# Touch Centralised Controller
# MCM-A300N

# General Introduction

- **Concept**
  - Integrated management for middle sized site
  - Individual/Zone control, Scheduling, Energy saving control
  - Smart phone style user-friendly control
  - Easy & intuitive User Interface (screen)



Wipe

Slide,

Drag & Drop

Easy & intuitive UI

4way   1way   2way   AHU   Duct   EHS   ERV
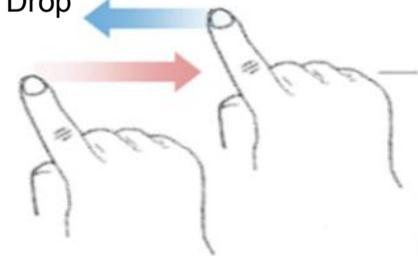
# General Introduction

## Main feature

- ● **7" Color Capacitive Touch Screen**
- ● **Easy and intuitive UI**

  - Various icons based on equipment & operation condition

  | | | | | | | |
  |---|---|---|---|---|---|---|
  | 4way | 1way | 2way | AHU | Duct | EHS | ERV |

  | | | | | | | |
  |---|---|---|---|---|---|---|
  | Off | On | Peak | Defrost | Filter Warning | Error | Network Error |

  - Individual/Group management

- ● **Multi control for middle sized sites**
  - Max. 128 indoor unit control
  - Temp./Mode/Air-direction/Fan speed
  - User editable naming (Indoor/Zone)
  - External devices interlock(DI: 2, DO:1)
- ● **Energy Saving Control**
  - Schedule control(Up to 10 items)
  - Restriction(Temperature, R/C, button Lock, Password)
- ● **Others**
  - Support 13-language
  - Daylight Saving Time mode
  - Error display & history saving
  - Free-volt input: AC 110~240V

# General Introduction

- **Control & monitoring**

  - Easy to check each device status using color and icon
  - Turning over pages with flicking or simple touch (No scroll bar)
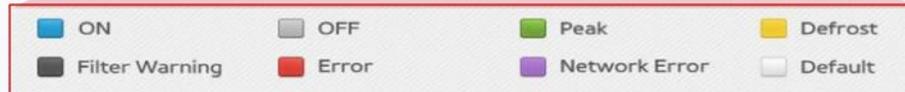
# General Introduction

**Control & monitoring**

- Big sized indication for using easily

# General Introduction

**SAMSUNG**

- **Smart central management**

  - Temperature setting limitation

30℃ / 30℃

Default range

Upper limit temperature for heating

Lower limit temperature for cooling

16℃ / 18℃
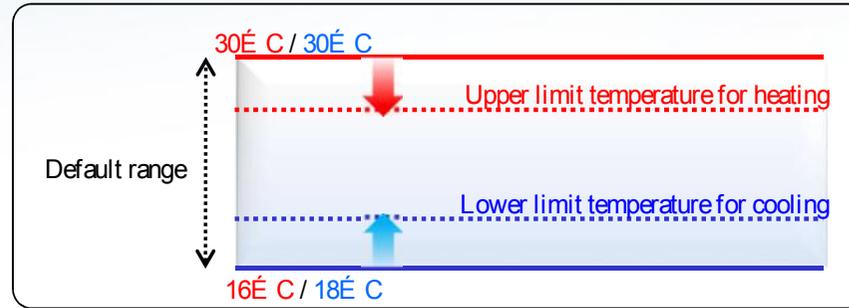
Lower limit temperature for cooling = 23℃
Upper limit temperature for heating = 27℃

Set temp. : 18 ℃ in cooling

Set temp. : 28 ℃ in heating

☐ If room temperature is set out of the limits, it will be revised to within the value limits automatically.

# General Introduction



- **Zone management for multiple units**

  - Max.12 zone management
  - Simply controls zone with one button
  - Unique zone description icon makes it easy to recognise each zone.

# General Introduction

- **Schedule control**

  - Max. 10 operation schedule settings
  - Possible to make various operation schedules
  - Weekly, daily, exception day setting
  - Simple schedule setting User Interface
  - Easy to execute and stop the schedule



08 : 00 AM On      10 : 00 PM Off



| Schedule | | ⏱ PM 05:45 |
|---|---|---|
| Schedule Name #1 Sun Mon Tue Wed Thu Fri Sat ▶ | Schedule Name #2 Sun Mon Tue Wed Thu Fri Sat ⏸ | |
| Schedule Name #3 Sun Mon Tue Wed Thu Fri Sat ⏸ | Schedule Name #4 Sun Mon Tue Wed Thu Fri Sat ⏸ | |
| ✓ Schedule Name #5 Sun Mon Tue Wed Thu Fri Sat ▶ | Schedule Name #6 Sun Mon Tue Wed Thu Fri Sat ⏸ | |
| Schedule Name #7 Sun Mon Tue Wed Thu Fri Sat ▶ | Schedule Name #8 Sun Mon Tue Wed Thu Fri Sat ⏸ | |
| Schedule Name #9 Sun Mon Tue Wed Thu Fri Sat ⏸ | Schedule Name #10 Sun Mon Tue Wed Thu Fri Sat ▶ | |
| | New    Delete | Ex. Day |



**Create Schedule Event**

| Operation | OFF | ERV Mode | Prohibit |
|---|---|---|---|
| Temp.Set | 24C | | |
| Mode | Cool | | Time   Min |
| Fan Speed | Low | PM | 11   16 |
| | | | 10   15 |
| Remote Control | Disable RC | AM | 09   14 |

OK      Cancel

# General Introduction

- **External devices interlock**
  - Simple operation control interlocking with external contact (2 Digital input)
  - Provides 3 types of operation pattern
  - Indoor unit operation on/off status output (1 Digital output)

