

SPLIT TYPE  
ROOM AIR CONDITIONER  
WALL MOUNTED TYPE

# SERVICE MANUAL



| Indoor unit | Outdoor unit |
|-------------|--------------|
| ASYG12LUCA  | AOYG12LUC    |
| ASYG14LUCA  | AOYG14LUC    |

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# SPECIFICATIONS

## ELECTRICAL DATA

| TYPE                 |         | Cool & heat inverter  |                       |
|----------------------|---------|-----------------------|-----------------------|
| INDOOR UNIT          |         | ASYG12LUCA            | ASYG14LUCA            |
| OUTDOOR UNIT         |         | AOYG12LUC             | AOYG14LUC             |
| COOLING CAPACITY     |         | 3.50 kW               | 4.20 kW               |
| HEATING CAPACITY     |         | 4.00 kW               | 5.40 kW               |
| POWER SOURCE         |         | 230 V                 | 230 V                 |
| FREQUENCY            |         | 50 Hz                 | 50 Hz                 |
| RUNNING CURRENT      | Cooling | 4.6 A                 | 5.8 A                 |
|                      | Heating | 4.7 A                 | 6.3 A                 |
| INPUT WATTS          | Cooling | 0.905 kW              | 1.235 kW              |
|                      | Heating | 0.930 kW              | 1.380 kW              |
| E.E.R.               | Cooling | 3.87 kW/kW            | 3.40 kW/kW            |
| COP                  | Heating | 4.30 kW/kW            | 3.91 kW/kW            |
| MOISTURE REMOVAL     |         | 1.8 L/h               | 2.1 L/h               |
| AIR CIRCULATION HIGH | Cooling | 850 m <sup>3</sup> /h | 900 m <sup>3</sup> /h |
|                      | Heating | 850 m <sup>3</sup> /h | 950 m <sup>3</sup> /h |
| MAXIMUM CURRENT      | Cooling | 6.5 A                 | 9.0 A                 |
|                      | Heating | 9.0 A                 | 10.5 A                |

## FAN MOTOR

| POWER SOURCE         |              | 230 V        |              |
|----------------------|--------------|--------------|--------------|
| INDOOR UNIT Cooling  | High speed   | 1,370 r.p.m. | 1,440 r.p.m. |
|                      | Middle speed | 1,120 r.p.m. | 1,220 r.p.m. |
|                      | Low speed    | 960 r.p.m.   | 980 r.p.m.   |
|                      | Quiet        | 650 r.p.m.   | 740 r.p.m.   |
| INDOOR UNIT Heating  | High speed   | 1,370 r.p.m. | 1,510 r.p.m. |
|                      | Middle speed | 1,180 r.p.m. | 1,220 r.p.m. |
|                      | Low speed    | 960 r.p.m.   | 1,030 r.p.m. |
|                      | Quiet        | 650 r.p.m.   | 790 r.p.m.   |
| OUTDOOR UNIT Cooling |              | 850 r.p.m.   | 850 r.p.m.   |
| OUTDOOR UNIT Heating |              | 750 r.p.m.   | 750 r.p.m.   |

## NOISE LEVEL

|                      |              |       |       |
|----------------------|--------------|-------|-------|
| INDOOR UNIT Cooling  | High speed   | 43 dB | 45 dB |
|                      | Middle speed | 37 dB | 40 dB |
|                      | Low speed    | 32 dB | 33 dB |
|                      | Quiet        | 21 dB | 25 dB |
| INDOOR UNIT Heating  | High speed   | 43 dB | 45 dB |
|                      | Middle speed | 38 dB | 40 dB |
|                      | Low speed    | 32 dB | 34 dB |
|                      | Quiet        | 21 dB | 27 dB |
| OUTDOOR UNIT Cooling |              | 50 dB | 50 dB |
| OUTDOOR UNIT Heating |              | 50 dB | 50 dB |

## COMPRESSOR AND REFRIGERANT

|                        |   |         |
|------------------------|---|---------|
| COMPRESSOR TYPE        | Hermetic type, 4 pole, 3 phase, DC inverter motor, Rotary |         |
| DISCRIMINATION         | DA89X1C-20FZ2   |         |
| WEIGHT (with oil)      | 9.2 kg  |         |
| PRECHARGED REFRIGERANT | 1,050 g   |         |
| REFRIGERANT TYPE       | R410A   |         |
| FULL CHARGE            | Pipe length 15 m  | 1,050 g |
|                        | 20 m  | 1,150 g |
| ADDITIONAL CHARGE      | 20 g/m  |         |
| MAXIMUM PIPING HEIGHT  | 15m   |         |

## DIMENSIONS

|              |           |                    |
|--------------|-----------|--------------------|
| INDOOR UNIT  | H x W x D | 282 x 870 x 185 mm |
| OUTDOOR UNIT | H x W x D | 540 x 790 x 290 mm |

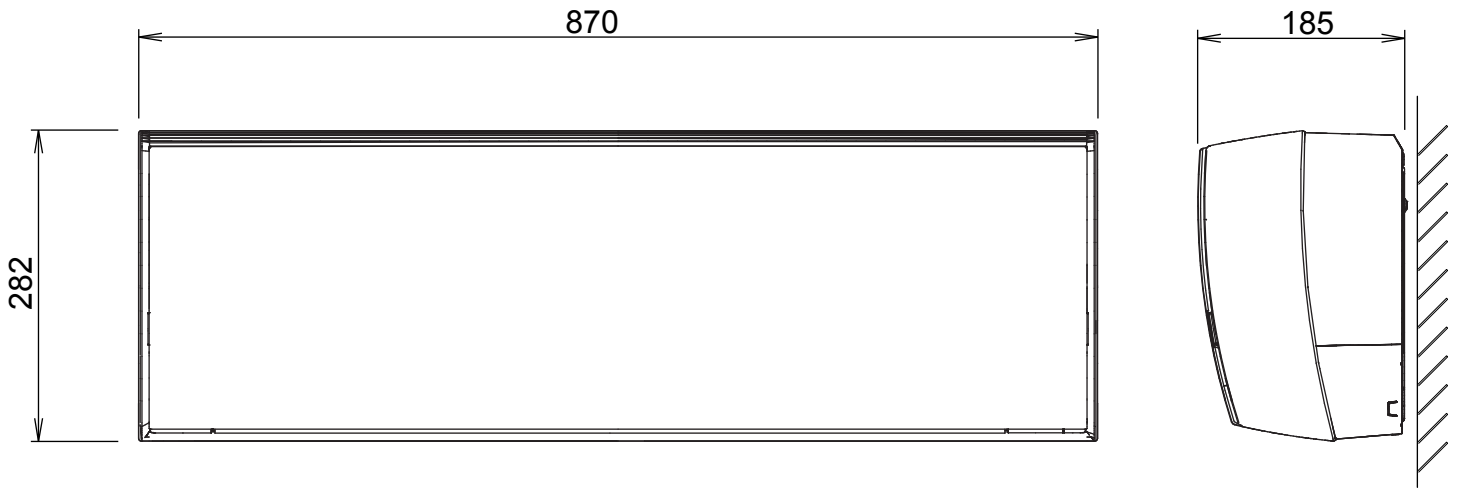
## WEIGHT

|              |                |                               |
|--------------|----------------|-------------------------------|
| INDOOR UNIT  | Shipping / Net | 12 kg / 9.5 kg                |
| OUTDOOR UNIT | Shipping / Net | 37 kg / 33 kg / 38 kg / 34 kg |

