

# Air conditioner

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## User & installation manual

MIM-D01AUN/MIM-B17BUN/MIM-B18BUN

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- Thank you for purchasing this Samsung Product.
- Before operating this unit, please read this manual carefully and retain it for future reference.
- For more information on using the product, download the user manual from the product and refer to it.



**SAMSUNG**

# Safety Precautions **English**

California Proposition 65 Warning (US)

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Cautions for operation

- **Before using the DMS2.5, BACnet Gateway, LonWorks Gateway, read carefully these instructions.**
- **After reading the instructions, keep this user's manual in a handy and safe place.**
- **If a user is changed, you must hand over the manuals.**
- **Never attempt to install the air conditioning system or to move the product by yourself.**

### **WARNING**

- ◆ Do not attempt to install or repair the product by yourself.
- ◆ The product contains no user-serviceable parts. Always consult authorized service personnel for repairs.
- ◆ When moving, consult authorized service personnel for disconnection and installation of the product.
- ◆ Ensure that the wall is strong enough to support the weight of the product.
- ◆ Must install the product with rated power supply.
- ◆ In the event of a malfunction (burning smell, etc.), immediately stop operation, turn off the electrical breaker, and consult authorized service personnel.

### **CAUTION**

- ◆ Do not use inflammable gases near the product.
- ◆ Do not spill water into the product.
- ◆ Do not operate the product with wet hands.
- ◆ Do not install the product in a location where it will come into contact with the combustible gases, machine oil, sulphide gas, etc.
- ◆ Do not press buttons with a pointed thing.
- ◆ Do not pull or bend the product cable excessively.
- ◆ Do not use the product for other purpose.
- ◆ Do not spray an insecticide or other combustible things on the product.
- ◆ Do not clean the product with benzene, solvents or other chemicals.
- ◆ Do not give a shock to the product or disassemble it by yourself.

## Cautions for installation

- **This user & installation manual describes how to install the DMS2.5, BACnet Gateway, LonWorks Gateway. For installation of other optional accessories, refer to the appropriate installation manual.**

### **WARNING**

- ◆ Read carefully this user & installation manual before installation and check if the product is installed correctly after installation.
- ◆ Do not attempt to install or repair this product by yourself.
- ◆ This product contains no user-serviceable parts. Always consult authorized service personnel for repairs.
- ◆ When moving, consult authorized service personnel for disconnection and installation of the product.
- ◆ Ensure that the wall is strong enough to support the weight of the product.
- ◆ Must install the product with rated power supply.
- ◆ The product must be installed according to the national electrical rules by an installation specialist.
- ◆ If you wish to uninstall the product, consult an authorized installation center.

### **CAUTION**

- ◆ Do not use inflammable gases near the product.
- ◆ Do not install the product in a location where it will come into contact with combustible gases, machine oil, sulphide gas, etc.
- ◆ Avoid locations where acid/alkali solution or special spray is used.
- ◆ Choose a location that is dry and sunny, but not exposed to direct sunlight. Suitable temperature is between 0°C(32 °F) and 39°C(102.2°F).
- ◆ Do not spill water into the product.
- ◆ Do not apply tensile strength to the cable to avoid cable damage.
- ◆ Do not press buttons with a sharp object.
- ◆ Do not connect the power cable to the control terminal.
- ◆ If the product is installed in a hospital or other special places, it should not affect other electronic devices.

# Consignes de sécurité **Français**

Avertissement Proposition 65 de Californie (US)

 **AVERTISSEMENT:** Cancer et Troubles de l'appareil reproducteur - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Précautions pour le fonctionnement

- Avant d'utiliser le DMS2.5, BACnet Gateway, LonWorks Gateway, lisez attentivement ces consignes.
- Après en avoir pris connaissance, conservez ce manuel d'utilisation dans un lieu sûr et à portée de main. En cas de changement d'utilisateur, vous devez remettre les manuels.
- Ne tentez jamais d'installer le climatiseur ou de déplacer le produit par vous-même.

### **AVERTISSEMENT**

- ◆ Ne tentez pas d'installer ou de réparer vous-même le produit.
- ◆ Le produit ne contient aucun composant interne susceptible d'être réparé par l'utilisateur. Consultez toujours le personnel d'entretien agréé pour toute réparation.
- ◆ En cas de déplacement, consultez le personnel d'entretien agréé pour tout débranchement et toute installation du produit.
- ◆ Assurez-vous que le mur est suffisamment résistant pour supporter le poids du produit.
- ◆ Vous devez raccorder le produit à une installation supportant sa puissance nominale.
- ◆ En cas de dysfonctionnement (odeur de brûlé, etc.), arrêtez immédiatement le fonctionnement, coupez le disjoncteur électrique et consultez le personnel d'entretien qualifié.

### **ATTENTION**

- ◆ N'utilisez pas de gaz inflammable à proximité du produit.
- ◆ Ne renversez pas d'eau dans le produit.
- ◆ Ne manipulez pas le produit si vous avez les mains mouillées.
- ◆ N'installez pas le produit dans un lieu où il sera en contact avec des gaz combustibles, de l'huile de machine, de l'hydrogène sulfuré, etc.
- ◆ N'appuyez pas sur les boutons avec un objet pointu.
- ◆ Ne tirez pas sur le cordon d'alimentation du produit et ne le pliez pas excessivement.
- ◆ N'utilisez pas le produit dans un autre but que celui auquel il est destiné.
- ◆ Ne vaporisez pas d'insecticide ou autre produit combustible sur le produit.
- ◆ Ne nettoyez pas le produit en utilisant du benzène, des solvants ou autres produits chimiques.
- ◆ N'appliquez pas de choc sur le produit et ne le désassemblez pas non plus vous-même.

## Précautions pour l'installation

- Ce manuel d'utilisation et d'installation décrit comment installer le DMS2.5, BACnet Gateway, LonWorks Gateway. Pour obtenir des informations sur l'installation d'autres accessoires optionnels, reportez-vous au manuel d'installation correspondant.

### **AVERTISSEMENT**

- ◆ Veuillez lire attentivement ce manuel d'utilisation et d'installation avant l'installation, puis vérifiez si le produit est correctement installé.
- ◆ Ne tentez pas d'installer ou de réparer vous-même ce produit.
- ◆ Ce produit ne contient aucun composant interne susceptible d'être réparé par l'utilisateur. Consultez toujours le personnel d'entretien agréé pour toute réparation.
- ◆ En cas de déplacement, consultez le personnel d'entretien agréé pour tout débranchement et toute installation du produit.
- ◆ Assurez-vous que le mur est suffisamment résistant pour supporter le poids du produit.
- ◆ Connectez impérativement le produit à une installation supportant sa puissance nominale.
- ◆ Conformément aux règles électriques nationales, le produit doit être installé par un technicien d'installation.
- ◆ Si vous voulez désinstaller le produit, consultez un centre d'installation agréé.

### **ATTENTION**

- ◆ N'utilisez pas de gaz inflammable à proximité de l'appareil.
- ◆ N'installez pas le produit dans un lieu où il sera en contact avec des gaz combustibles, de l'huile de machine, de l'hydrogène sulfuré, etc.
- ◆ Évitez les emplacements où des solutions acides/alcalines ou des pulvérisateurs spéciaux sont utilisés.
- ◆ Choisissez un emplacement sec et lumineux, mais non exposé à la lumière directe du soleil. La température adaptée se situe entre 0°C (32°F) et 39°C (102,2°F).
- ◆ Ne renversez pas d'eau dans le produit.
- ◆ Ne soumettez pas le câble à un effort de tension qui pourrait l'endommager.
- ◆ N'appuyez pas sur les boutons à l'aide d'un objet pointu.
- ◆ Ne branchez pas le câble d'alimentation à la borne de commande.
- ◆ Si le produit est installé dans un hôpital ou dans d'autres endroits spéciaux, il ne doit pas affecter les autres appareils électroniques.

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- Note*
- ◆ The contents and pictures used in this user & installation manual may be changed without advance notice for the functional reinforcement and improvement of a product.
  - ◆ This user & installation manual is for DMS2.5, BACnet Gateway, LonWorks Gateway installation.
  - ◆ Refer to page 47~68 to check BACnet Gateway installation.
  - ◆ Refer to page 69~95 to check LonWorks Gateway installation.

## Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

# Before Installing the DMS2.5

## Checks before installation

### 1 DMS2.5 IP

- ◆ Basically, only Private IP can be set to IP address. To use Public IP, you must set Enable public IP as 'Enable' from the menu [System Settings] → [System environment setting].

- Private IP range : 10.0.0.0 ~ 10.255.255.255, 172.16.0.0 ~ 172.31.255.255, 192.168.0.0 ~ 192.168.255.255

- Public IP range: IP except for Private IP range and 127.0.0.1(localhost)

- ◆ DMS2.5 supports DHCP. If Public IP must be assigned from DHCP, you must set Enable public IP as 'Enable' from the menu [System Settings] → [System environment setting].

※ DHCP(Dynamic Host Configuration Protocol)

An Internet protocol for automating the configuration of computers that use TCP/IP. DHCP is used to automatically assign IP addresses.

In other words, the IP address of the host is supported only when the PC is on.

### 2 Network related equipments

※ DHCP(Dynamic Host Configuration Protocol)

An Internet protocol for automating the configuration of computers that use TCP/IP. DHCP is used to automatically assign IP addresses.

In other words, the IP address of the host is supported only when the PC is on.

### 3 Installation connection wire

- ◆ The LAN cable and the communication cables from OnOff controller/interface modules must be installed in such a way that the wires can be connected to the DMS2.5 with ease.

#### Note

◆ *DMS2.5 supports Static IP or Dynamic IP. Web browser or S-NET series accesses DMS2.5 using its IP address. If the web browser or S-NET series which accesses to DMS2.5 are installed in a PC and the PC's IP is set to Public IP, you must register the Public IP to DMS2.5 to access.*

◆ *A static IP from an internet service provider must be used if xDSL (ADSL, VDSL) is supported.*









CAUTION

- ◆ **Use this product only in a separate dedicated network. Samsung electronics is not liable for any problems caused by connecting it to the Internet or an intranet.**

## Accessories

Make sure you have each item. Supplied items may vary depending on your country or service provider.

| Item     | DMS2.5  | Adapter   | Power cable   | M4x16 Screw   |
|----------|---|---|---|---|
| Quantity | 1   | 1   | 1   | 6   |
| Shape    |  |  |  |  |

| User & Installation manual  | Cable tie   |
|---|---|
| 1   | 1   |
|  |  |



CAUTION

- ◆ ***The DMS2.5 must be installed by a trained installer.***
- ◆ ***Ensure the main power is turned off before installing the DMS2.5.***
- ◆ ***Be sure to use adapter and power cable we provide.***
- ◆ ***The shape of power cable may differ depending on the model.***
- ◆ ***The power cable and the communication cable must be installed according to the national electrical wiring regulations.***
- ◆ ***LonWorks communication cable should use the cable which fits to the specification provided by Echelon.***

# Viewing the Parts

## Main Parts

### DMS2.5 Exterior

#### LCD Display

Shows current time and IP address. Various messages will be displayed depending on button input.

#### LCD operation button

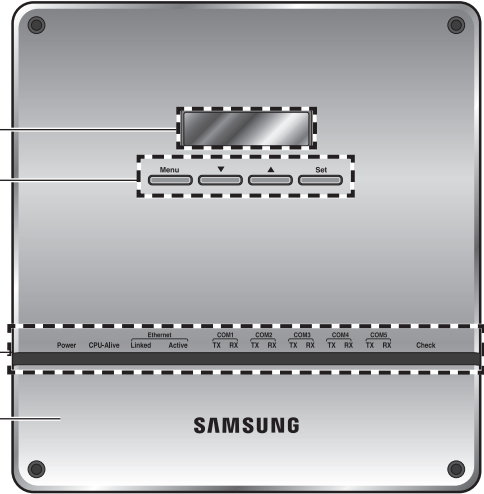
There are 4 buttons(Menu, ▼(Down), ▲(Up), Set) and you can access menu and move, check the menu.

#### LED Indicator

Check 15 LED status such as Power, CPU-Alive, Ethernet-Linked/Active, COM1~5-TX/RX and Check

#### DMS2.5 Bottom cover

Unfasten 2 screws on the bottom and separate the bottom cover from DMS2.5. Then check cable connection part.

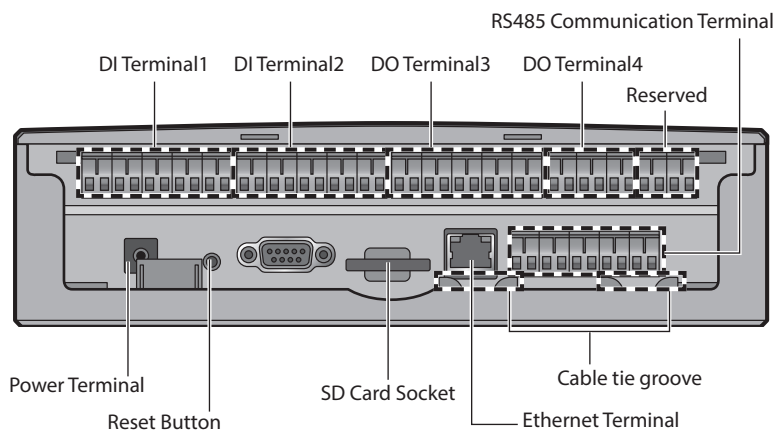


### LED Indicator

| Item            | Name  | Status  |
|-----------------|---|---|
| Power           | Power indicator   | Turns blue when the power is supplied.                            |
| CPU Alive       | CPU operation indicator   | Blinks in orange with 1 second intervals during normal operation. |
| Ethernet-Linked | Internet connection indicator   | Turns green during normal connection.                             |
| Ethernet-Active | Internet data transmission/reception indicator                        | Blinks in orange during normal transmission/reception.            |
| COM1~5 - TX     | Channel 1~5 OnOff controller/Outdoor unit Data transmission Indicator | Blinks in green during normal transmission.                       |
| COM1~5 - RX     | Channel 1~5 OnOff controller/Outdoor unit Data reception Indicator    | Blinks in green during normal reception,                          |
| Check           | Indoor/Outdoor unit/Communication check Indicator                     | Turns green when notice occurs.                                   |

## Viewing the Parts (Continued)

### DMS2.5 Cable Connection Part

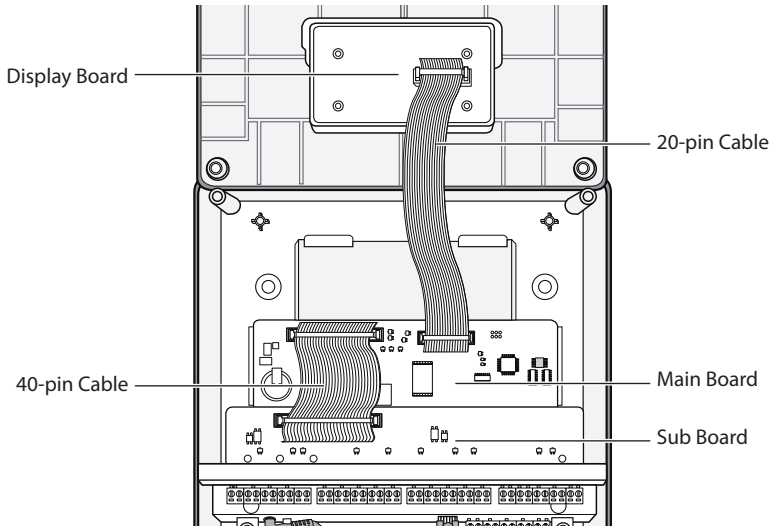


| Name                         | Description   |
|------------------------------|---|
| DI Terminal1                 | Digital Input connection terminal, Channel1~Channel5  |
| DI Terminal2                 | Digital Input connection terminal, Channel6~Channel10   |
| DO Terminal3                 | Digital Output connection terminal, Channel1~Channel5   |
| DO Terminal4                 | Digital Output connection terminal, Channel6~Channel8   |
| Reset Button                 | Reset DMS2.5  |
| Power Terminal               | Connect DMS2.5 adapter  |
| SD card socket               | Sub memory (for program update and set information saving) socket                                   |
| RS485 Communication Terminal | Connect for RS485 communication with devices such as OnOff controller/Outdoor unit<br>- COM1 ~ COM5 |
| Ethernet Terminal            | Connect LAN cable   |
| Cable tie groove             | Groove for arranging cables   |



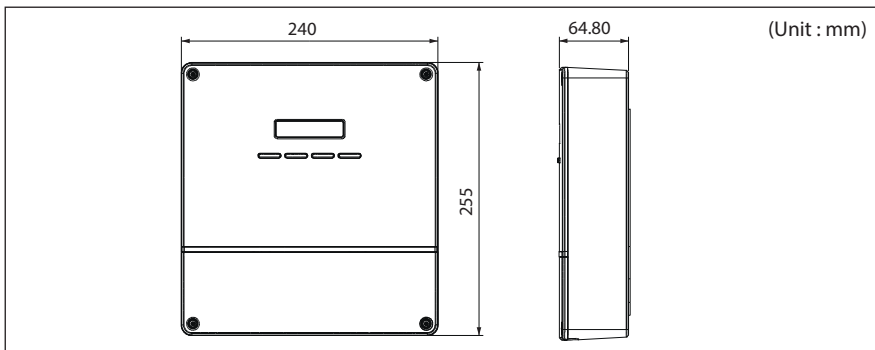
## Main Parts

### DMS2.5 Interior

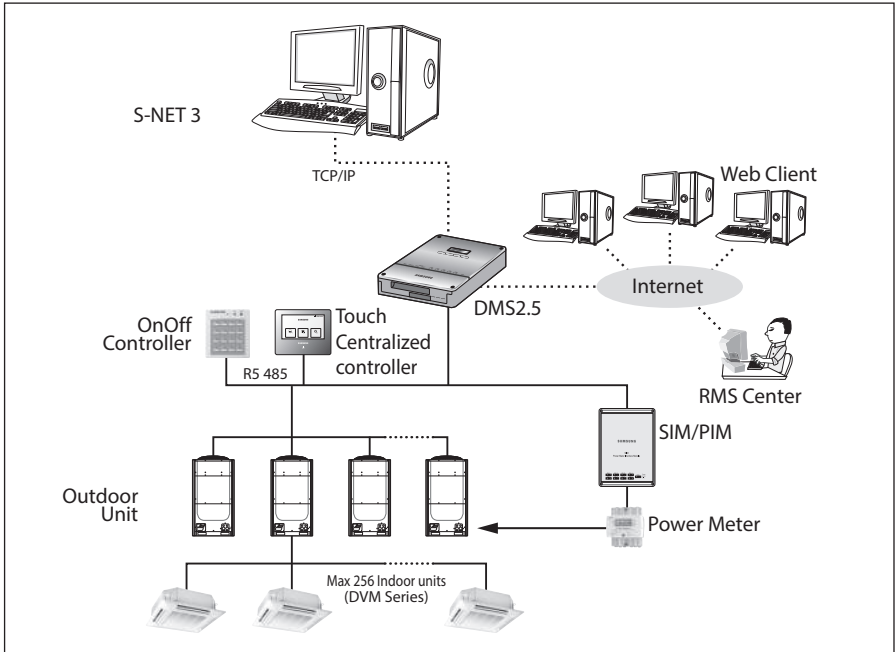


- Note**
- ◆ If you need external circuit configuration, consult with the manufacturer.
  - ◆ Refer to page 18 for DI contact input operation.

## Product Dimensions



# System Architecture



- Connecting outdoor unit and DMS2.5.
  - You can control up to 80 outdoor units and 256 indoor units by using DMS2.5.
  - ※ You can connect up to 16 (outdoor) units per each communication channel of the DMS2.5.
  - ※ The maximum number of indoor units (including ERV and MCU) that can be connected to each communication channel of DMS2.5 RS485 is 128.
  - If the number of connected outdoor unit increases, it may take long time for tracking. (Max. 30 minutes)



- ◆ **For devices that support new communication, you must set the communication mode of the channel to 'NEW' from 'System settings → Tracking' menu. Set of Indoor/outdoor units, with conventional communication type, cannot be connected to DMS2.5 with new communication.**
- ◆ **When 'NEW' is set as communication mode of the channel, virtual OnOff controller address will be assigned.**  
**(Channel 0: Virtual OnOff controller 11, Channel 1: Virtual OnOff controller 12, Channel 2: Virtual OnOff controller 13, Channel 3: Virtual OnOff controller 14, Channel 4: Virtual OnOff controller 15)**

## Compatible Devices

| No | Devices  | Model  | Note   |
|----|--|--|--|
| 1  | Indoor Unit<br>Outdoor Unit                          | DVM S HR, DVM S HP, DVM ECO,<br>DVM S WATER GEO, DVM S cooling<br>only outdoor units and indoor units<br>that can be connected to these<br>outdoor units | DVM, CAC indoor/outdoor units and<br>ERV product groups that support NASA<br>communication |
| 2  | OnOff controller/<br>Touch Centralized<br>controller | MCM-A202DUN, MCM-A300UN  | OnOff controller: Centralized controller   |
| 3  | PIM  | MIM-B16UN  | Needed for EHP power distribution  |
| 4* | Watt-hour Meter                                      | Pulse type   | Connected with PIM<br>Pulse Width: 20~400(ms)<br>Pulse: 1~10000(Wh/Pulse)                  |

※ Products with '\*' are not Samsung products and must be purchased separately.  
(Only selected power meters may be used for protocol compatibility issues.)

