



INVERTER SPLIT TYPE
 AIR CONDITIONER (50Hz)
 DUCT TYPE

SERVICE MANUAL



| Indoor unit | Outdoor unit |
|-------------|--------------|
| ARHF12LALU | AOHA12LACL |
| ARHF12LALU | AOHA12LALL |
| ARHF14LALU | AOHA14LACL |
| ARHF14LALU | AOHA14LALL |
| ARHF18LALU | AOHA18LACL |
| ARHF18LALU | AOHA18LALL |

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SPECIFICATIONS

ELECTRICAL DATA

| TYPE | | Inverter Cool & Heat | Inverter Cool & Heat | Inverter Cool & Heat |
|------------------|---------|----------------------|----------------------|----------------------|
| INDOOR UNIT | | ARHF12LALU | ARHF14LALU | ARHF18LALU |
| OUTDOOR UNIT | | AOHA12LA_L | AOHA14LA_L | AOHA18LA_L |
| COOLING CAPACITY | | 3.50 kW | 4.30 kW | 5.20 kW |
| HEATING CAPACITY | | 4.10 kW | 5.00 kW | 6.00 kW |
| POWER SOURCE | | 230 V | 230 V | 230 V |
| FREQUENCY | | 50 Hz | 50 Hz | 50 Hz |
| RUNNING CURRENT | Cooling | 4.6 A | 5.8 A | 7.1 A |
| | Heating | 4.9 A | 5.9 A | 7.3 A |
| INPUT WATTS | Cooling | 1.05 kW | 1.33 kW | 1.62 kW |
| | Heating | 1.11 kW | 1.34 kW | 1.66 kW |
| E.E.R. | Cooling | 3.33 kW/kW | 3.21 kW/kW | 3.21 kW/kW |
| | Heating | 3.69 kW/kW | 3.71 kW/kW | 3.61 kW/kW |
| STARTING CURRENT | | 4.9 A | 5.9 A | 7.7 A |
| MOISTURE REMOVAL | | 1.3 L/hr | 1.5 L/hr | 2.0 L/hr |
| MAXIMUM CURRENT | | 10.0 A | 12.5 A | 12.5 A |

Note : The above list shows values at the external static pressure of 0Pa, setting the fan speed high notch. (indoor unit)

FAN SPEED

| | | | | |
|--------------|----------------|------------|--------------|--------------|
| INDOOR UNIT | Discrimination | MFH-24RVL | MFH-24RVL | MFH-24RVL |
| | High | 880 r.p.m. | 1,040 r.p.m. | 1,040 r.p.m. |
| | Med | 780 r.p.m. | 950 r.p.m. | 950 r.p.m. |
| | Low | 720 r.p.m. | 840 r.p.m. | 840 r.p.m. |
| | Quiet | 620 r.p.m. | 740 r.p.m. | 740 r.p.m. |
| OUTDOOR UNIT | Discrimination | MFE-18ROM | MFE-18ROM | MFE-18ROM |
| | Cooling | 770 r.p.m. | 820 r.p.m. | 860 r.p.m. |
| | Heating | 700 r.p.m. | 750 r.p.m. | 820 r.p.m. |

Note : The above list shows values at the external static pressure of 0Pa, setting the fan speed high notch. (indoor unit)

AIR FLOW

| | | | | |
|--------------|---------|-------------------------|-------------------------|-------------------------|
| INDOOR UNIT | High | 720 m ³ /h | 870 m ³ /h | 820 m ³ /h |
| | Med | 630 m ³ /h | 770 m ³ /h | 720 m ³ /h |
| | Low | 560 m ³ /h | 670 m ³ /h | 610 m ³ /h |
| | Quiet | 480 m ³ /h | 580 m ³ /h | 550 m ³ /h |
| OUTDOOR UNIT | Cooling | 1,780 m ³ /h | 1,910 m ³ /h | 2,000 m ³ /h |
| | Heating | 1,630 m ³ /h | 1,740 m ³ /h | 1,910 m ³ /h |

Note : The above list shows values at the external static pressure of 0Pa, setting the fan speed high notch. (indoor unit)

| | | | |
|--------------|------------|------------|------------|
| INDOOR UNIT | ARHF12LALU | ARHF14LALU | ARHF18LALU |
| OUTDOOR UNIT | AOHA12LA_L | AOHA14LA_L | AOHA18LA_L |

NOISE LEVEL

| | | | | |
|--------------|------------|-------|-------|-------|
| INDOOR UNIT | High speed | 32 dB | 33 dB | 33 dB |
| | Med speed | 30 dB | 31 dB | 31 dB |
| | Low speed | 28 dB | 29 dB | 29 dB |
| | Quiet | 26 dB | 27 dB | 27 dB |
| OUTDOOR UNIT | Cooling | 47 dB | 49 dB | 50 dB |
| | Heating | 48 dB | 49 dB | 50 dB |

Note : Static pressure : 0Pa

Duct length : Inlet 1m, Outlet 2m (indoor uit)

MEASUREMENT

| | | |
|-------------------------|--------------|--------------------|
| DIMENSIONS H x W x D | Indoor unit | 217 x 953 x 595 mm |
| | Outdoor unit | 578 x 790 x 300 mm |
| WEIGHT Gross / Net | Indoor unit | 27 kg / 23 kg |
| | Outdoor unit | 44 kg / 40 kg |

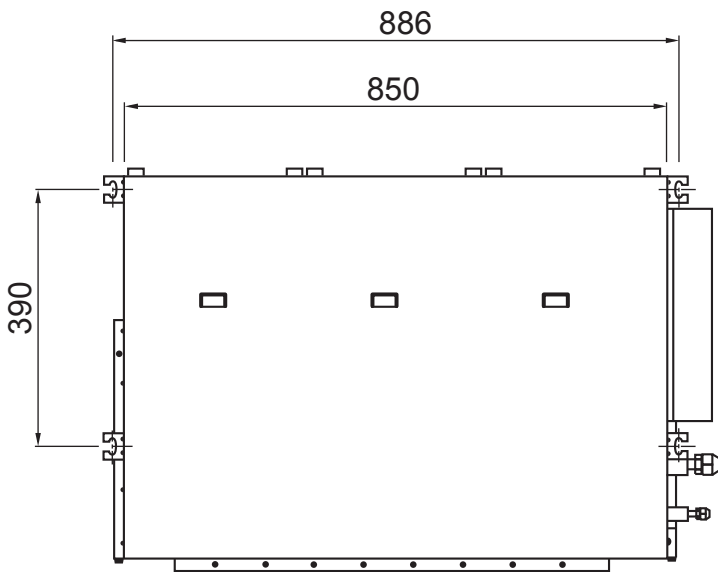
COMPRESSOR AND REFRIGERANT

| | | | | |
|----------------------|---|---------|---------|---------|
| COMPRESSOR TYPE | Hermetic type, 4 poles, DC motor, Twin Rotary | | | |
| DISCRIMINATION | DA130AIF-25NA | | | |
| WEIGHT (with oil) | 9.6 kg | | | |
| REFRIGERANT TYPE | R410A | R410A | R410A | |
| STANDARD REFRIGERANT | 1,150 g | 1,250 g | 1,250 g | |
| FULL CHARGE | Pipe Length 15 m | 1,150 g | 1,250 g | 1,250 g |
| | 20 m | 1,250 g | 1,350 g | 1,350 g |
| | 25 m | 1,350 g | 1,450 g | 1,450 g |
| ADDITIONAL CHARGE | 20 g/m | 20 g/m | 20 g/m | |
| MAXIMUM PIPE HEIGHT | 15 m | 15 m | 15 m | |

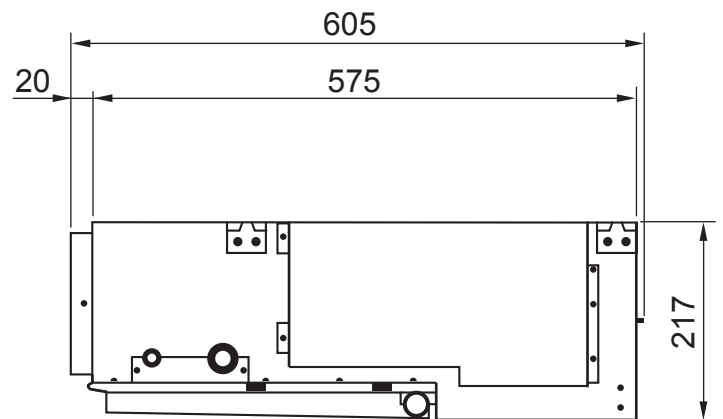
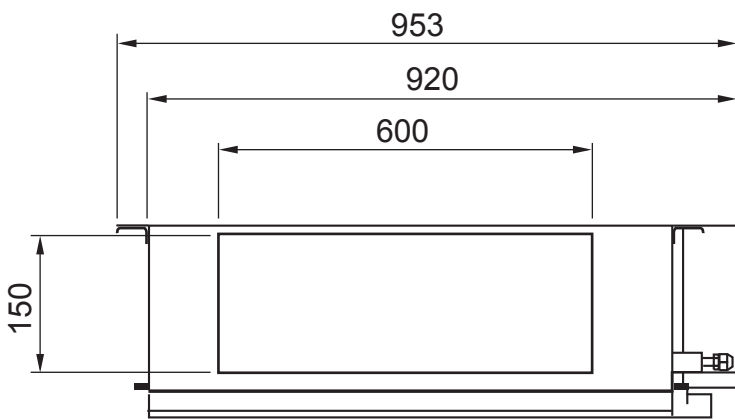
DIMENSIONS

