

**DC INVERTER**

## **INSTALLATION INSTRUCTIONS**

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**ENGLISH**

1. LOCATION OF OUTDOOR UNIT
2. ELECTRICAL CONNECTION BETWEEN INDOOR AND OUTDOOR UNIT
3. REFRIGERANT TUBING
4. FEATURES SETUP
5. INSTALLATION TEST MISWIRING CHECK
6. FINAL TASKS

**NOTE:** This manual is for Multi split applications only.  
For indoor units installation, please refer to the installation manual  
supplied within the indoor unit package.

# INSTALLATION INSTRUCTIONS FOR MULTI SPLIT DCI DUO AIR CONDITIONER

## CAUTION:

Detail information is in installation manual of indoor unit, the following content is special requirement of duo outdoor unit.

## 1. LOCATION OF OUTDOOR UNIT

Select the location considering the following:

### OUTDOOR UNIT

1. The unit may be suspended from a wall by a bracket (Optional) or located in a free standing position on the floor (preferably slightly elevated).
2. If the unit is suspended, ensure that the bracket is firmly connected and the wall is strong enough to withstand vibrations.
3. Unit location should not disturb neighbors with noise or exhaust air stream.
4. Refer to figure 1 for allowed installation distances.

Note: When installing the units, pls refer to the installation manual supplied within the indoor unit package together!

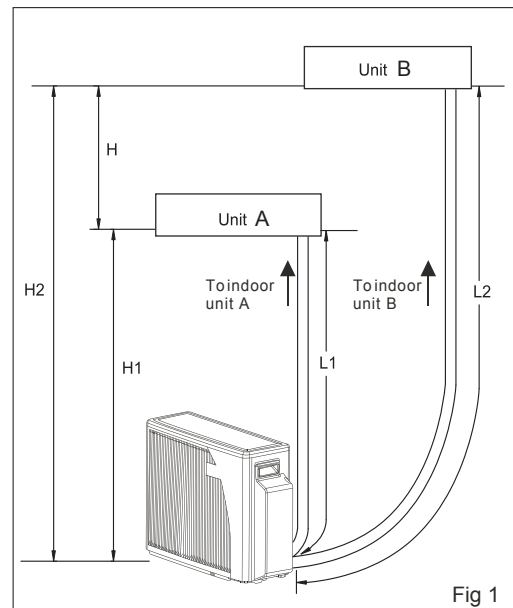


Fig 1 NOTES:  
 $L1 + L2 \leq 30m$  and  $L1, L2 \leq 25m$   
 $H \leq 5m$   $H1, H2 \leq 10m$

## 2. ELECTRICAL CONNECTION BETWEEN INDOOR AND OUTDOOR UNIT

Electrical connections:

1. Remove the power supply cable that is connected to the indoor units.
2. To connect the indoor units to the outdoor unit, use the following electrical cables.

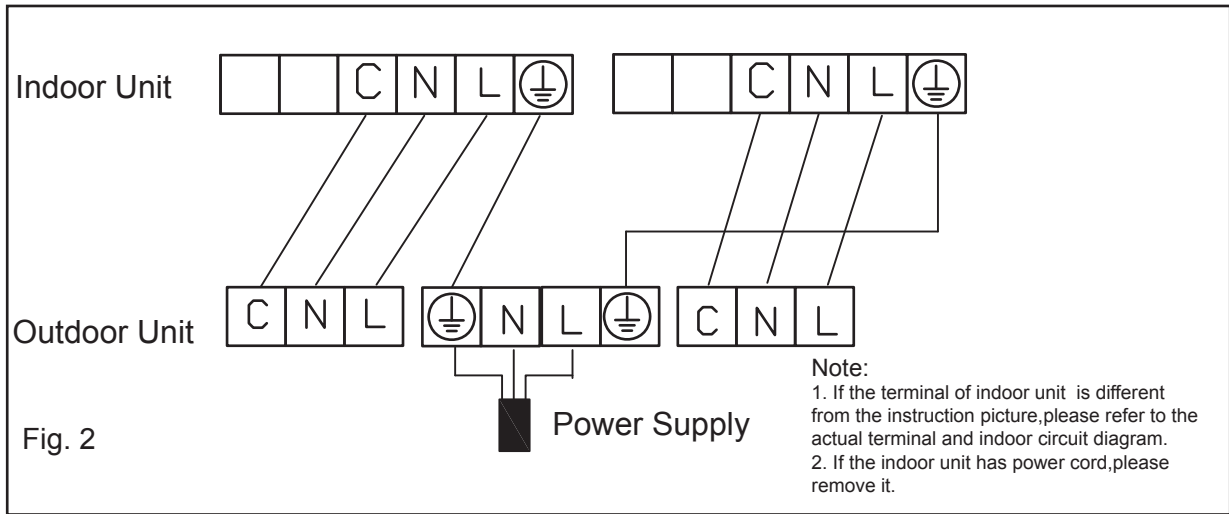
Power input cable	3wires x 2.5mm <sup>2</sup>
Cable between indoor and outdoor unit	4wires x 1.5mm <sup>2</sup>

3. Connect the cable ends to the terminals of the indoor and outdoor units, as shown in fig. 2. Please select corresponding connection according to the different indoor units.