**Emergency**
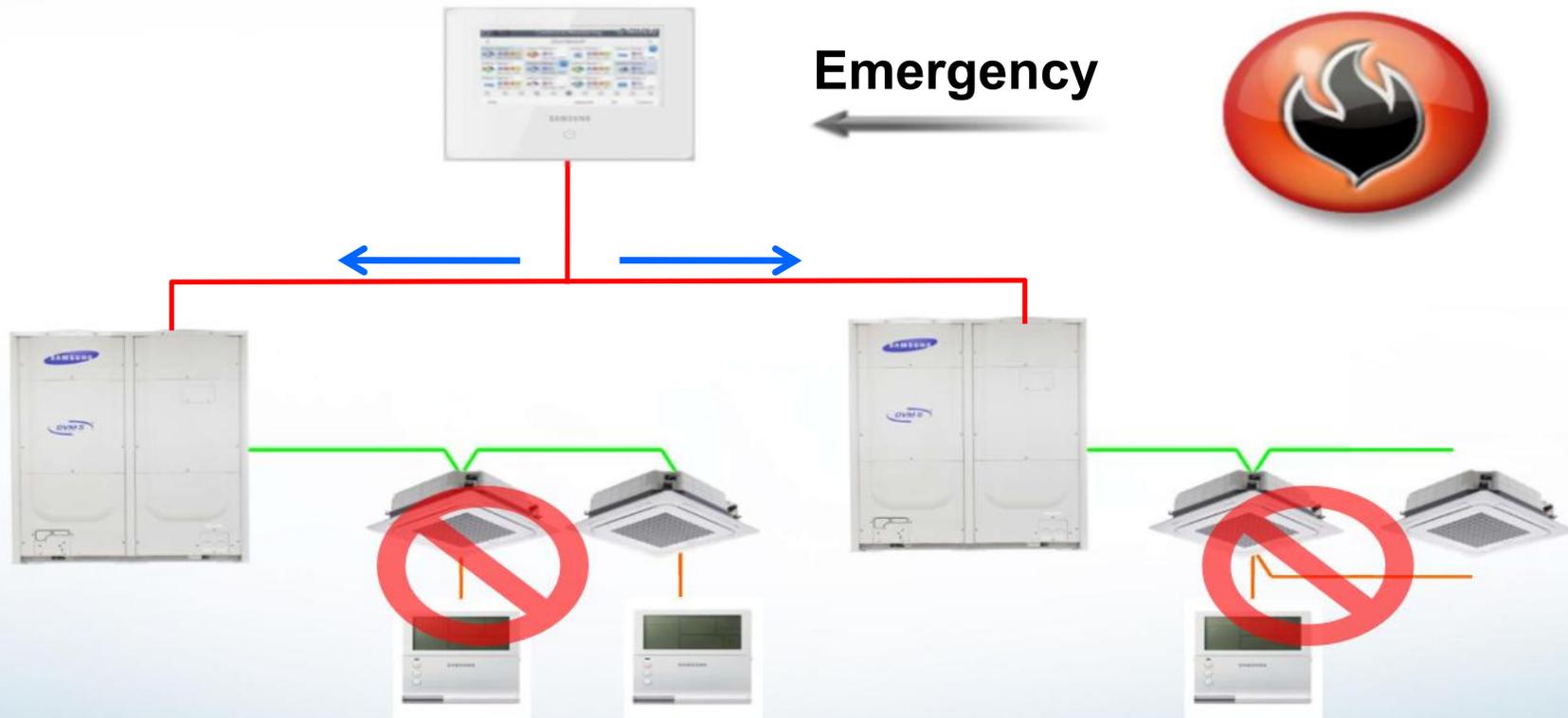
# II Centralized control systems

## 3. Touch centralized controller

❑ *MCM-A300N*

### 1) Features



- 7 inch touch LCD controller
- Controls maximum 128 indoor units
- Controls maximum 12 zones
- Schedule control, Indoor unit usage restriction, View indoor unit error history
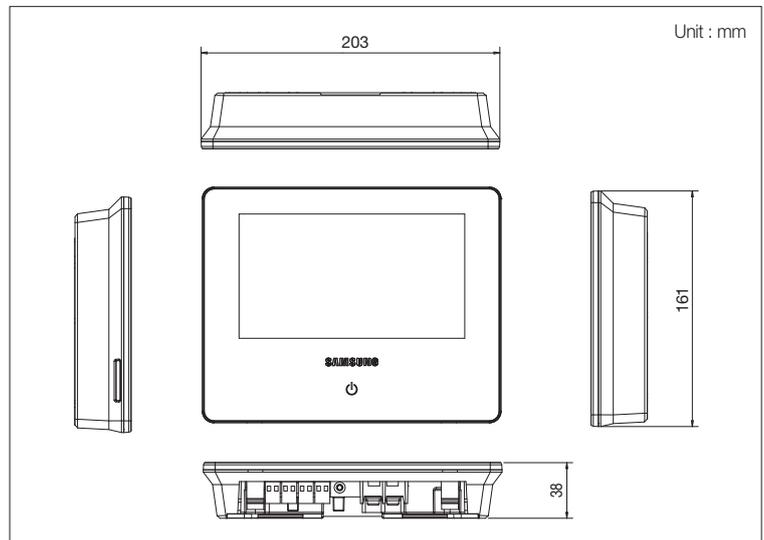
### 2) Product specification

| Power supply | | AC200V~240V, 50/60Hz | |
|---|---|---|---|
| Power consumption | | 110W | |
| Operating temperature range | | 0°C~40°C | |
| Operating humidity range | | 30%RH~90%RH | |
| Communication | | RS485 x 1 (F1/F2 or R1/R2) | |
| External communication port | Digital Output | 1 | |
| | Digital Input | 2 | |
| Maximum connection length | RS485 | 1000m | |
| | Digital Output | 100m | |
| | Digital Input | 100m | |
| Max. connectable number of device | Set layer | **Device** | **Number** |
| | | Indoor units (including ERV, MCU) | 80 (Maximum 64 indoor units, 16 ERVs and 16 MCUs) |
| | | Outdoor unit | 1 |
| | | OnOff controller | Total 16 |
| | | Touch centralized controller | |
| | Control layer | **Device** | **Number** |
| | | Indoor units (including ERV, MCU) | 128 |
| | | Outdoor unit (including interface module MIM-N01) | 16 |
| | | OnOff controller | 16 (15 when DMS2, BACnet gateway, LonWorks gateway is connected) |
| | | Touch centralized controller | |
| | | DMS2 | Total 1 |
| | | BACnet GW | |
| | | LonWorks GW | |

### Compatible product

| Outdoor unit | AM✳✳✳✳X✳✳✳✳✳✳ |
| --- | --- |
| Controller | OnOff controller (MCM-A202DN) |
| | Touch centralized controller (MCM-A300N) |
| | DMS2 (MIM-D00AN) |
| | BACnet gateway (MIM-B17N) |
| | Lonworks gateway (MIM-B18N) |

✳ Conventional communication outdoor unit requires interface module (MIM-N01) to establish connection

✳ MIM-B13D, MIM-B13E, MIM-B04A Interface modules cannot be connected.

✳ ERV connection is not supported until end of 2013.

## 3) Description of parts



| No. | Name | Description |
| --- | --- | --- |
| ① | LCD On/Off button and Indoor unit operation indicator | ▪ Button : Turn on/off the LCD screen<br>▪ Indicator<br>  - Blue :  Turns on if any one of the indoor unit is in operation.<br>  - Red :  Turns on if nay one of the indoor unit has an error |
| ② | SD card slot | Use to back-up data on SD card or updating S/W |
| ③ | Power terminal | Connect AC 100~240 V, 50/60 Hz power |
| ④ | Reset button | Use to reset Touch centralized controller |
| ⑤ | DI-1 terminal | Terminal block for connecting digital input signal from 3rd party device. |
| ⑥ | DI-2 terminal | Terminal block for connecting digital input signal from 3rd party device. |
| ⑦ | DO Terminal | ▪ Terminal block for digital output signal.<br>- Short : When any one of indoor units turns On<br>- Open :When all indoor units are  off |
| ⑧ | 485 communication terminal | ▪ When connecting to set layer: Connect to outdoor unit or indoor unit (F1/F2)<br>▪ When connecting to control layer: Connect to outdoor unit, OnOff controller, Touch centralized controller or DMS2 (R1/R2) |

