



Shown with optional C2-FILL slot cover (sold separately)

CLICK PLUS C2-03CPU(-x)

The CLICK PLUS C2-03CPU and C2-03CPU-2 have the most connectivity options in our CLICK PLUS CPU family. They offer both Wi-Fi and Bluetooth connection for simple wireless provisioning and connectivity with the CLICK Mobile app. With both RS-232 and RS-485 ports, you can connect multiple serial devices. The RJ-45 Ethernet port allows for a separate (secondary) network connection apart from the Wi-Fi network.

Key Features

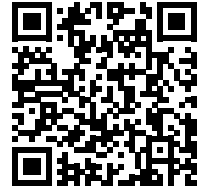
- Real Time Clock/Calendar
- Battery backup (battery sold separately)
- RS-232 port
- RS-485 port
- microB USB port
- microSD Card slot
- RJ-45 Ethernet
- WLAN
- Bluetooth

Before You Begin...

This guide provides a quick overview of installation and setup of your CLICK PLUS CPU. It assumes some familiarity with the installation and operation of industrial control equipment.

Please read and understand the information in this guide prior to installation, operation, or servicing this equipment.

The CLICK PLUS User Manual provides full specifications and more in-depth information on installation, setup, programming and operation of the device. The User Manual (C2-USER-M) is available in PDF format by scanning this QR code or from <https://www.automationdirect.com/pn/doc/manual/C2-USER-M>. Extensive online help is also available from within the CLICK software or at <https://www.automationdirect.com/clickplcs/free-software/software-help>.



What You'll Need

- CLICK PLUS CPU
- PC, or Android or iOS mobile device (for setup/provisioning)
- Click Software ver. 3.20 or later (PC) or Click App (mobile device)
- 24VDC power supply (SELV and Limited Energy)
(CLICK power supply C0-00AC or C0-01AC is recommended.)
- Appropriate enclosure with vertical surface for DIN rail or surface mount
- M4 screws, spring washers and flat washers if surface mounting
- Ferrules and crimping tool for wire terminations (recommended)
- Option Slot cover(s) (part #C2-FILL) are recommended if you are not planning to use an Option Slot module. (Sold separately.)
- Basic tools (screwdriver, wire stripper, etc.)

PLEASE REVIEW THE SAFETY WARNINGS ON THE NEXT PAGE!

Safety Warnings

Please follow these instructions for personal and operational safety.

WARNING Assumes that incorrect handling may cause hazardous conditions, resulting in severe injury or death.

CAUTION Assumes that incorrect handling may cause hazardous conditions, resulting in medium or slight injury, or may cause equipment damage.

WARNING

- Don't use this equipment in a flammable or explosive environment in order to avoid accidental injury or fire.
- You should use external electromechanical devices that are independent of the PLC (Programmable Logic Controller) system to provide protection for any part of the system; otherwise malfunction or output failures may result in a hazardous accident.
- 24VDC power is required from a secondary circuit or a specific power supply unit only.
- Ensure the Ground Terminal of the Power Supply (C0-00AC/ C0-01AC) for the CLICK PLUS CPU is connected to Earth Ground to avoid electric shock or equipment damage during a short circuit.
- Don't operate the equipment with a nonconforming external power supply to avoid electric shock, equipment damage or fire.
- Don't intentionally fault the wiring; this may cause equipment damage or fire.
- To avoid electric shock or malfunctions which might result in an accident, don't touch any terminal while the PLC power is on.
- Don't put metals (e.g. screwdriver) into vent holes, or drop trash or foreign objects (e.g. wire cut-offs) into the device, in order to avoid electric shock or equipment damage.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be invalidated.

CAUTION

- For use in Pollution Degree 2 Environment. Use and store the equipment in an environment described in the specifications (regarding temperature, humidity, vibrations, shock, etc.) in order to avoid equipment damage or fire.
- Ensure all wiring has strain reliefs in order to avoid damage to insulation that might result in electric shock or fire.
- Ensure secondary external power circuits are only live after PLC control program is started; otherwise a malfunction or output failure may result in a hazardous accident.
- Don't block the vent holes. This may cause an increase of internal temperature resulting in equipment damage or fire.
- Don't disassemble or modify equipment so as to avoid electric shock, equipment damage, or fire.
- Cut off all phases of the external power source before maintenance work, thus avoiding electric shock or equipment damage.

Hardware Installation

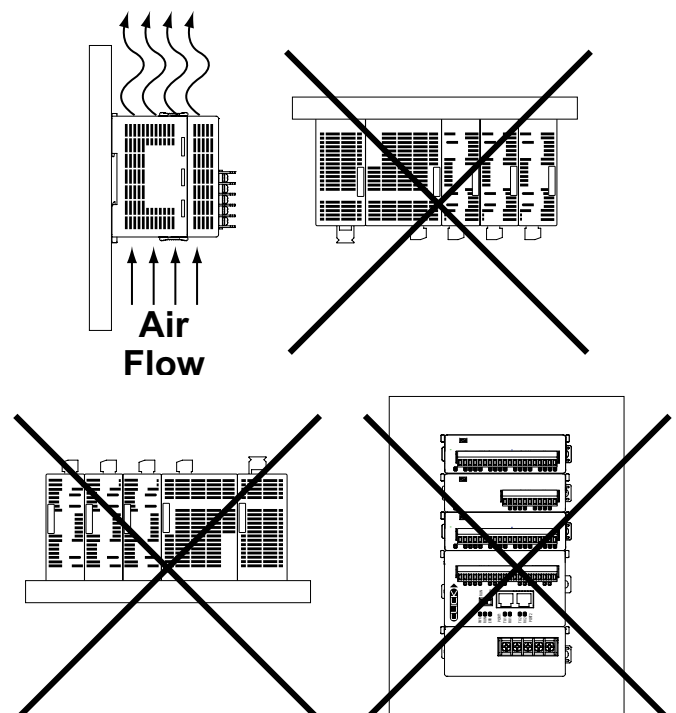
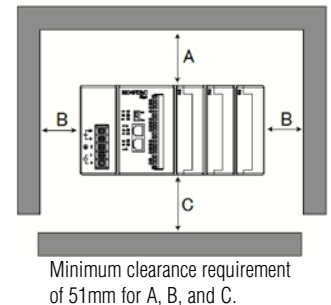
ENCLOSURES

