

INSTALLATION MANUAL

AIR CONDITIONER

Please read this usage/installation manual completely before installing the product.
Usage/Installation work must be performed in accordance with the national wiring standards by authorized personnel only.
Please retain this installation manual for future reference after reading it thoroughly.

Dry Contact For Thermostat

V-NET

PDRYCB300



P/NO : MFL69265517

www.lg.com

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Safety Precautions



To prevent injury to the user or other people and property damage, the following instructions must be followed.

- Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

⚠ WARNING This symbol indicates the possibility of death or serious injury.

⚠ CAUTION This symbol indicates the possibility of injury or damage.

- Meanings of symbols used in this manual are as shown below.

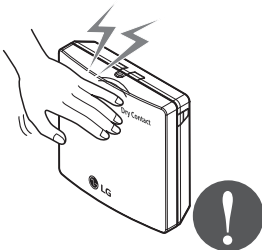
| | |
|---|---|
|  | Be sure not to do. |
|  | Be sure to follow the instruction. |

⚠ WARNING

■ Installation

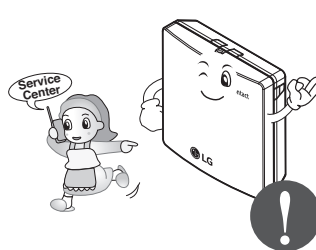
Don't touch with the hands while the power is on.

- Cause fire, electric shock, explosion or injury.



Product installation must be referred to a service center or installation shop.

- Cause fire, electric shock, explosion or injury.



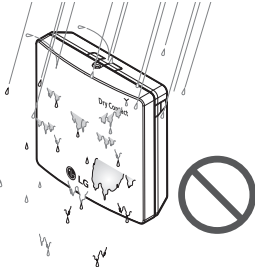
Request installation from installation shop or service center when reinstalling the product.

- Cause fire, electric shock, explosion or injury.



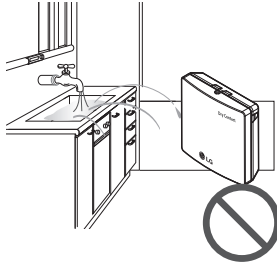
Do not install the product in the place where rain can get to the product.

- Cause product failure



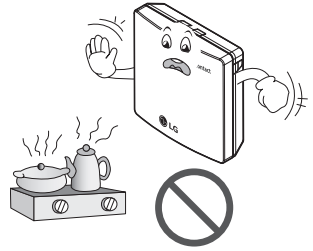
Do not install the unit in humid locations.

- Cause product failure



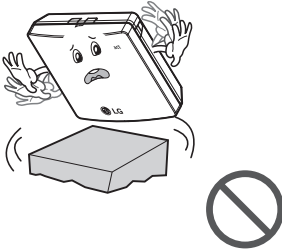
Do not put the product closer to fire.

- Cause fire



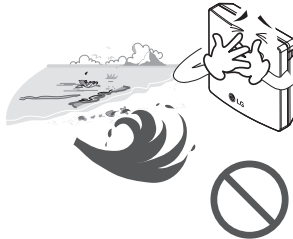
Do not install in a place that cannot withstand the weight of the product.

- The product may get damaged or may break.



Do not install the product to a place that generates oil, steam, salt, sulfuric gas, etc.

- Cause the product's deformation or failure.



Use standardized Product.

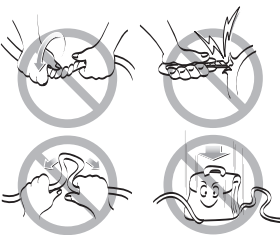
- Cause product failure



■ Operation

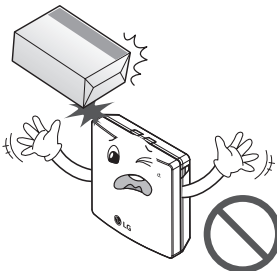
Do not change or extend power lines arbitrarily.

- Cause fire or electric shock.



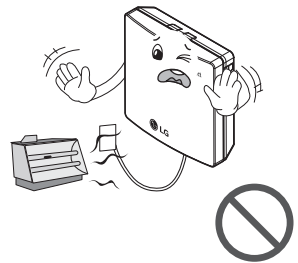
Do not give a shock to the product.

- If you give a shock to the product, it may cause the product's failure.



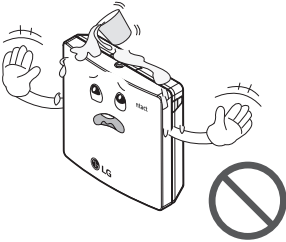
Do not use a heater near the power line.

- Cause fire or electric shock.



Do not spill water inside of the product.

- Cause electric shock or breakdown.



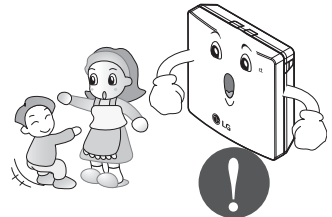
If the product has been inundated, you must refer to a service center or installation shop.

- It can cause a fire.



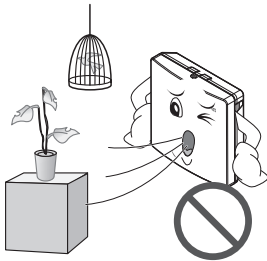
Children and elderly use the product under the guardian's supervision.

- Cause accidents and product failures.



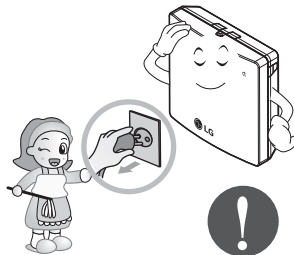
Do not use for special purpose / place such as conserving flora and fauna, precision instruments, art.

- Otherwise, it can cause property damage.



