CLICK PLUS
C2-01CPU Series Quick Start Guide

▼AUTOMATIONDIRECT.com
3505 HUTCHINSON ROAD
CUMMING, GA 30040-5860
1-800-633-0405

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

CLICK PLUS C2-01CPU(-x)

The CLICK PLUS C2-01CPU and C2-01CPU-2 offer the lowest-cost entry into our CLICK PLUS CPU family. They provide all the computing power of the CLICK PLUS line, and have USB, Ethernet and RS-232 connectivity built in. The CPUs are compatible with the full line of CLICK PLUS Option Slot modules and CLICK Stackable modules.
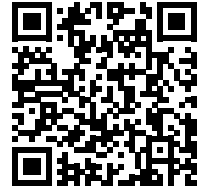
Key Features

- Real Time Clock/Calendar
- Battery backup (battery sold separately)
- RS-232 port
- microB USB port
- RJ-45 Ethernet

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 with Click Software ver. 3.20 or later
- 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.
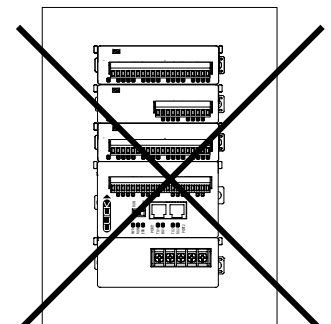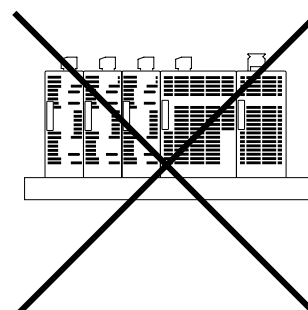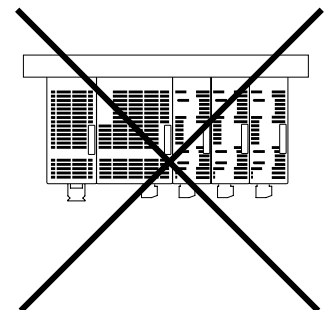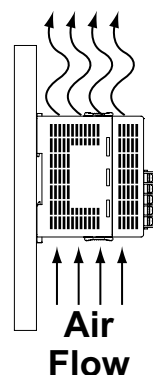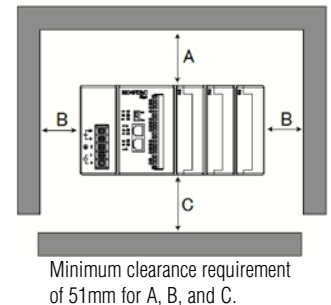
Hardware Installation

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

Minimum clearance requirement of 51mm for A, B, and C.

- Do not mount the unit upside down, on a horizontal surface, or in a vertical arrangement.
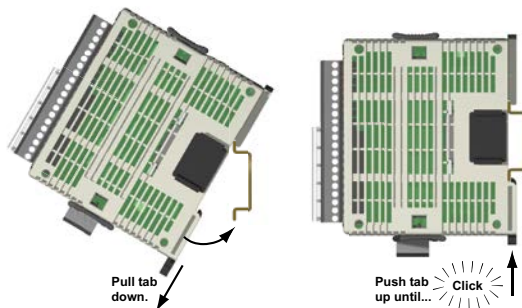

Air Flow

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

Pull tab down.

Push tab up until... Click

- 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

Upper Mounting Tab

Lower Mounting Tab

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	• 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.