### ⚠ Attention

For multi-split units, remove power supply cord from indoor unit.  
Connect main supply to outdoor unit only!

Fig. 2 Wirling Diagram



### 3. REFRIGERANT TUBING

#### CONNECT THE INDOOR TO THE OUTDOOR UNIT

The indoor unit contains a small quantity of nitrogen. Do not unscrew the nuts from the unit until you are ready to connect the tubing. The outdoor unit is supplied with sufficient refrigerant charge (R410A). Refer to outdoor unit nameplate.

To prevent crushing, bend tubes using a bending tool.

NOTE: Use refrigeration R410A type copper tubing only

1. Open the valve cover.
2. Use tubing diameter that corresponds to the tubing diameter of the indoor and outdoor units. Note that the liquid and suction tubes have different diameters. (See tube size, torque tightening table.)
3. Place flare nuts on tube ends before preparing them with a flaring tool. Use the flare nuts that are mounted on the supplied outdoor and indoor units.
4. Connect the all ends of the tubing to the indoor and outdoor units. Notice the sign. All ends should correspond one by one.
5. Insulate each tube separately, and their unions, with at least 13 mm thick of insulation. Wrap the refrigerant tubing, drain hose and electric cables together with a vinyl tape (UV protected).

**Caution!**

When unscrewing the valve caps, do not stand in front of them or the spindles at any time, as the system is under pressure.

**NOTE:**

The communication wire of IDU A connecting to A# valve must be connected to CA on ODU terminal, and so is the communication wire of IDU B.

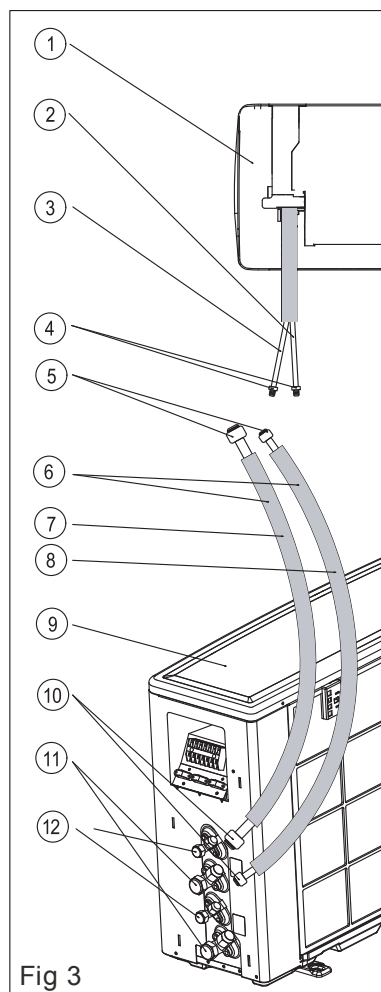


Fig.3

1. INDOOR UNIT
2. Liquid tube (small dia.)
3. Suction tube (large dia.)
4. Plugs
5. Flare nuts
6. Tubing between units
7. Suction tube
8. Liquid tube
9. OUTDOOR UNIT
10. Flare nuts
11. Suction valve (larger)
12. Liquid valve (small)

**NOTE:**

A# valves connect IDU-A.  
 B# valves connect IDU-B.  
 All ends should correspond one by one.

Fig 3

# 4 FEATURES SETUP

## Display Board general description

The display board serves as interface between the installer/technician to the A/C unit.

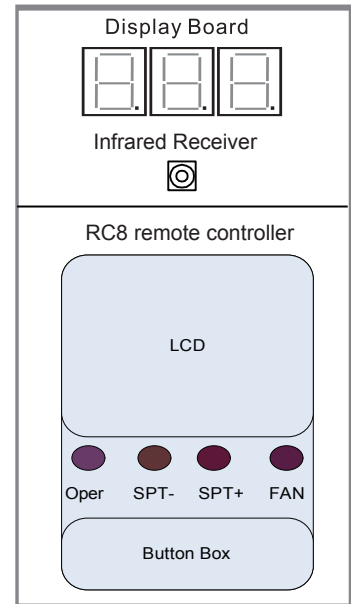
The navigation through the menu can be performed by RC8 (Both select "SPT-" and "SPT+" for upto 5 seconds to enter and escape diagnostics mode) through the infrared receiver.