INDOOR UNIT

Unit : mm

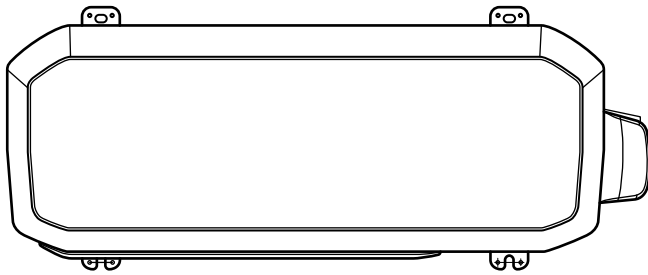


Drain pipe diameters
Inside : 21.5 mm
Outside : 26.0 mm

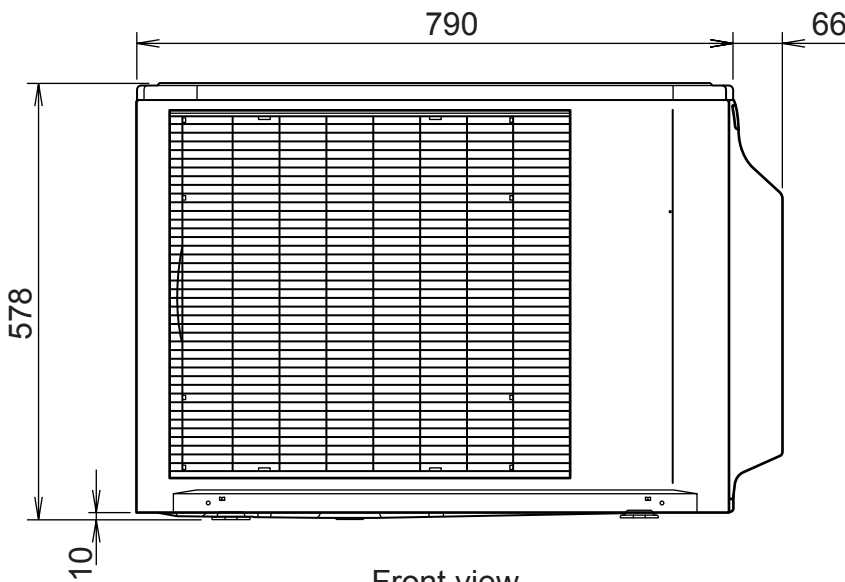


OUTDOOR UNIT

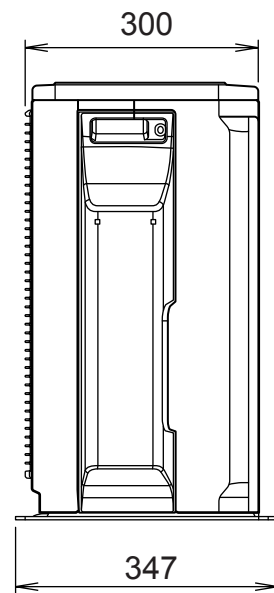
Unit : mm



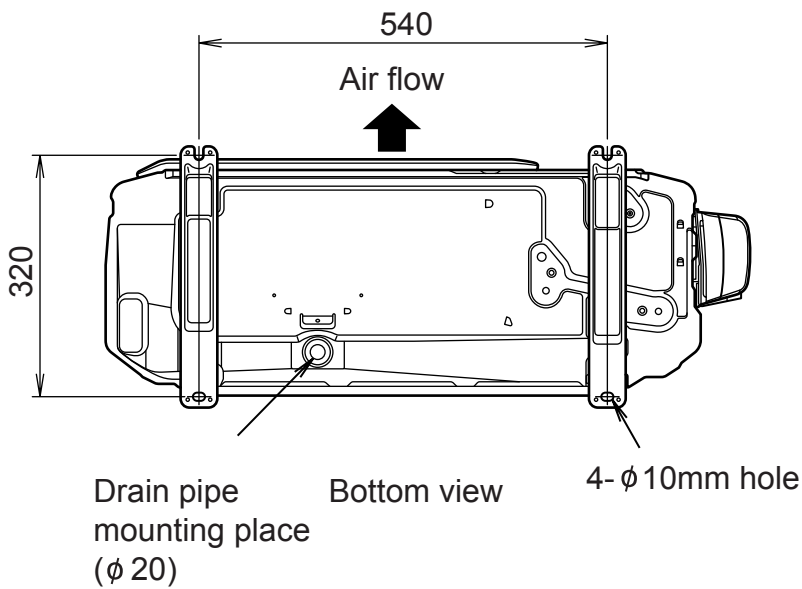
Top view



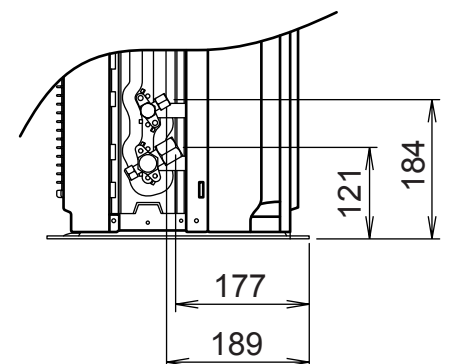
Front view



Side view



Bottom view

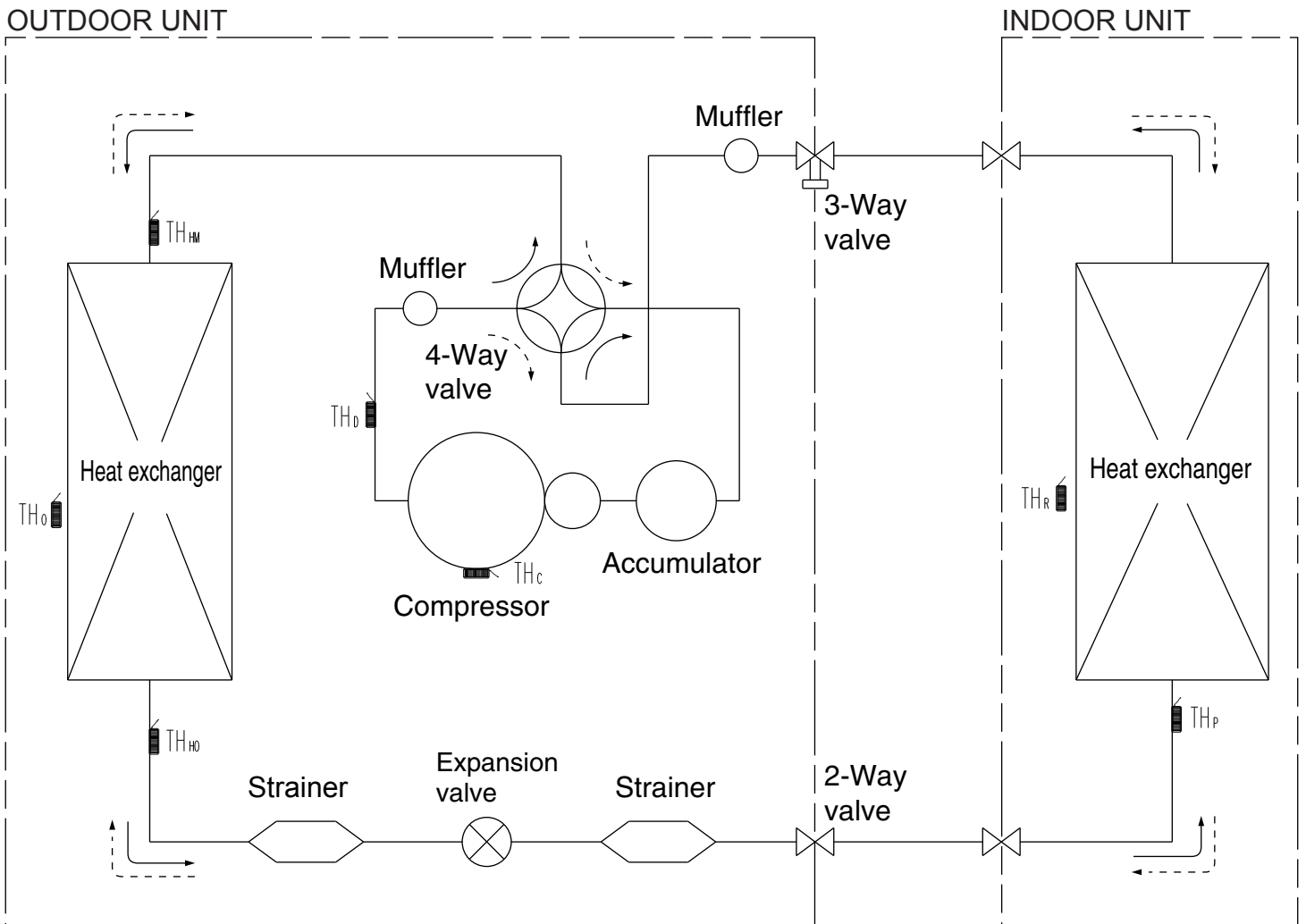


REFRIGERANT SYSTEM DIAGRAM

<Refrigerant direction>

————> Cool

- - - - -> Heat



TH_c : THERMISTOR (COMPRESSOR)
 TH_o : THERMISTOR (DISCHARGE)
 TH_{HM} : THERMISTOR (HEAT EXCHANGER MED)
 TH_{HO} : THERMISTOR (HEAT EXCHANGER OUT)
 TH_o : THERMISTOR (OUTDOOR AIR)

TH_p : THERMISTOR (PIPE)
 TH_r : THERMISTOR (ROOM)

<Refrigerant pipe diameter>

ARHF12LALU / AOHA12LA_L

Liquid : 1/4" (6.35 mm)

Gas : 3/8" (9.52 mm)

