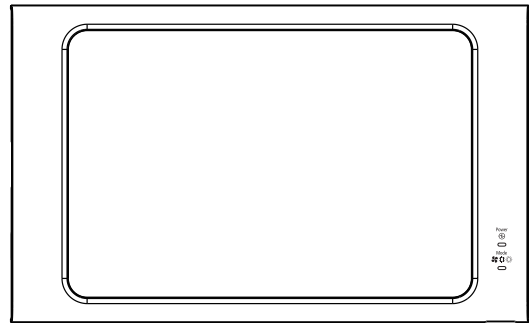


Installation & Maintenance Manual

VRF Central Touchscreen Controller

Model: CCXL01



IMPORTANT:

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

P5417067

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 central controller 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.
- If you have questions, please contact your distributor or dealer.
- This manual provides common descriptions, basic and advanced information to maintain and service this central controller 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.
- This product is NOT intended to use for emergency control or other life safety purposes.

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.

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1. Safety Summary

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 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 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 due to a falling unit.
- Use appropriate Personal Protective Equipment (PPE), such as gloves and protective goggles and, where appropriate, have a gas mask nearby. Also use electrical protection equipment and tools suited for electrical operation purposes. Keep a quenching cloth and a fire extinguisher nearby during brazing. Use care in handling, rigging, and setting of bulky equipment.
- When transporting, be careful when picking up, moving and mounting these units. Although the unit may be packed using plastic straps, do not use them for transporting the unit from one location to another. Do not stand on or put any material on the unit. Get a partner to help, and bend with your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut fingers, so wear protective gloves.
- 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 or jump-out any safety device or switch.
- 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.
---------------	---

- Be careful that moisture, dust, or variant refrigerant compounds not enter the refrigerant cycle during installation work. Foreign matter could damage internal components or cause blockages.
- If air filters are required on this unit, do not operate the unit without the air filter set in place. If the air filter is not installed, dust may accumulate and breakdown may result.
- Do not install this unit in any place where silicon gases can coalesce. If the silicon gas molecules attach themselves to the surface of the heat exchanger, the finned surfaces will repel water. As a result, any amount of drainage condensate can overflow from the drain condensate pan and could settle inside of the electrical box, possibly causing electrical failures.

- 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.
- When a wireless controller is used, locate at a distance of at least 3.3 ft. (approximately 1 meter) between the indoor unit and electric lighting. If not, the receiver part of the unit may have difficulty receiving operation commands.
- Do not install the unit in any location where animals and plants can come into direct contact with the outlet air stream. Exposure could adversely affect the animals and plants.
- Do not install the unit with any downward slope to the side of the drain boss. If you do, you may have drain water flowing back which may cause leaks.
- Be sure the drain hose discharges water properly. If connected incorrectly, it may cause leaks.
- Do not install the unit in any place where oil can seep onto the units, such as table or seating areas in restaurants, and so forth. For these locations or social venues, use specialized units with oil-resistant features built into them. In addition, use a specialized ceiling fan designed for restaurant use. These specialized oil-resistant units can be ordered for such applications. However, in places where large quantities of oil can splash onto the unit, such as a factory, even the specialized units cannot be used. These products should not be installed in such locations.

Installation Precautions



WARNING

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

- When installing the unit into...
 - A wall: Make sure the wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.
 - A room: Properly insulate any refrigerant tubing run inside a room to prevent "sweating" that can cause dripping and water damage to wall and floors.
 - Damp or uneven areas: Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the unit to prevent water damage and abnormal vibration.
 - An area with high winds: Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.
 - A snowy area (only for Heat Pump Model): Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.
- Do not install the unit in the following places. Doing so can result in an explosion, fire, deformation, corrosion, or product failure.
 - Explosive or flammable atmosphere
 - Where a fire, oil, steam or powder can directly enter the unit, such as nearby or above a kitchen stove.
 - Where oil (including machinery oil) may be present.
 - Where corrosive gases such as chlorine, bromine, or sulfide can accumulate, such as near a hot tub or hot spring.
 - Where dense, salt-laden airflow is heavy, such as in coastal regions.
 - Where the air quality is of high acidity.
 - Where harmful gases can be generated from decomposition.
- Do not position the drain pipe for the indoor unit near any sanitary sewers where corrosive gases may be present. If you do, toxic gases can seep into breathable air spaces and can cause respiratory injuries. If the drainpipe is installed incorrectly, water leakage and damage to the ceiling, floor, furniture, or other possessions may result. If the condensate piping becomes clogged, water may drip from the indoor unit. Do not install the indoor unit where such dripping can cause moisture damage or uneven locations: Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the unit to prevent water damage and abnormal vibration.
- Before performing any brazing work, be sure that there are no flammable materials or open flames nearby.

- Perform a test run 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.
- Clean up the site when finished, remembering to check that no metal scraps or bits of wiring have been left behind inside the unit being installed.

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

Refrigerant Precautions



To reduce the risk of serious injury or death, the following refrigerant precautions must be followed.

- As originally manufactured, this unit contains refrigerant installed by Johnson Controls. Johnson Controls uses only refrigerants that have been approved for use in the unit’s intended home country or market. Johnson Controls distributors similarly are only authorized to provide refrigerants that have been approved for use in the countries or markets they serve. The refrigerant used in this unit is identified on the unit’s faceplate and/or in the associated manuals. Any additions of refrigerant into this unit must comply with the country’s requirements with regard to refrigerant use and should be obtained from Johnson Controls distributors. Use of any non-approved refrigerant substitutes will void the warranty and will increase the potential risk of injury or death.
- If installed in a small room, take measures to prevent the refrigerant from exceeding the maximum allowable concentration in the event that refrigerant gases should escape. Refrigerant gases can cause asphyxiation (0.42 kg/m³ based on ISO 5149 for R410A). Consult with your distributor for countermeasures (ventilation system and so on). If refrigerant gas has leaked during the installation work, ventilate the room immediately.
- Before installation is complete, make sure that the refrigerant leak test has been performed. If refrigerant gases escape into the air, turn OFF the main switch, extinguish any open flames and contact your service contractor. Refrigerant (Fluorocarbon) for this unit is odorless. If the refrigerant should leak and come into contact with open flames, toxic gas could be generated. Also, because the fluorocarbons are heavier than air, they settle to the floor, which could cause asphyxiation.
- When installing the unit, and connecting refrigerant piping, keep all piping runs as short as possible, and make sure to securely connect the refrigerant piping before the compressor starts operating. If the refrigerant piping is not connected and the compressor activates with the stop valve opened, the refrigerant cycle will become subjected to extremely high pressure, which can cause an explosion or fire.
- Tighten the flare nut with a torque wrench in the specified manner. Do not apply excessive force to the flare nut when tightening. If you do, the flare nut can crack and refrigerant leakage may occur.
- A compressor/unit comprises a pressurized system. Never loosen threaded joints while the system is under pressure and never open pressurized system parts.
- When maintaining, relocating, and disposing of the unit, dismantle the refrigerant piping after the compressor stops.

Electrical Precautions







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

- Highly dangerous electrical voltages are 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 servicing, open and tag all disconnect switches. Never assume that electrical power is disconnected. Check with meter and equipment.
- Only use electrical protection equipment and tools suited for this installation.
- Use specified cables between units.

- Communication cabling shall be a minimum of 18-Gauge, two-Conductor, Stranded Shielded Copper. Shielded cable must be used in all areas 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.
- Use an exclusive power supply for the air conditioner at the unit's rated voltage.
- Be sure to install circuit breakers (ground fault interrupter, isolating switch, molded case circuit breaker and so on), with the specified capacity. Ensure that the wiring terminals are tightened securely to recommended torque specifications.
- Clamp electrical wires securely with a cable 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.
- Turn OFF and disconnect the unit from the power source when handling the service connector. Do not open the service cover or access panel to the indoor or outdoor units without turning OFF the main power supply.
- After operation shutdown, be sure to wait at least five minutes before turning OFF the main power switch. Otherwise, water leakage or electrical breakdown may result. Disconnect the power source completely before attempting any maintenance for electrical parts. Check to ensure that no residual voltage is present after disconnecting the power source.
- 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 cable is securely connected. Do not connect ground wiring to gas piping, water piping, lighting conductor, or telephone ground cables.
- If there are frequent occurrences with blown fuses or flipped circuit breakers, shut down the system immediately and contact your service contractor.

2. Before Installation

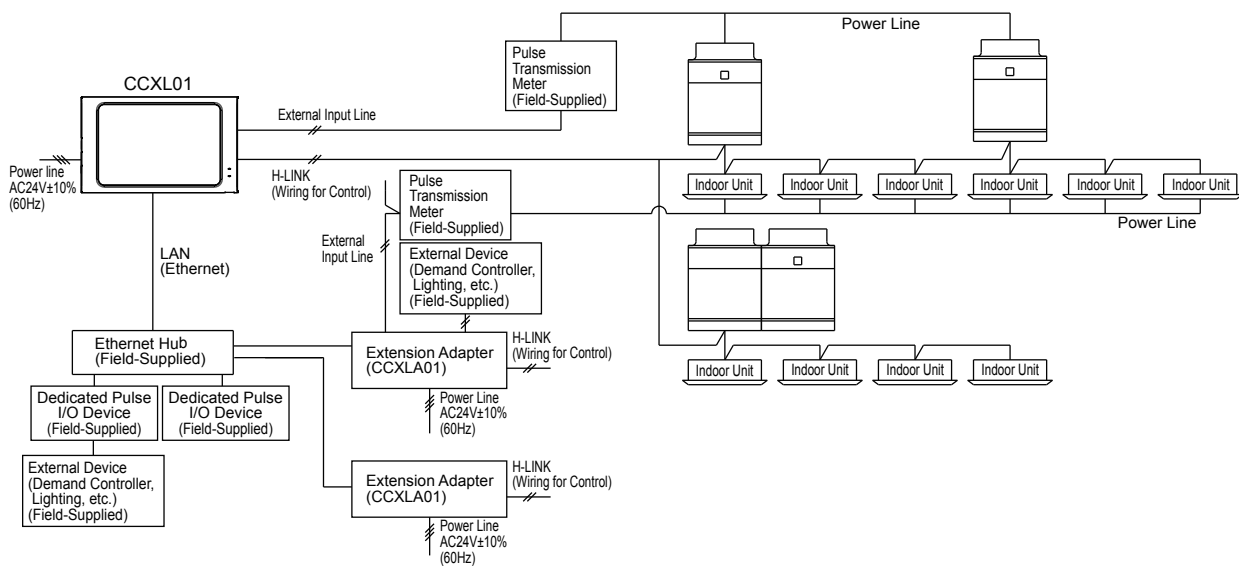
- Check to ensure that the following parts are packed with VRF Central Touchscreen Controller (also referred to as CCXL01).

Item	VRF Central Touchscreen Controller CCXL01	Operation Manual	Installation and Maintenance Manual	Wood Screw
Appearance				
Q'ty.	1	1	1	6

3. Specification

3.1 System Configuration

Sample system configuration is as follows. This installation and operation manual is exclusively for CCXL01. Also refer to installation and maintenance manual for other air conditioners and devices connecting to the system.



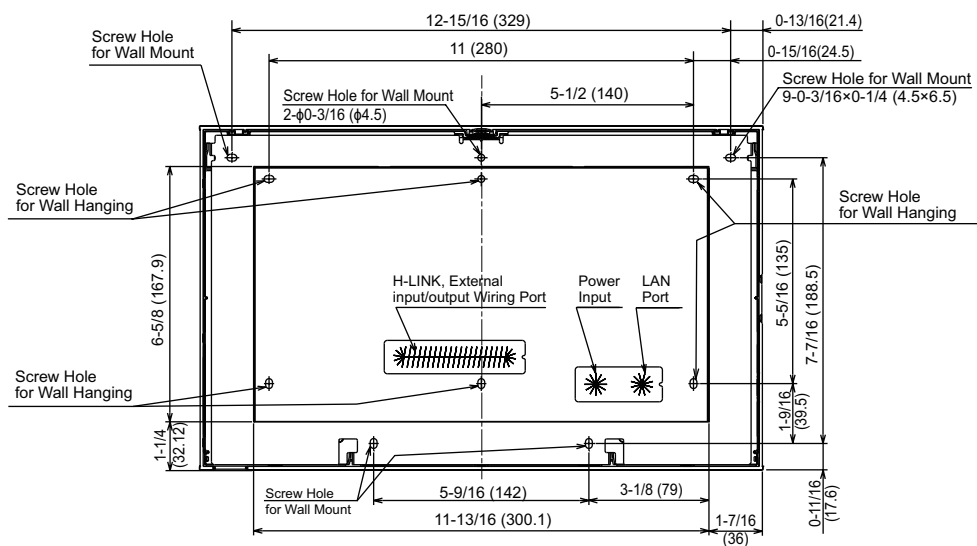
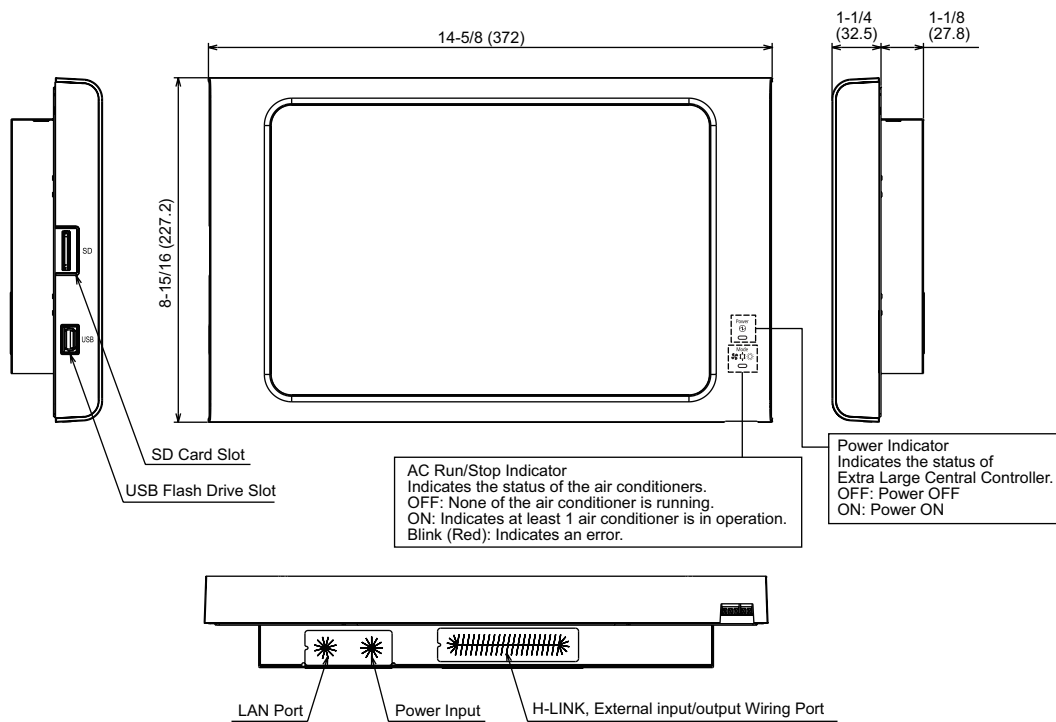
NOTICE

- Up to 15 Extension adapters (CCXLA01) can be connected to a system.
- Up to 64 outdoor units (H-LINK II compliant) and 160 indoor units (H-LINK II compliant) can be connected to VRF Central Touchscreen Controller (CCXL01)/Extension Adapter (CCXLA01). Refer to specification for connecting devices for detail.
- Up to 16 dedicated pulse I/O (also referred to as PIO) devices can be connected to one system.
- One VRF Central Touchscreen Controller (CCXL01) and Extension adapter (CCXLA01) can monitor/control up to 2 dedicated pulse I/O devices.
- Dedicated pulse I/O devices cannot be simultaneously controlled (external output) by VRF Central Touchscreen Controller and multiple extension adapters.
- Use dedicated pulse I/O devices exclusively for this system.
- Use straight cable for LAN (Ethernet cable), and ensure to connect VRF Central Touchscreen Controller and extension adapter with Ethernet hub.
- Ethernet is a registered trademark of Fuji Xerox Co., Ltd.
- Use Ethernet hub with Auto-Negotiation function.

3.2 Dimension and Parts Names

Dimension and parts names are as follows:

(Unit: inch(mm))

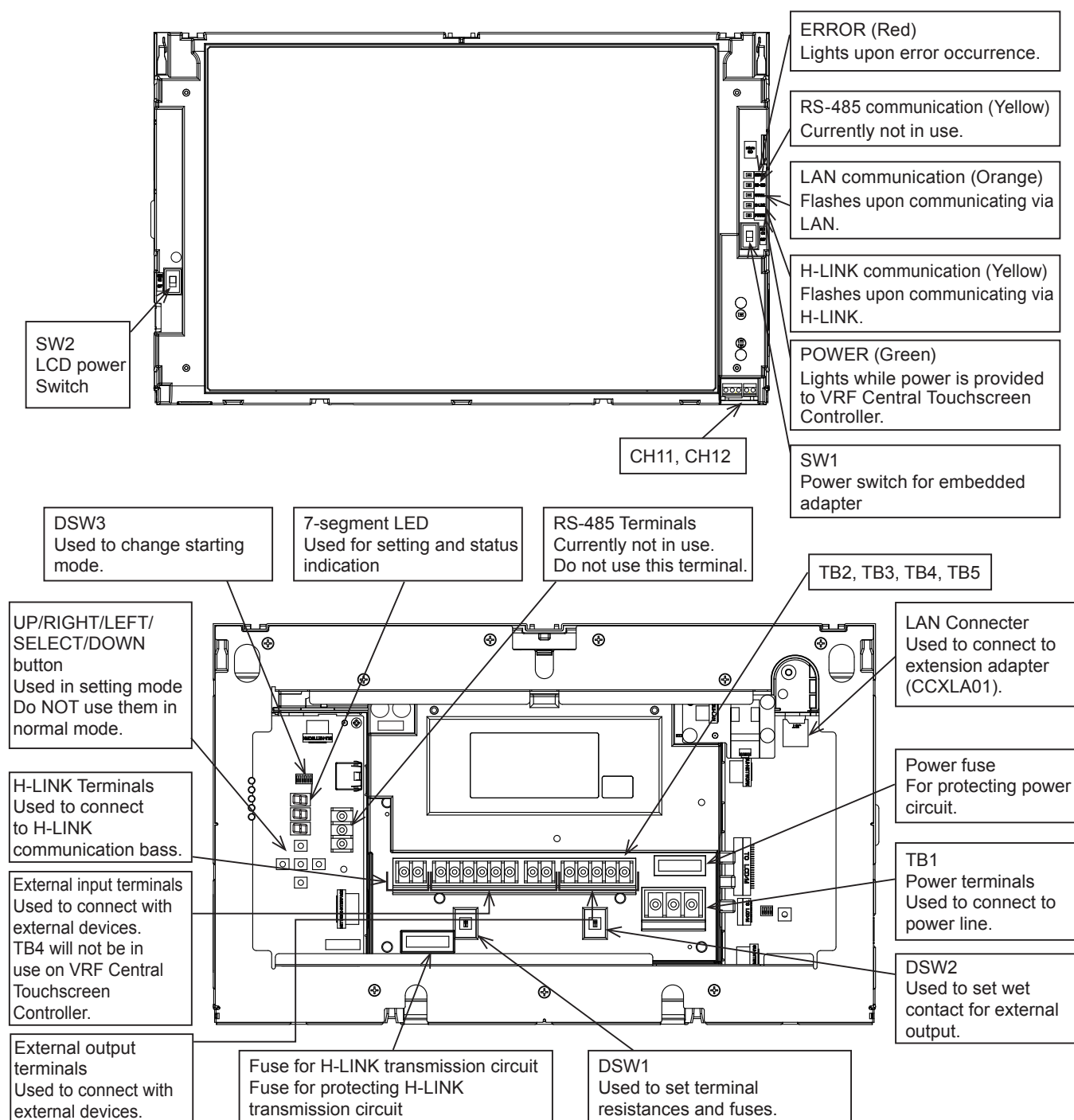


Rear View

3.3 Parts Names and Functions

The following diagram shows VRF Central Touchscreen Controller with front and rear cover removed. Each name and function are listed.

Regarding how to connect each terminal, refer to “6.2 Wiring Work” on page 14. Regarding how to set each switch, refer to “6.3 Switch Setting Procedures” on page 16.



Status Indicator (LED)

Mark	Specification
ERROR	Lights upon system error occurrence (red)
RS-485	RS-485 flashes upon communication via RS-485.
LAN	Lights when communication link is established / Flashes while communicating (orange)
H-LINK	Flashes when communicating via H-LINK (communication line) (yellow)
POWER	Lights while internal power is ON (green).

3.4 Specifications

The hardware specification for VRF Central Touchscreen Controller is shown in Table 3.1, and the communication specification is shown in Table 3.2 and 3.3.

Table 3.1 Specification for VRF Central Touchscreen Controller Hardware

Item	Specification
Dimensions (W×H×D)	14-5/8 × 8-15/16 × 1-1/4 + 1-1/8 (molded in wall) inch (372 × 227.2 × 32.5 + 27.8 (molded in wall) mm)
Net Weight	7.7lbs. (3.5kg)
Installation Condition	For indoor use only. Applicable for a wall mount and wall built in.
Clock Accuracy	± 70 seconds/month
Ambient Temperature	32~104°F (0~40°C)
Ambient Humidity	20-85% RH (No condensation)
Display	12.1 inch TFT color liquid crystal display
Power Supply	AC24V ± 10% (60Hz) (Transformer 55VA (Min.))
Power Consumption	50W (Max.) (55VA (Max.))

Table 3.2 Communication Specification for H-LINK

Item	Specification
Communication Peer	Indoor units / Outdoor units (*1)
Communication Line	Nonpolar Two Wires
Communication Method	Half-Duplex Communication
Synchronous Method	Asynchronous
Communication Speed	9,600 bps
Total Wiring Length	3,281 ft. (1,000m) or less
Maximum Controlled Unit Number on System (*2)	Outdoor Unit: Max. 64 Units Indoor Unit: Max. 160 Units Total Number: 200 Note that the number of indoor units is restricted to 128 and total is 145 or less if one or more units not supporting H-LINK II are to be connected.
For Combined Use	CCL01 or later models, CCM01 or later models. *1. RC-less indoor units can not be connected to the system where 2 or more central controllers are connected. *2. For combined use of central controllers, system may need to restrict the use of the *RC prohibit function. *3. One H-LINK system can include up to 8 central controllers.

*RC: Remote Controller

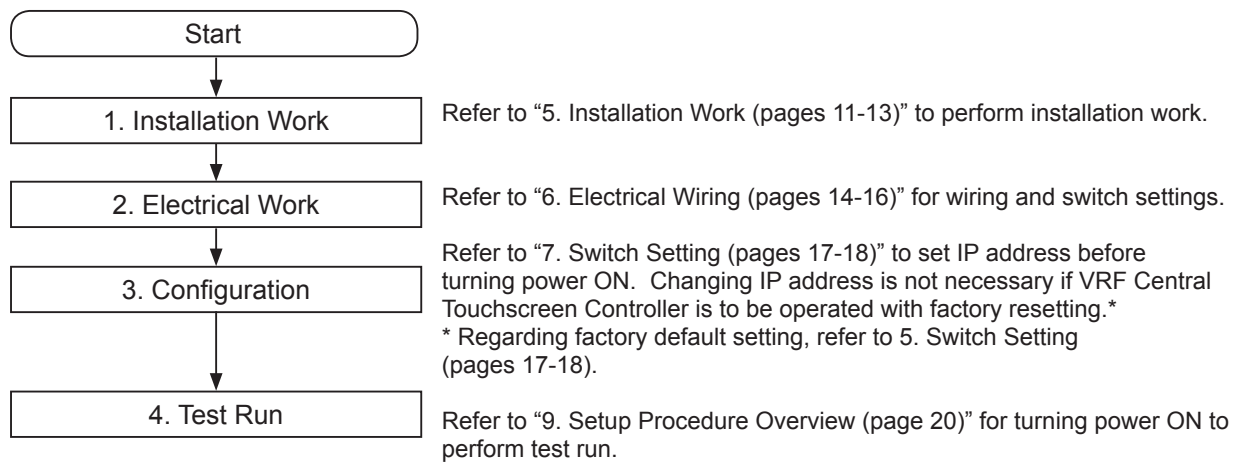
RC-less: Units without RC

Table 3.3 Communication Specification for LAN (Ethernet)

Item	Specification
Communication Unit	Extension Adapter (CCXLA01), Dedicated Pulse In/output Device (PIO)
Communication Line	LAN (Ethernet)
Communication Method	IEEE802.3 complied (10BASE-T/100BASE-TX)
Wire Length	328.1ft. (100m)

4. Installation Procedure

This manual describes how to install and to turn the power ON VRF Central Touchscreen Controller. Follow instructions 1-4 to install VRF Central Touchscreen Controller.



5. Installation Work

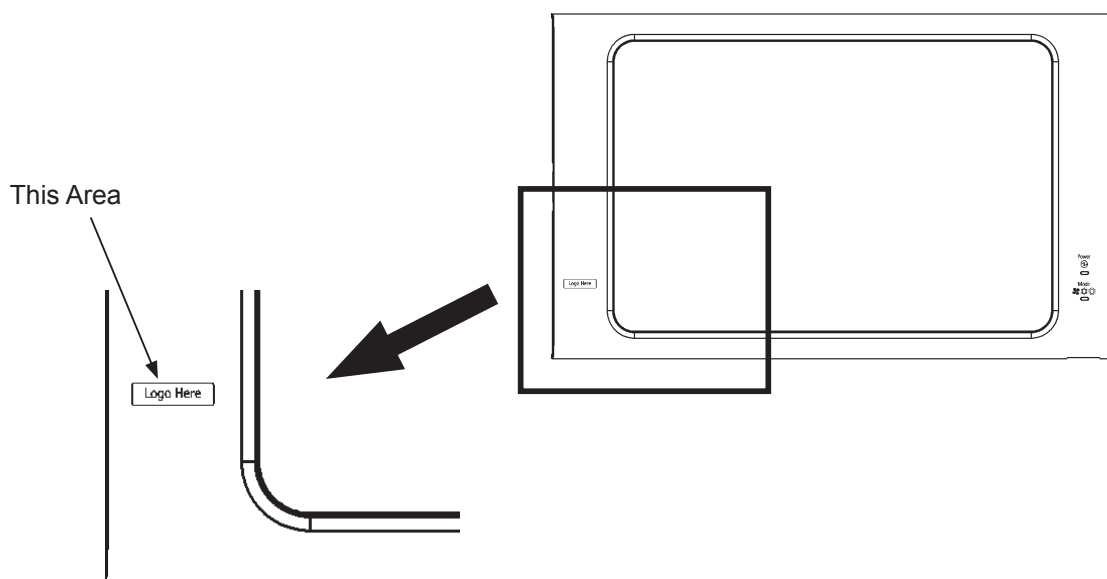
5.1 Place for Installation

Choose place that applies to the following:

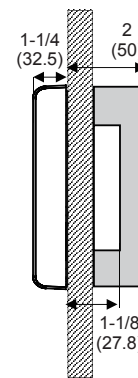
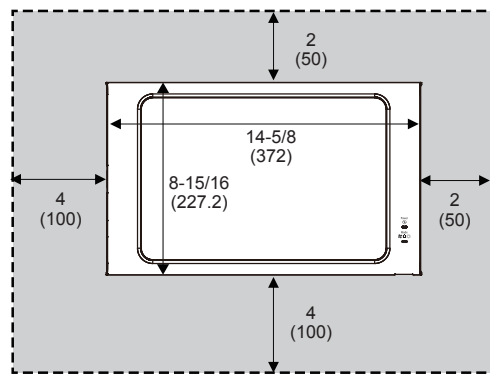
- ☐ (1) Refer to page 2 of this installation manual.
- ☐ (2) Place where VRF Central Touchscreen Controller can be firmly fixed with wood screw on wall mount.

5.2 Installation Procedure

- ☐ (1) Select the accessory brand label according to the production order.
Attach the accessory brand label to this area.

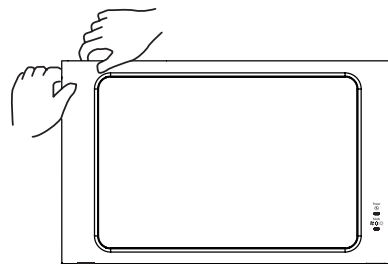


- (2) Maintain sufficient space for the installation of VRF Central Touchscreen Controller as shown below.

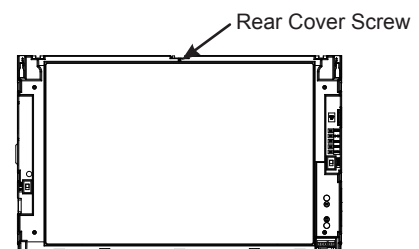


Unit: inch (mm)

- (3) Gently lift up the front cover from left upper corner and do as same on right upper corner to easily remove the front cover.



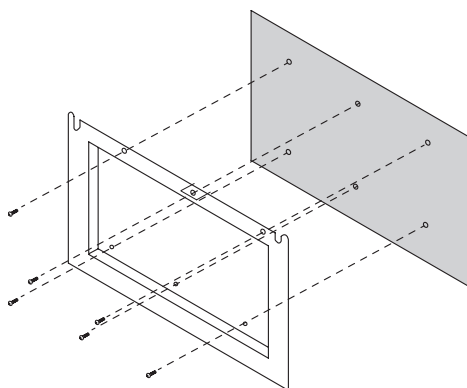
- (4) Remove screw and slide the rear cover to remove it.



- (5) Firmly attach the rear cover on the wall.

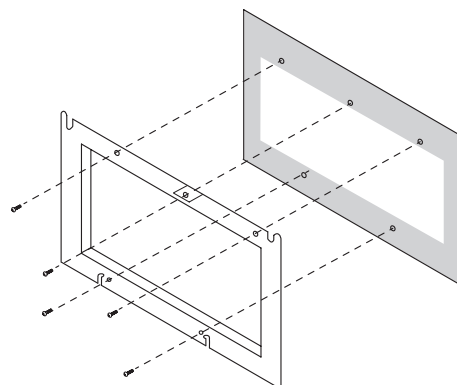
- (a) For Wall Mount

Attach the rear cover to the wall with screws (6 screws, included in the package) through screw holes.



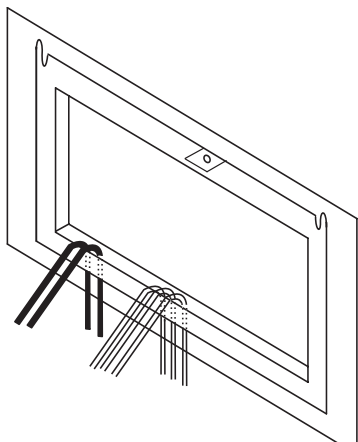
- (b) For Wall Built-in

Secure wall opening size of H:6-5/8(167.9mm)
W: 11-13/16(300.1mm) D: 1-1/8(27.8mm).
Refer to chapter 3.2 for detail of dimension.
Firmly attach the rear cover to the wall with screws (5 screws, included in the package) through screw holes.

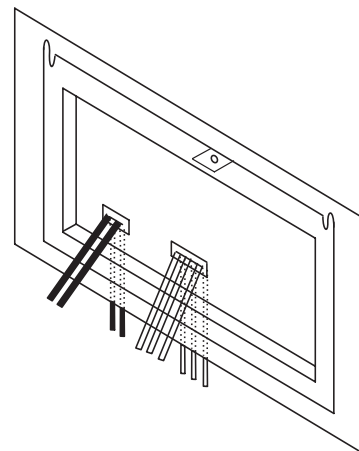


☐ (6) Put wires through the rear cover.

☐ (a) For Wall Mount
Let the wires out of the bottom part of the rear cover.

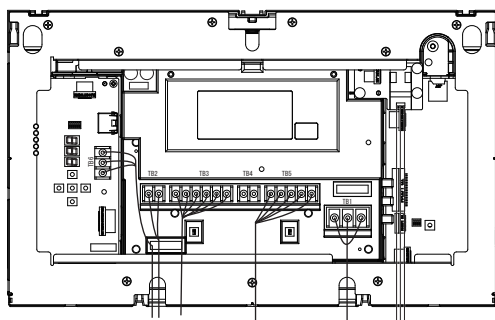


☐ (b) For Wall Built-in
Let the wires out of the wire outlet.

