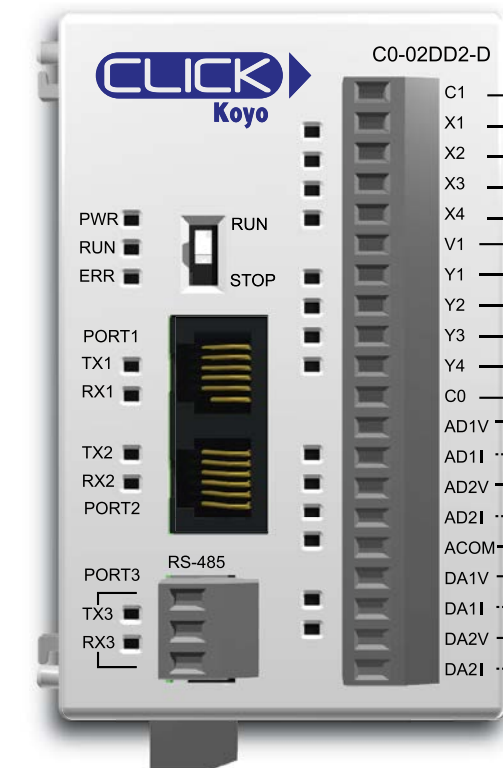


# Analog PLC

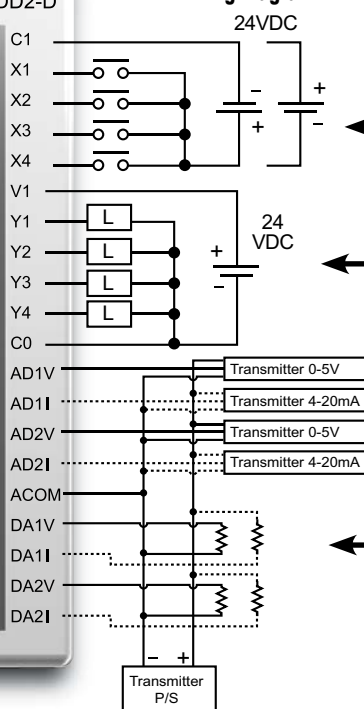
**C0-02DD2-D \$195.00**
**4 DC Input/4 Sourcing DC Output; 2 Analog In/2 Analog Out Micro PLC**

## General Specifications

|                                            |                     |
|--------------------------------------------|---------------------|
| <b>Current Consumption at 24VDC</b>        | 140mA               |
| <b>Terminal Block Replacement Part No.</b> | C0-16TB             |
| <b>Drawing Link</b>                        | <a href="#">PDF</a> |
| <b>Weight</b>                              | 5.3 oz [150g]       |



### Wiring Diagram



See Discrete I/O Specifications - Inputs (X1 through X4)

See Discrete I/O Specifications - Outputs (Y1 through Y4)

See Analog I/O Specifications - Voltage & Current Input (AD1V through AD2I)

See Analog I/O Specifications - Voltage & Current Output (DA1V through DA2I)



**NOTE:** There are no **ZIPLink** pre-wired PLC connection cables and modules for the Analog PLCs (cannot mix discrete I/O and analog I/O signals in a **ZIPLink** cable).



**WARNING:** YOU MUST USE PROPER SOFTWARE AND FIRMWARE FOR THIS PLC UNIT.



**IMPORTANT:** YOU CAN USE ONLY ONE TERMINAL (VOLTAGE OR CURRENT) PER CHANNEL. YOU MUST ALSO SELECT THE ANALOG TYPE (VOLTAGE OR CURRENT) IN THE CPU BUILT-IN I/O SETUP IN THE CLICK PROGRAMMING SOFTWARE (PULL-DOWN MENU SETUP > CPU BUILT-IN I/O SETUP).

| Serial Number*     | Software       | Firmware       |
|--------------------|----------------|----------------|
| Before 174018001   | V1.12 or later | V1.10 or later |
| 174018001 or later | V2.10 or later | V2.10 or later |

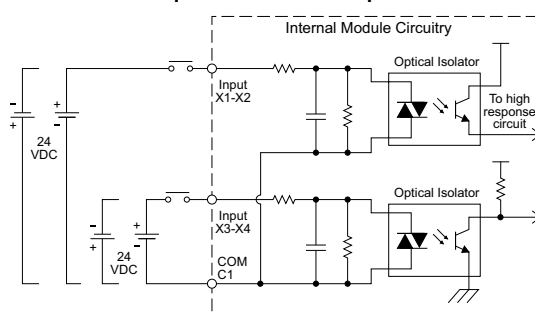
\*You can find the serial number on the bottom of the product label.

### X1 - X4

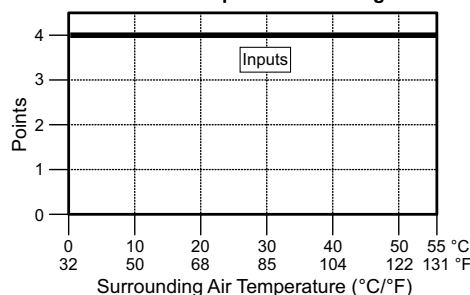
| Discrete I/O Specifications - Inputs |                                                    |
|--------------------------------------|----------------------------------------------------|
| <b>Inputs per Module</b>             | 4 (Sink/Source)                                    |
| <b>Operating Voltage Range</b>       | 24VDC                                              |
| <b>Input Voltage Range</b>           | 21.6–26.4 VDC                                      |
| <b>Input Current</b>                 | X1-2: Typ 5mA @ 24VDC<br>X3-4: Typ 4mA @ 24VDC     |
| <b>Maximum Input Current</b>         | X1-2: 6.0 mA @ 26.4 VDC<br>X3-4: 5.0 mA @ 26.4 VDC |
| <b>Input Impedance</b>               | X1-2: 4.7 kΩ @ 24VDC<br>X3-4: 6.8 kΩ @ 24VDC       |
| <b>ON Voltage Level</b>              | X1-2: > 19VDC<br>X3-4: > 19VDC                     |
| <b>OFF Voltage Level</b>             | X1-2: < 4VDC<br>X3-4: < 7VDC                       |
| <b>Minimum ON Current</b>            | X1-2: 4.5 mA<br>X3-4: 3.5 mA                       |
| <b>Maximum OFF Current</b>           | X1-2: 0.1 mA<br>X3-4: 0.5 mA                       |
| <b>OFF to ON Response</b>            | X1-2: Typ 5μs Max 20μs*<br>X3-4: Typ 2ms Max 10ms  |
| <b>ON to OFF Response</b>            | X1-2: Typ 5μs Max 20μs*<br>X3-4: Typ 3ms Max 10ms  |
| <b>Status Indicators</b>             | Logic Side (4 points, green LED)                   |
| <b>Commons</b>                       | 1 (4 points/common)                                |

\* Threshold level is 70% amplitude.

