Airwell

Service Manual

SX TELECOM R410A

(Close Control)

Indoor Unit	Outdoor Unit
SX 12 TELECOM	*GC 12 LT*
SX 18 TELECOM	*GC 18 LT*
SX 30 TELECOM	*GC 30T LT*

REFRIGERANT

R410A

COOLING ONLY

SM TELECOM 1-A.0 GB

JULY – 2009

CONTENTS

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.

Dates of issue for original and changed pages are:

Original ..... 0 ..... June 2009

Total number of pages in this publication is 149 consisting of the following:

Page No.	Revision No. #		Page No.	Revision No. #		Page No.	Revision No. #

- Zero in this column indicates an original page.

*Due to constant improvements please note that the data on this service manual can be modified with out notice.
**Photos are not contractual.

Table of Contents

1. INTRODUCTION

1.1 General

The **SX Telecom** (Close control) is developed for telecom communication rooms that could operate in cooling up to -10°C cooling operation. The indoor unit is a standard type as SX R410A fixed RPM line.Outdoor unit modify by adding a fan speed regulator adjust.

- **Cooling Only:** *SX 12 TELECOM*
  SX 18 TELECOM
  SX 30 TELECOM

1.2 Main Features

The **SX TELECOM** series benefits from the most advanced technological innovations, namely :

- Can be installed as floor or ceiling
- Microprocessor control.
- Infrared remote control and manual control on the unit.
- Automatic treated air sweep (Horizontal and Vertical).
- Wall mounted RCW2 remote control (Optional).
- Can be operated under the condition of outdoor temperature of -10°C by real pressure input.
- Connectivity to network (Airconet) system control.
- Possibility for treated air distribution to adjacent room (Accessory kit).
- High COP.
- Easy access to the interconnecting tubing and wiring connections.
- Possibility to connect a condensate pump kit with an integral over flow protection (Accessory kit).
- Automatic treated air sweep (horizontal and vertical)
- Low indoor and outdoor noise levels.
- Easy installation and service.

1.3 Indoor Unit

The indoor unit can be mounted as floor or ceiling type, no special adjustment are needed. it can be easily fitted to many types of residential and commercials applications.

It includes:

- Casing with inlet and outlet grilles.
- Motorized flaps (Horizontal and vertical).
- Advanced electronic control box assembly (storm 10V7).
- Coated indoor coil.
- Mounting plate.

1.4 Filtration

The **SX Series** presents several types of air filters:

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

1.5 Control

The microprocessor indoor controller, and an infrared remote control, supplied as standard, provide complete operating function and programming. The unit is designed with an on unit control board as well.
For further details please refer to the Operation Manual, Appendix A.

1.6 Outdoor Unit

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

It includes :

- A **Rotary** 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.

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

ASK (All Season Kit):

For low ambient working conditions in cooling, an ASK can be installed inside the outdoor unit. This kit allows cooling operation down to outdoor temp of -10 ºC by gradually controlling the outdoor fan speed motor.

RCW Wall Mounted Remote Control

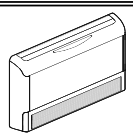
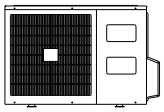
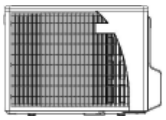
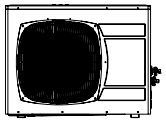
The **RCW remote control** is mounted on the wall, and controls the unit either as an infrared remote control or as a wired controller. The wired controller can control up to 10 Indoor units with the same program settings and adjustments.
For further details please refer to Optional Accessories, Chapter on this manual.

1.9 Inbox Documentation

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

1.10 Matching Table

1.10.1 R410A

OUTDOOR UNITS			INDOOR UNITS		
					
	MODEL	REF'	SX 12 TELECOM	SX 18 TELECOM	SX 30 TELECOM
	GC 12 LT	R410A	√		
	GC 18 LT	R410A		√	
	GC 30T LT	R410A			√

The above tables lists outdoor units and SX indoor units, which can be matched together. In addition the listed outdoor units can be matched with other types of indoor units such as Ducted, Wall Mounted, and Cassettes .

For further information please refer to the relevant Service Manual.

2. PRODUCT DATA SHEET

2.1 SX 12 TELECOM / GC 12 LT R410A

Model Indoor Unit				**SX 12 TELECOM**
Model Outdoor Unit				**GC 12 LT**
Installation Method of Pipe				Flared
Characteristics			Units	Cooling Only
Capacity (1)			Btu/hr	12180
			kW	3.57
Power input (1)			kW	1.06
EER (Cooling) or COP(Heating) (1)			W/W	3.37
Energy efficiency class				A
Power supply			V/Ph/Hz	220-240V/Single/50Hz
Rated current			A	4.7
Power factor				0.98
Prated (IDU)			W	45
Prated (IDU+ODU)			W	1400
Starting current			A	26
Circuit breaker rating			A	10
INDOOR	Fan type & quantity			Centrifugal x 2
	Fan speeds	H/M/L	RPM	830/770/710
	Air flow (2)	H/M/L	m3/hr	420/390/350
	External static pressure	Min-Max	Pa	0
	Sound power level (3)	H/M/L	dB(A)	56/53/51
	Sound pressure level(4)	H/M/L	dB(A)	45/41/38
	Moisture removal		l/hr	1.4
	Condensate drain tube I.D		mm	16
	Dimensions	WxHxD	mm	820x630 x190
	Weight		kg	22
	Package dimensions	WxHxD	mm	920x726x273
	Packaged weight		kg	26
	Units per pallet		units	14
	Stacking height		units	7 levels
OUTDOOR	Refrigerant control			Capillary tube
	Compressor type, model			Rotary, Panasonic 5PS132EAC22
	Fan type & quantity			Propeller(direct) x 1
	Fan speeds	H/L	RPM	810
	Air flow	H/L	m3/hr	1850
	Sound power level	H/L	dB(A)	65
	Sound pressure level(4)	H/L	dB(A)	54
	Dimensions	WxHxD	mm	830/545/246
	Weight		kg	32.5
	Package dimensions	WxHxD	mm	870x600x320
	Packaged weight		kg	35
	Units per pallet		Units	9
	Stacking height		units	3 levels
	Refrigerant type			R410A
	Refrigerant chargless distance		kg/(7.5m)	1.05
	Additional charge per 1 meter		g/m	4m≤Length≤10m:+0g;10m≤Length≤15m:+50g
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)
		Suction line	In.(mm)	3/8"(9.53)
		Max. tubing length	m.	Max.15
		Max. height difference	m.	Max.7
Operation control type				Remote control
Heating elements			kW	
Others				ALL SEASON KIT

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.2 SX 18 TELECOM / GC 18 LT R410A

Model Indoor Unit				**SX 18 TELECOM**
Model Outdoor Unit				**GC 18 LT**
Installation Method of Pipe				Flared
Characteristics			Units	Cooling Only
Capacity (1)			Btu/hr	17910
			kW	5.25
Power input (1)			kW	1.64
EER (Cooling) or COP(Heating) (1)			W/W	3.20
Energy efficiency class				A
Power supply			V/Ph/Hz	220-240V/Single/50Hz
Rated current			A	7.3
Power factor				0.98
Prated (IDU)			W	110
Proted (IDU+ODU)			W	2150
Starting current			A	28
Circuit breaker rating			A	15
INDOOR	Fan type & quantity			Centrifugal x 2
	Fan speeds	H/M/L	RPM	1100/1000/900
	Air flow (2)	H/M/L	m3/hr	560/520/460
	External static pressure	Min-Max	Pa	0
	Sound power level (3)	H/M/L	dB(A)	47/44/40
	Sound pressure level(4)	H/M/L	dB(A)	59/55/51
	Moisture removal		l/hr	2.1
	Condensate drain tube I.D		mm	16
	Dimensions	WxHxD	mm	820/630/190
	Weight		kg	21
	Package dimensions	WxHxD	mm	920/762/273
	Packaged weight		kg	23
	Units per pallet		units	14
	Stacking height		units	7 levels
OUTDOOR	Refrigerant control			Capillary tube
	Compressor type, model			Rotary,Panasonic 5KS205EAB21
	Fan type & quantity			Propeller(direct) x 1
	Fan speeds	H/L	RPM	920
	Air flow	H/L	m3/hr	2160
	Sound power level	H/L	dB(A)	64
	Sound pressure level(4)	H/L	dB(A)	56
	Dimensions	WxHxD	mm	795/610/290
	Weight		kg	42
	Package dimensions	WxHxD	mm	970/650/394
	Packaged weight		kg	45
	Units per pallet		Units	9
	Stacking height		units	3 levels
	Refrigerant type			R410A
	Refrigerant chargless distance		kg/m	1.37
	Additional charge per 1 meter		g/m	4m≤Length≤10m:+0g; 10≤Length≤15m:+100g
	Connections between units	Liquid line	In.(mm)	1/4"
		Suction line	In.(mm)	3/8"
		Max. tubing length	m.	Max.15
		Max. height difference	m.	Max.7
Operation control type				Remote control
Heating elements			kW	
Others				ALL SEASON KIT

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

2.3 SX 30 TELECOM / GC 30T LT R410A

Model Indoor Unit				**SX 30 TELECOM**
Model Outdoor Unit				**GC 30T LT**
Installation Method of Pipe				Flared
Characteristics			Units	Cooling Only
Capacity (1)			Btu/hr	28300
			kW	8.30
Power input (1)			kW	2.77
EER (Cooling) or COP(Heating) (1)			W/W	3.00
Energy efficiency class				C
Power supply			V/Ph/Hz	400V/3/50Hz
Rated current			A	3x5.2
Starting current			A	35
Circuit breaker rating			A	3x16
INDOOR	Fan type & quantity			Centrifugal x 2
	Fan speeds	H/M/L	RPM	1360/1200/1010
	Air flow (2)	H/M/L	m3/hr	1020/895/700
	External static pressure	Min-Max	Pa	N/A
	Sound power level (3)	H/M/L	dB(A)	68/64/60
	Sound pressure level(4)	H/M/L	dB(A)	56/53/49
	Moisture removal		l/hr	3.4
	Condensate drain tube I.D		mm	16
	Dimensions	WxHxD	mm	1200x630x190
	Weight		kg	32
	Package dimensions	WxHxD	mm	1270x710x280
	Packaged weight		kg	36
	Units per pallet		units	7
	Stacking height		units	7 Levels
OUTDOOR	Refrigerant control			Capillary
	Compressor type, model			Rotary, Mitsubishi NN33VAAMT
	Fan type & quantity			Propeller(direct) x 1
	Fan speeds	H/L	RPM	850
	Air flow	H/L	m3/hr	3150
	Sound power level	H/L	dB(A)	69
	Sound pressure level(4)	H/L	dB(A)	59
	Dimensions	WxHxD	mm	900x860x340
	Weight		kg	78
	Package dimensions	WxHxD	mm	985x907x435
	Packaged weight		kg	82
	Units per pallet		Units	6
	Stacking height		units	2 Levels
	Refrigerant type			R410A
	Refrigerant chargless distance		kg/m	2.42kg/15m
	Additional charge per 1 meter		g/m	30
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)
		Suction line	In.(mm)	5/8"(15.88)
		Max .tubing length	m.	Max.30
		Max .height difference	m.	Max.15
Operation control type				Remote control
Heating elements			kW	
Others				Crankcase heater (50W)

(1) Rating conditions in accordance with ISO 5151 and ISO 13253 (for ducted units) and EN 14511.
(2) Airflow in ducted units; at nominal external static pressure.
(3) Sound power in ducted units is measured at air discharge.
(4) Sound pressure level measured at 1 meter distance from unit.

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

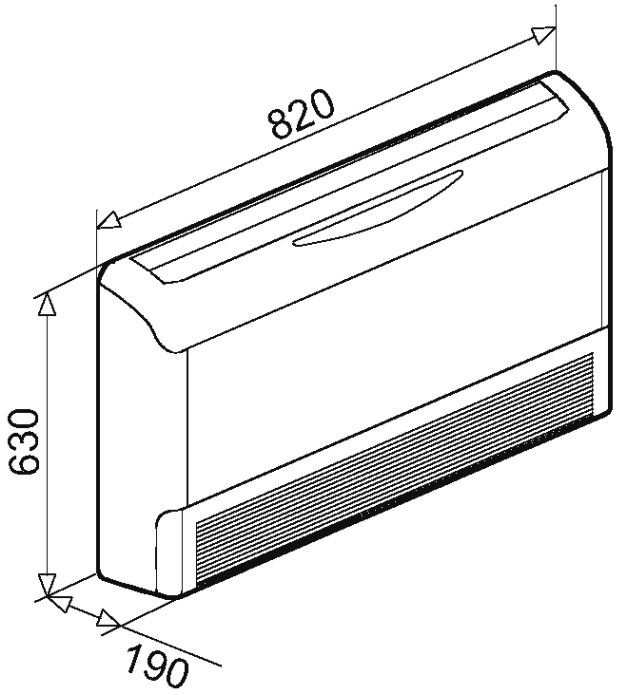
Heating:
Indoor: 20°C DB
Outdoor: 7°C DB 6°C WB

3.1 Operating Limits R410A

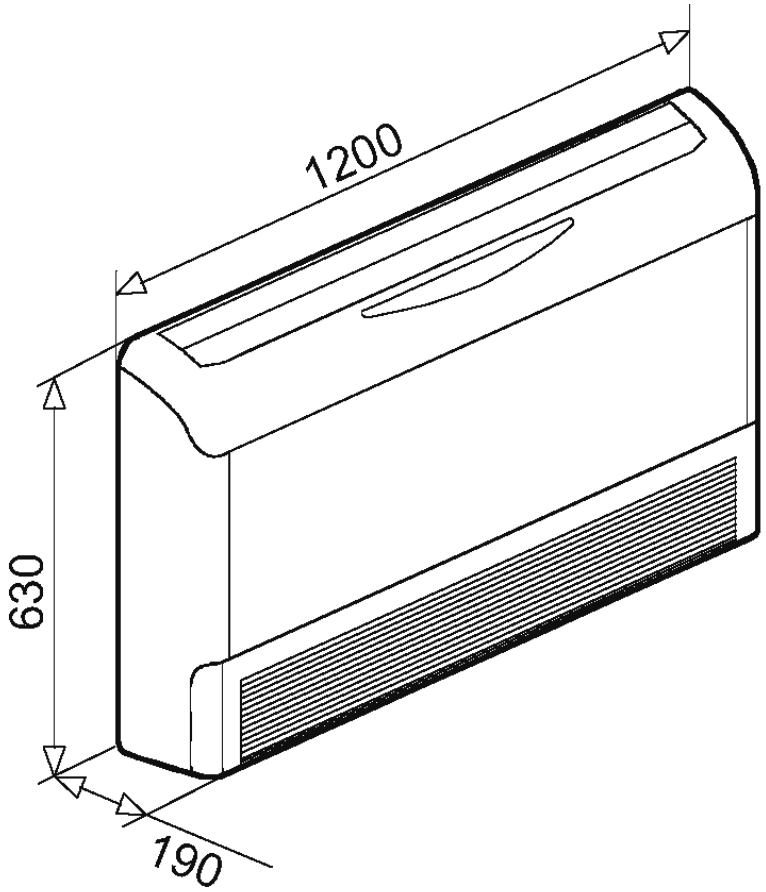
		Indoor	Outdoor
Cooling	Upper limit	32°C DB 23°C WB	46°C DB
	Lower limit	21°C DB 15°C WB	21°C DB
Heating	Upper limit	27°C DB	24°C DB 18°C WB
	Lower limit	20°C DB	-9°C DB -10°C WB
Voltage	1PH	198 – 264 V	
	3PH	360 – 440 V	

4. OUTLINE DIMENSIONS

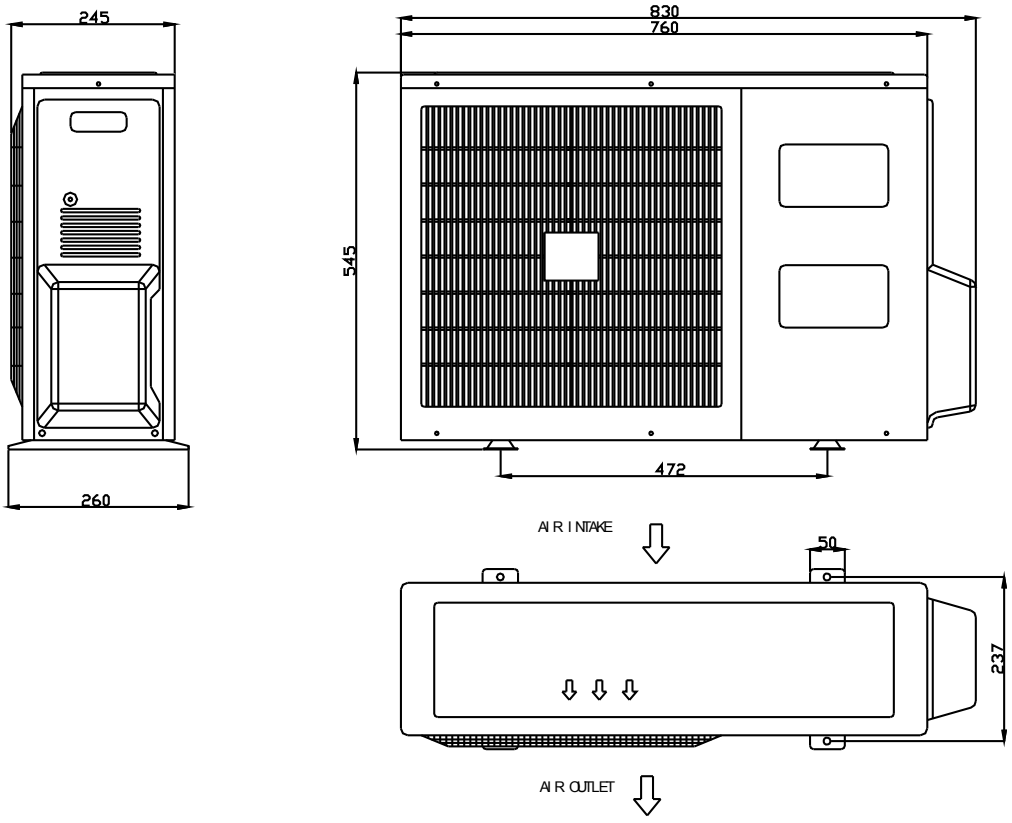
4.1 Indoor Unit : SX 12 TELECOM, SX 18 TELECOM



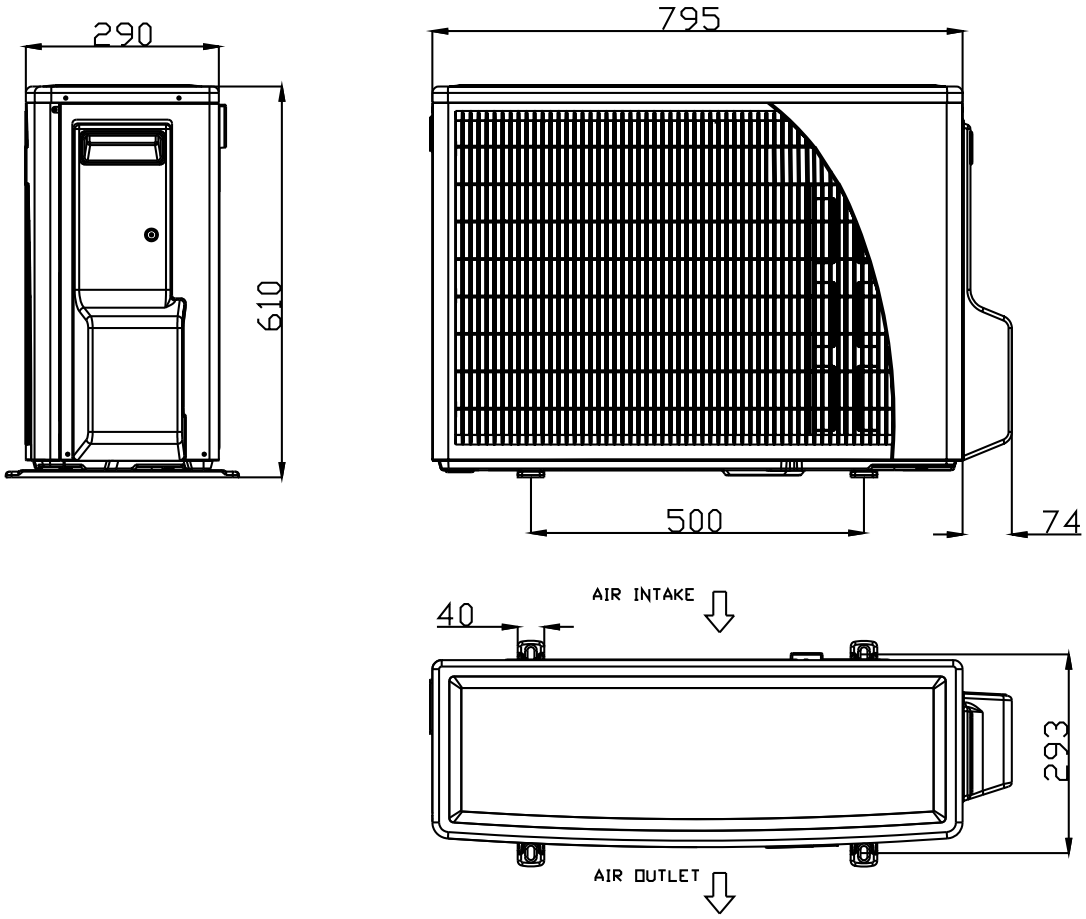
4.2 Indoor Unit : SX 30 TELECOM



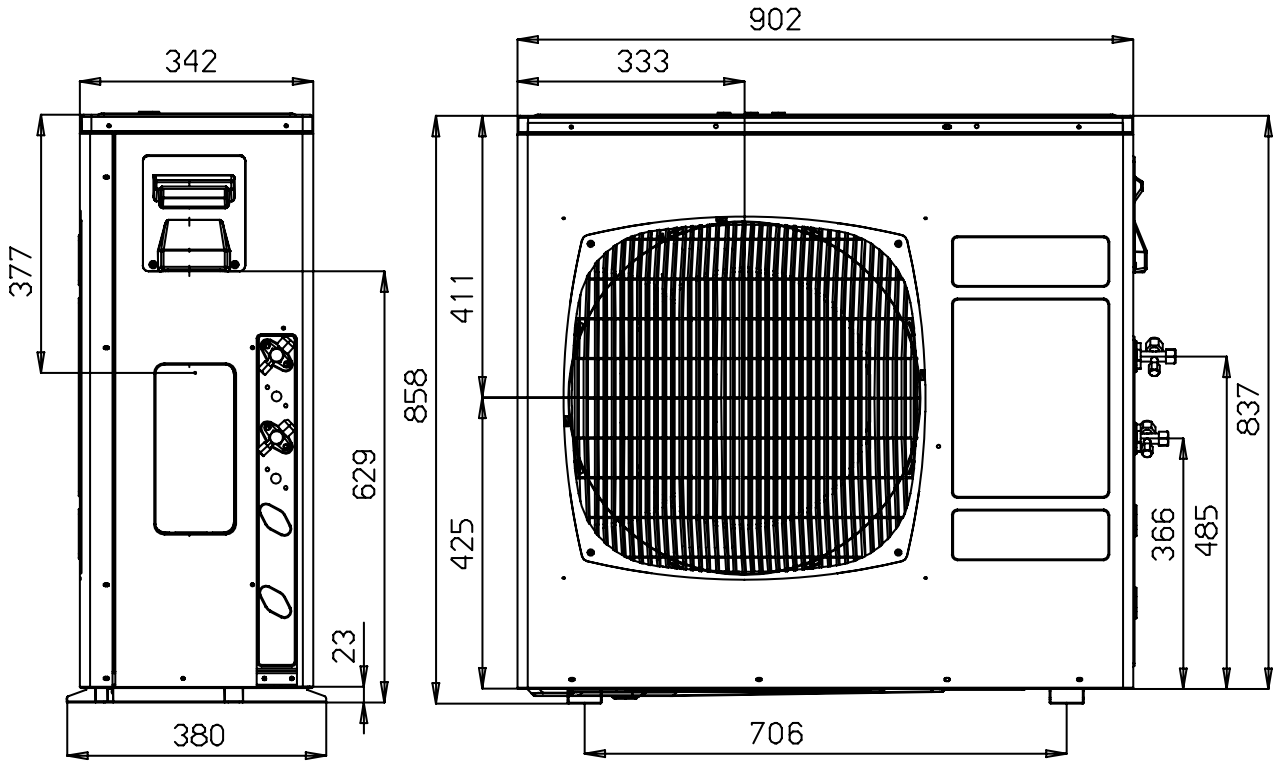
4.3 Outdoor Unit : GC 12 LT



4.4 Outdoor Unit : GC 18 LT



4.5 Outdoor Unit : GC 30T LT



5. PERFORMANCE DATA

5.1 SX 12 TELECOM / GC 12 LT R410A

5.1.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	3.64	3.86	4.03	4.21	4.36
	SC	2.48	2.63	2.78	2.71	2.76
	PI	0.75	0.75	0.75	0.76	0.76
20(1)	TC	3.61	3.82	4.00	4.18	4.32
	SC	2.57	2.73	2.89	2.80	2.86
	PI	0.81	0.82	0.82	0.83	0.83
25	TC	3.46	3.71	3.93	4.11	4.25
	SC	2.42	2.59	2.74	2.69	2.76
	PI	0.88	0.89	0.89	0.90	0.90
30	TC	3.25	3.50	3.78	3.93	4.07
	SC	2.29	2.48	2.68	2.62	2.73
	PI	0.95	0.96	0.97	0.98	0.98
35	TC	3.00	3.25	**3.57**	3.75	3.89
	SC	2.16	2.35	**2.57**	2.54	2.64
	PI	1.03	1.04	**1.06**	1.07	1.07
40	TC	2.71	2.96	3.28	3.46	3.61
	SC	2.01	2.21	2.43	2.39	2.51
	PI	1.11	1.12	1.14	1.16	1.16
46	TC	2.36	2.61	2.93	3.11	3.25
	SC	1.83	2.02	2.28	2.24	2.34
	PI	1.21	1.23	1.26	1.27	1.28

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
OU – Outdoor

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

5.2 Capacity Correction Factor Due to Tubing Length

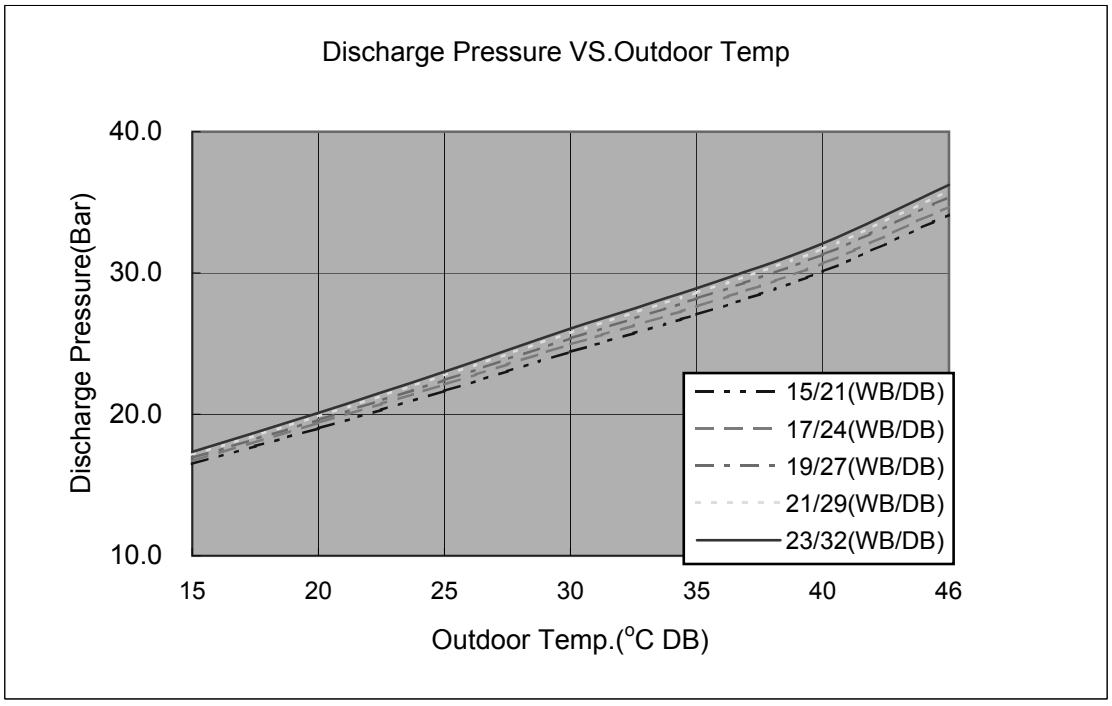
5.2.1 Cooling

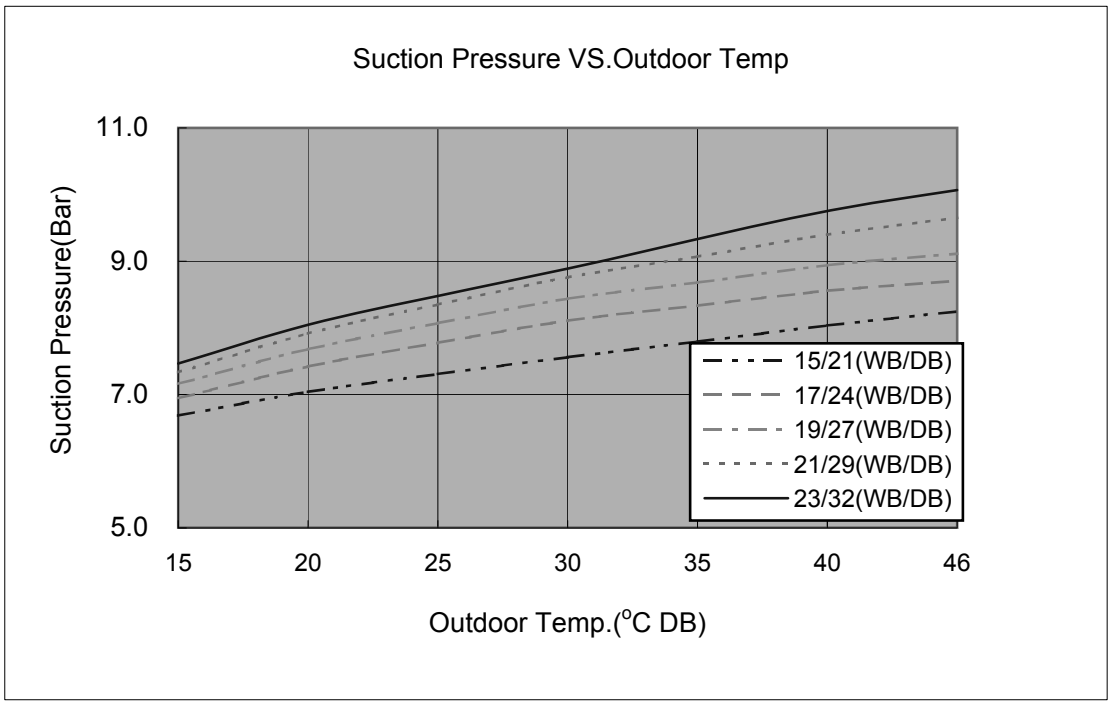
TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.961	0.950	---	---	---	---	---

