



Service Manual

XLF DCI Series

Indoor Units	Outdoor Units
XLF 9	GC 9
XLF 12	GC 12



REFRIGERANT

R410A

HEAT PUMP

LIST OF EFFECTIVE PAGES

Note: Changes in the pages are indicated by a “Revision#” in the footer of each effected page (when none indicates no changes in the relevant page). All pages in the following list represent effected/ non effected pages divided by chapters.

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1. INTRODUCTION

1.1 General

The new **XLF DCI Inverter** split wall mounted range comprise the RC (heat pump) models, as follows:

- **XLF 9 DCI**
- **XLF 12 DCI**

The indoor **XLF DCI** units are available as LED display types, featuring esthetic design, compact dimensions, and low noise operation.

1.2 Main Features

The **XLF DCI** series benefits from the most advanced technological innovations, namely:

- DC Inverter technology.
- R410A models.
- Microprocessor control.
- Precharged refrigerant.
- Infrared remote control with liquid crystal display.
- Indoor centrifugal fan.
- High COP.
- DC Brush less fan motor.
- Networking system connectivity.
- Connection to Multi Split outdoor units
- A dry contact for clock or power shedding functions (configurable).
- Cooling operation at outdoor temperature down to -10°C.
- Heating operation at outdoor temperature down to -15°C.
- Low indoor and outdoor noise levels.
- Easy installation and service.

1.3 Indoor Unit

The indoor unit is a wall mounted, and can be easily fitted to many types of residential and commercial applications.

It includes:

- Casing with air inlet and outlet grills.
- A large-diameter centrifugal fan.

- Coil with treated aluminum fins.
- Motorized flaps.
- Multi-speed motor with internal protection.
- DC motor with internal protection.
- Advanced electronic control box assembly.
- Interconnecting wiring terminal block.
- Mounting plate.

1.4 Filtration

The **XLF DCI** series presents one type of air filters:.

- Easily accessible, and re-usable pre-filters (mesh).

1.5 Control

The microprocessor indoor controller, and an infrared remote control, supplied as standard, provides complete operating function and programming. For further details please refer to the Remote Control Manual, Appendix A.

1.6 Outdoor Unit

The **XLF DCI** outdoor units can be installed as floor or wall mounted units by using a wall supporting bracket. The metal sheets are protected from corrosion allowing long life resistance. All outdoor units are pre-charged. For further information please refer to the Product Data Sheet, Chapter 2.

It includes:

- Compressor mounted in a soundproofed compartment :
- Axial fan.
- Outdoor coil with hydrophilic louver fins for RC units.
- Outlet air fan grill.
- Service valves" flare" type connection.
- Interconnecting wiring terminal block.

- **GC 9 R410A**
- **GC 12 R410A**

1.7 Tubing Connections

Flare type interconnecting tubing to be produced on site.

For further details please refer to the Installation Manual, APPENDIX A.

1.8 Accessories

Remote Control

RCW Wall Mounted Remote Control

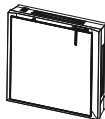
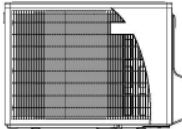
The RCW remote control is mounted on the wall (RC-2,RC-3,RC-4), and controls the unit either as an infrared remote control or as a wired controller. The wired controller can control up to 10 Indoor units with the same program settings and adjustments. For further details please refer to Optional Accessories.

1.9 Inbox Documentation

Each unit is supplied with its own installation, operation and remote control manuals.

1.10 Matching Table

1.10.1 R410A

OUTDOOR UNITS			INDOOR UNITS	
				
	MODEL	REFRIGER.	XLF 9	XLF 12
	GC 9	R410A	√	
	GC 12	R410A		√

2. PRODUCT DATA SHEET

2.1 XLF 9 DCI

Model Indoor Unit				XLF 9 DCI	
Model Outdoor Unit				GC 9 R410A	
Installation Method of Pipe				Flared	
Characteristics			Units	Cooling	Heating
Capacity ⁽⁴⁾			Btu/hr	8530(4780-11600)	8530(5120-15360)
			kW	2.5(1.4-3.4)	2.5(1.5-4.5)
Power input ⁽⁴⁾			kW	0.658(0.45-0.98)	0.625(0.48-1.53)
EER (Cooling) or COP(Heating) ⁽⁴⁾			W/W	3.8	4.0
Energy efficiency class				A	A
Power supply			V	220-240	
			Ph	1	
			Hz	50	
Rated current			A	2.9	2.8
Power factor				0.97	0.97
Prated (IDU)			W	30	
Prated (IDU+ODU)			W	1600	
Starting current			A	10.5	
Circuit breaker rating			A	15	
INDOOR	Fan type & quantity			Helicoid x 1	
	Fan speeds	H/M/L	RPM	520/490/450	
	Air flow ⁽¹⁾	H/M/L	m3/hr	390/370/330	
	External static pressure	Min	Pa	0	
	Sound power level ⁽²⁾	H/M/L	dB(A)	55/-/-	
	Sound pressure level ⁽³⁾	H/M/L	dB(A)	38/35/32	
	Moisture removal		l/hr	1	
	Condensate drain tube I.D		mm	16	
	Dimensions	WxHxD	mm	570*570*160	
	Net Weight		kg	13.5	
	Package dimensions	WxHxD	mm	700*700*255	
	Packaged weight		kg	15.5	
	Units per pallet		units	16	
	Stacking height		units	8levels	
	OUTDOOR	Refrigerant control			Electronical Expansion Valve
Compressor type,model			Single Rotary DC Inverter,Panasonic 5RS102XAB		
Fan type & quantity			Propeller x 1		
Fan speeds		H	RPM	830	
Air flow		H	m3/hr	1780	
Sound power level		H	dB(A)	61	
Sound pressure level ⁽³⁾		H	dB(A)	51	
Dimensions		WxHxD	mm	795x610x290	
Net Weight		kg	38		
Package dimensions		WxHxD	mm	970x650x394	
Packaged weight		kg	42		
Units per pallet		Units	9		
Stacking height		units	3 levels		
Refrigerant type			R410A		
Standard charge		kg(7.5m)	1.1		
Additional charge			No need		
Connections between units		Liquid line	In.(mm)	1/4"(6.35)	
		Suction line	In.(mm)	3/8"(9.53)	
		Max.tubing length	m.	Max.20	
	Max.height difference	m.	Max.10		
Operation control type				Remote controll	
Heating elements (Option)			kW		
Others					

⁽¹⁾ Airflow in ducted units;at nominal external static pressure.

⁽²⁾ Sound power in ducted units is measured at air discharge.

⁽³⁾ Sound pressure level measured at 1-meter distance from unit.

⁽⁴⁾ Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).

2.2 XLF 12 DCI

Model Indoor Unit				XLF 12 DCI	
Model Outdoor Unit				GC 12 R410A	
Installation Method of Pipe				Flared	
Characteristics			Units	Cooling	Heating
Capacity ⁽⁴⁾			Btu/hr	11940(4780-14000)	11940(5120-19100)
			kW	3.5(1.4-4.1)	3.5(1.5-5.6)
Power input ⁽⁴⁾			kW	1.09(0.5-1.31)	0.969(0.53-1.94)
EER (Cooling) or COP(Heating) ⁽⁴⁾			W/W	3.21	3.61
Energy efficiency class				A	A
Power supply			V	220-240	
			Ph	1	
			Hz	50	
Rated current			A	4.9	4.3
Power factor				0.97	0.97
Prated (IDU)			W	30	
Prated (IDU+ODU)			W	1800	
Starting current			A	10.5	
Circuit breaker rating			A	15	
INDOOR	Fan type & quantity			Helicoid x 1	
	Fan speeds	H/M/L	RPM	540/510/450	
	Air flow ⁽¹⁾	H/M/L	m3/hr	400/370/310	
	External static pressure	Min	Pa	0	
	Sound power level ⁽²⁾	H/M/L	dB(A)	56/-/-	
	Sound pressure level ⁽³⁾	H/M/L	dB(A)	39/36/33	
	Moisture removal		l/hr	1.6	
	Condensate drain tube I.D		mm	16	
	Dimensions	WxHxD	mm	570*570*160	
	Net Weight		kg	13.5	
	Package dimensions	WxHxD	mm	700*700*255	
	Packaged weight		kg	15.5	
	Units per pallet		units	16	
	Stacking height		units	8 levels	
OUTDOOR	Refrigerant control			Electronical Expansion Valve	
	Compressor type,model			Single Rotary DC Inverter,Panasonic 5RS102XAB	
	Fan type & quantity			Propeller x 1	
	Fan speeds	H	RPM	830	
	Air flow	H	m3/hr	1780	
	Sound power level	H	dB(A)	62	
	Sound pressure level ⁽³⁾	H	dB(A)	52	
	Dimensions	WxHxD	mm	795x610x290	
	Net Weight		kg	38.5	
	Package dimensions	WxHxD	mm	970x650x394	
	Packaged weight		kg	42.5	
	Units per pallet		Units	9	
	Stacking height		units	3 levels	
	Refrigerant type			R410A	
	Standard charge		kg(7.5m)	1.2	
	Additional charge			No need	
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)	
		Suction line	In.(mm)	3/8"(9.53)	
		Max.tubing length	m.	Max.20	
Max.height difference		m.	Max.10		
Operation control type				Remote control	
Heating elements (Option)			kW		
Others					

⁽¹⁾ Airflow in ducted units;at nominal external static pressure.

⁽²⁾ Sound power in ducted units is measured at air discharge.

⁽³⁾ Sound pressure level measured at 1-meter distance from unit.

⁽⁴⁾ Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).

3. RATING CONDITIONS

Standard conditions in accordance with ISO 5151, ISO 13253 (for ducted units) and EN 14511.

Cooling:

Indoor: 27°C DB 19°C WB

Outdoor: 35°C DB

Heating:

Indoor: 20°C DB

Outdoor: 7°C DB 6°C WB

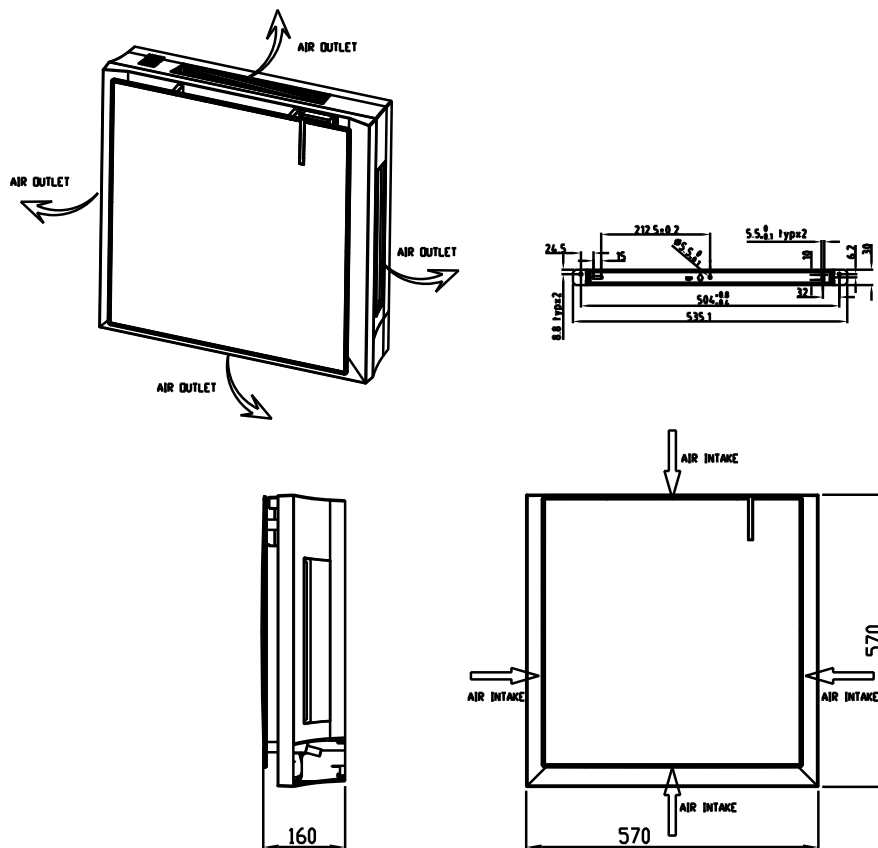
3.1 Operating Limits

3.1.1 R410A

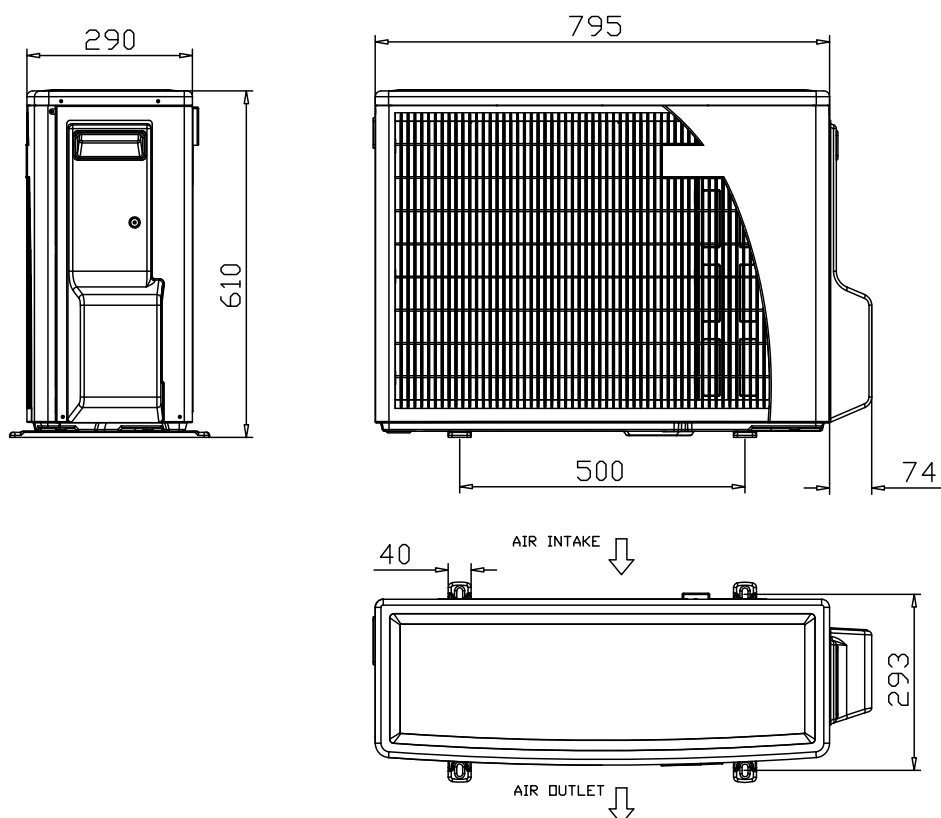
		Indoor	Outdoor
Cooling	Upper limit	32°C DB 23°C WB	46°C DB
	Lower limit	21°C DB 15°C WB	-10°C DB
Heating	Upper limit	27°C DB	24°C DB 18°C WB
	Lower limit	10°C DB	-15°C DB -16°C WB
Voltage	1PH	1PH 198 ÷ 264 V	