ARHF14LALU / AOHA14LA_L

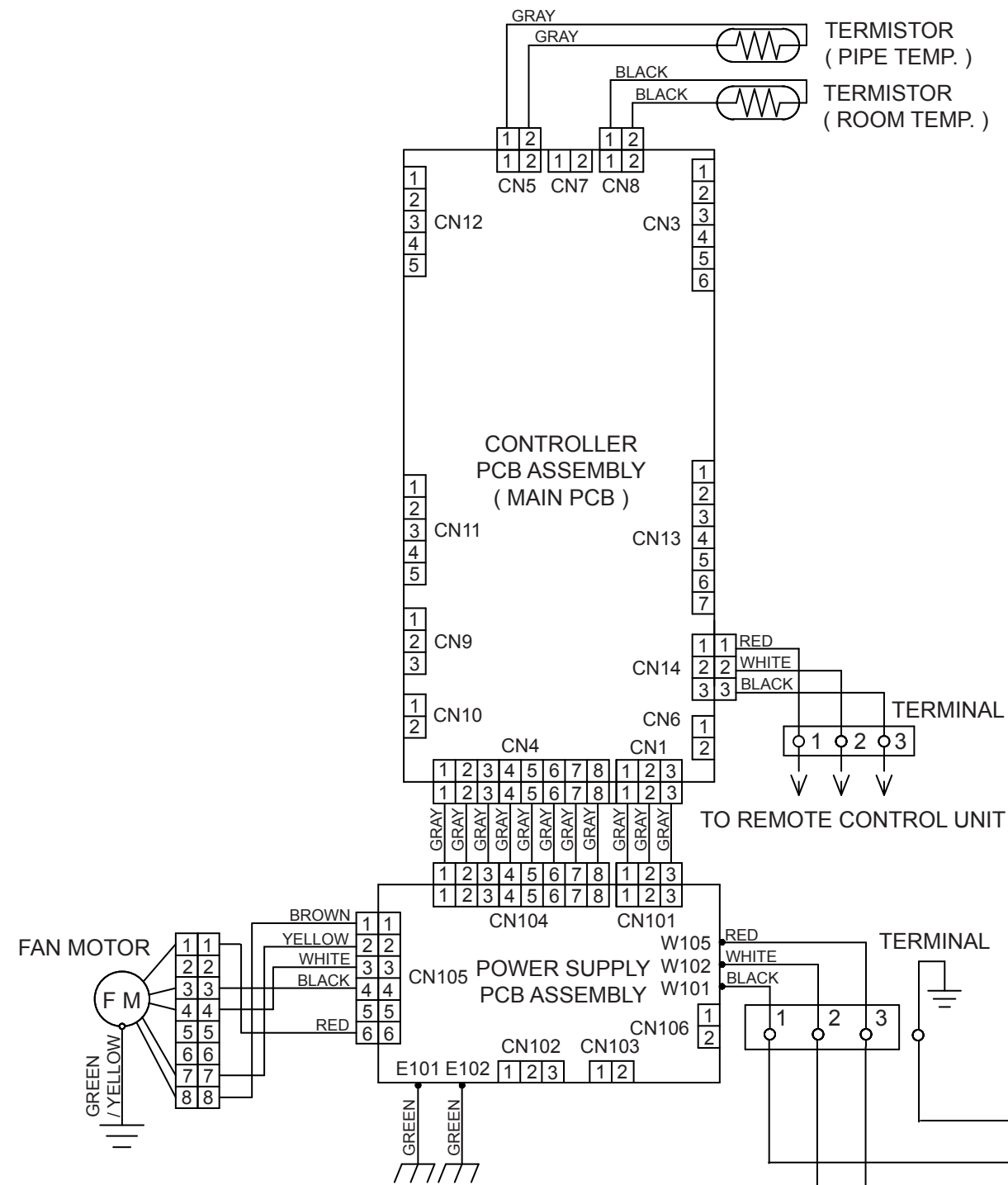
ARHF18LALU / AOHA18LA_L

Liquid : 1/4" (6.35 mm)

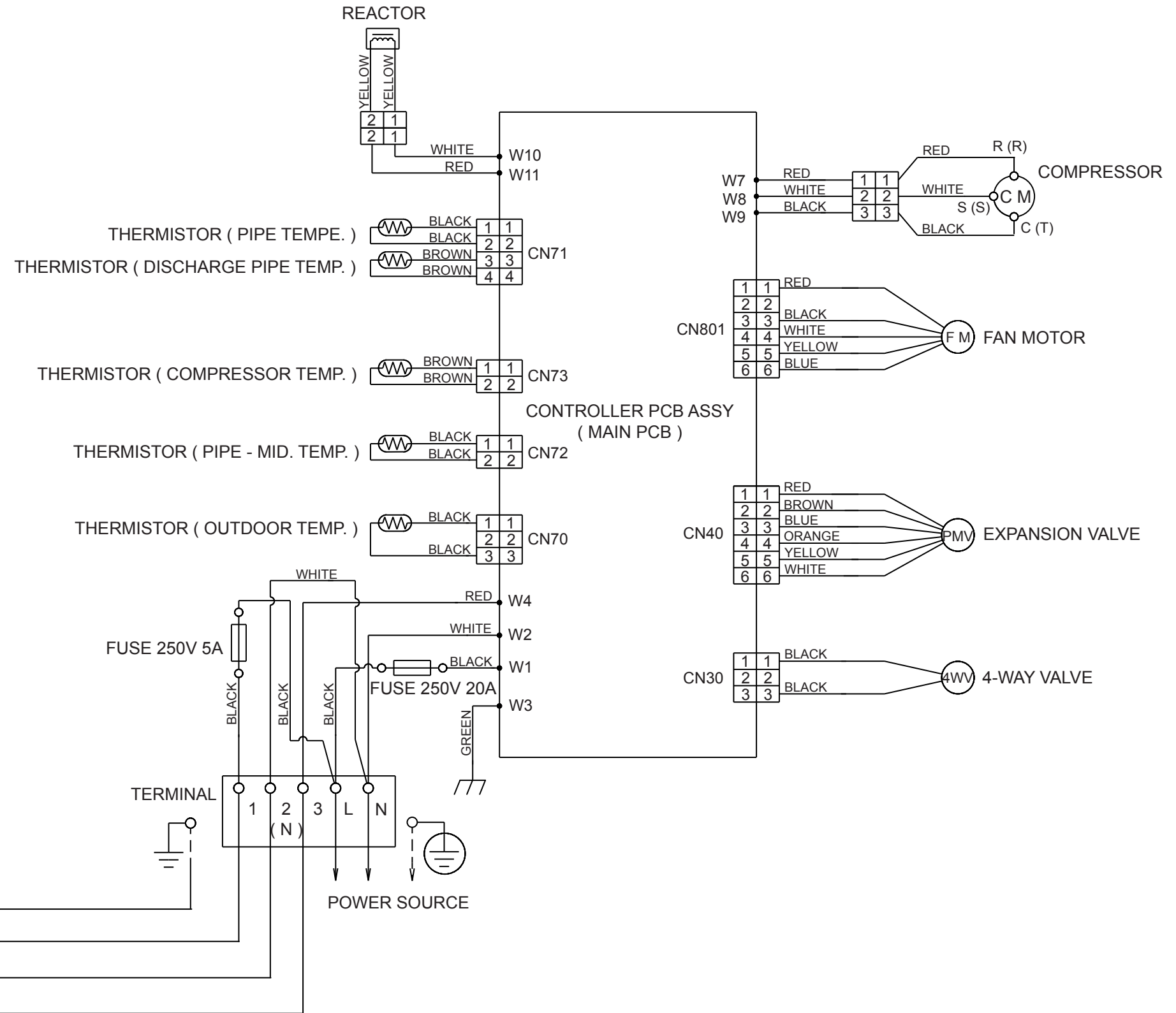
Gas : 1/2" (12.70 mm)