# DIMENSIONS

unit : mm

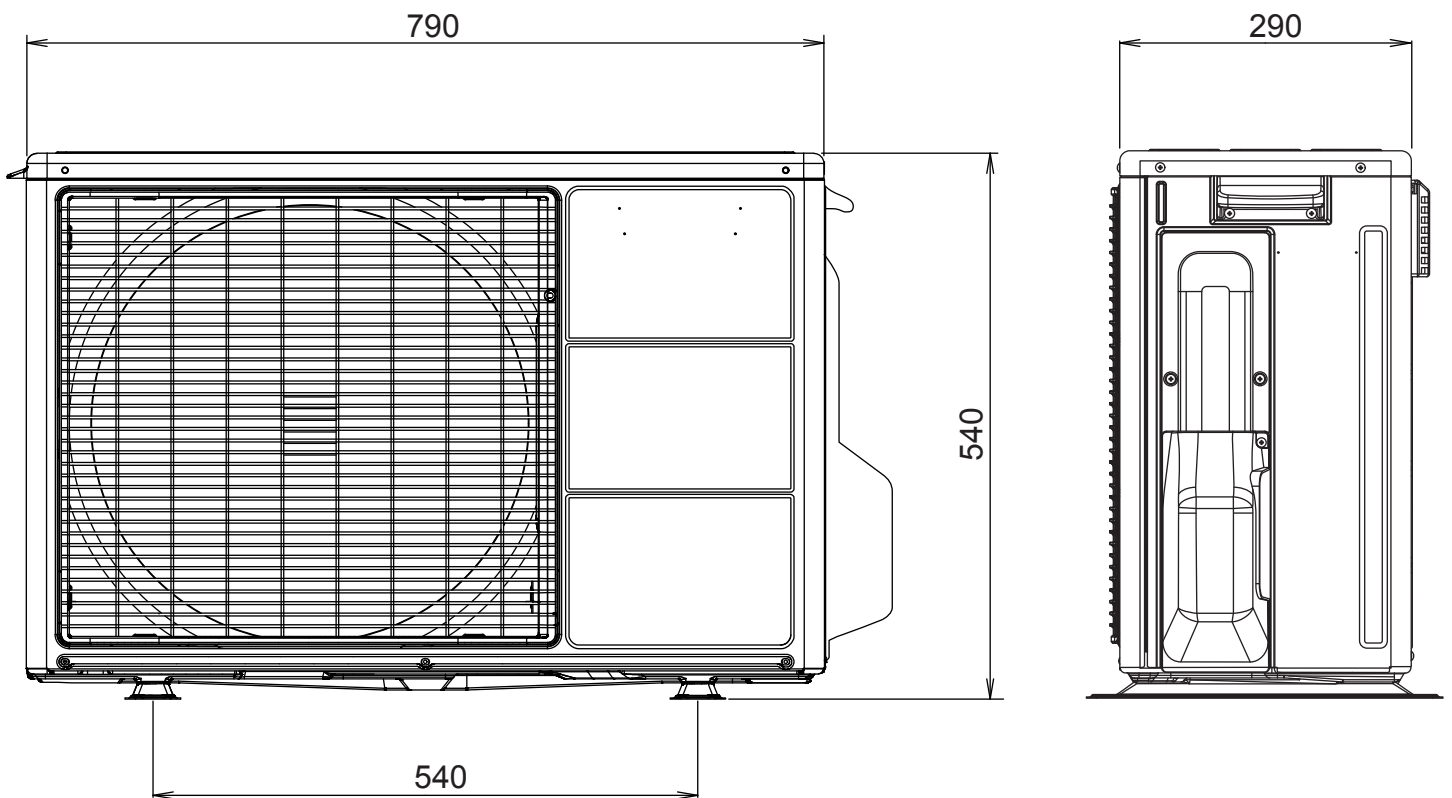
## INDOOR UNIT



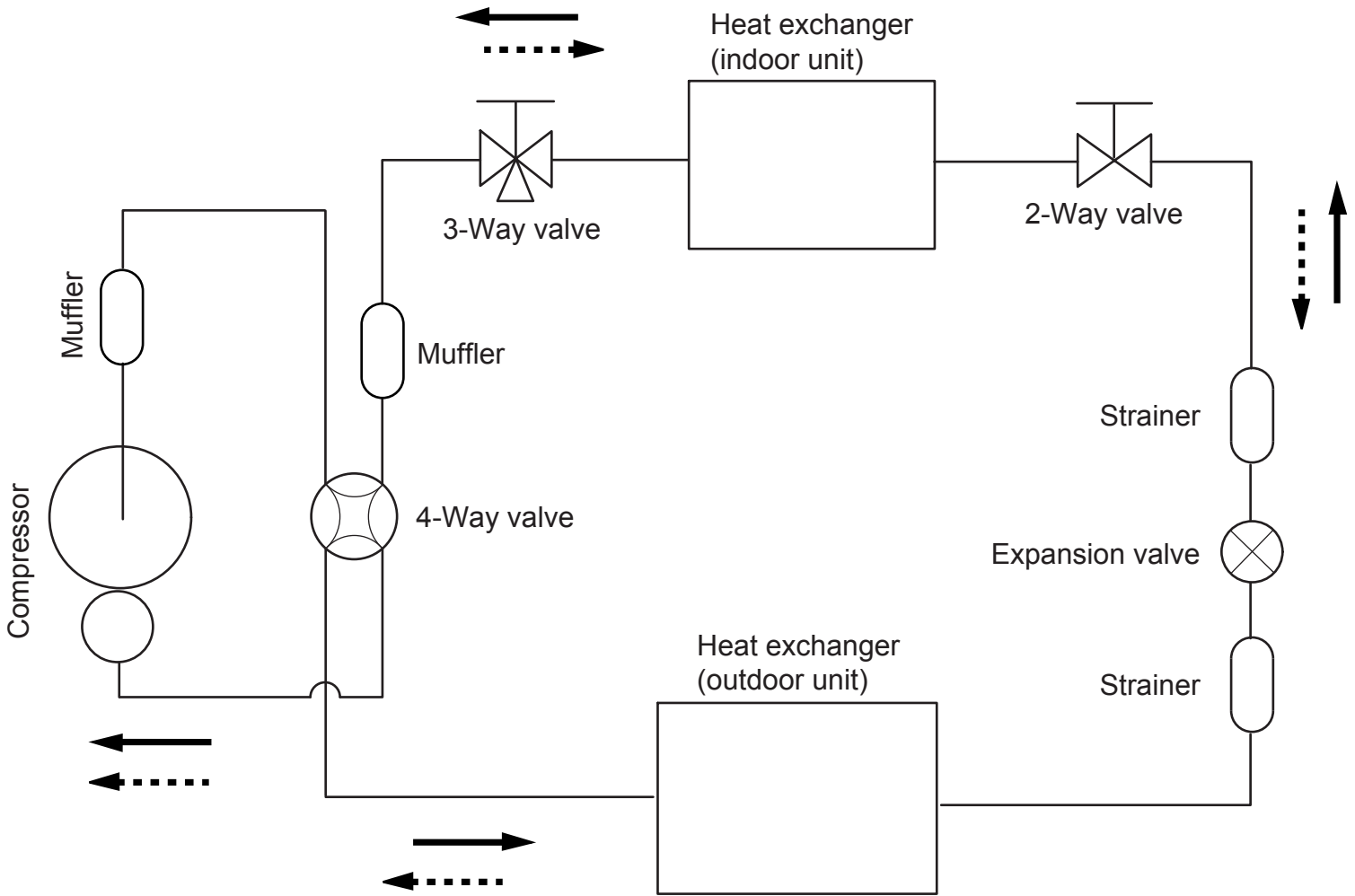
Drain pipe diameter  
16.2 mm

Liquid pipe diameter : 6.35 mm  
Gas pipe diameter : 9.52 mm(12), 12.7 mm(14)

## OUTDOOR UNIT



# REFRIGERANT SYSTEM DIAGRAM



Refrigerant direction

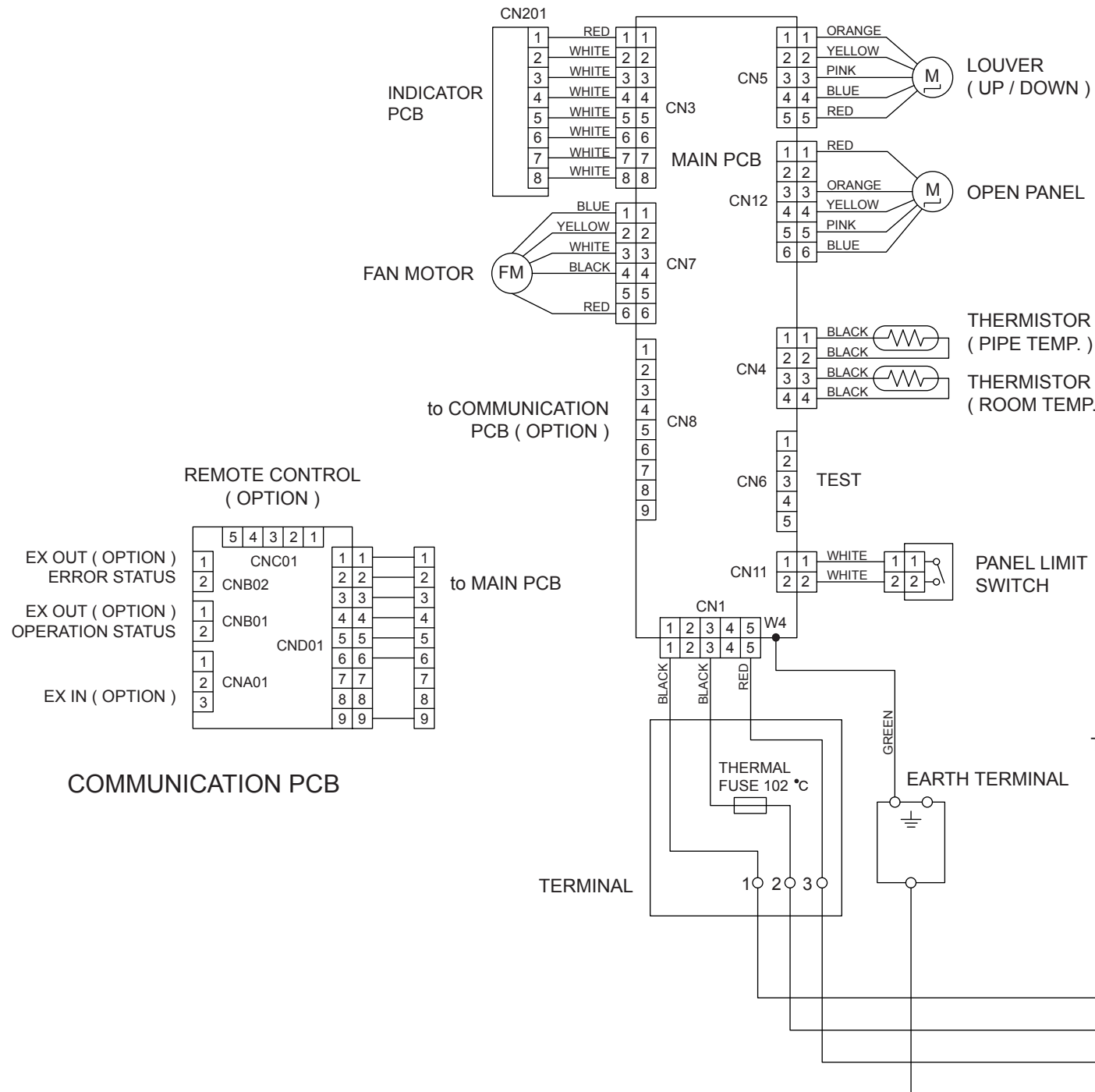
- Cooling
- Heating

Refrigerant pipe diameter

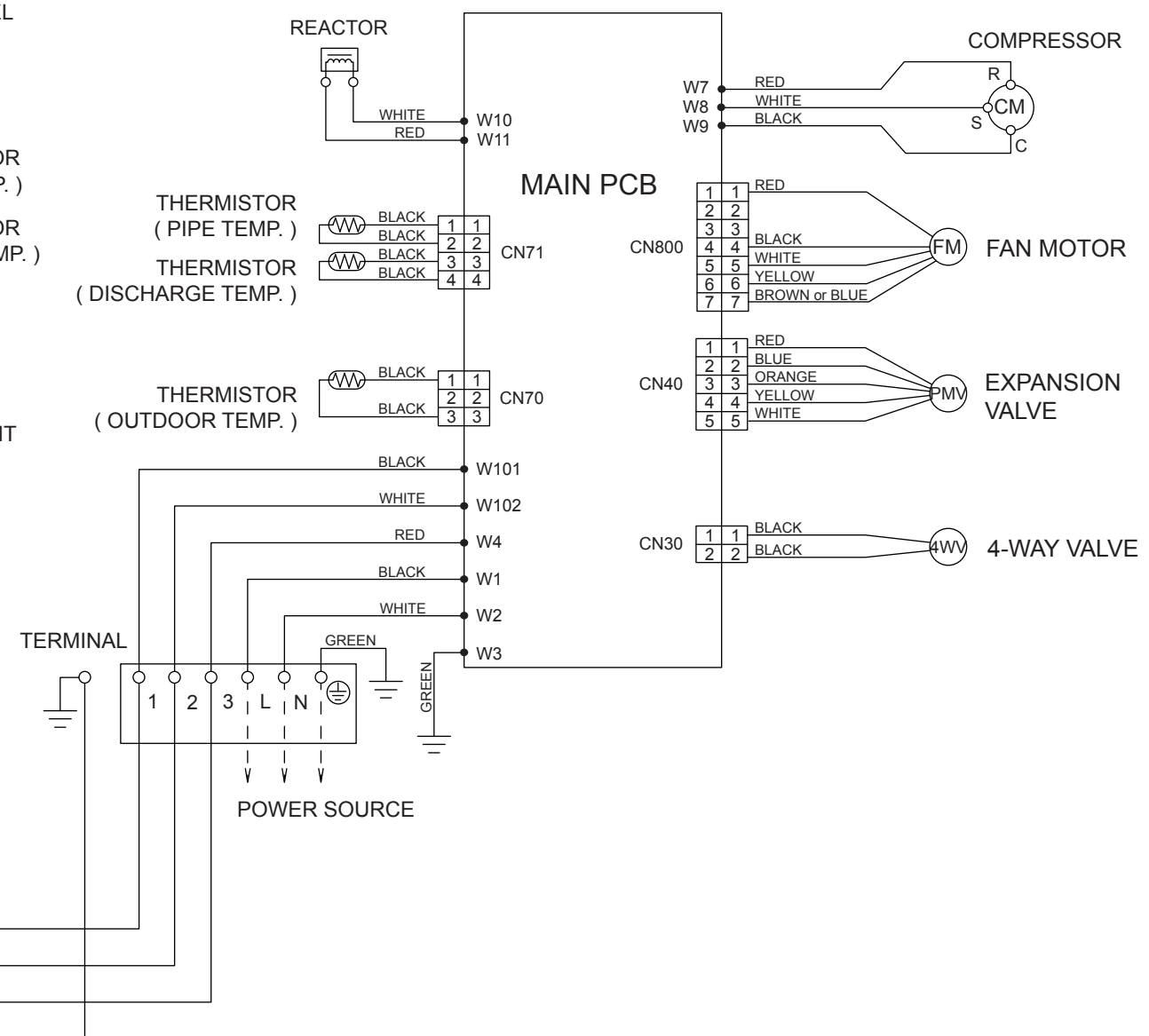
- 12
  - Liquid : 1/4" (6.35 mm)
  - Gas : 3/8" (9.52 mm)
- 14
  - Liquid : 1/4" (6.35 mm)
  - Gas : 1/2" (12.7 mm)

