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LG

LG BNU-LW(Lonworks Gateway) *Installation Manual*

ENGLISH

ITALIANO

ESPAÑOL

FRANÇAIS

DEUTSCH

CHINESE

IMPORTANT

- Please read this Installation Manual carefully and thoroughly before installing and operating your room air conditioner.
- Please retain this Installation Manual for future reference after reading it thoroughly.

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Safety Precautions



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

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

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

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

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

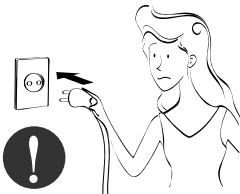
| | |
|---|---|
|  | Be sure not to do. |
|  | Be sure to follow the instruction. |

⚠ WARNING

■ Operation

Do not operate or stop the unit by inserting or pulling out the power plug.

- It will cause electric shock or fire due to heat generation.



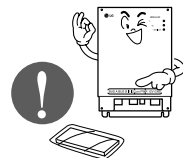
Ask for Product equipment at the service center or establishment certainly at the specialty store.

- It can cause an accident, electric shock, explosion or injury.



Use standard parts.

- Use of non standard parts can cause electric shock, explosion, injury, breakdown.



Standard Parts

Safety Precautions

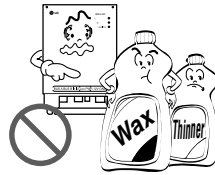
While re-installing the established product, notify the service center or establishment specialty store.

- It can cause an accident, electric shock, explosion, injury.shock.



Do not use the power cord near Flammable gas or combustibles, such as gasoline, benzene, thinner, etc.

- It may cause an explosion or fire



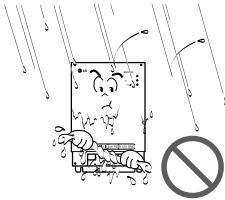
Do not disjoint randomly or repair and remodel the product.

- It may cause fire and electric shock



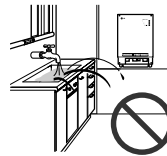
If water enters the product, turn the power switch of the main body of appliance off.

- After taking the power-plug out from the socket, contact the service center.



Keep the product away from the places which can have moisture.

- Water may enter the unit and degrade the insulation. It may cause an electric shock.



■ During usage

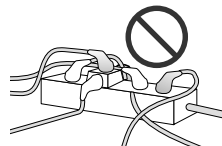
Do not change or extend the conductor at random.

- It can cause fire and electric shock.



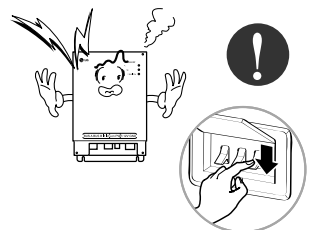
Do not use concert with in the octopus-like legs way.

- It can cause fire and electric shock



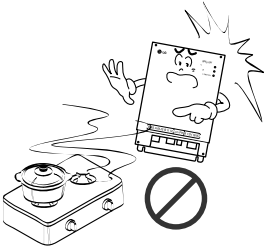
Unplug the unit if strange sounds, smell, or smoke comes from it.

- It may cause fire and electric shock accident.



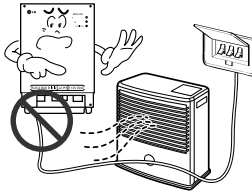
Do not put firearms near product.

- It can cause fire.



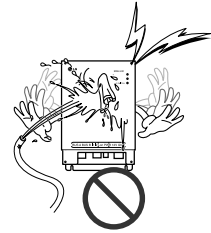
Do not put an electric heater or conductor near to the product.

- It can cause fire and electric shock.



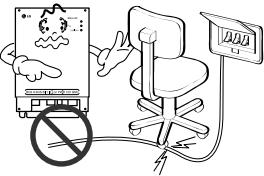
Do not spill water inside product.

- It can cause electric shock and breakdown.



Do not place heavy goods on wire.

- It can cause fire and electric shock.



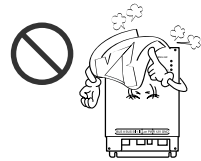
Hold the plug by the head of the power plug when taking it out.

- It may cause electric shock and damage.



Do not place heavy goods on product.

- It can cause product breakdown.



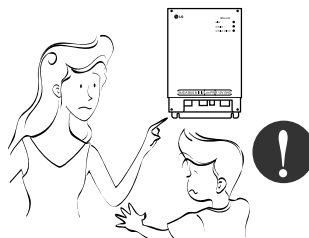
That increase in case of product was been flood certainly in the service center or establishment specialty store commit .

- I am responsible for fire and electric shock.



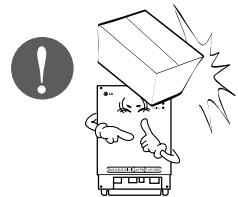
Protect the product from handling by a children.

- It can cause accident and product breakdown.



Do not apply shock to product.

- I am responsible for breakdown in case of shock to product.



⚠ CAUTION

■ During usage

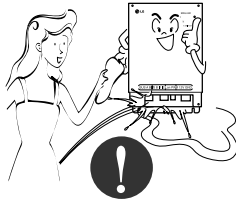
Clean by soft hands using a cleaning material like a soft cloth.

- It can result in fire and product transformation.



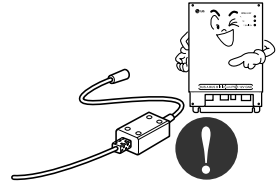
Do not place any live part on the surface having water.

- It can cause product breakdown.



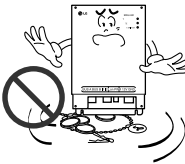
Use recommended Adapter.

- Otherwise it can result in product breakdown



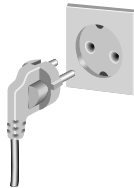
Avoid contact to the metallic goods such as necklace, coin, key, a watch which may touch the battery even for a short-time.

