CLICK PLC Overview

CPU Modules

The eleven CLICK CPU modules are available with different combinations of built-in I/O types.

Basic CPU

CLICK Basic CPU Modules			
Part Number	**Inputs (8 points)**	**Outputs (6 points)**	**Price**
C0-00DD1-D	DC (24 VDC, sink/source)	DC (0.1 A, 5-24 VDC, Sink)	<--->
C0-00DD2-D		DC (0.1 A, 24 VDC, Source)	<--->
C0-00DR-D		Relay (1 A@6-27 VDC/6-240 VAC)	<--->
C0-00AR-D	AC (100-120 VAC)		<--->

Basic CPU Module Features:

- Eight discrete input points
- Six discrete output points
- Two RS-232 communications ports

Standard CPU

CLICK Standard CPU Modules			
Part Number	**Inputs (8 points)**	**Outputs (6 points)**	**Price**
C0-01DD1-D	DC (24 VDC, sink/source)	DC (0.1 A, 5-24 VDC, Sink)	<--->
C0-01DD2-D		DC (0.1 A, 24 VDC, Source)	<--->
C0-01DR-D		Relay (1 A@6-27 VDC/6-240 VAC)	<--->
C0-01AR-D	AC (100-120 VAC)		<--->

Standard CPU Module Features:

- Eight discrete input points
- Six discrete output points
- Two RS-232 communications ports
- One RS-485 communications port
- Backup battery (Battery sold separately)

Analog CPU

CLICK Analog CPU Modules				
Part Number	**Inputs (4 points)**	**Outputs (4 points)**	***Analog Inputs, Outputs***	**Price**
C0-02DD1-D	DC (24 VDC, sink/source)	DC (0.1 A, 5-24 VDC, Sink)	2 channels in / 2 channels out; voltage (0-5 VDC) and current (4-20 mA) selectable	<--->
C0-02DD2-D		DC (0.1 A, 24 VDC, Source)		<--->
C0-02DR-D		Relay (1 A@6-27 VDC/6-240 VAC)		<--->

Analog CPU Module Features:

- Four discrete input points and four discrete output points
- Two analog input points and two analog output points
- Two RS-232 communications ports
- One RS-485 communications port
- Backup battery (Battery sold separately)

CLICK PLC Overview

Input I/O Modules

There are six input I/O modules available.

C0-08ND3

C0-08ND3-1

C0-16ND3

C0-08NE3

C0-16NE3

C0-08NA

CLICK Input I/O Modules		
Part Number	Inputs	Price
C0-08ND3	DC (8 pts, 12-27 VDC)	<--->
C0-08ND3-1	DC (8 pts, 3.3-5 VDC)	<--->
C0-16ND3	DC (16 pts, 24 VDC)	<--->
C0-08NE3	AC/DC (8 pts, 24 VAC/VDC)	<--->
C0-16NE3	AC/DC (16 pts, 24 VAC/VDC)	<--->
C0-08NA	AC (8 pts, 100-120 VAC)	<--->

Output I/O Modules

There are seven output I/O modules available.

C0-08TD1

C0-08TD2

C0-16TD1

C0-16TD2

C0-08TA

C0-04TRS

C0-08TR

CLICK Output I/O Modules		
Part Number	Outputs	Price
C0-08TD1	DC (8 pts, 0.3 A @ 3.3-27 VDC, Sink)	<--->
C0-08TD2	DC (8 pts, 0.3 A @ 12-24 VDC, Source)	<--->
C0-16TD1	DC (16 pts, 0.1 A @ 5-27 VDC, Sink)	<--->
C0-16TD2	DC (16 pts, 0.1 A @ 12-24 VDC, Source)	<--->
C0-08TA	AC (8 pts, 0.3A @ 17-240 VAC)	<--->
C0-04TRS*	Relay (4 pts, 7A @ 6-27 VDC/6-240 VAC)	<--->
C0-08TR	Relay (8 pts, 1A @ 6-27 VDC/6-240 VAC)	<--->

* To drive more than a 7A load or to use replaceable relays, consider using a C0-16TD1 output module with a ZL-RRL16-24 ZIPLink relay module and the correct ZIPLink cable (see Wiring System for CLICK PLCs later in this section).

