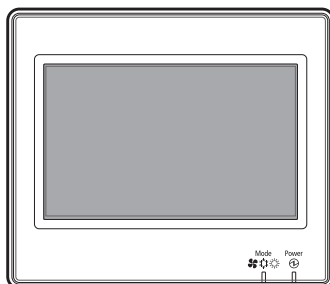


Installation & Maintenance Manual

For Mini Central Controller

Model: CCM01



IMPORTANT:

***READ AND UNDERSTAND
THIS MANUAL BEFORE USING
THIS MINI CENTRAL
CONTROLLER.
KEEP THIS MANUAL FOR
FUTURE REFERENCE.***

LIT-12012039

P5415512

IMPORTANT:

READ AND UNDERSTAND THIS MANUAL BEFORE USING THIS MINI-CENTRAL CONTROLLER.
KEEP THIS MANUAL FOR FUTURE REFERENCE.

IMPORTANT NOTICE:

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- Signal words are used to identify levels of hazard seriousness. Definitions for identifying hazard levels are provided below with their respective signal words.

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 heat pump air conditioning unit 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 heat pump air conditioning unit is operated and serviced in the United States of America and comes with a full complement of the appropriate Safety, Danger, and Caution, 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 heat pump air conditioning unit 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 unit is explained in these instructions. Use of this equipment 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



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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 appropriately 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 noise and electronic interference 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.
- Locate the wireless controller at a distance of at least three feet (approximately 1m) between the indoor unit and electric lighting. Otherwise, the receiver part of the unit may have difficulty receiving operation commands.

- If the wired controller is installed in a location where electromagnetic radiation is generated, make sure that the wired controller is shielded and cables are sleeved inside conduit tubing.
- If there is a source of electrical 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



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



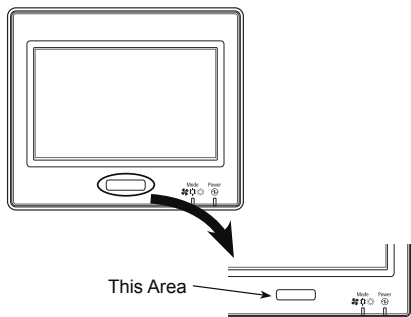
Take the following precautions to reduce the risk of electric shock, fire or explosion resulting in serious injury or death:

- 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 is 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.










2. Brand Label

Select the applicable brand label. Apply the brand label in the designated area as shown in the picture below.



3. Before Installation

☐ Check to ensure that the following parts are packed with the mini central controller.

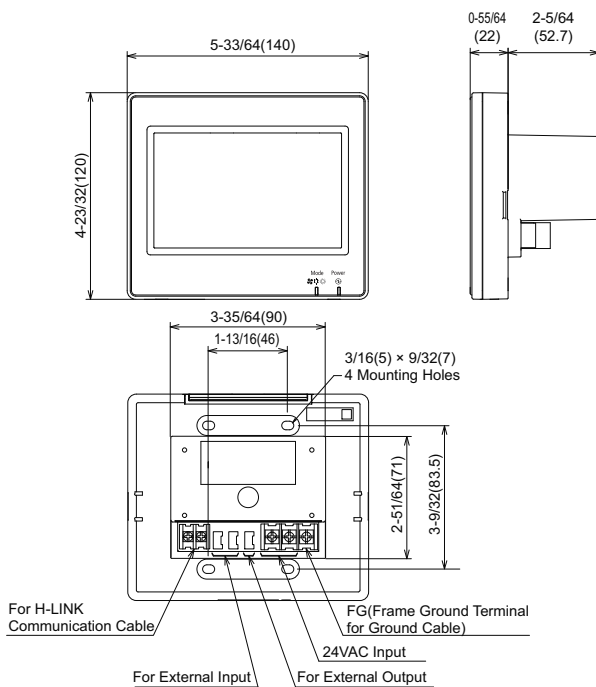
Item	Mini Central Controller	Operation Manual	Installation & Maintenance Manual	Touch Pen	Touch Pen Holder	Screw	Connector	Closed End Connector	Nylon Band
Appearance						 M4x0-5/8 inch			
Qty.	1	1	1	2	1	4	3	9	3

☐ Select a suitable place for handling and determine the installation place of the wired controller with the customer's acceptance. Do not install a wired controller:

- Where accessible to children.
- Where the direct air discharge from the air conditioner is directed toward people or pets.

4. Outer Dimensions

(Unit: inch (mm))



5. Features

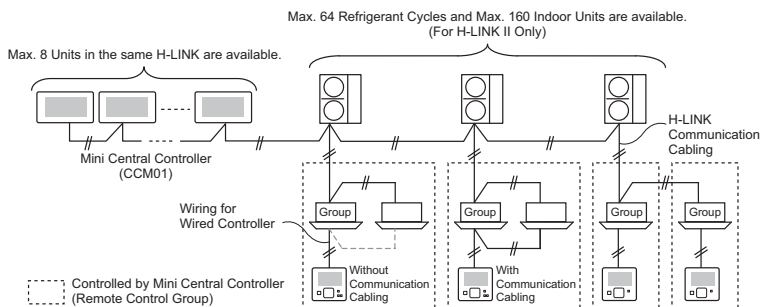
The mini-central controller (CCM01) is the controller for an air conditioner that controls and monitors a maximum of 160 indoor units and maximum 32 wired controller groups.

5.1 Specifications

Model	CCM01
Outer Dimension <WxHxD+(Built-in Part)>	5-33/64 × 4-23/32 × 0-55/64 + (2-5/64 for wall embedding) inch (140 × 120 × 22 + (52.7 for wall embedding) mm)
Net Weight	1.1 LBS (0.5 kg) (Approx.)
Installation Location	Indoor Use
Installation Method	Wall embedded using Steel Box (option)
Connected Indoor Unit (Qty.)	160 (Max.)
Clock Accuracy	± 70 Seconds/Month (at Normal Temperature)
Ambient Temperature	41 ~ 95°F (5 ~ 35°C)
Ambient Humidity	35 ~ 90%
Display	5.0" TFT Color Liquid Crystal Display (800 x 480 dots)
Rated Power Supply	24VAC, 60Hz
Electrical Power Consumption	10W (Max.)

5.2 System Configuration

This mini central controller (CCM01) is connected to H-LINK and used for the central control and monitoring of air conditioners. The system configuration example is shown in below.

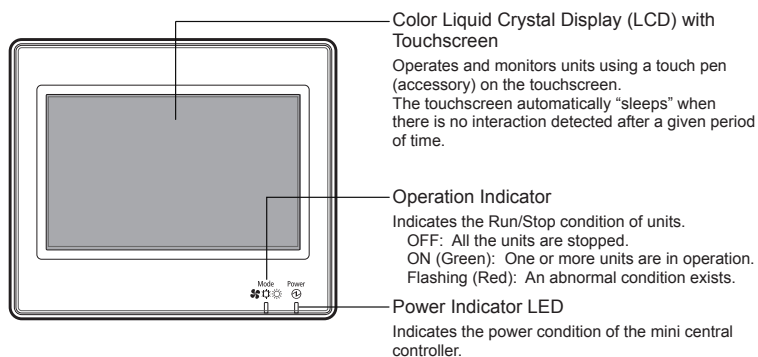


NOTICE

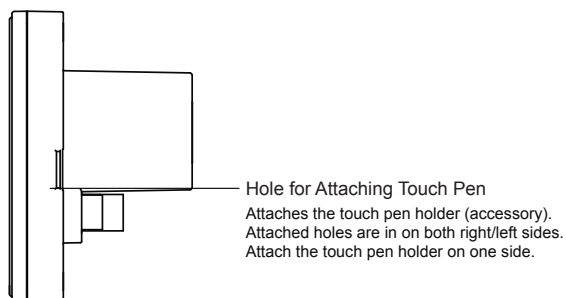
- When one or more indoor units with no remote controller (CIS01, CIW01, CIR01) are connected to the H-LINK network, you cannot connect multiple central controllers to the H-LINK.

5.3 Component Names and Functions

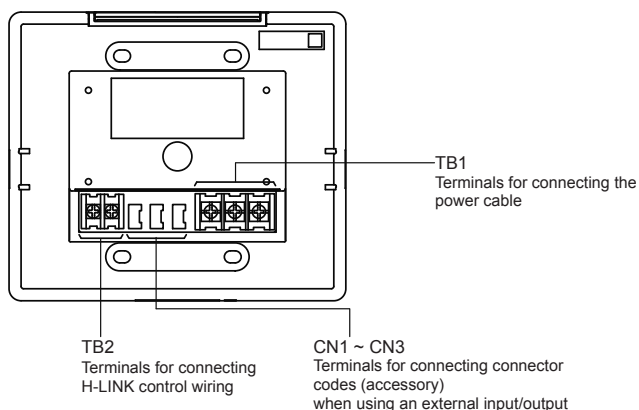
[Front Side]



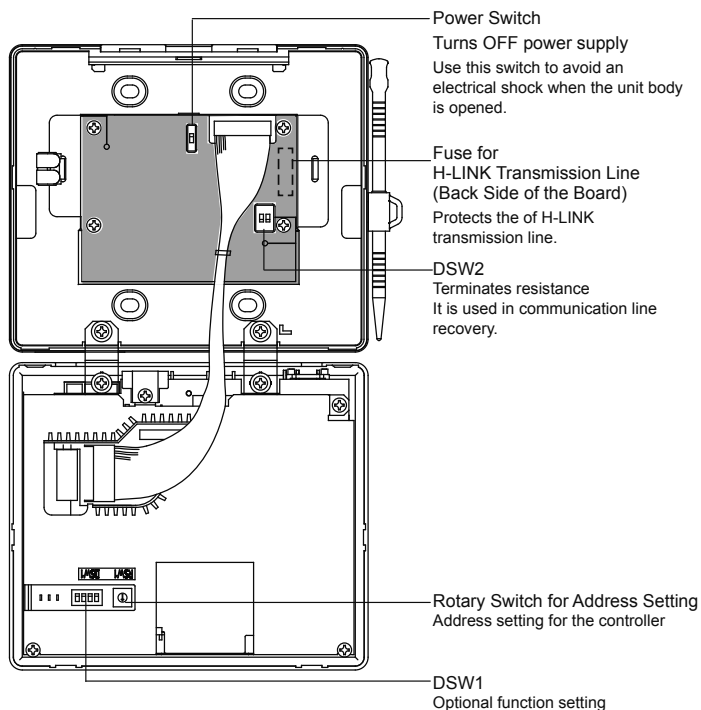
[Right Side]



[Rear Side]



[When Unit Body is Opened]

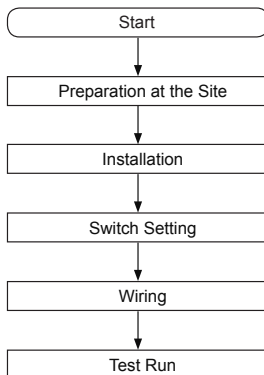


WARNING

Removing the covers may result in a serious electrical shock.

6. Installation Procedure

This manual informs the installer how to handle the mini central controller and the Test Run of the controller. The installation procedures are shown below.