## Compatible Devices (Continued)

### Maximum Devices Attachable

| Devices   | Max. | Note  |
|---|------|---|
| Indoor Unit                                       | 256  | Tracking error occurs if exceeded<br>The maximum number of indoor units (including ERV and MCU) that can be connected to each DMS communication channel is 128. |
| OnOff controller/<br>Touch Centralized controller | 75   | Must not exceed 15 units per each RS485 communication terminal  |
| Outdoor unit                                      | 80   | Must not exceed 16 units per each RS485 communication terminal  |
| SIM/PIM   | 8    |   |
| Watt-hour Meter                                   | 64   | Maximum 8 units can be connected to 1 SIM/PIM.  |

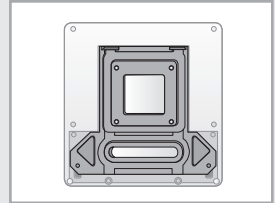


CAUTION

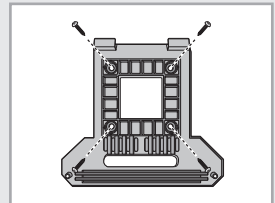
***The sum of OnOff controller, touch centralized controller, and SIM/PIM interface module that can be connected to each DMS2.5 communication channel should be 15 or less.***

## Installing the DMS2.5

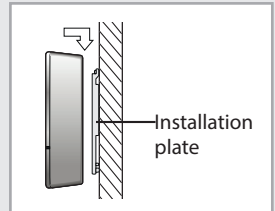
- 1 Separate the installation plate on the rear side of DMS2.5.



- 2 Fix the installation plate on the wall using 4 screws.



- 3 Hang the DMS2.5 on the groove which is on the top of the installation plate.

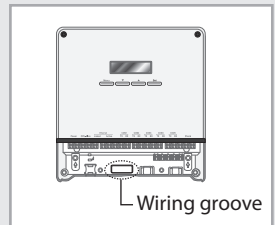


- 4 Fix the installation plate and DMS2.5 using 2 screws.

- ◆ Depending on the installation environment, fix DMS2.5 using assistant holes.  
(Screws for assistant hole are not provided by our company.)



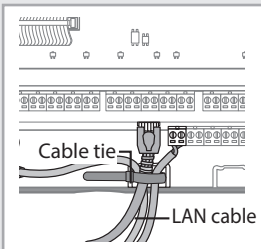
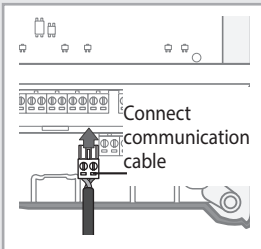
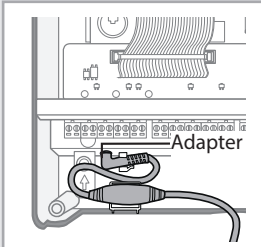
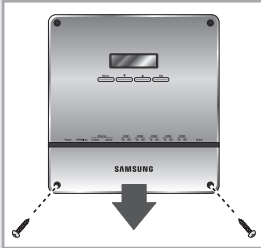
- 5 If you install DMS2.5 inside of the wall or wiring from the rear side is needed, use wiring groove on the bottom of DMS2.5.



CAUTION

**To prevent breakdown and damage of DMS2.5, and for safe usage, it is recommended to install DMS2.5 on the wall.**

## Installing the DMS2.5 (Continued)



### Connecting Outdoor Unit

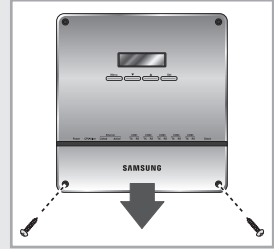
- 1 Unfasten the 2 screws on the bottom of the DMS2.5 front cover. Hold the bottom 2 sides of the DMS2.5 and push downwards to slide open the cover.
- 2 Connect the adapter to the power terminal.
  - ◆ Arrange the adapter as the right figure.
- 3 Separate 1 terminal block from 5 terminal blocks that are attached to RS485 communication terminal of the DMS2.5. Then, connect outdoor unit communication cable (R1, R2] to the terminal block.(R1↔A, R2↔B)
- 4 Connect LAN cable to the Ethernet terminal of DMS2.5. Then arrange it using cable tie.
- 5 Fasten the bottom cover of DMS2.5 and fix it using 2 screws.



**Maximum 80 Outdoor units can be connected to one DMS2.5.**

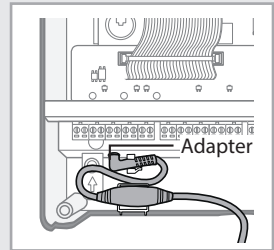
## Connecting SIM

1 Unfasten the 2 screws on the bottom of the DMS2.5 front cover. Hold the bottom 2 sides of the DMS2.5 and push downwards to slide open the cover.

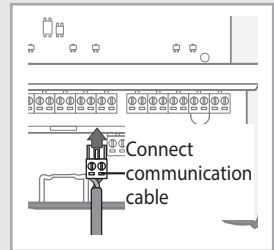


2 Connect the adapter to the power terminal.

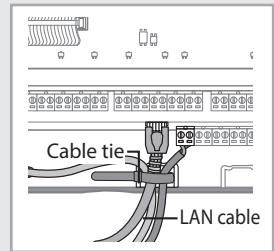
◆ Arrange the adapter as the right figure.



3 Separate 1 terminal block from 5 terminal blocks which are attached to RS485 communication terminal. Then, connect SIM/PIM communication cable to the terminal block.



4 Connect LAN cable to the Ethernet terminal of DMS2.5. Then arrange it using cable tie.



CAUTION

**Maximum 8 SIM/PIM units can be connected to one DMS2.5.**

## Installing the DMS2.5 (Continued)

### Using the DI External Contact Control (Optional)

#### Setting the External Contact Control Pattern

- You can set the system settings through contact control pattern.

- 1 Select [System Settings] menu and click [System environment setting].
- 2 Click [Edit] from 'Select the contact control pattern'.
- 3 Select the pattern you want to check.
  - ◆ Pattern 1[No external input]: No operation will be made when inputting contact point control signal.
  - ◆ Pattern 2[Level(Emergency stop)]: Commands that stop all indoor unit operation and disable remote control when inputting contact point control signal. In level emergency stop status, it will not be controlled even if the command is set from upper controller.
  - ◆ Pattern 3[Level(Operation/Stop)]: Level signal input timing. It changes operation/stop status of all indoor units.
  - ◆ Pattern 4[pulse (Operation/Stop,Disable/Enable)]: Pulse signal. It changes operation/stop status of all indoor units.
- 4 Click [Save] after setting is completed.
- 5 Click [OK] when "This information will be modified. Do you want to proceed?" message window appears.
- 6 "Reading data from DMS2.5. Please wait." message appears and saving is completed. Then, system environment setting screen appears again with all items are disabled.

**Note** Pattern 1 is set as factory setting.



CAUTION

- ◆ **DMS2.5 has total 10 DI ports. However, actually used DI ports are Ch1 and Ch2, and the rest of the ports (Ch3~Ch10) are for additional functions. Therefore, make sure to connect Ch1 or Ch2 when using it.**
- ◆ **For DO, Ch1 and Ch2 are currently used inside of DMS2.5. Ch9 and Ch10 are reserved in case of need. Therefore you can only use Ch3~Ch8.**



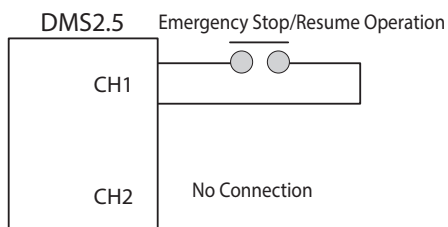
## Contact control Pattern

| Pattern  | Control  |
|----------|--|
| Pattern1 | <ul style="list-style-type: none"> <li>▶ No external input (Factory default setting)<br/>When you input contact control signal in port 1, there will be no response.</li> </ul>  |
| Pattern2 | <ul style="list-style-type: none"> <li>▶ Level input (Emergency stop)               <ol style="list-style-type: none"> <li>1. If the contact control signal is changed to ON, emergency stop status and all the indoor units are given 'Stop' command, and controlling using remote controller is impossible.</li> <li>2. During the emergency stop, the DMS2.5 will ignore any request from the upper controllers.</li> <li>3. During the emergency stop, the DMS2.5 will ignore previously set schedules.</li> <li>4. When the contact control signal changes from ON to OFF, DVM goes into normal operation status and returns to the remote control status before emergency stop.</li> <li>5. Even if the contact control signal of port 1 changes from ON to OFF, there will be no change to the indoor unit.</li> <li>6. When you input contact control signal in port 2, there will be no response.</li> </ol> </li> </ul>  |
| Pattern3 | <ul style="list-style-type: none"> <li>▶ Level input (Operation/Stop, Remote control Enable/Disable)               <ol style="list-style-type: none"> <li>1. If the contact signal of port 1 changes from OFF to ON, all indoor units will be given 'Operation' command.</li> <li>2. If the contact signal of port 1 changes from ON to OFF, all indoor units will be given 'Stop' command.</li> <li>3. If the contact signal of port 2 is OFF, you cannot control all indoor units using remote controller.</li> <li>4. If the contact signal of port 2 changes from OFF to ON, you can control all indoor units using remote controller.</li> <li>5. If the contact signal of port 2 changes from ON to OFF, you cannot control all indoor units using remote controller.</li> <li>6. Control command from the upper controller will be operated regardless of the contact point status.</li> <li>7. DVM system control using Schedule control will be operated regardless of the contact point status.</li> </ol> </li> </ul> |
| Pattern4 | <ul style="list-style-type: none"> <li>▶ Pulse input (Operation/Stop)               <ol style="list-style-type: none"> <li>1. Valid pulse duration for input signal is 0.5~1.0 second.<br/>DMS2.5 ignores the signal which has shorter than 0.5 second duration, longer than 1.0 second Pulse width.</li> <li>2. When Pulse input signal is ON in Port 1. all indoor units will be given 'Operation' command.</li> <li>3. When Pulse input signal is ON in Port 2. all indoor units will be given 'Stop' command.</li> <li>4. DVM control command from the upper controller will be operated regardless of Pulse input signal.</li> <li>5. DVM system control using Schedule control will be operated regardless of Pulse input signal.</li> </ol> </li> </ul>   |

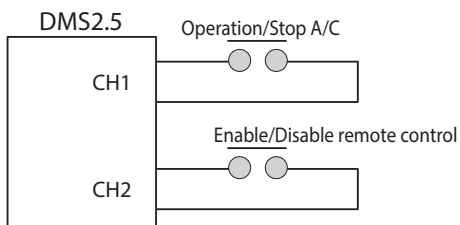
## Installing the DMS2.5 (Continued)

### DI(Digital Input) Circuitry according to Contact control Pattern

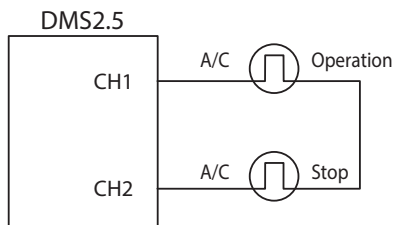
- Pattern 2 (May be used for connection with a fire sensor)



- Pattern 3 (External contact signal control)



- Pattern 4 (Pulse signal control)



# Setting the Computer Environment

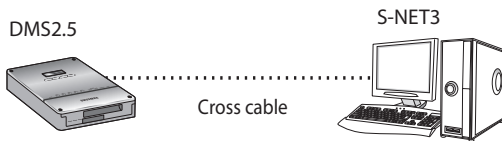
- 1 Device related to network (Purchase separately)
  - ◆ Computer with a LAN Card
  - ◆ HUB or network cable(Cross-Direct cable)
- 2 Computer web browser specification
  - ◆ Internet Explorer 11 or later version
  - ◆ Silverlight 2.0 or later version

**Note** ◆ A cross cable is used when connecting to PC directly. It is produced as transmission and reception cables are crossed. Cable 1, 2, 3, and 6 are crossed each other.

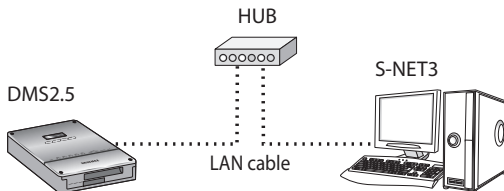
◆ Visit internet homepage (<http://www.microsoft.com/silverlight/>) to download Silverlight. Or you can download it through the download link which is noticed automatically when you access to DMS2.5 for the first time.

## Connect DMS2.5 and Computer

### Connect DMS2.5 and Computer directly



### Connect DMS2.5 and Computer using HUB



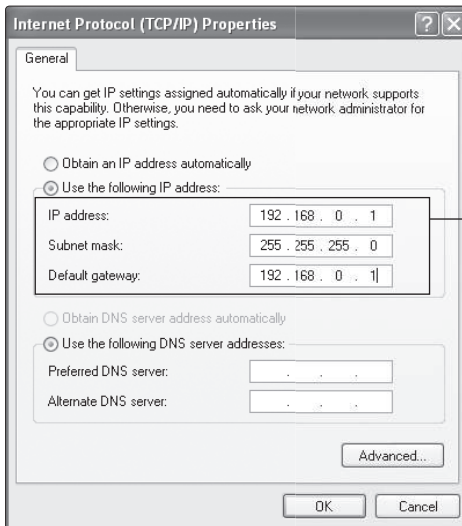
## Setting the Computer Environment (Continued)

### Computer Settings for DMS2.5 Connection

- All settings of DMS2.5 will be arranged in web page which built in DMS2.5. You should access to DMS2.5 IP to use DMS2.5 web page.  
Set your computer settings as follows.
- DMS2.5 Factory default setting  
DMS2.5 IP : 192.168.0.100

### IP Setting (Recommended)

- To access to DMS2.5 IP, set the network information of DMS2.5 connected computer as follows.

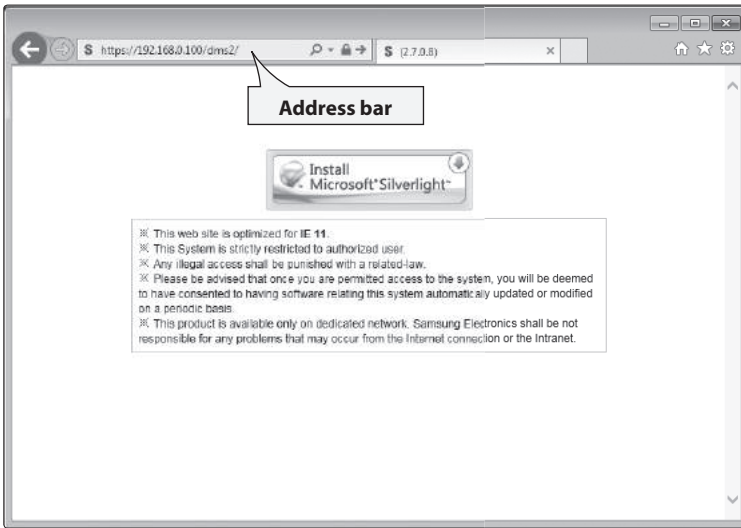



- IP address : 192.168.0.1(~253)  
Except 100
- Subnet mask : 255.255.255.0
- Default gateway : 192.168.0.1

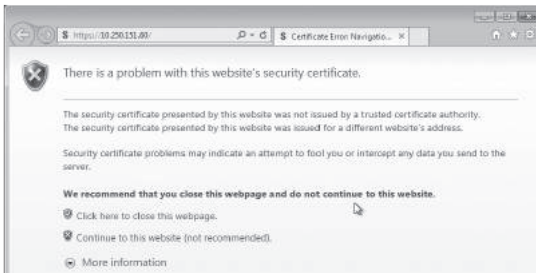
- 1 Select [My network Settings] icon and click [Properties] using right button.
- 2 Select [Local area connection] icon and click [Properties] using right button from the network connection folder.
- 3 [Internet protocol(TCP/IP)] and click [Properties] using right button from the local area connection property window.
- 4 Enter "192,168,0,1" in IP address field, "255,255,255,0" for subnet mask address, and "192,168,0,1" for default gateway.
- 5 Click [OK] after setting.

# Setting the DMS2.5

## DMS2.5 Connection and Login



- 1 Click internet explorer icon(  ) twice on your computer.
- 2 When internet explorer window appears, enter IP address (**https://192.168.0.100**) on the address field then press [ENTER].
  - 1) At initial access, security certificate warning popup message will appear as shown. This message appears since DMS2.5 used the certificate of its own, so it will not appear if DMS2.5 certificate is registered on web browser. DMS2.5 certificate must be registered because the message will appear every time and it is not safe for security if it is not registered. Also, it should be registered to all PCs that are connecting to DMS2.5.



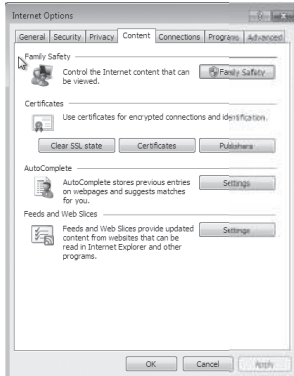
CAUTION

**You must stop connecting due to security problem if the message appears even if you registered DMS2.5 certificate.**

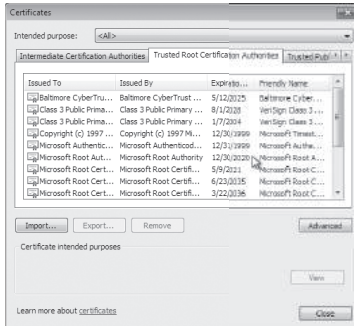
## Setting the DMS2.5 (Continued)

### 2) Registering DMS2.5 certificate on web browser

A. Select 'Content' tap in 'Tools' → 'Internet options', and click 'Certificates'.



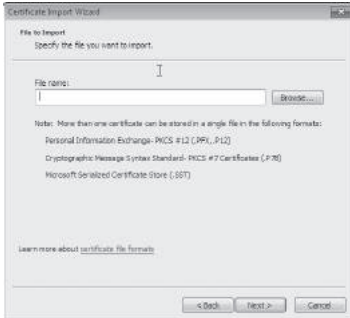
B. Select 'Trusted Root Certification Authorities' and click 'Import'.



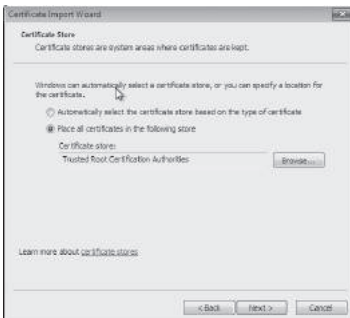
C. Click 'Next'.



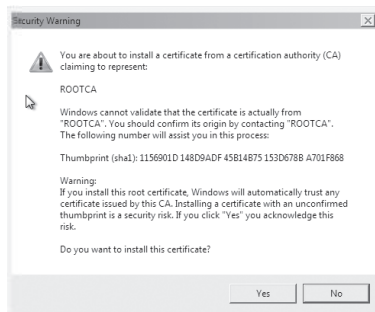
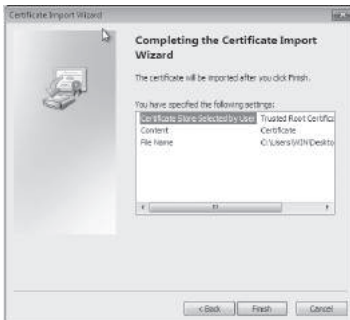
D. Select 'Browse' and find DMS2.5 certificate, and click 'Next'. DMS2.5 certificate can be downloaded from [System environment setting].



E. Select 'Place all certificates in following drive' and click 'Next'.

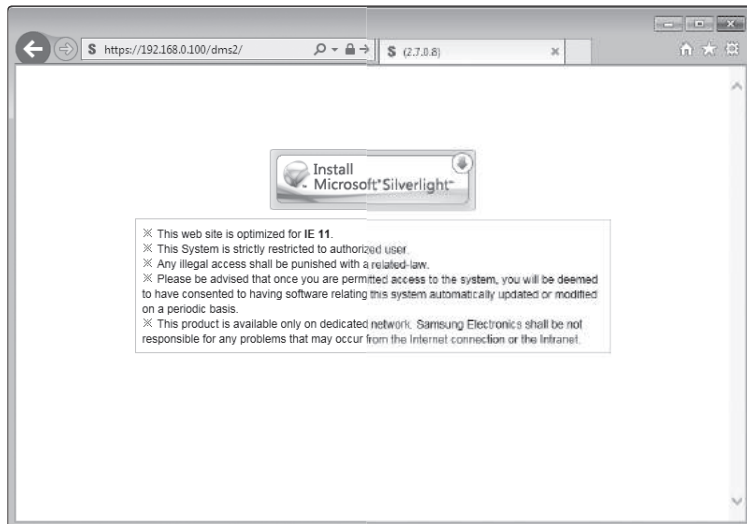


F. Click 'Finish', and click 'Yes' when security warning appears.



## Setting the DMS2.5 (Continued)

- 3 If it is the first time to access DMS2.5, "Install Microsoft Silverlight" message will appear.
  - ◆ If Microsoft Silverlight has already been installed, the screen will not appear.

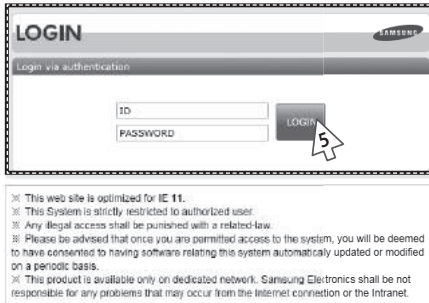


- 4 Click [Run] button and continue installation.  
After installation, access DMS2.5 again.