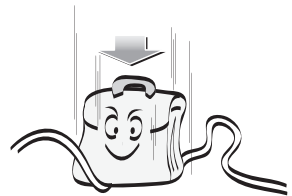
Remove the power plug when cleaning.

- Cause fire or electric shock.



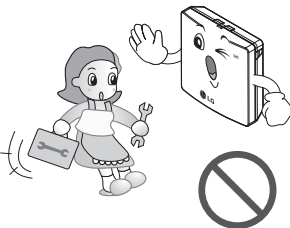
Do not place heavy objects on the power line.

- Cause fire or electric shock.



Do not disassemble, repair, or modify the product.

- Cause fire or electric shock.

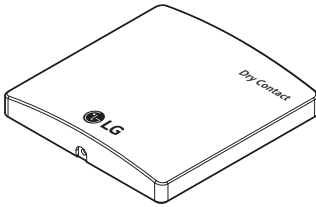


Do not touch with wet hands.

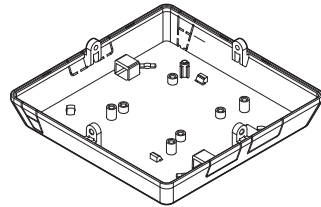
- Cause fire or electric shock.



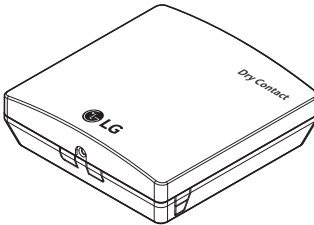
Name of each part



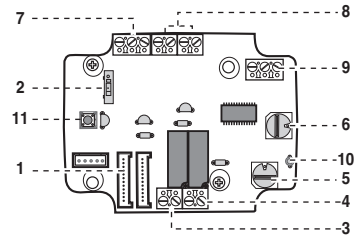
Front Case



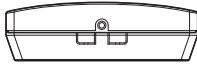
Rear Case



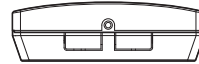
ISO View



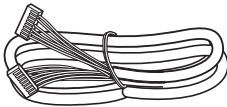
PCB



Side

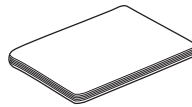


Side



Cable(1 EA)

(For Connecting with indoor unit)



Installation Manual

*** Others :**

Screw 4 EA(For installation)

Clamp 4 EA(For installation)

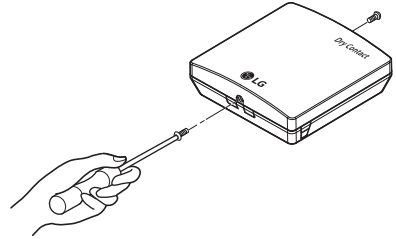
DRY CONTACT FOR THERMOSTAT

- 1. CN_INDOOR : Connector for indoor unit
- 2. CHANGE_OVER_SW : Switch to select External Voltage or Non Voltage for input contact signal
- 3. CN_OUT(O1,O2) : Output terminal to show whether the indoor unit is operating (Relay contact)
- 4. CN_OUT(E3,E4) : Output terminal to show whether there is an error with the indoor unit (Relay contact)
- 5. TEMP_SW : Switch to set the desired temperature of the indoor unit
- 6. SETTING_SW : Switch to select whether to use set function of Dry contact
- 7. CN_Ther/oper : Input terminal for thermo & operation signal
- 8. CN_MODE : Input terminal for Mode signal
- 9. CN_WIND : Input terminal for Wind signal
- 10. DISPLAY_LED : LED to display the status of Dry contact Module
- 11. RESET_SW : Reset switch

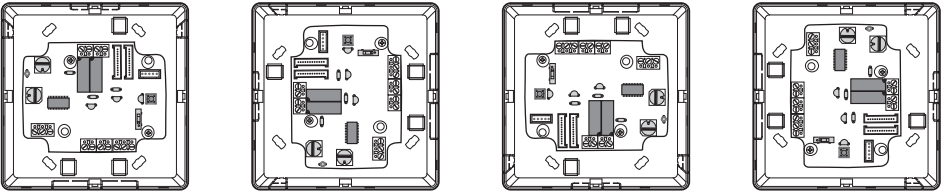
Installation Method

Installation

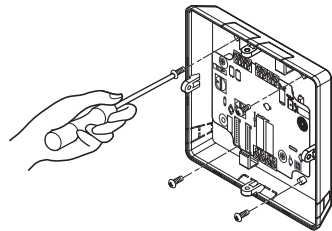
- 1) Loosen and remove two screws that secure the product.



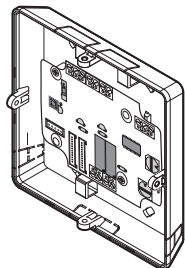
- 2) Position the rear case to the direction towards to the connector for convenient cable arrangement.



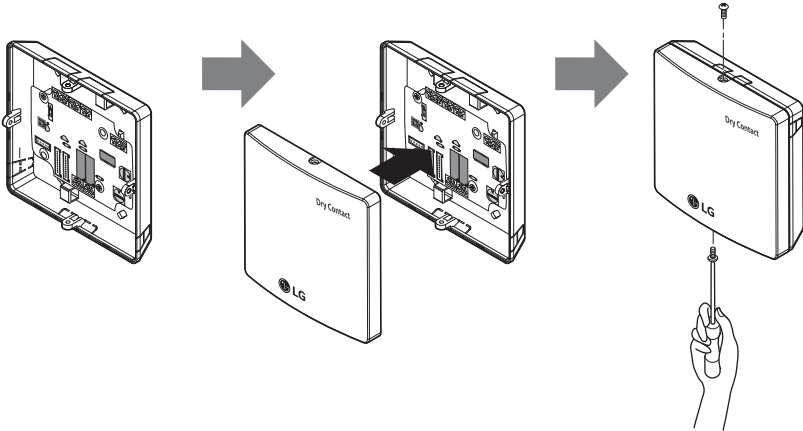
- 3) Secure the rear case on the installation place using the supplied fixing screws.