# CIRCUIT DIAGRAM

## INDOOR UNIT

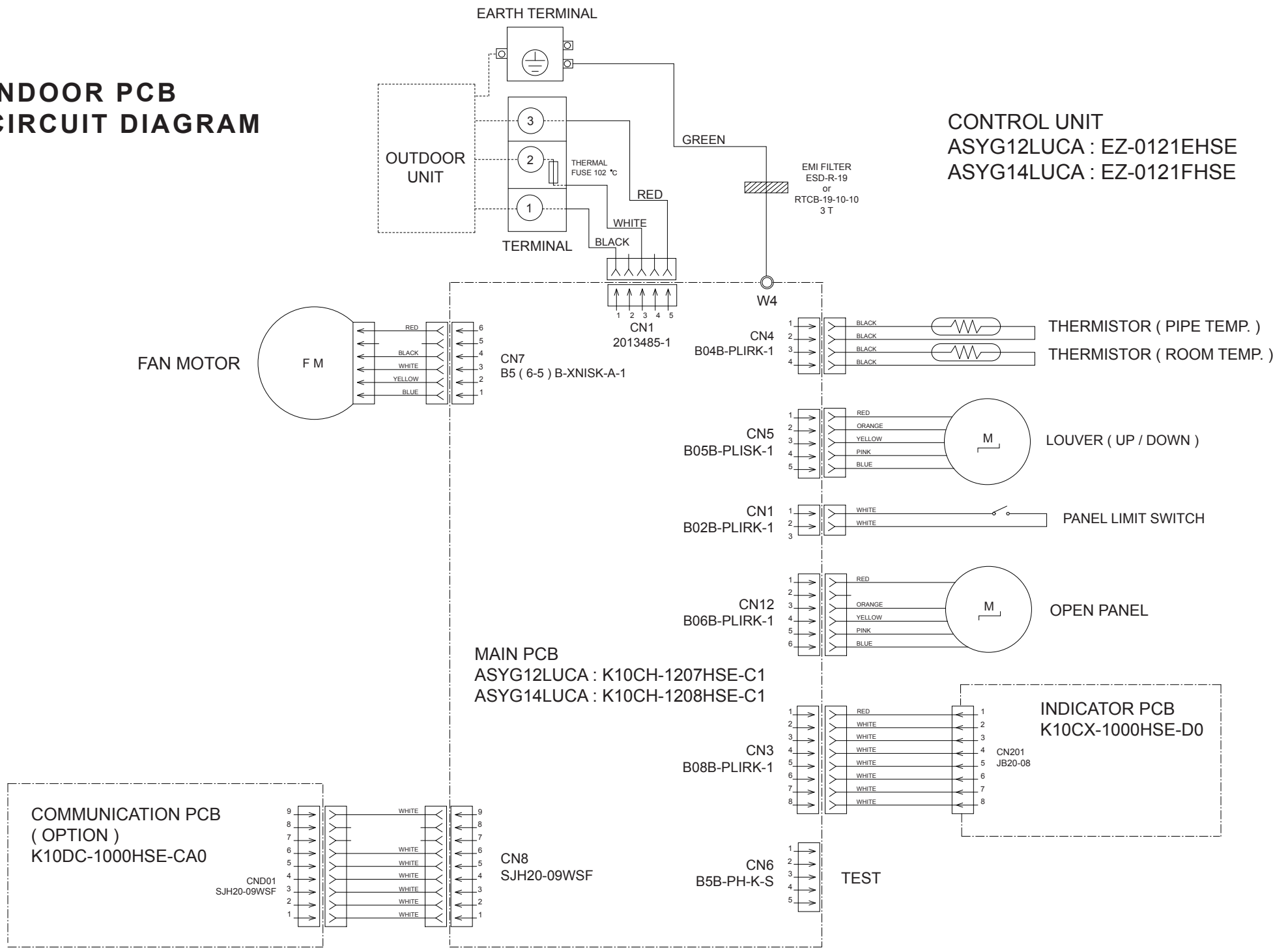


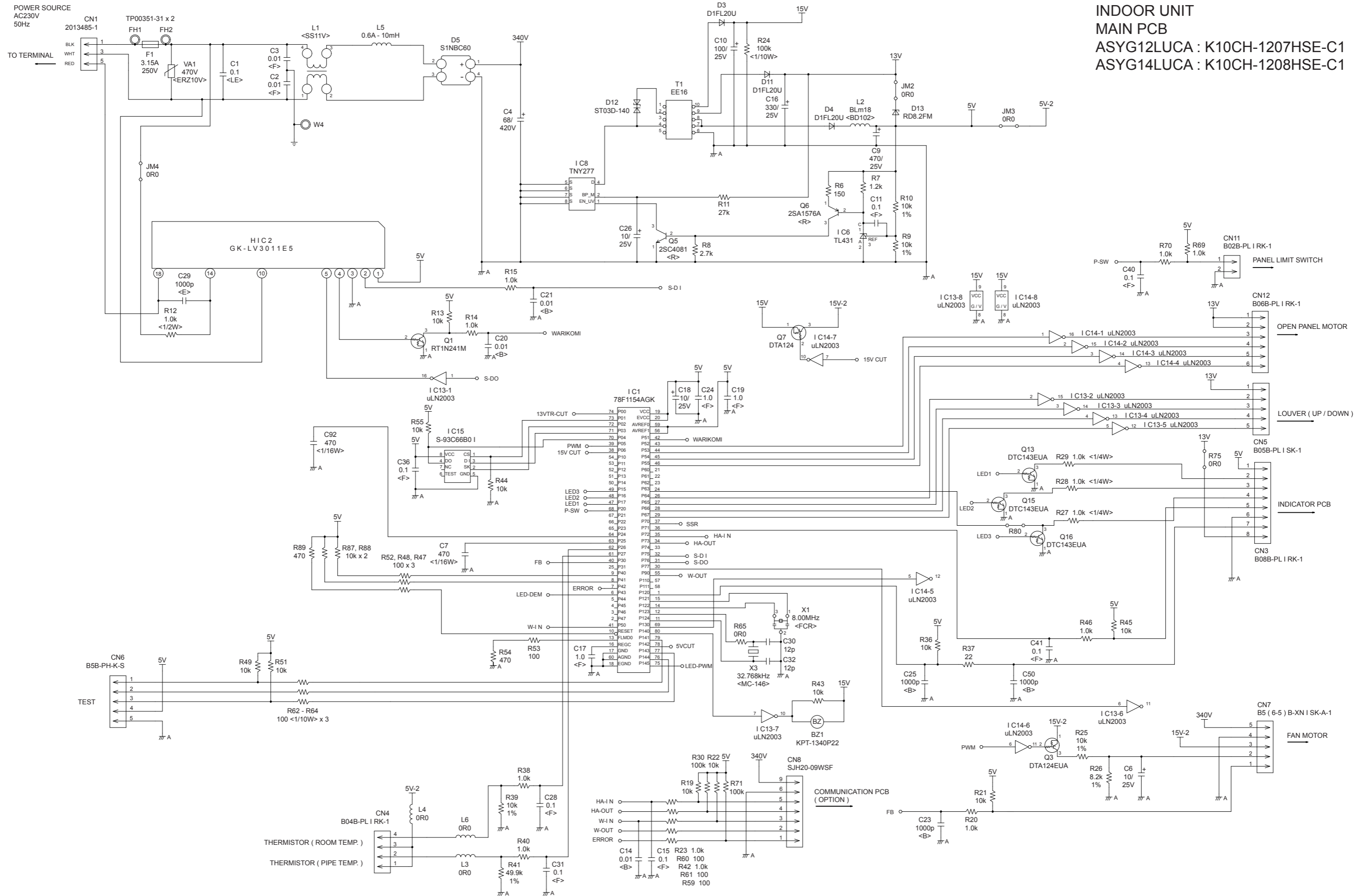
## OUTDOOR UNIT



# INDOOR PCB CIRCUIT DIAGRAM

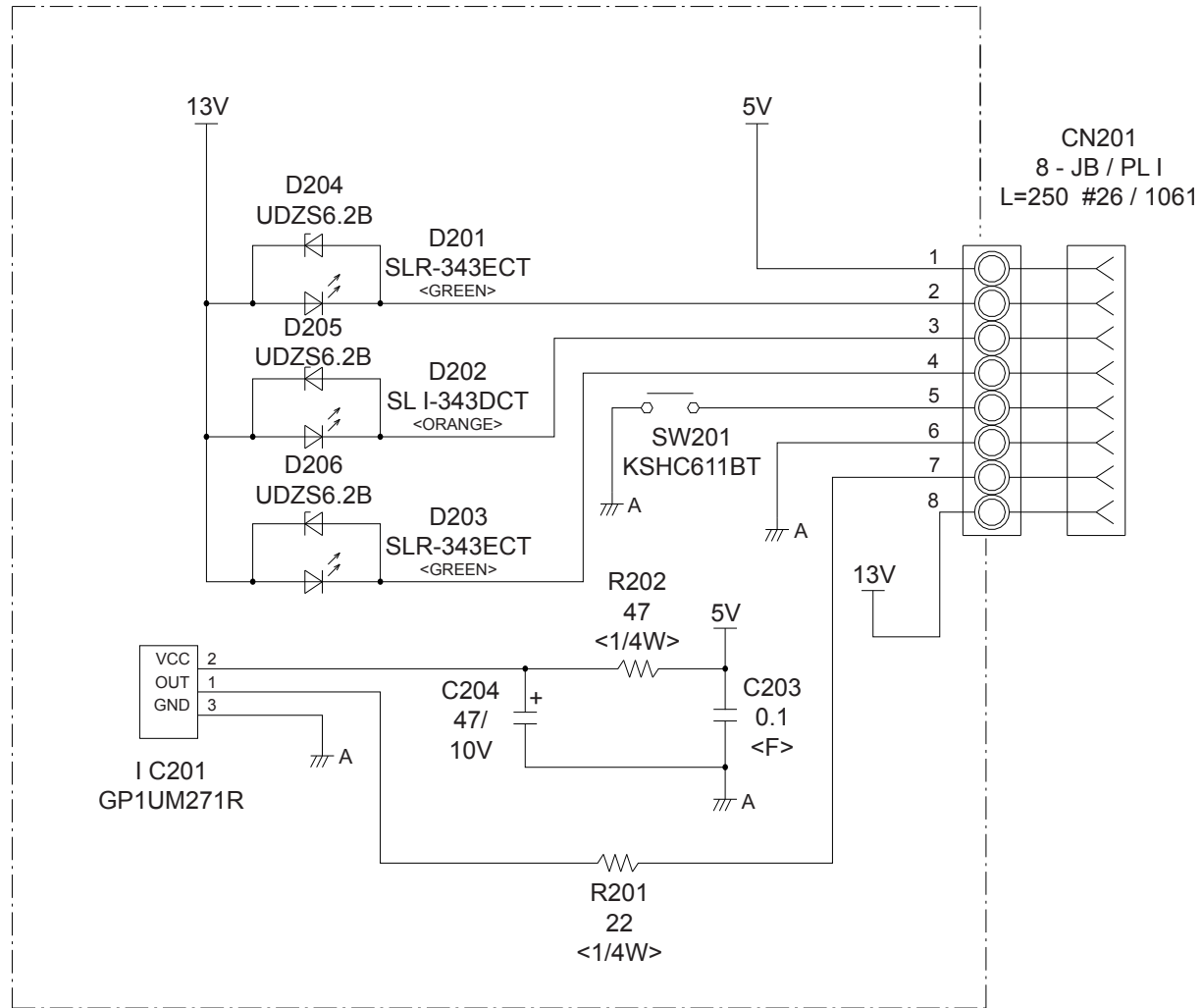
CONTROL UNIT  
 ASYG12LUCA : EZ-0121EHSE  
 ASYG14LUCA : EZ-0121FHSE



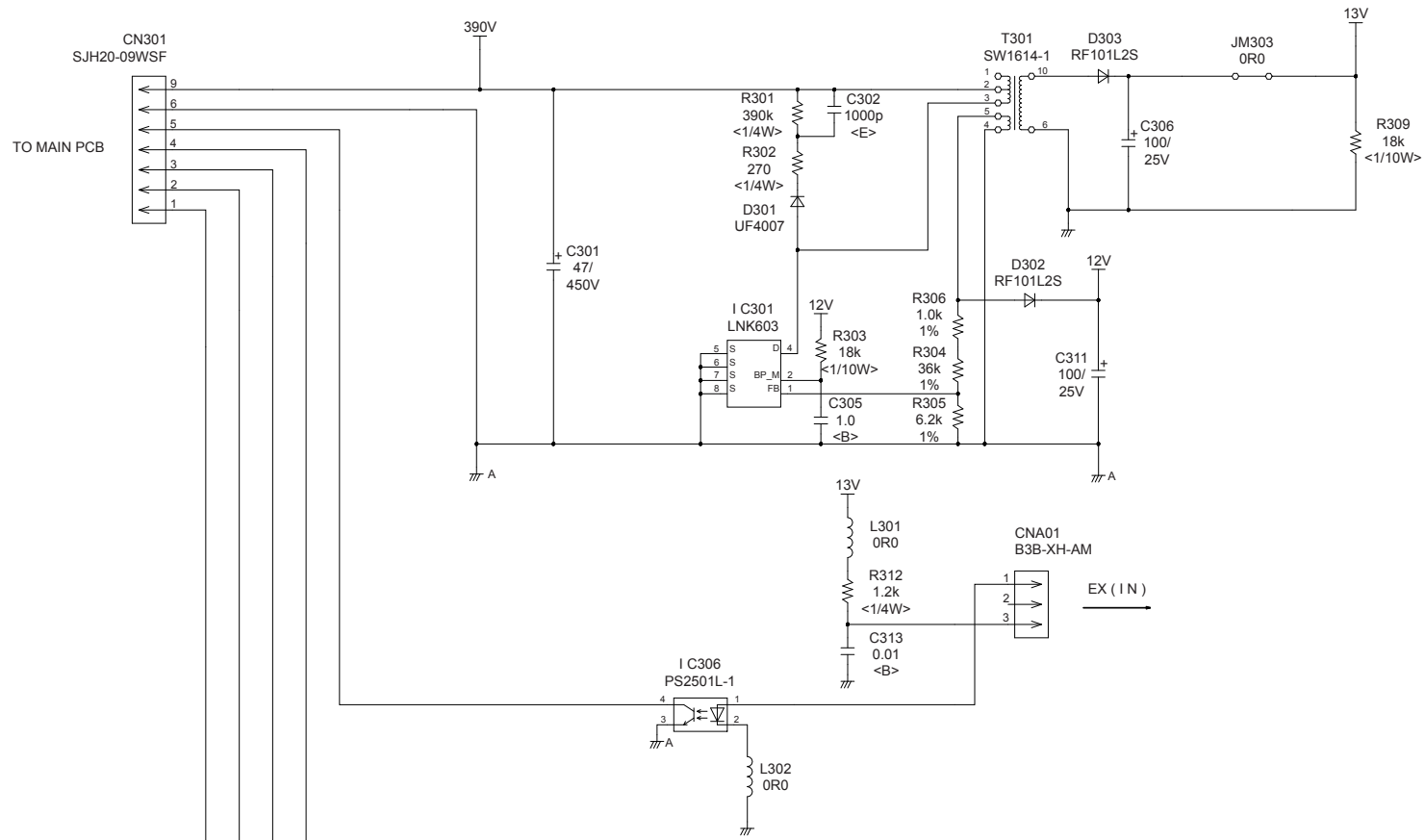


INDOOR UNIT  
 MAIN PCB  
 ASYG12LUCA : K10CH-1207HSE-C1  
 ASYG14LUCA : K10CH-1208HSE-C1

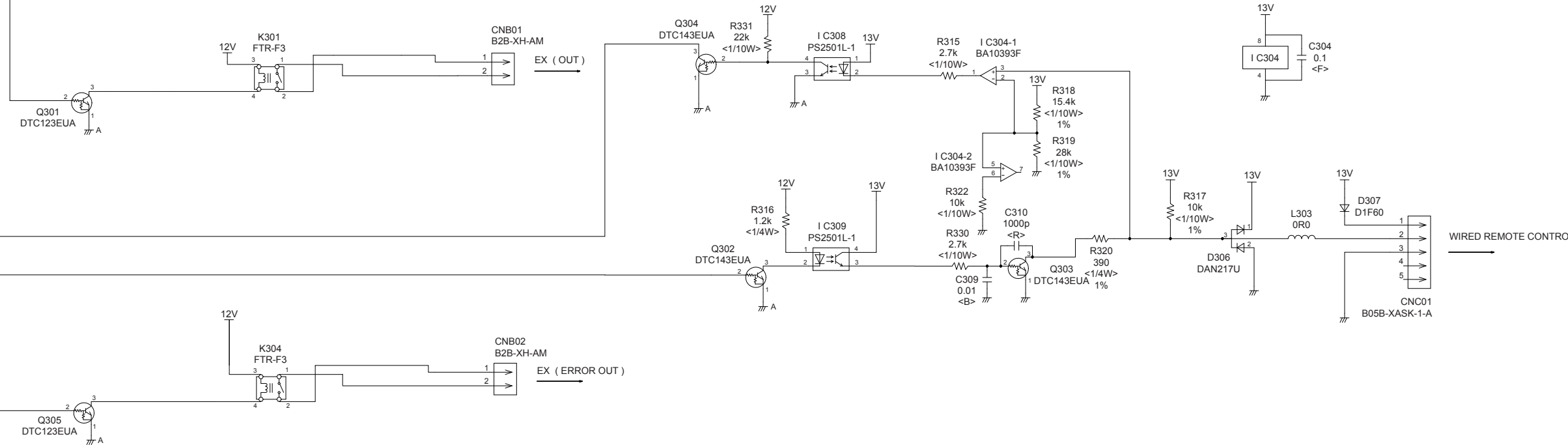
INDOOR UNIT  
 INDICATOR PCB  
 K10CX-1000HSE-D0