Power Supplies

Two power supplies are offered.

C0-00AC

C0-01AC

CLICK Power Supplies			
Part Number	Input Voltage	Output Current	Price
C0-00AC	85-264 VAC	0.5A @ 24 VDC	<--->
C0-01AC	85-264 VAC	1.3A @ 24 VDC	<--->

CLICK PLC 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 CPU module.**

2. **If you need additional I/O, select from thirteen types of I/O modules.**

3. **Select a 24 VDC power supply.**

or

4. **Download the FREE CLICK programming software.**

5. **Select your PC-to-PLC programming cable.**

If your PC has a USB port, use cable EA-MG-PGM-CBL to connect to the CPU module port. If your PC has a 9-pin serial communications port, use programming cable D2-DSCBL.

EA-MG-PGM-CBL

or

D2-DSCBL

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

6. **Select tools, wire, and provide power.**

Screwdriver
DN-SS1

Wire Strippers
DN-WS

Hookup Wire

CLICK Programming Software

FREE Software!

CLICK programming software can be downloaded at no charge.

The CLICK programming software is designed to be a user-friendly application, and the tools, layout, and software interaction provide ease-of-use and quick learning.

The simple operation of this software allows users to quickly develop a ladder logic program. The online help file provides information that will help you get acquainted with the software quickly.

PC Requirements

CLICK PLC Windows-based programming software works with Windows® 2000 Service Pack 4, XP Home or Professional, Vista (32 bit only) or Windows 7 (32 bit only). These are the minimum system requirements:

- Personal Computer with a 333 MHz or higher processor (CPU) clock speed recommended; Intel Pentium/Celeron family or AMD K6/Athlon/Duron family, or compatible processor recommended
- SVGA 800x600 pixels resolution. (1024x768 pixels resolution recommended)
- 150MB free hard-disk space
- 128MB free Ram (512MB recommended)
- CD-ROM or DVD drive for installing software from the CD
- 9-pin serial port or USB port for project transfer to PLC (USB port communications also requires USB-to-serial converter)

C0-PGMSW FREE

CLICK PLC Programming Software

Free download available from the Web includes the manual in pdf format. Cable sold separately.

Windows2000/XP(Home/Pro)/Vista/ Windows 7 required.

The CLICK Programming Software can be downloaded free at the *AutomationDirect* Web site:

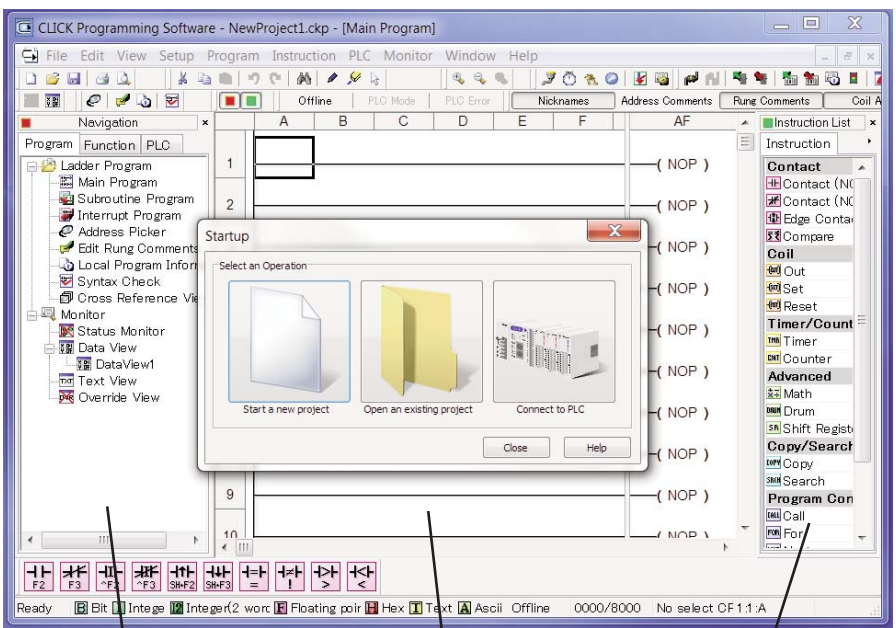
www.support.automationdirect.com/downloads.html

NOTE: CLICK PLCs cannot be programmed using *Direct*SOFT5 programming software, which is used to program our *Direct*LOGIC PLCs; you must use the CLICK programming software, C0-PGMSW.