### Equivalent Discrete Input Circuit



### C0-02DD2-D Temperature Derating Chart



# Analog PLC

## C0-02DD2-D (cont'd)

Y1 - Y4

### Discrete I/O Specifications - Outputs

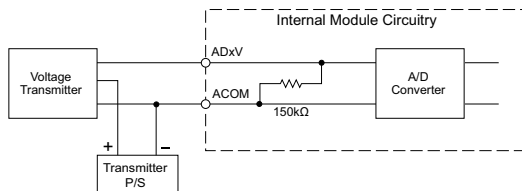
|                                |                                            |
|--------------------------------|--------------------------------------------|
| <b>Outputs per Module</b>      | 4 (Source)                                 |
| <b>Operating Voltage Range</b> | 24VDC                                      |
| <b>Output Voltage Range</b>    | 19.2–30 VDC                                |
| <b>Maximum Output Current</b>  | 0.1 A/point, 0.4 A/common                  |
| <b>Minimum Output Current</b>  | 0.2 mA                                     |
| <b>Maximum Leakage Current</b> | Y1 : 0.1 mA @ 30VDC; Y2-4 : 0.1 mA @ 30VDC |
| <b>On Voltage Drop</b>         | Y1: 1VDC @ 0.1 A; Y2-4 : 0.5 VDC @ 0.1 mA  |
| <b>Maximum Inrush Current</b>  | 150mA for 10ms                             |
| <b>OFF to ON Response</b>      | Y1: typ 5μs; max 20μs; Y2-4: < 0.5 ms      |
| <b>ON to OFF Response</b>      | Y1: typ 5μs; max 20μs; Y2-4: < 0.5 ms      |
| <b>Status Indicators</b>       | Logic Side (4 points, red LED)             |
| <b>Commons</b>                 | 1 (4 points/common)                        |

AD1V - AD2I

### Analog Specifications - Voltage Input

|                                       |                                                   |
|---------------------------------------|---------------------------------------------------|
| <b>Number of Channels</b>             | 2 (voltage/current selectable)                    |
| <b>Input Range</b>                    | 0–5 VDC (6 VDC Max.)                              |
| <b>Resolution</b>                     | 12-bit                                            |
| <b>Conversion Time</b>                | 50ms                                              |
| <b>Input Impedance</b>                | 25kΩ<br>150kΩ (Serial numbers prior to 174018001) |
| <b>Input Stability</b>                | ±2 LSB maximum                                    |
| <b>Full-Scale Calibration Error</b>   | ±1.2% maximum                                     |
| <b>Offset Calibration Error</b>       | ±5mV maximum                                      |
| <b>Accuracy vs. Temperature Error</b> | ±100ppm / °C maximum                              |

Analog Voltage Input Circuit

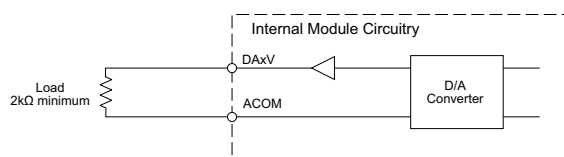


DA1V - DA2I

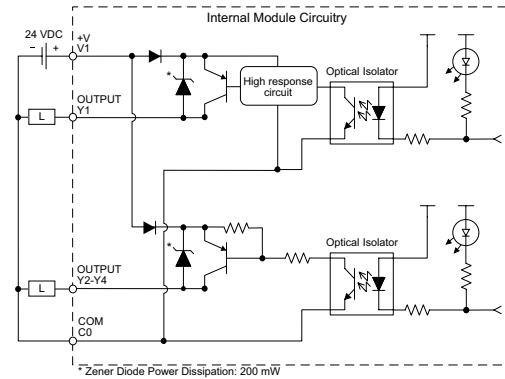
### Analog Specifications - Voltage Output

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Outputs per Module</b>            | 2 (voltage/current selectable)              |
| <b>Output Range</b>                  | 0–5 VDC                                     |
| <b>Resolution</b>                    | 12-bit                                      |
| <b>Conversion Time</b>               | 1ms                                         |
| <b>Load Impedance</b>                | 2kΩ minimum (output current 2.5 mA maximum) |
| <b>Full-Scale Calibration Error</b>  | ±0.8% maximum                               |
| <b>Offset Calibration Error</b>      | ±5mV maximum                                |
| <b>Accuracy vs Temperature Error</b> | ±100ppm / °C maximum                        |

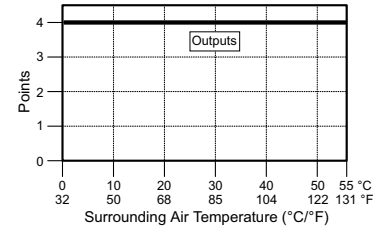
Analog Voltage Output Circuit



Equivalent Output Circuit



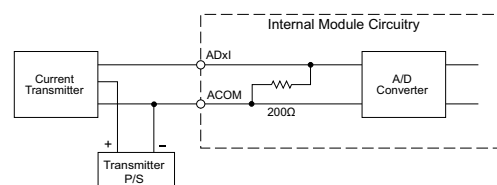
C0-02DD2-D Temperature Derating Chart



### Analog Specifications - Current Input

|                                      |                                                  |
|--------------------------------------|--------------------------------------------------|
| <b>Inputs per Module</b>             | 2 (voltage/current selectable)                   |
| <b>Input Range</b>                   | 4–20 mA (sink)                                   |
| <b>Resolution</b>                    | 12-bit                                           |
| <b>Conversion Time</b>               | 50ms                                             |
| <b>Input Impedance</b>               | 100Ω<br>200Ω (Serial numbers prior to 174018001) |
| <b>Input Stability</b>               | ±2 LSB                                           |
| <b>Full-Scale Calibration Error</b>  | ±1% maximum                                      |
| <b>Offset Calibration Error</b>      | ±0.1 mA maximum                                  |
| <b>Accuracy vs Temperature Error</b> | ±100 ppm / °C maximum                            |

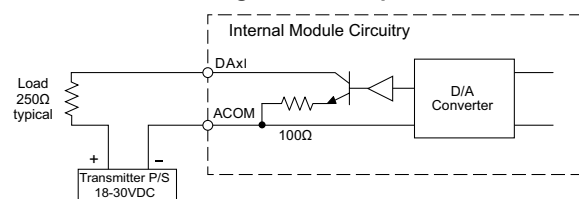
Analog Current Input Circuit



### Analog Specifications - Current Output

|                                      |                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Outputs per Module</b>            | 2 (voltage/current selectable)                                                                      |
| <b>Output Range</b>                  | 4–20 mA (sink)                                                                                      |
| <b>Resolution</b>                    | 12-bit                                                                                              |
| <b>Conversion Time</b>               | 1ms                                                                                                 |
| <b>Loop Supply Voltage</b>           | DC 18–30 V                                                                                          |
| <b>Load Impedance</b>                | 250Ω<br>Load Power Supply:<br>DC 18V: 600Ω maximum<br>DC 24V: 900Ω maximum<br>DC 30V: 1200Ω maximum |
| <b>Full-Scale Calibration Error</b>  | ±1% maximum                                                                                         |
| <b>Offset Calibration Error</b>      | ±0.1 mA maximum                                                                                     |
| <b>Accuracy vs Temperature Error</b> | ±100ppm / °C maximum                                                                                |