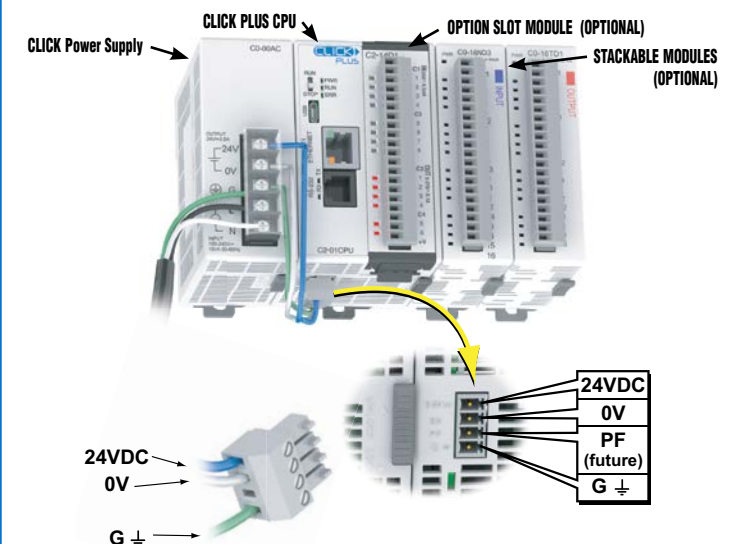| Company	Type	Model No.	Compliant Wire
AutomationDirect	Ferrule	V30AE000009 V30AE000041	0.2–0.5 mm² (22–26AWG)

* 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.

CLICK Power Supply

CLICK PLUS CPU

OPTION SLOT MODULE (OPTIONAL)

STACKABLE MODULES (OPTIONAL)

24VDC
0V
PF (future)
G ⏚

24VDC
0V

G ⏚

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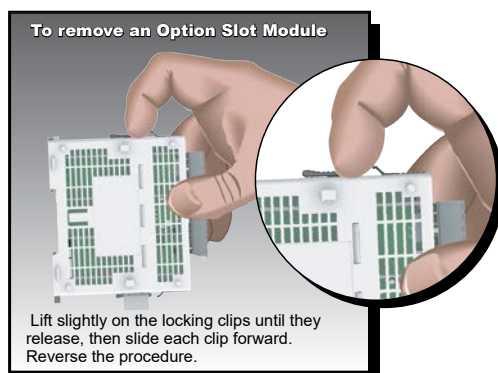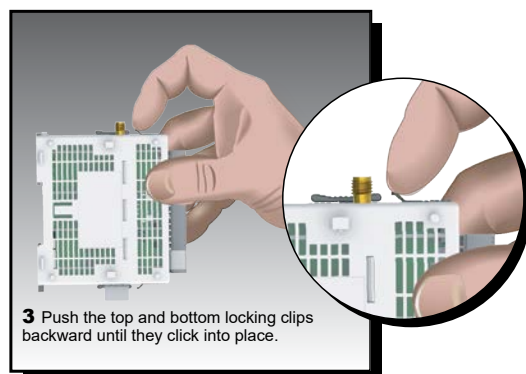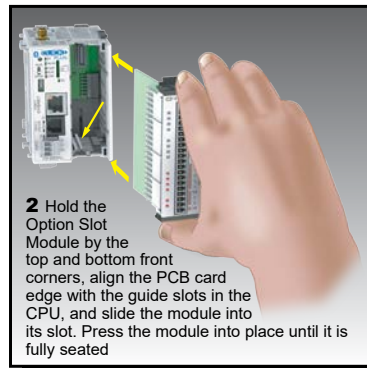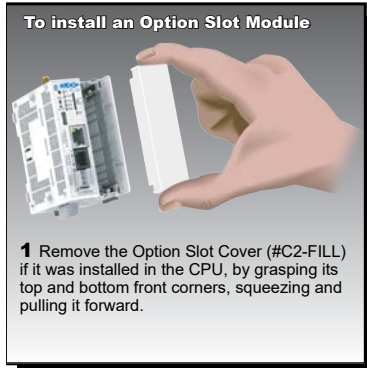
I/O wiring is discussed in each module's documentation.

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## 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

To install an Option Slot Module

1 Remove the Option Slot Cover (#C2-FILL) if it was installed in the CPU, by grasping its top and bottom front corners, squeezing and pulling it forward.

2 Hold the Option Slot Module by the top and bottom front corners, align the PCB card edge with the guide slots in the CPU, and slide the module into its slot. Press the module into place until it is fully seated

3 Push the top and bottom locking clips backward until they click into place.

To remove an Option Slot Module

Lift slightly on the locking clips until they release, then slide each clip forward. Reverse the procedure.