# II Centralized control systems

## 3. Touch centralized controller

❏ *MCM-A300N*

4) Connection diagram



S-NET 3

TCP/IP

**Control layer**

OnOff controller    OnOff controller

Touch centralized controller

DMS2

RS485

Touch centralized controller

Outdoor unit

Maximum 128 indoor units (DVM series)
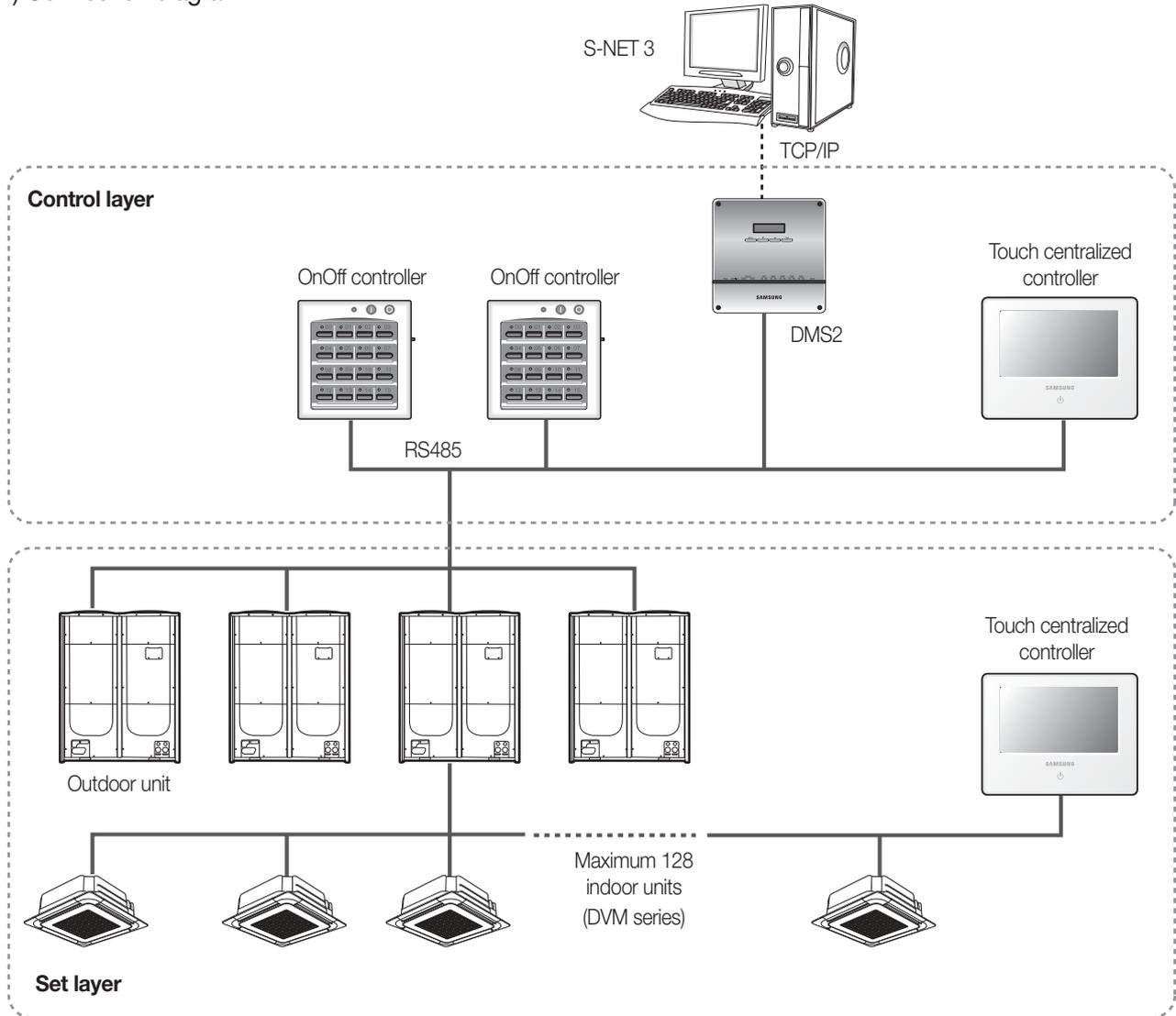
**Set layer**

## 5) Connection

### Set layer connection (F1/F2)

- When Touch centralized controller only controls indoor units of 1 outdoor unit, then it can be connected to F1/F2 line of outdoor unit or indoor unit.
- Max. 16 Controllers can be connected to same communication line.

✴ Connectable controller: - OnOff controller (MCM-A202DN)

                             - Touch centralized controller (MCM-A300N)
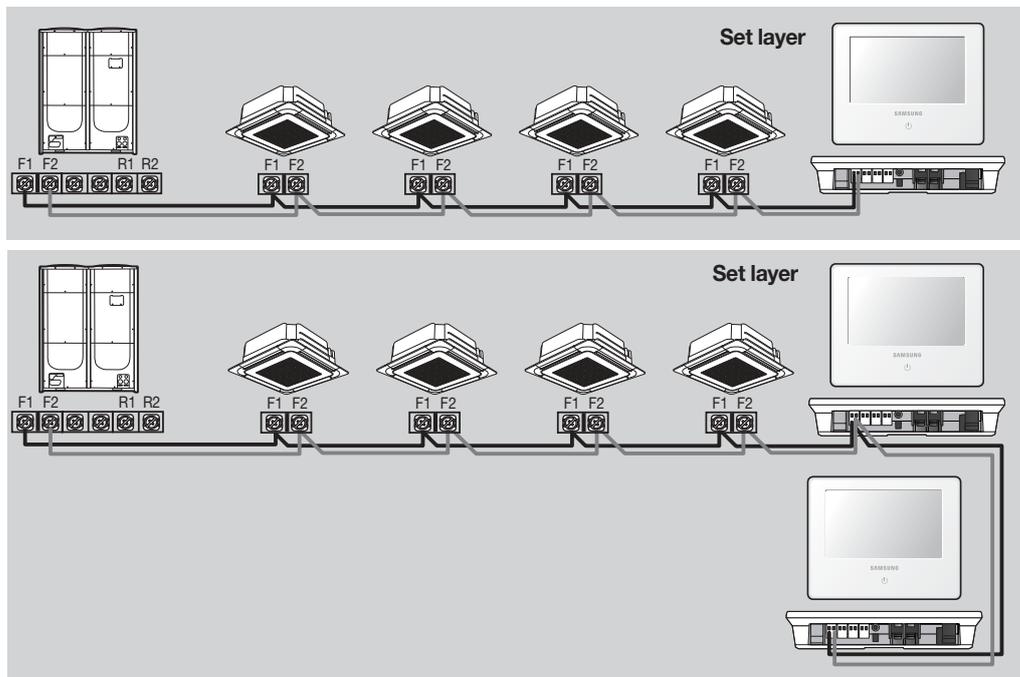


### Control layer connection (R1/R2)

- Max. 16 Controllers can be connected to same communication line (In case of DMS2/BACnet gateway/LonWorks gateway connection, Max.15)
- Max. 16 outdoor units can be connected to same communication line (Includes interface module MIM-N01).

✴ Connectable controller : - Touch centralized controller (MCM-A300N).

                       - OnOff controller (MCM-A202DN).

                       - DMS2(MIM-D00AN), BACnet gateway (MIM-B17N), LonWoks gateway (MIM-B18N) : Only one of the three models.