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

5.3 Pressure Curves

5.3.1 Cooling





5.4 SX 18 TELECOM / GC 18 LT R410A

5.4.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	5.36	5.67	5.93	6.20	6.41
	SC	3.45	3.66	3.86	3.77	3.83
	PI	1.16	1.17	1.17	1.17	1.18
20(1)	TC	5.30	5.62	5.88	6.14	6.35
	SC	3.78	4.02	4.25	4.12	4.21
	PI	1.26	1.26	1.27	1.28	1.28
25	TC	5.09	5.46	5.78	6.04	6.25
	SC	3.36	3.59	3.80	3.73	3.83
	PI	1.36	1.37	1.38	1.39	1.40
30	TC	4.78	5.15	5.57	5.78	5.99
	SC	3.19	3.44	3.72	3.64	3.79
	PI	1.47	1.49	1.51	1.52	1.52
35	TC	4.41	4.78	**5.25**	5.51	5.72
	SC	3.00	3.27	**3.57**	3.53	3.67
	PI	1.59	1.61	**1.64**	1.65	1.66
40	TC	3.99	4.36	4.83	5.09	5.30
	SC	2.79	3.07	3.38	3.32	3.49
	PI	1.71	1.74	1.77	1.79	1.80
46	TC	3.47	3.83	4.31	4.57	4.78
	SC	2.54	2.81	3.17	3.11	3.25
	PI	1.88	1.91	1.94	1.97	1.99

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
OU – Outdoor

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

5.5 Capacity Correction Factor Due to Tubing Length

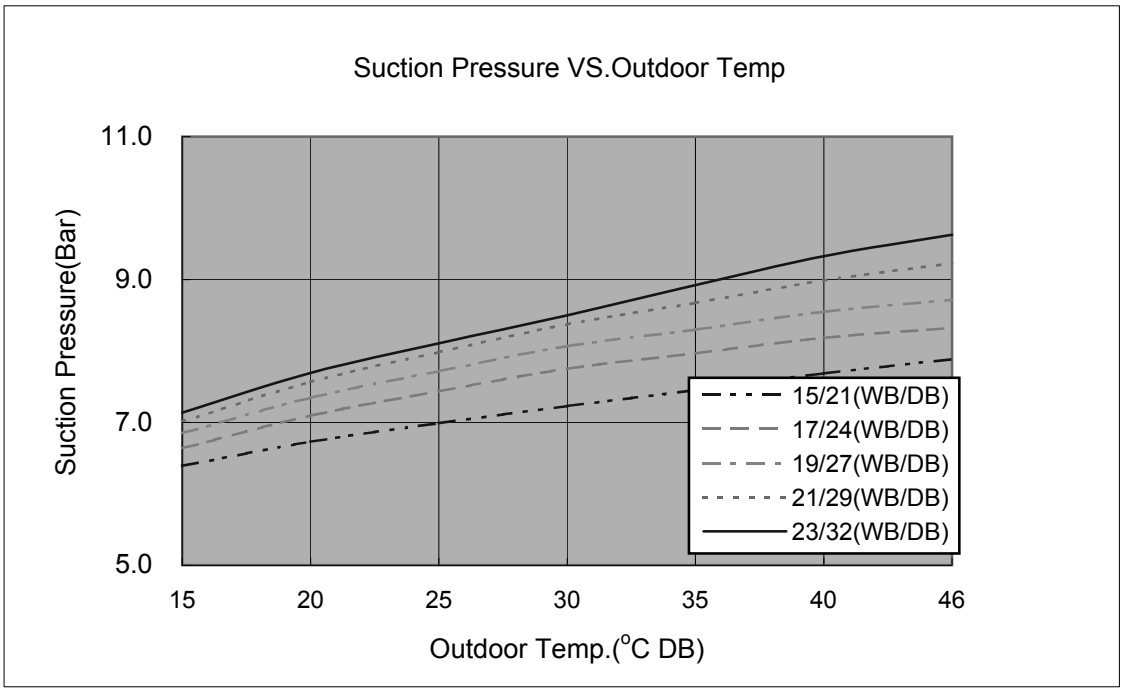
5.5.1 Cooling

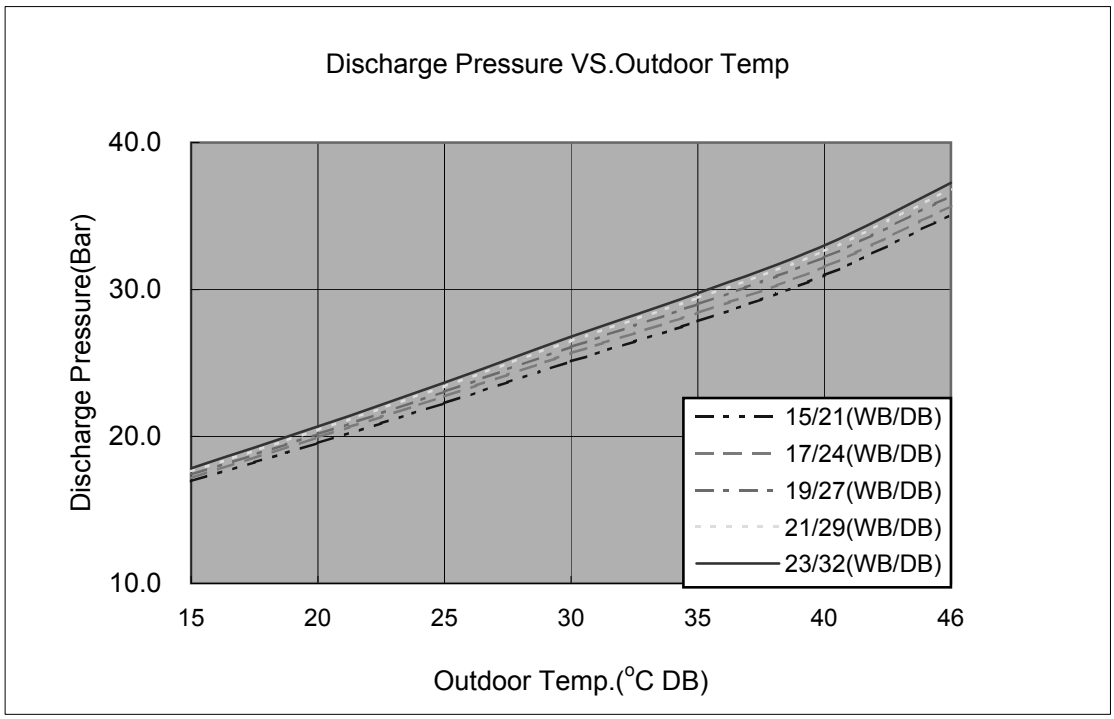
TOTAL TUBING LENGTH								
3m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.02	**1**	0.990	0.975	0.960	0.945	---	---	---

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

5.6 Pressure Curves

5.6.1 Cooling





5.7 SX 30 TELECOM / GC 30T LT R410A

5.7.1 Cooling Mode at 7.5m Tubing Connection.

230V : Indoor Fan at High Speed.

ENTERING AIR DB OU COIL (°C)	DATA	ENTERING AIR WB/DB ID COIL (°C)				
		15/21	17/24	19/27	21/29	23/32
15(1)	TC	8.75	9.06	9.27	9.49	9.64
	SC	5.53	5.77	5.99	6.14	6.26
	PI	1.96	1.97	1.97	1.98	1.99
20(1)	TC	8.46	8.92	9.20	9.42	9.62
	SC	5.42	5.72	5.96	6.13	6.24
	PI	2.13	2.14	2.15	2.16	2.16
25	TC	8.01	8.65	9.09	9.37	9.59
	SC	5.28	5.61	5.91	6.08	6.20
	PI	2.30	2.32	2.34	2.35	2.37
30	TC	7.49	8.15	8.81	9.12	9.39
	SC	5.12	5.44	5.78	5.95	6.07
	PI	2.49	2.52	2.54	2.56	2.59
35	TC	6.93	7.52	**8.30**	8.72	9.13
	SC	4.87	5.22	**5.65**	5.81	5.93
	PI	2.68	2.73	**2.77**	2.79	2.81
40	TC	6.31	6.86	7.49	8.19	8.61
	SC	4.59	4.94	5.34	5.51	5.63
	PI	2.89	2.94	2.99	3.02	3.05
46	TC	5.47	5.98	6.58	7.27	7.83
	SC	4.23	4.53	4.87	5.04	5.16
	PI	3.16	3.21	3.28	3.33	3.36

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
OU – Outdoor

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

5.8 Capacity Correction Factor Due to Tubing Length

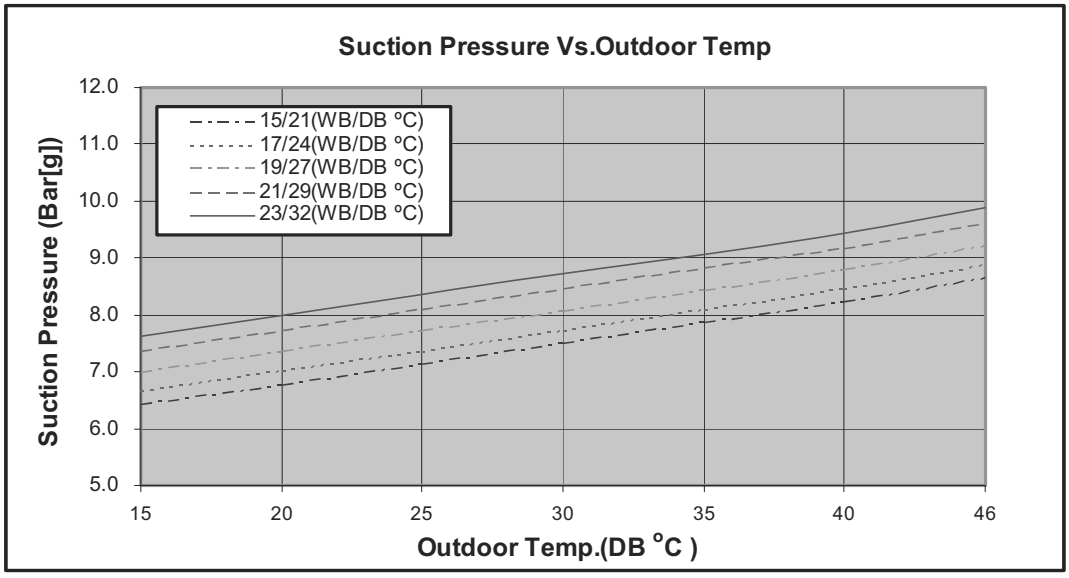
5.8.1 Cooling

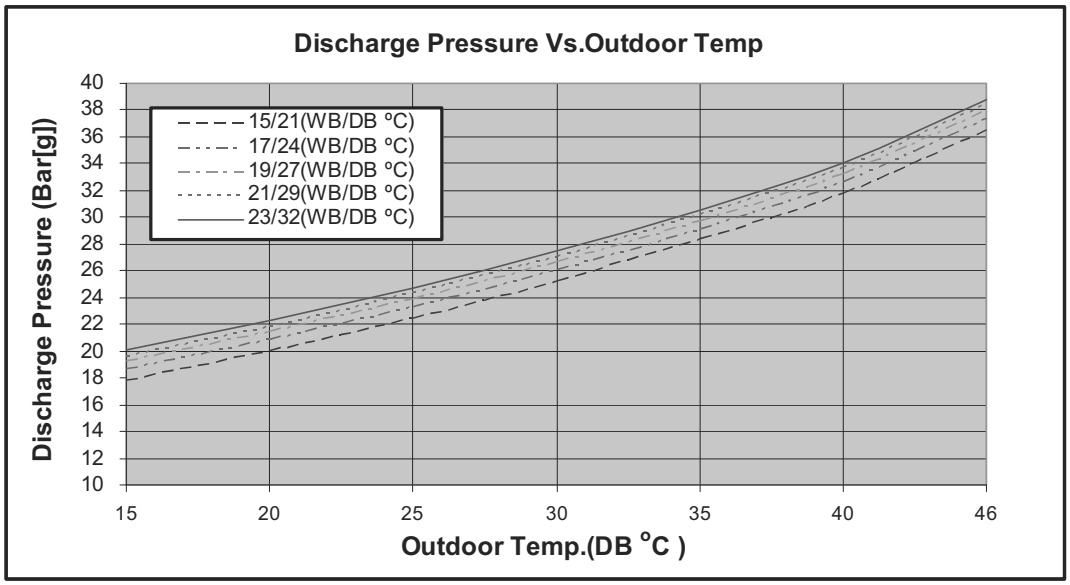
TOTAL TUBING LENGTH								
4m	**7.5m**	10m	15m	20m	25m	30m	40m	50m
1.01	**1**	0.98	0.97	0.96	0.95	0.94	---	---

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

5.9 Pressure Curves

5.9.1 Cooling





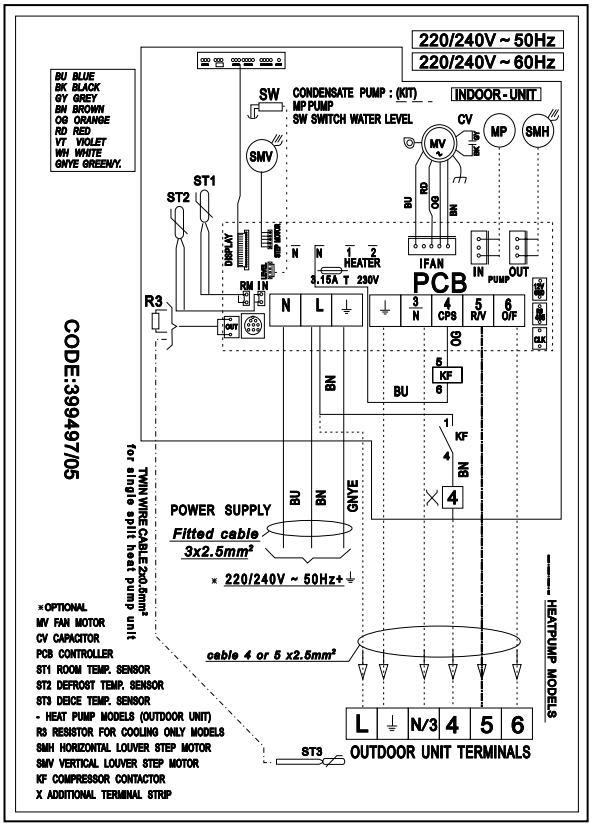
6. ELECTRICAL DATA

6.1 Single Phase Units

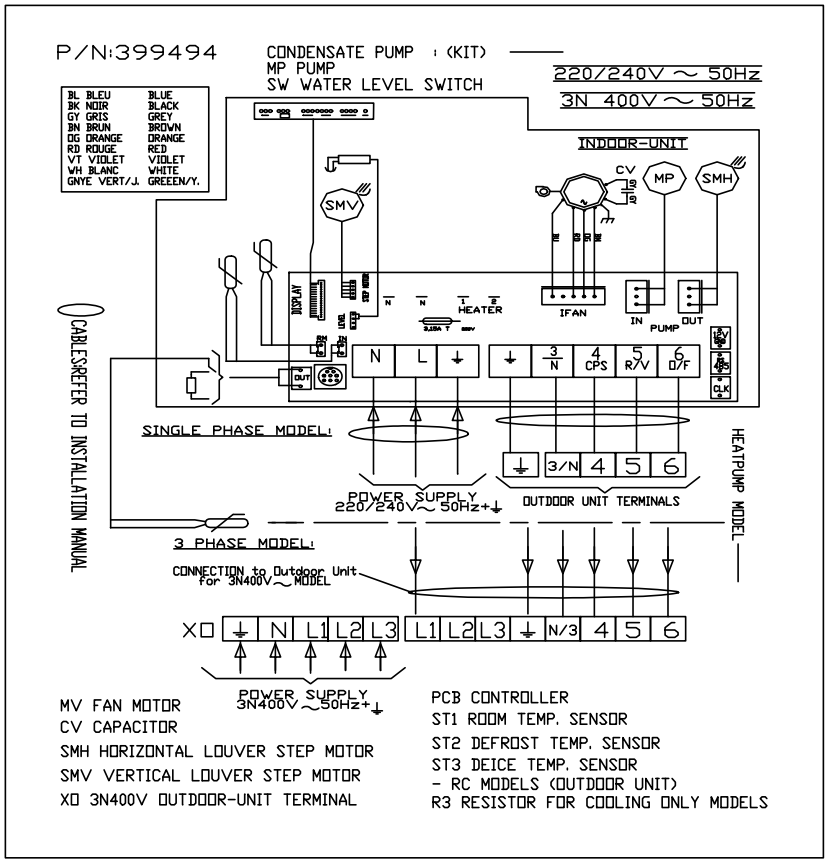
MODEL	SX 12 TELECOM	SX 18 TELECOM		SX 30 TELECOM
Power Supply	To indoor	To Indoor	To outdoor	To Outdoor
	1PH-230V-50Hz	*1PH-230V-50Hz*		*3PH – 400V – 50 Hz*
Max Current, A	7.6	12		3 x 9.2
Circuit Breaker	16	16		3 x 16
Power Supply Wiring No. X Cross Section mm^2	3x1.5 mm^2	3x2.5 mm^2		5 X 2.5 mm^2
Interconnecting Cable RC Model No. X Cross Section mm^2	5x1.5 mm^2 +2x0.5 mm^2 (OCT sensor)	5x2.5 mm^2 +2x0.5 mm^2 (OCT sensor)	6x1.5 mm^2 +2x0.5 mm^2 (OCT sensor)	6 X 1.5 mm^2 + 2 X 0.5 mm^2 (OCT Sensor)
Interconnecting Cable ST Model No. X Cross Section mm^2	4x1.5 mm^2	4x2.5 mm	5x2.5 mm	5X1.5 mm^2 + 2X0.5 mm^2 (OCT Sensor)