It is important to select the appropriate enclosure to ensure safe and proper operation of your CLICK PLUS PLC system. Please use this product in a metal enclosure/cabinet. Control applications vary and yours may require additional considerations. At a minimum your enclosure should include:

- Conformance to electrical standards
- Protection from the elements in an industrial environment
- Common ground reference
- Maintenance of specified ambient temperature
- Access to equipment
- Security or restricted access
- Sufficient space for proper installation and maintenance of equipment

CLEARANCES AND ORIENTATION

- Mount the unit horizontally to provide proper ventilation.
- There is a minimum clearance requirement of 2in. (51mm) from all sides of the cabinet and the equipment.
- There is a minimum clearance requirement of 1.5 in. (38mm) from the wiring ducts and the equipment
- Do not mount the unit upside down, on a horizontal surface, or in a vertical arrangement.



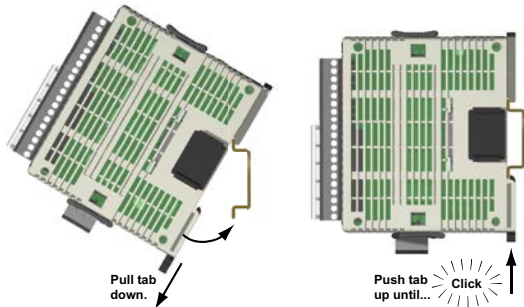
Hardware Installation, continued

CAUTION Discharge static electricity before installation or wiring in order to avoid electric equipment damage.

MOUNTING

The CLICK PLUS can be mounted on DIN rail or surface mounted using built-in mounting tabs.

DIN Rail Mounting



- When installing on DIN rails, always use end brackets on both ends of assembly. (AutomationDirect p/n DN-EB35)
- Use 35mm width DIN Rails.
- Use M4 size screws when you surface mount.
- Tighten the screws with a spring washer and a small round washer and torque 0.5 to 0.6 N·m.

Surface Mounting



Power supply symbols listed on the equipment are indicated by the symbols shown below.

Name	Description	Symbol	
DC	Direct current		IEC6047 No. 5031
G	Functional earthing		IEC6047 No. 5017

The symbol near the battery holder is indicated by the following symbol.

Name	Description	Symbol	
CAUTION	Safety instruction for battery replacement		ISO 7000 No.0434B

The symbol on the product label is indicated by the following symbol.

Name	Description	Symbol	
CAUTION	<ul style="list-style-type: none"> Refer to QR code link for product handling Use Copper Conductor Only 		ISO 7000 No.0434B

WIRING

24VDC power is supplied to the CLICK PLUS CPU through wiring connected from the power supply output to the 4-pin connector located on the bottom of the CPU unit.

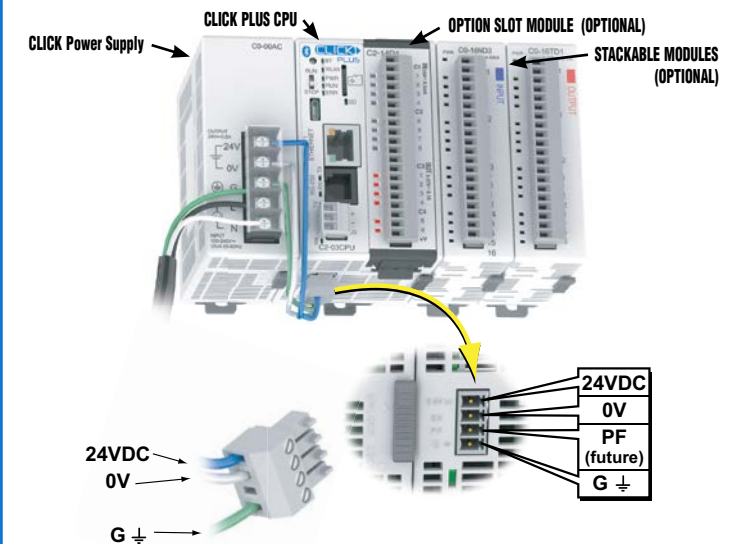
16–28 AWG wiring is supported. We recommend using crimping ferrules on all wire terminations for a more secure connection. The following crimping ferrules are recommended for the 24VDC power terminals.

Company	Type	Model No.	Compliant Wire
AutomationDirect	Ferrule	V30AE000009 V30AE000041	0.2–0.5 mm ² (22–26AWG)

* Maximum tightening torque is 0.22 to 0.25 N·m. Take care not to contact adjacent terminal.

Please use SELV (as defined by UL61010-2-201) and Limited Energy (as defined by UL61010-1, 9.4) power supply. CLICK power supply C0-00AC or C0-01AC is recommended.

CAUTION Do not operate without first installing safety cover over power supply leads.



24VDC power is supplied to the CPU unit through wiring connected from the power supply output to the 4-pin 24VDC input connector located on the bottom of the CPU unit.