NOTE: When using Standard CPUs, you must use CLICK programming software version V1.20 or later.
When using Analog CPUs, you must use CLICK programming software version V1.12 or later.

Main window

The Main Window is displayed when the program opens. It is divided into Menus, Toolbars, and Windows that work together to make project development as simple as possible.



CLICK Programming Software

Instructions

The easy-to-use instructions are described in the CLICK programming software online help file.

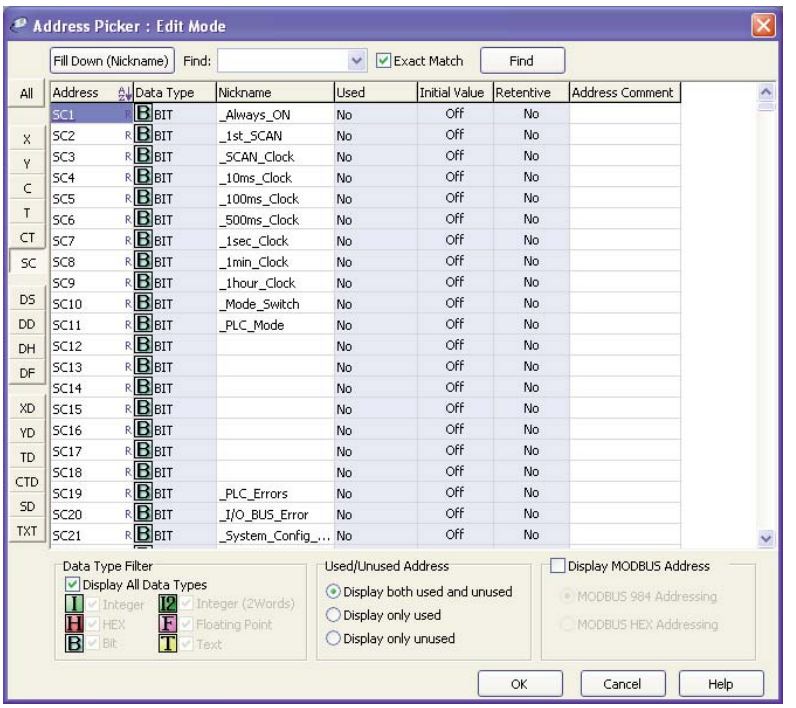
Powerful Features!

CLICK programming software has amazingly powerful features for a free software product, such as

- Address picker
- Separate subroutine programs
- Separate interrupt programs
- Color rung comment feature
- Project loader
- Documentation is stored within the PLC memory

Address Picker

The Address Picker is a powerful multi-function memory table which can be used to assign nicknames, create address comments, and establish initial values for specific memory locations. It can assign specific memory locations to be retentive during power outages. The Address Picker also has powerful tools for sorting the memory table and making it easier to use.

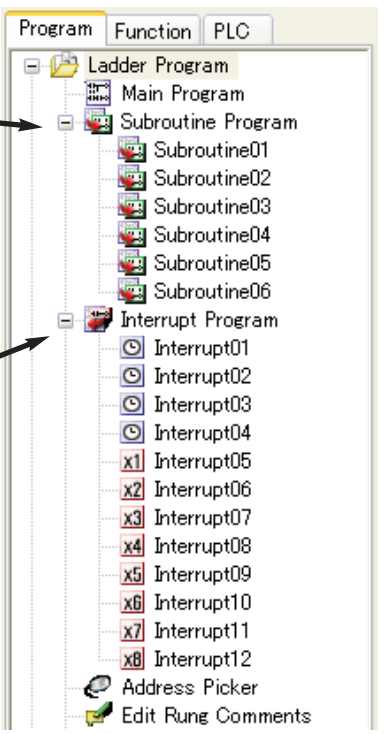


Subroutine Programs

Subroutine programs can be created and named to isolate a body of program code that is run selectively. You can run up to 986 subroutine programs.