CIRCUIT DIAGRAM

INDOOR UNIT



OUTDOOR UNIT



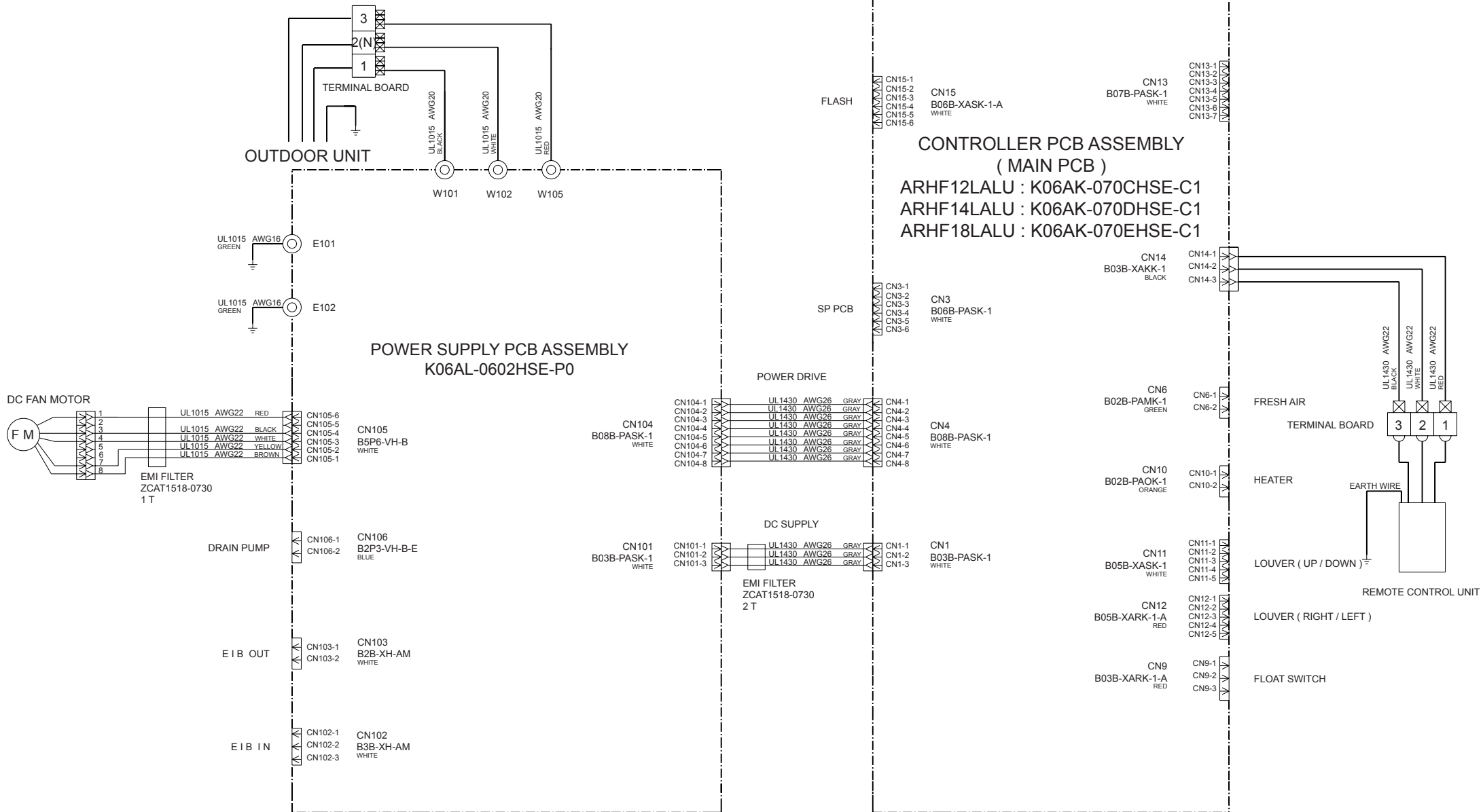
INDOOR PCB CIRCUIT DIAGRAM

CONTROL UNIT

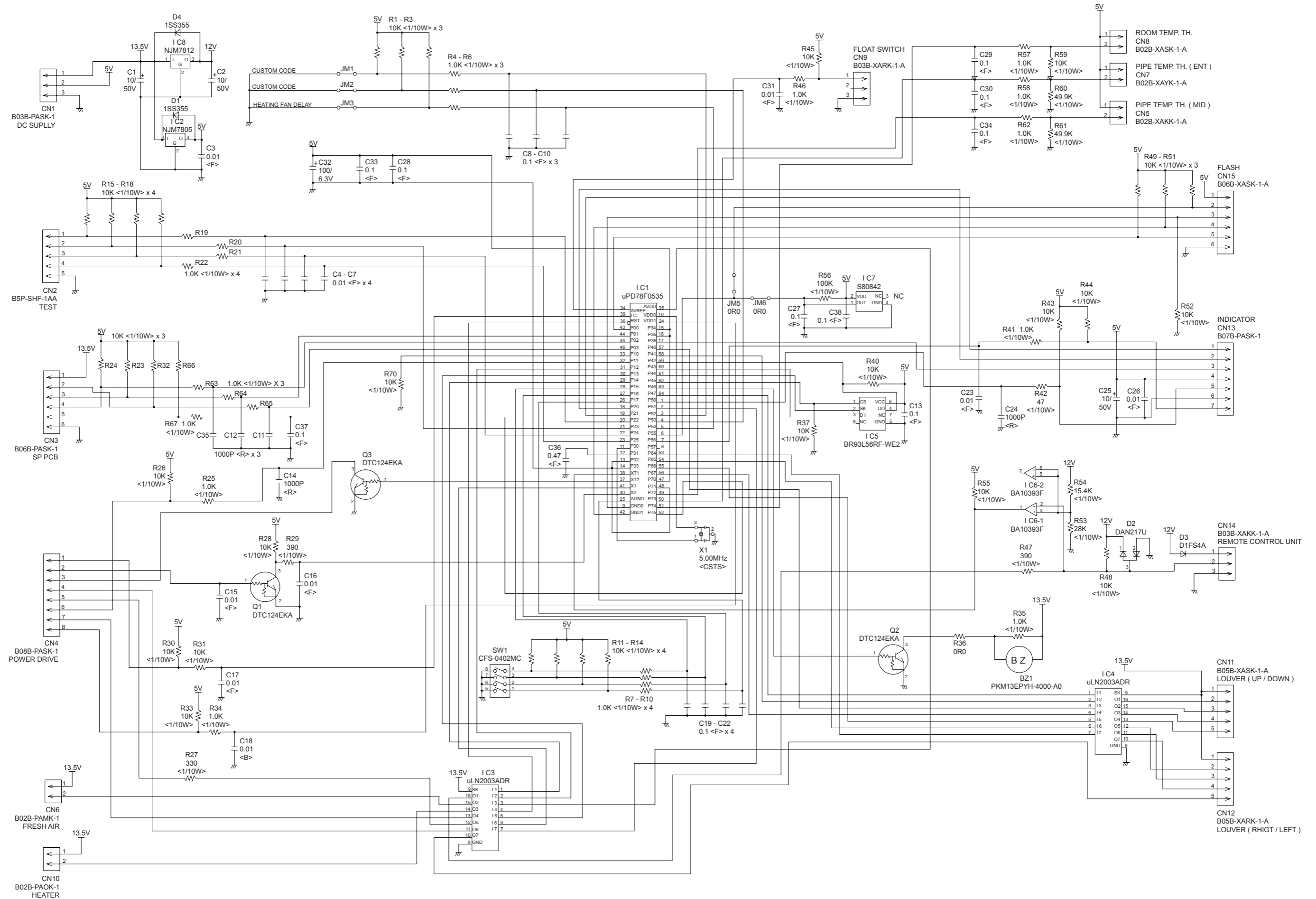
ARHF12LALU : EZ-0070SHSE

ARHF14LALU : EZ-0070THSE

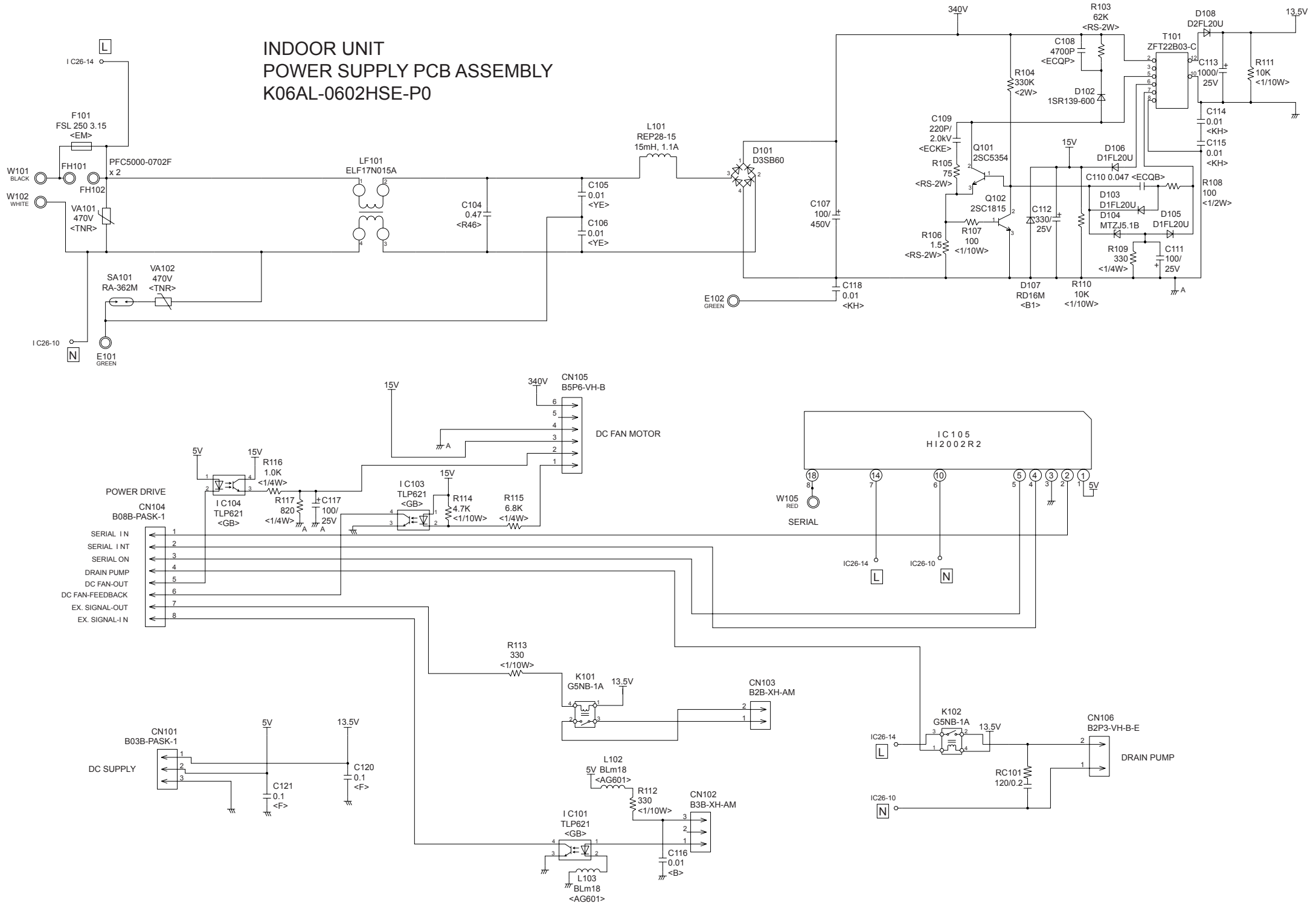
ARHF18LALU : EZ-0070WHSE



INDOOR UNIT
 CONTROLLER PCB ASSEMBLY (MAIN PCB)
 ARHF12LALU : K06AK-070CHSE-C1
 ARHF14LALU : K06AK-070DHSE-C1
 ARHF18LALU : K06AK-070EHSE-C1