6.1 Preparation at the Site

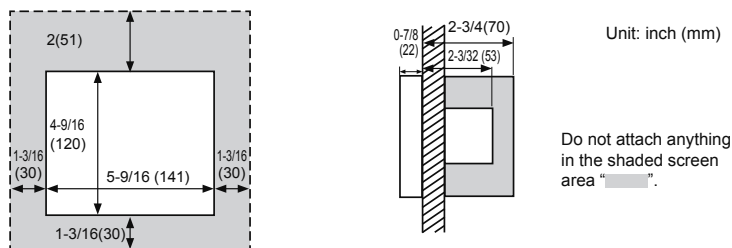
Before installing a controller, prepare the following items.

Parts	Specification
Steel Box	Option
Power Supply Cable	Cable SPEC: AWG 16(1.25mm ²) to AWG 14(2mm ²) Recommended Cable: 600V CV, CCV, CEV
H-LINK Cable (For Control)	Cable SPEC: AWG 18(0.75mm ²) to AWG 16(1.25mm ²) Recommended Cable: JKEPV-S, JKEV-S, CVV-S, CVV, 600V VCT

6.2 Installation

[Installation Space]

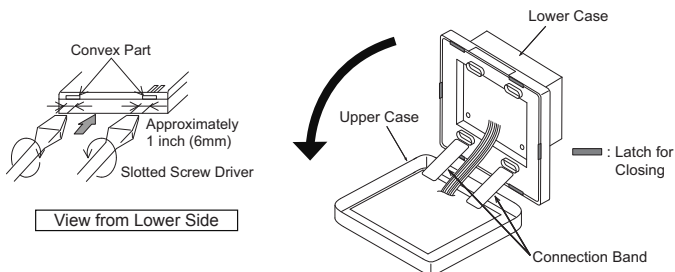
- ☐ Provide the installation space for the mini central controller as shown below.



- When installing more than two mini central controllers in a row or in line, keep the space between each.
- Vertical Direction: 2 inches (51mm)
 - Horizontal Direction: 1-3/16 inch (30mm)

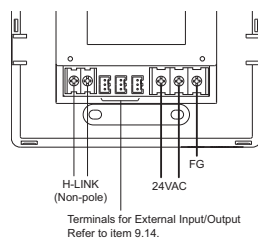
[Installation Method]

- 1. Install the steel box (option) into the wall.
- 2. Open the unit body. (The factory ships the unit body open.)
If the unit is closed, open it as shown below.
 - a. Remove the convex part of the case by pressing and rotating a screwdriver in the cut-out portions (two cut-out portions on the convex part).
 - b. When pulling up the convex part of the case, the copper separates from the upper side and lateral side so the cover opens. The upper and lower case are fixed with a connection band. Do not use excessive force to open the case.

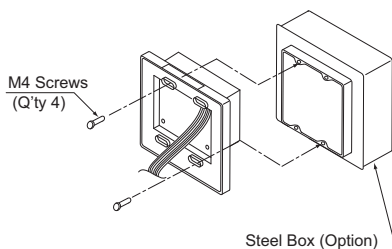


- 3. Connect the wiring to the terminal board of the mini central controller.

Terminal Board	Use	Connection Procedure
TB1	For Power Supply	M3 Screw-on terminal Round Terminal Connection
TB2	For H-LINK Communication	Tightening Torque 0.4 ft·lbs
CN1 ~ 3	For External Input/Output	Connector, three pin Insert connector cords (accessory) until hearing clicking sound.



- 4. Attach the steel box (option) with the accessory mounting screw (M4 x 0-5/8 inch).



7. Switch Setting Procedure

Switch the settings for mini central controller as shown in the following table.

□ 1. Use the settings below:

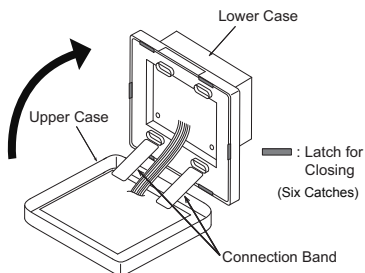
Switch	Switch No.	Usage	Factory Setting	Remarks
RSW1 (Rotary Switch 16-pole)	-	For address setting of mini central controller	0	When using multiple units
DSW1 (DIP Switch; 4-pole)	1	OFF (Fixed)	OFF	
	2	OFF (Fixed)	OFF	Not Used
	3	OFF (Fixed)	OFF	Not Used
	4	ON (Fixed)	ON	
DSW2 (DIP Switch; 2-pole)	1	ON: Terminating Resistance Enable OFF: Terminating Resistance Disable	OFF	Make sure no other terminating resistance exists on the same H-LINK when enabling the terminating resistance from the mini central controller.
	2	ON: Protection Fuse for H-LINK ... Disable (short-circuited) OFF: Protection Fuse for H-LINK ... Enable (Normal)	OFF	
SW1		ON: Turn ON Mini Central Controller OFF: Turn OFF Mini Central Controller	ON	

NOTICE

- Turn OFF the power supply when setting the DIP switches and rotary switch.
Do not touch the printed circuit board and metal part to avoid a mini central controller malfunction.
- Alarm 63 is displayed on an H-LINK II compliant central controller if a mis-configured DSW1-1 is connected. In this case, turn OFF the power supply for all central control devices and correct the settings of each central control device. Then, restart central control devices.
- When using several mini central controllers at the same time, set "RSW1" so as not to overlap.

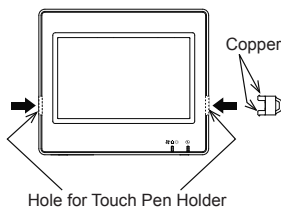
□ 2. Close the unit body until it snaps, making sure it is completely closed.

- Hook the copper to the upper side of the case.
- The upper side of the case closes when you put the copper over the lateral and lower side.



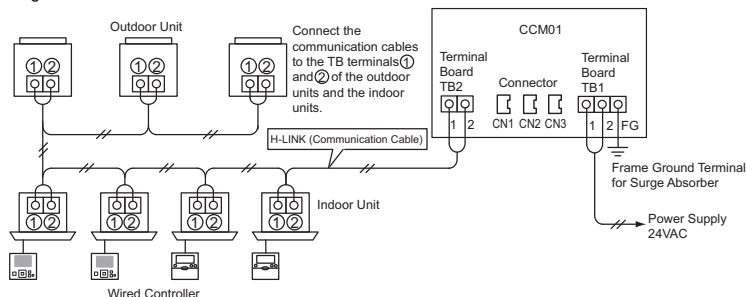
• To Attach Touch Pen Holder

When attaching the touch pen holder to the controller, insert the copper into mounting holes of the main holder until hearing clicking sound.



8. Electrical Wiring Procedures

- 1. The mini central controller requires wiring work for the power supply cable, air conditioner, and control wiring (H-LINK).
- 2. Wiring Method




Type of Wiring	Specification	Length of Wiring	Cable Specification	Recommended Cable Model
Power Supply Cable	24VAC	-	AWG 16 (1.25mm ²) to AWG 14 (2mm ²)	600V CV, CCV, CEV
Earth Wiring	-	-	-	-
H-LINK (Control Wire)	5VDC	3281 feet (1000m) ≥	AWG 18 (0.75mm ²) to AWG 16 (1.25mm ²)	JKPEV-S, JKEV-S, CVV-S, CVV, 600V VCT
Wiring for External Input and Output	Input: Non-voltage Normal Open Output: 12VDC, 75mA ≥	984.3 feet (300m) ≥	AWG 20 (0.5mm ²) to AWG 16 (1.25mm ²)	

- In case wire length specification on the signal communication side for external input is mentioned, use shorter wiring either ① communication side wire length specification or ② 984.3 feet (300m).

NOTICE

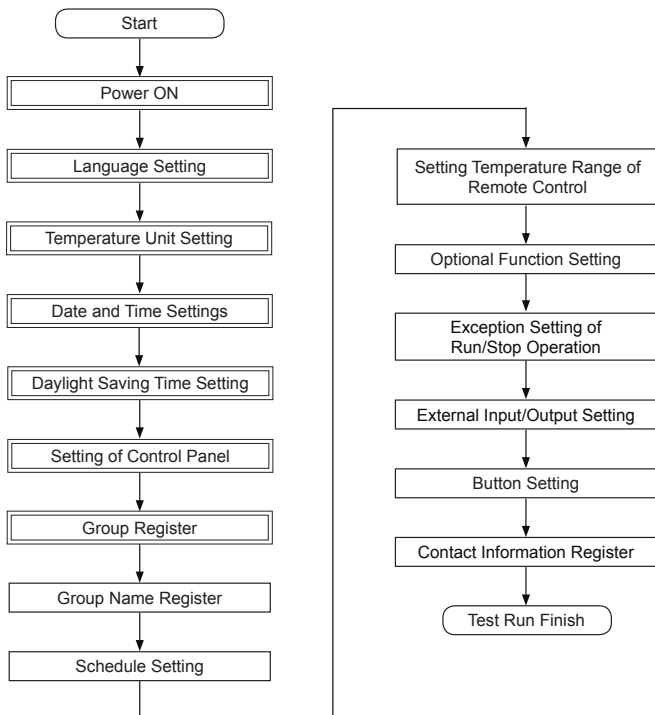
- The mini central controller may break down if wiring is correct.
- Communication cabling shall be a minimum of 18-Gauge, two-conductor, stranded copper. Shielded cable must be considered for applications and routing in areas of high EMI and other sources of potentially excessive electrical noise to 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.
- If wiring work is performed with the main power ON, it may cause a breakdown of the controller. Turn OFF the main power of the air conditioner and the controller before performing wiring work.
- Communication cables are required to be separated from the power supply wiring and other electrical device wiring. Keep at least 12 inches (31cm) between communication cabling and the power supply wiring. If the above is not secured, put the power supply wirings and communication cabling into the each metal conduit tube separately. One side of the metal conduit tubes should be grounded for noise reduction.
- Do not connect the power supply wiring to the terminals for transmission of the mini central controller. If the power supply wires are connected incorrectly, the fuse of the printed circuit board will short-circuit. If this happens, turn on the DSW2-pin on the printed circuit board to enable emergency operation without benefit of protective fuse safeguards.
- Remove the ground wiring for the frame ground (FG) terminal when the insulating capacity test or the withstand voltage test is performed. It may prevent operation of the mini central controller.

9. Test Run Procedure

The flow diagram below outlines Test Run procedures. The process rectangles below “” are required items.

Refer to the operation manual for the mini central controller for the Control Method settings.

NOTE: The screen image may be different from the actual screen.