Analog Current Output Circuit



# CLICK PLC Specifications

## General Specifications For All CLICK PLC Products

These general specifications apply to all CLICK PLCs and optional power supply products. Please refer to the appropriate I/O temperature derating charts under both the PLC and I/O module specifications to determine best operating conditions based on the ambient temperature of your particular application.

| General Specifications       |                                                                                                                                                                                                                                                                                                     |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating Temperature</b> | Analog, analog combo I/O modules only:<br>32°F to 140°F [0°C to 60°C];<br>All other modules:<br>32°F to 131°F [0°C to 55°C],<br>IEC 60068-2-14 (Test Nb, Thermal Shock)                                                                                                                             |
| <b>Storage Temperature</b>   | -4°F to 158°F [-20°C to 70°C]<br>IEC 60068-2-1 (Test Ab, Cold)<br>IEC 60068-2-2 (Test Bb, Dry Heat)<br>IEC 60068-2-14 (Test Na, Thermal Shock)                                                                                                                                                      |
| <b>Ambient Humidity</b>      | 30% to 95% relative humidity (non-condensing)                                                                                                                                                                                                                                                       |
| <b>Environmental Air</b>     | No corrosive gases. Environmental pollution level is 2 (UL840)                                                                                                                                                                                                                                      |
| <b>Vibration</b>             | MIL STD 810C, Method 514.2, EC60068-2-27, Category [f],<br>Procedure[VIII]<br>JIS C60068-2-27 (Sine wave vibration test)                                                                                                                                                                            |
| <b>Shock</b>                 | MIL STD 810C, Method 516.2, IEC60068-2-27,<br>JIS C60068-2-27, Category [f], Procedure[VIII]                                                                                                                                                                                                        |
| <b>Noise Immunity</b>        | <EN61131-2><br>EN61000-4-2 (ESD)<br>EN61000-4-3 (RFI)<br>EN61000-4-4 (FTB)<br>EN61000-4-5 (Surge)<br>EN61000-4-6 (Conducted)<br>EN61000-4-8 (Power frequency magnetic field immunity)<br><br><Local Test><br>Impulse noise 1μs, 1000V<br>RFI: No interference measured at 150 and 450 MHz (5w/15cm) |
| <b>Emissions</b>             | EN55011:1998 Class A; EN61000-6-4:2007+A1:2011                                                                                                                                                                                                                                                      |
| <b>Agency Approvals</b>      | UL508, UL61010-2-201 (File No. E157382, E316037); CE (EN61131-2); CUL Canadian C22.2                                                                                                                                                                                                                |
| <b>Other</b>                 | RoHS 2011/65/EU Amendment (EU)2015/863                                                                                                                                                                                                                                                              |

# CLICK PLC Specifications

## PLC Unit Specifications

| Basic, Standard and Analog PLC Unit Specifications         |                                                         |                                                                 |                                                                 |
|------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
|                                                            | Basic PLC                                               | Standard PLC                                                    | Analog PLC                                                      |
| <b>Control Method</b>                                      | Stored Program/Cyclic execution method                  | Stored Program/Cyclic execution method                          | Stored Program/Cyclic execution method                          |
| <b>I/O Numbering System</b>                                | Fixed in Decimal                                        | Fixed in Decimal                                                | Fixed in Decimal                                                |
| <b>Ladder Memory (steps)</b>                               | 8000                                                    | 8000                                                            | 8000                                                            |
| <b>Total Data Memory (words)</b>                           | 8000                                                    | 8000                                                            | 8000                                                            |
| <b>Contact Execution (Boolean)</b>                         | < 0.6 us                                                | < 0.6 us                                                        | < 0.6 us                                                        |
| <b>Typical Scan (1K Boolean)</b>                           | 1-2 ms                                                  | 1-2 ms                                                          | 1-2 ms                                                          |
| <b>RLL Ladder Style Programming</b>                        | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>Run Time Edits</b>                                      | No                                                      | No                                                              | No                                                              |
| <b>Scan</b>                                                | Variable / fixed                                        | Variable / fixed                                                | Variable / fixed                                                |
| <b>CLICK Programming Software for Windows</b>              | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>Built-in Communication Ports</b>                        | Yes (two RS-232 ports)                                  | Yes (two RS-232 ports and one RS-485 port)                      | Yes (two RS-232 ports and one RS-485 port)                      |
| <b>Protocols</b>                                           | Protocols: Modbus RTU (master/slave) and ASCII (in/out) |                                                                 |                                                                 |
| <b>FLASH Memory</b>                                        | Standard on PLC                                         | Standard on PLC                                                 | Standard on PLC                                                 |
| <b>Built-in Discrete I/O points</b>                        | 8 inputs, 6 outputs                                     | 8 inputs, 6 outputs                                             | 4 inputs, 4 outputs                                             |
| <b>Built-in Analog I/O Channels</b>                        | No                                                      | No                                                              | 2 inputs, 2 outputs                                             |
| <b>Number of Instructions Available</b>                    | 21                                                      | 21                                                              | 21                                                              |
| <b>Control Relays</b>                                      | 2000                                                    | 2000                                                            | 2000                                                            |
| <b>System Control Relays</b>                               | 1000                                                    | 1000                                                            | 1000                                                            |
| <b>Timers</b>                                              | 500                                                     | 500                                                             | 500                                                             |
| <b>Counters</b>                                            | 250                                                     | 250                                                             | 250                                                             |
| <b>Interrupts</b>                                          | Yes (external: 8 / timed: 4)                            | Yes (external: 8 / timed: 4)                                    | Yes (external: 4 / timed: 4)                                    |
| <b>Subroutines</b>                                         | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>For/Next Loops</b>                                      | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>Math (Integer and Hex)</b>                              | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>Drum Sequencer Instruction</b>                          | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>Internal Diagnostics</b>                                | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>Password Security</b>                                   | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>System Error Log</b>                                    | Yes                                                     | Yes                                                             | Yes                                                             |
| <b>User Error Log</b>                                      | No                                                      | No                                                              | No                                                              |
| <b>Memory Backup</b>                                       | Super Capacitor                                         | Super Capacitor + Battery                                       | Super Capacitor + Battery                                       |
| <b>Battery Backup</b>                                      | No                                                      | Yes (battery sold separately; part # <a href="#">D2-BAT-1</a> ) | Yes (battery sold separately; part # <a href="#">D2-BAT-1</a> ) |
| <b>Calendar/Clock</b>                                      | No                                                      | Yes                                                             | Yes                                                             |
| <b>I/O Terminal Block Replacement</b>                      | AutomationDirect p/n <a href="#">C0-16TB</a>            | AutomationDirect p/n <a href="#">C0-16TB</a>                    | AutomationDirect p/n <a href="#">C0-16TB</a>                    |
| <b>Communication Port &amp; Terminal Block Replacement</b> | N/A                                                     | AutomationDirect p/n <a href="#">C0-3TB</a>                     | AutomationDirect p/n <a href="#">C0-3TB</a>                     |
| <b>24VDC Power Terminal Block Replacement</b>              | AutomationDirect p/n <a href="#">C0-4TB</a>             | AutomationDirect p/n <a href="#">C0-4TB</a>                     | AutomationDirect p/n <a href="#">C0-4TB</a>                     |

