



# Multi Air Conditioner

## **SVC MANUAL(Exploded View)**

**MODEL : A9UW56LFA0 [FM57AH U32JRD]  
A8UW48LFA0 [FM49AH U32JRD]  
A7UW42LFA0 [FM41AH U32JRD]**

### **CAUTION**

Before Servicing the unit, read the safety precautions in General SVC manual.  
Only for authorized service personnel.

# 1. Specification

| Outdoor unit                             |                                      |                           |                             | A7UW42LFA0<br>[FM41AH U32JRD] | A8UW48LFA0<br>[FM49AH U32JRD] | A9UW56LFA0<br>[FM57AH U32JRD] |
|--|--------------------------------------|---------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|
| Testing Combination                      |                                      |                           |                             | MS07AQ NB0 x 7EA              | MS07AQ NB0 x 7EA              | MS09AQ NB0 x 7EA              |
| Capacity                                 | Cooling                              | Min.~Rated-Max.           | kW                          | 2.8 ~ 12.1 ~ 14.1             | 3.3 ~ 14.0 ~ 17.0             | 4.0 ~ 15.5 ~ 18.5             |
|  |                                      | Min.~Rated-Max.           | Btu/h                       | 9,600 ~ 41,300 ~ 48,000       | 11,400 ~ 47,800 ~ 58,080      | 13,800 ~ 52,900 ~ 63,200      |
|  | Heating                              | Min.~Rated-Max.           | kW                          | 3.2 ~ 12.5 ~ 15.2             | 3.7 ~ 16.0 ~ 17.3             | 4.5 ~ 17.4 ~ 18.8             |
|  |                                      | Min.~Rated-Max.           | Btu/h                       | 10,752 ~ 42,700 ~ 52,000      | 12,768 ~ 54,600 ~ 59,000      | 15,456 ~ 59,400 ~ 64,000      |
| Power Input                              | Cooling                              | Min.~Rated-Max.           | kW                          | 0.8 ~ 2.39 ~ 3.79             | 0.84 ~ 3.17 ~ 5.08            | 1.0 ~ 3.86 ~ 5.86             |
|  | Heating                              | Min.~Rated-Max.           | kW                          | 0.89 ~ 2.54 ~ 4.72            | 1.30 ~ 3.66 ~ 5.17            | 1.49 ~ 4.16 ~ 6.19            |
| EER / COP                                |                                      |                           | W / W                       | 5.06 / 4.92                   | 4.41 / 4.37                   | 4.01 / 4.18                   |
| Energy Label (Rated)                     | Cooling / Heating                    |                           | -                           | - / -                         | - / -                         | - / -                         |
| SEER / SCOP                              |                                      |                           | Wh / Wh                     | - / -                         | - / -                         | - / -                         |
| Energy Label (Seasonal)                  | Cooling / Heating                    |                           | -                           | - / -                         | - / -                         | - / -                         |
| Annual electricity consumption           | Cooling                              |                           | kWh                         | -                             | -                             | -                             |
| Power Supply                             |                                      |                           | V, Ø, Hz                    | 380-415 / 3 / 50              | 380-415 / 3 / 50              | 380-415 / 3 / 50              |
| Running Current                          | Cooling                              | Min.~Rated~Max.           | A                           | 1.5 ~ 3.3 ~ 5.7               | 1.8 ~ 4.4 ~ 7.3               | 2.3 ~ 5.4 ~ 8.4               |
|  | Heating                              | Min.~Rated~Max.           | A                           | 1.7 ~ 3.3 ~ 6.9               | 2.1 ~ 5.1 ~ 7.5               | 2.5 ~ 5.5 ~ 9.0               |
| Starting Current                         | Cooling                              | Max.                      | A                           | -                             | -                             | -                             |
|  | Heating                              | Max.                      | A                           | -                             | -                             | -                             |
| Wiring Connections                       | Power Supply Cable (included Earth)  | Outdoor Unit              | No. x mm <sup>2</sup> (AWG) | 5C x 2.5 (12)                 | 5C x 2.5 (12)                 | 5C x 2.5 (12)                 |
|  | Power and transmission cable         |                           | No. x mm <sup>2</sup> (AWG) | 4C x 0.75 (18)                | 4C x 0.75 (18)                | 4C x 0.75 (18)                |
| Combination                              | Sum of Indoor Units Capacity         |                           | kBtu/h                      | 54                            | 63                            | 73                            |
|  | Number of Indoor Units               |                           | EA                          | 7                             | 8                             | 9                             |
|  | Number of BD Units                   |                           | EA                          | 3                             | 3                             | 3                             |
| Casing Color                             |                                      |                           | -                           | Warm Gray                     | Warm Gray                     | Warm Gray                     |
| Dimensions                               | W x H x D                            |                           | mm                          | 950 x 1380 x 330              | 950 x 1380 x 330              | 950 x 1380 x 330              |
|  | W x H x D                            |                           | inch                        | 37.4 x 54.3 x 13.0            | 37.4 x 54.3 x 13.0            | 37.4 x 54.3 x 13.0            |