7. WIRING DIAGRAMS

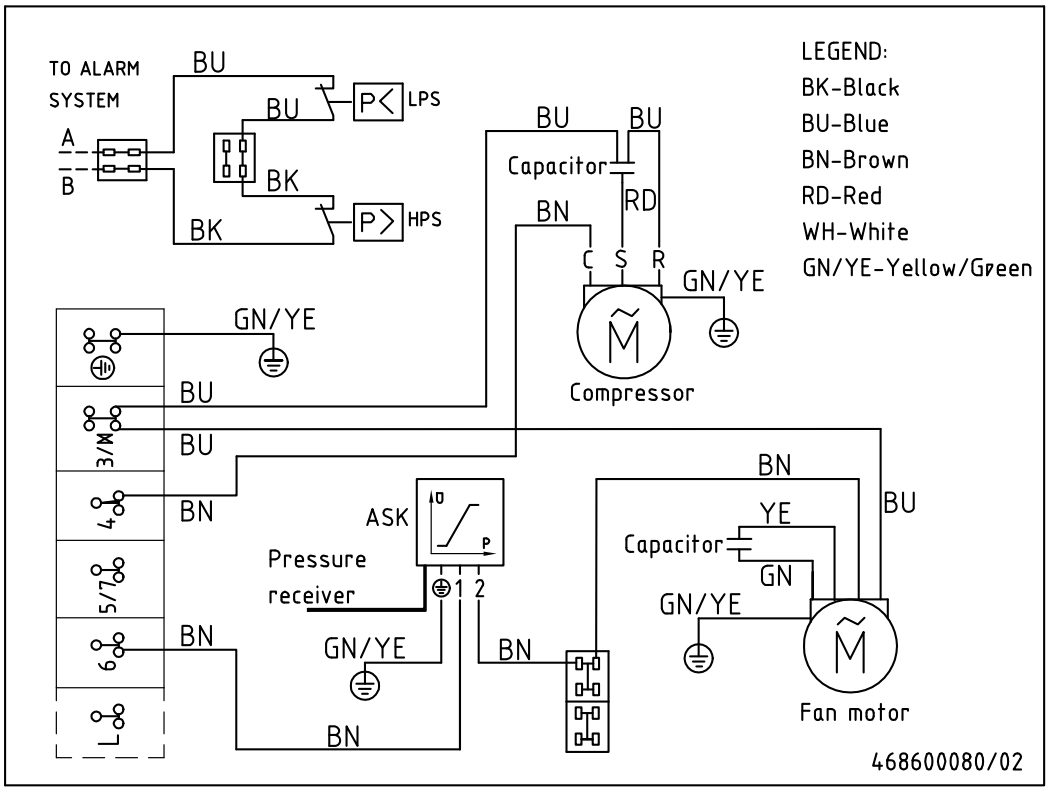
7.1 Indoor Unit: SX 12



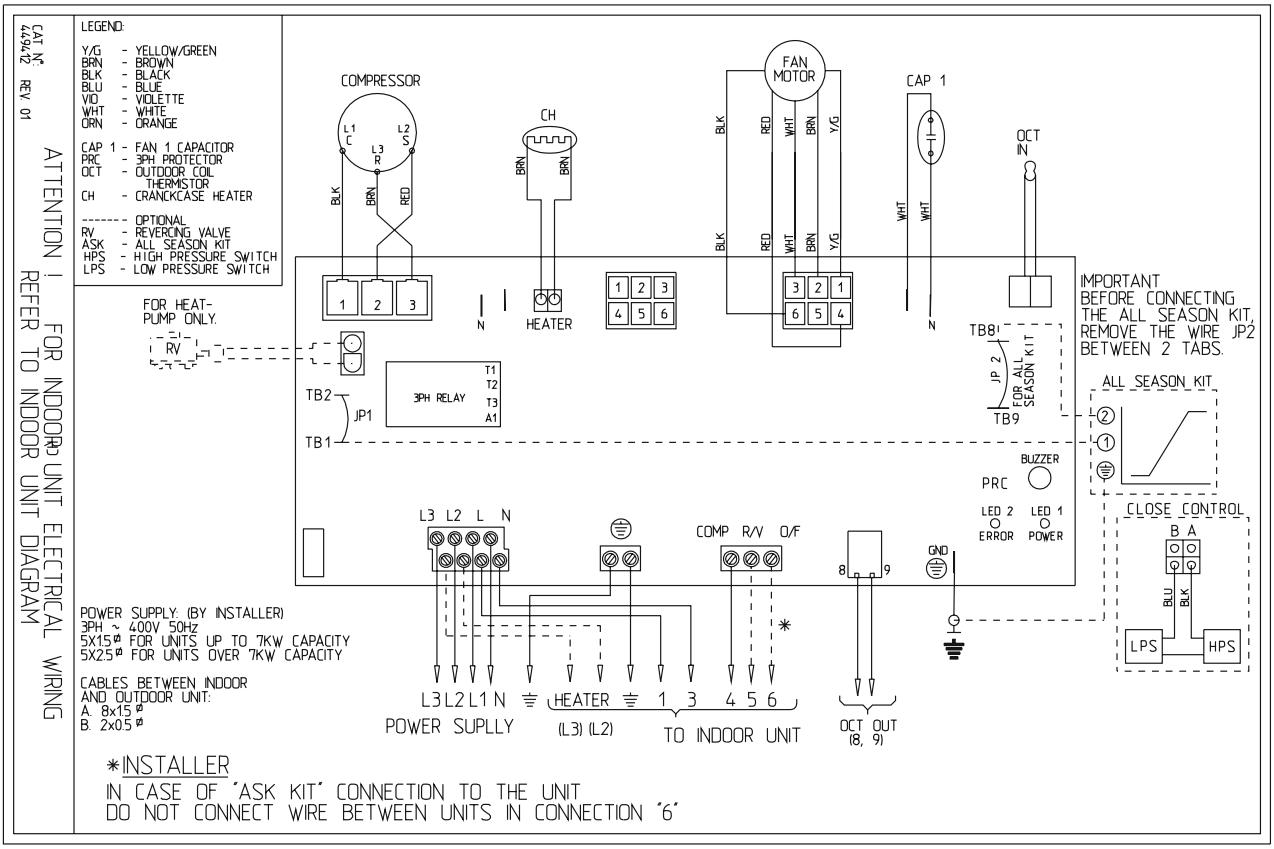
7.2 Indoor Unit: SX 18, SX 30



7.3 Outdoor Unit: GC 12 LT, GC 18 LT

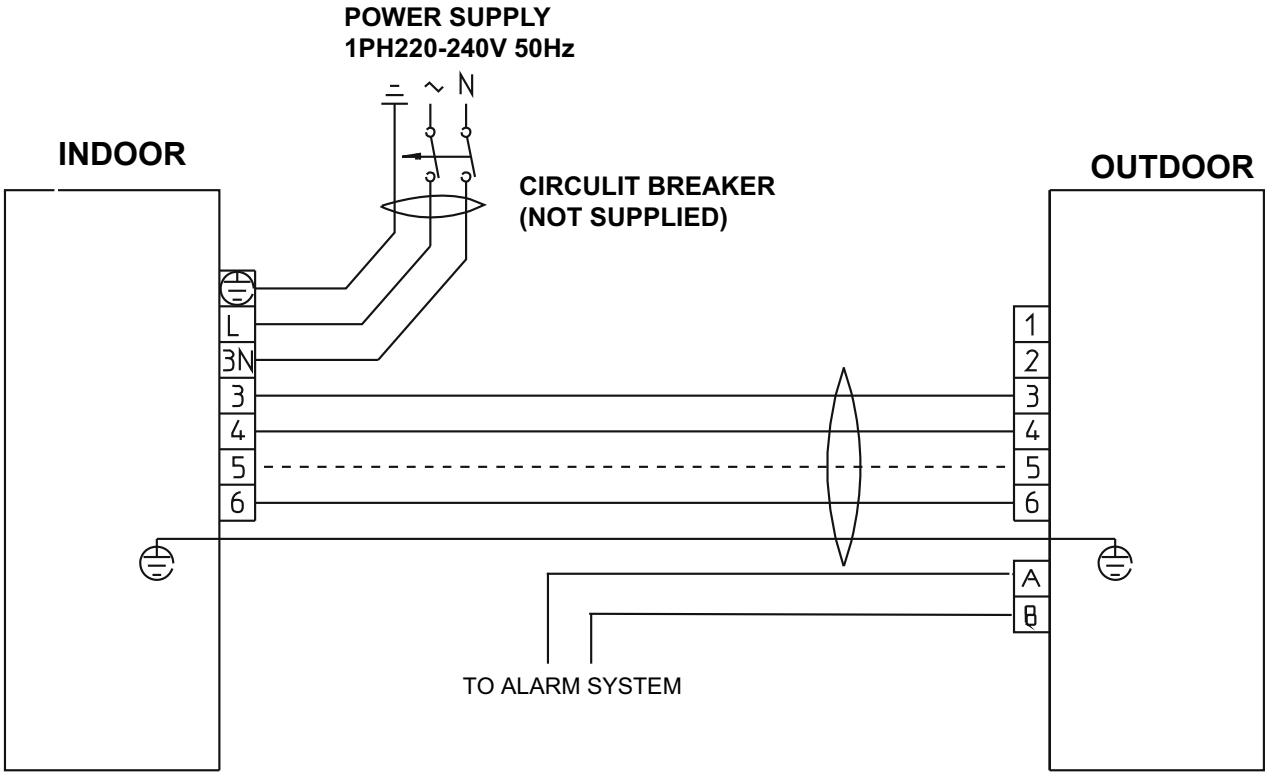


7.4 Outdoor Unit: GC 30T LT

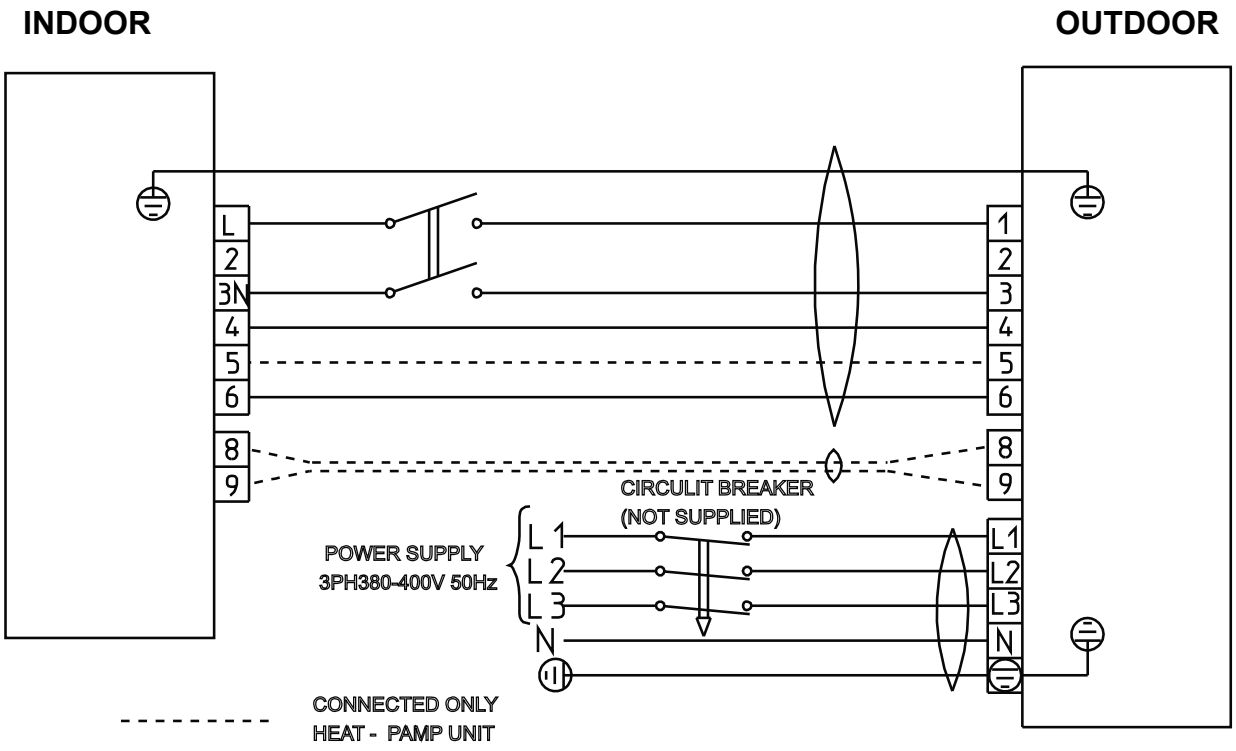


8. ELECTRICAL CONNECTIONS

8.1 SX 12 TELECOM / GC 12 LT, SX 18 TELECOM / GC 18 LT



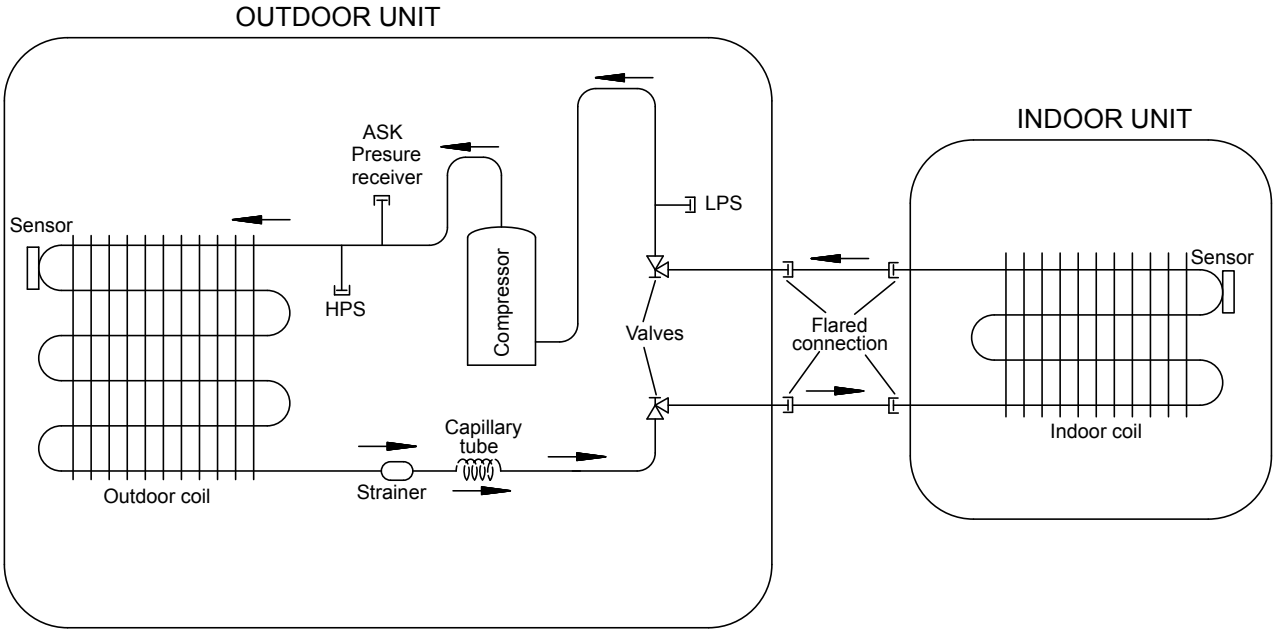
8.2 SX 30 TELECOM / GC 30T LT



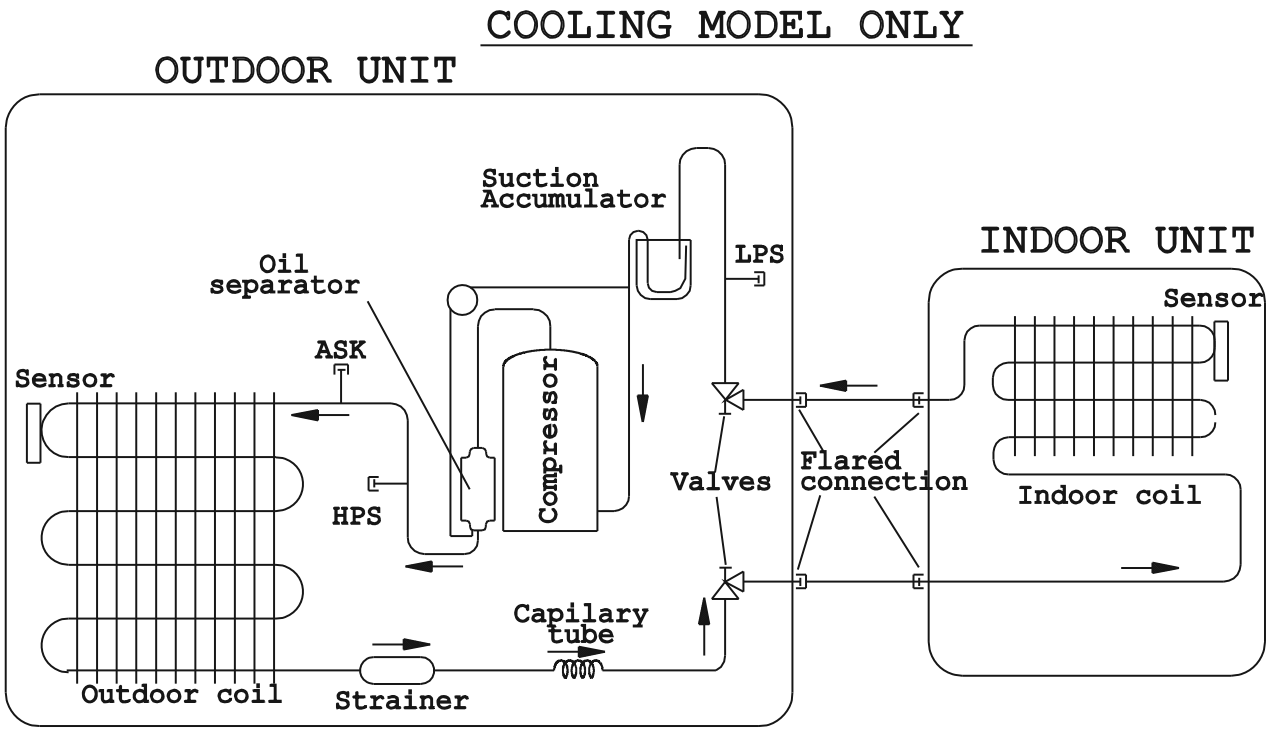
9. REFRIGERATION DIAGRAMS

9.1 Heat Pump Models

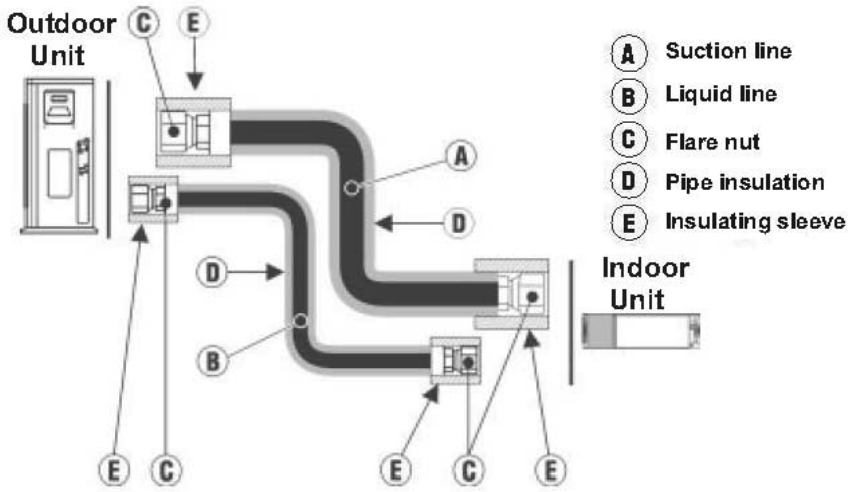
9.1.1 SX 12, SX 18 Telecom

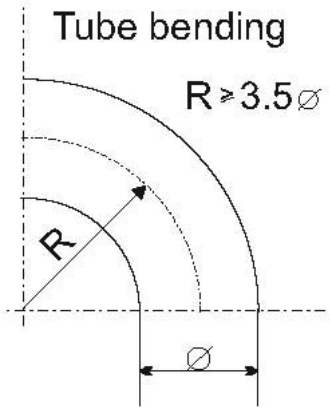


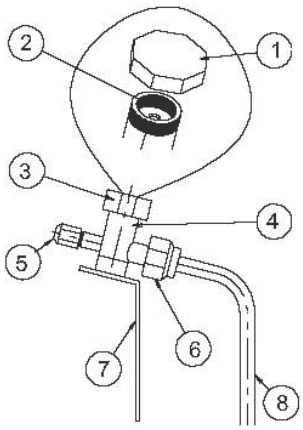
9.1.2 SX 30 Telecom



10. TUBING CONNECTIONS



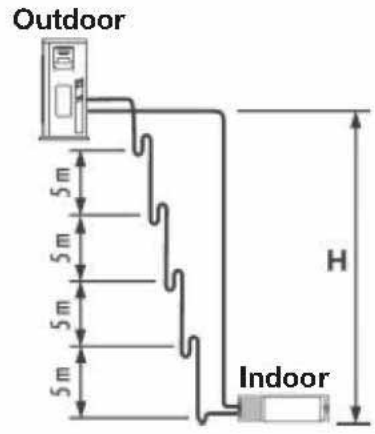




TUBE (Inch) / TORQUE (Nm)	1/4"	3/8"	1/2"	5/8"	3/4"
Flare Nuts	11-13	40-45	60-65	70-75	80-85
Valve Cap	13-20	13-20	18-25	18-25	40-50
Service Port Cap	11-13	11-13	11-13	11-13	11-13

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. Incase the indoor unit is installed above the outdoor, no trap is required.



11. CONTROL SYSTEM

11.1 Electronic Control

11.1.1 Introduction

The electronic control information is designed for service applications, and is common to the following groups of air-conditioners:

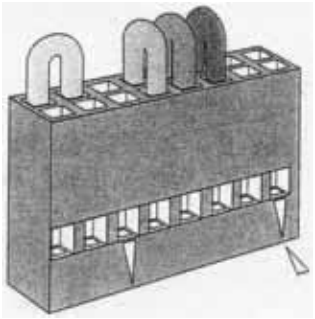
- **ST/RC** group -Cooling only / cooling and heating by heat pump.
- **SH group** -Cooling and heating by heat pump and supplementary heater.
- **RH group** -Cooling, heating by heaters only.

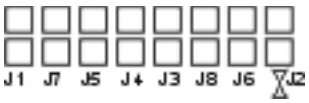
11.1.2 Model Plug Settings

Before installation, make sure to set the model plug conforming to the suitable group.

GROUP	**J6** Setting	**J2** Setting
ST / RC	Open	Open
SH	Closed	Open
RH	Closed	Closed

Model Plug





Group	Location of the jumpers
ST	
RC	
RH	
SH	

11.1.3 Remote Control DIP Switch Settings

SETTING SWITCH STATUS				DEFINITION	
SW. NO. 1	SW. NO. 2	SW. NO. 3	SW. NO. 4	RC3	RC4
OFF	OFF	--	--	RC-ALL MODES OF OPERATION	
ON	OFF	--	--	STD-COOL, FAN, DRY, ACTIVE	
OFF	ON	--	--	HEAT-COOL, FAN, DRY, ACTIVE	
ON	ON	--	--	AUTO FAN (AF)	
--	--	OFF	--	TEMP. DISPLAY IN °C DEGREES	VERTICAL SWING ONLY
--	--	ON	--	TEMP. DISPLAY IN °F DEGREES	HORIZONTAL & VERTICAL SWING FUNCTIONS TOGETHER
--	--	--	OFF	TIMER & CLOCK 12H AM, PM	DISABLE LCD & KEY ILLUMINATION
--	--	--	ON	TIMER & CLOCK 24H	ENABLE LCD & KEY ILLUMINATION

Reset operation **-** Press the 4 buttons simultaneously: “CLEAR “, “SET”, "HR +", ”HR -” for 5 seconds

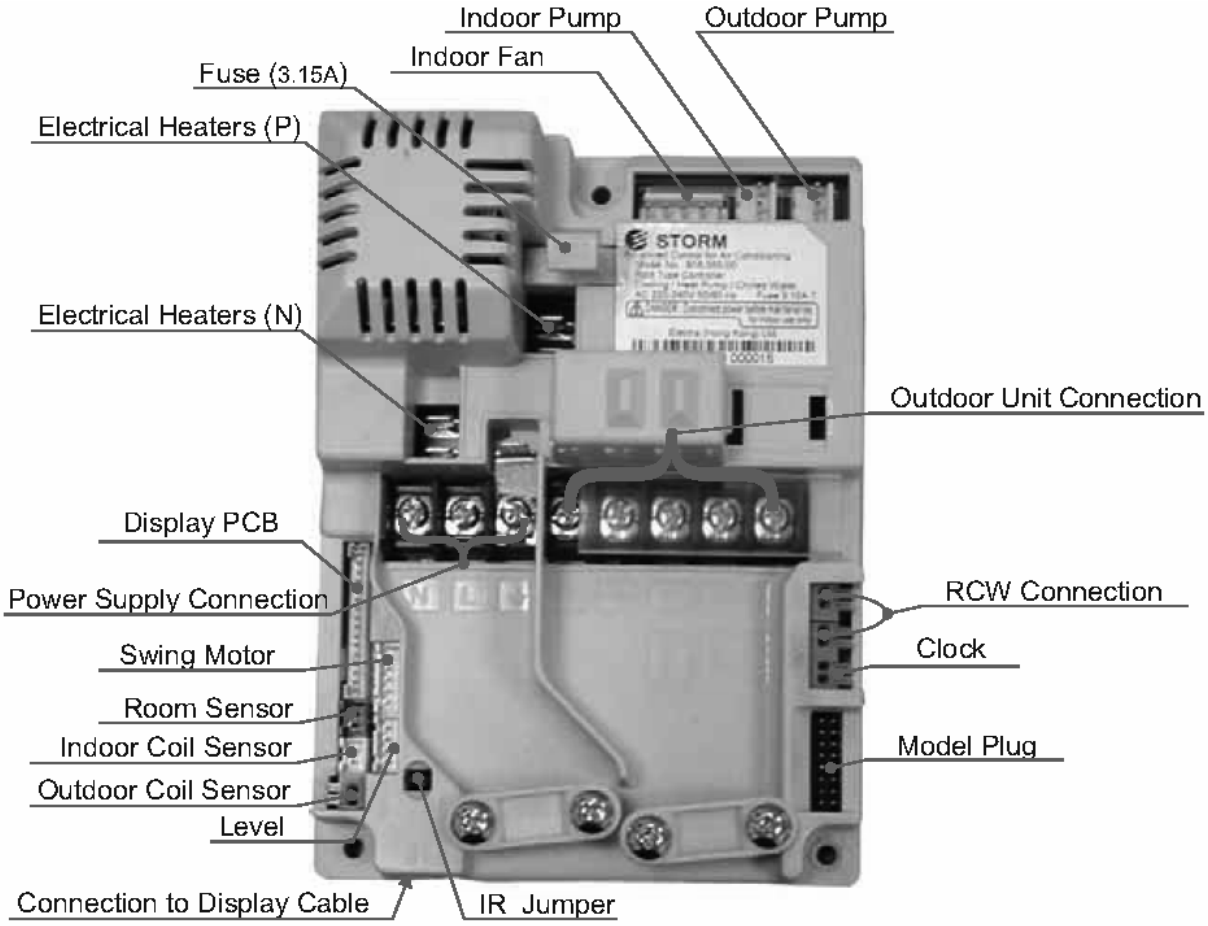
LEGEND

SW1, SW2 - Selection of RC/ST
SW3 – Selection of Display °C or °F in RC3 or swing function in RC4
SW4 – Selection of Time Display 12H AM/PM or 24H in RC3 or illumination in RC4
OFF = 0
ON = 1

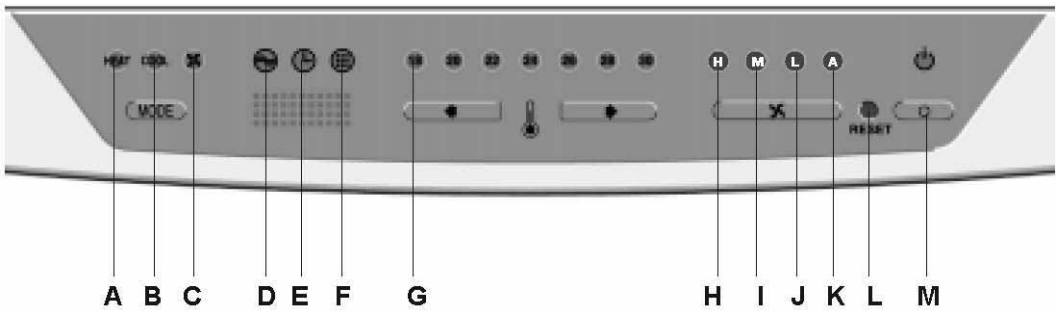
NOTE

After setting the DIP switches perform reset operation.

11.1.4 Main PCB Controller



11.1.5 Display Board :LEXAN



11.1.6 Display Board : Assembly

11.1.7 Legend :

A) Heating LED

B) Cooling LED

C) Fan LED

D) Operation LED

E) Timer LED

F) Filter LED

G) Temp' Set Point Indication

H) Fan Speed H,(High) **I,**(Medium) **J,**(Low) **K**,(AUTO)

L) Reset

M) STB'Y LED

11.2 Control Function

11.2.1 Abbreviations

AC - Alternate Current
A/C - Air-Conditioner
ANY - ON or OFF status
CLOCK - ON/OFF Operation Input, (dry contact)
COMP - Compressor
CPU - Central Processing Unit
CTV - Compensation Temperature Value
HE - Heating Element
HPC - High Pressure Control
H/W - Hardware
ICP - Indoor Condensation Pump
ICT - Indoor Coil Temperature (RT2) sensor
IF, IFAN - Indoor Fan
IR - Infrared
LEVEL1 - Normal Water Level
LEVEL2/3 - Medium/High Waterlevel
LEVEL4 - Overflow Level
Max - Maximum
Min - Minimum
min - Minute (time)
NA - Not Applicable
OCP - Outdoor Condensation Pump
OCT - Outdoor Coil Temperature (RT3) sensor
OF, OFAN - Outdoor Fan
OPER - Operate
Para. - Paragraph
RAT - Return Air Temperature (RT1) sensor
RC - Reverse Cycle (Heat Pump)
R/C - Remote Control
RCT - Remote Control Temperature
RH - Resistance Heater
RT - Room Temperature (i.e. RCT in IFEEL mode, RAT otherwise)
RV - Reversing Valve
SB, STBY - Stand-By
sec - Second (time)
Sect - Section
SH - Supplementary Heater
SPT - Set Point Temperature
ST - Standard (Model with Cooling Only)
S/W - Software
TEMP - Temperature
W/O - Without
ΔT - The difference between SPT and RT.
in Heat Mode: $\Delta T = SPT - RT$
in Cool/Dry/Fan Mode: $\Delta T = RT - SPT$

11.3 General Functions

11.3.1 COMP Operation

a. For each Mode including POWER OFF & SB, a Min time delay of 3 min before COMP restarting, excluding DEICING Mode (see para. 14.12.2).

b. The Min operation time of COMP under different operating conditions is:

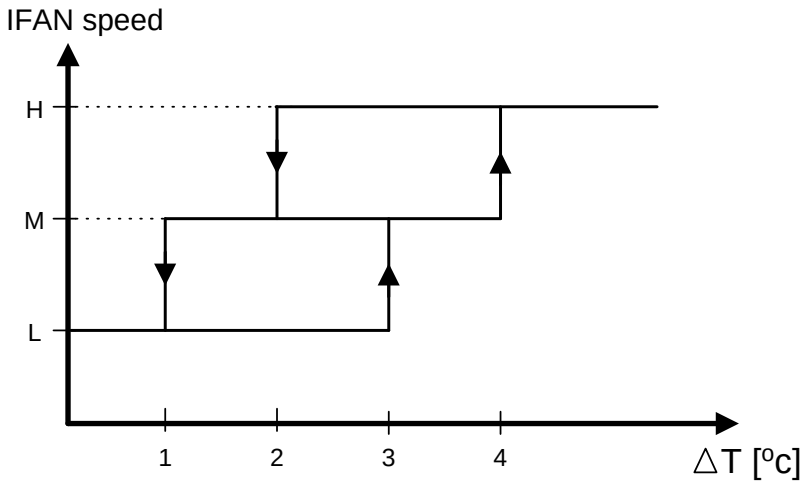
Operation Mode	Min Operation Time of COMP
Heat, Cool, HP protection or Auto Modes	3 min.
Fan, Dry, Overflow, Protection Modes, or Mode Change	Ignored

11.3.2 IFAN operation

a. Min time interval between IFAN speed change in AUTOFAN Mode is 30 sec.

b. Min time interval between IFAN speed change in H/M/L Mode is 1 sec.

c. IFAN speed in Heat/Cool AUTOFAN Mode is determined according to the following chart:



Where in Heat Mode: $\Delta T = SPT - RT$
in Cool Mode: $\Delta T = RT - SPT$

11.3.3 OFAN Operation

Min time interval between OFAN ON/OFF state changes is 30 sec.

11.3.4 HE Operation

a. Min Heaters ON or OFF time is 30 sec.

b. Heaters can never be in operation while IFAN is OFF.

c. In RH group, HE-1 and HE-2 will be activated only when COMP is not operating, except in Dry Mode.

11.3.5 Protections

a. High pressure protection is applicable to all operating modes.

b. Deicing control is valid in Heat and Auto Heat Modes only.

c. Defrosting control is valid in Dry, Cool, and Auto Cool Modes.

11.3.6 Thermistors Operation

a. Return air Temp. is detected by RAT in normal Mode, or by RCT (R/C sensor) in I-FEEL Mode.

b. Indoor Coil Temp. is detected by ICT.

c. Outdoor Coil Temp. is detected by OCT.

d. Definition of thermistor faults:

1) Thermistor is disconnected - the thermistor reading is below – 30^{O}C.

2) Thermistor is shorted - the thermistor reading is above 75^{O}C.

3) Thermistor Temp reading doesn't change -

a) This test is performed only once after a unit is switched from OFF/STBY to operation. At the first occurrence of 10 min continuous COMP operation, the current ICT are compared with those when the COMP was switched from OFF to ON 10 min before. If the ΔT is less than 3^{O}C, the thermistor is regarded as defective.

b) The ICT no-change error can be disabled together by connecting a 4.7kΩ resistor (5%) to the ICT connector. These resistors are equivalent to a thermistor 48+/-1^{O}C.

e. Cases for disabling ICT thermistor disconnected detection:

1) The detection of thermistor faults a. and b. above is disabled when Deicer Protection is started. The detection will be enabled again only after (1) the deicing is completed, and (2) COMP has been restarted and operated for 30 sec.

2) When all the following conditions are fulfilled:

a) 4.7kΩ resistor is connected to the OCT.

b) IFAN is OFF.

c) Compressor is ON.

d) ICT < -30 (disconnected).

11.3.7 RV Fault

This test is applied only in compressor units where 4.7kΩ resistor is not connected to the OCT.
The test is performed every time the unit is switched from OFF/STBY to OPER in Heat mode or changes operation mode from COOL/DRY to HEAT or (this applies also in AUTO COOL/HEAT mode).
If ICT is lower than 35°C at the time of mode change, then at the first occurrence of 15 min continuous COMP operation, ICT is compared with ICT reading when the COMP was switched from OFF to ON 15 min before. RV fault is defined when ICT decreases more than 5°C.
In this case, the COMP will stop and the SB LED will blink. The fault is reset after switching to SB or after mode change.

11.3.8 General Features

a. Allowed (control target) range for RAT is SPT +/-1ºC.

b. Whenever the unit is changed from COOL/DRY/STBY mode to HEAT mode or vice versa, the procedures below are followed:
Stop COMP for 3 min → Change RV state → Start COMP if necessary.

11.4 Cooling Mode

11.4.1 Cooling Mode – General

a. Mode Definition

Mode: COOL, AUTO (at Cooling)

Temp: Selected desired temperature.

Fan: HIGH, MED, LOW, AUTO.

Timer: Any

I-FEEL: ON or OFF

b. Room Temperature, RT, is detected by:

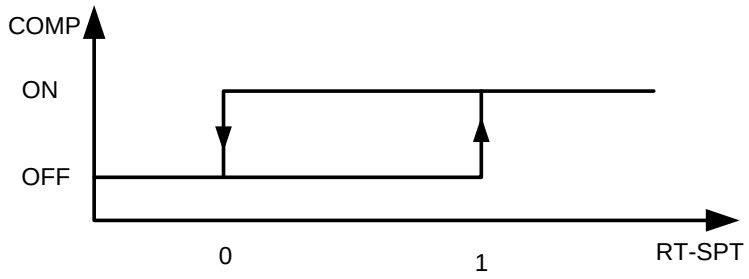
- RAT in normal operation, or
- RCT (R/C sensor) in I-FEEL mode.

c. Indoor Coil Temp is detected by ICT.

d. Outdoor Coil Temp is detected by OCT.

11.4.2 Control Functions

a. COMP Operation



b. OFAN Operation

- In normal operation OFAN operates together with the COMP.

c. IFAN Operation

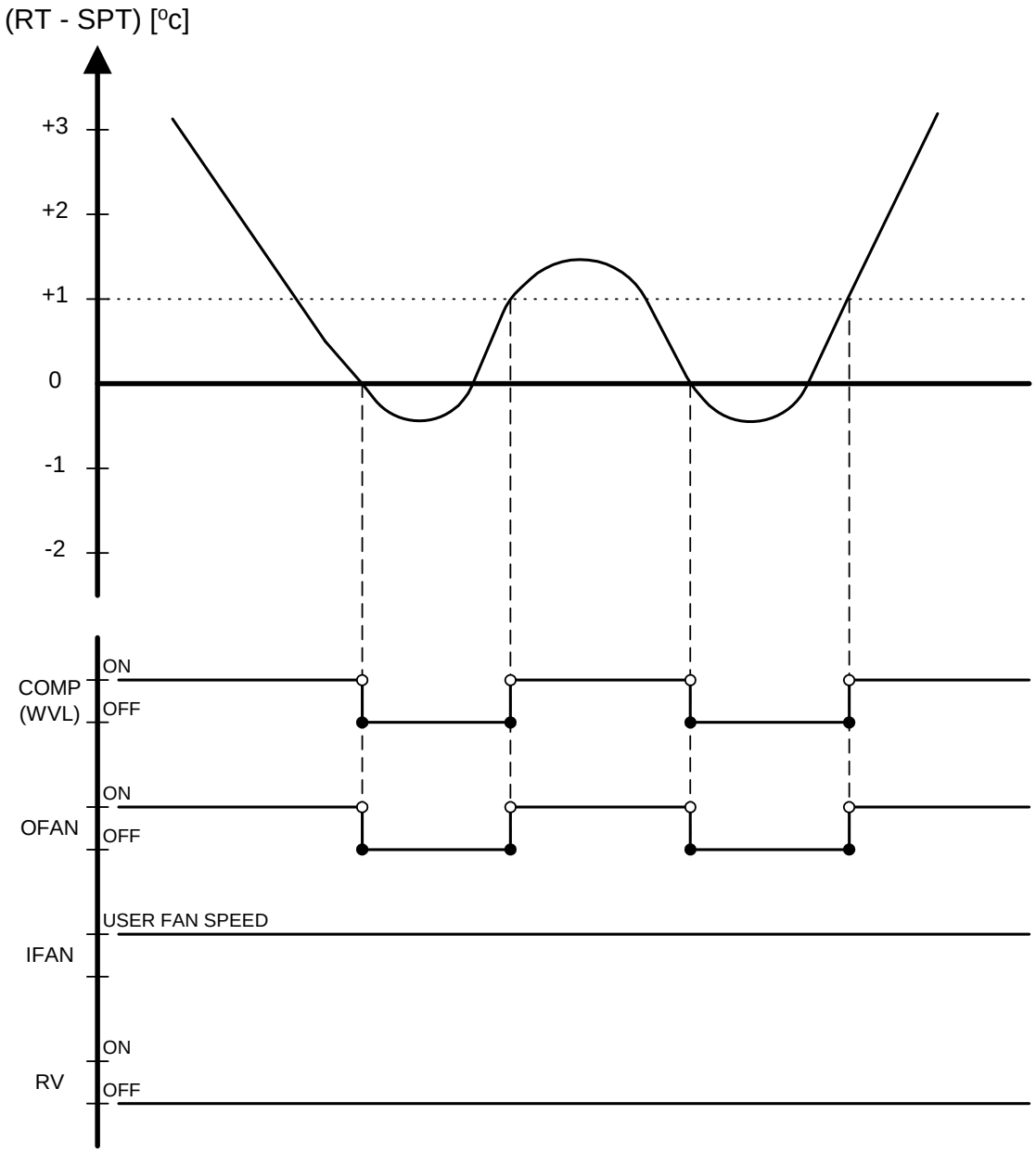
- IFAN will operate in ANY speed regardless the ICT or COMP state.
- IFAN speed will be determined according to user selection or AUTO-FAN logic

d. RV and HEATERS outputs

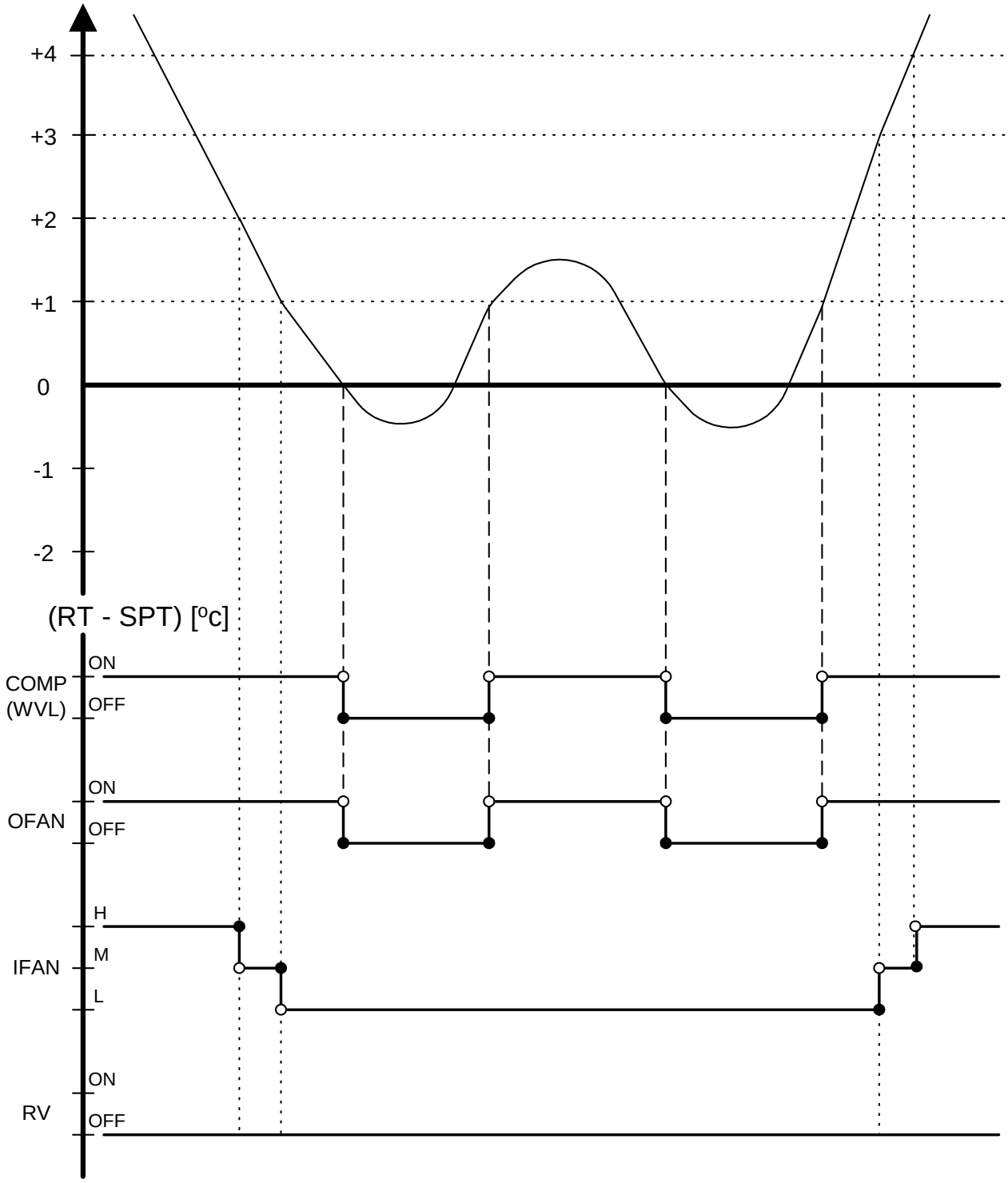
- RV and HEATERS are in OFF state in COOL mode.