- It may cause product breakdown and injury.

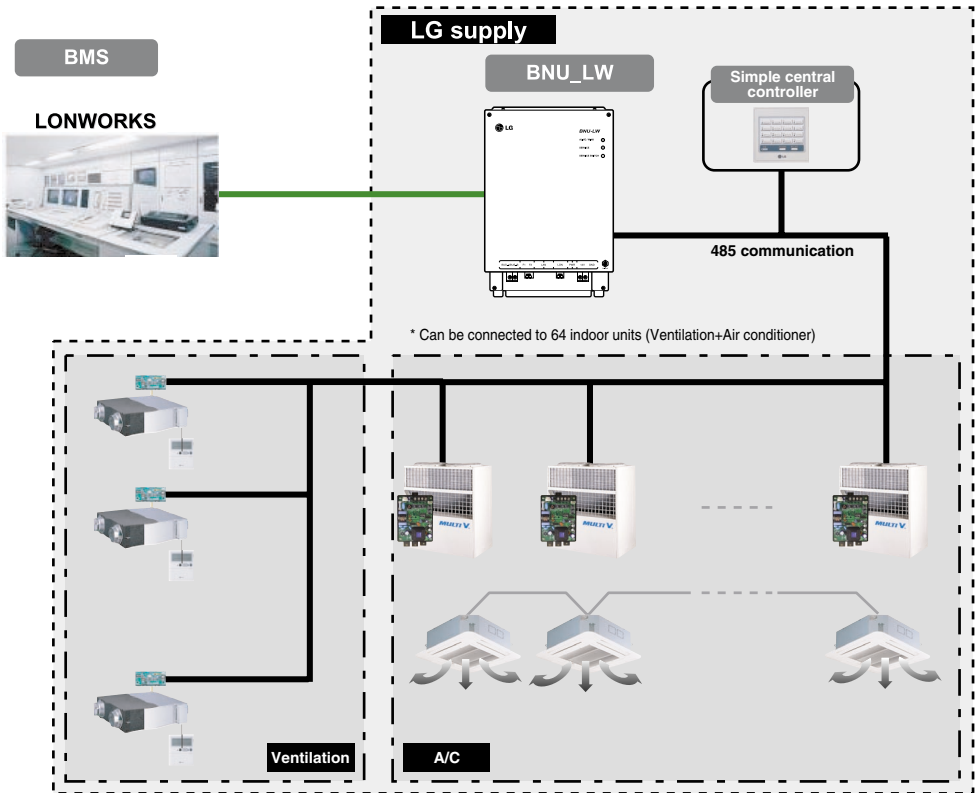


Hold the plug by the head of the power plug when taking it out.

- It may cause electric shock and damage.



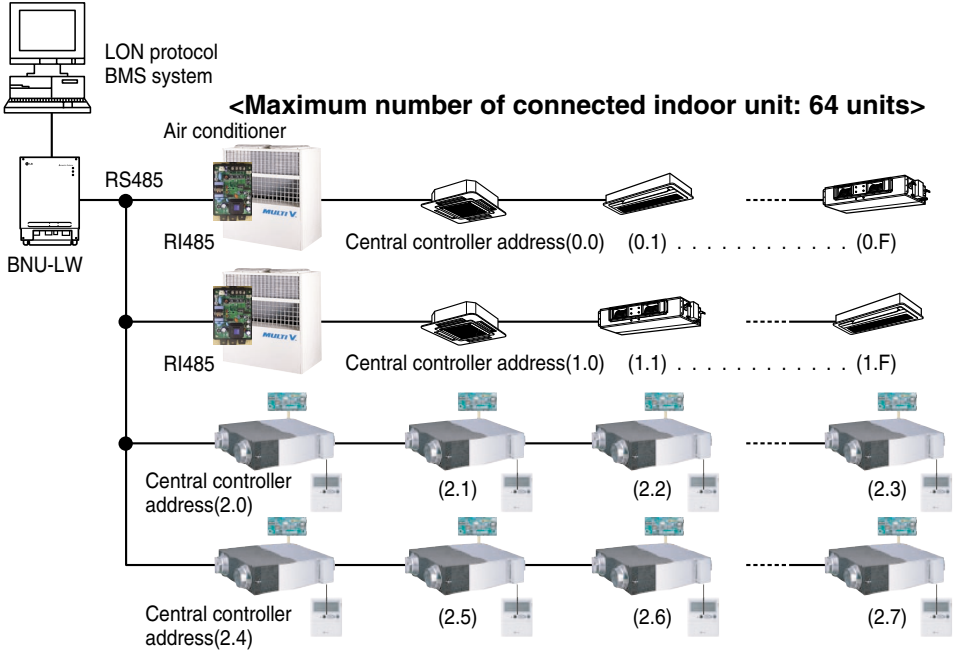
Overall system diagram



* PNF-B16A1 (Lon Gateway) can be used in connection with the simple central controller.

External wiring diagram

How to set the address for the central controller of the indoor unit connected to BNU-LW (Lonworks Gateway)



- When the address of the indoor unit of the air conditioner is duplicated with that of the ventilation unit, it will not operate normally.
- Maximum of 64 units of the indoor unit (Air conditioner+Ventilation) can be connected to the BNU-LW.
- It is recommended to connect 16 units of PI485 and maximum of d32 PI485 units to the BNU-LW.
- Ventilation products cannot be interfaced with the simple central controller.

Communication line specification

1. RS-485 communication line specification: 0.75mm² or above 2C shield, product to product: 200M, total length: 1km
2. FT-10 communication line: Refer to the following table.