CAUTION DO NOT USE the PF connector. Leave this terminal unconnected. Connecting the PF terminal to another device may cause damage to the CLICK PLUS CPU.

I/O wiring is discussed in each module's documentation.

ANTENNA MOUNTING

The CLICK PLUS CPU uses a single 2.4 GHz antenna for both Bluetooth and wireless LAN connections. It can use an SE-ANT210 direct-mount antenna, but for a continuous WLAN connection from within a metal enclosure an SE-ANT250 remote-mount antenna is recommended.

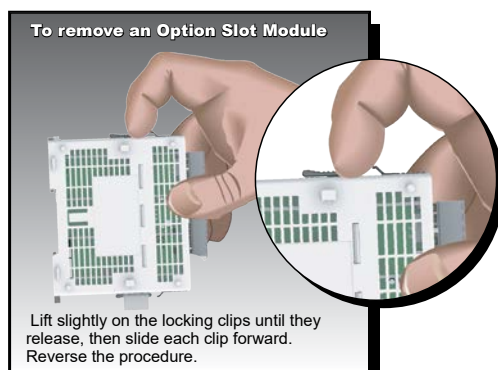
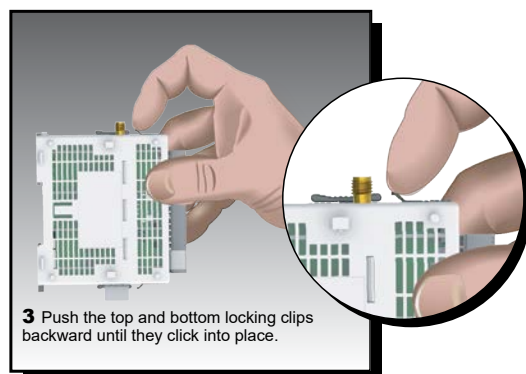
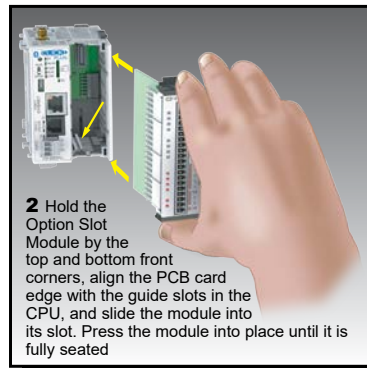
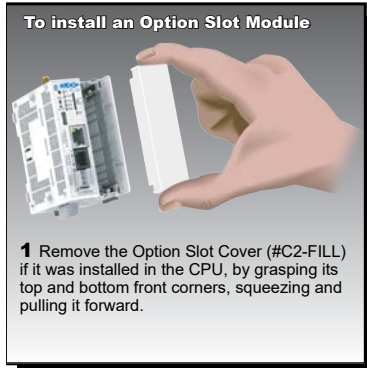


Hardware Installation, continued



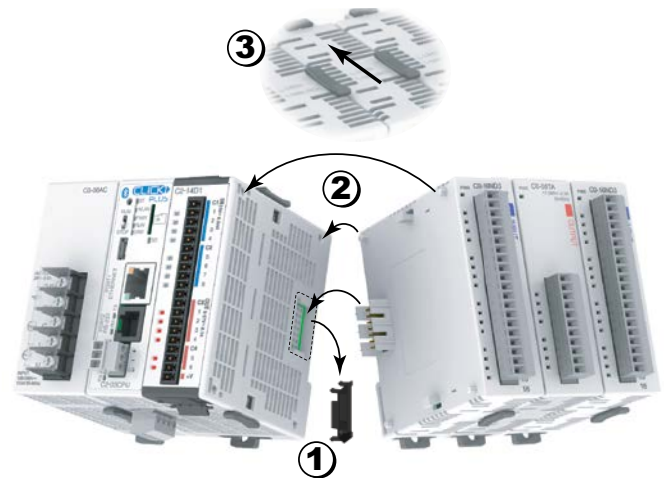
CAUTION Cut off all phases of the power source externally and wait **5 seconds** before installing or removing the Option Slot module or Stackable I/O of a running system.

INSTALL OR REMOVE THE OPTION SLOT MODULE



INSTALL OR REMOVE STACKABLE MODULES

1. Slide the expansion port LOCK lever to "UNLOCK" and remove bus cover.
2. Align I/O module with right hand side of CPU, engaging bus connector so that modules are flush.
3. Slide the "LOCK" lever firmly towards rear of modules, locking them together.



To remove a module, work the installation steps in reverse.

INSTALL OR REPLACE THE BATTERY

(Lithium CR2032 battery, Part # D0-MC-BAT, not included)

1. Power up the CPU for **at least 10 minutes** to charge the CPU's capacitor prior to removing the battery. This will retain function memories. We recommend you backup data memory before replacing the battery.
2. Power off the CPU.
3. Pull out the battery holder. (This may require a small screwdriver to push in the tab and lift it when the unit is mounted.)
4. Put in a new battery, with the positive (+) polarity side facing the battery holder.
5. Insert the battery holder into the CPU and push it all the way in.
6. Power on the CPU.



1 Power 10+ minutes

2 Remove Power

Battery life is about 3 years. Replace battery within 10 minutes of power off.



CAUTION Battery may explode if mistreated.

Do not recharge, disassemble, or dispose of in fire.