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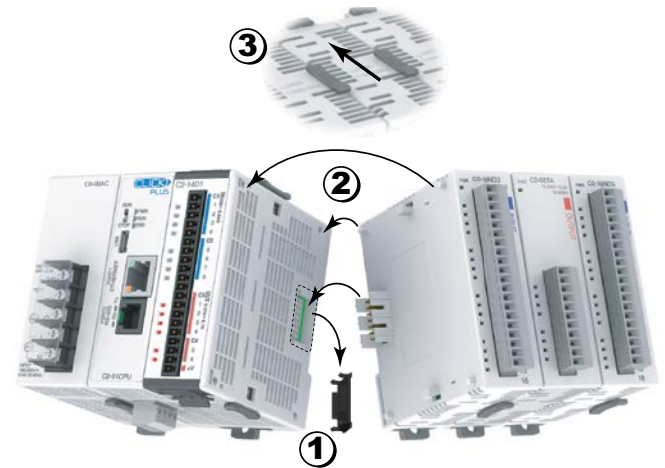
To remove a module, work the installation steps in reverse.

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.

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

① Power 10+ minutes
② Remove Power

⚠️ **CAUTION** Battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

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.

CLICK Plus PLC

USB microB Port

PC with USB A Port

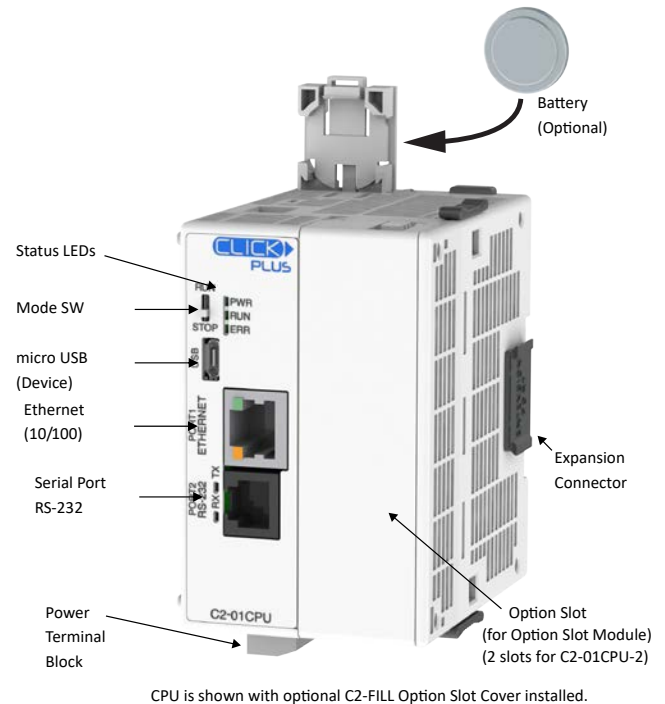USB Cable ADC Part # USB-CBL-AMICB6
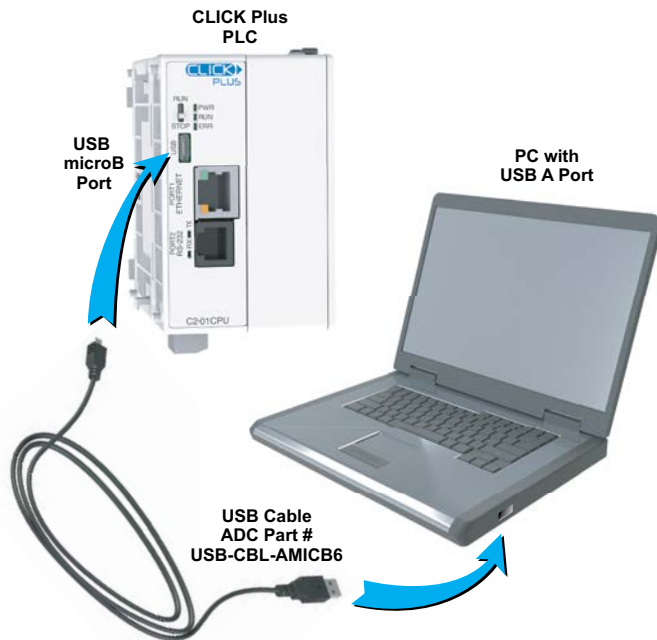
2. Once connected open the Software and select the PLC Menu and Connect.