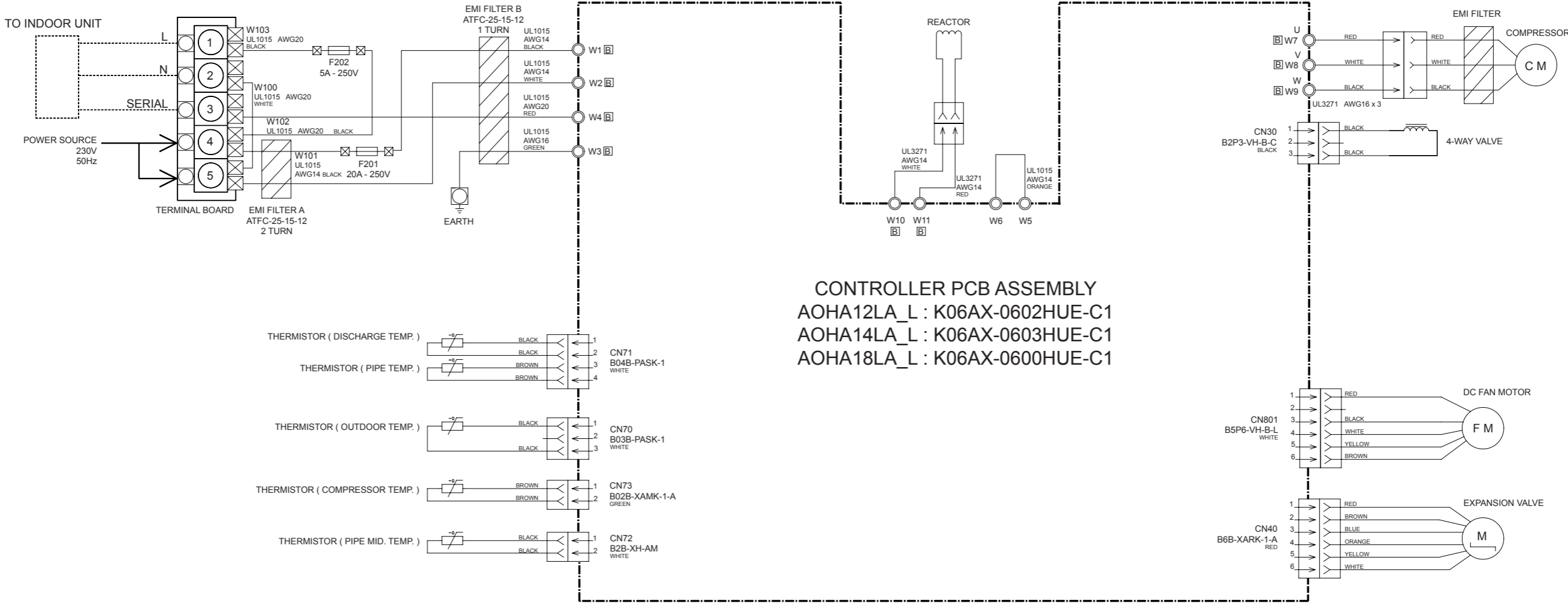


INDOOR UNIT POWER SUPPLY PCB ASSEMBLY K06AL-0602HSE-P0

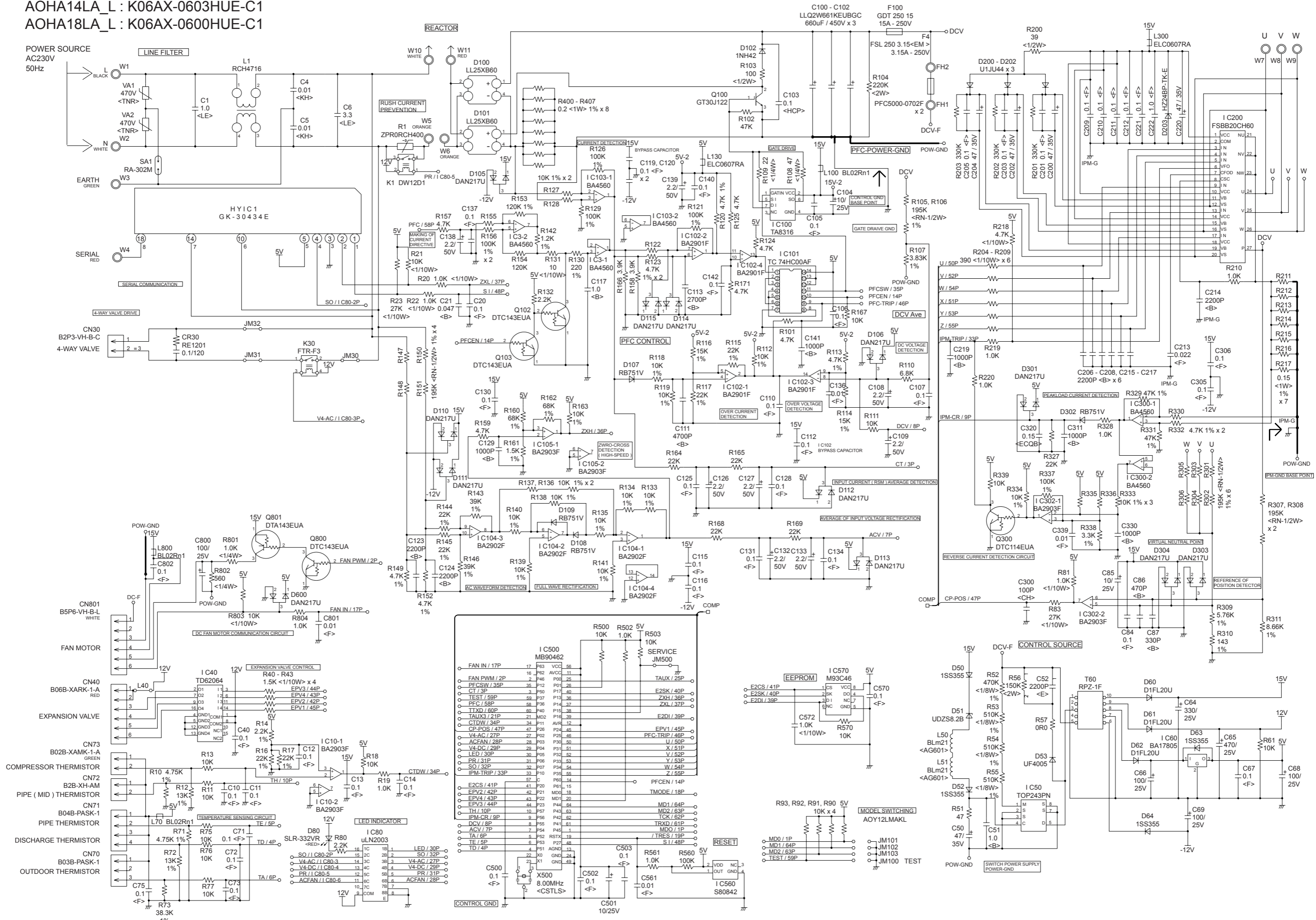


OUTDOOR PCB CIRCUIT DIAGRAM

INVERTER ASSEMBLY
 AOHA12LA_L : EZ-0060RHUE
 AOHA14LA_L : EZ-0060SHUE
 AOHA18LA_L : EZ-0069HUE



OUTDOOR UNIT
 CONTROLLER PCB ASSEMBLY
 AOHA12LA_L : K06AX-0602HUE-C1
 AOHA14LA_L : K06AX-0603HUE-C1
 AOHA18LA_L : K06AX-0600HUE-C1



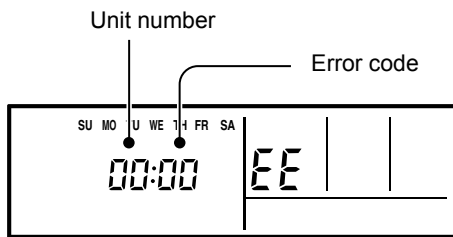
ERROR CONTENTS

REMOTE CONTROL

Troubleshooting at the remote control LCD
This is possible only on the wired remote control.

SELF-DIAGNOSIS

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



Ex. Self-diagnosis

| Code | Error contents |
|--|--|
| 01 13 26 27 | Indoor signal error |
| 00 | Wired remote controller abnormal |
| 02 | Indoor room temperature sensor error |
| 04 | Indoor heat exchanger temperature sensor (middle) error |
| 28 | Indoor heat exchanger temperature sensor (inlet) error |
| 09 | Float switch operated |
| 0C | Outdoor discharge pipe temperature sensor error |
| 06 | Outdoor heat exchanger temperature sensor (outlet) error |
| 0A | Outdoor temperature sensor error |
| 15 | Compressor temperature sensor error |
| 1d | 2-way valve temperature sensor error |
| 1E | 3-way valve temperature sensor error |
| 29 | Outdoor heat exchanger temperature sensor (middle) error |
| 20 | Indoor manual auto switch abnormal |
| 2A | Power supply frequency detection error |
| 17 | IPM protection |
| 18 | CT error |
| 1A | Compressor location error |
| 1b | Outdoor fan error |
| 1F | Connected indoor unit abnormal |
| 1c | Outdoor unit computer communication error |
| 12 | Indoor fan abnormal |
| 0F | Discharge temperature error |
| 24 | Excessive high pressure protection on cooling |
| 2c | 4-way valve abnormal |
| 16 | Pressure switch abnormal |
| 2b | Compressor temperature error |
| 19 | Active filter abnormal |
| 25 | PFC circuit error |

If "CO" appears in the unit number display, there is a remote control error.

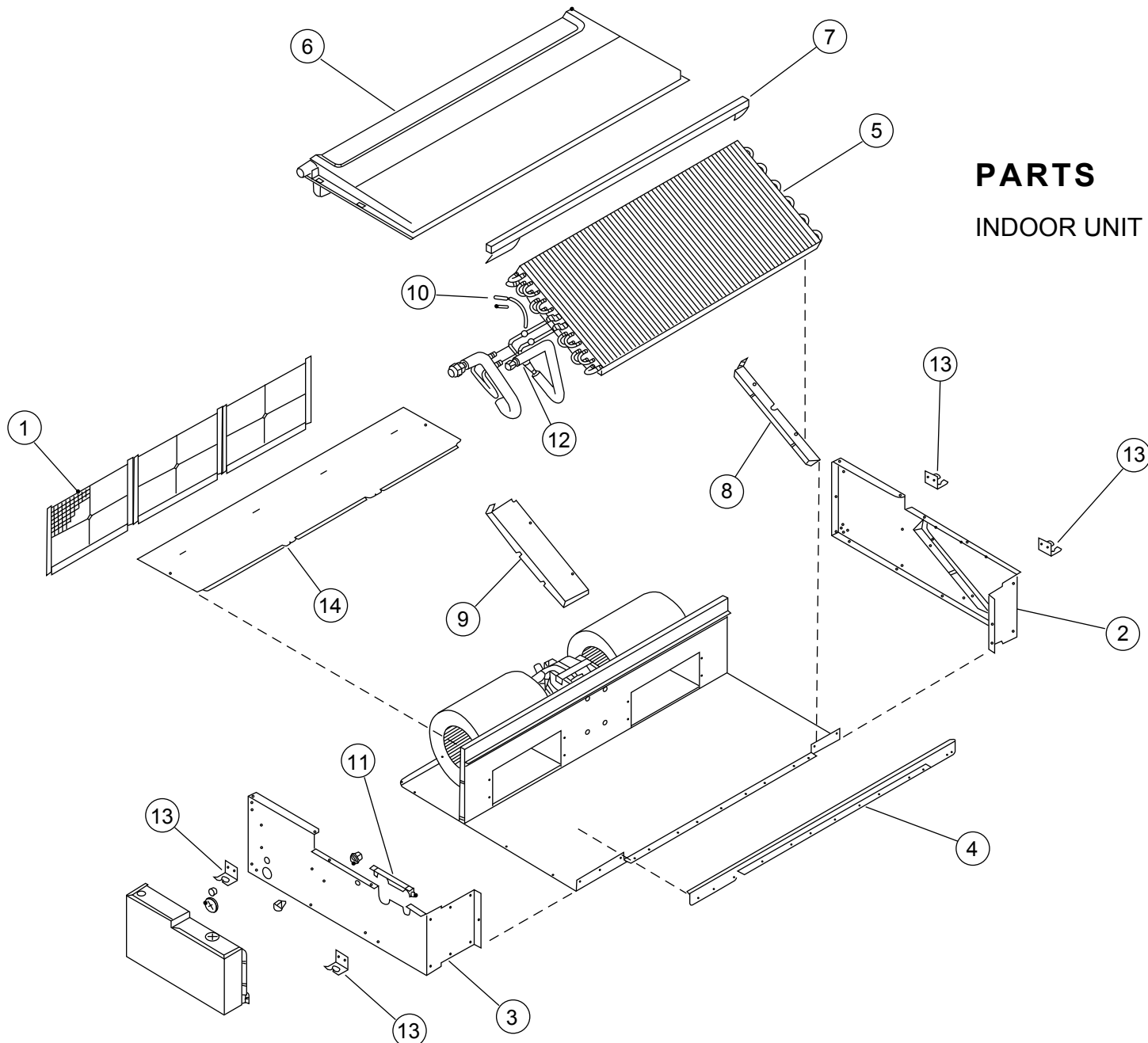
| Unit number | Error code | Content |
|-------------|------------|--|
| CO | 1d | Incompatible indoor unit is connected |
| CO | 1c | Communication error between indoor unit and remote control |

