

# INSTALLATION MANUAL

# AIR CONDITIONER

Please read this installation manual completely before installing the product.  
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.

Applied(AHU)  
COMMUNICATION KIT



MFL69940009  
Rev.00\_041519

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# IMPORTANT SAFETY INSTRUCTIONS

## ***READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.***

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product

### **WARNING**

It can result in serious injury or death when the directions are ignored

### **CAUTION**

It can result in minor injury or product damage when the directions are ignored

### **WARNING**

- Installation or 2 made by unqualified persons can result in hazards to you and others.
- Installation **MUST** conform with local building codes or, in the absence of local codes.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.
- The appliance shall be disconnected from its power source during service and when replacing parts.
  - Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.
- This equipment shall be provided with a supply conductor complying with the national regulation.

### Installation

- Always perform grounding.
  - Otherwise, it may cause electrical shock.
- Don't use a power cord, a plug or a loose socket that is damaged.
  - Otherwise, it may cause fire or electrical shock.
- For installation of the product, always contact the service center or a professional installation agency.
  - Otherwise, it may cause fire, electrical shock, explosion or injury.
- Securely attach the electrical part cover to AHU Comm. Kit.
  - If the electric part cover of AHU Comm. Kit is not attached securely, it could result in a fire or electric shock due to dust, water, etc.
- Always install an air leakage breaker and a dedicated switching board.
  - No installation may cause a fire and electrical shock.
- Do not keep or use flammable gases or combustibles near the equipment.
  - Otherwise, it may cause a fire or the failure of product.
- Do not install, remove or reinstall the unit by yourself.
  - Otherwise, it may cause a fire, electrical shock, explosion or injury.

- Do not disassemble or repair the product randomly.
  - It will cause a fire or electrical shock.
- Do not install the product in a place where there is the concern of falling down.
  - Otherwise, it may result in personal injury.
- Use caution when unpacking and installing.
  - Sharp edges may cause injury.
- The frequency is set automatically.

### Operation

- Do not share the outlet with other appliances.
  - It will cause an electric shock or a fire due to heat generation.
- Do not use the damaged power cord.
  - Otherwise, it may cause a fire or electrical shock.
- Do not modify or extend the power cord randomly.
  - Otherwise, it may cause a fire or electrical shock.
- Take care so that the power cord may not be pulled during operation.
  - Otherwise, it may cause a fire or electrical shock.
- Unplug the unit if strange sounds, smell, or smoke comes from it.
  - Otherwise, it may cause electrical shock or a fire.
- Keep flames away.
  - Otherwise, may occur a fire.
- Take the power plug out if necessary, holding the head of the plug and do not touch it with wet hands.
  - Otherwise, it may cause a fire or electrical shock.
- Do not use the power cord near the heating tools.
  - Otherwise, it may cause a fire and electrical shock.
- Do not allow water to run into electrical parts.
  - Otherwise, it may cause the failure of machine or electrical shock.
- Hold the plug by the head when taking it out.
  - It may cause electric shock and damage.
- Be cautious that water could not enter the product.
  - Otherwise, it may cause a fire electrical shock or product damage.
- Do not step on the indoor/outdoor unit and do not put anything on it.
  - It may cause an injury through dropping of the unit or falling down.
- Do not place a heavy object on the power cord.
  - Otherwise, it may cause a fire or electrical shock.
- When the product is submerged into water, always contact the service center.
  - Otherwise, it may cause a fire or electrical shock.

## ! CAUTION

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.

## Disposal of your old appliance



1. When this crossed out wheeled bin symbol is depicted on the product and its operator's manual, it means the product is covered by the e-waste Management and Handling Rules, 2011. and are meant to be recycled, dismantled, refurbished or disposed off.

### 2. Do's

- a. The product is required to be handed over only to the authorized recycler for disposal.
- b. Keep the product in isolated area, after it becomes non-functional/unreparable so as to prevent its accidental breakage.