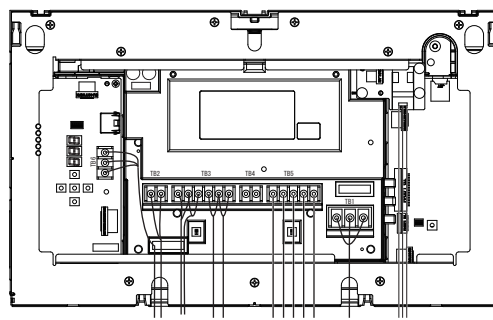


☐ (7) Connect wires to terminals and/or connectors on VRF Central Touchscreen Controller.
Refer to “6. Electrical Wiring” (page 14) for detail.

☐ (a) For on Wall Mount
Put wires through designated outlets to connect them to terminals and connectors.

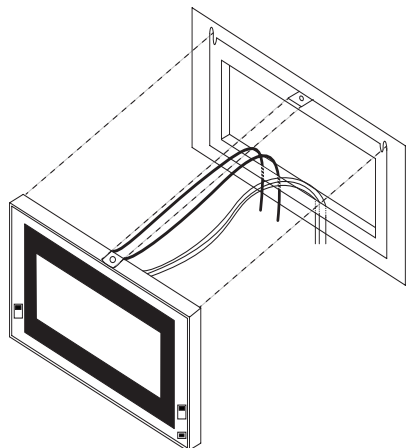


☐ (b) For Wall Built-in
Connect wires directly to terminals and connectors (without putting wires through outlets).

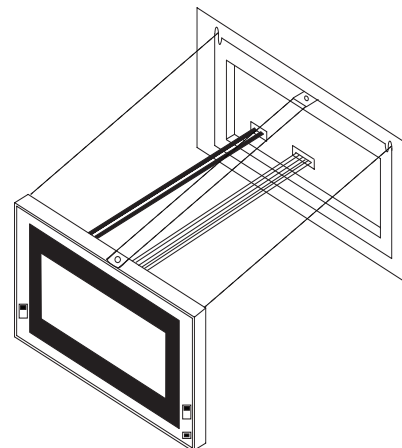


☐ (8) Take the slack to hook VRF Central Touchscreen Controller on the hooks on the upper part of the rear cover.

☐ (a) For Wall Mount



☐ (b) For Wall Built-in



☐ (9) Tighten the screw (1 screw) on the upper part of the rear cover.
Turn the power ON before fitting the front cover.

6. Electrical Wiring

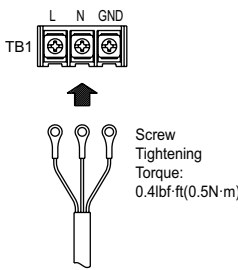
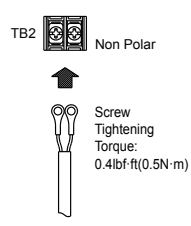
6.1 Wiring Procedures


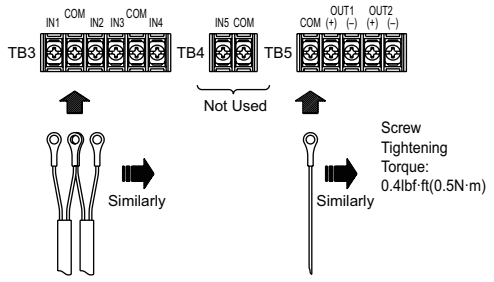
- 1. Read and understand safety summary in this manual well to perform wiring work. Wiring work for power line and line for communication with air conditioners (H-LINK) are required.
Wiring work for communication with extension adapter (LAN) is also required for use of extension adapter (CCXLA01).
Note that wiring work for communication with external devices also is required if any external devices are to be connected to the system. Ensure power to the controller is turned OFF.

6.2 Wiring Work

- 1. Ensure that the power line and the power on connecting devices are all turned OFF before performing any wiring work.
- 2. Follow the instruction below to perform wiring work.

Table 6.1 Connecting Wires

Type of Wiring	Power Supply Cable	H-LINK (Control Cable)
Specification	24VAC±10% 60Hz	5VDC
Wiring Length	—	3281ft.(1,000m) or less
Cable Specifcaiton	AWG16(1.25mm ²) to AWG14(2mm ²)	AWG18 (0.75mm ²) to AWG16 (1.25mm ²)
Cable Model	CVV, CEV, CCV	JKFEV-S, JKEV-S, CVV
Terminal/Connector	M4 Screw Terminal (with Terminal Cover)	M3 Screw Terminal
Connection Procedure	 <p>Use an insulated crimp terminal. Connect the cable to power source terminal. Connect ring terminal to each terminal with screws provided. * To prevent electric shock, do NOT remove the terminal cover.</p>	 <p>Use an insulated crimp terminal. Connect the cable to H-LINK terminal. Connect ring terminal to each terminal with screws provided.</p>

Type of Wiring	LAN Cable	External In/Output Cable
Specification	IEEE802.3 Compliant 100BASE-TX/10BASE-T	Input: DC24V 10mA Output: Dry/Wet Contact Setting DC24V 40mA or less
Wiring Length	328.1ft.(100m) or less	229.7ft.(70m) or less
Cable Specifcaiton	LAN Cable Category 5 or more	AWG20 (0.5mm ²) to AWG16 (1.25mm ²)
Cable Model	—	CVV, CEV, CCV, JKEV-S
Terminal/Connector	RJ45 Connector	M3 Screw Terminal
Connection Procedure	 <p>Connect the cable to LAN terminal. Insert cable until lock sound is heard.</p>	 <p>Use an insulated crimp terminal. Connect the cable to external in/ output terminal. Connect ring terminal to each terminal with screws provided. NOTE: When connecting external output at wet contact setting, the DIP switch setting is required.</p>

NOTICE:

- Secure space longer than 5-7/8 inch (150mm) between communication lines (H-LINK, LAN, External Input/output).

- Connecting External Devices

NOTES:

1. External input circuit is pulled up to DC24V in VRF Central Touchscreen Controller. On the wire between VRF Central Touchscreen Controller and external device, the maximum current from VRF Central Touchscreen Controller is 10mA.
Pulse width and pulse interval need to be 90 ms or longer for use with pulse input.
2. When connecting to external output, apply relay with following specifications.
 - Rated voltage: 24VAC
 - Rated current: 40mA or less
3. To set voltage contact for external output, set DSW2 for external output setting to ON.
4. 4 COM terminals can be used for both input and output. (They conduct with each other internally)

<How to wire>

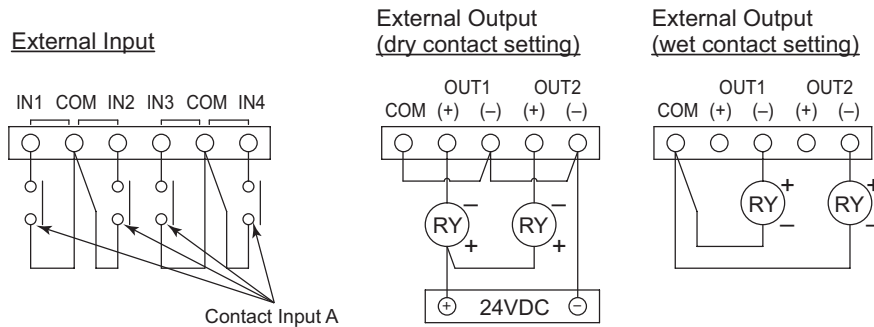


Fig. 6.1 How to Wire External Devices

6.3 Switch Setting Procedures



Change switch setting before turning power on.

Switch settings are as follows. Factory default setting may need to be changed depending on the use in the field. (voltage contact setting)

Table 6.2 Switch Setting

Switch		Usage (ON/OFF)	Factory Setting	Remarks
DSW1 (2-position DSW)	1	ON: H-LINK Terminal Resistance Active OFF: H-LINK Terminal Resistance Inactive	OFF	Ensure that no other terminal resistance exists on the same H-LINK when acting the terminal resistance from VRF Central Touchscreen Controller.
	2	ON: Protection Fuse for H-LINK ... Inactive (Short-circuited) OFF: Protection Fuse for H-LINK ... Active (Normal)	OFF	When the protection fuse for H-LINK is blown, set 2 pin on DSW1 to ON to make short-circuit between fuse terminals.
DSW2 (2-position DSW)	1	ON: External output 1 voltage contact (24V ON) setting OFF: External output 1 No-voltage contact (24V OFF) setting	OFF	Set this switch as ON to set external output 1 to wet contact.
	2	ON: External output 2 voltage contact (24V ON) setting OFF: External output 2 No-voltage contact (24V OFF) setting	OFF	Set this switch as ON to set external output 2 to wet contact.
DSW3 (6-position DSW)	1	[ON OFF]: Normal Mode ON	ON	—
	2	[OFF ON]: Setting Mode (3 and 4 OFF) (1 and 2 from the left)	OFF	—
	3	ON (Fixed)	ON	Do NOT change it.
	4	OFF: H-LINK II Support Mode ON: H-LINK II Non-support Mode	OFF	Do NOT change it.
	5	ON (Fixed)	ON	Do NOT change it.
	6	OFF (Fixed)	OFF	Do NOT change it.

Table 6.3 Setting Startup option DSW3 setting

No.	DSW3 Setting	Setting Position	Setting State	Usage
1		1, 3 and 5 pin ON	Normal Mode	1, 3 and 5 pins are ON as factory default setting. Power on as they are. Connection check starts after power is turned on. ERROR LED goes OFF upon completion of connection check. NOTE: Set 3 pin as ON to show temperature in 0.5°C resolution or/and Degrees Fahrenheit.
2		2 and 5 pin ON	Setting Mode	Power on with the setting illustrated on the left to utilize programming mode.

7. Switch Setting

Check/modify the detail setting by following instructions below. Factory-setting is as follows.
To connect to HUB, set the IP address that has no duplication on the same network for VRF Central Touchscreen Controller.

Table 7.1 Factory-Setting (Initial Setting)

Name	Initial Setting
IP Address	192.168.0.23
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1

< Checking IP Address >

- ☐ 1. Connect HUB and PC before connecting VRF Central Touchscreen Controller to HUB.
 - ☐ 2. On PC, go to [Start]-[Control Panel]-[Network and Sharing Center]-[Local Area Connection]-[Properties]-[Internet protocol version 4 (TCP/IP4)*] to set the IP address of PC. Make sure that the last one digit is different from one of VRF Central Touchscreen Controller.
(Example: If IP address for VRF Central Touchscreen Controller is 192.168.0.23, then IP address for PC can be 192.168.0.30, and so on.)
 - ☐ 3. Go to [Start]-[All Programs]-[Accessories]-[Command Prompt]*.
 - ☐ 4. Enter "ping [IP address that is to be set for VRF Central Touchscreen Controller]" and press [Enter] key on keyboard. (Example: "ping [192.168.0.24 (any address that has no duplication on the system)]")
 - ☐ 5. If the window shows "Request timed out", then the IP address is not being used on the network and can be used for VRF Central Touchscreen Controller.
If the request does not time out, the address is already used and cannot be used for VRF Central Touchscreen Controller.
- * These steps apply to Windows 7. These steps may or may not completely apply to other operating system (OS).

< Procedure >

- ☐ 1. Remove the rear cover and set 2 and 5 pins on DSW3 as ON. (Programming mode)
- ☐ 2. Turn the power ON.
- ☐ 3. Wait until 7-segment LED shows "1".
- ☐ 4. Press [UP] or [DOWN] button to check that 7-segment LED shows as follows. Set 7-segment LED as "4" to change IP address.

Table 7.2 Indications and Contents

Items	7-Segment LED Display		Main Function
	Before Pushing [SELECT]	After Pushing [SELECT]	
Reserved	1	—	Do NOT change it.
Reserved	2	—	Do NOT change it.
Connection info.	3	0 ~ 1	1 when it has connection information and 0 when it does not. Set 0 to delete connection information
IP address	4	The first 3 digits of the address	Check and modify IP address for VRF Central Touchscreen Controller.
Subnet mask	5	The first 3 digits of the address	Check and modify subnet mask for VRF Central Touchscreen Controller.
Default gateway	6	The first 3 digits of the address	Check and modify default gateway for VRF Central Touchscreen Controller.
Reserved	7 ~ 8	—	Do NOT change it.
Version + P number	c	Version + the first 3 digits of P number	Version + P number (YYYYMMDDhhmmPPPP) is shown.
Reserved	d	—	Do NOT change it.
Address (H-LINK communication source)	e	1 ~ 32	Modify address for VRF Central Touchscreen Controller.
Factory resetting	f	0 ~ 1	To reset the setting to factory default, show 1, otherwise show 0. (Ensure that "0" is indicated when checking the setting.)

- 5. Press [SELECT] button to show the first 3 digits of current setting. Example of IP address is as follows.
(Example: 192.168.0.23)

(a) The contents in the square are shown on 7-segment LED.



NOTE: The value “0” for IP address, subnet mask and default gateway are indicated with “000”.

- (b) Press [SELECT] button to move the display to the left most range.

The third digit from the left will flash. (Example: 192.168.0.23)



- (c) Press [LEFT] [RIGHT] [UP] [DOWN] button to show network address and to change setting.

Press [RIGHT] button to right scroll the indication by 1 digit. (Example: 192.168.0.23)



Press [LEFT] button to left scroll the indication by 1 digit. (Example: 192.168.0.23)



Press [UP] button to increment the right most number by 1.

(Example: 192.168.0.23 -> 193.168.0.23. Increments up to 9.)

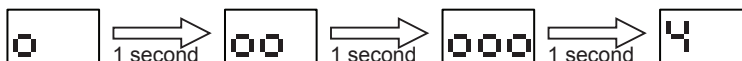


Press [DOWN] button to decrease the right most number by 1.

(Example: 192.168.0.23 -> 193.168.0.23. decreases down to 0.)



- (d) Press [SELECT] and indication is as follows and then indicates the number for the setting item.



- 6. To change other setting items, repeat step (4) to (5) as necessary.

NOTES:

1. Restart VRF Central Touchscreen Controller to activate the change. Shut the power off to confirm all LEDs go off, set DSW to normal mode (1, 3 and 5 pin ON) and then turn the power ON again.
2. Upon resetting to factory default setting, VRF Central Touchscreen Controller automatically restarts. When restarting due to resetting to factory default setting, 7-segment LED once indicates “1” and then returns to the normal indication.

NOTICE:

- Regarding the detail of IP address, subnet mask and default gateway, contact network administrator. Subnet mask and default gateway need not be set if the network is exclusively for VRF Central Touchscreen Controller and its peripheral. Regarding network security, contact network administrator.

8. Indication (Normal and Abnormal)

LED indication for normal and abnormal condition are as follow.

Table 8.1 Indication and Condition for ERROR LED and 7-segment LED

State	Lights/indicates when	Goes OFF/clears when	ERROR LED state	7-segment LED state	Indication priority
Software start up failure	Detected abnormality on the software	The software has no error/ abnormality.	ON	0E0	1
Memory check failure (FlashROM)	Detected abnormality on checking FlashROM	Checking FlashROM successfully completed.	ON	0E1	2
Checking memory (FlashROM)	Checking FlashROM	Checking FlashROM successfully completed.	OFF	0c1	3
Memory check failure (SDRAM)	Detected abnormality on checking SDRAM	Checking SDRAM successfully completed.	ON	0E2	4
Checking memory (SDRAM)	Checking SDRAM	Checking SDRAM successfully completed.	OFF	0c2	5
File system failure	Detected abnormality on checking file system	Checking file system successfully completed.	ON	0E6	6
Application start up	Immediately after turning power ON and application start up in normal mode	1 second elapsed	on for 1 second	088	7
H-LINK initialization failure	After turning power ON in normal mode, application starts up and detected abnormality on initializing H-LINK communication port.	Initialization of H-LINK communication port successfully completed.	ON	0HE	8
Internal database failure	After turning power ON in normal mode, application starts up and detected abnormality on checking internal database.	Checking internal database successfully completed.	ON for 1 sec. and OFF for 1 sec. (Repeated)	0EE	9
Initializing system	After turning power ON in normal mode, application starts up and then processing system initialization.	System initialization successfully completed.	OFF	050	10
Preparing for air conditioners connection checking	After start up in normal mode, the VRF Central Touchscreen Controller is either checking connection with other central controllers or while auto address detection.	Starting connection checking	Flashes once in 5 sec. (Repeated)	0cA	11
Checking connection with air conditioners	After turning power ON in normal mode, application starts up and then checking connection with air conditioners.	Connection checking completed.	Flashes once in 5 sec. (Repeated)	0c0	12
Communication failure with air conditioners	After turning power ON in normal mode, completed connection checking with air conditioners and detected communication failure with 1 or more air conditioners.	Communication with all air conditioners detected is successfully established.	Flashes once in 3 sec. (Repeated)	00E	13
Writing microSD (for service maintenance)	Data being written to microSD card	Writing data completed.	OFF	5d0	14
Normal state (*)	After turning power ON on normal mode, none of the above situations is observed.	One or more criteria above are met.	OFF	000	15

NOTICE:

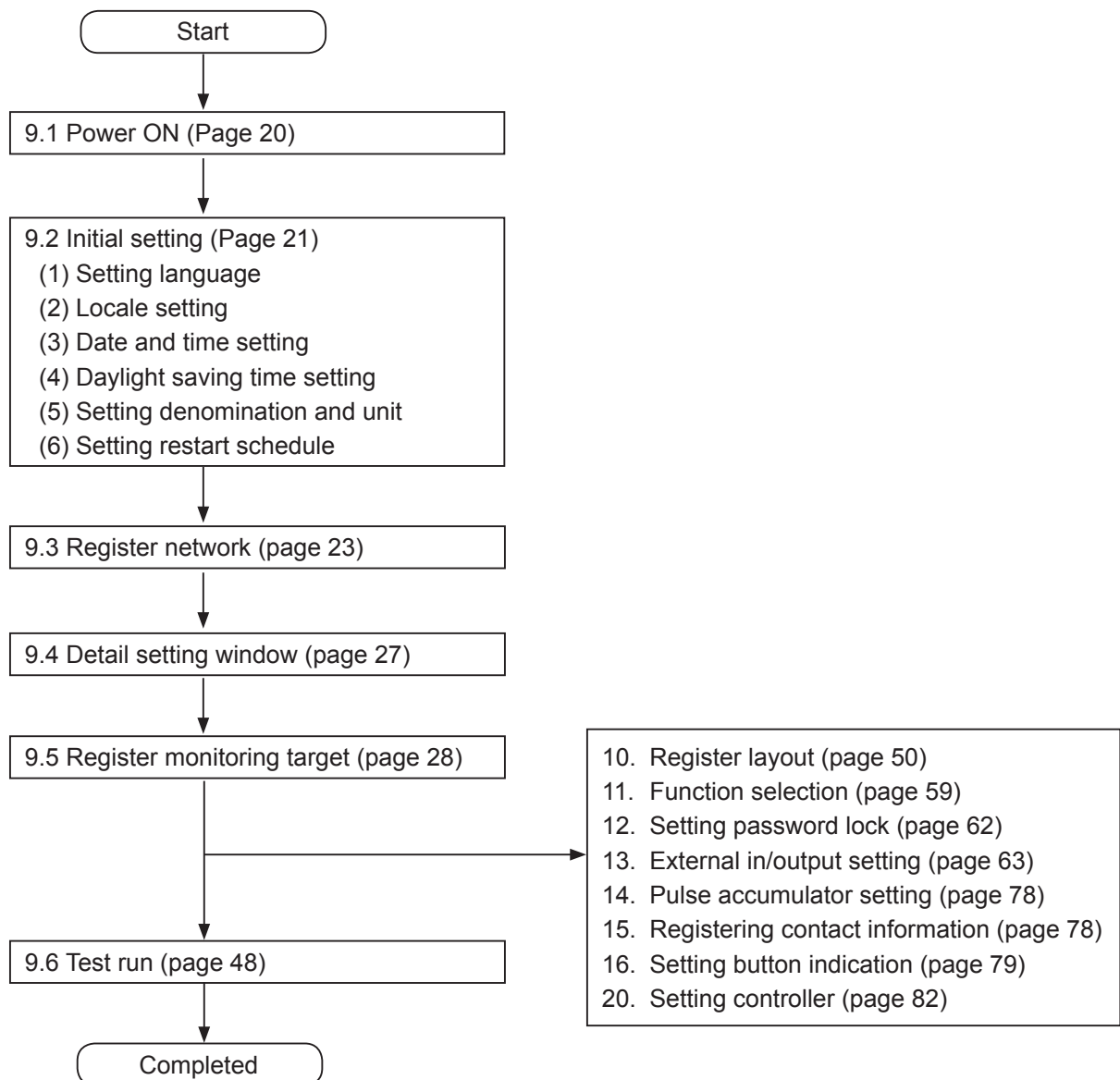
Upon occurrence of situation highlighted in gray, refer to pages 84-85 “20. Maintenance and service”.

*: “0c0” indicating checking connection will turn to “000” as making transition to normal operation state.

If VRF Central Touchscreen Controller failed to detect all air conditioners detected on the initial connection check, after recovery from power failure, for example, 7-segment LED will indicate “000” for 3 minutes and then show “00E” to indicate communication failure with air conditioners.

9. Setup Procedure Overview

Set up VRF Central Touchscreen Controller by following the steps below.



9.1 Power ON

Complete test run on air conditioners first to confirm proper operation of system.

- (1) Turn ON the power for all air conditioners on the system.
- (2) Ensure the power switches SW1 and SW2 on VRF Central Touchscreen Controller are set as ON and then turn the power ON. Power indicator on VRF Central Touchscreen Controller is ON. After a minute, the start-up window is shown and connection check starts.

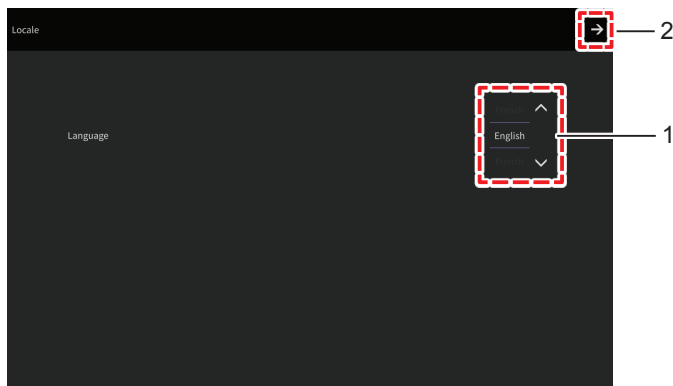
NOTE:

If 2 or more central controllers are on the same H-LINK, disconnect all the other central controllers other than VRF Central Touchscreen Controller from H-LINK to turn ON the power for VRF Central Touchscreen Controller.

- (3) Ensure that the connection checking with air conditioners is completed. This is completed in approximately 20 minutes after turning the power ON. Remove the front cover to ensure the ERROR LED on the upper right is completely OFF. (If the LED repeatedly flashes every 5 seconds, VRF Central Touchscreen Controller is still checking connection.) If ERROR LED does not go off, remove the rear cover and check indication on 7-segment LED to refer to the previous page. After ERROR LED completely goes off, put the front cover and perform initial setting as described in the next page.

9.2 Initial setting

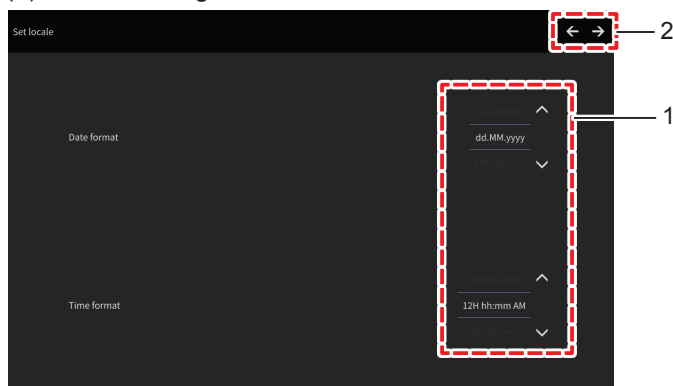
(1) Setting language



In this section, select the language appropriate for the user and locale.

1. Tap ^ or v to set language to use
2. Tap → to show locale setting window.

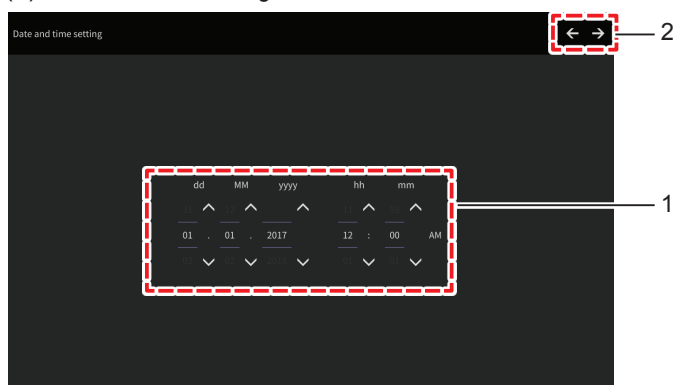
(2) Locale setting



In this section, select the date and time format appropriate for the user and locale.

1. Tap ^ or v to set date and time format.
Date format: Set the order for year/month/day and delimitation in between.
Time format: hh and mm indicate hour and minute respectively. Select 12 hour/24 hour notation.
2. Tap → to show date and time setting window.
Tap ← to return to language setting window.

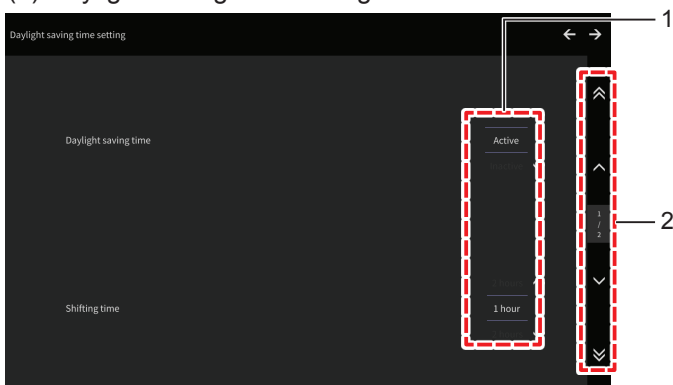
(3) Date and time setting



In this section, set the date and time to use on VRF Central Touchscreen Controller.

1. Tap ^ or v to set date and time for VRF Central Touchscreen Controller.
2. Tap → to show daylight saving time setting window.
Tap ← to return to locale setting window.

(4) Daylight saving time setting



In this section, set daylight saving time.

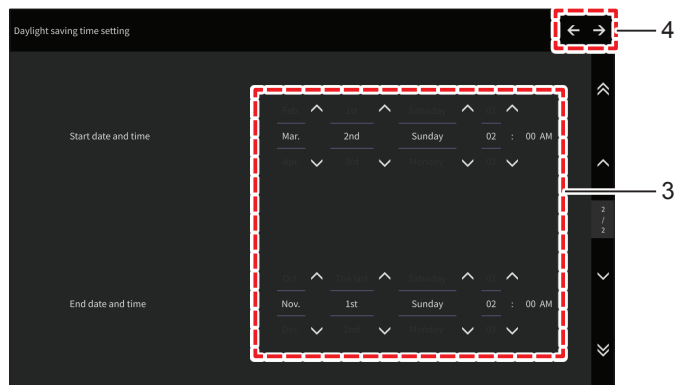
1. Tap ^ or v to choose active/inactive and set shifting time for daylight saving time.
2. Tap ^ or v to scroll a page down.

Continue to next page.

NOTICE:

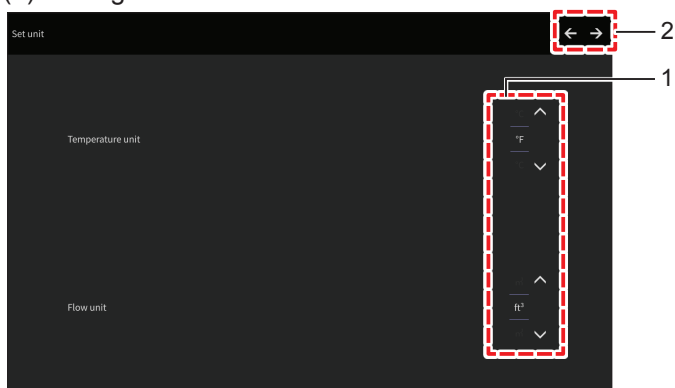
This image may differ from the actual controller.

Continue from previous page.



3. Tap ^ or v to start/end date and time.
4. Tap → to show window for setting denomination and unit.
Tap ← to return to date and time setting window.

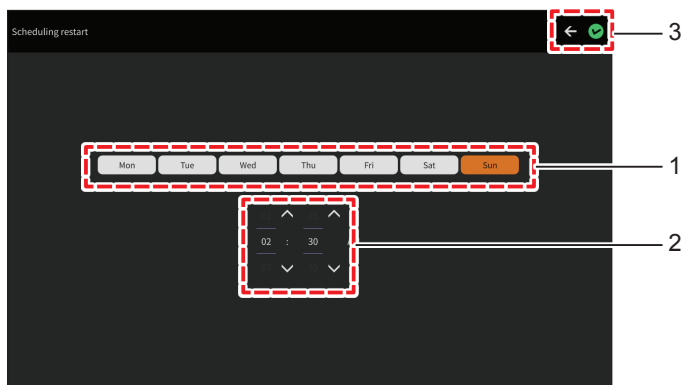
(5) Setting denomination and unit



In this section, set unit for temperature, and fan speed.

1. Tap ^ or v to set unit for temperature and fan speed.
2. Tap → to show setting restart schedule window.
Tap ← to return to daylight saving time setting window.

(6) Setting restart schedule



1. Select a day of the week to perform restart. Set as VRF Central Touchscreen Controller to restart at least once a week.
2. Set ^ or v to set time to restart.
3. Tap ✓ to confirm setting and to return to network registration window.
Tap ← to go to the previous page.

- Select time when monitoring and controlling are not needed. (e.g. at midnight)
- Do not set at 0:00 to 2:00 if energy calculation functionality is activated.

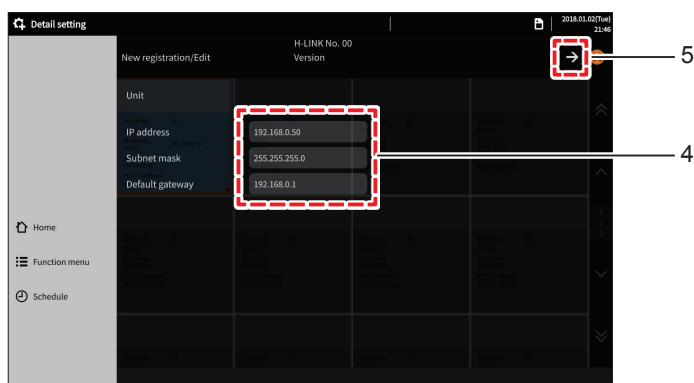
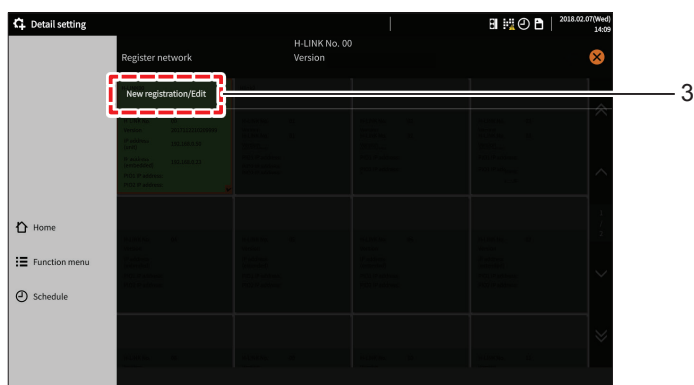
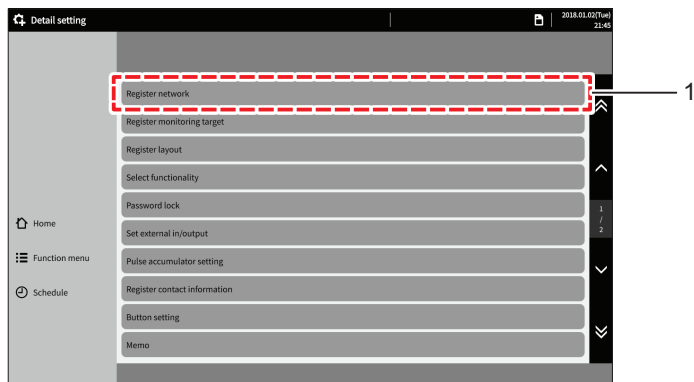
NOTE:

Restart notification pop up appears at the scheduled time. After showing pop up message for 60 seconds, VRF Central Touchscreen Controller starts the shutdown process.