Interrupt Programs

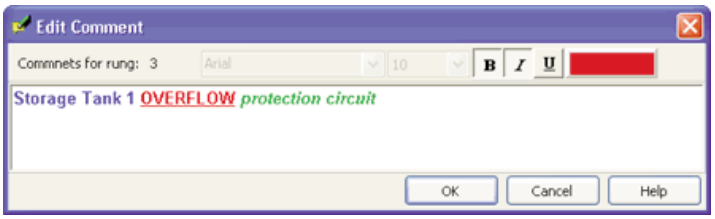
Interrupt programs are created and named. The Basic and Standard CPU modules support up to 12 interrupt programs. The Analog CPU modules support up to 8 interrupt programs.

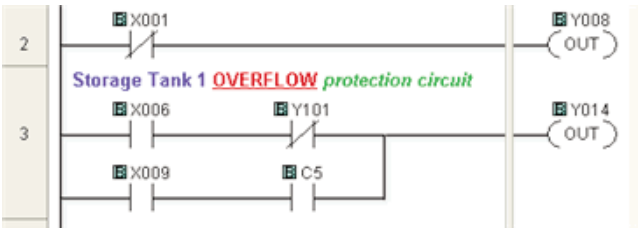


CLICK Programming Software

Color Rung Comment

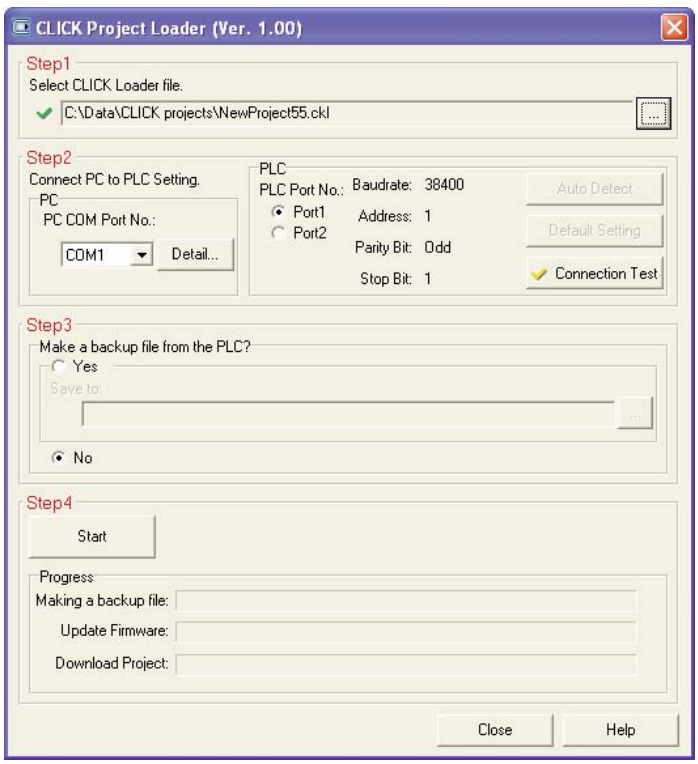
Easily create and edit rung comments with colors and three text styles. Comments are stored in the PLC memory for future reference.





Project Loader

The CLICK programming software can export the CLICK project in an encrypted format. The exported file can be sent to the end user. Then the end user can download the file into the CLICK PLC with the tool called Project Loader.



NOTE: PROJECT LOADER IS A SEPARATE PROGRAM FROM THE CLICK PROGRAMMING SOFTWARE, BUT IT IS INSTALLED ON THE PC WHEN THE CLICK PROGRAMMING SOFTWARE IS INSTALLED.