### Don't

- a. The product should not be opened by the user himself/herself, but only by authorized service personnel.
  - b. The product is not meant for re-sale to any unauthorized agencies/scrap dealer / kabariwalah.
  - c. The product is not meant for mixing into household waste stream.
  - d. Do not keep any replaced spare part(s) from the product in exposed area.
3. Any disposal through unauthorized agencies/person will attract action under Environment (Protection) Act 1986.
  4. Hazards of improper handling or accidental breakage.
    - a. If batteries are disposed incorrectly, it can greatly harm the environment. The chemical byproducts are hazardous. The metals and chemicals found in batteries can mix into soil which may be hazardous to humans, plants and animals. If thrown in fire, they can cause blast and release toxic gases which may be harmful for health.
    - b. The refrigerant used can be combustible at low pressure. The potential health effect of over exposure is dizziness, headache and heart irregularities.
  5. This product is complied with the requirement of Hazardous Substances as specified under Rule 13 (1) & (2) of the E-Waste (Management & Handling) Rules, 2011.
  6. To locate a nearest collection centre or call for pick-up (limited area only) for disposal of this appliance, please contact Toll Free No. 1800-315-9999 / 1800-180-9999 for details. All collection centre and pick up facilities are done by third parties with LG Electronics India Pvt. Ltd. Merely as a facilitator. For more detailed information , please visit : <http://www.lge.com>

# BEFORE INSTALLATION

## ! CAUTION

- **Don't install or operate the unit in rooms mentioned below.**

- ① Where mineral oil, like cutting oil is present.
- ② Where the air contains high levels of salt such as air near the ocean.
- ③ Where sulphurous gas is present such as that in areas of hot spring.
- ④ In vehicles or vessels.
- ⑤ Where voltage fluctuates a lot such as that in factories.
- ⑥ Where high concentration of vapor spray are present.
- ⑦ Where machines generating electromagnetic waves are present.
- ⑧ Where acidic or alkaline vapor is present.
- ⑨ The option boxes must be installed with entrances downward.

- **Check the mentioned below, when you apply the AHU (Field supply).**

- ① If the AHU (Field supply) provided in the field is exclusively for heating, you must not change the operating mode to cooling on the remote controller. If not, it can cause electric shock, injury or death. If you want to operate in cooling mode, AHU (Field supply) must comply with the following details.

(Following)

- The insulation level of AHU (Field supply) motor must be 'F' or above, and the protection level must satisfy 'IP 54'.
  - AHU (Field supply) must have the drain pan installed.
- ② Fan speed button on the wired remote controller is not operated.
  - ③ For refrigerant piping of outdoor unit, refer to the installation manual supplied with the outdoor unit.
  - ④ For installation of the wired remote controller, refer to the manual supplied with the wired remote controller.
  - ⑤ For protecting the refrigerant cycle in heating, the inlet Air temperature to the Heat Exchanger has to be over 5 °C.
  - ⑥ The EEV or TXV kit has to be installed on the AHU as close as possible to the Heat Exchanger.

- **AHU Communication Kit**

- ① Thermistor cable and remote controller wire should be located at least 50 mm away from power supply wires and from wires to the controller. Not following this guideline may result in malfunction due to electrical noise.
- ② Use only specified wires, and tightly connect wires to the terminals. Keep wiring in neat order so that it does not obstruct other equipment. Incomplete connections could result in overheating, and in worse case electric shock or fire.

- **AHU Operation range**

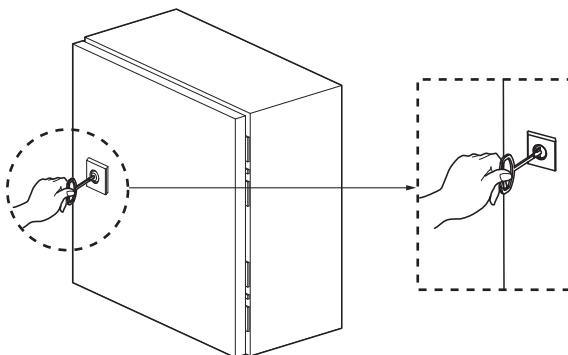
- When installing Room thermistor, always place it to the inlet of Heat Exchanger. Otherwise, it may might not operate properly.
- Range of the inlet Air temperature to the Heat Exchanger is 18 ~ 40 °C for cooling & 5 ~ 30 °C for heating. If the temperature is under 18 °C for cooling & over 30 °C for heating, the system might operate ON and OFF because of protection logic system's.

