur de chaleur sensible) – en anglais : SHF) : FCS pour le mode sensibilité élevée (« High ») = FCS du tableau des capacités normales x rapport FCS.
   Capacità sensibile (SHF): SHF per modalità ad alta capacità sensibile = SHF per tabella capacità normali X rapporto SHF.
   Gevoeligheidscapaciteit (WGF (warmtegevoelsfactor)– in het Engels “SHF”): WGF voor de modus grote (“High”) gevoeligheid = WGF uit de tabel met normale capaciteiten x WGF-ratio.
   Ощутимая производительность (SHF): SHF для режима с высоким коэфф. ощутимого охлаждения = SHF для нормального режима, таблица X коэфф. SHF.
   Algılanabilir kapasite (SHF): Yüksek algı modu için SHF = Normal kapasite tablosundaki SHF değeri x SHF oranı.

3. In case of SHF is bigger than 1 , SHF is “1”
   Für den Fall, dass SHF größer als 1 ist, wird SHF als “1” angenommen.
   Σε περίπτωση που το SHF είναι μεγαλύτερο από 1, το SHF είναι “1”
   En caso de que SHF sea superior a 1 , SHF equivale a “1”
   Si FCS est supérieur à 1, utilisez « 1 » pour FCS.
   Qualora il valore SHF sia maggiore di 1 , SHF è “1”
   Indien WGF groter is dan 1, neem dan “1” voor WGF.
   Если SHF больше 1, то SHF равен “1”
   SHF değeri 1’den büyükse, SHF değeri “1” kabul edilmelidir

5 Dimensional drawings

5 - 1 Dimensional Drawings

FXDQ-M9



Nr	Part name
1	Liquid pipe connection (ø 6.35)
2	Gas pipe connection (ø 12.7)
3	Drain hole (o.d. ø 27.2 - i.d. ø 21.6)
4	Transmission wiring port
5	Power supply wiring port
6	Service space
7	Switch box
8	Nameplate

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6 Piping diagrams

6 - 1 Piping Diagrams

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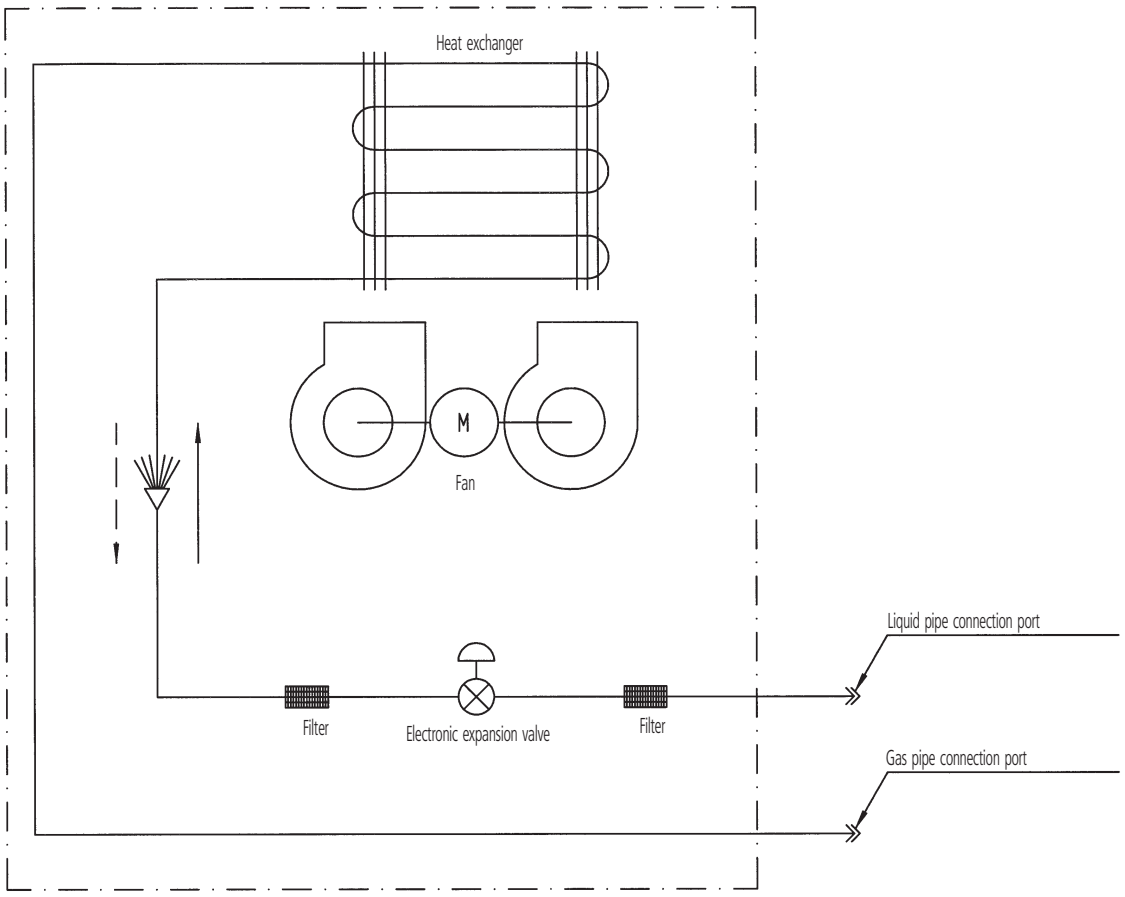