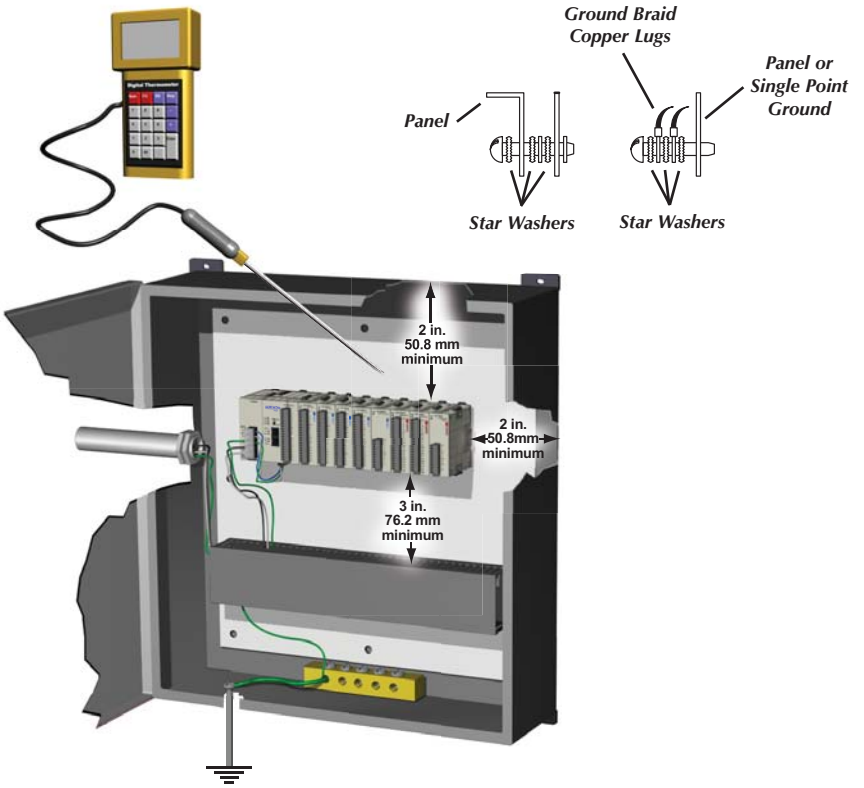
Product Dimensions and Installation

It is important to understand the installation requirements for your CLICK system. Your knowledge of these requirements will help ensure that your system operates within its environmental and electrical limits.

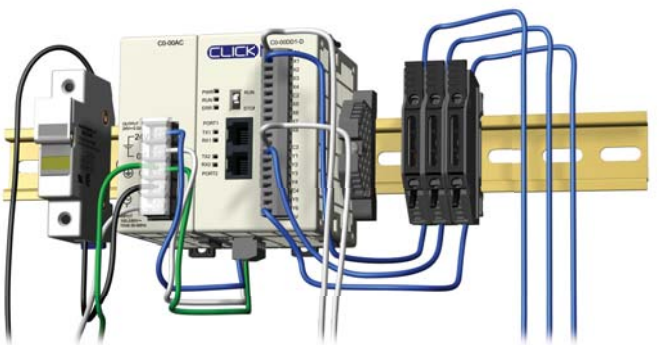
Plan for Safety

This catalog should never be used as a replacement for the user manual.

You can purchase, download free, or view online the user manuals for these products. Manual C0-USER-M is the user manual for the CLICK PLC. This user manual contains important safety information that must be followed. The system installation should comply with all appropriate electrical codes and standards.

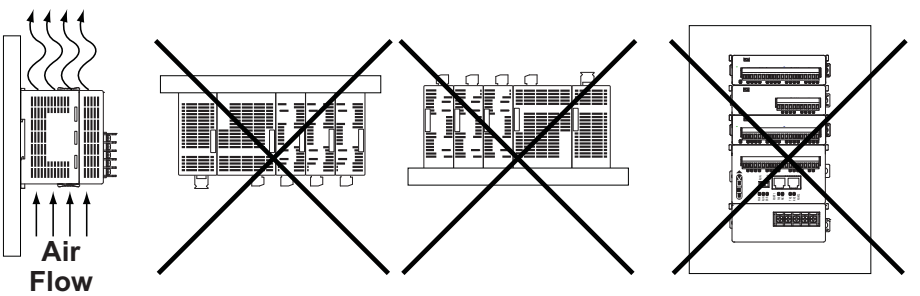


NOTE: THERE IS A MIMIMUM CLEARANCE REQUIREMENT OF 2 INCHES(51 MM) BETWEEN THE CLICK PLC AND THE PANEL DOOR OR ANY DEVICES MOUNTED IN THE PANEL DOOR. THE SAME CLEARANCE IS REQUIRED BETWEEN THE PLC AND ANY SIDE OF THE ENCLOSURE. A MINIMUM CLEARANCE OF 3 INCHES (76 MM) IS REQUIRED BETWEEN THE PLC AND A WIREWAY OR ANY HEAT PRODUCING DEVICE.