9.3 Register network

Register network for VRF Central Touchscreen Controller to communicate with embedded extension adapters (CCXLA01) and PIOs.

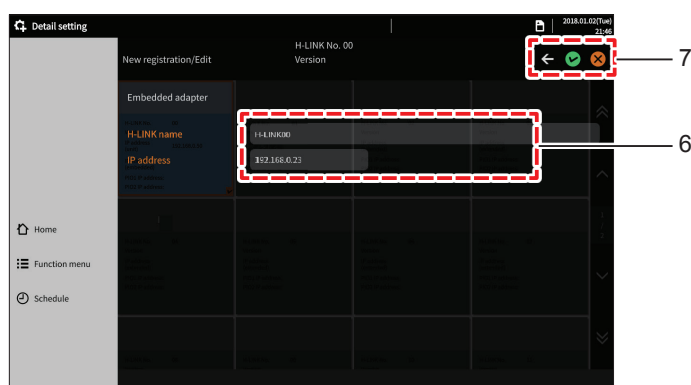
(1) New registration



Continue to next page.

1. Tap **Register network** on detail setting window. The window for registering network is shown.
- Upon completion of initial setting, step 2 is shown.
2. Tap panel for desired H-LINK No.
H-LINK No.00: VRF Central Touchscreen Controller and embedded adapter
Other than H-LINK No.00: Extension adapter
3. Tap **New registration/Edit**.
If panel for H-LINK No.00 is selected, step 4 is shown.
If panel for any other than H-LINK No.00 is selected, step 6 is shown.
4. Set network information for VRF Central Touchscreen Controller. Tap input field for name to enter information on keyboard. The keyboard is shown. Regarding keyboard operation, refer to "Basic Window Operation".
- If the network is exclusively for this system, no setting change is necessary.
5. Tap → to confirm setting and to go to embedded adapter setting window.

Continue from previous page.



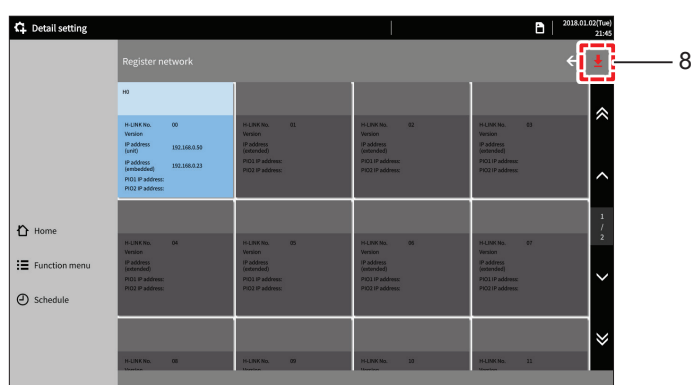
6. Tap input field for each item to enter information on keyboard. Network information for embedded adapter and extension adapter is in the following table.

- Enter new IP address if it has been changed while processing “7. Switch Setting” (page 17).

7. Tap to confirm setting and to return to network registration window. Tap to discard the change and to return to network registration window. Tap to go to the previous page.

8. Tap to register the contents.

- Make sure to tap this icon when the contents have been changed. Otherwise the changes made will not be registered. Upon completion of registration, the panel color changes from light blue to green.



NOTE:

The background color of the panels indicates the network connection status of VRF Central Touchscreen Controller or extension adapter.

Network connection	Registered (Connected)	Changing setting (Unregistered)	Invalid setting	Not registered / Postponed
Panel color	Green	Light blue	Red	Gray

(*): Check the network environment and/or setting contents to register again if the panel is shown with background color red.

NOTICE:

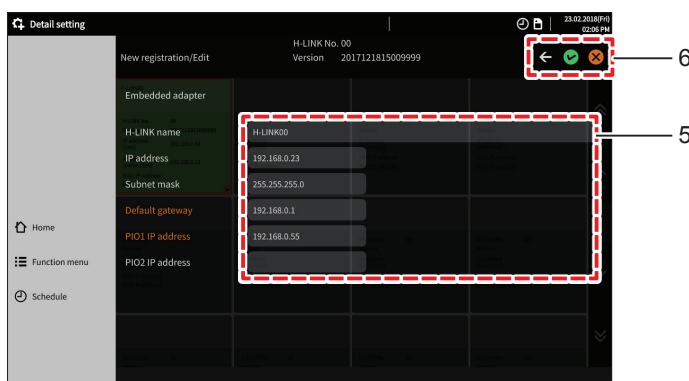
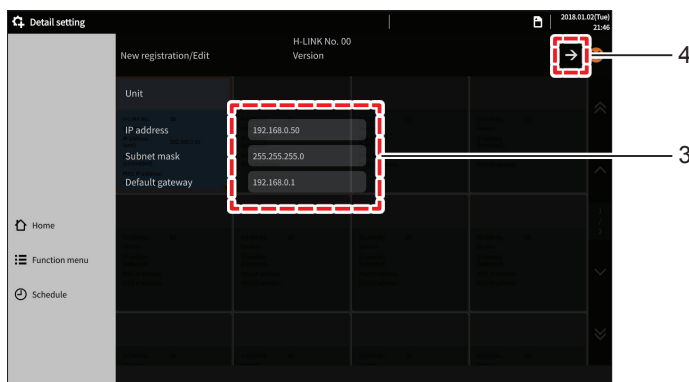
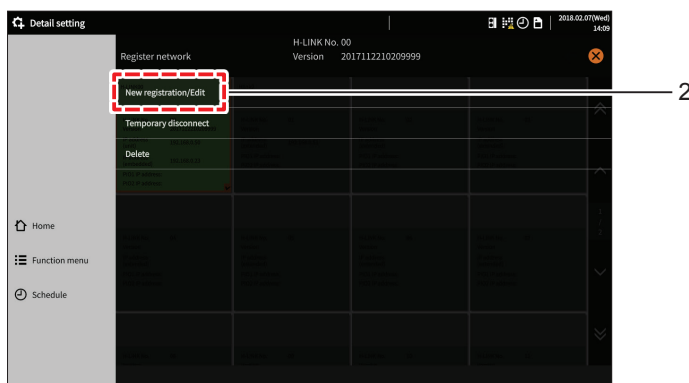
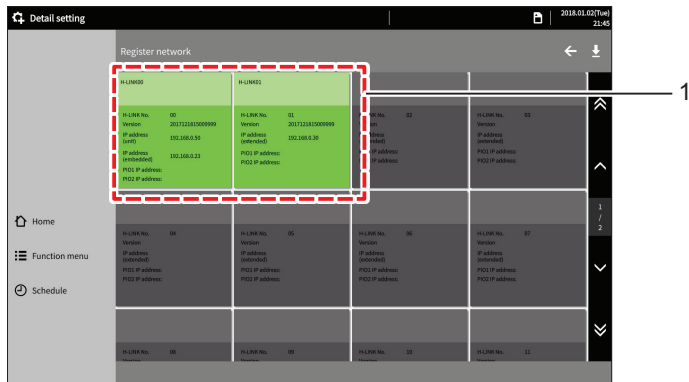
The factory-setting for IP address of embedded adapter and extension adapter are both “192.168.0.23”. Duplicated IP address on 1 network can cause failure on LAN communication. Make sure to follow page 17 “7. Switch Settings” to modify IP addresses for extension adapters.

On “new registration”, set H-LINK name and IP address. Regarding the detail of IP address, subnet mask and default gateway on extension adapters, refer to the next page “(2) Modification”.

The default network information for VRF Central Touchscreen Controller (CCXL01) and Extension adapter (CCXLA01) are as follows:

Device	Item	Value
VRF Central Touchscreen Controller	IP address	192.168.0.50
	Subnet mask	255.255.255.0
	Default gateway	192.168.0.1
Embedded adapter	H-LINK name	No setting
	IP address	192.168.0.23
	Subnet mask	255.255.255.0
Extension adapter	H-LINK name	No setting
	IP address	192.168.0.23
	Subnet mask	255.255.255.0
Extension adapter	Default gateway	192.168.0.1

(2) Modification



1. Tap panel for desired H-LINK No.
H-LINK No.00: VRF Central Touchscreen Controller and embedded adapter
Other than H-LINK No.00: Extension adapter
Modification can be made only for registered (green) panel.

2. Tap **New registration/Edit**.
If panel for H-LINK No.00 is selected, step 3 is shown.
If panel for any other than H-LINK No.00 is selected, step 5 is shown.

3. Set network information for VRF Central Touchscreen Controller.
Tap input field for each item to enter information on keyboard.

• If the network is exclusively for this system, no setting change is necessary.*

4. Tap → to confirm setting and to go to embedded adapter setting window.

5. Tap input field for each item to enter information on keyboard.
Network information for embedded adapter and extension adapter is in the table on the previous page.

6. Tap to confirm setting and to return to network window.
Tap to discard the change and to return to network window.
Tap ← to go to the previous page.

• Upon completing the setting, refer to page 23 "(1) New registration" and tap to register the contents.

(*) Setting modification is needed for combined use with extension adapter.
It may take several minutes for the changes to take effect.

(3) Postpone/delete network information

1. Tap panel for desired H-LINK No.

2. Tap the item to operate.
Confirmation pop up for each item is shown.

- Tap **Temporary disconnect** to temporarily postpone the connection of specified H-LINK No.
- Tap **Delete** to completely discard (=delete) the registered information for the specified H-LINK No.
- Tap **Yes** on the confirmation pop up and refer to page 23 “(1) New registration” and tap to register the contents.

(4) Reconnection

1. Tap panel for H-LINK No. that has been temporarily disconnected.

- Disabled H-LINK No. are shown in gray.

2. Tap **Reconnect**.
The connection for the specified H-LINK No. is re-established.


- Follow page 23 “(1) New registration” and tap to register the contents.

NOTE:

“Temporarily disconnected” H-LINKs maintain their information registered in VRF Central Touchscreen Controller but will not communicate with VRF Central Touchscreen Controller. Upon tapping **Reconnect**, VRF Central Touchscreen Controller will attempt to establish connection with those H-LINKs again. Upon Deleting, all the information is discarded and connection is canceled. The Deleted H-LINKs need to be registered from the “New Registration” window to establish the communication again.


9.4 Detail setting window

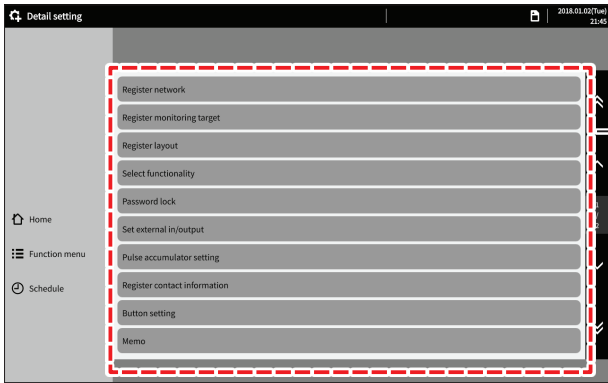
- Open detail setting window by [←] icon.



1

1. Tap ←.
Detail setting window is shown.

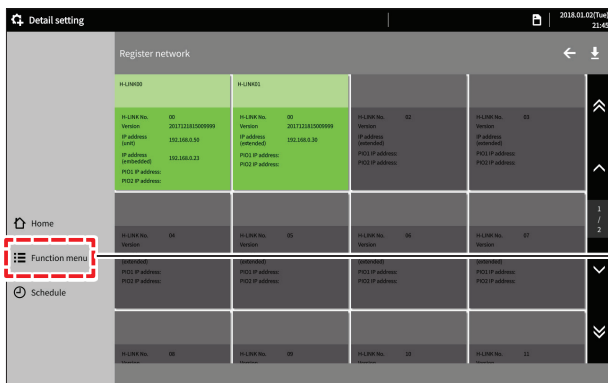




2


2. Tap desired item to show detail window.
“Register network” and “Register monitoring target” are required for monitoring/controlling air conditioners. Set the rest as necessary.

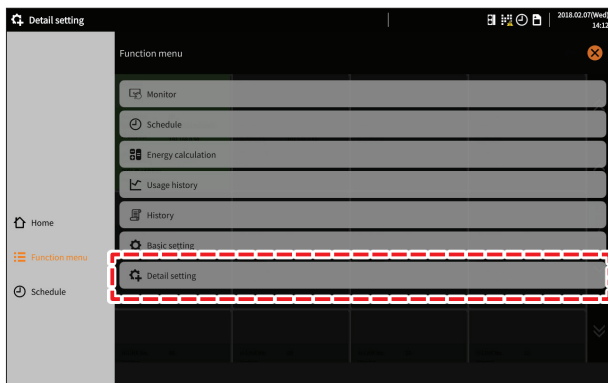
- Open detail setting window from function menu.



1

1. Tap **Function Menu**.
Function Menu window is shown.





2

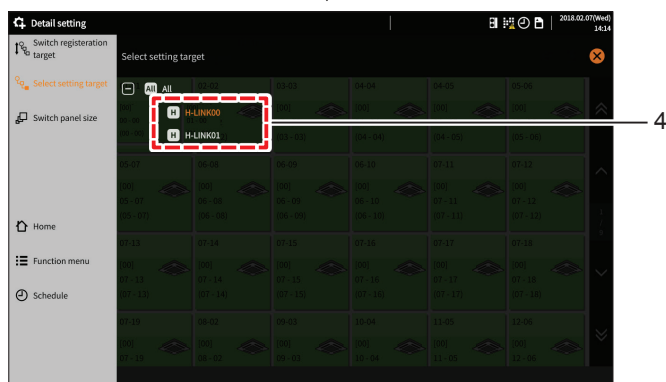
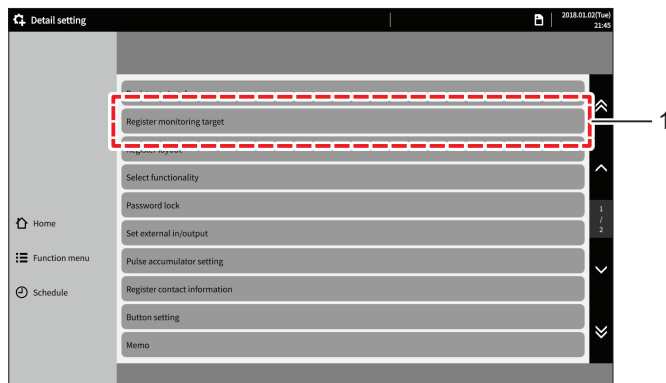
2. Tap **Detail setting**.
Password input window is shown if the password is activated. The default password for detail setting window is “2468”. After entering password, detail setting window is shown.

9.5 Register Monitoring Target

This setting is to allocate each unit connected to VRF Central Touchscreen Controller/Extension adapter to Group/Block/Area. Registering monitoring target is required for VRF Central Touchscreen Controller to monitor/control air conditioners. Ensure that units are registered.

(1) Register units

■ Check connecting status for units



Continue to next page.

1. Tap **Register monitoring target** on detail setting window. Register monitoring target window is shown.

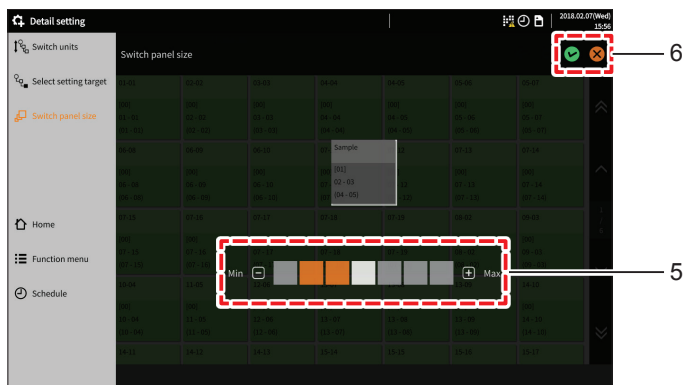
2. Tap item to switch display.

- Tap **Switch registration target** and step 3 is shown.
- Tap **Select setting target** and step 4 is shown.
- Tap **Switch panel size** and step 5 is shown.

3. Tap unit to register. Tap unit and register monitoring target window for the specified unit is shown.

4. Tap the name of H-LINK that the unit is registered in. The register monitoring target window for specified VRF Central Touchscreen Controller or extension adapter is shown.

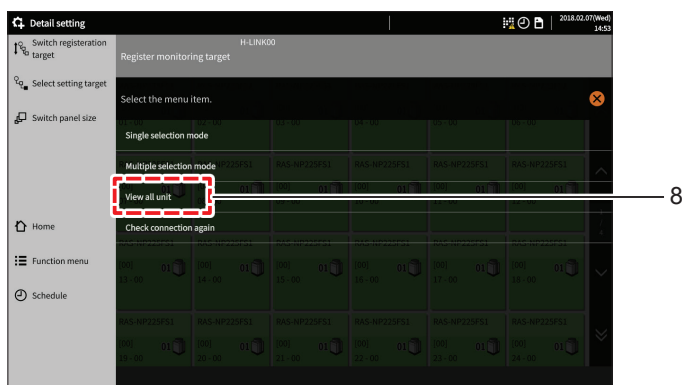
Continue from previous page.



5. Tap + or – to change panel size.
6. Tap to confirm setting and to return to register monitoring target window.
Tap to discard the change and to return to register monitoring target window.

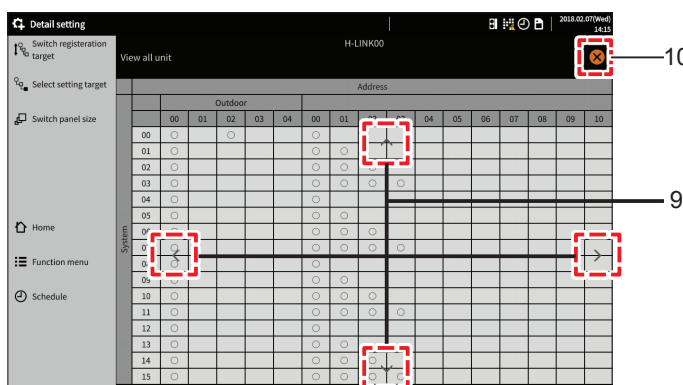


7. Tap to show menu window.



8. Tap **View all unit**.
 - If indoor unit/outdoor unit is selected, step 9 is shown.
 - For facility units, step 9 of “■ Setting external in/output for facility units” on page 35 is shown.

Connecting states for specified units is shown.



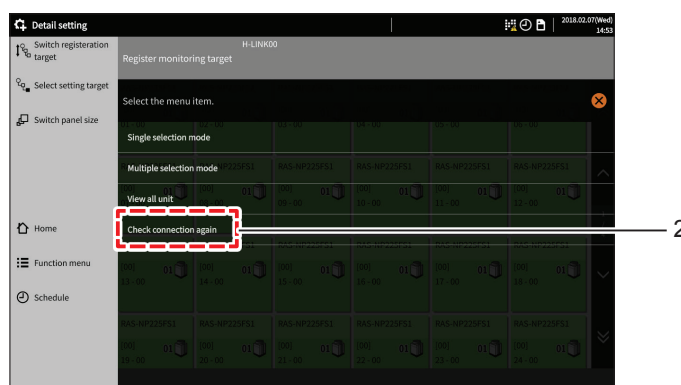
9. Tap the window. Arrows appear. Tap the arrows to scroll horizontally and vertically in the table. Tap to verify that the refrigerant cycle, address and number of units are correctly shown.
If the units information is not correct, refer to the next page of “■ Checking connection again”.
10. Tap to return to Register monitoring target window.

- If the units and/or address information shown is incorrect, the settings and/or wiring may have been done incorrectly. Check the settings. Tap **Check connection again** to ensure all unit information is correct.

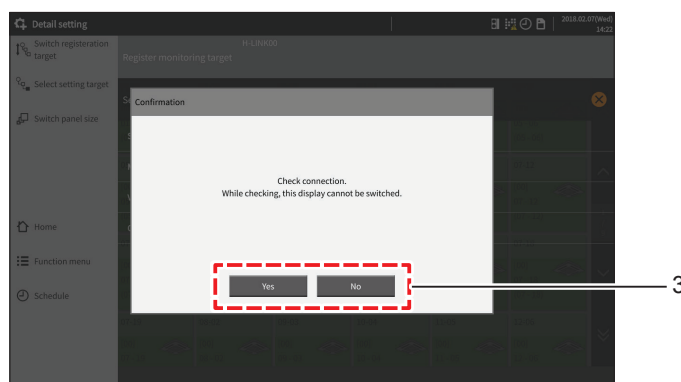
■ Checking Connection again



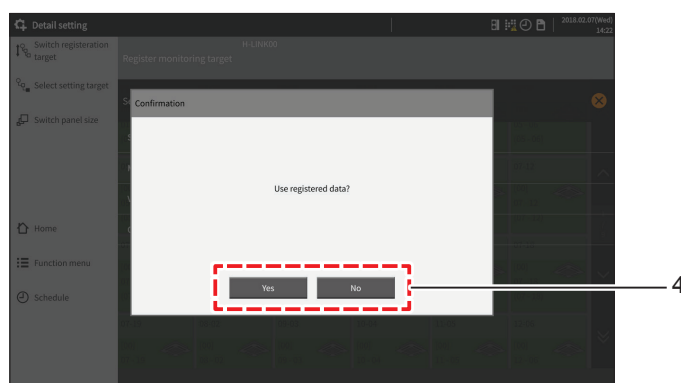
1. Tap to show menu window.



2. Tap **Check connection again**. Confirmation pop up is shown.



3. Tap **Yes**.
Confirmation pop up asking whether or not to use registered data.
Tap **No** to cancel connection check and to return to the previous window.

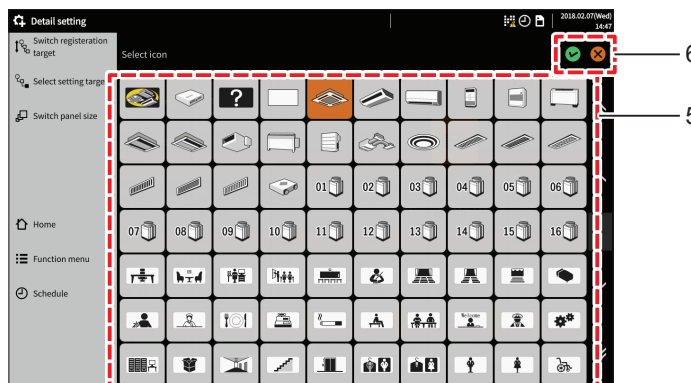
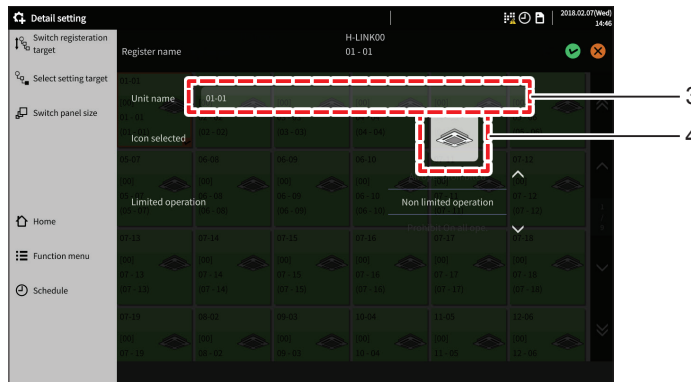


4. Tap **Yes** to maintain registered monitoring target information.
Tap **No** to delete registered monitoring target information and to initialize connection.
After completing connection check, register monitoring target window is shown.

- Connection check may take approximately 20 minutes.

• If any change is made on function selection on units such as unit/RC system configuration and temperature range, tap **Check connection again** to ensure all unit information is correct.

■ Registering Unit Names



Continue to next page.

Follow 2 ~ 6 in “■ Check connecting status for units” (pages 28 - 29) to show units to register.

1. Tap unit to register.

2. Tap **Register name**.
The window for registering name is shown.

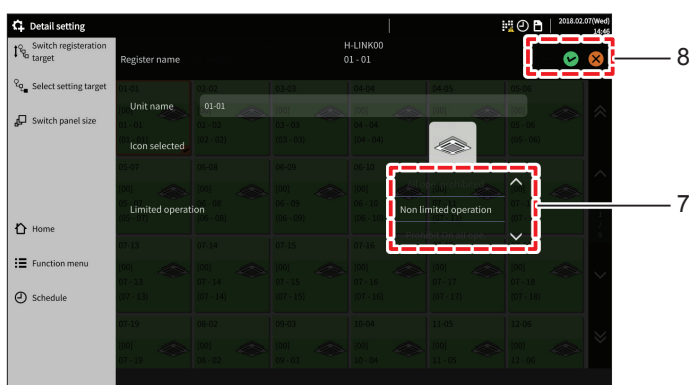
3. Shows current registered name.
Tap input field to enter information on keyboard.
Regarding keyboard operation, refer to “Basic Window Operation” in operation manual.
Names must be 16 characters or less.

4. Shows current registered icon.
Tap icon to show window for selecting icon.

5. Tapped icon is shown in orange.

6. Tap to confirm setting and to return to registering monitoring target window.
Tap to discard the change and to return to register monitoring target window.

Continue from previous page.



7. Tap ^ or v to restrict operation for air conditioners and facility units. Set restriction on operation for On all/ Off all and/or All operation.
 - Restriction on operation is shown only when the target is the “unit”.
 - On all/Off all are for restricting effective range for **On all/Off all**.

8. Tap to confirm setting and to return to registering monitoring target window. Tap to discard the change and to return to register monitoring target window.



9. Tap to register the contents.
 - Make sure to tap this icon when the contents have been changed. Otherwise the change made is not registered. Upon completion of registration, the panel color changes from light blue to green.
 - Registering facility units may take approximately 10 minutes.

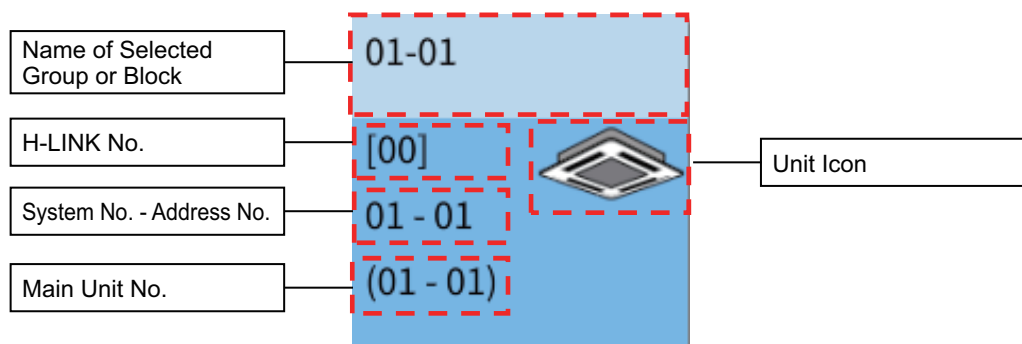
NOTE:

The background color of the panels indicates the network connection status of extension adapter.

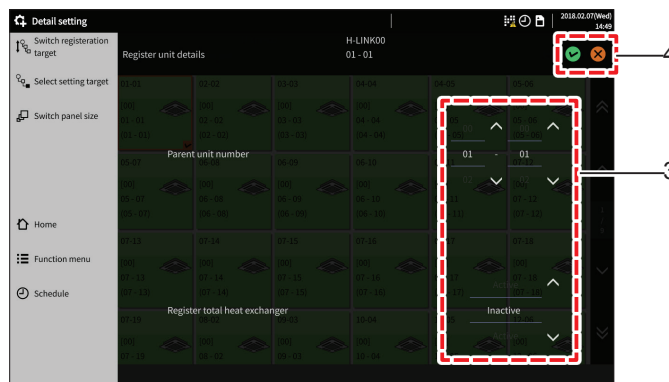
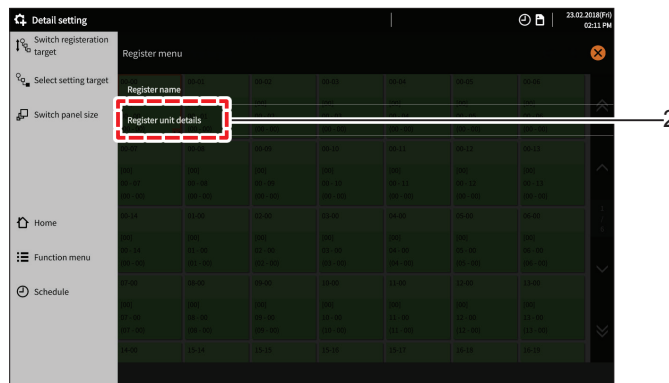
Network connection	Registered (Connected)	Changing setting (Unregistered)	Invalid setting/Error	Not registered / Disabled
Panel color	Green	Light blue	Red	Gray

(*): Check the network environment and/or setting contents to register again if the panel is shown with background color red.

- Contents on panel
Operation status of air conditioners is shown in the panel (the largest) as in the following.
3 panel sizes are provided to best select the appropriate size for status and air conditioners desired to be shown.



■ Detailed Settings for In/Outdoor Units



Follow “■ Check connecting status for units” (page 28) to show units to register.

1. Tap unit to register.

2. Tap **Register unit details**.
The window to register unit details is shown.

3. Tap ^ or v to change setting.

- On detail setting for indoor units, set “parent number” and “register total heat exchanger”.
- On detail setting for outdoor units, set “Capacity control and Lower noise” and “Outdoor temperature representative unit setting”.

4. Tap to confirm setting and to return to registering monitoring target window.
Tap to discard the change and to return to register monitoring target window.

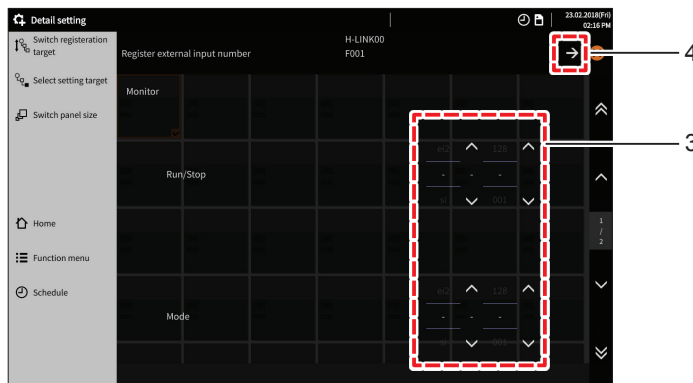
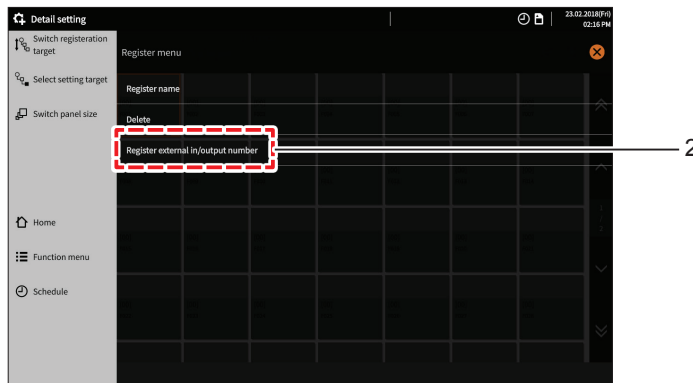
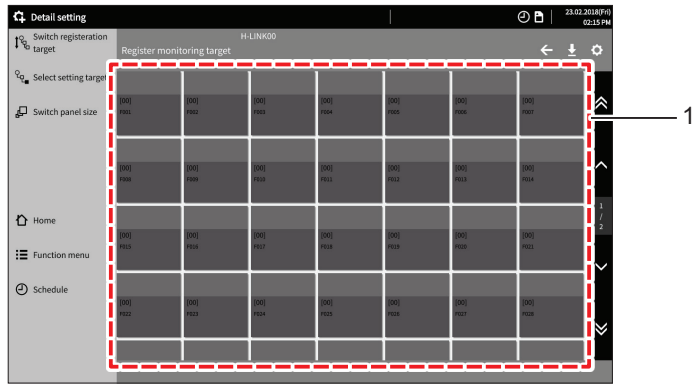
- Upon completing the setting, tap to register contents as described in step 9 of “■ Registering unit names” on page 32.