**Silverlight operates normally with Windows 7 or later version. It may not operate normally with former version of Windows.**





- 5 Enter ID and password when DMS2.5 main web page appears. Then click [LOGIN].
  - ◆ Depending on authorization settings set by the administrator, access to some functions may be restricted.
  - ◆ For user authorization setting, refer to System settings → User authorization management.  
The default DMS2.5 user ID is 'admin' and password is 'ac0530'.

- Note*
- ◆ *Only authorized users can access to web page.*
  - ◆ *Connection speed may slow down.  
Fewer than 5 concurrent users are recommended.*
  - ◆ *DMS2.5 manager should change ID and password for security and management.*
  - ◆ *LOGOUT : If you want to log out, click [LOGOUT] on the top of the menu. DMS2.5 will be ended.*

## Setting the DMS2.5 (Continued)

### ■ DMS2.5 System Environment Setting (Network settings)

- You can set and check information about DMS2.5 installation operation.

### ■ DMS2.5 Network Information Setting

- 
- 1 Select [System Settings] menu and click [System environment setting].

---

  - 2 Click [Edit] from DMS2.5 network information window.

---

  - 3 When text boxes of IP address, subnet mask address, default gateway and DNS server are enabled, enter values for each item.
    - ◆ 15 letters can be entered for each item.
    - ◆ Each item should match with the network address form.

#### When checking DHCP

- ◆ If you check the 'DHCP', the text boxes of IP address, subnet mask address, default gateway and DNS server will be disabled.
  - ◆ If you want manual setting, uncheck 'DHCP' and then enter network information manually.
- 
- 4 After clicking [Save], click [OK] when the message window appears.
    - ◆ If you click [OK] after setting network information as 'Edit', current internet explorer will be closed. And when you access DMS2.5 again, you can access DMS2.5 using manually setting IP.
    - ◆ If you click [OK] after setting network information as 'DHCP', current internet explorer will be closed. And when you access DMS2.5 again, you can access DMS2.5 using the IP displayed in LCD Display.
-

**Note**

- ◆ **Factory setting is as follows.**
  - IP address: 192.168.0.100      - Subnet mask address: 255.255.255.0
  - Default gateway: 192.168.0.1 - DNS server: 0.0.0.0
- ◆ **If you enabled the function by checking 'DHCP', you can check changed network information on the external LCD display.**
- ◆ **If 'DHCP' is set, IP address from DHCP server will be displayed.**
- ◆ **DMS2.5 gets automatically set IP address when you activate DHCP function. When connecting DMS2.5 to S-NET series, you can connect them using the IP. However the auto setting IP address can be changed by events such as network environment of restart.**

*In this case, it may cause communication failure between S-NET series and DMS2.5. Therefore it is not recommended to connect DMS2.5 using DHCP address and S-NET series.*
- ◆ **Refer to the user manual if you want to check other items of the system environment setting, tracking which collects information about indoor and outdoor units connected to DMS2.5, and setting for power distribution. To download the user manual, select [User manual] after selecting [System settings] menu.**



CAUTION

- ◆ ***This product must be used in a dedicated network because it cannot respond to network attacks such as hacking and viruses. When it is connected to the Internet or an intranet (ex: an office LAN), it could be a risk of illegal approach. Also, this may change it to a harmful connection for other network devices. This is not the responsibility of Samsung Electronics and not included in compensation for the damage.***

### System Time Setting

- 1 Select [System Settings] menu and click [System environment setting].
- 2 Click [Edit] from system time setting.
- 3 Enter system time(year/month/day/hour/minute/second).
  - ◆ You can enter only numbers.
  - ◆ Year: You can enter from 1980 to 2035.
  - ◆ Month: You can enter from 1 to 12.
  - ◆ Day: You can enter from 1 to 31.
  - ◆ Hour: You can enter from 0 to 23.
  - ◆ Minute: You can enter from 0 to 59.
  - ◆ Second: You can enter from 0 to 59.
- 4 Click [Save] and message window appears. Then click [OK].
  - ◆ "Reading data from DMS2.5. Please wait." message appears and saving is completed. Then, system environment setting screen appears again as all items are disabled.

*Note* System time reflects set current time.

---

## Setting the Language

---

- 1 Select [System Settings] menu and click [System environment setting].

---

  - 2 Click [Edit] from language selection.

---

  - 3 Select a language you want then click [Save].

---

  - 4 Click [OK] when “This operation needs DMS2.5 to be restarted. Do you want to apply the setting?” message appears.
    - ◆ Click [OK] and current web browser will be closed. DMS2.5 will restart and it may take approximately 1 minute.
-

## Setting the DMS2.5 (Continued)

### DMS2.5 Name Setting

- 1 Select [System Settings] menu and click [System environment setting].
- 2 Click [Edit] from DMS2.5 name setting window.
- 3 Enter name of DMS2.5 when DMS2.5 name field enabled.
  - ◆ You can use maximum 30 letters including English alphabets and special symbols.
  - ◆ When DMS2.5 name is set, the name will be displayed on the top title bar of web browser.
- 4 Click [Save] after setting is completed.
- 5 Click [OK] when “This information will be modified. Do you want to proceed?” message window appears.
- 6 “Reading data from DMS2.5. Please wait.” message appears and saving is completed. Afterwards, system environment setting screen appears again as all items are disabled.
  - ◆ You can check new DMS2.5 name on the title bar of web browser.

**Note** *Name of DMS2.5 is set to blank as factory default.*

## Error Mail Forwarding Setting

- 1 Select [System Settings] menu and click [System environment setting].
- 2 Click [Edit] from error mail forwarding setting.
- 3 Set all the items as the value you want when all items fields are enabled.
  - ◆ If you select 'Apply', you should enter e-mail address, SMTP server ID, password, and SMTP server address.
  - ◆ If you select 'Not apply', E-mail, ID, PW and SMTP server items will not affect.
- 4 Click [Save] after setting is completed.
- 5 Click [OK] when "This information will be modified. Do you want to proceed?" message window appears.
- 6 "Reading data from DMS2.5. Please wait." message appears and saving is completed. Afterwards, system environment setting screen appears again with all items are disabled.

- Note*
- ◆ *In factory setting, 'Not apply' is checked and item fields (E-mail, ID, PW, SMTP server) are blank.*
  - ◆ *E-mail forwarding function deals with the server supporting SSL.*

## Setting the DMS2.5 (Continued)

### Setting Enable public IP

- 1 Select [System Settings] menu and click [System environment setting].
- 2 Click [Edit] on Enable public IP section.
- 3 Select whether to use Public IP or not.
  - ◆ When you select 'Enable', you must register the Public IP of PCs or network devices to access DMS2.5 from the PCs or network devices.
- 4 Click [Save].

### Setting Public IP of upper controller

- 1 Select [System Settings] menu and click [System environment setting].
- 2 Click [Edit] on Public IP of upper controller section.
- 3 Register the Public IP of PCs or network devices to access DMS2.5 from the PCs or network devices.
  - ◆ Select 'Apply' after entering the Public IP to access DMS2.5.
- 4 Click [Save].



## System setting initialization

192.168.0.100  
06:12:13(AM)

- 1 Press [Menu], [▲], [▼] or [Set] on LCD if IP and current time are displayed on LCD screen.
  - ◆ Main menu screen appears.
  - ◆ Initialization is not possible in the screen which time information is displayed.

MAIN MENU  
1. IP Config

- 2 Press [Menu] → [▼] → [▲] → [▼] → [Menu] buttons in order in main menu screen.
  - ◆ Caution will be displayed on LCD Display.

Are you sure?  
YES:Set, NO:Menu

- 3 Initialize DMS2.5 by clicking [Set] when caution phrase appears.
  - ◆ If you press [Menu] button, turns back to main menu without initialization.



CAUTION

***When initializing system setting, all saved data in DMS2.5 will be deleted.  
After initialization, saved data and IP address will be same as factory setting.***

## ◆ What is tracking?

Tracking is an operation that finds devices which are connected to DMS2.5.

Through tracking operation, devices which are connected to DMS2.5 can recognize if they are connecting to DMS2.5.

To supervise and control system air conditioner using DMS2.5, tracking should be done first.

## ◆ Things you can do through tracking

Checking the number of devices installed, setting communication mode for each channel, DVM tracking, Renaming is possible through tracking.

## ◆ Execute tracking

(1) Connect DVM device

- Connect the device to COM1~COM5.

(2) Set communication mode for each channel.

- Set proper communication mode which fits to the devices connected in step (1).

- Be careful that if communication mode is not properly set, the device will not be found through tracking.

(3) Execute tracking - Execute DVM tracking.

- DVM tracking is an operation that finds system air conditioner devices such as indoor/outdoor unit and watt-hour meter.

(4) Name setting for each device.

- Name setting for each device is a function that sets the name of connected devices. Set the name which shows installation location of the device.

## ◆ Communication mode setting for each channel

Roles

- It records what devices are connected to COM1~COM5 of DMS2.5.

- Through tracking, DMS2.5 searches proper devices which fits to user's setting.

- Select proper communication mode which fits to connected device.

What is communication mode?

- Outdoor unit, OnOff controller, SIM, PIM can be connected to DMS2.5.

- Following is the list of devices that can be communicated through each communication mode.

▶ NEW mode: OnOff controller, outdoor units, and SIM/PIM which support new communication mode.

▶ IM mode: IM mode cannot be set, but it can be used for function change or new function with an updated version.

## Setting Communication Mode for Each Channel

- 1 Select [System Settings] menu and click [Tracking].
- 2 Click [Edit] from communication mode for each channel setting.
  - ◆ [Edit] will change to [Cancel].
  - ◆ Selection buttons are enabled. However, the channels which have searched device maintains its selection button disabled.
- 3 When each channel is enabled, check the communication mode you want to set for each channel.
  - ◆ You cannot change the communication mode of channel which has currently connected device.
  - ◆ When 'NEW' is set as communication mode, setting will allow tracking, monitoring and controlling devices that support NEW communication mode.
  - ◆ IM mode cannot be set, but it can be used for function change or new function with an updated version.
- 4 Click [Save] after setting is completed.
  - ◆ "Reading data from DMS2.5. Please wait." message appears and saving is completed. After that, tracking page with disabled items will be displayed again.
  - ◆ If you click [Cancel], check boxes will be disabled and [Cancel] will change to [Edit].

### DVM Tracking

- 1 Select [System Settings] menu and click [Tracking].

---

- 2 Click [DVM Tracking].

---

- 3 Enter administrator's password and then click [OK].

---

- 4 Tracking information window pops up. Check it and click [OK] to continue.
  - ◆ Execute tracking depending on the communication mode set by communication mode setting for each channel.

---

- 5 "Tracking is in progress. Please wait." message appears.
  - ◆ Tracking takes from few seconds to several ten minutes. However, it may vary depending on the number of installed controllers. (Max. 30 minutes)

- 
- 6 Tracking completed message will appear.  
Select Zone initialization mode you want.
- ◆ No initialization: No zone information initialization will be made.
  - ◆ Individual initialization: Initialize zone information as individual mode.
    - Individual mode: Arrange by indoor unit main address on monitoring page.
  - ◆ Group initialization: Initialize zone information as group mode.
    - Group mode: Create group by indoor unit group address (RMC) on monitoring page.
- ※ Individual mode and group mode can be changed in [Zone Setting & Edit].
- 
- 7 Page will be refreshed by clicking [OK]. Then you can check tracking result.
- 

- Note**
- ◆ *If tracking is executed successfully while 'NEW' is set as communication mode for each channel, virtual OnOff controller will be assigned to each channel.*
  - ◆ *If there is no searched outdoor unit, OnOff controller, SIM/ PIM, it is regarded as DVM tracking failure.*
  - ◆ *If there are devices which have same address, first searched device will be registered only.*
    - ※ *Searching order is not fixed.*
  - ◆ *The number of OnOff controller does not contain the number of virtual OnOff controller.*
  - ◆ *Total number of indoor units includes general indoor units, ERV, AHU, Fresh ducts, ERV PLUS, Hydro Unit, Hydro Unit HT, DVM CHILLER and FCU Kit.*



CAUTION

- ◆ *If you execute tracking, system setting will be initialized.*
- ◆ *If tracking result does not match with actual installation information, there can be critical error in additional functions such as power distribution.*
- ◆ *Make sure that tracking information matches to actual installation information after tracking.*
- ◆ *If there are errors on indoor and outdoor units while tracking, the units may not be matched.*

### Disconnect All Devices

#### Function

Initialize searched device status in DMS2.5.

Monitoring and controlling of all the connected devices to DMS2.5 will be stopped when you use this function.

- ◆ Connect searched device to the other channel and execute tracking.  
If the other device is searched in the channel you want to use, use 'Disconnect all devices' function.
- ◆ If you use this function, DMS2.5 device connection status will be initialized.

#### Disconnect All Devices

- 1 Select [System Settings] menu and click [Tracking].
- 2 Click [Disconnect all devices].
- 3 Enter administrator's password and then click [OK].
- 4 Disconnect all devices information window pops up. Check it and click [OK] to continue.
- 5 "Reading data from DMS2.5. Please wait." message appears.  
After completing disconnect all devices operation, page will be refreshed.

- Note**
- ◆ *After executing disconnect all devices function, device search status of DMS2.5 will be initialized.*
  - ◆ *You should execute tracking again after using disconnect all devices function.*

## Renaming the Device

- 1 Select [System Settings] menu and click [Tracking].
- 2 Click [Edit] on the bottom of tracking device list.
  - ◆ [Edit] will change to [Cancel].
  - ◆ When the type of the device is displayed, NEW communication address will be shown with it.

---

*Note* If you press [Cancel] button, [Cancel] will change to [Edit], and the changed name of device will be restored to original name.

---

- 3 Enter the device name, which is saved in the PBA of indoor unit and outdoor unit, in the Device name field or enter the name, which is saved in the DMS2.5, in the Name field.
    - ◆ You cannot use special symbols as Device name and Name.
    - ◆ The Name should be within 16 letters.
    - ◆ The Device name should be within 10 letters.
    - ◆ Select the check box beside 'Device name' if you want to use the name of the device (that supports NEW communication) which is saved in the PBA
  - 4 Click [Save] after setting is completed.
    - ◆ "Reading data from DMS2.5. Please wait." message appears and saving is completed. After that, tracking page with disabled items will be displayed again.
    - ◆ If you click [Cancel], input fields are disabled and [Cancel] will change to [Edit].
-

### DMS DI•DO Port Setting

- 1 Select [System Settings] and then click [Tracking].
- 2 Click [Setting] which is next to DMS DI•DO of device list.
- 3 Click [Edit] which is on the bottom of DMS DI•DO setting page.
  - ◆ [Edit] will change to [Cancel].
- 4 Edit each item when DMS DI•DO selection and input fields are activated.
  - ◆ Device type : DI or DO
  - ◆ Short name – Input short name of the device.
  - ◆ Full name – Input full name of the device.
  - ◆ Minimum value / Maximum value – MIN value is fixed as OFF and MAX value is fixed as ON.
- 5 Click [Save].
  - ◆ After the saving is complete, DMS DI•DO setting page with all inactivated items will appear.
  - ◆ If you press [Cancel], webpage will refresh and it goes back to the state before the modification.



## **PIM Setting**

- 1 Click [System Settings] → [Tracking] when DMS2.5 web page menu screen appears.
- 2 Click [Setting] which is next to PIM of device list.
  - ◆ Enter administrator's password and then click [OK].
- 3 Click [Edit] which is on the bottom of PIM setting page.
  - ◆ [Edit] will change to [Cancel].
- 4 Select a field you want to change.
  - ◆ Meter Value ( 0~999999.9, to one decimal place)
  - ◆ Meter Type / Pulse rate
    - Electricity (1~10000)
    - Water (1~10000)
    - Gas (0.001~10, to three decimal places)
  - ◆ Channel Status
  - ◆ Time Setting
  - ◆ PIM Password (Number)



CAUTION

- ◆ ***You should tick the check box of the channel you want to change.***

- 5 Click the check boxes to select the channel applying for the setting.
- 6 Click [Save].
  - ◆ If you press [Cancel], webpage will refresh and it goes back to the state before the modification.

## Setting the Power Distribution

- ◆ When doing power distribution, set SIM/PIM channel for each indoor unit.

### Channel Setting by Indoor Unit

- 1 Click [EHP Power Consumption Inspection] → [Channel setting by indoor unit] when DMS2.5 web page menu screen appears.
- 2 Click [Edit] when the setting channel by indoor unit screen appears.
- 3 Check the address and channel information of SIM/PIM which is connected to watt-hour meter.
  - ◆ If 0~7 SIM/PIM units execute tracking, it will be displayed as 16~23 in DMS2.5.
- 4 Check the information of indoor/outdoor unit which is connected to watt-hour meter.
- 5 Check the SIM/PIM channel(watt-hour meter) information of indoor/outdoor unit.
  - ◆ You can set the channel when SIM/PIM is installed in DMS2.5.
  - ◆ When bringing indoor unit's power from outdoor unit, set the 'Outdoor unit SIM channel' information only. ('Outdoor unit SIM channel' is referring to watt-hour meter which is connected to outdoor unit.)
  - ◆ When bringing indoor unit's power from the other device, not from outdoor unit, set the 'Outdoor unit SIM channel' and 'Indoor unit SIM channel' information. ('Indoor unit SIM channel' is referring to watt-hour meter which is connected to indoor unit.)
  - ◆ Power distribution will be executed automatically. The user does not need to check the value of watt-hour meter.
  - ◆ The maximum number of SIM channels for an outdoor unit is 4.

- 
- 6 Check the virtual channel information of indoor/outdoor unit.
- ◆ To execute power distribution without SIM/PIM, you should set virtual channel.
  - ◆ When bringing indoor unit's power from outdoor unit, set the 'Outdoor unit virtual channel' information only.  
( 'Outdoor unit virtual channel' is referring to watt-hour meter which is connected to outdoor unit.)
  - ◆ When bringing indoor unit's power from the other device, not from outdoor unit, set the 'Outdoor unit virtual channel' and 'Indoor unit virtual channel' information.  
( 'Indoor unit virtual channel' is referring to watt-hour meter which is connected to indoor unit.)
  - ◆ The number of virtual channel varies depending on the number of outdoor unit.
  - ◆ To execute power distribution, you need to check watt-hour meter value manually.
  - ◆ Power distribution using SIM/PIM is more accurate than using indoor/outdoor unit virtual channel. Therefore, it is recommended to execute power distribution using SIM/PIM.
- 

- 7 Set indoor unit to execute power distribution.
- ◆ If you do not set the watt-hour meter information, the power distribution result of the indoor unit will be displayed as '0'.
- 

- 8 Click [Save].
- ◆ Set channel information will be saved in DMS2.5.
  - ◆ If you do not click [Save], changed setting will not be saved.
- 

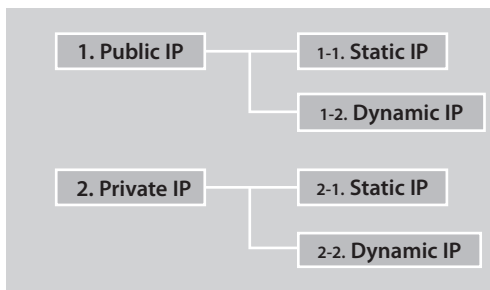


CAUTION

- ◆ **Information of watt-hour meter connected to indoor/outdoor unit should be accurate. If the watt-hour meter information is not accurate when you set channel information of indoor unit, error may occur in the power distribution result.**
- ◆ **You should set SIM/PIM channel information in the indoor unit if you want to execute power distribution using SIM/PIM. If not, it means that you do not execute power distribution.**  
**In this case, the power distribution result of the indoor unit will be '0'.**
- ◆ **If the information of watt-hour meter connected to indoor/outdoor unit is changed, consult with installation engineer.**
- ◆ **DMS2.5 executes power distribution based on set information.**

## IP Terminology

- DMS2.5 needs IP address to contact other computers.



1. Public IP : Ordinary IP used to connect internet is called public IP.

1-1. Static IP : Static IP is a number that is assigned to a computer by an Internet service provider (ISP) to be its permanent address on the Internet.

1-2. Dynamic IP : Dynamic IP is a number, which changes every time when computer or model has restarted.

2. Private IP : This is a local IP which can not be used for internet connection. If you share internet connection through router, internet sharing software or, through OS, you may check the Client IP and they will be similar to below number system.

**10.0.0.0 ~ 10.255.255.255,**  
**172.16.0.0 ~ 172.31.255.255,**  
**192.168.0.0 ~ 192.168.255.255**

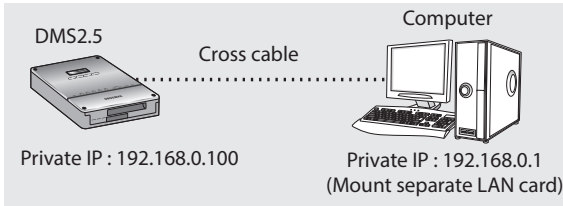
2-1. Static IP : Designated IP assigned by user.

2-2. Dynamic IP : User sets up to obtain their IP automatically.

