

SPLIT TYPE  
ROOM AIR CONDITIONER  
WALL MOUNTED TYPE

# SERVICE MANUAL

| Indoor unit | Outdoor unit |
|-------------|--------------|
| ASU9RLS2    | AOU9RLS2H    |
| ASU12RLS2   | AOU12RLS2H   |



## CONTENTS

|                                 |    |
|---------------------------------|----|
| SPECIFICATIONS.....             | 1  |
| DIMENSIONS.....                 | 2  |
| REFRIGERANT SYSTEM DIAGRAM....  | 3  |
| CIRCUIT DIAGRAM.....            | 4  |
| INDOOR PCB CIRCUIT DIAGRAM..... | 5  |
| OUTDOOR PCB CIRCUIT DIAGRAM.... | 9  |
| ERROR DETECTION.....            | 11 |
| PARTS (INDOOR UNIT).....        | 13 |
| PARTS (OUTDOOR UNIT).....       | 18 |
| ACCESSORIES.....                | 21 |

# SPECIFICATIONS

## ELECTRICAL DATA

|                      |         |                                |                      |
|----------------------|---------|--------------------------------|----------------------|
| TYPE                 |         | Cool & heat inverter           |                      |
| INDOOR UNIT          |         | ASU9RLS2                       | ASU12RLS2            |
| OUTDOOR UNIT         |         | AOU9RLS2H                      | AOU12RLS2H           |
| COOLING CAPACITY     |         | 9,000 Btu/h                    | 12,000 Btu/h         |
| HEATING CAPACITY     |         | 12,000 Btu/h                   | 16,000 Btu/h         |
| POWER SOURCE         |         | 208/230 V                      |                      |
| FREQUENCY            |         | 60 Hz                          |                      |
| RUNNING CURRENT      | Cooling | 2.7 A                          | 4.0 A                |
|                      | Heating | 3.7 A                          | 5.5 A                |
| INPUT WATTS          | Cooling | 0.560 kW                       | 0.870 kW             |
|                      | Heating | 0.800 kW                       | 1.200 kW             |
| E.E.R.               | Cooling | 16.1 Btu/Wh                    | 13.8 Btu/Wh          |
| COP                  | Heating | 15.0 Btu/Wh                    | 13.3 Btu/Wh          |
| MOISTURE REMOVAL     |         | 2.7 Pts/h<br>1.3 L/h           | 3.8 Pts/h<br>1.8 L/h |
| AIR CIRCULATION HIGH |         | 500 CFM, 850 m <sup>3</sup> /h |                      |
| MAXIMUM CURRENT      | Cooling | 9.4 A                          |                      |
|                      | Heating | 11.9 A                         |                      |

## FAN MOTOR

|                      |            |              |  |
|----------------------|------------|--------------|--|
| POWER SOURCE         |            | 208/230 V    |  |
| INDOOR UNIT Cooling  | High       | 1,030 r.p.m. |  |
|                      | Medium     | 950 r.p.m.   |  |
|                      | Low        | 850 r.p.m.   |  |
|                      | Quiet      | 650 r.p.m.   |  |
| INDOOR UNIT Heating  | High       | 1,030 r.p.m. |  |
|                      | Medium     | 950 r.p.m.   |  |
|                      | Low        | 850 r.p.m.   |  |
|                      | Quiet      | 650 r.p.m.   |  |
| OUTDOOR UNIT Cooling | 780 r.p.m. | 870 r.p.m.   |  |
| OUTDOOR UNIT Heating | 780 r.p.m. | 780 r.p.m.   |  |

## NOISE LEVEL

|                      |        |       |  |
|----------------------|--------|-------|--|
| INDOOR UNIT Cooling  | High   | 43 dB |  |
|                      | Medium | 37 dB |  |
|                      | Low    | 32 dB |  |
|                      | Quiet  | 21 dB |  |
| INDOOR UNIT Heating  | High   | 43 dB |  |
|                      | Medium | 38 dB |  |
|                      | Low    | 32 dB |  |
|                      | Quiet  | 21 dB |  |
| OUTDOOR UNIT Cooling | 48 dB  | 49 dB |  |
| OUTDOOR UNIT Heating | 49 dB  | 50 dB |  |

## COMPRESSOR AND REFRIGERANT

|                        |  |                            |  |
|------------------------|--|----------------------------|--|
| COMPRESSOR TYPE        | Hermetic type,<br>4 pole, 3 phase,<br>DC inverter motor,<br>Rotary |                            |  |
| DISCRIMINATION         | 808-884-80   |                            |  |
| WEIGHT (with oil)      | 20 lb. 8 oz., 9.3 kg   |                            |  |
| PRECHARGED REFRIGERANT | 2 lb. 10-5/16 oz., 1,200 g   |                            |  |
| REFRIGERANT TYPE       | R410A  |                            |  |
| FULL CHARGE            | Pipe length 49 ft.   | 2 lb. 10-5/16 oz., 1,200 g |  |
|                        | 66 ft.   | 3 lb. 27/32 oz., 1,300 g   |  |
| ADDITIONAL CHARGE      | 0.22 oz/ft, 20 g/m   |                            |  |
| MAXIMUM PIPING HEIGHT  | 49 ft., 15m  |                            |  |

## DIMENSIONS

|                           |  |
|---------------------------|--|
| INDOOR UNIT<br>H x W x D  | 11-3/32 x 34-1/4 x 7-9/32 inch<br>282 x 870 x 185 mm     |
| OUTDOOR UNIT<br>H x W x D | 24-13/32 x 31-3/32 x 11-13/32 inch<br>620 x 790 x 290 mm |

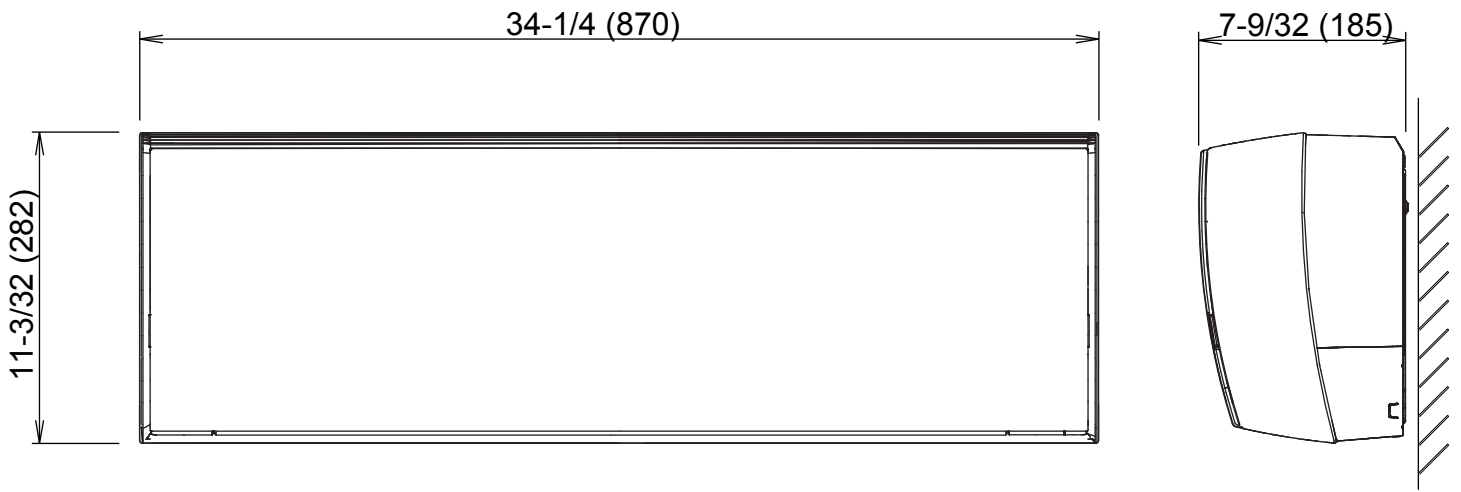
## WEIGHT

|                                |                                   |
|--------------------------------|-----------------------------------|
| INDOOR UNIT<br>Net / Shipping  | 21 lb. / 27 lb.<br>9.5 kg / 12 kg |
| OUTDOOR UNIT<br>Net / Shipping | 86 lb. / 93 lb.<br>39 kg / 42 kg  |

# DIMENSIONS

unit : inch (mm)