# CLICK Specifications

## CLICK PLC Hardware/Software Compatibility

CLICK PLCs require a minimum software version of v2.50 for the PID function. The table below shows the most recent software and hardware versions required for the High-Speed input operation capability to be accessible.

| CLICK PLC Features Software Compatibility |                                                            |                                |                   |             |       |       |
|-------------------------------------------|------------------------------------------------------------|--------------------------------|-------------------|-------------|-------|-------|
| CPU Type                                  | Part Number                                                | Minimum CLICK Software Version |                   |             |       |       |
|                                           |                                                            | Hardware                       | High-Speed Inputs | EtherNet/IP | PID   | DHCP  |
| Basic                                     | <a href="#">C0-00DD1-D</a>                                 | v1.00                          | N/A               | N/A         | N/A   | N/A   |
|                                           | <a href="#">C0-00DD2-D</a>                                 |                                |                   |             |       |       |
|                                           | <a href="#">C0-00DR-D</a>                                  |                                |                   |             |       |       |
|                                           | <a href="#">C0-00AR-D</a>                                  |                                |                   |             |       |       |
| Standard                                  | <a href="#">C0-01DD1-D</a>                                 | v1.20                          | N/A               | N/A         | N/A   | N/A   |
|                                           | <a href="#">C0-01DD2-D</a>                                 |                                |                   |             |       |       |
|                                           | <a href="#">C0-01DR-D</a>                                  |                                |                   |             |       |       |
|                                           | <a href="#">C0-01AR-D</a>                                  |                                |                   |             |       |       |
| Analog                                    | <a href="#">C0-02DD1-D</a> (before SN 171208001)           | v1.12                          | N/A               | N/A         | N/A   | N/A   |
|                                           | <a href="#">C0-02DD1-D</a> (after SN 171208001)            | v2.10                          |                   |             |       |       |
|                                           | <a href="#">C0-02DD2-D</a> (before SN 174018001)           | v1.12                          |                   |             |       |       |
|                                           | <a href="#">C0-02DD2-D</a> (after SN 174018001)            | v2.10                          |                   |             |       |       |
|                                           | <a href="#">C0-02DR-D</a> (before SN 173158001)            | v1.12                          |                   |             |       |       |
|                                           | <a href="#">C0-02DR-D</a> (after SN 173158001)             | v2.10                          |                   |             |       |       |
| Ethernet CPUs                             | Ethernet CPUs require v2.40 for EtherNet/IP communications |                                |                   |             |       |       |
| Ethernet Basic                            | <a href="#">C0-10DD1E-D</a>                                | v2.00                          | v2.30             | v2.40       | v2.50 | v3.00 |
|                                           | <a href="#">C0-10DD2E-D</a>                                |                                |                   |             |       |       |
|                                           | <a href="#">C0-10DRE-D</a>                                 |                                | N/A               |             |       |       |
|                                           | <a href="#">C0-10ARE-D</a>                                 |                                |                   |             |       |       |
| Ethernet Standard                         | <a href="#">C0-11DD1E-D</a>                                | v2.00                          | v2.30             | v2.40       | v2.50 | v3.00 |
|                                           | <a href="#">C0-11DD2E-D</a>                                |                                |                   |             |       |       |
|                                           | <a href="#">C0-11DRE-D</a>                                 |                                | N/A               |             |       |       |
|                                           | <a href="#">C0-11ARE-D</a>                                 |                                |                   |             |       |       |
| Ethernet Analog                           | <a href="#">C0-12DD1E-D</a>                                | v2.20                          | v2.30             | v2.40       | v2.50 | v3.00 |
|                                           | <a href="#">C0-12DD2E-D</a>                                |                                |                   |             |       |       |
|                                           | <a href="#">C0-12DRE-D</a>                                 |                                | N/A               |             |       |       |
|                                           | <a href="#">C0-12ARE-D</a>                                 |                                |                   |             |       |       |
|                                           | <a href="#">C0-12DD1E-1-D</a>                              |                                | v2.30             |             |       |       |
|                                           | <a href="#">C0-12DD2E-1-D</a>                              |                                |                   |             |       |       |
|                                           | <a href="#">C0-12DRE-1-D</a>                               |                                | N/A               |             |       |       |
|                                           | <a href="#">C0-12ARE-1-D</a>                               |                                |                   |             |       |       |
|                                           | <a href="#">C0-12DD1E-2-D</a>                              |                                | v2.30             |             |       |       |
|                                           | <a href="#">C0-12DD2E-2-D</a>                              |                                |                   |             |       |       |
|                                           | <a href="#">C0-12DRE-2-D</a>                               |                                | N/A               |             |       |       |
|                                           | <a href="#">C0-12ARE-2-D</a>                               |                                |                   |             |       |       |
| I/O Modules                               | <a href="#">C0-08NE3</a>                                   | v1.20                          | N/A               | N/A         | N/A   | N/A   |
|                                           | <a href="#">C0-16NE3</a>                                   |                                |                   |             |       |       |
|                                           | <a href="#">C0-04AD-1</a>                                  | v1.40                          |                   |             |       |       |
|                                           | <a href="#">C0-04AD-2</a>                                  |                                |                   |             |       |       |
|                                           | <a href="#">C0-04DA-1</a>                                  |                                |                   |             |       |       |
|                                           | <a href="#">C0-04DA-2</a>                                  |                                |                   |             |       |       |
|                                           | <a href="#">C0-4AD2DA-1</a>                                |                                |                   |             |       |       |
|                                           | <a href="#">C0-4AD2DA-2</a>                                |                                |                   |             |       |       |
|                                           | <a href="#">C0-04RTD</a>                                   |                                |                   |             |       |       |
|                                           | <a href="#">C0-04THM</a>                                   |                                |                   |             |       |       |
|                                           | <a href="#">C0-08CDR</a>                                   |                                |                   |             |       |       |
|                                           | <a href="#">C0-16CDD1</a>                                  |                                |                   |             |       |       |
|                                           | <a href="#">C0-16CDD2</a>                                  |                                |                   |             |       |       |
|                                           | <a href="#">C0-04POT</a>                                   | v3.70                          |                   |             |       |       |
|                                           | Other modules                                              | v1.00                          |                   |             |       |       |

# CLICK PLC Family Overview

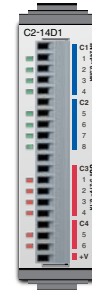
## What you'll need

Of course, what you'll need for your system depends on your particular application, but this overview shows you what you'll need for a simple system.