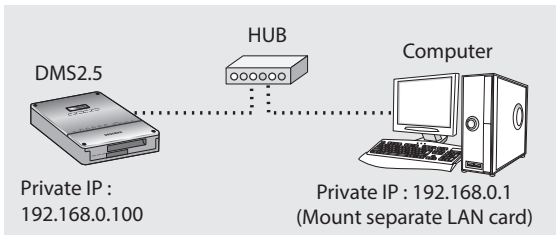
## Examples of DMS2.5 Installation with DSL

### Local Management without External Control : Use Private IP

- ◆ Direct connection between DMS2.5 and computer or controller

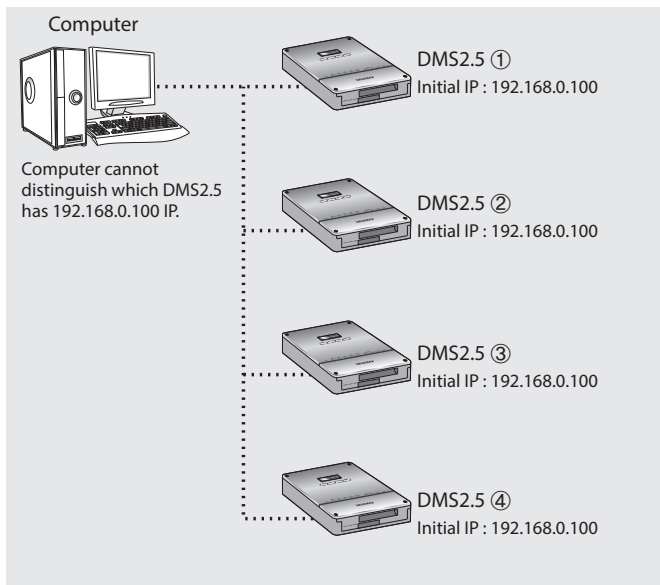


- ◆ Direct connection between DMS2.5 and computer or controller through HUB



### Initial Connection Error (for Private IP)

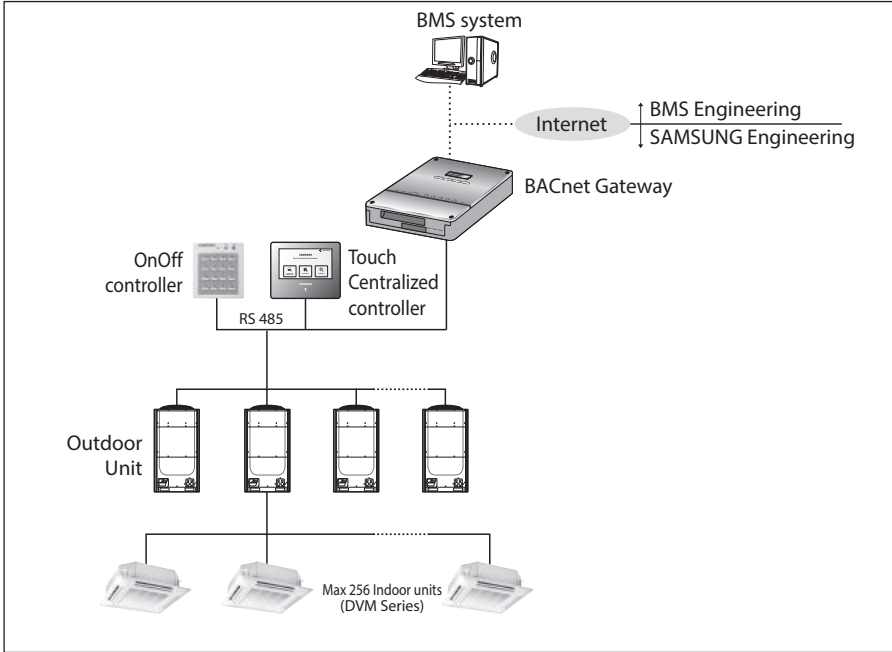
#### Several DMS2.5s are Connected to the Same Network



- ◆ In factory setting, all IP of DMS2.5 is same. Therefore, if you connect several DMS2.5 to the same network, the computer cannot distinguish which DMS2.5 has 192.168.0.100 IP address.
- ◆ Solution
  - Connect only 1 DMS2.5 to the same network.
  - Connect the power to only one DMS2.5 you want to use and cut the power for the rest of DMS2.5.
  - Disconnect from the network and set the IP again per each DMS2.5. Then connect to the network again.

# BACnet Gateway setting

## System Architecture



- Connecting outdoor units and BACnet Gateway
  - You can control up to 80 outdoor units and 256 indoor units using BACnet Gateway.
    - \* Each communication channel of BACnet Gateway can be connected with 16 outdoor units.
    - \* The maximum number of indoor units (including ERV and MCU) that can be connected to each communication channel of BACnet Gateway RS485 is 128.
  - The more outdoor units are connected, the longer time takes for tracking. (Max. 30 minutes)



CAUTION

- ◆ **For devices that support new communication, you must set the communication mode of the channel to 'NEW' from 'System settings → Tracking' menu. Set of Indoor/outdoor units, with conventional communication type, cannot be connected to BACnet Gateway with new communication.**
- ◆ **When setting communication channel mode as 'NEW', the address of virtual centralized control will be assigned.**  
**Channel 0: Virtual OnOff controller 11, Channel 1: Virtual OnOff controller 12, Channel 2: Virtual OnOff controller 13, Channel 3: Virtual OnOff controller 14, Channel 4: Virtual OnOff controller 15**

## BACnet Gateway setting (Continued)

### Compatible Devices

| No | Devices  | Model   | Note  |
|----|--|---|---|
| 1  | Indoor Unit<br>Outdoor Unit                                | Outdoor unit: DVM S HR, DVM S HP,<br>DVM ECO, DVM S WATER, DVM S<br>Cooling Only<br>Indoor unit: Models that can be<br>connected with above outdoor units | You should check that your indoor unit<br>supports BACnet Gateway. (Refer to<br>BACnet point list.) |
| 2  | OnOff<br>controller/<br>Touch<br>Centralized<br>controller | MCM-A202DUN, MCM-A300UN   | OnOff controller: Centralized controller  |
| 3  | PIM  | MIM-B16UN   | Needed for EHP power distribution   |
| 4* | Watt-hour<br>Meter   | Pulse type  | Connected with PIM<br>Pulse Width: 20~400(ms)<br>Pulse: 1~10000(Wh/Pulse)                           |

※ Products with '\*' are not Samsung products and must be purchased separately.  
(Only selected power meters may be used for protocol compatibility issues.)

※ Samsung is not responsible for BMS engineering which creates each device and objects.  
For further directions regarding on BMS engineering, consult with specialized BMS related  
vendor.



## Maximum Devices Attachable

| Devices  | Max. | Note  |
|--|------|---|
| Indoor Unit  | 256  | Tracking error occurs if exceeded<br>The maximum number of indoor units (including ERV and MCU) that can be connected to each communication channel is 128. |
| OnOff controller/<br>Touch<br>Centralized controller | 75   | Must not exceed 15 units per each RS485 communication terminal  |
| Outdoor unit   | 80   | Must not exceed 16 units per each RS485 communication terminal  |
| SIM/PIM  | 8    |   |
| Watt-hour Meter                                      | 64   | Maximum 8 units can be connected to 1 SIM/PIM.  |




CAUTION

- ◆ ***The sum of OnOff controller, touch centralized controller, and SIM/PIM interface module that can be connected to each communication channel should be 15 or less.***

## Setting the BACnet Gateway

### BACnet Gateway Connection and Login

- 1 Click internet explorer icon(  ) twice on your computer.
- 2 When internet explorer window appears, enter IP address (**https://192.168.0.100**) on the address bar then press [ENTER].
- 3 If it is the first time to access BACnet Gateway, "Install Microsoft Silverlight" message will appear.
  - ◆ If the Microsoft Silverlight has already been installed, the above message will not appear.
- 4 Click [Run] button and continue installation.  
After installation, access BACnet Gateway again.



CAUTION

***Silverlight operates normally with Windows 7 or later version. It may not operate normally with previous version of Windows.***

- 5 Enter ID and password when BACnet Gateway main web page appears, Then click [LOGIN].
  - ◆ If you use accounts with general authorization level to login, you cannot use the BACnet Gateway settings.
  - ◆ Depending on authorization level set by the administrator, access to some functions may be restricted.
  - ◆ You can change authorization level settings from **System settings** → **User authorization management**.
  - ◆ To use the BACnet Gateway functions, you must login with the ID that is included in administration group. Factory default BACnet Gateway ID is 'admin' and password is 'ac0530'.

- Note*
- ◆ *Only authorized users can access web page.*
  - ◆ *Connection speed may slow down. Fewer than 5 concurrent users are recommended.*
  - ◆ *BACnet Gateway manager should change ID and password for security and management.*
  - ◆ *Logout: If you want to logout, click [LOGOUT] on the top of the menu. BACnet Gateway will be ended.*



CAUTION

- ◆ ***If you use accounts with authorization level lower than management group or accounts with general authorization level, you cannot access BACnet Gateway settings.***
- ◆ ***If you cannot access BACnet Gateway, consult the manager.***

- 
- 6 If you login successfully, 'Control and Monitoring' screen will appear.

Click [System Setting]→[BACnet configuration] menu to switch to BACnet Gateway.



CAUTION

- ◆ ***If you use accounts with authorization level lower than management group or accounts with general authorization level, BACnet configuration will not be displayed on the menu.***
- ◆ ***If the BACnet configuration menu does not appear, consult the manager.***

- 
- 7 If you access BACnet Gateway, 'Device Configuration' screen will appear initially.

- ◆ If you click [DMS2.5 Connect] button, screen will be switched to initial screen.

## BACnet Gateway setting (Continued)

### Reading EHP Watt-hour Meter

#### Setting and checking watt-hour meter

- 1 Click [System and Checking Watt-hour meter].
  - ◆ You can change settings on watt-hour meter only when SIM/PIM interface module is connected.
- 2 Click [Edit] from the 'Setting and checking Watt-hour meter' screen.
  - ◆ CT proportion is set to '1' as factory default value.
- 3 Set the [Name] and [CT proportion] for the watt-hour meter.
  - ◆ You can use maximum 16 letters for name and only available special characters are ".", ",", "\_", "-", and "space".
  - ◆ Value for CT proportion should be integer between range of 1 ~ 5000.
- 4 Click [Save].
  - ◆ CT proportion value will be saved to the BACnet Gateway.
  - ◆ If you do not click [Save] changed setting will not be saved.
- 5 Watt-hour meter value will display the actual value of electricity on the corresponding watt-hour meter. Value will be updated automatically.



CAUTION

***When using CT watt-hour meter, be careful that there can be difference with actual power consumption as much as CT ratio error.***

## Monthly baseline setting

---

- 1 Click [System and Checking Watt-hour meter].
  - 2 Click [Edit] from the 'Monthly baseline setting' screen.
    - ◆ You can make changes when list box enables.
  - 3 Set the Monthly baseline setting.
    - ◆ You can select from 1 ~ 31.
    - ◆ If you select the last day of the month, it will automatically set the last day of corresponding month as baseline.  
Ex) Last day of February: 28<sup>th</sup> or 29<sup>th</sup>
    - ◆ Power consumption is calculated for a month before monthly baseline.  
Ex) Monthly baseline: 28<sup>th</sup>  
Today: 19<sup>th</sup> Nov.  
Time period for power consumption and operation: 29<sup>th</sup> Sep. ~ 28<sup>th</sup> Oct.
  - 4 Click [Save].
    - ◆ Changed settings will be saved to the BACnet Gateway.
    - ◆ If you do not click [Save] changed setting will not be saved.
- 

## Period setting

---

- 1 Click [System and Checking Watt-hour meter].
  - 2 Click [Edit] from the 'Period setting' screen.
    - ◆ You can select checkbox to set period in daily or monthly unit.
    - ◆ If you select daily period setting, text box will be enabled and you can enter the period in daily unit.
    - ◆ If you select monthly period setting, you can select the period in monthly unit.
  - 3 Set the period
    - ◆ If you set period in daily unit, you can set up to maximum 90 days.
    - ◆ If you set period in monthly unit, you can set up to maximum 1 months.
  - 4 Click [Save].
    - ◆ Changed setting will be saved to BACnet Gateway.
    - ◆ If you do not click [Save], changed setting will not be saved.
-

## BACnet Gateway setting (Continued)

### System Settings

- ◆ You can set and check information about BACnet Gateway installation and operation.

#### BACnet Gateway network information

- 1 Click [System Settings].
- 2 Click [Edit] from the 'BACnet network information' section.
- 3 When text boxes of IP, Subnet mask, Default gateway, DNS server, BBMD IP, BBMD PORT, Network No., and BACnet PORT are enabled, enter the address values for each item.
  - ◆ 15 letters can be entered for each item.
  - ◆ Each item should match with the network address form.
  - ◆ You can enter from 1 to 40 for Network No.
  - ◆ If you want to use multiple BACnet Gateway in the same network, you should set up "Network No." differently.
  - ◆ You can edit BBMD PORT. You can enter from 0 to 65535.
  - ◆ You can edit BACnet PORT. You can enter from 0 to 65535.
- 4 Click [Save] button on the 'BACnet network information' section.
- 5 When the pop-up window appears, click [OK].
- 6 If you click [OK], current internet explorer will be closed. Then you may run the web browser again and access BACnet Gateway by entering the IP set and saved manually.



CAUTION

- ◆ **Default value of BACnet PORT is 47808.**
- ◆ **Check the communication with external BACnet device when changing BACnet PORT.**
- ◆ **Set default value of BBMD PORT when not using BBMD function.**
- ◆ **Default value of BBMD PORT is 0 (Not used).**
- ◆ **Check the communication with external BACnet device when using BBMD function.**
- ◆ **Local network does not work when changing BBMD PORT.**
- ◆ **Default value of network number is 9.**
- ◆ **Set the network number that is not repeated when communicating externally.**

---

## **BACnet gateway information and initialization**

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- 1** Click [System Settings].

---

  - 2** You can check the basic BACnet gateway information from 'BACnet gateway information' section.

---

  - 3** Click [Edit] from the 'BACnet gateway information' section.

---

  - 4** If you want to initialize 'Recipient\_list', Check and click [Save].

---

  - 5** When the pop-up window appears, click [OK]. BACnet Gateway will restart and the system will initialize 'Recipient\_list'.
-

# BACnet Gateway setting (Continued)

## Device Configuration

### Checking device information

---

1 Click one of the Object ID from 'Object ID' column.  
Detail information of the selected device will be displayed in device information.

---

2 Analog data of the selected device will be displayed in Analog data.

- ◆ Object ID: Displays ID of the corresponding object.
  - ◆ Type: Displays type of the corresponding object.
    - AI: Input (Read Only)
    - AO: Output (Read/Write)
    - AV: Value (Read/Write)
  - ◆ Object Name: Displays the name of the corresponding object.
  - ◆ Value: Displays the current value of the corresponding object.
    - Unit will be displayed between [ ].
- 

3 Binary data of the selected device will be displayed in Binary data.

- ◆ Object ID: Displays ID of the corresponding object.
  - ◆ Type: Displays type of the corresponding object.
    - BI: Input (Read Only)
    - BO: Output (Read/Write)
    - BV: Value (Read/Write)
  - ◆ Object Name: Displays the name of the corresponding object.
  - ◆ Value: Displays the current value of the corresponding object.
    - It will be displayed either On or Off
- 

4 Multi-state Data of the selected device will be displayed in Multi-state data.

- ◆ Object ID: Displays ID of the corresponding object.
  - ◆ Type: Displays type of the corresponding object.
    - MI: Input (Read Only)
    - MO: Output (Read/Write)
    - MV: Value (Read/Write)
  - ◆ Object Name: Displays the name of the corresponding object.
  - ◆ Value: Displays the current value of the corresponding object.
- 

*Note* Please refer to BACnet Point List to check the device configuration data for each device (Refer to page 62~67).



## BACnet Protocol Implementation Conformance Statement

Date: 2017.08.31

Vendor Name: Samsung Electronics Co., Ltd.

Product Name: DMS BACnet Gateway

Product Model Number: MIM-B17BN, MIM-B17BUN

Application Software Version: 1.20 Firmware Revision: 1.35

BACnet Protocol Revision: 12

### Product Description:

This product supports BACnet/IP and provide functions to monitor and control status of air conditioner.

### BACnet Standardized Device Profile (Annex L):

- BACnet Operator Workstation (B-OWS)
- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Display (B-OD)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)

List all BACnet Interoperability Building Blocks Supported (Annex K): \_\_\_\_\_

|              | SUPPORTED BIBBS               | BIBB NAME                              | SUPPORTED                           | REMARKS |
|--------------|-------------------------------|--|-------------------------------------|---------|
| Data Sharing | DS-RP-A                       | Data Sharing-ReadProperty-A            | <input type="checkbox"/>            |         |
|              | DS-RP-B                       | Data Sharing-ReadProperty-B            | <input checked="" type="checkbox"/> |         |
|              | DS-RPM-A                      | Data Sharing-ReadPropertyMultiple-A    | <input type="checkbox"/>            |         |
|              | DS-RPM-B                      | Data Sharing-ReadPropertyMultiple-B    | <input checked="" type="checkbox"/> |         |
|              | DS-RPC-A                      | Data Sharing-ReadPropertyConditional-A | <input type="checkbox"/>            |         |
|              | DS-RPC-B                      | Data Sharing-ReadPropertyConditional-B | <input type="checkbox"/>            |         |
|              | DS-WP-A                       | Data Sharing-WriteProperty-A           | <input type="checkbox"/>            |         |
|              | DS-WP-B                       | Data Sharing-WriteProperty-B           | <input checked="" type="checkbox"/> |         |
|              | DS-WPM-A                      | Data Sharing-WritePropertyMultiple-A   | <input type="checkbox"/>            |         |
|              | DS-WPM-B                      | Data Sharing-WritePropertyMultiple-B   | <input checked="" type="checkbox"/> |         |
|              | DS-COV-A                      | DataSharing-COV-A                      | <input type="checkbox"/>            |         |
|              | DS-COV-B                      | DataSharing-COV-B                      | <input checked="" type="checkbox"/> |         |
|              | DS-COVP-A                     | DataSharing-COVP-A                     | <input type="checkbox"/>            |         |
|              | DS-COVP-B                     | DataSharing-COVP-B                     | <input type="checkbox"/>            |         |
|              | DS-COVU-A                     | DataSharing-COV-Unsolicited-A          | <input type="checkbox"/>            |         |
| DS-COVU-B    | DataSharing-COV-Unsolicited-B | <input type="checkbox"/>               |                                     |         |

## BACnet Gateway setting (Continued)

|                               | SUPPORTED BIBBS                      | BIBB NAME                                     | SUPPORTED                           | REMARKS |
|-------------------------------|--------------------------------------|---|-------------------------------------|---------|
| Alarm and Event Management    | AE-N-A                               | Alarm&Event-Notification-A                    | <input type="checkbox"/>            |         |
|                               | AE-N-I-B                             | Alarm&Event-Notification Internal-B           | <input type="checkbox"/>            |         |
|                               | AE-N-E-B                             | Alarm&Event-Notification External-B           | <input type="checkbox"/>            |         |
|                               | AE-ACK-A                             | Alarm&Event-ACK-A                             | <input type="checkbox"/>            |         |
|                               | AE-ACK-B                             | Alarm&Event-ACK-B                             | <input type="checkbox"/>            |         |
|                               | AE-ASUM-A                            | Alarm&Event-Summary-A                         | <input type="checkbox"/>            |         |
|                               | AE-ASUM-B                            | Alarm&Event-Summary-B                         | <input type="checkbox"/>            |         |
|                               | AE-ESUM-A                            | Alarm&Event-Enrollment Summary-A              | <input type="checkbox"/>            |         |
|                               | AE-ESUM-B                            | Alarm&Event-Enrollment Summary-B              | <input type="checkbox"/>            |         |
|                               | AE-INFO-A                            | Alarm&Event-Information-A                     | <input type="checkbox"/>            |         |
|                               | AE-INFO-B                            | Alarm&Event-Information-B                     | <input type="checkbox"/>            |         |
|                               | AE-LS-A                              | Alarm&Event-LifeSafety-A                      | <input type="checkbox"/>            |         |
|                               | AE-LS-B                              | Alarm&Event-LifeSafety-B                      | <input type="checkbox"/>            |         |
| Scheduling                    | SCHED-A                              | Scheduling-A                                  | <input type="checkbox"/>            |         |
|                               | SCHED-I-B                            | Scheduling-Internal-B                         | <input type="checkbox"/>            |         |
|                               | SCHED-E-B                            | Scheduling-External-B                         | <input type="checkbox"/>            |         |
| Trending                      | T-VMT-A                              | Viewing and Modifying Trends-A                | <input type="checkbox"/>            |         |
|                               | T-VMT-I-B                            | Viewing and Modifying Trends Internal-B       | <input type="checkbox"/>            |         |
|                               | T-VMT-E-B                            | Viewing and Modifying Trends External-B       | <input type="checkbox"/>            |         |
|                               | T-ATR-A                              | Automated Trend Retrieval-A                   | <input type="checkbox"/>            |         |
|                               | T-ATR-B                              | Automated Trend Retrieval-B                   | <input type="checkbox"/>            |         |
|                               | T-VMMV-A                             | Viewing and Modifying Multiple Values-A       | <input type="checkbox"/>            |         |
|                               | T-VMMV-I-B                           | View and Modifying Multiple Values Internal-B | <input type="checkbox"/>            |         |
|                               | T-VMMV-E-B                           | View and Modifying Multiple Values External-B | <input type="checkbox"/>            |         |
|                               | T-AMVR-A                             | Automated Multiple Value Retrieval-A          | <input type="checkbox"/>            |         |
| T-AMVR-B                      | Automated Multiple Value Retrieval-B | <input type="checkbox"/>                      |                                     |         |
| Device and Network Management | DM-DDB-A                             | Dynamic Device Binding-A                      | <input type="checkbox"/>            |         |
|                               | DM-DDB-B                             | Dynamic Device Binding-B                      | <input checked="" type="checkbox"/> |         |
|                               | DM-DOB-A                             | Dynamic Object Binding-A                      | <input type="checkbox"/>            |         |
|                               | DM-DOB-B                             | Dynamic Object Binding-B                      | <input checked="" type="checkbox"/> |         |
|                               | DM-DCC-A                             | DeviceCommunicationControl-A                  | <input type="checkbox"/>            |         |
|                               | DM-DCC-B                             | DeviceCommunicationControl-B                  | <input checked="" type="checkbox"/> |         |
|                               | DM-TM-A                              | Text Message-A                                | <input type="checkbox"/>            |         |
|                               | DM-TM-B                              | Text Message-B                                | <input type="checkbox"/>            |         |
|                               | DM-TS-A                              | Time Synchronization-A                        | <input type="checkbox"/>            |         |
|                               | DM-TS-B                              | Time Synchronization-B                        | <input checked="" type="checkbox"/> |         |
|                               | DM-UTC-A                             | UTCTime Synchronization-A                     | <input type="checkbox"/>            |         |
|                               | DM-UTC-B                             | UTCTime Synchronization-B                     | <input checked="" type="checkbox"/> |         |
|                               | DM-RD-A                              | ReinitializeDevice-A                          | <input type="checkbox"/>            |         |
| DM-RD-B                       | ReinitializeDevice-B                 | <input checked="" type="checkbox"/>           |                                     |         |
| DM-BR-A                       | Backup&Restore-A                     | <input type="checkbox"/>                      |                                     |         |
| DM-BR-B                       | Backup&Restore-B                     | <input type="checkbox"/>                      |                                     |         |

|                               | SUPPORTED BIBBS | BIBB NAME                    | SUPPORTED                           | REMARKS |
|-------------------------------|-----------------|------------------------------|-------------------------------------|---------|
| Device and Network Management | DM-R-A          | Restart-A                    | <input type="checkbox"/>            |         |
|                               | DM-R-B          | Restart-B                    | <input type="checkbox"/>            |         |
|                               | DM-LM-A         | List Manipulation-A          | <input type="checkbox"/>            |         |
|                               | DM-LM-B         | List Manipulation-B          | <input checked="" type="checkbox"/> |         |
|                               | DM-OCD-A        | Object Creation & Deletion-A | <input type="checkbox"/>            |         |
|                               | DM-OCD-B        | Object Creation & Deletion-B | <input type="checkbox"/>            |         |
|                               | DM-VT-A         | Virtual Terminal-A           | <input type="checkbox"/>            |         |
|                               | DM-VT-B         | Virtual Terminal-B           | <input type="checkbox"/>            |         |
|                               | NM-CE-A         | Connection Establishment-A   | <input type="checkbox"/>            |         |
|                               | NM-CE-B         | Connection Establishment-B   | <input type="checkbox"/>            |         |
|                               | NM-RC-A         | Router Configuration-A       | <input type="checkbox"/>            |         |
|                               | NM-RC-B         | Router Configuration-B       | <input checked="" type="checkbox"/> |         |