3. In the Connect to PLC Window, select USB for Port Type.

4. For Com Port No., select the COMX (CLICK PLUS).
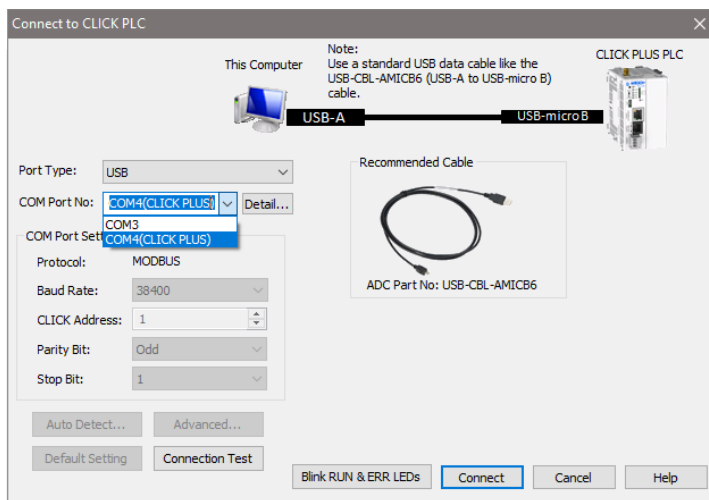
LOAD A PROJECT

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

External Features

Battery (Optional)

Status LEDs

Mode SW

micro USB (Device)

Ethernet (10/100)

Serial Port RS-232

Power Terminal Block

Expansion Connector

Option Slot (for Option Slot Module) (2 slots for C2-01CPU-2)

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

LED Status Indicators

C2-01CPU(-x)

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

Technical Specifications

Power Specifications

	C2-01CPU	C2-01CPU-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

	C2-01CPU	C2-01CPU-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	99g [3.5 oz]	114g [4.0 oz]
Agency Approvals	UL61010 (File No. E157382, E316037); CE (EN61131-2); CUL Canadian C22.2	
Other	RoHS 2011/65/EU Amendment (EU)2015/863	

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: ▪ Stackable I/O BUS ▪ 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