11.4.3 Sequence Diagrams

a. Maintaining room temp at desired level by comparing RT and SPT with user defined IFAN speed.



b. Maintaining room temp at desired level by comparing RT and SPT with AUTO-IFAN.



11.5 Heating Mode

11.5.1 Heating Mode - General

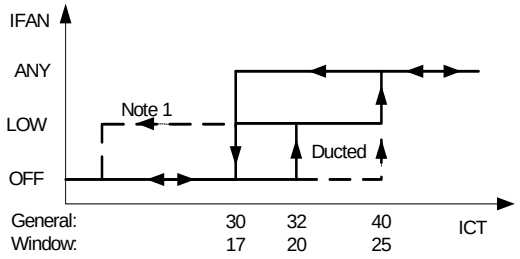
a. Compensation Procedure
When I-FEEL is OFF during HEAT mode: RT= RAT – CTV.
When I-FEEL is ON during HEAT mode: RT= RCT.

Type of Indoor	CTV
Wall Mounted	+3 °C
Mobiles / Floor Ceiling	+0 °C
Square /Window	+2 °C
Ducted	+4 °C
Cassettes	+4 °C

No compensation will be activated in Forced operation modes

b. IFAN operation rules for RC and SH groups:

1) As a general rule for **RC and SH groups,** IFAN will be switched ON according to the following graph:



NOTE 1

When COMP is ON (except WAX Model), IFAN will change from LOW to OFF either when:

a) ICT<28 and IFAN is on for 5 min or longer.

Or,

b) ICT<20

NOTE 2

When ICT is faulty:
When the compressor switches from OFF to ON (excluding deicing), IFAN will be on in ANY speed.
When the compressor switches from ON to OFF, the IFAN will change to LOW speed for 30 seconds and then it will be off.

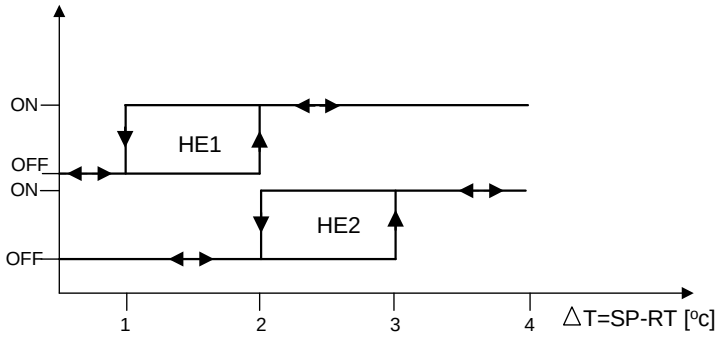
2) In SH or RC group, IFAN will operate for Min 30 sec according to 1) above after HEs are turned off, where in a case it has to be OFF, it will be forced to LOW speed.

c. IFAN operation rules for RH group

1) In RH group, IFAN starts when HE starts. When HE switches to OFF, IFAN switches to LOW for 30 sec and then stops.

d. Heaters operation rules for RC and SH groups:

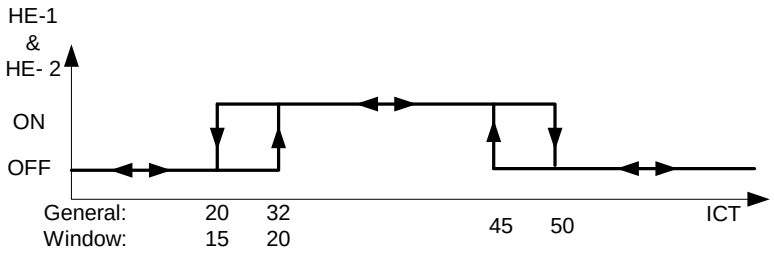
1) For both RC and SH groups, Heaters versus ΔT is as follows:



2) Operation rules for Heaters in RC group:

a) Heaters can be enabled only if IFAN is ON.

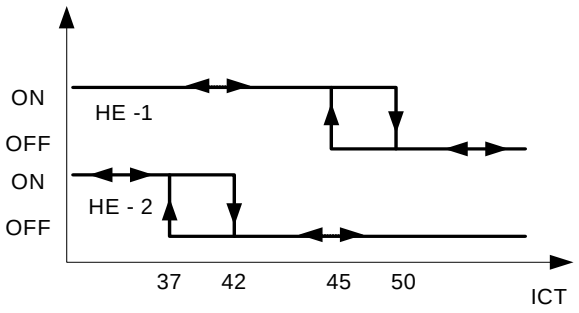
b) Heaters will operate according to ΔT **and** the following graph:



3) Rules for Heaters operation in SH group:

a) When heaters are to be ON and IFAN is to be OFF according to d. 1) above, IFAN will be forced to LOW speed.

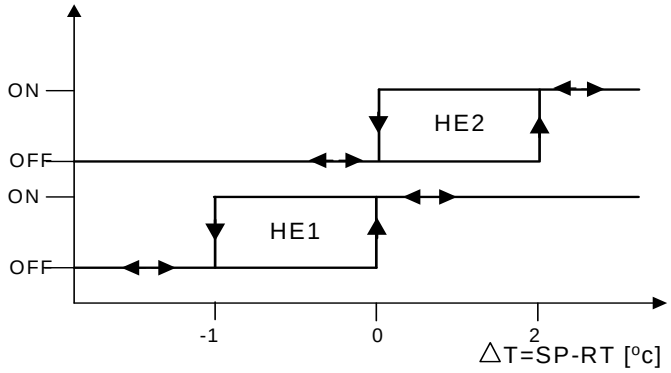
b) Heaters will operate according to ΔT and the following graph:



4) For both RC and SH groups, excluding deicing, HE1 and HE2 can be ON only when the compressor is ON.

e. Heaters operation rules for RH groups:

1) In RH group, HE operation is according to the difference between RAT and SPT.



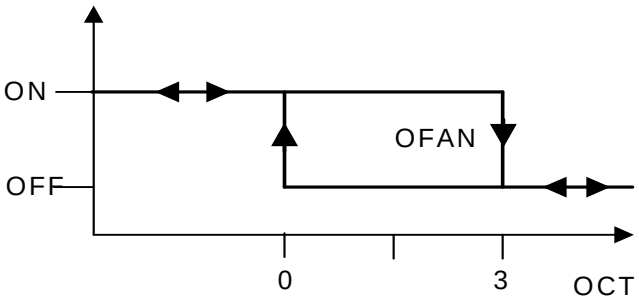
f. OFAN Operation for RC and SH groups

1) As a general rule for RC and SH groups, excluding protection modes, OFAN starts with the compressor.

2) When OFAN is ON it will operate according to the following conditions:

a) OFAN operates together with the compressor.

b) When $(RT \geq SPT - 2)$ *and* $ICT \geq 50$ and the 4.7kΩ resistor is not connected to the OCT, OFAN will operate according to the following curve:



11.6 Heating, RC or SH Group

Mode: HEAT, AUTO (at heating)

Temp: Selected desired temperature

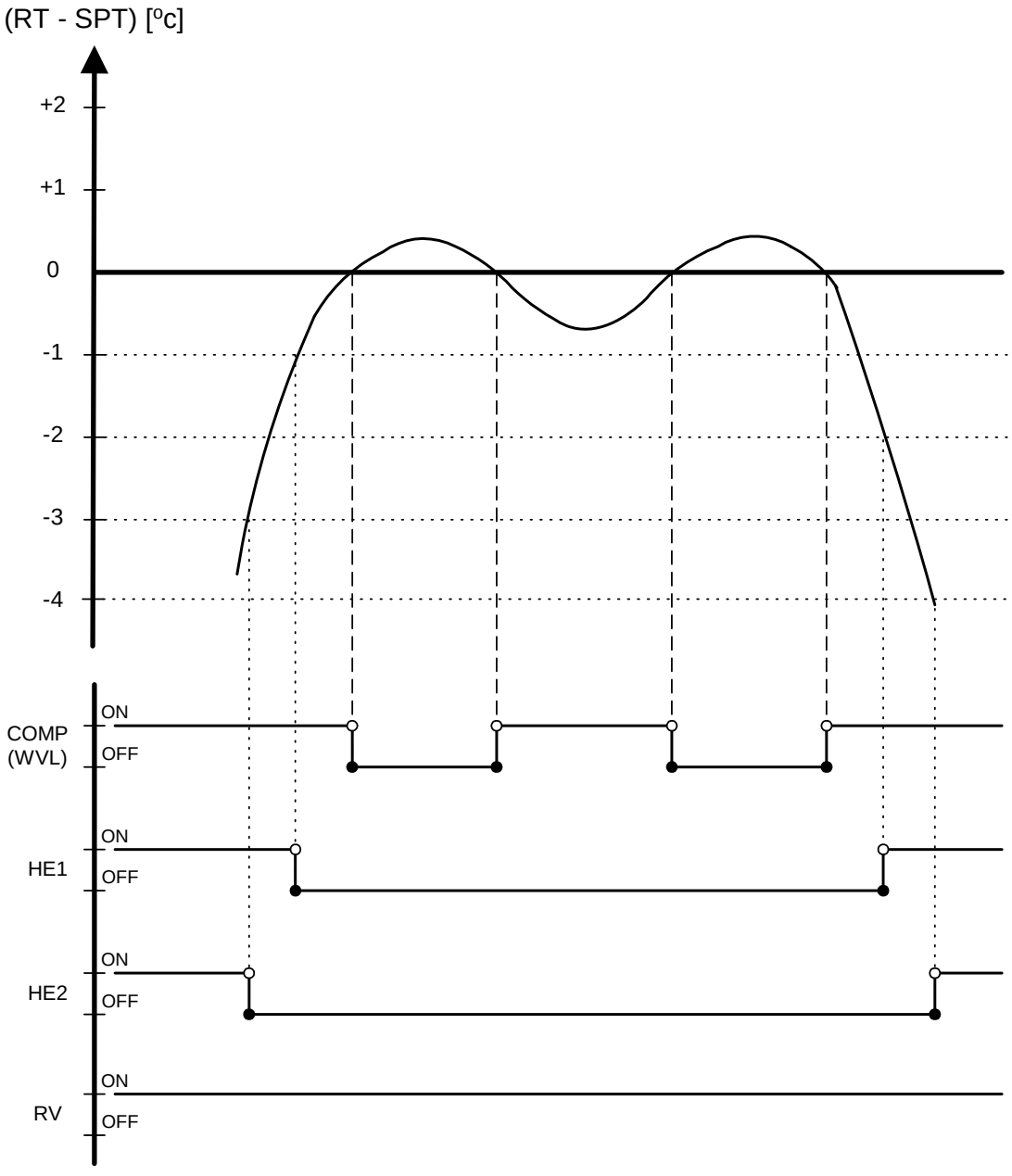
Fan: HIGH, MED, LOW

Timer: Any

I-FEEL: ON or OFF

11.6.1 Sequence Diagram

Maintains room temp. at desired level by comparing RAT or RCT to SPT.



11.7 Heating, RC or SH Group with Autofan

Mode: HEAT, AUTO (at heating)

Temp: Selected desired temperature

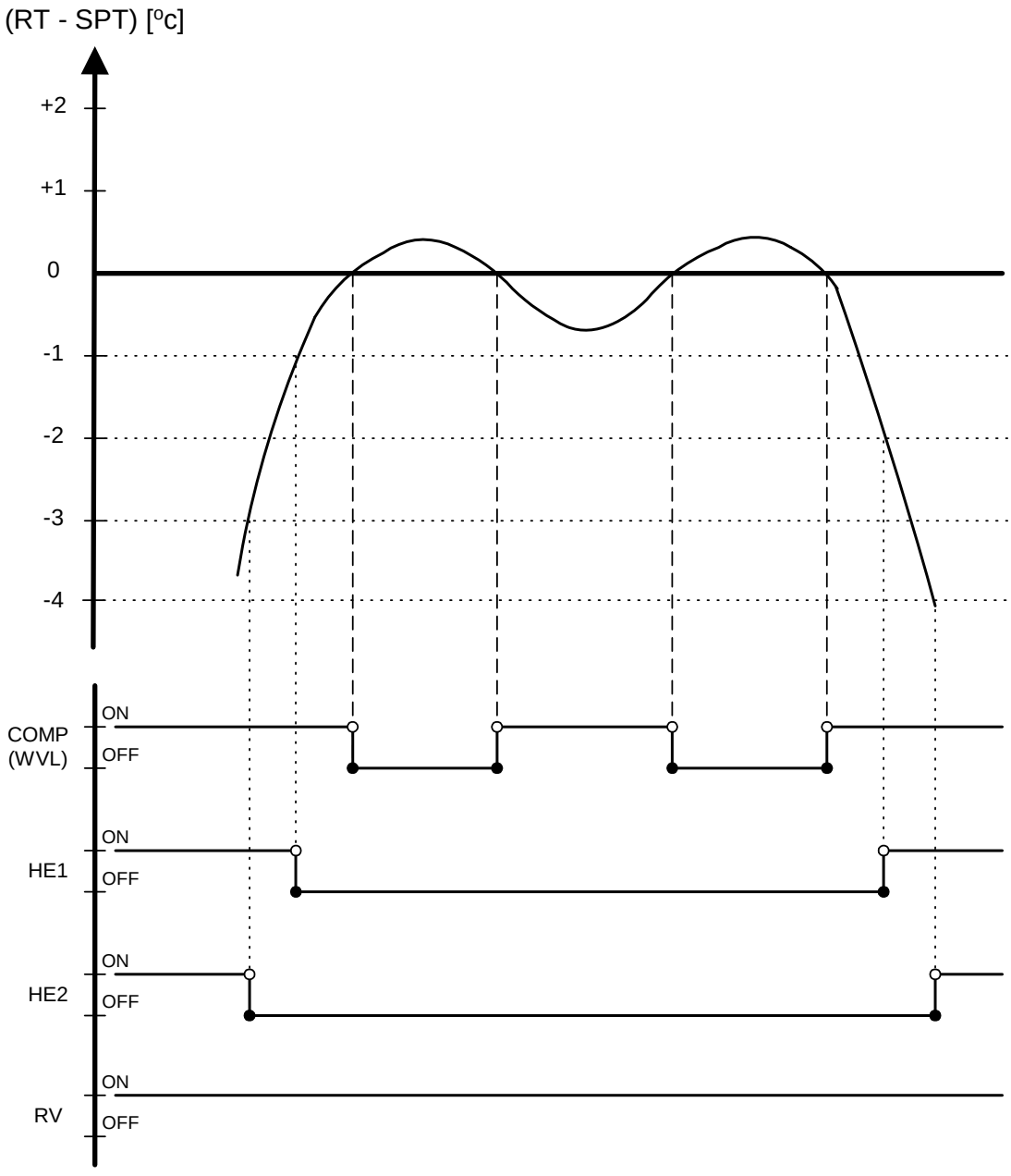
Fan: AUTO

Timer: Any

I-FEEL: ON or OFF

11.7.1 Sequence Diagram

Maintains room temp at desired level by controlling COMP, IFAN and OFAN.



11.8 Heating, RH Group

Mode: HEAT, AUTO (at Heating)

Temp: Selected desired temperature

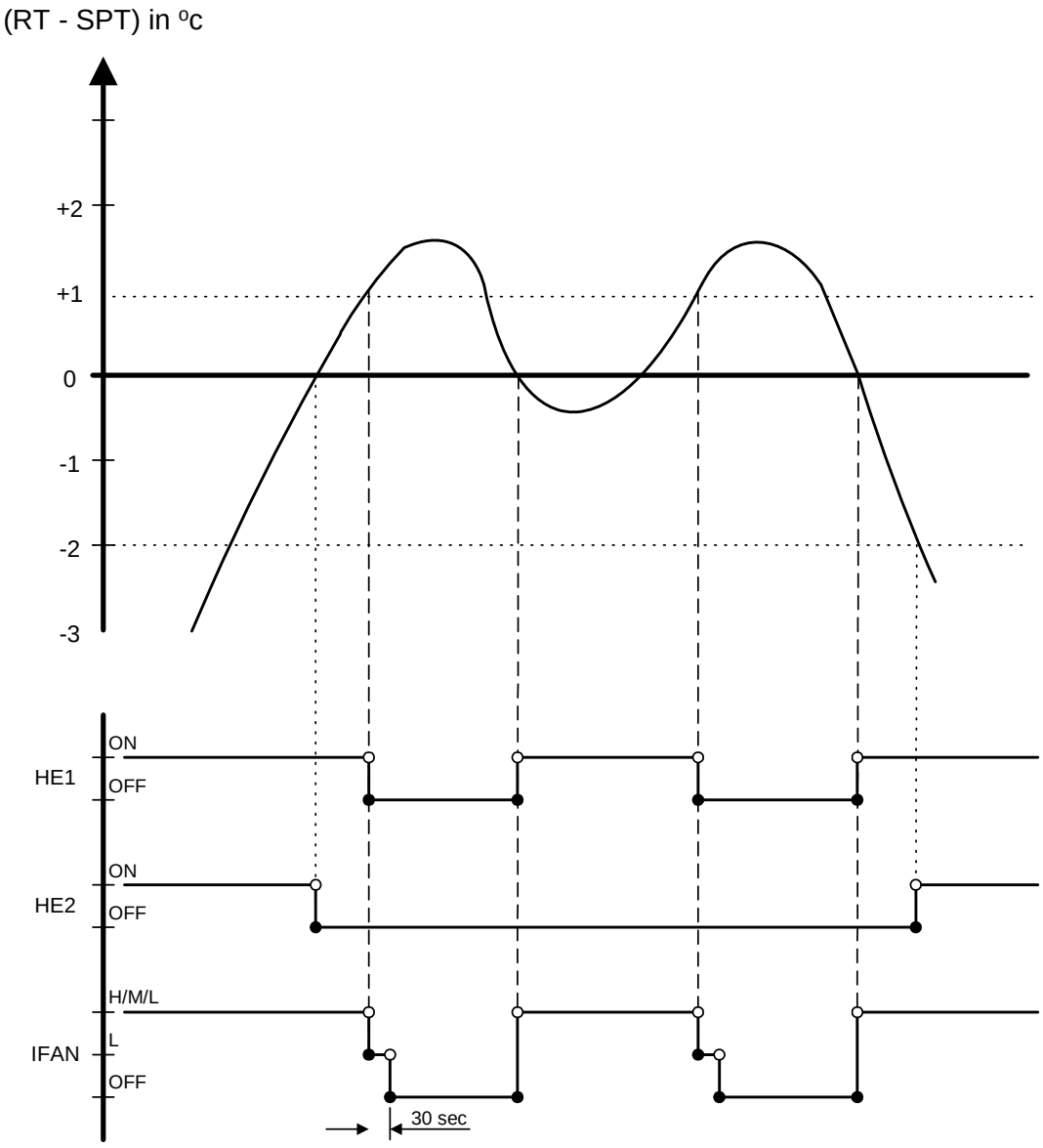
Fan: HIGH, MED, LOW

Timer: Any

I-FEEL: ON or OFF

11.8.1 Sequence Diagram

Maintains room temp at desired level by controlling Heating Elements: HE1 or HE2.



11.9 Heating, RH Group, with AUTOFAN

Mode: HEAT, AUTO (at Heating)

Temp: Selected desired temperature

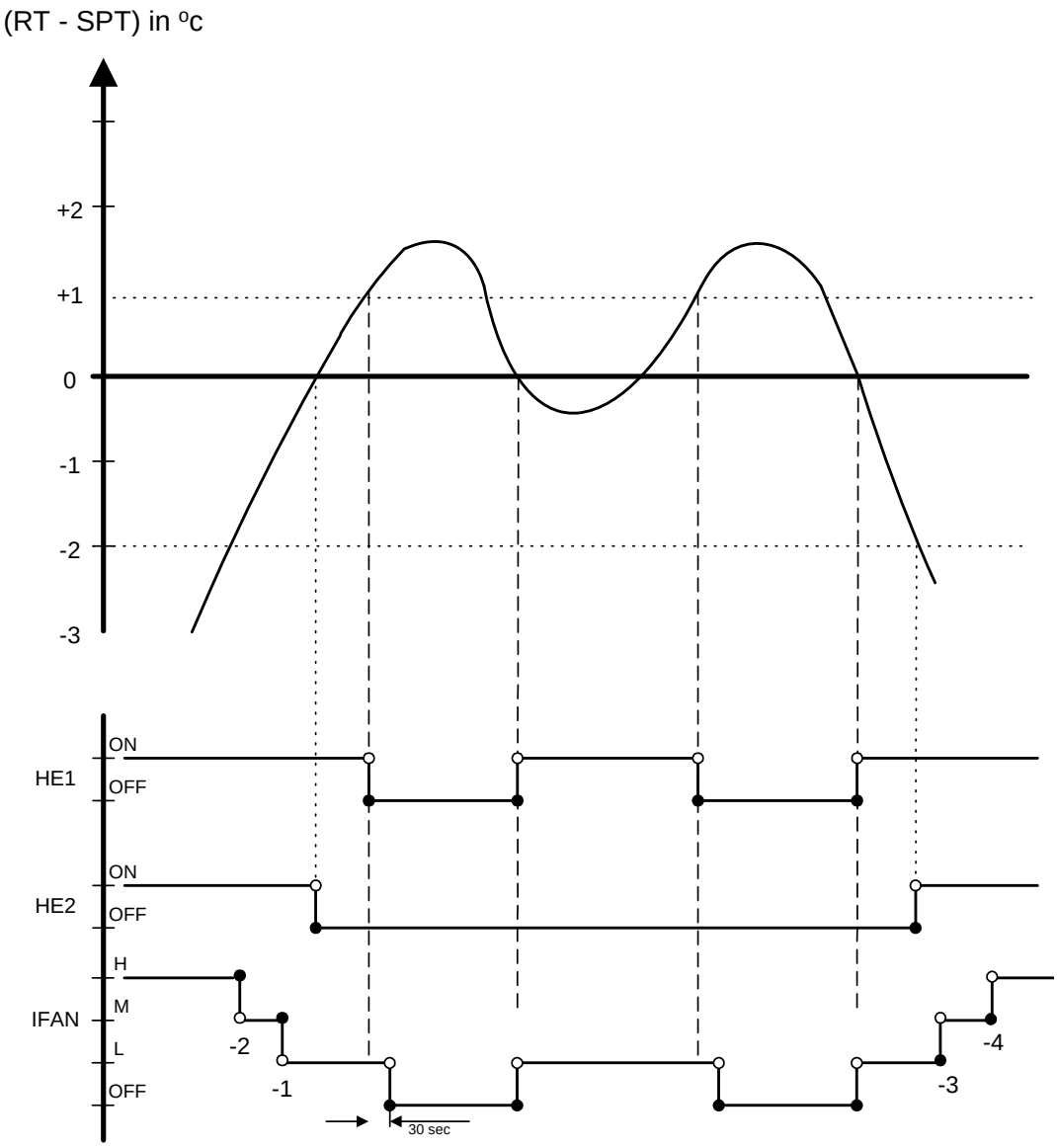
Fan: AUTO

Timer: Any

I-FEEL: ON or OFF

11.9.1 Sequence Diagram

Maintains room temp. at desired level by controlling the 2-Stage Electric Heaters.



11.10 Automatic Cooling or Heating

11.10.1 Automatic Cooling or Heating - General

The AUTO Mode is for models with compressor and the WVL-RH only. The WVL-ST, RC and SH units do not work in AUTO Mode.

a. Mode Definition

Mode: AUTO

Temp: Selected desired temperature

Fan: Any

Timer: Any

I-FEEL: ON or OFF

b. Switching-temperature between Cooling and Heating is SPT $\pm$ 3^{O}C.

c. When the AUTO Mode is started with SPT +/-0 ^{O}C, the unit will not select Auto Heat or Auto Cool mode immediately. Instead, the unit will be in a temporary FAN Mode with IFAN operating at low speed. The proper Auto Heat mode or Auto Cool will be started whenever the RT reaches SPT-1^{O}C or SPT+1^{O}C respectively.

d. For RC & SH units, Mode change between Auto Heat & Auto Cool Modes is possible only after the COMP has been OFF during the last T minutes.

Mode Change	Time, T
Auto Cool to Auto Heat	3 min
Auto Heat to Auto Cool	4 min

e. For RH and WVL-RH units, Mode change between Auto Heat & Auto Cool Modes is possible after the COMP/HEs have been OFF during the last T minutes.

Mode Change	Time, T
Auto Cool to Auto Heat	COMP off for 3 min
Auto Heat to Auto Cool	HEs off for 3 min

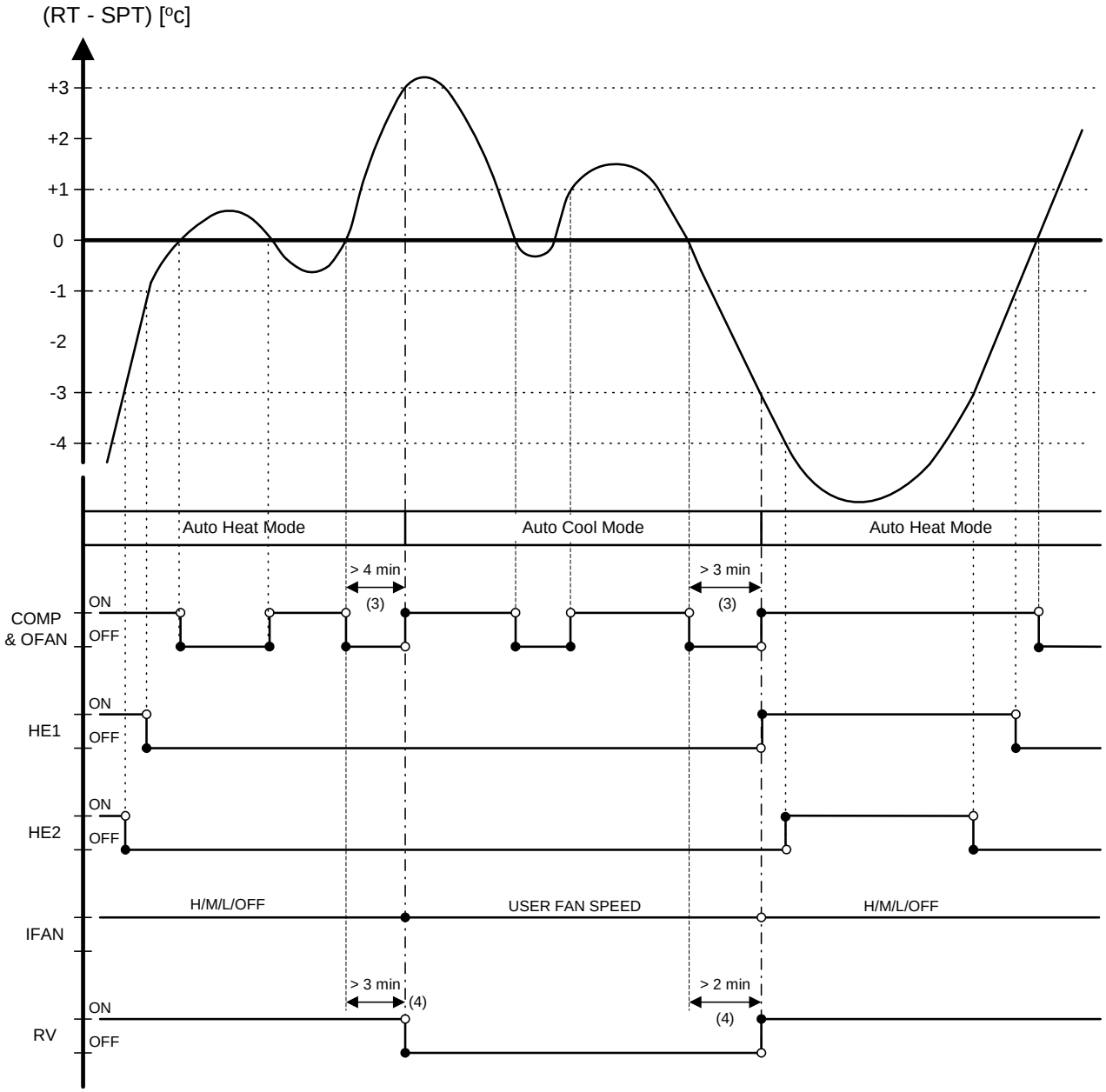
f. When unit is changed form Cool/Dry Mode to Auto Mode, the unit will continue to operate in (Auto) Cool Mode until the conditions for switching from Auto Cool to Auto Heat are satisfied.

Similarly, when unit is changed from Heat Mode to Auto Mode, the unit will continue to operate in (Auto) Heat Mode until the conditions for switching from Auto Heat to Auto Cool are satisfied.