9.1 Features and Functions

Item	Function	Page
Language Setting	This function is used for language selection.	17
Date and Time Settings	This function is used for adjusting the date and time.	17
Group Register	The connected indoor units are checked by the mini central controller in the same H-LINK. This function is used for the group or block registration of them.	18
Main Unit Register	This function is used for the main unit registration in the each remote control group. (The main unit is the only one for each remote control group.) The control command is sent from the mini central controller to the main unit for the remote control group.	19
Sub Unit Register	This function is used for registration of the sub units except the main unit in the same remote control group. If using the wired controllers or the receiver kits as follows, the sub units are registered automatically by the mini central controller after the main unit registration. • Infrared Receiver (IR)	20
Group Name Register	This function is used for registering the naming of a Block and Group. The registrable number of letters are a maximum 20 letters for the name of each block or group. It is also available to copy group names. If the group/block is registered without a name, it will be registered as "Group 1" or "Block 1" automatically.	20
Schedule Settings	This function is used for scheduled timer operation which can be set by each group or block.	20
Schedule Timer Setting	This function is used for setting the time (by the minute), "Run/Stop" and temperature (66~86°F (19~30°C). For weekly schedule setting, up to 10 schedule items can be set per day. It is also possible to copy the setting information.	20
Holiday Setting	This function is used for suspending the scheduled operation temporarily. The scheduled operation will not be available when this function is set. This function is used for setting irregular holidays such as national holidays.	20
Schedule Timer ON/OFF Setting	"Schedule Timer OFF Setting" is used for suspending the scheduled operation for the target group. The scheduled operation will not be available when Schedule Timer is OFF. This function is used for a long holiday, sudden holidays, and national holidays.	20
Optional Function Setting	This function is used for setting and changing of the function for air conditioners and the mini central controller.	22
Exception Setting for Run/Stop Operation	This function is used to specify exceptional Groups/Blocks for All Run/Stop commands. • The All Run/Stop command will not affect to the specified group/block.	23
Selecting Exceptions; Operations to be Excluded	This function is used to select which the following will be excluded: • Run • Stop • Run and Stop	23
Selecting Group and Block Exceptions	This function is used to select All Run/Stop commands, but the following are excluded: • All Groups Run/Stop • Run/Stop by Block • All Groups Setting • Setting by Block	23
External Input/Output Setting	Two external input terminals and two external output terminals are equipped in the mini central controller. These terminals are used for "All Groups Run/Stop" and "Demand Function" operations for the connected air conditioners. The external output terminals are used for the operation signal output or alarm signal output of the air conditioners which are connected to the mini central controller.	24
Exception to External Input	This function is used for cancelling operation commands such as "All Groups Run/Stop", using the external input signal. "Exception External Input" is available for each external input (Input 1 and Input 2).	24
Selecting Groups of Exception External Input 1	This function is used for selecting a group to cancel an operation command from external input 1.	24
Selecting Groups of Exception External Input 2	This function is used for selecting a group to cancel an operation command from external input 2.	24
Demand Function Setting	This function is used for setting of "Demand Function" to the terminal of "Input 1". The operating condition is changed by the demand signal such as the operation to stop and Thermo-OFF. "Demand Function" is available when you do the following: 1. Select "Demand Function" at "Input 1" on the "External Input/Output Setting" screen. ("Demand Function" will not be available without this setting.) 2. Select one of "Demand Function" No.1 to No.4 at "Demand Function Setting" screen.	24
Demand Function Setting	This function is to select the action at "Demand Function" control.	24
Selecting Group for Demand Function	This function is to select the target group for "Demand Function" control.	24
Button Setting	This function specifies each button to be shown/hidden. This function also includes a specification/setting for "one-tap operation" or "press-and-hold" operation.	25
Contact Information Register	This function is used for editing the contents of contact information registration.	25

9.2 Supply Power to the Unit

1. Apply power to the outdoor unit(s) at least 12 hours prior to operation of the system for preheating of the compressor oil.
 - Perform after a Test Run on each air conditioner and confirm that each unit operates normally.
2. Turn on the power supply of the mini central controller.

Refer to the operator's manual for details.

9.3 Language Setting

After turning ON the power supply, the language setting is displayed on the touchscreen as shown at right.
(When the power supply is turned ON at the first time.)
Select the using appropriate language for operation and touch "Set".

Refer to the operator's manual for details.



9.4 Temperature Unit Setting

After the language is set, the screen will be displayed as shown on the right.
Select the appropriate temperature unit, then touch "Set".

Refer to the operator's manual for details.



9.5 Date and Time Settings

After the temperature unit, the Date and Time settings screen is displayed on the touchscreen as shown at right.
Tap "Set" on the touchscreen display, and set the date and time according to the indicated procedure.

Refer to Section 8.6 in the Operation Manual for details.



9.6 Daylight Saving Time Setting

After the Date/Time function is set, the screen is displayed as shown on the right. Set each item, then touch "Setting completed" in the lower-right corner.

Refer to the operator's manual for details.

Initial Setting: DST			05/20/2015(Sat)10:20	
Daylight Saving Time	Enable	Disable		
Start Date and Time	Mar. 2nd Sunday	02:00	Edit	
End Date and Time	Nov. 1st Sunday	02:00	Edit	
Shift Time	<	1 hour	>	
Setting completed				

9.7 Setting of Control Patterns

1. After adjusting date and time settings, the control pattern screen is displayed as shown in the figure on the right. Touch "Set" on the touchscreen to display the setting screen.
2. When tapping on the control pattern button, to register a group the selected button is rimmed with an orange outline. Touch "Register Main Unit" to set the selected control pattern and the group register screen is displayed.

Refer to Section 10.3 below for details.

Register Group

Set

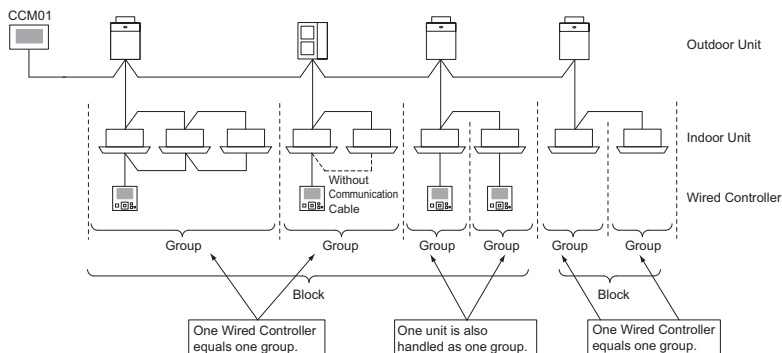
9.8 Group Register

Register the indoor units confirmed for connection to the group (block) of the mini central controller.

Refer to Section 10.3 below for details.

[Group and Block]

- **Group:**
Indicates the minimum number of operational units controlled by one mini central controller. One remote control group is considered as one group, and the same setting is applied. A maximum of 32 groups (4 blocks x 8 groups, 8 blocks x 4 groups, 2 blocks x 16 groups, 16 blocks x 2 groups) can be controlled by one mini central controller.)
- **Block:**
Indicates the number of operational units combining groups into one. The mini central controller can regulate indoor units depending on the control patterns (4 blocks x 8 groups, 8 blocks x 4 groups, 2 blocks x 16 groups, 16 blocks x 2 groups).
- **Remote Control Group:**
Indicates multiple indoor units (a maximum of 16) connected by communication line to the wired controller. Indoor units registered as same the remote control group are applied using the same settings.
- **Main Unit:**
Indicates the representative unit of the remote control group. The mini central controller transmits control commands to this representative unit.
- **Sub Unit:**
Indicates indoor units other than the main unit.



NOTICE

<Main Unit Registration>

- The main unit registration is available for only one indoor unit for one group. Thus, duplicate registration of the main unit is not possible for the same group. If the main unit registration is changed for some reason, cancel the current main unit registration, and register the new main unit again.
- When the indoor units with fan speeds of "4-touch" and "3-touch" are intermixed in the same remote control group, register the indoor unit with a fan speed of "4-touch" as the main unit. If an indoor unit with a "3-touch" fan speed is registered as the main unit, a "4-touch" fan speed setting cannot be applied for this group. In other words, designate the main unit as a "4-touch" fan speed unit.
- When the indoor unit with the automatic louver swing and the indoor unit without the automatic louver swing are mixed in same remote control group, register the indoor unit with the auto-louver as the main unit. If the indoor unit without auto-louver is registered as the main unit, the auto-louver setting cannot be applied for this group.
- If the group with the communication cable connected to the wired controller is not used, the indoor unit without the wired controller is not registered as the main unit.
- Upon replacing indoor unit, cancel the current main unit registration, and then register the main unit again.

<Sub Unit Registration>

- A maximum 15 sub units can be registered in the same remote group with the main unit.
- Indoor units without a wired controller cannot be registered as sub units.
- When changing the registration of the indoor unit which is already registered as a sub unit, cancel the registration setting first. Then, change the registration.

9.9 Registering Groups/Blocks Names

Register the names of groups and the blocks for the registered groups. .

The registrable number of letters are a maximum of 20 for the name of the group (block).

Set by Monitor → Menu → Group Name Register.

Refer to Section 8.9 in the Operation Manual for details.

NOTICE

- When touching "Enter" at the name registration, the name of the group or the block is displayed in one or two lines. A maximum of eight letters or characters can be entered on one line.

9.10 Schedule Timer Operation

This function is used for the timer operation.

The schedule setting command allows for settings for each block and group.

Holiday settings that do not activate the schedule are also available.

Set by Monitor → Menu → Schedule Setting.

Refer to Section 8.4 in Operation Manual for details.

9.11 Setting Temperature Range of Remote Control

This is the function for adjusting temperature range of the wired controller operation.

Minimum/Maximum temperature of cooling or heating can be set depending in the RUN mode.

Set by Monitor → Menu → Setting Temperature Range of Remote Control.

Refer to Section 7.9 in the Operation Manual for details.

9.12 Service Menu

The Service Menu functions and detailed contents are described as follows.

- Group Register
- Optional Function Setting
- Exception Setting of Run/Stop Operation
- External Input/Output Setting
- Exception External Input
- Button Setting
- Contact Information Register
- Memo
- Restore Setting
- Checking Connection
- Alarm History

Function	Contents	Page
Group Register	The connected indoor units are checked by the mini central controller in the same H-LINK. This function is used for the group or block registration of these indoor units.	27
Setting of control patterns	Sets the control pattern.	27
Main Unit Register	This function is used for the main unit registration in the each remote control group. (The main unit is the only one in the remote control group.) The control command is sent from the mini central controller to the main unit for the remote control group.	29
Sub Unit Register	This function is used for registration of the sub units except the main unit in the same remote control group. When using wired controllers or receiver kits, the sub units are registered automatically by the mini central controller after the main unit registration. • IR Receiver Kit	31
Displays a List of Registers	Displays the location of those Indoor Units which were registered in each group.	35
Optional Function Setting	This function is used for setting and changing optional functions for air conditioner units and the mini central controller.	36
Air Conditioner, Wired Controller Setting	Set or change the optional function of the air conditioner and wired controller.	36
Mini Central Controller Setting	Sets or changes the operational mode, color of the operation indicator, or the mini central controller.	37
Indoor Unit Setting	Set or change the function selection for indoor units.	38
Exception Setting for Run/Stop Operation	The factory-set group is "All Group Run (stop)", "Block run (stop)" or when "All Groups (Blocks)" operate as "Run(Stop)". This operation is not accepted.	39
External to Input/Output Setting	There are four inputs and two outputs for the external Input/Output function in the mini central controller.	40
Button Setting	This function specifies each button to be shown/hidden. This function also includes the specification/setting for "one-touch operation" or "press and hold" operation.	43
Contact Information Register	This function is used for editing the contents of contact information registration.	44
Memo	Record and Browse the Test Run and Maintenance Information.	45
Restore Setting	This function is used for restoring all the settings such as registered Groups (Blocks) and schedules.	48
Checking Connection	This function is used for checking the connected indoor unit numbers in the same H-LINK. When this function is used, the confirmation for retention of registered information such as the group names, schedules, and so forth will be indicated. If "OK" is touched, the connected indoor unit numbers are updated with the registered information. If "Cancel" is touched, the setting of the mini central controller is restored.	49
Alarm History	This function is a compilation and display list of alarm history events over the service life of the air conditioner and the controller. (Maximum 100 records)	50

9.13 Optional Function Setting

This function is used for setting and changing the function selection of air conditioner and mini central controller in the following table. Set by Monitor → Menu → Service Menu → Optional Function Setting.