| No | Connection condition                                             | Combination                                                                             |
|----|------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1  | 100 % Fresh Air Intake AHU only are connected with outdoor units | 1) The total capacity of 100 % Fresh Air Intake AHU should be 50~100 % of outdoor unit. |

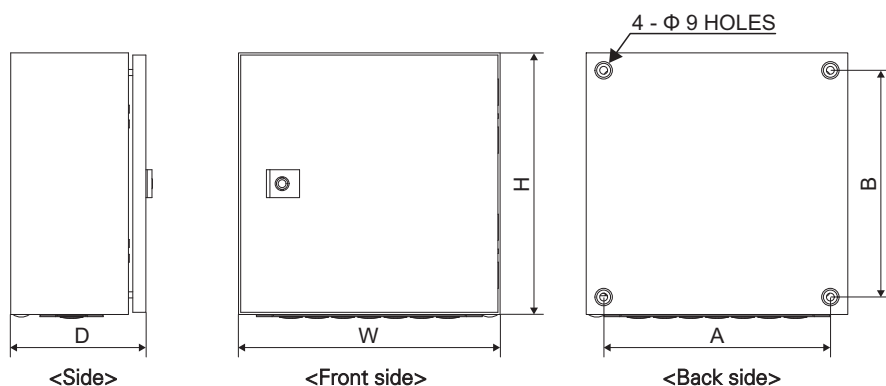
# COMMUNICATION KIT INSTALLATION

## Mechanical installation

- 1 Open the door using the key.



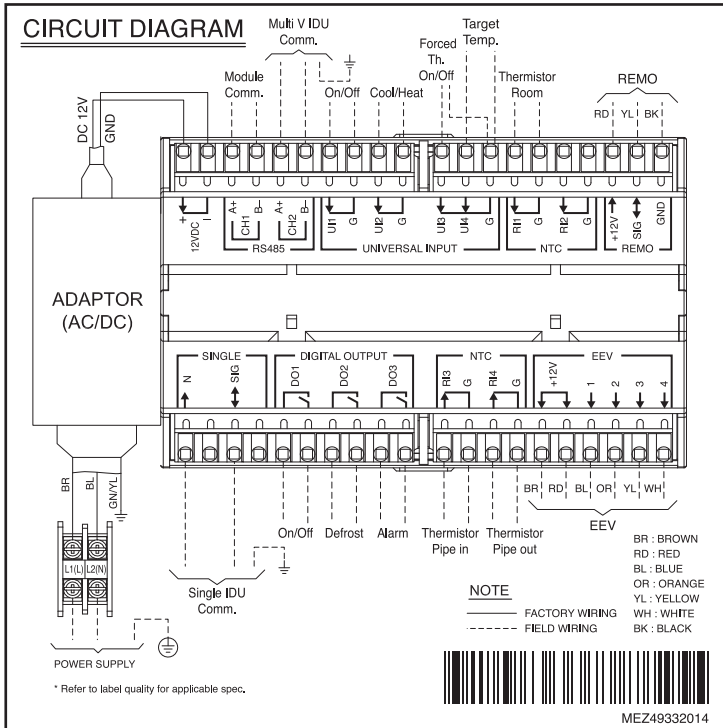
- 2 Drill 4 holes on correct position and fix the Comm. Kit box securely with 4 screws (Field supply) through the holes  $\varnothing 9$  mm(11/32 inch) [Reference the length of the holes  $\varnothing 9$ (11/32)]



| Model     | Size |     |     |     |     |
|-----------|------|-----|-----|-----|-----|
|           | W    | D   | H   | A   | B   |
| PAHCMR000 | 300  | 155 | 300 | 260 | 260 |
| PAHCMS000 | 380  | 155 | 300 | 340 | 260 |