Setup & Provisioning via Bluetooth

The C2-03CPU and C2-03CPU-2 can be configured over a Bluetooth, Ethernet or micro USB connection. You will need a Windows® PC or a mobile device (iOS or Android) and an appropriate antenna or cable for the method you choose. This guide covers the simplest cases—setting up a new CLICK PLUS device using a mobile device over a Bluetooth connection or setup over USB connection to a PC. For other setup and provisioning methods, including the use of preconfigured provisioning files, please see the CLICK PLUS User Manual or Software help file.

Connection Requirements	
Method	Requirements
Bluetooth	2.4 GHz antenna* (SE-ANT210 or SE-ANT250)

* A remote-mounted antenna is recommended to connect with the enclosure closed.

PREPARE A MOBILE DEVICE FOR CONNECTION

Install the CLICK PLUS Provisioning App using one of the QR codes below, or search for the app in the appropriate app store (CLICK PLUS Provisioning, published by Automationdirect.com).

Apple Store



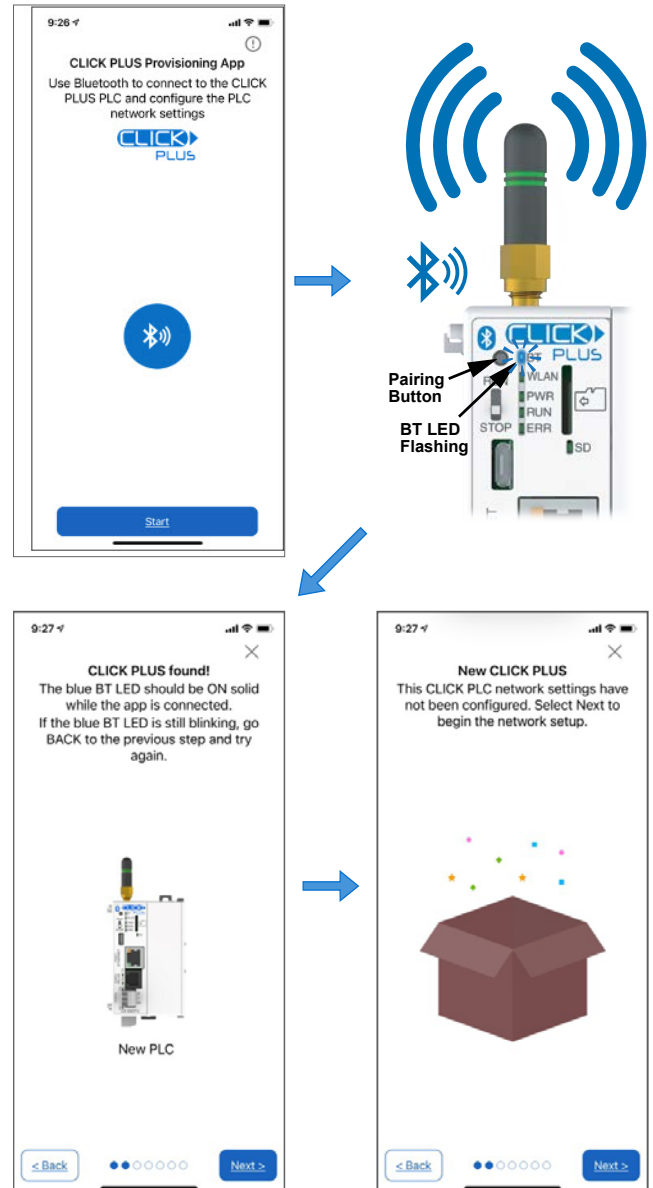
Google Play Store



FIND THE NEW CPU

Connect to the CPU as follows:

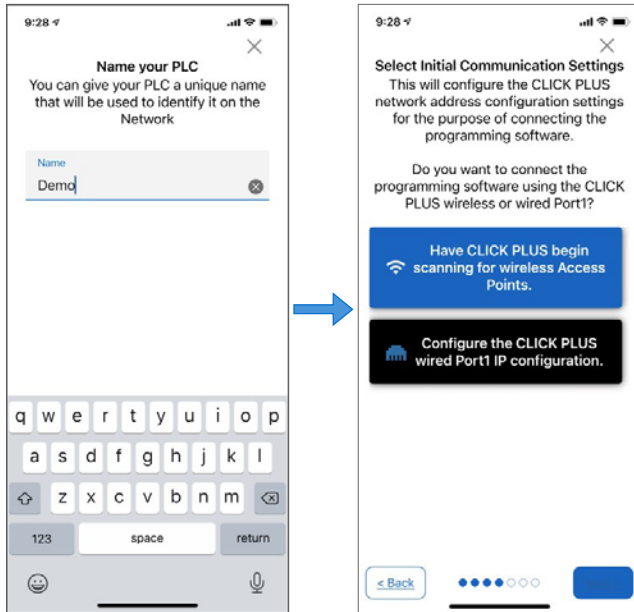
1. Open the CLICK PLUS Provisioning App.
2. Tap *Start* in the App.
3. Cycle power on the CLICK PLUS CPU or press the Pairing button on the CLICK PLUS CPU for 1 second. (A factory-default CPU will be in pairing mode for 30 seconds after power is applied.) The blue BT LED will start flashing.
4. The App will find the CLICK PLUS PLC that's in Provisioning mode. The blue BT LED will be ON solid when the App is connected to the PLC. Tap *Next* in the App to continue.
5. If the App detects that the PLC is factory new and the network settings have not been configured, it will prompt you to Tap *Next* to begin the provisioning process.