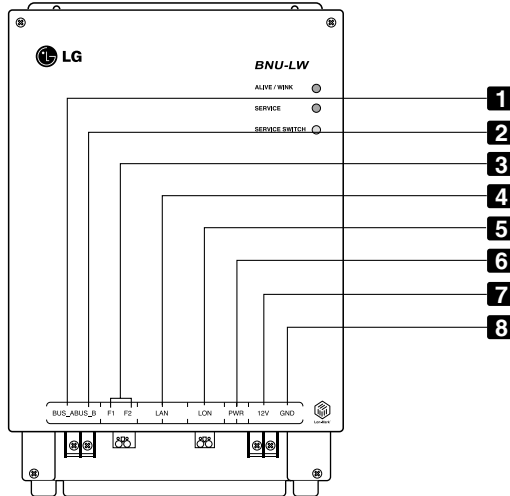
| Cable Type | Line thickness (AWG) | Diameter |
|---|----------------------|----------|
| TIA 568A Category 5 cable | 24 | 0.5mm |
| Belden 88471 (PVC jacket) or equivalent cable | 16 | 1.3mm |
| Belden 85102(Tefzel jacket) or equal cable | 16 | 1.3mm |
| Level IV cable | 22 | 0.65mm |
| JY(st)Y 2x2x0.8 | 20.4 | 0.8mm |

* Nod to node distance (max): 250m, maximum distance: 450m

* AWG: American Wire Gauge

Name of each part

LONWORKS GATEWAY



- 1** BUS_A: 485 communication line A (+)
- 2** BUS_B: 485 communication line B (-)
- 3** F1, F2: Fire detection function (external device) contact point connection
- 4** LAN: LAN port necessary for web function
- 5** LON: TP/FT-10 communication line (Lonworks system communication line) non-polarity
- 6** PWR: Connection to DC 12V power adapter
- 7** 12V: Connection when not using DC 12V power adapter
- 8** GND: Connection when not using GNS adapter

ALIVE/WINK: It flashes every 1 second when it is normal

It flashes 5 times when receiving WINK command from Lonworks system (Green)

SERVICE: It is turned off when it is normal and flashes when it is not connected to the Lonworks system. It is turned on when the service switch is pressed.

SERVICE SWITCH: When you press the switch the Neuron ID is transmitted to the Lonworks system, and the service LED is turned on.



BNU-LW (PNF-B16A1) product is a product certified of LON-MARK, an international standard. (Lon Mark Version 3.3)

⚠ WARNING

No. 6 and No. 7,8 are all for power supply. Therefore, only one of two combinations should be used.

When DC 12V is used for the power, Connect No. 6 to the power (not necessary to use No. 7,8.)

When DC 12V is NOT used for the power, Connect No. 7, 8 to the power (not necessary to use No. 6.)