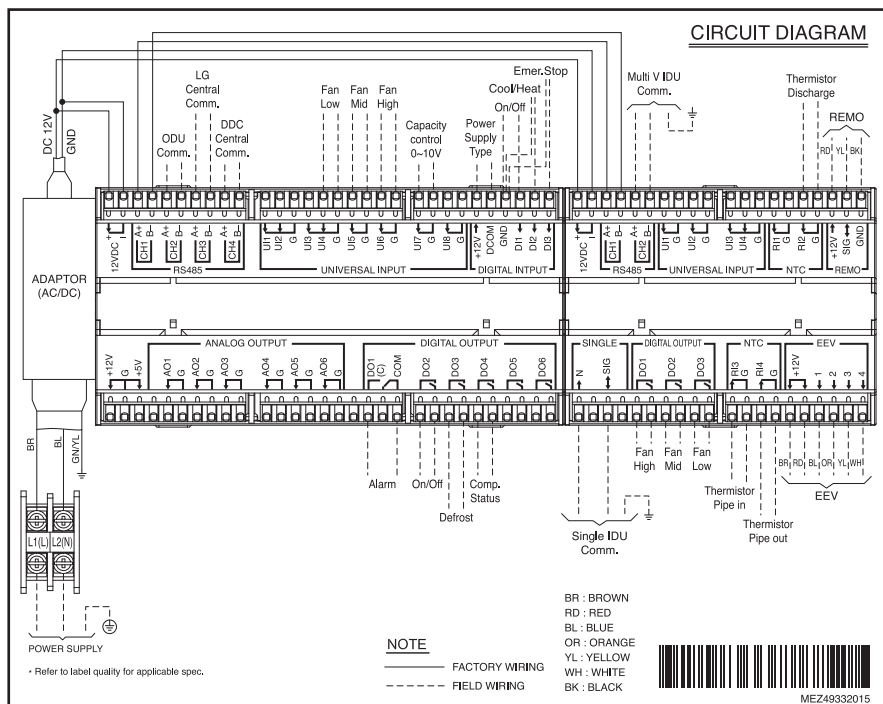
# Electric Wiring Work (PAHCMR000)

## Circuit diagram



## Electric Wiring Work (PAHCM5000)

## Circuit diagram

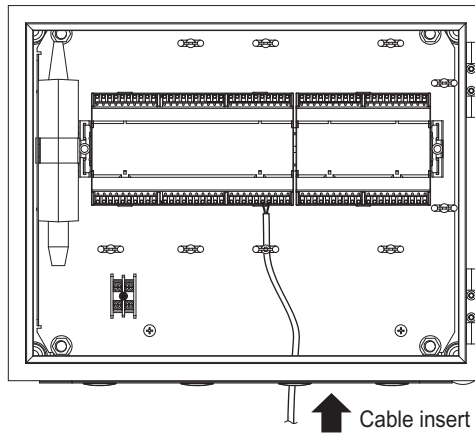


## Electrical Work

### Connection of the wires

- 1 For connection to outdoor unit and to controller (Field supply) :  
Pull the wires inside through the cable gland and close the nut firmly in order to ensure a good pull relieve and water protection.
- 2 The wires require an additional pull-relief. Strap the wire with the support tie wrap.

(Front View)



- 3 For the wired remote controller wire and outdoor unit communication wire, remove the coating at the end of the wire to connect and use the Pin type (JOBN153) to connect to the terminal block.



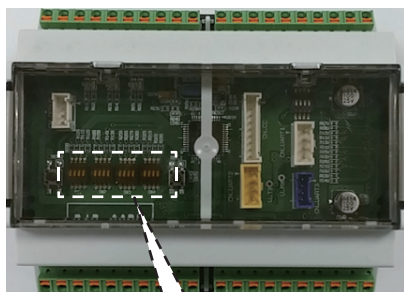
Pin type (JOBN153)

### CAUTION

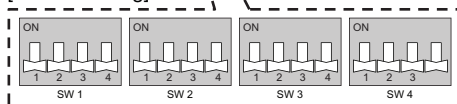
- All field supplied parts and materials and electric works must be conform to local codes.
- Use copper wire only.
- All wiring must be performed by an authorized electrician.
- A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance to relevant local and national legislation.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, wiring and wiring instructions.

## DIP Switch Setting

### PAHCMR000



[Default setting]



- Detailed actions for the DIP switch value are shown below.