- 4) Remove knock out shapes on the rear case (4-sided) according to the connector's size and direction.



- 5) Connect the connection wires properly according to the connection method. (Refer to the instruction and set-up description)
- 6) Set the switch according to the setting method. (Refer to the instruction and set-up description)
- 7) Tighten the fixing screws on the top and bottom of the case.



▲ CAUTION

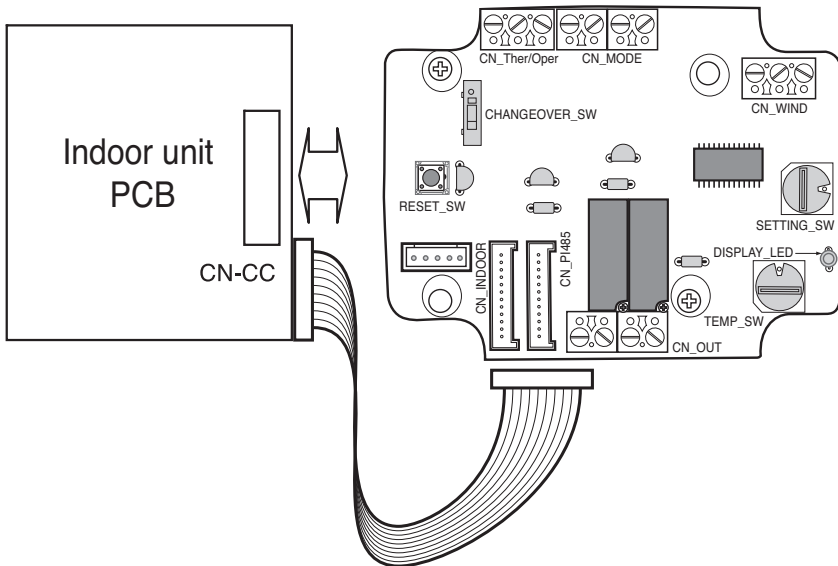
1. Install the product on flat surface and install anchoring screws at more than 2 places. Otherwise the central controller may not be anchored properly.
2. Do not tighten anchoring screws too tightly. It may cause deformation of the case.
3. Do not deform the case at random. It may cause malfunction of the central controller.

Setting and using method

After change any Dry contact setting, then you must press RESET switch to reflect the setting.

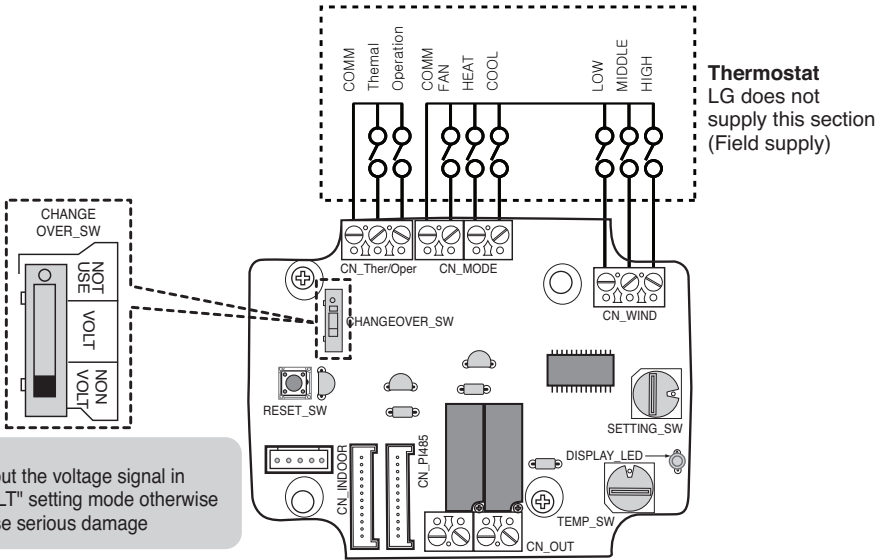
1. Power supply and indoor unit connection

■ When using the Dry contact for communication independently

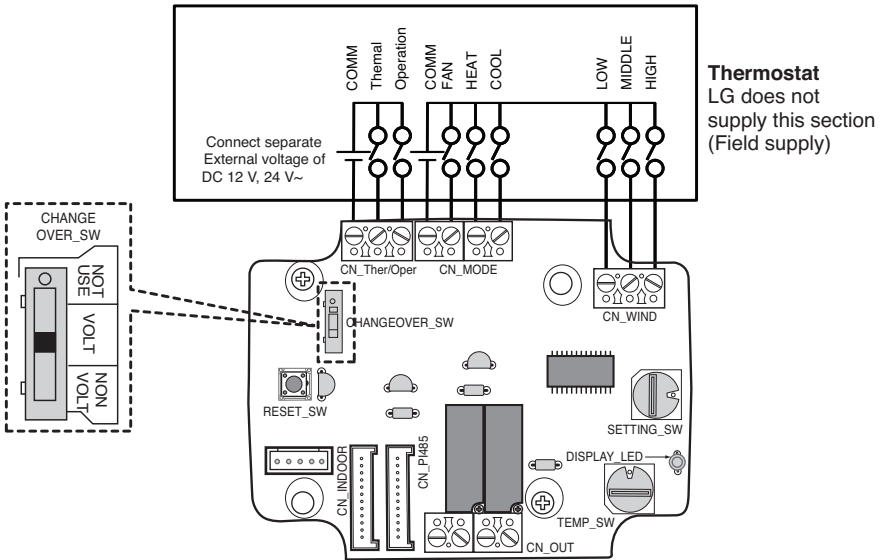


2. Setting of Contact Signal Input

■ For input contact closure only(No power input)