### 1. Select your **CLICK** or **CLICK PLUS** PLC unit.



### 2. If using a **CLICK PLUS** PLC, select an Option Slot Module if desired.



### 3. If you need additional I/O, select from 24 different types of Stackable I/O modules.



### 4. Select a 24VDC power supply.



or



### 5. Download the **FREE CLICK** programming software. [support.automationdirect.com/products/clickplcs.html](http://support.automationdirect.com/products/clickplcs.html)



### 6. Download the **FREE CLICK** mobile app. The **CLICK** mobile app is available for **iOS** and **Android**. It can connect to your **C2-02CPU** or **C2-03CPU** over **Bluetooth** to provision the PLC onto a **Wi-Fi** network. (PLC requires an external antenna)



# CLICK PLC Family Overview

## What you'll need (continued)

### 7. Select your PC-to-PLC programming cable.

If your PC has a USB port, use cable [EA-MG-PGM-CBL](#) to connect to the PLC port. If your PC has a 9-pin serial communications port, use programming cable [D2-DSCBL](#). If your PC has an Ethernet port, use [C5E-STPYL-C3](#) (crossover) or [C5E-STPYL-S3](#) (straight through) Ethernet cable. If your PC is on a network with a wireless access point, you can connect using one of our Wi-Fi antennas.

**[USB-CBL-AMICB6](#)**



**USB A to USB microB  
Programming Cable Assembly  
(CLICK PLUS Only)**

**[C5E-STPYL-C3](#) (crossover)  
[C5E-STPYL-S3](#) (straight through)**



**For Ethernet PLC Unit**

**or**

**[SE-ANT250](#)  
Wi-Fi/Bluetooth Dome Antenna  
([C2-02CPU](#) & [C2-03CPU](#) only)**



**or**

**[SE-ANT210](#)  
Wi-Fi/Bluetooth Whip Antenna  
([C2-02CPU](#) & [C2-03CPU](#) only)  
(nonmetal enclosure only)**



**[D2-DSCBL](#)**



**(PC requires RS-232 port  
to use this cable)**

**or**

**[EA-MG-PGM-CBL](#)**



**Connects to PC USB Port**

### 8. Select tools, wire, and provide power.

**Screwdriver  
[TW-SD-MSL-2](#)**



**Wire Strippers  
[DN-WS](#)**



**Hookup Wire**





# Power Supplies

## Power Supplies

The CLICK PLC family offers two 24VDC power supplies. They are identical except for the output current.

It is not mandatory to use one of these CLICK power supplies for the CLICK/CLICK PLUS PLC system. You can use any other 24VDC power supply that AutomationDirect.com offers, including the PSP24-DC12-1 12 to 24 VDC converter shown below.

### CO-00AC Power Supply

Limited auxiliary AC power supply allows you to power the 24VDC CLICK C0 and C2 series PLCs with 100–240 VAC supply power. The 0.5 A DC power supply is capable of controlling the PLC plus a limited configuration based on the power budget of each I/O module. The CO-00AC is a low-cost solution for applications requiring only minimal I/O and power consumption. This power supply will not support a fully-populated CLICK PLC system with all possible I/O module combinations.

### CO-01AC Power Supply

Expanded auxiliary AC power supply allows you to power the 24VDC CLICK C0 and C2 series PLCs with 100–240 VAC supply power. The 1.3 A DC power supply is capable of supporting a fully-populated CLICK PLC system with all possible I/O module combinations, with no concerns for exceeding the power budget.

### PSP24-DC12-1 DC-DC Converter

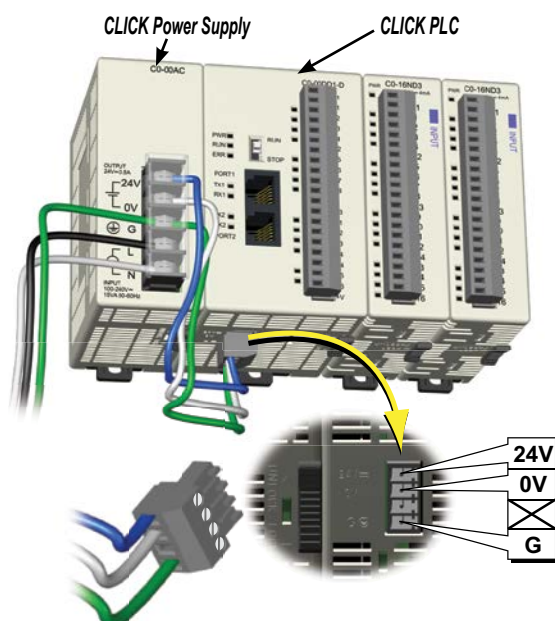
With this DC-DC converter you can operate the CLICK/CLICK PLUS PLC with 12VDC input power.

| CLICK 24VDC Power Supply Ratings |                |         |
|----------------------------------|----------------|---------|
| Part Number                      | Output Current | Price   |
| <a href="#">CO-00AC</a>          | 0.5 A          | \$51.00 |
| <a href="#">CO-01AC</a>          | 1.3 A          | \$63.00 |

| Power Supply Input Specifications |                                   |                                   |
|-----------------------------------|-----------------------------------|-----------------------------------|
| Part Number                       | CO-00AC                           | CO-01AC                           |
| Input Voltage Range               | 85–264 VAC                        |                                   |
| Input Frequency                   | 47–63 Hz                          |                                   |
| Input Current (typical)           | 0.3 A @ 100VAC,<br>0.2 A @ 200VAC | 0.9 A @ 100VAC,<br>0.6 A @ 200VAC |
| Inrush Current                    | 30A                               |                                   |
| Efficiency                        | 80% typical                       |                                   |

| Power Supply Output Specs |                                    |                                 |
|---------------------------|------------------------------------|---------------------------------|
| Part Number               | CO-00AC                            | CO-01AC                         |
| Output Voltage Range      | 23–25 VDC                          |                                 |
| Output Current            | 0.5 A                              | 1.3 A                           |
| Ripple                    | 200mV p-p max (0–55°C)             |                                 |
| Ripple Noise              | 300mV p-p max (0–55°C)             |                                 |
| Over Current Protection   | @ 0.65 A<br>(automatic recovery)   | @ 1.6 A<br>(automatic recovery) |
| Over Voltage Protection   | @ 27.6 V (clamped by Zener diode)  |                                 |
| Start-up Time             | 1000ms max at rated input and load |                                 |
| Hold-up Time              | 10ms minimum at 85VAC, I=max       |                                 |

| Power Supply General Specs    |                                                                        |         |
|-------------------------------|------------------------------------------------------------------------|---------|
| Part Number                   | CO-00AC                                                                | CO-01AC |
| Ambient Operating Temperature | 32–131°F [0–55°C]                                                      |         |
| Storage Temperature           | –4–158°F [–20–70°C]                                                    |         |
| Humidity                      | 30–95%, non-condensing                                                 |         |
| Vibration Resistance          | JIS C60068-2-6, sine wave vibration                                    |         |
| Shock Resistance              | JIS C60068-2-27                                                        |         |
| Voltage Withstand             | 1500VAC, 5mA cutoff current                                            |         |
| Input-Output                  | 1500VAC, 5mA cutoff current                                            |         |
| Input-Ground                  | 500VAC, 5mA cutoff current                                             |         |
| Output-Ground                 | 10MΩ minimum, 500VDC                                                   |         |
| Insulation Resistance         | 10MΩ minimum, 500VDC                                                   |         |
| Input-Output                  | 5MΩ minimum, 500VDC                                                    |         |
| Input-Ground                  | FCC Class A, EN55022:1998 Class A                                      |         |
| Output-Ground                 | 5P terminal block, Fujicon UF2362AX series or equivalent               |         |
| Noise Immunity                | UL508, UL1604, EN61010-1 (IEC 1010-1), CAN/CSA E60079-15:02, JIS C0025 |         |
| Input/Output Interface        | PDF                                                                    |         |
| Agency Approvals              | PDF                                                                    |         |
| Drawing Link                  | 5.3 oz [150g]                                                          |         |
| Weight                        | 6.0 oz [170g]                                                          |         |



