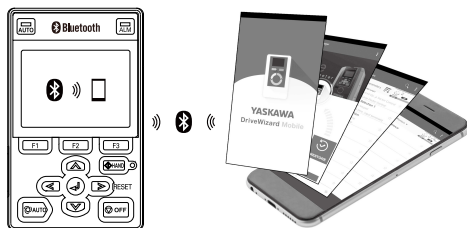


Yaskawa AC Drive Option Bluetooth HOA Keypad Installation Manual

Type: JVOP-KPLCD04AxB

To properly use the product, read this manual thoroughly and retain for easy reference, inspection, and maintenance. Ensure the end user receives this manual.



Get the **DriveWizard Mobile App**



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1 Preface and Safety

◆ Applicable Documentation

Document	Description
Yaskawa AC Drive Option Bluetooth HOA Keypad Installation Manual	<p>Read this manual before you install this option to the drive.</p> <p>The manual contains basic information about how to install, wire, and connect and disconnect smartphones or tablets through Bluetooth communication.</p> <p>This manual is in the product package.</p>
Yaskawa AC Drive Manuals	<p>Refer to the manual packaged with the drive for basic information about the drive.</p> <p>Refer to the Technical Manual for more information about programming and parameter settings.</p> <p>You can download the Technical Manual from the Yaskawa website shown on the back cover of this manual.</p>

Note:

This manual shows typical examples. Different drive models can have different functions. Refer to the drive manuals for more information.

◆ Glossary

Phrase	Definition
Drive	YASKAWA AC Drive HV600
Bluetooth Keypad	Yaskawa AC Drive Option Bluetooth HOA Keypad
Standard Keypad	HOA keypad without Bluetooth capability
Bluetooth Mode	A mode where the Bluetooth Keypad broadcasts Bluetooth. A smart device using the DriveWizard Mobile App can communicate with the drive through Bluetooth.

Phrase	Definition
Normal Operation Mode	A mode where the Bluetooth Keypad does not broadcast Bluetooth. The Bluetooth Keypad can be used as the Standard Keypad.
DriveWizard Mobile	A mobile app for Android and iOS that simplifies drive parameter management and monitoring.

◆ Registered Trademarks

- Bluetooth® is a trademark or registered trademark of Bluetooth SIG, Inc. USA.
- Apple and the Apple logo are trademarks of Apple Inc., registered in the U.S. and other countries.
- App Store is a service mark of Apple Inc.
- The iOS trademark is used under license of Cisco in the U.S.
- Google Play and the Google Play logo are trademarks of Google LLC.
- QR Code is a registered trademark of DENSO WAVE INCORPORATED.
- Other company names and product names in this manual are trademarks or registered trademarks of the respective companies.

◆ Supplemental Safety Information

Read and understand this manual before you install, operate, or do maintenance on the option. Use this option as specified by this manual and local codes.

The symbol marks in this section identify safety messages in this manual. If you do not obey these safety messages, the hazards can cause serious injury, death, or damage to the products and related equipment and systems.

▲ DANGER *This signal word identifies a hazard that will cause serious injury or death if you do not prevent it.*

▲ WARNING *This signal word identifies a hazard that can cause death or serious injuries if you do not prevent it.*

⚠ CAUTION Identifies a hazardous situation, which, if not avoided, can cause minor or moderate injury.

NOTICE This signal word identifies a property damage message that is not related to personal injury.

■ General Safety

General Precautions

- The figures in this manual can possibly include options and drives without covers or safety shields to show detail. Install missing covers or safety shields before you operate the drive. Use the option only as specified by the instructions in this manual.
- The diagrams in this manual are only examples and are not always related to all the products included in this manual.
- Yaskawa can change the products and specifications in this manual or the content and presentation of the manual without notice to improve the product and/or the manual.
- If you damage or lose manuals, contact a Yaskawa representative or the nearest Yaskawa sales office shown on the rear cover of the manual, and tell them the document number on the front cover to order new copies.

⚠ DANGER Do not ignore the safety messages in this manual. If you ignore the safety messages in this manual, it will cause serious injury or death. The manufacturer is not responsible for injuries or damage to equipment.

◆ Use Precautions

This product includes a wireless device. Some countries restrict the use of wireless devices as specified by their radio laws. Confirm the radio laws of the country in which you will use the device.

2 Overview

Use a Bluetooth Keypad and the DriveWizard Mobile App to communicate with the drive by Bluetooth. The Bluetooth keypad has all of the functions of the standard keypad plus Bluetooth connectivity.

◆ Bluetooth Capability

Key features of this keypad include the ability to:

3 Receiving

- Read and modify drive parameter settings
 - Back up, restore, and verify drive parameters
 - Monitor drive operation status
-


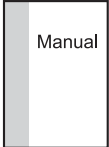
◆ Compatible Products

Drive	Drive Software Version
HV600	All

3 Receiving

1. Make sure that there is no damage to the keypad and no parts are missing.
If there is damage to the products, contact the shipping company immediately. The Yaskawa warranty does not include damage from shipping.
2. Make sure that the model number on the option nameplate and the model number on the purchase order are the same.
If you have problems with the option, contact the distributor where you purchased the option or the Yaskawa sales office immediately.

◆ Option Package Contents

Option Contents		Quantity
Bluetooth HOA Keypad		1
Installation Manual (This document)		1

4 Component Names and Functions

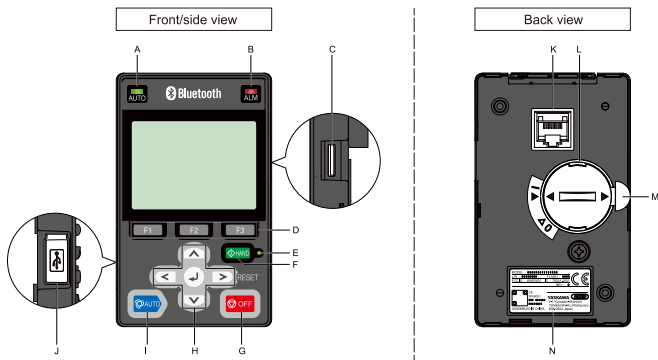

















Figure 4.1 Keypad

Table 4.1 Keypad: Names and Functions

No.	Name	Function
A	AUTO LED ^{*1} 	Illuminates to show that the drive is in AUTO Mode.
B	ALM LED 	Illuminates when the drive detects a fault. Flashes when the drive detects: <ul style="list-style-type: none"> An alarm An oPE parameter setting error A fault or alarm during Auto-Tuning The LED turns off when there are no drive faults or alarms.
C	microSD Card Insertion Slot	Used with the parameter group o5: Log function of the drive to save drive status information.
D	Function Keys (F1, F2, F3) 	The menu shown on the keypad sets the functions for function keys. The name of each function is in the lower half of the display window.
E	HAND LED ^{*1} 	Illuminates to show that the drive is in HAND Mode.
F	HAND Key 	Sets drive operation to HAND Mode. The drive uses the S5-01 [HAND Frequency Reference Selection] setting.
G	OFF Key 	Stops drive operation. Note: The OFF key has highest priority. Push  to stop the motor even when a Run command is active at an external Run command source. Set o2-02 = 0 [STOP Key Function Selection = Disabled] to disable  priority.