#### (1) Connection with outdoor unit

- When Touch centralized controller controls indoor units of multiple outdoor units, then it should be connected to R1/R2 line of outdoor units.
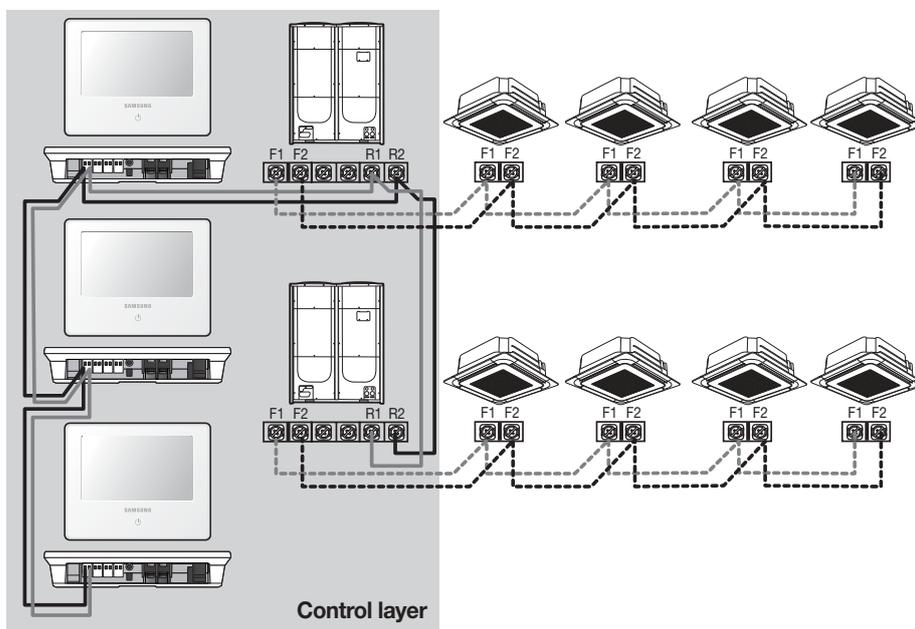
# II Centralized control systems

## 3. Touch centralized controller

❏ *MCM-A300N*

5) Connection

▮ Control layer connection (R1/R2)

(2) Connection with DMS2 / BACnet GW / Lonworks GW

▶ Case1



Ex.) DMS2(MIM-D00AN)

**Control layer**

▶ Case2



Ex.) DMS2(MIM-D00AN)

**Control layer**
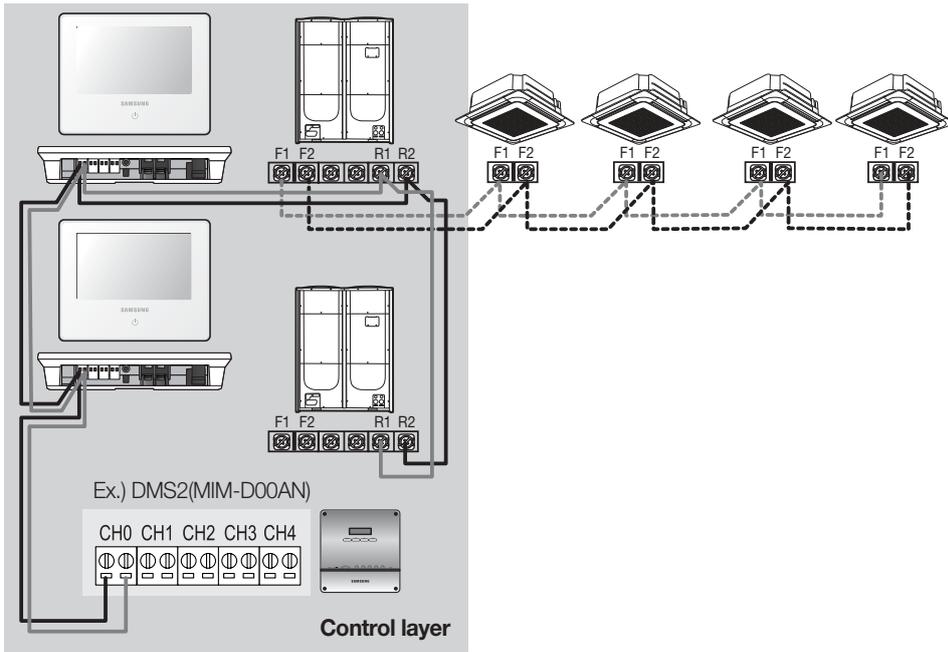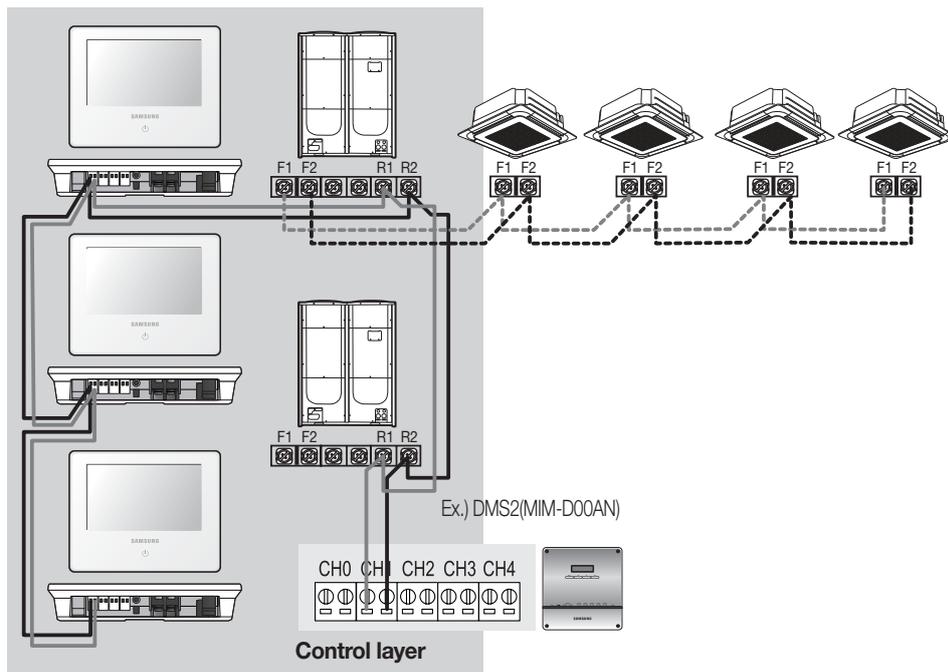
▶ Caution
 • When Touch centralized controller is connected to Outdoor unit's F1/F2 line, DMS2, BACnet GW,
   LonWorks GW cannot be connected to same communication line.



DMS2 / BACnet GW / LonWorks GW should be connected to
control layer.
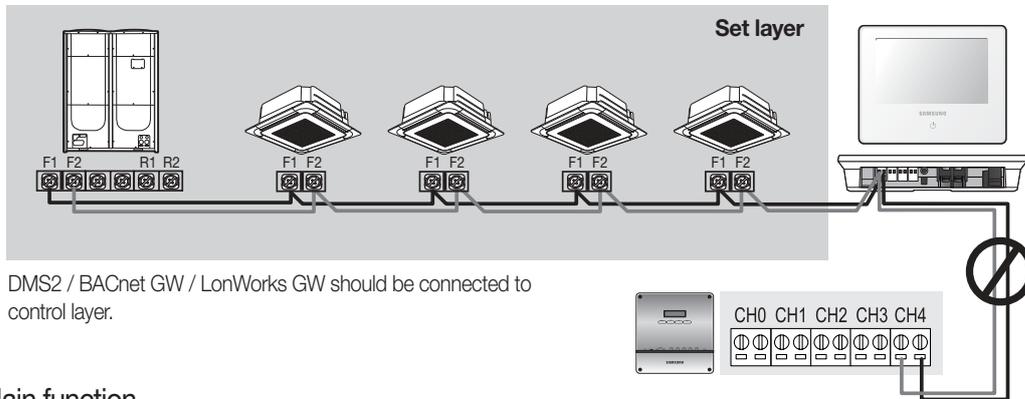
## 6) Main function

### Zone control



 • You can create a zone by grouping multiple indoor units
 • Maximum 12 zones can be created (Total up to 128 indoor units)



 • You can set the name of Zone/indoor unit
 • You can set the zone icon for purpose of each zone.