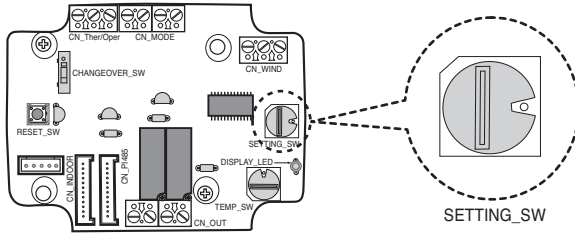


■ For input contact voltage : DC 12 V, 24 V~



3. Setting of 'SETTING_SW'

■ Using 'SETTING_SW', select the Option of control Function as described below



<SETTING_SW Function>

| No. | WIND Signal en/disable | Thermal en/disable | Oper Mode en/disable | Dry Contact Control Priority |
|-----|------------------------|----------------------|----------------------|------------------------------|
| 0 | Disable | Disable | Disable | Disable |
| 1 | Disable | Disable | Disable | Enable ⁴⁾ |
| 2 | Disable | Disable | Enable ³⁾ | Disable |
| 3 | Disable | Disable | Enable | Enable |
| 4 | Disable | Enable ²⁾ | Disable | Disable |
| 5 | Disable | Enable | Disable | Enable |
| 6 | Disable | Enable | Enable | Disable |
| 7 | Disable | Enable | Enable | Enable |
| 8 | Enable ¹⁾ | Disable | Disable | Disable |
| 9 | Enable | Disable | Disable | Enable |
| A | Enable | Disable | Enable | Disable |
| B | Enable | Disable | Enable | Enable |
| C | Enable | Enable | Disable | Disable |
| D | Enable | Enable | Disable | Enable |
| E | Enable | Enable | Enable | Disable |
| F | Enable | Enable | Enable | Enable |

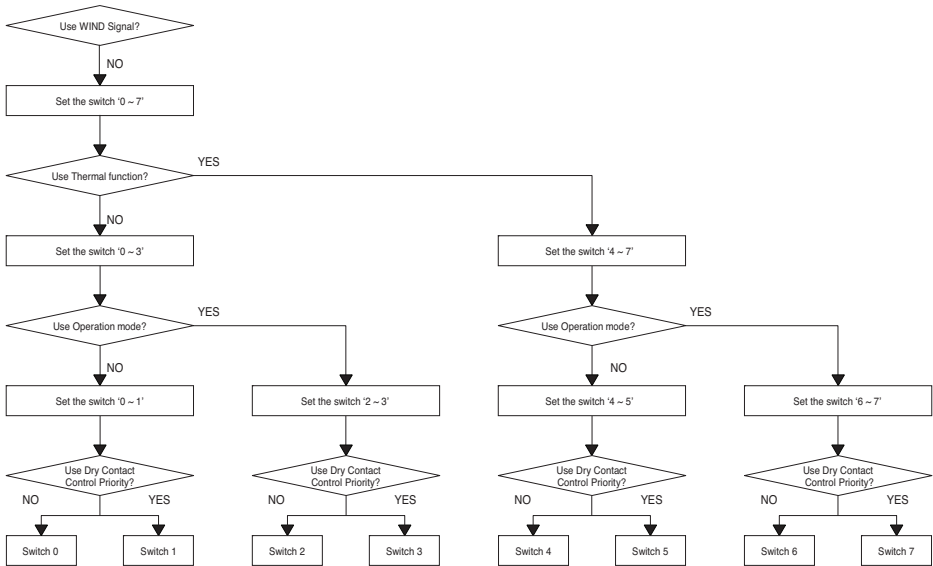
- 1) Enable CN_WIND signal – Amount of wind flow (Low, Middle, High) signal enable
- 2) Enable Thermo ON/OFF input signal
 - Desired Temperature 18 °C in cooling mode
 - Desired Temperature 30 °C in heating mode
 - No function in FAN mode
- 3) Enable CN_MODE signal – Operation mode (Cool, Heat, Fan) signal enable
- 4) Enable Thermostat priority control mode – Indoor's remote-controller signal will be disregarded

Notes

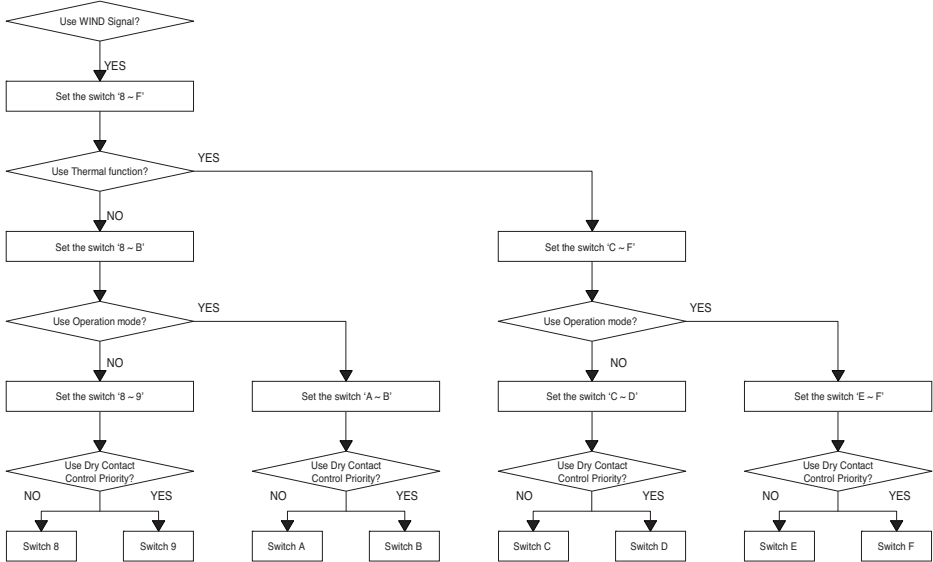
- Information of 'SETTING_SW' is sensed only initial step by Dry contact module therefore , once the configuration changed , Reset of Dry contact module is required.
- After power input or unit's reset , wait 25~30 sec(Display LED 10 times blinking) for unit stabilization then Dry contact module will operate normally.