4. OUTLINE DIMENSIONS

4.1 Indoor Unit: XLF 9 DCI, XLF 12 DCI



4.2 Outdoor Unit: GC 9, GC 12



5. PERFORMANCE DATA & PRESSURE CURVES

5.1 XLF 9 DCI / GC 9 R410A

5.1.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	2.58	2.73	2.86	2.99	3.09
	SC	1.89	2.00	2.11	2.06	2.09
	PI	0.47	0.48	0.48	0.48	0.48
20	TC	2.56	2.71	2.83	2.96	3.06
	SC	1.82	1.94	2.05	1.99	2.03
	PI	0.51	0.52	0.52	0.52	0.52
25	TC	2.45	2.63	2.78	2.91	3.01
	SC	1.83	1.96	2.08	2.04	2.09
	PI	0.55	0.56	0.56	0.57	0.57
30	TC	2.30	2.48	2.68	2.78	2.88
	SC	1.74	1.88	2.03	1.99	2.07
	PI	0.60	0.61	0.61	0.62	0.62
35	TC	2.13	2.30	2.53	2.66	2.76
	SC	1.64	1.78	1.95	1.93	2.01
	PI	0.65	0.66	0.67	0.66	0.68
40	TC	1.92	2.10	2.33	2.45	2.56
	SC	1.52	1.68	1.84	1.82	1.90
	PI	0.70	0.71	0.72	0.73	0.73
46	TC	1.67	1.85	2.07	2.20	2.30
	SC	1.38	1.54	1.73	1.70	1.78
	PI	0.77	0.78	0.79	0.80	0.81

LEGEND

- TC – Total Cooling Capacity, kW
- SC – Sensible Capacity, kW
- PI – Power Input, kW
- WB – Wet Bulb Temp., (°C)
- DB – Dry Bulb Temp., (°C)
- ID – Indoor
- OD – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.1.2 Heating Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING WB OD COIL(°C)	ENTERING AIR DB ID COIL(°C)					
	15		20		25	
	TH	PI	TH	PI	TH	PI
-10	1.32	0.53	1.27	0.56	1.22	0.59
-7	1.42	0.54	1.37	0.57	1.32	0.60
-2	1.51	0.55	1.46	0.58	1.41	0.61
2	1.83	0.57	1.76	0.61	1.68	0.65
6	2.59	0.62	2.51	0.66	2.42	0.70
10	2.81	0.65	2.74	0.70	2.66	0.74
15	3.04	0.68	2.96	0.73	2.89	0.78
20	3.20	0.70	3.12	0.76	3.04	0.82

* the above chart includes the weighted deicing influence.

LEGEND

TH – Total Heating Capacity, kW
PI – Power Input, kW
WB – Wet Bulb Temp., (°C)
DB – Dry Bulb Temp., (°C)
ID – Indoor
OD – Outdoor

5.2 Capacity Correction Factor Due to Tubing Length

5.2.1 Cooling

TOTAL TUBING LENGTH (One Way)								
3m	7.5m	10m	15m	20m	25m	30m	40m	50m
1.02	1	0.961	0.950	---	---	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

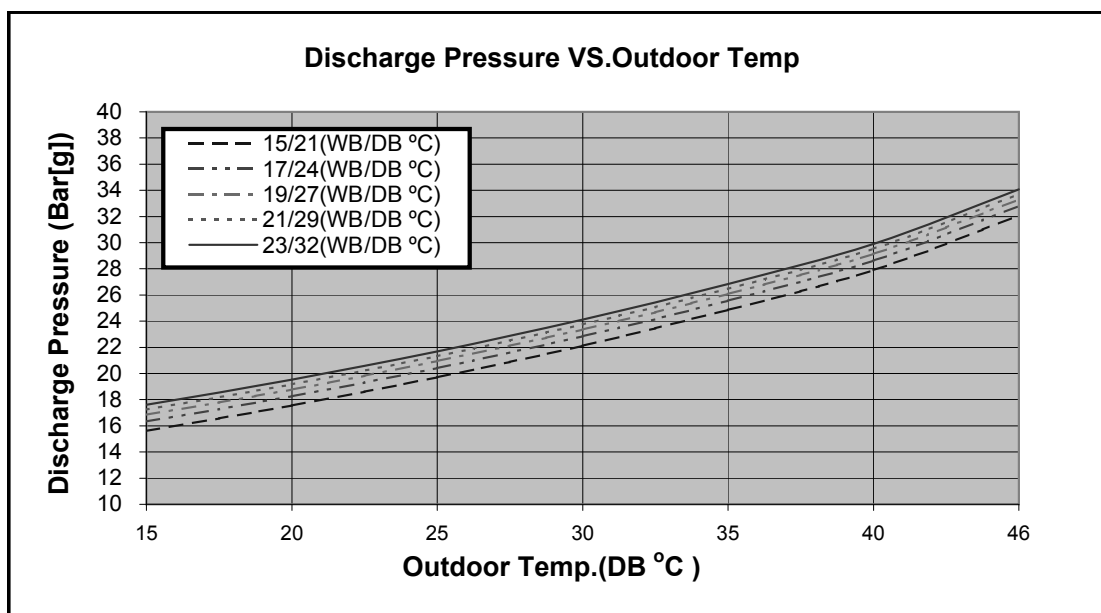
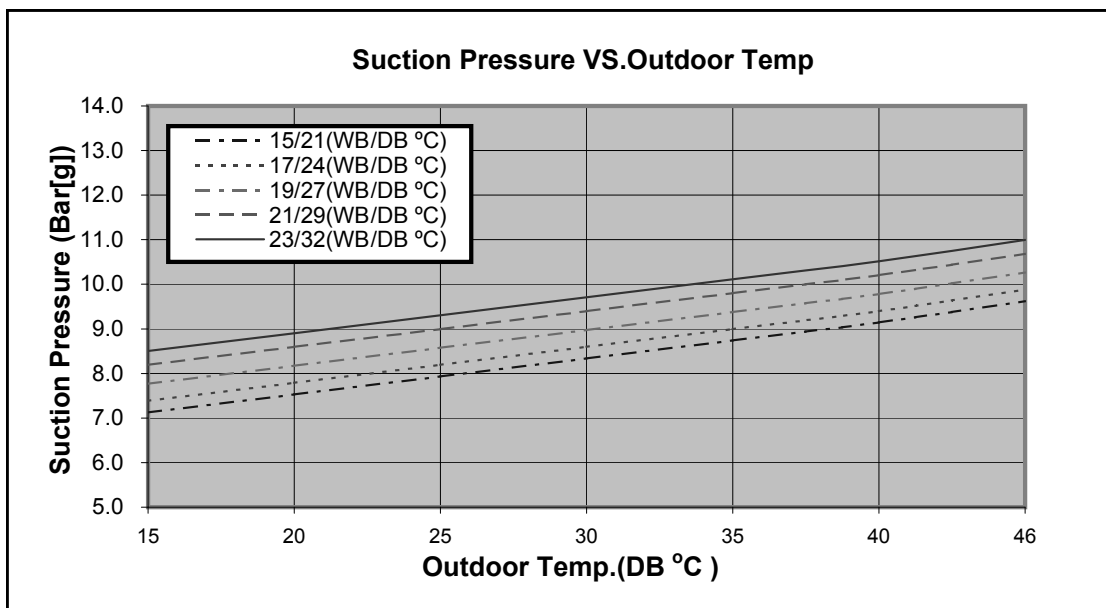
5.2.2 Heating

TOTAL TUBING LENGTH (One Way)								
3m	7.5m	10m	15m	20m	25m	30m	40m	50m
1.05	1	0.975	0.961	---	---	---	---	---

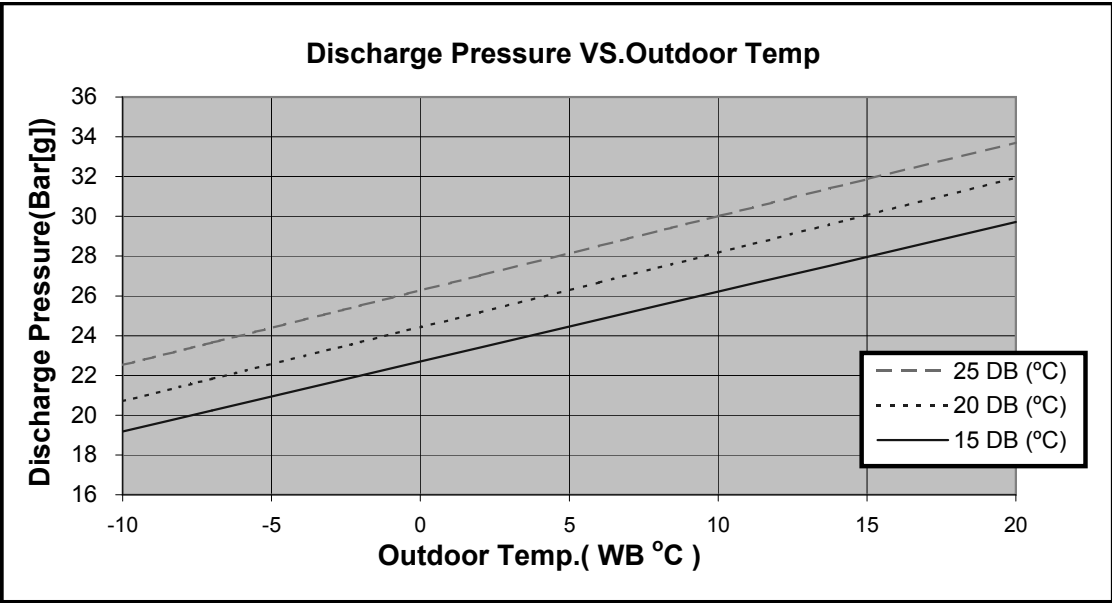
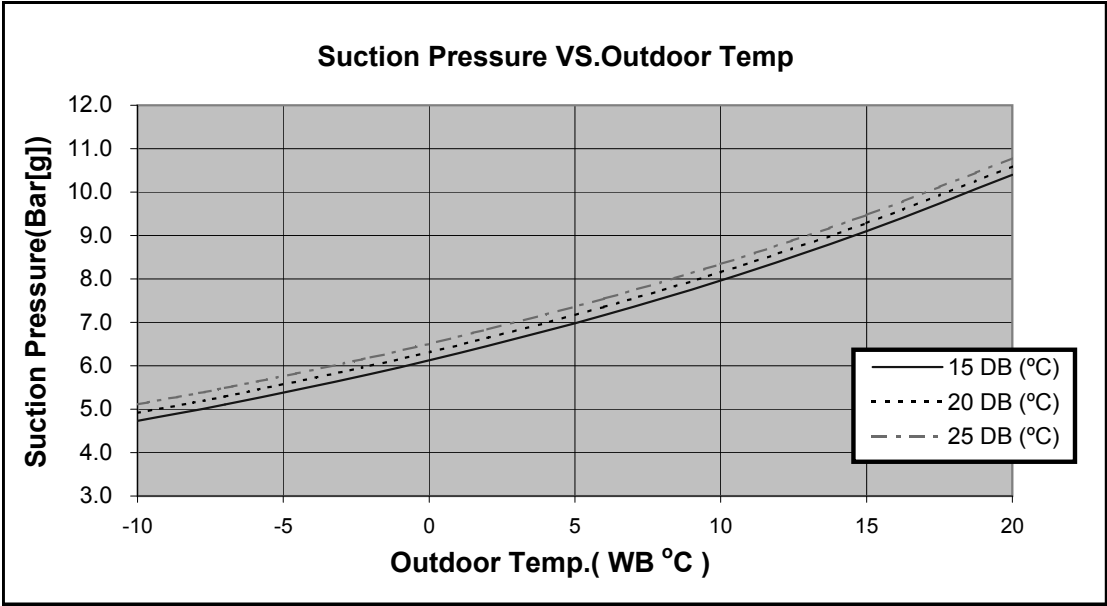
* Minimum recommended tubing length between indoor and outdoor units is 3m.

5.3 Pressure Curves.

5.3.1 Cooling.



5.3.2 Heating.



5.4 XLF 12 DCI / GC 12 R410A

5.4.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	3.43	3.64	3.80	3.97	4.11
	SC	1.73	1.83	1.93	1.89	1.92
	PI	0.77	0.77	0.78	0.78	0.78
20	TC	3.40	3.60	3.77	3.94	4.07
	SC	2.42	2.58	2.72	2.64	2.70
	PI	0.84	0.84	0.84	0.85	0.85
25	TC	3.27	3.50	3.70	3.87	4.01
	SC	1.68	1.80	1.90	1.87	1.92
	PI	0.90	0.91	0.92	0.93	0.93
30	TC	3.06	3.30	3.57	3.70	3.84
	SC	1.60	1.72	1.86	1.82	1.90
	PI	0.98	0.99	1.00	1.01	1.01
35	TC	2.83	3.06	3.37	3.53	3.67
	SC	1.50	1.63	1.79	1.77	1.84
	PI	1.06	1.07	1.09	1.10	1.10
40	TC	2.56	2.79	3.10	3.27	3.40
	SC	1.40	1.54	1.69	1.66	1.74
	PI	1.14	1.16	1.18	1.19	1.20
46	TC	2.22	2.46	2.76	2.93	3.06
	SC	1.27	1.41	1.58	1.55	1.63
	PI	1.25	1.27	1.29	1.31	1.32

LEGEND

- TC – Total Cooling Capacity, kW
- SC – Sensible Capacity, kW
- PI – Power Input, kW
- WB – Wet Bulb Temp., (°C)
- DB – Dry Bulb Temp., (°C)
- ID – Indoor
- OD – Outdoor

(1) Marked area is below standard operating limits. For operating in low ambient conditions, refer to Optional Accessories (Chapter 15).