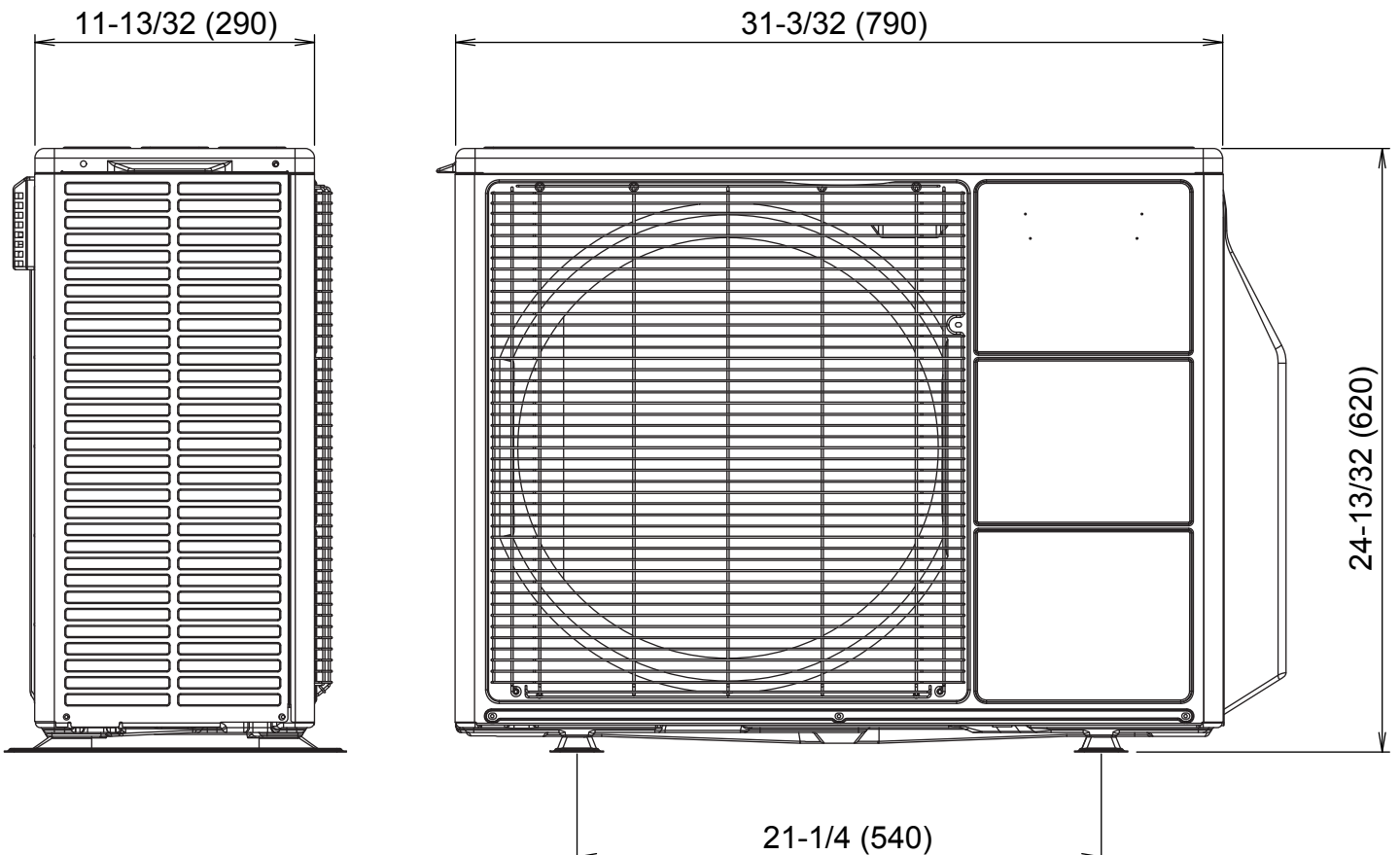
## INDOOR UNIT



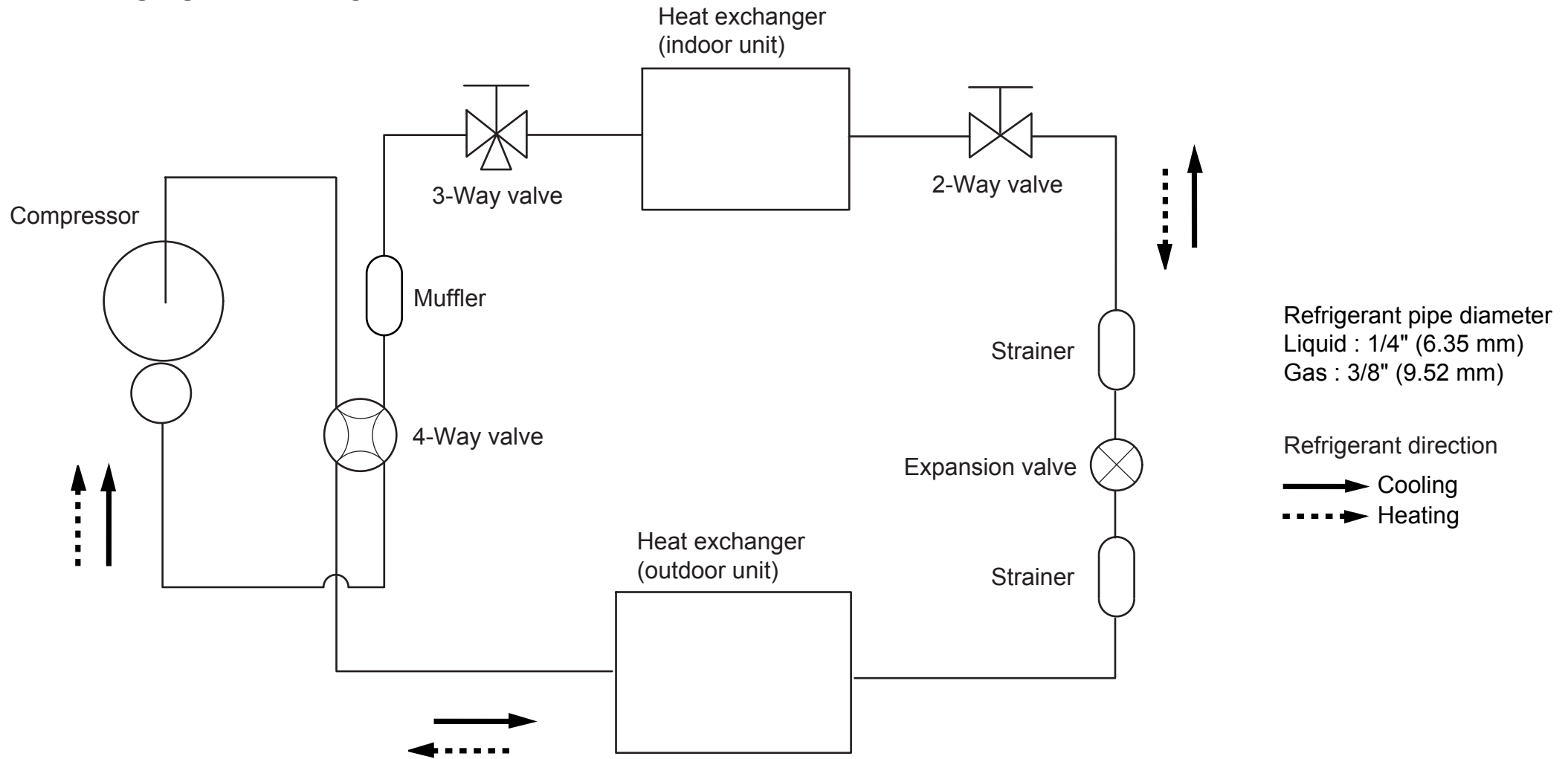
Drain pipe diameter  
16.2 mm

Liquid pipe diameter :  $\frac{1}{4}$  inch (6.35 mm)  
Gas pipe diameter :  $\frac{3}{8}$  inch (9.52 mm)