■ Flow Chart for 'SETTING_SW'

- When not using WIND signal



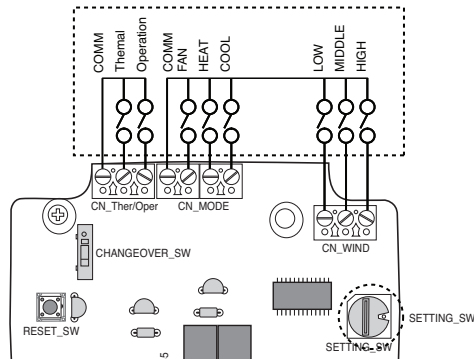
- When using WIND signal



Notes

- When you change a function with remote control without setting Dry_contact control priority the display condition between remote control and controller can be different.

■ Function table for the selection of 'SETTING_SW' and the input signal



| SETTING_SW | CN_MODE input | | | Function |
|-----------------|--------------------|-----------|--------------------|----------|
| | FAN | HEAT | COOL | |
| 2,3,6,7,A,B,E,F | 0 | 0 | 0 | NA |
| | 0 | 0 | 1 | COOL |
| | 0 | 1 | 0 | HEAT |
| | 0 | 1 | 1 | NA |
| | 1 | 0 | 0 | FAN |
| | 1 | 0 | 1 | NA |
| | 1 | 1 | 0 | NA |
| | 1 | 1 | 1 | NA |
| Others | - | - | - | NA |
| SETTING_SW | CN_WIND input | | | Function |
| | Low | Middle | High | |
| 8,9,A,B,C,D,E,F | 0 | 0 | 0 | NA |
| | 0 | 0 | 1 | High |
| | 0 | 1 | 0 | Middle |
| | 0 | 1 | 1 | NA |
| | 1 | 0 | 0 | Low |
| | 1 | 0 | 1 | NA |
| | 1 | 1 | 0 | NA |
| | 1 | 1 | 1 | NA |
| Others | - | - | - | NA |
| SETTING_SW | CN_Ther/Oper input | | Function | |
| | Thermal | Operation | | |
| 4,5,6,7,C,D,E,F | 0 | 0 | Thermal Off + Stop | |
| | 0 | 1 | Thermal Off + Run | |
| | 1 | 0 | Thermal On + Stop | |
| | 1 | 1 | Thermal On + Run | |
| Others | - | - | NA | |

Notes

- 1) Thermal On : This input will change automatically desired temperature
 Desired Temperature 18 °C In cooling mode
 Desired Temperature 30 °C In heating mode
 No function In FAN mode

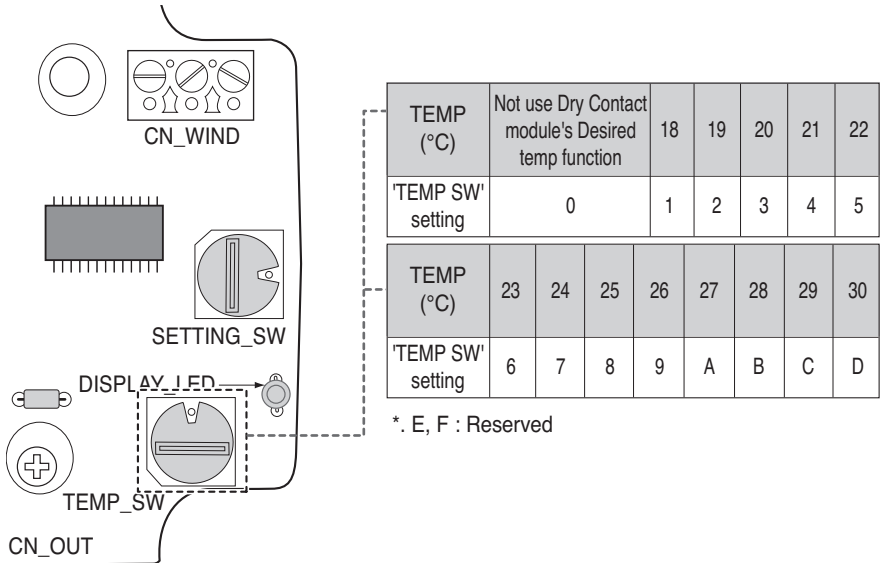
4. Setting of 'TEMP_SW'

■ When setting the desired temperature of the Dry contact Module

: When operating the indoor unit using Dry contact module's desired temperature, set the desired temperature according to the 'TEMP_SW' setting.

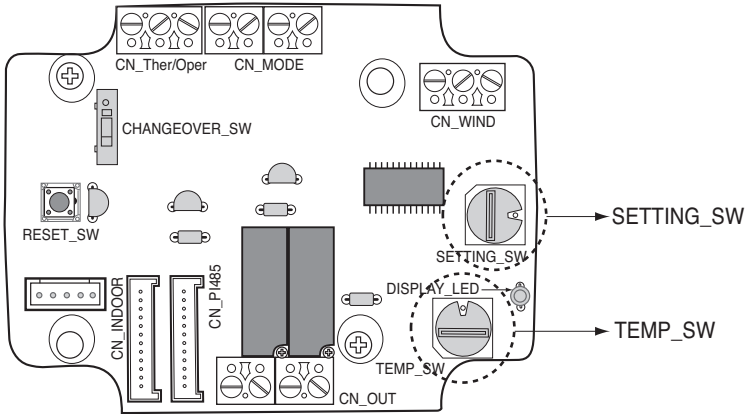
If Thermostat priority control mode is disabled, the desired temperature can be reset by other controller

- Use the 'TEMP_SW' to set the temperature as shown below.



