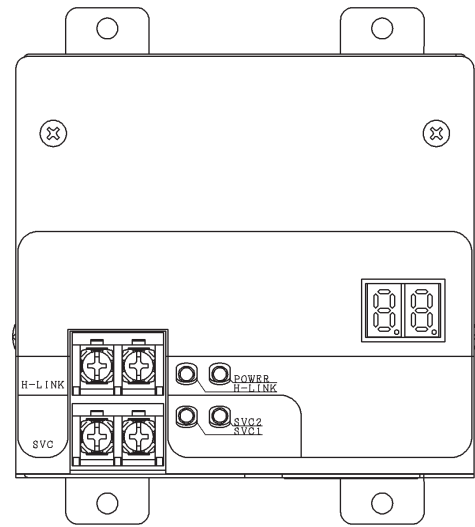


Installation & Maintenance Manual

LON ADAPTER

- CLW01 -



IMPORTANT:

*READ AND UNDERSTAND
THIS MANUAL BEFORE USING
THIS LON ADAPTER.
KEEP THIS MANUAL FOR
FUTURE REFERENCE.*

P5415730

Important Notice

- Johnson Controls Inc. pursues a policy of continuing improvement in design and performance in its products. As such, Johnson Controls Inc. reserves the right to make changes at any time without prior notice.
- Johnson Controls Inc. cannot anticipate every possible circumstance that might involve a potential hazard.
- This LON adapter is designed for standard air conditioning applications only.
Do not use this unit for anything other than the purposes for which it was intended for.
- The installer and system specialist shall safeguard against leakage in accordance with local pipefitter and electrical codes. The following standards may be applicable, if local regulations are not available. International Organization for Standardization: (ISO 5149 or European Standard, EN 378). No part of this manual may be reproduced in any way without the expressed written consent of Johnson Controls Inc.
- This LON adapter will be operated and serviced in the United States of America and comes with a full complement of the appropriate Safety, Danger, Caution, and Warnings.
- If you have questions, please contact your distributor or dealer.
- This manual provides common descriptions, basic and advanced information to maintain and service this LON adapter which you operate as well for other models.
- This manual should be considered as a permanent part of the air conditioning equipment and should remain with the air conditioning equipment.

Product Inspection upon Arrival

1. Upon receiving this product, inspect it for any damages incurred in transit. Claims for damage, either apparent or concealed, should be filed immediately with the shipping company.
2. Check the model number, electrical characteristics (power supply, voltage, and frequency rating), and any accessories to determine if they agree with the purchase order.
3. The standard utilization for this product is explained in these instructions. Use of this product for purposes other than what it designed for is not recommended.
4. Please contact your local agent or contractor as any issues involving installation, performance, or maintenance arise. Liability does not cover defects originating from unauthorized modifications performed by a customer without the written consent of Johnson Controls, Inc. Performing any mechanical alterations on this product without the consent of the manufacturer will render your warranty null and void.

1. Safety Summary



IMPORTANT:

READ AND UNDERSTAND THIS MANUAL BEFORE USING THIS LON ADAPTER.
KEEP THIS MANUAL FOR FUTURE REFERENCE.


IMPORTANT NOTICE:

- No part of this manual may be reproduced without the expressed written permission of Hitachi or Johnson Controls, Inc.
- Signal words are used to identify levels of hazard seriousness. Definitions for identifying hazard levels are provided below with their respective signal words.

Signal Words

 WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates information considered important, but not hazard-related (for example, messages relating to property damage).

General Precautions

 WARNING	To reduce the risk of serious injury or death, read these instructions thoroughly and follow all warnings or cautions included in all manuals that accompanied the product and are attached to the unit. <i>Refer back to these safety instructions as needed.</i>
---	--

- This system, including this controller, should be installed by personnel certified by Johnson Controls, Inc. Personnel must be qualified according to local, state and national building and safety codes and regulations. Incorrect installation could cause leaks, electric shock, fire or an explosion. In areas where Seismic Performance requirements are specified, the appropriate measures should be taken during installation to guard against possible damage or injury that might occur in an earthquake.
If the unit is not installed correctly, injuries may occur because of a falling unit.
- Use appropriate Personal Protective Equipment (PPE), such as gloves, protective goggles and electrical protection equipment and tools suited for electrical operation purposes.
- When transporting, be careful when picking up, moving and mounting these units. Although the controller may be packed using plastic straps, do not use them for transporting from one location to another. Do not stand on or put any material on the controller.
- When installing the controller cabling to the units, do not touch or adjust any safety devices inside the indoor or outdoor units. All safety features, disengagement, and interlocks must be in place and functioning correctly before the equipment is put into operation. If these devices are improperly adjusted or tampered with in any way, a serious accident can occur. Never bypass, wire around, or jump-out any safety device or switch.
- Use only Johnson Controls recommended, provided as standardized, or replacement parts.
- Johnson Controls will not assume any liability for injuries or damage caused by not following steps outlined or described in this manual. Unauthorized modifications to Johnson Controls products are prohibited as they...
 - May create hazards which could result in death, serious injury or equipment damage;
 - Will void product warranties;
 - May invalidate product regulatory certifications;
 - May violate OSHA standards;

NOTICE	Take the following precautions to reduce the risk of property damage.
---------------	---

- Do not touch the main circuit board or electronic components in the controller or remote devices. Make sure that dust and/or steam does not accumulate on the circuit board.
- When installing the unit in a hospital or other facility where electromagnetic waves are generated from nearby medical and/or electronic devices, be prepared for Electromagnetic Interference (EMI). Do not install where the waves can directly radiate into the electrical box, controller cable, or controller. Inverters, appliances, high-frequency medical equipment, and radio communications equipment may cause the unit to malfunction. The operation of the unit may also adversely affect these same devices. Install the unit at least 10 ft. (approximately 3m) away from such devices.

- If there is a source of electromagnetic interference near the power source, install noise suppression equipment (filter).
- During the test run, check the unit's operation temperature. If the unit is used in an environment where the temperature exceeds the operation boundary, it may cause severe damage. Check the operation temperature boundary in the manual. If there is no specified temperature, use the unit within the operation temperature boundary of 35° to 104°F (0 to 40°C).
- Read installation and appropriate user manuals for connection with PC or peripheral devices. If a warning window appears on the PC, the product stops, does not work properly or works intermittently, immediately stop using the equipment.

Installation Precautions

WARNING

Take the following precautions to reduce the risk of electric shock, fire or explosion resulting in serious injury or death:

- If the remote sensors are not used with this controller, then do not install this controller...
 - In a room where there is no thermostat.
 - Where the unit is exposed to direct sunshine or direct light.
 - Where the unit will be in close proximity to a heat source.
 - Where hot/cold air from the outdoors, or a draft from elsewhere (such as air vents, diffusers or grilles) can affect air circulation.
 - In areas with poor air circulation and ventilation.
- Perform a test run using the controller to ensure normal operation. Safety guards, shields, barriers, covers, and protective devices must be in place while the compressor/unit is operating. During the test run, keep fingers and clothing away from any moving parts.

After installation work for the system has been completed, explain the "Safety Precautions," use, and maintenance of the unit to the customer according to the information in all manuals that accompanied the system. All manuals and warranty information must be given to the user or left near the Indoor Unit.

Electrical Precautions

WARNING

Take the following precautions to reduce the risk of electric shock, fire or explosion resulting in serious injury or death:

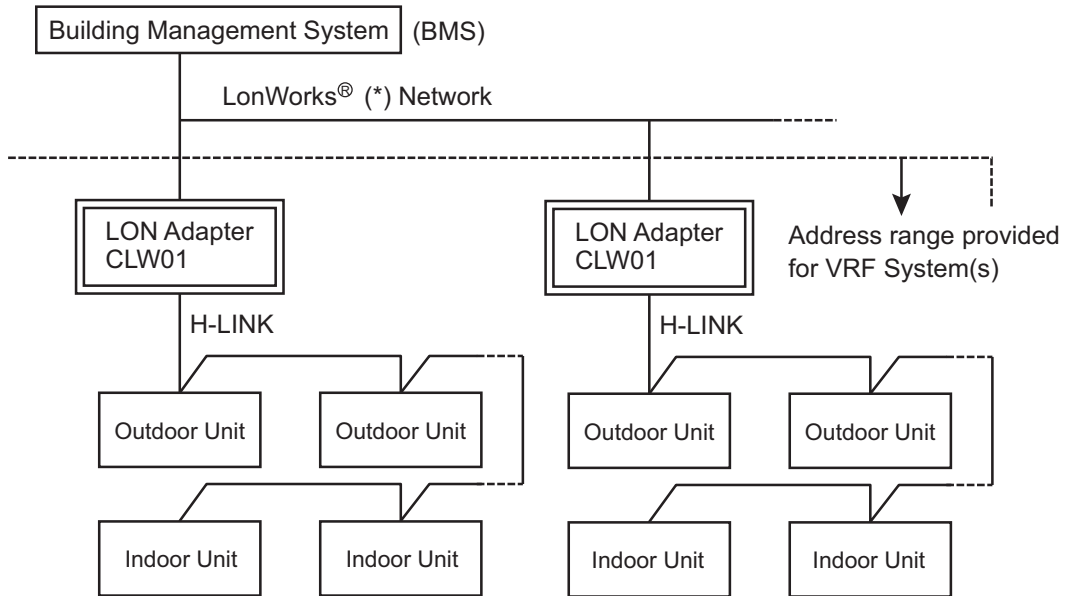
- Only use electrical protection equipment and tools suited for this installation.
- Insulate the wired controller against moisture and temperature extremes.
- Use specified cables between units and the controller.
- Communication cabling shall be a minimum of 18-Gauge, 2-Conductor, Stranded Copper. Shielded cable must be considered for applications and routing in areas of high EMI and other sources of potentially excessive electrical noise to reduce the potential for communication errors. When shielded cabling is applied, proper bonding and termination of the cable shield is required as per Johnson Controls guidelines. Plenum and riser ratings for communication cables must be considered per application and local code requirements.
- The polarity of the input terminals is important, so be sure to match the polarity when using contacts that have polarity.
- Highly dangerous electrical voltages may be used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause serious injury or death.
- Before installing the controller or remote devices, ensure that the indoor and outdoor unit operation has been stopped. Further, be sure to wait at least five minutes before turning off the main power switch to the indoor or outdoor units. Otherwise, water leakage or electrical breakdown may result.
- Do not open the service cover or access panel to the indoor or outdoor units without turning OFF the main power supply. Before connecting or servicing the controller or cables to indoor or outdoor units, open and tag all disconnect switches. Never assume electrical power is disconnected. Check with a meter and equipment.