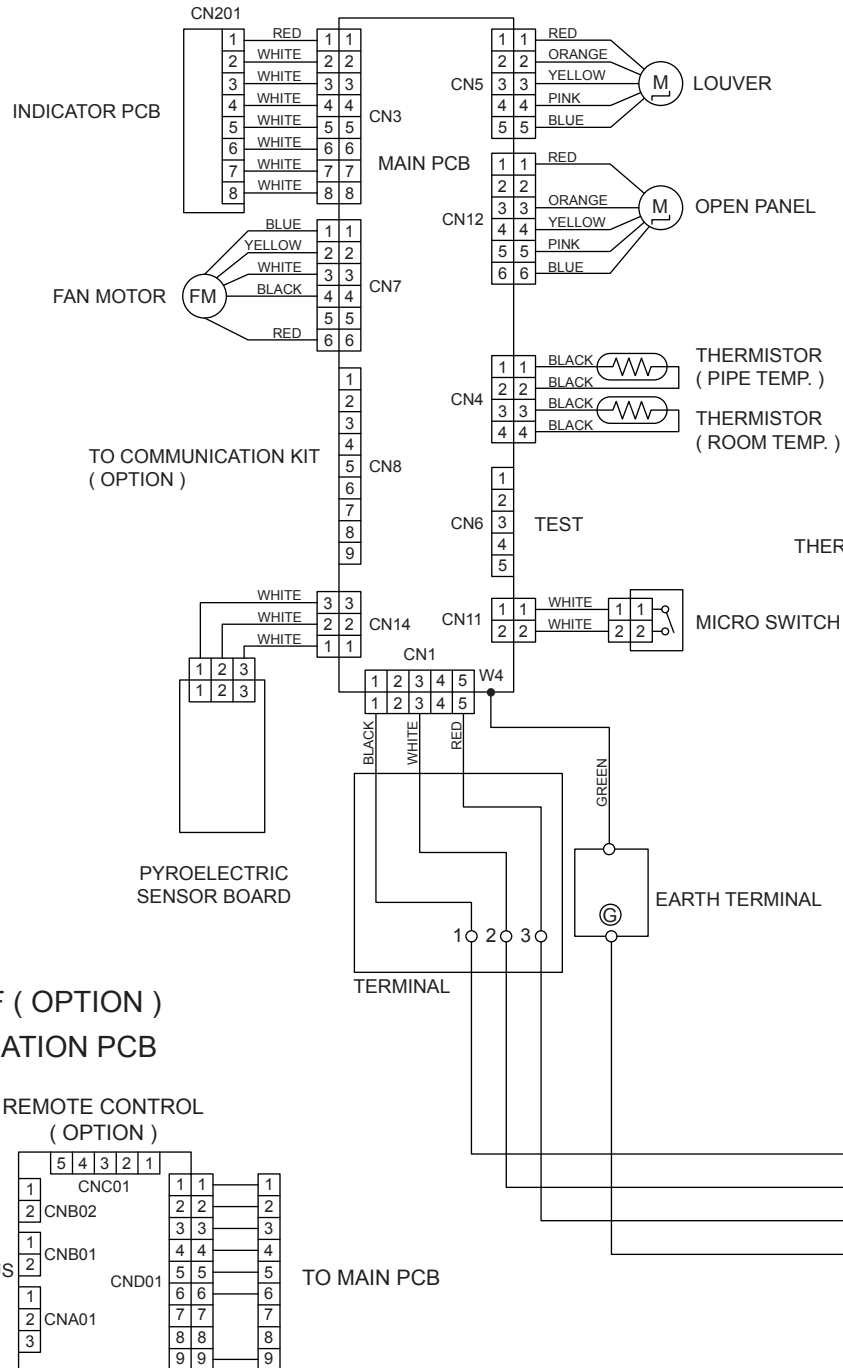
## OUTDOOR UNIT



# REFRIGERANT SYSTEM DIAGRAM

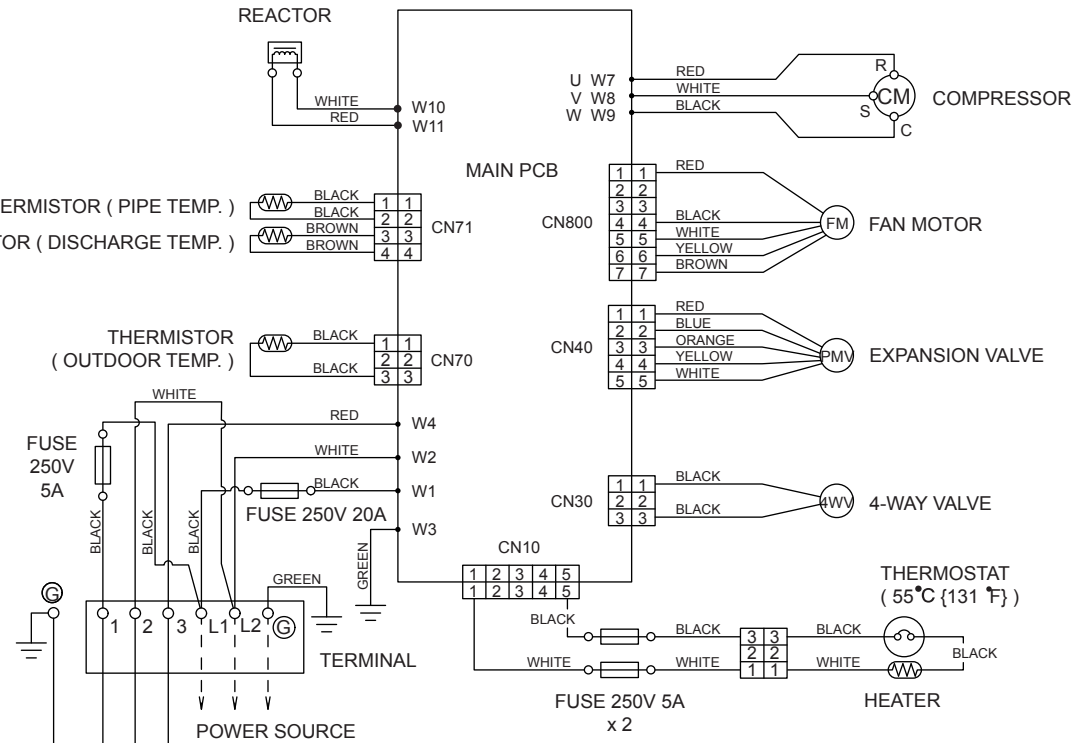


# INDOOR UNIT



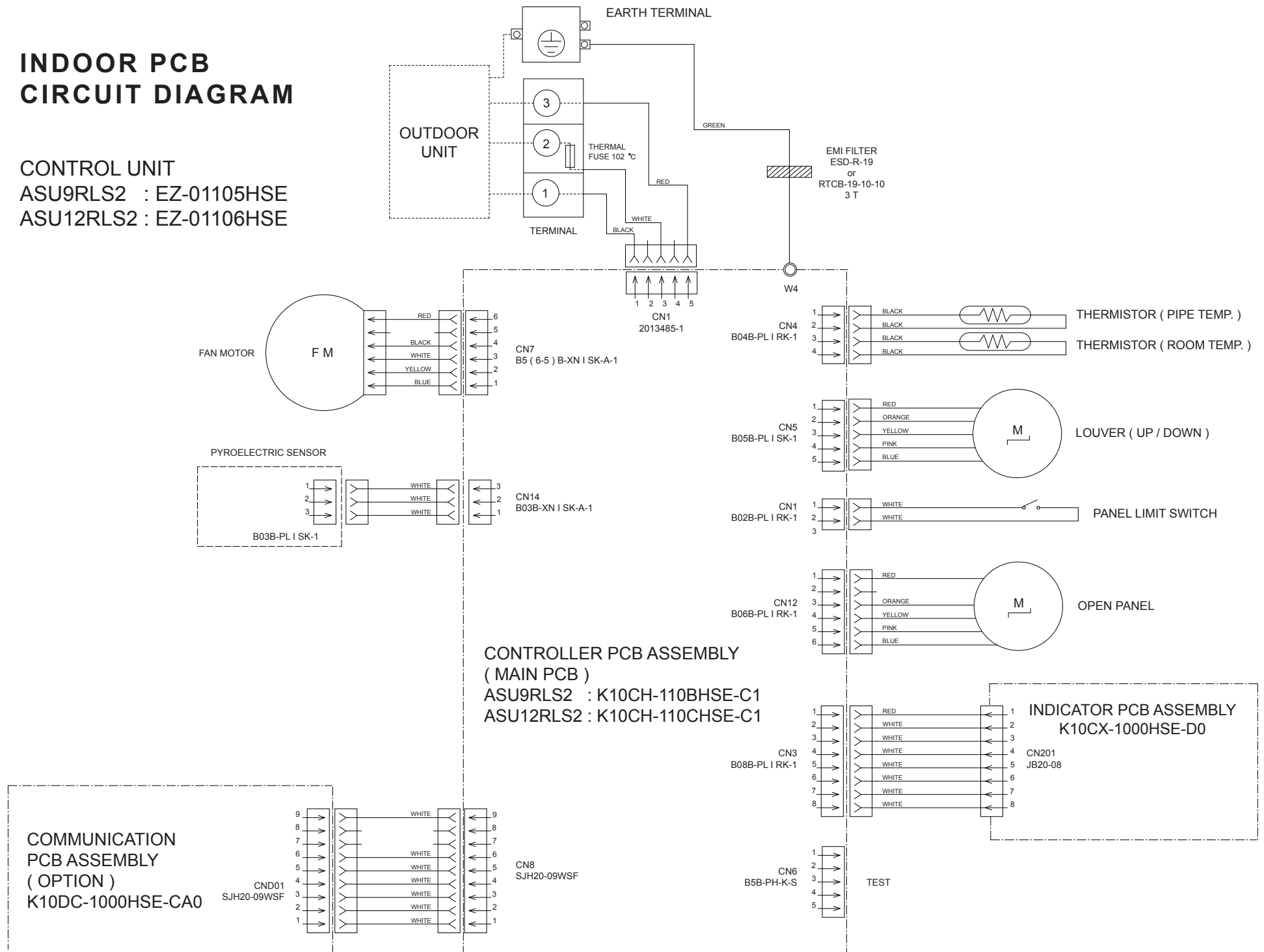
# CIRCUIT DIAGRAM

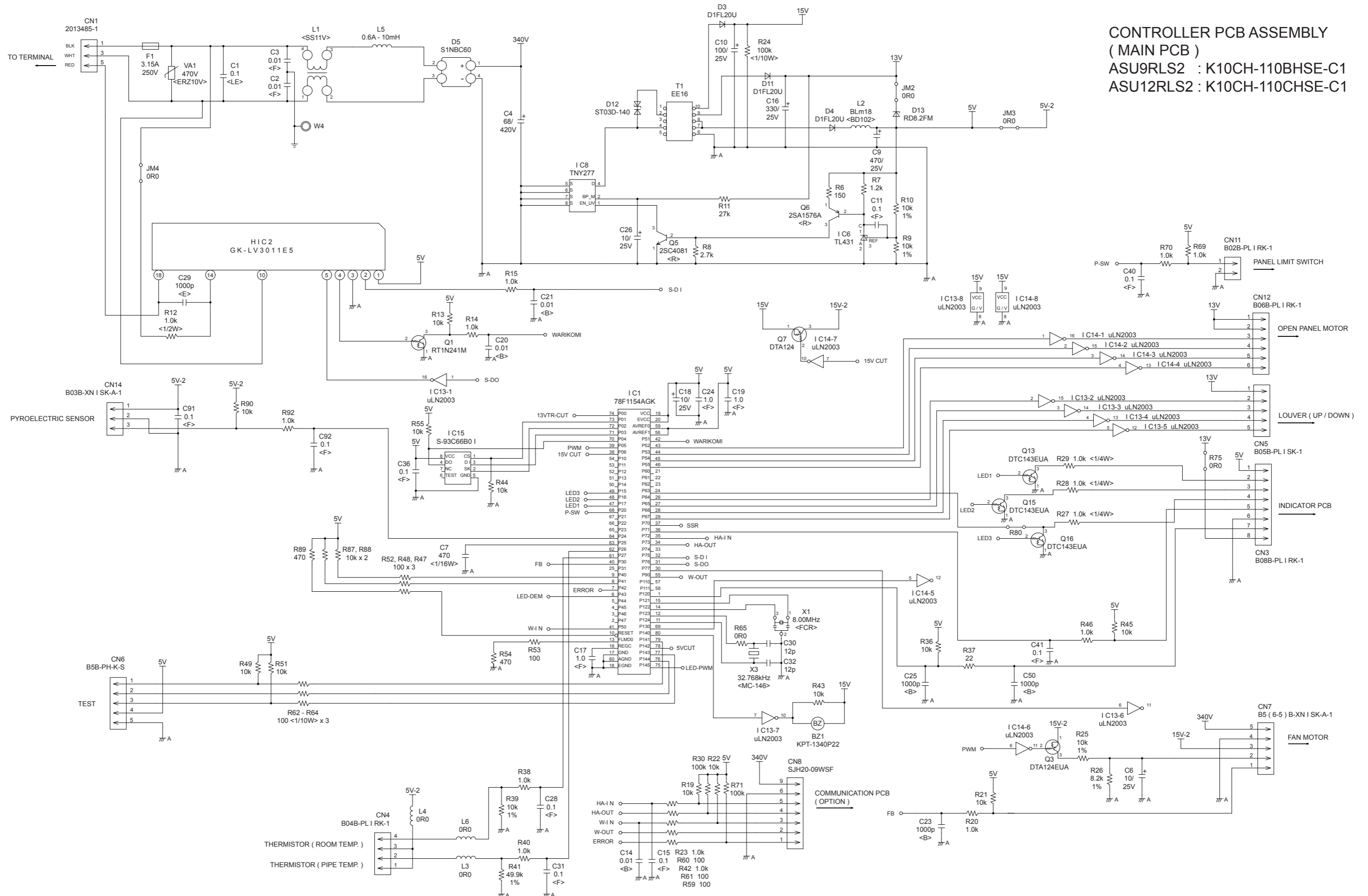
## OUTDOOR UNIT



# INDOOR PCB CIRCUIT DIAGRAM

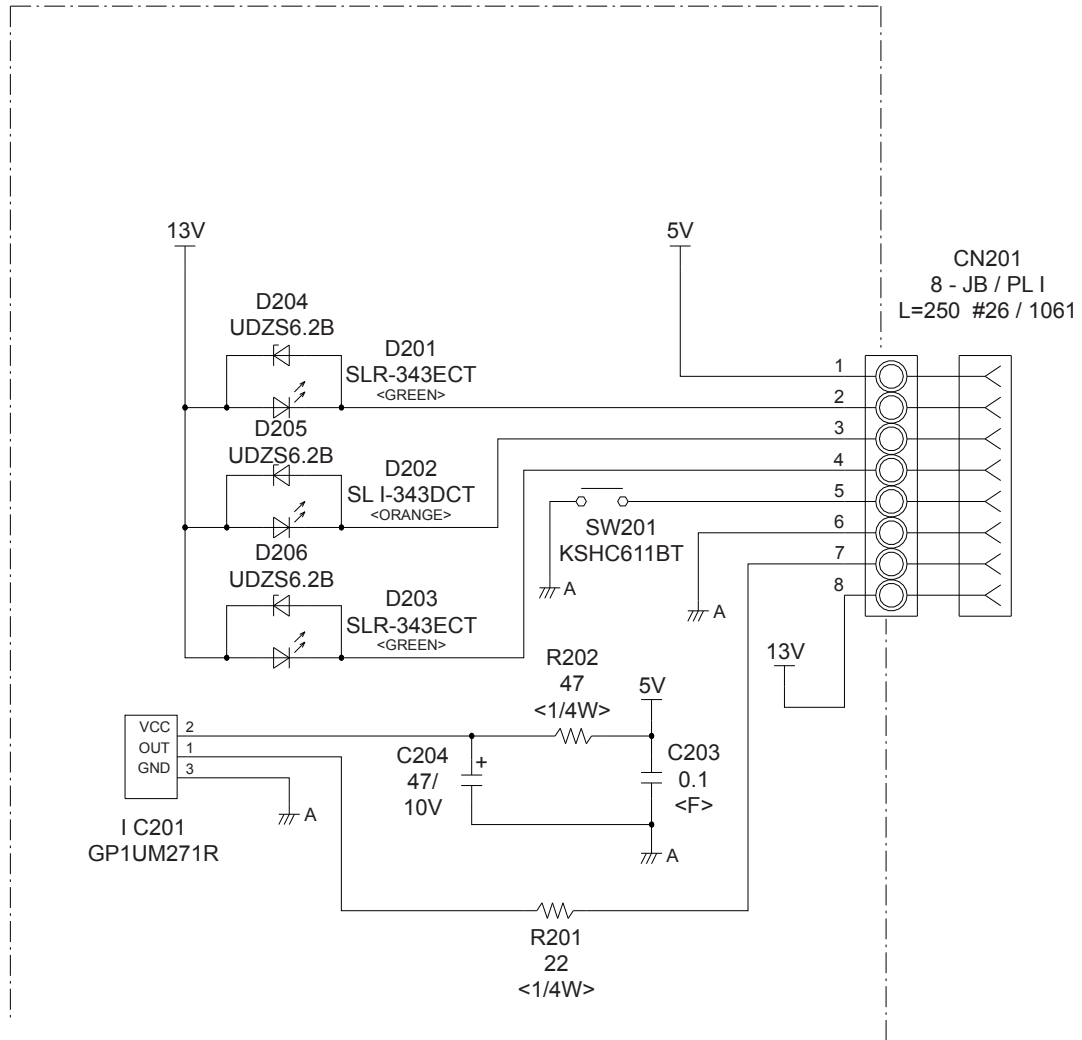
CONTROL UNIT  
 ASU9RLS2 : EZ-01105HSE  
 ASU12RLS2 : EZ-01106HSE





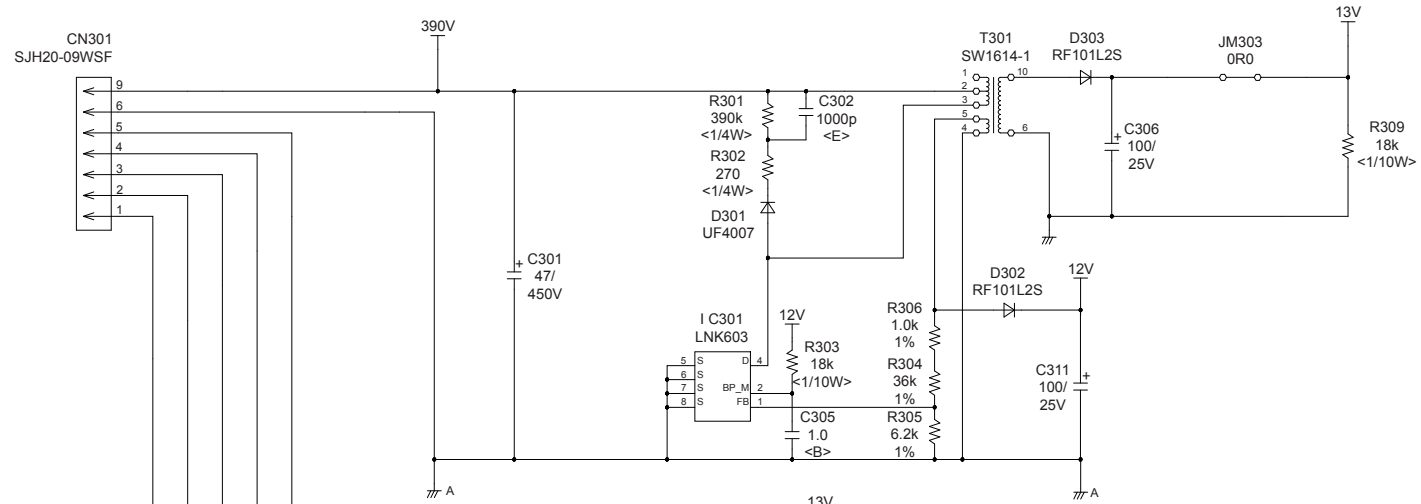
**CONTROLLER PCB ASSEMBLY**  
**( MAIN PCB )**  
 ASU9RLS2 : K10CH-110BHSE-C1  
 ASU12RLS2 : K10CH-110CHSE-C1