# II  Centralized control systems

## 3. Touch centralized controller

❏ *MCM-A300N*

6) Main function

**G**rouping indoor units

- Function to control and monitor multiple indoor units that are grouped and expressed as single indoor unit



Displays number of indoor units in a group



Displays number of indoor units in a group
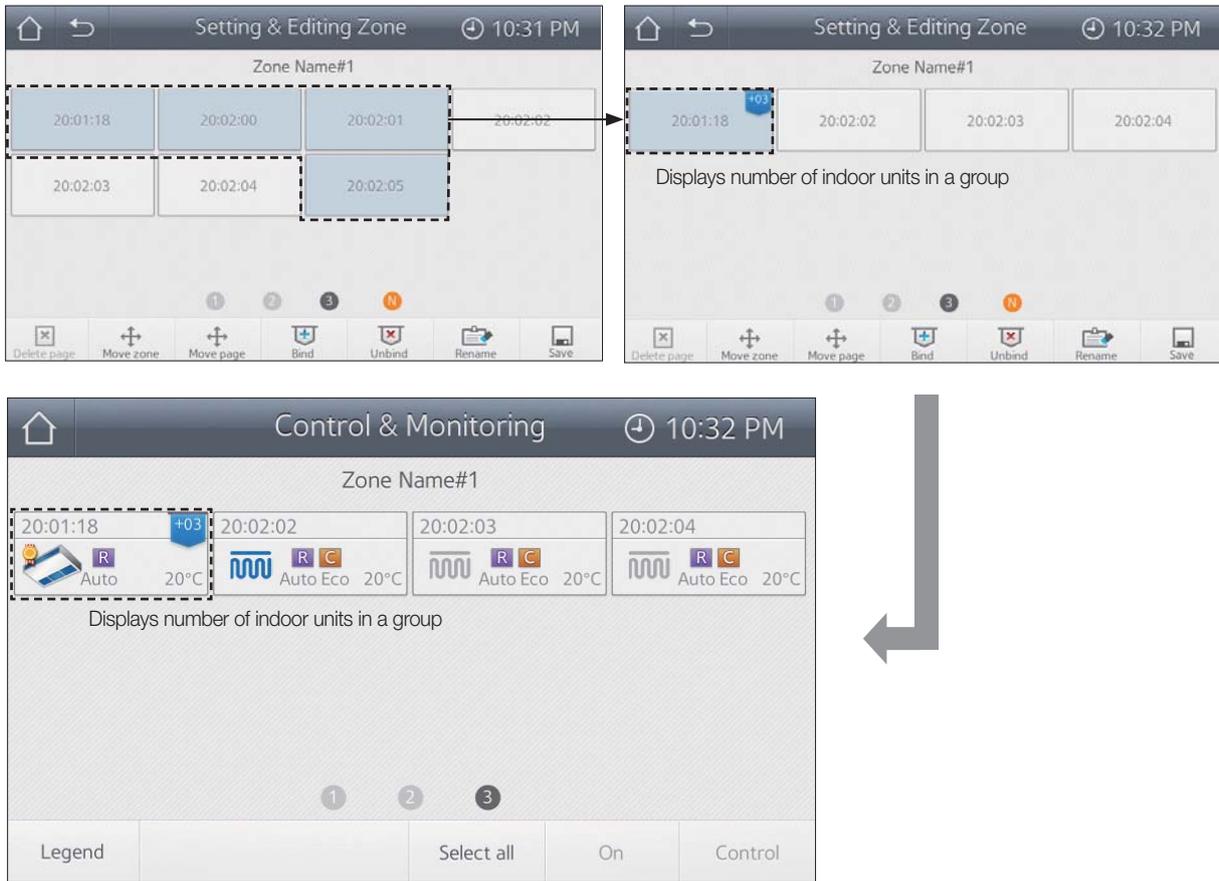
**S**chedule control
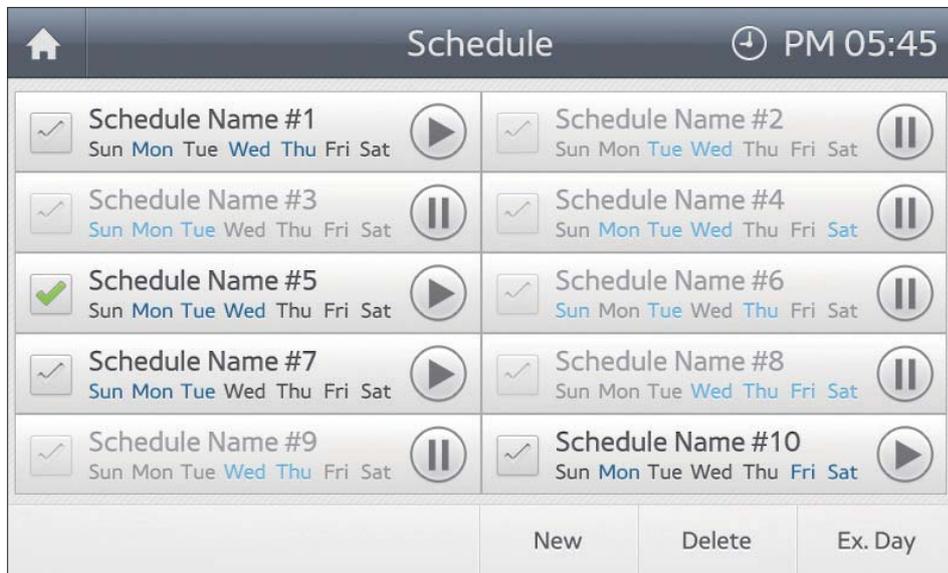


- Maximum 10 schedules can be created
- Excluded day setting is possible

## Setting indoor unit usage restriction

### (1) Cool lower limit/ Heat upper limit



- It can set the lower temperature limit in Cool mode and the upper temperature limit in Heat mode.
- This setting can be changed by other touch centralized controller and DMS2.

### (2) Operation mode limit



- To prevent the wrong operation mode setting, it can limit the operation mode of indoor unit.
  - Cool only : Heat, Auto (Heat) operation mode is restricted
  - Heat only : Cool, Dry, Auto (Cool) operation mode is restricted
- This setting can be changed by other touch centralized controller and DMS2.

# II Centralized control systems

## 3. Touch centralized controller

❑ *MCM-A300N*

### 6) Main function

#### Lock function

• You can lock the functions of Touch centralized controller.

(1) Screen lock



• You can lock the screen.
  Password is required when you try to use it.

(2) Operating panel lock



• You can set the access lock of each item of operating panel.
  The locked item will be deactivated.

(3) Menu lock



• You can set the access lock of each menu.
  Password is required when you try to use it.