11.10.2 Sequence Diagrams

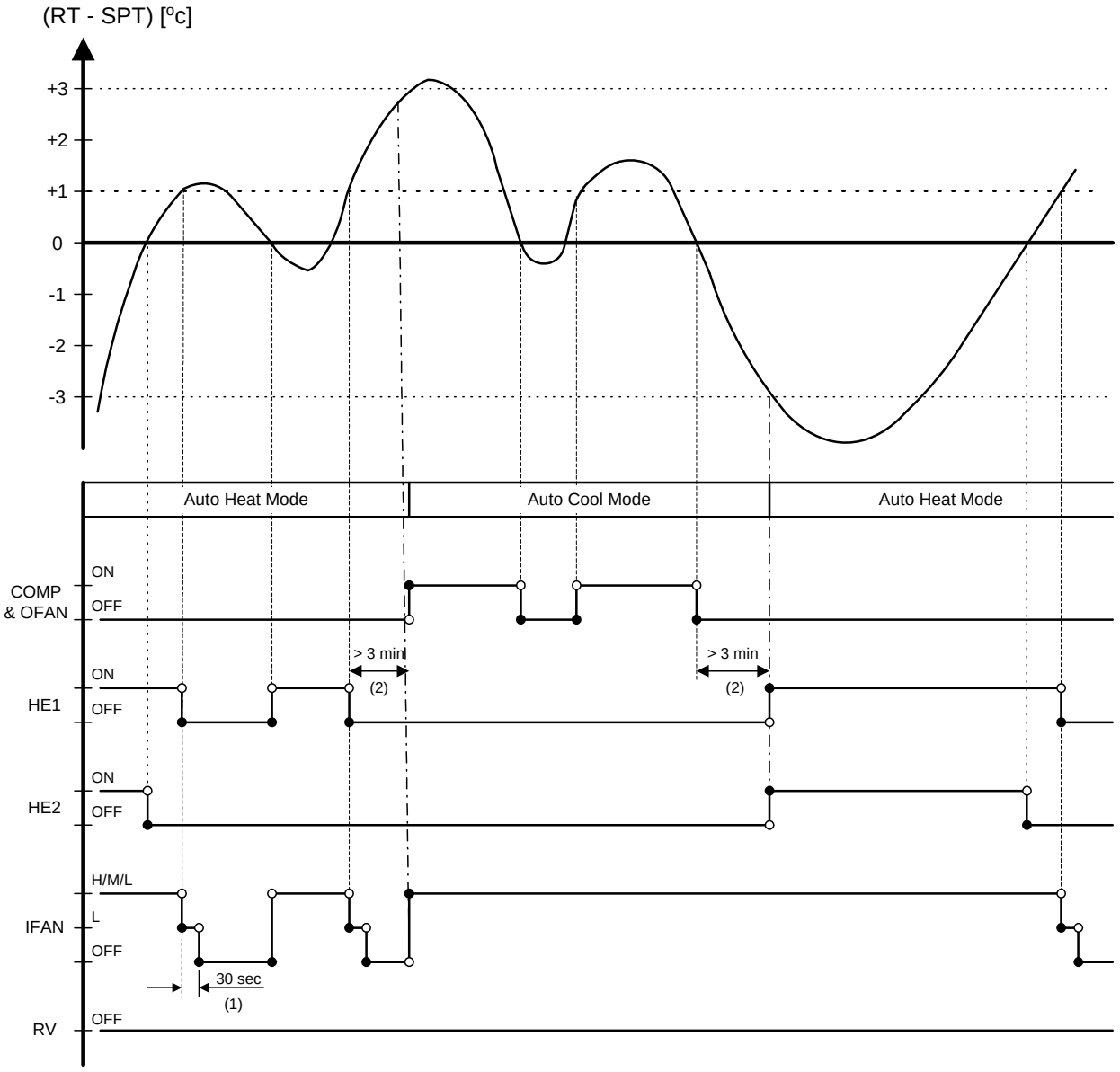
a. Auto Cooling or Heating, RC or SH Groups

Maintains room temp. at desired level by selecting between cooling and heating modes.



b. Auto Cooling or Heating RH Group

Maintains room temp. at desired level by selecting between Cooling or Heating Modes.

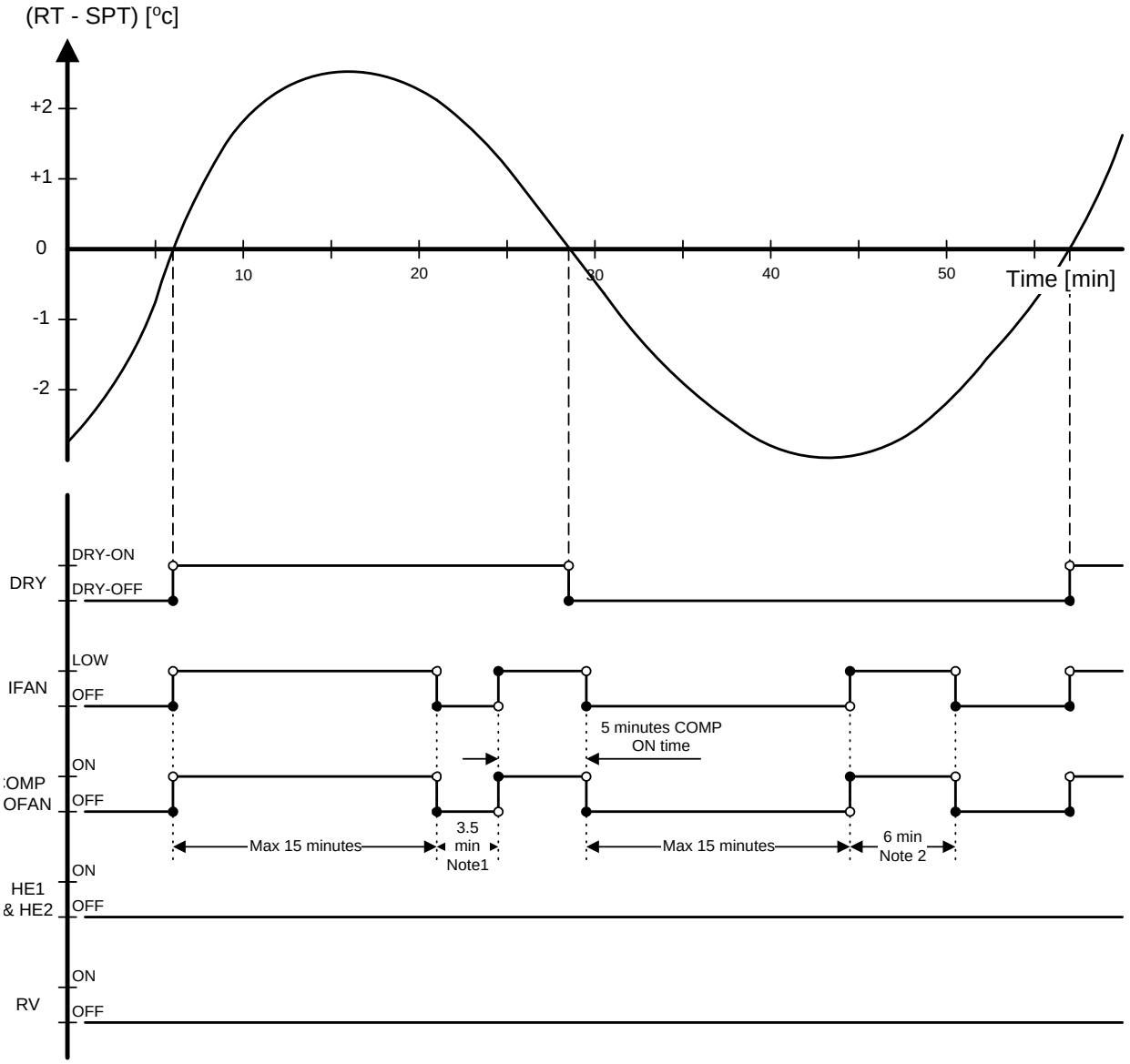


11.11 Dry Mode

11.11.1 Dry, ST or RC Group or P2000 Model with Any Group Settings

Mode: DRY
Temp: Selected desired temperature
Fan: LOW (automatically selected by software)
Timer: Any
I-FEEL: Any

Control function
Reduce room humidity with minimum temp. fluctuations by operating in Cool Mode with LOW speed IFAN.



NOTES

1. **When DRY is ON, the COMP is forced OFF for 3.5 min (longer than the 3 min Min COMP- OFF time) after every 15 min of continuous COMP operation.**
2. **When DRY is OFF, the COMP is forced ON for 6 min (longer than the 3 min Min COMP- ON time) after every 15 min of continuous COMP OFF time.**
3. **When DRY is changed from ON to OFF or vice versa, the limits mentioned in (1) & (2) are ignored. The COMP operation is only controlled by the 3 min Min OFF time and 1 min Min ON time.**
4. **In DRY Mode, IFAN is LOW when COMP is ON, and is OFF when COMP is OFF.**
5. **HEs are always OFF in DRY Mode.**

11.11.2 DRY, SH or RH group

Mode: DRY

Temp: Selected desired temperature

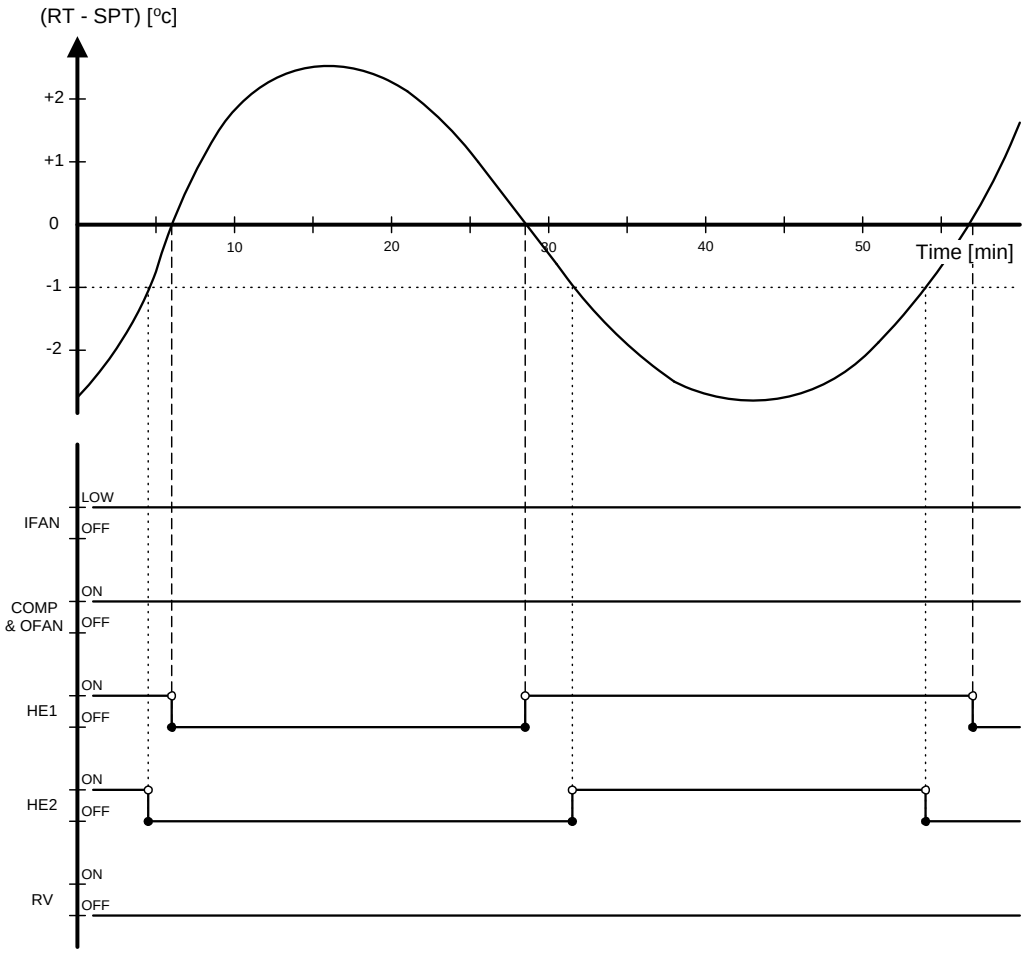
Fan: LOW (automatically selected by software)

Timer: Any

I-FEEL: Any

Control function

Reduces room humidity with minimum temp. fluctuations by operating in Cool Mode with LOW speed IFAN and HE.



11.12 Protection

11.12.1 Cooling Mode Protections

a. Indoor Coil Defrost

Mode: COOLING, DRY, AUTO

Temp: Selected desired temp.

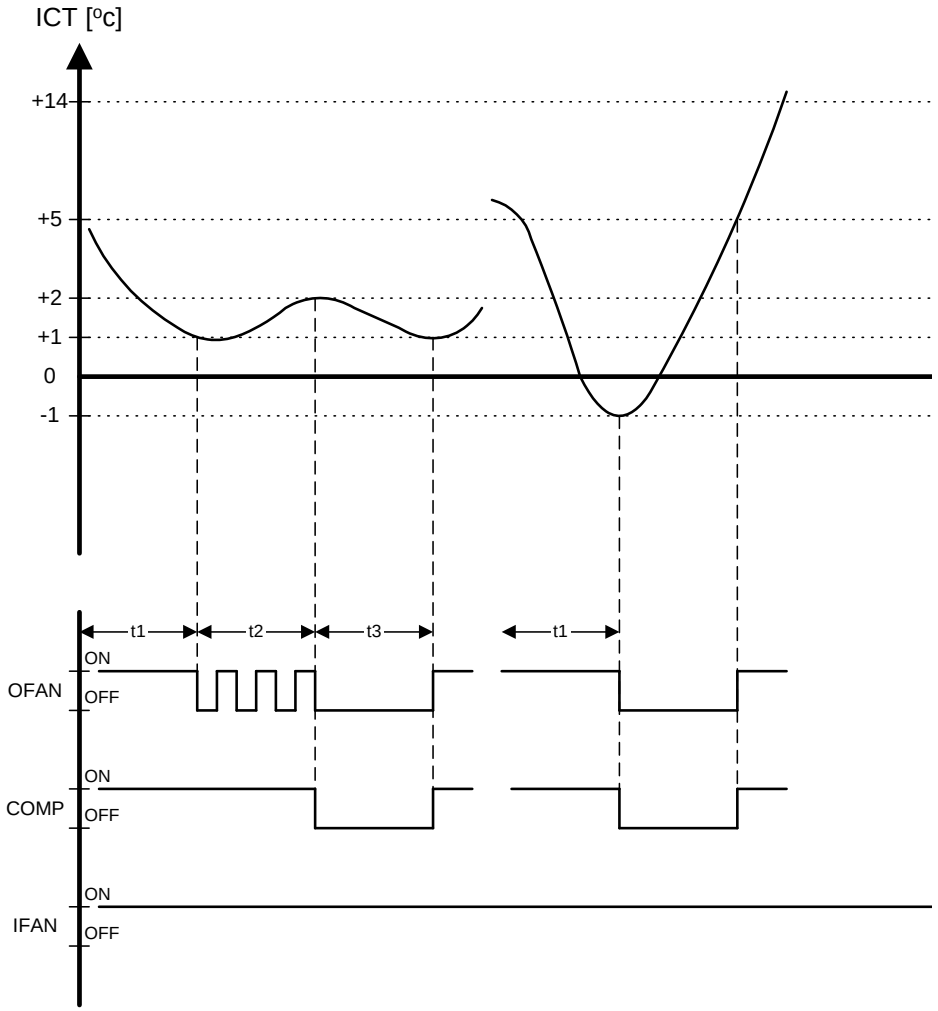
Fan: Any

Timer: Any

I-FEEL: ON or OFF

Control Function

Protects the indoor coil from ice formation at low ambient temperatures.



t1 = 5 min minimum for each COMP starting.
t2 = OFAN cycling (alternate between ON and OFF every 30 sec) for 20 min maximum.
t3 = COMP and OFAN stops for 10 min minimum.

b. High Pressure Protection

Mode: (AUTO) COOLING or DRY

Temp: Selected desired temperature

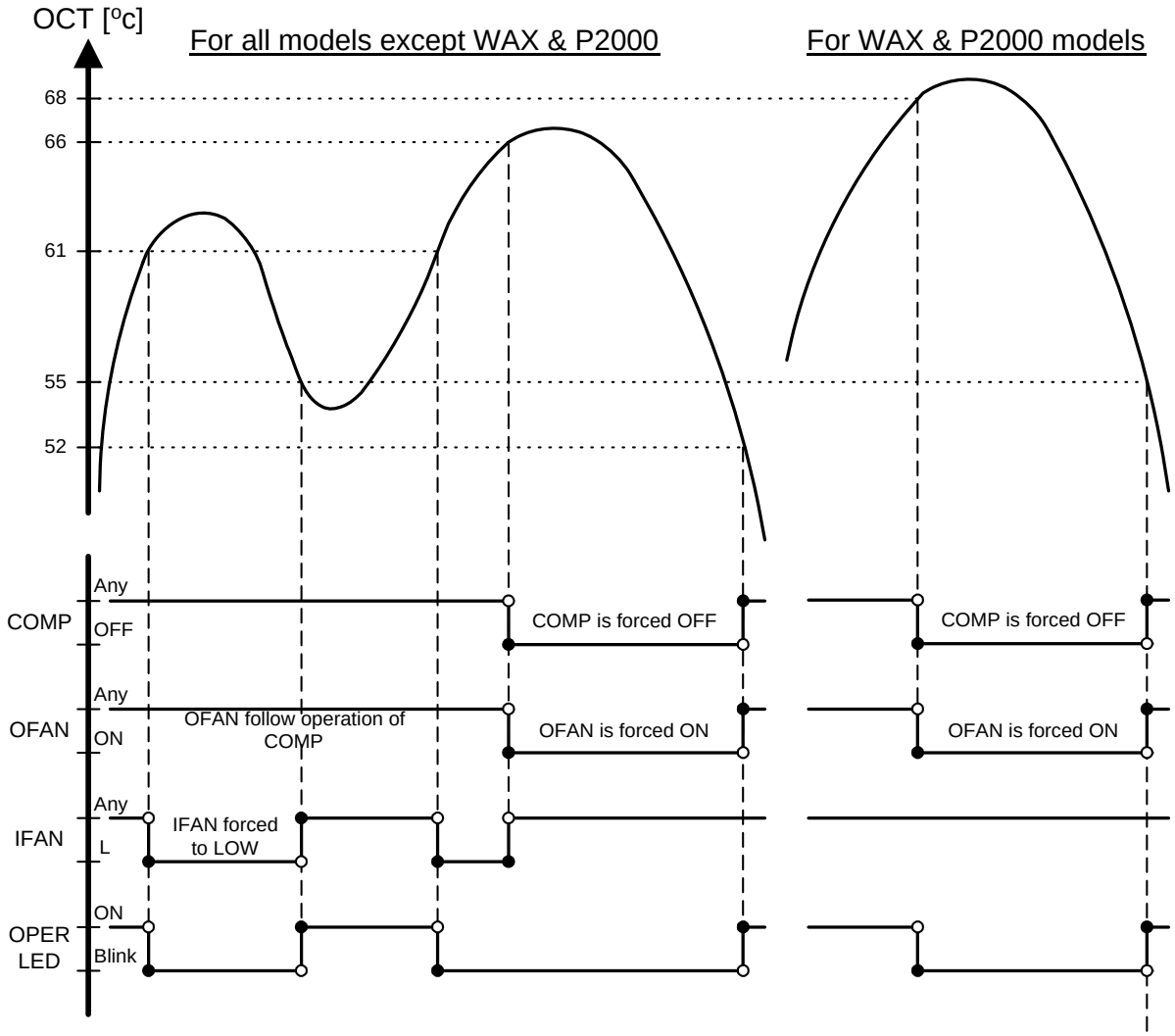
Fan: Any

Timer: Any

I-FEEL: ON or OFF

Control Function

To protect the COMP from the high pressure build-up in the outdoor coil during normal cooling operation, by switching OFF the IFAN and COMP.



NOTE

The ICT is also monitored during COOL and DRY modes, in case the RV control circuit is faulty. Whenever ICT reaches 70°C, which indicates a high pressure in the indoor coil, the COMP will be forced OFF automatically. The COMP can be turned ON again only after the ICT is under 70°C again and after the 3 min COMP ON delay time. The OPER LED will not blink in this case.

11.12.2 Heating Mode Protections

a. Outdoor Coil Deicing (excluding RH Group)

Mode: HEATING, AUTO (at heating)

Temp: Selected desired temperature

Fan: Any

Timer: Any

I-FEEL: Any

Control function

To protect the outdoor coil from ice formation by controlling COMP & RV operation.

1) Deicer Activation Algorithm

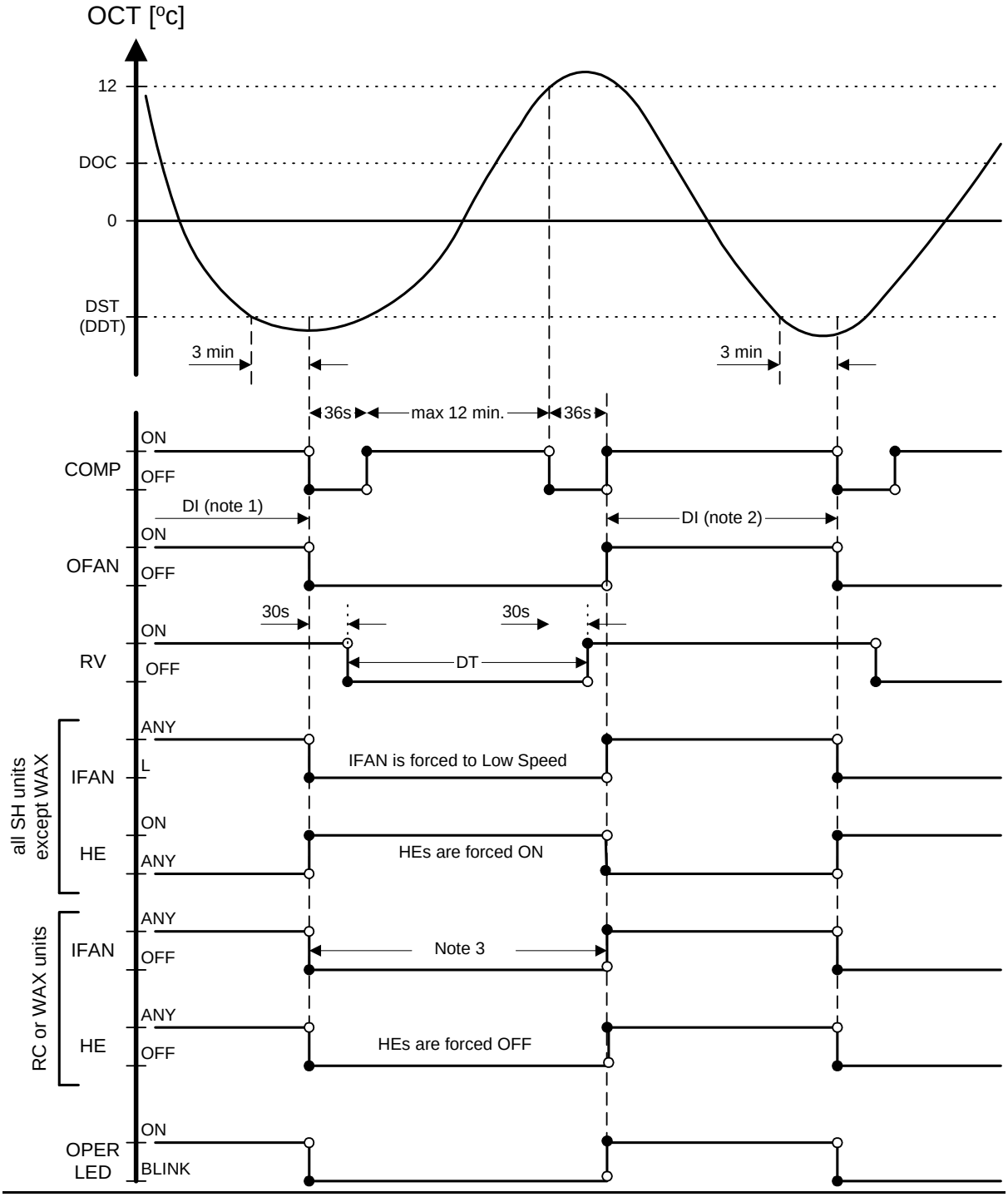
a) Static deicer threshold is -5°C

b) Dynamic deicer threshold changes of 3°C in 3 minutes in the OCT temperature

c) In first COMP activation (after SB or OFF), if OCT < 0°C, min time to first deicer is 10 min else 40 min.

d) In a case of reading 3 successive OCT values below –10°C and previously 3 successive OCT values of 43°C (4.7 K) , the unit will activate deicing procedure.

2) Deicing procedure



NOTES

1. **In the following Deicing cycles, the time interval between two Deicing cycles activation is between 30 to 80 min.**
2. **For RC group, IFAN is forced OFF.**
3. **For SH group, HEs are forced ON and IFAN is forced to operate at LOW speed, regardless of the ICT and difference between RAT & SPT.**
4. **When jumper J7 is set, the DST value is -2°C.**

b. High Pressure Protection (excluding RH Group)

Mode: (AUTO) HEATING

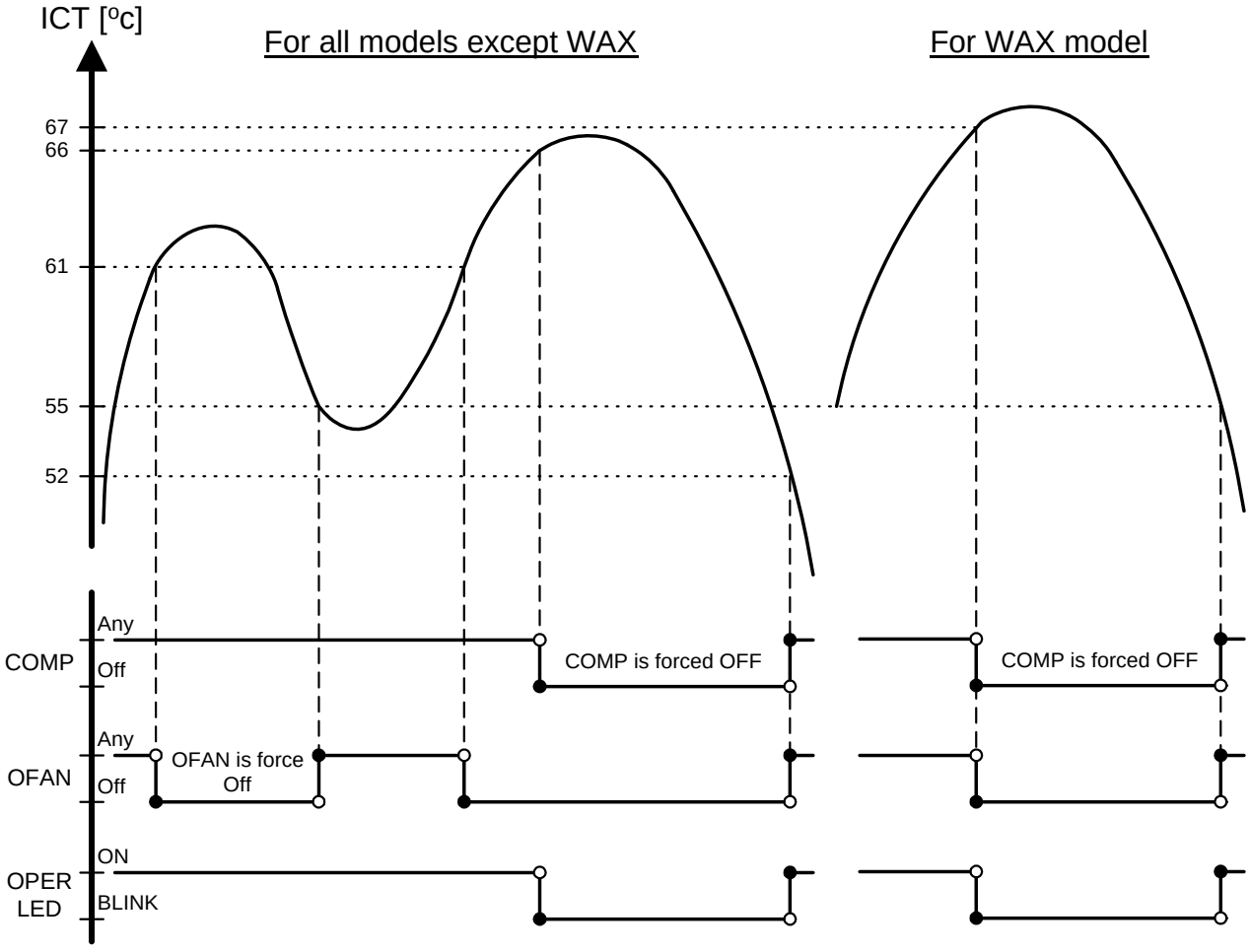
Fan: Any

Timer: Any

I-FEEL: ON or OFF

Control Function

Protects the compressor from high pressure by switching OFF the OFAN and COMP.

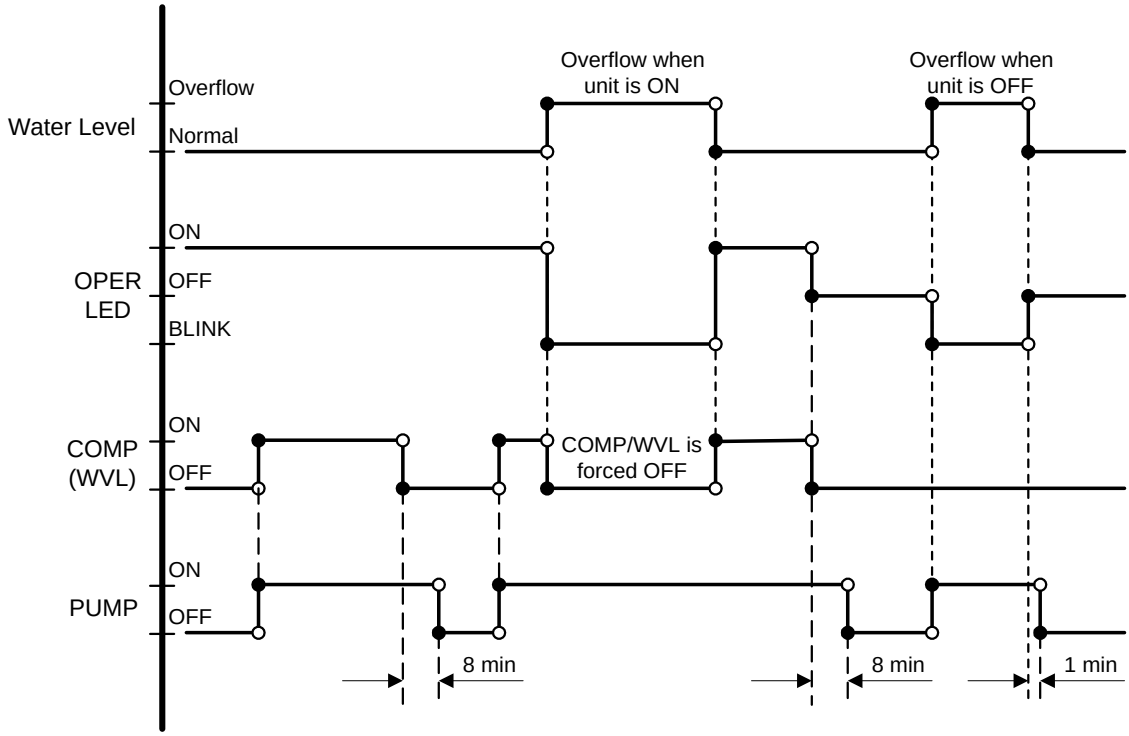


11.12.3 Condensation Pump (ECC/K model)

Mode: Cool, Dry, Auto
Temp: Selected desired temperature
Fan: Any
Timer: Any
I FEEL: Any

Control function:

Prevent Condensed water from Overflowing.



Notes:

1. The switch used for water level detection is closed under normal condition, and is open when water overflow.
2. For the NEC version of MCU, the "Over Flow" & “Normal” condition are indicated by logic “0” & “1” at the LEVEL4 input pin respectively.
3. For the Fujitsu version of MCU, the "Over Flow" & “Normal” condition are indicated by logic “1” & “0” at the LEVEL4 input pin respectively.
4. The “Overflow” condition can activate the water pump in SB and operating modes.