Refer to Section 10.5 for details.

Function	Description
Setting the Operation Mode	Touch "Enable" to allow the "Setting Operational Mode" to become the present operation mode. This operational mode is now selected as the present setting which cannot be changed from the wired controller and the mini central controller.
Setting the Temperature Setting	Touch "Enable" to allow a "Temperature Setting" to be set for the present temperature. The temperature setting is set as the present setting which cannot be changed from the wired controller and the mini central controller.
Cooling Only	Touch "Enable" for "Cooling Only", that is, to set the operational mode to cooling only. This function is used in heat pump models which can be operated for cooling only. The operational modes "HEAT" and "AUTO" cannot be selected from the wired controller and the mini central controller.
Auto	Touch "Enable" for "Auto" to use the automatic cooling/heating operation. It is possible to set this mode from the wired controller and the mini central controller. However, in the following instances, "AUTO" cannot be selected: <ul style="list-style-type: none"> Connected to the model of Cooling Only. The function "Cooling Only" is enabled.
Setting Fan Speed	Tap "Enable" of "Fixing Fan Speed" to set the fan speed. The fan speed is fixed as present setting which cannot be changed by the wired controller and the mini central controller.
Control Mode	This function is used for changing the control mode of the mini central controller. When set this function, touch "All Groups" display as the target groups, and select the control mode to "Normal" or "Run/Stop Only". <ul style="list-style-type: none"> Normal: "Setting" is displayed when tapping the group button. This mode is the factory setting. The "Normal" setting is available for each group. Run/Stop Only: The control mode at "Monitor 1 or 2" is changed to only "Run and Stop" for each group.
Operation Indicator	Switch the color of the operation back and forth between green and red. When an error occurs, the indicator will flash red OFF and ON regardless of the setting.
All Groups Display Automatic Switch	When starting from the "All Groups" display at the beginning of the operation, set "Enable". On the Block display screen, if a mini central controller does not operate in a given time, the screen automatically switches to the All Groups display.
Wired Controller Operation is Prohibited when Setting OFF Time?	When setting the "Stop command for the Remote Control by OFF time" and "Remote Operation Prohibited (All Items)", set the schedule function of the mini central controller to "Enable". In this case, when ON Time cancels Remote Operation Prohibited (All Items), the operation cannot be controlled by way of a command. When Remote Operation Prohibited is set (by item), this function cannot be set. Set is as "Disable".
Display Graph for Numerical Value	When displaying a graph for operation time or Thermo-On time (without displaying any numeric value), set the Operation Time display as "Disable".
Thermo-On Time Display	When running the Time display, set the Thermo-On time to "Enable" to display the time.

Items	Optional Function	Setting Condition	Contents	Setting
q1	Auxiliary Heater Setting	00 01	Not Available Available	
q2	Auxiliary Heater ON Compensation	-3(-1.5) -4(-2.5) -5(-3.0) -6(-3.5) -7(-4.0) -8(-4.5) -9(-5.0) -1(-0.5) -2(-1.0)	-3°F (-1.5°C) -4°F (-2.5°C) -5°F (-3.0°C) -6°F (-3.5°C) -7°F (-4.0°C) -8°F (-4.5°C) -9°F (-5.0°C) -1°F (-0.5°C) -2°F (-1.0°C)	
q3	Auxiliary Heater OFF Compensation	0(0.0) 1(0.5)	0°F (0.0°C) 1°F (0.5°C)	
q4	Ambient Temperature Restriction Setpoint	-4 (-20.0) 2 (-17.0) 8 (-13.0) 14 (-10.0) 20 (-7.0) 26 (-3.0) 32 (0.0) -13 (-25.0) -8 (-22.0)	-4°F (-20.0°C) 2°F (-17.0°C) 8°F (-13.0°C) 14°F (-10.0°C) 20°F (-7.0°C) 26°F (-3.0°C) 32°F (0.0°C) -13°F (-25.0°C) -8°F (-22.0°C)	

Items	Optional Function	Setting Condition	Contents	Setting
q5	Ambient Temperature Restriction Setpoint Compensation	4(2.5) 5(3.0) 6(3.5) 1(0.5) 2(1.0) 3(1.5)	4°F (2.5°C) 5°F (3.0°C) 6°F (3.5°C) 1°F (0.5°C) 2°F (1.0°C) 3°F (1.5°C)	
r1	Dual Setpoint	00 01	Not Available Available	
r2	Cooling/Heating Changeover Temperature	2(1.0) 3(1.5) 4(2.5) 5(3.0) 1(0.5)	2°F (1.0°C) 3°F (1.5°C) 4°F (2.5°C) 5°F (3.0°C) 1°F (0.5°C)	
r3	Setback Temperature Compensation	4(2.5) 5(3.0) 6(3.5) 7(4.0) 8(4.5) 9(5.0) 10(5.5) 1(0.5) 2(1.0) 3(1.5)	4°F (2.5°C) 5°F (3.0°C) 6°F (3.5°C) 7°F (4.0°C) 8°F (4.5°C) 9°F (5.0°C) 10°F (5.5°C) 1°F (0.5°C) 2°F (1.0°C) 3°F (1.5°C)	

NOTICE

- When using the Optional Function Setting (Air Conditioner, Wired Controller setting), set the same content to the Remote Control Groups. In the same way, use the wired controller to set from the mini central controller at the Optional Function Setting (Fixed, Auto).
- Fixed operation mode of optional function setting and demand of external input output setting: the group which set both of the operation mode shift will stop regardless the operation mode when the demand signal is ON.
- When the Power ON/OFF (d1, d3) of the optional function is set, DO NOT set the prohibition of the remote control operation. When the operation of the local remote control is not restricted when using the Power ON/OFF, DO NOT use the lock function of the local remote control.

9.14 Exception Setting of Run/Stop Operation

When the group is set as All Run (all groups, all blocks) "RUN" and "STOP" cannot be accepted.

When using the exception setting Run/Stop, select from the following:

- None
- Run + Stop
- Stop
- Run

Set by Monitor > Menu > Service Menu > Exception Setting of Run/Stop Operation.

Refer to Section 10.6 for details.

NOTICE

- "All of the Run/Stop" and "Run/Stop by Block" commands will not be affected when they are set to Groups/Blocks. However, these commands are accepted as follows within this function.
 - Scheduled Timer Operation
 - "All Run/Stop" and "Run/Stop by Block" by External Input command
- The "Run/Stop" operation is available when the group is selected individually.

9.15 External Input/Output Setting

In the principal mini central controller, there is an external Input/Output function of four inputs and two outputs.

Set by Monitor > Menu > Service Menu > External Input and Output Setting.

Refer to Section 10.7 for details.

Input and Output	Connection	Function	
Input 1	CN1 1-2 Pin	<ul style="list-style-type: none"> • All Run/Stop (Level) • All Run (Pulse) • All Stop (Pulse) • No Setting (Factory Setting) 	<ul style="list-style-type: none"> • Emergency Stop (Level) • Demand (Stop/Run mode Shift/ Outdoor Unit Capacity Control)
Input 2	CN1 2-3 Pin		
Input 3	CN2 1-2 Pin		
Input 4	CN2 2-3 Pin		
Output 1	CN3 1-2 Pin	<ul style="list-style-type: none"> • All Run • All Alarm 	<ul style="list-style-type: none"> • No Setting (Factory Setting)
Output 2	CN3 1-3 Pin		

■ External Input Function

1. All Run/Stop (Level)
All groups simultaneously affect the Run/Stop operation through the external input signal
2. All Run (Pulse)
All groups simultaneously affect the Run operation through the external input signal
3. All Stop (Pulse)
All groups simultaneously affect the Stop operation through the external pulse signal input
4. Emergency Stop (Level)
All groups simultaneously affect the Stop operation through the external emergency stop signal.
When the "Emergency Stop" is activated, the wired controller LCD displays "Central Control" and the operation cannot be performed from the wired controller.
 - When using with another mini central controller, the "Run/Stop" operation is available from the other mini central controller even if during an emergency stop.
5. Demand Control Function (*1)
At peak demand, electrical consumption is cut by the external demand control signal.
Only the input from terminal one is available at the external demand signal.
The operational mode of a selected group is changed by the demand signal as follows:

	Demand Signal ON	Demand Signal OFF
Stop (*2)	Indoor Unit will stop (Remote control operation prohibited).	Return to the previous operation condition. (*3)(*8)
Run Mode Shift (*2)(*4)	COOL or DRY switch to FAN (Remote control operation prohibited) HEAT switch to STOP (Remote control operation prohibited)	
Operation Unit Capacity Control (*5)(*6)(*7)	Control the value of outdoor unit capacity in the setting value. (Setting Value: 100/90/80/70/60/50/40/0%)	Cancel the capacity control.

- (*1): Do not set "STOP" or "Run Mode Shift" when using simultaneously with other mini central controller.
When setting outdoor unit capacity control, set one of the mini central controller and do not set the others.
- (*2): Setting is only possible for Stop or Run Mode Shift. It is not possible to set multiple contact points.
- (*3): Do this when "AUTO" operation is carried out, or "Fixing Operation Mode" is enabled at "Optional Function Setting".
- (*4): It will stop regardless of the operating mode, as in "AUTO" or when the "operating mode fixed" in the optional function setting is enabled.
- (*5): The outdoor unit capacity control can be set to multiple contact points. When there is a signal input in multiple contact points, the control with the most contact points has the highest priority as follows (Input 1 > Input 2 > Input 3 > Input 4).
- (*6): The control capacity target applies to outdoor units only. If the desired target is different than the one selected, contact your contractor for adjustments.
- (*7): It is possible to control using a schedule without using demand control.
- (*8): Upon clearance of demand signal, operation status may not return to the previous state if air conditioner received control command while demand signal was ON.

■ External Output Function

1. All Run Output

This is an external output for the indoor unit operation signal in the target group.
The operation signal outputs even if only one indoor unit in the target group is operating.

2. External Output Alarm

This is an external output alarm signal for an indoor unit in the target group.
The alarm signal activates even if a fault occurs in one indoor unit within the target group.

■ External Input/Output Terminals Specification

Input Terminal: Non-voltage contact (normal open) for demand signal Input 12VDC, 10mA
Switching of the contact is possible.

Pulse width is 300ms or more for pulse signal input.

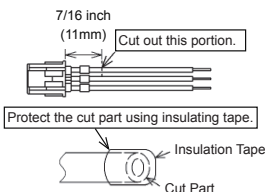
Output Terminal: Contact (voltage is applied) for signal Output 12VDC

Recommended Relay: MY Relay manufactured by Omron Corporation
(Do not use a diode built-in type.)

Input/Output connection: Use the connector cord accessory.

Connection procedure:

- When the cord is not used depending for any reason, check the connector number and cut out a portion as shown in the figure at the right. Protect the cut part using insulating tape as local code.