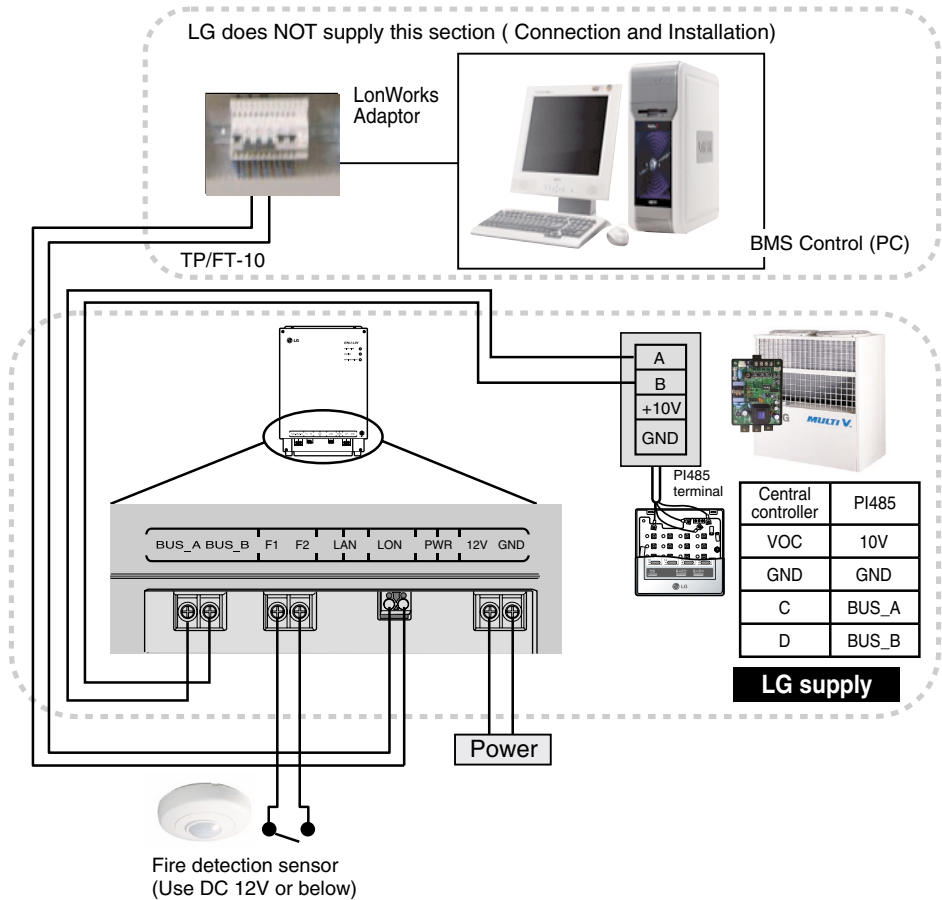
Installation order

1. Install the product according to the setting of the central controller address of the indoor unit and the DIP S/W of PI485. (Set the DIP switch No. 4 to ON.)
(Refer to the PI485 installation manual for details.)
2. Connect BUS_A and BUS_B (485 communication line) while paying attention to the connecting polarity. (Refer to the next page.)
3. LON (TP/FT-10 line) Lonworks Gateway communication line connection) TP/FT-10 communication line does not have polarity. Connect the 2 communication lines to BMS.
4. PWR (Power supply)
You can select either one of the two for the power supply.
 - ① Use DC 12V power adapter
Connect to No. 6 in name of each part.
 - ② When separate DC12 can be supplied
Connect 12V and GND to No. 7 and 8 terminals.
5. When you press the service switch after connecting to the Lonworks system, the service LED is turned on and the neuron ID is automatically transmitted to the Lonworks system.
6. Check whether the service LED is in normal condition (OFF condition) within 10 minutes. If the service LED is in normal condition, the installation has been done normally.
7. When using the fire detection port, connect the two terminals of the fire diction sensor to F1 and F2.
(Fire detection sensor must be used for DC output of 12V or below.)
8. After the installation, connect the LAN cable between the PCs to use the web server so that you can check whether the LG product has been installed normally. – Refer to the remote diagnosis function part (page 16) for details.

▲ CAUTION

When connecting the signal line to the terminal of Lonworks Gateway, always use a manual driver.
(Careful attention is required not to damage the terminal block and PCB.)

BNU-LW wiring order

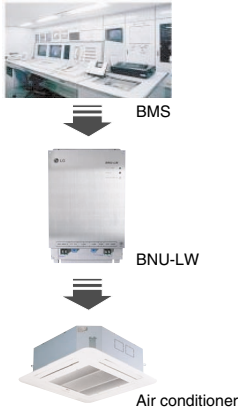



[Wiring sequence]

- Connect 485 communication line
 - Pay attention to BUS A and BUS B polarity (Refer to the G/W manual for DIP S/W information for 485 G/W.)
- Connect the Lonworks communication line (TP/FT-10)
 - No polarity.
- Power supply (Select one from No. 1 or 2)
 - Use DC 12V adapter
 - Connect to No. 6 jack from name of each part.
 - Supply DC 12V to installation site
 - Connect 12V and GND to No. 7 and 8 terminals.
- Interface with simple central controller
 - Set the DIP S/W No. 2 of the simple central controller to ON and configure the setting according to the rotary S/W address. (Refer to setting part when connection to simple central controller (page 20) for details.)
- Connect fire detection sensor
 - When the signal of DC 12 or below is transmitted in case of a fire, the indoor unit and ventilation product that is connected to BNU-LW will all be turned off.

Air conditioner/ventilation function table



Air conditioner indoor unit function

| Classification | Control | Monitoring |
|---------------------------------|---|--|
| Function |  |  |
| Indoor unit individual control | ○ | ○ |
| Operating mode change | ○ | ○ |
| Fan level change | ○ | ○ |
| Temperature adjustment function | ○ | ○ |
| Lock function | ○ | ○ |
| Automatic fan direction | ○ | ○ |
| Indoor unit temperature check | X | ○ |
| Error check | X | ○ |
| Simultaneous operation/stop | ○ | X |

Binding (connection) function: Binding function refers to the case when the output of a unit has been bound to the input of another unit and the process of input change from the output change. The binding function is possible with Lon unit of other manufacturer.

Ex) When the ON/OFF output of the indoor unit No. 1 is bound to ON/OFF input of indoor unit of No. 2 and when the indoor unit No. 1 is turned on, the indoor unit No. 2 also gets turned on from receiving the signal.

Ventilation indoor unit function

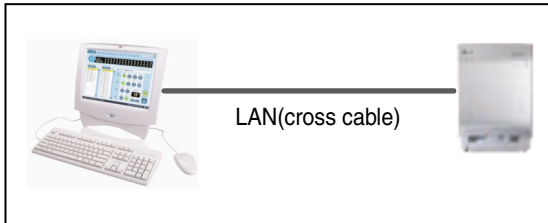
| Classification | Control | Monitoring |
|---|---|--|
| Function |  <p>BMS</p> <p>BNU-LW</p> <p>Ventilation</p> |  <p>Ventilation</p> <p>BNU-LW</p> <p>BMS</p> |
| Indoor unit individual control | ○ | ○ |
| Operating mode change | ○ | ○ |
| Fan level change | ○ | ○ |
| User operation mode (Quick ventilation, power save, heating) | ○ | ○ |
| Lock function | ○ | ○ |
| Error check | X | ○ |
| Simultaneous operation/stop | ○ | X |

Binding (connection) function: Binding function refers to the case when the output of a unit has been bound to the input of another unit and the process of input change from the output change. The binding function is possible with Lon unit of other manufacturer.

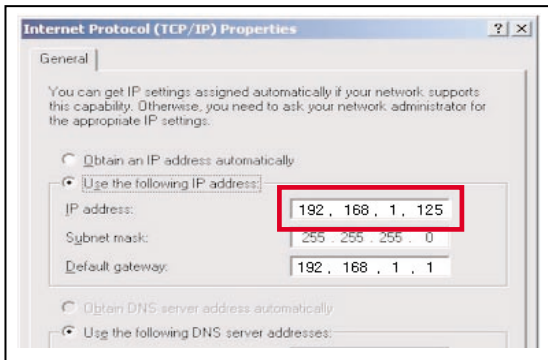
Ex) When the ON/OFF output of the indoor unit No. 1 is bound to ON/OFF input of indoor unit of No. 2 and when the indoor unit No. 1 is turned on, the indoor unit No. 2 also gets turned on from receiving the signal.