No.	Name	Function
H	Left Arrow Key 	Moves the cursor to the left.
	Up Arrow Key/ Down Arrow Key  / 	<ul style="list-style-type: none"> • Scrolls up or down to display the next item or the previous item. • Selects parameter numbers, and increments or decrements setting values.
	Right Arrow Key (RESET) 	<ul style="list-style-type: none"> • Moves the cursor to the right. • Continues to the next screen. • Clears drive faults.
	ENTER Key 	<ul style="list-style-type: none"> • Enters parameter values and settings. • Selects menu items to move the user between keypad displays. • Selects each mode, parameter, and set value.
I	AUTO Key 	Sets drive operation to AUTO Mode. The drive uses the <i>b1-01 [Frequency Reference Selection 1]</i> and <i>b1-02 [Run Command Selection 1]</i> settings. Note: Push  on the keypad to set the drive to HAND Mode before you use the keypad to operate the motor.
J	USB Terminal	Factory use for firmware update.
K	RJ-45 Connector	Uses an RJ-45 8-pin straight through UTP CAT5e extension cable or keypad connector to connect to the drive.
L	Clock Battery Cover	Cover for the clock battery. Note: <ul style="list-style-type: none"> • The battery included with the keypad is for operation check. It may be exhausted earlier than the expected battery life described in the manual. • Refer to “Maintenance & Troubleshooting Manual (TOEPYAIHV6001)” for more information about replacement procedure. To replace the battery, use a Hitachi Maxell “CR2016 Lithium Manganese Dioxide Lithium Battery” or an equivalent battery with these properties:



4 Component Names and Functions



No.	Name	Function
		<ul style="list-style-type: none"> Nominal voltage: 3 V Operating temperature range: -20 °C to +85 °C (-4 °F to +185 °F)
M	Insulation Sheet	An insulating sheet is attached to the keypad battery to prevent battery drain. Remove the insulation sheet before you use the keypad for the first time.
N	Nameplate	<p>Shows the model number of the keypad and other information</p> <p>Note:</p> <ul style="list-style-type: none"> “REV” identifies the hardware and software version of the keypad. “FCC ID” is the ID issued by the U.S. Federal Communications Commission. “IC” is the Canadian authentication code.

*1 Refer to *Indicator LEDs and Drive Status on page 12* for more information about AUTO LED and HAND LED indications.

◆ Indicator LEDs and Drive Status

Table 4.2 AUTO LED and HAND LED Indications

AUTO LED 	HAND LED 	Status
OFF	OFF	OFF Mode
OFF	ON	HAND Mode
OFF	Long blink (50% duty)	<p>HAND Mode</p> <ul style="list-style-type: none"> When the Frequency Reference is 0 or during deceleration During PI Sleep
OFF	Double blink	<p>HAND Mode</p> <p>When you clear the Run command and enter the Run command again during the time set in C1-02 [Deceleration Time 1]</p>

AUTO LED 	HAND LED 	Status
ON	OFF	AUTO Mode
Long blink (50% duty)	OFF	AUTO Mode <ul style="list-style-type: none"> When the Frequency Reference is 0 or during deceleration During PI Sleep
Double blink	OFF	AUTO Mode When an MFDI sends a Fast Stop signal to stop the drive

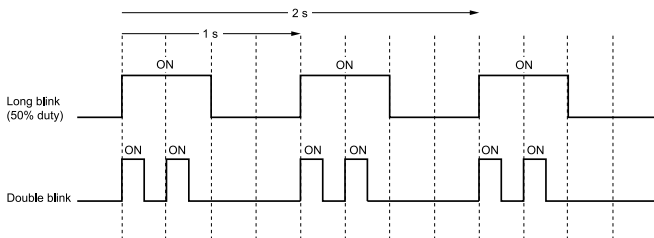


Figure 4.2 AUTO LED and HAND LED Timing Status

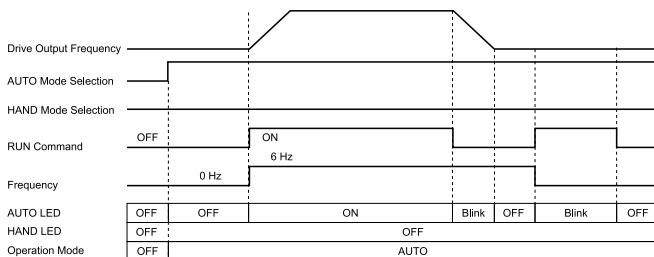


Figure 4.3 LEDs and Drive Operation in AUTO and HAND Modes

5 Installation and Primary Operation

◆ Section Safety

NOTICE *Damage to Equipment.* Correctly connect all pins and connectors. If the pins and connectors are incorrect, it can cause damage to equipment and incorrect operation.

NOTICE *Damage to Equipment.* Do not bend the communication cables more than the bend radius specifications. If you bend the cables too much, it can break the wires and loosen connections.

Note:

Use Yaskawa connection cables or recommended cables only. Incorrect cables can cause the drive or option to function incorrectly.

◆ Installing the Keypad on the Drive

Refer to *Remote Keypad Installation Methods on page 32* when you install the keypad on an enclosure panel.

1. Remove the standard keypad that shipped with the drive.

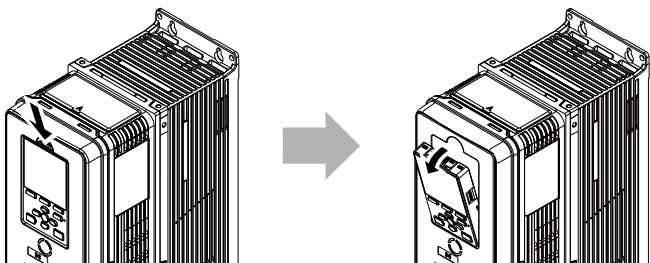


Figure 5.1 Remove the Keypad

- Put the bottom of the Bluetooth keypad into position first, then carefully push on the top of the keypad until the hook clicks into place.