Mounting Orientation

CLICK PLCs must be mounted properly to ensure ample airflow for cooling purposes. It is important to follow the unit orientation requirements and to verify that the PLC's dimensions are compatible with your application. Notice particularly the grounding requirements and the recommended cabinet clearances.

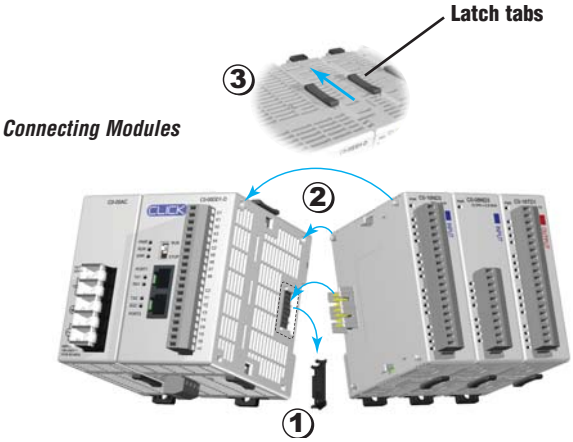


Product Dimensions and Installation

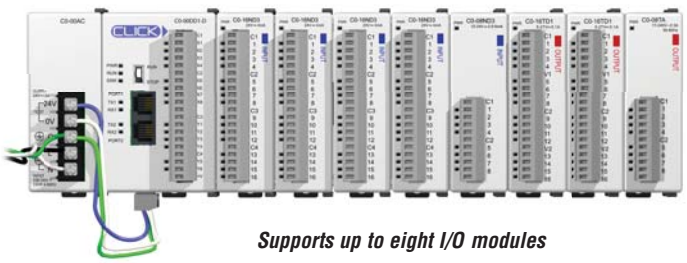
Connecting the Modules Together

CLICK CPUs, I/O modules and power supplies connect together using the extension ports that are located on the side panels of the modules (no PLC backplane/base required).

1. Remove extension port covers and slide the latch tabs forward.
2. Align the module pins and connection plug, and press the I/O module onto the right side of the CPU.
3. Slide the latch tabs backward to lock the modules together.



Connecting Modules



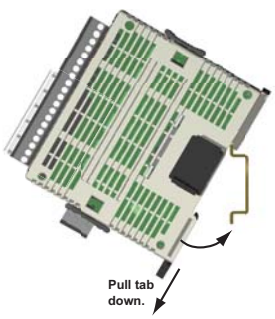
Supports up to eight I/O modules

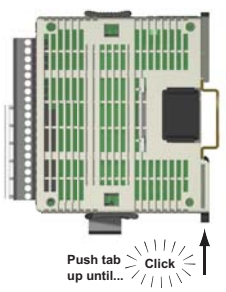
Mounting

The CLICK PLC system, which includes the CLICK power supplies, CPU modules, and I/O modules, can be mounted in one of two ways.

1. DIN rail mounted
2. Surface mounted using the built-in upper and lower mounting tabs.

DIN Rail Mounting





Surface Mounting

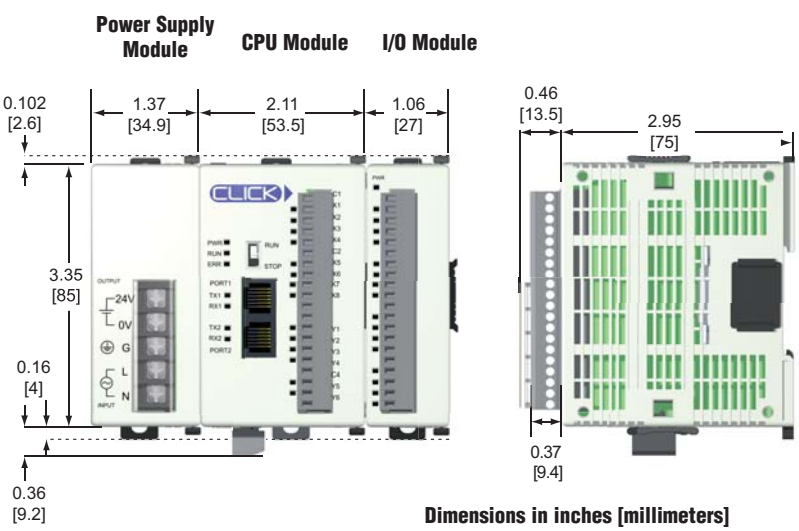
Unit Dimensions

These diagrams show the outside dimensions of the CLICK power suppy, CPU, and I/O modules. The CLICK PLC system is designed to be mounted on standard 35mm DIN rail, or it can be surface mounted.