- Main Unit No.: Select main unit No. as a representative unit for the RC group from a range of 00-00 to 63-63 (refrigerant cycle - address).
Main unit No. is required to be a combination of refrigerant cycle and address that have been detected by VRF Central Touchscreen Controller.
Main unit No. need to be the same value on ones in the same RC group. Modify the parent number on this section if detected main unit No. for the unit and actual system configuration of RC group do not match.
- Register total heat exchanger: Set as **Inactive**.
- Capacity control/Lower noise: The item selected as **Inactive** will not be displayed in monitor/schedule window. The configuration of **Active** and **Inactive** on this section is reflected on the item display for other windows.
- Outdoor temperature representative unit setting: Select **Active** and the temperature sensed on the given outdoor unit is shown on the upper part of the screen.

NOTICE:

- Setting lower noise to units that do not support the function may cause malfunction on capacity control.
- The setting for capacity control/lower noise is applied in approximately 15 minutes.

■ Setting external in/output for facility units



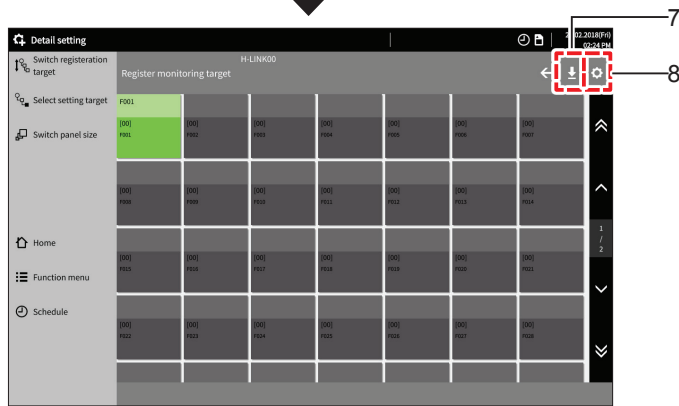
Continue to next page.

Follow “■ Check connecting status for units” (page 28) to show facility units to register.

1. Tap facility unit to register.
 - Sort the facility unit No. by ascending order and fill the panels without space to register facility units.
2. Tap **Register external in/output number**.
The window for registering external input/output number is shown.
 - Tap **Delete** to delete registered facility unit information.
3. Tap ^ or v for each item to change setting.
External input can be set on “Run/ Stop”, “Mode”, and “Alarm” for monitoring.
4. Tap → to confirm setting and to go to external output setting window.
5. Tap ^ or v for each item to change setting.
External output can be set on “Run / Stop”, and “Mode” for controlling.
6. Tap to confirm setting and to return to registering monitoring target window.
Tap to discard the change and to return to register monitoring target window.
Tap ← to go to the previous page.

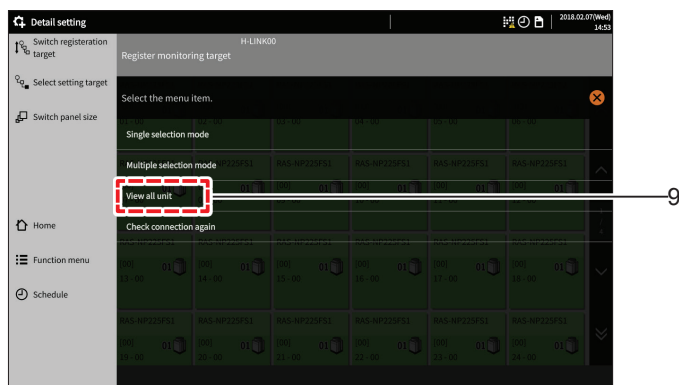
- For monitoring, applicable ranges are as follows. si001 - si004, PIO1 contact point: ei1001 - ei1128, PIO2 contact point: ei2001 - ei2128.
- For controlling, applicable ranges are as follows. so001 - so002, PIO1 contact point: eo1001 - eo1128, PIO2 contact point: eo2001 - eo2128.

Continue from previous page.



7. Upon completing the setting, tap to register the contents.

8. Tap to show menu window.



9. Tap **View all unit**.
All units are shown.

Setting contents for specified facility unit is shown.



10. Tap or to check setting contents for facility units.
Set the external input/output for facility units again if the setting is not correctly updated.

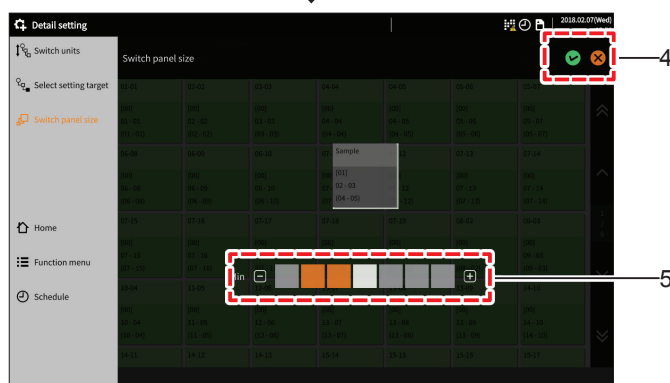
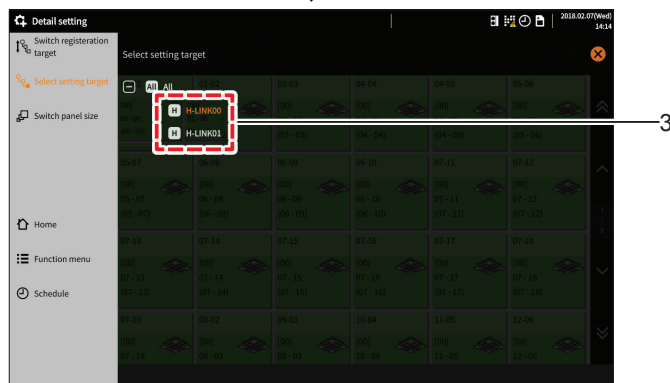
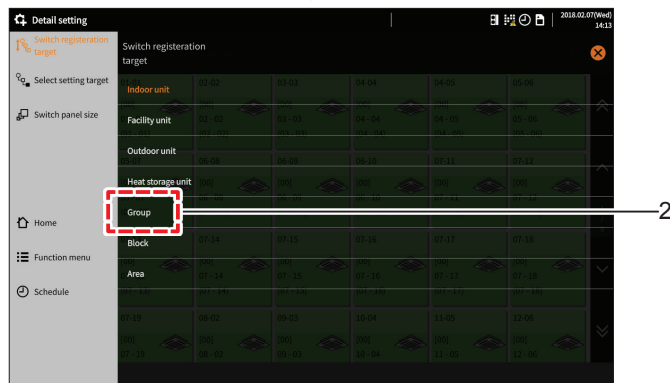
11. Tap to return to Register monitoring target window.

- Up to 2 PIOs can be connected per VRF Central Touchscreen Controller/Extension adapter. Register PIO on network registration to use PIO for external input/output setting.
- Do not use refrigerant cycle 62-63 to use facility units.

(2) Registering group

Group is a collection of target units for monitoring and controlling. Register 1 or more unit(s) in VRF Central Touchscreen Controller/Extension adapter to a group. One VRF Central Touchscreen Controller/Extension adapter can have 128 groups registered. Group registration is required for monitoring/controlling air conditioners and/or facility units.

■ Registering group name



Continue to next page.

1. Tap item to switch display.

- Tap **Switch registration target** and step 2 is shown.
- Tap **Select setting target** and step 3 is shown.
- Tap **Switch panel size** and step 4 is shown.

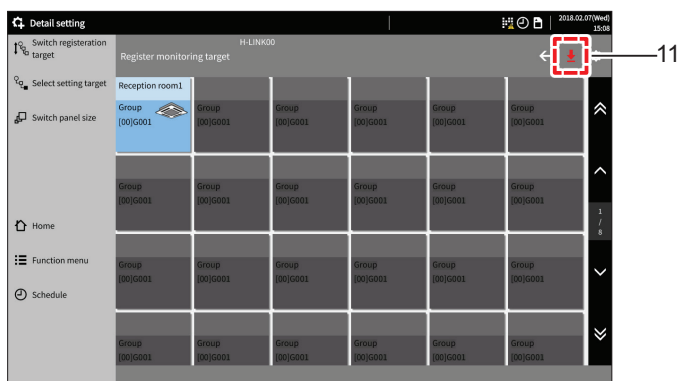
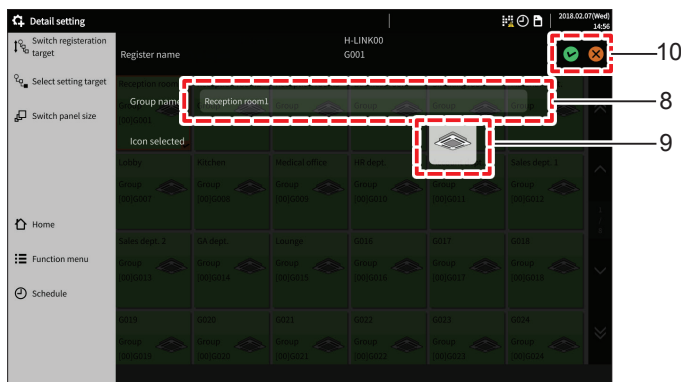
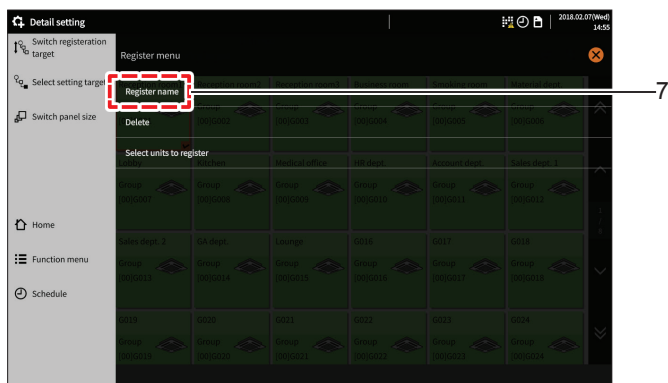
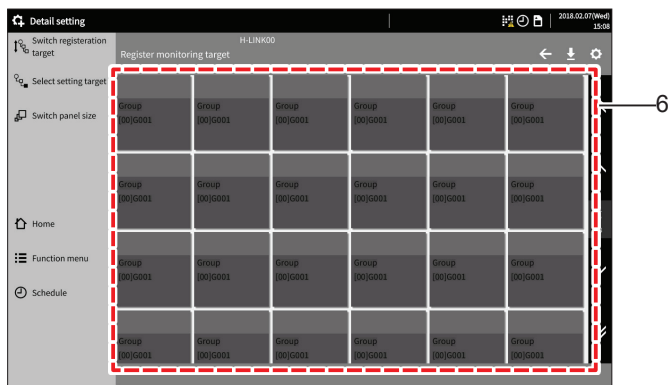
2. Tap **Group**. Register monitoring target window is shown.

3. Tap the name of H-LINK that the group is registered in. The register monitoring target window for specified VRF Central Touchscreen Controller or extension adapter is shown.

4. Tap + or – to change panel size.

5. Tap to confirm setting and to return to registering monitoring target window. Tap to discard the change and to return to register monitoring target window.

Continue from previous page.



6. Tap group to register.

7. Tap **Register name**.

The window for registering name is shown.

- Tap **Delete** to delete setting contents.

8. Shows current registered name.

Tap input field for name to enter information on keyboard.

The keyboard is shown.

Regarding keyboard operation, refer to "Basic Window Operation" in operation manual.

Names must be 16 characters or less.

9. Shows current registered icon.

Tap icon to show window for selecting icon.

Refer to step 5 of "■ Registering unit names" on page 31.

10. Tap to confirm setting and to return to registering monitoring target window.

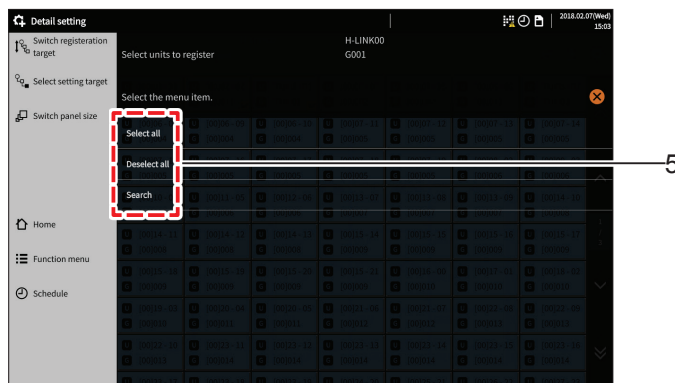
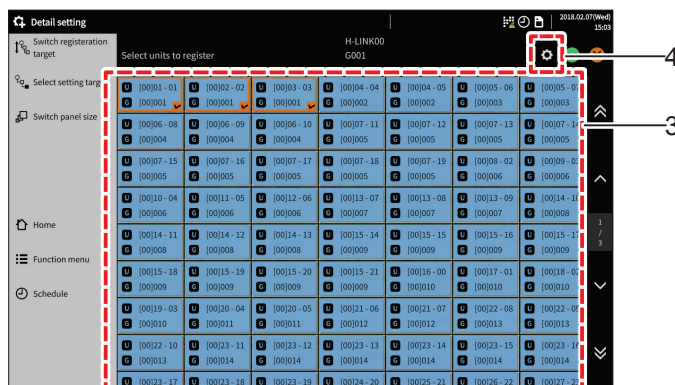
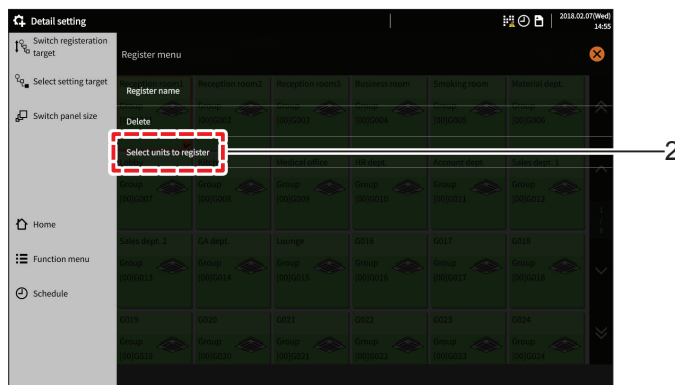
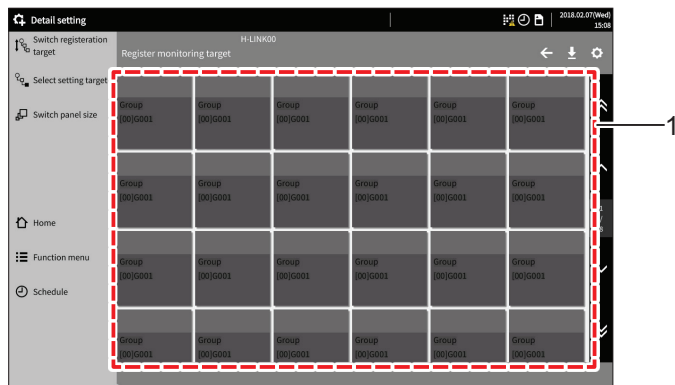
Tap to discard the change and to return to register monitoring target window.

11. Tap to register the contents.

- Make sure to tap this icon when the contents are changed. Otherwise the change made is not registered.

Upon completion of registration, the panel color changes from light blue to green.

■ Allocating units to group



Follow step 2 to 5 of “■ Registering group name” (page 36) to show group to register.

1. Tap group to register.

2. Tap **Select units to register**.
Select register target window is shown.

- Tap **Delete** to delete setting contents.

3. Tap panel for the unit to allocate to the specified group.

- Panels shown with background blue indicate that the unit is already allocated to other group. Blue panels can be selected but the registered data is deleted upon allocating to the new group.

4. Tap . Window for **Select all** and sorting is shown.

5. Tap **Select all** to select all units shown in the window.

Tap **Deselect all** to deselect all selected units.

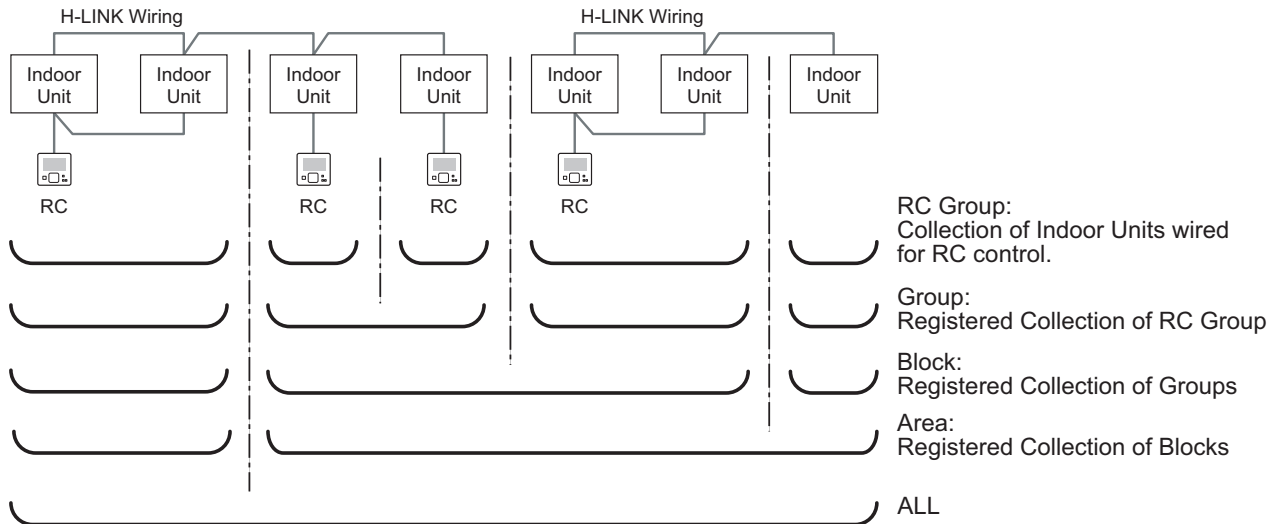
Tap **Search** to show search window.

Continue to next page.

Continue from previous page.



6. Tap unit type.
The selected item is shown in orange.
List(s) meeting at least one of the criteria is shown.
7. Tap to confirm setting and to return to registering monitoring target window.
Tap to discard the change and to return to register monitoring target window.
 - Tap selected list again and tap to cancel search.
8. Select unit to allocate to the group and tap . Setting is confirmed and the window returns to the register monitoring target window.
Tap to discard the change and to return to register monitoring target window.
 - Upon completing the setting, tap to register contents as described in step 11 of "■ Registering group name" on page 37.



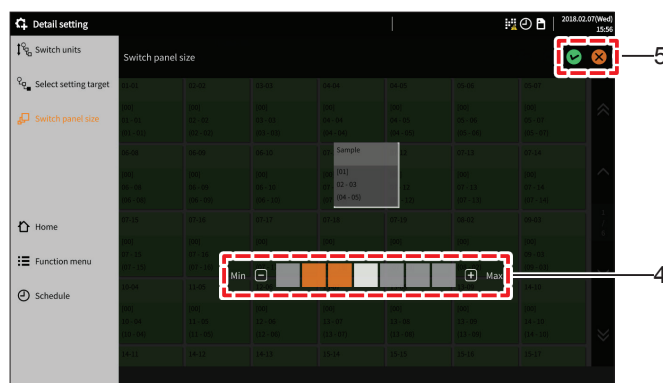
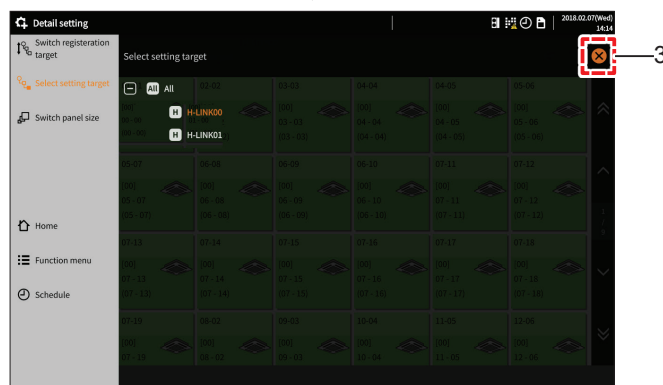
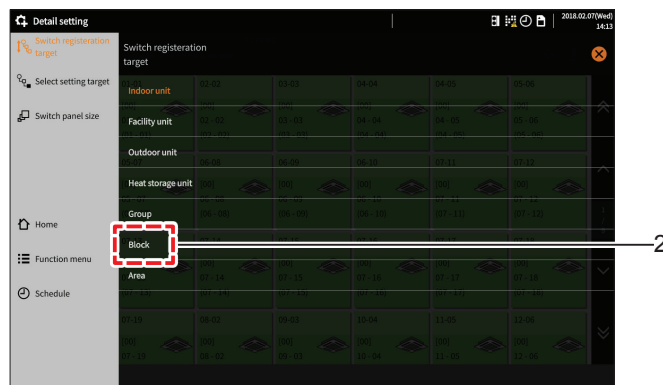
NOTICE:

- Delete schedule for the group first to change the group. Then change the group in this section.

(3) Registering blocks

Block is a collection of target units for monitoring and controlling. Register 1 or more group(s) in a system to a block. One system can have 512 blocks registered. Block registration is required for monitoring/controlling air conditioners and/or facility units.

■ Registering block name






Continue to next page.

1. Tap item to switch display.
 - Tap **Switch registration target** and step 2 is shown.
 - Tap **Select setting target** and step 3 is shown.
 - Tap **Switch panel size** and step 4 is shown.

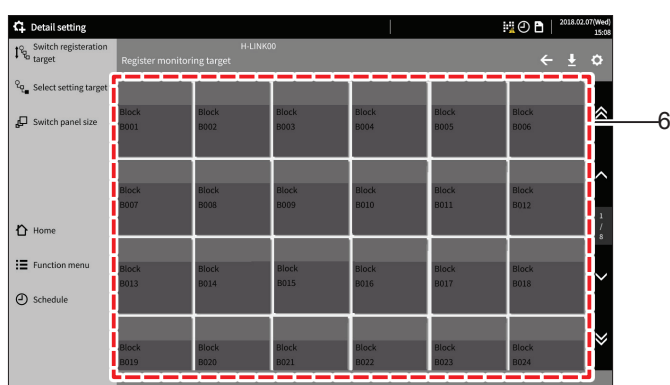
2. Tap block to register.
The registering monitoring target window for blocks is shown.

Upon registering up to Area, tree view for monitor window is created.
This window can be used for checking system configuration.

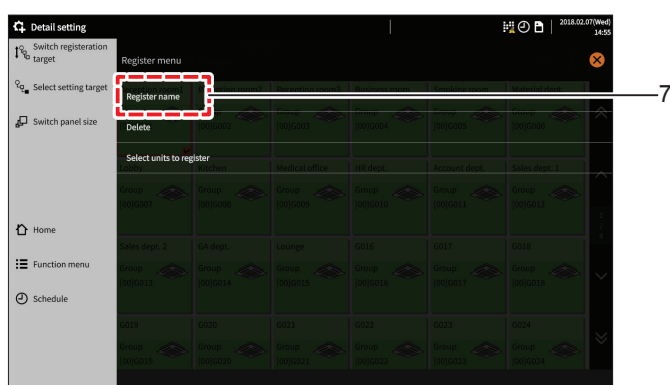
3. Tap  to return to Register monitoring target window.

4. Tap + or – to change panel size.
5. Tap  to confirm setting and to return to registering monitoring target window.
Tap  to discard the change and to return to register monitoring target window.

Continue from previous page.

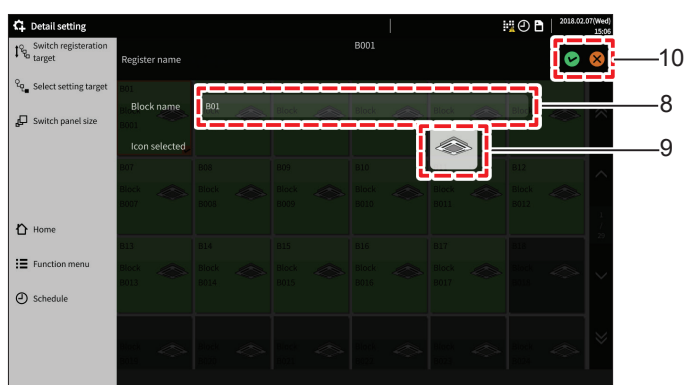


6. Tap block to register.



7. Tap **Register name**.
The window for registering name is shown.

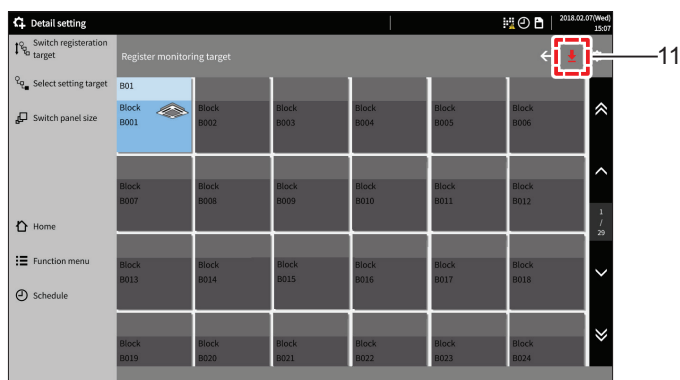
- Tap **Delete** to delete setting contents.



8. Shows current registered name.
Tap input field for name to enter information on keyboard.
The keyboard is shown.
Regarding keyboard operation, refer to “Basic Window Operation” in operation manual.
Names must be 16 characters or less.

9. Shows current registered icon.
Tap icon to show window for selecting icon.
Refer to step 5 of “■ Registering unit names” on page 31.

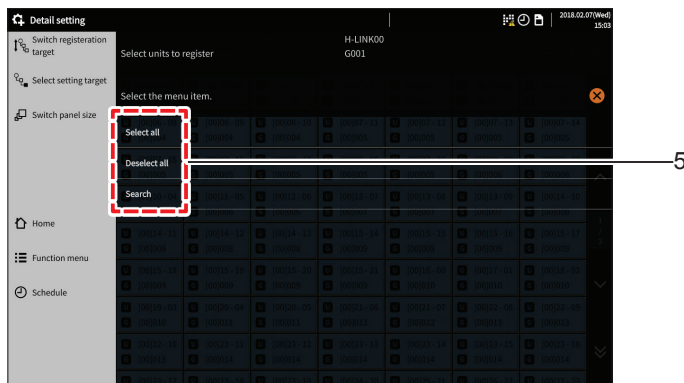
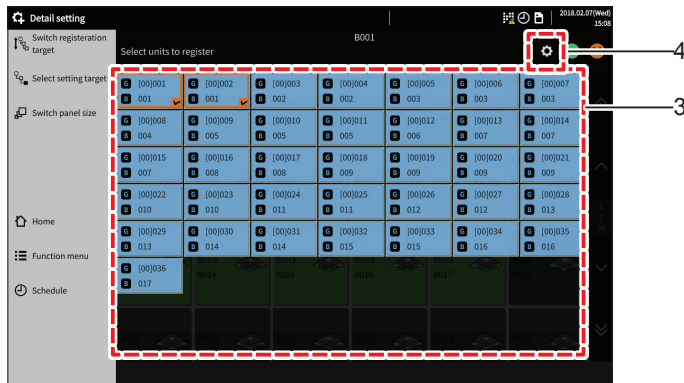
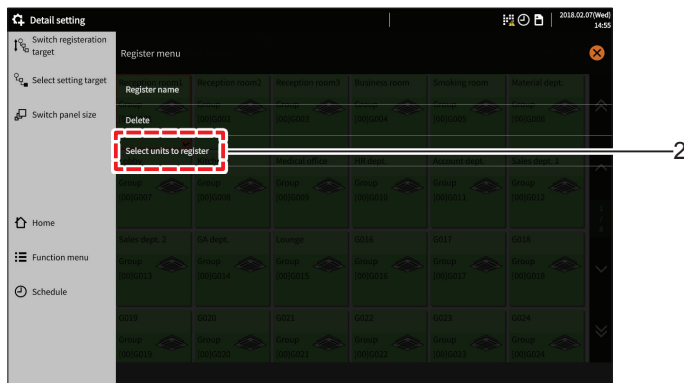
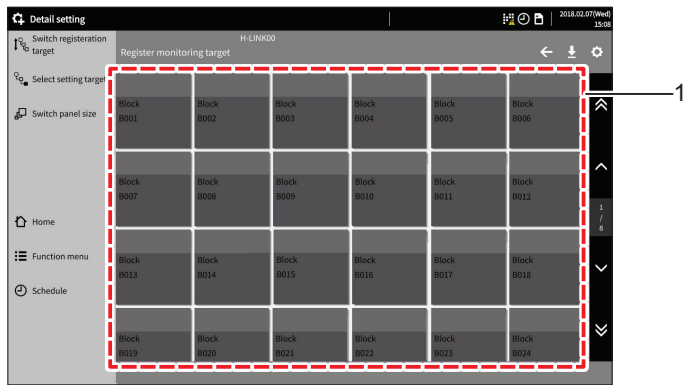
10. Tap to confirm setting and to return to registering monitoring target window.
Tap to discard the change and to return to register monitoring target window.



11. Tap to register the contents.

- Make sure to tap this icon when the contents are changed.
Otherwise the change made is not registered.
Upon completion of registration, the panel color changes from light blue to green.

■ Select group to allocate to the block



Continue to next page.

Follow step 2 to 5 of “■ Registering block name” (page 40) to show group to register.

1. Tap block to register.
2. Tap **Select units to register**.
Select register target window is shown.
 - Tap **Delete** to delete setting contents.
3. Tap panel for the group to allocate to the specified block.
 - Panels shown with background blue indicate that the group is already allocated to other block. Blue panels can be selected but the registered data is deleted upon allocating to the new block.
4. Tap . Window for [Select all] and sorting is shown.
5. Tap **Select all** to select all groups shown in the window.
Tap **Deselect all** to deselect all selected groups.
Tap **Search** to show search window.

Continue from previous page.



6. Tap criteria used to filter the list. The selected item is shown in orange. List(s) meeting at least one of the criteria is shown.
7. Tap to show monitor window with item contents confirmed. Tap to discard the change and to return to register monitoring target window.
 - Tap selected list again and tap to cancel search.



8. Select unit to allocate to the group and tap . Setting is confirmed and window returns to the monitoring target window. Tap to discard the change and window returns to the monitoring target window.
 - Upon completing the setting, tap to register contents as described in step 11 of "■ Registering block name" on page 41.