Setup & Provisioning via Bluetooth, continued

NAME THE CPU AND SELECT A PORT

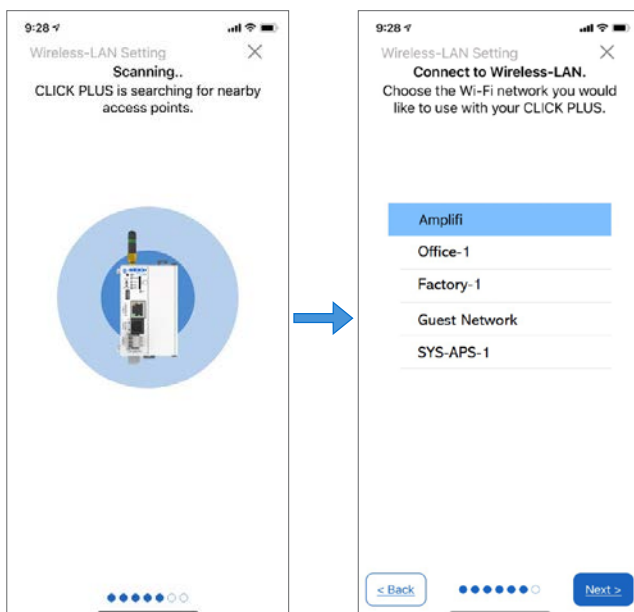
- Enter a name for the CPU and tap *Next*. Choose a unique name if other CLICK PLCs are on your network.
- Choose which network port to provision (wired or wireless).



CONNECT TO A WIRELESS ACCESS POINT (SKIP FOR WIRED CONNECTION)

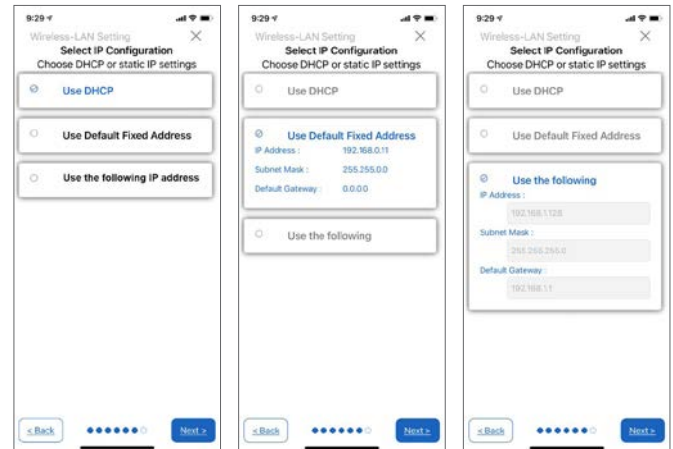
You will need an active Network Access point available within range of the CLICK PLUS PLC, and know the password to allow the PLC to connect to the Network.

- The CLICK PLC will scan for any access point within range. Select an Access Point and type in the correct password that the PLC will need to connect.



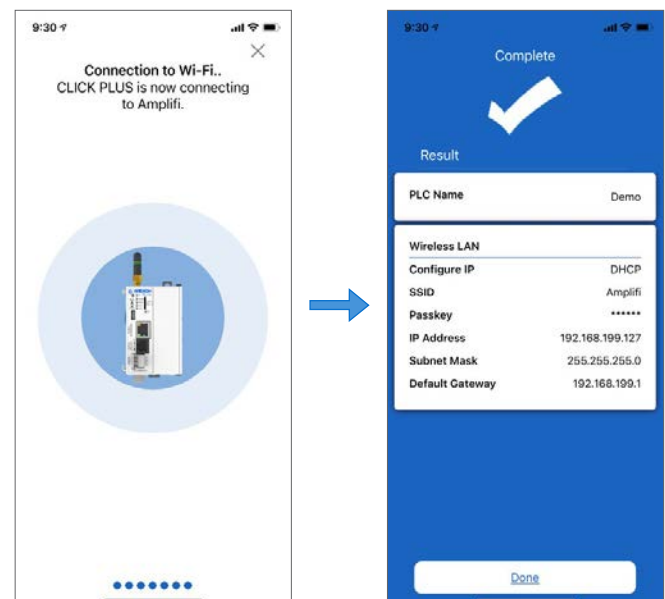
SET UP NETWORK PARAMETERS

- Once the PLC is connected to the wireless access point or wired network, choose which IP address configuration to use, then tap *Next* to continue.
 - Use DHCP*: Automatically assign a network IP address to the CLICK PLUS PLC. This is often the simplest way to connect.
 - Use Default Fixed Address*:
Wireless: 192.168.0.11 Wired: 192.168.0.10
 - Use the following IP address*: Manually enter valid IP address, subnet mask, and gateway for your network.



- The CLICK PLUS will connect to the network and exchange configuration information. If the settings are correct, the App will show the Completion screen and the network settings of the CLICK PLUS can be viewed. If using a wireless connection, the CLICK PLUS WLAN LED will also be ON.

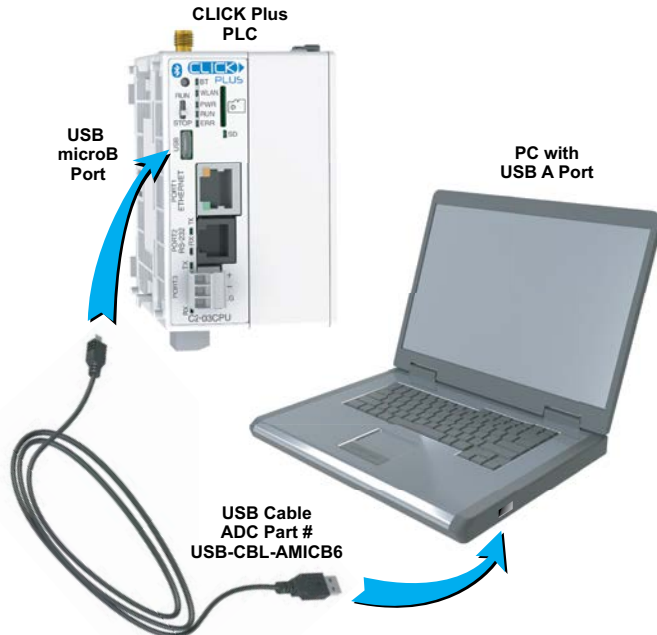
The PLC is now connected to the network and accessible to PCs running the CLICK Programming Software and connected to the same network.