REMOTE CONTROL	FUNCTION
FAN	SELECT
SPT-	DOWN
SPT+	UP
OPER/STBY	ESCAPE

-Scroll ( "Up" & "Down" ) - used to scroll between options (up and down)

-Select - used to select an option.

-Escape ( "Esc" ) - Will go up one level in the menu



## Thermal mode setting

There are 2 options for the thermal mode setting of the unit, either to set the mode by the indoor units selection or by forcing the mode to cool or heat.

## Priority room setting

If an IDU is defined as a priority unit, the operational mode (Cool/Heat) will be defined according to the priority unit request. If no unit is selected (as the default value) the first unit turned on determines the unit mode.

1. Scroll down the Down button until setup is displayed (Stp) and then press the Select button.
2. Scroll down the Down button to choose the unit priority requested and then press the Select button.

### Display Board Menu list

- Mode (Cl/Ht/Sb)**
  - Technician Test (tt)
    - Technician Test Cool (ttC)
    - Technician Test Heat (ttH)
- Installation Test (it)**
  - Number of IDUs (nID)
  - Begin test (bgn)
  - Test Result (pf)
  - Matrix Table Test Result (tbl)
- Diagnostics (dia)**
  - Outdoor Unit (oxx)
  - Indoor Unit A (axx)
  - Indoor Unit B (bxx)
- Set Up (Stp)**
  - First IDU Wins (idu)
  - IDU A is master (a-p)
  - IDU B is master (b-p)

a. No unit priority - Display shows "idu" (default value).



b. Unit A is in priority - Display shows "A-p" .



c. Unit B is in priority - Display shows "b-p" .



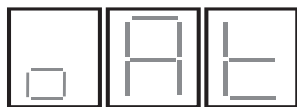
# 5 INSTALLATION TEST MISWIRING CHECK

For proper system operation, each communication cable has to be connected to the corresponding indoor unit, following the refrigerant tubes. This means that the communication lines Ca,Cb has to be connected to the indoor units A, B respectively.

To serve this purpose the system is designed to have the "Installation Test Mode". When this mode is set, the unit verifies whether the correct connections were made or not.

**Notes:**

- 1. The miswiring check cannot be performed while outdoor temperature is below 5°C. In this situation the display will show "OAT".



1. Outdoor Temperature below 5°C

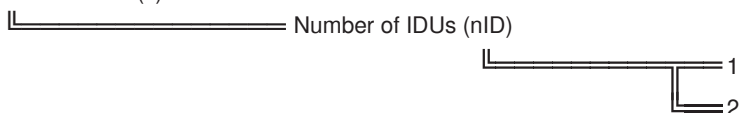


2. Unit malfunction (example: code O01)

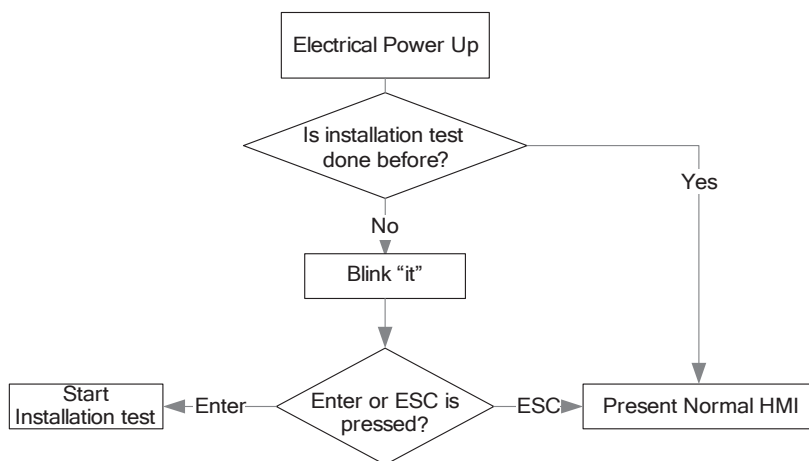
- 2. The miswiring check cannot be performed if some components in the unit are out of operation. In this situation the display will show the error code "xxx".
- 3. The indoor units are turned automatically to installation test mode, no need to turn them on.