- Use an exclusive power supply at the controller's rated voltage.
- Be sure to install circuit breakers (ground fault interrupter, isolating switch, molded case circuit breaker, and so forth) with the specified capacity. Ensure that the wiring terminals are tightened securely to recommended torque specifications.
- Clamp electrical wires securely with a cord clamp after all wiring is connected to the terminal block. In addition, run wires securely through the wiring access channel.
- When installing the power lines, do not apply tension to the cables. Secure the suspended cables at regular intervals, but not too tightly.
- Make sure that the terminals do not come into contact with the surface of the electrical box. If the terminals are too close to the surface, it may lead to failures at the terminal connection.
- Do not clean with, or pour water into, the controller as it could cause electric shock and/or damage the unit. Do not use strong detergent such as a solvent. Clean with a soft cloth.
- Check that the ground wire is securely connected. Do not connect ground wiring to gas piping, water piping, lighting conductor, or telephone ground wiring.
- If there are frequent occurrences with blown fuses or flipped circuit breakers, shut down the system immediately and contact your service contractor.

2. System Configuration

The example of the system configuration with the LON adapter is shown in Fig. 2.1.

This installation manual applies to the CLW01 only. As for the other equipments of the system in details, refer to the installation and maintenance manual of the equipment.



(*) LONWORKS® is the Registered Trademark of Echelon Corporation in US and other countries.

Fig. 2.1 Example of System Configuration

3. Outer Dimensions

(Unit: inch(mm))

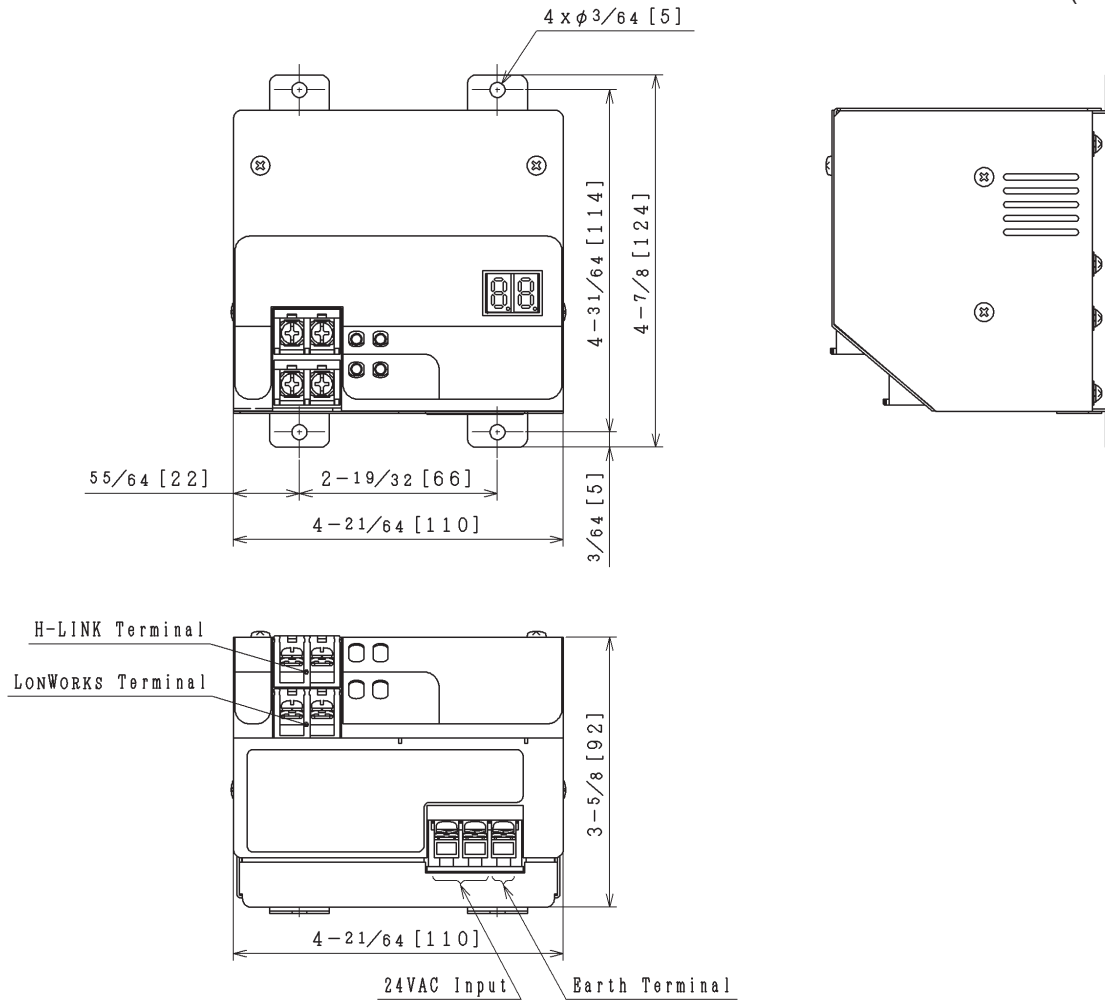


Fig. 3.1 Outer Dimensions

4. Brand Label

Select the accessory brand label according to the production order. (HITACHI or YORK)
 Peel off the Upper Cover's protective film. Attach the accessory brand logo label to this area.

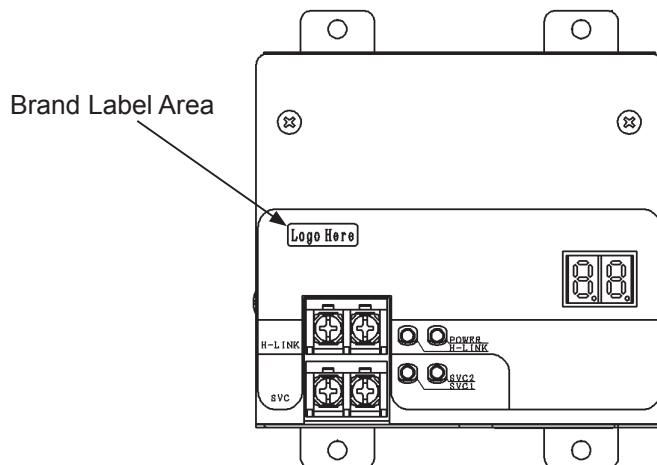


Fig. 4.1 Brand Label Area

5. Parts of LON Adapter

Names of each part of the LON adapter are shown in Fig. 5.1.

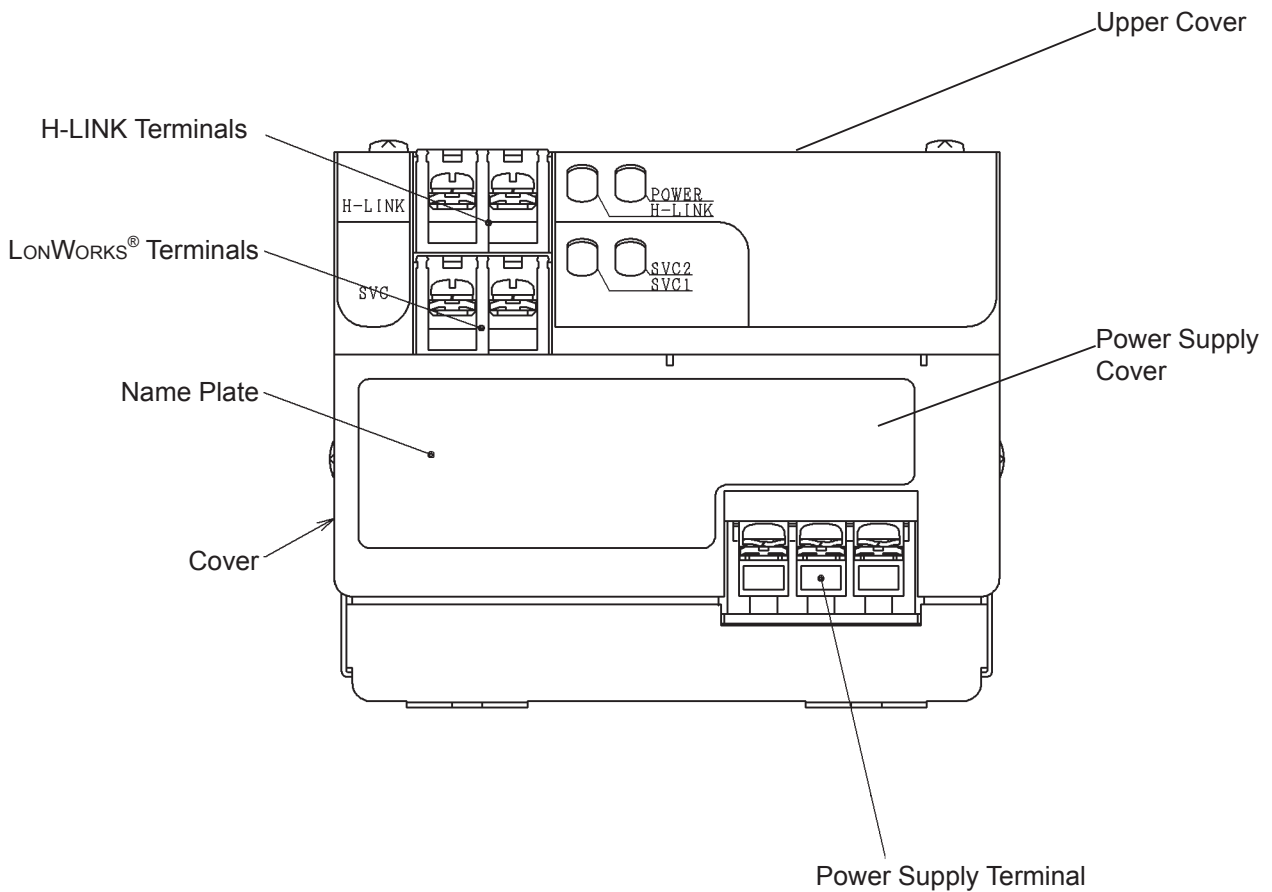
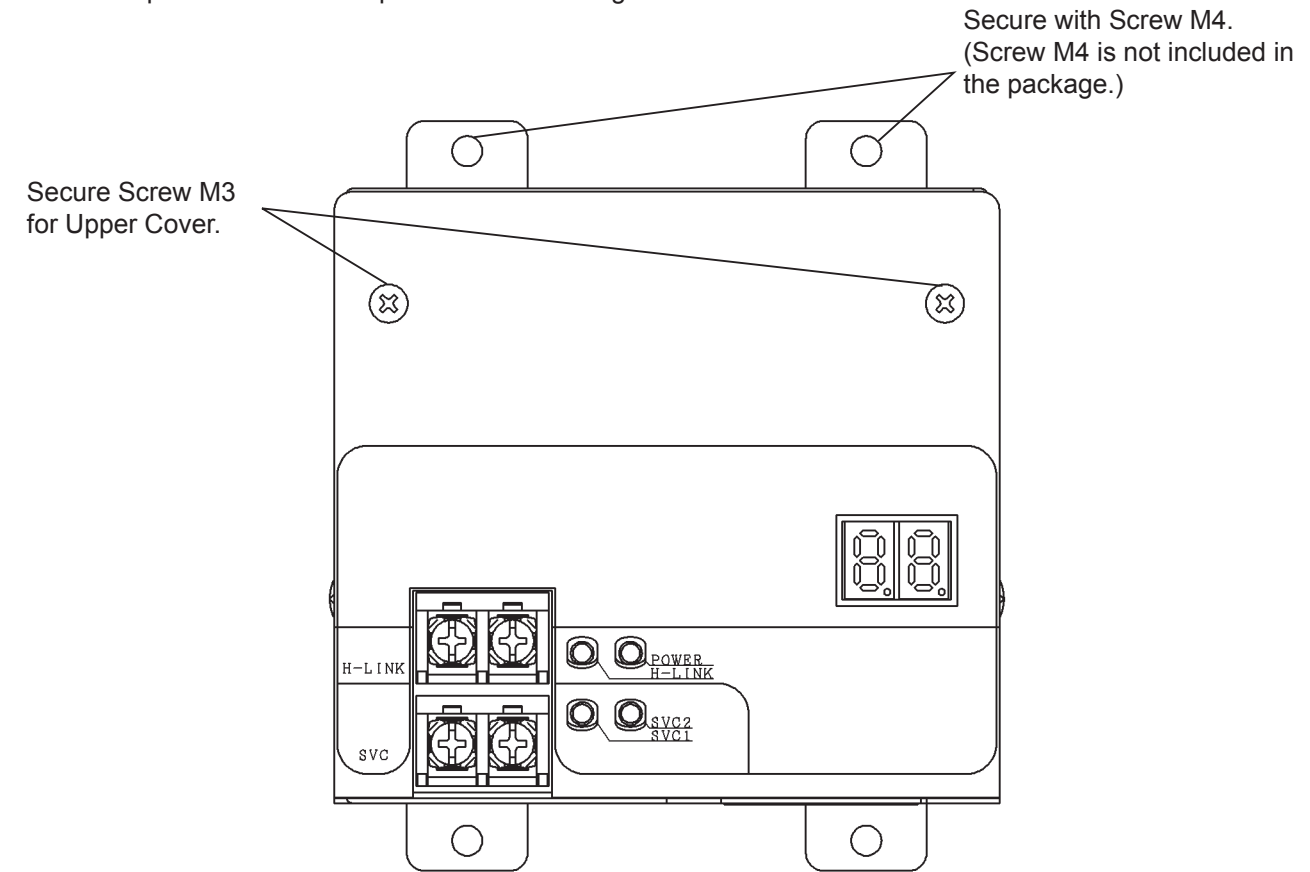