## Remote controller usage restriction

### (1) Indoor unit operating panel
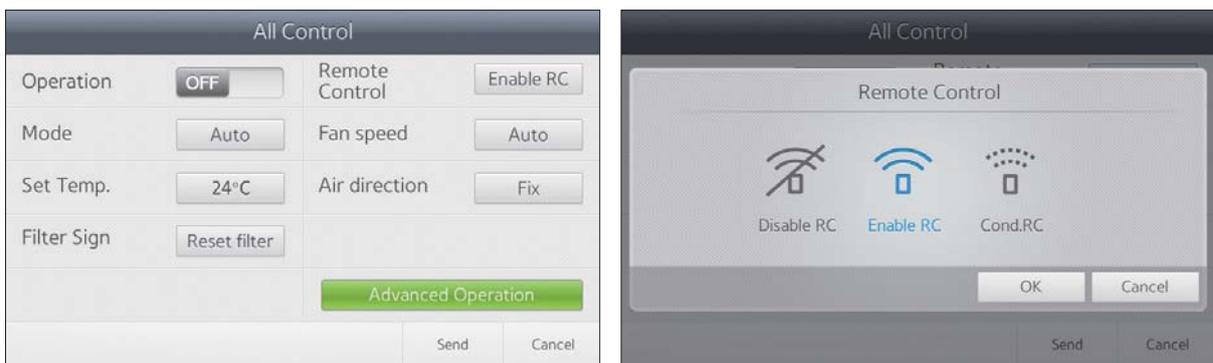


- You can set the controller restriction.
- You can set the type of controller which will be restricted when "Disable RC" is applied from operating panel.
  [Settings] → [Device settings] → [Control level]

### (2) Device settings
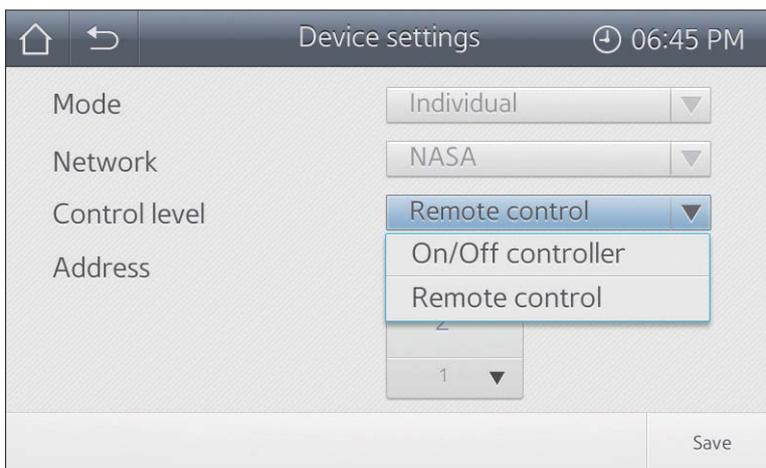


- You can set the type of controller which will be restricted when "Disable RC" is applied from operating panel.
  - Remote controller : Restrict wired/wireless remote controller usage, OnOff controller usage is possible
  - OnOff controller : Restricts wired/wireless remote controller and OnOff controller usage

# II Centralized control systems

## 3. Touch centralized controller

❏ *MCM-A300N*

6) Main function

### Tracking



- Detects all the indoor and outdoor units that are connected to communication line of Touch centralized controller
- When multiple number of Touch centralized controller is connected together, you can use check box of S/H (Show/Hide) to select indoor units that will be controlled from each Touch centralized controller.

### Hiding indoor unit



- Indoor unit with no check mark on S/H (Show/Hide) check box, will not be controlled and monitored from the Touch centralized controller.

# Air Conditioner
## installation manual

imagine the possibilities

Thank you for purchasing this Samsung product.

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# Safety precautions

This installation manual is for installing the Touch Centralized Controller. Read the installation manual thoroughly before installing the product. (Refer to the appropriate manual for installing other optional parts.)

| ⚠ WARNING | • Hazards or unsafe practices that may result in **severe personal injury or death**. |
|---|---|
| ⚠ CAUTION | • Hazards or unsafe practices that may result in **minor personal injury or property damage**. |

## SEVERE WARNING SIGNS

**Consult qualified installer or service center for installation.**
► There is a risk of product malfunction, water leakage, electric shock or fire.

**Install the product firmly on the place that can withstand the weight of the product.**
► If the installation location is not strong enough, product may fall and get damaged.

**Connect the power with rated voltage when installing.**
► If not, there is risk of fire or damage to the product.

**Do not attempt to move or re-install the product that is already installed.**
► There is risk of electric shock and fire.

**Do not attempt to repair, disassemble, or modify the product yourself.**
► There is potential risk of product damage, electric shock or fire. When repair is needed, consult qualified installer or service center.

**Check if the installation was done properly according to the installation manual.**
► There is risk of electric shock or fire if the product is installed incorrectly.

**Make sure that all wiring work is done by qualified person complying regional standards and instructions in this manual.**
► If the installation is done by unqualified person, there is risk of product malfunction, electric shock or fire caused by incorrect installation.

**Contact the service center when you need to dispose the product.**

2

## CAUTION SIGNS

**Do not install the product in a place where it is or might be exposed to inflammable gas leakage.**
▶ There is risk of fire or explosion.

**Do not install the product in a place where it will be exposed to oil or vapor etc.**
▶ If the product is used in a place where it is exposed to oil, vapor or sulphur dioxide, parts of the product may get damaged or product may function abnormally.

**Make sure that water does not get into the product.**
▶ There is risk of electric shock and fire.

**Make sure there is no tension to the cable during installation.**
▶ Cable may get cut and cause fire.

**Install the product in a place with temperature between 0 °c~39 °c with no direct sunlight.**
▶ There is risk of electric shock or abnormal operation.

**Do not install the product in a place where special spray or acid/alkali solution is used.**
▶ There is risk of electric shock or abnormal operation.

**Do not press the button with sharp object.**
▶ There is risk of electric shock or damaging the parts.

**Do not connect the power cable to the communication cable terminal.**
▶ There is risk of fire or explosion.

**When installing the product in hospitals or other places, make sure that the product does not interrupt with other products.**
▶ Abnormal operation may occur.

# Before installation

## Check list before the installation

### Installation cables

**Cables must be installed not to tightly to the wall where the product will be installed in prior to product installation.**

### Accessories

**Before the installation, check if all the accessories are included with the product. Type and quantity of the accessories may be subject to change without prior notice.**

| Name | Touch Centralized Controller | Cable tie | M4 Screw | User's manual | Installation manual |
|---|---|---|---|---|---|
| Quantity | 1 | 3 | 4 | 1 | 1 |
| Image | | | | | |

| | |
|---|---|
| ⚠️ CAUTION | • Touch Centralized Controller must be installed by the installation expert.<br>• Before installing the Touch Centralized Controller, check if the power is off.<br>• Communication cable must be installed according to the electrical wiring regulation and make sure that cable is installed through the wall so that it is not exposed to the users. (Use VCTF 2C x 0.75 mm² Communication cable ) |

## Selecting solderless ring terminal

1. Select a solderless ring terminal for a power cable according to the nominal dimensions for cable.
2. Apply insulation coating to the connection part of the solderless ring terminal and the power cable.
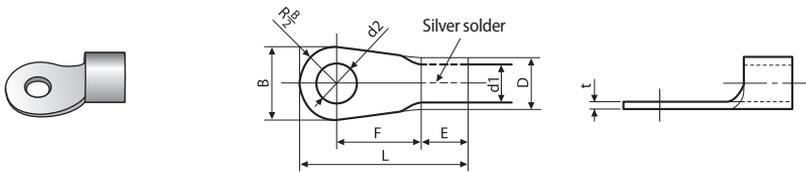
| Nominal dimensions for cable (mm²) | | 1.5 | | 2.5 | |
|---|---|---|---|---|---|
| Nominal dimensions for screw (mm) | | 4 | 4 | 4 | 4 |
| **B** | Standard dimension (mm) | 6.6 | 8 | 6.6 | 8.5 |
| | Allowance (mm) | ±0.2 | | ±0.2 | |
| **D** | Standard dimension (mm) | 3.4 | | 4.2 | |
| | Allowance (mm) | +0.3 -0.2 | | +0.3 -0.2 | |
| **d1** | Standard dimension (mm) | 1.7 | | 2.3 | |
| | Allowance (mm) | ±0.2 | | ±0.2 | |
| **E** | Min. (mm) | 4.1 | | 6 | |
| **F** | Min. (mm) | 6 | | 6 | |
| **L** | Max. (mm) | 16 | | 17.5 | |
| **d2** | Standard dimension (mm) | 4.3 | | 4.3 | |
| | Allowance (mm) | + 0.2 0 | | + 0.2 0 | |
| **t** | Min. (mm) | 0.7 | | 0.8 | |