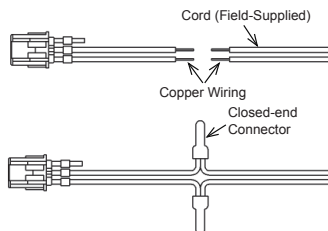


- To connect a relay or timer with cord that meets local electrical codes and connect using one of the following procedures:

a. When Soldering

Twist and solder copper wires together and insulate with electrical tape.

- When Caulking with a closed-end connector accessory:
Insert the closed-end connector after twisting and soldering copper wires together. Then caulk with the aid of a clamping tool. (Check by pulling up). Make sure the connection is secure by pulling up on the connection.



9.15 Button Setting

The operating button indication selection

The operating button indication can be selected to show or hide for restricting operation.

Set by Monitor > Menu > Service Menu > Button Setting.

Refer to Section 10.8 for details.

9.16 Contact Information Register

The contact information editing or registration for "Contact Info." display function. This function is used when there is an error issue with the system and an alarm code is displayed.

Set by Monitor → Menu → Service Menu → Contact Info. Register.

Refer to Section 10.9 for details.

9.17 Alarm History

The alarm history record of the air conditioner and the mini central controller

The time of alarm occurrence, abnormal unit and alarm code are recorded. The alarm history record of all deletions is performed by this function.

Set by Monitor > Menu > Service Menu > Alarm History.

Refer to Section 10.13 for details.

10. Service Menu

10.1 Display of Service Menu Screen

The diagram illustrates the steps to reach the Service Menu. It begins with two initial screens: '<Monitor (All Groups)>' and '<Monitor (Block)>'. Both screens feature a 'Menu' button at the bottom. Step 1 indicates touching this 'Menu' button. This leads to a 'Menu' screen displaying various options. Step 2 shows the 'Service Menu' option, which is highlighted with a dashed box and labeled '3'. Step 3 indicates pressing and holding this 'Service Menu' option for at least three seconds. Finally, step 4 shows the 'Service Menu' screen, which is also highlighted with a dashed box and labeled '4'. This screen contains options like Group Register, Optional Function Setting, Exception Setting, External Input/Output Setting, Button setting, Contact Information Register, Memo, Restore Settings, Checking Connection, and Alarm History.

1. Touch "Menu" on the "<Monitor (All Groups)>" or "<Monitor (Block)>" screen.
2. The "Menu" screen is displayed.
3. Press and hold "Service Menu" for at least three seconds. The "Service Menu" is displayed.
4. Select the "Service Menu" function by touching each item button. The setting screen of selected function will be displayed.

NOTICE

Depending on the operating condition of the air conditioner unit and the mini central controller (listed as 1 through 4 below), the following functions cannot be selected.

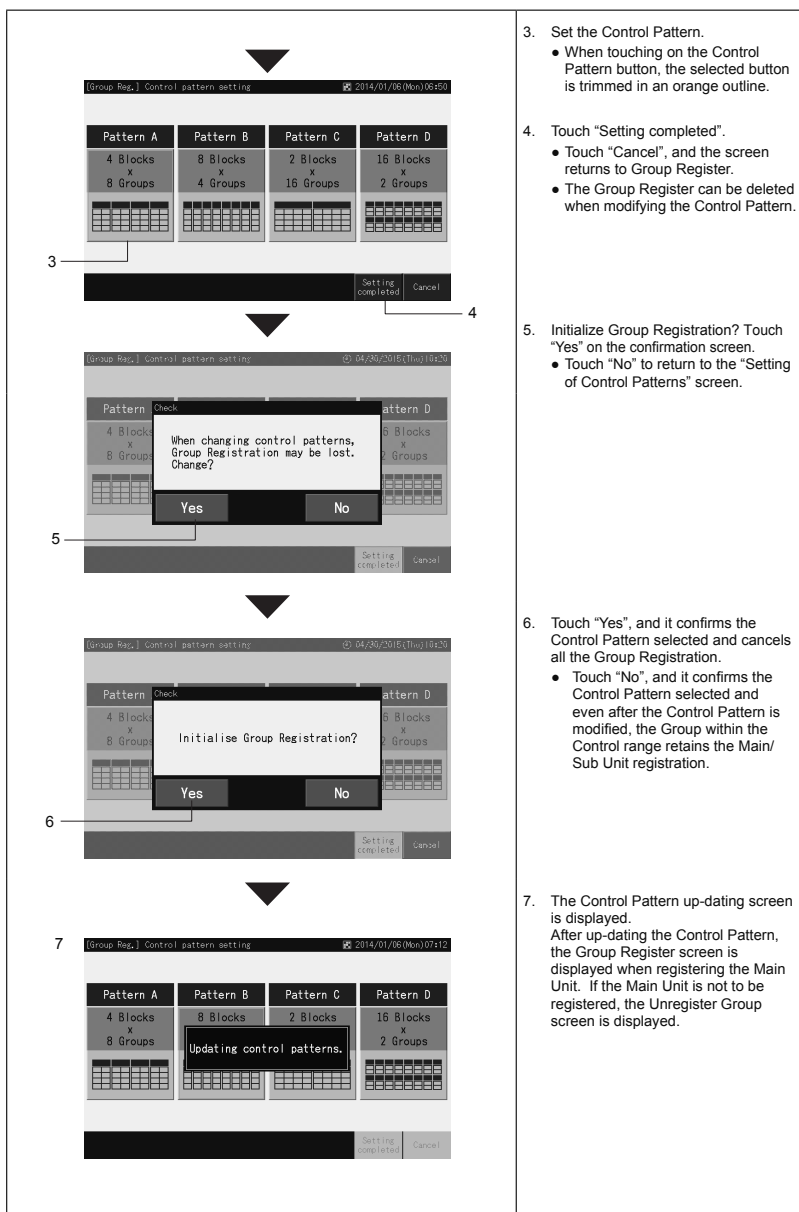
- Group Register (1)
- A/C unit and Wired Controller setting (Optional Function Setting) (2)
- External Input/Output Setting (1, 2)
- Restore Settings (1, 3, 4)
- Checking Connection (1, 2)
 1. When the External Input signal is ON
 2. When one air conditioner unit is operating
 3. When one air conditioner unit Wired Controller is restricted (Without Wired Controller not included).
 4. When one outdoor unit is operating at capacity control.

1. Touch "Menu" to return to the Menu screen.

2. Touch on "Monitor screen" to return to the Monitor screen.

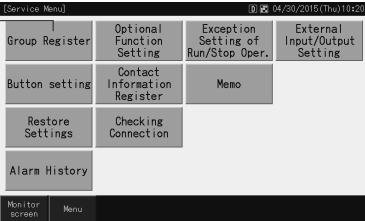
10.3.1 How to Register Control Pattern

P5415512 27




10.4 Group Register


10.4.1 How to Register Group (Main Unit)



▼



▼



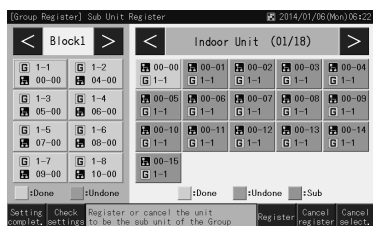
▼

Continue to Next Page

1. Select "Group Register" on the "Service Menu" screen.
NOTE:
This function cannot be selected when the external input signal is connected to the external input terminal 1 or 2.

2. Select "Main Unit Register" on the "Group Register" screen.

3. Select a Group for the main unit to register.
 - Touch "<" or ">" on the upper left of the touchscreen, to switch the block display.
 - The information of Block number and Group number are indicated in the button as "Block No. - Group Name".
 - Select the group button by touch. The selected button is trimmed with an orange outline. Touch the selected group button again and the group selection is canceled.
 - The Main Unit screen may be different depending on the Control Pattern. The screen on the left indicates the Setting of control patterns when Pattern A is selected (4 Blocks x 8 Groups).



6

7

4. Select the indoor unit for "Main Unit Register".

- Touch "<" or ">" on the upper right area of the touchscreen and the indoor units display is changed.
- The information of the refrigerant cycle num and indoor unit address are indicated in the indoor unit button as "Refrigerant Cycle No. - Indoor Unit Address".
- Select the indoor unit button by touch. The selected button is trimmed with an orange outline. If the selected button is touched again, the indoor unit selection is canceled.
- The indoor unit that is already registered as the main unit cannot be selected. (The button color is blue.)

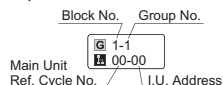
< About the Indoor Unit Selecting >

- The indoor unit which letters are highlighted in red cannot be registered as the main unit. In this case, the indoor unit is registered as the sub unit automatically.
- When the indoor unit with a fan speed of Four, and fan speed setting Three becomes intermixed in the same Remote Control group, register the indoor unit with a fan speed of Four as a Main Unit.
- When the indoor units such as "with auto louver function" and "without auto louver function" are mix-installed in the same H-LINK, register the indoor unit "with auto louver function" on the priority basis as the main unit. If the unit "without auto louver function" is registered as the main unit, the auto louver function cannot be used in this H-LINK. (The same applies to the other functions.)

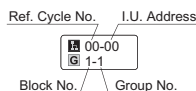
5. Touch "Register" to register the main unit while the group and indoor unit are selected.

- If the group and indoor unit for the main unit are not selected, "Register" is displayed in gray but cannot be selected.
- The button color of the registered group and indoor unit are changed to blue and the information is displayed in the button group shown below.

< Group Button >



< Indoor Unit Button >



Proceed to the main unit register, depending on the setting.

- Continue "Main Unit Register"....(3)
- Exit "Main Unit Register".....(6)

6. Touch "Setting complet." to register the group and return to the Group Register menu screen.
7. Touch "Monitor screen" to return to Monitor screen.
8. Touch "Service Menu" to return to Service Menu screen.