#### Segmentation Capability:

- Segmented requests supported Window Size \_\_\_\_\_
- Segmented responses supported Window Size \_\_\_\_\_

#### Standard Object Types Supported:

| Object-Type        | Supported                           | Dynamically Creatable    | Dynamically Deletable    | Writeable Properties |
|--------------------|-------------------------------------|--------------------------|--------------------------|----------------------|
| Analog Input       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Analog Output      | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Analog Value       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Present value        |
| Binary Input       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Binary Output      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Present value        |
| Binary Value       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Present value        |
| Calendar           | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Command            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Device             | Yes                                 | n/a                      | n/a                      | n/a                  |
| Event Enrollment   | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| File               | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Group              | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Loop               | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Multi-state Input  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Present value        |
| Multi-state Output | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Multi-state Value  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Present value        |
| Notification Class | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Recipient_List       |
| Program            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |
| Schedule           | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                      |

## BACnet Gateway setting (Continued)

### Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) \_\_\_\_\_
- MS/TP master (Clause 9), baud rate(s): \_\_\_\_\_
- MS/TP slave (Clause 9), baud rate(s): \_\_\_\_\_
- Point-To-Point, EIA 232 (Clause 10), baud rate(s): \_\_\_\_\_
- Point-To-Point, modem, (Clause 10), baud rate(s): \_\_\_\_\_
- LonTalk, (Clause 11), medium: \_\_\_\_\_
- BACnet/ZigBee (ANNEX O)
- Other: \_\_\_\_\_

### Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.)  Yes  No

### Networking Options:

- Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
  - Does the BBMD support registrations by Foreign Devices?  Yes  No
  - Does the BBMD support network address translation?  Yes  No

### Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

- ISO 10646 (UTF-8)  IBM™/Microsoft™ DBCS  ISO 8859-1
- ISO 10646 (UCS-2)  ISO 10646 (UCS-4)  JIS 0208

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:

This gateway switches SAMSUNG air conditioner protocol to BACnet protocol to make RS-485 communication possible with the air conditioners connected to gateway.



## BACnet Gateway setting (Continued)

### BACnet Point List

#### Indoor Unit

Single indoor unit has following point list.

| Instance Number | Object   | Object Type | Object Name                   | Unit  |            | Status value   |        |        |  |  |
|-----------------|--|-------------|-------------------------------|---|------------|----------------|--------|--------|--|--|
|                 |  |             |                               | Inactive  | Active     |                |        |        |  |  |
|                 |  |             |                               | Text-1  | Text-2     | Text-3         | Text-4 | Text-5 |  |  |
| 1               | Indoor Temperature   | AI          | AC_RoomTemp_xx_xxxxxx         | °C  |            |                |        |        |  |  |
| 2               | Set temperature  | AV          | AC_Temp_Set_xx_xxxxxx         | °C  |            |                |        |        |  |  |
| 3               | Setting lower temperature limit                                  | AV          | AC_Cool_LimitTemp_xx_xxxxxx   | °C  |            |                |        |        |  |  |
| 4               | Setting upper temperature limit                                  | AV          | AC_Heat_LimitTemp_xx_xxxxxx   | °C  |            |                |        |        |  |  |
| 5               | The power value of an indoor unit after the basic date           | AI          | AC_Baseline_kWh_xx_xxxxxx     | kWh   |            |                |        |        |  |  |
| 6               | The number of hours usage of an indoor unit after the basic date | AI          | AC_Baseline_Minute_xx_xxxxxx  | Minute  |            |                |        |        |  |  |
| 7               | Power value within period  | AI          | AC_Period_kWh_xx_xxxxxx       | kWh   |            |                |        |        |  |  |
| 8               | The number of hours usage of an indoor unit within period        | AI          | AC_Period_Minute_xx_xxxxxx    | Minute  |            |                |        |        |  |  |
| ** 9            | Power On/Off   | BV          | AC_Power_xx_xxxxxx            | Off   | On         |                |        |        |  |  |
| 10              | Applying lower temperature limit setting                         | BV          | AC_Cool_Limit_set_xx_xxxxxx   | False   | True       |                |        |        |  |  |
| 11              | Applying upper temperature limit setting                         | BV          | AC_Heat_Limit_set_xx_xxxxxx   | False   | True       |                |        |        |  |  |
| ** 12           | Filter sign status   | BI          | AC_FilterSign_xx_xxxxxx       | False   | True       |                |        |        |  |  |
| ** 13           | Filter sign reset  | BO          | AC_FilterSign_Reset_xx_xxxxxx | False   | True       |                |        |        |  |  |
| ** 14           | Operation mode status  | MV          | AC_Operation_Mode_xx_xxxxxx   | Auto  | Cool       | Heat           | Fan    | Dry    |  |  |
| * 15            | Fan speed status   | MV          | AC_FanSpeed_xx_xxxxxx         | Auto  | Low        | Mid            | High   | Turbo  |  |  |
| * 16            | Air flow direction status  | MV          | AC_FanFlow_xx_xxxxxx          | 1: None, 2: Vertical, 3: Horizon, 4: All, 5: Spot, 6: Mid, 7: Wide, 8: Swing                |            |                |        |        |  |  |
| ** 17           | Operation mode limit status                                      | MV          | AC_Mode_Limit_xx_xxxxxx       | No Limit  | Cool Only  | Heat Only      |        |        |  |  |
| ** 18           | Remote controller limit status                                   | MV          | AC_Remocon_Limit_xx_xxxxxx    | Enable RC   | Disable RC | Conditional RC |        |        |  |  |
| ** 19           | Integrated error code of both indoor unit and outdoor unit       | AI          | AC_Error_Code_xx_xxxxxx       | Refer to list of error code   |            |                |        |        |  |  |
| * 20            | SPI setting  | BV          | AC_SPI_xx_xxxxxx              | False   | True       |                |        |        |  |  |
| * 21            | HumanSensor setting  | BV          | AC_MDS_xx_xxxxxx              | False   | True       |                |        |        |  |  |
| * 22            | Discharge cooling set temperature                                | AV          | AC_DisCoolTemp_Set_xx_xxxxxx  | °C/F  |            |                |        |        |  |  |
| * 23            | Discharge heating set temperature                                | AV          | AC_DisHeatTemp_Set_xx_xxxxxx  | °C/F  |            |                |        |        |  |  |
| * 24            | Discharge current temperature                                    | AI          | AC_DisCurrentTemp_xx_xxxxxx   | °C/F  |            |                |        |        |  |  |
| ** 25           | AC Indoor Notify   | NC          | AC_Notify_xx_xxxxxx           | When the error occurred, send event to list of destination in the recipient_list. (Max : 8) |            |                |        |        |  |  |

\* Temperature setting range can be different depending on the model and the common range is as follows:

Auto: 18 °C~30 °C

Cool: 18 °C~30 °C

Heat: 16 °C~30 °C

Fan: Temperature cannot be adjusted

Dry: 18 °C~30 °C

(\*) Mark is optionally supported. For a fresh duct, (\*\*) mark is supported.

## AHU Kit

Single AHU unit has following point list.

| Instance Number | Object   | Object Type | Object Name                    | Unit  |            | Status value   |        |        |  |  |
|-----------------|--|-------------|--------------------------------|---|------------|----------------|--------|--------|--|--|
|                 |  |             |                                | Inactive  | Active     |                |        |        |  |  |
|                 |  |             |                                | Text-1  | Text-2     | Text-3         | Text-4 | Text-5 |  |  |
| 1               | Indoor Temperature   | AI          | AHU_RoomTemp_xx_xxxxxx         | °C  |            |                |        |        |  |  |
| 2               | Set temperature  | AV          | AHU_Temp_Set_xx_xxxxxx         | °C  |            |                |        |        |  |  |
| 3               | Setting lower temperature limit                                  | AV          | AHU_Cool_LimitTemp_xx_xxxxxx   | °C  |            |                |        |        |  |  |
| 4               | Setting upper temperature limit                                  | AV          | AHU_Heat_LimitTemp_xx_xxxxxx   | °C  |            |                |        |        |  |  |
| 5               | The power value of an indoor unit after the basic date           | AI          | AHU_Baseline_kWh_xx_xxxxxx     | kWh   |            |                |        |        |  |  |
| 6               | The number of hours usage of an indoor unit after the basic date | AI          | AHU_Baseline_Minute_xx_xxxxxx  | Minute  |            |                |        |        |  |  |
| 7               | Power value within period  | AI          | AHU_Period_kWh_xx_xxxxxx       | kWh   |            |                |        |        |  |  |
| 8               | The number of hours usage of an indoor unit within period        | AI          | AHU_Period_Minute_xx_xxxxxx    | Minute  |            |                |        |        |  |  |
| 9               | Power On/Off   | BV          | AHU_Power_xx_xxxxxx            | Off   | On         |                |        |        |  |  |
| 10              | Applying lower temperature limit setting                         | BV          | AHU_Cool_Limit_set_xx_xxxxxx   | False   | True       |                |        |        |  |  |
| 11              | Applying upper temperature limit setting                         | BV          | AHU_Heat_Limit_set_xx_xxxxxx   | False   | True       |                |        |        |  |  |
| 12              | Filter sign status   | BI          | AHU_FilterSign_xx_xxxxxx       | False   | True       |                |        |        |  |  |
| 13              | Filter sign reset  | BO          | AHU_FilterSign_Reset_xx_xxxxxx | False   | True       |                |        |        |  |  |
| 14              | Operation mode status  | MV          | AHU_Operation_Mode_xx_xxxxxx   | Auto  | Cool       | Heat           | Fan    | Dry    |  |  |
| 15              | Operation mode limit status                                      | MV          | AHU_Mode_Limit_xx_xxxxxx       | No Limit  | Cool Only  | Heat Only      |        |        |  |  |
| 16              | Remote controller limit status                                   | MV          | AHU_Remocon_Limit_xx_xxxxxx    | Enable RC   | Disable RC | Conditional RC |        |        |  |  |
| 17              | Integrated error code of both indoor unit and outdoor unit       | AI          | AHU_Error_Code_xx_xxxxxx       | Refer to list of error code   |            |                |        |        |  |  |
| * 18            | Discharge cooling set temperature                                | AV          | AHU_DisCoolSetTemp_xx_xxxxxx   | °C  |            |                |        |        |  |  |
| * 19            | Discharge heating set temperature                                | AV          | AHU_DisHeatSetTemp_xx_xxxxxx   | °C  |            |                |        |        |  |  |
| * 20            | Discharge current temperature                                    | AI          | AHU_Dis_CurrentTemp_xx_xxxxxx  | °C  |            |                |        |        |  |  |
| * 21            | Humidification setting   | BV          | AHU_Humidification_xx_xxxxxx   | Off   | On         |                |        |        |  |  |
| * 22            | Outdoor air intake setting                                       | BV          | AHU_OAIntake_xx_xxxxxx         | Off   | On         |                |        |        |  |  |
| * 23            | Outdoor cooling setting  | BV          | AHU_OutdoorCool_xx_xxxxxx      | Off   | On         |                |        |        |  |  |
| * 24            | Fan speed status   | MV          | AHU_FanSpeed_xx_xxxxxx         | Low   | Mid        | High           |        |        |  |  |
| * 25            | Set humidity status  | MV          | AHU_SetHumidity_xx_xxxxxx      | Low   | Mid        | High           |        |        |  |  |
| * 26            | Current humidity status  | MI          | AHU_CurrentHumidity_xx_xxxxxx  | Low   | Mid        | High           |        |        |  |  |
| 27              | AHU Notify   | NC          | AHU_Notify_xx_xxxxxx           | When the error occurred, send event to list of destination in the recipient_list. (Max : 8) |            |                |        |        |  |  |

(\*) Mark is optionally supported.

## BACnet Gateway setting (Continued)

### EHS

Single EHS Unit has following point list.

| Instance Number | Object   | Object Type | Object Name                      | Unit  |            | Status value  |        |  |  |
|-----------------|--|-------------|----------------------------------|---|------------|---|--------|--|--|
|                 |  |             |                                  | Inactive  | Active     |   |        |  |  |
|                 |  |             |                                  | Text-1  | Text-2     | Text-3  | Text-4 |  |  |
| 1               | Room temperature   | AI          | EHS_RoomTemp_xx_xxxxxx           | °C  |            |   |        |  |  |
| 2               | Set temperature  | AV          | EHS_Temp_Set_xx_xxxxxx           | °C  |            | Use when displayed temperature type is set to 'Room'.     |        |  |  |
| 3               | Set temperature of water out                                     | AV          | EHS_WaterOutTemp_Set_xx_xxxxxx   | °C  |            | Use when displayed temperature type is set to 'WaterOut'. |        |  |  |
| 4               | Set temperature of hot water                                     | AV          | EHS_HotWaterTemp_Set_xx_xxxxxx   | °C  |            |   |        |  |  |
| 5               | Setting lower temperature limit                                  | AV          | EHS_Cool_LimitTemp_xx_xxxxxx     | °C  |            | Use when displayed temperature type is set to 'Room'.     |        |  |  |
| 6               | Setting upper temperature limit                                  | AV          | EHS_Heat_LimitTemp_xx_xxxxxx     | °C  |            | Use when displayed temperature type is set to 'Room'.     |        |  |  |
| 7               | Lower temperature limit for water out                            | AV          | EHS_WOCoolLimitTemp_xx_xxxxxx    | °C  |            |   |        |  |  |
| 8               | Upper temperature limit for water out                            | AV          | EHS_WOHeatLimitTemp_xx_xxxxxx    | °C  |            |   |        |  |  |
| 9               | Upper temperature limit for hot water                            | AV          | EHS_WTHeatLimitTemp_xx_xxxxxx    | °C  |            |   |        |  |  |
| 10              | The power value after the basic date                             | AI          | EHS_Baseline_KWh_xx_xxxxxx       | kWh   |            |   |        |  |  |
| 11              | The number of hours usage of an indoor unit after the basic date | AI          | EHS_Baseline_Minute_xx_xxxxxx    | Minute  |            |   |        |  |  |
| 12              | Power value within period  | AI          | EHS_Period_kWh_xx_xxxxxx         | kWh   |            |   |        |  |  |
| 13              | The number of hours usage of an indoor unit within period        | AI          | EHS_Period_Minute_xx_xxxxxx      | Minute  |            |   |        |  |  |
| 14              | Current temperature of water out                                 | AI          | EHS_WOCurrentTemp_xx_xxxxxx      | °C  |            |   |        |  |  |
| 15              | Current temperature of hot water                                 | AI          | EHS_HotWaterTemp_xx_xxxxxx       | °C  |            |   |        |  |  |
| 16              | Displayed temperature type                                       | BI          | EHS_ControlTempType_xx_xxxxxx    | Room  | WaterOut   |   |        |  |  |
| 17              | Thermostat usage   | BI          | EHS_Thermostat_xx_xxxxxx         | False   | True       |   |        |  |  |
| 18              | Outing   | BI          | EHS_GoOut_xx_xxxxxx              | Off   | On         |   |        |  |  |
| 19              | Power On/Off   | BV          | EHS_Power_xx_xxxxxx              | Off   | On         |   |        |  |  |
| 20              | Setting lower temperature limit                                  | BV          | EHS_Cool_LimitTemp_Set_xx_xxxxxx | False   | True       | Use when displayed temperature type is set to 'Room'.     |        |  |  |
| 21              | Setting upper temperature limit                                  | BV          | EHS_Heat_LimitTemp_Set_xx_xxxxxx | False   | True       | Use when displayed temperature type is set to 'Room'.     |        |  |  |
| 22              | Apply lower temperature limit for water out                      | BV          | EHS_WOCoolLimitFlag_xx_xxxxxx    | False   | True       | Use when displayed temperature type is set to 'WaterOut'. |        |  |  |
| 23              | Apply upper temperature limit for water out                      | BV          | EHS_WOHeatLimitFlag_xx_xxxxxx    | False   | True       | Use when displayed temperature type is set to 'WaterOut'. |        |  |  |
| 24              | Apply upper temperature limit for hot water                      | BV          | EHS_WTHeatLimitFlag_xx_xxxxxx    | False   | True       |   |        |  |  |
| 25              | On/Off status of hot water mode                                  | BV          | EHS_HotWater_Power_xx_xxxxxx     | Off   | On         |   |        |  |  |
| 26              | Status of quiet operation  | BV          | EHS_Sleep_xx_xxxxxx              | Off   | On         |   |        |  |  |
| 27              | Operation mode status  | MV          | EHS_Operation_Mode_xx_xxxxxx     | Auto  | Cool       | Heat  |        |  |  |
| 28              | Operation mode limit status                                      | MV          | EHS_Mode_Limit_xx_xxxxxx         | No Limit  | Cool Only  | Heat Only   |        |  |  |
| 29              | Remote controller limit status                                   | MV          | EHS_Remoccon_Limit_xx_xxxxxx     | Enable RC   | Disable RC | Conditional RC  |        |  |  |
| 30              | Status of hot water operation mode                               | MV          | EHS_HotWater_Mode_xx_xxxxxx      | *Force  | Eco        | Standard  | Power  |  |  |
| 31              | Integrated error code of both indoor unit and outdoor unit       | AI          | EHS_Error_Code_xx_xxxxxx         |   |            |   |        |  |  |
| 32              | EHS notify   | NC          | EHS_Notify_xx_xxxxxx             | When the error occurred, send event to list of destination in the recipient_list. (Max : 8) |            |   |        |  |  |

Force hot water mode (\* marked) will be supported later.  
It is the point list of Hydro Unit and Hydro Unit HT.