5. Installation of thermostat

- When interlocking with thermostat, select the option of control function as described below.



<Switch Function>

| TEMP_SW | SETTING_SW | Thermostat mode | WIND Signal en/disable |
|---------|------------|---------------------------------|------------------------|
| F | 0 | Conventional AC Unit Thermostat | Disable |
| | 1 | | Enable |
| | 2 | Heat Pump Thermostat_O Terminal | Disable |
| | 3 | | Enable |
| | 4 | Heat Pump Thermostat_B Terminal | Disable |
| | 5 | | Enable |

- 1) When interlocking with thermostat, set TEMP_SW to F.
- 2) Enable CN_WIND signal – Amount of wind flow(Low, Middle, High) signal enable

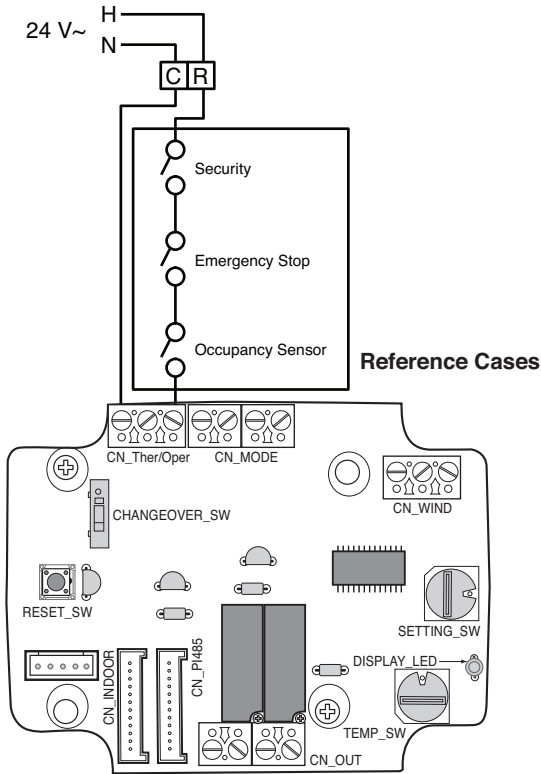
Notes

- Information of 'SETTING_SW' is sensed only initial step by Dry contact module therefore , once the configuration changed , Reset of Dry contact module is required.
- After power input or unit's reset , wait 25~30 sec(Display LED 10 times blinking) for unit stabilization then Dry contact module will operate normally.
- Do not use desired temperature setting function when interlocking with thermostat.

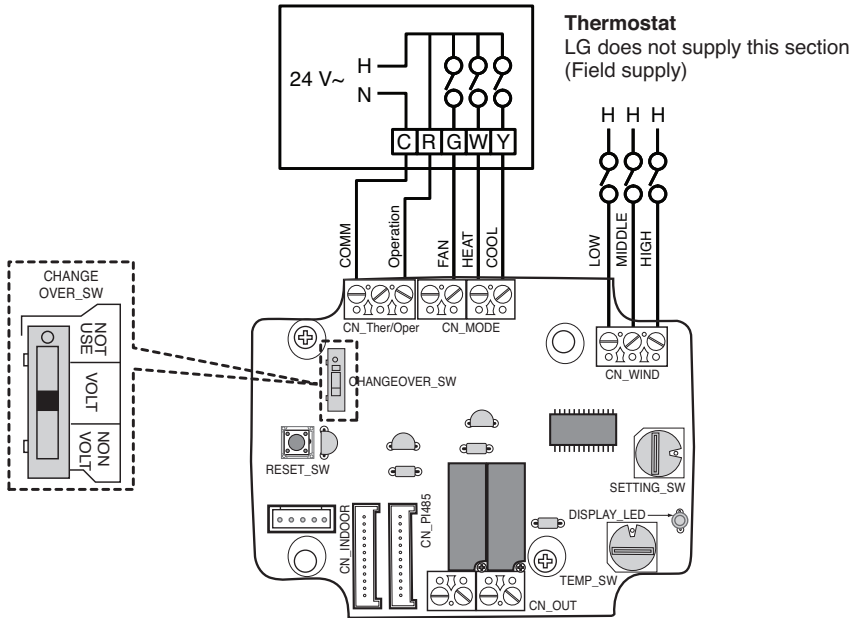
■ Details of Installation for thermostat

- 1) In case of Occupancy sensor,
 - When motion is detected by the sensor, Indoor unit is enabled.
 - Otherwise, Indoor unit is disabled.

- 2) In case of Emergency Stop or Security option.
 - When emergency condition occurs, Indoor unit is disabled.
 - Otherwise, Indoor unit is enabled.