Fig. 5.1 Names of Parts

Fig. 5.2 shows the LON adapter without the Upper Cover. Names of each part are shown below.

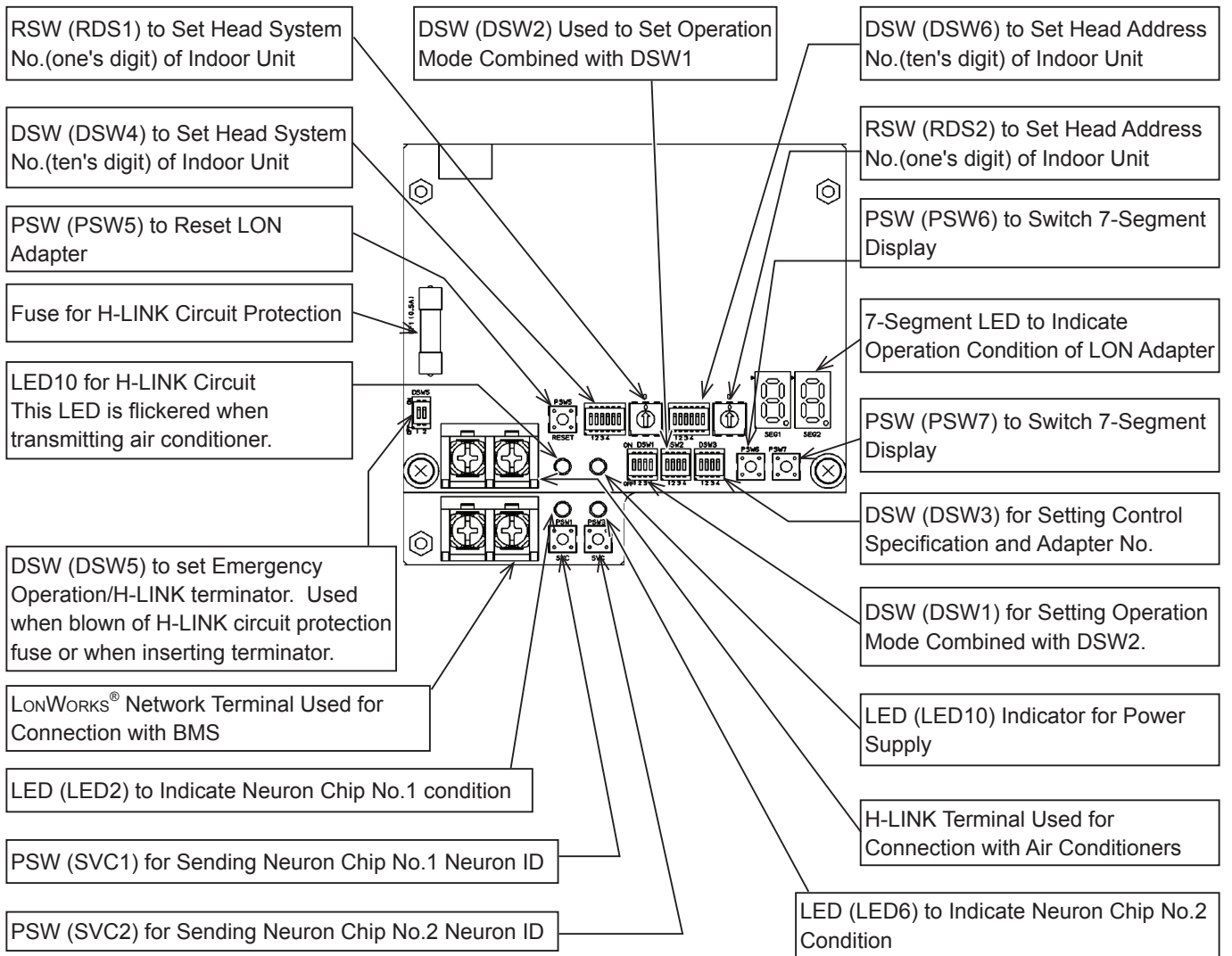


Fig. 5.2 Names of Each Part in LON Adapter

6. Specifications

The hardware specification for the LON adapter is shown in Table 6.1, and the communication specification is shown in Table 6.2 and 6.3.

Table 6.1 Specification for LON Adapter Hardware

Item	Specification
Transceiver	FT5000 Smart Transceiver
Outer Dimension <WxDxH>	4-21/64 x 4-7/8 x 3-5/8 inch (110 x 124 x 92 mm) (Except Projection) (when attached to wall vertically)
Net Weight	1.5lb (670g)
Rated Power Supply	AC24V ± 10% (60Hz)
Electrical Power Consumption	6W (Max.)
Operating Environment	<ul style="list-style-type: none"> ● Ambient Temperature: 32 ~ 113°F (0 ~ 45°C) ● Ambient Humidity: 25 ~ 80%RH (No Condensation)
Material	SUS430CP
Mounting Method	Attach to wall (vertical) (4-M4 screws (not included in the package) or installed on DIN rail)
Special note	<ol style="list-style-type: none"> 1. For Indoor Installation only. Use only in installation rain-proof and dust-proof. 2. The operation of LonWorks® Network isn't in the range of warranty. 3. When attaching to DIN rail, DIN rail adapter (Sold separately. not included in the package) will be required.

Table 6.2 Communication Specification for H-LINK

Item	Specification
Communication Unit	Outdoor Unit, Indoor Unit
Communication Line	Non-Polar Two Wires
Communication Method	Half-Duplex Communication
Synchronous Method	Start-Stop Synchronization
Communication Speed	9600 bps
Total Length of Connecting Cable	3281ft. (1000m) (Max.)

Table 6.3 Communication Specification for LonWorks®

Item	Specification
Communication Unit	Management Computer
Transmission Protocol	LonTalk Protocol (*)
Access Method	Predicted Persistent CSMA/CD System
Encoding Method	Differential Manchester Code
Communication Speed	78000 bps
Wiring Length	Total Length 3281ft.(1,000m) Max.

(*): LonTalk® is the Registered Trademark of Echelon Corporation in US and other countries.

The number of LON adapters used together in Table 6.4 and the other central controllers used together are shown in Table 6.5.

Table 6.4 Number of Connectable Remote Group

Control Specification	Number of Remote Group which can be Controlled	Number of LON adapters used together to the same H-LINK	Remarks
Standard	64	1	The number of indoor units connectable to same H-LINK is 160 maximum for each control specification.
Option A	64	1	
Option B	32	2	
Option C	16	4	

Table 6.5 Number of Connectable Central Controller

Central Controller	Model	Number Connectable to Same H-LINK	Remarks
Large Central Controller	CCL01(*)	8 units maximum, including all LON adapter(s)	
Mini Central Controller	CCM01(*)		

(*) : Indoor Unit without Remote Control cannot be connected when using together with central controller.
 Do not select Power Supply RUN/STOP (d1 - d3) in the function of the air conditioner when using together with the central controller.

7. Installation Work

In this chapter, the installation method from the LON adapter installation to the power ON (Test Running) is described. The installation procedures are shown in Table 7.1.