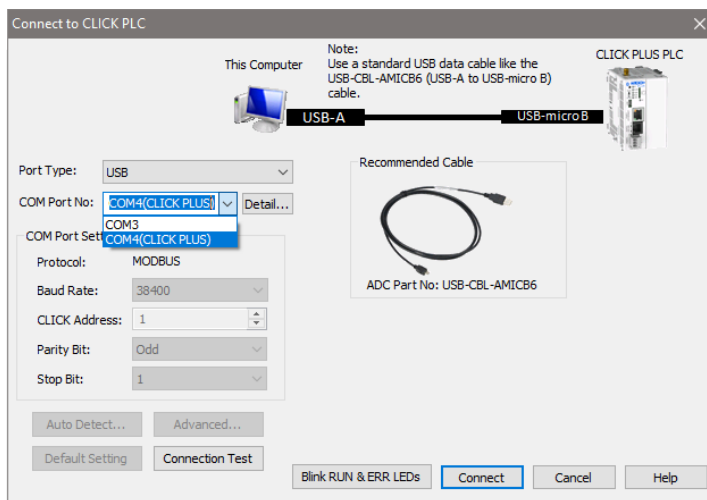
Connecting via USB

To connect the CLICK PLUS CPU to a PC, use a USB A to USB microB cable, such as the AutomationDirect USB-CBL-AMICB6 cable.

1. Connect the cable between the CPU microB port and an available USB port on your PC.



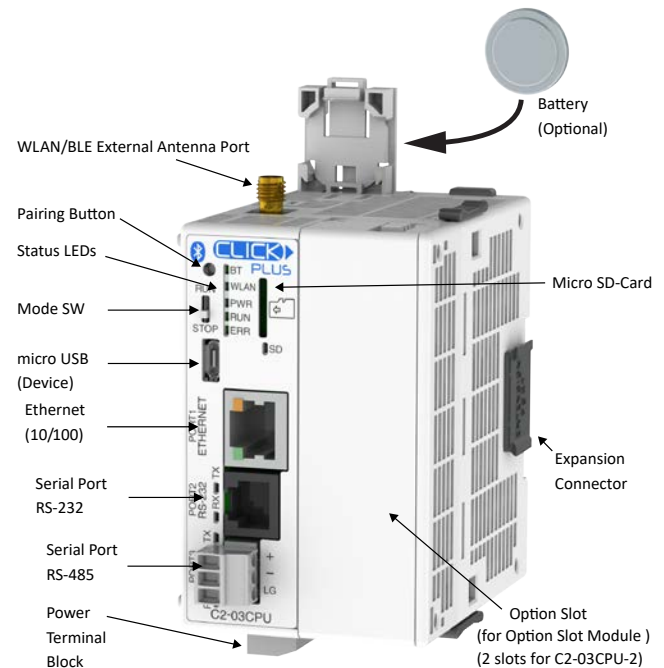
2. Once connected open the Software and select the PLC Menu and Connect.
3. In the Connect to PLC Window, select USB for Port Type.
4. For Com Port No., select the COMX (CLICK PLUS).



LOAD A PROJECT

The CLICK PLUS CPU is now ready to continue configuration using the CLICK software and load a project.

External Features



CPU is shown with optional C2-FILL Option Slot Cover installed.

LED Status Indicators

BLUETOOTH LED (Blue)	
On	Link
Blink	Activity (per packet)
Blink	Pairing Mode (500ms flash)
Blink	Disabled in PLC (200ms flash)
Off	No Link

WLAN LED (Green)	
On	Link
Blink	Activity
Off	No Link

MICRO SD LED (Green)	
On	Mounted
Blink	Access
Off	No SD Mounted

POWER LED (Green)	
On	Power Good
Blink	USB Low Power Mode
Off	Power Failure

RUN LED (Green)	
On	CPU Run Mode
Blink	Initializing Modules
Off	CPU Program Mode

ERROR LED (RED)	
On	Self Diagnostic Error
Blink	Self Diagnostic Warning
Off	No Error

LNK/ACT LED (Green)	
On	Connected to the network
Blink	Communicating
Off	Disconnected from the network

100MBIT LED (Orange)	
On	Communicating at 100Mbps
Off	Communicating at 10Mbps or disconnected from the network

TX & RX LED (Green)	
On	Com Port Data Active
Off	No Communication

C2-03CPU(-x)

Technical Specifications

Power Specifications		
	C2-03CPU	C2-03CPU-2
Power Input Voltage Range	20–28 VDC Class 2 or SELV(Safety Extra-Low Voltage) or Limited Energy Circuit power supply	
Maximum Power Consumption	20W	22W
Maximum Inrush Current	30A @ 1ms	
Acceptable External Power Drop	Max 10ms (AC Power Failure with C0-00AC or C0-01AC)	
Wire Range	16–28 AWG	
Wire Strip Length	7.0 mm	
Wire Specification	Lead-free, heat resistant, polyvinyl chloride insulated copper wire, rated over 80°C	
Screw Torque	2.0–2.2 lb-in [0.22–0.25 N·m]	
24VDC Power Terminal Block Replacement	AutomationDirect p/n C0-4TB	