Ethernet Port Specifications

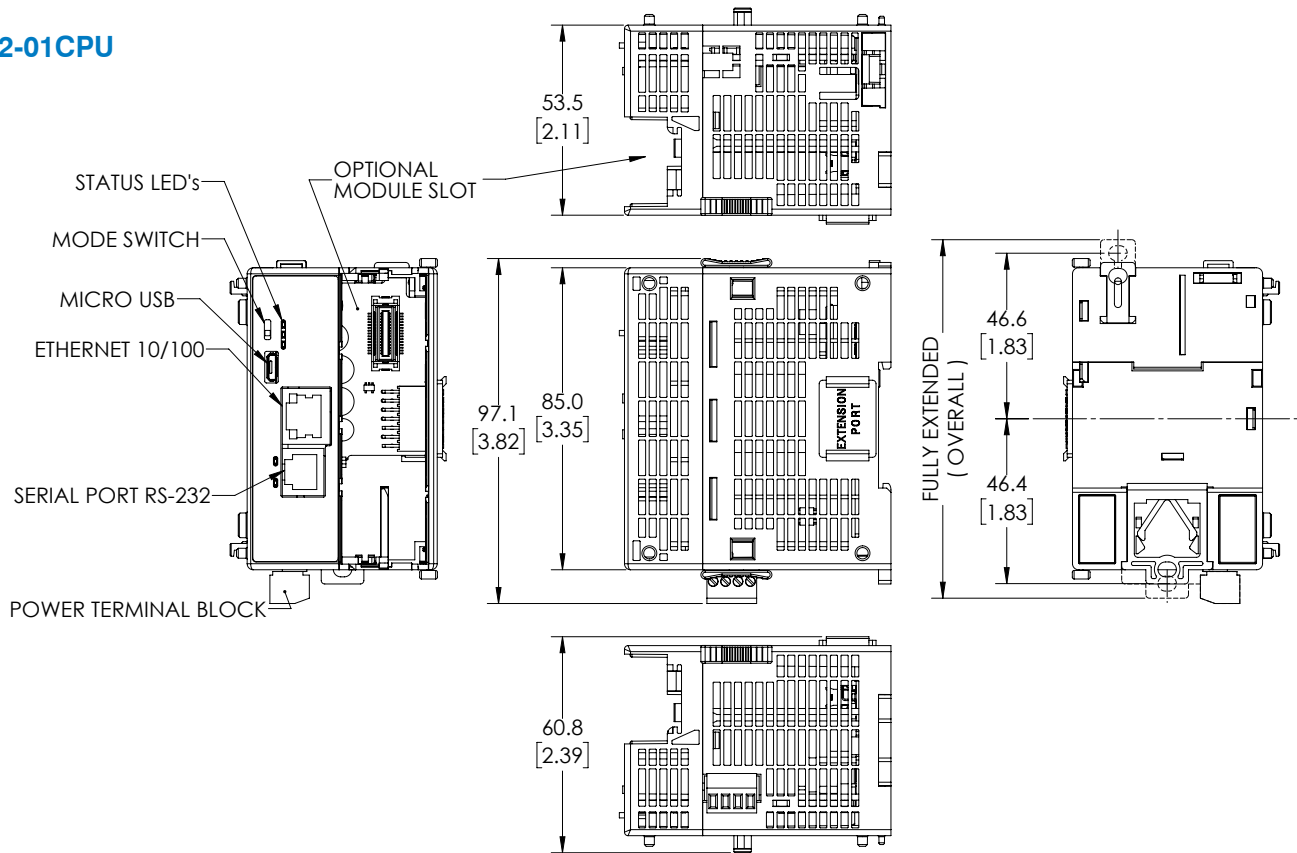|	
Communications Ratings	10/100 Base-T
Cable Specifications	Category 5
Auto MDI/MDI-X	Yes
Connector	RJ45
Default Settings	▪ IP address assigned by DHCP ▫ Fallback on DHCP failure: 169.254.x.x (APIPA) ▪ Default Fixed Address: ▫ IP Address: 192.168.0.10 ▫ Subnet Mask: 255.255.0.0 ▫ Default Gateway: 0.0.0.0 ▪ Manually configured Fixed Address
Status Lamp	LINK/ACT, 10/100

Backup Battery Specifications

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

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Mechanical Drawings

Unit Dimensions: mm [in]

C2-01CPU

STATUS LED's
MODE SWITCH
MICRO USB
ETHERNET 10/100
SERIAL PORT RS-232
POWER TERMINAL BLOCK
OPTIONAL MODULE SLOT

53.5 [2.11]
97.1 [3.82]
85.0 [3.35]
60.8 [2.39]
46.6 [1.83]
46.4 [1.83]
FULLY EXTENDED (OVERALL)
EXTENSION PORT

C2-01CPU-2

EXPANSION SLOTS
STATUS LED's
MODE SWITCH
MICRO USB
ETHERNET 10/100
SERIAL PORT RS-232
POWER TERMINAL BLOCK

87.8 [3.46]
80.5 [3.17]
97.1 [3.82]
85.0 [3.35]
46.4 [1.83]
46.6 [1.83]
FULLY EXTENDED (OVERALL)
EXTENSION PORT
LOCK UNLOCK

www.automationdirect.com/clickplcs

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.

C0-4TB
Replacement terminal block for the 24VDC power connection. Sold in packs of 2.

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