**Please follow all the steps below:**

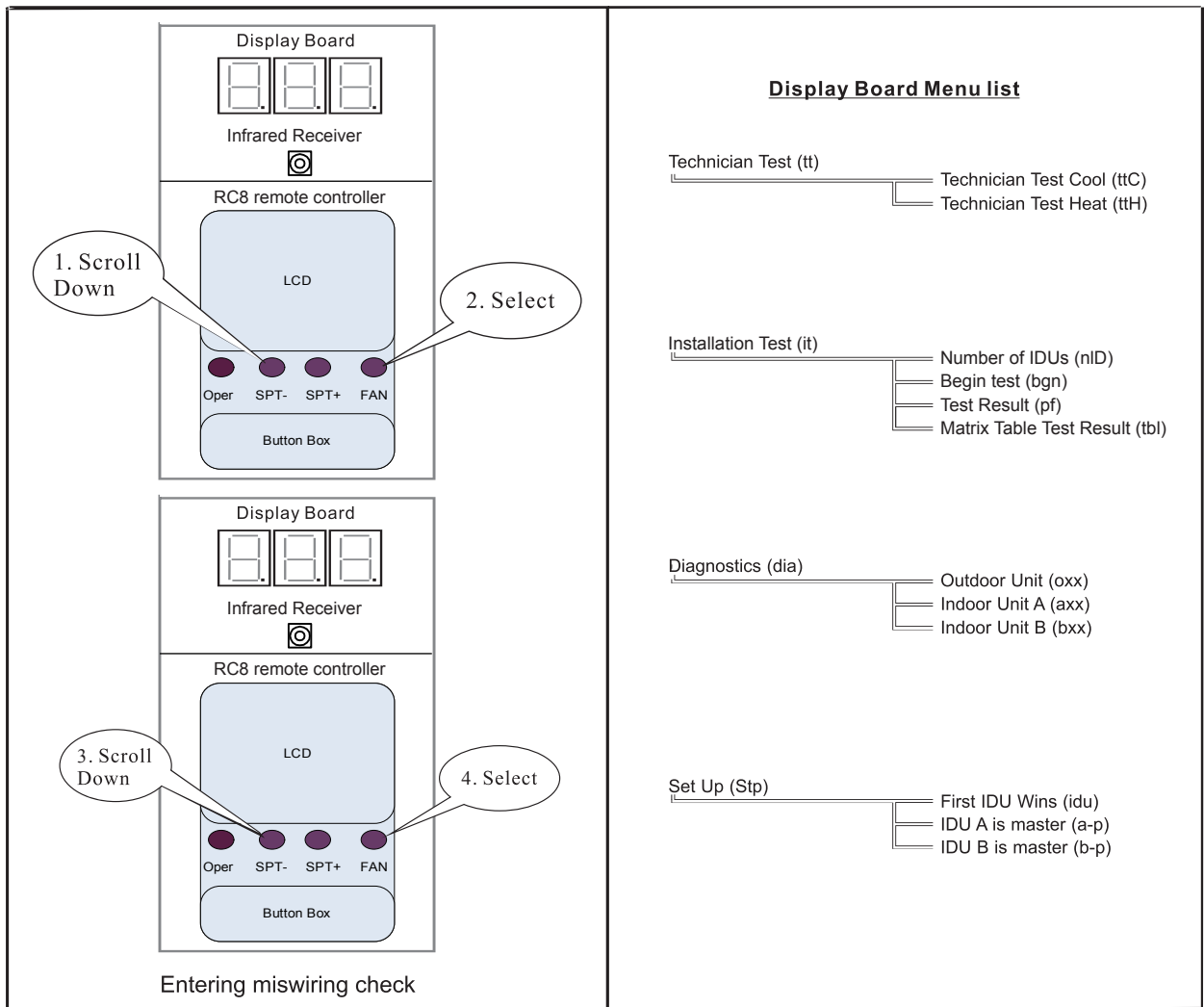
- 1. Make sure all wiring and piping to indoor units are properly connected.
- 2. Turn on the power breaker.
- 3. Number of IDUs  
Installation Test (it)



- 4. Entering installation test
  - a) Entering at the first time



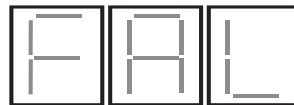
- b) Entering by scrolling the menu(Any time)  
Enter the test by scrolling down to installation test (it) – press the "Down" button until "it" shows on the display, press "Select", then scroll "Down" until "bgn", then press "Select".



- During installation test the system works without the installer interference. It can be observed that the compressor, outdoor fan and indoor fans are stopped and starts according to preset procedure.
- The system exits installation test either by continuous press on the escape button for 5 seconds or when the system finishes installation test by itself after 15 to 19 minutes. During the installation test, the system will count down the remaining time in minutes.
- After installation test, the system stops for 5 minutes, and then it resumes its normal operation. The judgment code is shown on the display - either "pass" or "fail".



Installation test passed with success



Installation test fail

- Upon the judgment code, if required, the installer should correct the communication wiring.

## 6 FINAL TASKS

- Check all valve caps and ensure that they had tightened properly. Close the valve cover.
- Fill gaps on the wall between hole sides and tubing with sealer.
- Attach wiring and tubing to the wall with clamps where necessary.
- Operate the unit for no less than 5 minutes at heating or cooling mode.
- Explain filter removal, cleaning and installation.
- Operate the air conditioner together with the customer and explain all functions.
- Give the operating and installation manuals to the customer.