11.13 Forced Operation (Excluding PRX & PXD Models)

a. Forced operation allows units to start, stop and operate in cooling or heating in preset temp. according to the following table:

Forced Operation Mode	Pre-set Temp for : MBX, P2000, PX Models	Pre-set Temp for : FCD, RWK ,ELD, ECC, WAX, WNX, WMN Models
Cooling	20 ºC	22 ºC
Heating	25 ºC	28 ºC

NOTES

1. **While under the forced operation, the temperature compensation schedule is disabled.**
2. **The forced operation is activated when the mode button on the Display Board is used to switch the unit to COOL or HEAT mode.**
3. **The IFAN is always set to Autofan Speed in forced operation.**

Temp: Set – desired temperature selected

Fan: Any

Timer: Interact with Sleep Timer

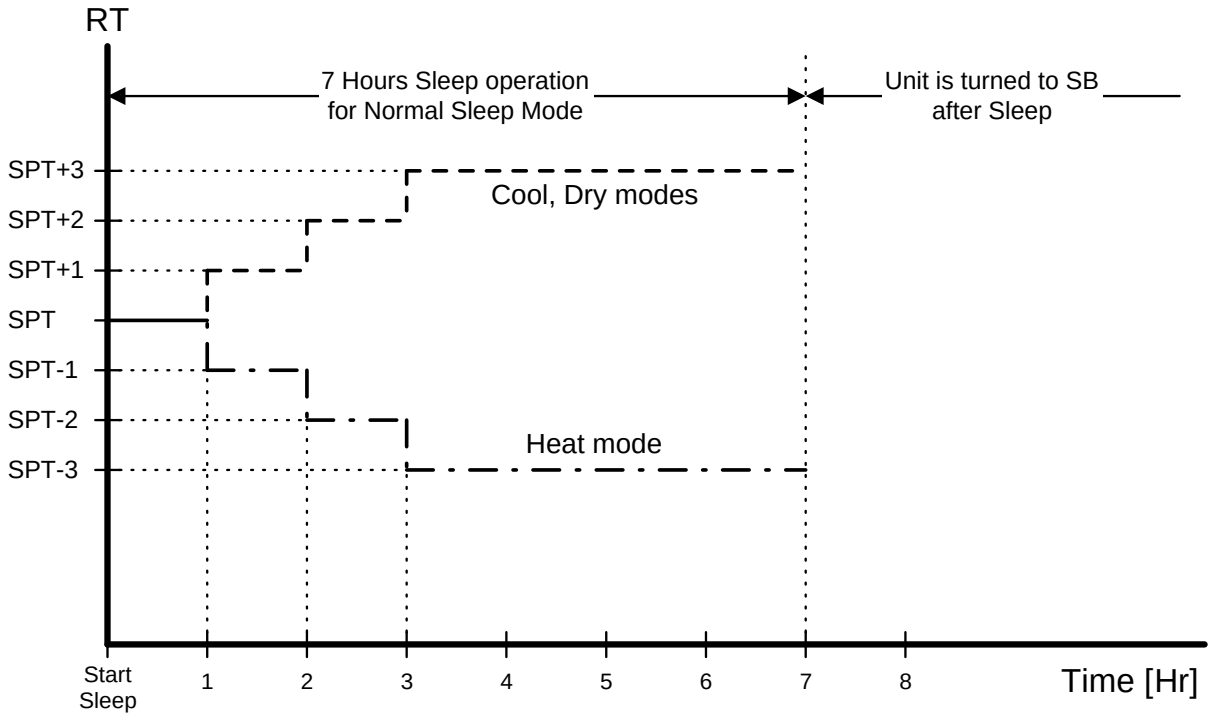
I-FEEL: ON or OFF

The Sleep mode is activated by using the SLEEP button on the R/C. In Sleep Mode, the unit will automatically adjust the SPT to turn up/down the room temperature (RT) gradually to provide maximum comfort for the sleeping user.

Sleep is treated as TIMER function. Therefore, the TIMER LED is activated similar to TIMER function.

11.14 SPT Adjustment in Sleep Mode

- In COOL, AUTO COOL or DRY modes, the SPT adjustment is positive (from 0 to +3°C).
- In HEAT or AUTO HEAT modes, the SPT adjustment is negative (from 0 to -3°C).
- In other modes, there is no SPT adjustment.
- The SPT adjustment is cancelled when the Sleep mode is cancelled.



NOTE

If OFF-timer is active, the unit may go to SB before or after 7 hours of sleep operation.

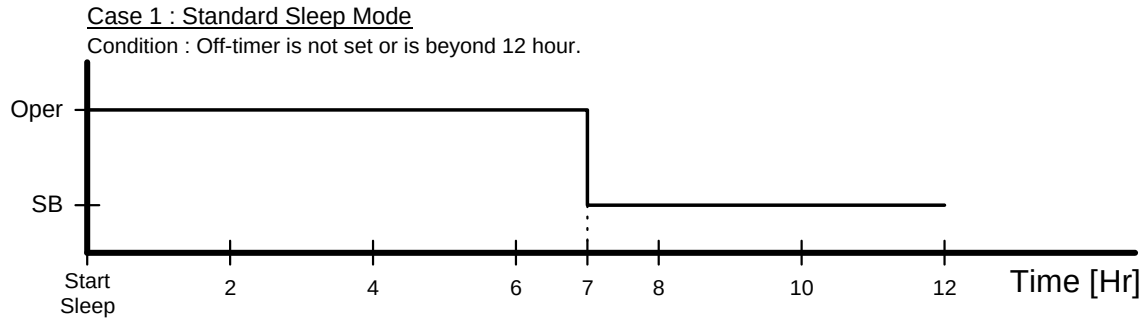
11.14.1 Time Adjustment in SLEEP Mode

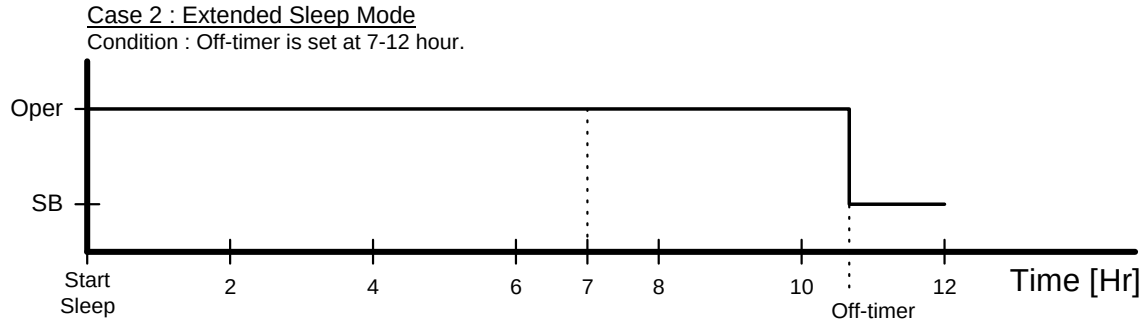
In 10V4, the user can make use of the Off-Timer to extend the Sleep Time from 7 hours to 12 hour (max). The operation of the new “Extended Sleep Mode” is illustrated by the graphs below.

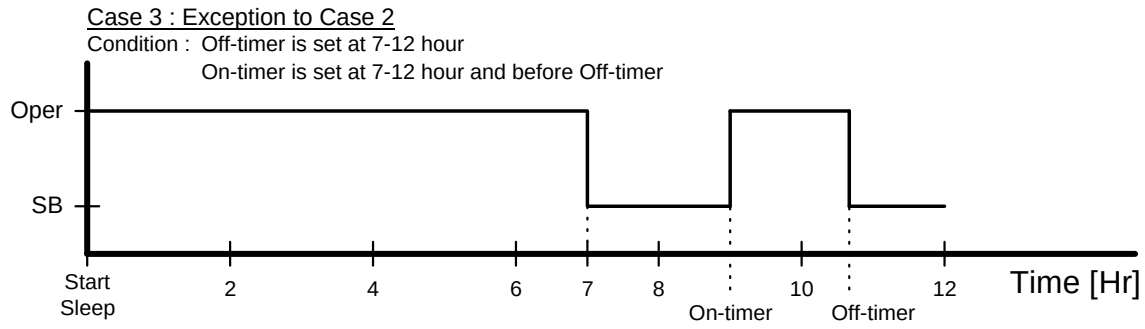
Case 1 is the Standard Sleep Mode, which is the only sleep mode in the previous version of MCU. The A/C unit simply works for 7 hours, then goes to SB.

Case 2 is the new Extended Sleep Mode. If an active Off-Timer is set to turn off the A/C between 7-12 hour, relative to the starting of Sleep, the Sleep time is extended. And, instead of going to SB at the 7th hour, the A/C will work until reaching the Off-time.

Case 3 is an exception to case 2. The Sleep Mode will not be extended to the Off-Time when the Off-Timer is preceded by an On-Timer, which is also between 7-12 hour.





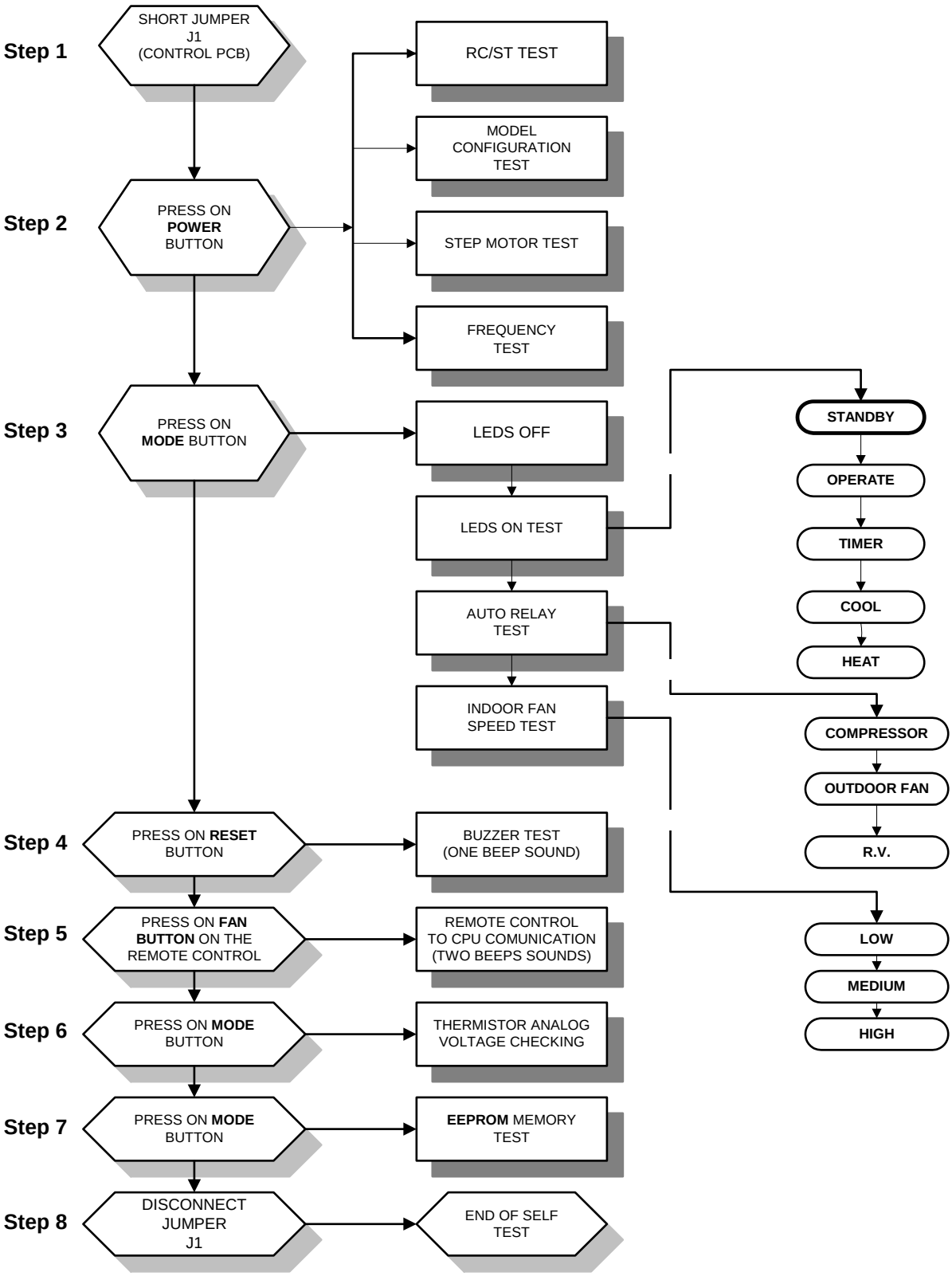


11.15 Controller Self-Test Procedure

11.15.1 By Shorting Test Jumper J1

SELF-TEST FLOW CHART

FOR CONTROLLER (VERSION 4V5 OR HIGHER)



11.15.2 By Remote Control Settings:

a. STEP 1: TURNING ON THE POWER.
Turn ON the power, make sure that the unit is in operation.

b. STEP 2 : ENABLE SELF-TEST MODE

1) Use the remote control to send the first settings to display / indoor unit HEAT mode, HIGH IFAN, set temperature to 16 ºC**,** no I-FEEL Sleep or any other timer settings are needed.

2) Cover the IR transmitter components in the remote control so that it will not transmit the signals to the indoor unit display.

3) Use the remote control to send the second settings to display / indoor unit COOL mode, LOW IFAN, no I-FEEL Sleep or any other timer settings.

4) Uncover the remote control IR transmitter and change the temperature settings. If the display/indoor unit receive the settings properly the following steps will start:

c. STEP 3: MODEL SETTING CONFIRMATION

1) The STAND-BY and COOL LEDS will indicate the operation mode as follows:

OPERATION MODE	STAND-BY LED	COOL LED
ST	ON	OFF
RC	OFF	OFF
SH	OFF	ON
RH	ON	ON

2) Testing the Model configuration. Selected by the COMP, STAND-BY, TIMER LEDS and FILTER will indicate the model configuration as follows (the relevant line for this manual is highlighted):

MODEL	COMP	OPERATE LED	TIMER LED	FILTER LED
WNG	ON	OFF	OFF	OFF
MBX	ON	OFF	OFF	ON
WNX	ON	OFF	ON	OFF
PRX	ON	ON	OFF	OFF
WMN1	ON	ON	OFF	ON
EMD/LS	ON	ON	ON	OFF
ECC-K	ON	ON	ON	ON
WMN 4	OFF	OFF	ON	OFF
PXD	OFF	OFF	ON	ON
WMN 2/WHX	OFF	ON	OFF	ON
WMN 3	OFF	ON	ON	ON

In this term the step motor will turn to HOME POSITION.

d. STEP 3: AUTO LED WALK TEST.

1) All the LEDS will turn OFF.

2) All the LEDS will turn ON for 1 second one by one in the following sequence:

STAND-BY ⇨ OPERATE ⇨ TIMER ⇨ FILTER ⇨ COOL ⇨ HEAT.

3) In PRX all the LEDS will turn ON for 1 second one by one in the following sequence : 18 °c ⇨ 20 °c ⇨ 22 °c ⇨ 24 °c ⇨ 26 °c ⇨ 28 °c ⇨ 30 °c ⇨ High IFAN ⇨ Auto IFAN ⇨ Med IFAN ⇨ Low IFAN ⇨ STAND-BY⇨ TIMER ⇨ FILTER ⇨COOL⇨ HEAT.

e. STEP 4: AUTO REALY WALK TEST:

All relays will energize one by one in the following sequence:

COMPRESSOR ⇨ OUTDOOR FAN⇨R. V. ⇨ HEATER 1 ⇨ HEATER 2 ⇨ INDOOR WATER PUMP ⇨ SWING or OUTDOOR WATER PUMP ⇨ INDOOR FAN: LOW ⇨ MID ⇨ HIGH.

When the relay walk test is completed, the next test will start automatically.

f. STEP 5: FREQUENCY TESTING:

If the frequency measuring process fails the COOL LED will turn ON. In order to move to the next step, press ON/OFF button on the remote control.

g. STEP 6: INPUT TEST.

The test purpose is to check the analog real time indicators (thermistors, LEVEL and clock) according to the table below.

LED Indicator	Condition for LED to be ON
STBY LED	Room thermistor ≠ 25°c
OPER LED	Indoor coil thermistor ≠ 25°c
TIMER LED	Outdoor coil thermistor ≠ 25°c
FILTER LED	Clock
COOL LED	LEVEL 2&3
HEAT LED	LEVEL 4

h. STEP 7: TIMING RESET TEST (WATCH DOG).

The test purpose is to verify that the CPU rise time after power failure is between 1 to 3 sec, test results are indicated on the LEDS : STAND-BY,OPER, TIMER and FILTER turning ON one by one.

The results of the test are coded as follows:

Pass condition:

1 sec - STAND-BY and OPER are turned ON

2 sec - STAND-BY, OPER and TIMER are turned ON

Fail condition:

0 sec - STAND-BY is turned ON

3 sec - STAND-BY, OPER, TIMER and FILTER are turned ON

When the timing reset test is completed, the next test will start automatically.

i. STEP 8: MEMORY TEST (EEPROM)

The test purpose is to check if the memory is functioning correctly. The test result is reported by using the STAND-BY and FILTER LEDS:

LED Indicator	Condition for LED to be ON
STAND-BY LED	Test passed
FILTER LED	Test failed

AT THIS POINT THE SELF-TEST IS COMPLETED.

In order to terminate Self-Test mode the User can change the unit setting from COOL Mode, LOW FAN to COOL Mode, MED FAN or to wait without using the remote control for 60 sec.

Values of Sensors Temperature VS. Voltage (DC)

Temp. (°C)	Voltage (V)	Temp. (°C)	Voltage (V)	Temp. (°C)	Voltage (V)	Temp. (°C)	Voltage (V)
-20	4,554	2	3.744	24	2.555	46	1.487
-19	4,529	3	3.695	25	2.5	47	1.447
-18	4,502	4	3.646	26	2.445	48	1.409
-17	4,475	5	3.595	27	2.391	49	1.371
-16	4.446	6	3.544	28	2.338	50	1.334
-15	4.417	7	3.492	29	2.284	51	1.298
-14	4.386	8	3.439	30	2.232	52	1.263
-13	4.354	9	3.386	31	2.18	53	1.228
-12	4.322	10	3.332	32	2.128	54	1.195
-11	4.287	11	3.278	33	2.077	55	1.162
-10	4.252	12	3.223	34	2.027	56	1.13
-9	4.216	13	3.168	35	1.978	57	1.099
-8	4.178	14	3.113	36	1.929	58	1.069
-7	4.14	15	3.058	37	1.881	59	1.04
-6	4.1	16	3.002	38	1.834	60	1.011
-5	4.059	17	2.946	39	1.798	61	0.983
-4	4.017	18	2.89	40	1.742	62	0.956
-3	3.974	19	2.833	41	1.698	63	0.929
-2	3.93	20	2.777	42	1.654	64	0.904
-1	3.885	21	2.722	43	1.611	65	0.879
0	3.839	22	2.666	44	1.569	66	0.854
1	3.792	23	2.61	45	1.527	67	0.831

11.16 System Diagnostics

Pressing Mode button for 5-10 seconds in SB or any other operation mode will activate the DIAGNOSTICS mode, acknowledged by 3 short beeps and lighting of COOL and HEAT LEDs.
In DIAGNOSTICS mode, system failures will be indicated by the blinking of HEAT & COOL LEDs.
The coding method is as follows:

- HEAT LED blinks 5 times in 5 seconds, and then turns off for the next 5 seconds.
- COOL LED blinks during the same 5 seconds according to the following table:

No.	Problem	1	2	3	4	5
1	RT1 is disconnected	○	●	●	●	●
2	RT1 is shorted	○	●	●	●	○
3	RV fault	○	●	●	○	●
4	RT2 is disconnected	●	○	●	●	●
5	RT2 is shorted	●	○	●	●	○
6	(Reserved)	●	○	●	○	●
7	RT2 temp reading doesn't change	●	○	●	○	○
8	RT3 is disconnected	●	●	○	●	●
9	RT3 is shorted	●	●	○	●	○
10	(Reserved)	●	●	○	○	●
11	RT3 temp reading doesn't change	●	●	○	○	○
12	RT2 & RT3 temp reading doesn't change	●	○	○	○	○

LEGEND

○ - ON, ● - OFF

NOTES

1. **If faults occur in more than one thermistor (except case number 12 in table above), only one fault will be indicated according to the following order: RT3, RT2, RT1.**
2. **A/C will return to normal mode when sending a command by the R/C during system DIAGNOSTICS mode. If the command from the R/C contains a Group ID, the ID will become the new Group ID of the ELCON unit.**

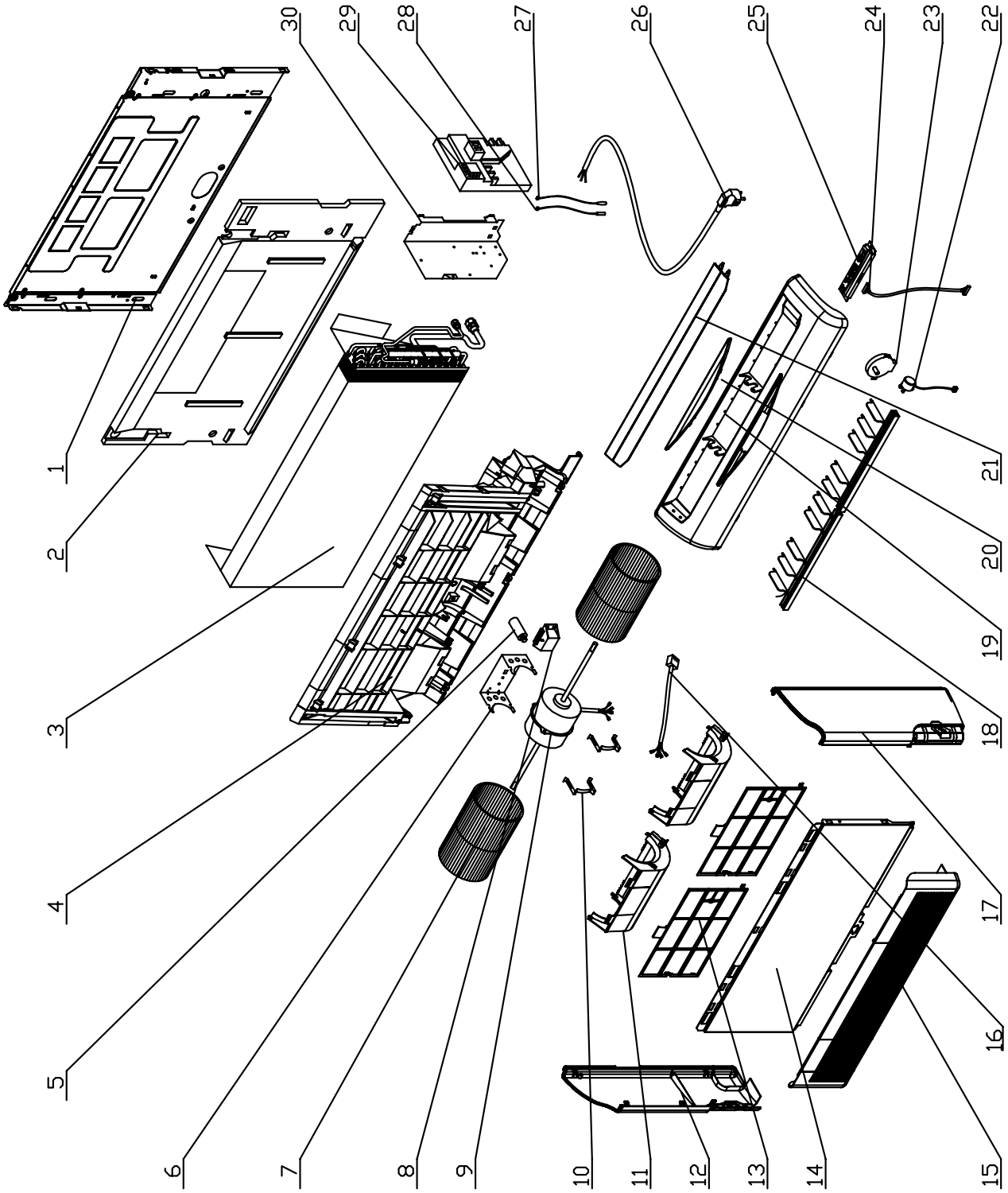
12. TROUBLESHOOTING

No.	SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
1	Power supply indicator (Red LED) does not light up.	No power supply.	Check power supply. If power supply is OK, check display and display wiring, if OK, replace PCB.
2	Unit does not respond to remote control command.	Remote control command did not reach the indoor unit.	Check remote control batteries. If batteries are OK, check display and display wiring, if OK, replace PCB.
3	Unit responds to remote control command but operate indicator (Green LED) does not light up.	Problem with display PCB.	Replace display PCB.
4	Indoor fan does not start (louvers are opened and Green LED lights up).	Unit in HEAT MODE and coil is still not warm.	Change to COOL MODE and check.
		Problem with PCB or capacitor.	Change to HIGH speed and check power supply to motor is higher than 130 VAC. If OK replace capacitor, if not OK replace controller.
5	Indoor fan works when unit is OFF, and indoor fan speed is not changed by remote control command.	PCB problem.	Replace controller.
6	Compressor does not start.	Electronics control problem or protection.	Perform diagnostics, and follow the actions described below.
7	Compressor stops during operation and Green LED remains on.	Electronic control or power supply problem.	Perform diagnostics, and follow the actions described below.
8	Compressor is ON but outdoor fan does not work.	Problem with outdoor electronics or outdoor fan capacitor.	Switch unit to COOL mode, HIGH speed with 16 degrees set point (summer) or HEAT mode high speed with 30 degrees set point (winter). Check power supply to motor is higher than 130 VAC. If OK replace capacitor, if not OK replace controller.
9	Unit works in wrong mode (cool instead of heat or heat instead of cool).	Electronics or power connection to RV.	Check RV power connections. If OK, check RV operation with direct 230 VAC power supply, if OK, replace outdoor controller.
10	All components are operating properly but no cooling or heating.	Refrigerant leak.	Check refrigeration system.

No.	SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
11	One of the protections is activated and compressor is stopped with no apparent reason.	Control problem or refrigeration system problem.	Perform diagnostics to detect active protection, and take action accordingly.
12	Compressor motor is noisy and no suction is present.	Wrong phase order to compressor.	Check compressor phase order.
13	Water leakage from indoor unit.	Indoor unit drainage tube is blocked.	Check and open drainage tube.
14	Freezing of outdoor unit in HEAT Mode and outdoor unit base is blocked with ice.		Connect base heater.
15	Unit operates with wrong fan speeds or wrong frequency.	Wrong jumper settings.	Perform diagnostics to obtain unit model or if operating by EEPROM parameters.
16	Filter LED comes ON after 512 hours of operation	Clogged air-filter	Replace air-filter. Press the RESET button.

13. EXPLODED VIEWS & SPARE PARTS LISTS

13.1 Indoor Unit: SX 12 TELECOM, SX 18 TELECOM



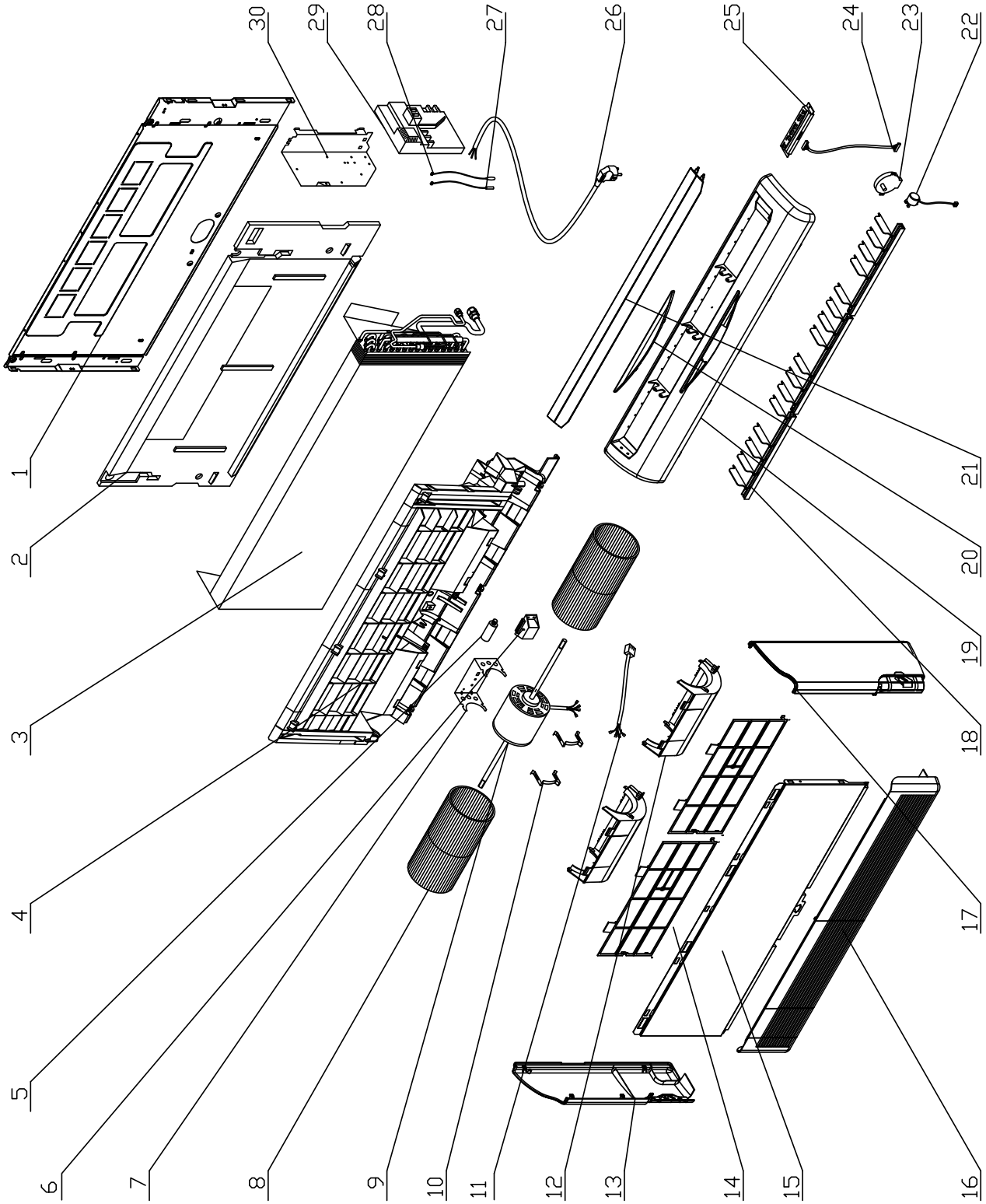
13.2 Indoor Unit: SX 12

No.	Item Code	Item Description	Quantity
1	484001	AIR INLET ASSY (SMALL)	1
2	221555	FILTER (SMALL)	2
3	307981	FRONT PANEL (SMALL)	1
4	373244	RIGHT PANEL	1
5	455000600	Capacitor With Screw for fan motor	1
6	462350087	Evaporator Assy./PXD12 R410A	1
7	370281	AIR OUTLET FRAME (SMALL)	1
8	285032	DRAIN TUBE	1
9	372338	HORIZONTAL LOUVER FRONT (SMALL)	1
9	372339	HORIZONTAL LOUVER BACK (SMALL)	1
10	371255	VERTICAL LOUVER FRONT	10
11	4520429	MOTOR WIRE ---PXD	1
12	293321	CENTRIFUGAL FAN (SMALL)	2
13	466235	MOUNTED BRCKET ASSY.(SMALL)	1
14	382334	BASE EPS (SMALL)	1
15	307979	BACK PANEL (SMALL)	1
16	4520929R	Motor Assy. for PXD9-12-15	1
17	323425	MOTOR SUPPORT LENGTH 99	1
18	436665	STEP MOTOR	1
18	263034	SWING MOTOR	1
19	455013304R	EUR EURPowerCord/3G/1.5/2100()	1
20	375209-01	DISPLAY PANEL ASSY.---AIRWELL	1
21	234213R	DISPLAY BOX PXD EHK: 906-041-02	1
22	464100	FAN FRAME ASSY (SMALL)	1
23	452837700R	STORM-1 (PXD & K)916A355-18	1
24	438082	Thermistor Indoor	1
25	467400025	(650mm) Indoor Air Inlet Temperature S	1
26	311036	STORM METAL PANEL	1
27	391508	CABLE DISPLAY	1
28	435679	Defrost cable-HK 157-051-61	1
29	436609R	RemotecontrollerRC4RCLD974-609-00	1
30	373245	Side Plate / Left	1
31	372341	FAN COVER (SMALL)	2
32	324296	MOTOR SPRING CLIP	2
35	4520933	Auto-transformer	1