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



| PSP24-DC12-1 DC-DC Converter Specs |                                 |
|------------------------------------|---------------------------------|
| Input Voltage Range                | 9.5–18 VDC                      |
| Input Power (no load)              | 1.0 W max.                      |
| Startup Voltage                    | 8.4 VDC                         |
| Undervoltage Shutdown              | 7.6 VDC                         |
| Output Voltage Range               | 24–28 VDC (adjustable)          |
| Output Current                     | 1.0 A                           |
| Short Circuit Protection           | Current limited at 110% typical |
| Drawing Link                       | PDF                             |
| Weight                             | 7.5 oz [213g]                   |



# Power Budgeting

## Power Budgeting

There are two factors to consider when determining the power required to operate a CLICK PLC system. The first is the power required by the PLC and internal logic-side power provided through the PLC. This includes the CPU's own I/O, any connected I/O modules that are powered through the PLC expansion port, plus any device, such as a **C-more** Micro-Graphic panel, that is powered through one of the communications ports.

The second area is the power required by all externally-connected I/O devices. This should be viewed as the field-side power required. The field-side power is dependent on the voltage used for a particular input or output device as it relates to the wired I/O point and to the calculated load rating of the connected device.

It is strongly recommended that the power source for the logic side be separate from the power source for the field side to help eliminate possible electrical noise.

Power budgeting requires the calculation of the total current the 24VDC power source needs to provide to CLICK's logic side. A separate calculation is required to determine the total current required for all devices operating from the field side of the PLC system.

Refer to the Power Budgeting example shown on the following page. The table shows required current for a CLICK PLUS PLC, two I/O modules, and a **C-more** Micro. Use the total amperage values to select a suitable power supply.



**CLICK 24VDC Power Supply**  
C0-00AC or C0-01AC



**Other 24VDC Power Supply**  
Example: PSP24-060S

## Power Consumption for CLICK and CLICK PLUS PLC Units

| PLC Current Consumption (mA) |                                       |                                   |
|------------------------------|---------------------------------------|-----------------------------------|
| Part Number                  | Power Budget<br>24VDC<br>(Logic Side) | External<br>24VDC<br>(Field Side) |
| Basic PLC Units              |                                       |                                   |
| <a href="#">C0-00DD1-D</a>   | 120                                   | 60                                |
| <a href="#">C0-00DD2-D</a>   | 120                                   | 0                                 |
| <a href="#">C0-00DR-D</a>    |                                       |                                   |
| <a href="#">C0-00AR-D</a>    |                                       |                                   |
| Standard PLC Units           |                                       |                                   |
| <a href="#">C0-01DD1-D</a>   | 140                                   | 60                                |
| <a href="#">C0-01DD2-D</a>   | 140                                   | 0                                 |
| <a href="#">C0-01DR-D</a>    |                                       |                                   |
| <a href="#">C0-01AR-D</a>    |                                       |                                   |
| Analog PLC Units             |                                       |                                   |
| <a href="#">C0-02DD1-D</a>   | 140                                   | 60                                |
| <a href="#">C0-02DD2-D</a>   | 140                                   | 0                                 |
| <a href="#">C0-02DR-D</a>    |                                       |                                   |
| Ethernet Basic PLC Units     |                                       |                                   |
| <a href="#">C0-10DD1E-D</a>  | 120                                   | 60                                |
| <a href="#">C0-10DD2E-D</a>  | 120                                   | 0                                 |
| <a href="#">C0-10DRE-D</a>   |                                       |                                   |
| <a href="#">C0-10ARE-D</a>   |                                       |                                   |
| Ethernet Standard PLC Units  |                                       |                                   |
| <a href="#">C0-11DD1E-D</a>  | 140                                   | 60                                |
| <a href="#">C0-11DD2E-D</a>  | 140                                   | 0                                 |
| <a href="#">C0-11DRE-D</a>   |                                       |                                   |
| <a href="#">C0-11ARE-D</a>   |                                       |                                   |

| PLC Current Consumption (mA)  |                                       |                                   |
|-------------------------------|---------------------------------------|-----------------------------------|
| Part Number                   | Power Budget<br>24VDC<br>(Logic Side) | External<br>24VDC<br>(Field Side) |
| Ethernet Analog PLC Units     |                                       |                                   |
| <a href="#">C0-12DD1E-D</a>   | 140                                   | 60                                |
| <a href="#">C0-12DD2E-D</a>   |                                       | 0                                 |
| <a href="#">C0-12DRE-D</a>    | 160                                   |                                   |
| <a href="#">C0-12ARE-D</a>    |                                       |                                   |
| <a href="#">C0-12DD1E-1-D</a> | 140                                   | 60                                |
| <a href="#">C0-12DD2E-1-D</a> | 160                                   | 0                                 |
| <a href="#">C0-12DRE-1-D</a>  |                                       |                                   |
| <a href="#">C0-12ARE-1-D</a>  |                                       |                                   |
| <a href="#">C0-12DD1E-2-D</a> | 140                                   | 60                                |
| <a href="#">C0-12DD2E-2-D</a> | 160                                   | 0                                 |
| <a href="#">C0-12DRE-2-D</a>  |                                       |                                   |
| <a href="#">C0-12ARE-2-D</a>  |                                       |                                   |
| CLICK PLUS PLCs               |                                       |                                   |
| <a href="#">C2-01CPU</a>      | 110                                   | 0                                 |
| <a href="#">C2-01CPU-2</a>    | 120                                   |                                   |
| <a href="#">C2-02CPU</a>      | 105                                   |                                   |
| <a href="#">C2-02CPU-2</a>    | 115                                   |                                   |
| <a href="#">C2-03CPU</a>      | 130                                   |                                   |
| <a href="#">C2-03CPU-2</a>    | 140                                   |                                   |