■ For conventional thermostat signal input

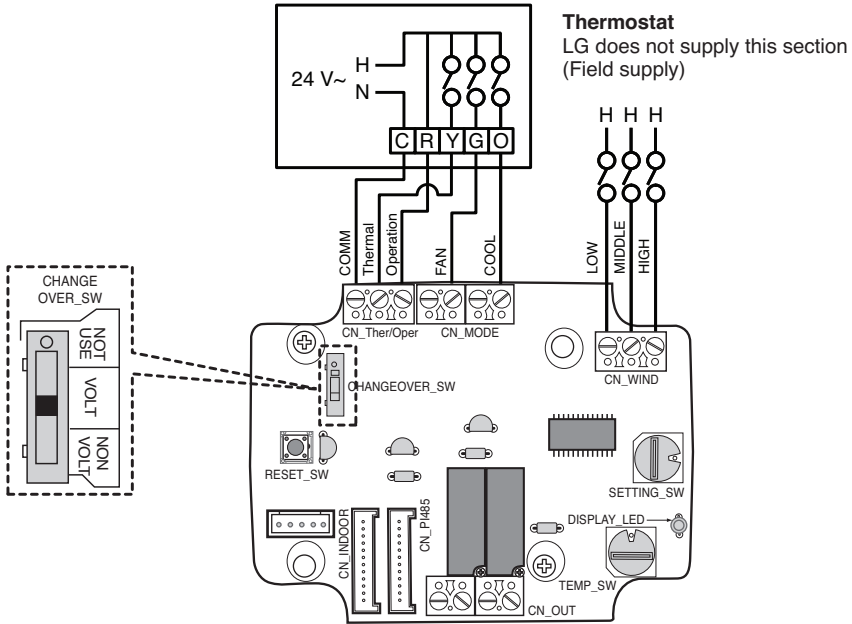


| Thermostat Fan & System Switch | | | Input | | | | IDU Response [Mode / Thermal / Fan] |
|--------------------------------|-----------------------------|-----------|------------|-------------|-------------|---|--|
| FAN [Auto / On] | MODE [Cool / Heat / Off] | Operation | FAN [G] | HEAT [W] | COOL [Y] | | |
| - | - | - | 0 | - | - | - | Disable Operation |
| Auto | OFF | - | 1 | 0 | 0 | 0 | Enable |
| | Cool | RT > SP | 1 | 1 | 0 | 1 | Cool / On / On |
| | | RT < SP | 1 | 0 | 0 | 0 | Enable |
| | Heat | RT < SP | 1 | 1 | 1 | 0 | Heat/ On/On |
| | | RT > SP | 1 | 0 | 0 | 0 | Enable |
| ON | FAN | - | 1 | 1 | 0 | 0 | Fan/ Off/ On |
| | Cool | RT > SP | 1 | 1 | 0 | 1 | Cool/ On/ On |
| | | RT < SP | 1 | 1 | 0 | 0 | Fan/ Off/ On |
| | Heat | RT < SP | 1 | 1 | 1 | 0 | Heat/ On/ On |
| | | RT > SP | 1 | 1 | 0 | 0 | Fan/ Off/ On |

Notes

- IDU Fan logic, depending on model selected, may delay IDU fan operation momentarily during a cold start heat call. This function allows IDU coil to warm up prior to operating fan in some IDU models.
- Thermostats that use resistive anticipation are not supported at this time.
- Verify documentation of desired thermostat so that the logic is same as shown in the table above.

■ For heat pump thermostat with O terminal signal input

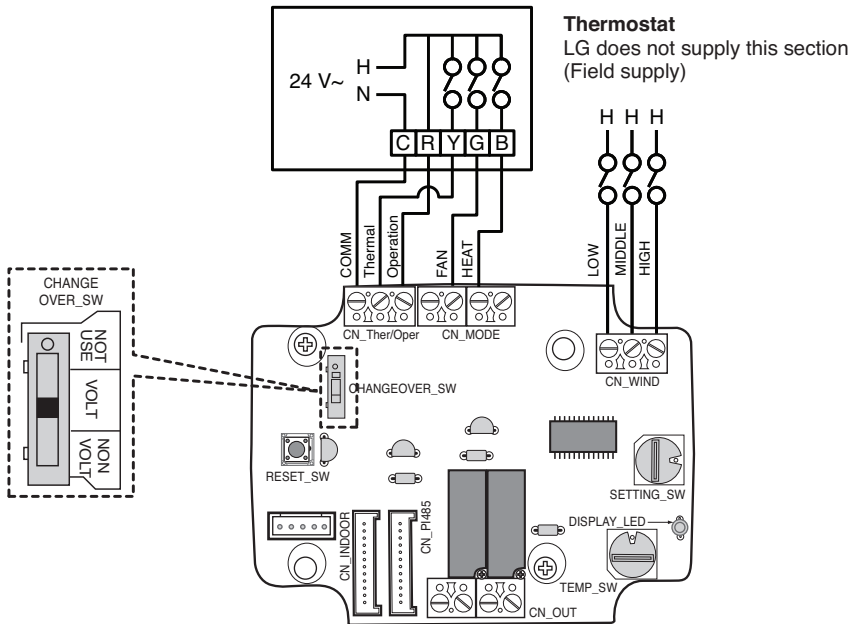


| Thermostat Fan & System Switch | | Input | | | | | IDU Response [Mode / Thermal / Fan] |
|--------------------------------|-----------------------------|-----------|----------------|------------|-------------|--------------|--|
| FAN [Auto / On] | MODE [Cool / Heat / Off] | Operation | Thermal [Y] | FAN [G] | COOL [O] | | |
| - | - | - | 0 | - | - | - | Disable Operation |
| Auto | OFF | - | 1 | 0 | 0 | 0 | Enable |
| | Cool | RT > SP | 1 | 1 | 0 | 1 | Cool / On / On |
| | | RT < SP | 1 | 0 | 0 | 1 | Enable |
| | Heat | RT < SP | 1 | 1 | 0 | 0 | Heat/ On/On |
| RT > SP | | 1 | 0 | 0 | 0 | Enable | |
| ON | FAN | - | 1 | 0 | 1 | 0 | Fan/ Off/ On |
| | Cool | RT > SP | 1 | 1 | 1 | 1 | Cool/ On/ On |
| | | RT < SP | 1 | 0 | 1 | 1 | Fan/ Off/ On |
| | Heat | RT < SP | 1 | 1 | 1 | 0 | Heat/ On/ On |
| RT > SP | | 1 | 0 | 1 | 0 | Fan/ Off/ On | |

Notes

- Thermostats that close contacts "O" or "B" during Cool or Heat call only have not been verified. "O" and/or "B" contact closure must be maintained during respective cycle / mode selection.
- IDU Fan logic, depending on model selected, may delay IDU fan operation momentarily during a cold start heat call. This function allows IDU coil to warm up prior to operating fan in some IDU models.
- Thermostats that use resistive anticipation are not supported at this time.
- Verify documentation of desired thermostat so that the logic is same as shown in the table above.