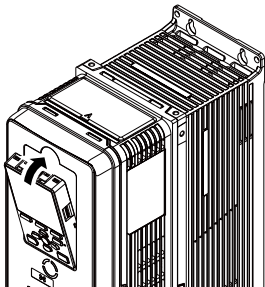


Figure 5.2 Attach the Keypad

◆ Connecting the Keypad and Smart Device

■ Prepare the Information Necessary for Connection

Collect this information before you connect the keypad to a smartphone or tablet with Bluetooth communications:

- Yaskawa Drive Cloud account Member ID and Password.

Note:

- Access the URL on the back cover of this manual to register for an account.
- For Japan: Member ID and password to the Yaskawa product and technical information website
- For the Americas: Direct your web browser to <https://www.yaskawa.com/dwm> and click on "Create New Account"

- Setting value of *A1-12* [Bluetooth ID]

Note:

When *A1-12* = 0000, Bluetooth communication is disabled. Set the Bluetooth ID \neq 0000 to enable Bluetooth. Refer to [Enabling Bluetooth Communications on page 17](#) for more information.

- Drive series and serial number of the drive to which you will connect.

Note:

- To retrieve the Device Name transmitted by Bluetooth, push **F2** (Device Name).

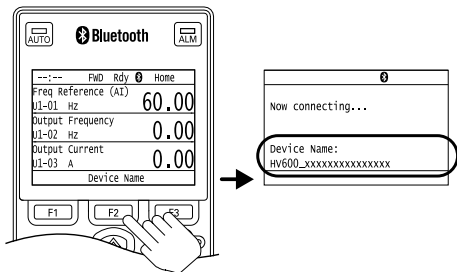


Figure 5.3 Device Name



- Use the Device Name when you connect a smartphone or tablet to the drive to identify your drive from the other devices that are transmitting Bluetooth.

■ Install DriveWizard Mobile

Download DriveWizard Mobile to your smartphone or tablet through the Apple App Store or Google Play Store.

- For iOS devices: App Store
- For Android devices: Google Play Store

Table 5.1 QR Codes

App Store	Google Play Store
	

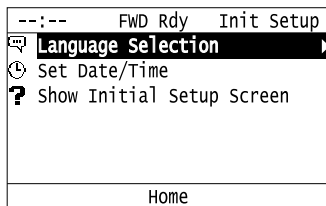
Refer to [Table 5.2](#) for operating systems and drives compatible with the DriveWizard Mobile App.



Table 5.2 DriveWizard Mobile Specifications

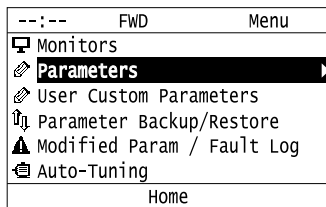
Item	Description
Recommended Operating Environment for Smart Device	<ul style="list-style-type: none"> OS: Android 6.0, 7.0, 7.1, 8.0, 8.1, 9.0, 10.0 or iOS 10, 11, 12, 13 Support for Bluetooth 4.0 or 4.1

■ Enabling Bluetooth Communications

1. Push **F2** two times on the initial Setup screen.



2. Push  to select [Parameters] then push .



3. Select [A Initialization Parameters] then push .

--:--	FWD	Parameters
A	Initialization Parameters	▶
b	Application	
C	Tuning	
d	References	
E	Motor Parameters	
F	Options	
	Back	Home

4. Select [A1 Initialization] then push .


--:--	FWD	Parameters
A1	Initialization	▶
A2	User Parameters	
	Back	Home

5. Select [Bluetooth ID] then push .


--:--	FWD	Parameters
Application Preset		
A1-06	1	(0)
DriveWorkSEZ Function Selection		
A1-07	0	(0)
Bluetooth ID		
A1-12	0	
	Back	Home

6. Set A1-12 \neq 0000 [Bluetooth ID \neq 0000].


--:--	FWD	Parameters
Bluetooth ID		
A1-12		
0000		
Default :		
Range : 0~9999		
Back	Default	Min/Max




--:--	FWD	Parameters
Bluetooth ID		
A1-12		
1235		
Default :		
Range : 0~9999		
Back	Default	Min/Max

7. Push  to keep the new A1-12 setting.

--:--	FWD	Parameters
Application Preset		
A1-06	1	(0)
DriveWorkSEZ Function Selection		
A1-07	0	(0)
Bluetooth ID		
A1-12	1235	
Back	Home	


8. Push and hold  (Home) to show the HOME screen in Bluetooth Mode.

--:--	FWD	Rdy		Home
OFF				

Freq Reference (AI)				
U1-01	Hz			0.00

Output Frequency				
U1-02	Hz			0.00

Device Name				

- (注)
- The Bluetooth icon shows that the Bluetooth is enabled.
 - You can temporarily disable Bluetooth and change to Normal Operation Mode when you push a key other than .
 - When the keypad is idle for longer than 60 seconds, the keypad will automatically go back to Bluetooth Mode, even after you change to Normal Operation Mode.

■ Connect to the Drive

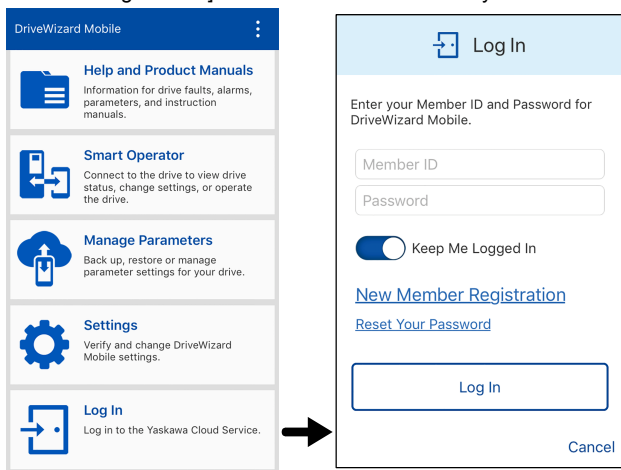
Use this procedure to launch DriveWizard Mobile and connect to the drive.

1. Start DriveWizard Mobile on your smartphone or tablet.

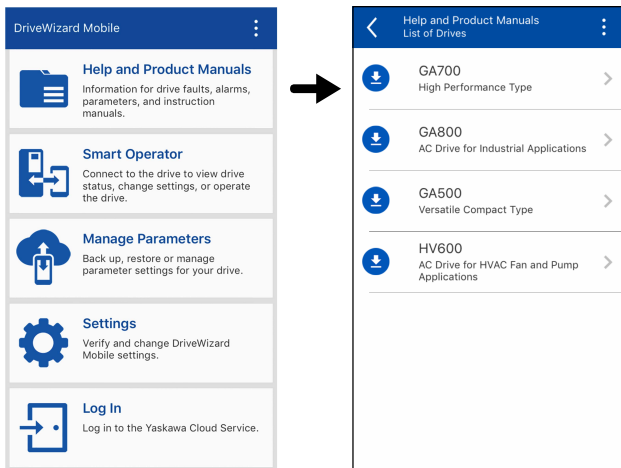


2. Tap [Log In] to Log into DriveWizard Mobile. Use your Drive Cloud ID and password.

If you do not have an account, tap [New Member Registration] to create an account before you continue.