INDOOR UNIT  
 INDICATOR PCB ASSEMBLY  
 K10CX-1000HSE-D0

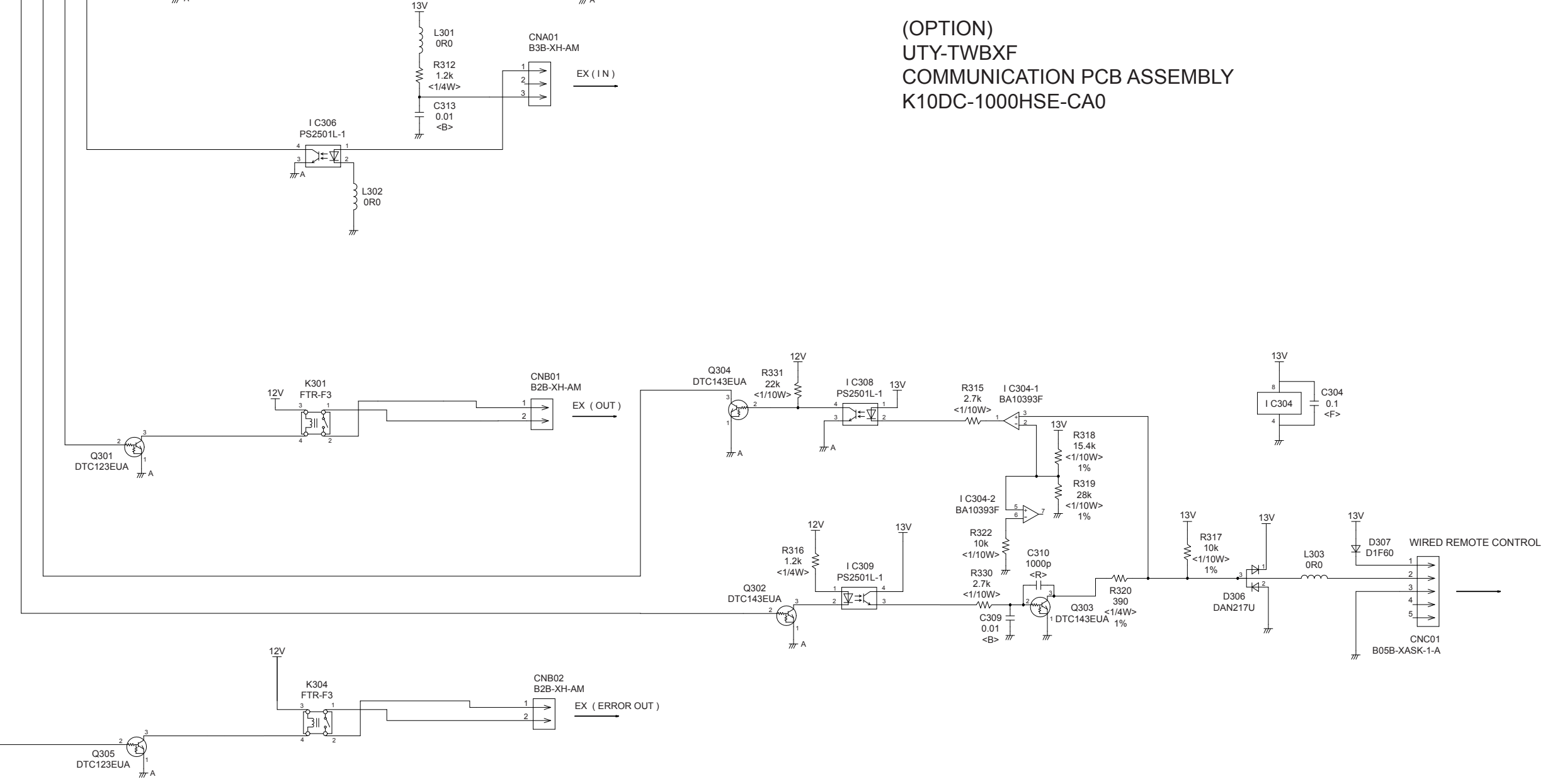




TO CONTROLLER PCB ASSEMBLY

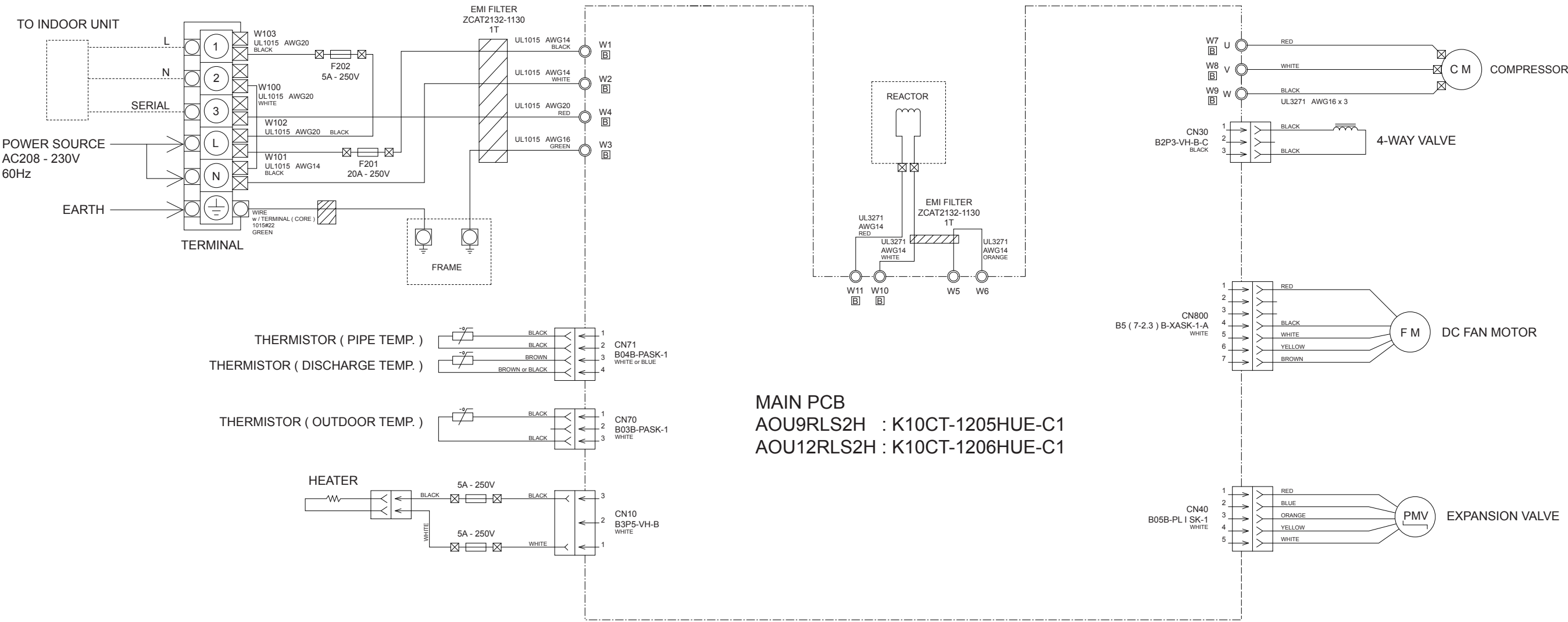


(OPTION)  
 UTY-TWBXF  
 COMMUNICATION PCB ASSEMBLY  
 K10DC-1000HSE-CA0



# OUTDOOR PCB CIRCUIT DIAGRAM

INVERTER ASSEMBLY  
 AOU9RLS2H : EZ-01216HUE  
 AOU12RLS2H : EZ-01217HUE



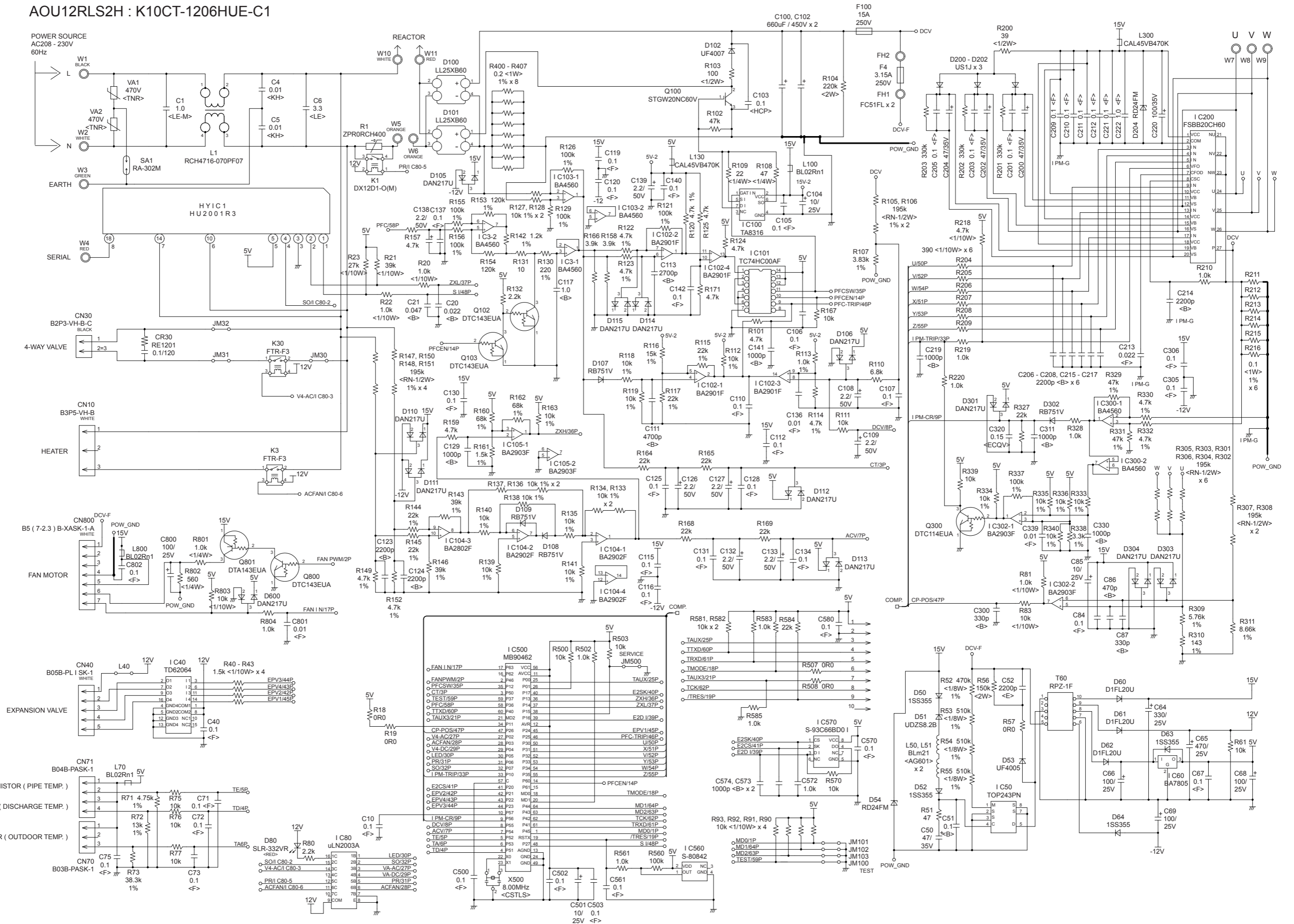
MAIN PCB  
 AOU9RLS2H : K10CT-1205HUE-C1  
 AOU12RLS2H : K10CT-1206HUE-C1