BNU-LW remote diagnosis function

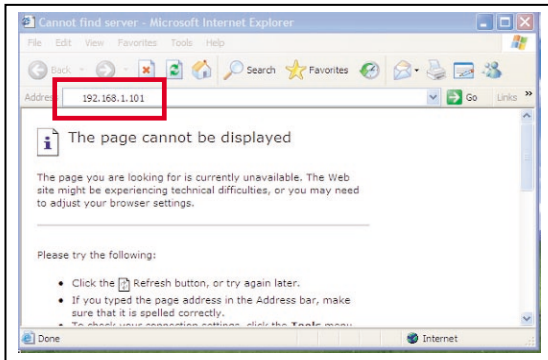
Setting method



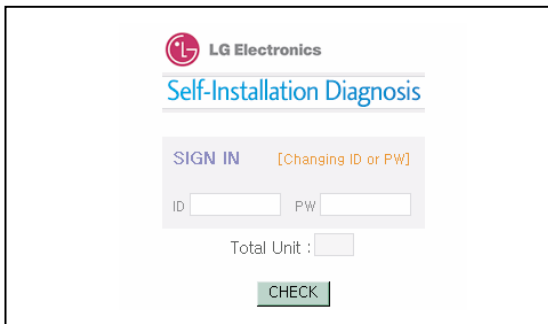
1. Connect the LAN line between the PC and the LAN port of the BNU-LW.



2. Set the network IP of the used PC to 192.168.1.xxx (except 101).



3. Enter 192.168.1.101 in the Internet Explorer.



4. The above picture is shown when connected normally.

- Initial ID: lonwork
- Initial password: lonwork
- Enter the total number of connected indoor units in the Total Unit block.

Configuration

"A"

LG Electronics
Self-Installation Diagnosis

The Status of Connection [Set up Network place]

Total : 22/22 (connected/total) EA
Connected : Indoor 16 EA - vent 06 EA
under constructing 00 EA

① INDOOR - ② Addr. : ALL - ③ ON - ④ COOL - ⑤ Check ⑥ Reload

"B"

| Indoor Address [Running Status : err] | Vent Address [Running Status : err] |
|---------------------------------------|-------------------------------------|
| No.01 @-00 [OFF - COOL : 000] | No.01 @-00 [OFF - AUTO : 000] |
| No.02 @-01 [OFF - COOL : 000] | No.02 @-01 [OFF - AUTO : 000] |
| No.03 @-02 [OFF - COOL : 000] | No.03 @-02 [OFF - AUTO : 000] |
| No.04 @-03 [OFF - COOL : 000] | No.04 @-03 [OFF - AUTO : 000] |
| No.05 @-04 [OFF - COOL : 000] | No.05 @-04 [OFF - AUTO : 000] |
| No.06 @-05 [OFF - COOL : 000] | No.06 @-05 [OFF - AUTO : 000] |
| No.07 @-06 [OFF - COOL : 000] | |
| No.08 @-07 [OFF - COOL : 000] | |
| No.09 @-08 [OFF - COOL : 000] | |
| No.10 @-09 [OFF - COOL : 000] | |
| No.11 @-10 [OFF - COOL : 000] | |
| No.12 @-11 [OFF - COOL : 000] | |
| No.13 @-12 [OFF - COOL : 000] | |
| No.14 @-13 [OFF - COOL : 000] | |
| No.15 @-14 [OFF - COOL : 000] | |
| No.16 @-15 [OFF - COOL : 000] | |

- After entering the ID and password, the air condition and ventilation products currently connected are displays as shown in the picture.
- "A" part displays the number of air condition and ventilation products are currently connected.
- When you would like to control a product ① Select the product – ② Set the address – ③ Command ON/OFF – ④ Select the mode – ⑤ Click on check to control the product.
- When you would like to check the current status ⑥ Click on Reload and you will be able to check the current indoor unit status in the "B" part.
- When you would like to change the IP, click on [Set up Network place] to change the IP.

A Information of the setting up

① Network place IP address : 192.168.1.100
Gateway : 192.168.1.1
Subnet mask : 255.255.255.0

② SVCnet Server IP address : 192.168.2.100 (port 80)
Time between transfers [sec] : 3600
Site code : M00D00S0A0
Site name : test_site

③ MAC address 0,8,DC,C,0,1 [BNU-LW No. 0]

④ Version hardware : 1.0 // firmware : 1.1

B Network place

IP address . . .

Gateway . . .

Subnet mask . . .

C Connection of SVCnet

IP address //port . . . //

Time between transfers : : (HH:MM:SS)

Site code

Site name

BNU-LW No.

D Password

- A:** ① It displays the current IP, Gateway, Subnet mask information.
② When you would like to use the SVCnet Server, it displays the SVCnet Server information.
③ It displays the MAC address information.
④ It displays the current version information of the BNU-LW.

B: When you would like to change the IP and Gateway, Subnet mask information, press the Edit button next to the information you would like to change.

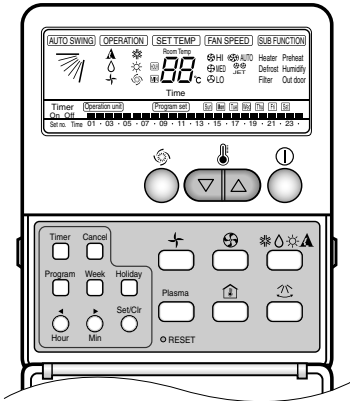
C: This is the space to enter the SVCnet Server information to connect. SVCnet Server is the service that monitors the air conditioner status connected to BNU-LW through the LAN in the future by the LG Electronics Service Center to provide early notification in case of a problem.

D: In order to prevent the network or arbitrary change, a security function has been applied for you to enter the initial login password to change the network setting.

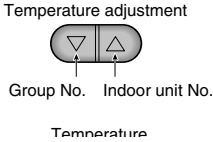
Setting the indoor unit address

Setting the indoor unit address

When using the wired remote controller

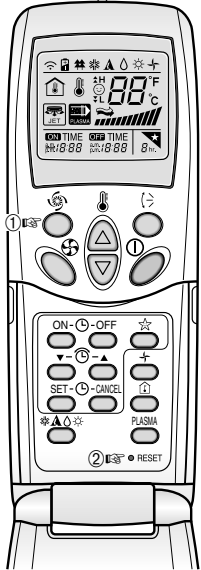


1. Press the week day and reservation set/cancel buttons simultaneously for 3 seconds.
2. By using the temperature adjustment button, set the indoor unit address.
Setting range: 00~FF
3. When you press the week day and reservation set/cancel buttons simultaneously for 3 seconds, the address setting is completed.