3. Tap [Help and Product Manuals] on the Home Screen, select the drive model to connect, and download the product information.



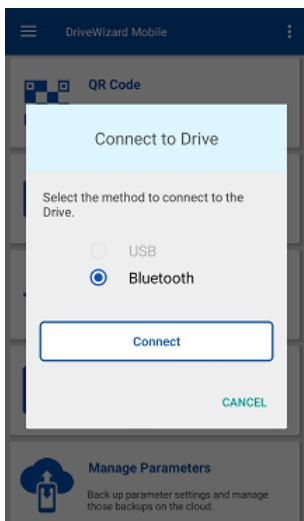
4. Tap [Smart Operator].



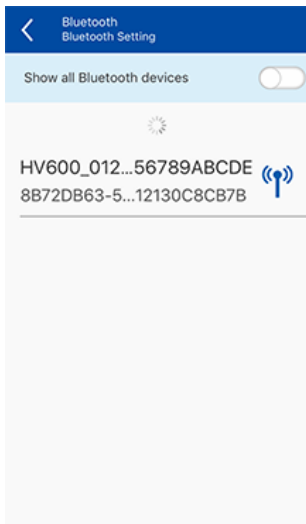
5. Select [Bluetooth] then tap [Connect].

Note:

This dialog screen is only for Android smart devices. Skip this step for iOS devices.



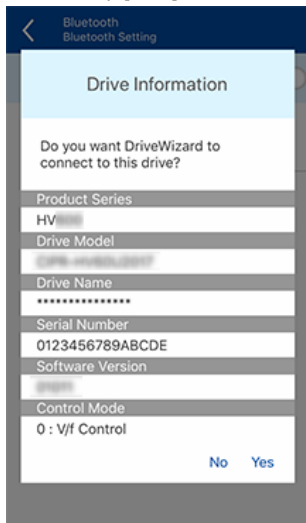
6. Tap the correct drive in the list of Bluetooth devices to make the connection.



Note:

- Push **F2** (Device Name) to check the Device Name of the drive you will connect.
- The device name of the drive is shown as "Drive Series_Serial Number". If necessary, use the [Drive Information] menu in DriveWizard Mobile to change the "Serial Number" to a different value.
- If you did not download the product information of the connected drive, download the product information as specified by the dialog.

7. Make sure that the screen shows the correct drive information and tap [YES].



Note:

Make sure that the LED status ring of the connected drive is flashing.

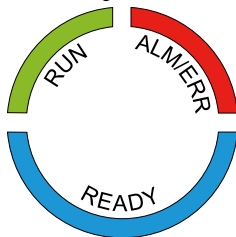
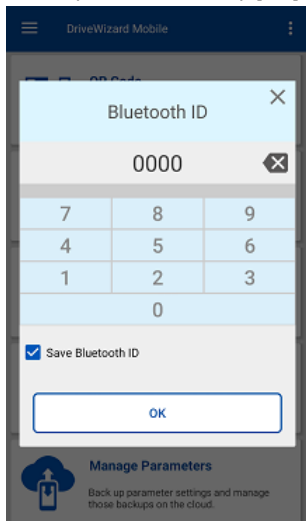


Figure 5.4 LED Status Ring

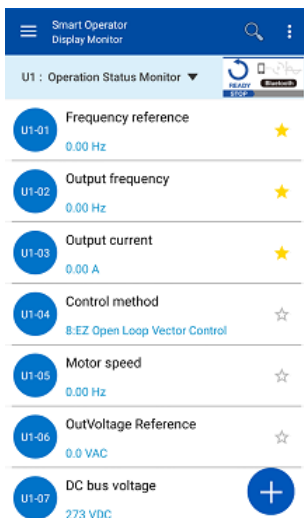
8. Enter the setting value of A1-12 [Bluetooth ID] on the Bluetooth ID Input screen and tap [OK].



Note:

Check the [Save Bluetooth ID] checkbox to skip this step in the future.

When you connect the drive and your smartphone or tablet, the smart device will show the list of *UI: [Operation Status Monitors]*.



Bluetooth connection procedure is complete.



Note:

Refer to the DriveWizard Mobile Help for more information about how to use DriveWizard Mobile to operate the drive.

■ Disconnect Bluetooth Communications

The operation to disconnect Bluetooth communications is different for different operating devices. [Table 5.3](#) lists the disconnection methods for each operating device.

Table 5.3 Operating Devices and Disconnection Method

Operating Device	Disconnection Method
Smartphone or Tablet	Go back to the DriveWizard Mobile App Home screen to disconnect communications with the keypad.
Keypad	<ul style="list-style-type: none"> • Push  to stop communications between the smartphone or tablet and the drive and switch the keypad to Normal Operation Mode. • Push a key other than  to show the confirmation screen before you disconnect from the smartphone or tablet. Select [Yes, disconnect.] to disconnect and switch to Normal Operation Mode. <div data-bbox="370 550 793 812" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Disconnect Bluetooth mode?</p> <p style="text-align: center;">No, continue.</p> <p style="text-align: center;">Yes, disconnect.</p> </div> <p>Note:</p> <ul style="list-style-type: none"> • Use parameters to set drive operation after you disconnect the smartphone or tablet and drive. • If the keypad is idle for longer than 60 seconds after you switch to Normal Operation Mode, the keypad will automatically go back to Bluetooth Mode. • Set $A1-12 = 0000$ [Bluetooth ID = 0000] to keep the keypad in Normal Operation Mode in these conditions: <ul style="list-style-type: none"> –The keypad was idle, for example during Auto-Tuning –The keypad must not switch from Normal Operation Mode to Bluetooth Mode

◆ Bluetooth Mode

■ Bluetooth Mode and Normal Operation Mode

The keypad operates in Bluetooth Mode and Normal Operation Mode.

- Bluetooth Mode

This mode uses a smartphone or tablet and DriveWizard Mobile to interface with the drive.

Note:

Set $A1-12 \neq 0000$ [Bluetooth ID $\neq 0000$] to enable Bluetooth when you energize the drive.