| Net Weight                               |                                      |                           | kg (lbs)                    | 96 (211.6)                    | 96 (211.6)                    | 96 (211.6)                    |
| Compressor                               | Type                                 | -                         |                             | Twin Rotary                   | Twin Rotary                   | Twin Rotary                   |
|  | Model                                | Model x No.               |                             | GPT442MAA x 1                 | GPT442MAA x 1                 | GPT442MAA x 1                 |
|  | Motor type                           | -                         |                             | BLDC                          | BLDC                          | BLDC                          |
|  | Motor Output                         | W x No.                   |                             | 4,000 (at 60Hz) x 1           | 4,000 (at 60Hz) x 1           | 4,000 (at 60Hz) x 1           |
| Refrigerant                              | Type                                 | -                         |                             | R410A                         | R410A                         | R410A                         |
|  | Precharged Amount                    | g (oz)                    |                             | 4,400 (155.2)                 | 4,400 (155.2)                 | 4,400 (155.2)                 |
|  | Chargeless-Pipe Length               | m (ft)                    |                             | 40 (131.2)                    | 40 (131.2)                    | 40 (131.2)                    |
|  | Additional Charging Volume           | g/m (oz/ft)               |                             | 20 (0.22)                     | 20 (0.22)                     | 20 (0.22)                     |
|  | Control                              | -                         |                             | Electronic Expansion Valve    | Electronic Expansion Valve    | Electronic Expansion Valve    |
| Refrigerant Oil                          | Type                                 | -                         |                             | FVC68D                        | FVC68D                        | FVC68D                        |
|  | Charged volume                       | cc x No.                  |                             | 1,300 x 1                     | 1,300 x 1                     | 1,300 x 1                     |
| Heat Exchanger                           | (Row x Column x Fins per inch) x No. |                           | -                           | (2 x 32 x 14) x2              | (2 x 32 x 14) x2              | (2 x 32 x 14) x2              |
| Fan                                      | Type                                 | -                         |                             | Propeller                     | Propeller                     | Propeller                     |
|  | Air Flow Rate                        | m <sup>3</sup> /min x No. |                             | 60 x 2                        | 60 x 2                        | 60 x 2                        |
| Fan Motor                                | Type                                 | -                         |                             | BLDC                          | BLDC                          | BLDC                          |
|  | Output                               | W x No.                   |                             | 124.2 x 2                     | 124.2 x 2                     | 124.2 x 2                     |
| Sound Pressure Level                     | Cooling / Heating                    | Rated                     | dB(A)                       | 53 / 55                       | 54 / 56                       | 54 / 56                       |
| Sound Power Level                        | Cooling                              | Rated                     | dB(A)                       | -                             | -                             | -                             |
| Piping Connections                       | Liquid                               | Outer Dia.                | mm(inch) x No.              | Ø 9.52 (3/8)                  | Ø 9.52 (3/8)                  | Ø 9.52 (3/8)                  |
|  | Gas                                  | Outer Dia.                | mm(inch) x No.              | Ø 19.05 (3/4)                 | Ø 19.05 (3/4)                 | Ø 19.05 (3/4)                 |
| Piping Length                            | Total Piping                         | Max.                      | m (ft)                      | 125 (410.1)                   | 135 (442.9)                   | 145 (475.7)                   |
|  | Main Piping                          | Max.                      | m (ft)                      | 55 (180.4)                    | 55 (180.4)                    | 55 (180.4)                    |
|  | Total Branch Piping                  | Max.                      | m (ft)                      | 70 (229.7)                    | 80 (262.5)                    | 90 (295.3)                    |
|  | Each Branch Piping                   | Max.                      | m (ft)                      | 15 (49.2)                     | 15 (49.2)                     | 15 (49.2)                     |
| Maximum Height Difference                | Outdoor Unit ~ Indoor Unit           | Max.                      | m (ft)                      | 30 (98.4)                     | 30 (98.4)                     | 30 (98.4)                     |
|  | Indoor Unit ~ Indoor Unit            | Max.                      | m (ft)                      | 15 (49.2)                     | 15 (49.2)                     | 15 (49.2)                     |
| Operation Range<br>(Outdoor Temperature) | Cooling                              | Min. ~ Max.               | °C DB (°F DB)               | -10 (14.0) ~ 48 (118.4)       | -10 (14.0) ~ 48 (118.4)       | -10 (14.0) ~ 48 (118.4)       |
|  | Heating                              | Min. ~ Max.               | °C WB (°F WB)               | -18 (-0.4) ~ 18 (64.4)        | -18 (-0.4) ~ 18 (64.4)        | -18 (-0.4) ~ 18 (64.4)        |