# OUTDOOR UNIT

## MAIN PCB

AOU9RLS2H : K10CT-1205HUE-C1

AOU12RLS2H : K10CT-1206HUE-C1



## Indoor unit display

# ERROR DETECTION

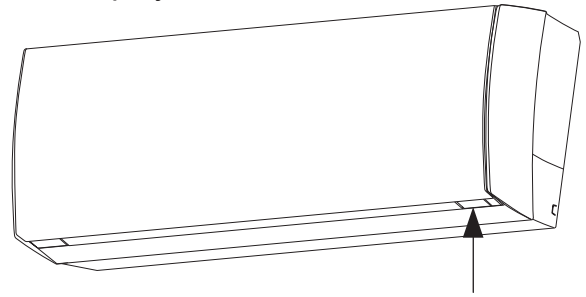
## INDOOR UNIT REMOTE CONTROL

If you use a wireless remote control, the lamp on the photo detector unit will output error codes by way of blinking patterns.

If you use a wired remote control, error codes will appear on the remote control display.

See the lamp blinking patterns and error codes in the table.

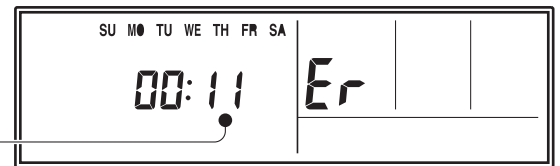
An error display is displayed only during operation.



OPERATION indicator lamp (green)  
TIMER indicator lamp (orange)  
ECONOMY indicator lamp (green)

## Wired remote control display (Option)

If an error occurs, the following display will be shown.  
("Er" will appear in the set room temperature display.)



Error code

● : 0.5s ON / 0.5s OFF

◇ : 0.1s ON / 0.1s OFF

( ) : Number of flashing

| Indoor unit            |                     |                      | Wired remote control | Description  |
|------------------------|---------------------|----------------------|----------------------|--|
| OPERATION lamp (green) | TIMER lamp (orange) | ECONOMY lamp (green) |                      |  |
| ● (1)                  | ● (1)               | ◇                    | 11                   | Serial communication error   |
| ● (1)                  | ● (2)               | ◇                    | 12                   | Wired remote control communication error                             |
| ● (1)                  | ● (5)               | ◇                    | 15                   | Check run unfinished   |
| ● (2)                  | ● (2)               | ◇                    | 22                   | Indoor unit capacity error   |
| ● (2)                  | ● (3)               | ◇                    | 23                   | Combination error  |
| ● (3)                  | ● (2)               | ◇                    | 32                   | Indoor unit PCB model information error                              |
| ● (3)                  | ● (5)               | ◇                    | 35                   | Manual auto switch error   |
| ● (4)                  | ● (1)               | ◇                    | 41                   | Room temp. sensor error  |
| ● (4)                  | ● (2)               | ◇                    | 42                   | Indoor unit Heat Ex. Middle temp. sensor error                       |
| ● (5)                  | ● (1)               | ◇                    | 51                   | Indoor unit fan motor error  |
| ● (5)                  | ● (8)               | ◇                    | 58                   | Intake grill error   |
| ● (5)                  | ● (15)              | ◇                    | 5U                   | Indoor unit error  |
| ● (6)                  | ● (2)               | ◇                    | 62                   | Outdoor unit main PCB model information error or communication error |
| ● (6)                  | ● (3)               | ◇                    | 63                   | Inverter error   |
| ● (6)                  | ● (4)               | ◇                    | 64                   | Active filter error, PFC circuit error                               |
| ● (6)                  | ● (5)               | ◇                    | 65                   | Trip terminal L error  |
| ● (6)                  | ● (10)              | ◇                    | 6A                   | Display PCB microcomputers communication error                       |
| ● (7)                  | ● (1)               | ◇                    | 71                   | Discharge temp. sensor error   |
| ● (7)                  | ● (2)               | ◇                    | 72                   | Compressor temp. sensor error  |

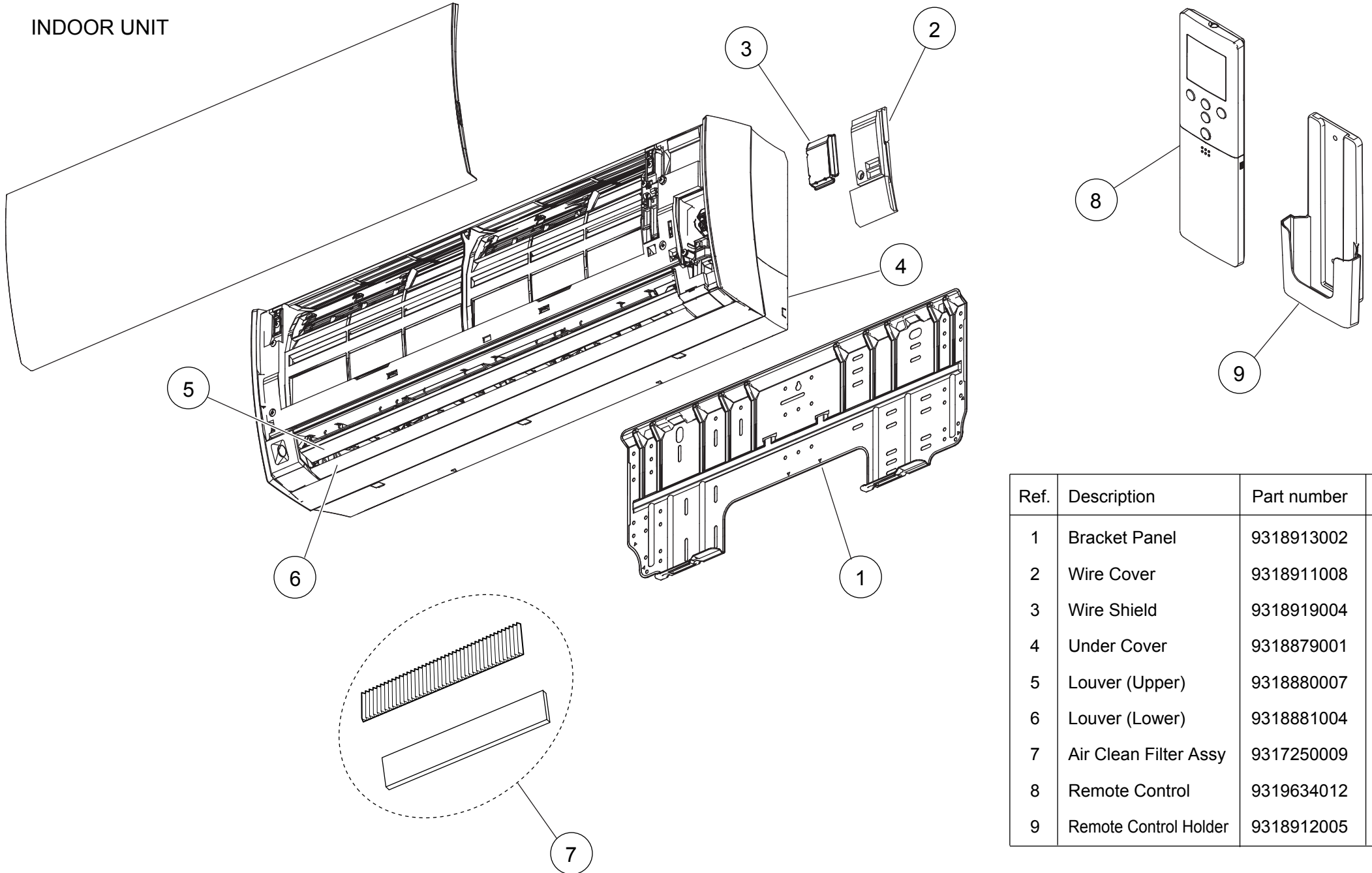
| Indoor unit            |                     |                      | Wired remote control | Description   |
|------------------------|---------------------|----------------------|----------------------|---|
| OPERATION lamp (green) | TIMER lamp (orange) | ECONOMY lamp (green) |                      |   |
| ● (7)                  | ● (3)               | ◇                    | 73                   | Outdoor unit Heat Ex. liquid temp. sensor error   |
| ● (7)                  | ● (4)               | ◇                    | 74                   | Outdoor temp. sensor error  |
| ● (7)                  | ● (5)               | ◇                    | 75                   | Suction Gas temp. sensor error  |
| ● (7)                  | ● (6)               | ◇                    | 76                   | • 2-way valve temp. sensor error<br>• 3-way valve temp. sensor error                                  |
| ● (7)                  | ● (7)               | ◇                    | 77                   | Heat sink temp. sensor error  |
| ● (8)                  | ● (2)               | ◇                    | 82                   | • Sub-cool Heat Ex. gas inlet temp. sensor error<br>• Sub-cool Heat Ex. gas outlet temp. sensor error |
| ● (8)                  | ● (3)               | ◇                    | 83                   | Liquid pipe temp. sensor error  |
| ● (8)                  | ● (4)               | ◇                    | 84                   | Current sensor error  |
| ● (8)                  | ● (6)               | ◇                    | 86                   | • Discharge pressure sensor error<br>• Suction pressure sensor error<br>• High pressure switch error  |
| ● (9)                  | ● (4)               | ◇                    | 94                   | Trip detection  |
| ● (9)                  | ● (5)               | ◇                    | 95                   | Compressor rotor position detection error (permanent stop)  |
| ● (9)                  | ● (7)               | ◇                    | 97                   | Outdoor unit fan motor error  |
| ● (9)                  | ● (9)               | ◇                    | 99                   | 4-way valve error   |
| ● (10)                 | ● (1)               | ◇                    | A1                   | Discharge temp. error   |
| ● (10)                 | ● (3)               | ◇                    | A3                   | Compressor temp. error  |
| ● (10)                 | ● (4)               | ◇                    | A4                   | High pressure error   |
| ● (10)                 | ● (5)               | ◇                    | A5                   | Low pressure error  |
| ● (13)                 | ● (2)               | ◇                    | J2                   | Branch boxes error  |