## ERV, ERV Plus

Single ERV or ERV Plus unit has following point list.

| Instance Number | Object   | Object Type | Object Name                        | Unit   |            | Status value   |        |        |  |  |
|-----------------|--|-------------|------------------------------------|--|------------|----------------|--------|--------|--|--|
|                 |  |             |                                    | Inactive   | Active     |                |        |        |  |  |
|                 |  |             |                                    | Text-1   | Text-2     | Text-3         | Text-4 | Text-5 |  |  |
| 1               | Power On/Off operation   | BV          | ERV_Power_xx_xxxxxx                | Off  | On         |                |        |        |  |  |
| 2               | Filter sign status   | BI          | ERV_FilterSign_xx_xxxxxx           | False  | True       |                |        |        |  |  |
| 3               | Filter sign reset  | BO          | ERV_FilterSign_Reset_xx_xxxxxx     | False  | True       |                |        |        |  |  |
| 4               | Operation mode status  | MV          | ERV_Operation_Mode_xx_xxxxxx       | Auto   | HeatEx     | Bypass         | Sleep  |        |  |  |
| 5               | Fan speed status   | MV          | ERV_FanSpeed_xx_xxxxxx             | Low  | High       | Turbo          |        |        |  |  |
| 6               | Remote controller limit status                                     | MV          | ERV_Remocon_Limit_xx_xxxxxx        | Enable RC  | Disable RC | Conditional RC |        |        |  |  |
| 7               | Integrated error code of ERV unit                                  | AI          | ERV_Error_Code_xx_xxxxxx           |  |            |                |        |        |  |  |
| *8              | The power value of an ERV Plus unit after the basic date           | AI          | ERV_Plus_Baseline_kWh_xx_xxxxxx    | kWh  |            |                |        |        |  |  |
| *9              | The number of hours usage of an ERV Plus unit after the basic date | AI          | ERV_Plus_Baseline_Minute_xx_xxxxxx | Minute   |            |                |        |        |  |  |
| *10             | Power value within period  | AI          | ERV_Plus_Period_kWh_xx_xxxxxx      | kWh  |            |                |        |        |  |  |
| *11             | The number of hours usage of an ERV Plus unit within period        | AI          | ERV_Plus_Period_Minute_xx_xxxxxx   | Minute   |            |                |        |        |  |  |
| *12             | ERV Plus operation mode status                                     | MV          | ERV_Plus_Operation_Mode_xx_xxxxxx  | Auto   | Cool       | Heat           | Off    |        |  |  |
| *13             | ERV Plus operation mode limit status                               | MV          | ERV_Plus_Mode_Limit_xx_xxxxxx      | No Limit   | Cool Only  | Heat Only      |        |        |  |  |
| 14              | ERV Notify   | NC          | ERV_Notify_xx_xxxxxx               | When the error occurred, send event to list of destination in the recipient_list. (Max: 8) |            |                |        |        |  |  |

(\*) Mark is optionally supported.

## DVM CHILLER

Single DVM CHILLER Unit has following point list.

| Instance Number | Object   | Object Type | Object Name                  | Unit   |            | Status value   |           |        |  |  |
|-----------------|--|-------------|------------------------------|--|------------|----------------|-----------|--------|--|--|
|                 |  |             |                              | Inactive   | Active     |                |           |        |  |  |
|                 |  |             |                              | Text-1   | Text-2     | Text-3         | Text-4    | Text-5 |  |  |
| 1               | Chilled Water Temperature  | AI          | MC_WaterTemp_xx_xxxxxx       | °C/F   |            |                |           |        |  |  |
| 2               | Set temperature  | AV          | MC_WaterTemp_Set_xx_xxxxxx   | °C/F   |            |                |           |        |  |  |
| 3               | Demand limit setting   | AV          | MC_Demand_Set_xx_xxxxxx      | %  |            |                |           |        |  |  |
| 4               | The number of hours usage of an indoor unit after the basic date | AI          | MC_Baseline_Minute_xx_xxxxxx | Minute   |            |                |           |        |  |  |
| 5               | The number of hours usage of an indoor unit within period        | AI          | MC_Period_Minute_xx_xxxxxx   | Minute   |            |                |           |        |  |  |
| 6               | Power On/Off operation   | BV          | MC_Power_xx_xxxxxx           | Off  | On         |                |           |        |  |  |
| 7               | Water Law  | BO          | MC_Water_Law_xx_xxxxxx       | False  | True       |                |           |        |  |  |
| 8               | Quiet  | BV          | MC_Quiet_xx_xxxxxx           | Off  | On         |                |           |        |  |  |
| 9               | Forced Fan   | BV          | MC_Forced_Fan_xx_xxxxxx      | Off  | On         |                |           |        |  |  |
| 10              | Operation mode status  | MV          | MC_Operation_Mode_xx_xxxxxx  | Cool   | Heat       | Cool Storage   | Hot Water |        |  |  |
| 11              | Remote controller limit status                                   | MV          | MC_Remocon_Limit_xx_xxxxxx   | Enable RC  | Disable RC | Conditional RC |           |        |  |  |
| 12              | Integrated error code  | AI          | MC_Error_Code_xx_xxxxxx      |  |            |                |           |        |  |  |
| 13              | DVM CHILLER Notify   | NC          | MC_Notify_xx_xxxxxx          | When the error occurred, send event to list of destination in the recipient_list. (Max: 8) |            |                |           |        |  |  |

BACnet Device Object does not support master function of DVM CHILLER.

**Demand control setting range is as follows:**

50,55,60,65,70,75,80,85,90,95,100(%)

## BACnet Gateway setting (Continued)

### SIM/PIM

Single SIM/PIM has following point list.

| Instance Number | Object             | Object Type | Object Name          | Status value  |
|-----------------|--------------------|-------------|----------------------|---|
| 1               | SIM/PIM error code | AI          | SIM_Error_Code_xx_xx | Refer to list of error code   |
| 2               | SIM/PIM Notify     | NC          | SIM_Notify_xx_xx     | When the error occurred, send event to list of destination in the recipient_list. (Max:8) |

### Centralized Controller (OnOff Controller)

Single Centralized Controller (OnOff Controller) has following point list.

| Instance Number | Object   | Object Type | Object Name              | Status value  |
|-----------------|--|-------------|--------------------------|---|
| 1               | Centralized Controller (OnOff Controller) error code | AI          | Central_Error_Code_xx_xx | Refer to the list of the integrated error code  |
| 2               | Centralized Controller (OnOff Controller) notify     | NC          | Central_Notify_xx_xx     | When the error occurred, send event to list of destination in the recipient_list. (Max:8) |

### Interface Module (Outdoor Unit)

Single Interface Module (Outdoor Unit) has following point list.

| Instance Number | Object                                     | Object Type | Object Name                   | Unit   |        |        |        |        | Status value |  |  |  |  |  |  |  |  |  |
|-----------------|--|-------------|-------------------------------|--|--------|--------|--------|--------|--------------|--|--|--|--|--|--|--|--|--|
|                 |  |             |                               | Inactive   |        | Active |        |        |              |  |  |  |  |  |  |  |  |  |
|                 |  |             |                               | Text-1   | Text-2 | Text-3 | Text-4 | Text-5 |              |  |  |  |  |  |  |  |  |  |
| 1               | Outside temperature                        | AI          | ODU_Outside_Temp_xx_xxxx      | °C   |        |        |        |        |              |  |  |  |  |  |  |  |  |  |
| *2              | Cool capacity compensation                 | AV          | ODU_Cool_Compensation_xx_xxxx | 0: 5~7°C / 1: 7~9°C / 2: 9~11°C / 3: 10~12°C / 4: 11~13°C / 5: 12~14°C / 6: 13~15°C / 14: Auto control (from ODU)  |        |        |        |        |              |  |  |  |  |  |  |  |  |  |
| *3              | Heat capacity compensation                 | AV          | ODU_Heat_Compensation_xx_xxxx | 0: 25 kg/cm <sup>2</sup> / 1: 26 kg/cm <sup>2</sup> / 2: 27 kg/cm <sup>2</sup> / 3: 28 kg/cm <sup>2</sup> / 4: 29 kg/cm <sup>2</sup> / 5: 30 kg/cm <sup>2</sup> / 6: 31 kg/cm <sup>2</sup> / 7: 32 kg/cm <sup>2</sup> / 8: 33 kg/cm <sup>2</sup> / 14: Auto control (from ODU) |        |        |        |        |              |  |  |  |  |  |  |  |  |  |
| 4               | Compressor status                          | BI          | ODU_Comp_Status_xx_xxxx       | False  | True   |        |        |        |              |  |  |  |  |  |  |  |  |  |
| 5               | Interface Module (Outdoor Unit) error code | AI          | Repeater_Error_Code_xx_xxxx   | Refer to the list of the integrated error code   |        |        |        |        |              |  |  |  |  |  |  |  |  |  |
| 6               | Interface Module (Outdoor Unit) notify     | NC          | IM_Notify_xx_xxxx             | When the error occurred, send event to list of destination in the recipient_list. (Max:8)  |        |        |        |        |              |  |  |  |  |  |  |  |  |  |

(\*) Mark is optionally supported.

## BACnet Gateway

BACnet Gateway has following point list.

| Instance Number | Control and Monitoring | Object Type | Object Name             | Status Value  |
|-----------------|------------------------|-------------|-------------------------|---|
| 1               | All device OFF         | BO          | ALL_OFF_xx              | Inactive : All devices Off  |
| 2               | DMS2.5 Status          | AI          | DMS2.5_Status_xx        | 0: Normal, 8: Emergency stop,<br>105 : Tracking in progress,<br>108 : Tracking failed<br>109 : DMS2.5 ↔ BACnet Communication failed |
| 3               | BACnet error code      | AI          | BACnetApp_Error_Code_xx | BACnet error code   |
| 4               | Gateway Notify         | NC          | GW_Notify_xx            | When the error occurred, send event to list of destination in the recipient_list. (Max : 8)   |

## DDC

DDC has following point list.

| Instance Number | Object           | Object Type | Object Name                           | Unit     |        | Status value |        |        |  |  |
|-----------------|------------------|-------------|---------------------------------------|----------|--------|--------------|--------|--------|--|--|
|                 |                  |             |                                       | Inactive | Active |              |        |        |  |  |
|                 |                  |             |                                       | Text-1   | Text-2 | Text-3       | Text-4 | Text-5 |  |  |
| 1               | Digital Input 1  | BI          | DI_01_xx_xx (BACnet Gateway Reserved) | Off      | On     |              |        |        |  |  |
| 2               | Digital Input 2  | BI          | DI_02_xx_xx (BACnet Gateway Reserved) | Off      | On     |              |        |        |  |  |
| 3               | Digital Input 3  | BI          | DI_03_xx_xx                           | Off      | On     |              |        |        |  |  |
| 4               | Digital Input 4  | BI          | DI_04_xx_xx                           | Off      | On     |              |        |        |  |  |
| 5               | Digital Input 5  | BI          | DI_05_xx_xx                           | Off      | On     |              |        |        |  |  |
| 6               | Digital Input 6  | BI          | DI_06_xx_xx                           | Off      | On     |              |        |        |  |  |
| 7               | Digital Input 7  | BI          | DI_07_xx_xx                           | Off      | On     |              |        |        |  |  |
| 8               | Digital Input 8  | BI          | DI_08_xx_xx                           | Off      | On     |              |        |        |  |  |
| 9               | Digital Input 9  | BI          | DI_09_xx_xx                           | Off      | On     |              |        |        |  |  |
| 10              | Digital Input 10 | BI          | DI_10_xx_xx                           | Off      | On     |              |        |        |  |  |
| 11              | Digital Output 1 | BO          | DO_01_xx_xx (BACnet Gateway Reserved) | Off      | On     |              |        |        |  |  |
| 12              | Digital Output 2 | BO          | DO_02_xx_xx (BACnet Gateway Reserved) | Off      | On     |              |        |        |  |  |
| 13              | Digital Output 3 | BO          | DO_03_xx_xx                           | Off      | On     |              |        |        |  |  |
| 14              | Digital Output 4 | BO          | DO_04_xx_xx                           | Off      | On     |              |        |        |  |  |
| 15              | Digital Output 5 | BO          | DO_05_xx_xx                           | Off      | On     |              |        |        |  |  |
| 16              | Digital Output 6 | BO          | DO_06_xx_xx                           | Off      | On     |              |        |        |  |  |
| 17              | Digital Output 7 | BO          | DO_07_xx_xx                           | Off      | On     |              |        |        |  |  |
| 18              | Digital Output 8 | BO          | DO_08_xx_xx                           | Off      | On     |              |        |        |  |  |



CAUTION

- ◆ **If communication error occurs on devices such as SIM/PIM/Centralized Controller (OnOff Controller)/Interface Module (Outdoor Unit) etc, other functions such as power distribution may also create a problem. You must have BMS system to check the errors and you must take action immediately.**

## BACnet Gateway setting (Continued)

### Other Information

#### Object setting when there is communication error

If any communication error occurs between the air conditioner devices, the property will be set as below.

1. Reliability property will be set as COMMUNICATION\_FAILURE.
2. Fault / Alarm flag of Status\_Flags property will be set as TRUE.
3. Present\_Value property is readable but the value is not guaranteed.

#### Object setting when there is general error

If any air conditioner related error occurs, the property will be set as below.

1. The Reliability property value of each object will be set as UNRELIABLE\_OTHER.
2. FAULT / Alarm flag of Status Flags property will be set as TRUE.

### Main service

#### Time setting

Time synchronization Service is a service that allows the time of BACnet Gateway to be synchronized with the time of PC.

#### COV (Change Of Value)

COV service is supported and you can set confirmed or unconfirmed COV.

You can set lifetime value.



CAUTION

- ◆ ***COV registration information will disappear when a BACnet gateway is switched off. The reserved value caused by the power supply problem is not guaranteed according to the BACnet regulation.***
- ◆ ***When BMS system is sending control command, don't send it repeatedly in a very short time.***
- ◆ ***If BMS system is sending control command repeatedly in a very short time, DMS may be stopped due to overload.***

# Viewing LonWorks Gateway's Parts

## Main Parts

### LonWorks Gateway Exterior

#### LCD Display

Shows current time and IP address. Various messages will be displayed depending on button input.

#### LCD operation button

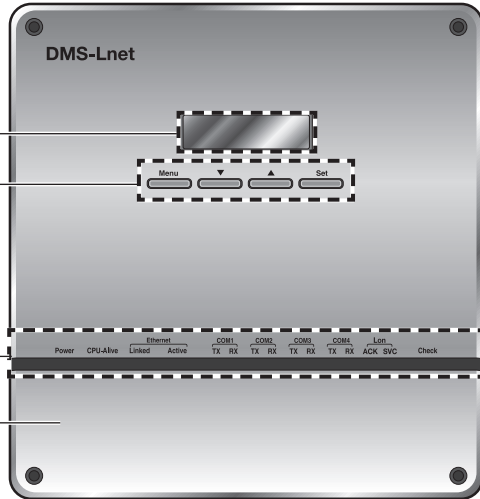
There are 4 buttons(Menu, ▼(Down), ▲(Up), Set) and you can access menu and move, check the menu.

#### LED Indicator

Check 15 LED status such as Power, CPU-Alive, Ethernet-Linked/Active, COM1~4-TX/RX, Lon ACK, Lon SVC and Check.

#### LonWorks Gateway Bottom cover

Unfasten 2 screws on the bottom and separate the bottom cover from LonWorks Gateway. Then check cable connection part.

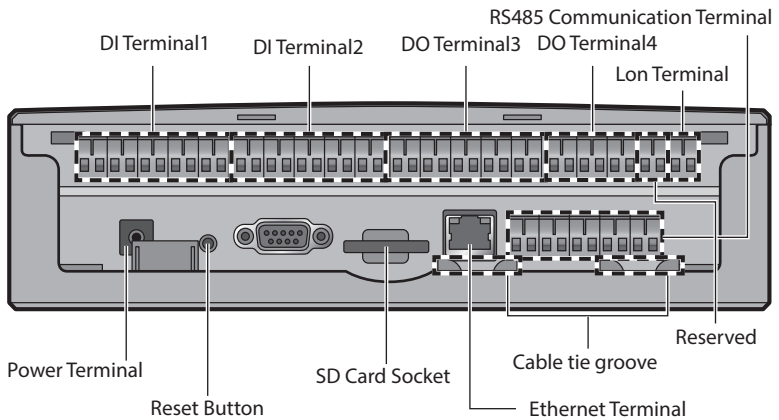


### LED Indicator

| Item            | Name  | Status   |
|-----------------|---|--|
| Power           | Power indicator   | Turns blue when the power is supplied.   |
| CPU Alive       | CPU operation indicator   | Blinks in orange with 1 second intervals during normal operation.                              |
| Ethernet-Linked | Internet connection indicator   | Turns green during normal connection.  |
| Ethernet-Active | Internet data transmission/reception indicator                        | Blinks in orange during normal transmission/reception.   |
| COM1~4 - TX     | Channel 1~4 OnOff controller/Outdoor unit Data transmission Indicator | Blinks in green during normal transmission.  |
| COM1~4 - RX     | Channel 1~4 OnOff controller/Outdoor unit Data reception Indicator    | Blinks in green during normal reception.   |
| Lon ACK         | LonWorks data reception indicator                                     | Blinks in green during normal reception.   |
| Lon SVC         | LonWorks device status indicator                                      | Blinks in green during un-configured.<br>- Needs commission by integration tool (Ex. LonMaker) |
| Check           | Indoor/Outdoor unit/Communication check Indicator                     | Turns green when notice occurs.  |

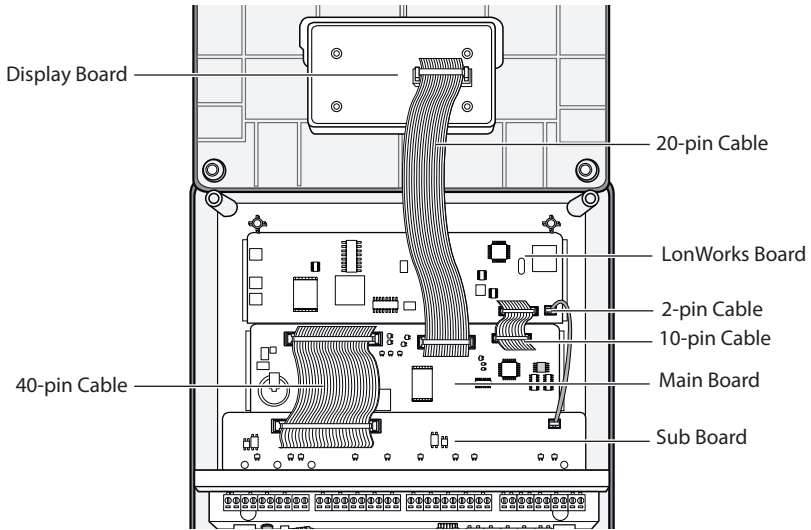
## Viewing LonWorks Gateway's Parts (Continued)

### LonWorks Gateway Cable Connection Part



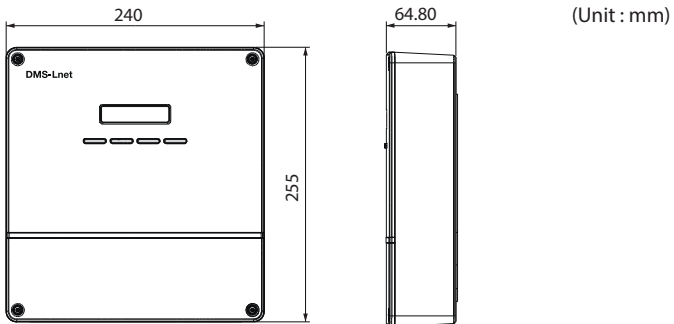
| Name                         | Description  |
|------------------------------|--|
| DI Terminal1                 | Digital Input connection terminal, Channel1~Channel5   |
| DI Terminal2                 | Digital Input connection terminal, Channel6~Channel10  |
| DO Terminal3                 | Digital Output connection terminal, Channel1~Channel5  |
| DO Terminal4                 | Digital Output connection terminal, Channel6~Channel8  |
| Lon Terminal                 | Terminal Block for LonWorks communication (TP/FT-10)   |
| Reset Button                 | Reset LonWorks Gateway   |
| Power Terminal               | Connect LonWorks Gateway adapter   |
| SD card socket               | Sub memory (for program update and set information saving) socket                                      |
| RS485 Communication Terminal | Connect for RS485 communication with devices such as OnOff controller/Interface module<br>-COM1 ~ COM5 |
| Ethernet Terminal            | Connect LAN cable  |
| Cable tie groove             | Groove for arranging cables  |

## LonWorks Gateway Interior



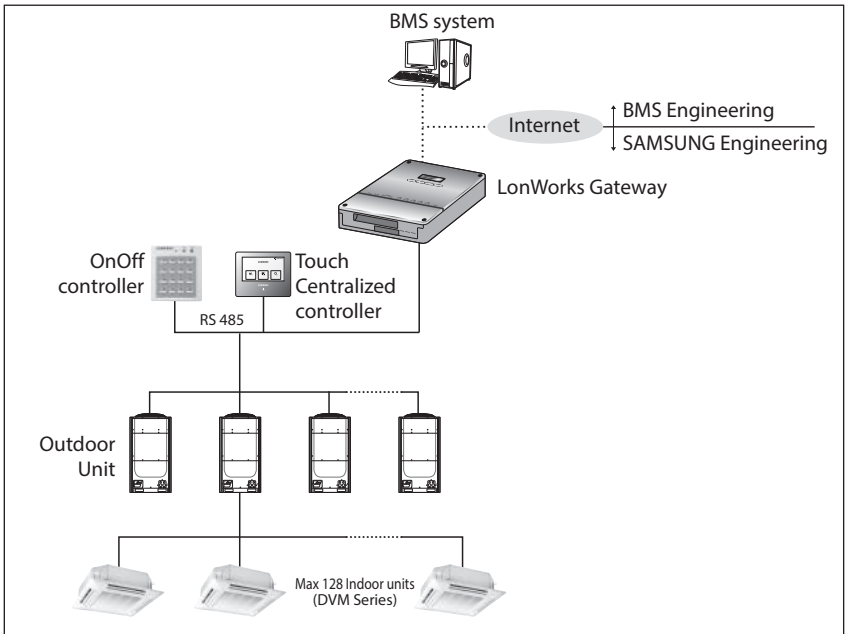
*Note* If you need external circuit configuration, consult with the manufacturer.