- Normal Operation Mode

- This mode uses the Bluetooth keypad to operate and monitor the drive.
- The keys operate the same as the keys on the standard keypad included with the drive. Refer to *Component Names and Functions on page 9* for more information.
- Push a key other than **F2** when in Bluetooth Mode to disconnect Bluetooth communications and switch to Normal Operation Mode. Refer to *Disconnect Bluetooth Communications on page 27* for more information.

Note:

Set $A1-12 = 0000$ to disable the Bluetooth connection. When $A1-12 \neq 0000$, push a key other than **F2** when you are in Bluetooth Mode to temporarily disconnect Bluetooth communications and change to Normal Operation Mode. When the keypad is idle for longer than 60 seconds, the keypad will automatically go back to Bluetooth Mode, even after you change to Normal Operation Mode.

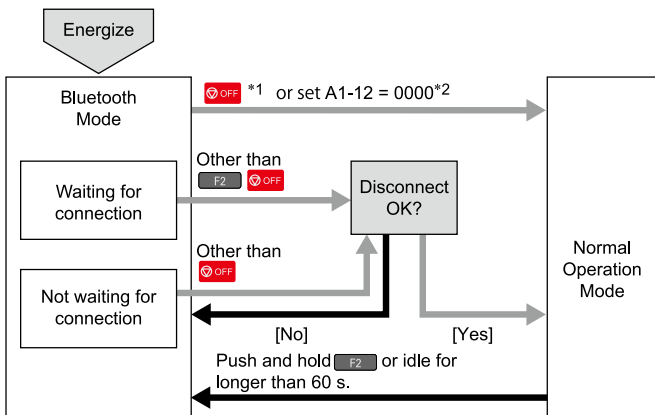



Figure 5.5 Changing between Bluetooth Mode and Normal Operation Mode

- *1 Push  to stop drive operation.
 *2 Set $A1-12 = 0000$ to disable the Bluetooth connection.

■ Key Functions in Bluetooth Mode













The  is the only key that operates the same in Bluetooth Mode and Normal Operation Mode. The other keys on the keypad will disconnect from Bluetooth Mode.

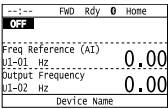
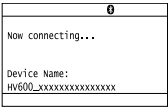
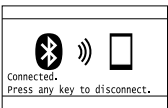
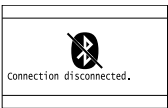
Table 5.4 Key Functions

Key	Function
	Stops drive operation and switches the keypad to Normal Operation Mode.
         	Shows the confirmation screen to disconnect Bluetooth Mode. Select [YES] to switch to Normal Operation Mode.

■ Bluetooth Mode Screen Displays

Table 5.5 shows the screen displays and connection statuses for the keypad.

Table 5.5 Bluetooth Mode Screen Displays and Connection Statuses

Screen Display	Connection Status
 <p>HOME Screen</p>  <p>Connection Standby Screen</p>	<ul style="list-style-type: none"> The keypad is in standby and waiting for a Bluetooth connection. When you push F2 (Device Name), the keypad shows the connection standby screen. When you push F2 again, the keypad goes back to the home screen.
	<ul style="list-style-type: none"> The keypad is communicating with a smartphone or tablet. The keypad is waiting for the smartphone or tablet to enter the Bluetooth ID.
	<p>There is a problem with the connection to the smartphone or tablet.</p> <p>Note: After 2 seconds, the drive goes back to the connection standby screen.</p>

◆ Remote Keypad Installation Methods

Installation Method	Features	Required Tools and Installation Support Sets
Outside the control panel	Installs the option on the outside of the panel. An optional installation bracket is not necessary for this installation.	Phillips screwdriver #2 (M3)
Inside the control panel	Installs the option on the Inside of the panel. Keypad does not extend farther than the front of the control panel.	<ul style="list-style-type: none"> • Phillips screwdriver #2 (M3, M4) • Installation support set A (for mounting with screws, model: 900-192-933-001)
		<ul style="list-style-type: none"> • Phillips screwdriver #2 (M3) • Wrench (M4) • Installation support set B (for mounting with nut clamp, model: 900-192-933-002)


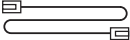


Note:

Installation support sets are sold separately. When there are weld studs on the interior of the control panel, use installation support set B.

■ Optional Items

The optional remote-control extension cable and installation support set are necessary for Internal/Flush-Mount installation.

Contact Yaskawa or your nearest sales representative to order mounting brackets and mounting hardware.

Optional Items	Model	Notes
Remote control extension cable (1 m (3.3 ft)) 	WV001 *1	Connects the keypad for remote operation. <ul style="list-style-type: none"> • RJ-45 8-pin straight through • UTP CAT5e cable (1 m (3.3 ft)/3 m (9.8 ft))
Remote control extension cable (3 m (9.8 ft)) 	WV003 *1	<div style="background-color: #0070C0; color: white; padding: 2px;">NOTICE</div> <i>Damage to Equipment. Do not use this cable to connect the drive to a PC. Failure to obey will cause damage to the PC.</i>
Installation Support Set A (screw clamp) 	900-192-933-001	Encloses the keypad in the panel. <ul style="list-style-type: none"> • M3 screws: 6 mm (0.24 in) depth Phillips recessed pan head machine screws (2) • M4 screws: 10 mm (0.39 in) depth Phillips truss head screws (4) (for panel thickness of 1 to 1.6 mm (0.04 to 0.06 in))
Installation Support Set B (nut clamp) 	900-192-933-002	Encloses the keypad in the panel. When there are weld studs on the interior of the control panel, use the installation support set B (nut clamp). <ul style="list-style-type: none"> • M3 screws: 6 mm (0.24 in) depth Phillips recessed pan head machine screws (2)

*1 Part numbers for the Americas are UWR0051 and UWR0052. Contact Yaskawa or your nearest sales representative for more information.

■ External Keypad Dimensions

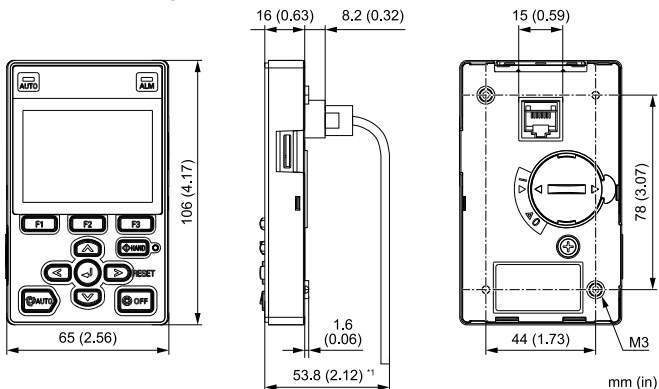


Figure 5.6 Exterior and Mounting Dimensions

*1 Minimum bending radius

■ Procedure

Install to the Outside of a Control Panel

1. Use the panel cut-out dimensions in [Figure 5.7](#) to cut an opening in the control panel for the keypad.

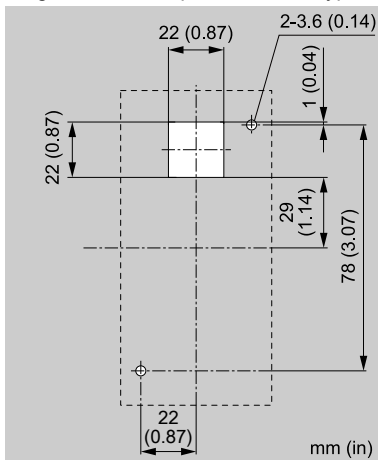
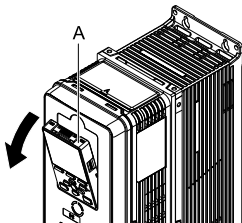