## Power Consumption for CLICK PLUS Option Slot Modules

| CLICK PLUS<br>Option Slot Modules<br>Current Consumption (mA) |                                       |                                   |
|---------------------------------------------------------------|---------------------------------------|-----------------------------------|
| Part Number                                                   | Power Budget<br>24VDC<br>(Logic Side) | External<br>24VDC<br>(Field Side) |
| <b>Option Slot I/O Modules</b>                                |                                       |                                   |
| <a href="#">C2-14D1</a>                                       | 50                                    | 60                                |
| <a href="#">C2-14D2</a>                                       | 50                                    | 0                                 |
| <a href="#">C2-14DR</a>                                       | 75                                    | 0                                 |
| <a href="#">C2-14AR</a>                                       | 75                                    | 0                                 |
| <a href="#">C2-14TTL</a>                                      | 220                                   | 0                                 |
| <a href="#">C2-08D1-4VC</a>                                   | 80                                    | 60                                |
| <a href="#">C2-08D2-4VC</a>                                   | 80                                    | 0                                 |
| <a href="#">C2-08DR-4VC</a>                                   | 100                                   | 0                                 |
| <a href="#">C2-08AR-4VC</a>                                   | 100                                   | 0                                 |
| <a href="#">C2-08D1-6C</a>                                    | 80                                    | 60                                |
| <a href="#">C2-08D2-6C</a>                                    | 80                                    | 0                                 |
| <a href="#">C2-08DR-6C</a>                                    | 100                                   | 0                                 |
| <a href="#">C2-08AR-6C</a>                                    | 100                                   | 0                                 |
| <a href="#">C2-08D1-6V</a>                                    | 80                                    | 60                                |
| <a href="#">C2-08D2-6V</a>                                    | 80                                    | 0                                 |
| <a href="#">C2-08DR-6V</a>                                    | 100                                   | 0                                 |
| <a href="#">C2-08AR-6V</a>                                    | 100                                   | 0                                 |
| <b>Option Slot Intelligent Modules</b>                        |                                       |                                   |
| <a href="#">C2-DCM</a>                                        | 60                                    | 0                                 |
| <a href="#">C2-NRED</a>                                       | 125                                   | 0                                 |
| <a href="#">C2-OPCUA</a>                                      | 125                                   | 0                                 |

# Power Budgeting

## Power Consumption for CLICK Stackable I/O Modules

| I/O Module Current Consumption (mA) |                                 |                             |
|-------------------------------------|---------------------------------|-----------------------------|
| Part Number                         | Power Budget 24VDC (logic side) | External 24VDC (field side) |
| <b>Discrete Input Modules</b>       |                                 |                             |
| <a href="#">C0-08SIM</a>            | 50                              | 0                           |
| <a href="#">C0-08ND3</a>            | 30                              | 0                           |
| <a href="#">C0-08ND3-1</a>          | 30                              | 0                           |
| <a href="#">C0-16ND3</a>            | 40                              | 0                           |
| <a href="#">C0-08NE3</a>            | 30                              | 0                           |
| <a href="#">C0-16NE3</a>            | 40                              | 0                           |
| <a href="#">C0-08NA</a>             | 30                              | 0                           |
| <b>Discrete Output Modules</b>      |                                 |                             |
| <a href="#">C0-08TD1</a>            | 50                              | 15                          |
| <a href="#">C0-08TD2</a>            | 50                              | 0                           |
| <a href="#">C0-16TD1</a>            | 80                              | 100                         |
| <a href="#">C0-16TD2</a>            | 80                              | 0                           |
| <a href="#">C0-08TA</a>             | 80                              | 0                           |
| <a href="#">C0-04TRS</a>            | 100                             | 0                           |
| <a href="#">C0-04TRS-10</a>         | 120                             | 0                           |
| <a href="#">C0-08TR</a>             | 100                             | 0                           |
| <a href="#">C0-08TR-3</a>           | 90                              | 0                           |

| I/O Module Current Consumption (continued) (mA) |                                 |                             |
|-------------------------------------------------|---------------------------------|-----------------------------|
| Part Number                                     | Power Budget 24VDC (logic side) | External 24VDC (field side) |
| <b>Discrete Combo I/O Modules</b>               |                                 |                             |
| <a href="#">C0-16CDD1</a>                       | 80                              | 50                          |
| <a href="#">C0-16CDD2</a>                       | 80                              | 0                           |
| <a href="#">C0-08CDR</a>                        | 80                              | 0                           |
| <b>Analog Input Modules</b>                     |                                 |                             |
| <a href="#">C0-04AD-1</a>                       | 20                              | 65                          |
| <a href="#">C0-04AD-2</a>                       | 23                              | 65                          |
| <a href="#">C0-04POT</a>                        | 30                              | 0                           |
| <a href="#">C0-04RTD</a>                        | 25                              | 0                           |
| <a href="#">C0-04THM</a>                        | 25                              | 0                           |
| <b>Analog Output Modules</b>                    |                                 |                             |
| <a href="#">C0-04DA-1</a>                       | 20                              | 145                         |
| <a href="#">C0-04DA-2</a>                       | 20                              | 85                          |
| <b>Analog Combo I/O Modules</b>                 |                                 |                             |
| <a href="#">C0-4AD2DA-1</a>                     | 25                              | 75                          |
| <a href="#">C0-4AD2DA-2</a>                     | 20                              | 65                          |
| <b>C-more Micro-Graphic Panel</b>               |                                 |                             |
| <b>Monochrome only</b>                          | 90                              | 0                           |

System Configuration

PLC Name:  (Max. 24 characters)

☐ Start-up I/O Config Check

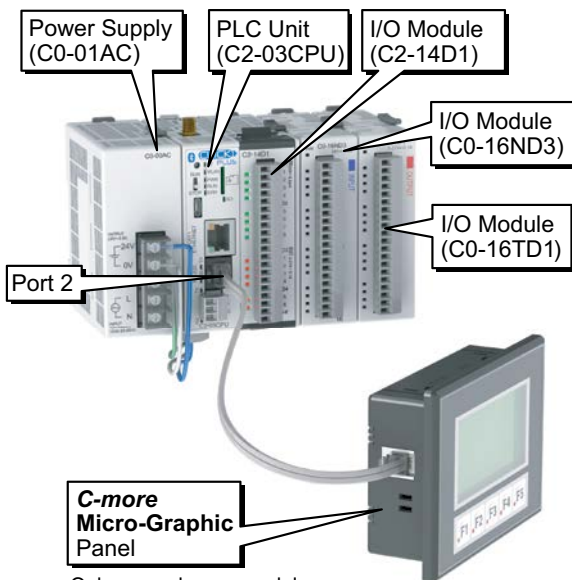
System Configuration Diagram:

System Configuration Table:

| Name             | P/S       | CPU       | Slot      | I/O 1     | I/O 2     | I/O 3     | I/O 4     | I/O 5     | I/O 6     | I/O 7     | I/O 8     |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Module Type      | C0-01AC   | C2-03CPU  | C2-14D2   | C0-16ND3  | C0-08NE3  | C0-16NE3  | C0-16TD1  | C0-04TRS  | C0-08TR   |           |           |
| Input(X)         |           |           | X001-X008 | X101-X116 | X201-X208 | X301-X316 |           |           |           |           |           |
| Output(Y)        |           |           | Y001-Y006 |           |           |           | Y401-Y416 | Y501-Y504 | Y601-Y608 |           |           |
| Power Budget(mA) | +1300     | -140      | -80       | -40       | -20       | -40       | -80       | -100      | -100      |           |           |
|                  | Change... | Change... | Change... | Change... | Change... | Change... | Change... | Change... | Change... | Select... | Select... |
|                  |           |           | Remove    | Remove    | Remove    | Remove    | Remove    | Remove    | Remove    | Remove    | Remove    |
|                  |           |           | Config... | Config... | Config... | Config... | Config... | Config... | Config... | Config... | Config... |

☒ Assign Nicknames & Comments when Analog I/O Used

View I/O MODBUS Addresses OK Cancel Help



Only monochrome models can be powered from port 2.