Table 7.1 Installation Steps

No.	Items	Contents
1	Selection of Installation Position	Precautions on the installation
2	Installation Procedures	Installation Procedure and its precautions
3	Electrical Wiring Connection	Power Supply and Wiring Procedure for Communication
4	Setting of DIP Switch	Description of DIP Switch and its Setup Method
5	Power Supply	Points to be checked

7.1 Selection for Installation Place

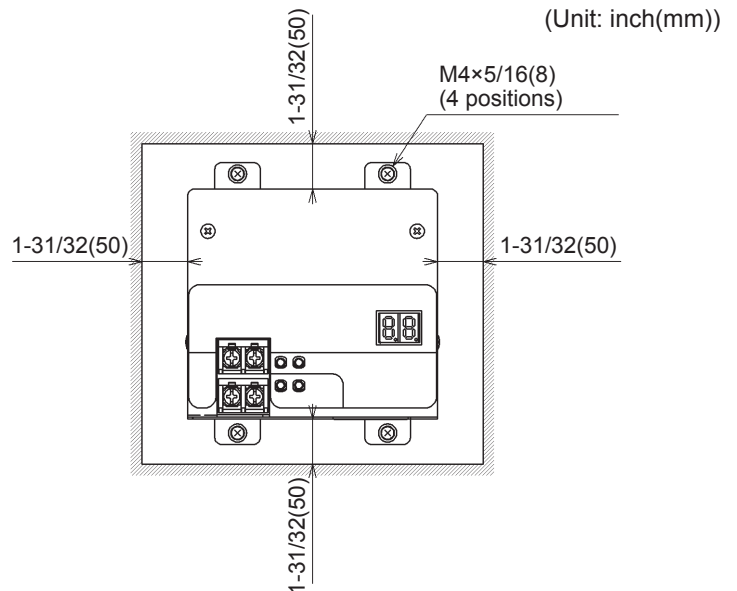
Select the installation place for the LON adapter at such places as;

- (1) described in this installation document under "Safety Summary"
- (2) within the grounded control panel made of metal

7.2 Installation Procedures

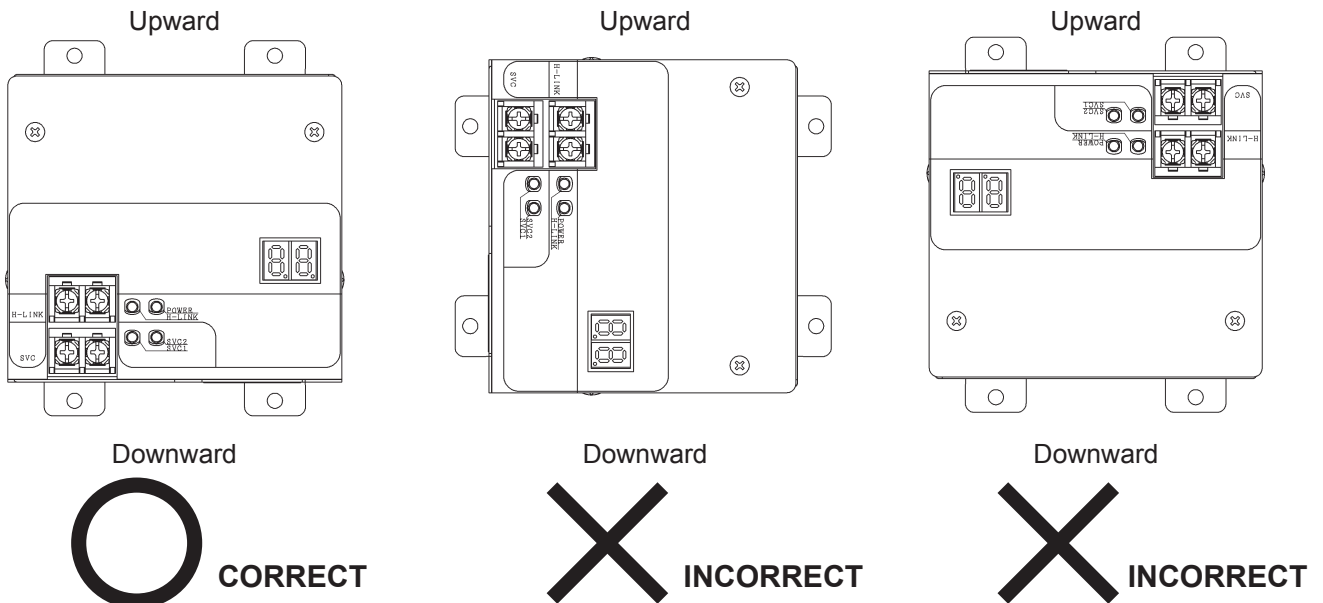
(1) Installation Space

Clear the service space for the LON adapter as shown in the right figure.

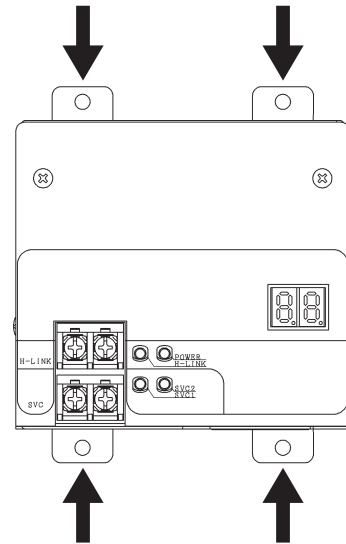


(2) Vertical Installation (On the Wall)

Follow the direction of the LON adapter installation.



- (3) Secure by Screw (M4: not included in the package).
Use the screw (M4) to secure the LON adapter on the wall (4 positions).

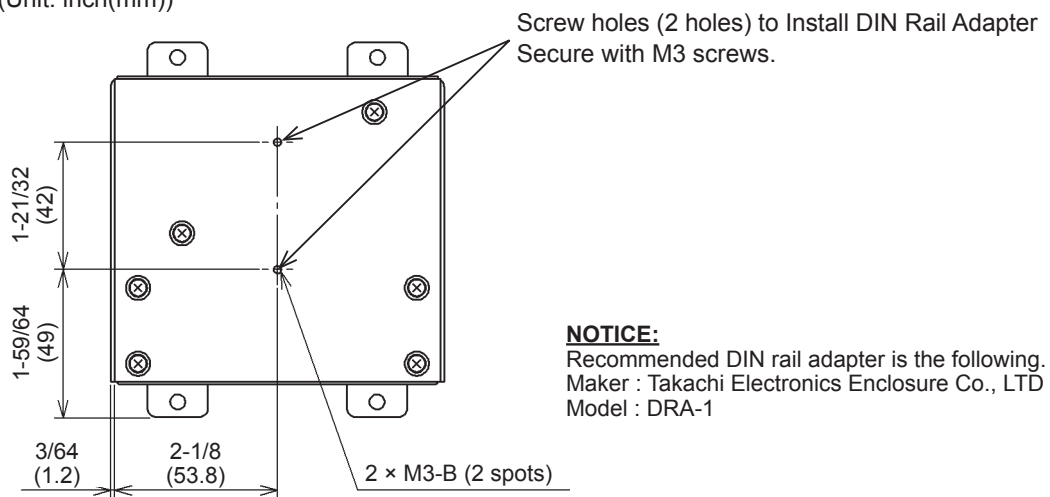


- (4) Secure by DIN Rail Adapter (not included in the package).
Screw the DIN rail adapter with this adapter and secure to the DIN rail.
- (i) Secure 2 screws (M3: not included in the package) from DIN rail adapter in the screw holes of the DIN rail adapter back side. The dimension of the screws for the DIN rail adapter are shown below.

NOTICE:

Be careful not to mistake the front/back, up/down of the DIN rail adapter.
(DIN rail adapter flat surface becomes the joining surface of the LON adapter. The part which has a ledge will be the upper part of the adapter.)

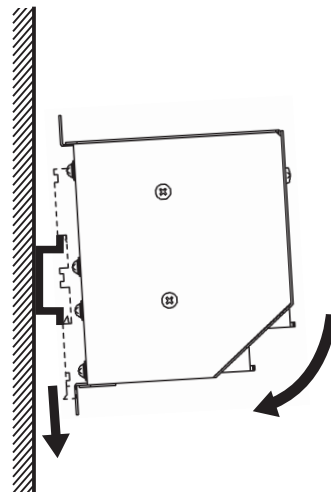
(Unit: inch(mm))



NOTICE:

Recommended DIN rail adapter is the following.
Maker : Takachi Electronics Enclosure Co., LTD
Model : DRA-1

- (ii) Secure the LON adapter to DIN rail.



Insert the adapter in the DIN rail while pulling down the ledge of DIN rail adapter.

8. Electrical Wiring

CAUTION

- Follow all electrical safety guidelines described in this installation document under “Safety Summary”.

- Follow the local codes and regulations, and the advance guidance of the electric power company when performing electrical wiring.
- Perform electrical wiring connection work only by qualified electrician.
- Perform the installation work of the earth leakage breaker and the grounding work according to the local codes and regulations.
- Run the communication cable as short as possible and keep a distance of 5.9 inch (15cm) or more away from alternate current (A/C) power source. If the communication cable is required to be run along the power source line, perform the noise prevention as follows:
 - Run the communication cable or power source through the conduit. (Ground (Earth) one end of the conduit.)
 - Use the shielded cable for the transmission line. (Ground (Earth) one end of the shield.)
- When connecting the wiring, ensure to use the insulated crimp terminal.
Especially, in case of connecting to the power supply cable, use the insulated crimp terminal (accessory). If using the solderless terminals without insulation-coating, it may lead to electric shock or short-circuit because of loose screws.
- Do NOT modify the inner system of the LON adapter. It will cause a malfunction.

8.1 Electrical Wiring Procedure

(1) The following electrical wiring work is required for the LON adapter.

- Power Supply Wiring
- Communication Cable between LON Adapter and Air Conditioners
- Communication Cable between LON Adapter and BMS

(2) Connection Procedures

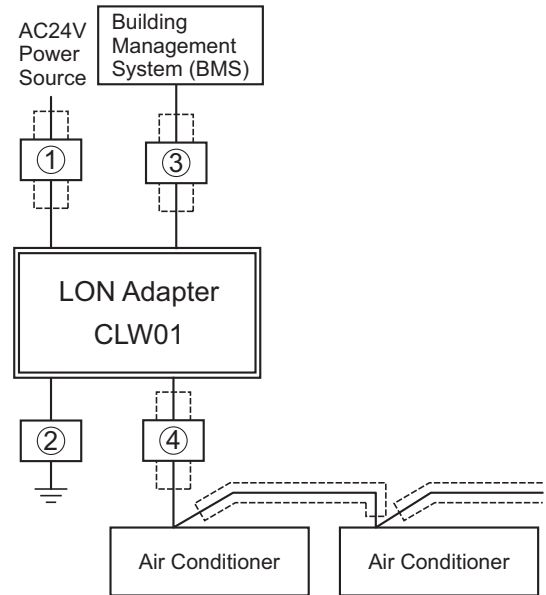


Fig. 8.1 Electrical Wiring Connection Procedures

Table 8.1 Electrical Wiring Specifications

No.	Connection	Cable Specification
1	Power Supply Line for LON Adapter	Cable SPEC: AWG 16(1.25mm ²) to AWG 14(2mm ²) Recommended Cable: 600V CV, CCV, CEV
2	Earth Wiring	Follow the local codes and regulations.
3	LonWorks [®] Network Line	Described in details (*1).
4	Communication Cable for Packaged Air Conditioner (H-LINK)	Described in details (*2).

(*1): Use the cable recommended by Echelon Co..

Also, follow the manufacturer's guidelines for connection to the BMS.