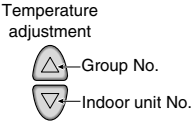


When using the wireless remote controller

Address setting mode



1. ① Press the top left button for more than 3 seconds. ② While the top left button pressed, press the Reset button .
※ The wireless remote controllers have different shapes according to the model.
2. By using the temperature adjustment button, set the indoor unit address.
Setting range: 00~FF
3. After setting the address, press the ON/OFF button toward the indoor unit 1 time.
4. The indoor unit will display the set address to complete the address setting. (The address display time and method can differ by the indoor unit type.)
5. Reset the remote controller to use the general operation mode.

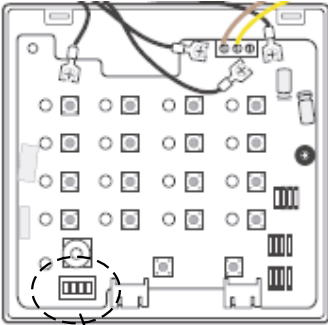


Address check mode

1. With the top right button pressed, press the Reset button. (Press the left button for more than 3 seconds.)
2. Press the ON/OFF button toward the indoor unit 1 time, and the indoor unit will display the set address in the display window. (The address display time and method can differ by the indoor unit type.)
3. Reset the remote controller to use the general operation mode.

※ The above function might not work for some remote controllers depending on the manufactured date of the wired/wireless remote controller.
It is not relevant for the consumer use and you can set the address with a remote controller that has the address setting functionality during the installation.

Interfacing with simple central controller



How to interface with simple central controller

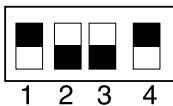
- When interfacing with simple central controller, turn the DIP S/W No. 2 of the simple central controller ON.
- Set the rotary S/W to the group address of the indoor unit you would like to control.



How to set PI-485

How to set PI-485

- BNU-LW uses LGAP communication protocol.
You can set the DIP S/W No. 1 and No. 4 of PI-485 ON.

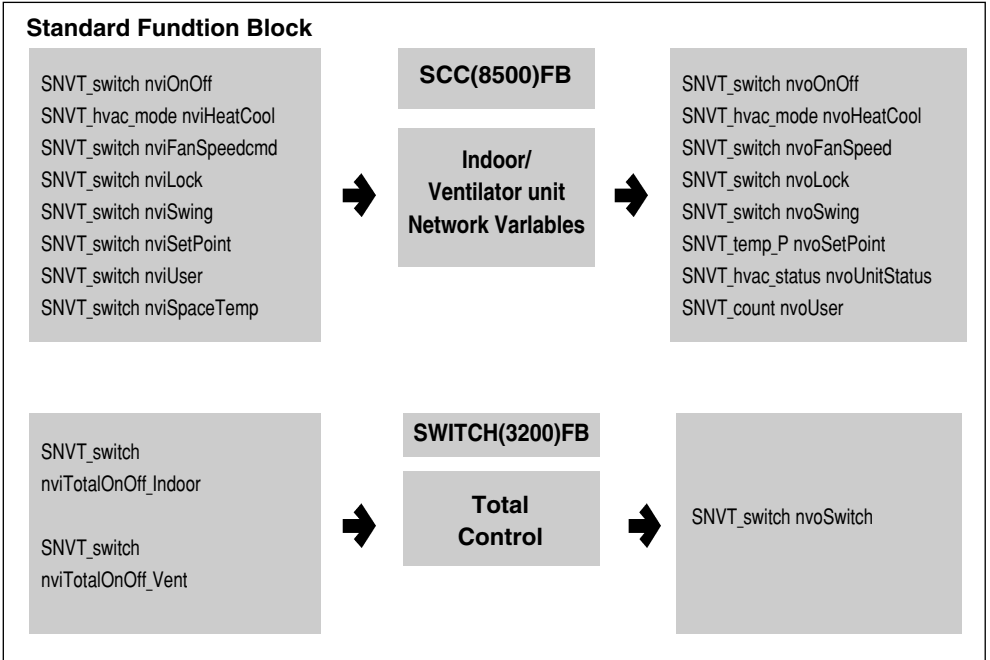


Appendix

- The appendix carries information necessary for interfacing with BMS and not necessary for actual installation.

A/C Objects

Standard Function Block



| Control | Monitoring |
|---|---|
| On/Off command | On/Off status monitoring |
| Mode selection command | Mode status monitoring |
| Fan level selection command | Fan level status monitoring |
| Indoor unit lock command | Lock status monitoring |
| Fan direction command | Fan direction status monitoring |
| Temperature setting command | Temperature setting status monitoring |
| Ventilation additional function command (Only applies for ventilation product) | Current temperature monitoring |
| Air conditioner total On/Off control | Error display |
| Ventilation total On/Off control | Ventilation additional function status monitoring (Only applies for ventilation product) |

- You can enable control and monitoring as shown in the figure for one air conditioner/ventilation unit.
- The network variable can differ from the actual.
(Refer to the XIF file for correct network variable.)