5.4.2 Heating Mode at 7.5m Tubing Connection.**230V : Indoor Fan at High Speed.**

ENTERING WB OD COIL(°C)	ENTERING AIR DB ID COIL(°C)					
	15		20		25	
	TH	PI	TH	PI	TH	PI
-10	1.75	0.76	1.69	0.81	1.62	0.85
-7	1.89	0.78	1.82	0.82	1.75	0.87
-2	2.00	0.79	1.94	0.84	1.87	0.88
2	2.44	0.83	2.34	0.88	2.24	0.93
6	3.44	0.89	3.34	0.95	3.22	1.01
10	3.74	0.94	3.64	1.00	3.54	1.07
15	4.04	0.98	3.94	1.05	3.84	1.12
20	4.25	1.01	4.15	1.09	4.04	1.18

* the above chart includes the weighted deicing influence.

LEGEND

TH – Total Heating Capacity, kW
 PI – Power Input, kW
 WB – Wet Bulb Temp., (°C)
 DB – Dry Bulb Temp., (°C)
 ID – Indoor
 OD – Outdoor

5.5 Capacity Correction Factor Due to Tubing Length**5.5.1 Cooling**

TOTAL TUBING LENGTH (One Way)								
3m	7.5m	10m	15m	20m	25m	30m	40m	50m
1.02	1	0.961	0.948	---	---	---	---	---

* Minimum recommended tubing length between indoor and outdoor units is 3m.

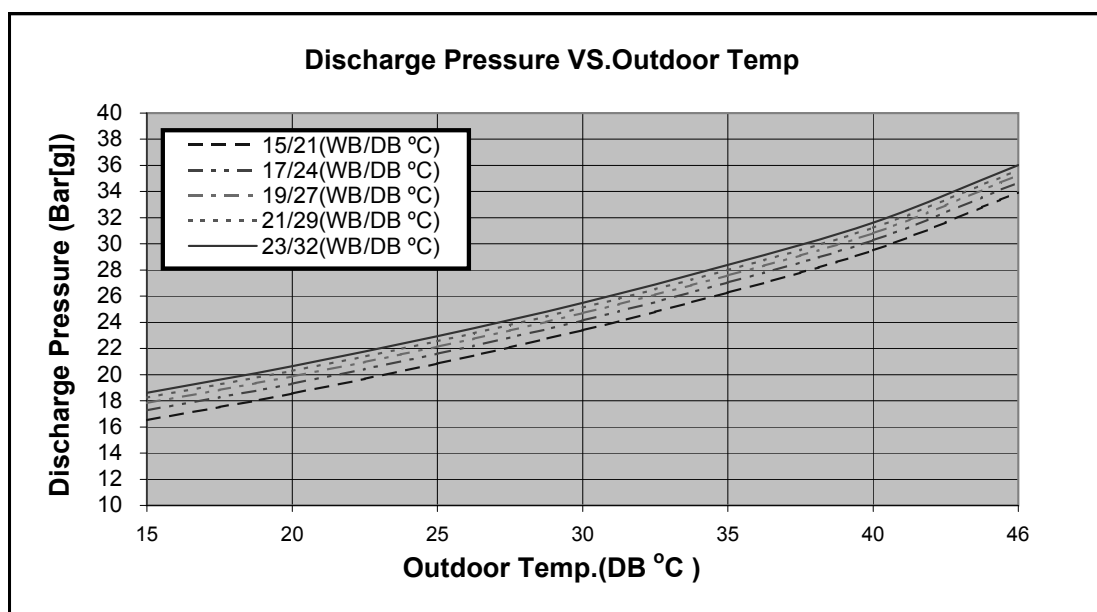
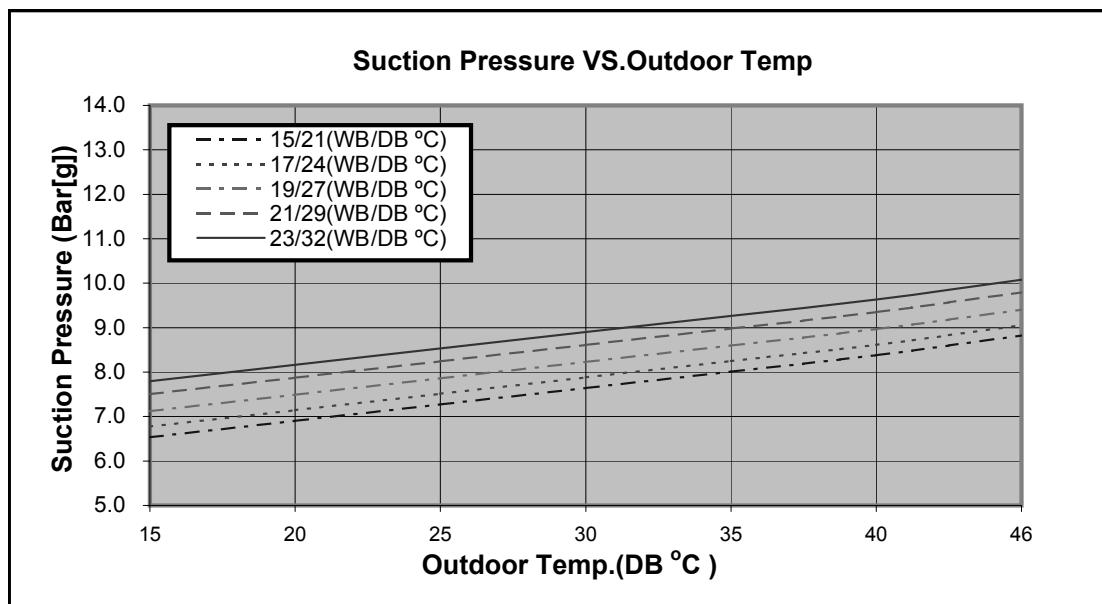
5.5.2 Heating

TOTAL TUBING LENGTH (One Way)								
3m	7.5m	10m	15m	20m	25m	30m	40m	50m
1.05	1	0.975	0.963	---	---	---	---	---

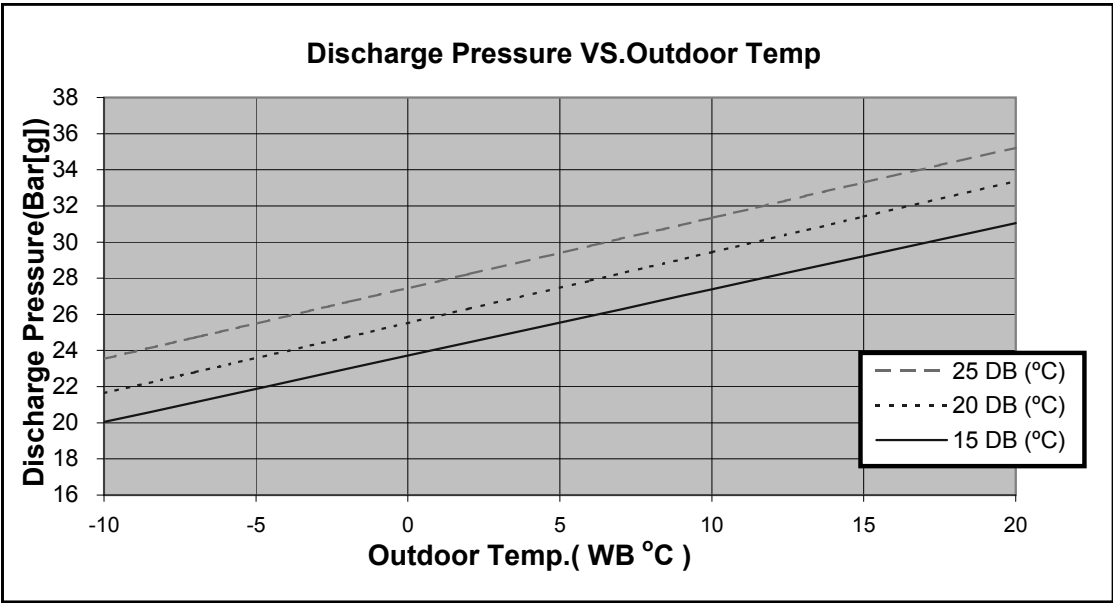
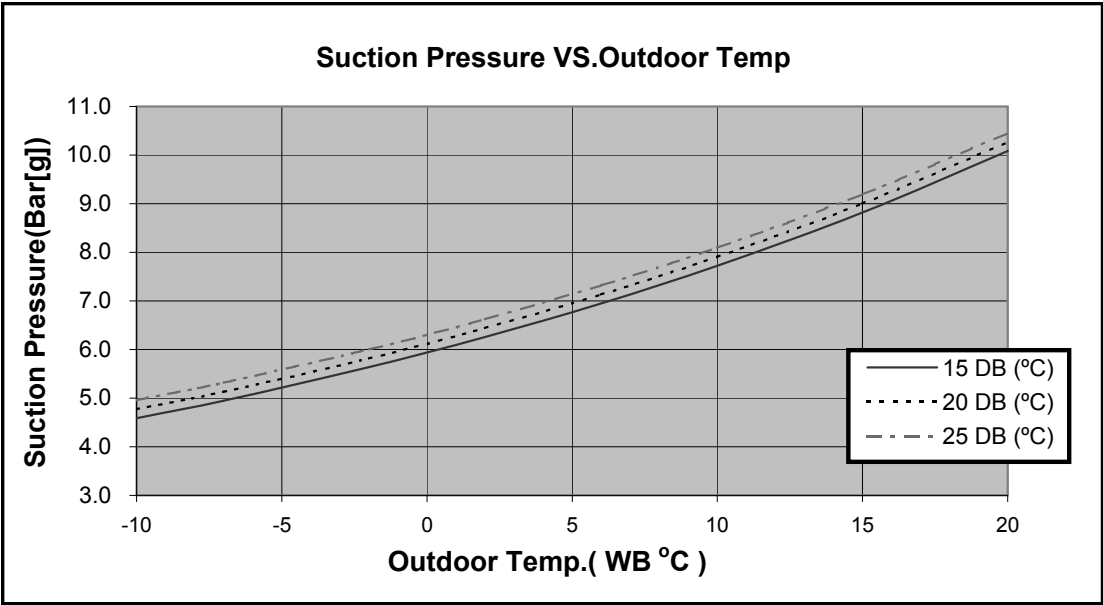
* Minimum recommended tubing length between indoor and outdoor units is 3m.

5.6 Pressure Curves.

5.6.1 Cooling.



5.6.2 Heating.



6. SOUND LEVEL CHARACTERISTICS

6.1 Sound Pressure Level

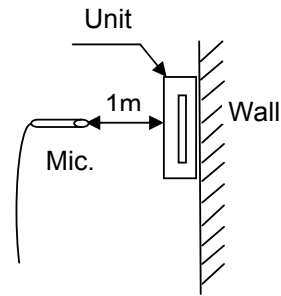
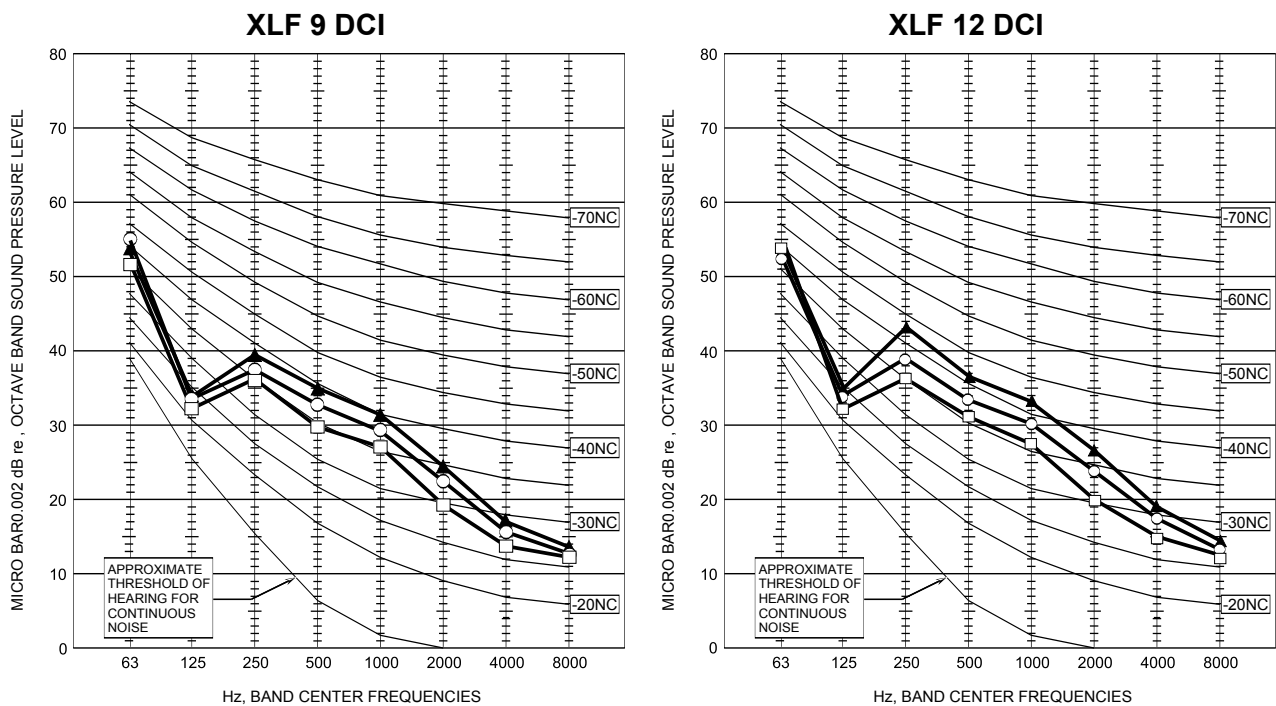