## Note:

- All data are based on the following conditions:
  - Cooling Temperature : Indoor 27°C(80.6°F) DB / 19°C(66.2°F) WB  
Outdoor 35°C(95°F) DB / 24°C(75.2°F) WB
  - Heating Temperature : Indoor 20°C(68°F) DB / 15°C(59°F) WB  
Outdoor 7°C(44.6°F) DB / 6°C(42.8°F) WB
  - Piping Length : Interconnected Pipe Length = 5m
  - Difference Limit of Elevation (Outdoor ~ Indoor Unit) is Zero.
- Wiring cable size must comply with the applicable local and national code.
- Due to our policy of innovation some specifications may be changed without notification.
- Sound Level Values are measured at Anechoic chamber. Therefore, these values can be increased(maximum 3dB(A)) owing to ambient conditions during operation.

## 2. List of Functions & Accessory

### 2.1 List of Functions

| Category             | Function                                | A7UW42LFA0<br>[FM41AH U32JRD] | A8UW48LFA0<br>[FM49AH U32JRD] | A9UW56LFA0<br>[FM57AH U32JRD] |
|----------------------|---|-------------------------------|-------------------------------|-------------------------------|
| Reliability          | Defrost / Deicing                       | O                             | O                             | O                             |
|                      | High Pressure Switch                    | X                             | X                             | X                             |
|                      | Low Pressure Switch                     | X                             | X                             | X                             |
|                      | Phase protection                        | O                             | O                             | O                             |
|                      | Restart Delay (3-minutes)               | O                             | O                             | O                             |
|                      | Self Diagnosis                          | O                             | O                             | O                             |
|                      | soft start                              | O                             | O                             | O                             |
| Convenience          | Test Function                           | O                             | O                             | O                             |
|                      | Auto operation(Artificial intelligence) | O                             | O                             | O                             |
|                      | Wiring Error Check                      | O                             | O                             | O                             |
|                      | Night Quiet Mode                        | O                             | O                             | O                             |
|                      | Peak Control                            | O                             | O                             | O                             |
|                      | Mode Lock                               | O                             | O                             | O                             |
|                      | Forced Operation                        | O                             | O                             | O                             |
| CAC Network Function | Auto Restart Operation                  | O                             | O                             | O                             |
|                      | Central control(LGAP)                   | O                             | O                             | O                             |
|                      | Dry contact                             | O                             | O                             | O                             |
|                      | PDI(Power Distribution Indicator)       | O                             | O                             | O                             |
|                      | PI485                                   | O                             | O                             | O                             |