13.3 Indoor Unit: SX 18

No.	Item Code	Item Description	Quantity
1	484001	AIR INLET ASSY (SMALL)	1
2	221555	FILTER (SMALL)	2
3	307981	FRONT PANEL (SMALL)	1
4	373244	RIGHT PANEL	1
5	455000601	Capacitor With Screw for fan motor	1
6	462350086	Evaporator Assy./PXD18 R22	1
7	370281	AIR OUTLET FRAME (SMALL)	1
8	285032	DRAIN TUBE	1
9	372338	HORIZONTAL LOUVER FRONT (SMALL)	1
9	372339	HORIZONTAL LOUVER BACK (SMALL)	1
10	371255	VERTICAL LOUVER FRONT	10
11	4520429	MOTOR WIRE ---PXD	1
12	293321	CENTRIFUGAL FAN (SMALL)	2
13	466235	MOUNTED BRCKET ASSY.(SMALL)	1
14	382334	BASE EPS (SMALL)	1
15	307979	BACK PANEL (SMALL)	1
16	4520930R	Motor Assy. for PXD18	1
17	323421	MOTOR SUPPORT LENGTH 119	1
18	436665	STEP MOTOR	1
18	263034	SWING MOTOR	1
19	455013304R	EUR EURPowerCord/3G/1.5/2100()	1
20	375209-01	DISPLAY PANEL ASSY.---AIRWELL	1
21	234213R	DISPLAY BOX PXD EHK: 906-041-02	1
22	464100	FAN FRAME ASSY (SMALL)	1
23	452837700R	STORM-1 (PXD & K)916A355-18	1
24	438082	Thermistor Indoor	1
25	467400025	(650mm) Indoor Air Inlet Temperature S	1
26	311036	STORM METAL PANEL	1
27	391508	CABLE DISPLAY	1
28	435679	Defrost cable-HK 157-051-61	1
29	436609R	RemotecontrollerRC4RCLD974-609-00	1
30	373245	Side Plate / Left	1
31	372341	FAN COVER (SMALL)	2
32	324296	MOTOR SPRING CLIP	2
35	4520934	Auto-transformer	1

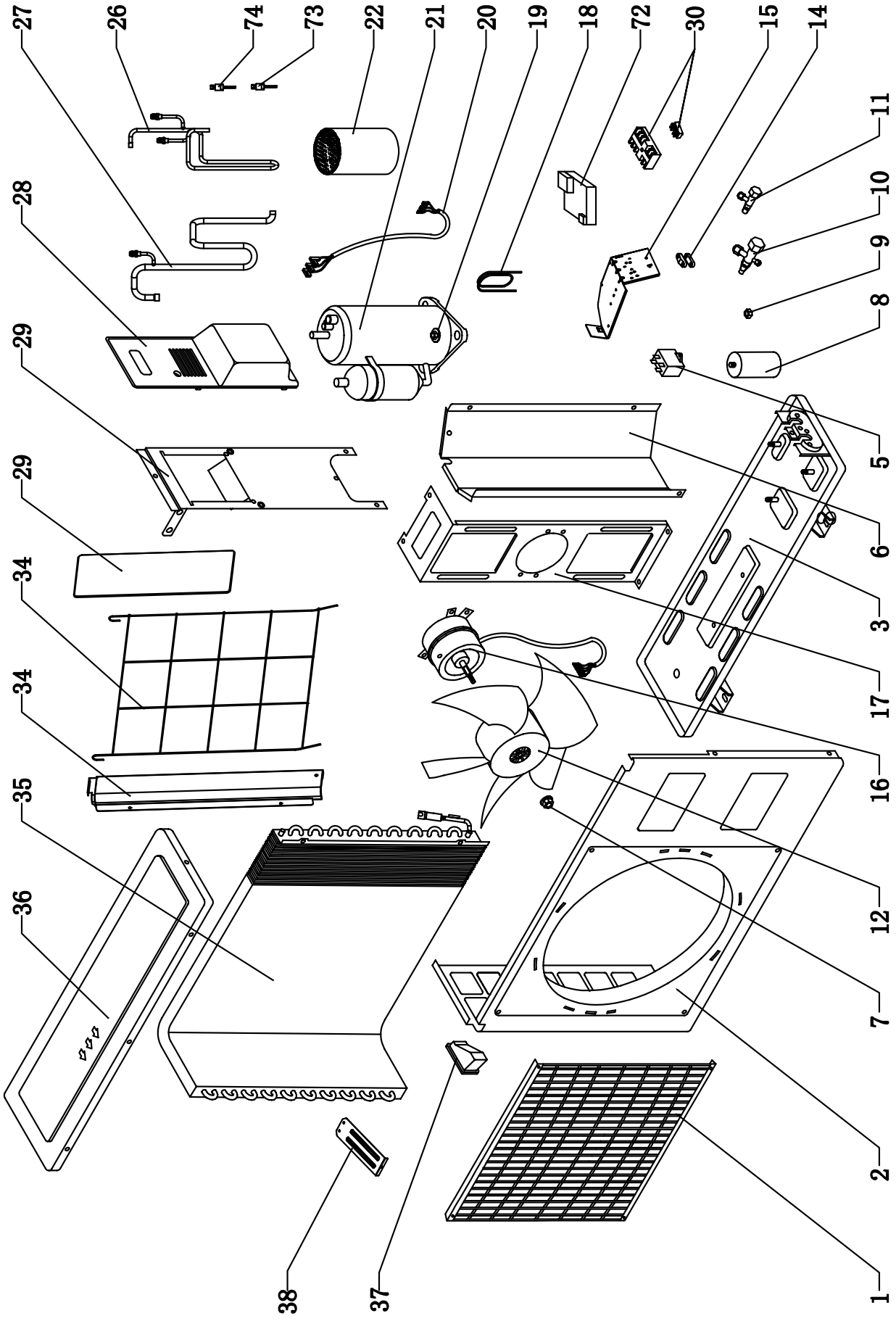
13.4 Indoor Unit: SX 30 TELECOM



13.5 Indoor Unit: SX 30 TELECOM

No.	Item Code	Item Description	Quantity
1	484002	AIR INLET ASSY (BIG)	1
2	221554	FILTER PXD (BIG)	2
3	4521714	Front plate assy (big)	1
4	373244	RIGHT PANEL	1
5	455000603	Capacitor 4uF With Screw for fan motor	1
6	462350088	Evaporator Assy./PXD30 R410A	1
7	370280	AIR OUTLET FRAME (BIG)	1
8	285032	DRAIN TUBE	1
9	372336	HORIZONTAL LOUVER FRONT (BIG)	1
9	372337	HORIZONTAL LOUVER BACK (BIG)	1
10	371255	VERTICAL LOUVER FRONT	10
11	391716	SWING MOTOR CABLE	1
12	293322	CENTRIFUGAL FAN (BIG)	2
13	466236	MOUNTED BRCKET ASSY.(BIG)	1
14	382333	BASE EPS (BIG)	1
15	307980	BACK PANEL BIG	1
16	4520932R	Motor Assy for PXD32	1
17	323422	MOTOR SUPPORT LENGTH 132	1
18	436665	STEP MOTOR	1
18	263034	SWING MOTOR	1
20	375209-01	DISPLAY PANEL ASSY AIRWELL	1
21	234213R	DISPLAY BOX PXD EHK: 906-041-02	1
22	373246	FRAME (BIG)	1
23	452837700R	STORM-1 (PXD & K)916A355-18	1
24	438082	Thermistor Indoor	1
25	467400025	(650mm) Indoor Air Inlet Temperature S	1
26	311036	STORM METAL PANEL	1
27	391508	CABLE DISPLAY	1
28	4520416	Defrost cable EXPORT UNITS	1
29	436609R	RemotecontrollerRC4RCLD974-609-00	1
30	373245	Side Plate / Left	1
31	372340	FAN COVER (BIG)	2
32	324296	MOTOR SPRING CLIP	2

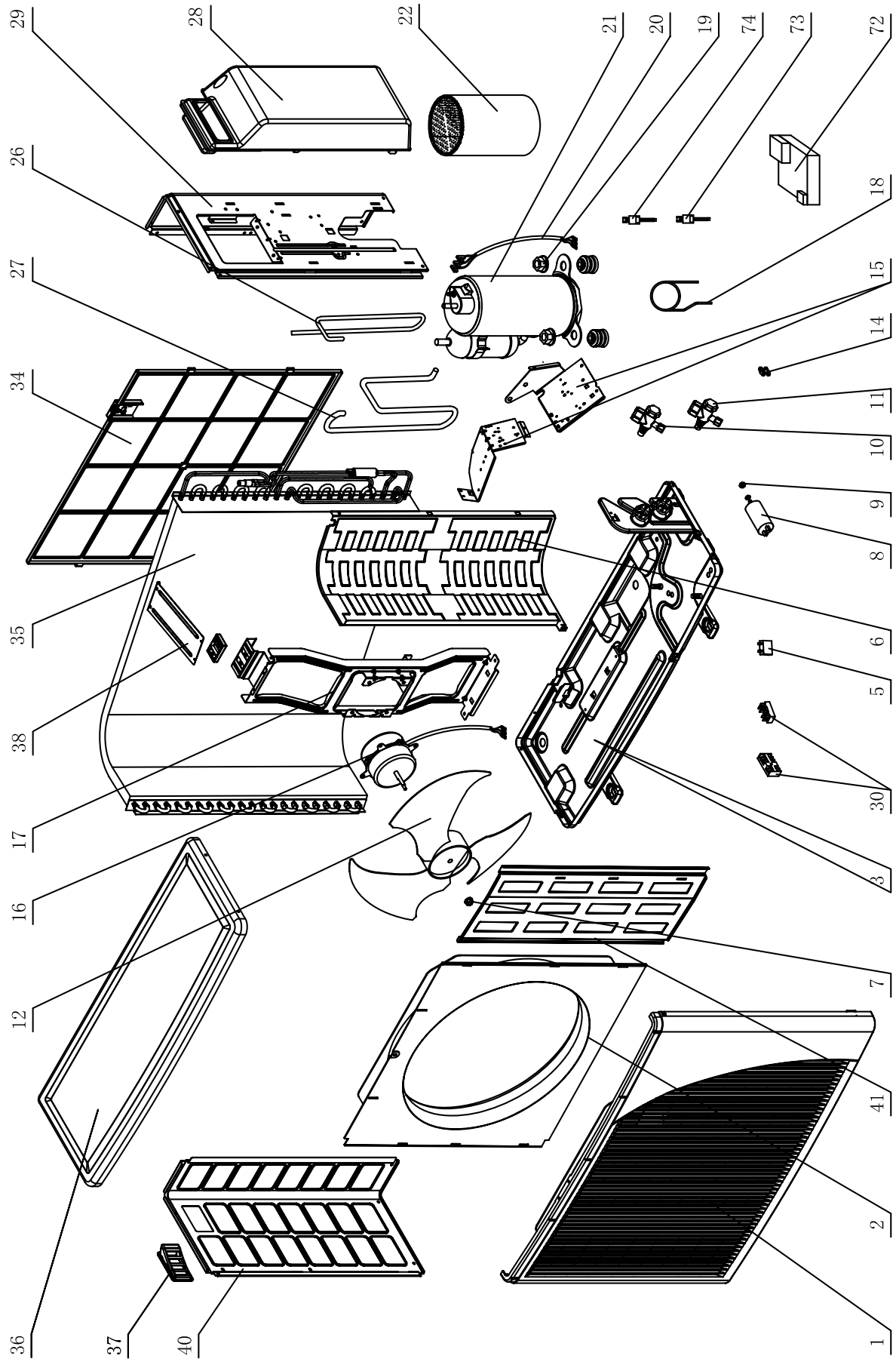
13.6 Outdoor Unit: GC 12 LT



13.7 Outdoor Unit: GC 12 LT

No.	Component	Item Description	Quantity
1	4522551	Grille A of GCN	1
2	4523441	Front panel A Painting assy	1
3	464600085	Base Plate Painting assy/GCN 12 R410A /Panisonic	1
5	455000108	Double patch Capacitor for fan motor 2uF	1
6	464160018	Partition plate/GCZ 9/12	1
7	4519300	Nut M5 L	1
8	455000503	Compressor Capacitor With Screw 30uF (CBB65)	1
9	201019	Nut M8	1
10	461000004	Liquid Valve 1/4" R410A	1
11	461010004	Gas Valve 3/8" R410A	1
12	4519251	Axial Fan OD=400	1
14	204107	Cable clip Nylon	1
15	453086100	Pedestal/Control	1
16	4522766R	Motor of outdoor (830rpm)	1
17	464860002	Motor Support Assy.	1
18	463100018	Capillary Assy /2.6X1.4X600/GCN 12 R410A ST/ASK	1
19	4510677	Nut With Flange M8 -D=24 GB6187-86	3
20	391498	Wire assy	1
21	460150005R	Compressor Assy./ 5PS132EAC22Panasonic	1
26	463750196	Dischaege Pipe Assy/GCN 12 R410A ST/ASK	1
27	463750198	Suction Pipe Assy/GCN 12 R410A ST/ASK	1
28	4516857	BIG SIDE COVER	1
29	453086200	Side Plate Painting Assy./Right	1
30	4514588	5 Poles terminal block	1
30	4517048	TERMINAL BLOCK OF NUETRAL	1
31	236179	2 Poles terminal block	1
34	464770001	Rear Plate/Left Painting Assy	1
34	464770007	Rear Plate/Right Painting Assy/GCZ 9/12	1
34	464800000	Guard Net/ODU Painting Assy	1
35	462300073	Condenser Assy/GCN 12 R410A ST	1
36	4516158	Cover panel Painting assy	1
37	436358	L. lifter	1
72	453147200	Fan Speed Controller (All Season Kit)(2.4MPa)	2
74	467440006	High Pressure Switch/HR200-951-0001/ 4.2 &3.6Mpa	4
73	467440005	Low Pressure Switch/HR200-951-0002/ 0.18&0.3Mpa	3

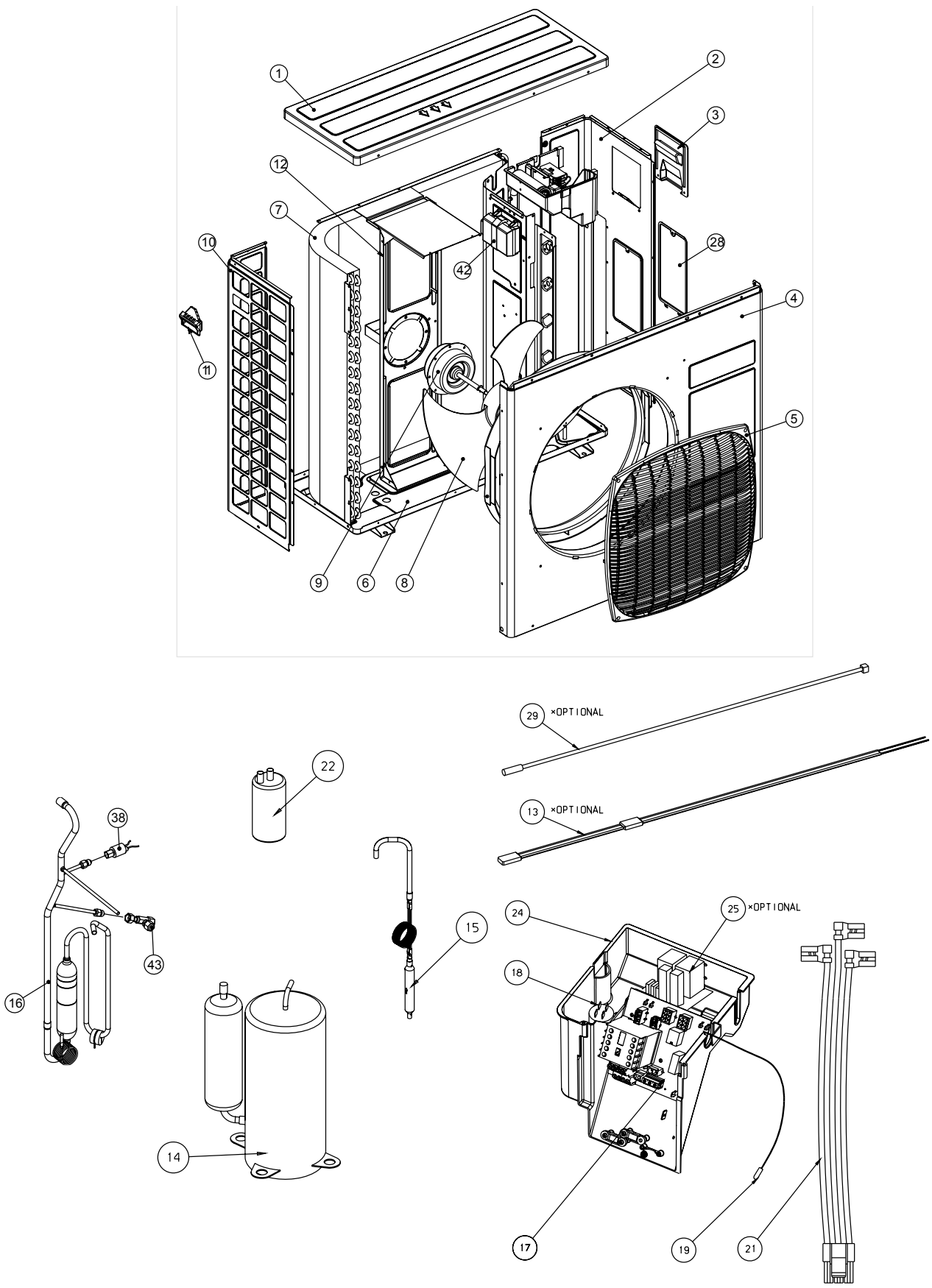
13.8 Outdoor Unit: GC 18 LT



13.9 Outdoor Unit: GC 18 LT

No.	Component	Item Description	Quantity
1	433218	Front Panel A	1
2	433221	Air Inlet Ring-420	1
3	464600075	Base Plate Painting Assy./ONG3-14	1
5	455000108	Double patch Capacitor for fan motor 2uF	1
6	433217	Partition Plate	1
7	4519300	Nut M5 L	1
8	455000507	Compressor Capacitor With Screw 50uF (CBB65)	1
9	201019	Nut M8	1
10	461010005	Gas Valve 1/2" R410A	1
11	461000004	Liquid Valve 1/4" R410A	1
12	4519251	Axial Fan OD=400	1
14	204107	Cable clip Nylon	1
15	453012700	Electric Panel	1
15	452914800	Fixing Plate for Soft-starter	1
16	4520171R	Fan Motor (910rpm)	1
17	4527203	Motor Support	1
18	463100017	Capillary/3.2X1.9X1400/ONG 17 R410A ST/ASK	1
19	4510677	Nut With Flange M8 -D=24 GB6187-86	3
20	391498	Wire assy	1
21	460150016R	Compressor Assy./Panasonic 5KS205EAB21/R410A	1
22	469270002	Insulation Rub+Felt/Compressor	1
26	463750191	Discharge Pipe Assy./ONG 17 R410A ST/ASK	1
27	463750192	Suction Pipe Assy./ONG 17 R410A ST/ASK	1
28	465340080	Valve Cover/PP+UV 5VA/ONG3	1
29	4519606	Right side panel (painting plate)	1
30	4514588	5 Poles terminal block	1
30	4517048	TERMINAL BLOCK OF NUETRAL	1
31	236179	2 Poles terminal block	1
34	433228	Back Side Net	1
35	462300070	Condenser Assy./ONG17 R410A ST	1
36	4519614	Painting Top Cover	1
37	433225	Handle	1
38	4526298	Bridge	1
40	4519607	Left Side Panel Painting Plate	1
41	433223	Painting Insulation Plate	1
72	453147200	Fan Speed Controller (All Season Kit)(2.4MPa)	1
73	467440005	High Pressure Switch/HR200-951-0001/ 4.2 &3.6Mpa	1
74	467440006	Low Pressure Switch/HR200-951-0002/ 0.18&0.3Mpa	1

13.10 Outdoor Unit: GC 30T LT



13.11 Outdoor Unit: GC 30T LT

No.	Item Code	Item Desc	Quantity
1	437045	LARGE UPPER COVER CUE	1
2	402930	SIDE PANEL OU8-33	1
3	436357	SMALL ELECTRICAL COVER CUE	1
4	402928	FRONT PANEL OU8-33 EL13	1
5	437091	OU SQUARE FAN GUARD	1
6	433705	NEW BASE ASSY OU 2005 LOCAL R410	1
7	433834	COIL OU8-30 ST GR R410A	1
8	4529604	AXIAL FAN D493x143	1
9	434211	MOTOR 70W,2S,OU7/8	1
10	403996	SIDE GUARD OU8-33Z	1
11	436358	TRANSPORT HANDLE CUE	1
12	433707	MOTOR SUPPORT BRACKET OU8	1
12	439775	MOTOR SUPPORT OU8-33	1
13	190443	HEATER CRANKCASE MITSUBISHI COMP	1
14	433298	COMPRESSOR NN33YCAMT	1
15	433830	CAPILLARY ASSY OU8-30 R410A ST	1
17	438771	BOARD TPHN 3C (RoHS)	1
18	442007	CAPACITOR 6uF 400V	1
19a	434716	THERMISTOR L1050 (for coil)	1
21	437280	COMPRESSOR WIRING OU10-3PH MITSUBISHI	1
22	402284	SUCTION ACCUMULATOR 5 x 3/4 7Lb R410A	1
24	437229	ELECTRICAL BOX TPHN	1
25	438803	3PH MOTOR PROTECTOR (RoHS)	1
28	439656	SIDE COVER OU10	1
37	232550	High Pressure Switch - Black Wire	1
38	232560	Low Pressure Switch - Blue wire	1
42	431056	LOW AMBIENT (ASK) CONTROLLER	1
43	415832	SERVICE VALVE T-TYPE R410A	1

14. OPTIONAL ACCESSORIES

14.1 RCW Wall Mounted Remote Control

14.1.1 The RCW wall mounted remote control can be fitted to a large range and models, It can be used as IR (wirless mode) or wired controler.the RCW can control up to15 indoor units using the same settings (on its wired aplication),

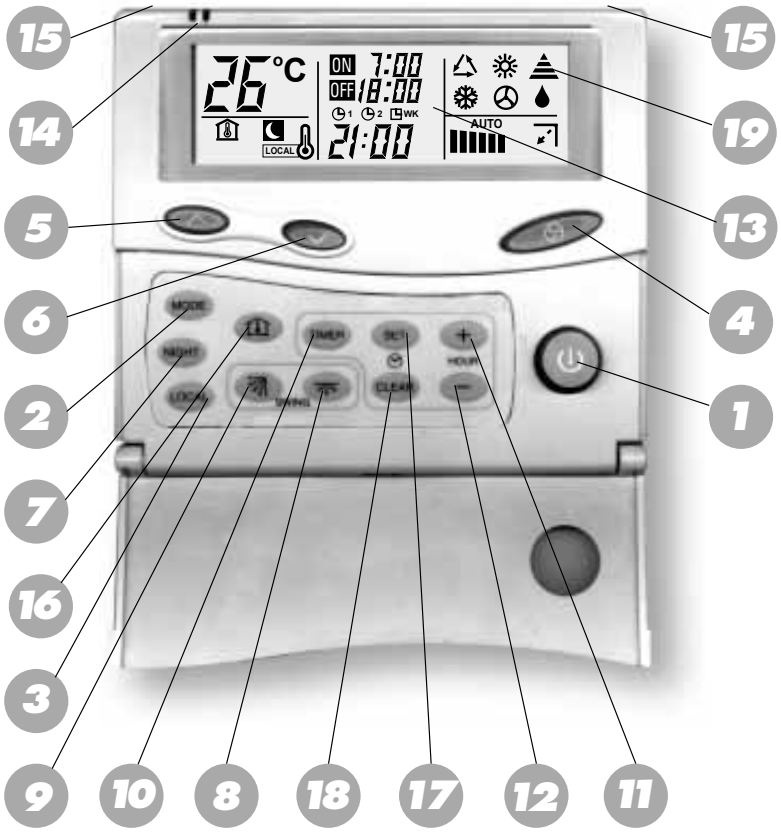
The max wiring length between the controller to the last indoor unit is 300m. for application on WNG LED indoor units an additional interface PCB is needed.

Ordering code no':

RCW – 436195
WNG add' PCB - SP000000290.

REMOTE CONTROL

1. START / STOP button
2. Operation mode selection button COOLING, HEATING, AUTO COOL / HEAT, DRY, FAN.
3. LOCAL temperature sensing button
4. FAN SPEED and AUTO FAN button
5. Room temperature UP button
6. Room temperature DOWN Button
7. NIGHT button
8. Airflow direction MANUAL positioning cor
9. Airflow direction AUTO-CONTROL buttor
10. TIMER button
11. TIMER UP button
12. TIMER DOWN button
13. LCD operation display
14. LOCAL sensor
15. Infrared signal transmitter
16. ROOM temperature button
17. TIMER SET button
18. TIMER CLEAR button
19. Transmission sign



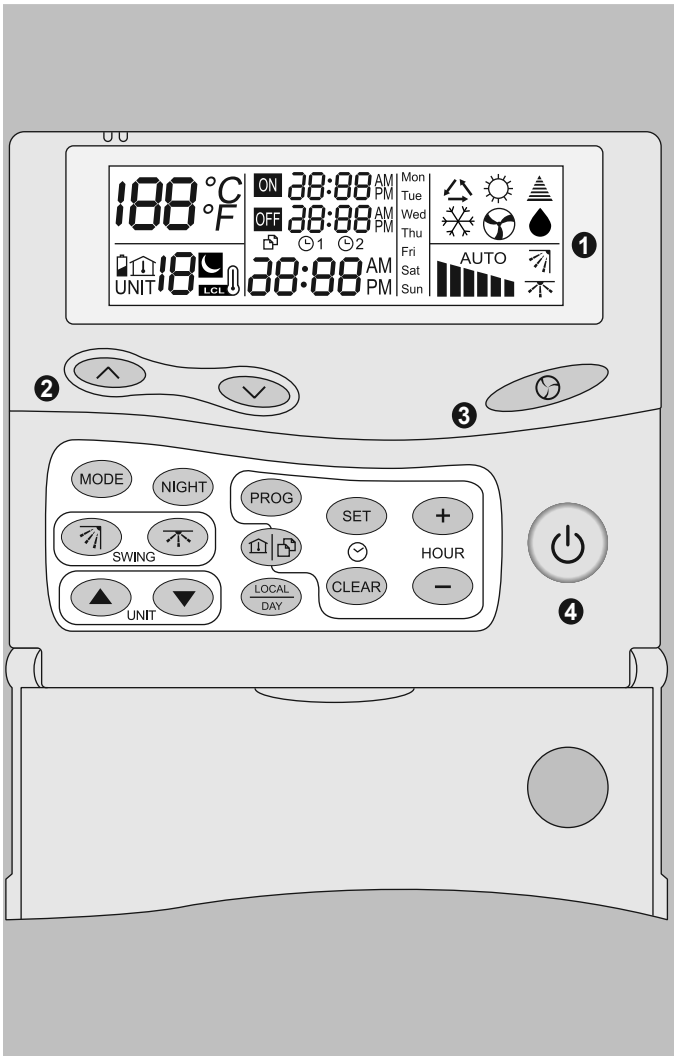
14.2 RCW2 Wall Mounted Remote Cntrol

14.2.1 The RCW2 wall mounted remote controler is a wired controler that can provide affective controling management up to 15 different settings and temp' zones.

The RCW2 can be connected up to a max' of 32 units,allowing a max wiring length of 1000m. for application on WNG LED indoor units an additional interface PCB is needed.

Ordering code no':

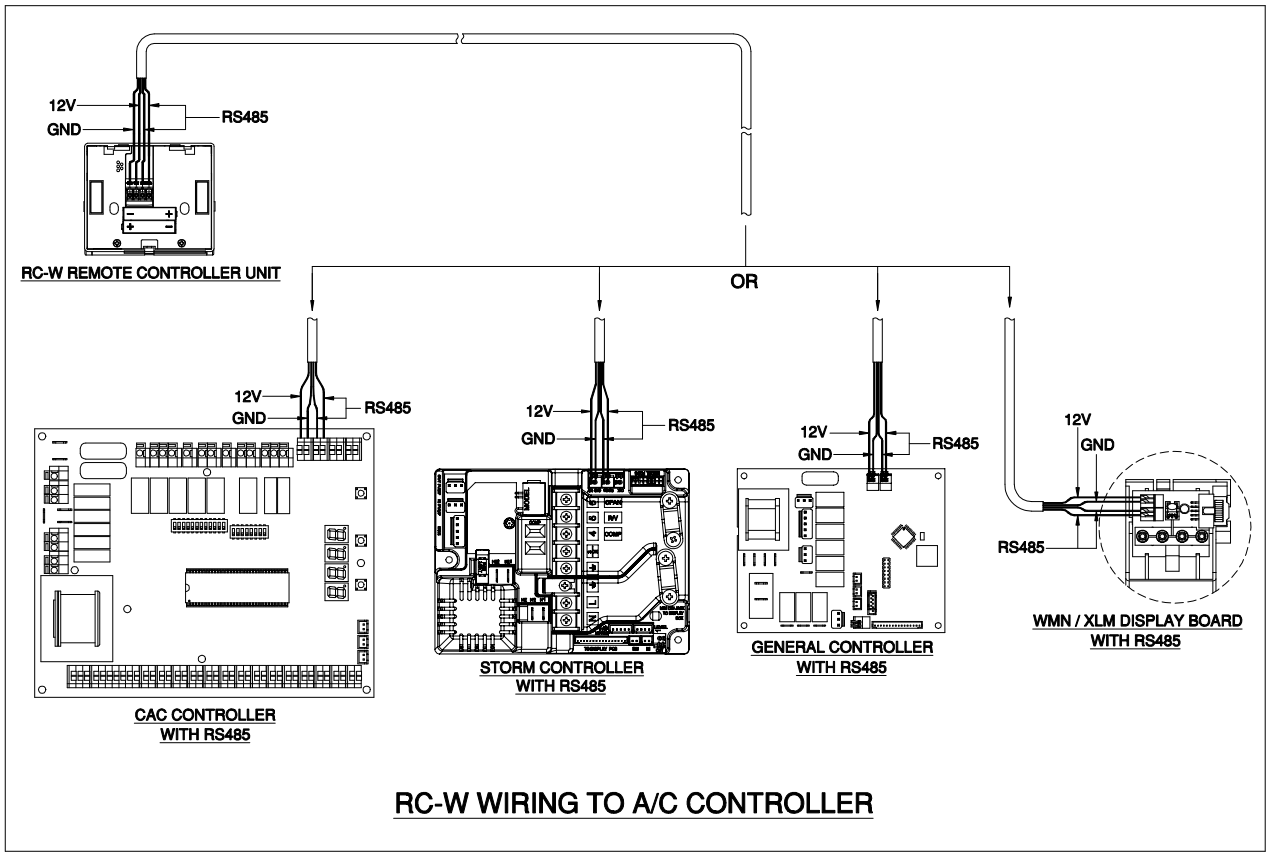
RCW2 – SP000000081
WNG add' PCB - SP000000290



1. Display screen.
2. Keys for raising and lowering the set temperature.
3. Ventilation mode selection :
   - Low speed.
   - Medium speed.
   - High speed.
   - AUTO : Automatic speed selection.
4. ON / Standby.