For further details, refer to the manual "FTT - 10A Free Topology Transceiver User's Guide" provided by Echelon Co.. The type and characteristics of wire recommended by Echelon are shown in Table 8.2.

Table 8.2 Cable Type and Characteristics Recommended by Echelon

Cable	Diameter of Wire/ AWG	Electric Resistivity Ω /km	Capacitance nF/km	Vprop % of Light Velocity
Belden 85102 Single/Twist pair, Number of Core 19/29, without Shield, 302°F(150°C)	1.3mm/16	28	56	62
Belden 8471 Single/Twist pair, Number of Core 19/29, without Shield, 140°F(60°C)	1.3mm/16	28	72	55
Level VI 22AWG Twist pair, Single Core, without Shield	0.65mm/22	106	49	67
JY(St)Y2 × 2 × 0.8 4 Lines Spiral Twist, Single Core, with Shield	0.8mm/20.4	73	98	41
TIA568A Category 5 24AWQ Twist Pair	0.51mm/24	168	46	58

In case of using a shielded cable, the cable should be connected to the ground through film resistance of metal, range of 470kΩ, 1/4W (wattage) and accuracy of error under 10% to prevent from building up of static charges.

(*2): H-LINK

Ensure to apply twisted pair cable. Recommended cables are shown in Table 8.3.

Table 8.3 Recommended Cable Types

Cable Specification	Recommended Cable
AWG 18 (0.75mm ²) to AWG 16 (1.25mm ²)	Communication Cable with Shield, Over AWG 18(0.75mm ²) (Equivalent to KPEV-S)

8.2 Electrical Wiring Connection

- (1) Before performing the electrical wiring connection, shut down the power supply and the other control system.
- (2) Loosen the 2 screws securing the Upper Cover to remove the Upper Cover.

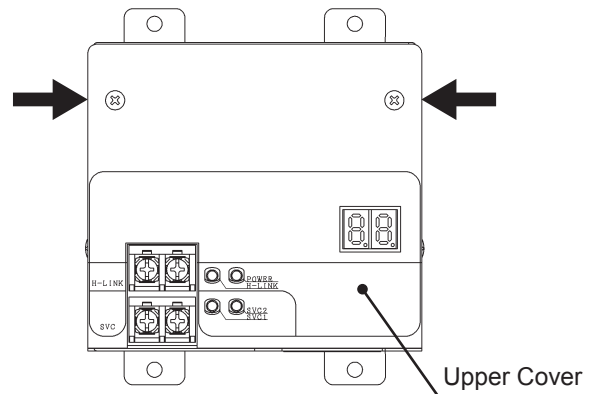


Fig. 8.2 Removing Upper Cover

- (3) Loosen the 1 screw securing the Power Supply Cover to remove the Power Supply Cover.

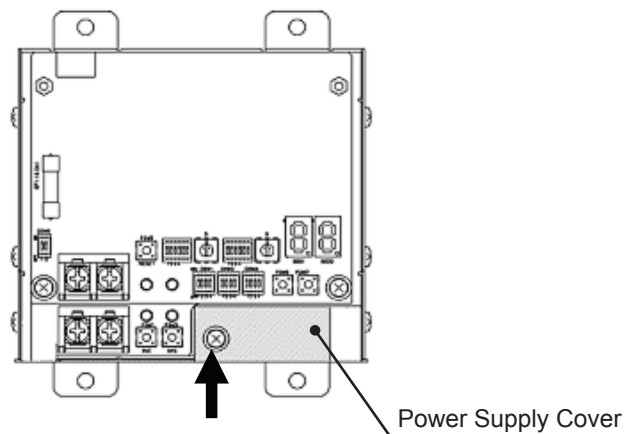
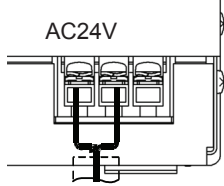
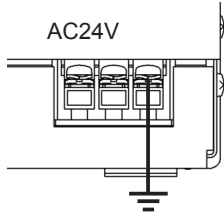
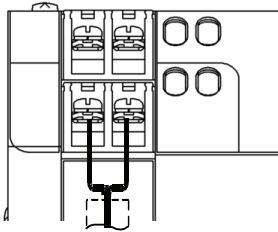
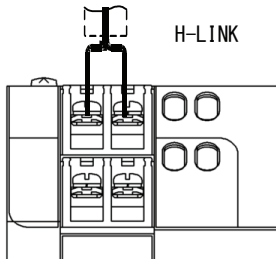


Fig. 8.3 Removing Power Supply Cover

- (4) Connect each wiring according to Table 8.4. The screw's size of the terminal board for the power supply is M3 and the tightening torque is 0.5 N-m.
 And the item "No." in Table 8.4 is applied to that of Table 8.1.

Table 8.4 Electrical Wiring Connection Procedures

Type	Other End for Connection	No.	Electrical Wiring Connection Procedure	Remarks
Power Line	Power Supply Cable for LON Adapter	1	Tightening Torque 0.8 [N-m] 	Always use a insulated crimp terminal (accessory).
	Power Supply Grounding	2	Tightening Torque 0.8 [N-m] 	Always use a insulated crimp terminal (accessory).
Transmission Line	LonWorks® Line	3	Tightening Torque 1.0 ~1.3 [N-m] 	Non-Polar
	H-LINK Line	4	Tightening Torque 1.0 ~1.3 [N-m] 	Non-Polar

- (5) When the wiring connection will be completed, put back the Power Supply Cover first. (Tightening torque of the Power Supply Cover secure screw: 0.63[N-m].)
 (6) Finally, put back the Upper Cover. (Tightening torque of the Upper Cover secure screw is 0.63[N-m].)

9. Test Run

⚠ CAUTION





















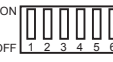


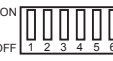




- When performing wiring work, power supply must be completely turned OFF, otherwise it will cause an electric shock, a short circuit or a fire by the fall of a screw.

NOTICE:

- Always turn OFF the power supply when taking off/back the Upper Cover of the LON adapter during Test Run or inspection.
- Except during Test Run or inspection, do not Turn ON the power with the Upper Cover of the LON adaptor opened.

9.1 Switch Setting Procedure

- Perform this setting before turning ON the power.
- Perform the setting of the switch after removing the Upper Cover.

Switch	Pin No.	Setting		Contents	Usage
		DSW1	DSW2	Operation Mode	
DSW1, DSW2 (Operation Mode Setting)	1~4	ON 	ON 	Standard Operation Mode (Factory-Setting)	
		ON 	ON 	Modification Mode for Control Specification	Refer to "9.4 Modifying Control Specification".
		ON 	ON 	Neuron Chip Commission Mode	Refer to "9.5 Adapter Registration (Commissioning) from BMS".
		ON 	ON 	Connected Indoor unit No./ Connected Remote Group No. Display Mode	Refer to "9.6 Checking Recognized Air Conditioner Information".
		ON 	ON 	Data Flash data erasing mode	Refer to "9.7 Erasing Connection Information".
		ON 	ON 	Self-check Mode	Refer to "10.1 Self-Checking".
DSW3 (Control Specification or Device Setting)	1, 2	ON 	Control Spec. : Standard (Factory-Setting)	Refer to "9.4 Modifying Control Specification".	
		ON 	Control Spec. : Option A		
		ON 	Control Spec. : Option B		
		ON 	Control Spec. : Option C		
	3, 4	ON 	Adapter No.1 (Factory-Setting)	Refer to "9.8 Setting of the Adapter No.".	
		ON 	Adapter No.2		
		ON 	Adapter No.3		
		ON 	Adapter No.4		
DSW4 (Head Indoor Unit System No.)	1~6	ON 	System number (ten's digit) of indoor unit which has the lowest system and address number within indoor units where the LON adapter controls	Refer to "9.3 Specifying Air Conditioners that LON Adapter Controls".	
DSW5 (H-LINK Control)	1	ON 	ON: Protection Fuse for H-LINK ...Disable(short-circuited) OFF: Protection Fuse for H-LINK ... Enable (Normal)		
	2	ON 	ON: Terminator Enable OFF: Terminator Disable		
DSW6 (Head Indoor Unit Address No.)	1~6	ON 	Address number (ten's digit) of indoor unit which has the lowest system and address number within indoor units where the LON adapter controls		
RDS1 (Head Indoor Unit System No.)	-		System number (one's digit) of indoor unit which has the lowest system and address number within indoor units where the LON adapter controls	Refer to "9.3 Specifying Air Conditioners that LON Adapter Controls".	
RDS2 (Head Indoor Unit Address No.)	-		Address number (one's digit) of indoor unit which has the lowest system and address number within indoor units where the LON adapter controls		
PSW6/PSW7 (To switch display of 7-segment)			For display switching 7-segment when checking information of air conditioners which are recognized by the LON adapter		
SVC1/SVC2 (For Commission)			For transmission of Neuron ID when BMS registers the LON adapter (Commissioning)		