#### OUTDOOR UNIT

| LED                            | ERROR                          |
|--------------------------------|--------------------------------|
| on                             | Discharge temperature abnormal |
| 0.5 second on / 0.5 second off | IPM overcurrent protection     |
| 0.1 second on / 0.1 second off | Thermistor abnormal            |
| 2.0 second on / 2.0 second off | CT abnormal                    |
| 0.1 second on / 2.0 second off | Compressor location abnormal   |
| 5.0 second on / 5.0 second off | Fan abnormal                   |

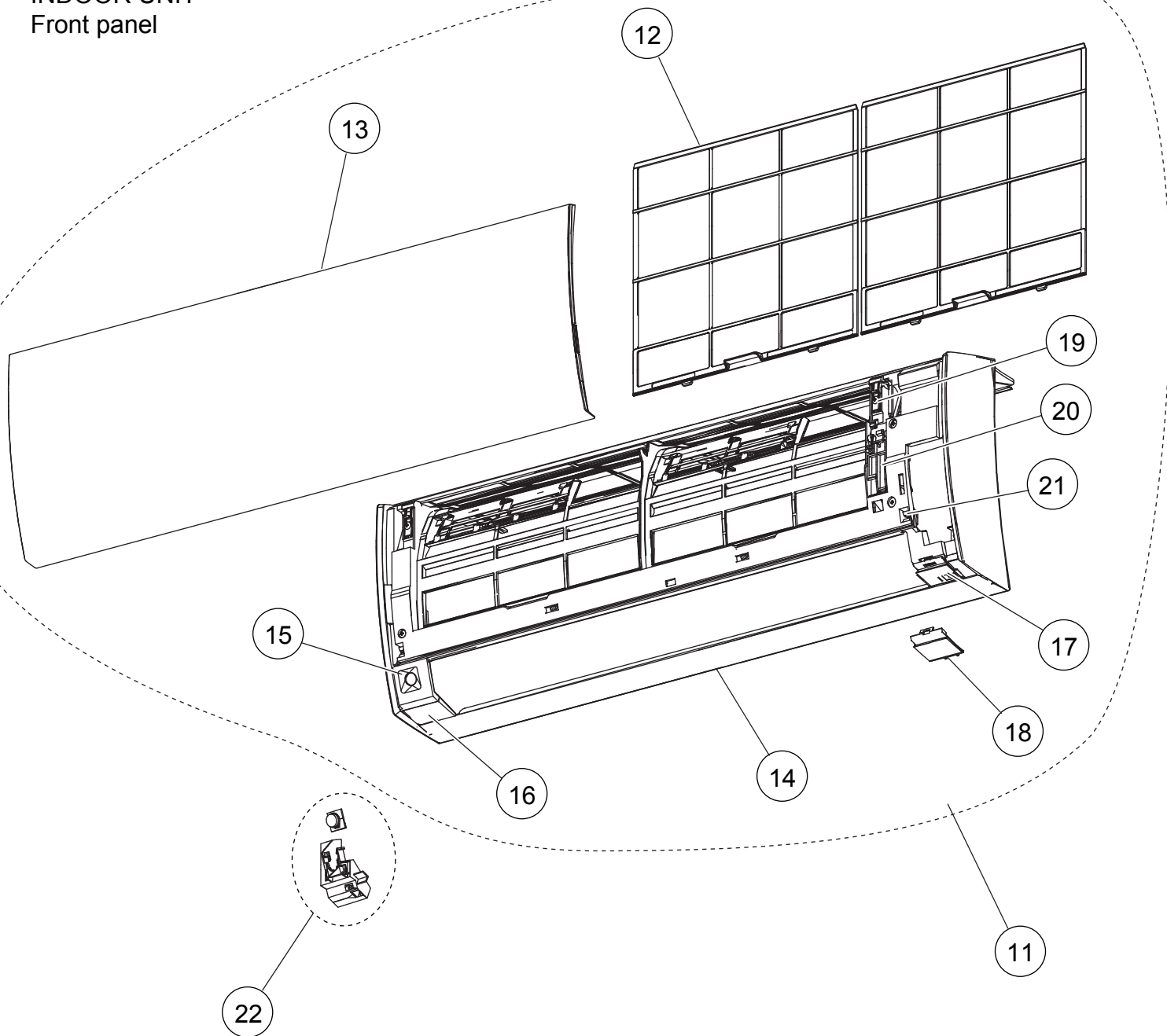
# PARTS

## INDOOR UNIT



| Ref. | Description           | Part number |
|------|-----------------------|-------------|
| 1    | Bracket Panel         | 9318913002  |
| 2    | Wire Cover            | 9318911008  |
| 3    | Wire Shield           | 9318919004  |
| 4    | Under Cover           | 9318879001  |
| 5    | Louver (Upper)        | 9318880007  |
| 6    | Louver (Lower)        | 9318881004  |
| 7    | Air Clean Filter Assy | 9317250009  |
| 8    | Remote Control        | 9319634012  |
| 9    | Remote Control Holder | 9318912005  |

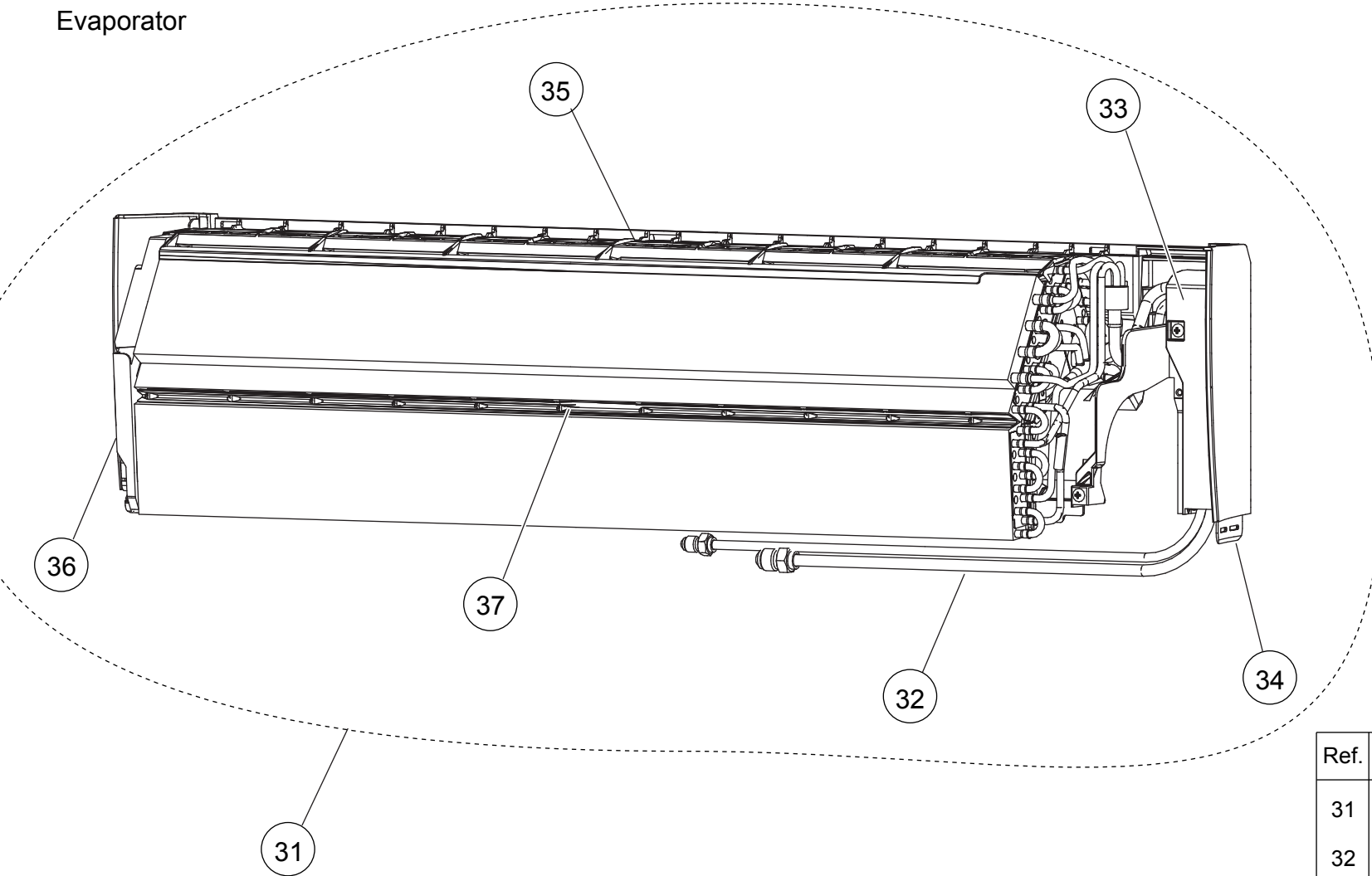
INDOOR UNIT  
Front panel



| Ref. | Description              | Part number |
|------|--------------------------|-------------|
| 11   | Front Panel Total Assy   | 9319348209  |
| 12   | Air Filter               | 9318883008  |
| 13   | Intake Grille Assy       | 9319351186  |
| 14   | Front Panel              | 9318876000  |
| 15   | Front Panel Cover T      | 9318909005  |
| 16   | Display Plate Holder L   | 9318894004  |
| 17   | Display Plate Holder R   | 9318895001  |
| 18   | Display Plate R          | 9318893007  |
| 19   | Arm Cover                | 9318900002  |
| 20   | Grille Stay              | 9318899009  |
| 21   | Grille Clamper B         | 9316951006  |
| 22   | Pyroelectric Sensor Assy | 9319346007  |