Refrigerant flow

Cooling
Heating

Piping connection diameters

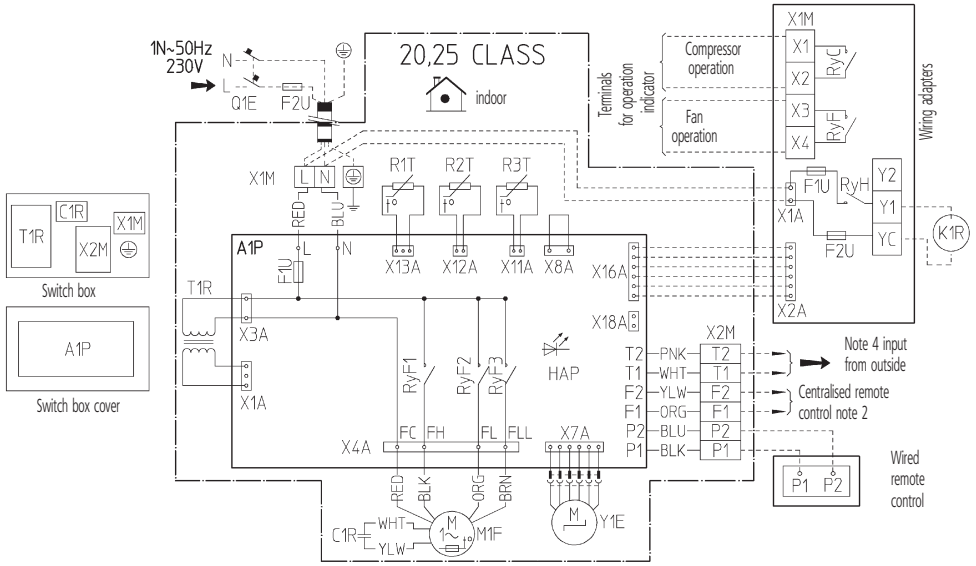
Model	Gas	Liquid
FXDQ20,25M9	ø12.7	ø6.4

3TW21175-1C

7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase

FXDQ-M9



A1P	Printed circuit board	RyF1-3	Magnetic relay (Fan)	RyC, RyF	Magnetic relay
C1R	Capacitor (Fan)	T1R	Transformer (220-240V/22V)	RyH	Magnetic relay (J1EH)
F1U	Fuse (250V, 10A)	X1M	Terminal strip (Power)	F1U, F2U	Fuse (250V, 5A)
F2U	Field fuse	X2M	Terminal strip (Control)	X1A, X2A	Connector (Wiring adapter)
HAP	Light emitting diode (Service monitor-green)	Y1E	Electronic expansion valve	X1M	Terminal strip
M1F	Motor (Fan)	Optional parts		Connector for optional parts	
Q1E	Earth leak detector	J1EH	Electric heater	X16A	Connector (Wiring adapter)
R1T	Thermistor (Air)	K1R	Magnetic relay (J1EH)	X18A	Connector (Wiring adapter for electronical appendices)
R2T, R3T	Thermistor (Refrigerant)	Wiring adapter			

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

COLORS : BLK : Black PNK : Pink
BLU : Blue RED : Red
BRN: Brown WHT : White
ORG : Orange YLW : Yellow

NOTES

1 Use copper conductors only.

2 When using a centralised remote control, see manual for connection to the unit.

3 When installing the electric heater change the wiring for the heater circuit. The main power supply has to be supplied independently.

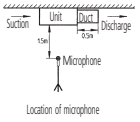
4 When connecting the input wires from the outdoor unit 'forced off' or 'on/off' operation can be selected by the remote control. For more details see installation manual.

2TW23666-1E

8 Sound data

8 - 1 Sound Level Data

FXDQ-M9

Model	Sound pressure level - 230V			Sound power level
	H	L	Measuring location	
FXDQ20M9	37	32		50
FXDQ25M9	37	32		50

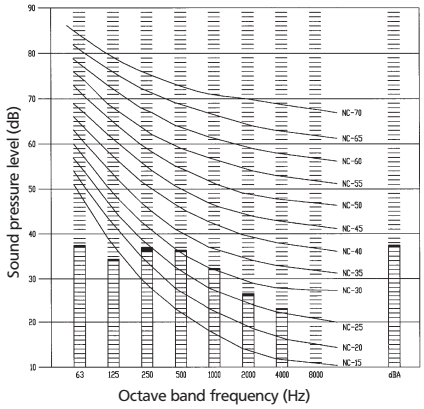
NOTES

1 dBA = A-weighted sound pressure level (A-scale according to IEC).
2 Reference acoustic pressure 0 dB = 20 Pa.
3 These operating values were obtained using a power source of 230V/50Hz.
4 These operating values were obtained in a dead room (conversion values). Noise values will vary depending on a range of factors such as the construction of the particular room in which the equipment is installed.
5 Operating noise differs with operation and ambient conditions.

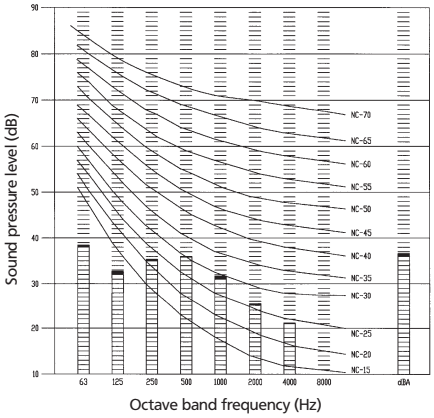
8 Sound data

8 - 2 Sound Pressure Spectrum

FXDQ20M9 3TW21467-1



FXDQ25M9 3TW21477-1



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.

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DAIKIN EUROPE N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende

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