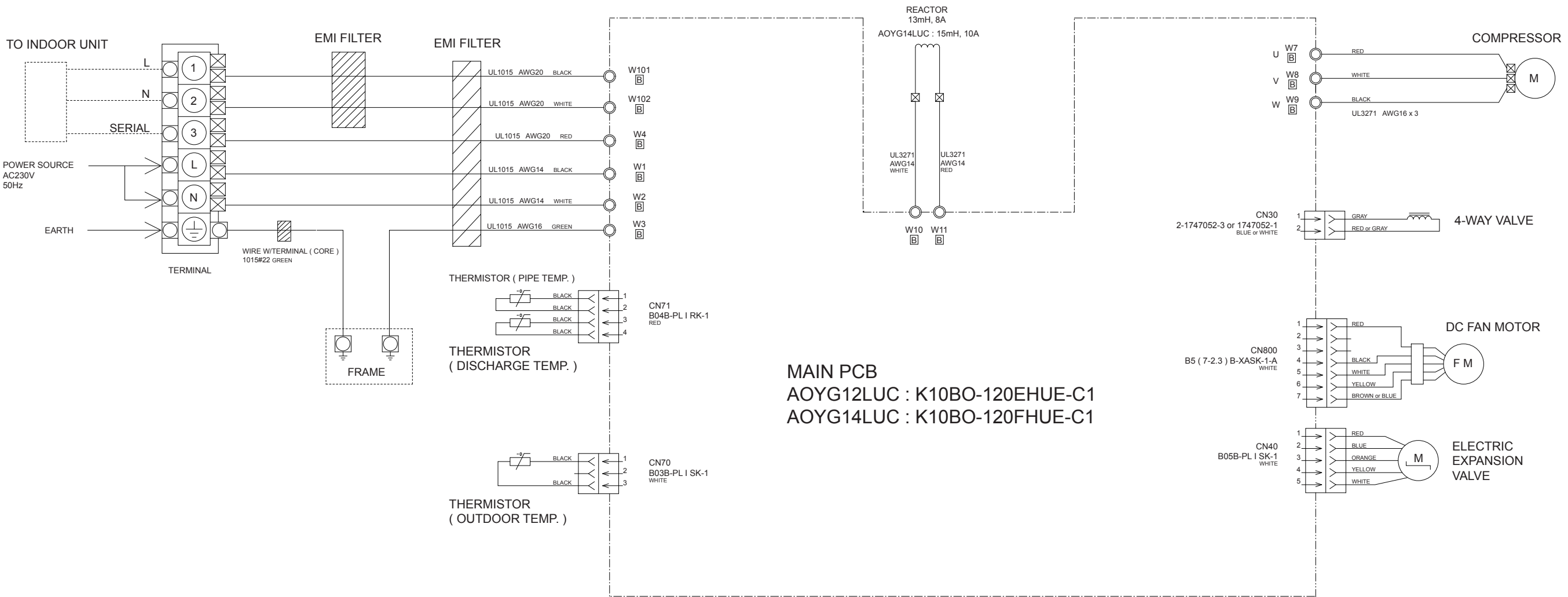


(OPTION)  
 UTY-TWBXF  
 COMMUNICATION PCB  
 K10DC-1000HSE-CA0

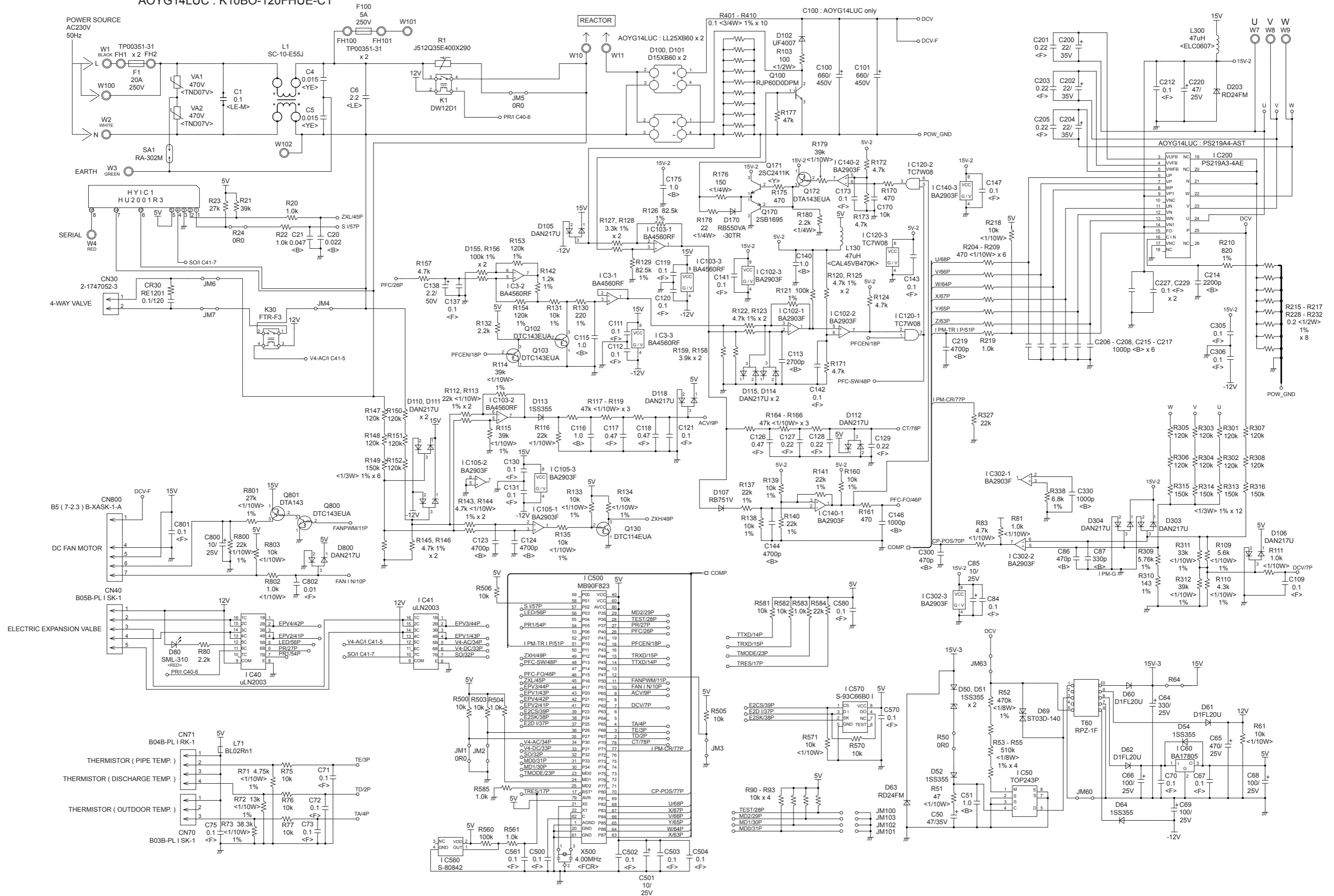


# OUTDOOR PCB CIRCUIT DIAGRAM

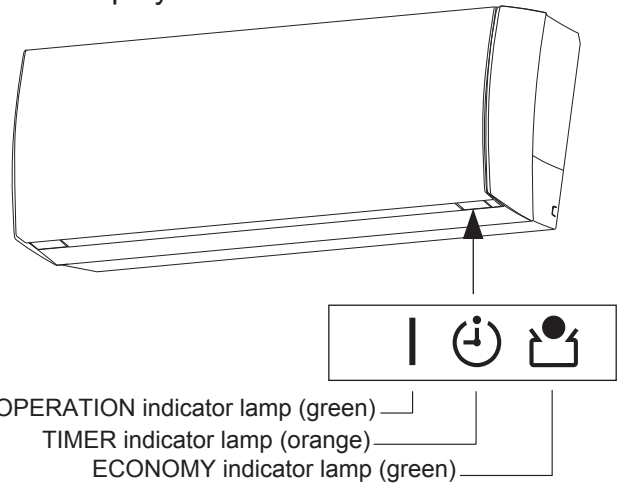
INVERTER ASSEMBLY  
 AOYG12LUC : EZ-010DHUE  
 AOYG14LUC : EZ-01008HUE



OUTDOOR UNIT  
 MAIN PCB  
 AOYG12LUC : K10BO-120EHUE-C1  
 AOYG14LUC : K10BO-120FHUE-C1

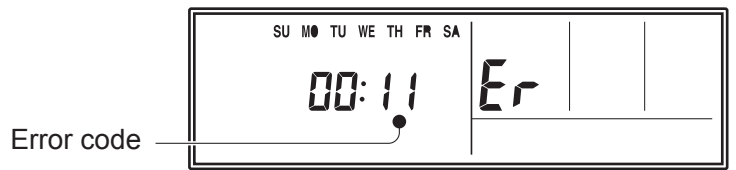


## Indoor unit display



### 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 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.

- : 0.5s ON / 0.5s OFF
- ( ) : Number of flashing
- ◇ : Constantly flashing

| Indoor unit lamp  |                |                 | Wired remote control | Description  |
|-------------------|----------------|-----------------|----------------------|--|
| OPERATION (green) | TIMER (orange) | ECONOMY (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 grille 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   |