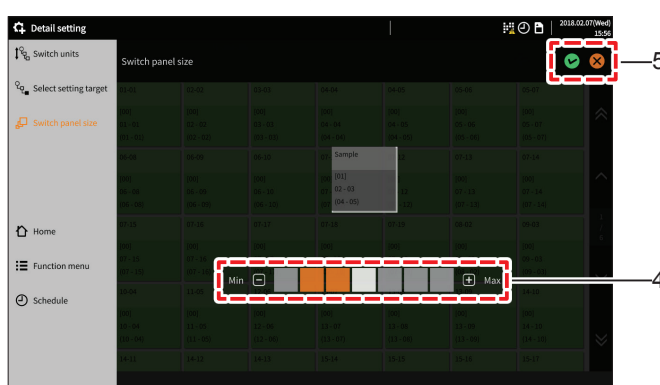
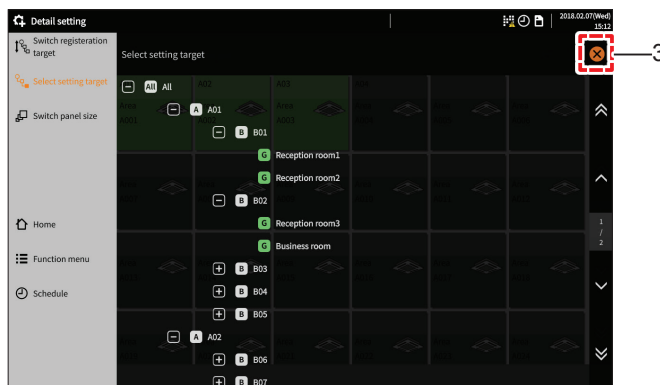
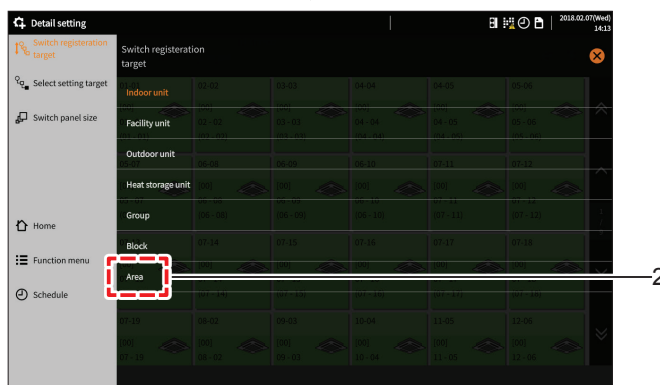
NOTICE:

- To apply usage history to block, select block with 200 or less units registered. (If block contains more than 200 units registered, it may take hours to show the result).

(4) Registering area

Area is a collection of target units for monitoring and controlling. Register 1 or more block(s) in a system to a Area. One system can have 512 areas registered. Area registration is required for monitoring/controlling air conditioners and/or facility units.

■ Registering area name



Continue to next page.

1. Tap item to switch display.
 - Tap **Switch registration target** and step 2 is shown.
 - Tap **Switch units to set** and step 3 is shown.
 - Tap **Switch panel size** and step 4 is shown.

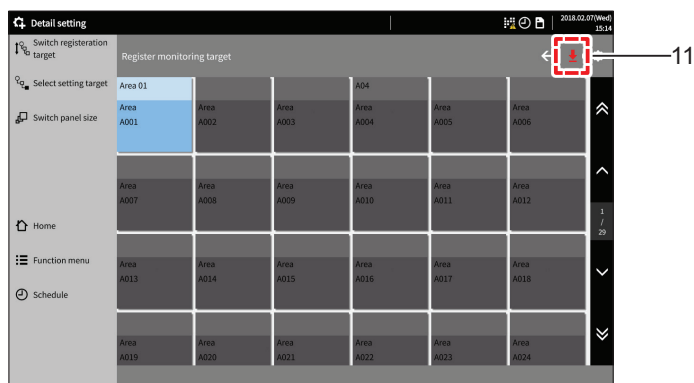
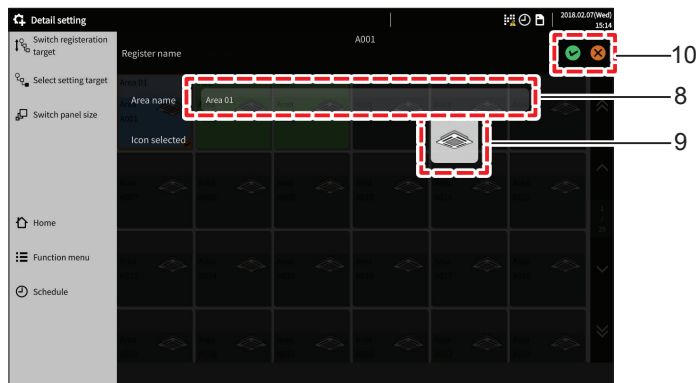
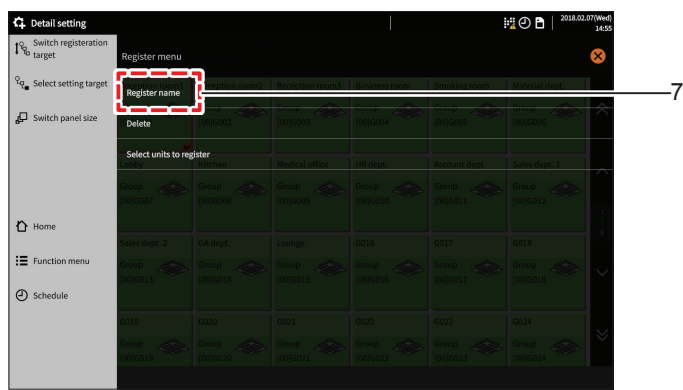
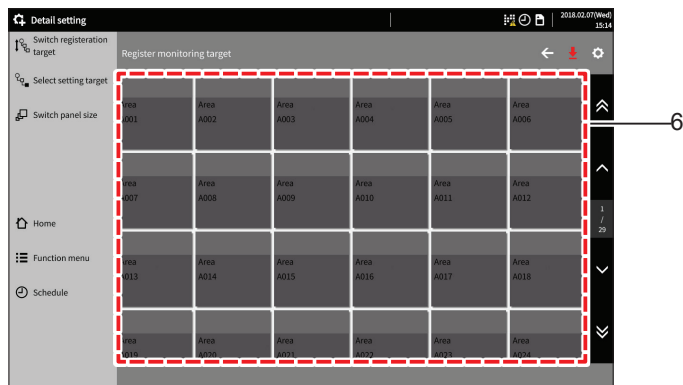
2. Tap area to register.
The registering monitoring target window for area is shown.

Upon registering up to Area, tree view for monitor window is created.
This window can be used for checking system configuration.

3. Tap to return to Register monitoring target window.

4. Tap + or – to change panel size.
5. Tap to confirm setting and to return to registering monitoring target window.
Tap to discard the change and to return to register monitoring target window.

Continue from previous page.



6. Tap area to register.

7. Tap **Register name**.

The window for registering name is shown.

- Tap **Delete** to delete setting contents.

8. Shows current registered name.
Tap input field for name to enter information on keyboard.

The keyboard is shown.
Regarding keyboard operation, refer to "Basic Window Operation" in operation manual.
Names must be 16 characters or less.

9. Shows current registered icon.
Tap icon to show window for selecting icon.

Refer to step 5 of "■ Registering unit names" on page 31.

10. Tap to confirm setting and to return to registering monitoring target window.

Tap to discard the change and to return to register monitoring target window.

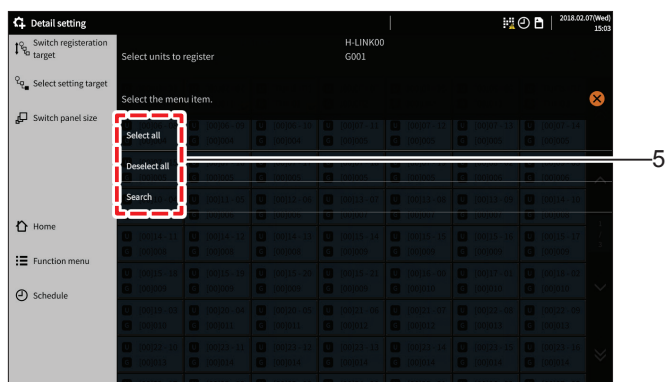
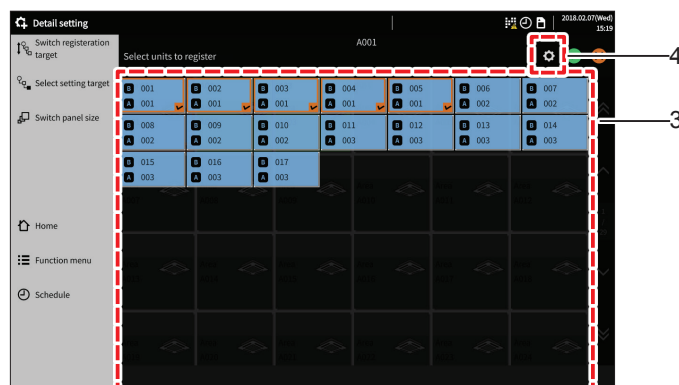
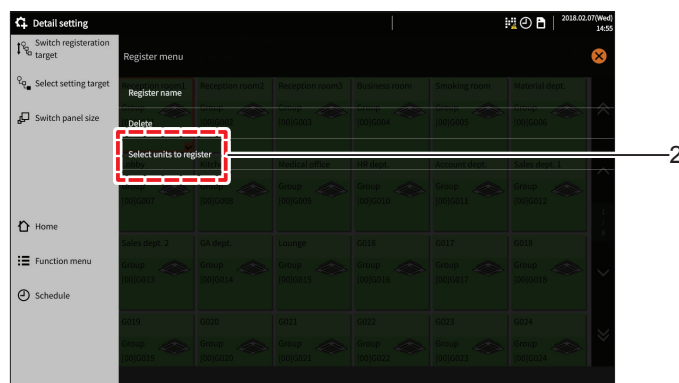
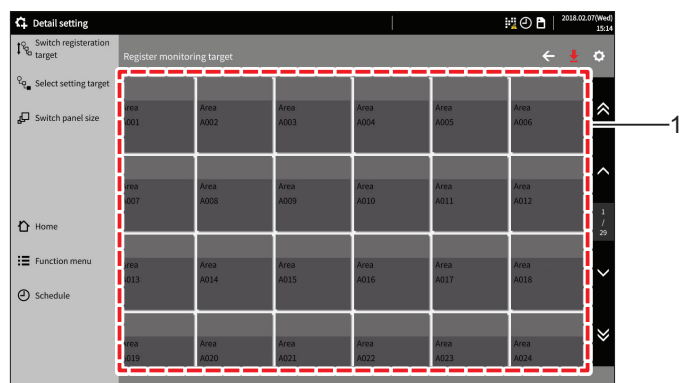
11. Tap to register the contents.

- Make sure to tap this icon when the contents are changed.

Otherwise the change made is not registered.

Upon completion of registration, the panel color changes from light blue to green.

■ Select block to allocate to the area



Continue to next page.

Follow steps 2 to 5 of “■ Registering area name” (page 44) to show group to register.

1. Tap area to register.
2. Tap **Select units to register**.
Select register target window is shown.
 - Tap **Delete** to delete setting contents.
3. Tap panel for the block to allocate to the specified area.
 - Panels shown with background blue indicate that the group is already allocated to other area. Blue panels can be selected but the registered data is deleted upon allocating to the new area.
4. Tap . Window for [Select all] and sorting is shown.
5. Tap **Select all** to select all groups shown in the window.
Tap **Deselect all** to deselect all selected blocks.
Tap **Search** to show search window.

Continue from previous page.



6. Tap criteria used to filter the list.
The selected item is shown in orange.
List(s) meeting at least one of the criteria is shown.
7. Tap to show monitor window with item contents confirmed.
Tap to discard the change and to return to register monitoring target window.

 - Tap selected list again and tap to cancel search.



8. Tap panel for the block to allocate to specified area.
Tap to confirm setting and to return to register monitoring target window.
Tap to discard the change and to return to register monitoring target window.

 - Upon completing the setting, tap to register contents as described in step 11 of “■ Registering area name” on page 45.

NOTICE:

- To apply usage history to area, select area with 200 or less units registered. (If block contains more than 200 units registered, it may take hours to show the result).

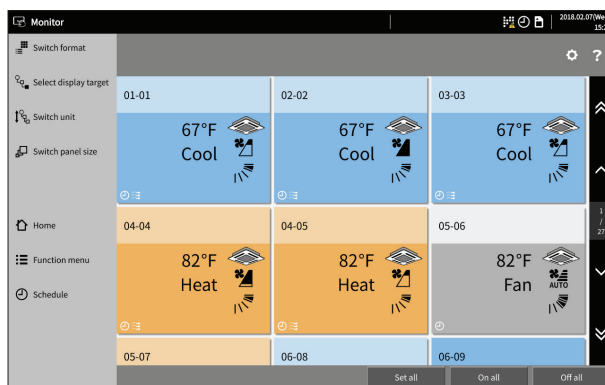
9.6 Test Run

(1) Monitoring and Controlling

NOTICE:

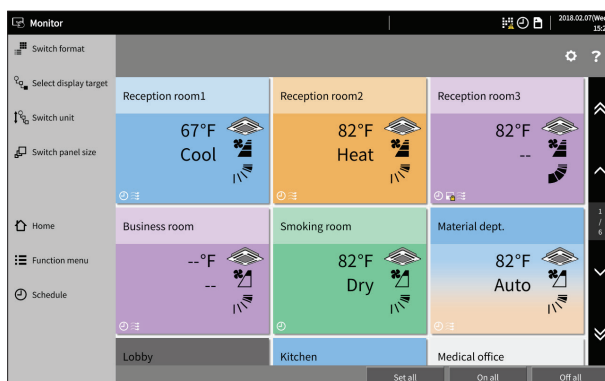
- When setting change is made on monitor window, the contents stay displayed (locked) for certain period of time. This display lock expires when states detected on VRF Central Touchscreen Controller match the actual operation states of the air conditioners. During this period, operations made on the remote controller are not affected on monitor window.
- This lock can last for 7 minutes at the longest.

■ Monitoring and Controlling per unit



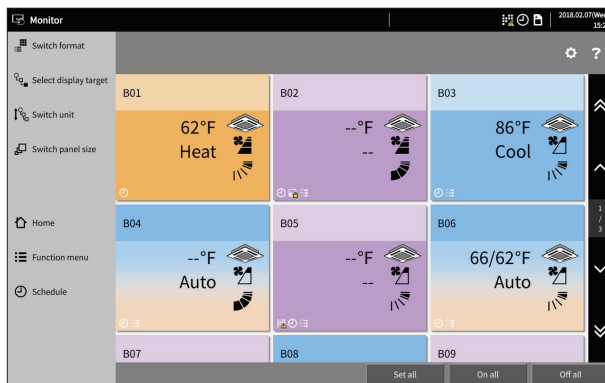
1. Set the following configuration in the monitoring window.
 - Display target: All
 - Displayed per: Unit:
 - Display format: Panel
 - Panel size: 1Refer to operation manual for detail of setting procedure.
2. Control an air conditioner from remote control and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
3. Select an air conditioner on VRF Central Touchscreen Controller and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
 - Conduct steps 2 and 3 on each air conditioner one by one to prevent any misreads and mistakes.

■ Monitoring and Controlling per group



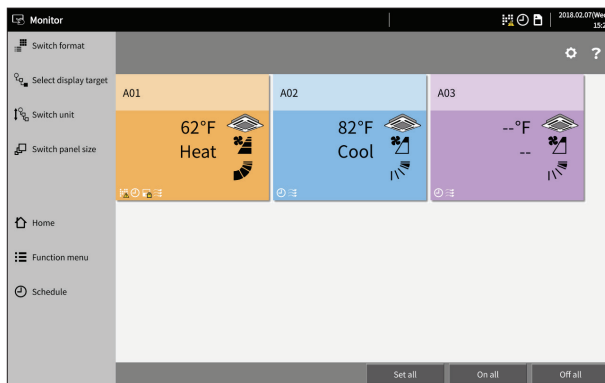
1. Set the following configuration in the monitoring window.
 - Display target: All
 - Displayed per: Group
 - Display format: Panel
 - Panel size: 1Refer to operation manual for detail of setting procedure.
2. Control an air conditioner from remote control and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
3. Select an air conditioner on VRF Central Touchscreen Controller and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
 - Conduct steps 2 and 3 on each group one by one to prevent any misreads and mistakes.

■ Monitoring and Controlling per block



1. Set the following configuration in the monitoring window.
 - Display target: All
 - Displayed per: Block
 - Display format: Panel
 - Panel size: 1
 Refer to operation manual for detail of setting procedure.
2. Control an air conditioner from remote control and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
3. Select an air conditioner on VRF Central Touchscreen Controller and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
 - Conduct steps 2 and 3 on each block one by one to prevent any misreads and mistakes.

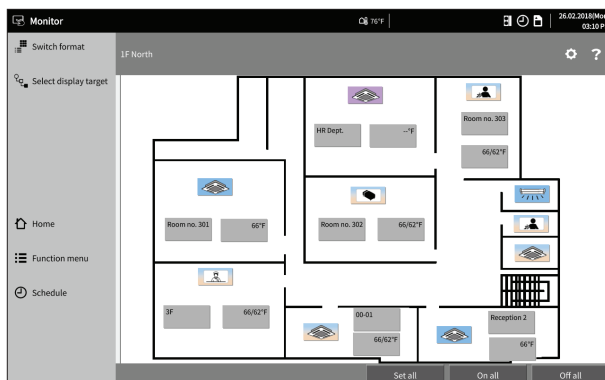
■ Monitoring and Controlling per area



1. Set the following configuration in the monitoring window.
 - Display target: All
 - Displayed per: Area
 - Display format: Panel
 - Panel size: 1
 Refer to operation manual for detail of setting procedure.
2. Control an air conditioner from remote control and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
3. Select an air conditioner on VRF Central Touchscreen Controller and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
 - Conduct steps 2 and 3 on each area one by one to prevent any misreads and mistakes.

■ Monitoring and Controlling per layout

This step is required only when layout is registered. Refer to "10. Register Layout" for detail.



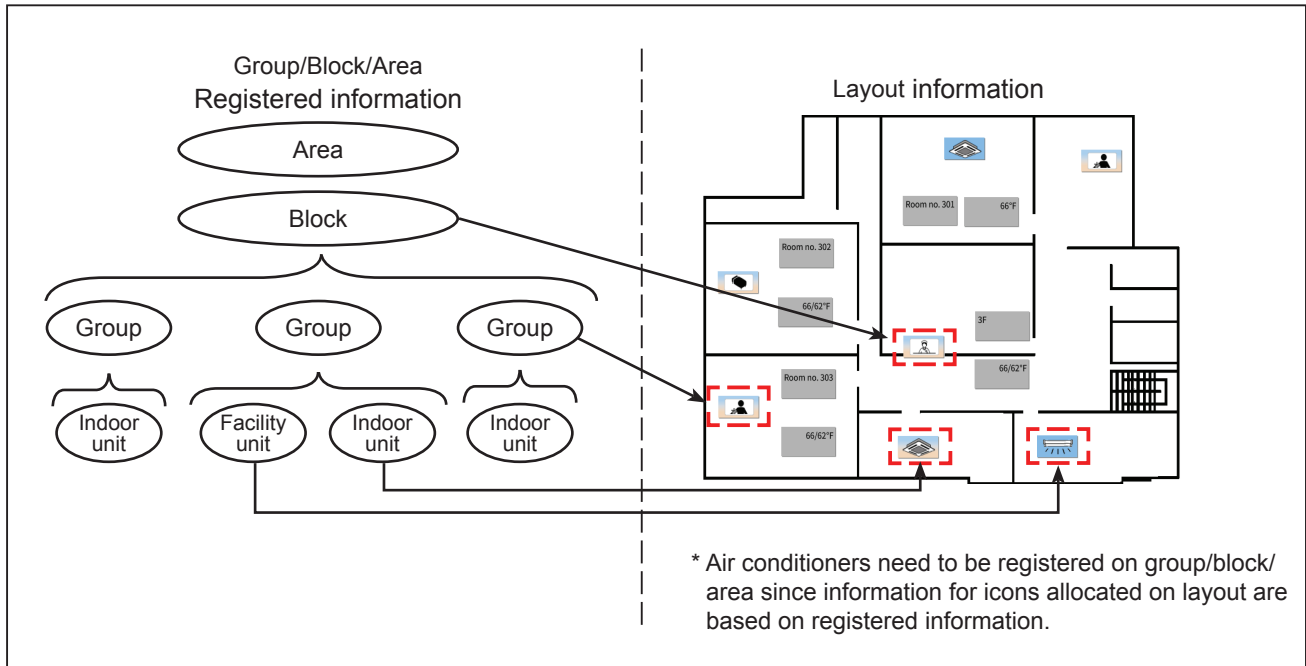
1. Set the following configuration in the monitoring window.
 - Display target: Each layout
 - Display format: Layout
2. Control an air conditioner from remote control and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
3. Select an air conditioner on VRF Central Touchscreen Controller and check if the indication on VRF Central Touchscreen Controller and the operating air conditioner match.
 - Conduct steps 2 and 3 on each layout one by one to prevent any misreads and mistakes.

10. Register Layout

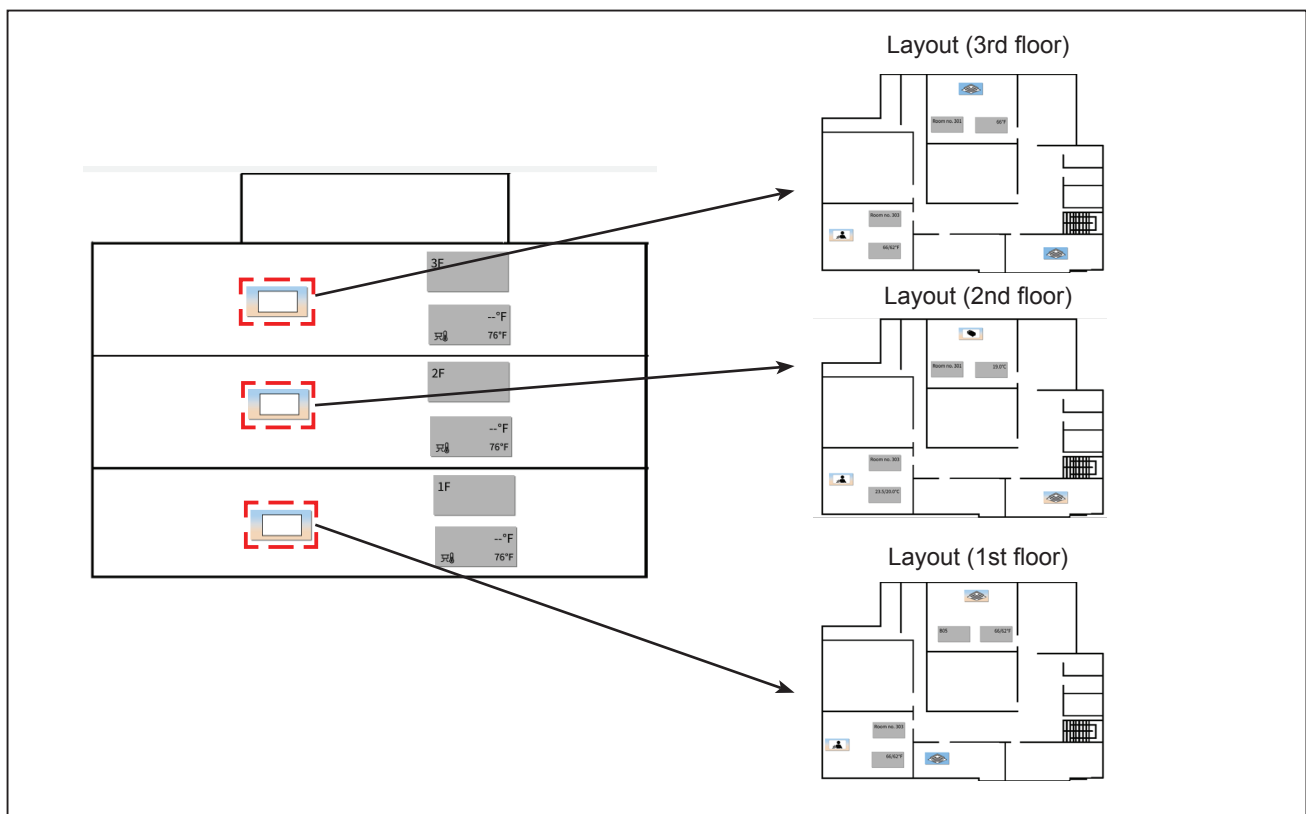
Layout is a collection of target units for monitoring and controlling. 1 layout can contain up to 256 icons, in total, for indoor units/groups/areas/facility units. Layout registration is required for monitoring/controlling air conditioners and/or facility units via the layout window.

Concept

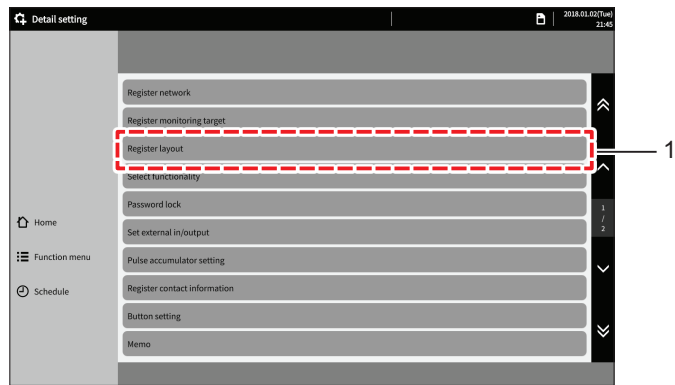
Layout window provides monitoring/controlling air conditioners and usage history view with area/block/group/indoor units/facility units are illustrated with a bird's eye view shortcut to each function.



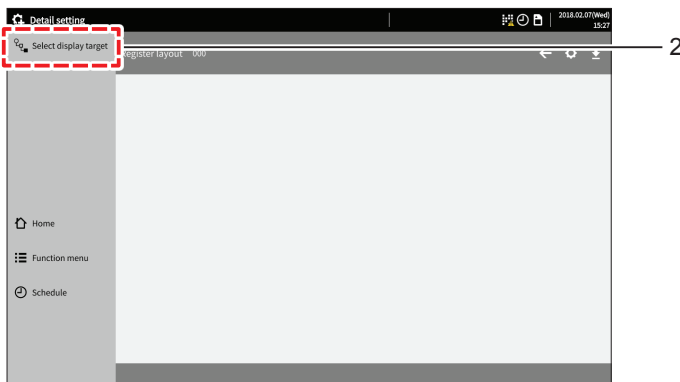
Multiple layouts (001-127) can be allocated on layout 000.



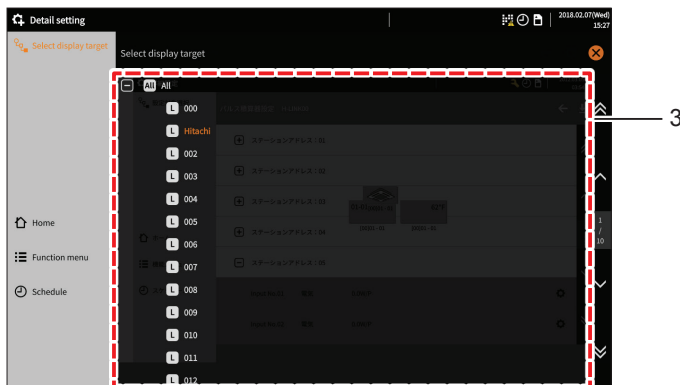
10.1 Registering Layout



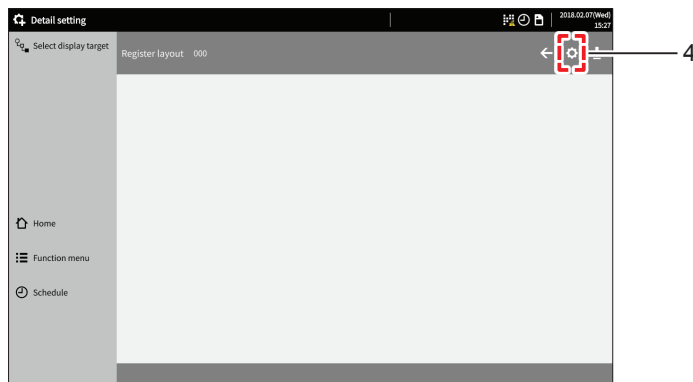
1. Tap **Register layout** on detail setting window.
The window for registering layout is shown.




2. Tap **Select setting target** on registering layout window.
Select display target window is shown.



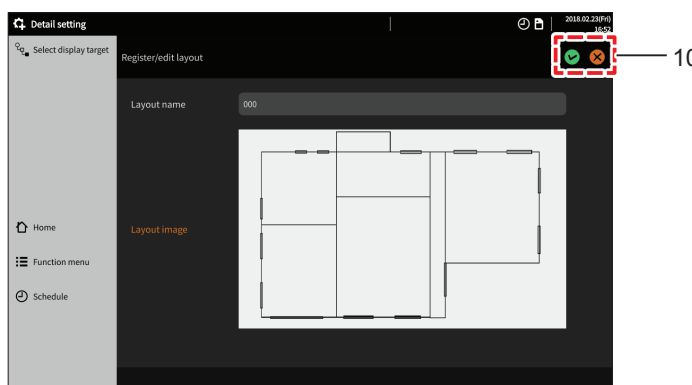
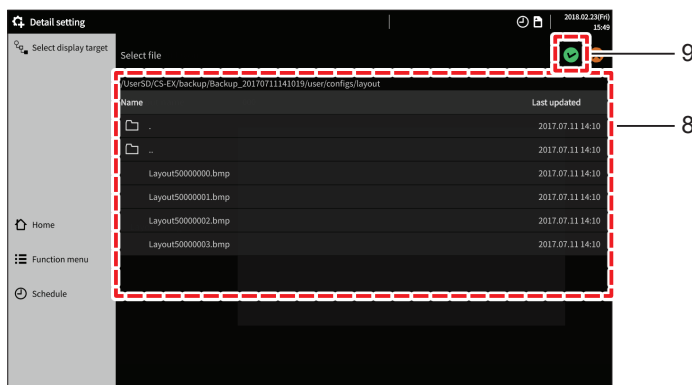
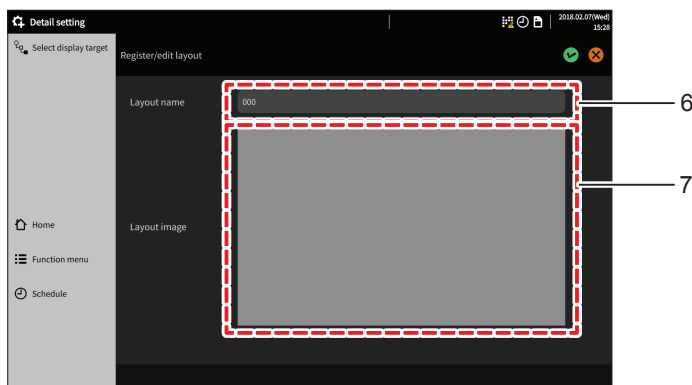
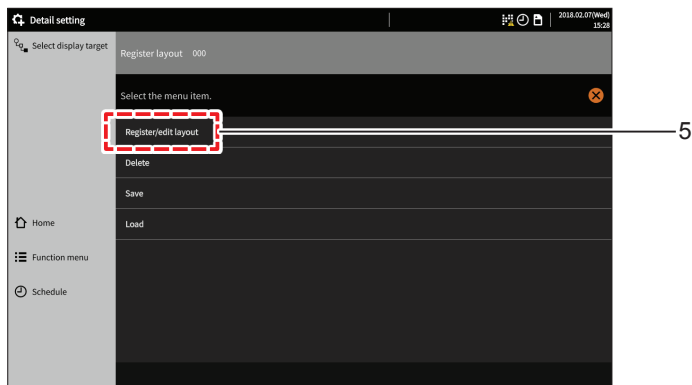
3. Tap layout to register/edit.
Registration window for selected layout is shown.



4. Tap .
Setting menu is shown.

Continue to the next page.

Continue from previous page.



5. Tap **Register/edit layout**.
Window for registering/editing layout is shown.

6. Tap input field for layout name to enter information on keyboard.
The maximum length for name of layout is 16 characters.
“(,) comma” and “(;;) semicolon” cannot be used for layout name.