Allow proper spacing from other components within an enclosure.

Maximum system:

Power Supply + CPU + 8 I/O modules.

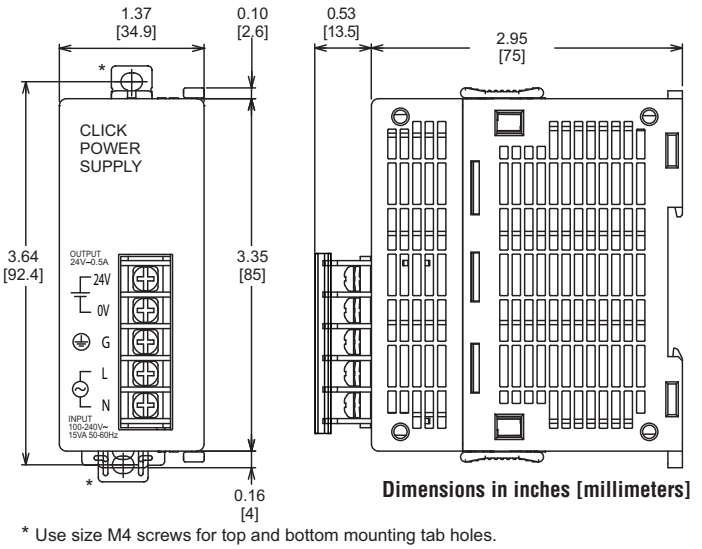


Dimensions in inches [millimeters]

Product Dimensions and Installation

Unit Dimensions

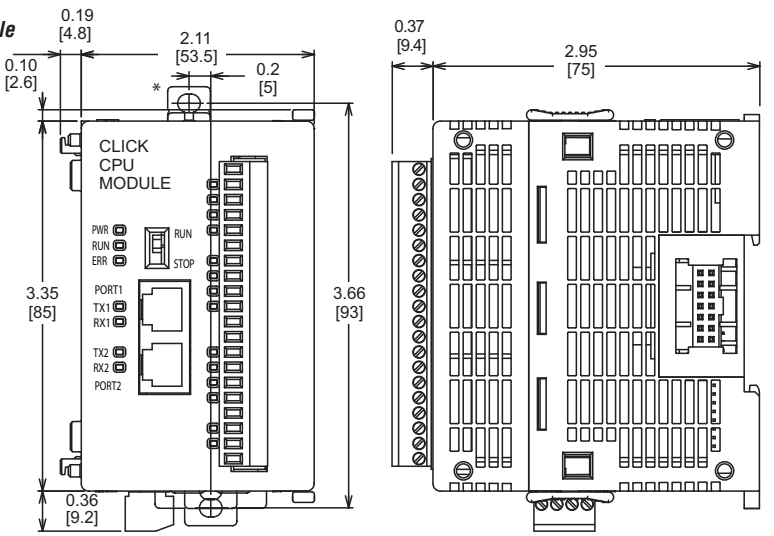
Power Supply



Dimensions in inches [millimeters]

* Use size M4 screws for top and bottom mounting tab holes.

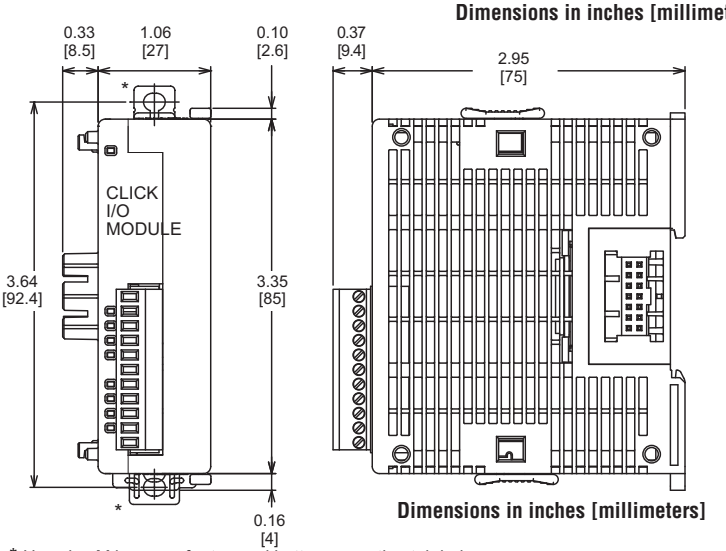
CPU Module



* Use size M4 screws for top and bottom mounting tab holes.