### Power Budgeting Example

| Current Consumption (mA) Example |                                 |                             |
|----------------------------------|---------------------------------|-----------------------------|
| Part Number                      | Power Budget 24VDC (logic side) | External 24VDC (field side) |
| <a href="#">C2-03CPU</a>         | 130                             | 0                           |
| <a href="#">C2-14D1</a>          | 50                              | 60                          |
| <a href="#">C0-16ND3</a>         | 40                              | 0                           |
| <a href="#">C0-16TD1</a>         | 80                              | 100                         |
| <a href="#">C-more Micro</a>     | 90                              | 0                           |
| <b>Total:</b>                    | <b>390</b>                      | <b>160 *</b>                |

\* Add in calculated load of connected I/O devices.

# Accessories

## **C2-USER-M**      **\$0.00**

### **CLICK PLUS PLC Hardware User Manual**

Manual covers all CLICK PLUS PLC and I/O module installation and wiring, specifications, error codes and troubleshooting guide. The CLICK PLUS PLC Hardware User Manual can be downloaded free at the AutomationDirect Web site; [www.AutomationDirect.com](http://www.AutomationDirect.com)



## **C0-USER-M**      **\$0.00**

### **CLICK PLC Hardware User Manual**

Manual covers all CLICK PLC and I/O module installation and wiring, specifications, error codes and troubleshooting guide. The CLICK PLC Hardware User Manual can be downloaded free at the AutomationDirect Web site; [www.AutomationDirect.com](http://www.AutomationDirect.com)



## **C0-PGMSW**      **\$12.00**

### **Programming Software USB**

The programming software can be downloaded free at the AutomationDirect Web site, or the USB can be purchased from the AutomationDirect online Web store. [www.AutomationDirect.com](http://www.AutomationDirect.com)



## **EA-MG-PGM-CBL**      **\$52.00**

### **PC to Panel Programming Cable Assembly for C-more Micro-Graphic Panels and CLICK/CLICK PLUS PLCs**

The 6-ft cable assembly connects a personal computer to any **C-more** Micro-Graphic panel, CLICK PLC, or select CLICK PLUS PLC for setup and programming.

*Note: This cable assembly uses the PC's USB port and converts the signals to serial transmissions. The USB port supplies 5VDC to the Micro-Graphic panel for configuration operations.*

Assembly includes standard USB A-type connector to B-type connector cable, custom converter, and an RS232C cable with an RJ12 modular connector on each end.



## **USB-CBL-AMICB6**      **\$5.25**

### **USB A to USB microB Programming Cable Assembly (CLICK PLUS Only)**

Programming cable, USB A to USB microB, 6ft (1.83 m) length. For use with CLICK PLUS PLCs and most USB devices. The USB port supplies 5VDC to the CLICK PLUS CPU for programming.



## **D2-DSCBL**      **\$35.00**

### **Programming Cable for CLICK/CLICK PLUS and DirectLOGIC PLCs**

12ft. (3.66 m) RS232 shielded PC programming cable for CLICK, select CLICK PLUS PLCs, DL05, DL06, DL105, DL205, D3-350, D4-450, D4-454, and Do-more H2 and T1H series CPUs. 9-pin D-shell female connector to an RJ12 6P6C connector.



*Note: If your PC has a USB port but does not have a serial port, you must use programming cable [EA-MG-PGM-CBL](#) to connect to CLICK PLCs. For CLICK PLUS PLCs, you may also use [USB-CBL-AMICB6](#)*

## **C0-3TB**      **\$10.00**

### **Spare 3-Pole Terminal Block**

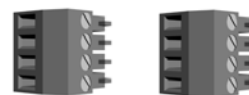
Replacement 3-pole terminal block for the 3-wire RS-485 Port 3 on CLICK Standard and Analog PLCs as well as the CLICK PLUS [C2-03CPU](#). Sold in packs of 2.



## **C0-4TB**      **\$10.00**

### **Spare 24VDC Power Terminal Block**

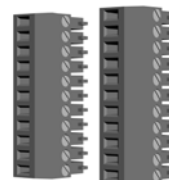
Replacement terminal block for the 24VDC supply power to the PLC. Sold in packs of 2.



## **C0-8TB**      **\$16.50**

### **Spare 8-Point I/O Terminal Block**

Replacement terminal block for the 8-point I/O modules. Sold in packs of 2.



## **C0-8TB-1**      **\$19.50**

### **Spare 13-Point I/O Terminal Block**

Replacement terminal block for the 8-point I/O relay modules. Sold in packs of 2.



## **C0-16TB**      **\$23.00**

### **Spare 16-Point I/O Terminal Block**

Replacement terminal block for the 16-point I/O modules and PLC built-in I/O. Sold in packs of 2.



## **C2-6TB**      **\$16.50**

### **Spare 6-pt Terminal Block**

Replacement terminal block for the C2-DCM serial ports. Sold in packs of 2.



# Accessories

## **SE-ANT250     \$37.00**

### ***Wi-Fi/Bluetooth Dome Antenna***

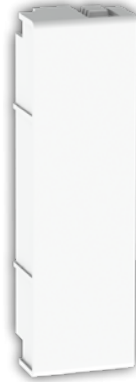
2.4 GHz antenna, IP67, panel mount, 9.8 ft (3m) cable length, for external mounting when CLICK PLUS PLC is installed in a metallic enclosure.



## **C2-FILL     \$8.50**

### ***CPU Option Slot Cover***

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



## **MSD-SLC16G     \$100.00**

16GB microSD card, industrial grade, 3D NAND Flash (with SLC Mode), 85°C [185°F] max operating temp.



## **SE-ANT210     \$10.50**

### ***Wi-Fi/Bluetooth Whip Antenna***

Whip/straight 2.4 GHz antenna, IP65, connector mount. Not recommended for installation in a metallic enclosure.



## **D2-BAT-1     \$6.50**

Replacement CR2354 battery for Standard, Analog, Ethernet Standard and Ethernet Analog PLC units.



## **TW-SD-MSL-2     \$4.00**

### ***Insulated Slotted Screwdriver***

0.4 x 2.5 x 80 mm slotted screwdriver for terminal blocks.



## **DN-EB35MN     \$31.50**

### ***DINector End Bracket***



## **D0-MC-BAT     \$3.00**

Replacement CR2032 battery for CLICK PLUS PLC units.



## **DN-WS     \$72.00**

### ***Wire Stripper***



## ***C-more and C-more Micro Graphic Operator Interfaces***



## ***ZIPLink Wiring Systems***



## ***Ethernet Cables***

Pre-terminated Cat5e Ethernet patch cables with RJ45 connectors provide dependable communication in industrial applications. These cables are available in various lengths and support transmission speeds of 10/100/1000 Mbps.