General Specifications		
	C2-03CPU	C2-03CPU-2
Operating Temperature	32°F to 131°F [0°C to 55°C]	
Storage Temperature	–4°F to 158°F [–20°C to 70°C]	
Ambient Humidity	30% to 95% relative humidity (non-condensing)	
Altitude	Up to 2,000m	
Environmental Air	No corrosive gases Pollution Degree 2 (UL840)	
Environment	For Indoor Use Only	
Weight	114g [4.0 oz]	129g [4.6 oz]
Agency Approvals	UL61010 (File No. E157382, E316037); CE (EN61131-2); CUL Canadian C22.2	
Radio Standards	<ul style="list-style-type: none"> FCC part15C (US) RED Article3.2 (CE) IC RSS-247 (Canada) MIC Item 19 of Article 2-1. (Japan) AS/NZS 4268 (Australia and NEW ZEALAND) 	
Other	RoHS 2011/65/EU Amendment (EU)2015/863 Bluetooth SIG, SD associate	

Micro SD Card Slot Specifications	
Type	microSDHC
Format	FAT32
Capacity	4GB to 32GB
Status Lamp	MOUNTED/ACCESS

Wireless LAN (WLAN) Specifications	
Standard	IEEE 802.11/b/g/n
Frequency	2.4 GHz
Maximum Transmitting Power	20.5 dBm (112mW)
Transmission Distance	Up to 30m with no interference
Line Speed	Up to 150 Mbps
WLAN Mode	Station
Security	WPA/WPA2/WPA2-Enterprise/WPS
Encryption	AES/RSA/ECC/SHA
Antenna	External
RF Certification	FCC/CE(Red)/IC/MIC/AS/NZS
Status Lamp	WLAN(Green)

Bluetooth Specifications	
Standard	IEEE 802.15.1 v4.2 Bluetooth Low Energy
Frequency	2.4 GHz
Maximum Transmitting Power	0 dBm (1mW)
Transmission Distance	Up to 10m
Line Speed	Up to 1 Mbps
Antenna	External
Association Certification	Bluetooth SIG
Pairing	Yes
RF Certification	FCC/CE(Red)/IC/MIC/AS/NZS
Status Lamp	BT (Blue)

Ethernet Port Specifications	
Communications Ratings	10/100 Base-T
Cable Specifications	Category 5
Auto MDI/MDI-X	Yes
Connector	RJ45
Address Settings	<ul style="list-style-type: none"> IP address assigned by DHCP <ul style="list-style-type: none"> Fallback on DHCP failure: 169.254.x.x (APIPA) Default Fixed Address: <ul style="list-style-type: none"> IP Address: 192.168.0.10 Subnet Mask: 255.255.0.0 Default Gateway: 0.0.0.0 Manually configured Fixed Address
Status Lamp	LINK/ACT, 10/100

Technical Specifications, continued

USB Programming Port Specifications	
Communications Ratings	USB 2.0 Full Speed (12Mbps)
Connector	MicroB USB
Bus Power	USB Low power Mode: Max. 500mA USB power supplied when USB cable is connected. Disabled Functions: <ul style="list-style-type: none"> ▪ SD card access ▪ WLAN ▪ Bluetooth ▪ Stackable I/O ▪ RUN Mode
Recommended Cable	AutomationDirect p/n USB-CBL-AMICB6
USB Cable Length	Max 15 ft.

RS-232 Port Specifications	
Communications Ratings	RS-232
Port Settings	Baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115.2k bps Data bits: 7 bit, 8 bit Parity: None, Odd, Even Stop bits: 1 bit, 2 bits
Connector	RJ12 phone jack
Power Supply to HMI	Supply 5V 200mA
Status Lamp	RX, TX

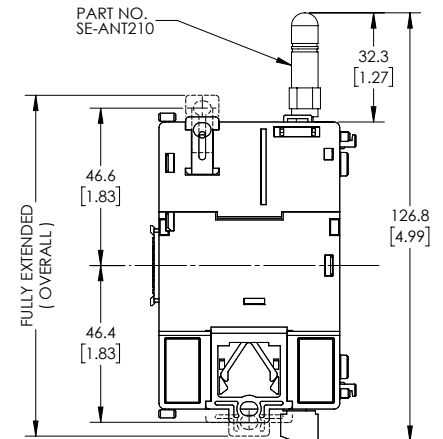
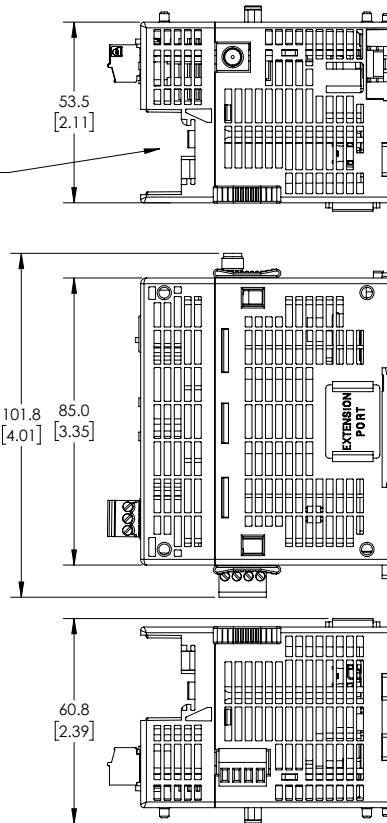
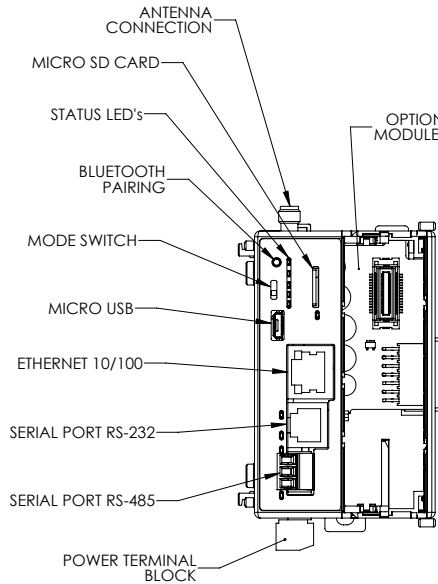
RS-485 Port Specifications	
Communications Ratings	RS-485
Port Settings	Baud rate: 2400, 4800, 9600, 19200, 38400, 57600, 115.2k bps Data bits: 7 bit, 8 bit Parity: None, Odd, Even Stop bits: 1 bit, 2 bits
Connector	3-wire terminal block
Terminal Type	Removable connector (AutomationDirect p/n C0-03TB or equiv.)
Wire Size Range	16–28 AWG
Wire Specification	Copper, rated over 60°C
Screw Torque	Min 0.22 N·m [1.95 lb-in]
Screwdriver Size	0.4 x 2.5 mm (AutomationDirect p/n TW-SD-VSL-1 or equiv.)
Pin Assignments	+: Differential signal + -: Differential signal - LG: Logic Ground
Status Lamp	RX, TX