**Note :**

O : Applied, X : Not applied

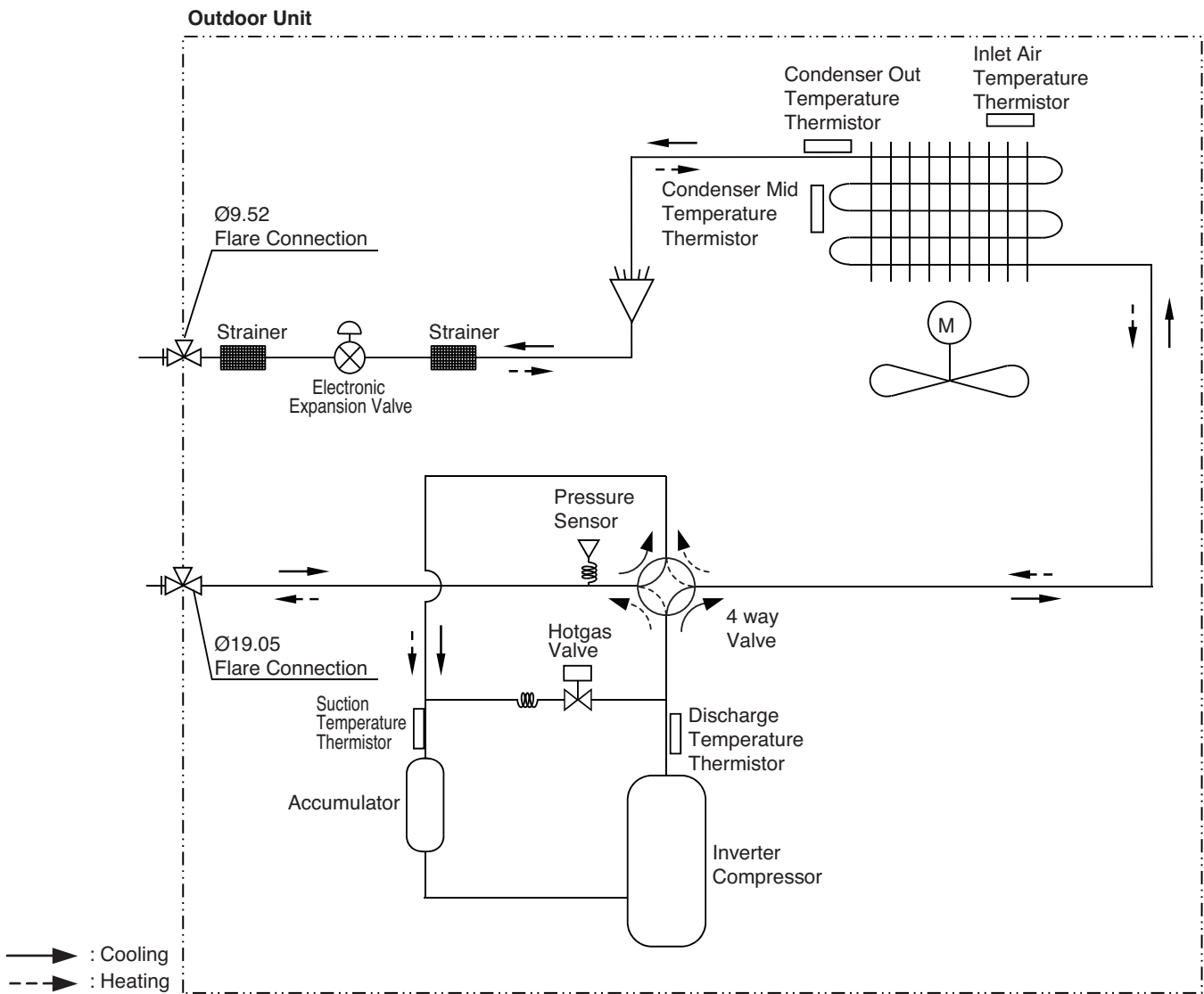
\* Option : Model name & price are different according to options, and assembled in factory with main unit.

Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

### 2.2 List of Accessory

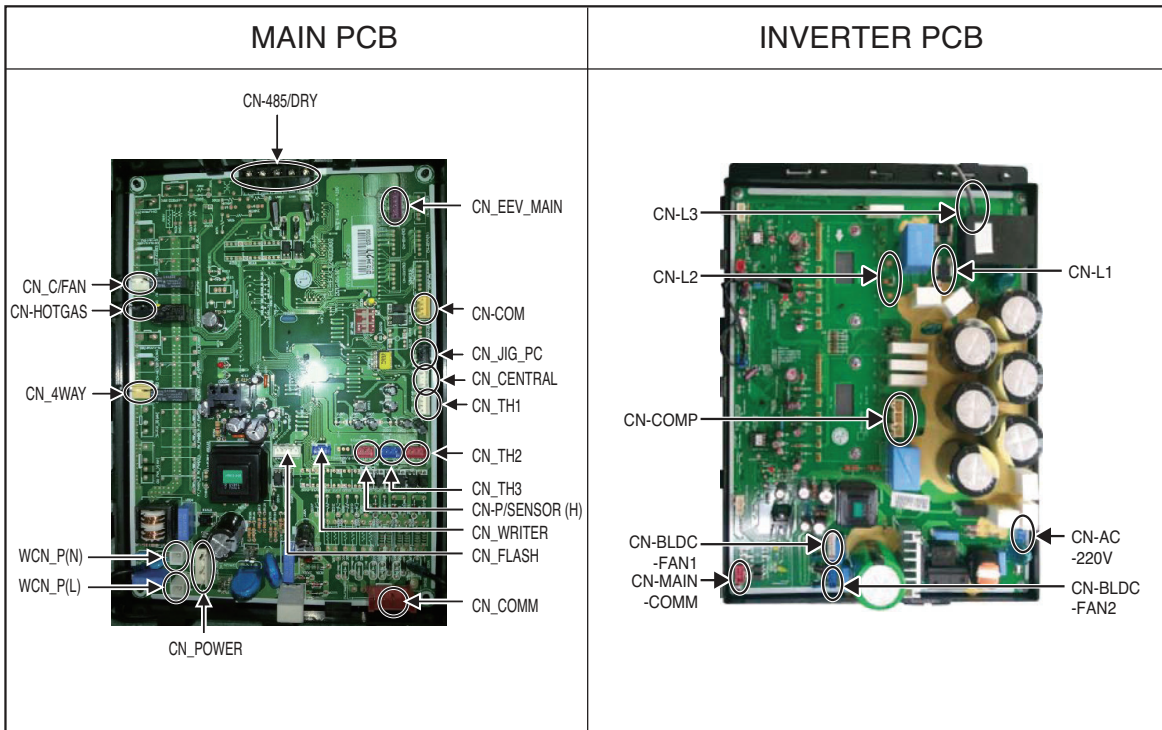
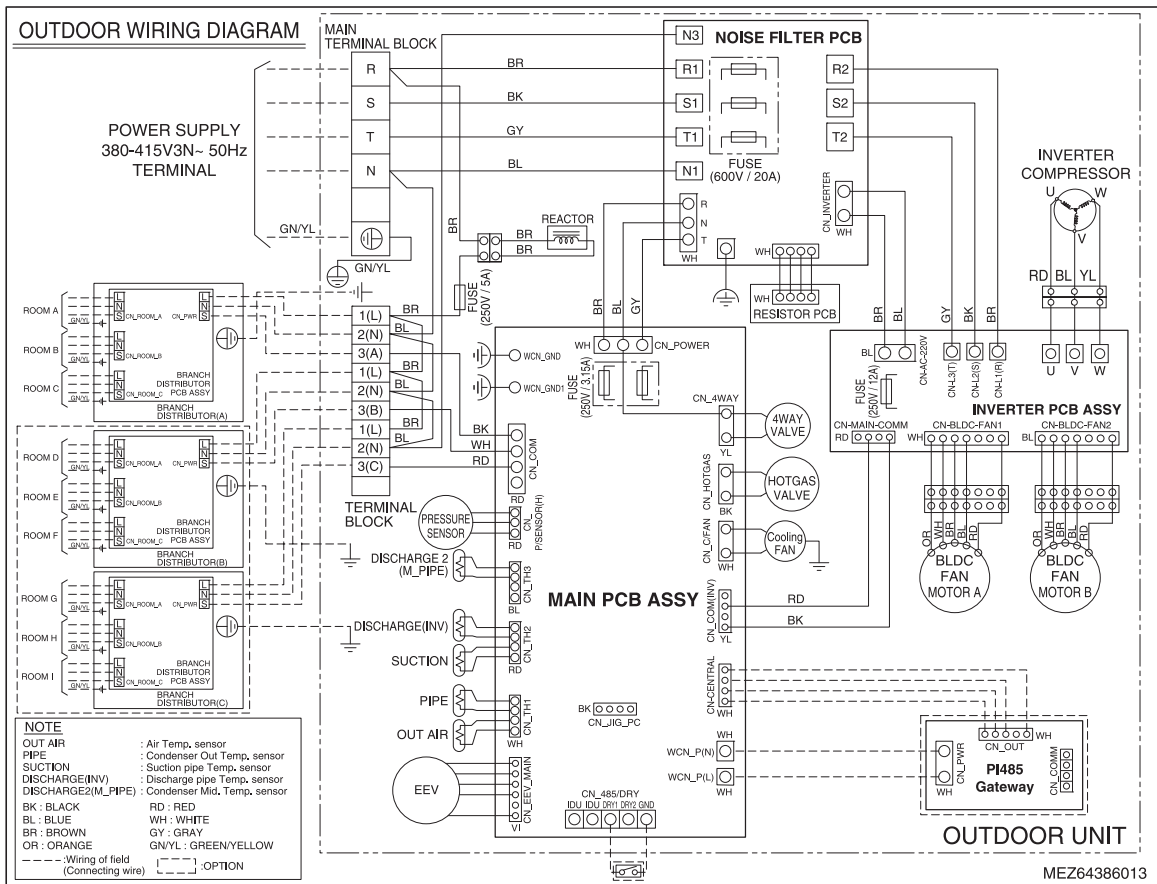
| Device                         |                                | A7UW42LFA0<br>[FM41AH U32JRD] | A8UW48LFA0<br>[FM49AH U32JRD] | A9UW56LFA0<br>[FM57AH U32JRD] |
|--------------------------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Central Controller             | Simple Controller              | PQCSB101S0                    | PQCSB101S0                    | PQCSB101S0                    |
|                                | Function controller            | PQCSB101S0 + PQCSC101S0       | PQCSB101S0 + PQCSC101S0       | PQCSB101S0 + PQCSC101S0       |
|                                | Function Scheduler             | PQCSB101S0 + PQCSD130A0       | PQCSB101S0 + PQCSD130A0       | PQCSB101S0 + PQCSD130A0       |
|                                | AC Ez                          | PQCSZ250S0                    | PQCSZ250S0                    | PQCSZ250S0                    |
|                                | AC Smart II                    | PQCSW320A1E                   | PQCSW320A1E                   | PQCSW320A1E                   |
|                                | Option Kit (SD card type)      | PQCSE341A0 / PQCSE342A0       | PQCSE341A0 / PQCSE342A0       | PQCSE341A0 / PQCSE342A0       |
|                                | ACP(Advanced Control Platform) | PQCPA11A0E / PQCPB11A0E       | PQCPA11A0E / PQCPB11A0E       | PQCPA11A0E / PQCPB11A0E       |
|                                | AC Manager                     | PQCSS520A0E                   | PQCSS520A0E                   | PQCSS520A0E                   |
|                                | PI485                          | PMNFP14A0/PMNFP14A1           | PMNFP14A0/PMNFP14A1           | PMNFP14A0/PMNFP14A1           |
|                                | DO(Digital Output) Kit         | PQNFP00T0                     | PQNFP00T0                     | PQNFP00T0                     |
| BNU<br>(Building Network Unit) | LONWORKS Gateway               | PQNFB16A1                     | PQNFB16A1                     | PQNFB16A1                     |
|                                | BACnet Gateway                 | PQNFB17B0                     | PQNFB17B0                     | PQNFB17B0                     |
| Installation                   | Y branch                       | PMBL5620                      | PMBL5620                      | PMBL5620                      |
|                                | Header branch                  | PMBL1203F0                    | PMBL1203F0                    | PMBL1203F0                    |
|                                | Air Guide                      | X                             | X                             | X                             |
|                                | BD Unit                        | PMBD3620, PMBD3630, PMBD3640  | PMBD3620, PMBD3630, PMBD3640  | PMBD3620, PMBD3630, PMBD3640  |
| ODU Dry Contact                |                                | O                             | O                             | O                             |
| Low Ambient Kit                |                                | O (Logical operation)         | O (Logical operation)         | O (Logical operation)         |