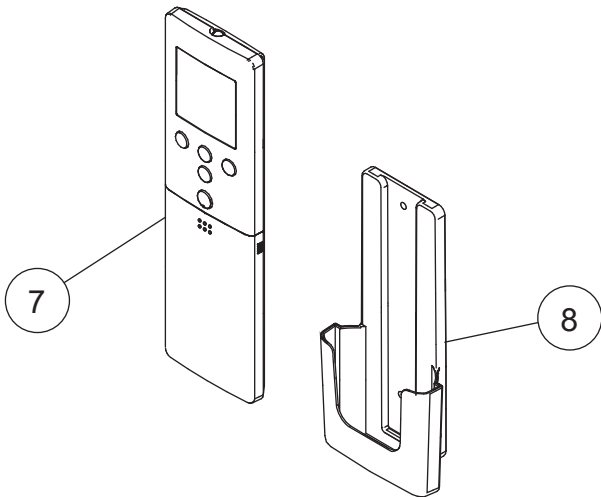
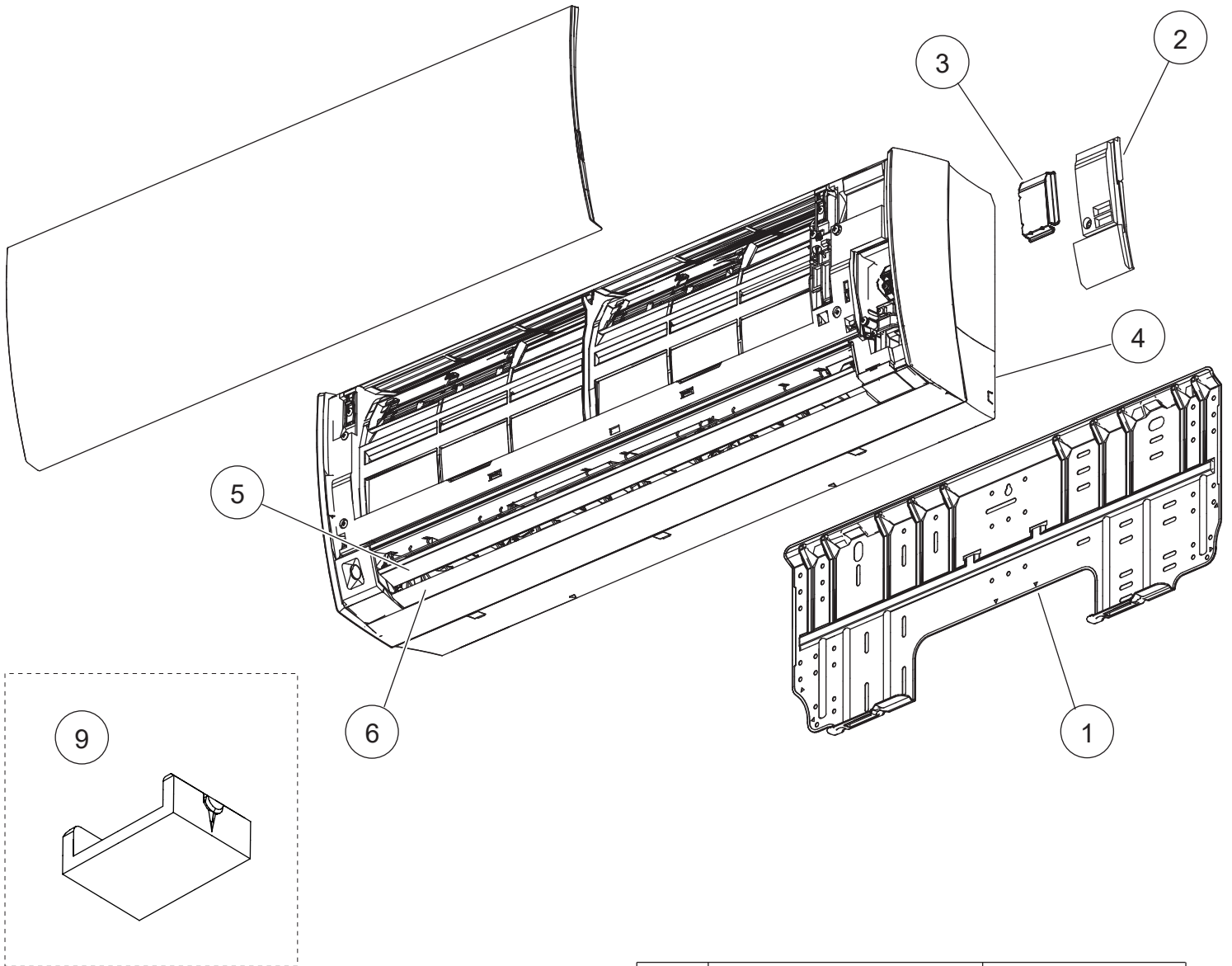
| Indoor unit lamp  |                |                 | Wired remote control | Description   |
|-------------------|----------------|-----------------|----------------------|---|
| OPERATION (green) | TIMER (orange) | ECONOMY (green) |                      |   |
| ● (7)             | ● (2)          | ◇               | 72                   | Compressor temp. sensor error   |
| ● (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  |

#### 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                   |

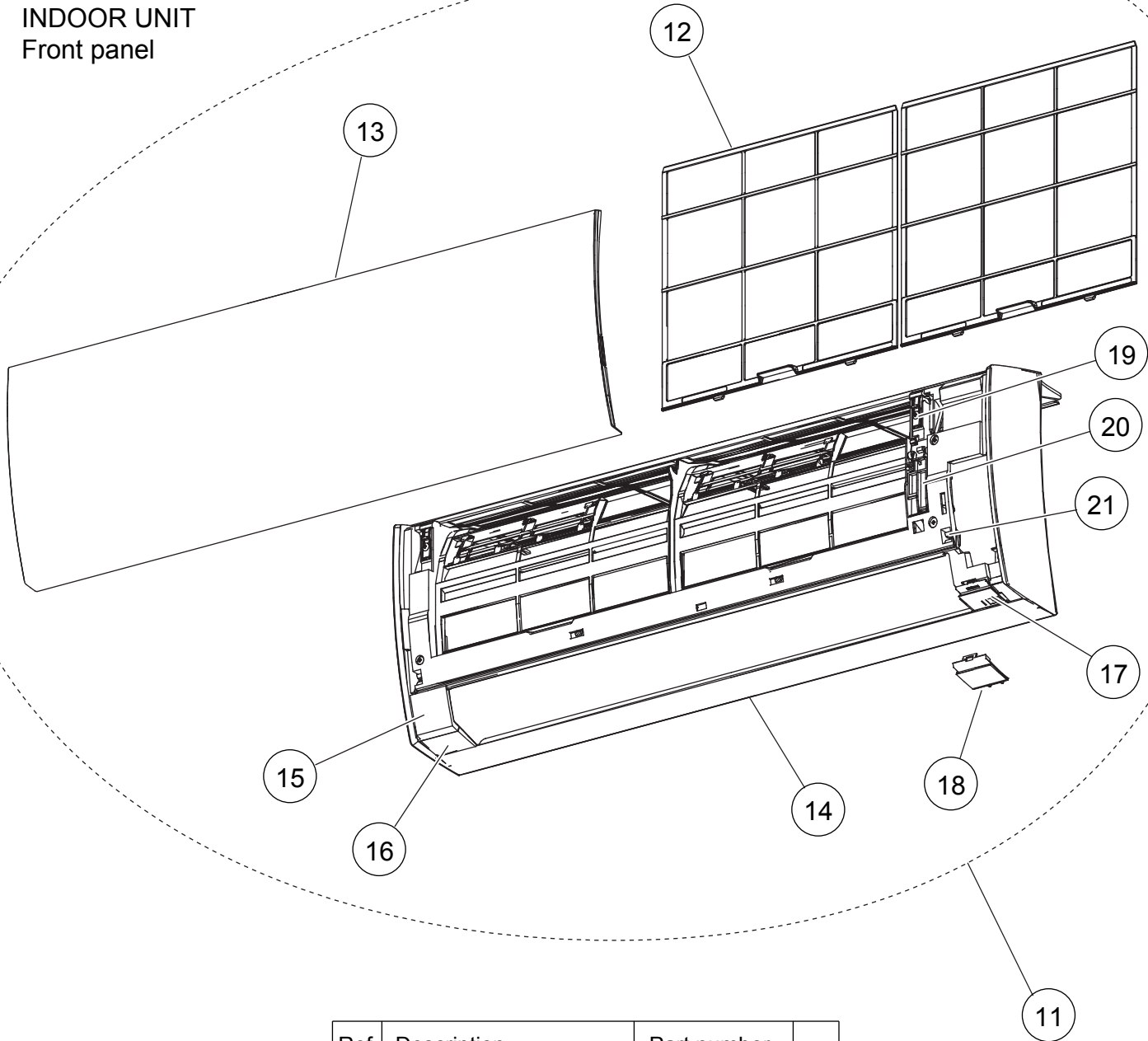
# PARTS

INDOOR UNIT  
ASYG12LUCA  
ASYG14LUCA



| 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    | Remote control        | 9319207018  |
| 8    | Remote control holder | 9318912005  |
| 9    | Screw cap             | 9309002067  |
| --   | Air clean filter assy | 9317250009  |