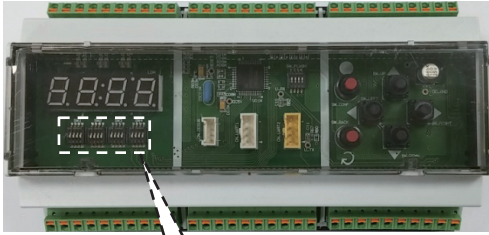
| SW1 | ON            | OFF     | Function            |
|-----|---------------|---------|---------------------|
| 1   | Single        | Multi V | Outdoor Unit system |
| 2   | Communication | Contact | Control Setting     |

| SW3 | ON    | OFF    | Function          |
|-----|-------|--------|-------------------|
| 1   | Slave | Master | Master/Slave      |
| 2   | C/O   | H/P    | Outdoor Unit Type |

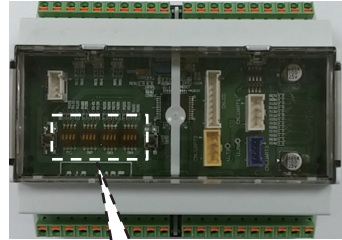
| SW4 |     |     |     | Capacity [kBTU] |          |
|-----|-----|-----|-----|-----------------|----------|
| 1   | 2   | 3   | 4   | Multi V         | Single   |
| OFF | OFF | OFF | OFF | 12              | 5        |
| OFF | OFF | OFF | ON  | 15              | 7        |
| OFF | OFF | ON  | OFF | 18              | 9        |
| OFF | OFF | ON  | ON  | 24              | 12       |
| OFF | ON  | OFF | OFF | 28              | 15       |
| OFF | ON  | OFF | ON  | 36              | 18       |
| OFF | ON  | ON  | OFF | 42              | 24       |
| OFF | ON  | ON  | ON  | 48              | 30       |
| ON  | OFF | OFF | OFF | 54              | 36       |
| ON  | OFF | OFF | ON  | 76              | 42       |
| ON  | OFF | ON  | OFF | 96              | 48       |
| ON  | OFF | ON  | ON  | 115             | 60       |
| ON  | ON  | OFF | OFF | 134             | 70       |
| ON  | ON  | OFF | ON  | 153             | 85       |
| ON  | ON  | ON  | OFF | 172             | Reserved |
| ON  | ON  | ON  | ON  | 192             | Reserved |

## PAHCM5000

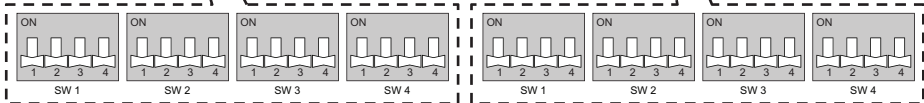
Main Module



Communication Module



[Default setting]



- Detailed actions for the DIP switch value are shown below.

## 1) Main Module DIP S/W

| SW1 | ON                         | OFF                       | Function                           |
|-----|----------------------------|---------------------------|------------------------------------|
| 1   | Communication              | Contact                   | Control Setting                    |
| 2   | Auto (temperature control) | Manual (capacity control) | Control the supply air temperature |
| 3   | Simultaneous operation     | Sequential operation      | Outdoor Unit sequential control    |

## 2) Communication Module DIP S/W

Set the same as the "PAHCMR000" Model.(See page 10)

# THERMISTORS INSTALLATION

## Pipe thermistors Installation

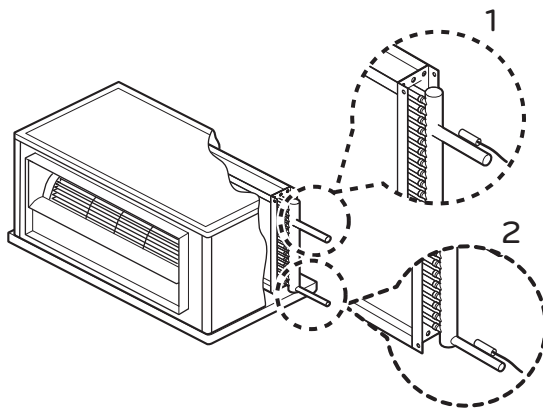
### Location of the pipe thermistors

A correct installation of the thermistors is required to ensure a good operation :

- 1 Pipe\_In  
: Install the thermistor behind the distributor on the coldest pass the heat exchanger (contact your heat exchanger dealer).
- 2 Pipe\_Out  
: Install the thermistor at the outlet of the heat exchanger as close as possible to the heat exchanger.