Figure 5.7 Panel Cut-Out Dimensions to Attach Outside of Control Panel

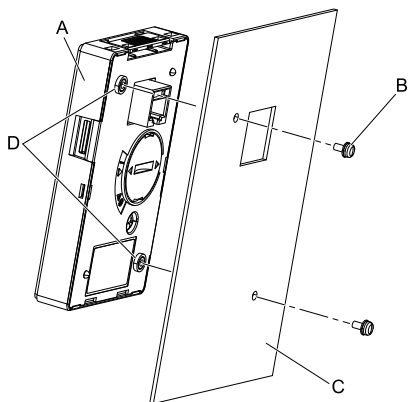
2. Remove the keypad from the drive.



A - Keypad

Figure 5.8 Remove the Keypad

3. Put the keypad on the outside of the control panel.
Use M3 screws (6 mm (0.24 in) depth cross-recessed pan head screws) to attach the keypad from the inside.
Tighten the screws to a tightening torque of 0.49 N·m to 0.73 N·m (4.34 in·lb to 6.46 in·lb).



A - Keypad

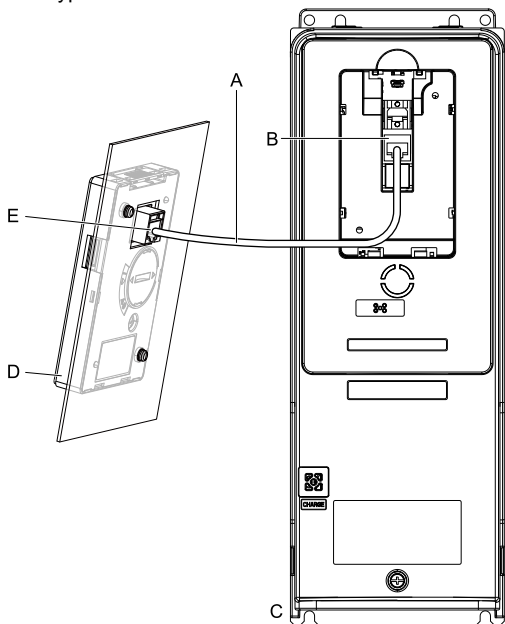
B - M3 screws

C - Enclosure panel

D - Screw mounting hole

Figure 5.9 Mount to the Outside of Control Panel

4. Use the remote control extension cable to connect the keypad to the drive.



- A - Remote control extension cable
- B - Communications connector
- C - Drive
- D - Keypad
- E - Cable connector

Figure 5.10 Use the Remote Control Extension Cable to Connect the Drive to the Keypad

Install to the Inside of a Control Panel

To attach the keypad inside of the control panel, you must purchase an installation support set, which is sold separately. Contact

Yaskawa or your nearest sales representative to order mounting brackets and mounting hardware.

Note:

- The installation procedure and panel cut-out dimensions are the same for mounting brackets A and B.
- Use a gasket between the control panel and the keypad in environments with a large quantity of dust or other unwanted airborne material.

1. Use the panel cut-out dimensions in [Figure 5.11](#) to cut an opening in the control panel for the keypad.

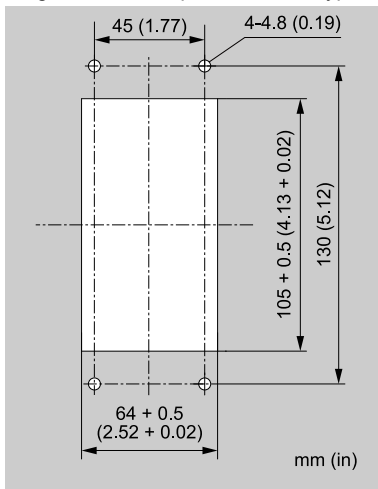
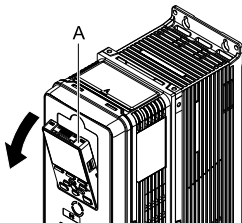


Figure 5.11 Panel Cut-Out Dimensions to Attach Inside Control Panel

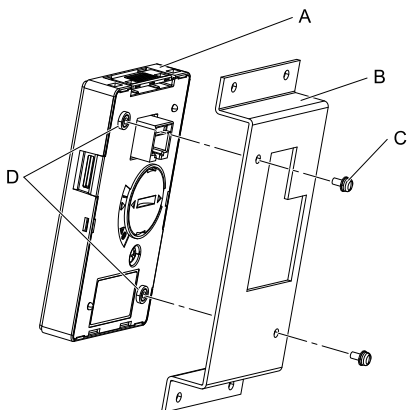
2. Remove the keypad from the drive.



A - Keypad

Figure 5.12 Remove the Keypad

3. Use the screws supplied with the mounting bracket, and attach the keypad to the mounting bracket.
Use the screws supplied with the installation support set, and tighten them to a tightening torque of 0.49 to 0.73 N·m (4.34 to 6.46 in·lb).



A - Keypad

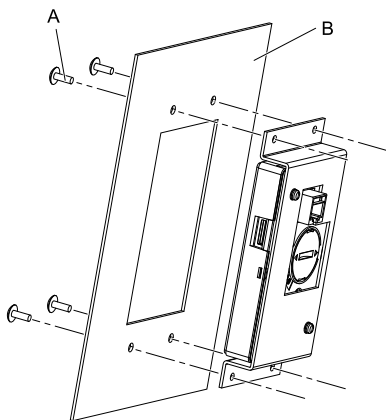
C - M3 screws

B - Mounting bracket A

D - Screw mounting hole

Figure 5.13 Attach Keypad to Mounting Bracket

4. Position the mounting bracket to which the keypad has been attached in the control panel, and use the screws to mount it from the outside.
Tighten the screws to a tightening torque of 0.98 to 1.33 N·m (8.67 to 11.77 in·lb).