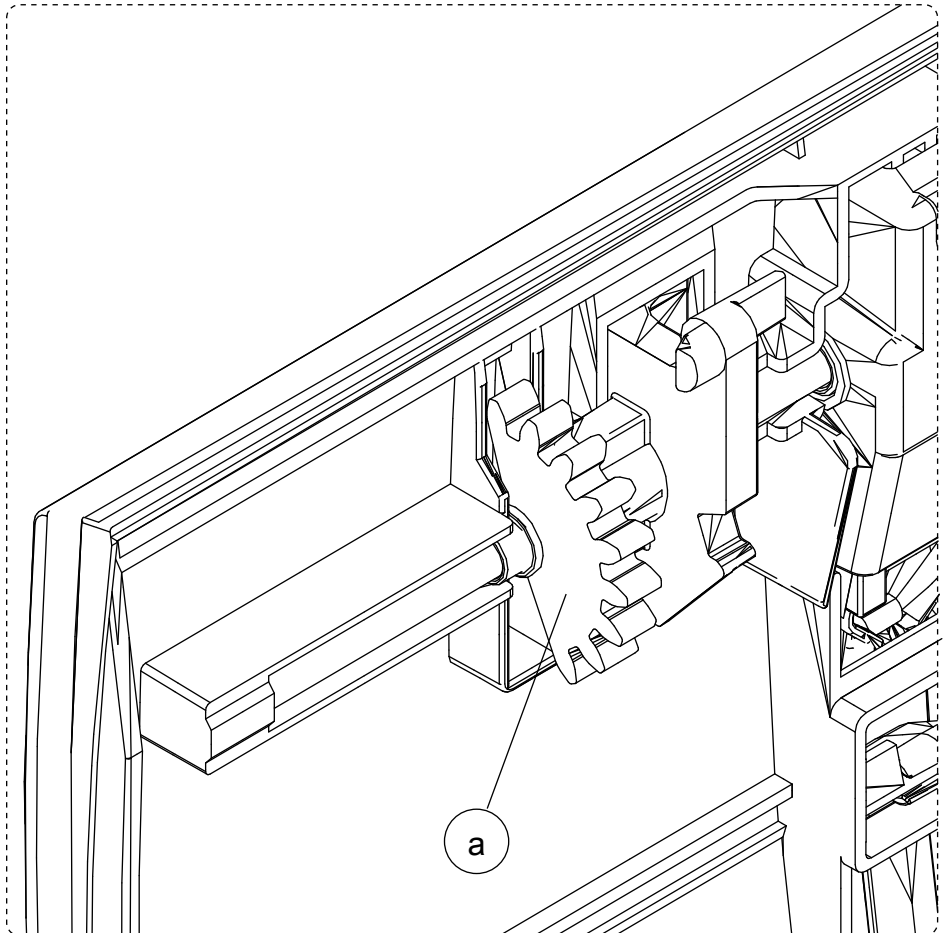
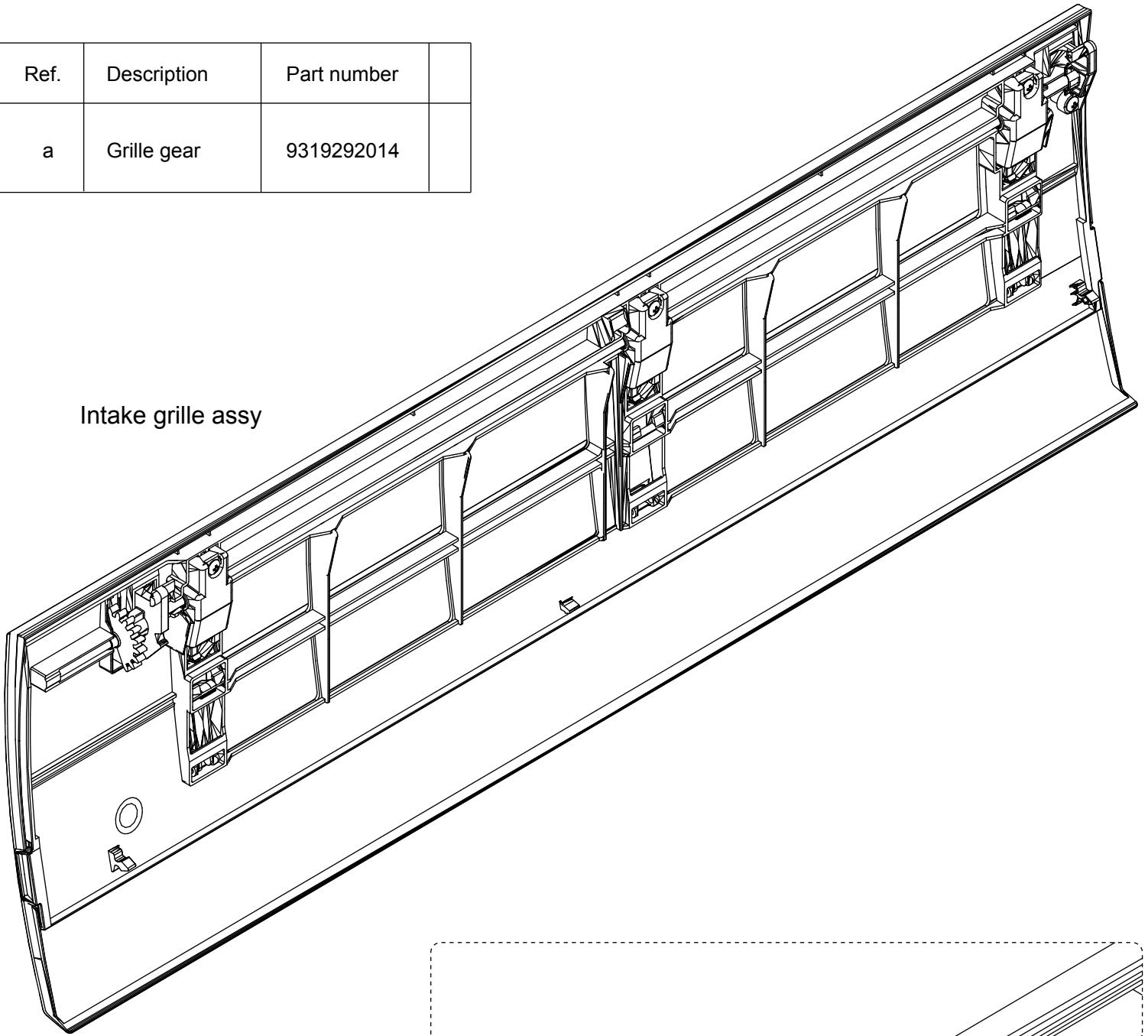
INDOOR UNIT  
Front panel



| Ref. | Description            | Part number |
|------|------------------------|-------------|
| 11   | Front Panel Total Assy | 9319348001  |
| 12   | Air Filter             | 9318883008  |
| 13   | Intake Grille Assy     | 9319351001  |
| 14   | Front Panel            | 9318876000  |
| 15   | Front Panel Cover U    | 9318910001  |
| 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  |

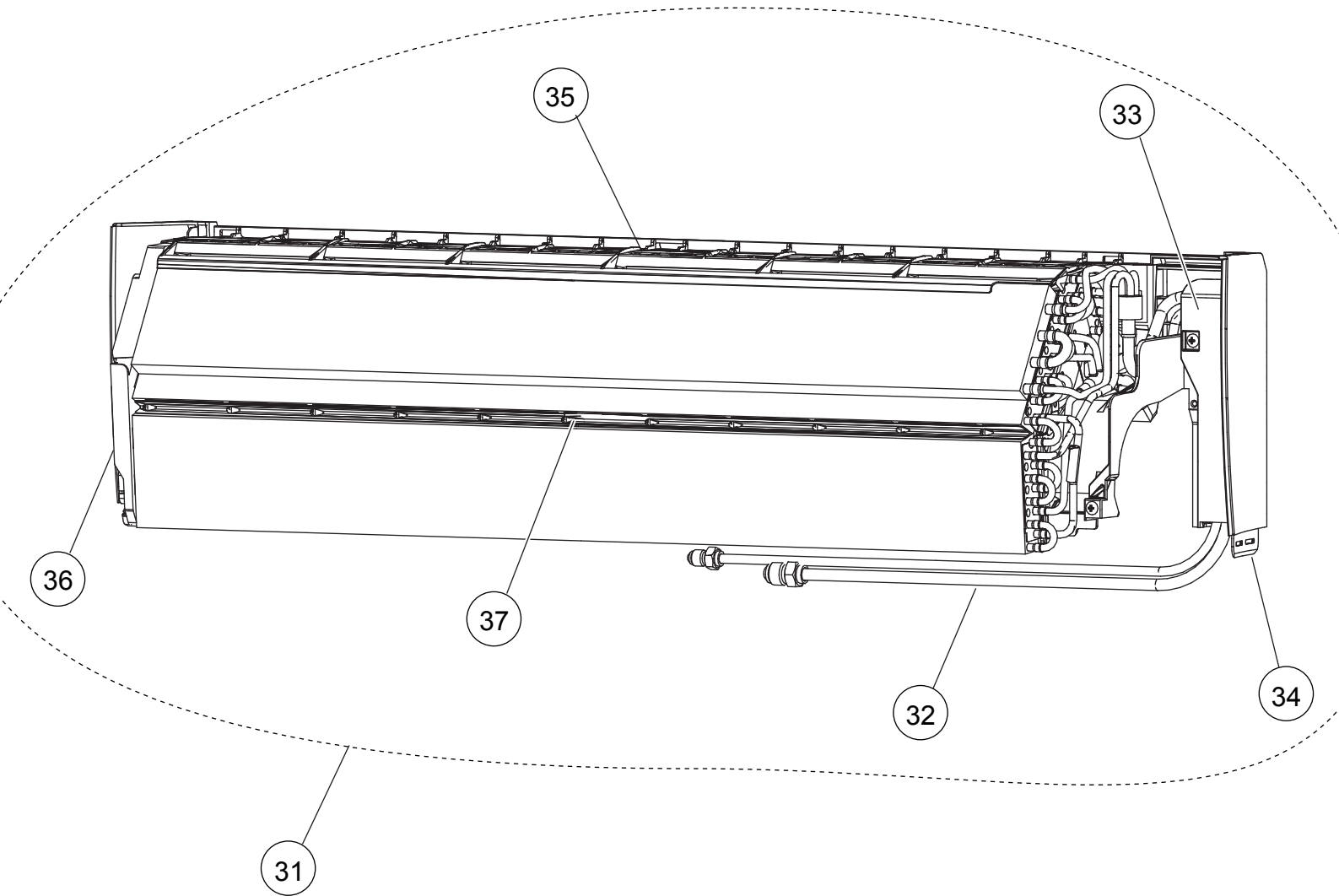
| Ref. | Description | Part number |  |
|------|-------------|-------------|--|
| a    | Grille gear | 9319292014  |  |