## Product Dimensions



# LonWorks Gateway setting

## System Architecture



- Connecting outdoor units and LonWorks Gateway
  - You can control up to 80 outdoor units and 128 indoor units using LonWorks Gateway.
    - ✱ Each communication channel of LonWorks Gateway can be connected with 16 outdoor units.
    - ✱ The maximum number of indoor units (including ERV and MCU) that can be connected to each RS485 communication channel of LonWorks Gateway is 128.
  - The more outdoor units are connected, the longer time takes for tracking.



- ◆ **For devices that support new communication, you must set the communication mode of the channel to 'NEW' from 'System settings → Tracking' menu. Set of Indoor/outdoor units, with conventional communication type, cannot be connected to LonWorks Gateway with new communication.**

- ◆ **When setting communication channel mode as 'NEW', the address of virtual OnOff control will be assigned.**

**Channel 0: Virtual OnOff controller 11, Channel 1: Virtual OnOff controller 12,  
Channel 2: Virtual OnOff controller 13, Channel 3: Virtual OnOff controller 14,  
Channel 4: Virtual OnOff controller 15**



## Compatible Devices

| No | Devices   | Model  | Note   |
|----|---|--|--|
| 1  | Indoor Unit<br>Outdoor Unit                       | DVM S HR, DVM S HP, DVM ECO,<br>DVM S WATER, DVM S cooling<br>only outdoor units and indoor<br>units that can be connected to<br>these outdoor units | Check if the LonWorks Gateway<br>supports each type of indoor units.<br>(Check the LonWorks NV list) |
| 2  | OnOff controller/<br>Touch Centralized controller | MCM-A202DUN, MCM-A300UN  | OnOff controller :<br>Centralized controller   |
| 3  | PIM   | MIM-B16UN  | Needed for EHP power distribution  |
| 4* | Watt-hour Meter                                   | Pulse type   | Connected with PIM<br>Pulse Width: 20~400(ms)<br>Pulse: 1~10000(Wh/Pulse)                            |

\* Products with '\*' are not Samsung products and must be purchased separately.  
(Only selected power meters may be used for protocol compatibility issues.)

\* Samsung is not responsible for BMS engineering which creates each device and objects.  
For further directions regarding on BMS engineering, consult with specialized BMS related vendor.

## LonWorks Gateway setting (Continued)

### Maximum Devices Attachable

| Devices  | Max. | Note  |
|--|------|---|
| Indoor Unit  | 128  | Tracking error occurs if exceeded<br>The maximum number of indoor units (including ERV and MCU) that can be connected to each communication channel is 128. |
| OnOff controller /<br>Touch Centralized controller | 75   | Must not exceed 15 units per each<br>RS485 communication terminal   |
| Outdoor unit                                       | 80   | Must not exceed 16 units per each<br>RS485 communication terminal   |
| SIM/PIM  | 8    | -   |
| Watt-hour Meter                                    | 64   | Maximum 8 units can be connected to<br>1 SIM/PIM.   |



CAUTION

- ◆ ***The sum of OnOff controller, touch centralized controller, and SIM/PIM interface module that can be connected to each communication channel should be 15 or less.***

## Installing the LonWorks Gateway

### Commission

#### ● Commission using Service Pin

To activate the Service Pin, press and hold [SET] button for more than three seconds while time is displayed in the LCD Display window of the front side of LonWorks Gateway.



Press and hold the [SET] button for more than 3 seconds.

When you press Service Pin, Neuron ID will be sent and [SVC] LED of the front panel will be lit up for a second.



***You should correctly set up a network according to the installation and communication environment and set the data processing system in advance.***

***This Gateway provides data for 128 indoor units. However, the connectable number of indoor units can be different according to the number of items, communication cycle or operating environment.***

***Do not connect a device requiring urgent control in the same network.***

## LonWorks Gateway setting (Continued)

### Control and Monitoring Item

#### ● Functional classification by a device.

The functions provided can be different according to the type of the connected device.

| No | NV Name         | Remarks  | Indoor | ERV | AHU Kit | Fresh Duct | DVM CHILLER | FCU Kit |
|----|-----------------|--|--------|-----|---------|------------|-------------|---------|
| 1  | nviOnOff        | ON/OFF command   | ○      | ○   | ○       | ○          | ○           | ○       |
| 2  | nviApplicMode   | Setting operating mode   | ○      | ×   | ○       | ○          | ○           | ○       |
| 3  | nviSetpoint     | Setting desirable temperature  | ○      | ×   | ○       | ×          | ○           | ○       |
| 4  | nviFanStatus    | Setting wind speed and direction   | ○      | ○   | ×       | ×          | ×           | ○       |
| 5  | nviERVMode      | Setting ERV operation mode   | ×      | ○   | ×       | ×          | ×           | ×       |
| 6  | nviFilterReset  | Filter reset command   | ○      | ○   | ○       | ○          | ×           | ×       |
| 7  | nviUserLockout  | Setting the restriction of remote control use                                    | ○      | ○   | ○       | ○          | ○           | ○       |
| 8  | nviOccOpMode    | Setting cooling only mode / Setting heating only mode                            | ○      | ×   | ○       | ○          | ×           | ○       |
| 9  | nviCoolTempLock | Setting the low temperature limit  | ○      | ×   | ○       | ×          | ×           | ○       |
| 10 | nviHeatTempLock | Setting the high temperature limit   | ○      | ×   | ○       | ×          | ×           | ○       |
| 11 | nvoSpaceTemp    | Display indoor temperature   | ○      | ×   | ○       | ×          | ○           | ○       |
| 12 | nvoApplicMode   | Display operating mode   | ○      | ×   | ○       | ○          | ○           | ○       |
| 13 | nvoSetpoint     | Display desire temperature   | ○      | ×   | ○       | ×          | ○           | ○       |
| 14 | nvoOnOff        | Display ON/OFF status  | ○      | ○   | ○       | ○          | ○           | ○       |
| 15 | nvoFanStatus    | Display wind speed and direction   | ○      | ○   | ×       | ×          | ×           | ○       |
| 16 | nvoERVMode      | Display ERV operating mode   | ×      | ○   | ×       | ×          | ×           | ×       |
| 17 | nvoErrorCode    | Display Error code   | ○      | ○   | ○       | ○          | ○           | ○       |
| 18 | nvoDeviceAlarm  | Remote control Lock, Filter Sign, Thermo ON/OFF, Error occurrence status display | ○      | ○   | ○       | ○          | ○           | ○       |
| 19 | nvoOccOpMode    | Cooling only/Heating only setup status display                                   | ○      | ×   | ○       | ○          | ×           | ○       |
| 20 | nvoCoolTempLock | Low temperature limit setting status display                                     | ○      | ×   | ○       | ×          | ×           | ○       |
| 21 | nvoHeatTempLock | High temperature limit setting status display                                    | ○      | ×   | ○       | ×          | ×           | ○       |
| 22 | nvoUserLockout  | Display the restriction of remote control use                                    | ○      | ○   | ○       | ○          | ○           | ○       |
| 23 | nvoEnergyComp   | Display electricity usage (Time Period)  | ○      | ×   | ×       | ×          | ×           | ×       |
| 24 | nvoEnergyCon    | Display electricity usage (Basic date)   | ○      | ×   | ×       | ×          | ×           | ×       |
| 25 | nvoRuntimep     | Display used hours (Period)  | ○      | ×   | ○       | ×          | ○           | ○       |
| 26 | nvoRuntime      | Display used hours (Basic date)  | ○      | ×   | ○       | ×          | ○           | ○       |
| 27 | nvoDevListDesc  | The summary of device information (Model, Address, Operation Status)             | ○      | ○   | ○       | ○          | ○           | ○       |

※ With DVM CHILLER, be cautious in setting a master device.

- Although the LonWorks Gateway can connect 128 units, the actual number of available items can differ according to the number of indoor units connected. When the number of indoor units is increased, the number of controllable items will be decreased; on the other hand, as the number of indoor units decreases, the controllable items increase.

The functions provided can be different according to the type of the connected device.

| Control and Monitoring Item | The maximum number of connectable indoor units. | Remarks  |
|-----------------------------|---|--|
| 27 items (All)              | 22  | In the case that 20 items can be processed per a second and data inquiry interval is 30 seconds. |
| 20 items                    | 30  |  |
| 15 items                    | 40  |  |
| 12 items                    | 50  |  |
| 9 items                     | 64  |  |
| 6 items                     | 100   |  |
| 4 items                     | 128   |  |

- You can freely choose the items.
- The number of items that can be processed will be different according to the time interval that inquires about data at Human Machine Interface. LonWorks Gateway can process 20 items of Acknowledged Service Type per a second. Therefore, the amount of data that can be processed is decided according to how frequently HMI inquires about the data and the number of indoor units that can be connected is decided by this amount of data.

\* For example : In the case that HMI inquires about the 27 items of Acknowledged Service Type by an indoor unit.  
When HMI inquires for data at 30 seconds interval, 22 indoor units can be connected, at 60 seconds interval 44 indoor units can be connected, at 120 seconds interval 88 indoor units can be connected.

- The renewal cycle can be different according to the provided NV.




CAUTION

- ◆ **When BMS system is sending control command, don't send it repeatedly in a very short time.**
- ◆ **If BMS system is sending control command repeatedly in a very short time, DMS may be stopped due to overload.**

# LonWorks Gateway setting (Continued)

## Setting the LonWorks Gateway

### LonWorks Gateway Connection and Login

- 1 Click internet explorer icon(  ) twice on your computer.
- 2 When internet explorer window appears, enter IP address (**http://192.168.0.100**) on the address bar then press [ENTER].
- 3 If it is the first time to access LonWorks Gateway, "Install Microsoft Silverlight" message will appear.
  - ◆ If the Microsoft Silverlight has already been installed, the above message will not appear.
- 4 Click [Run] button and continue installation.  
After installation, access LonWorks Gateway again.



CAUTION

***Silverlight operates normally with Windows 7 or later version. It may not operate normally with previous version of Windows.***

- 5 Enter ID and password when LonWorks Gateway main web page appears, Then click [LOGIN].
  - ◆ If you use accounts with general authorization level to login, you cannot use the LonWorks Gateway settings.
  - ◆ Depending on authorization level set by the administrator, access to some functions may be restricted.
  - ◆ You can change authorization level settings from **System settings → User authorization management**.
  - ◆ To use the LonWorks Gateway functions, you must login with the ID that is included in administration group. Factory default LonWorks Gateway ID is 'admin' and password is 'ac0530'.

#### *Note*

- ◆ *Only authorized users can access web page.*
- ◆ *Connection speed may slow down. Fewer than 5 concurrent users are recommended.*
- ◆ *LonWorks Gateway manager should change ID and password for security and management.*
- ◆ *Logout: If you want to logout, click [LOGOUT] on the top of the menu. LonWorks Gateway will be ended.*



CAUTION

- ◆ ***If you use accounts with authorization level lower than management group or accounts with general authorization level, you cannot access LonWorks Gateway settings.***
- ◆ ***If you cannot access LonWorks Gateway, consult the manager.***

- 6 If you login successfully, 'Control and Monitoring' screen of DMS2.5 will appear. Click [System Setting]→[LonWorks configuration] menu to switch to LonWorks Gateway.



- ◆ **If you use accounts with authorization level lower than management group or accounts with general authorization level, LonWorks configuration will not be displayed on the menu.**
- ◆ **If the LonWorks configuration menu does not appear, consult the manager.**

- 7 If you access LonWorks Gateway, 'Device Configuration' screen will appear initially.
  - ◆ If you click [DMS2.5 Connect] button, screen will be switched to initial screen of the DMS2.5.

## Reading EHP Watt-hour Meter

### Setting and checking watt-hour meter

- 1 Click [Setting and Checking Watt-hour meter].
  - ◆ You can change settings on watt-hour meter only when SIM/PIM interface module is connected.
- 2 Click [Edit] from the 'Setting and checking Watt-hour meter' screen.
  - ◆ CT proportion is set to '1' as factory default value.
- 3 Set the [Name] and [CT proportion] for the watt-hour meter.
  - ◆ You can use maximum 16 letters for name and only available special characters are ".", ",", "\_", "-", and "space".
  - ◆ Value for CT proportion should be integer between range of 1 ~ 5000.
- 4 Click [Save].
  - ◆ Changed settings will be saved to the LonWorks Gateway.
  - ◆ If you do not click [Save] changed setting will not be saved.
- 5 Watt-hour meter value will display the actual value of electricity on the corresponding watt-hour meter. Value will be updated automatically.



**When using CT watt-hour meter, be careful that there can be difference with actual power consumption as much as CT ratio error.**

## LonWorks Gateway setting (Continued)

### Monthly baseline setting

- 1 Click [Setting and Checking Watt-hour meter].
- 2 Click [Edit] from the 'Monthly baseline setting' screen.
  - ◆ You can make changes when list box enables.
- 3 Set the Monthly baseline setting.
  - ◆ You can select from 1~31.
  - ◆ If you select the last day of the month, it will automatically set the last day of corresponding month as baseline.  
Ex) Last day of February: 28<sup>th</sup> or 29<sup>th</sup>
  - ◆ Power consumption is calculated for a month before monthly baseline.  
Ex) Monthly baseline: 28<sup>th</sup>  
Today: 19<sup>th</sup> Nov.  
Time period for power consumption and operation: 29<sup>th</sup> Sep. ~ 28<sup>th</sup> Oct.
- 4 Click [Save].
  - ◆ Changed settings will be saved to the LonWorks Gateway.
  - ◆ If you do not click [Save] changed setting will not be saved.

### Period setting

- 1 Click [Setting and Checking Watt-hour meter].
- 2 Click [Edit] from the 'Period setting' screen.
  - ◆ You can select checkbox to set period in daily or monthly unit.
  - ◆ If you select daily period setting, text box will be enabled and you can enter the period in daily unit.
  - ◆ If you select monthly period setting, you can select the period in monthly unit.
- 3 Set the period
  - ◆ If you set period in daily unit, you can set up to maximum 90 days.
  - ◆ If you set period in monthly unit, you can set up to maximum 1 month.
- 4 Click [Save].
  - ◆ Changed setting will be saved to LonWorks Gateway.
  - ◆ If you do not click [Save], changed setting will not be saved.



## Device Configuration

### Checking and changing the Object ID

**List of equipment connected to LonWorks can be checked when the tracking is completed.**

- 1 Device Type, Address, Name and Object ID will appear.
- 2 Object IDs are assigned in order from 1 to 128 when initial tracking is executed.
- 3 If you want to change the Object ID, click [Edit] and change the Object ID of the applicable device.
  - ◆ The Object ID can not be used for more than one piece of device.
  - ◆ Object ID can be entered between 1 ~ 128.
  - ◆ Device without an Object ID can not transfer its information to LonWorks.
  - ◆ Object ID does not appear if there are more than 128 indoor units.

### Checking device information

- 1 Click one of the Addresses from 'Address' column.
  - ◆ Detail information of the selected device will be displayed in device information.
- 2 You can check the value of each Input item.

**Note** ◆ *The value of the Input item represents the current status of the device. Therefore, value may be different from the final status controlled by LonWorks MMI.*

◆ *Some values cannot be altered depending on their connection to a type of device (Indoor unit, ERV, AHU kit, Fresh ducts).*

- 3 Check the current value of the Output.

The current value indicates the current status of indoor unit(ERV) and the value can be different due to synchronization delay with LonWorks MMI and data conversion.

  - ▶ Refer to LonWorks Message Definition for device information display for each device.

## LonWorks Gateway setting (Continued)

### Overview for Function

◆ Followings are the NV lists of indoor unit(ERV/AHU kit/Fresh ducts) supported by LonWorks Gateway.

1) nvi type - Data setting is allowed

2) nvo type - Data setting is not allowed

Please refer to Message Definition for Setting value.

### 1. Indoor Unit(ERV/AHU Kit/Fresh ducts/DVM Chiller/FCU Kit) Objects

| No. | NV Name         | NV Type         | Remarks  |
|-----|-----------------|-----------------|--|
| 1   | nviOnOff        | SNVT_switch     | ON/OFF command   |
| 2   | nviApplicMode   | SNVT_hvac_mode  | Setting operating mode   |
| 3   | nviSetpoint     | SNVT_temp_p     | Setting desirable temperature  |
| 4   | nviFanStatus    | SNVT_switch     | Setting wind speed and direction   |
| 5   | nviERVMode      | SNVT_count      | Setting ERV operation mode   |
| 6   | nviFilterReset  | SNVT_switch     | Filter reset command   |
| 7   | nviUserLockout  | SNVT_switch     | Setting the restriction of remote control use                                    |
| 8   | nviOccOpMode    | SNVT_switch     | Setting cooling only mode / Setting heating only mode                            |
| 9   | nviCoolTempLock | SNVT_switch     | Setting the low temperature limit  |
| 10  | nviHeatTempLock | SNVT_switch     | Setting the high temperature limit   |
| 11  | nvoSpaceTemp    | SNVT_temp_p     | Display indoor temperature   |
| 12  | nvoApplicMode   | SNVT_hvac_mode  | Display operating mode   |
| 13  | nvoSetpoint     | SNVT_temp_p     | Display desire temperature   |
| 14  | nvoOnOff        | SNVT_switch     | Display ON/OFF status  |
| 15  | nvoFanStatus    | SNVT_switch     | Display wind speed and direction   |
| 16  | nvoERVMode      | SNVT_count      | Display ERV operating mode   |
| 17  | nvoErrorCode    | SNVT_count      | Display Error code   |
| 18  | nvoDeviceAlarm  | SNVT_state      | Remote control Lock, Filter Sign, Thermo ON/OFF, Error occurrence status display |
| 19  | nvoOccOpMode    | SNVT_switch     | Cooling only/Heating only setup status display                                   |
| 20  | nvoCoolTempLock | SNVT_switch     | Low temperature limit setting status display                                     |
| 21  | nvoHeatTempLock | SNVT_switch     | High temperature limit setting status display                                    |
| 22  | nvoUserLockout  | SNVT_switch     | Display the restriction of remote control use                                    |
| 23  | nvoEnergyComp   | SNVT_elec_kwh_l | Display electricity usage (Time Period)  |
| 24  | nvoEnergyCon    | SNVT_elec_kwh_l | Display electricity usage (Basic date)   |
| 25  | nvoRuntimep     | SNVT_time_hour  | Display used hours (Period)  |
| 26  | nvoRuntime      | SNVT_time_hour  | Display used hours (Basic date)  |
| 27  | nvoDevListDesc  | SNVT_str_asc    | The summary of device information (Model, Address, Operation Status)             |

## 2. DMS system Objects

| No. | NV Name          | NV Type         | Remarks  |
|-----|------------------|-----------------|--|
| 1   | nviDigitalOut[6] | SNVT_switch     | Control Digital output of DMS                                  |
| 2   | nviAllOff        | SNVT_hvac_emerg | Control all indoor unit / ERV OFF                              |
| 3   | nvoDigitalOut[6] | SNVT_switch     | Display Digital output status of DMS                           |
| 4   | nvoDigitalIn[8]  | SNVT_switch     | Display Digital input status of DMS                            |
| 5   | nvoSystemLock    | SNVT_switch     | Display System Lock status of DMS                              |
| 6   | nvoDMSAlarm      | SNVT_count      | Display communication error of the sub device connected to DMS |
| 7   | nvoSystemAlarm   | SNVT_count      |  |

## 3. Configuration Properties

| No. | NV Name         | NV Type                          | Remarks                       |
|-----|-----------------|----------------------------------|-------------------------------|
| 1   | nciSndHrtBt     | SNVT_time_sec<br>SCPTmaxSendTime | Send Heartbeat                |
| 2   | nciMinOutTm     | SNVT_time_sec<br>SCPTminSendTime | Minimum Send Time             |
| 3   | nciMinDeltaTemp | SNVT_temp_p<br>SCPTminDeltaTemp  | Min. difference before update |
| 4   | nciDelayStatrup | SNVT_time_sec<br>SCPTpwrupDelay  | Delay time after a power-up   |



CAUTION

### <Unused Network Variables>

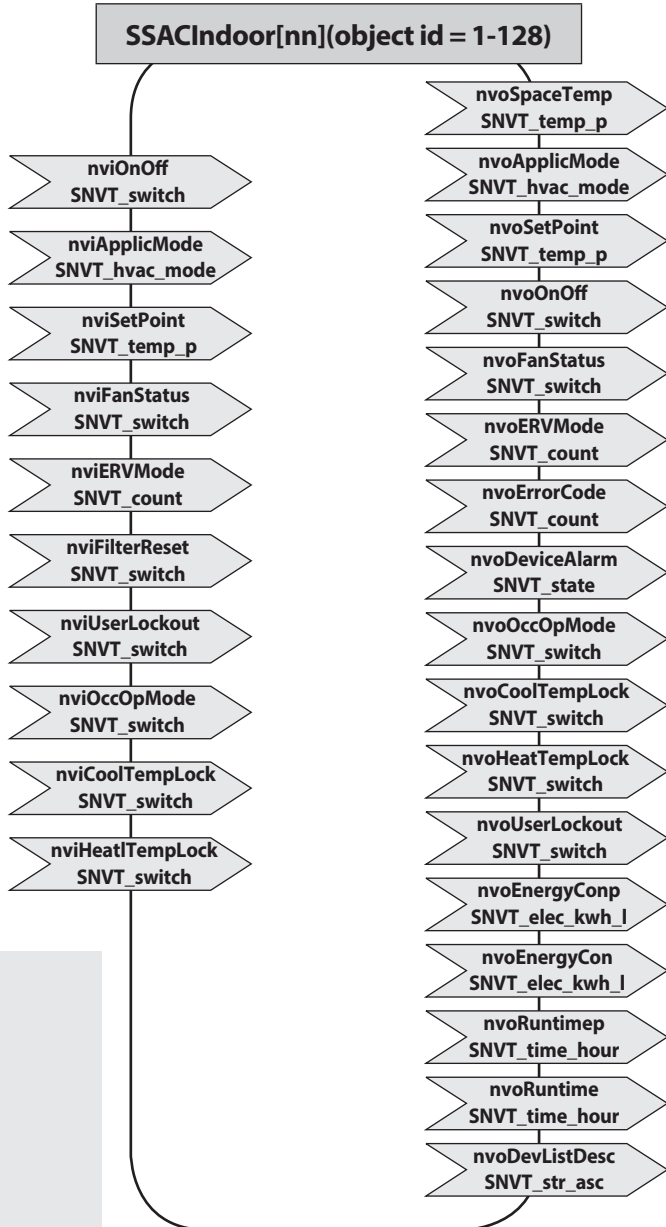
*The network variable listed below do exist within our XIF file. However, they are not explained in this document. They are exclusively intended for internal testing purpose and should not be used by a user.*