Figure 1

6.2 Sound Pressure Level Spectrum (Measured as Figure 1)



FAN SPEED	LINE
HI	—▲—
ME	—○—
LO	—□—

6.3 Outdoor units

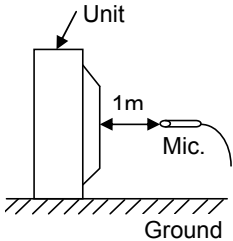
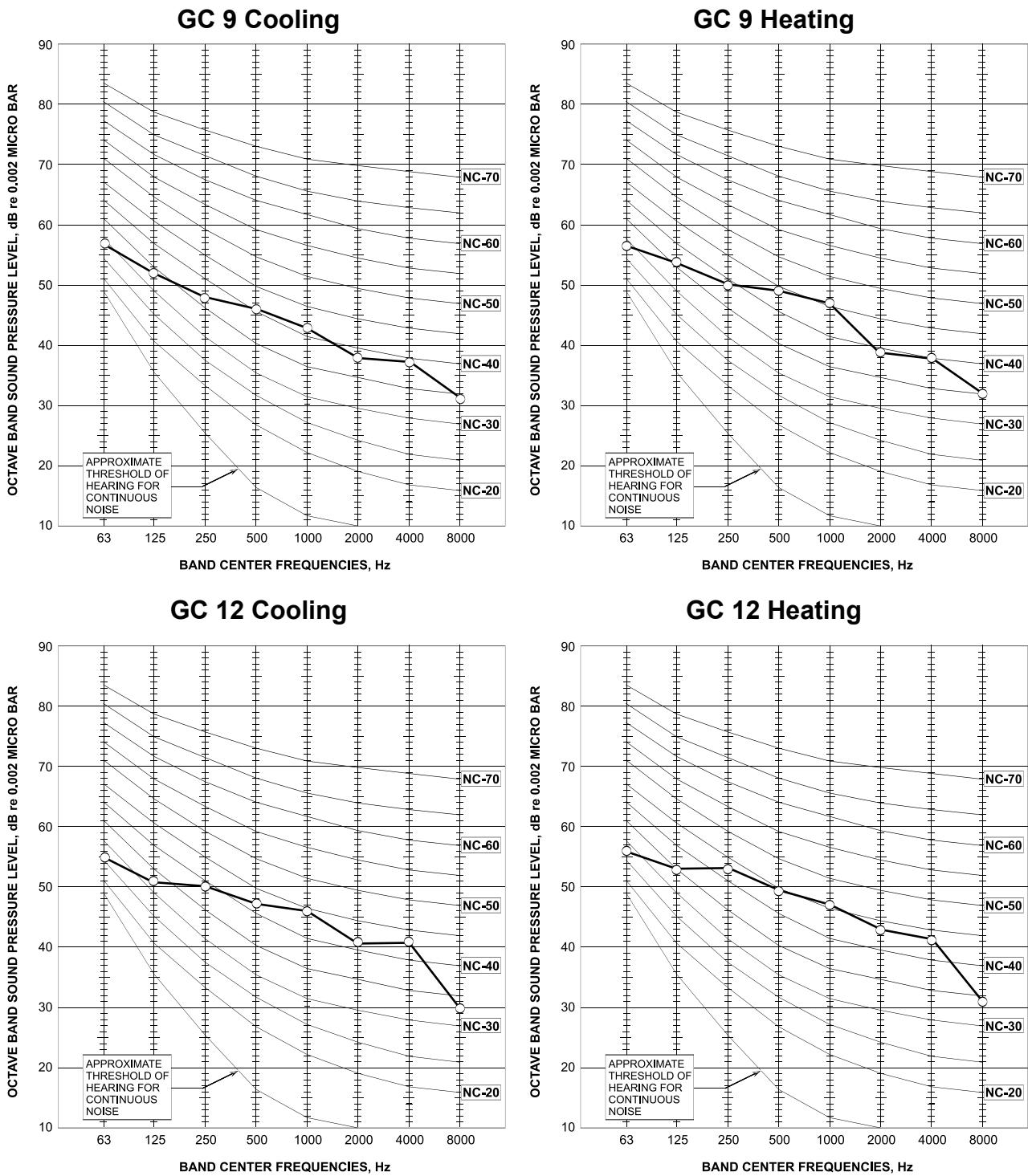


Figure 2

6.4 Sound Pressure Level Spectrum (Measured as Figure 2)



7. ELECTRICAL DATA

7.1 Single Units

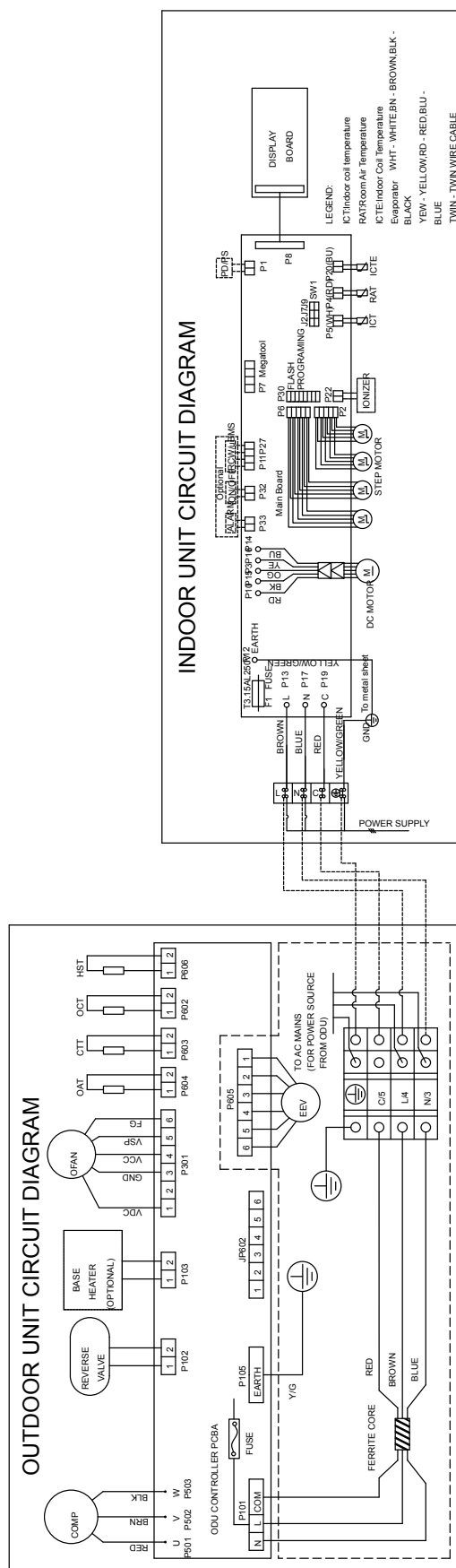
MODEL	XLF 9 DCI	XLF 12 DCI
Power Supply	To indoor	To indoor
	1PH-230V-50Hz	1PH-230V-50Hz
Max Current, (A)	10.0	10.0
Circuit Breaker,(A)	15.0	15.0
Power Supply Wiring. (No. x Cross Section mm ²)	3 x 1.5 mm ²	3 x 1.5 mm ²
Interconnecting Cable ST Model (No. x Cross Section mm ²)	4 x 1.5 mm ²	4 x 1.5 mm ²

NOTE

Power wiring cord should comply with local laws and electrical regulations requirements.

8. WIRING DIAGRAMS

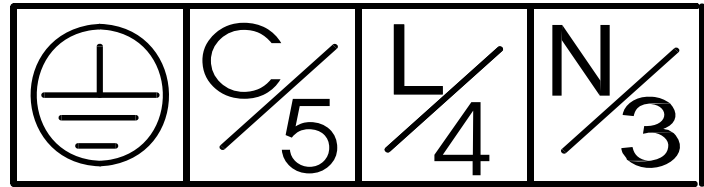
8.1 Units: XLF 9 DCI, XLF 12 DCI / GC 9, GC 12 R410A