Intake grille assy

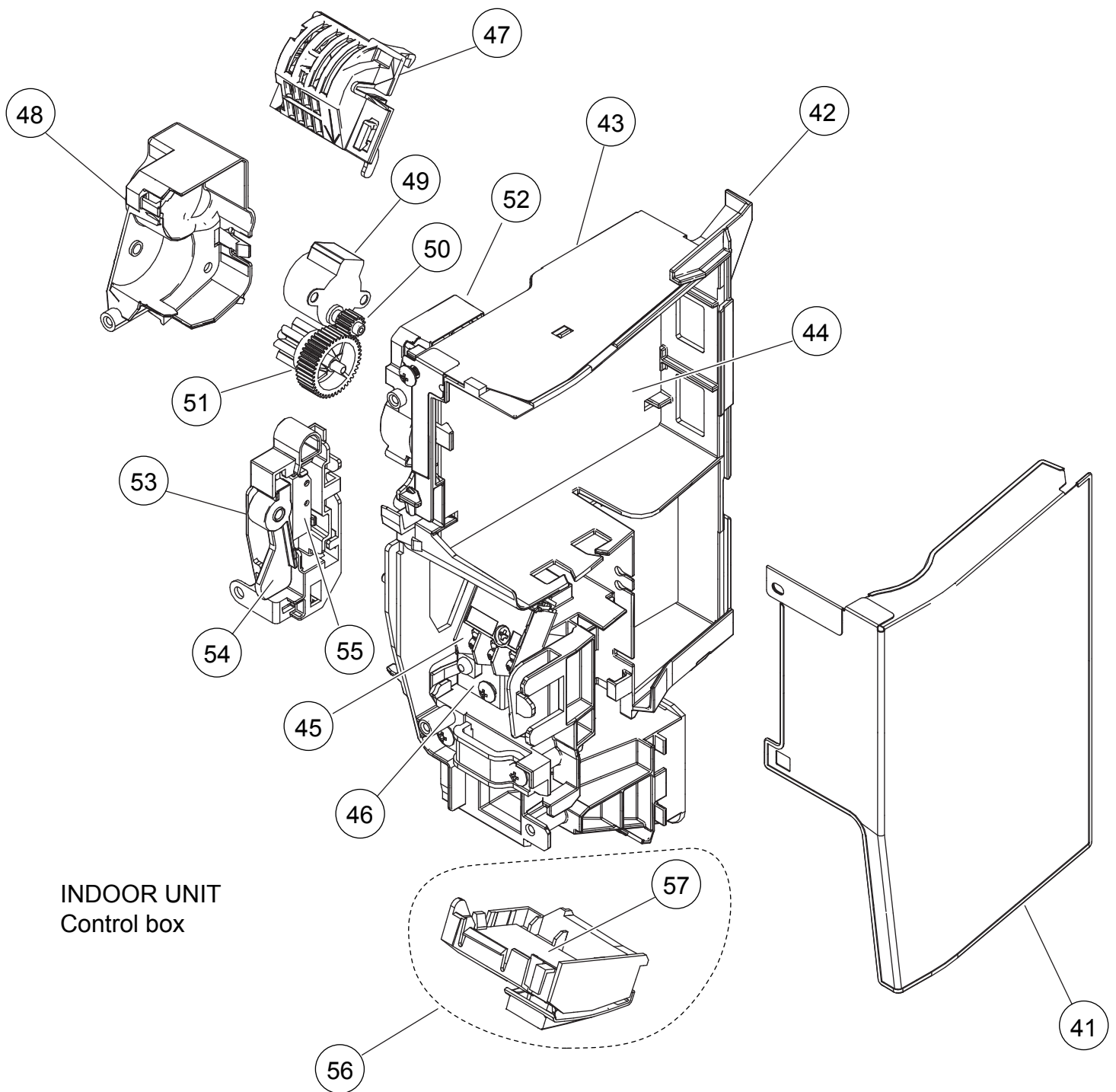




INDOOR UNIT  
Evaporator



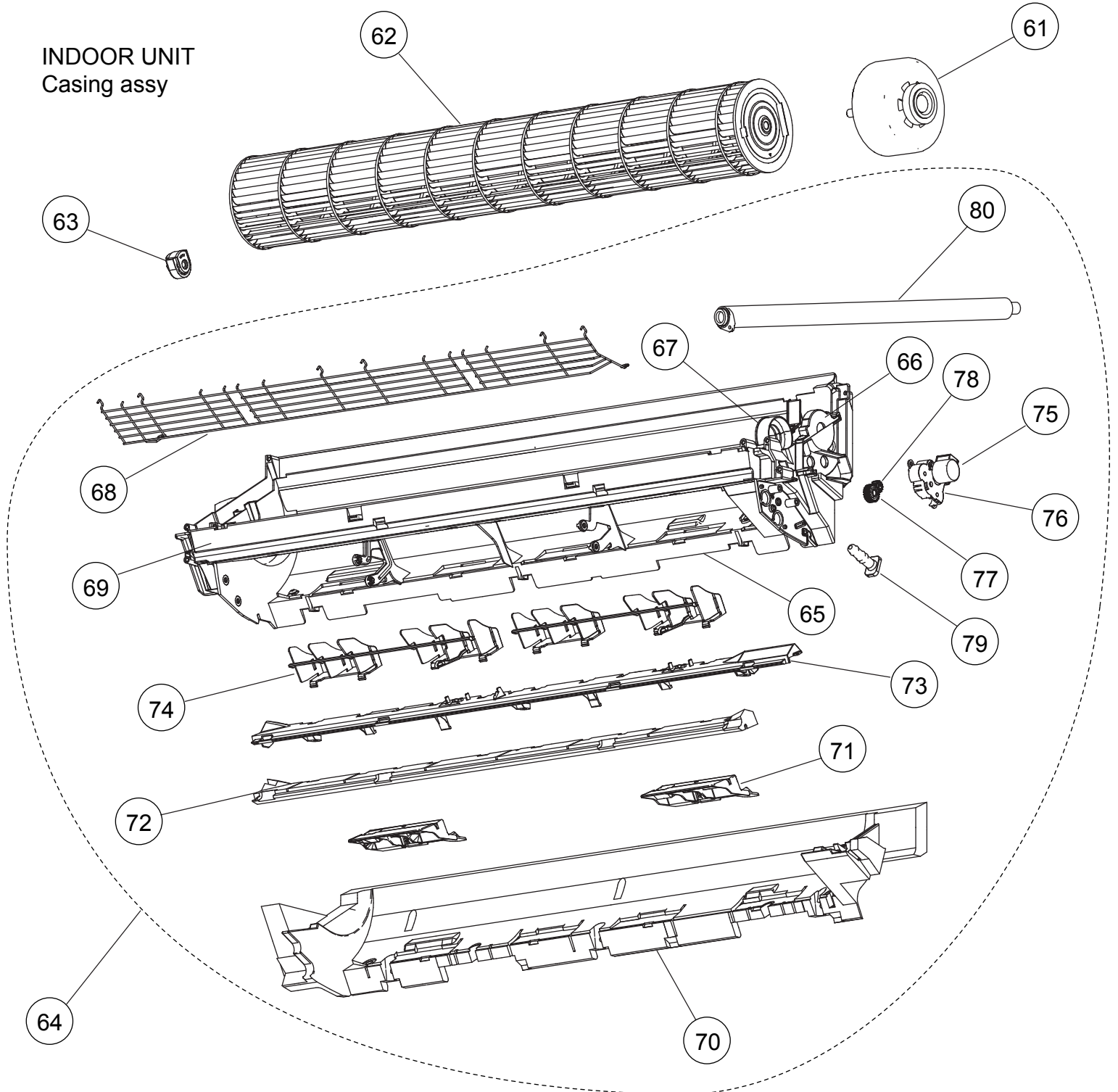
| Ref. | Description                | Part number |  |
|------|----------------------------|-------------|--|
| 31   | Evaporator Total Assy (12) | 9319327006  |  |
| 31   | Evaporator Total Assy (14) | 9319327013  |  |
| 32   | Joint Pipe Assy (12)       | 9319322001  |  |
| 32   | Joint Pipe Assy (14)       | 9319322018  |  |
| 33   | Joint Pipe Holder          | 9318901009  |  |
| 34   | Base                       | 9318874006  |  |
| 35   | Filter Guide               | 9318887006  |  |
| 36   | Evaporator Holder L        | 9318875003  |  |
| 37   | Air Seal                   | 9319295008  |  |



INDOOR UNIT  
Control box

| Ref. | Description            | Part number |  | Ref. | Description     | Part number |  |
|------|------------------------|-------------|--|------|-----------------|-------------|--|
| 41   | Cover Shield A         | 9318916003  |  | 50   | Gear B          | 9319294001  |  |
| 42   | Control Box            | 9318882001  |  | 51   | Panel Gear      | 9319293004  |  |
| 43   | Box Shield Assy        | 9319344003  |  | 52   | Gear Case       | 9318903003  |  |
| 44   | Main PCB (ASYG12LUCA)  | 9708713304  |  | 53   | Switch Case     | 9319332000  |  |
| 44   | Main PCB (ASYG14LUCA)  | 9708713311  |  | 54   | Grille Key Top  | 9319334004  |  |
| 45   | Terminal               | 9900638009  |  | 55   | Micro Switch    | 9900625009  |  |
| 46   | Earth Terminal         | 9318918007  |  | 56   | Display Assy    | 9708823010  |  |
| 47   | Room Thermistor Holder | 9319068008  |  | 57   | Indicator PCB   | 9708824017  |  |
| 48   | Gear Cover             | 9318902006  |  | --   | Thermistor Assy | 9900627003  |  |
| 49   | Step Motor             | 9900384166  |  |      |                 |             |  |

INDOOR UNIT  
Casing assy

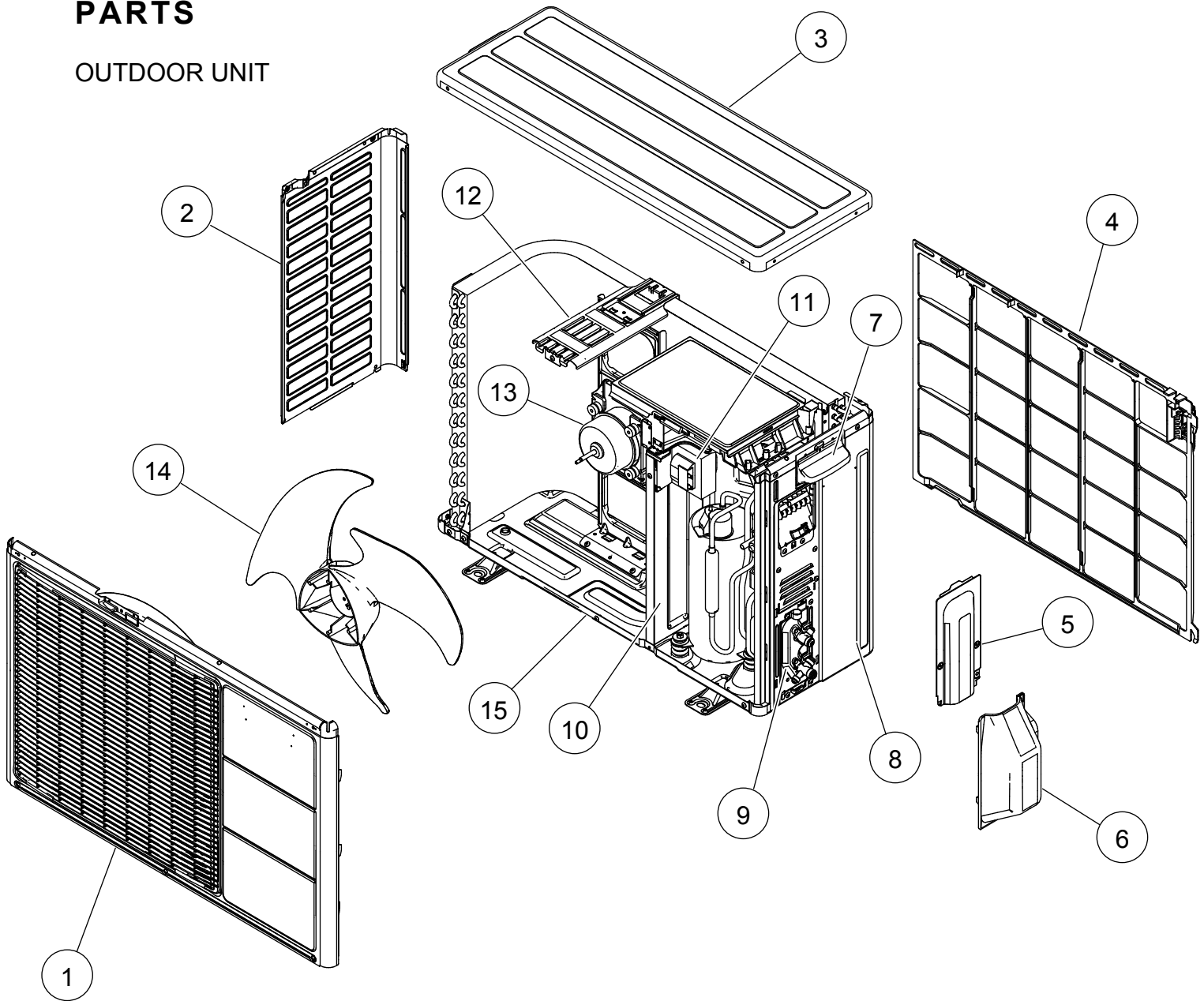


| Ref. | Description        | Part number |
|------|--------------------|-------------|
| 61   | Fan Motor          | 9602947003  |
| 62   | Crossflow Fan Assy | 9319361000  |
| 63   | Bearing C Assy     | 9306628017  |
| 64   | Casing Assy        | 9319342009  |
| 65   | Casing             | 9318873009  |
| 66   | Motor Cover        | 9316601000  |
| 67   | Motor Cover        | 9318888003  |
| 68   | Fan Guard          | 9318924008  |
| 69   | Casing Cover F     | 9318923001  |
| 70   | Casing Cover B     | 9318920000  |

| Ref. | Description        | Part number |
|------|--------------------|-------------|
| 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