OUTDOOR UNIT

| | |
|--|--------------------------|
| Error contents | LED |
| Thermistor malfunction | on 0.1 sec / off 0.1 sec |
| Abnormal discharge temperature | on |
| Current surge protection | on 0.5 sec / off 0.5 sec |
| CT abnormality | on 2.0 sec / off 2.0 sec |
| Compressor position detection malfunction | on 0.1 sec / off 2.0 sec |
| Fan malfunction | on 5.0 sec / off 5.0 sec |
| PAM voltage abnormality | on 5.0 sec / off 0.1 sec |
| Timer short | on 1.0 sec / off 0.1 sec |
| Compressor temperature protection (permanent stop) | on 2.0 sec / off 5.0 sec |
| PFC surge protection (permanent stop) | on 5.0 sec / off 2.0 sec |

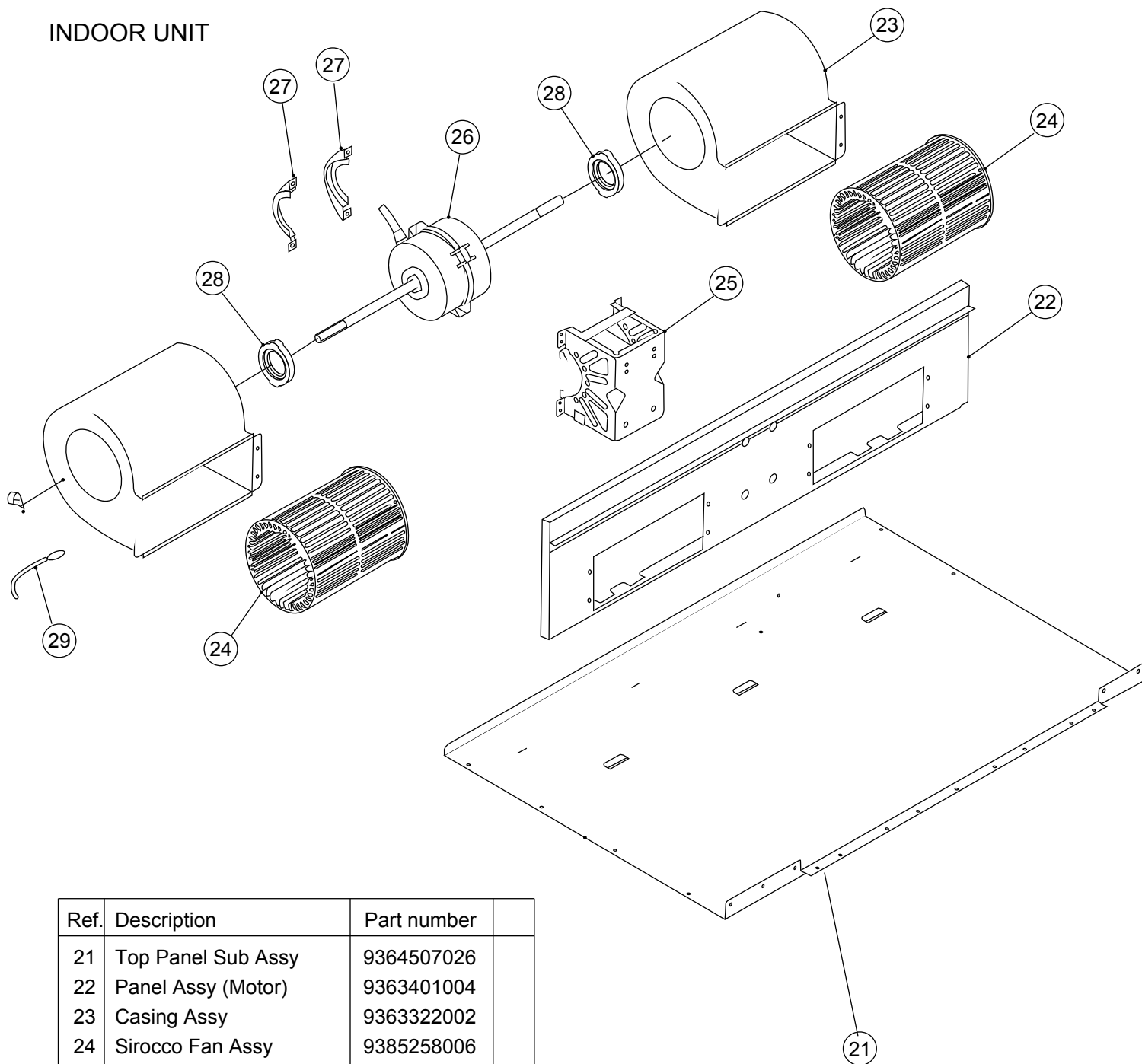
PARTS

INDOOR UNIT



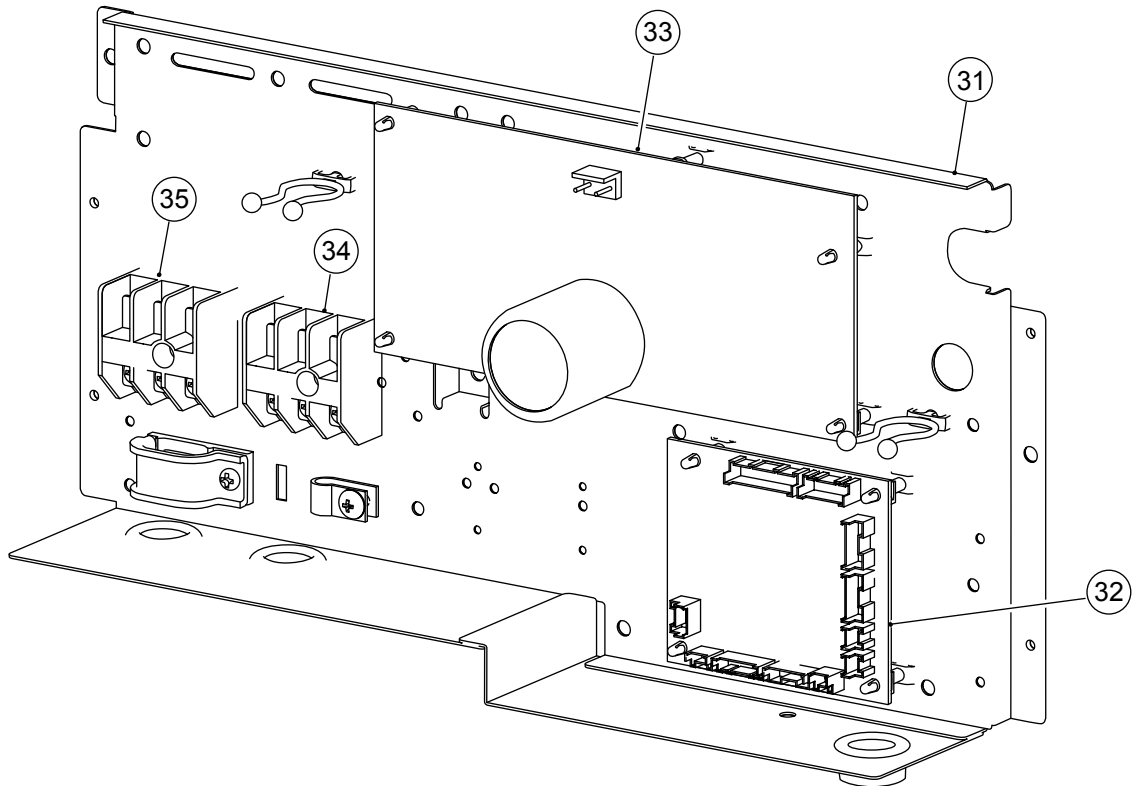
| Ref. | Description | Part number | | |
|------|--------------------------|-------------|------------|------------|
| | | ARHF12LALU | ARHF14LALU | ARHF18LALU |
| 1 | Air Filter | 9366833017 | 9366833017 | 9366833017 |
| 2 | Side Panel R Sub Assy | 9364505022 | 9364505022 | 9364505022 |
| 3 | Side Panel L Sub Assy | 9364506029 | 9364506029 | 9364506029 |
| 4 | Front Panel Sub Assy | 9364508023 | 9364508023 | 9364508023 |
| 5 | Evaporator Assy | 9373255024 | 9373255017 | 9372972014 |
| 6 | Drain Pan Sub Assy | 9364502069 | 9364502069 | 9364502069 |
| 7 | Evaporator Support Plate | 9363404005 | 9363404005 | 9363404005 |
| 8 | Bracket Evaporator R | 9363199000 | 9363199000 | 9363199000 |
| 9 | Bracket Evaporator L | 9363198003 | 9363198003 | 9363198003 |
| 10 | Pipe Thermistor | 9703297090 | 9703297069 | 9703297090 |
| 11 | Pipe Cover | 9363327007 | 9363327007 | 9363327007 |
| 12 | Distributor Assy | 9373034254 | 9373034209 | 9373034216 |
| 13 | Hook | 9363195002 | 9363195002 | 9363195002 |
| 14 | Cabinet Cover Sub Assy | 9364503028 | 9364503028 | 9364503028 |
| -- | Drain Cap Assy | 9377878014 | 9377878014 | 9377878014 |
| -- | Coupling Pipe Assy | 9373038467 | 9373038085 | --- |
| -- | Outlet (Eva) Assy | --- | --- | 9372978047 |