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# Name of the parts and product dimensions

## Name of the parts

### Front

SD card slot

LCD ON/OFF button
Indoor unit operation lamp (Blue)
Error lamp (Red)

### Bottom

Power terminal

RS 485 communication terminal

Reset Button

DO Terminal

DI-1 terminal

DI-2 terminal
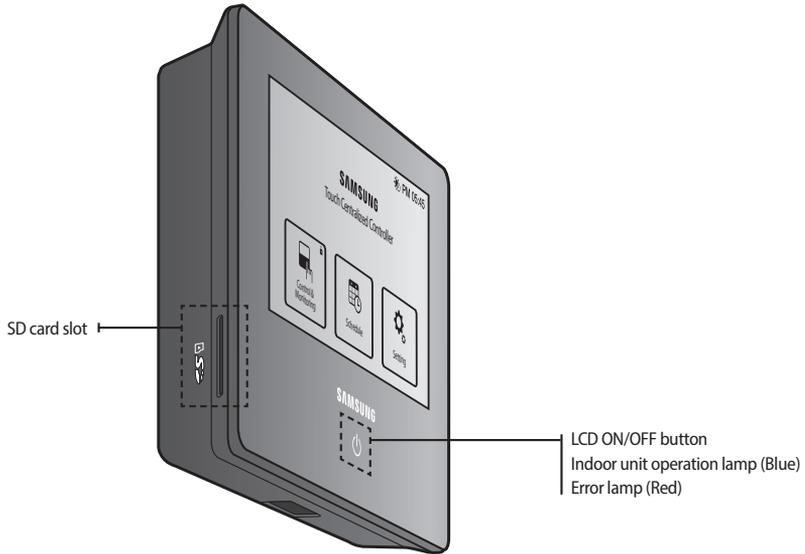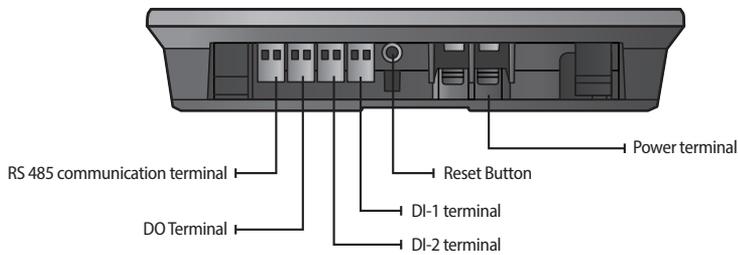
## Product dimensions

(Unit : mm)

205

163

38

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170

141
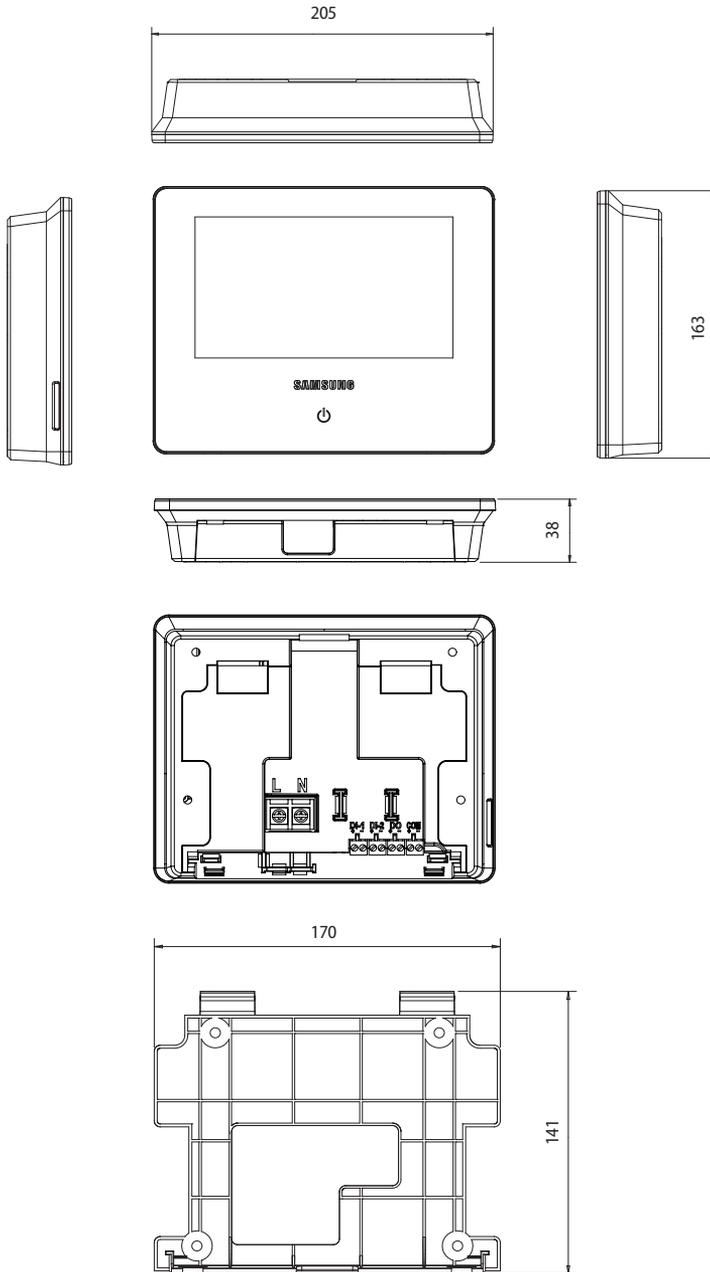
# Installing the Touch Centralized Controller

## System diagram
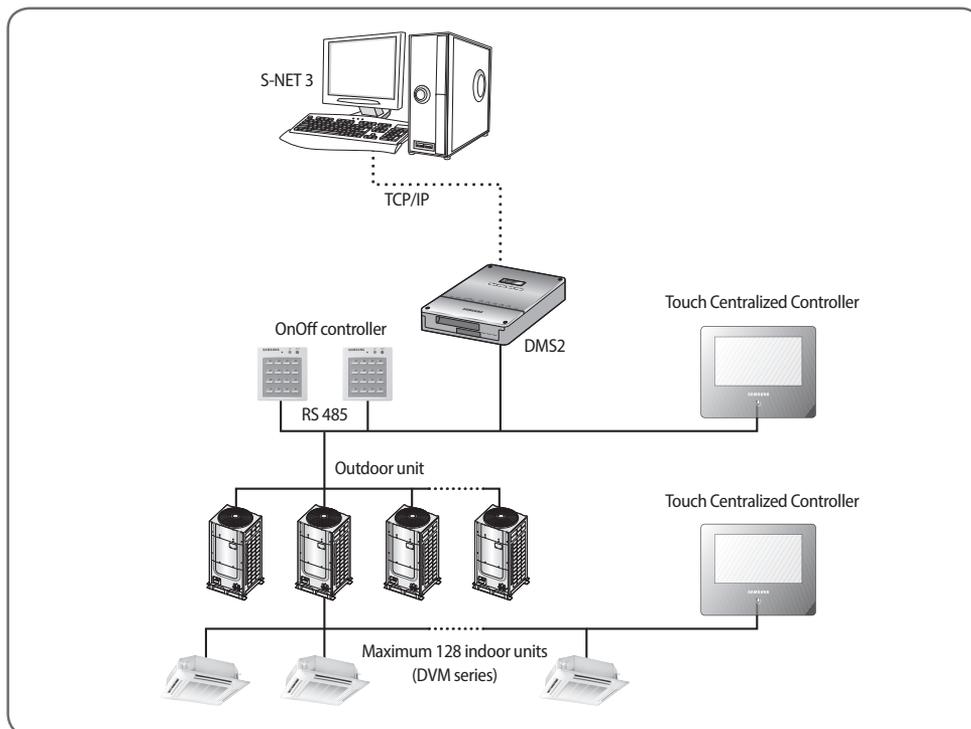


## Checking the power connection

1. Press the LCD ON/OFF button to turn on the LCD.
2. Check if the LCD turns on.
   - If the LCD does not turn on, check the connection of the power(AC 100~240 V, 50/60 Hz) terminal and the power connector.