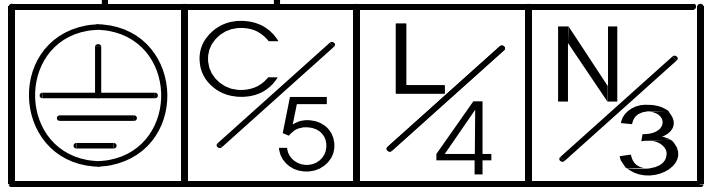
9. ELECTRICAL CONNECTIONS

9.1 XLF 9 / GC 9, XLF 12 / GC 12 R410A

Indoor unit



Outdoor unit

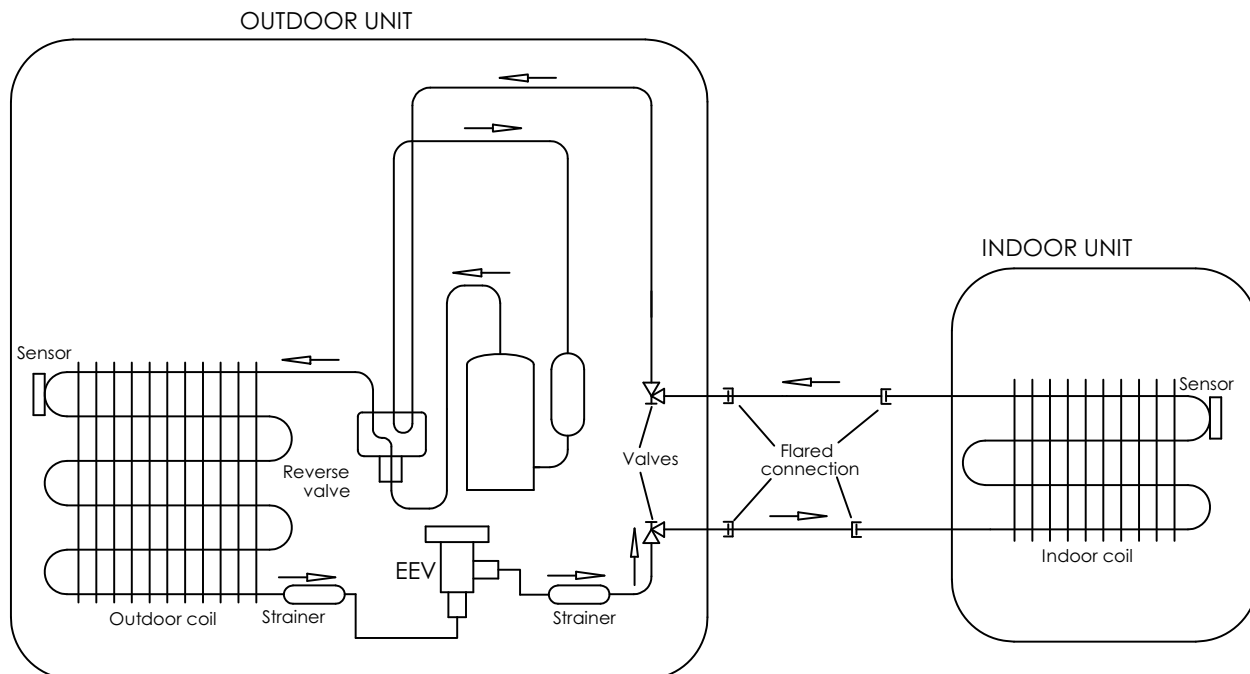


10. REFRIGERATION DIAGRAMS

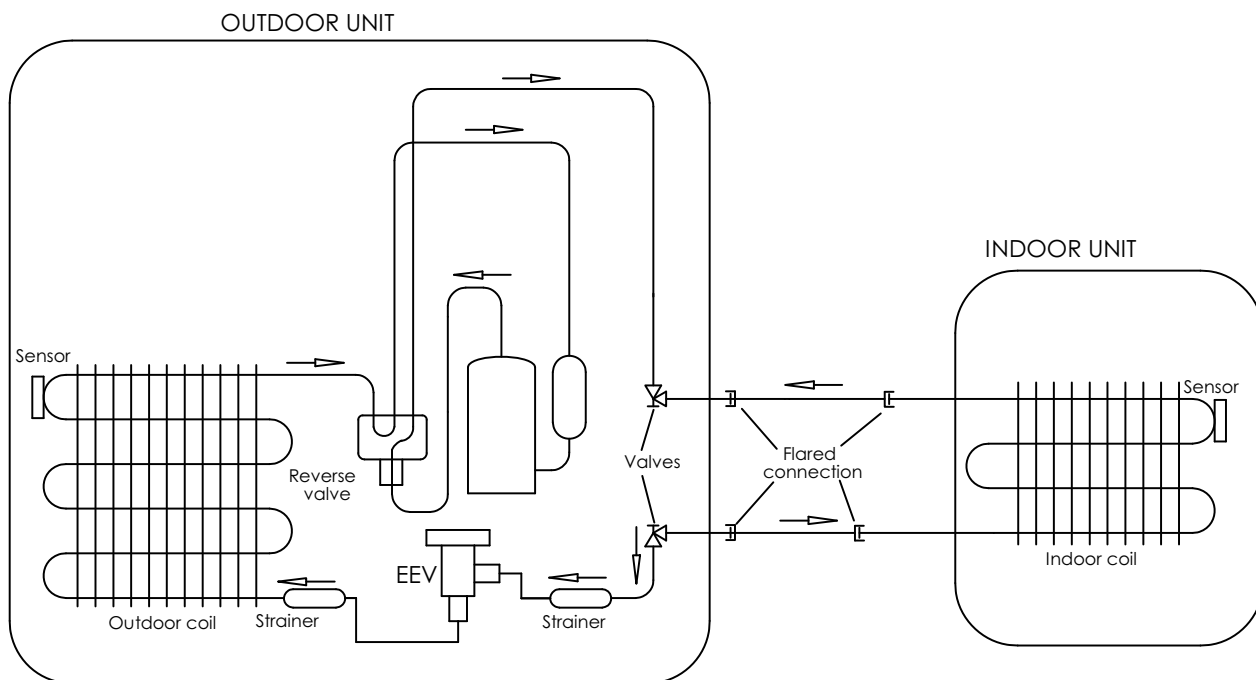
10.1 Heat Pump Models

10.1.1 XLF 9 DCI, XLF 12 DCI R410A

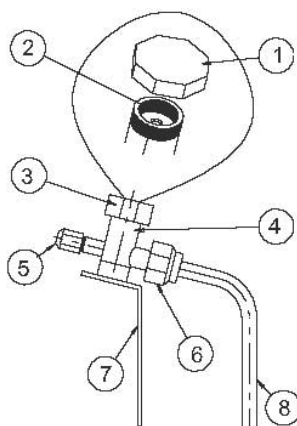
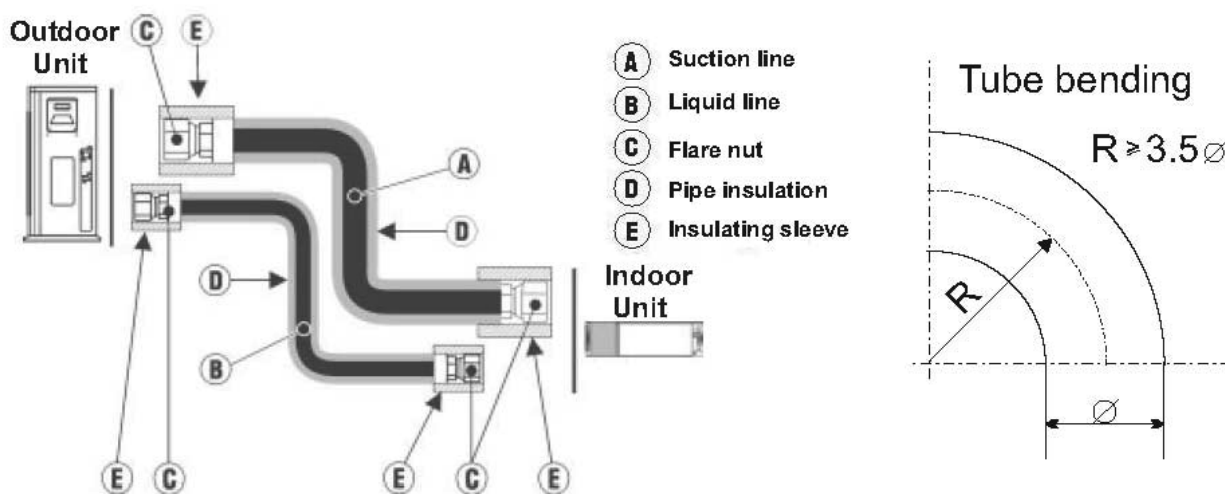
10.1.1a Cooling Mode



10.1.1b Heating Mode



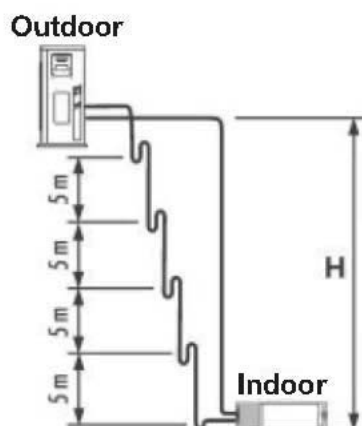
11. TUBING CONNECTIONS



TUBE (Inch)	1/4"	3/8"	1/2"	5/8"	3/4"
TORQUE (Nm)					
Flare Nuts	11-13	40-45	60-65	70-75	80-85
Valve Cap	13-20	13-20	18-25	18-25	40-50
Service Port Cap	11-13	11-13	11-13	11-13	11-13

1. Valve Protection Cap-end
2. Refrigerant Valve Port (use Allen wrench to open/close)
3. Valve Protection Cap
4. Refrigerant Valve
5. Service Port Cap
6. Flare Nut
7. Unit Back Side
8. Copper Tube

When the outdoor unit is installed above the indoor unit an oil trap is required every 5m along the suction line at the lowest point of the riser. In case the indoor unit is installed above the outdoor, no trap is required.



12 CONTROL SYSTEM

12.1 General Functions and Operating Rules The DCI software parametric.

All the model dependent parameters are shown in Blue color and with Italic style [*parameter*].

The parameters values are given in the last section of this control logic chapter of the service manual.

System Operation Concept

The control function is divided between indoor and outdoor unit controllers. Indoor unit is the system 'Master', requesting the outdoor unit for cooling/heating capacity supply. The outdoor unit is the system 'Slave' and it must supply the required capacity unless it enters into a protection mode avoiding it from supplying the requested capacity.

The capacity request is transferred via indoor to outdoor communication, and is represented by a parameter called 'NLOAD'. NLOAD is an integer number with values between 0 and 127, and it represents the heat or cool load felt by the indoor unit.

Compressor Frequency Control

NLOAD setting

The NLOAD setting is done by the indoor unit controller, based on a PI control scheme.

The actual NLOAD to be sent to the outdoor unit controller is based on the preliminary LOAD calculation, the indoor fan speed, and the power shedding function.

NLOAD limits as a function of indoor fan speed:

Indoor Fan Speed Maximum NLOAD Cooling Maximum NLOAD Heating

Indoor Fan Speed	Maximum NLOAD Cooling	Maximum NLOAD Heating
Low	<i>MaxNLOADIF1C</i>	<i>MaxNLOADIF1H</i>
Medium	<i>MaxNLOADIF2C</i>	<i>MaxNLOADIF2H</i>
High	<i>MaxNLOADIF3C</i>	<i>MaxNLOADIF3H</i>
Turbo	<i>MaxNLOADIF4C</i>	<i>MaxNLOADIF4H</i>
Auto	<i>MaxNLOADIF5C</i>	<i>MaxNLOADIF5H</i>

NLOAD limits as a function of power shedding:

Mode	Power Shedding OFF	Power Shedding ON
Cooling	No limit	Nominal Cooling
Heating	No limit	Nominal heating

Target Frequency Setting

Target Frequency Setting for GC 9 / 12

The compressor target frequency is a function of the NLOAD number sent from the indoor controller and the outdoor air temperature.

Basic Target Frequency Setting:

NLOAD	Target Frequency
127	Maximum Frequency
$10 < \text{NLOAD} < 127$	Interpolated value between minimum and maximum frequency
10	Minimum frequency
0	Compressor is sXLFPed

Target frequency limits as a function of outdoor air temperature (OAT):

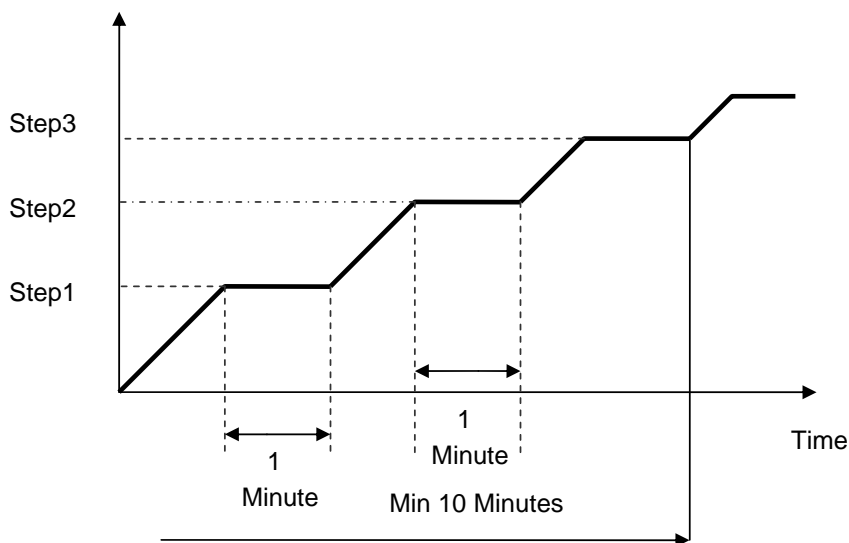
OAT Range	Cooling Mode limits	Heating Mode limits
OAT < 6	<i>MaxFreqAsOATC</i>	No limit
$6 \leq \text{OAT} < 15$		<i>MaxFreqAsOAT1H</i>
$15 \leq \text{OAT} < 28$		<i>MaxFreqAsOAT2H</i>
$28 \leq \text{OAT}$	No limit	

Frequency Changes Control

When the unit is running normally , the compressor frequency change rate is 1 Hz/sec.

Compressor Starting Control

Compressor starting control for GC 9 / 12



Minimum On and Off Time

3 minutes

Indoor Fan Control

8 Indoor fan speeds are determined for each model. 4 speeds for cool/dry/fan modes and 4 speeds for heat mode.

When user sets the indoor fan speed to a fixed speed (Low/ Medium/ High), unit will operate constantly at set speed.

When Auto Fan is selected, indoor unit controller can operate in all speeds. The actual speed is set according to the cool/heat load.

Turbo Speed

The Turbo speed is activated during the first 30 minutes of unit operation when auto fan speed is selected and under the following conditions:

Difference between set point and actual room temperature is bigger than 3 degrees.

Room temperature > 22 for cooling, or < 25 for heating.

Outdoor Fan Control

Outdoor Fan Control for DCI25/35

7 outdoor fan speeds are determined for each model. 3 speeds for cool and dry modes, and 3 speeds for heat mode, and a very low speed.

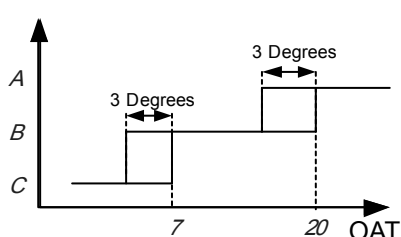
Outdoor fan speed is a function of compressor frequency and outdoor air temperature (OAT).

4 routines for fan control are determined. The control routine selection depends on operation mode, compressor speed, outdoor air temperature (OAT) and heat sink temperature (HST).

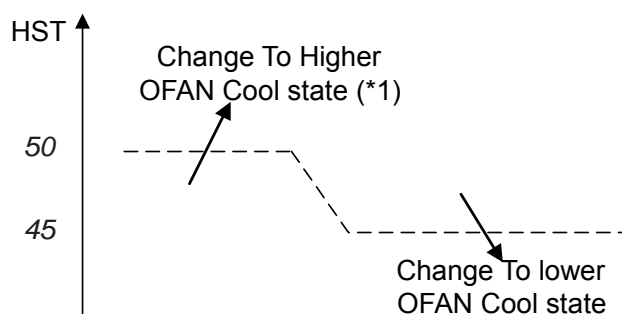
Routine	Conditions
A	Heating with OAT < 15°C or Cooling with OAT > 20°C, or Faulty OAT
B	Cooling with 20°C > OAT > 7°C
C	Cooling with 7°C > OAT
D	Heating with OAT > 15°C

	OFAN Speed			
Compressor Target Frequency	Routin A	Routin B	Routin C	Routin D
Freq=0	OFF	OFF	OFF	OFF
$10 \leq \text{Freq} < \text{OLowFreq}$	Low	Low	VL	Low
$\text{OLowFreq} \leq \text{Freq} < \text{OMedFreq}$	Medium	Low	VL	Low
$\text{OMedFreq} \leq \text{Freq}$	High	Low	Low	Medium

OFAN State
at Cool Mode



Note: Priorities A > B > C



(*1) If State C, change to B
If State B, change to A

When compressor is switched to OFF and the heat sink temperature is above 55 degrees, the outdoor fan will remain ON in low speed for up to 3 minutes.

EEV (Electronic Expansion Valve) Control

EEV Control for GC 9 / 12

EEV opening is defined as $EEV = EEV_{OL} + EEV_{CV}$

EEV_{OL} is the initial EEV opening as a function of the compressor frequency, operation mode, unit model and capacity.

EEV_{CV} is a correction value for the EEV opening that is based on the compressor temperature.

During the first 5 minutes of compressor operation $EEV_{CV} = 0$.

Once the first 5 minutes are over, the correction value is calculated as follow: $EEV_{CV}(n) = EEV_{CV}(n-1) + EEV_{CTT}$

EEV_{CTT} is the correction based on the compressor temperature. A target compressor temperature is set depending on frequency and outdoor air temperature, and the actual compressor temperature is compared to the target temperature to set the required correction to the EEV opening.

RV(Reversing Valve) Control

Reversing valve is on in heat mode.

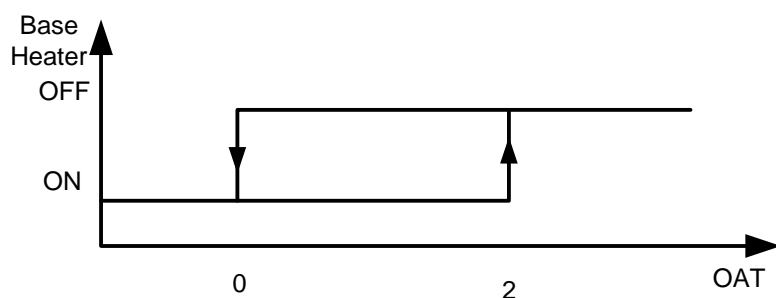
Switching of RV state is done only after compressor is off for over 3 minutes.

Ionizer Control

Ionizer is on when unit is on ,AND indoor fan is on ,AND Ioniser power switch is on.

Base Heater Control

The base heater will be working only when RV is "ON" according to the following graph:



When OAT is faulty the base heater will be "ON" continuously in HEAT mode.

Fan Mode

In high/ medium/ low indoor fan user setting, unit will operate fan in selected speed.

In AutoFan user setting, fan speed will be adjusted automatically according to the difference between actual room temperature and user set point temperature.

Cool Mode

NLOAD is calculated according to the difference between actual room temperature and user set point temperature by fuzzy control.

In high/ medium/ low indoor fan user setting, unit will operate fan in selected speed.

In AutoFan user setting, fan speed will be adjusted automatically according to the calculated NLOAD.

Heat Mode

NLOAD is calculated according to the difference between actual room temperature and user set point temperature by **fuzzy** control.

In high/ medium/ low indoor fan user setting, unit will operate fan in selected speed.

In AutoFan user setting, fan speed will be adjusted automatically according to the calculated NLOAD.