INDOOR UNIT



| Ref. | Description | Part number |
|------|--------------------------|-------------|
| 21 | Top Panel Sub Assy | 9364507026 |
| 22 | Panel Assy (Motor) | 9363401004 |
| 23 | Casing Assy | 9363322002 |
| 24 | Sirocco Fan Assy | 9385258006 |
| 25 | Motor Fixing Table Assy | 9358591000 |
| 26 | Fan Motor Assy | 9602401017 |
| 27 | Motor Fixture | 9358594001 |
| 28 | Rubber (Vibration-proof) | 9385102002 |
| 29 | Room Thermistor | 9703299018 |

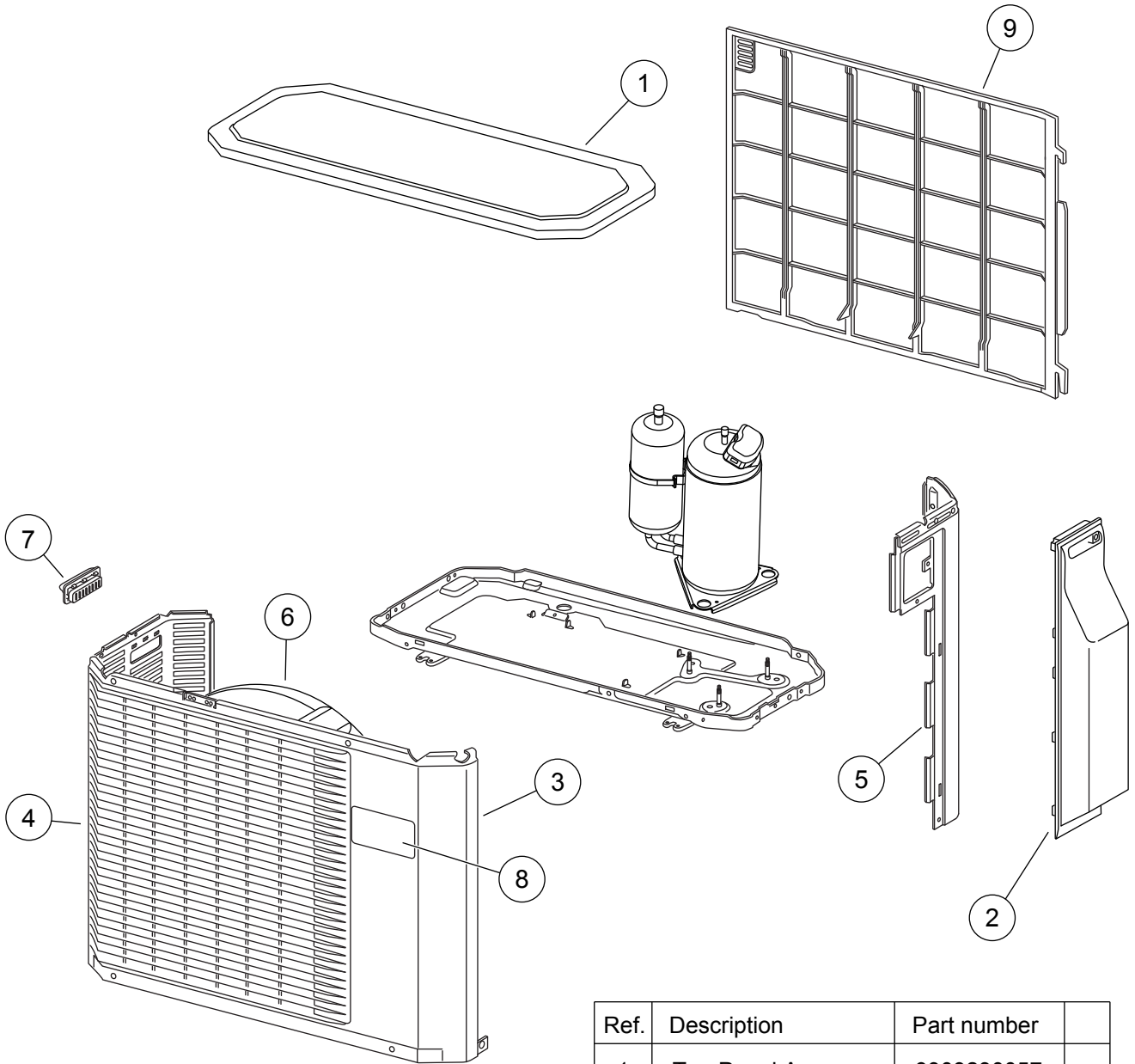
INDOOR UNIT



| Ref. | Description | Part number |
|------|--------------------------|-------------|
| 31 | Control Box | 9375240035 |
| 32 | Controller PCB Assy (12) | 9707393378 |
| 32 | Controller PCB Assy (14) | 9707393385 |
| 32 | Controller PCB Assy (18) | 9707393392 |
| 33 | Power Supply PCB Assy | 9707398038 |
| 34 | Terminal | 9703345012 |
| 35 | Terminal | 9306489045 |
| -- | Control Box Cover | 9363201000 |
| -- | Remote Control | 9372266199 |
| -- | Wire | 9372714010 |
| -- | Hole Cover | 9378176010 |
| -- | Cap (Power) | 9352173011 |