7. Tap field for layouts.

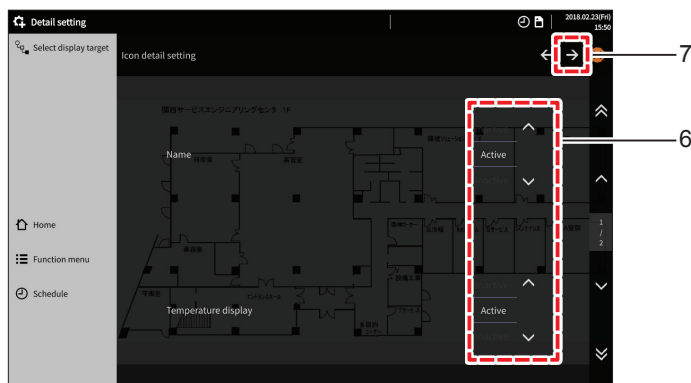
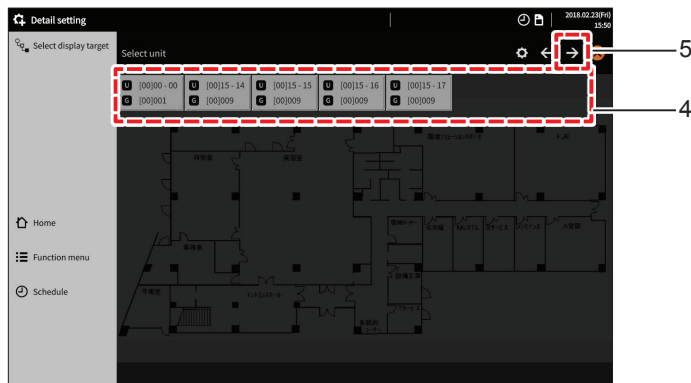
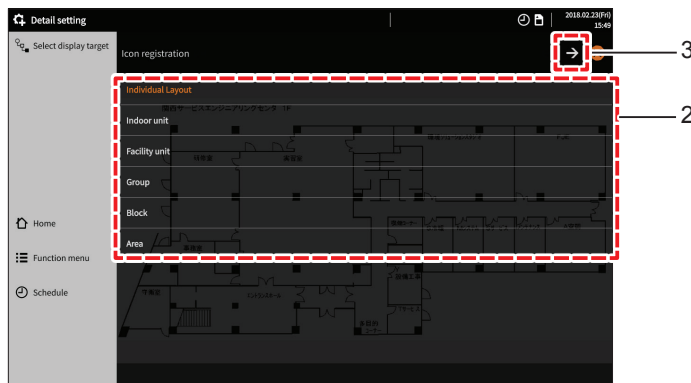
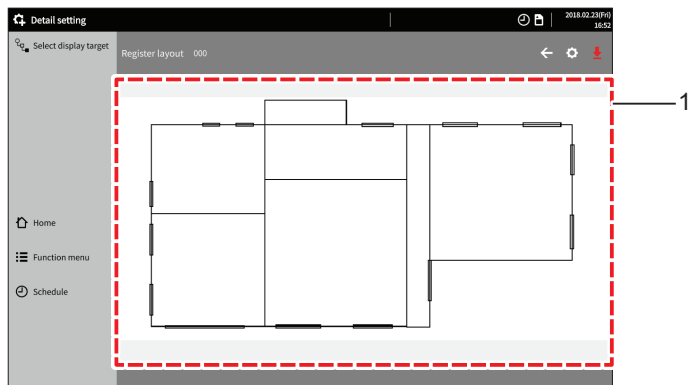
8. Select image to show.
Supported extensions: “jpg”, “bmp” and “png”.
The image size needs to be less than 610 pixel (H) x 1,050 pixel (W) and placed in “CX-EX” folder on SD card.

9. Tap to confirm setting and to return to registering/editing layout window.

10. Tap to confirm setting and to return to registering layout window.
Tap to discard setting and to return to registering layout window.

11. Upon completing setting, refer to “10.7 Saving Registered Layout” (page 58) to save data.

10.2 Allocating Icons



Continue to the next page.

1. Tap a layout background that icons are to be allocated on.
The window for registering icon is shown. Tap exactly where the icon shall be placed.

2. Select the icon type.

- Layout (Shown only when layout 000 is selected)
- Area
- Block
- Group
- Indoor unit
- Facility unit

3. Tap →. Panel selection window appears.

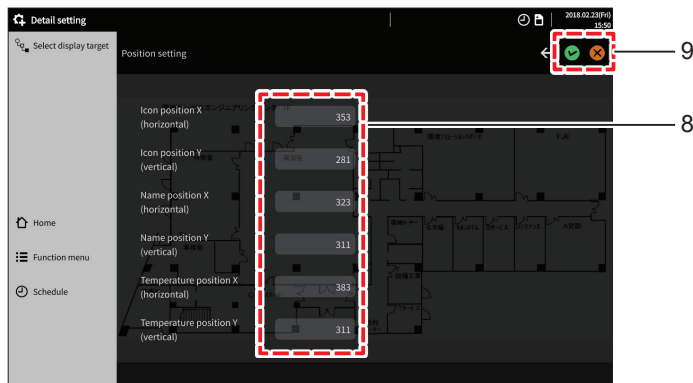
4. Select panel to allocate.

5. Tap → to show icon detail setting window.

6. Select whether or not to show name/temperature and the size for the icons.
Tap ^ or v to change setting items.
Facility units do not display temperature.
(It is not shown on the screen)

7. Tap → to show position setting window.

Continue from previous page.

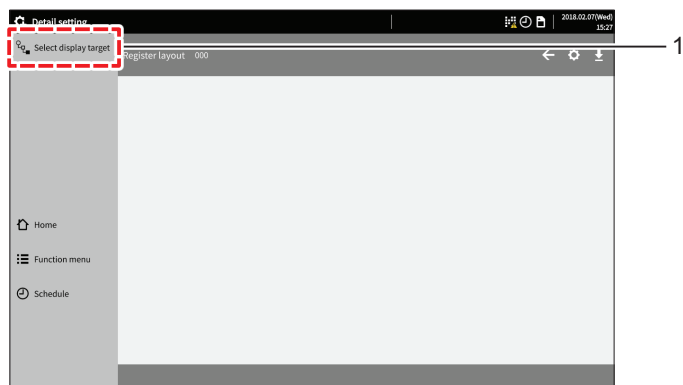


8. Enter coordinates for the icon. Input fields have coordinates for the position tapped on step 1 as a default.
9. Tap to confirm setting and to return to layout window. Tap to discard the change and to return to layout window.
10. Refer to “10.7 Saving Registered Layout” (page 58) to save data.

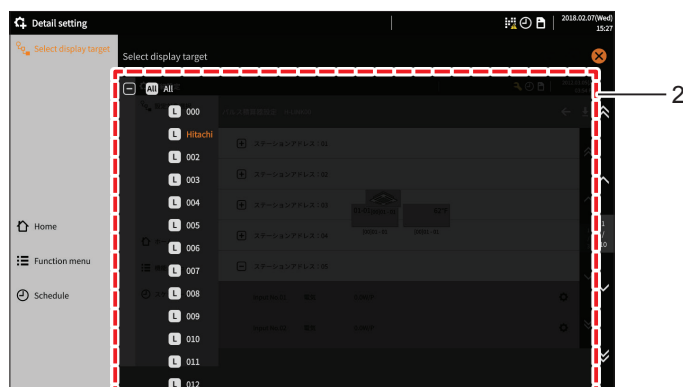
NOTICE:

Ensure allocated icons are not overlapped with each other.

10.3 Deleting Layout



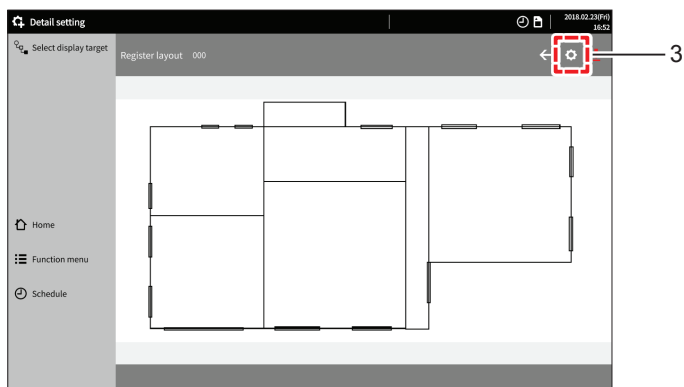
1. Tap **Select Display target** on registering layout window. Select Display Target is shown.




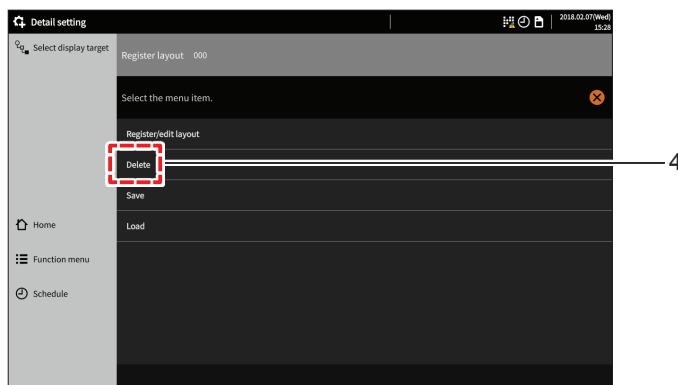
2. Tap layout to delete. The window for registering layout is shown.

Continue to the next page.

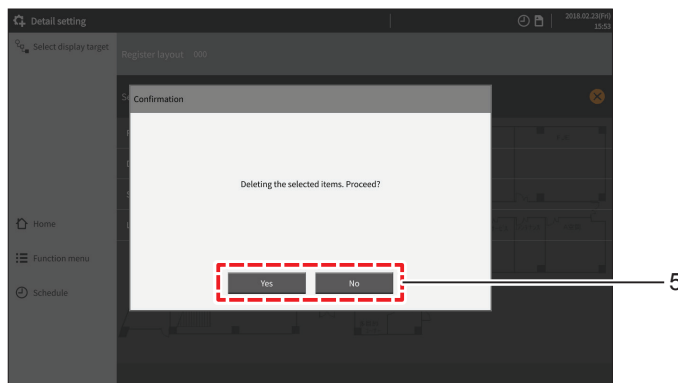
Continue from previous page.



3. Tap .
Setting menu is shown.

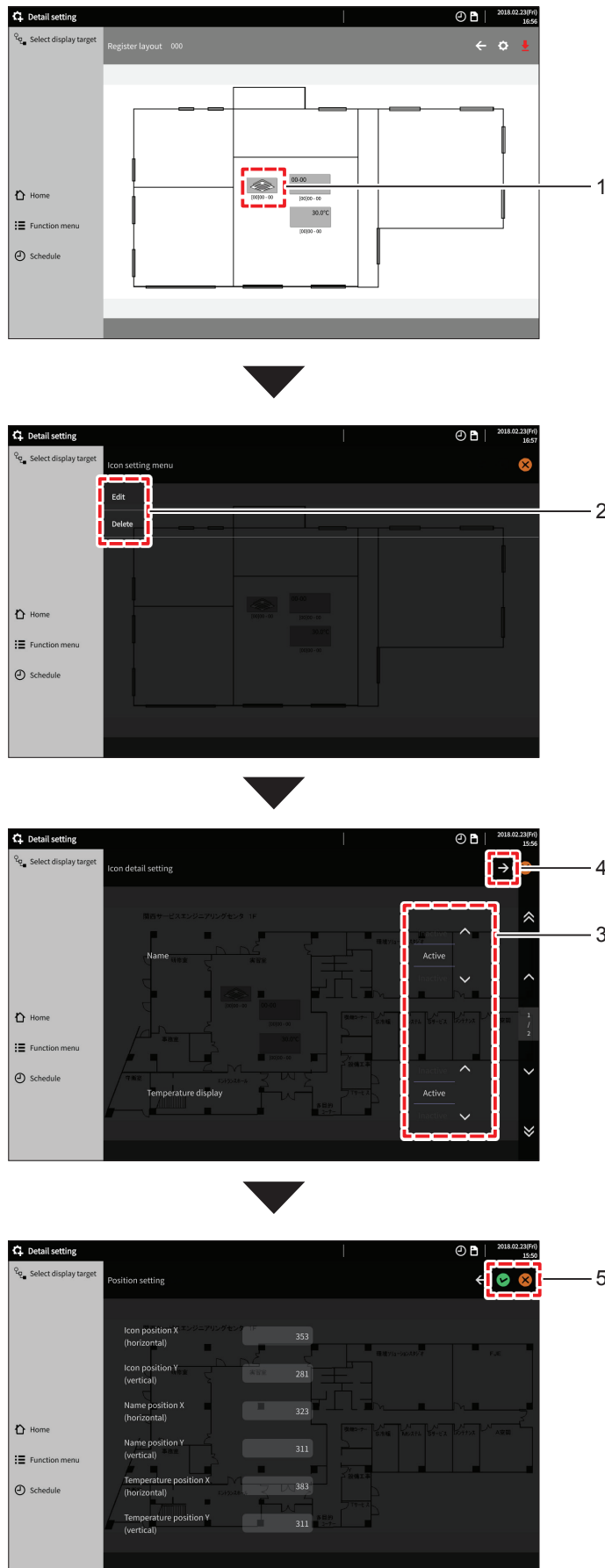


4. Tap **Delete**.



5. Confirmation pop up is shown. Tap **Yes** to delete layout that is currently shown, close the pop up message, and return to registering layout window.
Tap **No** to leave the layout undeleted and return to setting menu.
6. Refer to “10.7 Saving Registered Layout” (page 58) to save data.

10.4 Editing/Deleting Registered Icons

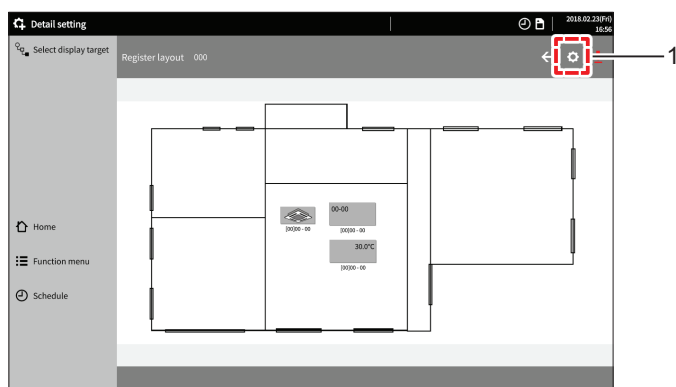



1. Tap unit icon to edit/delete on layout window.
Icon setting menu is shown.
2. Tap **Delete** and then **Yes** on confirmation pop up window to delete icon and return to registering layout window.
Tap **Edit** and refer to 3 and later.
3. Edit icon information on icon detail setting window.
4. Tap → or ← to switch icon detail setting window and position setting window and edit icon information.
Regarding the detail of each window, refer to step 6 to 8 in “10.2 Allocating icons” (pages 53-54).
5. Tap to confirm setting and to return to registering layout window.
Tap to discard the change and to return to registering layout window.
6. Refer to “10.7 Saving Registered Layout” (page 58) to save data.

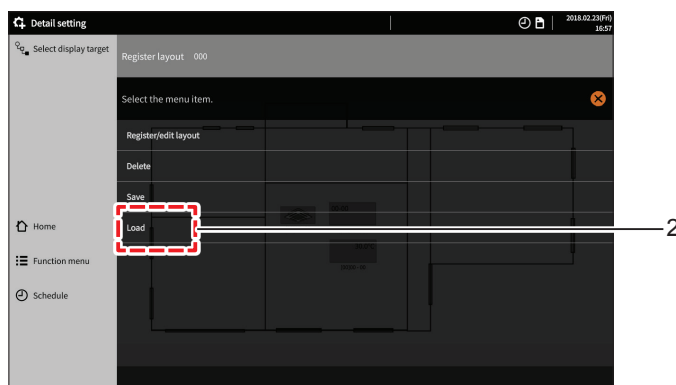
NOTE:

Tap and drag the icon both vertically and horizontally.

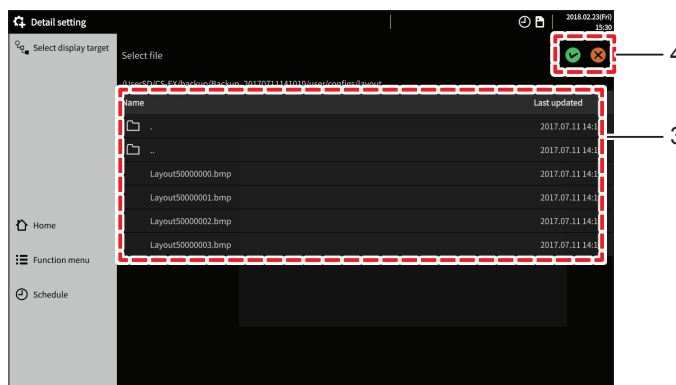
10.5 Loading Layout Data





1. Tap  on registering layout window. Setting menu is shown.

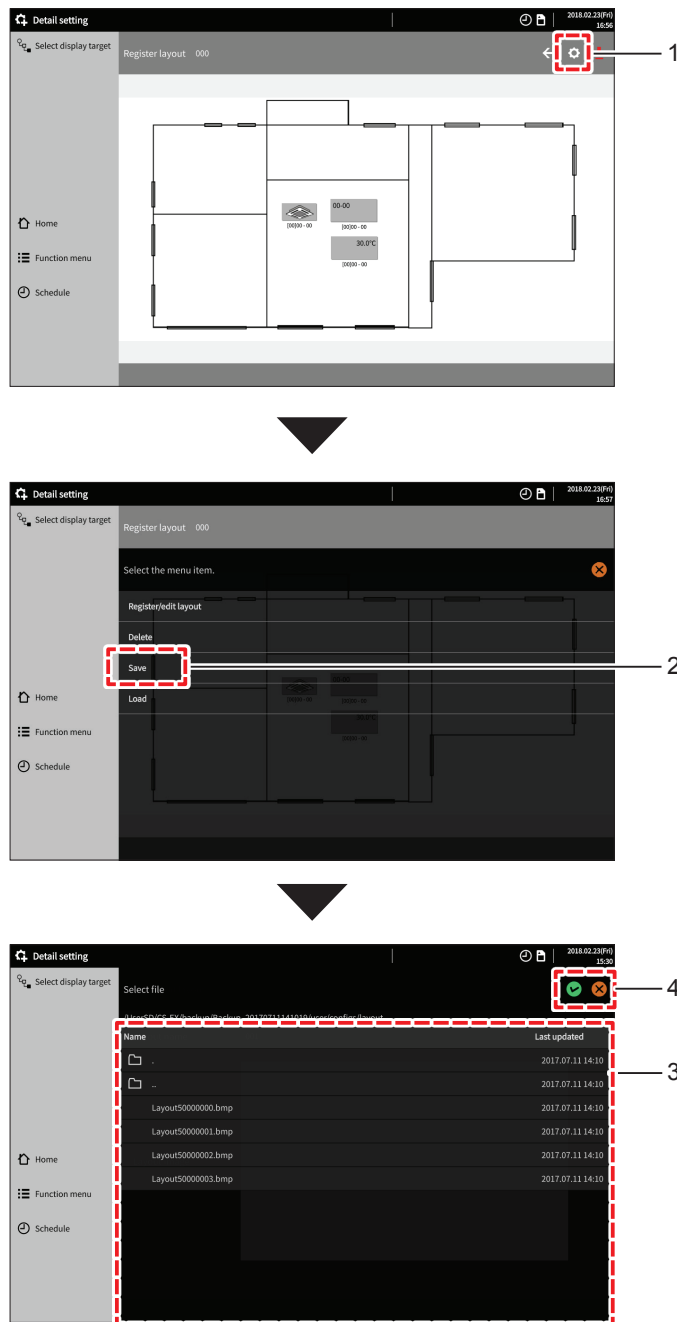


2. Tap **Load**.
The window for selecting file is shown.



3. Select file to load.
4. Tap  to confirm setting and to return to registering layout window.
Tap  to cancel loading and to return to registering layout window.

10.6 Saving Layout Data

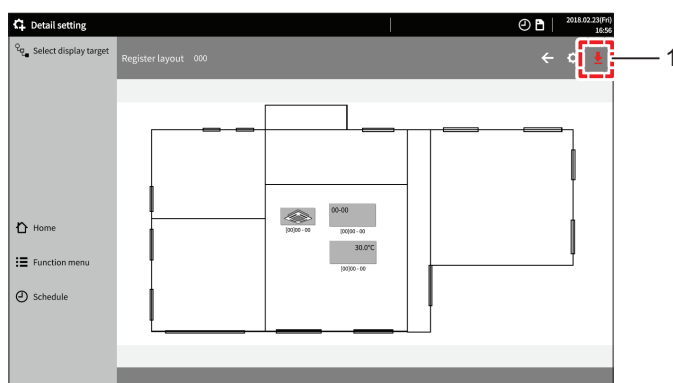


1. Tap on registering layout window. Setting menu is shown.

2. Tap **Save**.
The window for selecting folder is shown.

3. Select folder to save.
4. Tap to save the layout data and to return to registering layout window. Tap to cancel data saving and to return to registering layout window.

10.7 Saving Registered Layout



1. flashes after editing layout information.
2. Tap while is flashing to save the contents. Otherwise the change made is not registered.

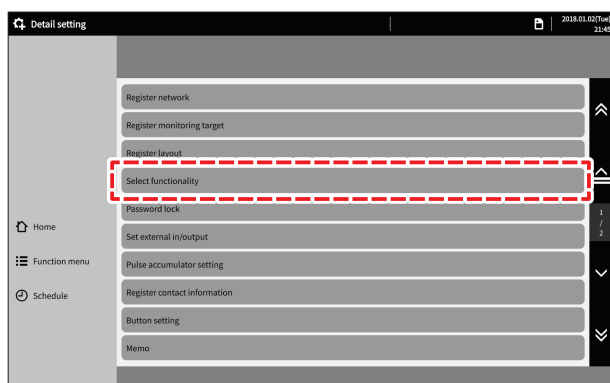
11. Function Selection

VRF Central Touchscreen Controller provides, as options, advanced settings such as “Mode fixed” and “Auto cool/heat” in addition to basic functions such as “Run/Stop” and “Mode”. Use the optional functions from “Function selection”. Select functions for indoor/outdoor units. These functions cannot be set while the unit is in operation.

Ensure the unit is not running to set functions.

NOTE: Contact your distributor before changing settings for outdoor units

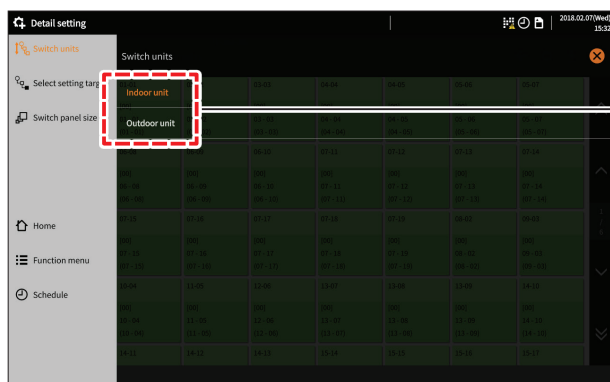
11.1 Editing Function Selection



1. Tap **Select functionality** on detail setting window.
Function selection window is shown.



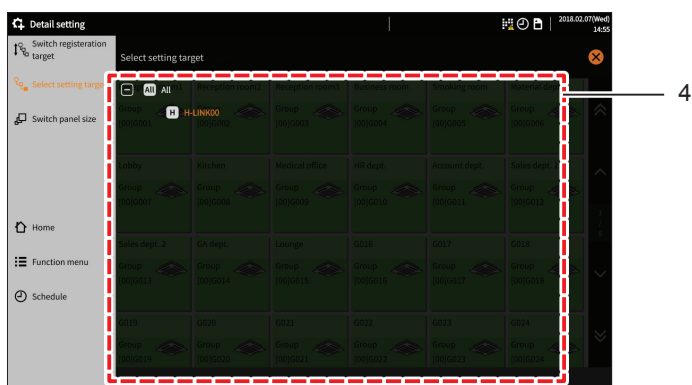
2. Tap item to switch display.
 - Tap **Switch units** and step 3 is shown.
 - Tap **Select setting target** and step 4 is shown.
 - Tap **Switch panel size** to change panel size.



3. Tap the type of unit to set.
Function selection window for the specified unit is shown.

Continue to the next page.

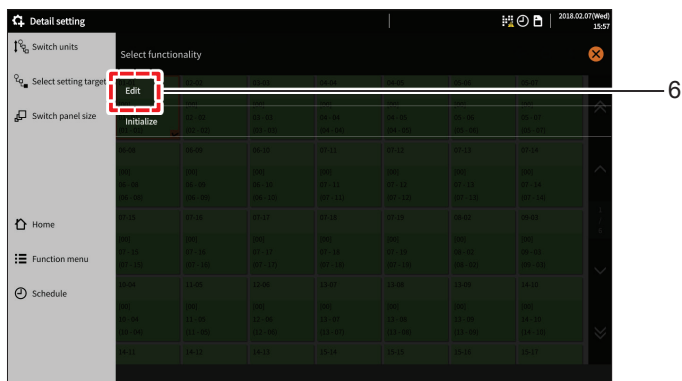
Continue from previous page.



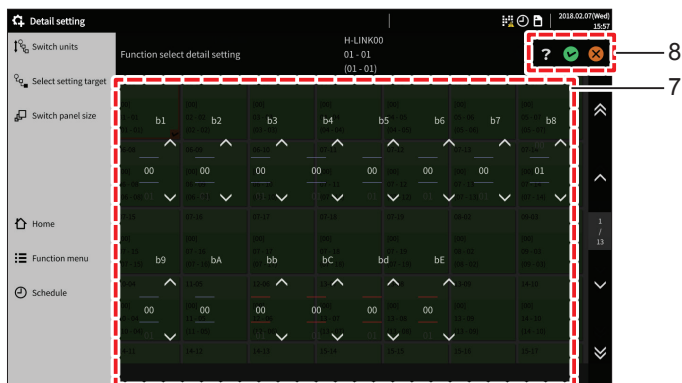
4



5



6



8

7

4. Tap setting target.
Function selection window for the specified target is shown.

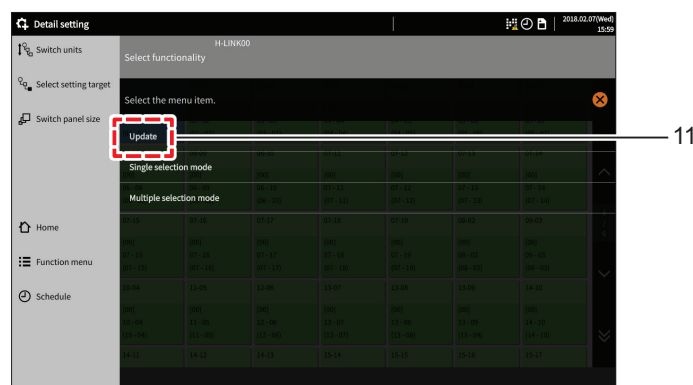
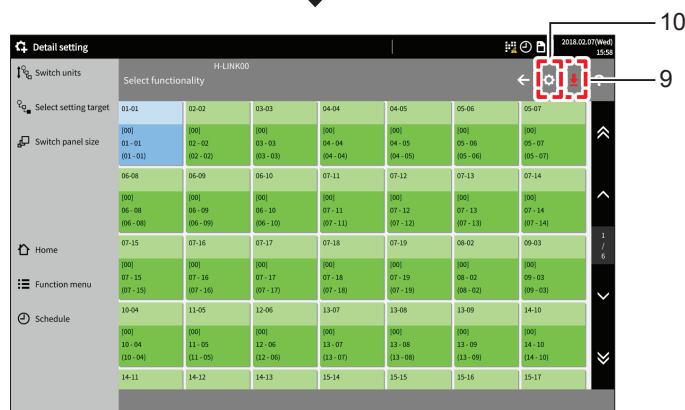
5. Tap panel of the target to set.

6. Tap **Edit**.
 - Tap **Initialize** to initialize function selection for unit(s).

7. Edit each item in function selection.
8. Tap **?** to show brief description for some of the functions.
Tap to confirm setting and to return to function selection window.
Tap to discard setting and to return to function selection window.
- Functions applicable only for indoor units that support dual setpoints have green bars indicated above and below the value.

Continue to the next page.

Continue from previous page.



9. Tap to confirm and reflect the setting contents.
 blinks to indicate the setting contents have not been saved.

10. After the setting contents are confirmed, wait approximately 2 minutes and tap .

11. Tap **Update**. Go back to step 5 to check if the setting contents for function selection are reflected.

NOTES:

- Some units may not reflect all setting contents. Refer to installation manual and operation manual for each unit and RC for detail.
- Supported functions are unit-type-specific. Refer to installation manual for each unit for detail.
If any change is made on function selection on units such as unit temperature range, tap [Register unit] to check connection again. Use registered data to check connection.

NOTICE:

- If indoor circuit board and/or wired controller/receiver kit controller are changed, make configuration again as necessary.
- If 2 or more central controllers are connected to the system, use only VRF Central Touchscreen Controller, NOT another type of central controllers, to set function selection.
Upon setting b8 (Auto cool/heat) on VRF Central Touchscreen Controller, however, set as the same as VRF Central Touchscreen Controller on all central controllers where available.
- When using RC operation prohibit function, set d1 and d3 (Power Supply ON/OFF) as 00.
- None of the function selection can be set for unit without remote controller.
- Only b1~FF, i1~i2 and o1~o3 are available for units that do not support dual-setpoints.
- To set b4 (filter sign time) on VRF Central Touchscreen Controller, ensure to reset filter sign for the air conditioner and filter sign on RC goes off.

12. Setting Password Lock

VRF Central Touchscreen Controller can have password set for each respective control item in addition to password for restricting users who have access to detail setting window. This section provides window for setting password for showing windows and control items.

12.1 Setting Password

1. Tap **Password lock** on detail setting window.
Password lock window is shown.

2. Set ON for each item to set password.
Set OFF for each item to lift password lock.
3. For items with active password, tap input field to enter password to set.
Password can be up to 8 numbers.
Passwords can be set respectively for each item.
4. Tap to confirm setting and to return to detail setting window.
Tap to discard the change and to return to detail setting window.

Password can be set for following items.

Password Item	Description
Password for indoor unit control	Use this password to restrict users who have access to indoor unit control.
Password for outdoor unit control	Use this password to restrict users who have access to outdoor unit control.
Password for switching limitation on operation	Use this password to restrict users that can modify setting for "Switching operation limitation" in "Register name for monitoring target" window.
Operation invalid time password	Use this password to restrict users who have access to all operations after specified expiration time.
Password for schedule window	Use this password to restrict users who have authority to show schedule window.
Password for basic setting window	Use this password to restrict users who have authority to show basic setting window.
Password for detail setting window	Use this password to restrict users who have authority to show detail setting window. The default password is "2468".
Password for usage history window	Use this password to restrict users who have authority to show usage history window.
Password for history window	Use this password to restrict users who have authority to show history window.
Password for showing energy calculation window	Use this password to restrict users who have authority to show energy calculation window.
Password for setting energy calculation	Use this password to restrict users who have authority to set energy calculation.

NOTE:

- If any of the password are to be set active, it is recommended to set password for detail setting window because all passwords can be changed/edited on detail setting window.

13. External In/Output Setting

This section provides setting external input signal for specified control and external output signal that VRF Central Touchscreen Controller transmits for notification/alarms.