Temperature Compensation

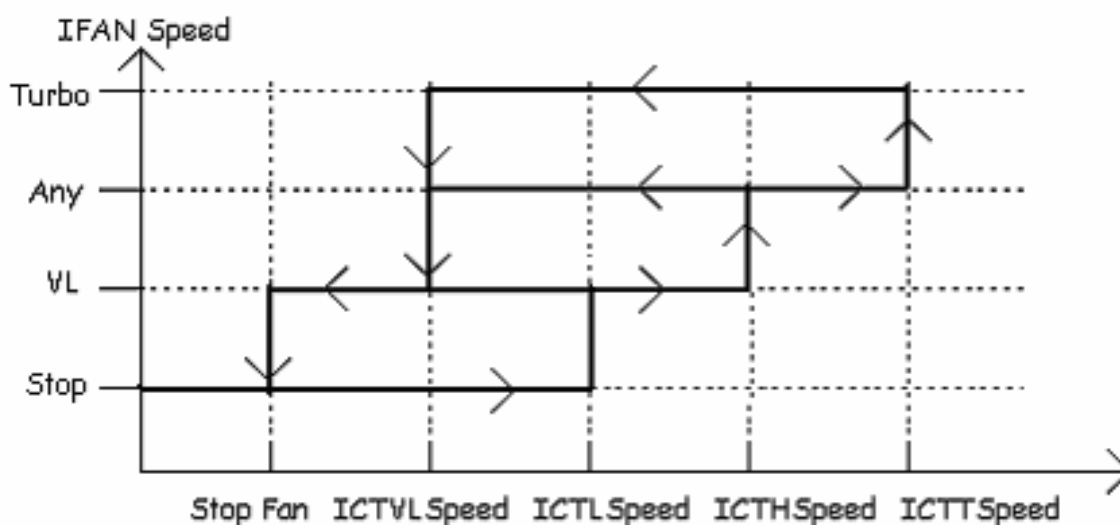
In wall mounted, ducted, and cassette models, 3 degrees are reduced from room temperature reading (except when in I-Feel mode), to compensate for temperature difference between high and low areas in the heated room, and for coil heat radiation on room thermistor.

The temperature compensation can be enabled/disabled by shortening of J2 on the indoor unit Controller

Model	J2 Shorted(ON)	J2 Opened(OFF)
Wall mounted	Compensation Disabled	Compensation Enabled
Cassette	Compensation Enabled	Compensation Disabled
Ducted	Compensation Enabled	Compensation Disabled
Floor/Ceiling	Compensation Disabled	Compensation Enabled

Indoor Fan Control in Heating Mode

Indoor fan speed depends on the indoor coil temperature:



Auto Cool/Heat Mode

When in auto cool heat mode unit will automatically select between cool and heat mode according to the difference between actual room temperature and user set point temperature (.T).

Unit will switch from cool to heat when compressor is off for 3 minutes, and .T < -3.

Unit will switch from heat to cool when compressor is off for 5 minutes, and .T < -3.

Dry Mode

As long as room temperature is higher than the set point, indoor fan will work in low speed and compressor will work between 0 and *MaxNLOADIF1C* Hz.

When the room temperature is lower than the set point, compressor will be switched OFF and indoor fan will cycle 3 minutes OFF, 1 minute ON.

Protections

There are 5 protection codes.

Normal (Norm) – unit operate normally.

sXLF Rise (SR) – compressor frequency can not be raised but does not have to be decreased.

HzDown1 (D1) – Compressor frequency is reduced by 2 to 5 Hz per minute.

HzDown2 (D2) – Compressor frequency is reduced by 5 to 10 Hz per minute.

sXLF Compressor (SC) – Compressor is sXLFped.

Indoor Coil Defrost Protection

Min(ICT,ICTE)	Trend				
	Fast Increasing	Increasing	No Change	Decreasing	Fast Decreasing
< -2	SC	SC	SC	SC	SC
[-2, 0)	D1	D1	D2	D2	D2
[0, 2)	SR	SR	D1	D2	D2
[2, 4)	SR	SR	SR	D1	D2
[4, 6)	Norm	Norm	SR	SR	D1
[6, 8]	Norm	Norm	Norm	SR	SR
> 8	Norm				

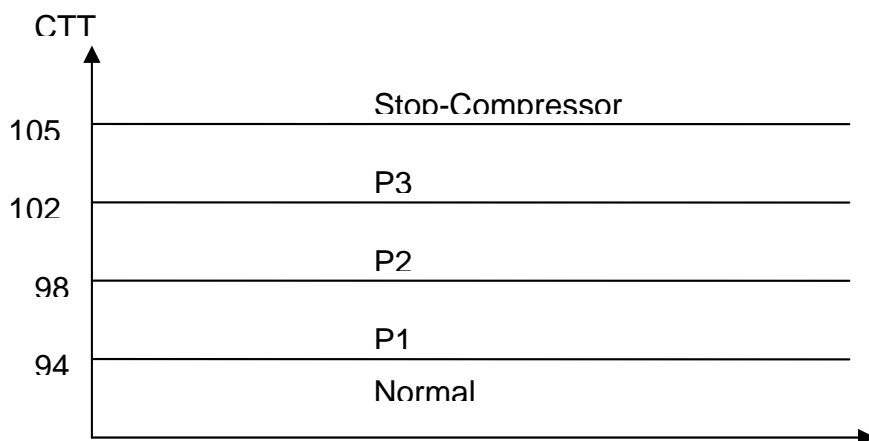
Indoor Coil Overheating Protection

ICT	ICT Trend				
	Fast Decreasing	Decreasing	No Change	Increasing	Fast Increasing
>62	SC	SC	SC	SC	SC
[60, 62)	D1	D1	D2	D2	D2
[55, 60)	SR	SR	D1	D2	D2
[52, 55)	SR	SR	SR	D1	D2
[48, 52)	Norm	Norm	SR	SR	D1
[45, 48)	Norm	Norm	Norm	SR	SR
I<45	Norm				

Compressor Overheating Protection

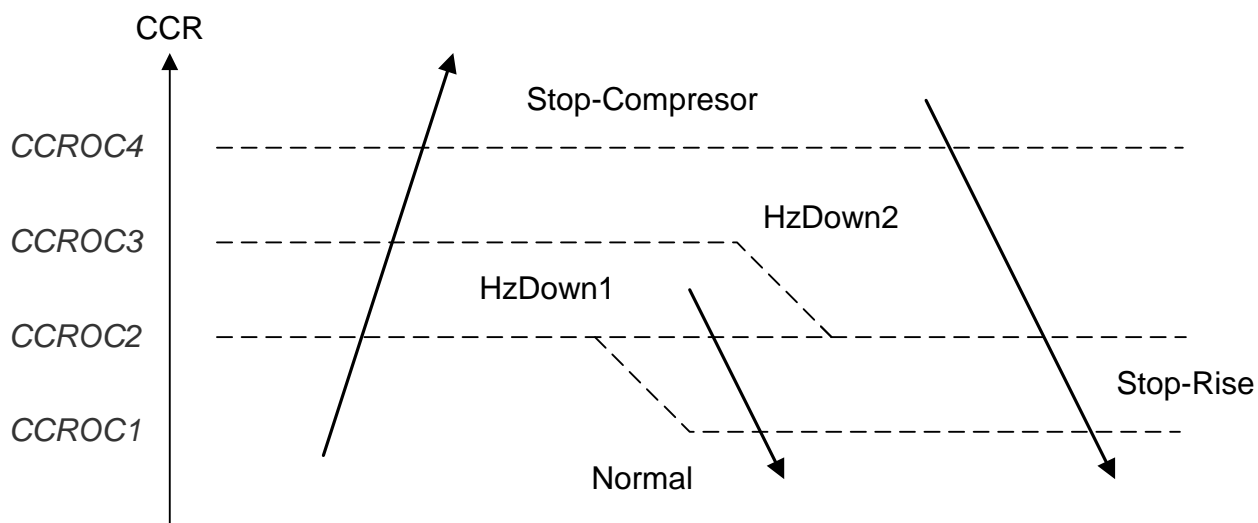
Compressor Overheating Protection for GC 9 / 12

Compressor temperature can be in one of 5 control zones (4 in protection, and 1 normal), according to the following chart.



Control Status	Compressor Temperature Increases	Else
P1	Normal	SXLF Rise
P2	HzDown 1	SXLF Rise
P3	HzDown 2	HzDown 1
SXLF Compressor	SXLF Compressor	

Compressor Over Current Protection Only For DCI25/35



Heat Sink Overheating Protection

Heat Sink Overheating Protection For GC 9 / 12

HST	HST Trend				
	Fast Decreasing	Decreasing	No Change	Increasing	Fast Increasing
≥ 90	SC	SC	SC	SC	SC
[85, 90)	D1	D1	D2	D2	D2
[82, 85)	SR	SR	D1	D2	D2
[80, 82)	SR	SR	SR	D1	D1
[78, 80)	Norm	Norm	Norm	SR	SR
< 78	Norm				

Outdoor Coil Deicing Protection

Outdoor coil Deicing Protection For GC 9 / 12

- **Entering Deicing Conditions**

Deicing operation will start when either one of the following conditions exist:

Case 1: $OCT < OAT - 8$ AND $TLD > DI$

Case 2: $OCT < OAT - 12$ AND $TLD > 30$ minutes.

Case 3: OCT is Invalid AND $TLD > DI$

Case 4: Unit is just switched to STBY AND $OCT < OAT - 8$

Case 5: $NLOAD = 0$ AND $OCT < OAT - 8$

Case 6: $OCT < -19$ AND $TLD > 60$ minutes

All this condition will exist during 10 seconds

OCT – Outdoor Coil Temperature

OAT – Outdoor Air Temperature

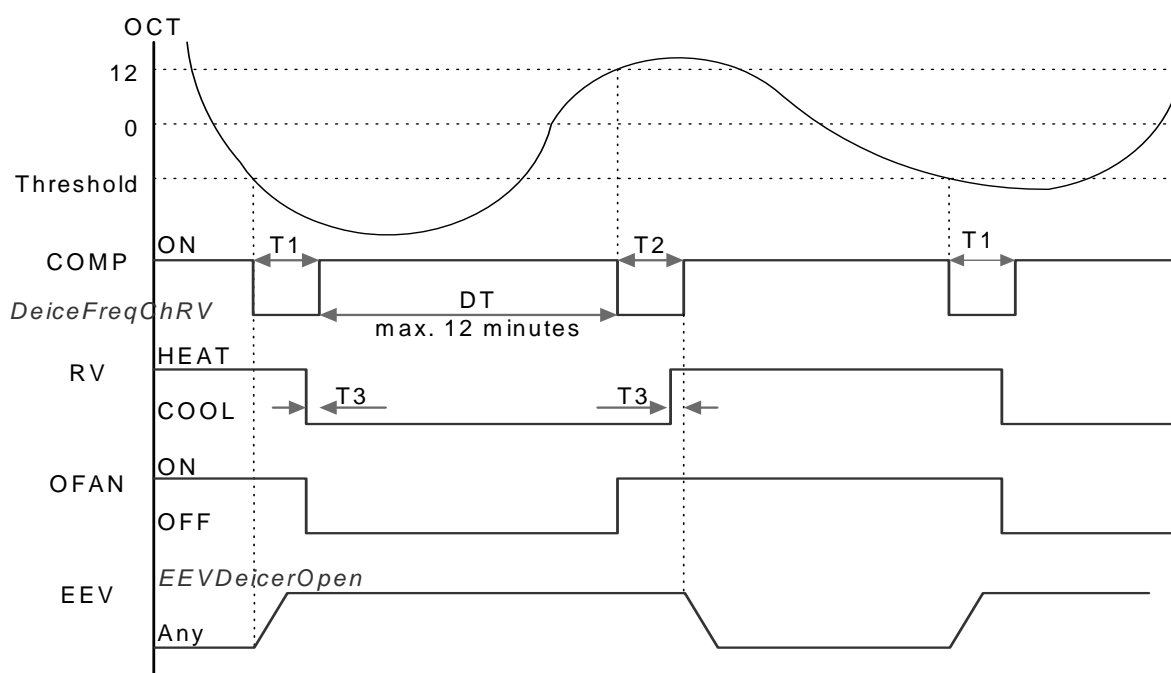
TLD – Time from Last Deicing

DI – Deicing Interval (Time Interval Between Two Deicing)

Deicing interval time when compressor is first started in heat mode, is 10 minutes if $OCT < -2$, and is 40 minutes in other cases.

Deicing interval time is changed (increased/ decreased in 10 minutes steps) as a function of deicing time. If deicing time is shorter then former deicing time, the deicing interval time will be increased. If deicing time is longer then former deicing time, the deicing interval time will be decreased.

• Deicing Operation Procedure



T1=60 secondes;T2=36 secondes;T3=6 secondes

T1=50 secondes;T2=36 secondes;T3=6 secondes

Operating the Unit from Mode Button (On displayer)

Forced operation allows to start, sXLF and operate in Cooling or Heating, in pre-set temperature according to the following table:

Forced operation Mode	Pre-set Temperature
Cooling	20°C
Heating	28°C

On Unit Controls and Indicators

Indoor Unit controller Controls and Indicators for All Models Except for Floor/Ceiling model

During OFF, Fan, Cool, Heat, Dry, and Auto modes (for operation in other modes, see at the relevant spec paragraph):

STAND BY
INDICATION

- Lights up when the Air Conditioner is connected to power and ready to receive the R/C commands
- STBY will be indicated by the following illumination (purple color):

LED	Duty Cycle (%)
'Unit Mode' Heat (Red)	50
'Unit Mode' Cool (Blue)	50
The combined color is purple (it's not red and not blue)	

OPERATION INDICATION

- 'Unit Mode' Cool Lights up in blue color during Cool, Dry, Fan, or Auto modes. Even though the mode can be changed automatically from Auto Cool to Auto Heat, the 'Unit Mode' Cool will light on.
- 'Unit Mode' Heat Lights up in Red color during heat mode. It will not light up during Auto Heat mode.
- Blinks continuously during protections (according to the relevant spec section). During heating the 'Unit Mode' Heat blinks. In cool, Dry, Fan, or Auto modes the 'Unit Mode' Cool blinks. The duty cycle illumination in protection mode 100%.
- The Red or Blue LED illuminates according to the following

Profile each time receiving an RC command.