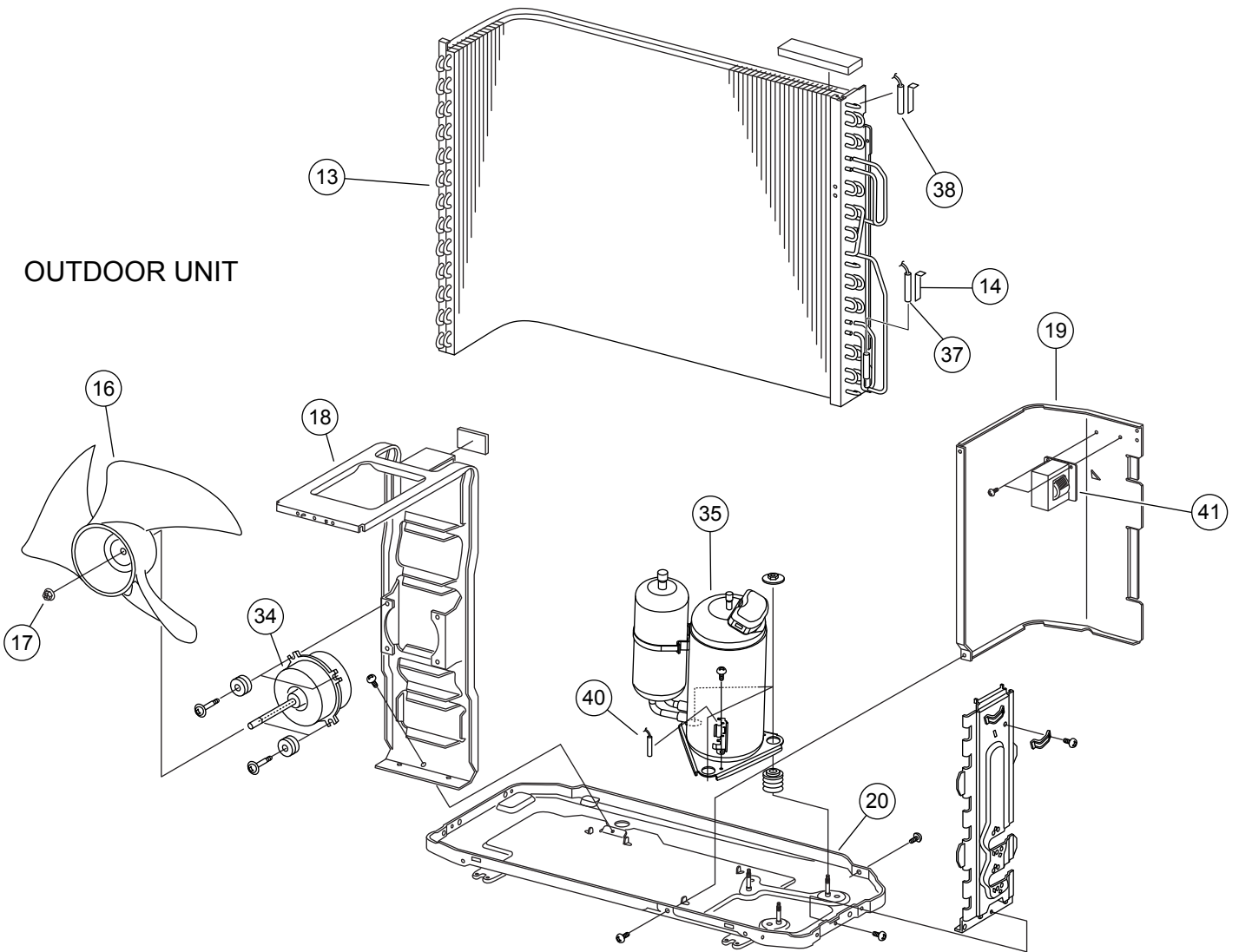
PARTS

OUTDOOR UNIT

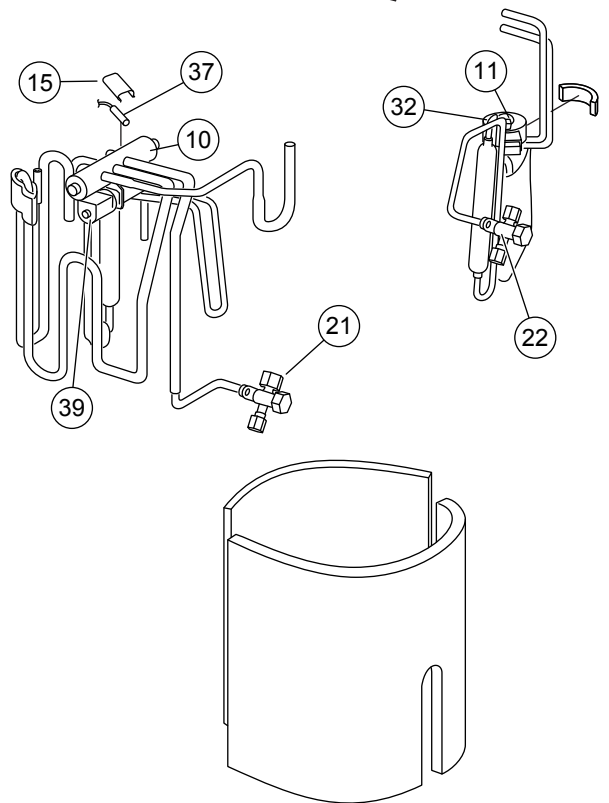


| Ref. | Description | Part number |
|------|---------------------|-------------|
| 1 | Top Panel Assy | 9309230057 |
| 2 | Cover (Switch) Assy | 9309237032 |
| 3 | Cabinet Assy | 9314809040 |
| 4 | Blow Down Grille | 9308884015 |
| 5 | Cabinet Right Assy | 9309236011 |
| 6 | Fan Ring | 9308885012 |
| 7 | Grip | 9308880017 |
| 8 | Emblem | 9315211019 |
| 9 | Protective Net | 9315319012 |

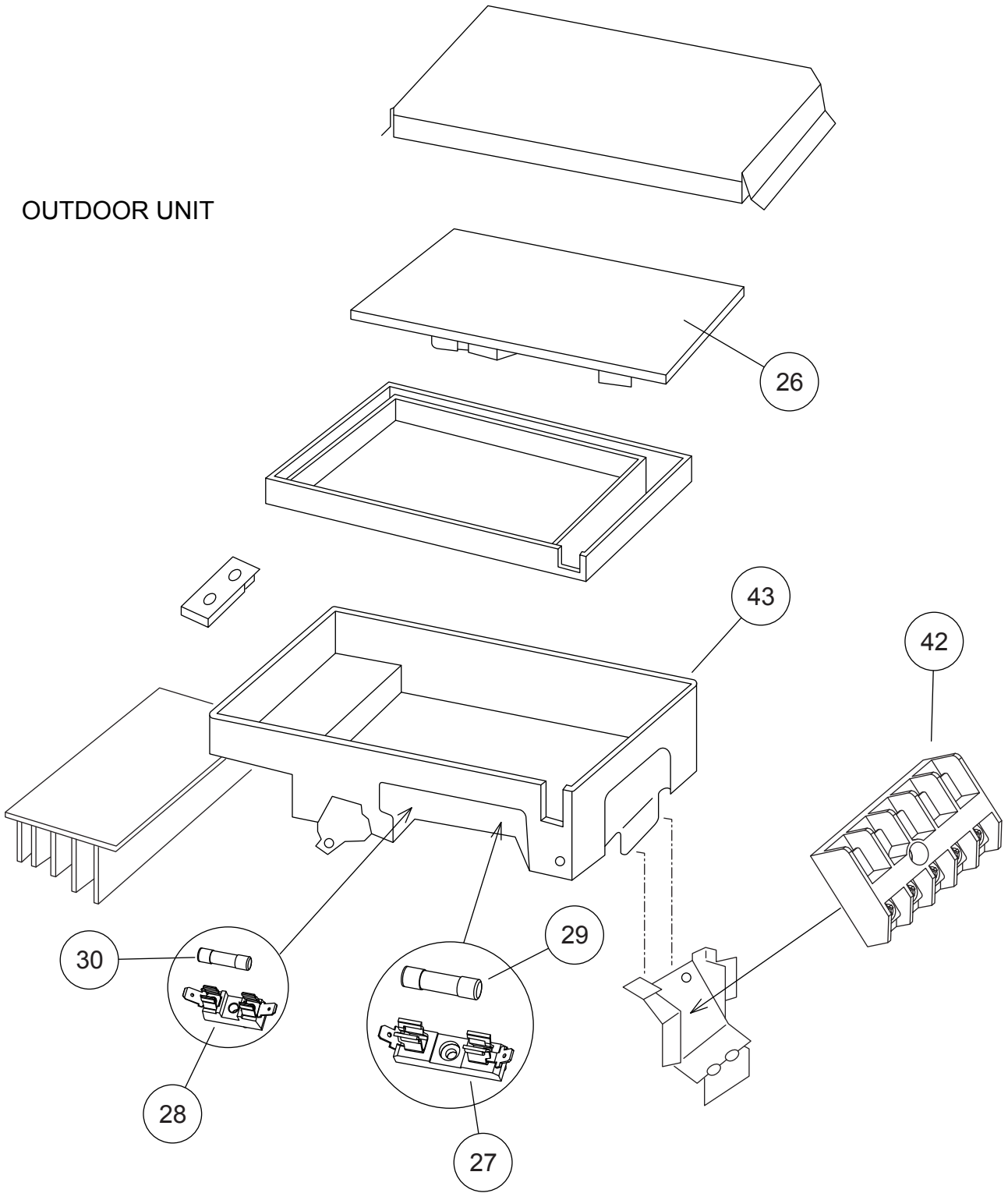
OUTDOOR UNIT



| Ref. | Description | Part number |
|------|---------------------------|--------------|
| 10 | 4-Way Valve | 9900047016 |
| 11 | Pulse Motor Valve Assy | 9311641018 |
| 13 | Condenser Assy | 9311382027 |
| 14 | Thermistor Spring-A | 313728262708 |
| 15 | Thermistor Spring | 9300089012 |
| 16 | Propeller Fan | 9309909014 |
| 17 | Nut | 9304902003 |
| 18 | Motor Bracket | 9308872012 |
| 19 | Separator Assy | 9312971015 |
| 20 | Base Assy | 9308869081 |
| 21 | 3-Way Valve Assy | 9970092015 |
| 22 | 2-Way Valve Assy | 9970093012 |
| 32 | Expansion Valve Coil | 9900057039 |
| 34 | Fan Motor | 9602133017 |
| 35 | Compressor Assy | 9313763039 |
| 37 | Thermistor Assy | 9900148027 |
| 38 | Heat Exchanger Thermistor | 9900403010 |
| 39 | Solenoid Coil | 9970033018 |
| 40 | Compressor Thermistor | 9900156046 |
| 41 | Reactor Assy | 9900354015 |
| -- | Outdoor Thermistor | 9900210045 |



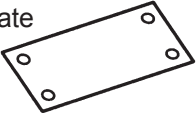
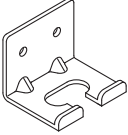
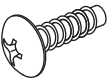


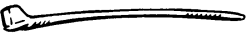
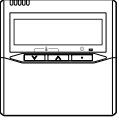
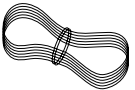

OUTDOOR UNIT



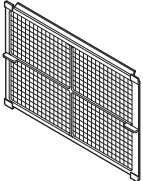
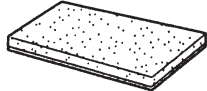



| Ref. | Description | Part number | |
|------|------------------------|-------------|--|
| 26 | Inverter PCB Assy (12) | 9707427035 | |
| 26 | Inverter PCB Assy (14) | 9707427042 | |
| 26 | Inverter PCB Assy (18) | 9707427011 | |
| 27 | Fuse Holder | 0501454012 | |
| 28 | Fuse Holder | 0501456016 | |
| 29 | Fuse | 0600382018 | |
| 30 | Fuse | 0600372163 | |
| 42 | Terminal | 9703874031 | |
| 43 | Inverter Case Assy | 9315690012 | |

ACCESSORIES

INDOOR UNIT

| Name and Shape | Q'ty | Application |
|--|------------------------------|---|
| Installation template  | 1 | For positioning the indoor unit (P/N 9364225005) |
| Hanger  | 4 | For suspending the indoor unit from ceiling (P/N 9363195002) |
| Screw (M4 x 10)  | 8 | For installing the hanger (P/N 0700009037) |
| Special nut A (large flange)  | 4 | For suspending the indoor unit from ceiling (P/N 313005446653) (P/N 313005446759) |
| Special nut B (small flange)  | 4 | |
| Binder  | (Small) 1 (Large) 4 | For remote control and cord binding (P/N 313361275805) For fixing the coupler heat insulation (P/N 312300787605) |
| Remote control  | 1 | For air conditioner operation (P/N 9372266199) |
| Remote control cord  | 1 | For connecting the remote control (P/N 9372714010) |
| Screw (M4 x 16)  | 2 | For installing remote control (P/N 0700181108) |

| Name and Shape | Q'ty | Application |
|--|------|--|
| Coupler heat insulation (large)  | 1 | For indoor side pipe joint (gas pipe) (P/N 9378173569) |
| Coupler heat insulation (small)  | 1 | For indoor side pipe joint (liquid pipe) (P/N 9378173521) |
| Filter  | 3 | For protecting air conditioner against dust (P/N 9366833017) |
| Drain hose insulation  | 1 | Insulates the drain hose and vinyl hose connection (P/N 313806217708) |
| Edge cover  | 1 | For making a wiring hole for connecting optional units (P/N 9364788005) |

OPTIONAL PARTS

The following options are available.

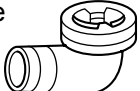
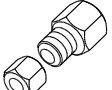
Remote sensor:UTD-RS100 (P/N 9072619004)

External control set:UTD-ECS5A (P/N 9077359004)

Drain pump unit : UTZ-PX1BBA (P/N 9052976004)

Receiver unit : UTY-LRHG1 (P/N 9048207006)

OUTDOOR UNIT

| Name and Shape | Q'ty | Application | Part number |
|--|------|--|-------------|
| Drain pipe  | 1 | For drain piping work. | 9303029015 |
| Adapter assy 12.7 mm -> 9.52 mm  | 1 | To connect 12,000 BTU model * 12,000 BTU model only | 9370244007 |

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