# 3. Piping Diagrams

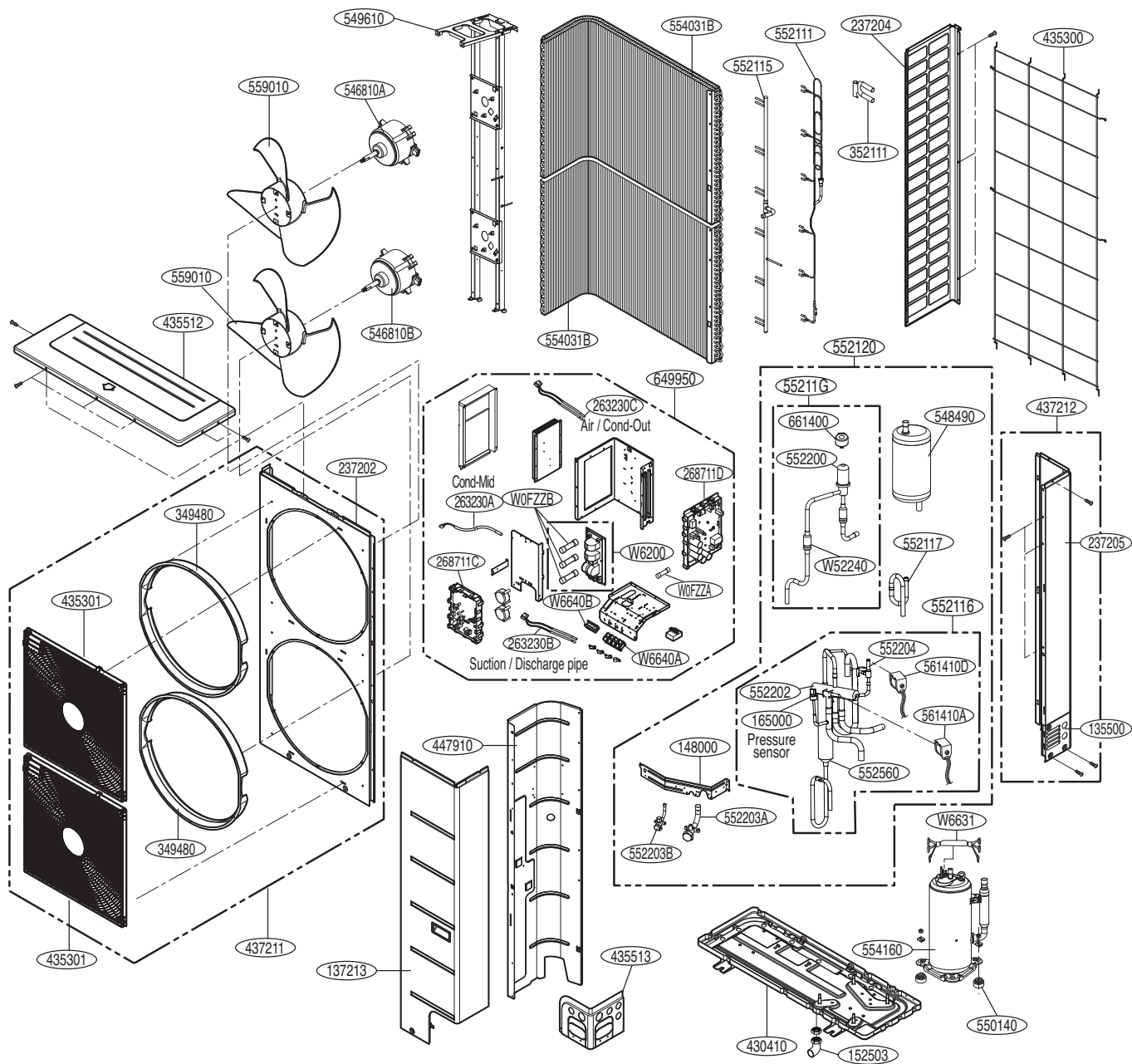


| PCB Connector  | Description                |
|----------------|----------------------------|
| CN-TH1         | Air / Cond Out             |
| CN-TH2         | Suction / Discharge        |
| CN-TH3         | Cond Mid                   |
| CN-P/SENSOR(H) | Pressure Sensor            |
| CN-EEV-MAIN    | Electronic Expansion Valve |
| CN-HOTGAS      | Hotgas Valve               |

# 4. Wiring Diagrams



# 5. Exploded View



| Location No. | PCB Connector  | Description         | Housing Color |
|--------------|----------------|---------------------|---------------|
| 263230C      | CN-TH1         | Air / Cond Out      | White         |
| 263230B      | CN-TH2         | Suction / Discharge | Red           |
| 263230A      | CN-TH3         | Cond Mid            | Blue          |
| 165000       | CN-P/SENSOR(H) | Pressure Sensor     | Red           |



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