Time (sec)	Duty Cycle (%)
0-2	100
2-4	90
4-6	80
6-8	70
8-10	60
>10	50

- The 'Unit Mode' LED will indicate the relevant mode (heat and Cool/Dry/Fan/Auto) under any system Trigger for mode change:

Internal timer

Timer-to-on command

	Presence detector
	Remote controller
	ICOM-X command
	Mode Button
ESF/INOIZER INDICATOR	<ul style="list-style-type: none"> Lights up during ESF/ ionizer operation.
TIMER INDICATOR	<ul style="list-style-type: none"> Lights up during Timer and Sleep operation.
FILTER INDICATOR	<ul style="list-style-type: none"> The filer LED never lights up(even when the filer needs to be cleaned).
COOLING INDICATOR	<ul style="list-style-type: none"> Lights up only during diagnostics (changing mode be pressing the Mode Button does not turn on this LED).
HEATING INDICATOR	<ul style="list-style-type: none"> Lights up only during diagnostics (changing mode by pressing the Mode Button does not turn on this LED).
MODE BUTTON(COOL/HEAT/OF F)	<ul style="list-style-type: none"> Every short pressing , the next operation mode is selected, in this order : SB → Cool Mode → Heat Mode → SB → ... In long pressing the system enters into diagnostic mode.
RESET BUTTON	<ul style="list-style-type: none"> For short pressing enables/disables the buzzer announcer: enable →disable...where the default value is enable. In long pressing system enters set up mode (if in SB).

Outdoor Unit controller Indications

Unit has three LED's.

SB LED is ON when power is ON (230 VAC, even when no communication).

STATUS LED is ON when COMP is ON, and Blinks according to diagnostics mode definitions when either fault or protection occurs.

FAULT LED Blinks according to diagnostics mode definitions when either fault or protection occurs.

Jumper Settings

Indoor Unit Controller

Definations:

Logic Input	Jumper (J)	DIP switch (D)
0	Open(Disconnected)	OFF
1	Close(Connected)	ON

Self Test Jumper(J1)

Jumper for production line check.

DIP Switch Settings

- **Compensation setting**

This setting activates the compensation to the return air temperature in heating mode. For indoor unit like cassette, the DIP switch J2 should be ON.

Compensation	J2(DIP1)
Activated (factory setting)	ON
Deactivated	OFF

- **Unit model setting (Factory setting)**

The unit model setting should be in accordance with the unit model on the nameplate. The unit operating parameters will be improper with wrong settings.

Unit model (Capacity)	J7(DIP2)
2.5kW model	OFF
3.5kW model	ON

- **Presence Detector/Power Shedding Selection**

Select the functions of dry contact PD/PS by setting the Dip switch J9

Selection	J9(DIP3)
Presence Detector	OFF
Power Shedding	ON

Dry Contacts

- **Alarm Output**

The Alarm Output dry contact will be on (closed), when a predefined set faults occur.

The fault set is defined under diagnostics section.

The alarm output will be off (open), when the predefined fault is cleared.

The indoor alarm outputs are defined according to the following table:

No	Problem	AO	5	4	3	2	1
1	ICT is disconnected	Yes	0	0	0	0	1
2	ICT is shorted	Yes	0	0	0	1	0
3	RAT is disconnected	Yes	0	0	0	1	1
4	RAT is shorted	Yes	0	0	1	0	0
5	Reserved (for MSMP used as RGT fault)	No	0	0	1	0	1
6	ICTE shorted/disconnected (when enabled)	Yes	0	0	1	1	0
7	Undefined IDU family/model	Yes	0	0	1	1	1
8	No Communication	Yes	0	1	0	0	0
9	No Encoder	No	0	1	0	0	1
10	Reserved	No	0	1	0	1	0
11	Outdoor Unit Fault	No	0	1	0	1	1
...	Reserved	No					
17	Defrost protection	No	1	0	0	0	1
18	Deicing Protection	No	1	0	0	1	0
19	Outdoor Unit Protection	No	1	0	0	1	1
20	Indoor Coil HP Protection	No	1	0	1	0	0
21	Overflow Protection	Yes	1	0	1	0	1
22	Reserved	No					
24	EEPROM Not Updated	No	1	1	0	0	0
25	Bad EEPROM	No	1	1	0	0	1
26	Bad Communication	No	1	1	0	1	0
27	Using EEPROM data	No	1	1	0	1	1
28	Model A	No	1	1	1	0	0
29	Model B	No	1	1	1	0	1
30	Model C	No	1	1	1	1	0
31	Model D	No	1	1	1	1	1

Notes:

1. Only one code is shown. Order of priority is lower to the higher number. Diagnostics is continuously ON as long power is on.
2. The following case describes the LEDs used to present diagnostics and the indication:

XLF DCI	Cool LED (Diagnostics) Replaced BY	Heat LED (Diagnostics) Replaced BY	Indoor Diagnostics indicated by	Outdoor Diagnostics indicated by
	Use Cool LED (Do not replace)	Use Heat LED (Do not replace)	'Unit Mode' cool is on (100%) during indoor diagnostics.	'Unit Mode' heat blinks during Outdoor diagnostics.

The outdoor alarm outputs are defined in the following way:

No	Problem	AO	5	4	3	2	1
1	OCT is disconnected	Yes	0	0	0	0	1
2	OCT is shorted	Yes	0	0	0	1	0
3	CTT is disconnected	Yes	0	0	0	1	1
4	CTT is shorted	Yes	0	0	1	0	0
5	HST is disconnected (when enabled)	Yes	0	0	1	0	1
6	HST is shorted (when enabled)	Yes	0	0	1	1	0
7	OAT is disconnected (when enabled)	Yes	0	0	1	1	1
8	OAT is shorted (when enabled)	Yes	0	1	0	0	0
9	TSUC is disconnected (when enabled)	Yes	0	1	0	0	1
10	TSUC is shorted (when enabled)	Yes	0	1	0	1	0
11	IPM Fault	Yes	0	1	0	1	1
12	Bad EEPROM	No	0	1	1	0	0
13	DC under voltage	Yes	0	1	1	0	1
14	DC over voltage	Yes	0	1	1	1	0
15	AC under voltage	Yes	0	1	1	1	1
16	Mismatch between IDU & ODU models	Yes	1	0	0	0	0
17	No Communication	Yes	1	0	0	0	1
18	Reserved	No	1	0	0	1	0
20	Heat sink Over Heating	No	1	0	1	0	0
21	Deicing	No	1	0	1	0	1
22	Compressor Over Heating	No	1	0	1	1	0
23	Compressor Over Current	No	1	0	1	1	1
24	No OFAN Feedback	No	1	1	0	0	0
25	OFAN locked	Yes	1	1	0	0	1
26	Compressor Lock	Yes	1	1	0	1	0
27	Bad Communication	No	1	1	0	1	1
28	Missing ODU configuration	Yes	1	1	1	0	0
29	Undefined ODU Model	Yes	1	1	1	0	1
30	For future use	No	1	1	1	1	0
31	Operation condition is exceeded	Yes	1	1	1	1	1

- **Unit ON Output**

The 'On/Off status' dry contact will be on (closed), when the indoor mode is not STBY.
If the indoor mode is STBY mode, the 'On/Off status' will be off (open).

- **PD/PS(Presence Detector/Power Shedding) ther**

	Function	Contact=open	Contact=short
J9=OFF	Presence Detector Connection	No limit	Force to STBY
J9=ON	Power Shedding Function	No limit	Limit NLOAD

Outdoor Unit Controller

JP9 Dip switch setting

ODU Model Selection

ODU3(DIP1)	ODU2(DIP1)	ODU1(DIP1)	ODU0(DIP1)	ODU Model
OFF	OFF	OFF	OFF	Reserved
OFF	OFF	OFF	ON	A (Single GC 9)
OFF	OFF	ON	OFF	B (Single DCI35)

Test Mode

Entering Test Mode

System can enter Test mode in two ways:

Automatically when the following conditions exists for 30 minutes continuously:

Mode = Cool, Set point = 16, Room temperature = $27(+1/-2)$, Outdoor temperature = $35(+2/-1)$ Or

Mode = Heat, Set point = 30, Room temperature = 20 ± 1 , Outdoor temperature = $7\pm(+1/-2)$ Manually when entering diagnostics with the following settings:

Mode = Cool, Set point = 16

Mode = Heat, Set point = 30

Unit Operation in Test Mode

In test mode, the unit will operate in fixed settings according to the indoor fan speed setting:

Indoor FAN Speed Setting	Unit Setting
Low	Minimum Capacity Setting
Turbo	Nominal Capacity Setting
Auto	Maximum Capacity Setting

During test mode, protections are disabled, except for XLF compressor status.

SW Parameters

Indoor Units SW Parameters

Model dependent parameters

XLF DCI Family

	A (XLF 9 DCI)	B (XLF 12 DCI)	C (Reserved)	D (Reserved)
IFVLOWC	400	400		
IFLOWC	450	450		
IFMEDC	490	510		
IFHIGHC	520	540		
IFTURBOC	570	590		
IFVLOWH	400	400		
IFLOWH	450	450		
IFMEDH	490	510		
IFHIGHH	520	590		
IFTURBOH	620	820		
Cap .Group	0	1		
NomLoadC	46	69		
NomLoadH	43	56		
MaxNLOADIF1C	47	42		
MaxNLOADIF2C	70	59		
MaxNLOADIF3C	127	127		
MaxNLOADIF4C	127	127		
MaxNLOADIF5C	127	127		
IFAN_SPEED_COMP0_C	0	0		
IFAN_SPEED_COMP1_C	0	0		
IFAN_SPEED_COMP2_C	0	0		
IFAN_SPEED_COMP3_C	0	0		
IFAN_SPEED_COMP0_H	0	0		
IFAN_SPEED_COMP1_H	0	0		
IFAN_SPEED_COMP2_H	0	0		
IFAN_SPEED_COMP3_H	0	0		
ModelEnable	1	1		

Outdoor Units SW Parameters

Model dependent parameters for GC 9 / GC 12

	Name	A Single DCI-25	B Single DCI-35
1	MinFreqC	30	33
2	MaxFreqC	64	80
3	MaxFreqCRunPhase	64	80
4	MinFreqH	30	35
5	MaxFreqH	81	93
6	MaxFreqHRunPhase	81	93
7	LoadDeadZoneC	90	95
8	LoadDeadZoneH	127	127
9	NormAccel	1	1
10	NormDecel	1	1
11	Step1Freq	60	60
12	Step2Freq	70	70
13	Step3Freq	90	90
14	OFVL	20	20
15	OFLOWC	55	55
16	OFMEDC	70	70
17	OFMAXC	83	83
18	OFLOWH	55	55
19	OFMEDH	70	70
20	OFMAXH	83	83
21	OFANTESTMODEC	83	83
22	OFANTESTMODEH	83	83
23	OFDelTestMode	20	20
24	CTTOH1	94	94
25	CTTOH2	98	98
26	CTTOH3	102	102
27	CTTOH4	105	105
28	CCROC1	7.1	7.1
29	CCROC2	7.5	7.5
30	CCROC3	7.9	7.9
31	CCROC4	8.3	8.3
32	DEICT1	60	60
33	DEICT2	36	36
34	DEICT3	6	6
35	ProtFreqLimit	60	60
36	EEVDecierOpen	180	180
37	OptimDeicFreq	90	90
38	OCTExuDeicer	12	12
39	MaxDeicerTime	12	12
40	EEVMinOperOpenC	50	50
41	EEVMaxOperOpenC	380	380
42	EEVMinOperOpenH	50	50
43	EEVMaxOperOpenH	300	300
44	EEVNormRate	33	33
45	EEVHighRate	12	12
46	EEVMaxOpen	500	500
47	OFLowFreqC	45	45
48	OFMedFreqC	57	57
49	OFLowFreqH	45	45
50	OFMedFreqH	57	57
51	HeaterDisableFlag	0	0
52	DeiceFreqChRV	0	0
53	OATRefC	35	35
54	SUCT Enable	0	0
55	HST Enable	0	0
56	OAT Enable	1	1
57	OATRefH	7	7
58	MinTargCTTC	30	30
59	MaxTargCTTC	95	95
60	MinTargCTTH	40	40
61	MaxTargCTTH	95	95
62	DST	8	8
63	DSTF	12	12
64	OATLimitC	24	24
65	OATLimit1H	6	6
66	OATLimit2H	15	15
67	MaxFreqAsOATC	50	50
68	MaxFreqAsOAT1H	65	75
69	MaxFreqAsOAT2H	60	60