10.4.2 How to Register Group (Sub Unit)

1. [Service Menu] 04/30/2015(Thu)10:20

Group Register	Optional Function Setting	Exception Setting of Run/Stop Oper.	External Input/Output Setting
Button setting	Contact Information Register	Memo	
Restore Settings	Checking Connection		
Alarm History			
Monitor screen	Menu		

2. [Group Register] Submenu 2014/01/05(Mon)06:05

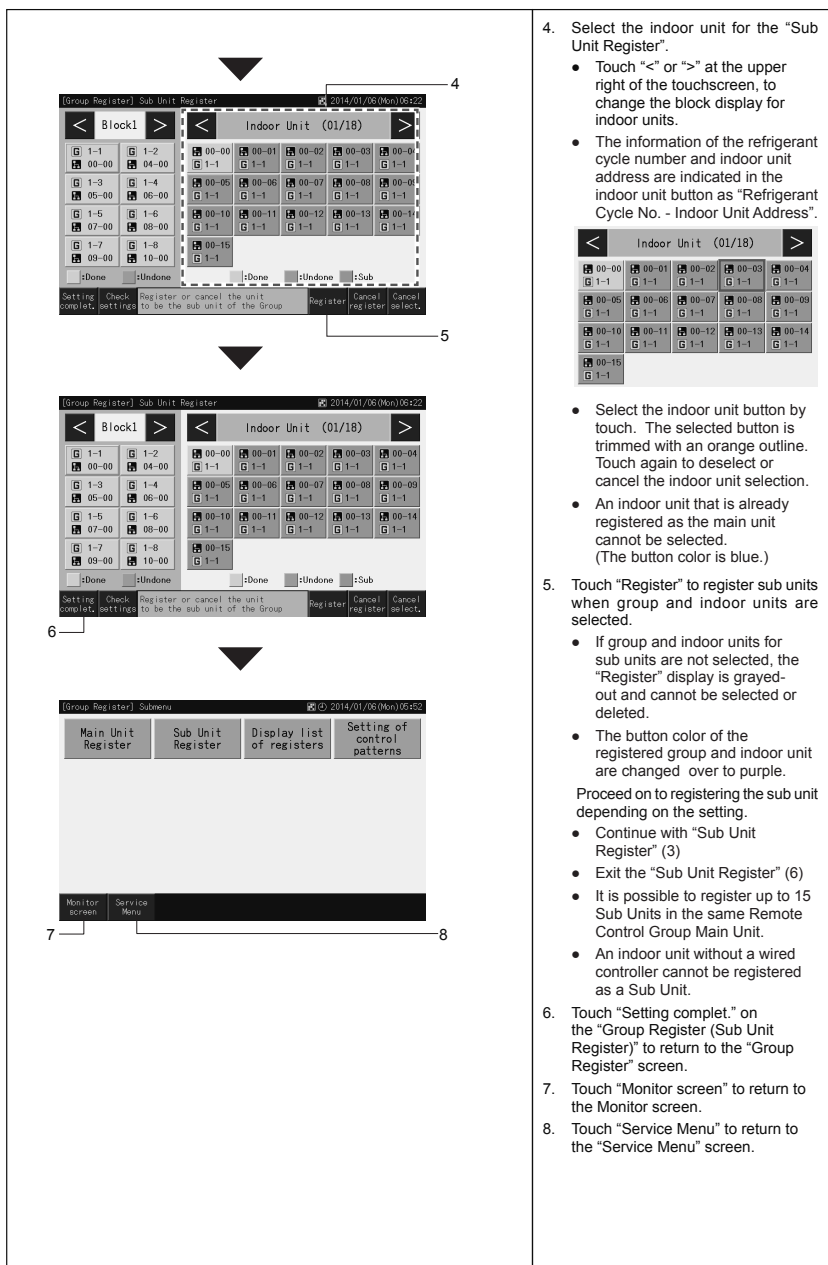
Main Unit Register	Sub Unit Register	Display list of registers	Setting of control patterns
--------------------	-------------------	---------------------------	-----------------------------

3. [Group Register] Main Unit Register 2014/01/05(Mon)06:08

< Block1 >		< Indoor Unit (01/18) >	
G 1-1	G 1-2	G 00-00	G 00-01
G 00-00	G 04-00	G 1-1	G 1-1
G 1-3	G 1-4	G 00-05	G 00-06
G 05-00	G 06-00	G 1-1	G 1-1
G 1-5	G 1-6	G 00-10	G 00-11
G 07-00	G 08-00	G 1-1	G 1-1
G 1-7	G 1-8	G 00-12	G 00-13
G 09-00	G 10-00	G 1-1	G 1-1
G 00-15	G 1-1		

Continue to Next Page

- Select "Group Register" on the "Service Menu" screen.
NOTE:
This function cannot be selected when the external input signal is connected at external input terminal (1 or 2).
- Select "Sub Unit Register" on the "Group Register" screen.
- Select the group for the "Sub Unit Register".
 - Touch "<" or ">" at the upper left of the touchscreen, to change the block array display.
 - Touch the group button to select. The selected button is trimmed with an orange outline.
 - Touch again to deselect or cancel.
 - Unregistered groups appear in gray and cannot be selected. Thus, the main unit cannot be selected for an unregistered group.
 - The sub unit register screen may be different, depending on the control pattern. The screen on the left indicates the setting of control patterns when pattern A is selected (4 blocks x 8 groups).



10.4.3 How to Cancel Group Register

The diagram illustrates the process of canceling a group register through a series of seven screenshots:

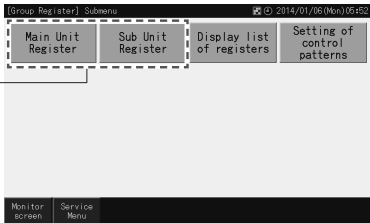
- Group Register** screen. The **Main Unit Register** button is highlighted with a dashed box and labeled '2'.
- Main Unit Register** screen. A grid of units is displayed. The **Cancel Register** button at the bottom right is highlighted with a dashed box and labeled '4'.
- Main Unit Register** screen. The **Cancel Register** button is highlighted with a dashed box and labeled '5'.
- Main Unit Register** screen. The **Cancel Register** button is highlighted with a dashed box and labeled '4'.
- Main Unit Register** screen. The **Cancel Register** button is highlighted with a dashed box and labeled '5'.
- Group Register** screen. The **Main Unit Register** button is highlighted with a dashed box and labeled '6'.
- Group Register** screen. The **Main Unit Register** button is highlighted with a dashed box and labeled '7'.

- Select "Group Register" on the "Service Menu" screen.
Refer to item 10.3.1 (1).
NOTE:
This function cannot be selected when the external input signal is connected at external terminal (1 or 2).
- Select "Main Unit Register (or Sub Unit Register)" on the screen of "Group Register".
- Select a registered group to cancel.
 - Touch "<" or ">" at the upper left of the touchscreen, to change the block array display.
 - Touch to select a group. The selected button is trimmed with an orange outline.
If the selected group button is tapped again, the group selection will be canceled.
- Touch "Cancel Register" to delete the Group Register. The Group or Indoor Unit Button turns gray.
 - Touch "Cancel Register" on the "Main Unit Register" screen, to deregister the main unit and any associated sub units.
 - Touch "Cancel Register" on the "Sub Unit Register" screen, and sub units are deregistered.


Proceeding to the following step to deregister a group will open the following options.

 - Continue with deregistration of Group Register (3)
 - Exit deregistration of Group Register (5)
- Touch "Setting complet." to return to the "Group Register" screen.
- Touch "Monitor screen" to return to the Monitor screen.
- Touch "Service Menu" to return to "Service Menu" screen.

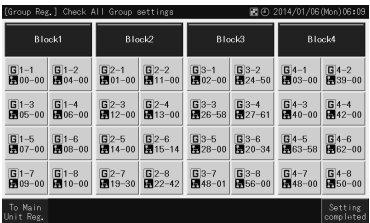
10.4.4 How to Check Group Register (Check Main Unit Register)



2

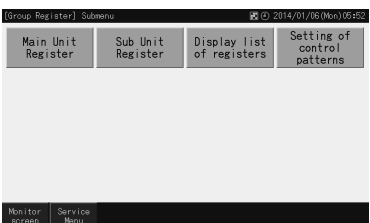


3



4

5



6

7

1. Select "Group Register" on the "Service Menu" screen.
Refer to item 10.4.1 (1).
NOTE:
This function cannot be selected when the external input signal is joined to the external input terminal (1 or 2).
2. Select "Main Unit Register (or Sub Unit Register)" on the "Group Register" screen.
3. Touch "Check settings" at the lower corner left of the touchscreen.
4. The screen switches to the "Group Register" Check screen.
 - The screen switches to Group Register when "Main Unit Register" is selected.
5. Touch "Setting completed" to register a Group. The screen returns to the "Group Register" Menu screen.
6. Touch "Monitor screen" to return to Monitor screen.
7. Touch on "Service Menu" to return to Service Menu screen.

10.4.5 How to Check Group Register (Check Register Details)

The diagram illustrates the process of checking group register details through a series of three screenshots. The first screenshot shows the 'Service Menu' with options: Main Unit Register, Sub Unit Register, Display list of registers, and Setting of control patterns. An arrow points to 'Display list of registers'. The second screenshot shows the 'List Display' screen with a table of groups and their addresses. An arrow points to the 'Submenu' button. The third screenshot shows the 'Service Menu' again, with arrows pointing to 'Monitor screen' and 'Service Menu'.

1. Select "Group Register" on the "Service Menu" screen.
Refer to item 10.4.1 (1).
NOTE:
This function cannot be selected when the external input signal is connected with external input terminals (1 and 2).
2. Select "Display list of registers" in the Group Register screen.
3. Select the target displayed (All Groups/Blocks).
4. Addresses for all registered indoor units are displayed for each group.

Black = Main Unit
(Other designated color) = Sub Unit
 - Move to another page by touching on "△" or "▽".
5. Touch "Submenu" to return to the Group Register screen.
6. Touch "Monitor screen" to return to the Monitor screen.
7. Touch on "Service Menu" to return to the "Service Menu" screen.

10.5 Optional Function Setting

10.5.1 Air Conditioner Remote Control Settings

1. When the air conditioner is not operating, select "Optional Function Setting" on the "Service Menu" screen.

2. Select "Remote control setting" on the "Menu" screen.

- Cannot be selected if the air conditioner is operating.

3. Select the Optional Function target (All Groups/Block/Group).

4. Select the function concerning each option.

- The selected function button changes color.

5. Touch "Setting completed" to confirm. Return to the "Menu" screen of the target group.

6. Touch "Cancel" to cancel the content setting. Return to the Optional Function target selection screen.

- When the air conditioner is not operating, select "Optional Function Setting" on the "Service Menu" screen.
- Select "Remote control setting" on the "Menu" screen.
 - Cannot be selected if the air conditioner is operating.
- Select the Optional Function target (All Groups/Block/Group).
- Select the function concerning each option.
 - The selected function button changes color.
- Touch "Setting completed" to confirm. Return to the "Menu" screen of the target group.
- Touch "Cancel" to cancel the content setting. Return to the Optional Function target selection screen.

NOTE:

Depending on the unit, the setting may not apply. Please, check the installation and maintenance manual, and the operation manual of each indoor unit or remote control for more details.

10.5.2 Mini Central Controller Setting

1

- Select "Optional Function Setting" on the "Service Menu" screen.

2

- Select "Controller setting" on the "Optional Function Setting" screen.

3

- Select a function concerning each item.
 - The color of the selected function button will change.

< Concerning OFF Time Remote control prohibition >

- When setting as Enable, the Remote Operation Prohibited (by item) cannot be set. The Remote Operation Prohibited (by item) can be set but, if operating simultaneously with other controllers, then do not perform any settings.
- When all groups have Remote Operation permitted (all items) only, It is possible to switch back and forth between Enable and Disable.

4

- Touch on "Setting completed" to confirm the setting. Return to the "Optional Function Setting Menu" screen.

- After selecting Enable or Disable in the OFF time Remote Control Prohibition, touch on "Setting completed". The confirmation screen is displayed as below.

5

- Touch on "Service Menu" to complete the Optional Function Setting and return to the "Service Menu" screen.

- Touch on "Service Menu" to complete the Optional Function Setting and return to the "Service Menu" screen.