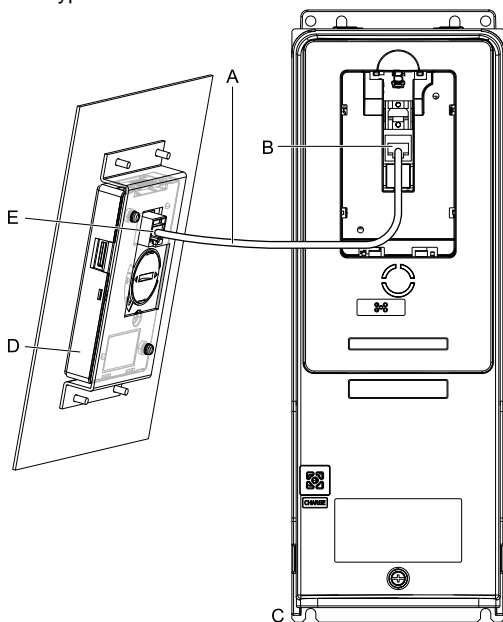


A - M4 screw

B - Enclosure panel

Figure 5.14 Mount Mounting Bracket to the Interior of the Control Panel

5. Use the remote control extension cable to connect the keypad to the drive.



- A - Remote control extension cable
B - Communications connector
C - Drive

- D - Keypad
E - Cable connector

Figure 5.15 Use the Remote Control Extension Cable to Connect the Drive to the Keypad

◆ Replace the Keypad Battery

When the keypad battery is expired, the date and time go back to the default settings. Use this procedure to replace the battery.

▲ WARNING *Fire Hazard. Handle keypad batteries properly. Do not charge the battery or disassemble the keypad. If the battery explodes, it can cause a fire.*

To replace the battery, use a Hitachi Maxell “CR2016 Lithium Manganese Dioxide Lithium Battery” or an equivalent battery with these properties:

- Nominal voltage: 3 V
- Operating temperature range: -20 °C to + 85°C (-4 °F to +185 ° F)

▲ WARNING *Fire Hazard. Do not disassemble batteries. Do not expose batteries to heat or fire. If the battery explodes, it can cause a fire.*

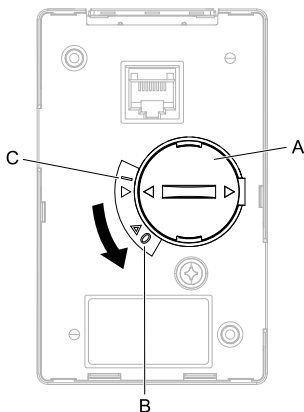
NOTICE *Damage to Equipment. The keypad battery stays in use after you de-energize the drive. When you will keep the drive de-energized for long periods of time, remove the battery from the keypad. When the expected life of the battery is complete, replace the battery immediately. A dead battery in the keypad can leak and cause damage to the keypad and drive.*

The performance life estimate of a new battery is:

- Ambient temperature 20 °C (68 °F): 5 years
- Ambient temperature -10 °C to +50 °C (14 °F to 122 °F): 3.5 years

1. De-energize the drive and remove the keypad.

2. Use a slotted screwdriver or other tool to turn the battery cover counterclockwise and remove the cover.



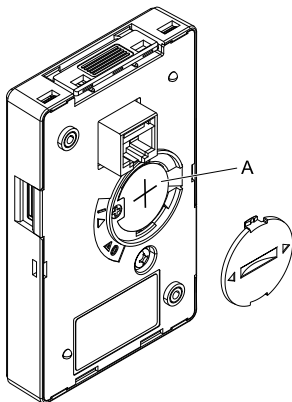
- A - Battery cover C - Closed
B - Opened

Figure 5.16 Remove the Battery Cover

3. Remove the used battery from the keypad.
4. Insert the new battery.

Note:

- The battery cover side is the positive pole. Make sure that the polarity is correct when you put the battery in the keypad.
- Discard the used battery as specified by local regulations.



A - Battery

Figure 5.17 Insert the New Battery

5. Put the battery cover on the keypad and use a slotted screwdriver to turn the battery cover clockwise to close it.
6. Install the keypad on the drive.

6 Related Parameters

These parameters set the drive to operate with Bluetooth Keypad. Set parameters as necessary. Refer to the drive manual for information about how to set parameters.

No. (Hex.)	Name	Description	Default (Range)
A1-12 (1564)	Bluetooth ID	Sets the password necessary to use Bluetooth to control the drive with a smartphone or tablet. Refer to the drive manual for the default setting. Set <i>A1-12 = 0000</i> to disable the Bluetooth connection.	- (0000 - 9999)
o2-27 (1565)	bCE Detection Selection	Sets drive operation if the Bluetooth device is disconnected when you operate the drive in Bluetooth Mode. Refer to the drive manual for the default setting. 0 : Ramp to Stop 1 : Coast to Stop 2 : Fast Stop (Use <i>C1-09</i>) 3 : Alarm Only 4 : No Alarm Display	- (0 - 4)

7 Fault Diagnostics and Solutions

Code	Name	Causes	Possible Solutions
bCE	Bluetooth Communication Fault	The smartphone or tablet with DriveWizard Mobile installed is too far from the keypad.	Use the smartphone or tablet 10 m (32.8 ft) or nearer to the keypad. Note: <i>bCE</i> can occur when the smartphone or tablet is 10 m (32.8 ft) or nearer to the keypad depending on the specifications of the smartphone or tablet.
		Radio waves from a different device are causing interference with communications between the smartphone or tablet and keypad.	Make sure that no device around the keypad uses the same radio bandwidth (2400 MHz to 2480 MHz), and prevent radio interference.

◆ Smartphones or Tablets Cannot Connect to the Keypad

Causes	Possible Solutions
Do not know the Bluetooth ID.	Use the keypad to check the value set in <i>A1-12 [Bluetooth ID]</i> .
Drive software is not compatible with the keypad.	Check the drive software version. Note: The keypad shows the alarm code.
The smartphone or tablet with DriveWizard Mobile installed is too far from the keypad.	Use the smartphone or tablet 10 m (32.8 ft) or nearer to the keypad. Note: The smartphone or tablet and the keypad could possibly not connect in distances nearer than 10 m (32.8 ft) because of smartphone or tablet specifications.