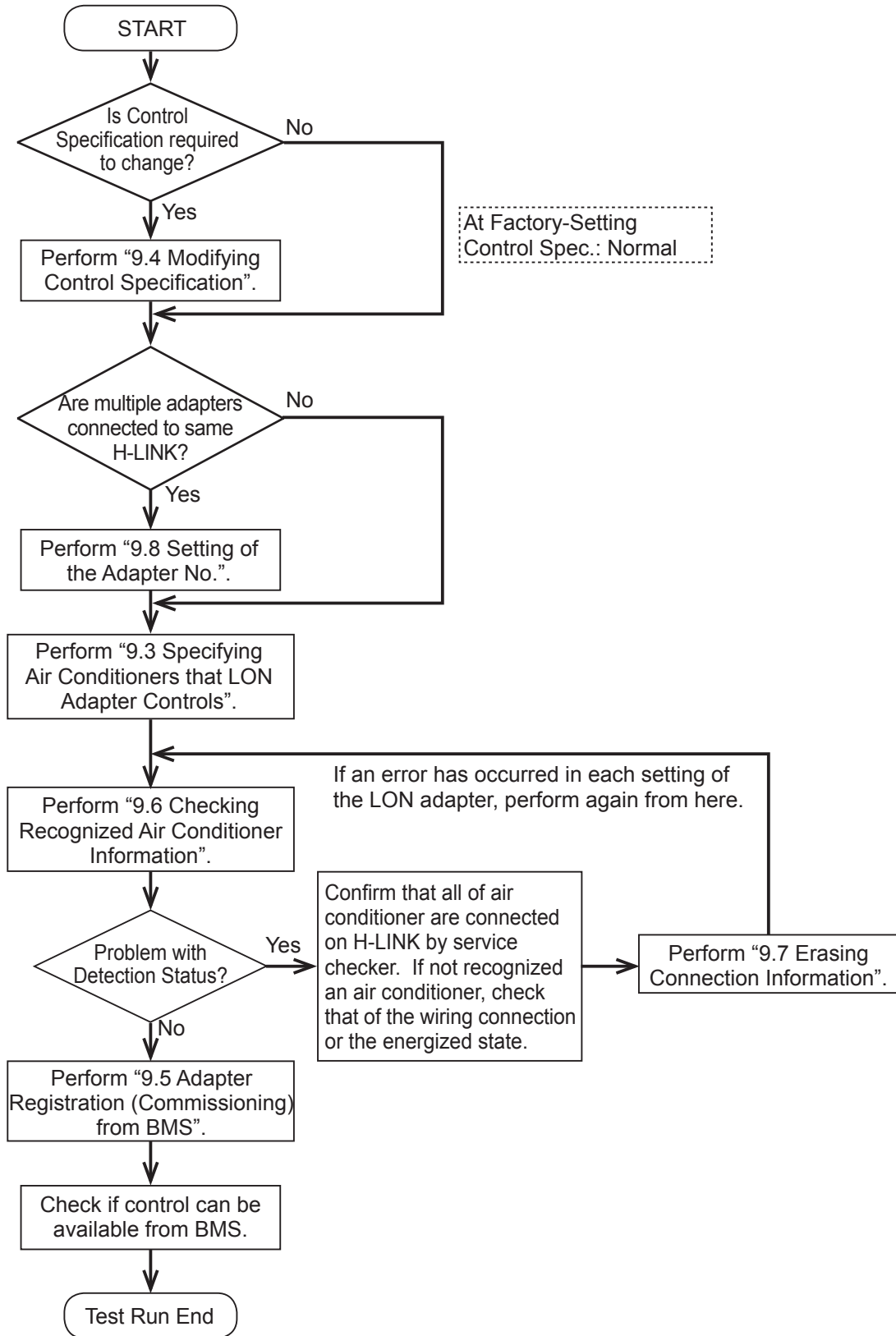
NOTICE:

Pin positions of each DSW are described in black color. Where DSW settings are not explicitly shown, refer to the "Contents" column in the table above for additional details.

9.2 Test Run Procedures

9.2.1 Before Test Run

- (1) Before this procedure ensure that all of the packaged air conditioners are operating properly to perform the test run. Also, ensure to confirm the indoor/outdoor unit refrigerant system No. and address setting.
- (2) After confirmed to finish the item 8.2 “Electrical Wiring Connection”, perform the test run according to the following.



9.3 Specifying Air Conditioners that LON Adapter Controls

It is necessary to specify the Air Conditioners so that the LON adapter can control them.

Perform the following settings among the indoor units that the LON adapter controls:

- By using DSW4 and RDS1, set Head System No. with system No. of the Indoor Unit that has the lowest system No. and the lowest address No.
- By using DSW6 and RDS2, set Head Address No. with address No. of the Indoor Unit that has the lowest system No. and the lowest address No.

Procedure

- (1) Turn OFF the power of the LON adapter.
- (2) Follow the instructions below to set DSW4, DSW6, RDS1 and RDS2

Table 9.1 Setting of Head System No. and Head Address No. (DSW4, DSW6, RDS1 and RDS2)

Head System No. (DSW4, RDS1) Head Address No. (DSW6, RDS2)	Contents
<p>Head System No.</p> <p>Head Address No.</p>	<p>Among Indoor Units that the LON adapter controls: By using DSW4, DSW6, RDS1 and RDS2 (refer to figure on the left), set Head System No. and Head Address No. with these of the Indoor Unit that have the lowest system No. and the lowest address No. The range possible is from 0 to 63. The setting will be Head System No.: 0 and Head Address No.: 0 at factory setting.</p>

Table 9.2 Setting by Number of System and Address





Setting of ten's digit (DSW4) of Head System No. or Setting of ten's digit (DSW6) of Head Address No.	Setting of one's digit (RDS1) of Head System No. or Setting of one's digit (RDS2) of Head Address No.

9.4 Modifying Control Specification









The options in the control specification of the LON adapter are Standard / Option A / Option B / Option C. The control specification can be modified by following the instructions as below. (Factory-Setting: "Standard")

Procedure

- (1) Turn OFF the power of the LON adapter.
- (2) Set DSW1 and DSW2 as below (Control Specification Modification Mode).

Control Specification Modification Mode	
DSW1	DSW2
ON  OFF 	ON  OFF 

- (3) Specify the control specification in DSW3.

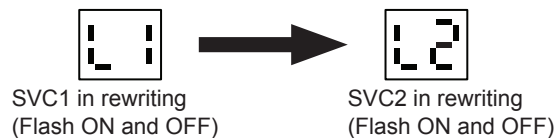
Control Specification Modification Mode	
Standard (Factory-Setting)	ON  OFF 
Option A	ON  OFF 
Option B	ON  OFF 
Option C	ON  OFF 

Each details for the control specification, refer to the "Connection Specification" of the LON adapter.

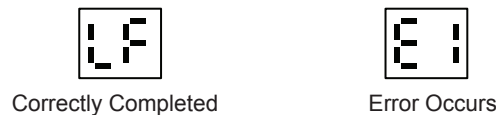
- (4) Turn the power ON and check if the display for 7-segment is the same as below:







- (5) Rewriting the incorporated software will start when the push switch (PSW6 or PSW7) is selected. The software rewriting will take about 6~7 minutes. During this time, the display of 7-segment will change as below.



- (6) When the software rewriting is completed, one of the 7-segment below will be displayed. Go to the step (7) to complete it correctly. If an error occurs, go back to the step (4) again.



- (7) Turn OFF the power, and set DSW1 and DSW2 as follows (Normal Operation mode).

Normal Operation Mode	
DSW1	DSW2
ON  OFF 	ON  OFF 

- (8) When the power is turned ON again, the LON adapter will start operation with modified Control Specification.

NOTICE:

- When modifying the control specification, perform it before registering the LON adapter with the BMS, because the registration (commissioning) with the BMS will be cancelled.

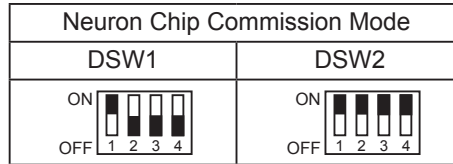
9.5 Adapter Registration (Commissioning) from BMS

After the test run is completed, it is necessary to register (commission) the LON adapter with the BMS. Also, the commissioning is performed for each LONWORKS® network processor (Neuron chip). Because the LON adapter has 2 Neuron chips, the commissioning will be performed twice.

The commissioning will be indicated from the BMS. Execute the following procedure when prompted by the BMS. The BMS will use an external interface file (XIF) when commissioning the LON adapter. Please contact your Johnson Controls representative for access to the XIF file for this adapter.

Procedure

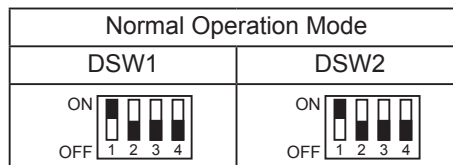
- (1) Turn OFF the power of the LON adapter.
- (2) Set (refer to the below figure) DSW1 and DSW2 (Neuron Chip Commission mode)



- (3) Turn ON the power. Check if 7-Segment display is the same as the figure on the right.



- (4) According to the indication of the BMS, press down PSW (SVC1/SVC2) for sending Neuron ID (No.1/No.2). When pressing down the buttons, the LED (LED2/LED6) which indicate the status of Neuron Chip (No.1/No.2) will light.
- (5) When the commission is completed, turn OFF the power, and set DSW1 and DSW2 as shown in the below figure (Normal Operation mode).



- (6) Turn the power back ON, the LON adapter can be controlled from the BMS.

9.6 Checking Recognized Air Conditioner Information

- (1) Execution of Air Conditioner Connection Checking
 Items from (2) are available after the power is turned ON and executing the Air Conditioner Connection Checking. In Normal Operation Mode (setting below), turn ON the power and check if 7-segment indication is changed in the table 9.3.

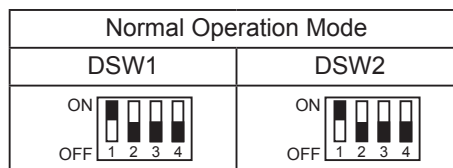
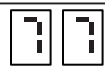
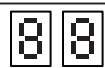
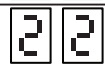

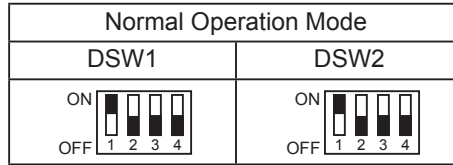


Table 9.3 7-Segment Display after Turning ON Power

Step	7-Segment Display	Status	Remarks
1	—	Power Supply OFF	When the display did not change or an indication other than one mentioned on the left is shown, refer to “10.2 Troubleshooting”.
2		Each node (SVC1 and SVC2) is initializing.	
3		System Initialization Completed	
4		Air conditioner connection checking is executing.	
5		Normal Transmission between LON Adapter and Air Conditioners	

(2) Check the Number of Recognized Remote Control Group

When 7-segment indication is "00" in Normal Operation Mode (setting below) and PSW (PSW6 or PSW7) is pressed, the LON adapter displays the number of recognized Remote Control Group.



(3) Check Detailed Information of Recognized Remote Control Group

Check the detailed information by "Recognized Indoor unit No. / Remote Control Group No. Display Mode" (as below).

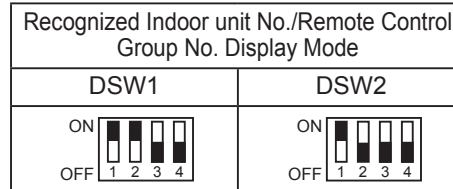














Table 9.4 Recognized Indoor Unit No. / Remote Control Group No. Display Mode

Checking Item	DSW1	DSW2	Contents
Check Remote Control Group Number	ON  OFF 	ON  OFF 	If press PSW (PSW6 or PSW7) to switch 7-segment display, recognized Remote Control Group number is displayed. Each time PSW6 or PSW7 is pressed, the recognized Remote Control Group number is displayed in descending or ascending order. When the number exceeds 100, indicate as in Fig. 9.1 with a "." after the last two digits. If DSW1 pin No.2 is turned OFF the number will go back to "00"
Check BMS side Identification Number	ON  OFF 	ON  OFF 	This item is enabled when checking the Remote Control Group number. If DSW2 pin No.2 is turned ON while checking the Remote Control Group number, the BMS side identification number* which is associated with the Remote Control Group displayed is indicated. *: Concerning the BMS side identification number, refer to the "Connection Specification" of the LON adapter.
Check Indoor Unit Information that belongs to Remote Control Group	ON  OFF 	ON  OFF 	This item is enabled when checking the Remote Control Group number. If DSW2 pin No.3 is turned ON while checking the Remote Control Group number, when PSW6 or PSW7 to switch 7-segment display, the system No. and address No. of the indoor unit that belongs to the displayed Remote Control Group is displayed in descending or ascending order. In that case, 7-segment will repeat the display of the system No. and the address No. each second as in Fig. 9.2.