10.5.3 Indoor Unit Settings

1. Service Menu

2. Optional Function Submenu

3. Set. Funct. Indoor setting gr. select

4. Optional Function Indoor unit setting

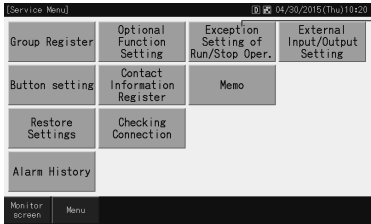
5. Setting completed / Cancel

1. When the air conditioner is not operating, select "Optional Function Setting" on the "Service Menu" screen.
2. Select "Indoor unit setting" on the "Menu" screen.
 - Cannot be selected if the air conditioner is operating.
3. Select the Optional Function target (All Groups/Block/Group).
4. Select the function concerning each option.
5. Touch "Setting completed" to confirm. Return to the "Menu" screen of the target group.
6. Touch "Cancel" to cancel the content setting. Return to the Optional Function target selection screen.

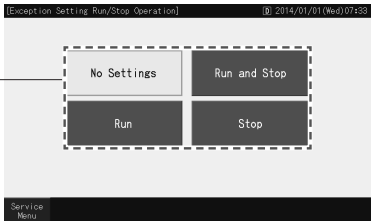
NOTE:

- Depending on the unit, the setting may not apply. Please, check the installation and maintenance manual, and the operation manual of each indoor unit or remote control for more details.
- If central controller that doesn't support dual setpoint coexists on the same network, dual setpoint and setback function will be unavailable on whole system.
The following setting is required also on the system. Optional function r1 setting must be "00".

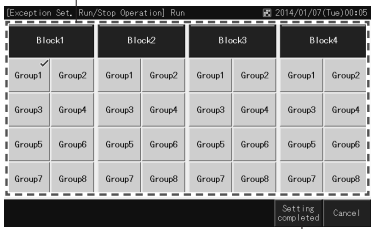
10.6 Exception Setting of Run/Stop Operation




1



2



3



4

1. Select the "Exception Setting of Run/ Stop Oper." on the "Service Menu" screen.

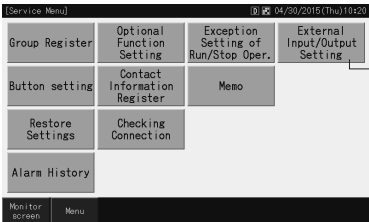
2. Select the operation to exclude settings.
 - The color of the selected function button changes.

3. Select the exception operation target (group/block)
 - Touch on the Group button to switch between "Select" and "Cancel".
 - Touch the Block button to switch between "Select" and "Cancel" for all groups in a block.
 - A check mark as shown is displayed on the selected group.

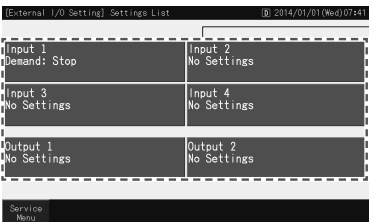
4. Touch on "Setting completed" to confirm the setting. Return to the Exception setting for the Run/Stop Operation.

10.7 External Input/Output Setting


10.7.1 External Input Setting



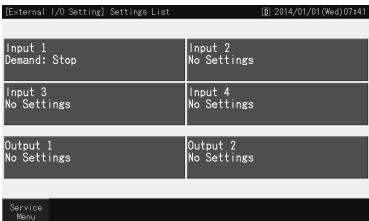
1



2



3

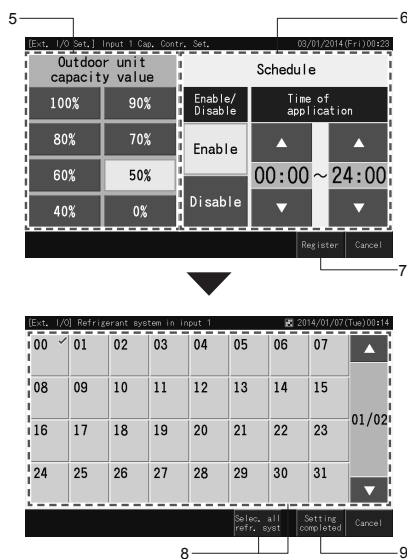


4

1. Select the "External Input/Output Setting" on the "Service Menu" screen.
 - If the air conditioner is operating, or if the external input signal contact point is ON, this cannot be selected.
2. Select the input target (from input 1 to 4) for the external input.
3. Select a function in the external input.
 - The selected function button color changes. Here are the steps displayed when a function is selected.
 - If "No Settings" selected, go on to step four.
 - If "Demand Capacity Control" is selected, go on to step five.
 - If other than those above, go on to step 10.

< "No Setting" >

4. Touch "Service Menu" to complete the External Input/Output setting. Return to the "Service Menu" screen.



<Outdoor Unit Capacity Control>

5. Select the outdoor unit capacity value.
 - The selected capacity value button changes color.
6. Control capacity can be selected in the central station schedule without using a contact point. In the schedule, select Enable and the applicable time.
 - Select "Enable" or "Disable".
 - Tap "Δ" or "▽" to set the applicable starting time and the ending time. The time adjusts for every 30 minutes.
 - When the Ending time is earlier than the Starting time, Ending time continues into the following day.

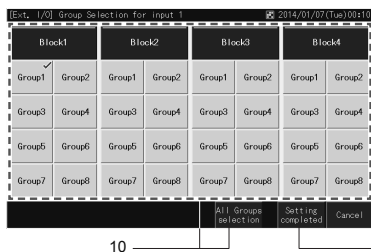
For example:

Starting Time 15:00
Ending Time 08:00,
The capacity control starts at 15:00 and will end the next day at 08:00.

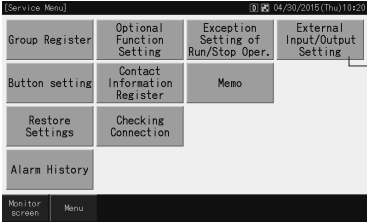
7. Touch "Register".
8. Select the capacity control target (Refrigerant system).
 - The buttons of the Refrigerant system of the registered outdoor unit numbers is displayed in blue.
 - Unregistered outdoor units is displayed in gray. This means that these refrigerant units cannot be selected.
 - Touch the refrigerant system number button to toggle back and forth between "Select" and "Cancel".
 - Touch "Select all refr. syst" to toggle back and forth between "Select" and "Cancel" for all refrigerant systems.
 - A check mark is displayed for the refrigerant selected.
9. Touch "Setting completed" to confirm the setting. Return to the External Input/Output Setting screen.

< Other settings >

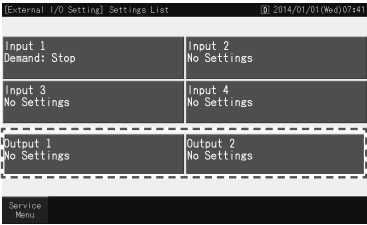
10. Select the External Input Control target (All Groups/Block/Group).
 - Touch the Group button to toggle between "Select" and "Cancel".
 - Touch the Block button to toggle between "Select" and "Cancel" Blocks in all Groups.
 - Touch "Select All Groups" to toggle between "Select" and "Cancel" all Groups.
 - A red check mark (shown at left) is displayed for the selected Group.
11. Touch "Setting completed" to confirm the setting. Return to the external Input/Output Setting screen.



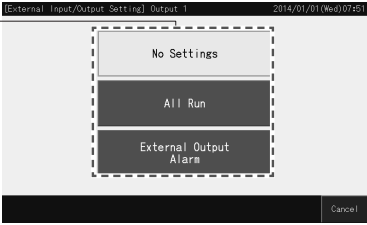
10.7.2 External Output Setting



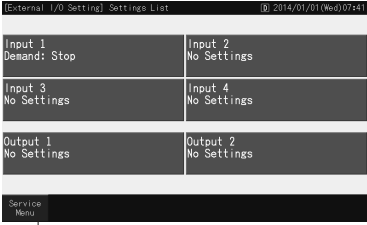
1



2



3



4

1. Select "External Input/Output Setting" on the Service Menu" screen.
 - When the air conditioner is operating, or when the external input signal contact point is ON, this cannot be operated.

2. Select the Output target of the External Output (Output 1, and 2).

3. Select the function used in the External Input.
 - The selected function button will change color.

Touch the "Optional Function button" to confirm the setting. Return to the External Input/Output Setting screen.

4. Touch "Service Menu" to complete the external Input/Output Setting and return to the "Service Menu" screen.

10.8 Button Setting

The diagram illustrates the process of setting buttons in three steps:

- Step 1:** On the "Service Menu" screen, select "Button setting". The screen shows options like Group Register, Optional Function Setting, Exception Setting of Run/Stop Oper., External Input/Output Setting, Button setting, Contact Information Register, Memo, Restore Settings, Checking Connection, Alarm History, Monitor screen, and Menu.
- Step 2:** On the "Button setting" screen, select a function concerning each group. The screen shows options like All Groups Run, All Groups Stop, All Groups Setting, and Menu, each with Show/Hide or One Tap/Press hold options. A dashed box highlights the "All Groups Run" option.
- Step 3:** Touch "Setting completed" to confirm the setting control and return to the "Service Menu" screen. The screen shows "Setting completed" and "Cancel" buttons.

1. Select "Button setting" on the "Service Menu" screen.
2. Select the function concerning each group.
 - The button of the selected function will change color.
3. Touch "Setting completed" to confirm the setting control and return to "Service Menu" screen.

10.9 Contact Information Register

The diagram illustrates the process of registering contact information through four main screens:

- Service Menu:** The 'Contact Information Register' option is selected.
- Contact Information Register:** The 'Name Edition' and 'TEL. No. Edition' options are selected for registration.
- Contact info input:** The user enters the name and telephone number for contact 2 using the on-screen keypad.
- Contact Information Register:** The registered information is displayed, and the 'Service Menu' is touched to complete the setting.

1. Select "Contact Information Register" on the "Service Menu" screen.
2. Select the "Contact Information (1 or 2) Name Edition" or the "Contact Information (1 or 2) TEL. No. Edition" to register the information.
3. Type in the telephone number.
NOTE:
Only the keyboard of numeric characters and symbols can be selected when "Contact Information (1 or 2) TEL. No. Edition" is selected.
4. The maximum allowable number of characters is 60 for the name of a company and 30 characters for a phone number.
5. Touch "Register" when the character information is completed. Confirm the Contact Information and return to the Contact Information Edit screen. Proceed with the contact information register, depending on the setting.
 - Continue to register or edit contact information.(2)
 - Finish this setting.(7)
6. Touch "Service Menu" to complete this setting. The screen reverts back to the "Service Menu".

10.10 Memo

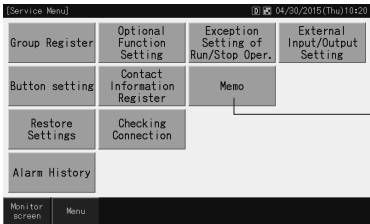
10.10.1 Register Memo

The diagram illustrates the process of registering a memo through a series of seven steps:

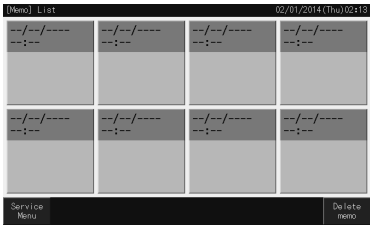
- Step 1:** Select "Memo" on the "Service Menu" screen. The screen shows a grid of options including Group Register, Optional Function Setting, Exception Setting of Run/Stop Oper., External Input/Output Setting, Button setting, Contact Information Register, Memo, Restore Settings, Checking Connection, Alarm History, Monitor screen, and Menu.
- Step 2:** Select the target to register. The screen shows a grid of eight empty boxes for character input.
- Step 3:** The character input screen is displayed. The screen shows a grid of characters and symbols, including numbers, letters, and special characters.
- Step 4:** Select a registered character or symbol from the character list. The screen shows a grid of characters and symbols, including numbers, letters, and special characters.
- Step 5:** Input characters. The screen shows a grid of characters and symbols, including numbers, letters, and special characters.
- Step 6:** Touch "Register" when character input is completed. The screen shows a grid of characters and symbols, including numbers, letters, and special characters.
- Step 7:** Touch "Service Menu" to return to the "Service Menu" screen. The screen shows a grid of characters and symbols, including numbers, letters, and special characters.