- ◆ nvlVolt
- ◆ nvoVoltFb

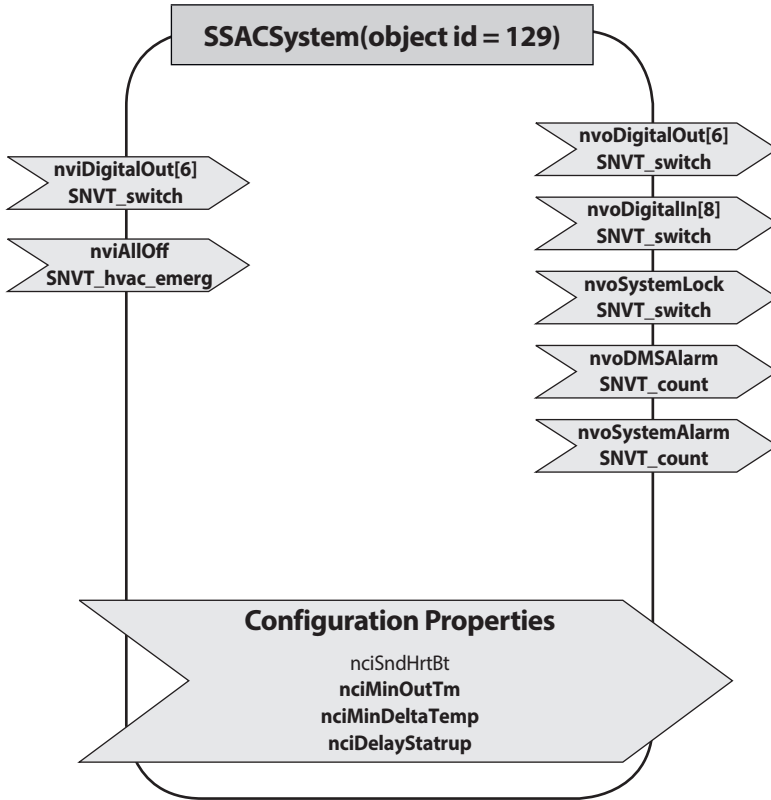
# LonWorks Gateway setting (Continued)

## Network Parameter Chart

### Indoor/ERV/AHU kit/Fresh ducts/DVM Chiller/FCU Kit objects



## DMS system objects



## LonWorks Gateway setting (Continued)

### Message Definition

#### Data for Indoor Device

##### ● nvoSpaceTemp(11)

| Description         | Indoor temperature                |
|---------------------|-----------------------------------|
| SNVT Type           | SNVT_temp_p: Signed Long, 2 bytes |
| Value and operation | Range: -10.00 °C ~ 50.00 °C       |

##### ● nvoApplicMode(12), nviApplicMode(2)

| Description         | Operation Mode status  |
|---------------------|--|
| SNVT Type           | SNVT_hvac_mode: Enumeration(hvac_t)  |
| Value and operation | 0: HVAC_AUTO<br>1: HVAC_HEAT<br>3: HVAC_COOL<br>6: HVAC_OFF<br>9: HVAC_FAN_ONLY<br>11: HVAC_ICE(Cool Storage)<br>13: HVAC_ECONOMY(Hot Water)<br>14: HVAC_DEHUMID |

\* Invalid Value: Automatically set as HVAC\_AUTO

##### ● nvoSetpoint(13), nviSetpoint(3)

| Description         | Set Temperature                                  |
|---------------------|--|
| SNVT Type           | SNVT_temp_p: Signed Long, 2 bytes                |
| Value and operation | Cool: 18.0 °C ~ 30.0 °C, Heat: 16.0 °C ~ 30.0 °C |

\* Invalid Value: Automatically set up as minimum or maximum value.

\* When setting temperature, only an integer value is applied. A decimal point is ignored.

\* DVM CHILLER: -10 °C ~ 55 °C

##### ● nvoOnOff(14), nviOnOff(1)

| Description         | Power ON/OFF status                |       |       |
|---------------------|------------------------------------|-------|-------|
| SNVT Type           | SNVT_switch: Unsigned/signed Short |       |       |
| Value and operation |                                    | Value | State |
|                     | OFF                                | 0.0   | 0     |
|                     | ON                                 | 100.0 | 1     |

● **nvoFanStatus(15), nviFanStatus(4)**

| Description         | Fan Speed and direction            |         |       |
|---------------------|------------------------------------|---------|-------|
| SNVT Type           | SNVT_switch: Unsigned/signed Short |         |       |
| Value and operation |                                    | Value   | State |
|                     | Auto                               | 0.0     | -     |
|                     | Low                                | 1.0     | -     |
|                     | Mid                                | 2.0     | -     |
|                     | High                               | 3.0     | -     |
|                     | Eco                                | 4.0     | -     |
|                     | Turbo                              | 5.0     | -     |
|                     | Auto                               | Any>5.0 |       |
|                     | Stop                               | -       | 0     |
|                     | Up-Down                            | -       | 1     |

- ※ Supporting modes are different according to indoor units.
- Indoor unit/FCU Kit: Auto, Low, Mid, High (Turbo : Optional)
  - ERV : Mid, High, Turbo
  - AHU Kit: High
- \* When an indoor unit operation mode is Auto or Dehumid, Fan speed is controlled as 'Auto'.
- \* When an indoor unit operation mode is FAN ONLY, 'Auto' cannot be controlled by Fan speed.

● **nvoERVMode(16), nviERVMode(5)**

| Description         | ERV Operation Mode  |
|---------------------|---|
| SNVT Type           | SNVT_count: Unsigned Long, 2 bytes  |
| Value and operation | ( 0: Auto )<br>1: H/R<br>( 2: Air purification )<br>3: Sleep<br>4: Normal |

※ ( ) : Function that is not supported now.

● **nvoErrorCode(17)**

| Description         | Error Code  |
|---------------------|---|
| SNVT Type           | SNVT_count: Unsigned Long, 2 bytes                                      |
| Value and operation | Valid Range: 0 ~ 999<br>00 00 → No Error<br>Refer to list of Error code |

## LonWorks Gateway setting (Continued)

### ● nvoDeviceAlarm(18)

| Description         | 1. Remote control restriction status<br>2. Filter alert status<br>3. Thermo On/Off status<br>4. Error alert Status |      |          |              |                |
|---------------------|--|------|----------|--------------|----------------|
| SNVT Type           | SNVT_state: 16 Unsigned Bitfields  |      |          |              |                |
| Value and operation | Byte   | Bit9 | Bit8     | Operation    | Remark         |
|                     | Flags_1  | 0    | 0        | Unlock       | nvoUserLockout |
|                     |  | 1    | 0        | Lock         |                |
|                     | Byte   | Bit  | value    | Operation    | Remark         |
|                     | Flags_2  | 2    | 0        | No alarm     | nvoFilterAlarm |
|                     |  |      | 1        | Alarm        |                |
|                     |  | 1    | 0        | Thermo Off   | Thermo On/Off  |
|                     |  |      | 1        | Thermo On    |                |
|                     | 0  | 0    | No Error | nvoErrorCode |                |
|                     |  | 1    | Error    |              |                |

### ● nvoOccOpMode(19), nviOccOpModeCmd(8)

| Description         | Operation Mode restriction         |       |       |
|---------------------|------------------------------------|-------|-------|
| SNVT Type           | SNVT_switch: Unsigned/singed Short |       |       |
| Value and operation |                                    | Value | State |
|                     | Unlock                             | 0.0   | 0     |
|                     | Cool only                          | 1.0   | 1     |
|                     | Heat only                          | 2.0   | 1     |

### ● nvoCoolTempLock(20), nviCoolTempLock(9)

| Description         | Setting/monitoring Lower limit temperature and function toggle |             |       |
|---------------------|--|-------------|-------|
| SNVT Type           | SNVT_switch: Unsigned/singed Short                             |             |       |
| Value and operation | Operation  | Value       | State |
|                     | Unlock   | 18.0 ~ 30.0 | 0     |
|                     | Lock   | 18.0 ~ 30.0 | 1     |
|                     | Cool: 18.0 °C ~ 30.0 °C  |             |       |



● **nvoHeatTempLock(21), nviHeatTempLock(10)**

| Description             | Setting/monitoring upper limit temperature and function toggle |             |       |
|-------------------------|--|-------------|-------|
| SNVT Type               | SNVT_switch: Unsigned/signed Short                             |             |       |
| Value and operation     | Operation  | Value       | State |
|                         | Unlock   | 16.0 ~ 30.0 | 0     |
|                         | Lock   | 16.0 ~ 30.0 | 1     |
| Heat: 16.0 °C ~ 30.0 °C |  |             |       |

● **nvoEnergyComp(23)**

| Description         | Electric consumption value within the period |
|---------------------|--|
| SNVT Type           | SNVT_elec_kwh_l: Signed Quad, 4bytes         |
| Value and operation | Raw range: 0 ~ 999999<br>Resolution: 0.1     |

● **nvoEnergyCon(24)**

| Description         | Electric consumption value after baselin |
|---------------------|--|
| SNVT Type           | SNVT_elec_kwh_l: Signed Quad, 4bytes     |
| Value and operation | Raw range: 0 ~ 999999<br>Resolution: 0.1 |

● **nvoRunTimep(25)**

| Description         | Indoor unit usage within the period |
|---------------------|-------------------------------------|
| SNVT Type           | SNVT_time_hour: Signed Long, 2bytes |
| Value and operation | Raw range: 0 ~ 65535                |

● **nvoRunTime(26)**

| Description         | Indoor unit usage after baseline    |
|---------------------|-------------------------------------|
| SNVT Type           | SNVT_time_hour: Signed Long, 2bytes |
| Value and operation | Raw range: 0 ~ 65535                |

※ Energy consumption and Runtime are the accumulated value during the user setting period.

※ The data above is for reference so you can not use them for official billing.

## LonWorks Gateway setting (Continued)

### ● nviFilterReset(6)

| Description         | Filter alert reset                 |       |              |        |
|---------------------|------------------------------------|-------|--------------|--------|
| SNVT Type           | SNVT_switch: Unsigned/singed Short |       |              |        |
| Value and operation | Value                              | State | Operation    | remark |
|                     | 0.0                                | 0     | No Action    |        |
|                     | 100.0                              | 1     | Filter Reset |        |

### ● nviUserLockout(7), nvoUserLockout(22)

| Description         | Remote control restriction         |       |           |        |
|---------------------|------------------------------------|-------|-----------|--------|
| SNVT Type           | SNVT_switch: Unsigned/singed Short |       |           |        |
| Value and operation | Value                              | State | Operation | remark |
|                     | 0.0                                | 0     | Unlock    |        |
|                     | 100.0                              | 1     | Level 1   |        |
|                     | 100.0                              | 2     | Lock      |        |

### ● nvoDevListDesc(27)

| Description         | Device Information                              |
|---------------------|---|
| SNVT Type           | SNVT_str_asc: Unsigned Character Array, 31bytes |
| Value and operation | Refer to Expansion of nvoDevListDesc            |

## ● Expansion of nvoDevListDesc

|        |              | description              | character  | value |
|--------|--------------|--------------------------|--|-------|
| ascii. | [0]          | Model information        | Alphabet or digit  |       |
|        | [1]          |                          | Alphabet or digit  |       |
|        | [2]          |                          | Alphabet or digit  |       |
|        | [3]          |                          | Alphabet or digit  |       |
|        | [4]          |                          | Alphabet or digit  |       |
|        | [5]          |                          | Alphabet or digit  |       |
|        | [6]          | Separator                | Underbar(_)  | 095   |
|        | [7]          | OnOff controller address | Alphabet or digit  |       |
|        | [8]          |                          | Alphabet or digit  |       |
|        | [9]          | Separator                | Period(.)  | 046   |
|        | [10]         | Interface Module address | Alphabet or digit  |       |
|        | [11]         |                          | Alphabet or digit  |       |
|        | [12]         | Separator                | Period(.)  | 046   |
|        | [13]         | Indoor Unit Address      | Alphabet or digit  |       |
|        | [14]         |                          | Alphabet or digit  |       |
|        | [15]         | Separator                | Underbar(_)  | 095   |
|        | [16]         | Unit type                | 0: indoor unit, 1: AHU, 2: ERV   |       |
|        | [17]         | Separator                | Underbar(_)  | 095   |
|        | [18]         | Operation mode           | DMS Format<br>0: Auto, 1: Cool, 2: Dehumid,<br>3: Fan, 4: Heat, 5: Cool Storage,<br>6: Hot Water |       |
|        | [19]         | ON/OFF                   | 0, 1   |       |
|        | [20]         | Fan speed                | 0, 1, 2, 3, 4, 5   |       |
|        | [21]         | Fan Swing                | 0, 1   |       |
|        | [22]         | Error                    | 0, 1   |       |
|        | [23]         | Separator                | Underbar(_)  | 095   |
|        | [24]         | setPoint temperate       | Second significant digit   |       |
|        | [25]         |                          | First significant digit  |       |
|        | [26]         |                          | First decimal place  |       |
|        | [27]         | Space temperate(*)       | Second significant digit   |       |
|        | [28]         |                          | First significant digit  |       |
|        | [29]         |                          | First decimal place  |       |
| [30]   | Null padding | 0                        | 048  |       |

(\*) If the value is a negative number, it is displayed as sign, 10-digit, single-digit.

## LonWorks Gateway setting (Continued)

### Data for DMS System

#### ● nvoDigitalOut(3), nviDigitalOut(1)

| Description         | Digital output status on DMS       |       |       |
|---------------------|------------------------------------|-------|-------|
| SNVT Type           | SNVT_switch: Unsigned/singed Short |       |       |
| Value and operation |                                    | Value | State |
|                     | OFF                                | 0.0   | 0     |
|                     | ON                                 | 100.0 | 1     |

#### ● nvoDigitalIn(4)

| Description         | Digital Input status on DMS        |       |       |
|---------------------|------------------------------------|-------|-------|
| SNVT Type           | SNVT_switch: Unsigned/singed Short |       |       |
| Value and operation |                                    | Value | State |
|                     | OFF                                | 0.0   | 0     |
|                     | ON                                 | 100.0 | 1     |

#### ● nvoSystemLock(5)

| Description         | System lock status of DMS(only monitoring available) |       |       |
|---------------------|--|-------|-------|
| SNVT Type           | SNVT_switch: Unsigned/singed Short                   |       |       |
| Value and operation |  | Value | State |
|                     | Unlock   | 0.0   | 0     |
|                     | Lock   | 100.0 | 1     |

#### ● nvoDMSAlarm(6)

| Description         | DMS Alarm                                     |
|---------------------|---|
| SNVT Type           | SNVT_count : Unsigned Long, 2 bytes           |
| Value and operation | 0 : Normal                                    |
|                     | 8 : Emergency stop                            |
|                     | 105 : Tracing in progress                     |
|                     | 108 : Tracking failed                         |
|                     | 109 : Lon Module ↔ DMS2.5 communication Error |
|                     | 110 : Object ID Update                        |

● **nvoSystemAlarm(7)**

| Description         | SIM/PIM Communication Error Code                        |
|---------------------|---|
| SNVT Type           | SNVT_count: Unsigned Long, 2 bytes                      |
| Value and operation | SIM/PIM Communication Error Refer to list of Error code |

● **nviAllOff(2)**

| Description         | All indoor units turn off              |
|---------------------|--|
| SNVT Type           | Enumeration, emerg_t                   |
| Value and operation | 0 : EMERG_NORMAL<br>4 : EMERG_SHUTDOWN |

### Configuration Properties

#### ● Overview

This document provides information on all configuration properties defined for LonWorks Gateway device. For the sake of simplicity, although the configuration properties are defined to UFPTSSACSystem functional block, they are shared among the members of UFPTSSACIndoor functional blocks.

#### ● Configuration Properties Table

| No | CPNV Name       | SCPT Reference   | SNVT Type     | Resolution |
|----|-----------------|------------------|---------------|------------|
| 1  | nciSndHrtBt     | SCPTmaxSendTime  | SNVT_time_sec | 0.1        |
| 2  | nciMinOutTm     | SCPTminSendTime  | SNVT_time_sec | 0.1        |
| 3  | nciMinDeltaTemp | SCPTminDeltaTemp | SNVT_temp_p   | 0.01       |
| 4  | nciDelayStartup | SCPTpwrUpDelay   | SNVT_time_sec | 0.1        |

### Details of Configuration Properties

#### ● Send Heartbeat

This configuration property defines the maximum period of time that expires before the specified network variable outputs will automatically be updated. The associated network variable will also be transmitted as a heartbeat output on a regular basis as dictated by the Maximum Send Time (nciSndHrtBt) configuration value.

Valid Range

The valid range is any value between 0.0 sec and 6,553.4 sec. Setting nciSndHrtBt = 0.0 (default value) disables the Send Heartbeat mechanism.

Recommendations

If required, especially in an event-driven update for monitoring, set a value greater than the default update rate (currently, 10s).

Associate Values

nvoDMSAlarm, nvoSystemAlarm.

#### ● Minimum Send Time

This configuration property defines the minimum period of time between automatic network variable output transmissions. The associated network variable will be updated no faster than the Minimum Send Time (nciMinOutTm) configuration value.

Valid Range

The valid range is any value between 0.0 sec and 6,553.4 sec. Setting nciMinOutTm = 0.0 (default value) disables the Minimum Send Time mechanism.

#### Recommendations

If required, set a value greater than the default update rate (currently, 10s). Any smaller value does not yield a change in the update pattern.

#### Associate Values

nvoSpaceTemp, nvoSetPoint

### ● Minimum Temperature Change

This configuration property sets the minimum temperature change required before the associated output network variable is updated. The associate network variable will not be updated unless the change is greater than or equal to the Minimum Temperature Change (nciMinDeltaTemp) configuration value.

#### Valid Range

The valid range is any value between -273.17°C and 327.66°C. Setting nciMinDeltaTemp = 0.0 (default value) disables the Minimum Temperature Change mechanism.

#### Recommendations

If required, set a value greater than 0.1 degree in Celsius. Also, consider the maximum of the typical operating range which is 50 degree in Celsius.

#### Associate Values

nvoSpaceTemp, nvoSetPoint

### ● Start-Up Delay

This configuration property controls the minimum period of time that expires before outputs are retransmitted. It also is the minimum amount of elapsed time after a power-up or re-establishment of communications before a control action takes place. This can be used to account for the settle-down time of a network.

All of the output network variable will be updated no faster than the Start-Up Delay (nciDelayStartup) configuration value. Also, the heartbeat mechanism will not be enabled unless the elapsed time passes the Start-Up Delay, if used.

#### Valid Range

The valid range is any value between 0.0 sec and 6,553.4 sec. Setting nciDelayStartup = 0.0 disables the Start-Up Delay mechanism.


#### Associate Values

All output network variables

#### Recommendations

If required, set a value greater than 1 minute which is a settle-down time of the installed device.

## Specifications

| Items          |                | Description   |
|----------------|----------------|---|
| Exterior       |                |  |
| Size           |                | 240 X 255 X 64.8 mm ( Width X Length X Height )                                   |
| Weight         |                | 1.48 Kg   |
| Power          | Source         | DC ADAPTOR  |
|                | INPUT Voltage  | 100-240V 50/60Hz 1.0A   |
|                | OUTPUT Voltage | 12V 3A  |
| Inter-<br>face | RS-485         | 5 Channels  |
|                | Ethernet       | 10/100Mbps 1 Port   |
|                | SD CARD        | Option (Purchase SD card separately)  |
|                | DI             | 12V Digital Input 10 Channels   |
|                | DO             | 12V Digital Output 8 Channels   |
|                | Etc.           | Serial Port, Reset Button   |
| Display        |                | 16-Character X 2-Line Character LCD   |
| Input method   |                | Menu/Up/Down/Set 4-Tact Button  |



## License

### Open Source Announcement

The software included in this product contains open source software. You may obtain the complete corresponding source code for a period of three years after the last shipment of this product by sending an email to <mailto:oss.request@samsung.com>.

It is also possible to obtain the complete corresponding source code in a physical medium such as a CD-ROM; a minimal charge will be required.

The following URL [http://opensource.samsung.com/opensource/DMS2\\_5/seq/1](http://opensource.samsung.com/opensource/DMS2_5/seq/1) leads to the download page of the source code made available and open source license information as related to this product. This offer is valid to anyone in receipt of this information.







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