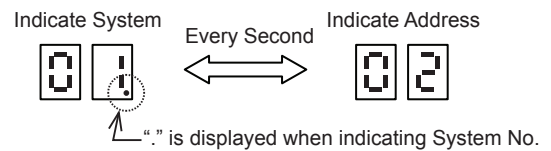
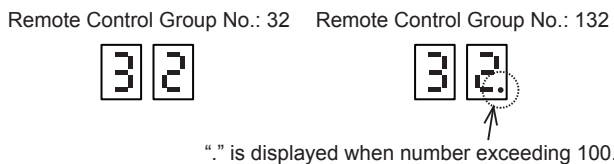


Fig. 9.1 Example of indication for Remote Control Group Number

Fig. 9.2 Example of Indication for System and Address (When System: 01, Address: 02)

9.7 Erasing Connection Information





When the LON adapter is turned ON for the first time, it stores automatically the connection information of the air conditioners.

When the power is turned ON again afterwards, it loads this information and recognizes implementation of the air conditioners. Therefore, if there is a modification in the implementation like the addition of the indoor unit, it is necessary to erase the connection information via the procedure below.

Also, this erasing can be performed anytime if turned ON in Normal operation mode.

Procedure


(1) Set DSW1 and DSW2 the same as shown below when the power ON (Data Flash Erasing Mode).

Data Flash Erasing Mode	
DSW1	DSW2
ON  OFF 	ON  OFF 

(2) Press for 10 seconds PSW6 or PSW7.





(3) When the erasing is completed, the indication below in 7-segment flashes ON and OFF twice during an interval of 0.5 seconds. Go to the step (4) when correctly completed. If not execute again from step (2).


Correctly Completed


Error Occurs

(4) Set DSW1 and DSW2 as follow (Normal Operation Mode).

Follow the steps in 9.2 “Test Run Procedure” and then try again the recognition of the air conditioners.

Normal Operation Mode	
DSW1	DSW2
ON  OFF 	ON  OFF 

9.8 Setting of the Adapter No.

The Adapter No.setting is necessary when connecting multiple adapters in the same H-LINK.

Set them without duplicating in the same H-LINK.



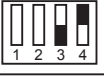

Also, the number starts from “1”. Connectable number of the LON adapters in the same H-LINK for each control specification is mentioned in the table below.

Table 9.5 Connectable number of Adapters in the same H-LINK

Control Specification	Number of Connectable LON Adapters
Standard	1 adapter
Option A	1 adapter
Option B	2 adapters
Option C	4 adapters

The setting is shown below.

Table 9.6 Setting of Adapter No.

Adapter No.	Setting of DSW3
No. 1 (Factory-Setting)	ON  OFF
No. 2	ON  OFF
No. 3	ON  OFF
No. 4	ON  OFF


















9.9 Display Condition for Each LED

Below is shown the display condition for each LED.

Table 9.7 List of Display Condition for Each LED

Name	Color	Function	Light State	Condition	Remarks
LED2	Yellow	Indicate States of Neuron Chip No.1	Light OFF	Commissioning of Neuron Chip Execution Completed	
			Flash ON/OFF with 1 sec. Interval	Commissioning of Neuron Chip Nonexecuted	Refer to "10.2 Troubleshooting".
			Light ON	Software is not written in Neuron Chip. Pressing PSW1 in Commission of Neuron Chip	Refer to "10.2 Troubleshooting". Refer to "9.5 Adapter Registration (Commissioning) from BMS".
LED6	Yellow	Indicate States of Neuron Chip No.2	Light OFF	Commissioning of Neuron Chip Execution Completed	
			Flash ON/OFF with 1 sec. Interval	Commissioning of Neuron Chip Nonexecuted	Refer to "10.2 Troubleshooting".
			Light ON	Software is not written in Neuron Chip. Pressing PSW2 in Commissioning of Neuron Chip	Refer to "10.2 Troubleshooting". Refer to "9.5 Adapter Registration (Commissioning) from BMS".
LED10	Red	Indicate Power Status	Light OFF	Not-yet-powered-on	
			Light ON	Power ON	
LED11	Green	Indicate H-LINK Communication Status	Flash ON/OFF Irregular	Executing H-LINK Communication	
			Other than Above	Non-Execution of H-LINK Communication	

Table 9.8 List of 7-Segment Display Condition

7-Segment LED	Condition	Display Condition	Display Cancellation Condition	Indication Priority
	Neuron Chip Initialization in process	Initialization of Neuron Chip in Process	Initialization of Neuron Chip Completed	1
	Neuron Chip Initialization Completed	Initialization of Neuron Chip Completed	None (change to "22" after 1 second)	1
	Commission Mode of Neuron Chip	When Power is turned ON in Neuron Chip Commission Mode	None (The display continues during this mode)	1
	Software Uncomformity for Neuron Chip	When software for Neuron Chip isn't written, or when control specification which is set in DSW3 is inconsistent with software for Neuron Chip	None (Operation stops in that case)	1
	Awaiting Software Writing for Neuron Chip	In case of power is turned ON in software writing mode for Neuron Chip.	Press PSW6 or PSW7.	1
	Software in Writing Process for Neuron Chip (Flash ON and OFF)	In case of the above PSW6 or PSW7 is pressed ("L1" is for writing in Neuron Chip No. 1 in process, and "L2" is for writing in Neuron Chip No. 2 in process)	When the writing of the software concerning the Neuron Chip is completed.	1
				
	Software Writing for Neuron Chip Completed Correctly	When software writing for Neuron Chip is completed correctly	None (Operation stops in that case)	1
	Software writing for Neuron Chip failure	When software writing for Neuron Chip has failed	None (Operation stops in that case)	1
	System Address No. Wrong Setting	When Head System/Head Address No. setting which are indicated in DSW4/RDS1 and DSW6/RDS2 are wrong	None (Operation stops in that case)	2
	Air Conditioner Connection Checking Error	When Air Conditioner Connection Checking is not completed even after more than 45 minutes are elapsed	Air Conditioner Connection Checking Completed	3
	Air Conditioner Connection Checking in Process	Air Conditioner Connection Checking in Process	Air Conditioner Connection Checking Completed	4
	All Indoor Units Communication Impossible	When condition where data from all Indoor units can't be received continued 70 seconds after Air Conditioner Connection Checking is completed	Data Received from Indoor Unit	5
Indicates the Number of Remote Control Group Connected	Indication of Connected Remote Control Group	While Pressing PSW6 or PSW7	Release PSW6 or PSW7 pressing.	6
	Detection of Sub Unit Attached to Multiple Remote Control Group	When a Sub Unit attached to multiple Remote Control Group within the control range of the LON adapter is detected, while checking Air Conditioner Connection	None (Operation stops in that case)	7
	Connection Information Successfully Erased (Flash ON and OFF)	When erasing process of the data flash by the User's operation has succeeded	Flash twice every 0.5 seconds and then switch back to indication before flashing.	8
	Erasing Connection Information Failed (Flash ON and OFF)	When the erasing process of the data flash by the User's operation has failed	Flash twice every 0.5 seconds and then switch back to indication before flashing.	8
	Regular Time	When other case than written above	When the indicated condition above are not established	9

NOTICE:

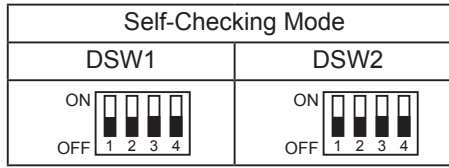
When one of the phenomenon in half-tone part (when Error) occurred, perform the countermeasure according to the item "10.2 Troubleshooting"

10. Maintenance and Service

10.1 Self-Checking




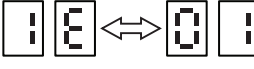
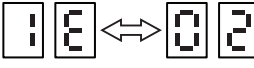
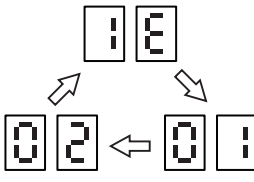




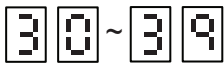



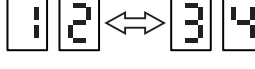
This section describes the procedure for checking each function in the self-checking mode.

- (1) Take a memo of the setting status before executing this operation because it will be necessary to restore the state of each switch after the self-checking is completed. Turn the power OFF after writing the memo and set DSW1 and DSW2 as shown below. (Self-checking mode).



- (2) Before performing the self-checking, remove all the cable and wiring to the LON adapter, the air conditioner and the BMS.
- (3) Turn ON the power of the LON adapter. (7-Segment is "77" → "88" after displayed, then light OFF.)
- (4) Execute the self-checking following the instructions in Table 10.1.

Table 10.1 DSW3 Setting and Checking Contents in Self-Checking Mode

No.	DSW3 Setting	Checking Item	7-Segment LED Display		Checking Contents
			In Normal	In Abnormal	
1		Checking Item not selected			
2		LONWORKS® Circuit Check		Neuron Chip No.1 Error  Neuron Chip No.2 Error  Neuron Chip No.1 & 2 Error 	Check if LONWORKS® circuit of the LON adapter operates correctly. When error is detected, the display on the left will be repeating each second.
3		H-LINK Circuit Check			Check if H-LINK circuit of the LON adapter operates correctly*. *: Enable the terminator of the LON adapter (DSW5 Pin No.2 is ON) when executing this checking.
4		Switch Reading Check		Value of 7-segment on the right side is inconsistent with the setting of these switches.	Check if DIP Switch, Rotary Switch and Push Switch of the LON adapter can be read correctly. Target switches are DSW1, DSW2, DSW4, DSW6, RDS1, RDS2, PSW6 and PSW7. The total of each switch in ON state (Rotary Switch is setting value) is indicated in 7-Segment on the right side (9 ON states maximum identified).
5		Watchdog Timer Circuit Check		Indicates other states than those written on the left	Check if the watchdog timer operates correctly.
6		ROM No. Check	(ROM No.: In case of P-1234)  When PSW6 or PSW7 is ON: ROM No. down 2 digits. When PSW6 or PSW7 is OFF: ROM No. up 2 digits.	Check visually ROM No. of the software loaded in this adapter.	

- (5) Turn the power OFF of the LON adapter.
- (6) Restore the states of each switch with the memo taken before executing the self-checking.
- (7) If there is no error in the self-checking result, connect this adapter with the air conditioner and the BMS.
- (8) Turn the power ON of the LON adapter.

10.2 Troubleshooting

This clause describes the troubleshooting.