Evaluation must be done to check if the evaporator is protected against freeze-up.  
Execute test operation and check for freeze-up.

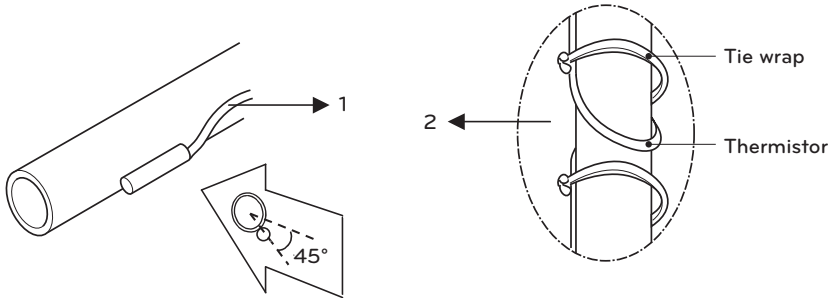
- 1 Pipe\_In(Suction pipe)
- 2 Pipe\_Out(Discharge pipe)



(Air Handling Unit)

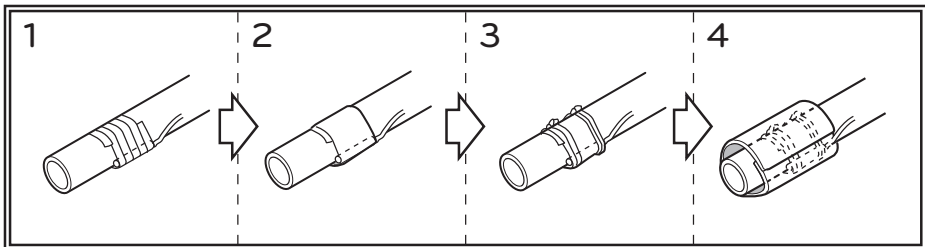
### Installation of the pipe thermistor cable

- 1 Put the thermistor cable in a separate protective tube.
- 2 Always add a pull-relief to the thermistor cable to avoid strain on the thermistor cable and loosening of the thermistor. Strain on the thermistor cable or loosening of the thermistor may result in bad contact and incorrect temperature measurement.



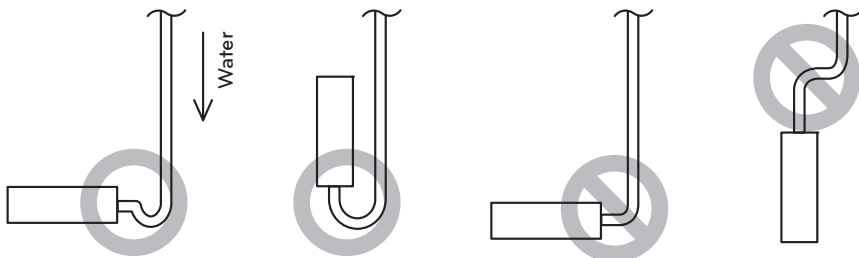
### Fixation of the pipe thermistors (Field work)

- 1 Fix the thermistor with insulating aluminum tape (Field supply) in order to ensure a good heat transfer.
- 2 Put the supplied piece of rubber around the thermistor in order to avoid loosening of the thermistor after some years.
- 3 Fasten the thermistor with 2 tie wraps (Field Supply)
- 4 Insulate the thermistor with insulation sheet (Over 5t, Field Supply)

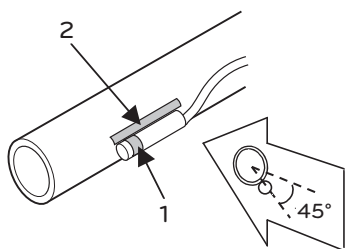


**! INSTRUCTION**

- Put the thermistor wire slightly above to avoid water accumulation on down of the thermistor.



- For sensing the evaporator's temp. in thermistor, Put the upper port of the thermistors on the evaporator, this is the most sensitive point of the thermistor.



- 1 Most sensitive point of the thermistor
- 2 Maximize the contact