Air conditioner control/monitoring point

| Point No. | Name | Object Name (nn: Air conditioner and ventilation group/indoor unit address) | Object Type | Unit | | | | | | | | |
|-----------|--------------------------|--|-------------|----------|---|--------|---------|--------|--------|---------------|--|-----------|
| | | | | code 0 | code 1 | code 2 | code 3 | code 4 | code 5 | code 9 | | |
| 1 | ON/OFF (setting) | SNVT_switch nviOnOff_nn | input | Stop | Operation | | | | | | | |
| 2 | ON/OFF (status) | SNVT_switch nvoOnOff_nn | output | Stop | Operation | | | | | | | |
| 3 | Lock (setting) | SNVT_switch nviLock_nn | input | Cancel | Setting | | | | | | | |
| 4 | Lock (status) | SNVT_switch nvoLock_nn | output | Cancel | Setting | | | | | | | |
| 5 | Operation Mode (setting) | SNVT_hvac_modenviHeatCool_nn | input | Auto | Heating | | Cooling | | | Dehumidifying | | Fan |
| 6 | Operation Mode (status) | SNVT_hvac_mode nviHeatCool_nn | output | Auto | Heating | | Cooling | | | Dehumidifying | | Fan |
| 7 | Swing(setting) | SNVT_switch nviSwing_nn | input | Cancel | Setting | | | | | | | |
| 8 | Swing(status) | SNVT_switch nvoSwing_nn | output | Cancel | Setting | | | | | | | |
| 9 | Fan speed(setting) | SNVT_switch nviFanSpeedCmd_nn | input | | Low | Med | High | | | Auto | | Super Low |
| 10 | Fan speed(status) | SNVT_switch nvoFanSpeed_nn | output | | Low | Med | High | | | Auto | | Super Low |
| 11 | Set Room Temperature | SNVT_temp_p nviSetPointCmd_nn | input | °C | | | | | | | | |
| 12 | Set Room Temperature | SNVT_temp_p nvoSetPoint_nn | output | °C | | | | | | | | |
| 13 | Room Temperature | SNVT_temp_p nvoSpaceTemp_nn | output | °C | | | | | | | | |
| 14 | Error Code | SNVT_hvac_status nvoUnitStatus_nn | output | no error | Refer to the LG Air Conditioner Error Code. | | | | | | | |

Ventilation control/monitoring point

| Point No. | Name | Object Name (nn: Air conditioner and ventilation group/indoor unit address) | Object Type | Unit | | | | | | |
|-----------|--------------------------|--|-------------|---|---------------|------------|-----------|--------|--------|--------|
| | | | | code 0 | code 1 | code 2 | code 3 | code 5 | code 9 | |
| 1 | ON/OFF (setting) | SNVT_switch nviOnOff_nn | input | Stop | Operation | | | | | |
| 2 | ON/OFF (status) | SNVT_switch nvoOnOff_nn | output | Stop | Operation | | | | | |
| 3 | Lock (setting) | SNVT_switch nviLock_nn | input | Cancel | Setting | | | | | |
| 4 | Lock (status) | SNVT_switch nvoLock_nn | output | Cancel | Setting | | | | | |
| 5 | Operation Mode (setting) | SNVT_hvac_modenviHeatCool_nn | input | Auto | Heat exchange | | | | | Normal |
| 6 | Operation Mode (status) | SNVT_hvac_mode nviHeatCool_nn | output | Auto | Heat exchange | | | | | Normal |
| 7 | Fan speed(setting) | SNVT_switch nviFanSpeedCmd_nn | input | | Low | High | Very high | | | |
| 8 | Fan speed(status) | SNVT_switch nvoFanSpeed_nn | output | | Low | High | Very high | | | |
| 9 | Error Code | SNVT_hvac_status nvoUnitStatus_nn | output | Refer to the LG Air Conditioner Error Code. | | | | | | |
| 10 | User Mode(setting) | SNVT_count nviUser_nn | output | | Quick | Power save | heat | | | |
| 11 | User Mode(status) | SNVT_count nvoUser_nn | output | | Quick | Power save | heat | | | |

Network variables

1) Individual operation/stop input/output (Air conditioner/ventilation)

| | | |
|--------|-----------|--|
| Input | Function | Operation/stop input |
| | Using NV | Network input variable : SNVT_switch nviOnOff_n |
| | Operation | It controls the operation/stop of each product (air conditioner/ventilation) |
| Output | Function | Operation/stop status display |
| | Using NV | Network output variable : SNVT_switch nvoOnOff_n |
| | Operation | It monitors the operating status of each product (air conditioner/ventilation) |

Valid Range

| NV | Filed | Operation |
|-------------------------------|---------------|---|
| SNVT_switch (Index : 95) | value | not used (set in 0% usually) |
| | state | 0 = Air conditioner/ventilation product OFF |
| | | 1 = Air conditioner/ventilation product ON |
| | Default Value | |

2) Operating mode input/output (Air conditioner/ventilation)

| | | |
|--------|-----------|---|
| Input | Function | Operating mode command input |
| | Using NV | Network input variable : SNVT_hvac_mode nviHeatCool_n |
| | Operation | It controls the operating mode of each air conditioner/ventilation product. |
| Output | Function | Operating mode status display |
| | Using NV | etwork output variable : SNVT_hvac_mode nvoHeatCool_n |
| | Operation | It monitors the operating status of each air conditioner/ventilation product. |

Valid Range

| NV | Operation |
|-----------------------------------|--|
| SNVT_hvac_mode (Index : 108) | HVAC_AUTO : 0 = AUTO mode(air conditional), Auto (ventilation) |
| | HVAC_HEAT : 1 = Heat mode(air conditional), heat exchange(ventilation) |
| | HVAC_COOL : 3 = Cool mode (cool) |
| | HVAC_PRE_COOL: 5 = Dry mode (dehumidification) |
| | HVAC_FAN_ONLY: 9 = Fan mode (fan) normal ventilation |
| | Default Value |

3) Fan level command input/output (Air conditioner/ventilation)

| | | |
|--------|-----------|---|
| Input | Function | Fan level command input |
| | Using NV | Network input variable : SNVT_switc nviFanSpeedCmd_n |
| | Operation | It controls the fan level of each indoor unit. |
| Output | Function | Fan level status display |
| | Using NV | Network output variable : SNVT_switch nvoFanSpeed_n |
| | Operation | It monitors the fan level of each product (air conditioner/ventilation) |