Table 10.2 Troubleshooting



No.	Phenomenon	Items to be Checked	Action
1	Adapter does not operate even after turning the power ON.	Is the power line connected to the LON adapter?	Connect the power line to the LON adapter.
		Is the screw of the power terminal loose?	Retighten the screw.
		Is the LON adapter powered?	Check if the main power supply is ON.
		Is supplied voltage adequate?	Measure the voltage of power supply. If the value 24VAC ± 10% (normal range) is exceeded, check the wiring connection and method.
		Has power supply fuse blown? (Power supply fuse is on the bottom PCB (power supply PCB))	If it has blown, contact your distributor or dealer.
		Is POWER LED (RED) lit?	There can be a failure in the LON adapter if the POWER LED is not lit without meeting conditions described above. Contact your distributor or dealer.
		Is 7-segment LED is indicating the status?	There can be a failure in the LON adapter if the 7-segment is not indicating the status. Contact your distributor or dealer.
2	<p>The LON adapter does not recognize the air conditioners. (7-segment indicates the following.)</p>  <p>Even though Power is ON, no indoor unit (Remote Controller Group) could be recognized</p>  <p>After the connection of the indoor unit (Remote Control Group) is recognized, the communication from all recognized indoor units is stopped for 70 seconds.</p>	Is H-LINK wiring connected to the LON adapter?	Connect H-LINK wiring to the LON adapter.
		Is a terminator on H-LINK wiring set properly?	Use single terminator on H-LINK wiring.
		Is the H-LINK cable disconnected?	Check the connection of the cable.
		Is the wiring of the transmission cable connected with the air conditioners is wired along power supply cable?	Provide a space of at least 5.9 inch(15 cm) between wires.
		Is H-LINK wiring using the cable of recommended specification?	Use a cable as indicated in Table 6.3 with a length of 3281ft.(1000m) maximum.
		Are the air conditioners turned ON ?	Turn ON the air conditioners.
		Is the address setting of the air conditioners correct?	Correct address setting according to the Installation and Maintenance Manual and Operation Manual of air conditioner.
		Is the DSW setting of the LON adapter correct? (especially for Head System No. and Head Address No. setting)	Check again DSW setting following the instructions in "9.1 Switch Setting Procedure".
		Is H-LINK LED (green) remained ON or OFF? * It will flash randomly when operating properly.	Check items in this table other than this item No. 2. * Check the H-LINK circuit protective fuse of the LON adapter. If it has blown, replace with a genuine part after clearing the cause of the failure. NOTICE: (1) H-LINK circuit protective fuse (EF1) is on the top PCB (Control PCB) of the LON adapter. (2) When emergency operation is required, turn the pin No.1 of DSW5 ON. * If the phenomenon still appears even though there was no problem after checking the action above, there can be a failure in the LON adapter. Contact your distributor or dealer.
		Are multiple LON adapters connected on the same H-LINK?	When multiple LON adapters are connected, according to the number of the LON adapters or the air conditioners, there are cases where the number "11" is indicated. In that case, wait a moment. If even after 30 minutes the number does not change to "00", check items in this table other than this item No.2.

Table 10.2 Troubleshooting

No.	Phenomenon	Items to be Checked	Action
3	When turning ON, 7-Segment indicates "77".	Is the LED (yellow) for SVC1 or the LED (yellow) for SVC2 lit ? NOTICE: LED is always OFF when operating correctly.	It is possible that the incorporated software is not correctly written. Execute "9.4 Modifying Control Specification".
		Does the LED (yellow) for SVC1 or the LED (yellow) for SVC2 flash ON/OFF (with an interval of 1~2 seconds)? NOTICE: LED is always OFF when operating correctly.	It is possible that the LON adapter registration (Commissioning) is not performed from the BMS. Execute "9.5 Adapter Registration (Commissioning) from the BMS".
4	The LON adapter cannot be controlled from the BMS.	Is LONWORKS® wiring connected to the LON adapter ?	Connect LONWORKS® wiring to the LON Adapter.
		Is the terminator on LONWORKS® wiring set properly?	Connect properly the terminator specified by Echelon.
		Is LONWORKS® cable disconnected ?	Check the connection of the cable.
		Is LONWORKS® wiring using the cable of recommended specification ?	Use a cable as indicated in Table 8.2 with a length of 3281ft.(1000m) maximum.
		Does the adapter recognize correctly the air conditioners ?	Check the content in item No.2 "The LON adapter does not recognize the air conditioners"
		Is the LON adapter correctly associated with the BMS (commission) ?	Check the content in item No.3 "When turning ON, 7-segment indicates "77"
		Is the Neuron Chip status LED (LED2, LED6) lit or flashing ON/OFF ?	Check items in this table other than this item No. 4. * If the phenomenon still appears even though there was no problem after checking the action above, there can be a failure in the LON adapter. Contact your distributor or dealer.
5	When turning ON, 7-Segment indicates "E0".	After control specification setting was modified (DSW3), did the incorporated software rewrite? NOTICE: If control specification setting (DSW3) is inconsistent with the incorporated software, this indication will be displayed.	Re-check Control Specification setting (DSW3). Refer to "9.1 Switch Setting Procedure" for details. If the incorporated software is not rewritten, follow the instructions in "9.4 Modifying Control Specification" and rewrite the incorporated software.
6	While following the instructions in "9.4 Modifying Control specification", the 7-segment indicates "E1" when rewriting the incorporated software.	The incorporated software rewriting has failed.	Follow the instructions in "9.4 Modifying Control Specification" and try again to rewrite the incorporated software. * If the phenomenon still appears even though there was no problem after checking the action above, there can be a failure in the LON adapter. Contact your distributor or dealer.
7	When turning ON, 7-segment indicates "E3".	Head system No. and Head Address No. setting (DSW4, RDS1, DSW6, RDS2) are not correct.	Perform correctly the setting of Head system No. and Head Address No. setting (DSW4, RDS1, DSW6, RDS2). Refer to "9.3 Specifying Air Conditioners that LON Adapter Controls".
8	When turning ON, 7-Segment indicates "E5" while recognizing the air conditioner.	Indoor unit which belongs to multiple Remote Control Group is detected.	Check the Remote Control Group composition of the indoor units.
9	While following the instructions in "9.7 Erasing Connection Information", the 7-segment flashes "Er" when erasing the connection information.	The connection information erasing has failed.	Follow the instructions in "9.7 Erasing Connection Information" and try again to erase the connection information. * If the phenomenon still appears even though there was no problem after checking the action above, there can be a failure in the LON adapter. Contact your distributor or dealer.
10	When the adapter recovered from power cut, the setting to the indoor unit without wired controller has changed before power cut.	This is for the LON adapter specification which initializes the setting (RUN/STOP state excluded) of the unit before and after power cut.	Please perform again the previous setting to the unit.

10.3 Periodic Check

To maintain the normal operation for the air conditioning control system, perform the periodic check as follows:

(1) Environmental Condition

- Ensure the temperature of the LON adapter is not abnormally high.
- Ensure that the temperature ambient where the LON adapter is located is not abnormally high.
- Ensure that the LON adapter is kept out of dust, scrap dust, and wire waste.

(2) LED Display

- Check that power supply LED (RED) is lit.
- Check if LED (GREEN) for H-LINK is not ON or OFF all the time (flash when operating correctly).
- Check if the LED (YELLOW) for Neuron Chip status indicator is not lit all the time or flashing (turned OFF when operating correctly).
- Check to ensure that 7-segment LED is indicating "00".

(3) Mounting and Connected Parts

- Check to ensure that the mounting screws and the Upper Cover secured screws are tightened firmly.
- Check to ensure that the wires are correctly connected.

⚠ CAUTION

- When performing wiring work, power supply must be completely turned OFF, otherwise it could cause an electric shock, a short circuit or a fire.

NOTICE:

- When opening/closing the Upper Cover or the Power Supply Cover of the LON adapter in Test Run or inspection, always turn OFF the power of the supply.
- Except when Test Run or inspection, do not turn ON the power with the Upper Cover of the LON adaptor opened.
- Perform maintenance after the power supply LED (RED) is turned OFF.
- When cleaning the product, do not use benzene, thinner or alcohol as it may result in discoloration or deformation.

11. Important Notice

■ Concerning Outdoor Unit Capacity Control (Control Spec. : Only Option C)

Pay enough attention to the following when using outdoor unit capacity control.

- Concerning the cooling rate power energy, this function is used to save on power consumption and keep it near the set value (%). The level of power consumption conservation is not guaranteed.
- Power consumption theoretically cannot be zero because of standby power, even if the set value is 0%. Also, the capacity control is not available when the outdoor unit is in start-up control or in a defrosting operation.
- The control target is the only one outdoor unit compatible with outdoor unit capacity control. The adjustable capacity value setting or compliance/non-compliance for this function can differ depending on the type of outdoor unit. Contact your distributor for detailed information.
- When several adapters are used together, do not perform control from each adapter for 1 outdoor unit.
- When using together other central controllers, only use one central controller to perform the settings.

■ Concerning Remote Operation Prohibited (by function)

This function is used to restrict the operation of the local remote control.

When the remote operation is prohibited (by function), the selected functions cannot operate (RUN/STOP, Operation Mode and Temperature Setting). Both the indoor unit and the local remote control can be used together only if they are compatible and interconnected with this function. Pay close attention to the following for the groups compatible with the remote operation prohibited (by function).

- Do not use together a Remote Operation prohibited (by function) and a Remote Operation prohibited (all functions).
- When performing settings of a Remote Operation prohibited, do not use the lock function on the local remote.
- When Remote Operation prohibited and lock function are used at the same time, Remote Operation prohibited is prior. Therefore, the lock function of the local remote control cannot be set.
- When Remote Operation prohibited is changed to the remote operation all permitted, the operation lock setting of the local remote control is cancelled.
- When a communication failure has occurred, the Remote Operation prohibited (by function) can be cancelled. In that case, perform the setting again.

■ Concerning Simultaneous Use with Other Central Controllers

When using simultaneously with other central controllers, pay close attention to the following:

- Other controllers than Large Central Controller (CCL01) and Mini Central Controller (CCM01) cannot be connected.
- When connecting the indoor unit without wired controller, the central controller cannot be used together.
- Perform setting of outdoor unit capacity control or lower noise control with only 1 central controller. Do not perform them with multiple central controllers.
- When the local Remote Control which is Remote Operation prohibited (by function) non-compliant is connected, the Remote Operation Prohibited function cannot be used. In that case, do not set the Remote Operation prohibited with all central controllers. If set as Remote Operation prohibited, the air conditioning system may not operate correctly:

■ Concerning Power RUN/STOP (d1, d3)

Do not use power RUN/STOP in the selection of the air conditioner function when using simultaneously with other central controllers.