13.1 Checking External In/Output Setting



1. Tap **Set external in/output** on detail setting window. External in/output setting window is shown.

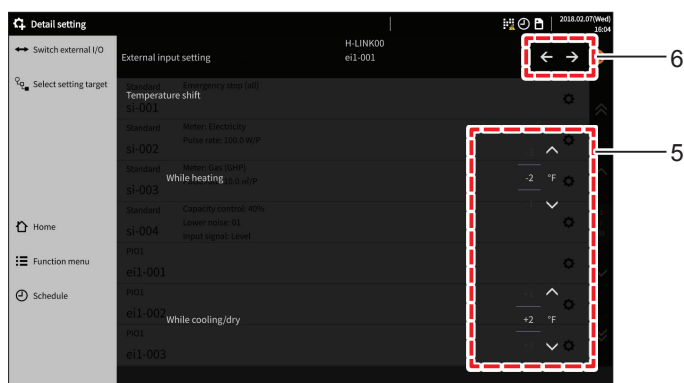
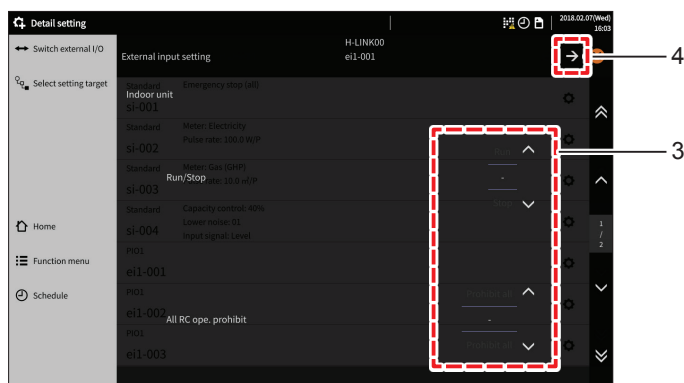
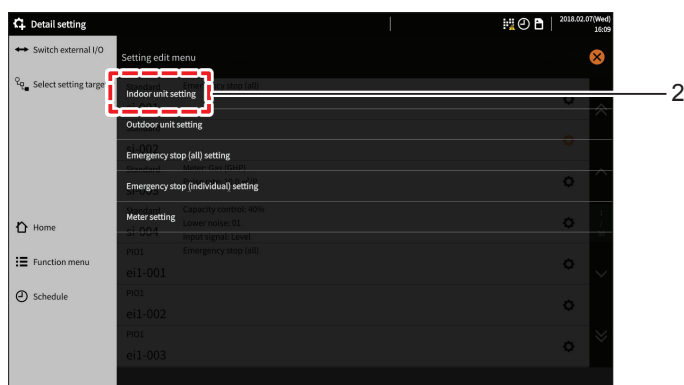
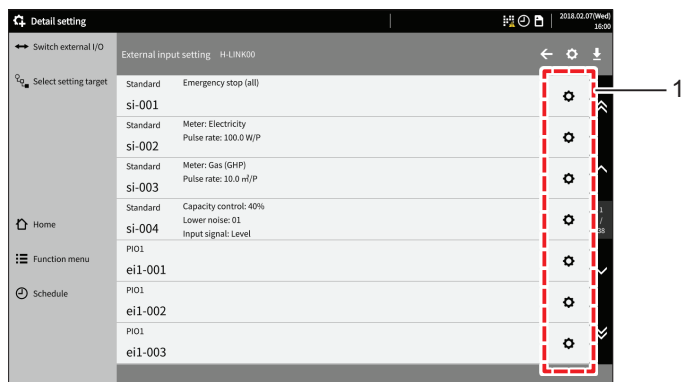
2. Tap item to switch display.
 - Tap **Switch external I/O** and step 3 is shown.
 - Tap **Select setting target** and step 4 is shown.
3. Tap and **Input check** or **Output check**. is indicated on contact points where currently sending/receiving signal on.

4. Tap item to show external in/output setting window showing item with selected values.

5. Tap item to show external in/output setting window showing item with selected values.

13.2 External Input Setting

(1) Setting indoor unit



Continue to the next page.

1. Tap for desired external input on external input setting window.

2. Tap **Indoor unit setting**.

3. Configure “Run/Stop”, “All RC ope. prohibit” and “Temperature/Mode”.

4. Tap →.

Selecting one from Temperature/ Mode, either of the window is shown.

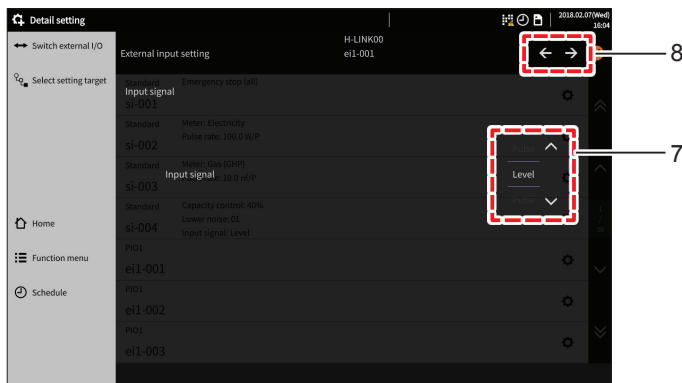
- Temperature shift: step 5 is shown.
- Mode shift: step 9 is shown.
- -- (No setting): step 7 is shown.

5. Set temperature shift for each item.

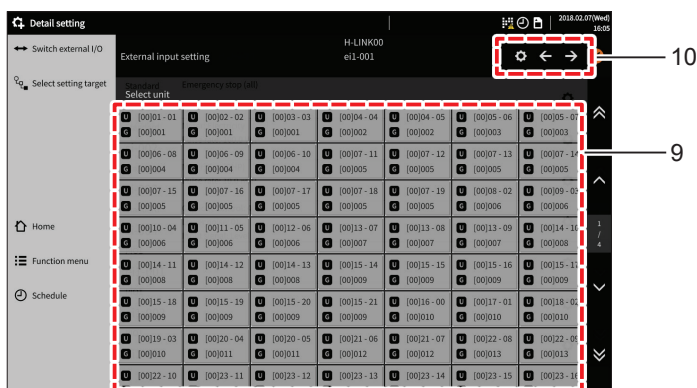
6. Tap →.

Tap ← to go to the previous page.

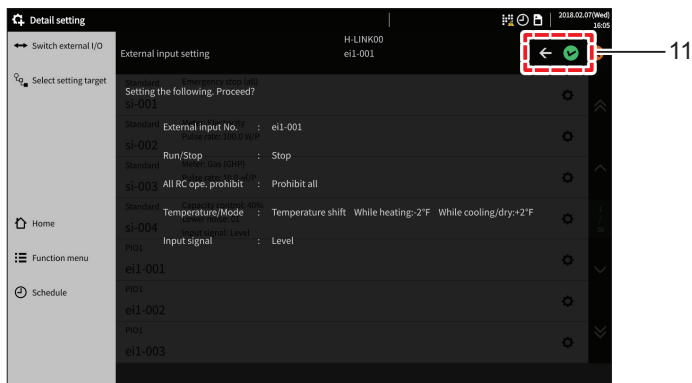
Continue from previous page.



7. Select the input signal type.
8. Tap →.
Tap ← to go to the previous page.



9. Tap the target unit.
10. Tap →.
Tap ← to go to the previous page.
Tap ⚙️. Window for **Select all** and sorting is shown.




11. Check the setting contents and tap ⏮️ to return to external input setting window.
Tap ← to go to the previous page.
12. Upon completing setting, refer to “13.4 Saving and Checking Setting Contents (page 77)” to follow the steps.

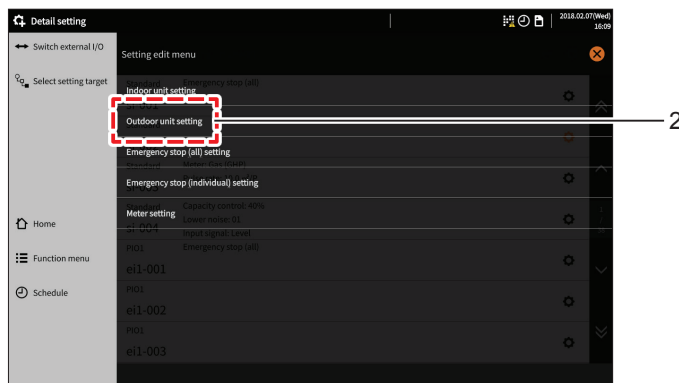
NOTICE:

- RC operation prohibit is not indicated if “Hide” is set on “RC operation prohibit control” on **Basic setting-Display/Sound setting**.
- Standard input points (si-001 - si-004) only are available for setting meters on external input setting.

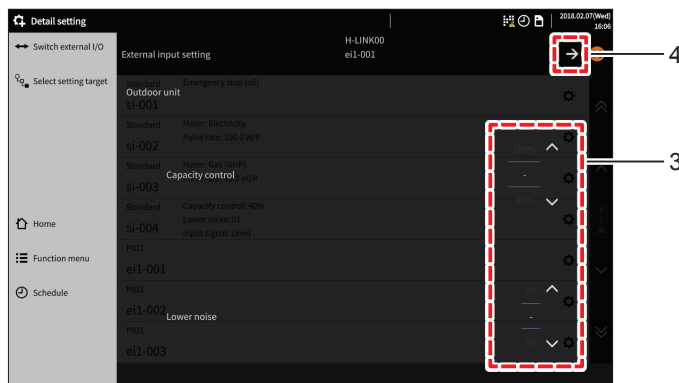
(2) Setting outdoor units



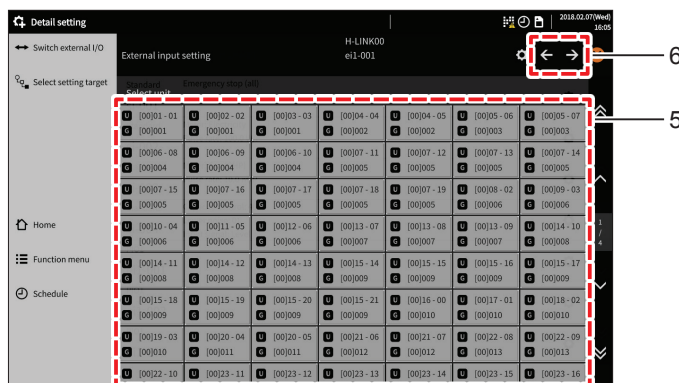
1. Tap  for desired external input on external input setting window.



2. Tap **Outdoor unit setting**.



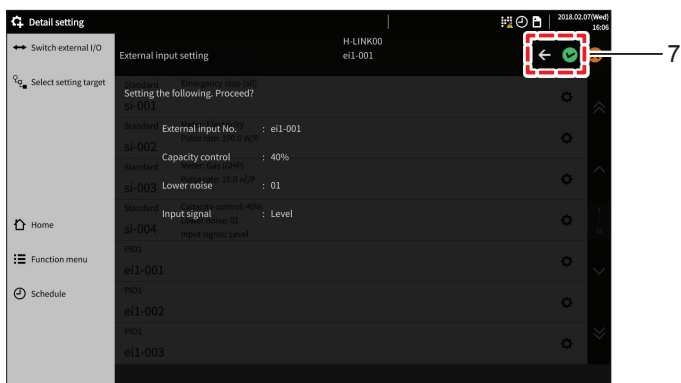
3. Set "Capacity control" and "Lower noise".
4. Tap →.




5. Tap the target unit.
6. Tap →.
Tap ← to go to the previous page.

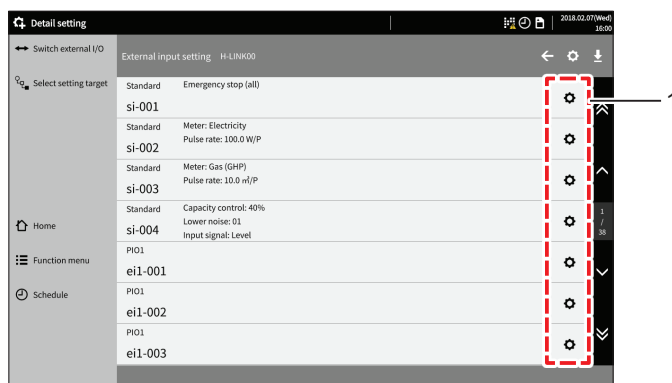
Continue to the next page.


Continue from previous page.

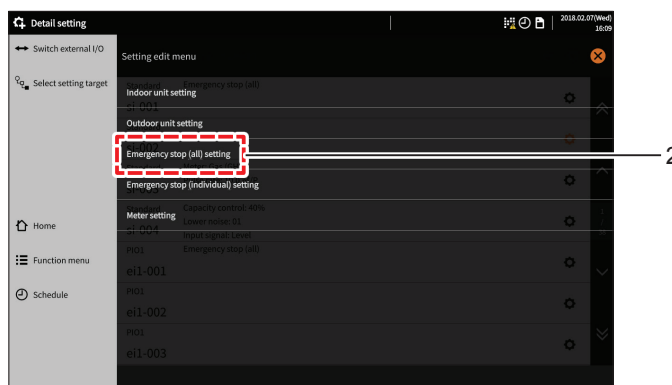


7. Check the setting contents and tap  to return to external input setting window.
Tap ← to go to the previous page.
8. Upon completing setting, refer to “13.4 Saving and checking setting contents (page 77)” to follow the steps.

(3) Setting Emergency stop (all) units



1. Tap  for desired external input on external input setting window.



2. Tap **Emergency stop (all) setting** to return to external input setting window.
3. Upon completing setting, refer to “13.4 Saving and Checking Setting Contents (page 77)” to follow the steps.

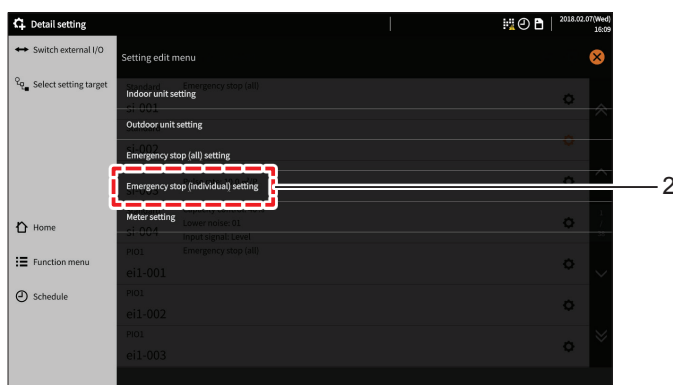
NOTICE:

- **Emergency stop** is not indicated if “Hide” is set on “RC operation prohibit control” on **Basic setting-Display/Sound setting**.

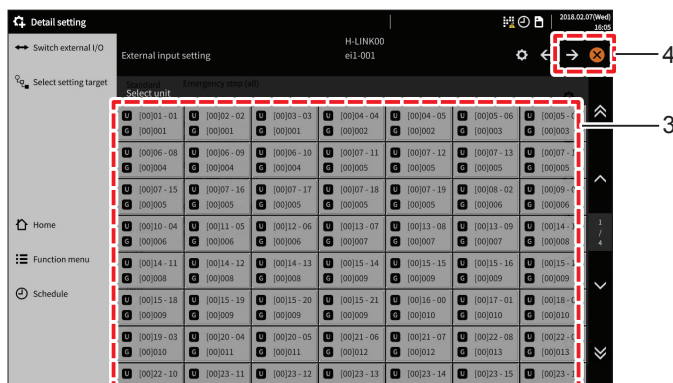
(4) Setting Emergency stop (individual)



1. Tap for desired external input on external input setting window.



2. Tap **Emergency stop (individual) setting**.

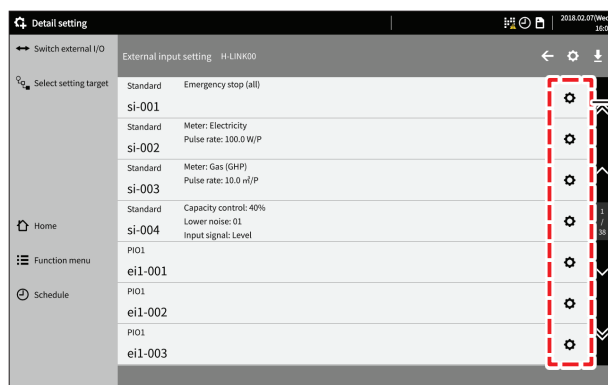


3. Tap unit to set.
4. Tap to confirm setting and to return to external input setting window. Tap to discard the change and to return to external input setting window.
5. Upon completing setting, refer to "13.4 Saving and Checking Setting Contents (page 77)" to follow the steps.

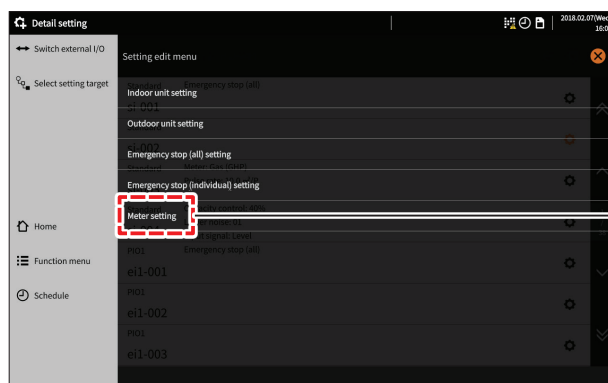
NOTICE:

- **Emergency stop** is not indicated if "Hide" is set on "RC operation prohibit control" on **Basic setting-Display/Sound setting**.

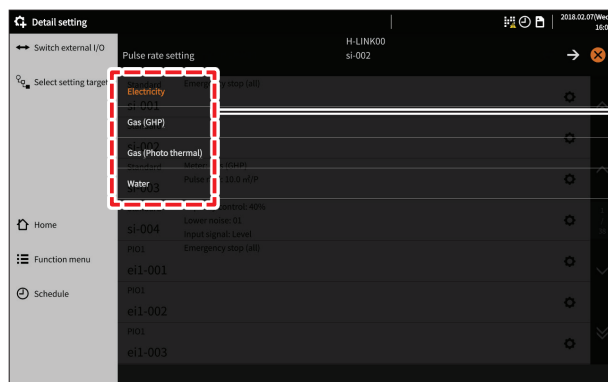
(5) Setting up power meters



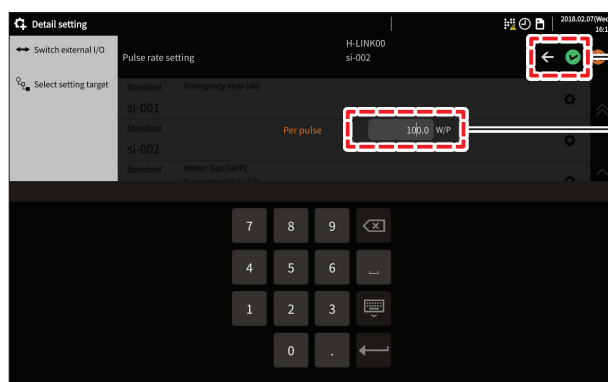
1. Tap for desired external input on external input setting window .
- Selecting set points (si-001 - si-004) only are available for setting meters on external input setting.



2. Tap **Meter setting**.



3. Select energy to apply pulse rate setting.



4. Enter pulse rate.
5. Tap to return to external in/output setting window.
Tap to go to the previous page.
6. Upon completing setting, refer to "13.4 Saving and Checking Setting Contents (page 77)" to follow the steps.

NOTICE:

- Input value for pulse rate needs to match the pulse interval on the meter.
- Setting values after decimal point for electricity pulse rate may cause difference of up to 0.5kWh from the actual value.
- When the pulse rate is edited, the new value is applied from the next calculation.
- Applicable energy type, units and range for pulse rate are as follows:

Type	Unit	Range (While energy calculation is inactive)	Range (While energy calculation is active)
Electricity	W/P	0.0 - 99999.9	1.0 - 99999.9
Gas (GHP)	m³/P		0.1 - 1000.0
Gas (Photo thermal)	m³/P		0.1 - 1000.0
Water	m³/P		0.1 - 100.0

- Note that if the pulse is counted via external input, pulse cannot be accumulated during power off and connection checking. This may affect usage and energy calculation.

NOTICE:

Use standard external input/output that is directly connected to VRF Central Touchscreen Controller/ Extension adapter for higher detection/control priority. If 2 or more different external input signals for the same target are to be received within 5 minutes, unit may not operate as expected.

- Priorities for each external input are as follow.
Register operation with higher priority, emergency stop, for example, on standard external input 1.
Priority 1- Standard external input 1
Priority 2- Standard external input 2
Priority 3- Standard external input 3
Priority 4- Standard external input 4
Priority 5-PIO1 External input 1
▪
▪
Priority 132-PIO1 External input 128
Priority 133-PIO2 External input 1
Priority 134-PIO2 External input 2
▪
▪
Priority 260-PIO2 External input 128
- Set all external inputs as OFF if any of the following condition/points applies:
1. Editing setting contents for external input
2. Checking connection
Upon receiving external input signal while the either of the above, control process may not be completed correctly.
- For external input function, VRF Central Touchscreen Controller transmits commands to air conditioners via communication line and therefore it may take up to 5 minutes for the commands to be reflected on all air conditioners depending on the system scale and communication environment. For this reason, external input function cannot be used for criteria and operation with high priority that need to be completed within limited time
(e.g. emergency stop for fire occurrence where all air conditioners must be stopped immediately, maybe within 1 minute).
- Send command from VRF Central Touchscreen Controller in following cases:
1. The external input state changed while the power on VRF Central Touchscreen Controller/Extension adapter/air conditioners was turned OFF.
2. The power on VRF Central Touchscreen Controller/Extension adapter/air conditioner was turned OFF and then turned back ON while external input signal was being received.
3. The external input state changed while communication failure occurred (while in 60/61/64/65 alarm) on VRF Central Touchscreen Controller/Extension adapter/air conditioners.
4. Communication failure occurred (60/61/64/65 alarm) and then recovered while external input signal was being received.

■ Emergency Stop

NOTICE:

- Emergency stop sets air conditioners connected to the specified adapter as follows and then stops all units.
Operation state: Stop
Operation Mode: Fan
Temperature: 82°F (28°C)
Fan speed: Low
Louver: 1st step
RC operation prohibit: Prohibit all
Configuration for RC prohibit remains if RC operation prohibit is set prior to the receipt of emergency stop (all/individual) signal.
- Do not control air conditioners (including schedule and external input functionality) for 15 minutes after emergency stop (all) signal has been cleared. Commands may not be completed correctly
- Upon receiving emergency stop (all) signal, indoor units once operate in Fan mode and then all stop.
- When using emergency stop (all) to units with function selection configured, check if the configuration is still as desired after emergency stop signal is cleared.
- To use emergency stop function, set from VRF Central Touchscreen Controller to use Emergency stop (all/individual). Applying external input signal directly to indoor units, indoor units may operate according to schedule function of VRF Central Touchscreen Controller even while emergency stop is commanded.
- Ensure that VRF Central Touchscreen Controller receives external input signal for emergency stop (all) for 1 minute or longer.
- VRF Central Touchscreen Controller system controls emergency stop via communication wirings. The control process is not completed successfully if the communication line is disconnected. Manually turn OFF the power on air conditioner in such cases.
- Emergency stop (Individual) sets specified air conditioners connected to as “Stop” and “RC operation prohibited” and then stops units. This control may take up to 7 minutes depending on the system scale.
- The operation status and RC prohibit status returns to the setting of before emergency stop (individual) signal input when the signal is cleared.

■ Mode Shift / Temperature Shift

NOTE:

- Mode shift and Temp. shift intends to save energy by control described below.
 [Mode shift]: This function switches to [Stop] when the mode is Heat otherwise switches to [FAN].
 [Temperature shift]: This function lowers the temperature by X°F in Heat mode and raises temperature by Y°F in Cool and Dry mode.
 * Neither of [Mode shift] or [Temperature shift] intends to guarantee the saving on power consumption.

NOTICE:

- Mode shift and Temperature shift cannot simultaneously be set together.
- If temp. shift is set on multiple external inputs, AND multiple external signals are to be received, then the signals are prioritized to change temperature. Upon signal clearance, the temperatures return to the value before the signal receipt.

Setting sample

External input 3 -- Demand controller priority Signal input **Low**

Target unit: All indoor unit

Setting: $\pm 4^{\circ}\text{F}$ All RC ope. prohibit

External input 2 -- Demand controller priority Signal input **Med**

Target unit: All indoor unit

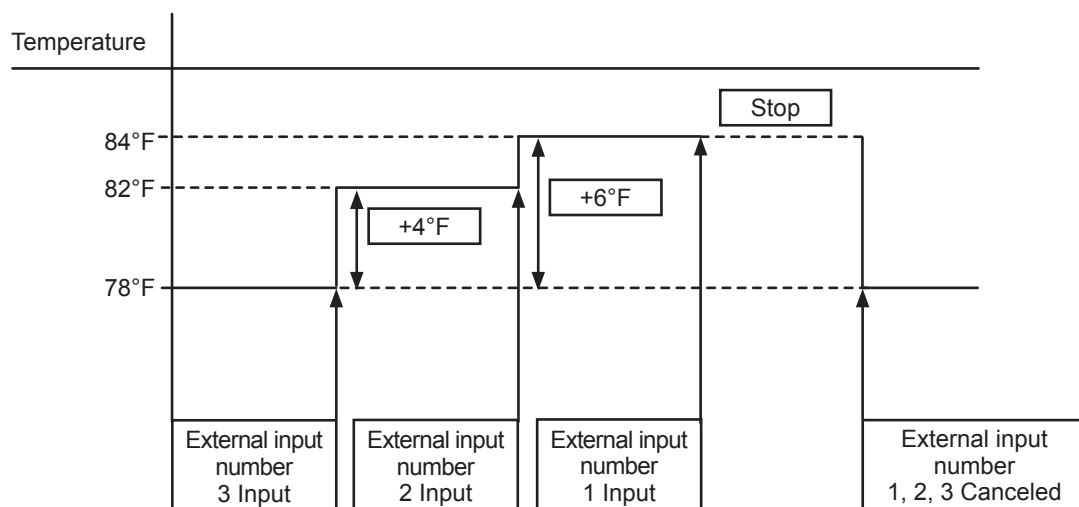
Setting: $\pm 6^{\circ}\text{F}$ All RC ope. prohibit

External input 1 -- Demand controller priority Signal input **High**

Target unit: All indoor unit

Setting: Stop All RC ope. prohibit

Operation sample While in Cool mode



- The unit does not stop if both [Mode shift] and [Run] are allocated to the same external input while in heat mode, Run has precedence.

■ Level signal input / Pulse signal input

NOTE:

Signal Input

If level signal input is selected, setting contents are recovered to the prior states once the signal input setting is lifted.

If pulse signal input is selected, setting contents are NOT recovered to the prior states once the signal input setting is lifted.

Level signal input only can be set for Mode shift, Emergency stop (All/individual), Capacity control and Lower noise.

NOTICE:

- Pulse width and pulse interval need to be 90 ms or longer for use with pulse signal on external input.
 - Level signal and pulse signal cannot be simultaneously set on VRF Central Touchscreen Controller and/or 1 Extension adapter. (No coexistence allowed).
 - 1 external input cannot have 2 or more different contents configured.
- Items can be modified even while receiving signals unless the item is prohibited to change.
- The setting does not return to the previous setting even after the signal is cleared unless level input is selected for this setting.
- While “level signal” is selected, if multiple signals are simultaneously received, the signal is prioritized (external input 1~260) to carry out the specified control.
- If “All RC ope. prohibit” and “Level signal input” are in combined use, the Run command for the indoor unit from VRF Central Touchscreen Controller is void while receiving external input signal. (Stop command is valid.)

NOTICE:

Outdoor Unit Setting

- To control capacity with **Schedule - Operation Pattern**, refer to “Detailed Setting for In/Outdoor Units” (page 33) to select desired outdoor unit to activate **Capacity control**.
- **Outdoor unit capacity control** is a function to save power consumption at approximately the specified percentage of maximum power consumption.
- The setting is applied approximately 15 minutes after the external input.
- Since units always need stand-by power*, power consumption is NOT “0” even if 0% is specified for capacity control.
 - * For units to stand-by to operate immediately, they need low amount of electricity.
- This control does not intend to guarantee the operation for the specified power consumption.
- This control does not take place while the unit is in defrost mode.
- To lower noise with **Schedule - Operation pattern**, refer to “Detailed Setting for In/Outdoor Units” (page 33) to select desired outdoor unit to activate **Capacity control** and **Lower noise**.

Do not set lower noise to units that do not support the function.

Activate **Capacity control** as well to use **Lower noise** function. Setting **Lower noise** alone does not operate correctly.
- Active/Inactive setting and applicable range for the setting may vary on outdoor units.

Contact your dealer or distributor for a detail of applicable outdoor units.

 - Set capacity control/lower noise for outdoor units from only 1 central controller.
 - When capacity control/lower noise is set for external input, scheduled operation for capacity control/lower noise is not active while receiving signal.

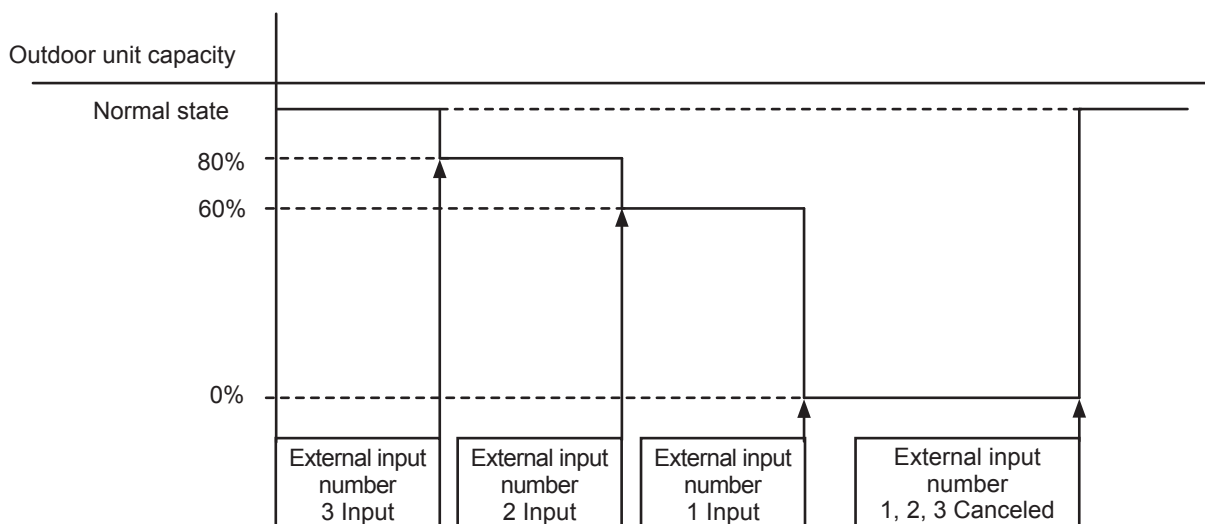
■ Demand Controller

- Combination example of demand controller
Using capacity control for outdoor units
Characteristics: As for applicable indoor unit, contact your distributor.

NOTICE:

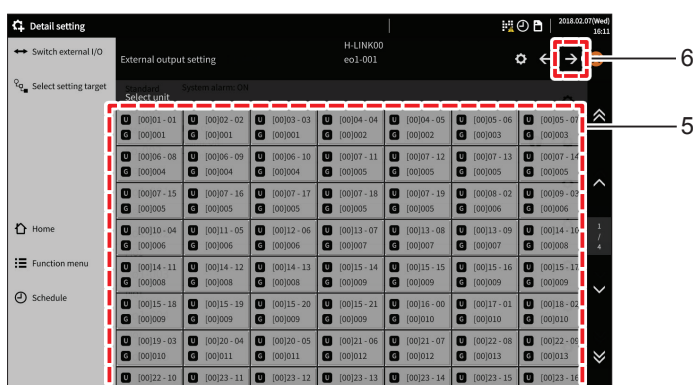
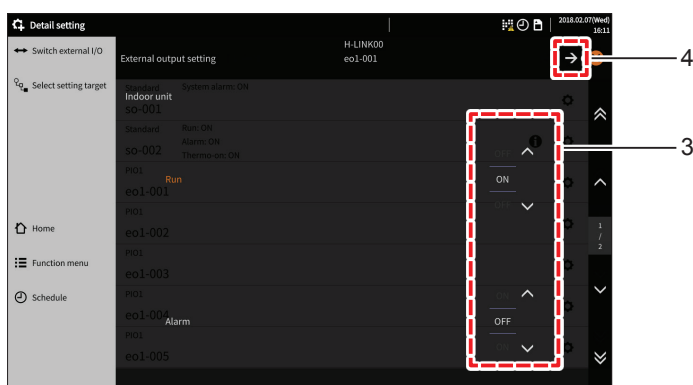
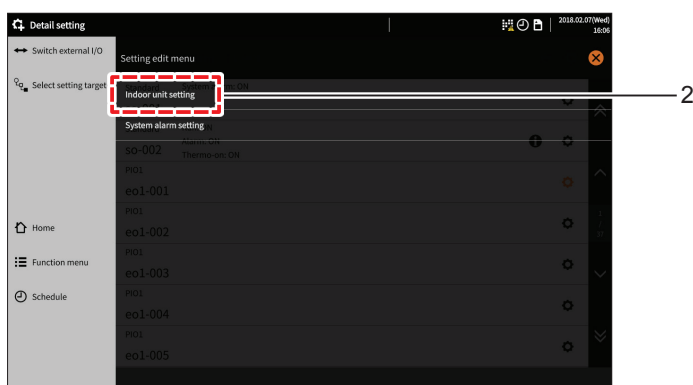
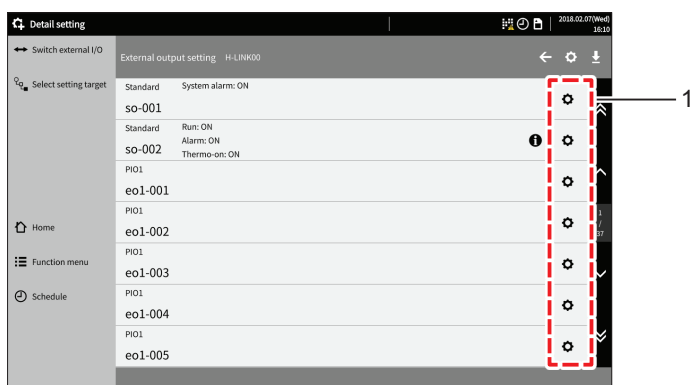
- Refer to “Detailed Setting for In/Outdoor Units” (page 33) to select desired outdoor unit to activate **Capacity control**.
Active/Inactive setting and applicable range for the setting may vary on outdoor units. Regarding applicable units, contact your distributor.
Setting sample
External input 3 -- Demand controller priority Signal input **Low**
Target unit: All outdoor unit
Setting: 80%
External input 2 -- Demand controller priority Signal input **Med**
Target unit: All outdoor unit
Setting: 60%
External input 1 -- Demand controller priority Signal input **High**
Target unit: All outdoor unit
Setting: 0%

Operation sample




13.3 External Output Setting

(1) Setting indoor unit



Continue to the next page.