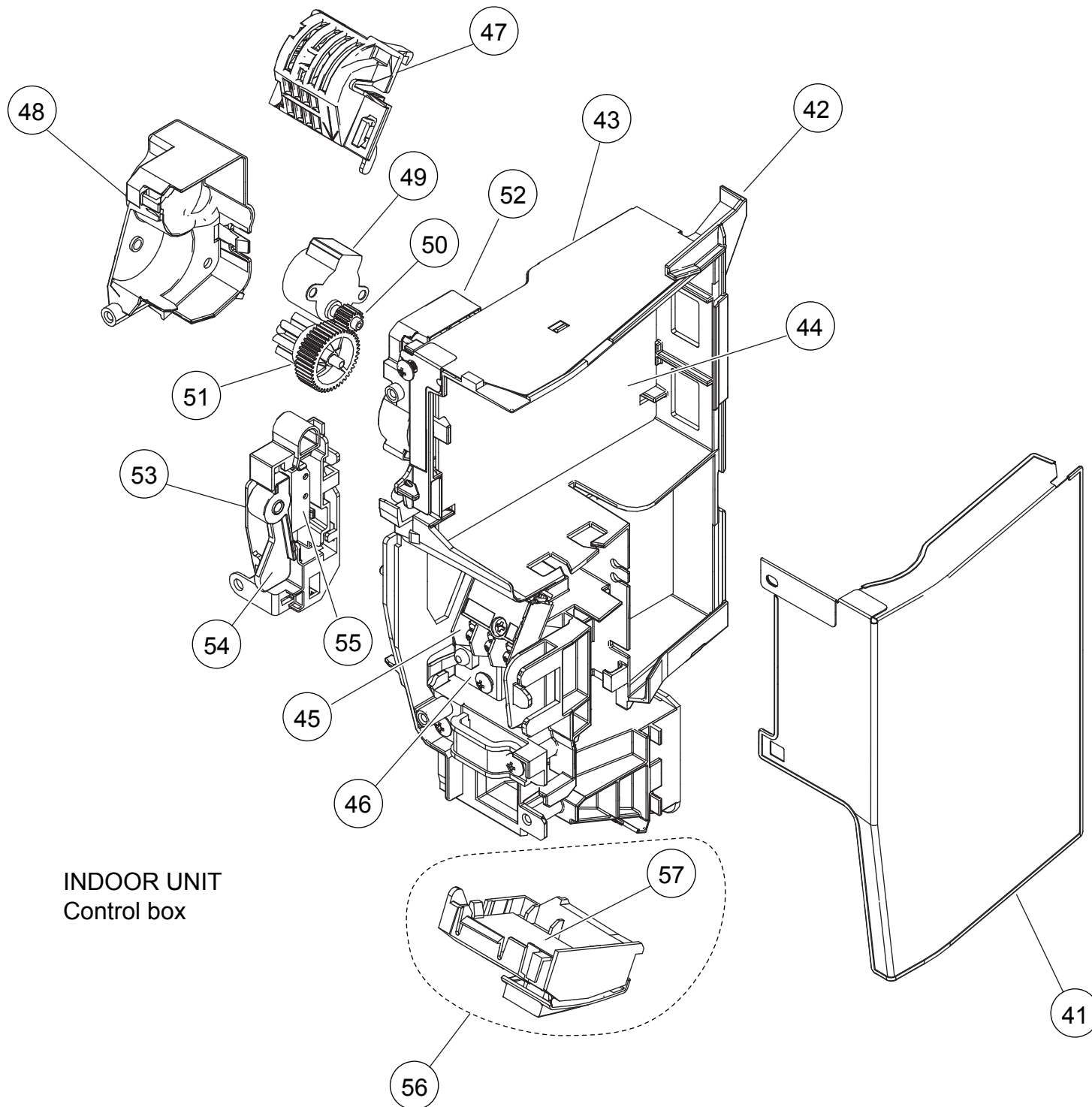


INDOOR UNIT  
Evaporator



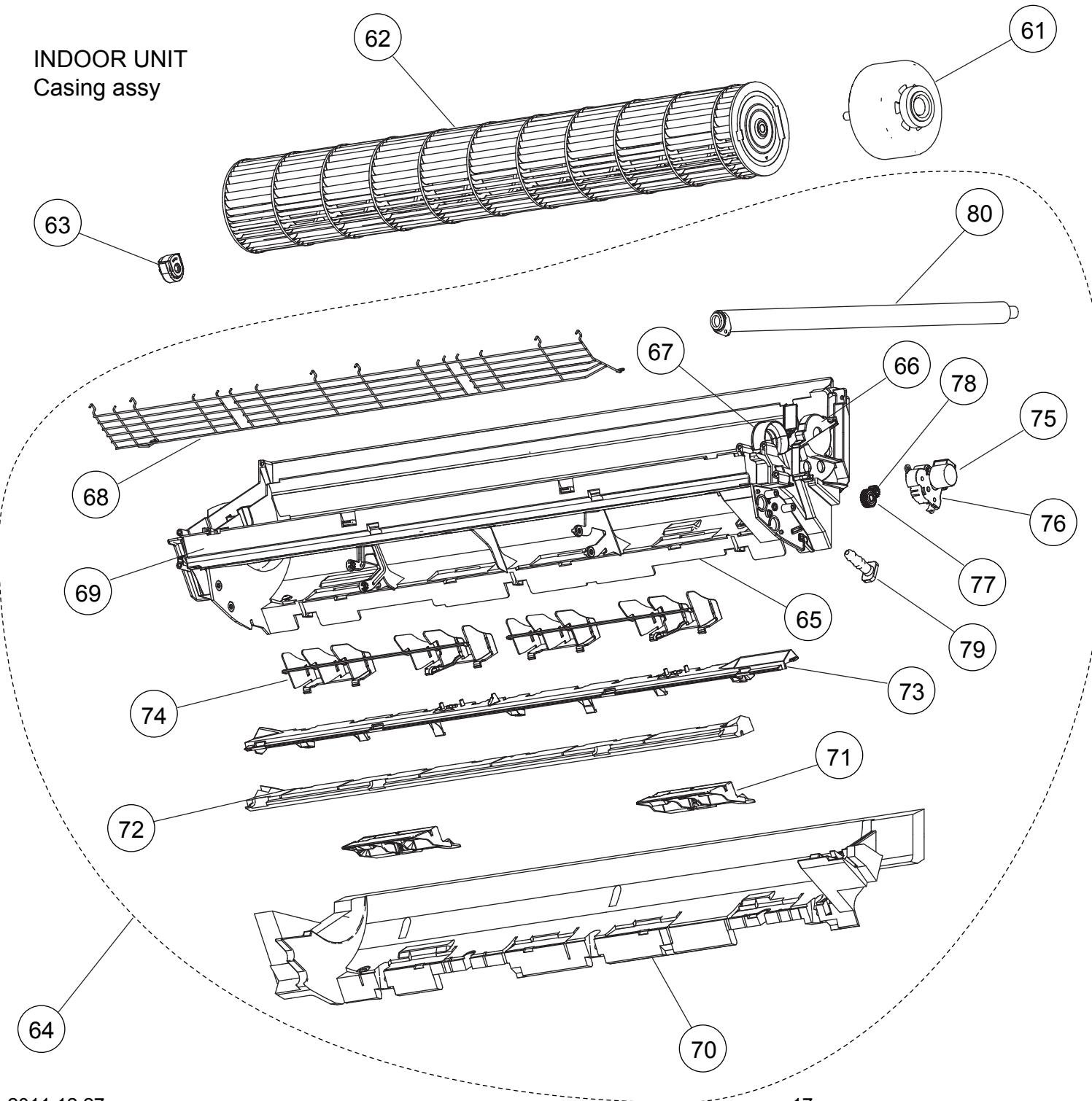
| Ref. | Description           | Part number |
|------|-----------------------|-------------|
| 31   | Evaporator Total Assy | 9319327006  |
| 32   | Joint Pipe Assy       | 9319322001  |
| 33   | Joint Pipe Holder     | 9318901009  |
| 34   | Base                  | 9318874006  |
| 35   | Filter Guide          | 9318887006  |
| 36   | Evaporator Holder L   | 9318875003  |
| 37   | Air Seal              | 9319295008  |





| Ref. | Description            | Part number |
|------|------------------------|-------------|
| 41   | Cover Shield A         | 9318916003  |
| 42   | Control Box            | 9318882018  |
| 43   | Box Shield Assy        | 9319344003  |
| 44   | Main PCB (9)           | 9708713205  |
| 44   | Main PCB (12)          | 9708713212  |
| 45   | Terminal               | 9900638016  |
| 46   | Earth Terminal         | 9318918007  |
| 47   | Room Thermistor Holder | 9319068008  |
| 48   | Gear Cover             | 9318902006  |
| 49   | Step Motor             | 9900384166  |
| 50   | Gear B                 | 9319294001  |
| 51   | Panel Gear             | 9319293004  |
| 52   | Gear Case              | 9318903003  |
| 53   | Switch Case            | 9319332000  |
| 54   | Grille Key Top         | 9319334004  |
| 55   | Micro Switch           | 9900625009  |
| 56   | Display Assy           | 9708823010  |
| 57   | Display PCB Assy       | 9708824017  |
| --   | Thermistor Assy        | 9900627003  |