■ For heat pump thermostat with B terminal signal input



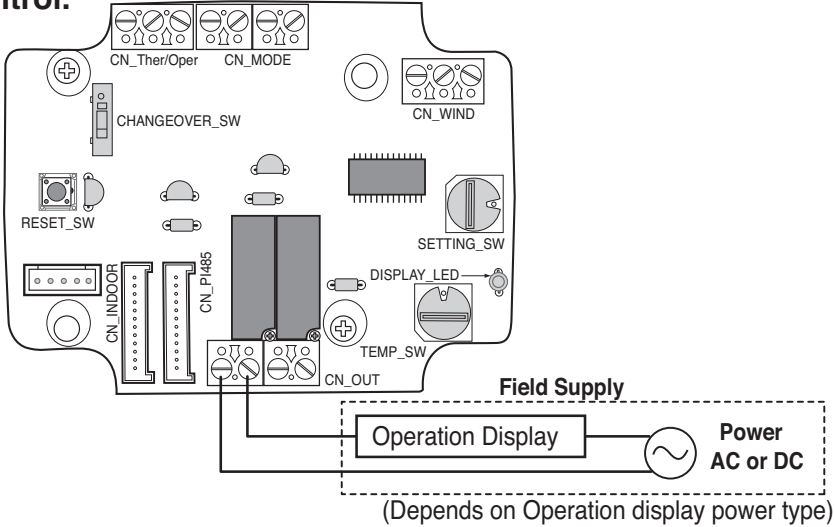
| Thermostat Fan & System Switch | | | Input | | | | IDU Response [Mode / Thermal / Fan] |
|--------------------------------|-----------------------------|---------|-----------|----------------|------------|-------------|--|
| FAN [Auto / On] | MODE [Cool / Heat / Off] | | Operation | Thermal [Y] | FAN [G] | HEAT [B] | |
| - | - | - | 0 | - | - | - | Disable Operation |
| Auto | OFF | - | 1 | 0 | 0 | 0 | Enable |
| | Cool | RT > SP | 1 | 1 | 0 | 0 | Cool / On / On |
| | | RT < SP | 1 | 0 | 0 | 0 | Enable |
| | Heat | RT < SP | 1 | 1 | 0 | 1 | Heat/ On/On |
| | | RT > SP | 1 | 0 | 0 | 1 | Enable |
| ON | OFF | - | 1 | 0 | 1 | 0 | Fan/ Off/ On |
| | Cool | RT > SP | 1 | 1 | 1 | 0 | Cool/ On/ On |
| | | RT < SP | 1 | 0 | 1 | 0 | Fan/ Off/ On |
| | Heat | RT < SP | 1 | 1 | 1 | 1 | Heat/ On/ On |
| | | RT > SP | 1 | 0 | 1 | 1 | Fan/ Off/ On |

Notes

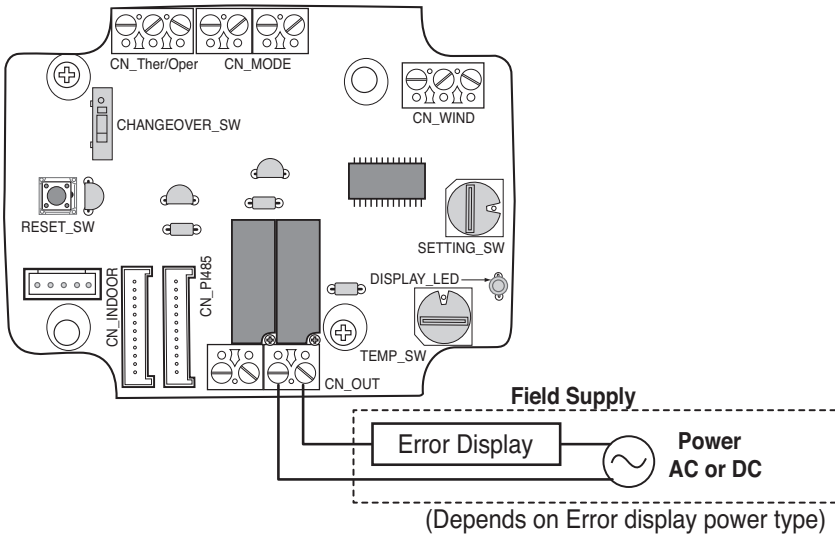
- Thermostats that close contacts "O" or "B" during Cool or Heat call only have not been verified. "O" and/or "B" contact closure must be maintained during respective cycle / mode selection.
- IDU Fan logic, depending on model selected, may delay IDU fan operation momentarily during a cold start heat call. This function allows IDU coil to warm up prior to operating fan in some IDU models.
- Thermostats that use resistive anticipation are not supported at this time.
- Verify documentation of desired thermostat so that the logic is same as shown in the table above.

6. Indoor unit monitoring

■ **Monitoring whether the indoor unit is operating: Refer to below and connect to the control device that you want to control.**



■ **Monitoring indoor unit error: Refer to below and connect to the control device that you want to control.**



⚠ CAUTION

Field supply power should not use more than DC 12 V(3A), 24 V~(3A)