1. Tap  for desired external output on external output setting window.

2. Tap **Indoor unit setting**.

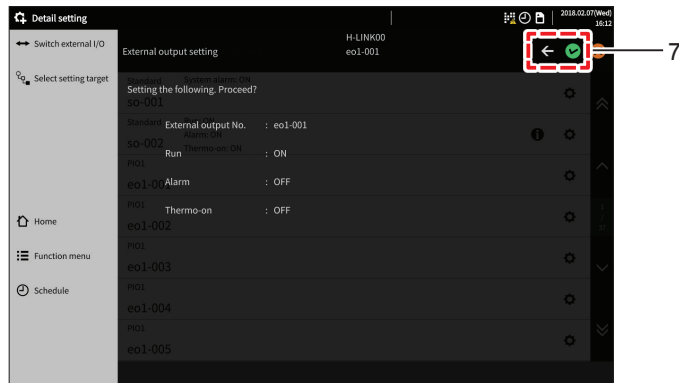
3. Set **Run**, **Alarm**, and **Thermo on**.

4. Tap →.

5. Tap unit to set.

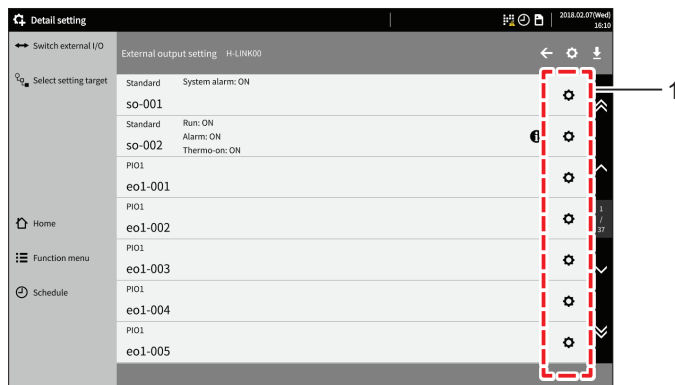
6. Tap →.

Continue from previous page.

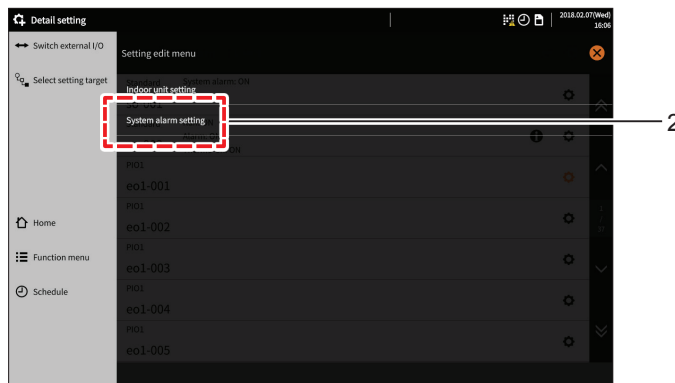


7. Check the contents and tap . External output setting window is shown.
Tap ← to go to the previous page.
8. Upon completing setting, refer to “13.4 Saving and Checking Setting Contents (page 77)” to follow the steps.

(2) Setting system alarm

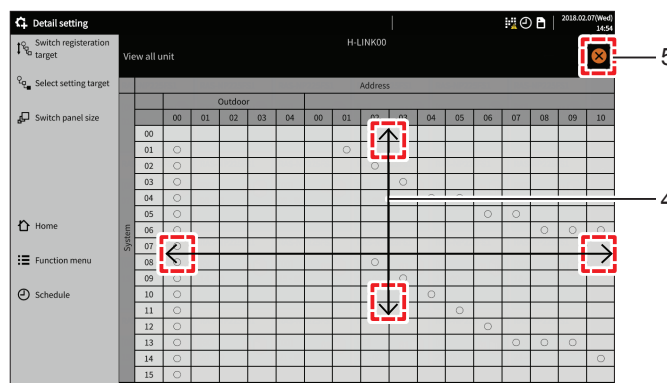
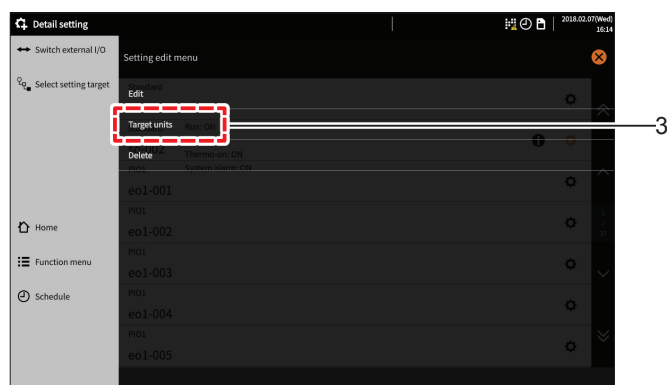


1. Tap for desired external output on external output setting window.



2. Tap **System alarm setting**. External output setting window is shown.
3. Upon completing setting, refer to “13.4 Saving and Checking Setting Contents (page 77)” to follow the steps.

13.4 Saving and Checking Setting Contents



1. flashes when contents are changed.
Tap while is flashing to save the contents.
Otherwise the change made is not registered.
2. Tap for the registered external in/output.
3. Tap **Target units**. This is not indicated if either of **Emergency stop (all) setting** or **Meter setting** is configured.
 - Tap **Edit** to change the contents.
 - Tap **Delete** to delete contents.

Target units configured for specified external input/output are shown.

4. Touch window and button to scroll (both horizontally and vertically) the table appears.
Tap the button to check if the units are correctly configured (shown in green)
5. Tap to return to external in/output setting window.

NOTICE:

- Detection and control of external input/output on PIO1 and PIO2 may take up to 1 minute. Use standard external input (4 inputs)/external output (2 outputs) that are directly connected to the adapter for higher control priority.
- If output trigger is set as Alarm, signal is transmitted upon detection of alarm on the unit or alarm on the outdoor unit that is connecting to the cycle.
- 1 signal cannot have 2 or more different contents configured.

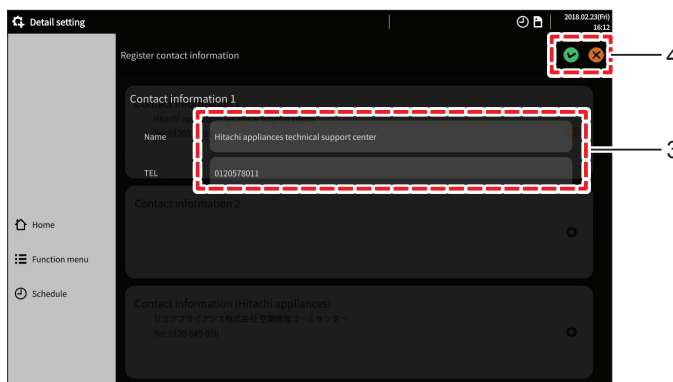
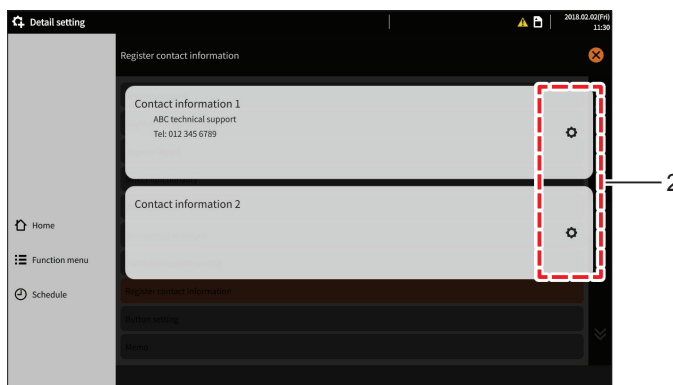
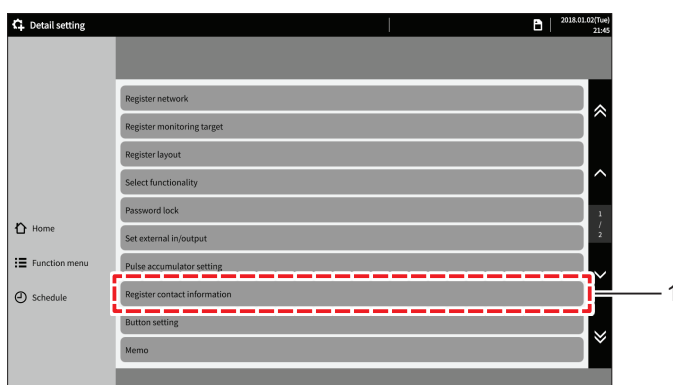
14. Pulse Accumulator Setting




This function is not available. Please do not use this function.

15. Registering Contact Information

Set contact information for abnormality occurrence. VRF Central Touchscreen Controller shows contact information upon alarm occurrence.

15.1 Registering Contact Information

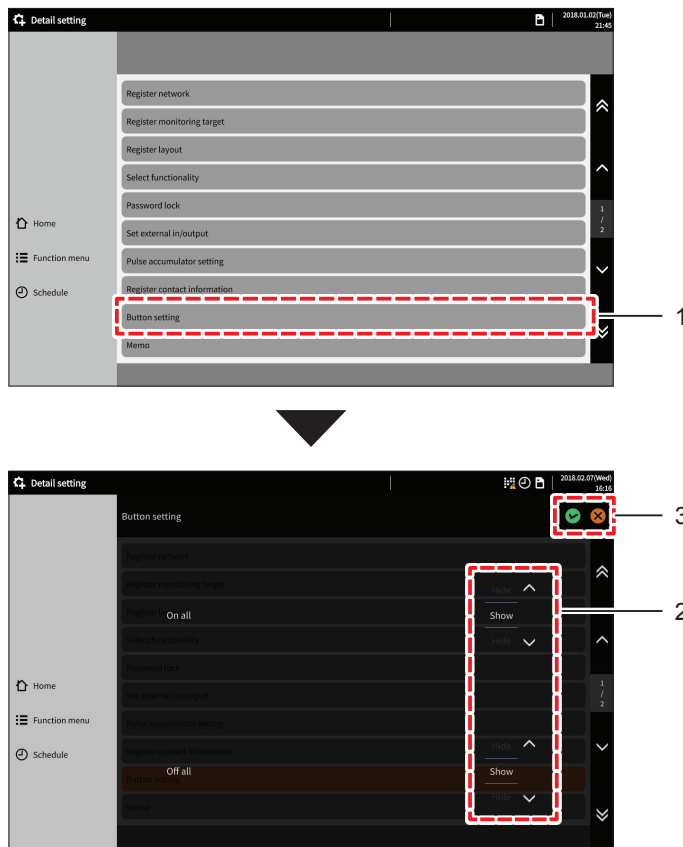


1. Tap **Register contact information** on detail setting window. The window for registering contact information is shown.
2. Tap  for contact information to edit.
3. Tap input field for either contact name or TEL to enter information on keyboard. The maximum lengths for contact name and TEL are 64 characters.
4. Tap  to confirm setting and to return to registering contact information window. Tap  to discard the change and to return to registering contact information window.



16. Setting Button Indication

Select whether or not to show buttons in contents button area on monitoring window.

16.1 Setting Button Indication



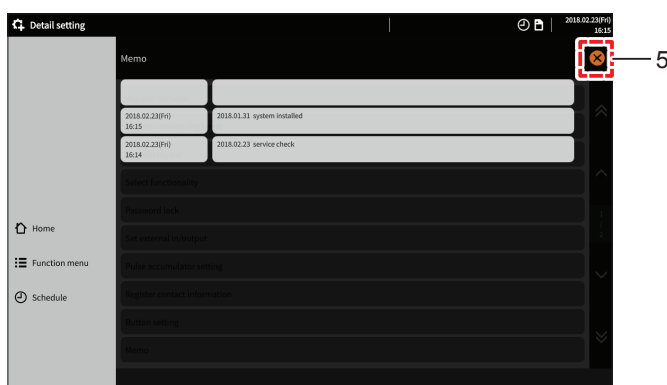
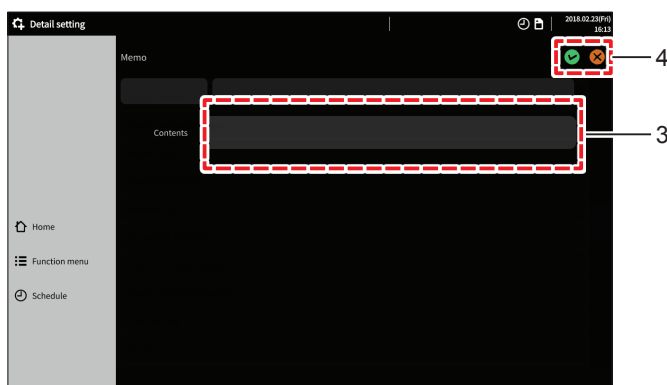
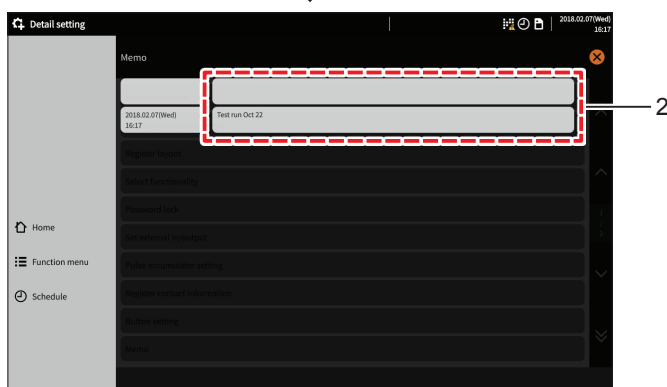
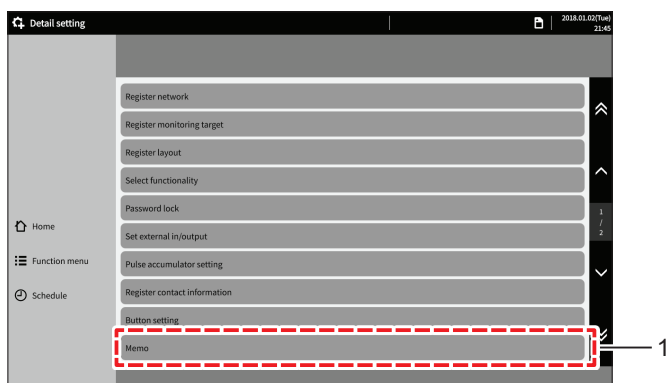
1. Tap **Button setting** on detail setting window.
Button setting window is shown.

2. Set whether or not to show button(s) for **On all**, **Off all**, and **Set all**.
3. Tap  to confirm setting and to return to detail setting window.
Tap  to discard the change and to return to detail setting window.

17. Memo

Memo window provides function to save and browse information of test run/maintenance for future reference.

17.1 Register / Edit Memo





1. Tap **Memo** on detail setting window. Memo window is shown.


2. Tap memo list to show input field.

- Tap the empty memo list on the top to newly create memo.
- Tap the existing memo to edit contents.

3. Tap input field for name to enter information on keyboard. The keyboard is shown. Regarding keyboard operation, refer to "Basic Window Operation" in operation manual. Memos must be 100 characters or less.

- Erase all the contents of memo to completely delete the memo list.

4. Tap  to confirm setting and to return to memo window. Tap  to discard the change and to return to memo window.

5. Tap  to return to detail setting window.

18. Factory Default Resetting

This function is used to reset VRF Central Touchscreen Controller to factory default setting.
This function is intended for the use of service personnel. (This is a future function and currently not available.)

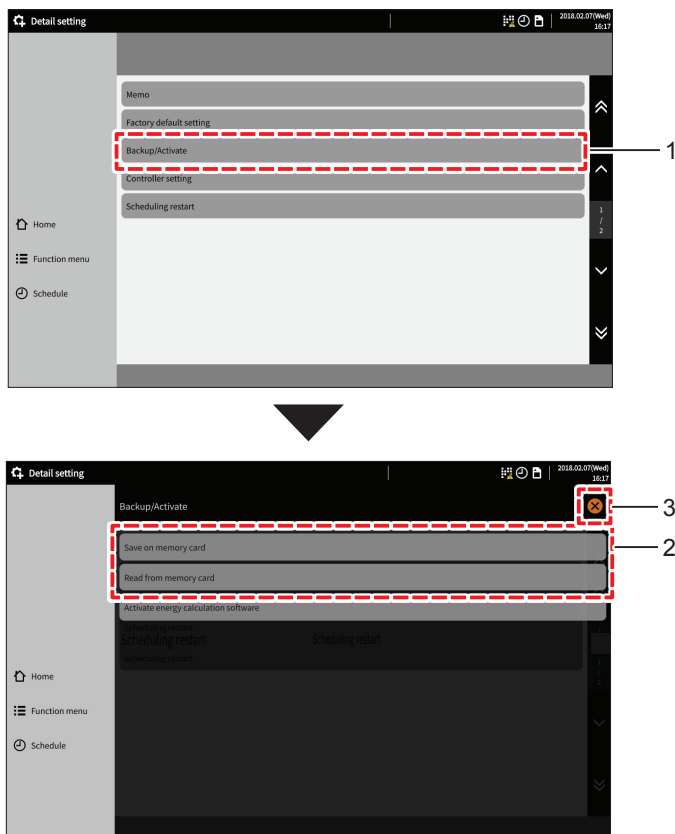



1. Tap **Factory default setting** on detail setting window.
Reset VRF Central Touchscreen Controller to the factory default setting.

19. Backup/Activate

On VRF Central Touchscreen Controller, each setting data can be saved/loaded with external media such as USB flash memory and/or SD cards.

19.1 Saving and Loading Data

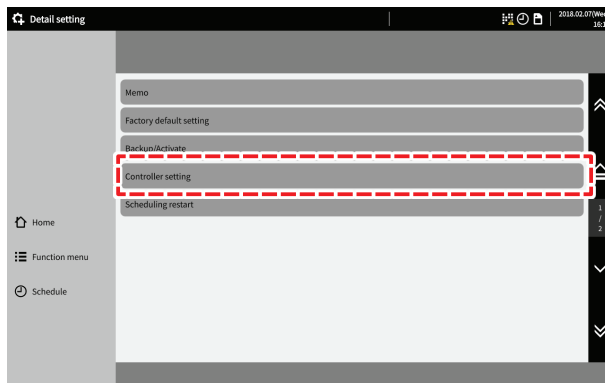


1. Tap **Backup/Activate** on detail setting window.
Backup/Activate window is shown.
Ensure that the external media are correctly inserted.
2. Tap **Save on memory card** to save data. Tap **Read from memory card** to load data.
The window for selecting folder is shown.
Refer to "Saving and Loading Data" in operation manual.
3. Tap  to return to detail setting window.

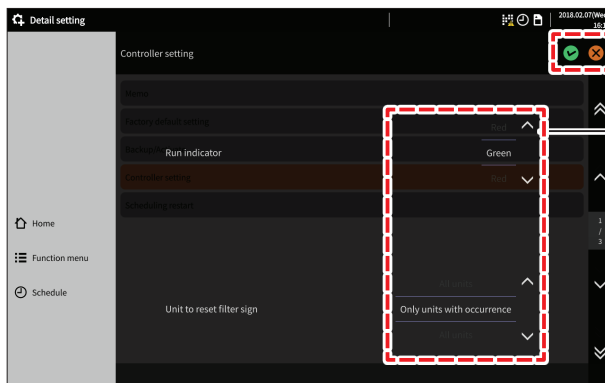
20. Setting Controller

Operation mode for controllers and operation indicator settings can be edited in this section.

20.1 Setting Controller



1. Tap **Controller setting** on detail setting window.
Controller setting window is shown.



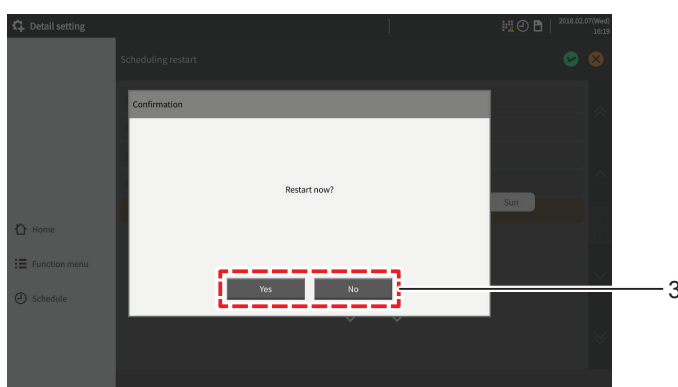
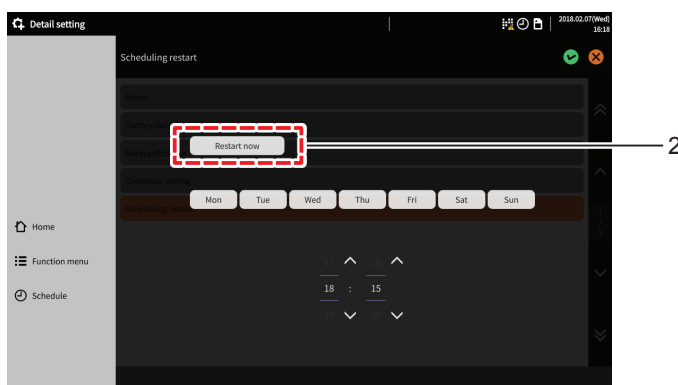
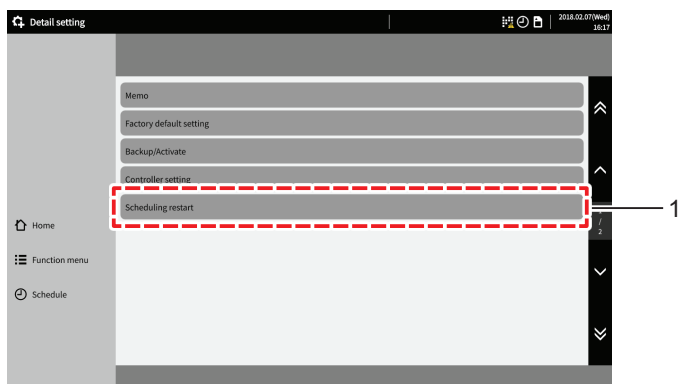
2. Set each item. Refer to the following table for a detail of setting items.
3. Tap to confirm setting and to return to detail setting window.
Tap to discard the change and to return to detail setting window.

Items	Choices	Description
Run indicator	Green / Red	Select the color for run indicator.
Filter sign reset target	All units / Units with active filter sign only	Select all units or units with active filter sign only to command filter sign reset to.
Operation range during monitor control	Detailed / Simplified	Select control item variety range upon selecting multiple units/groups/blocks/areas or monitoring window.
Periodic logging	Active / Inactive	Whether or not to activate periodic logging for schedule management information, Run/stop state, temperature, indoor temperature, outdoor temperature in SD card.
Communication logging Active / Inactive	Active / Inactive	Select Active to save H-LINK transmission information on SD card.

21. Setting Restart Schedule

Configuration/editing restart schedule or restarting VRF Central Touchscreen Controller now are available on this section.

21.1 Restart Now



1. Tap **Scheduling restart** on detail setting window. Scheduling restart setting window is shown.

2. Tap **Restart now**. Confirmation pop up is shown.

- Refer to step 6 of “9.2 Initial setting (page 22)” to set schedule for restart.

3. Tap **Yes** to immediately restart VRF Central Touchscreen Controller. Tap **No** to return to scheduling restart setting window without restarting VRF Central Touchscreen Controller.

22. Maintenance and Service

The following table identifies possible troubleshooting solutions for abnormal conditions. Ensure the power line is cut off before performing any checking described in the table.

Item	Phenomenon	Check	Action						
1	VRF Central Touchscreen Controller does not seem to be working even after power supply.	Is power line correctly connected to VRF Central Touchscreen Controller?	Ensure the power line is correctly connected to VRF Central Touchscreen Controller. Ensure the power line is cut off to wire.						
		Is the power on power supplier turned ON?	Turn the power on power supplier ON.						
		Is the power on VRF Central Touchscreen Controller turned ON?	Turn the power on VRF Central Touchscreen Controller ON. VRF Central Touchscreen Controller has 2 power switches; SW1 and SW2. Turn both power switches ON.						
		Is power voltage within the applicable range?	Measure the power voltage. If the value is out of the range of 24VAC±10%, check the writing and wiring method.						
		Isn't power fuse blown? Both 2 fuses are required to be unblown.	If VRF Central Touchscreen Controller has a blown fuse, replace with new one(s).						
		Does the POWER LED light up?	If none of the above applies to the circumstances and POWER LED still does not light up, VRF Central Touchscreen Controller may have internal defect. Contact your dealer or distributor.						
		Doesn't either ERROR LED, 7-segment LED indicate as following?	VRF Central Touchscreen Controller may have internal defect. Contact your dealer or distributor.						
		<table><tr><td>ERROR LED State</td><td>7-segment LED Indication</td></tr><tr><td>ON</td><td>0E0/0E1/0E2/0E6/0hE</td></tr><tr><td>ON for 1 second and OFF for 1 second (repeated)</td><td>0tE</td></tr></table>	ERROR LED State	7-segment LED Indication	ON	0E0/0E1/0E2/0E6/0hE	ON for 1 second and OFF for 1 second (repeated)	0tE	
		ERROR LED State	7-segment LED Indication						
ON	0E0/0E1/0E2/0E6/0hE								
ON for 1 second and OFF for 1 second (repeated)	0tE								
2	VRF Central Touchscreen Controller does not complete connection check after power ON.	Is H-LINK wiring connected to VRF Central Touchscreen Controller?	Correctly connect H-LINK to VRF Central Touchscreen Controller.						
		Is the setting for terminal resistance on the H-LINK wiring adequate?	Use single terminal resistance on H-LINK wiring.						
		Is all address for air conditioners configured correctly?	Set the address for air conditioners according to manuals for units.						
		Isn't H-LINK wiring disconnected?	Check the wiring connection.						
		Are all the power on air conditioners turned ON?	Turn ON the power on all air conditioners.						
		Does H-LINK wiring meet specification requirement?	Use AWG18, 2-wire, shielded standard copper cable with length of 3281ft.(1,000m) or shorter.						
		Doesn't either ERROR LED, 7-segment LED indicate as following?	If 7-segment LED repeatedly indicates “0cA” ↔ “0c0”, then H-LINK may not be wired correctly. Check the wiring connection for H-LINK and confirm the connection check again.						
		<table><tr><td>ERROR LED State</td><td>7-segment LED Indication</td></tr><tr><td>Flashes once in 5 seconds (repeated)</td><td>0cA ↔ 0c0 (repeated)</td></tr></table>	ERROR LED State	7-segment LED Indication	Flashes once in 5 seconds (repeated)	0cA ↔ 0c0 (repeated)			
		ERROR LED State	7-segment LED Indication						
		Flashes once in 5 seconds (repeated)	0cA ↔ 0c0 (repeated)						
		Doesn't either ERROR LED, 7-segment LED indicate as following?	If “0cA” stays lit for 5 minutes or longer, it may indicate that connection check between indoor units and outdoor units have not been completed. Check the wiring connection for H-LINK and confirm the connection check again.						
		<table><tr><td>ERROR LED State</td><td>7-segment LED Indication</td></tr><tr><td>Flashes once in 5 seconds (repeated)</td><td>0cA</td></tr></table>	ERROR LED State	7-segment LED Indication	Flashes once in 5 seconds (repeated)	0cA			
ERROR LED State	7-segment LED Indication								
Flashes once in 5 seconds (repeated)	0cA								
Does the H-LINK LED stay ON/OFF?	- Check if the H-LINK wiring is correctly connected. - If the H-LINK circuit protection fuse is blown, after clearing the fault, set Pin 2 ON DSW1 “H-LINK”. - If the condition does not meet the conditions described above, there can be a defect in VRF Central Touchscreen Controller. Contact your distributor or dealer.								

Item	Phenomenon	Check	Action				
3	VRF Central Touchscreen Controller does not establish connection with extension adapter.	Is LAN line correctly connected to VRF Central Touchscreen Controller?	Correctly connect LAN wiring to VRF Central Touchscreen Controller. Also check the fitting for connectors.				
		Is the power on HUB turned ON? (When using,)	Turn the power on HUB ON.				
		Does LAN wiring meet specification requirement?	Use LAN cable of category 5 or higher with length of 328.1ft. (100m) or shorter.				
		Is LAN cable free from disconnection, shortcut and other problems? (When using,) also check HUB conditions.	Replace with new ones.				
		Isn't H-LINK wiring placed along with power line?	Provide free space of 5-7/8 inches (150mm) or longer for each wiring.				
		Does the H-LINK LAN LED stay OFF?	If none of the above applies to the circumstances and phenomenon described on the left remains, VRF Central Touchscreen Controller may have internal defect. Contact your dealer or distributor.				
4	Air conditioning cannot be controlled by VRF Central Touchscreen Controller.	Doesn't either ERROR LED, 7-segment LED indicate as following? <table><tr><td>ERROR LED State</td><td>7-segment LED Indication</td></tr><tr><td>One flashing per 3 seconds</td><td>00E</td></tr></table>	ERROR LED State	7-segment LED Indication	One flashing per 3 seconds	00E	Communication is not properly established. Check the wiring connection for air conditioning units and H-LINK.
		ERROR LED State	7-segment LED Indication				
		One flashing per 3 seconds	00E				
		Are all the power on air conditioners turned ON?	Turn ON the power on all air conditioners.				
		Is the terminal resistance on H-LINK wiring correctly set?	Set only 1 terminal resistance on one H-LINK wiring.				
		Is all address for air conditioners configured correctly?	Set the address for air conditioners according to manuals for units.				
		Isn't H-LINK wiring disconnected?	Check the wiring connection for H-LINK.				
		Isn't H-LINK wiring placed along with power line?	Provide free space of 5-7/8 inches (150mm) or longer for each wiring.				
		Does H-LINK wiring meet specification requirement described in page 10?	Use the following cable: - Recommended Size: AWG18~16 (0.75~1.25mm²) - Total Length: Max. 3281ft.(1,000m))				
		Isn't H-LINK LED turned off?	Check the wiring connection for H-LINK.				
Doesn't H-LINK LED stay lit?	VRF Central Touchscreen Controller may have internal defect. Contact your dealer or distributor.						
5	VRF Central Touchscreen Controller does not establish connection with PIO.	Is LAN line correctly connected to PIO?	Connect LAN cable to PIO to check H-LINK LED on PIO turns ON.				
		Is PIO used the specified device?	Use Hitachi Industrial Equipment Systems Co.,Ltd. EH-150 EHV series configured by qualified personel from Service Engineering center.				
		Is the power on PIO turned ON?	Check that POWER LED on PIO is turned ON. Contact your distributor if power supply and wirings are appropriate but LED still doesn't light. This may be caused by PIO defect.				
		Does 7-segment LED show anything other than "00"?	This may be caused by PIO failure/defect. Contact your distributor.				
		Isn't ERR LED on PIO turned ON or flashing?	This may be caused by PIO failure/defect. Contact your distributor.				

23. Memory Cards

VRF Central Touchscreen Controller provides slots for microSD/microSDHC memory cards that apply to SD standard.

<Regarding trademarks>

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