Valid Range

| NV | Filed | Operation |
|-------------------------------|---------------|--|
| SNVT_switch (Index : 95) | value | 1: Air conditioner, ventilation low fan |
| | | 2: Air condition med fan, ventilation high fan |
| | | 3: Air condition high fan, ventilation very high fan |
| | | 4: Air condition, ventilation auto fan |
| | | 5. Air conditioner super low fan |
| | state | 0: Product not applied, 1: Product applied |
| | Default Value | |

4) Lock input/output (Air conditioner/ventilation)

| | | |
|--------|-----------|---|
| Input | Function | Lock setting command input |
| | Using NV | Network input variable : SNVT_switch nviLock_n |
| | Operation | It controls the lock status of each product (air conditioner/ventilation) |
| Output | Function | Lock status display |
| | Using NV | Network output variable : SNVT_switch nvoLock_n |
| | Operation | It monitors the lock status of each product (air conditioner/ventilation) |

Valid Range

| NV | Filed | Operation |
|-------------------------------|---------------|--|
| SNVT_switch (Index : 95) | value | not used (set in 0% usually) |
| | state | 0 = Air conditioner/ventilation product lock OFF |
| | | 1 = Air conditioner/ventilation product lock ON |
| | Default Value | |

5) Fan direction auto input/output (Only applies to air conditioner)

| | | |
|--------|-----------|---|
| Input | Function | Fan direction auto command input |
| | Using NV | Network input variable : SNVT_switch nviSwing_n |
| | Operation | It controls the fan direction of each product (air conditioner/ventilation) |
| Output | Function | Fan direction auto status display |
| | Using NV | Network output variable : SNVT_switch nvoSwing_n |
| | Operation | It monitors the fan direction of each product (air conditioner/ventilation) |

Valid Range

| NV | Filed | Operation |
|-------------------------------|---------------|---|
| SNVT_switch (Index : 95) | value | not used (set in 0% usually) |
| | state | 0 = Fan direction fixed for air conditioner product |
| | | 1 = Fan direction auto for air conditioner product |
| | Default Value | |

6) Temperature setting input/output (Only applies to air conditioner)

| | | |
|--------|-----------|---|
| Input | Function | Set temperature range input |
| | Using NV | Network input variable : SNVT_switch nviSetPoint_n |
| | Operation | It controls the temperature setting of each product (air conditioner/ventilation) |
| Output | Function | Set temperature range status display |
| | Using NV | Network output variable : SNVT_switch nvoSetPoint_n |
| | Operation | It monitors the set temperature of each product (air conditioner/ventilation) |

Valid Range

| NV | Operation |
|-------------------------------|--|
| SNVT_switch (Index : 95) | At Cool mode : 18 ~ 30°C |
| | At Heat mode : 18 ~ 30°C |
| | At Dry mode and Fan mode : Not available |
| | Default Value |

7) Indoor temperature status display (Only applies to air conditioner)

| | | |
|--------|-----------|--|
| Output | Function | Indoor temperature status display |
| | Using NV | Network output variable : SNVT_switch nvoSpaceTemp_n |
| | Operation | It monitors the indoor temperature. |

Valid Range

| NV | Operation | |
|-------------------------------|---------------|----------------------------------|
| SNVT_switch (Index : 95) | | At Cool mode : 10 ~ 40°C |
| | | At Heat mode : 10 ~ 40°C |
| | | At Dry, Fan mode : Not available |
| | Default Value | |

8) Error output (Air conditioner/ventilation)

| | | |
|--------|-----------|--|
| Output | Function | Error status display |
| | Using NV | Network input variable : SNVT_hvac_Status nvoUnitStatus_n |
| | Operation | It monitors the error status of each product (air conditioner/ventilation) |

Valid Range

| NV | Filed | Operation |
|--------------------------------|-----------------------|----------------------------------|
| SNVT_switch (Index : 112) | Mode | Currently operating mode display |
| | Heat_output_primary | Not used |
| | Heat_output_Secondary | Not used |
| | Cool_output | Not used |
| | Cool_output | Not used |
| | Econ_output | Not used |
| | fan_output | Not used |
| | In_alarm | Error code display |

* Refer to the Error Code table of the product manual for the error code.

9) Ventilation function command (Only applies to ventilation product)

| | | |
|--------|-----------|---|
| Input | Function | Ventilation user operating mode input |
| | Using NV | Network input variable : SNVT_count nviUser_n |
| | Operation | It controls the product function of each ventilation product. |
| Output | Function | Ventilation user operating mode status |
| | Using NV | Network output variable : SNVT_count nvoUser_n |
| | Operation | It monitors the function status of each ventilation product. |

Valid Range

| NV | Filed | Operation |
|-----------------------------|-------|---------------------|
| SNVT_count (Index : 8) | value | 0 = Not used |
| | | 1 = Quick mode |
| | | 2 = Power save mode |
| | | 3 = Heat |

10) Total operation/stop air conditioner indoor unit

| | | |
|-------|-----------|---|
| Input | Function | Total stop command input |
| | Using NV | Network input variable : SNVT_switch nviTotalONOFF_indoor |
| | Operation | It turns ON or OFF all the indoor units. |

11) Total operation/stop ventilation indoor unit

| | | |
|-------|-----------|---|
| Input | Function | Total stop command input |
| | Using NV | Network input variable : SNVT_switch nviTotalONOFF_indoor |
| | Operation | It turns ON or OFF all the ventilation units. |

Valid Range

| NV | Filed | Operation |
|-------------------------------|---------------|------------------------------|
| SNVT_switch (Index : 95) | value | not used |
| | state | 1 = All ON indoor/Vent unit |
| | | 0 = All OFF indoor/Vent unit |
| | Default Value | |