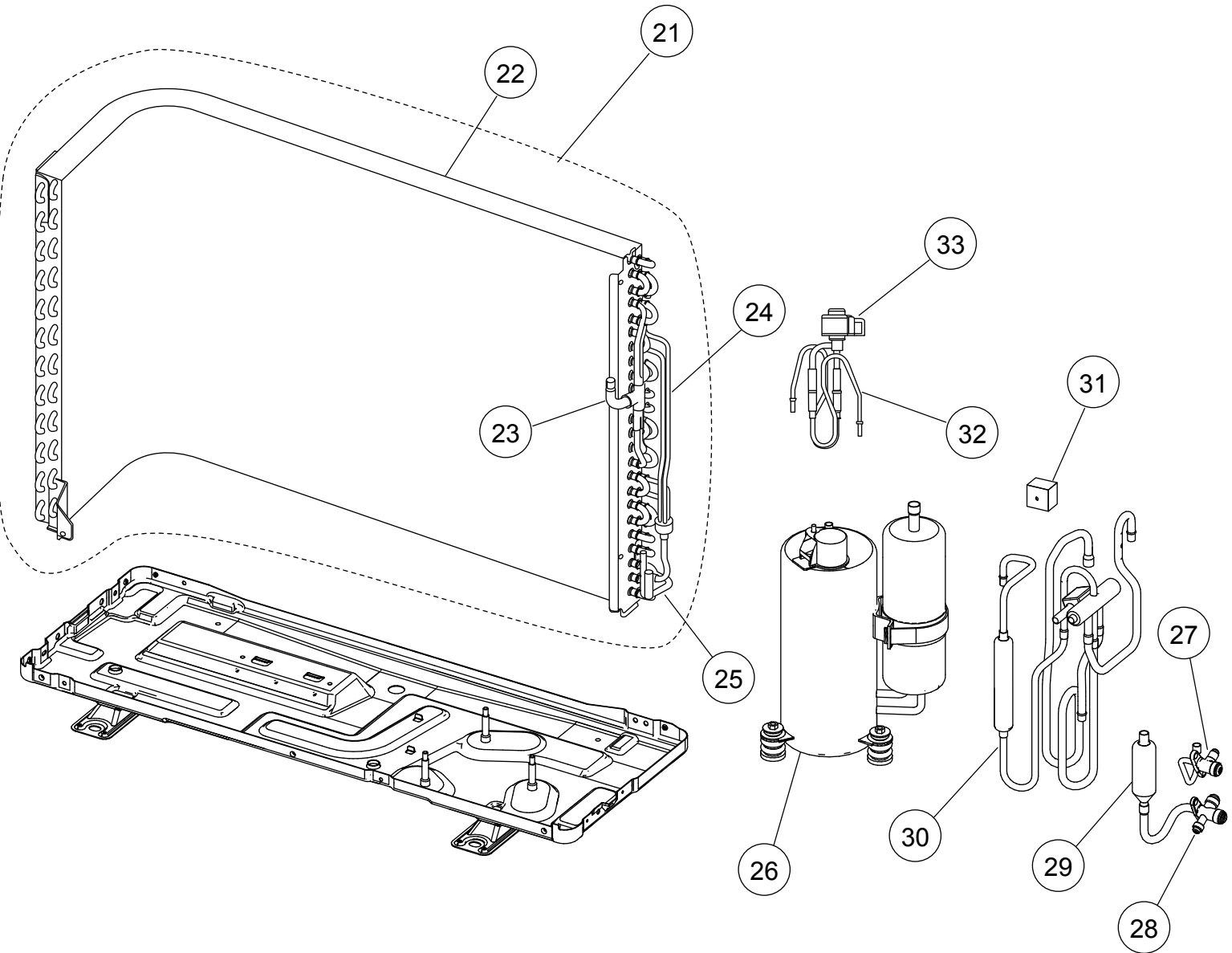
## OUTDOOR UNIT



| Ref. | Description         | Part number |
|------|---------------------|-------------|
| 1    | Front Panel Assy    | 9317760010  |
| 2    | Cabinet Left Assy   | 9318247008  |
| 3    | Top Panel Assy      | 9317761055  |
| 4    | Protective Net      | 9313941055  |
| 5    | Switch Cover A Assy | 9317795005  |
| 6    | Switch Cover B      | 9317582001  |
| 7    | Grip                | 9317588003  |
| 8    | Cabinet Right Assy  | 9317759021  |
| 9    | Valve Bracket       | 9331649001  |

| Ref. | Description        | Part number |
|------|--------------------|-------------|
| 10   | Separator Assy     | 9318340013  |
| 11   | Reactor Assy (12)  | 9900583002  |
| 11   | Reactor Assy (14)  | 9900611019  |
| 12   | Motor Bracket Assy | 9332289039  |
| 13   | Fan Motor          | 9602864003  |
| 14   | Propeller Fan      | 9313808013  |
| 15   | Base Assy          | 9316885028  |
| --   | Drain Assy         | 9303029022  |
| --   | Emblem             | 9319151007  |

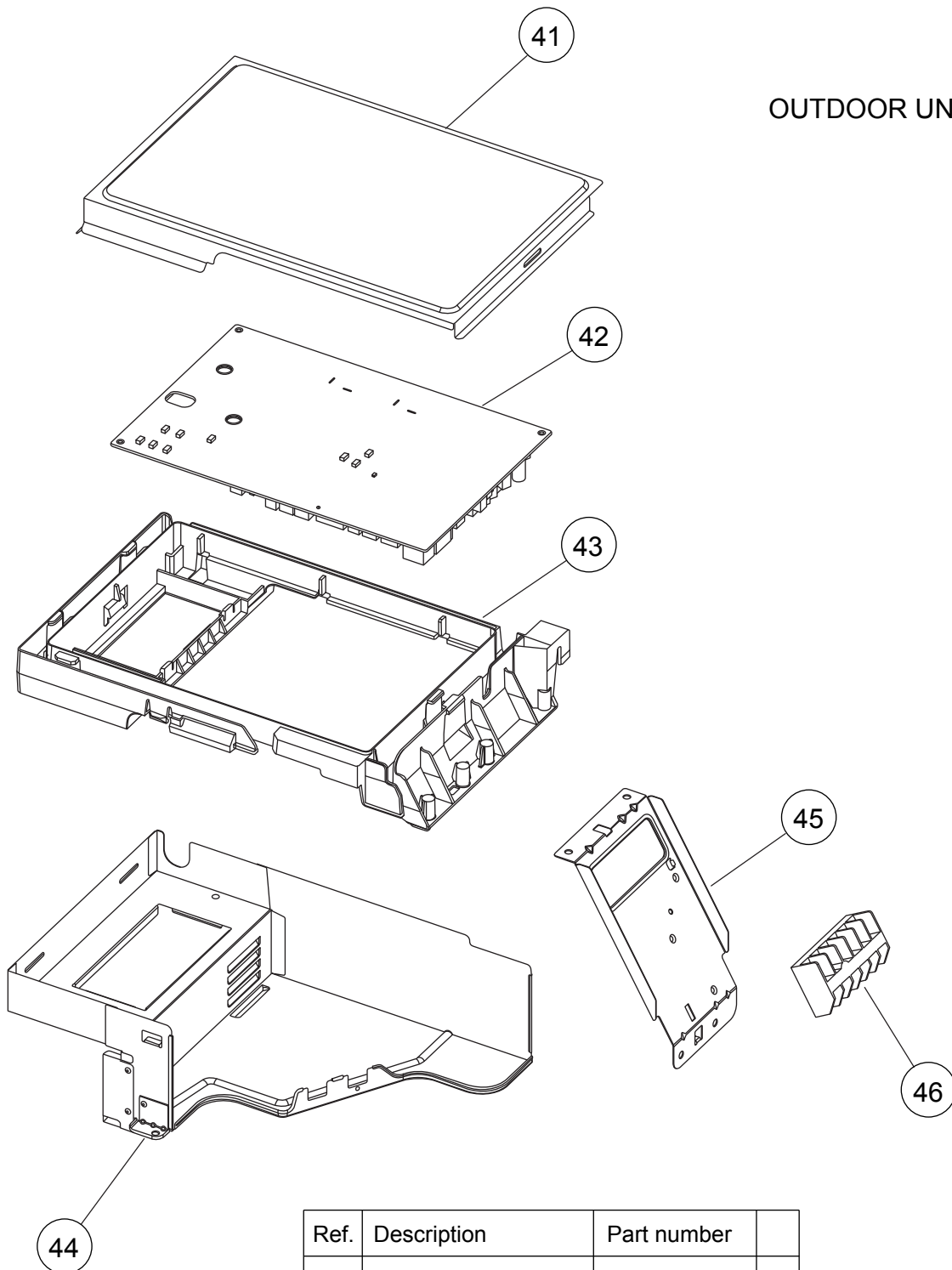
# OUTDOOR UNIT



| Ref. | Description          | Part number |
|------|----------------------|-------------|
| 21   | Condenser Total Assy | 9332359008  |
| 22   | Condenser Assy       | 9332360004  |
| 23   | Inlet Pipe Assy      | 9315578013  |
| 24   | Separate Pipe Assy   | 9317200011  |
| 25   | Exit Pipe Assy       | 9332361001  |
| 26   | Compressor Assy      | 9317619004  |
| 27   | 2 way Valve Assy     | 9332371000  |

| Ref. | Description            | Part number |
|------|------------------------|-------------|
| 28   | 3 way Valve Assy (12)  | 9315574015  |
| 28   | 3 way Valve Assy (14)  | 9332455007  |
| 29   | Muffler (12)           | 9308625007  |
| 29   | Muffler (14)           | 9316276017  |
| 30   | 4 way Valve Assy       | 9333982007  |
| 31   | Solenoid               | 9970110023  |
| 32   | Pulse Motor Valve Assy | 9332368000  |
| 33   | Expansion Valve Coil   | 9970095030  |

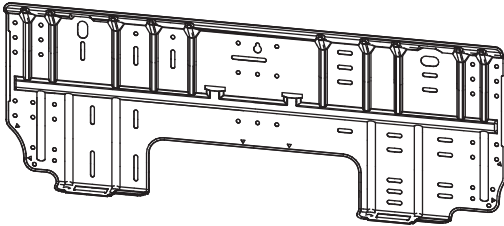
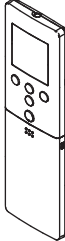


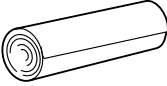


# OUTDOOR UNIT



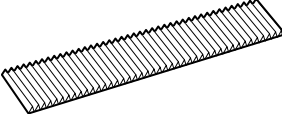
| Ref. | Description        | Part number |
|------|--------------------|-------------|
| 41   | Sealed Panel       | 9318181005  |
| 42   | Main PCB (AOYG12)  | 9708683423  |
| 42   | Main PCB (AOYG14)  | 9708683430  |
| 43   | PCB Holder         | 9318182002  |
| 44   | Inverter Case Assy | 9318242003  |
| 45   | Terminal Bracket   | 9317603010  |
| 46   | Terminal           | 9900435028  |
| --   | Outdoor Thermistor | 9900565008  |
| --   | Thermistor Assy    | 9900628000  |

# ACCESSORIES

## INDOOR UNIT

| Name and Shape   | Part number |
|--|-------------|
| Bracket panel<br>                         | 9318913002  |
| Remote control<br>                        | 9319207018  |
| Remote control holder<br>                | 9318912005  |
| Battery (penlight)<br>                  | 0600185046  |
| Cloth tape<br>                          | 9308117007  |
| Tapping screw (big)<br>(φ 4 x 25)<br>   | 0700076046  |
| Tapping screw (small)<br>(φ 3 x 12)<br> | 0700019036  |

## OPTION

| Name and Shape   | Part number            |
|--|------------------------|
| Air cleaning filter<br> | UTR-FA16<br>UTR-FA16-2 |

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