Backup Battery Specifications	
Type	CR-2032 (AutomationDirect #D0-MC-BAT recommended)

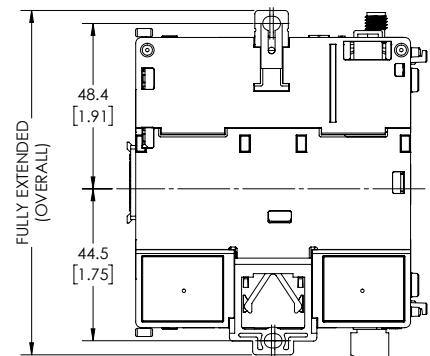
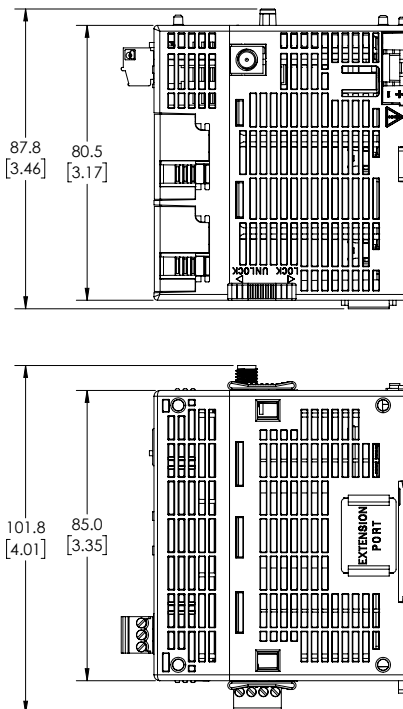
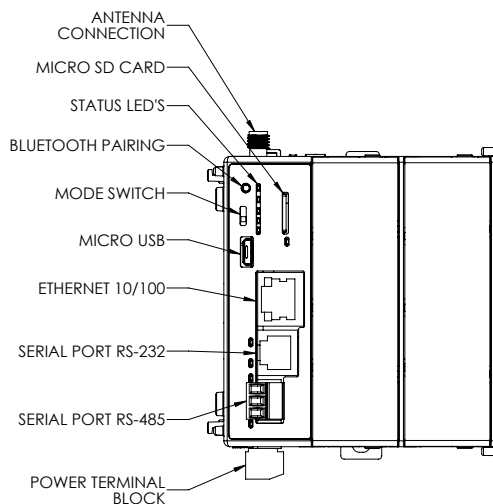
Mechanical Drawings

Unit Dimensions: mm [in]

C2-03CPU



C2-03 CPU-2



Accessories



C2-FILL

Snap-on CPU Option Slot cover for applications without an Option Slot module present.



D0-MC-BAT

Replacement battery for CLICK PLUS CPU units.



MSD-SLC16G

16GB microSD card, industrial grade, 3D NAND Flash (with SLC Mode), 70°C [158°F] max operating temp.



SE-ANT250

Dome 2.4 GHz antenna, IP67, panel mount, 9.8ft/3m cable length.



C0-4TB

Replacement terminal block for the 24VDC power connection. Sold in packs of 2.



C0-3TB

Replacement terminal block for the RS485 communications port. Sold in packs of 2.



SE-ANT210

Whip/straight 2.4 GHz antenna, IP65, connector mount.

FCC and ISED Regulatory Statements

The C2-03CPU and C2-03CPU-2 have achieved modular radio certification on a reference design for the United States and Canada. The reference design has been certified for Part 15.247 (Intentional Radiator) of the FCC rules and regulations, Industry Canada RSS-210.

Per FCC 15.19(a)(3) and (a)(4) This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The C2-03CPU and C2-03CPU-2 comply with Part 15.247 modular (Intentional Radiator) FCC rules and regulations. Changes or modifications not expressly approved by AutomationDirect could void the user's authority to operate the equipment.

Per RSS-Gen, Section 8.4 this device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Par RSS-Gen, Section 8.4 cet appareil est conforme à la norme RSS Industrie Canada exempt de licence. Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant causer un mauvais fonctionnement du dispositif.