13. TROUBLESHOOTING

13.1 Models: XLF 9 / GC 9, XLF 12 / GC 12

ELECTRICAL & CONTROL TROUBLESHOOTING

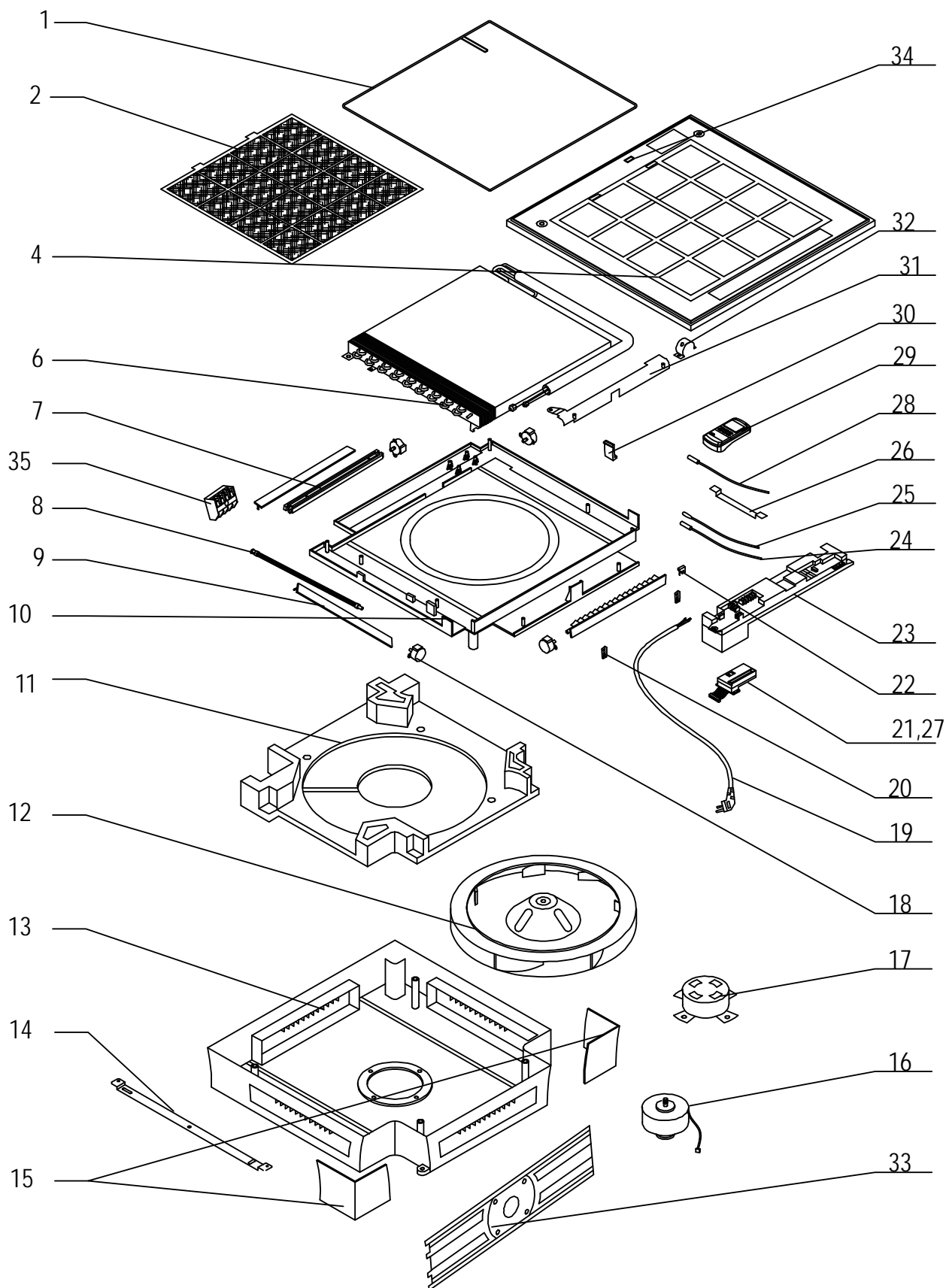
ATTENTION: check for broken or loose cable lugs first.

Problem	Cause	Remedy
Unit does not operate. Stand-by indicator does not light up	Unit not connected to power Power failure	Plug in the power cord Check main fuse
Unit does not operate. Stand-by indicator lights.	Remote control malfunctions The remote control is locked	Check remotecontrol batteries Try to operate from a closer distance Start from on-unit controls Unlock the remote control
Unit does not respond properly to remote control command	IR signal does not reach unit Distance between remote control and unit too large or aimed at from improper angle IR receiver on-unit exposed to strong light source	Check for obstruction between unit and remote control. Clear if needed. Get closer to unit. Dim lights, fluorescents especially
Air does not blow out from indoor unit	De-icing protection mode is activated Unit in AUTO FAN mode Over cooling in DRY	Normal operation in HEATING mode Normal operation in DRY mode
COOLING, DRY or HEATING does not start immediately	3-min. Compressor delayed start	Normal operation for these modes
Unit functions but does not perform sufficiently	Improper temperature setting Unit capacity insufficient for load or room size	Reset temperature Consult your dealer

14. EXPLODED VIEWS AND SPARE PARTS LISTS

14.1 R410A

14.1.1 Indoor Unit: XLF 9 DCI, XLF 12 DCI



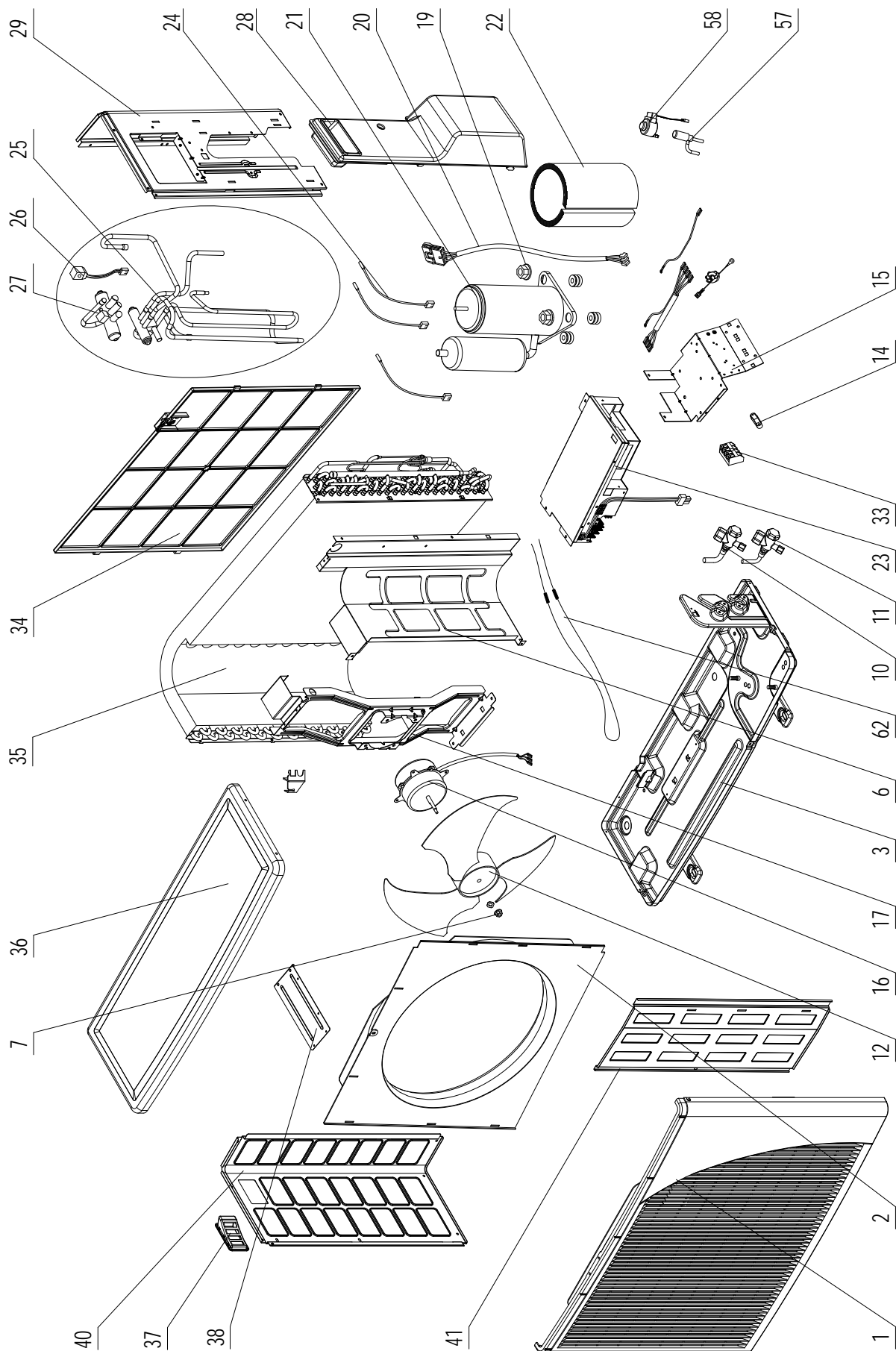
14.1.2 Indoor Unit: XLF 9 DCI

NO.	P/N	Description	Quan.
1	465720088	Front Panel Assy. (Electra)	1
	465720090	Front Panel Assy. (Airwell)	1
	465720091	Front Panel Assy./silver (Electra)	1
	465720092	Front Panel Assy. /silver(Airwell)	1
	465720162	Front Panel Assy. /silver(Johnson)	1
	465720099	Front Panel Assy. (Elco)	1
2	433007	Air Filter	1
4	465020128	Front Frame / Silver	1
	465020127	Front Frame / White	1
6	470680014	Evaporator Assy	1
7	465800023	Air Outlet Frame Assy./Silver	4
	465800041	Air Outlet Frame Assy./White	4
8	437562	Draining Hose	1
9	465160006	Flap / Silver	4
	465160007	Flap / White	4
10	465810000	Coil Support Assy.	1
11	433040	UNIT BASE INS.	1
12	433011	Fan	1
13	465320009	Base / Silver	1
	465320010	Base / White	1
14	433031	Installation Plate	1
15	465340025	CORNER COVER LEFT / Silver	1
	465340026	CORNER COVER RIGHT / Silver	1
	465340029	CORNER COVER LEFT / White	1
	465340030	CORNER COVER RIGHT / White	1
16	466130017R	Motor	1
17	433033	Motor Cover	1
18	433050	Step Motor	4
19	455013300R	Power Wire	1
20	433020	Cable locker	2
21	467300248R	Display / White	1
	467300249R	Display / Silver	1
22	4516263	Sensor base	1
23	467300211R	Control Box Assy	1
24	438082	Thermistor indoor coil	1
25	467400025	Thermistor Room	1
26	433032	Wires Cover	1
27	433027	Display Connect wire	1
28	467400034	Termistor indoor coil	1
29	453042500R	Remote control / RC4i-1	1
30	433008	LATCH	3
31	465320005	Tube Bracket	1
32	433034	Tube Lock	1
33	433030	BACK HOLDER	1
34	468240005	Film/display lamp/white	1
	468240006	Film/display lamp/silver	1
35	467420021	4 Poles terminal block	1

14.1.3 Indoor Unit: XLF 12 DCI

NO.	P/N	Description	Quan.
1	465720088	Front Panel Assy. (Electra)	1
	465720090	Front Panel Assy. (Airwell)	1
	465720091	Front Panel Assy. (Electra)	1
	465720092	Front Panel Assy. (Airwell)	1
	465720162	Front Panel Assy. /silver(Johnson)	1
	465720099	Front Panel Assy. (Elco)	1
2	433007	Air Filter	1
4	465020128	Front Frame / Silver	1
	465020127	Front Frame / White	1
6	470680013	Evaporator Assy	1
7	465800023	Air Outlet Frame Assy./Silver	4
	465800041	Air Outlet Frame Assy./White	4
8	437562	Draining Hose	1
9	465160006	Flap / Silver	4
	465160007	Flap / White	4
10	465810000	Coil Support Assy.	1
11	433040	UNIT BASE INS.	1
12	433011	Fan	1
13	465320009	Base / Silver	1
	465320010	Base / White	1
14	433031	Installation Plate	1
15	465340025	CORNER COVER LEFT / Silver	1
	465340026	CORNER COVER RIGHT / Silver	1
	465340029	CORNER COVER LEFT / White	1
	465340030	CORNER COVER RIGHT / White	1
16	466130017R	Motor	1
17	433033	Motor Cover	1
18	433050	Step Motor	4
19	455013300R	Power Wire	1
20	433020	Cable locker	2
21	467300248R	Display / White	1
	467300249R	Display / Silver	1
22	4516263	Sensor base	1
23	467300211R	Control Box Assy	1
24	438082	Thermistor indoor coil	1
25	467400025	Thermistor Room	1
26	433032	Wires Cover	1
27	433027	Display Connect wire	1
28	467400034	Termistor indoor coil	1
29	453042500R	Remote control / RC4i-1	1
30	433008	LATCH	3
31	465320005	Tube Bracket	1
32	433034	Tube Lock	1
33	433030	BACK HOLDER	1
34	468240005	Film/display lamp/white	1
	468240006	Film/display lamp/silver	1
35	467420021	4 Poles terminal block	1

14.1.4 Outdoor Unit GC 9, GC 12 DCI R410A



14.1.5 Outdoor Unit GC 9, GC 12 DCI R410A

No.	Part No.	Description	Qty
1	433218	A Front Panel A	1
2	4526340	Air inlet ring-420	1
3	4523060	Base Painting Assy.	1
6	4526299	Partition	1
7	4519300	Nut M5 L	1
10	463300505	Standard Valve Connect Pipe/Gas Valve/ TP2M 9.53*0.8/CON GCN ONG3	1
10	461010004	Gas Valve 3/8" R410A	1
11	463300510	Standard Valve Connect Pipe/Liquid Valve/ TP2M 6.35*0.8/RC/GCN ONG3	1
11	461000004	Liquid Valve 1/4" R410A	1
12	4526476	Axial fan OD=401	1
14	204107	Cable clip Nylon	1
15	4526300	Therminal sheet	1
16	4527092R	DC MOTOR for DCI 25/35	1
17	433215	Motor Support	1
20	4526221	Compressor wire	1
21	4526204	DC INVERTER Compressor Assy 5RS102XAB	1
22	4526433	1Comp. Insulation1	1
23	467300037R	Controller/Outdoor Units(DCI 1.8kW) EHK:906A099-03	1
24	467400023	OCT Outdoor Coil Temperature Sensor	1
24	4526775	Compressor top thermistor(CTT)	1
24	467400026	OAT Outdoor Air Temperature Sensor	1
25	461600058	4-Way Valve Assy./DCI 25	1
26	4522509	4-Way valve coil	1
27	4518951	4-W valve SHF-4H for R410A	1
28	433229	Valve Cover	1
29	4519606	Right side panel (painting plate)	1
33	4519188	4 poles terminal block	1
34	433228	Back Side Net	1
35	4526368	Condensor Soldering assy	1
36	4519614	Painting Top Cover	1
37	433225	Handle	1
38	4526298	Bridge	1
40	4519607	Left Side Panel Painting Plate	1
41	464860054	Painting Insulation Plate Assy/ONG	1
57	4526827	Electronical expansion valve CAM-BD15 FKS-1	1
58	452682802	EEV coil CAM-MD12FKS-2 (White connector, 530mm)	1
62	467100004	Heater/Base Plate	1

APPENDIX A

INSTALLATION AND OPERATION MANUAL

- ▶ OPERATION MANUAL XLF 9 / GC 9, XLF 12 / GC 12
- ▶ INSTALLATION MANUAL XLF 9 / GC 9, XLF 12 / GC 12