Causes	Possible Solutions
The keypad is not in Bluetooth Mode.	<ul style="list-style-type: none"> • Wait for 60 seconds minimum and do not push a key on the keypad until the keypad switches from Normal Operation Mode to Bluetooth Mode • Set $A1-12 \neq 0000$ [<i>Stall Prevention during Decel \neq Disabled</i>] to enable stall prevention. • Remove and connect the keypad again.
The Bluetooth radio/protocol version is not compatible with the keypad.	Make sure that the smartphone or tablet supports Bluetooth 4.0 or 4.1.
Radio waves from a different device are causing interference with communications between the smartphone or tablet and keypad.	Make sure that no device around the keypad uses the same radio bandwidth (2400 MHz to 2480 MHz), and prevent radio interference.
There is damage to the keypad circuit board.	Replace the keypad. Note: The keypad will show [Bluetooth Initializing...], and will not continue to the [Now connecting...] screen. The keypad will let the show an alarm.

8 Standards Compliance

This section gives the guidelines to use to comply with standards about machines and devices that use this product in different countries.

◆ European Standards (RE Directives)

This product complies with the EU Radio Equipment Directive (RED).

Importers, distributors, and manufacturers may be responsible for damages under this RED wireless directive.

◆ **FCC and IC Certifications**

The following Federal Communications Commission (FCC) and Industry Canada (IC) certifications compliance identification numbers have been assigned to this product:

- FCC ID: WAP2001
- IC: 7922A-2001

■ **FCC ID: WAP2001**

This product complies with Part 15 of the FCC Rules.

The operation of this product is subject to the following two criteria:

- This product will not cause harmful interference.
- This product is not susceptible to issues of interference including malfunction.

Note:

- This product has been tested and certified as compliant with Part 15 of FCC regulations as a Class A digital device. These regulations are intended to adequately protect against negative effects of interference when devices are used in commercial environments. This product generates and utilizes radio wave energy, and therefore can be a source of radiation. Failure to install and use this product in accordance with the manuals may result in the causing of harmful wireless interference. Using this device in residential areas may cause harmful interference. The customer shall be responsible for any consequences of using this product in such environments.
- Yaskawa may demand the disuse of this product if you or your customer modifies the product.

■ **IC7922A-2001**

This product is compliant with RSS-GEN requirements. The operation of this product is subject to the following two criteria:

- This product will not cause harmful interference.
- This product is not susceptible to issues of interference including malfunction.

◆ Japan Radio Law



Figure 8.1 Technical Conformity Mark

This product is compliant with the Japan Radio Law.

9 Disposal Instructions

Correctly discard these parts and materials as specified by regional, local, and municipal laws and regulations for this product:

- Battery
- microSD card

⚠ CAUTION *Fire Hazard. Put electrical tape fully around the battery before you discard it. If you do not correctly discard the battery, it can cause a fire.*

Note:

- Remove the battery and microSD card from the keypad.
- You cannot recycle the battery. Discard used batteries as specified by the battery manufacturer.
- Customers are responsible for microSD card data protection.
PC functions that format and delete the data may not be sufficient to fully erase the microSD card data. Yaskawa recommends that customers physically destroy the microSD card in a shredder or use data wipe software to fully erase the card.

◆ WEEE Directive



The wheeled bin symbol on this product, its manual, or its packaging identifies that you must recycle it at the end of its product life.

You must discard the product at an applicable collection point for electrical and electronic equipment (EEE). Do not discard the product with usual waste.

10 Specification

Table 10.1 Option Hardware Specifications

Item	Description
Model	JVOP-KPLCD04AxB
Port	RJ-45
Power Supply	Supply from drive (DC +5 V \pm 5%)
Operating Ambient Temperature	-10 °C to +50 °C (14 °F to 122 °F)
Operating Ambient Humidity	95% RH or less (no condensation)
Storage Ambient Temperature	-20 °C to +70 °C (-4 °F to +158 °F) (short-term storage temperature during transport)
Area of Use	Indoor (an area without corrosive gas, or dust)

Item	Description
Altitude	1000 m (3281 ft) Maximum
Vibration	10 Hz to 20 Hz: 9.8 m/s ² (1 G) 20 Hz to 55 Hz: 5.9 m/s ² (0.6 G)
Harmonized Standard	<ul style="list-style-type: none"> • European Standards (CE) • Federal Communications Commission (FCC) • Industry Canada (IC) • Japan Radio Law (MIC)
Approximate Number of Parameter Reads	100,000 maximum
Battery for Clock Backup	<p>Not supplied with the keypad.</p> <p>Yaskawa recommends a Hitachi Maxell "CR2016 Lithium Manganese Dioxide Lithium Battery" or an equivalent battery with these properties:</p> <p>Battery life:</p> <ul style="list-style-type: none"> • 5 years (20 °C (68 °F), when the battery is new) • 3.5 years (-10 °C to +50 °C (14 °F to 122 °F), when the battery is new)

Table 10.2 Bluetooth Communication Specifications

Item	Description
Bluetooth Standard	Bluetooth Ver. 4.1 Single Mode (Smart)
Certification	Bluetooth SIG Registered
Antenna Type	Planar-inverted F-type internal PCB antenna
Radio Band	2400 to 2480 MHz
Antenna Gain	Maximum of 0.5 dBi

11 Warranty

◆ Warranty Period

The period is 12 months from the date the product is first used by the buyer, or 18 months from the date of shipment, whichever occurs first.

◆ Post-Warranty Repair Period

The post-warranty repair period applies to products that are not in the standard warranty period. During the post-warranty repair period, Yaskawa will repair or replace damaged parts for a fee.

There is a limit to the period during which Yaskawa will repair or replace damaged parts. Contact Yaskawa or your nearest sales representative for more information.

◆ Cyber Security Disclaimers

This product is designed to transmit and receive data over a network interface. Users are responsible for network security regarding connectivity between this product and the customer network or some other network. Users are responsible for establishing and maintaining appropriate systems (such as firewalls, authentication, data encryption, and antivirus software) to protect the product, networks, systems, and interfaces against any kind of security breaches, unauthorized access, interference, intrusion, and loss/theft of data or information.

Yaskawa and its affiliates shall not be liable for any damages incurred due to security breaches, unauthorized access, interference, intrusion, and loss/theft of data.

◆ About Application of This Product

This product is not designed or manufactured for use in life-support machines or systems.

Contact a Yaskawa representative or your Yaskawa sales representative if you are considering the application of this product for special purposes, such as machines or systems used for passenger cars, medicine, airplanes and aerospace, nuclear power, electric power, or undersea relaying.

⚠ WARNING *Injury to Personnel. When you use this product in applications where its failure could cause the loss of human life, a serious accident, or physical injury, you must install applicable safety devices. If you do not correctly install safety devices, it can cause serious injury or death.*

Revision History

Date of Publication	Revision Number	Section	Revised Content
February 2020	-	-	First Edition

Yaskawa AC Drive Option Bluetooth HOA Keypad Installation Manual

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In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

Specifications are subject to change without notice for ongoing product modifications and improvements.

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