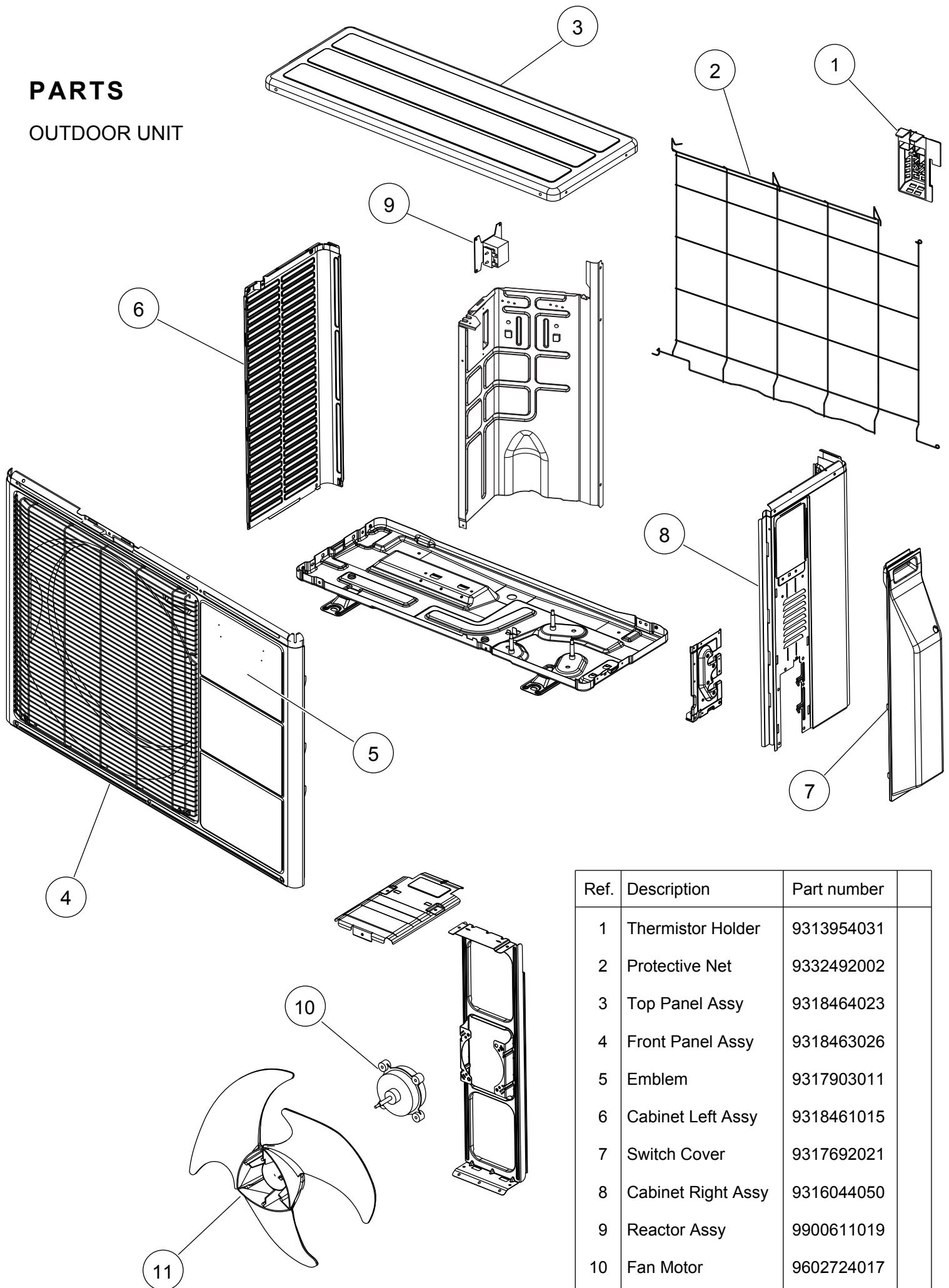
INDOOR UNIT  
Casing assy



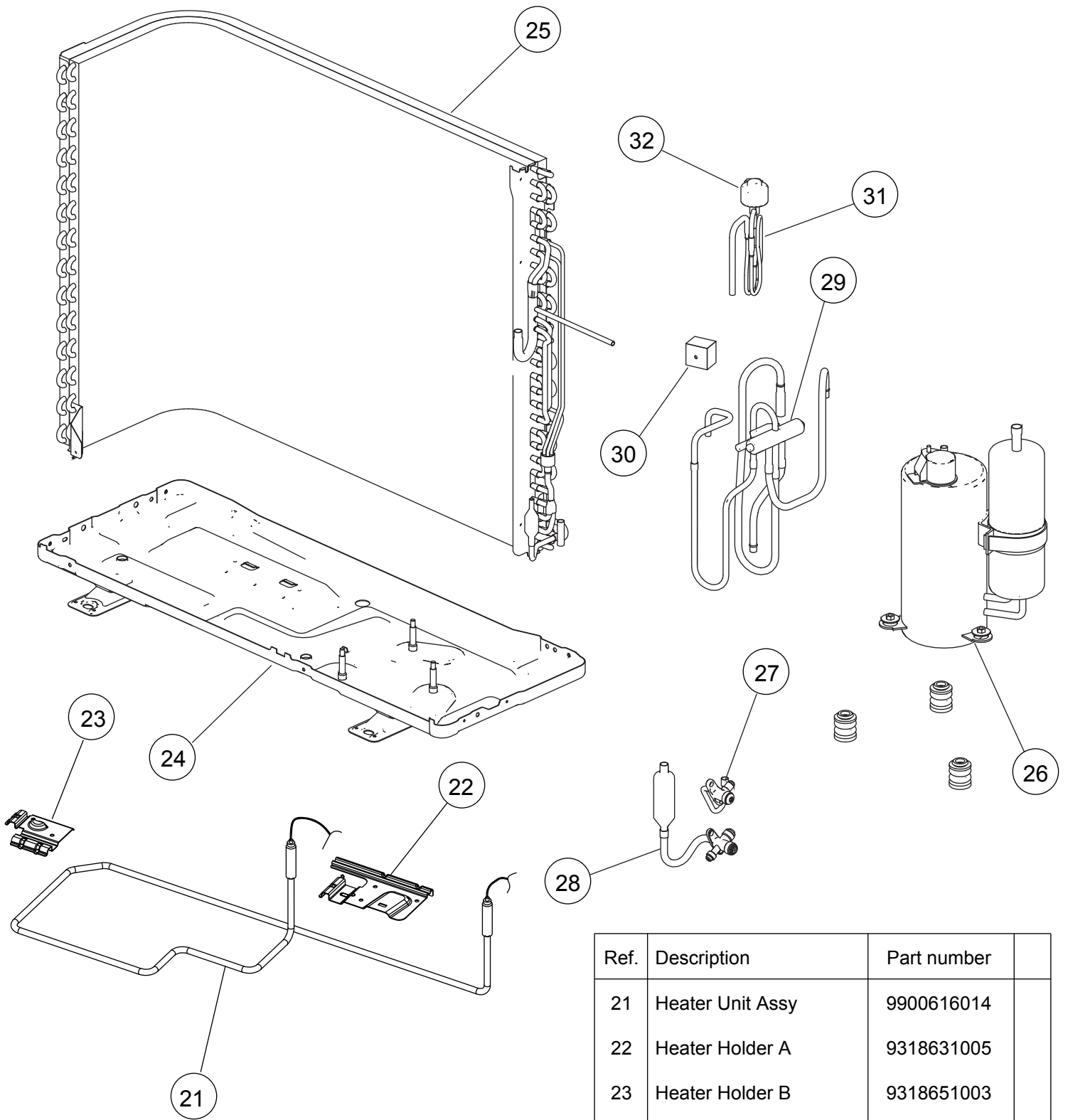
| Ref. | Description        | Part number |
|------|--------------------|-------------|
| 61   | Fan Motor          | 9602947010  |
| 62   | Crossflow Fan Assy | 9319361000  |
| 63   | Bearing C Assy     | 9306628017  |
| 64   | Casing Assy        | 9319342009  |
| 65   | Casing             | 9318873009  |
| 66   | Motor Cover        | 9316601000  |
| 67   | Motor Cover        | 9318888003  |
| 68   | Fan Guard          | 9318924008  |
| 69   | Casing Cover F     | 9318923001  |
| 70   | Casing Cover B     | 9318920000  |
| 71   | Pipe Bracket       | 9318889000  |
| 72   | Panel Cover        | 9319296005  |
| 73   | Louver Holder      | 9318886009  |
| 74   | R and L Louver     | 9318885002  |
| 75   | Motor Step         | 9900384128  |
| 76   | Louver Gear Holder | 9318905007  |
| 77   | Louver Gear        | 9318904000  |
| 78   | Gear A             | 9309994003  |
| 79   | Drain Cap          | 9316177017  |
| 80   | Drain Hose Assy    | 9316904002  |

# PARTS

## OUTDOOR UNIT



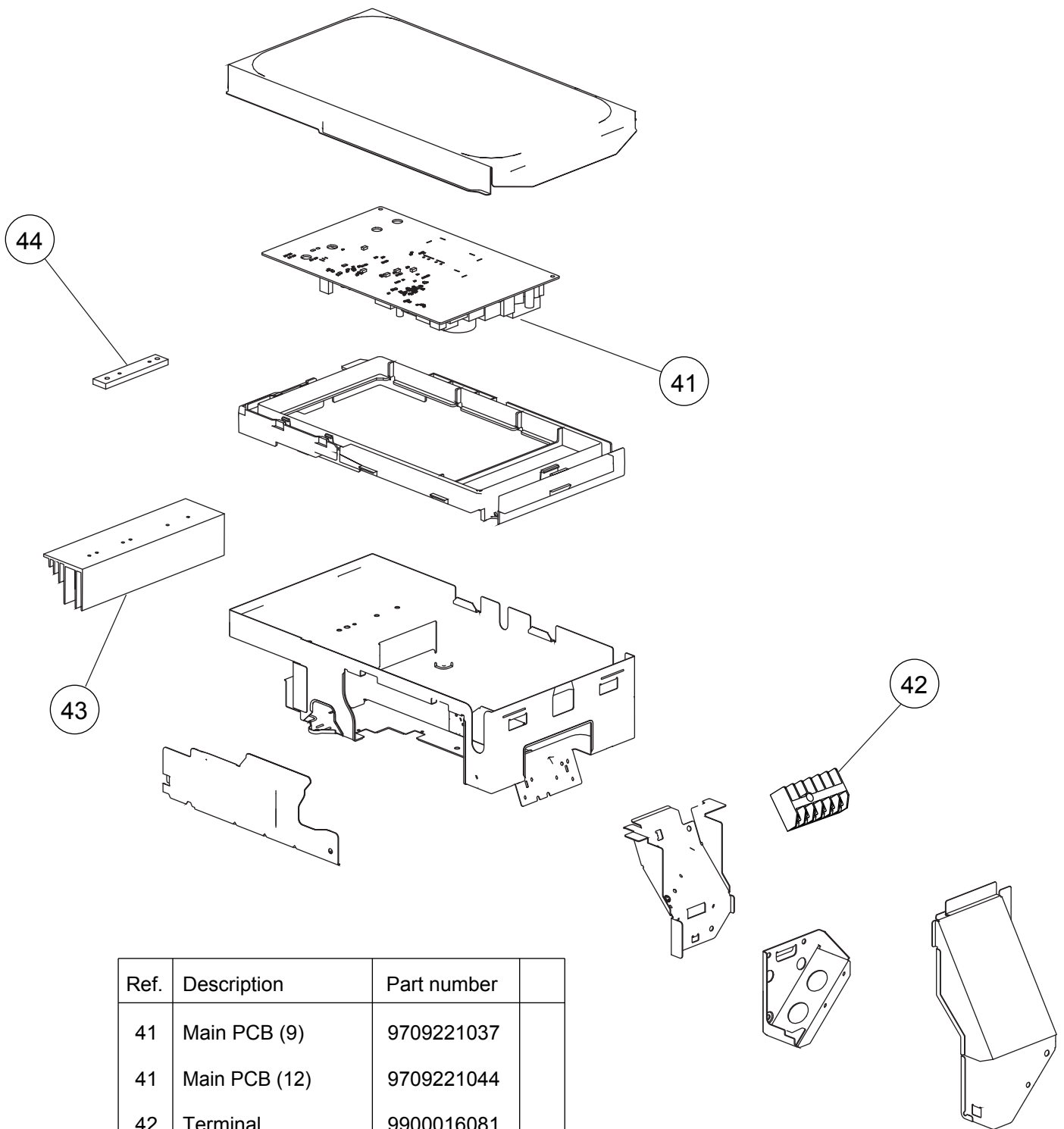
| Ref. | Description        | Part number |
|------|--------------------|-------------|
| 1    | Thermistor Holder  | 9313954031  |
| 2    | Protective Net     | 9332492002  |
| 3    | Top Panel Assy     | 9318464023  |
| 4    | Front Panel Assy   | 9318463026  |
| 5    | Emblem             | 9317903011  |
| 6    | Cabinet Left Assy  | 9318461015  |
| 7    | Switch Cover       | 9317692021  |
| 8    | Cabinet Right Assy | 9316044050  |
| 9    | Reactor Assy       | 9900611019  |
| 10   | Fan Motor          | 9602724017  |
| 11   | Propeller Fan      | 9313808013  |



OUTDOOR UNIT

| Ref. | Description            | Part number |
|------|------------------------|-------------|
| 21   | Heater Unit Assy       | 9900616014  |
| 22   | Heater Holder A        | 9318631005  |
| 23   | Heater Holder B        | 9318651003  |
| 24   | Base Assy              | 9316885059  |
| 25   | Condenser Total Assy   | 9317089098  |
| 26   | Compressor Assy        | 9317117005  |
| 27   | 2-way Valve Assy       | 9332371000  |
| 28   | 3-way Valve Sub Assy   | 9317109000  |
| 29   | 4-way Valve Assy       | 9317110020  |
| 30   | Solenoid               | 9970110047  |
| 31   | Pulse Motor Valve Assy | 9332368000  |
| 32   | Expansion Valve Coil   | 9970095030  |

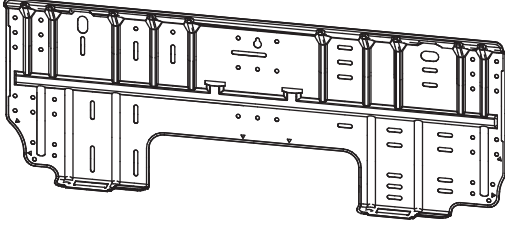
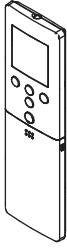


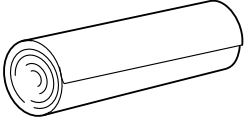

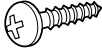
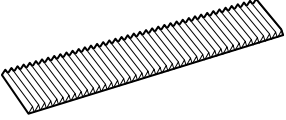
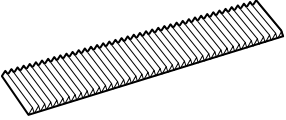
# OUTDOOR UNIT



| Ref. | Description        | Part number |
|------|--------------------|-------------|
| 41   | Main PCB (9)       | 9709221037  |
| 41   | Main PCB (12)      | 9709221044  |
| 42   | Terminal           | 9900016081  |
| 43   | Heatsink A         | 9314410017  |
| 44   | Heatsink B         | 9314090011  |
| --   | Outdoor Thermistor | 9900544010  |
| --   | Thermistor Assy    | 9900614027  |

# ACCESSORIES

## INDOOR UNIT

| Name and Shape  | Part number       |
|---|-------------------|
| <p>Bracket panel</p>   | <p>9318913002</p> |
| <p>Remote control</p>    | <p>9319634012</p> |
| <p>Remote control holder</p>                                  | <p>9318912005</p> |
| <p>Battery (penlight)</p>                                    | <p>0600185077</p> |
| <p>Cloth tape</p>    | <p>9308117007</p> |
| <p>Tapping screw (big)<br/>(<math>\phi</math> 4 x 25)</p>    | <p>0700076046</p> |
| <p>Tapping screw (small)<br/>(<math>\phi</math> 3 x 12)</p>  | <p>0700019036</p> |
| <p>Air cleaning filter<br/>(Ion deodrant)</p>                | <p>9311925088</p> |
| <p>Air cleaning filter<br/>(Electric)</p>                    | <p>9312153077</p> |

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