1. Select "Memo" on the "Service Menu" screen.
2. Select the target to register.
3. The character input screen is displayed.
4. Select a registered character or symbol from the character list.
5. Input characters. Touch "Delete" to erase the character on the left side of the cursor.
 - The number of characters possible to enter is 52 characters maximum.
6. Touch "Register" when character input is completed. Confirm the memo and return to the Memo display screen.
7. Touch "Service Menu" to return to "Service Menu" screen.

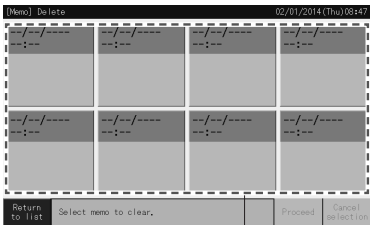
10.10.2 Delete Memo



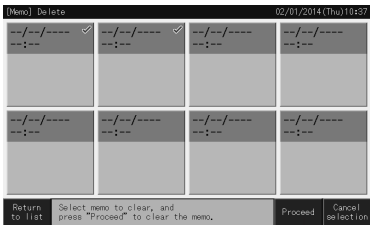
▼



▼



▼



▼

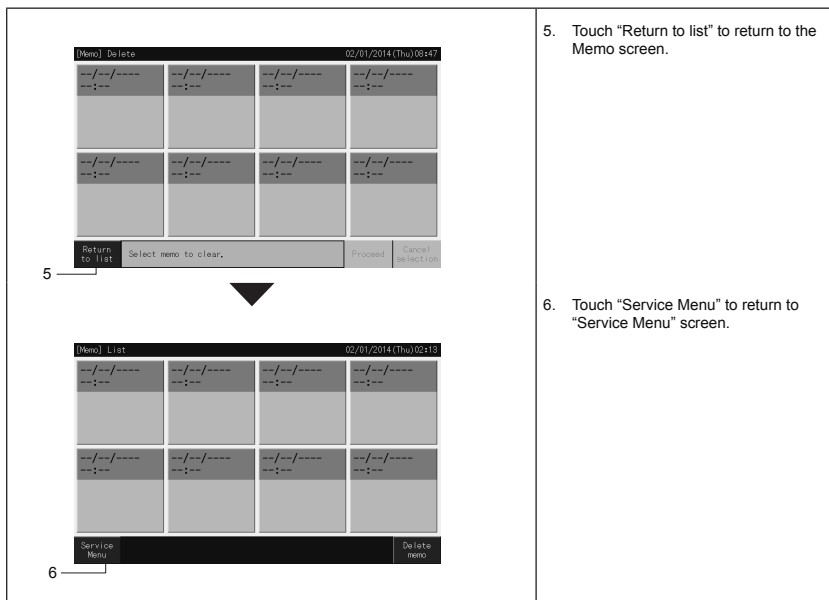
Continue to Next Page

1. Select "Memo" on the "Service Menu" screen.

2. Touch "Delete memo" to select a memo to delete.

3. Select the memo to delete.
 - Touch the Memo button to toggle back and forth from "Select" and "Cancel".
 - It is possible to select multiple Memos.
 - A red check mark appears on the selected memo(s).

4. Touch "Proceed" to clear the memo.



10.11 Restore Setting

1

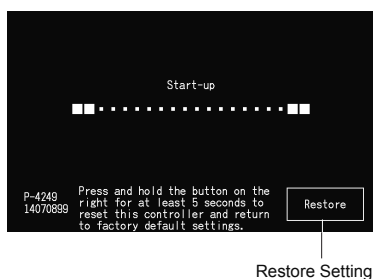
2

3

- Select "Restore Settings" on the "Service Menu" screen.
NOTE:
This function cannot be selected when the wired controller operation is prohibited, the external input contact point is ON, or outdoor unit capacity control is not cancelled. Cancel these parameters when performing "Restore settings".
- Touch "Yes" at the confirmation screen.
NOTE:
If "No" is selected, the screen is returned to the "Service Menu".
- The confirmation screen is displayed again, touch "Yes" to restore the setting. After several seconds, the screen is changed and the connection check of the system is started.
NOTE:
If "No" is selected, the screen will be returned to the "Service Menu".

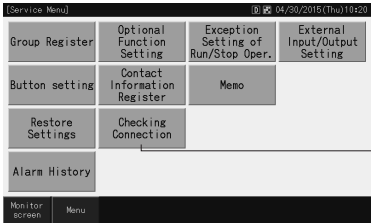
Information

The Restore Settings option can be set when the Start-up screen is displayed.

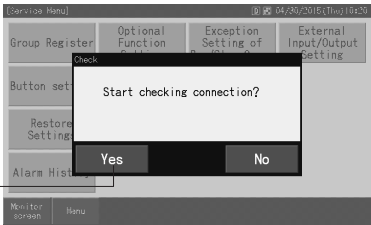


- To restore factory default settings, touch the "Restore" button in the lower right corner of the "Start-up" screen, maintaining contact for more than five seconds.
 - The "Restore settings" option is not displayed when the wired controller operation is prohibited, the external input contact point is ON, or that the outdoor unit capacity control is not cancelled.
- In a few seconds, the connection check process begins.
- When the connection verification process is complete, the "Date and Time Settings" screen is displayed.
(Refer to "Date and Time Settings" in Section 9.5.)

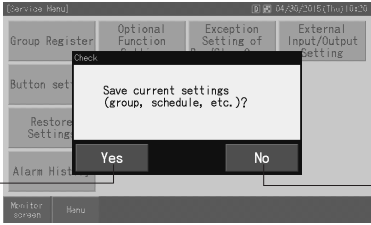
10.12 Checking Connection



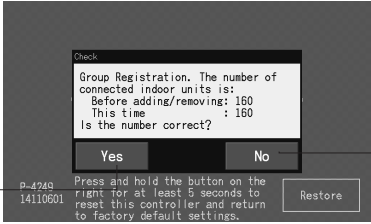
1



2



3 7



4 5

Continue to Next Page

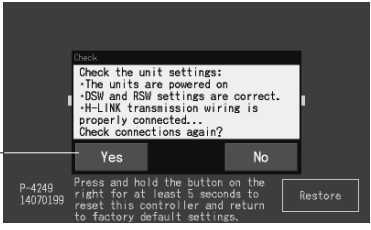
1. Select "Checking Connection" on the "Service Menu" screen.
NOTE:
This function cannot be selected when the air conditioner(s) is operating or that the external input signal is directed to external input terminal (1 or 2.)

2. Touch "Yes" at the confirmation screen.
NOTE:
Touch on the "No" button and the screen returns to the "Service Menu". Proceed with the connection information update depending upon what is to be set later.
 - Update connection information by retaining Group register and settings such as schedule setting, and so on. (Item 3 below.)
 - Perform reconnection check by initializing each setting. (It is the same as the restore setting command.) (Item 7, next page.)

< Keeping the setting >

3. Touch "Yes" at the confirmation screen to save the current setting.
NOTE:
Upon replacing indoor unit, cancel the current main unit registration and then register the main unit again.

4. When the process for checking connections is complete, the number of connected indoor units is displayed on the confirmation screen. Touch "Yes" if the number of connected units is indicated correctly. The "Main Unit Register" screen is displayed. Refer to Section 10.4.1 (3).
5. If the number of connected units indicates something different from actual number, touch "No".



Check

Check the unit settings:

- The units are powered on
- DSW and RSW settings are correct.
- H-LINK transmission wiring is properly connected...

Check connections again?


Yes No

p-4249 14070199

Press and hold the button on the right for at least 5 seconds to reset this controller and return to factory default settings.

Restore

▼



Service Menu

Group Register Optional Function Setting Exception Setting of Run/Stop Oper. External Input/Output Setting

Button setting Contact Information Register Memo

Restore Settings Checking Connection

Alarm History

Monitor screen Menu

Initialise all settings and start connection checking?

Yes No

6. Because the Confirmation screen is displayed again, check the air conditioner and touch on "Yes".

NOTE:
Touch "No" to return to the "Service Menu" screen.

< Not keeping the setting >

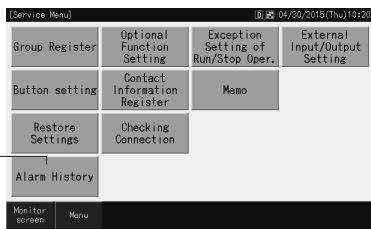
7. Touch "No" at the confirmation screen.

8. Touch "Yes" on the initialization screen display.

- The initialization for each model setting and connection confirmation processing starts.
- The RCS operation can not be selected when set as prohibited.
- Please cancel the "RCS operation prohibited" setting.

NOTE:
Touch "No" to return to the "Service Menu" screen.

10.13 Alarm History



Service Menu

Group Register Optional Function Setting Exception Setting of Run/Stop Oper. External Input/Output Setting

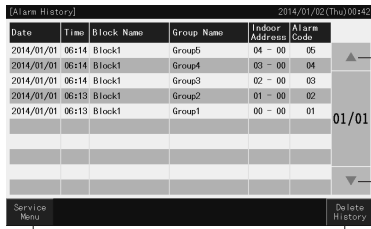
Button setting Contact Information Register Memo

Restore Settings Checking Connection

Alarm History

Monitor screen Menu

▼



Alarm History

2014/01/02 (Thu) 00:42

Date	Time	Block Name	Group Name	Indoor Address	Alarm Code
2014/01/01	06:14	Block1	Group5	04 - 00	05
2014/01/01	06:14	Block1	Group4	03 - 00	04
2014/01/01	06:14	Block1	Group3	02 - 00	03
2014/01/01	06:13	Block1	Group2	01 - 00	02
2014/01/01	06:13	Block1	Group1	00 - 00	01

Service Menu Delete History

1. Select "Alarm History" on the "Service Menu" screen.

2. The "Alarm History" screen is displayed. If there are more than 11 alarm records, touch "Δ" or "▽" to go onto the next page.

- If the alarm records number less than 10, it is not possible to advance to the next page.
- A maximum of 100 records can be stored in the memory.

3. Touch "Delete History" to delete an alarm history record. Touch "Yes" at the confirmation screen, and all alarm history records are deleted.

- Touch "No" to restore deleted files and return to the "Alarm History" screen.

4. Touch "Service Menu" to terminate Alarm History display and return to the Service Menu Screen.

Mini Central Controller Block/Group Register Table (1)

Refrigerant System Address

- Fill in Block numbers (1 through 4), Group numbers (1 through 16) in the table. (For example: 3-5), a circle the filled number for registering as main unit.

Mini Central Controller Block/Group Register Table (2)

[illegible]