- SET — Accessing the time setting mode.
- \+ — Advancing the time setting.
- – — Retarding the time setting.
- CLEAR — Clearing memory of programmed time settings in programming mode.
- LOCAL DAY — Day of the week selection key or sending "I feel" local temperature setting.
- PROG — Programming mode key.
- "Copy" key, enabling zone parameters to be duplicated for other zones.
- MODE — Operating mode selection.
- NIGHT — Day /Night key.
- ▲ — Current zone setting: zone above.
- ▼ — Current zone setting: zone below.
- Louver : step by step or horizontal.
- Louver : vertical.

14.3 RCW/RCW2 Wiring Connections as Shown on Kit



RC-W WIRING TO A/C CONTROLLER

All Season Kit Installation Instruction(for ST units only)

Switch off power supply to the unit

Fig.1

- Remove:
  - Cover **A;**
  - Power panel handle **B;**
  - Side cover **C** (if it exist).

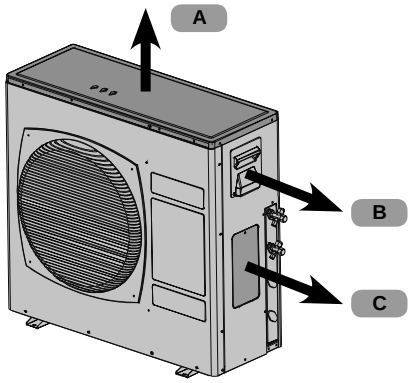


Fig.1

Fig.2

- Mount the Fan speed controller on the partition of the compressor compartment in the holes provided, using four supplied screws .

Note:

- In outdoor models OU8, the Fan Speed Controller should be mounted on the partition toward the outdoor fan motor side.

OU7

OU10

OU8

Fig.2

Fig.3

- Unscrew the cap of the provided service valve **D** and connect to the **T-valve**, supplied in the kit. Use Copper sealing gasked between the flare nut and it's connection to service valve **D**.

Note:

- The **"T-valve"** supplied in the kit is installed between valve **D** and capillary **E** offering the possibility of an additionall pressure connecting output for service.

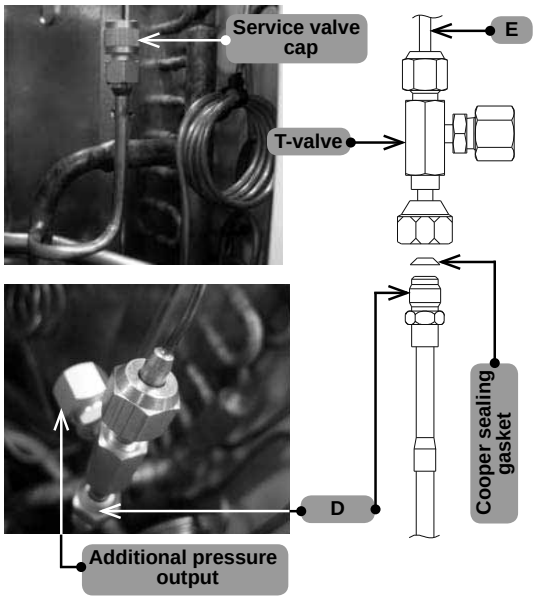


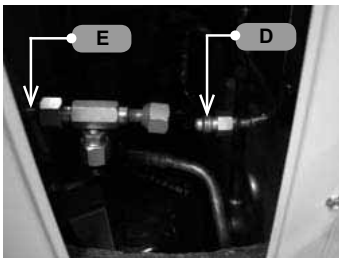
Fig.3

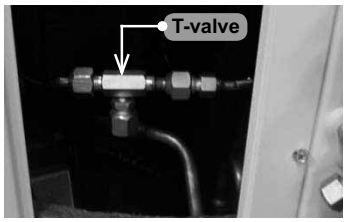
Fig.4

- Connect capillary **E** to **T-valve**.
  Use Copper sealing gasket between the flare nut and the connection to **T-valve.**

Note:

- Installing the Copper sealing gasket is mandatory in order to avoid refrigerant leak.





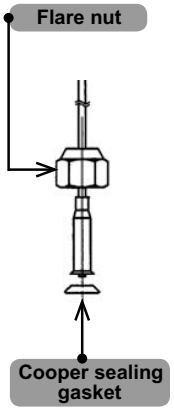
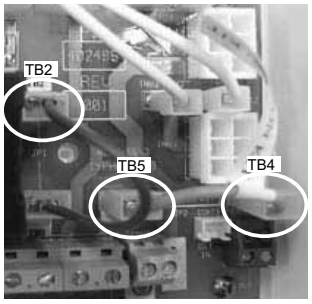


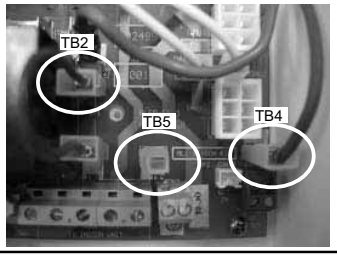
Fig.4

Fig.5

Electrical connections for 1PH units:

- Disconnect the wire from point “6” on main terminal outdoor PCB Typhoon and isolate it with isolation tape.
- Disconnect the JP1 and JP2 wires from tabs TB2; TB4; TB5 on PCB Typhoon.
  Connect the Red Wire from Fan Speed Controller to tab “TB4” on PCB Typhoon.
- Connect Green Wire from Fan Speed Controller to tab “TB2” on PCB Typhoon.
- Connect Y/Green wire from Fan Speed Controller to ground screw on units partition.
- Return “JP1” wire, previously disconnected, to tab “TB2”.





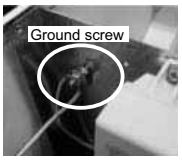
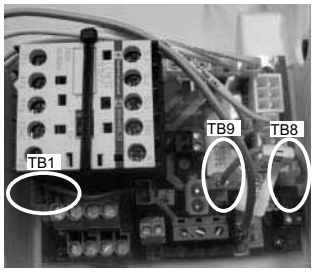


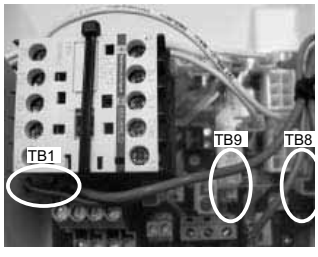
Fig.5

Fig.6

Electrical connections for 3PH units:

- Disconnect the wire from point “6” on main terminal PCB Typhoon and isolate it with isolation tape.
- Disconnect the JP1 and JP2 wires from tabs TB1; TB8; TB9 on PCB Typhoon.
- Connect Red Wire from Fan Speed Controller to tab “TB8” on PCB Typhoon.
- Connect Green Wire from Fan Speed Controller to Tab “TB1” on PCB Typhoon.
- Connect Y/Green wire from Fan Speed Controller to ground screw on units partition.
- Return “JP1” wire, previously disconnected, to





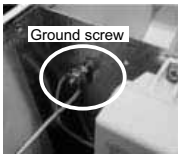
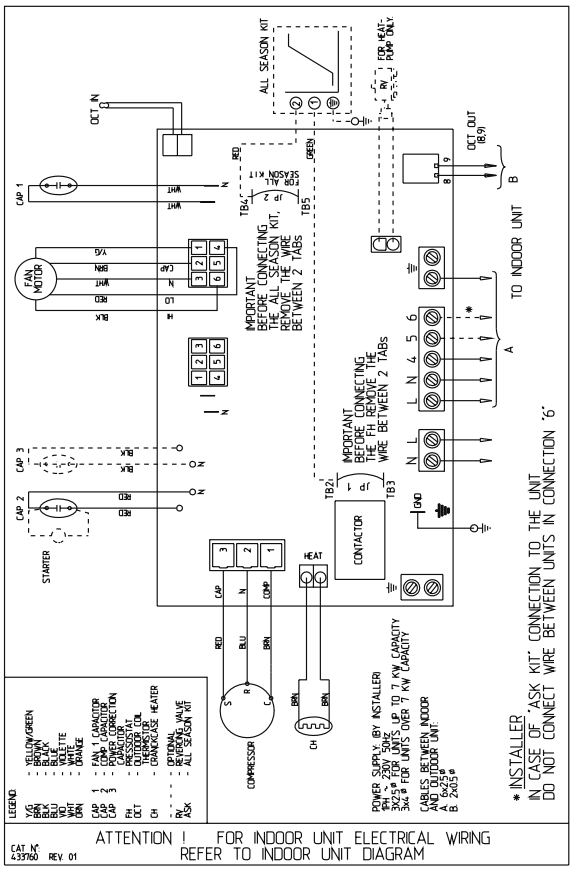


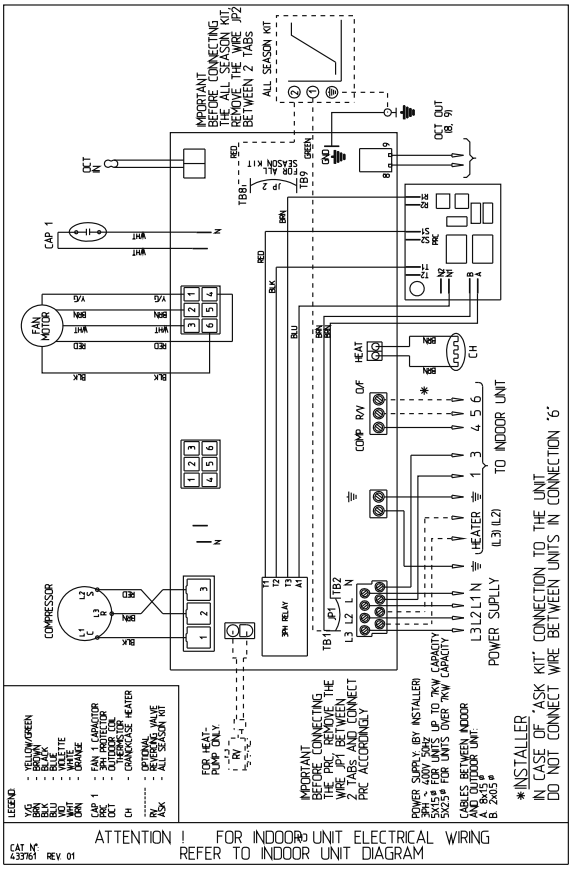
Fig.6

Fig.7

- Verify the wiring to electrical diagram.



1PH Unit



3PH Unit

Fig.8

- Arrange the wires and capillary tube together with plastic ties, don't fold or break the capillary tube,keep a large loop for extra length of capillary tube.
- Check for refrigerant leaks.

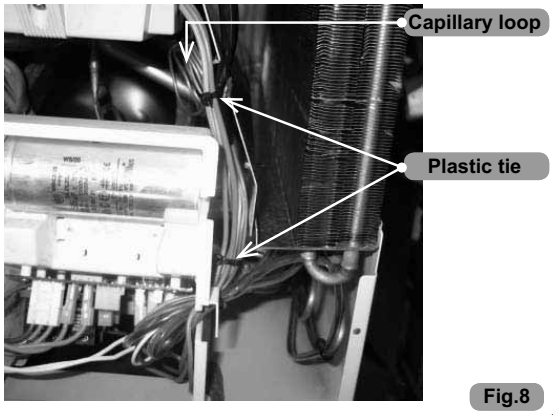


Fig.8

- Re-assemble the previously removed elements.

TH 3263 E - 399529

Electric heating for
PXD 12 - 15 - 18 - 24 - 28 - 32
SX SP 9 - 12 - 15 - 18- -24 - 30

GB I F E D

KIT DETAILS :

- *1 electric heater with wiring*
- *2 metal supports + screws*
- *2 screws to fix heater*
- *1 foam insulation block*
- *2 foam insulation squares*
- *1 sticky back wiring diagram to place in the side panel above the unit wiring diagram*
- *1 configuration plug (heatpump = 243213)*

MAKE SURE THAT AIR CONDITIONER IS DISCONNECTED FROM THE MAINS

KIT INSTALLATION : (Fig.1)

1 *Open the return air grille by pulling both edges*

2 *Remove the end screws*
Unscrew the middle screw without removing it

3 *Unhook the grille by pulling upwards*

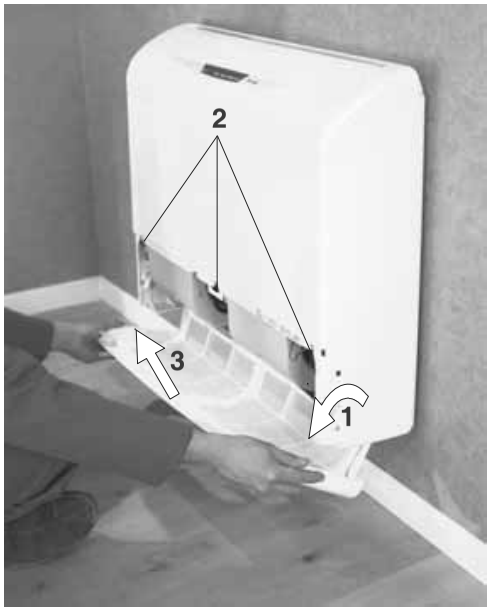
4 *Remove the side panels by pulling down*

5 *Remove the 3 screws holding the unit top*

6 *Unhook the unit top*

*Disconnect the wires between the **PXD** and the top:*
• Display cable (clear insulated cable).
• Vertical louver motor wires (red and blue with connectors).
• Horizontal louver motor wires (black).
Take care to separate the wire to help re-instalation.

Fig.1



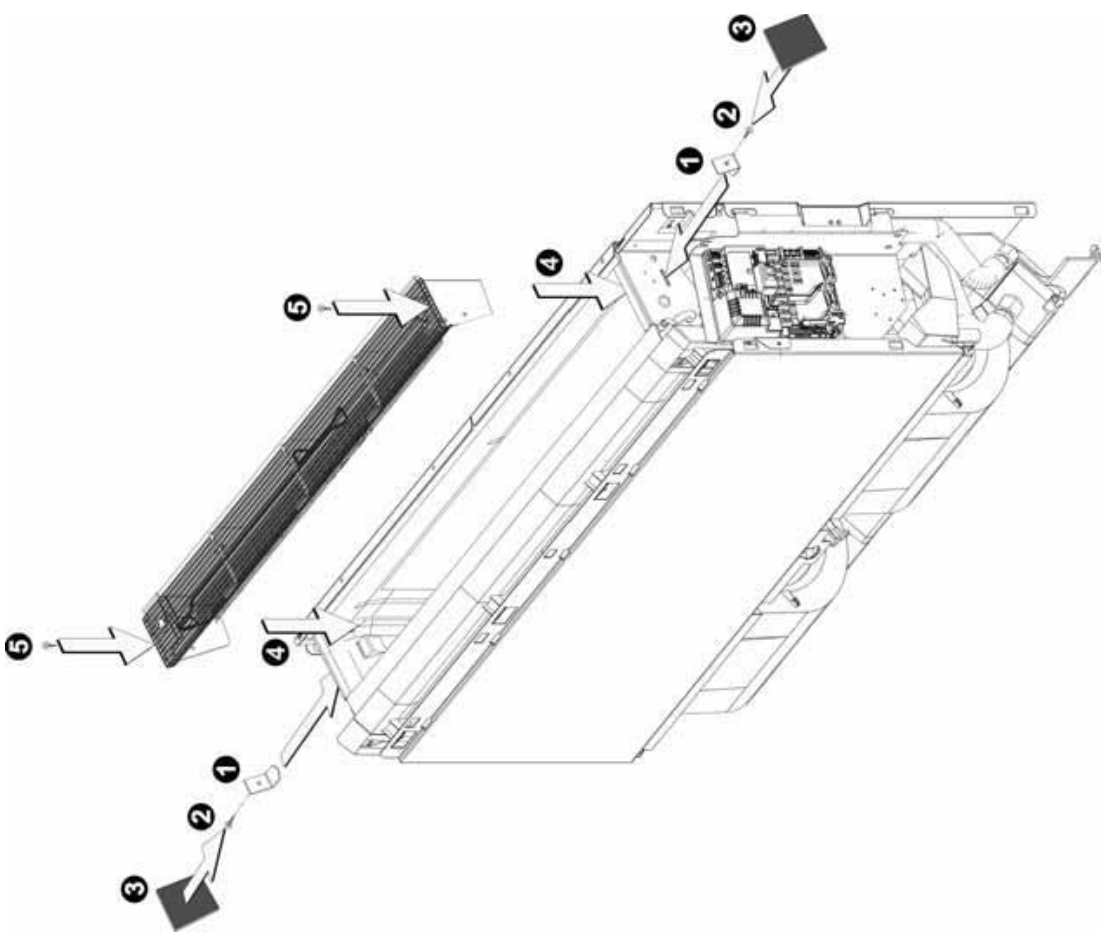


Fig.2

KIT INSTALLATION: (Fig.2)

1 *Insert the metal support in the slots (push to break the polystyrene behind the slot)*

2 *Fix the supports with the supplied screws*

3 *Cover the metal supports with the foam squares (to avoid air by-pass)*

4 *Slide the heater assembly into the PXD*

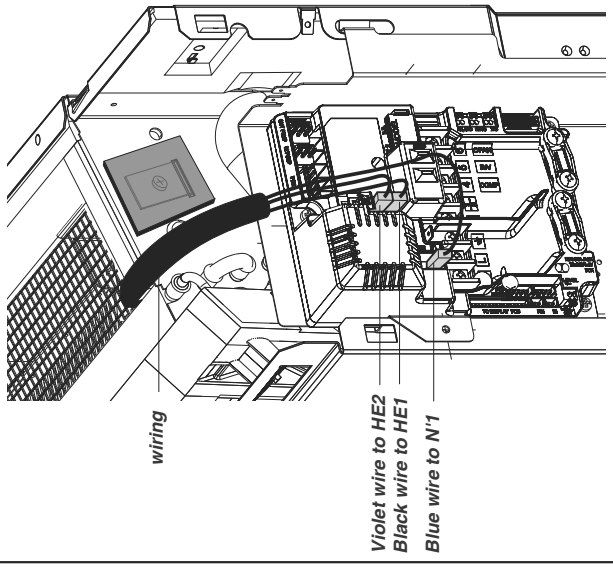
5 *Fix the heater assembly to the supports with the supplied screws*

ELECTRICAL CONNECTIONS

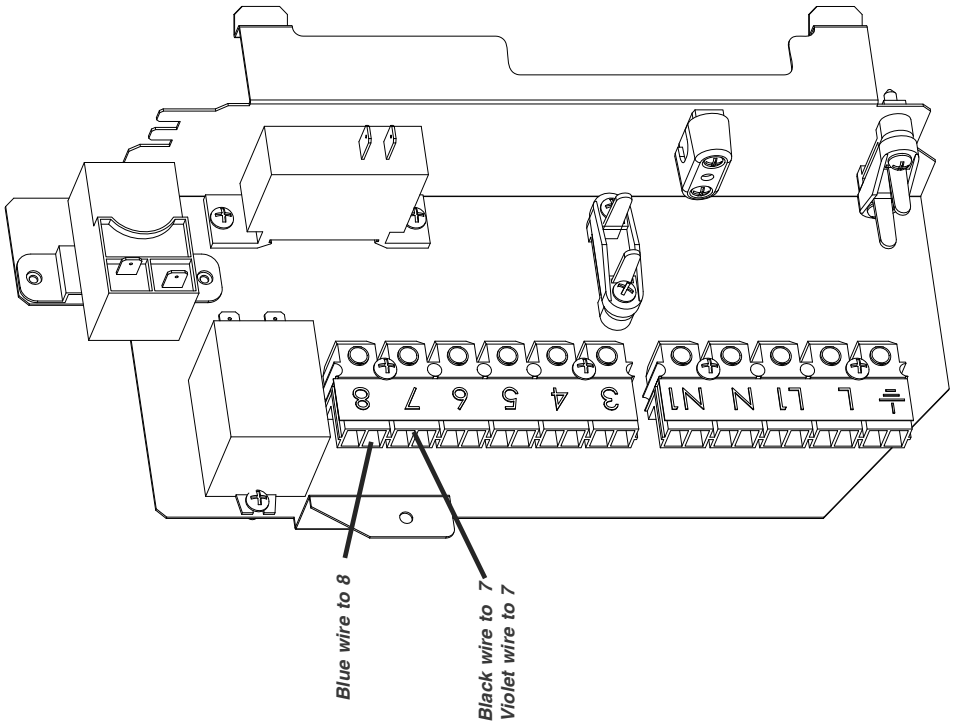
- *Place the wiring in the corner so that the unit top can be replaced*

MODELS PXD 12 - 15 - 18 - 24 - 28 - 32

- *Connect the wires with 6.35 connectors directly to the control board as shown*



SXSP 9 - 12 - 15 - 18 - 24 - 30



MODELS SXSP 9 - 12 - 15 - 18 - 24 - 30

- *Connect the wires with 6.35 connectors directly to the control board as shown*

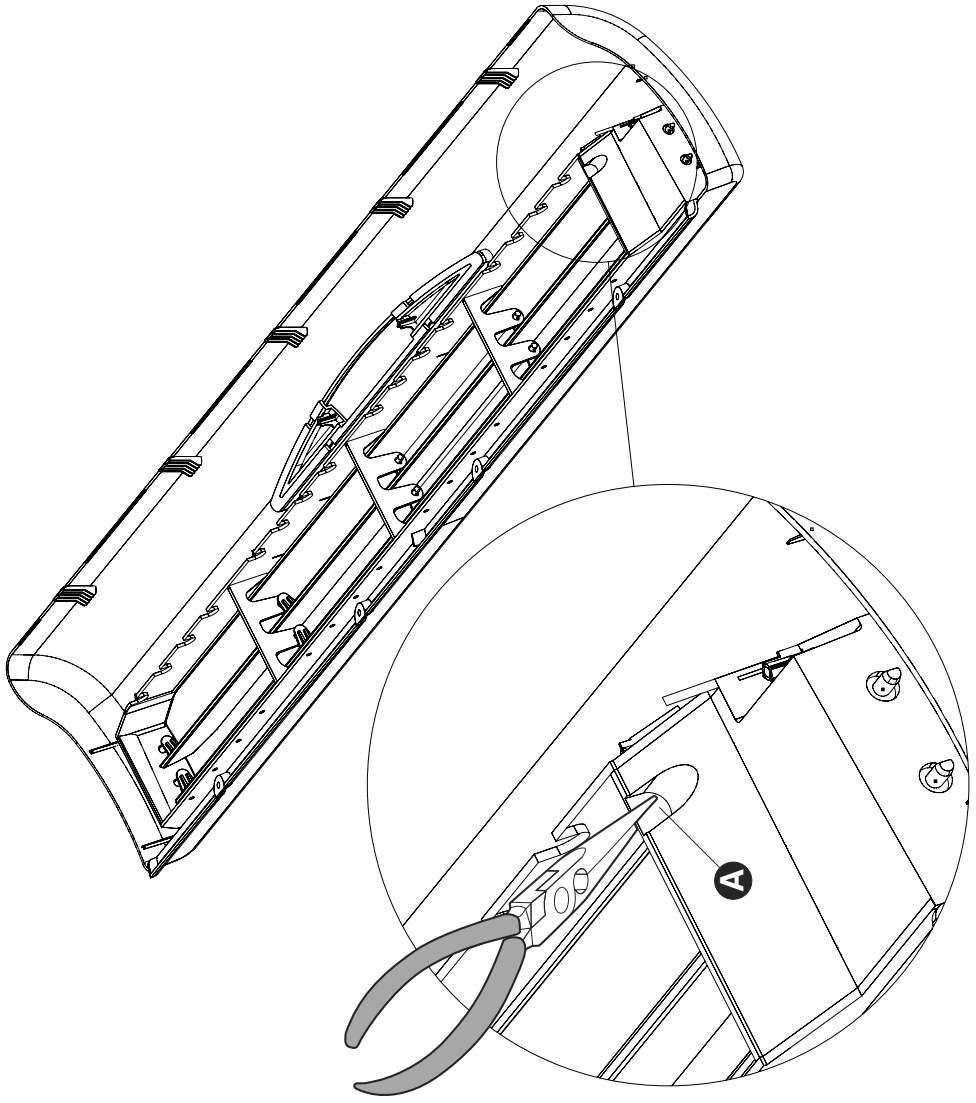
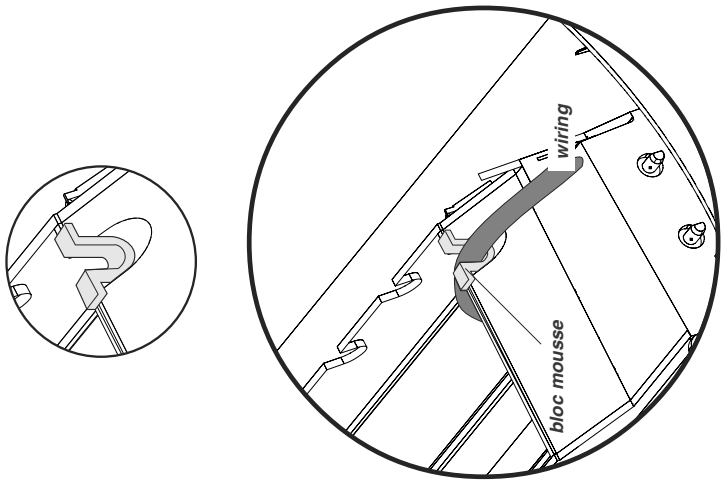


Fig.3

KIT INSTALLATION : (Fig.3)

- *On the unit top :*
  - *Using flat pliers break the plastic A (for the heater cable)*
  - *Place the foam insulation in the groove (to prevent air by-pass)*



KIT INSTALLATION : (Fig.4)
PXD 12 - 15 - 18 - 24 - 28 - 32
- *On the electric board*

- *Your unit is configured as **HEATPUMP** without electric heating*
- *To configure as **HEATPUMP** with electric heating*

- *Remove the plug marked **PXD-RC** (heapump) and replace it with the plug marked **PXD-SH** (heatpump with supplementary heaters) (fixed on the control board)*

*Heatpump **without** heaters*	***243211***	***PXD-RC***
*Heatpump **with** heaters*	***243213***	***PXD-SH***

REASSEMBLY
- *Reconnect the wiring between the PXD and the unit top*
- *Re install the unit top on the unit taking care to pass the wires in the groove as shown below*
- *Stick the wiring diagram in the side panel above the existing wiring diagram*
- *Replace the unit top screws then the sides and return air grille*

CAUTION

THE DISCHARGE PORT OF THE APPLIANCE MUST NEVER BE COVERED OR OBSTRUCTED BY A CURTAIN, CLOTH, ETC...

- *A label "DO NOT COVER" is supplied with the kit. Place it on the rear of the discharge frame as shown below.*

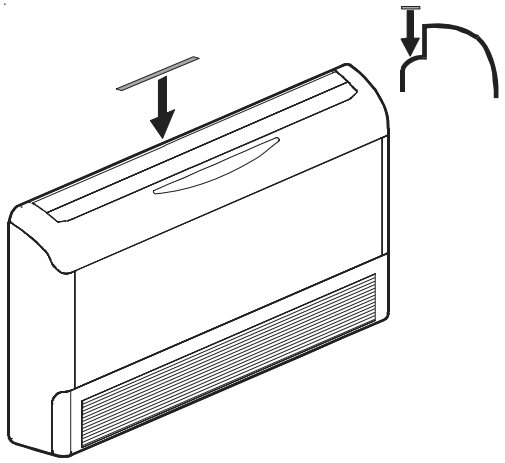
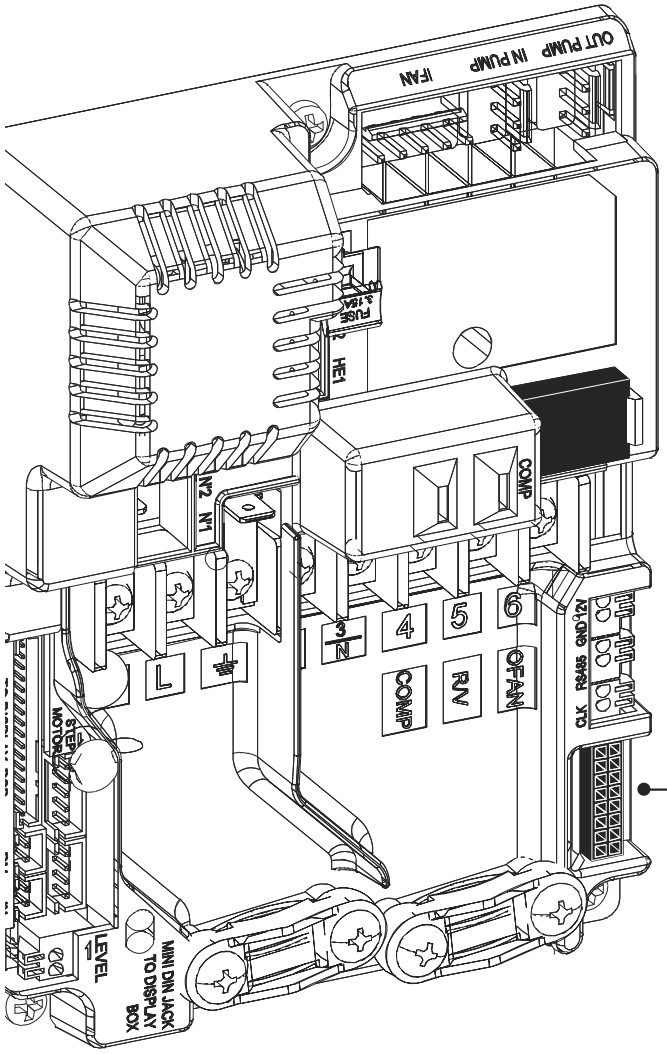


Fig.4

PXD 12 - 15 - 18 - 24 - 28 - 32



WARNING:
The plug has a small arrow to indicate the correct orientation. The side with the arrow must be towards the back of the unit.

Towards the metal panel

(metal panel)

APPENDIX A

INSTALLATION AND OPERATION MANUAL

CONTENTS