## Checking the LED

1. There is an error If the Error lamp (Red) turns on.
2. If the Error lamp (Red) turns on, check the connection status of communication/power and the status of communication cable.
3. If the Error lamp (Red) turns on, check if there is any error on the indoor unit that is connected to the Touch Centralized Controller.

## Maximum allowable number of connections

| Classification | When connected to control device layer | When connected to indoor/outdoor unit layer |
|---|---|---|
| Outdoor unit | 16 units | 1 unit |
| Indoor unit / ERV | 128 units | 80 units |

## ▍Installing the Touch Centralized Controller

1. Fix the installation plate of the Touch Centralized Controller on the wall with 4 screws.
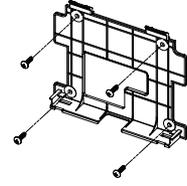
2. Connect the power cable to the power terminal on the back of the Touch Centralized Controller.

| Tightening torque (N.m) | |
|---|---|
| M4 | 1.2~1.5 |

[Arranging the wire in downward direction]

Fix it firmly with a cable tie

[Arranging the wire in upward direction (for in-wall wiring)]

Communication cable

Power cable
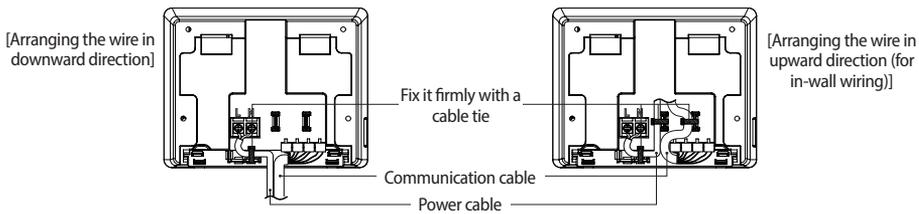
✻ When the wire needs to be arranged in upward direction, cut part of the case (as indicated in below illustration) by using an appropriate tools. (When cutting the part of the case, length and width should not exceed the measurements stated in the illustration)

Max 39.0

Part to be cut

Max 7.0
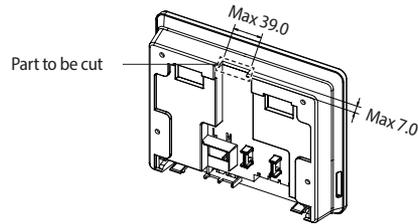
3. Connect the communication cable to the 485 communication terminal on the back of the Touch Centralized Controller.
   - If the connection is not done properly, communication may not work properly.
   - Use appropriate tools to connect the cables firmly within rated torque range so that it can withstand external forces.
   - You may connect the communication cable of the F1, F2 terminal of the indoor/outdoor unit or R1, R2 of the outdoor unit.
   - When connecting the Touch Centralized Controller to indoor/outdoor unit layer use F1, F2 terminal and use R1, R2 terminal when connecting it to control device layer.
4. Hang the top part of the Touch Centralized Controller on the installation plate, already installed on the wall, and fasten the hooks on the bottom part of the installation plate.
   - Make sure to fix the Touch Centralized Controller firmly since it may fall to the ground and get damaged if it is not firmly fixed.

**Disassemble point**
To separate the product from the installation plate

**Grooves for the hooks (inside the installation plate)**
To fix the product to the installation plate

Installation plate
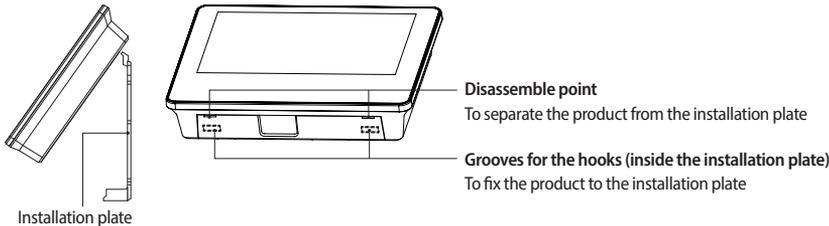
⚠ CAUTION • It is recommended to install the product on the wall for safe use and to prevent it from troubles and damages.

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# Installing the Touch Centralized Controller

## Tracking

Through tracking function, Touch Centralized Controller searches for the device that forms a system and registers the installation & status information of those devices.

1.  When you go to [Setting] → [Installation settings] → [Network & Tracking] menu and tap [Tracking] button, tracking will begin after user authentication.
2.  Tracking will run for maximum 10 minutes.
    -  If the number of connected outdoor unit increases, it may take long time for tracking.
3.  When the tracking is done, you can check the list of searched devices.
4.  You can select Show/Hide ( ☑ ) for the device that has completed the tracking.
    -  You can also hide the device which is found during the tracking with the Hide function.
5.  Indoor units that has disabled centralized control option will be fixed to 'Hide' status and it cannot be changed.

## Setting for external contact control through DI port (Optional)

### Setting DI pattern

You can set the DI pattern from [Setting] → [System settings] → [DI pattern] menu.

▶ **DI port**
Dry contact must be connected.



DI-1 (+,-)    DI-2 (+,-)
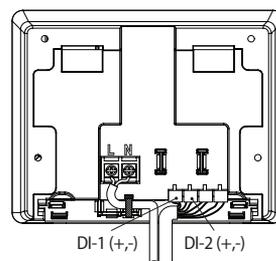
### Control pattern

| Pattern | Description of control |
|---------|------------------------|
| 1 | • No external input (Factory default setting)<br>• Nothing will happen when contact signal is inputted to port 1. |
| 2 | • When DI-1 ON signal is input, emergency stop status will occur.<br>• It will stop all indoor units and order the indoor units not to be controlled by a remote controller.<br>• In the emergency stop status, you cannot use the user control command. In addition, the schedule control will not work. When the contact control signal is changed to OFF, the control command can work normally. (DI-2 will not be used with the pattern 2) |
| 3 | • When DI-1 ON signal is input, it will stop all indoor units. When OFF signal is input, all indoor units are ON.<br>• When DI-2 ON signal is input, the remote control status of all the indoor units will be enabled and when the OFF signal is input, the remote control status will be disabled. |
| 4 | • Valid pulse width of the input signal is between 0.5~1.0 second. Signals with pulse width below 0.5 and over 1.0 second will be ignored.<br>• When the pulse contact signal is input to DI-1, ON command will be sent to all indoor units.<br>• When the pulse contact signal is input to DI-2, OFF command will be sent to all indoor units. |

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## DO port

▶ **DO operation specification**

DO output will turn on if any one of the indoor unit is turned on. DO output will turn off if all the indoor units are turned off.

▶ **DO port**

(+)terminal outputs 12 V, (-) terminal outputs open collector, Drive current under 10 mA.

DO (+,-)

SAMSUNG