Dimensions in inches [millimeters]

I/O Module



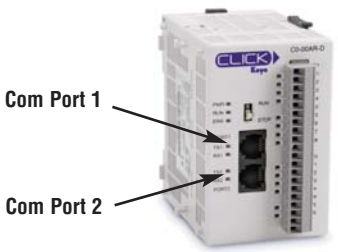
Dimensions in inches [millimeters]

* Use size M4 screws for top and bottom mounting tab holes.

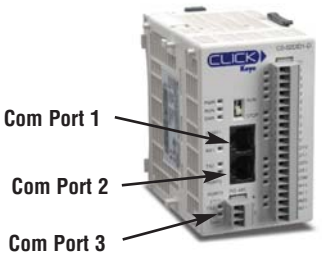
Networking the CLICK PLC

Built-in Communications Ports

All CPUs have two built-in RS-232 communications ports. Standard and Analog CPUs also have one built-in RS-485 communications port. One RS-232 port supports the Modbus RTU protocol only and can be used as the programming port. The other ports support either Modbus RTU or ASCII protocol. Both RS-232 ports supply 5 VDC, so you can connect a monochrome C-more Micro HMI panel without an additional power supply.



Basic CPU



Standard and Analog CPUs

LED Status Indicators

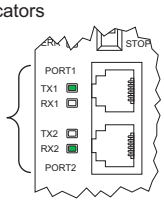
There are LED indicators located to the left of each communication port to indicate when the port is transmitting or receiving.

Basic CPUs

Port 1 & 2 LED Status Indicators

TX1 and TX2 (Green)	
On	The Comm Port is sending data.
Off	The Comm Port is not sending data.

RX1 and RX2 (Green)	
On	The Comm Port is receiving data.
Off	The Comm Port is not receiving data.

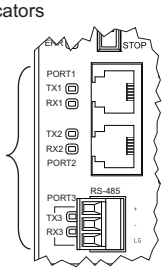


Standard and Analog CPUs

Port 1, 2, & 3 LED Status Indicators

TX1, TX2 and TX3 (Green)	
On	The Comm Port is sending data.
Off	The Comm Port is not sending data.

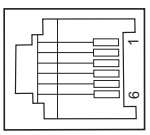
RX1, RX2 and RX3 (Green)	
On	The Comm Port is receiving data.
Off	The Comm Port is not receiving data.



Com Port 1 Specifications
Use: Programming Port
Physical: 6 pin, RJ12, RS-232
Communication speed (baud): 38400 (fixed)
Parity: Odd
Station Address: 1
Data length: 8 bits
Stop bit: 1
Protocol: Modbus RTU (slave only)

Port 1

6 pin RJ12 Phone Type Jack

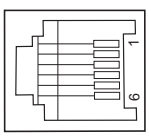


Port 1 Pin Descriptions		
1	0V	Power (-) connection (GND)
2	5V	Power (+) connection
3	RXD	Receive data (RS-232)
4	TXD	Transmit data (RS-232)
5	NC	No connection
6	0V	Power (-) connection (GND)

Com Port 2 Specifications
Use: Serial Communication
Physical: 6 pin, RJ12, RS-232
Communication speed (baud): 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity: odd, even, none
Station Address: 1 to 247
Data length: 8 bits (Modbus RTU) or 7, 8 bits (ASCII)
Stop bit: 1,2
Protocol: Modbus RTU (master/slave) or ASCII in/out

Port 2

6 pin RJ12 Phone Type Jack

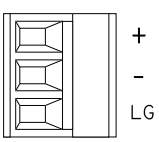


Port 2 Pin Descriptions		
1	0V	Power (-) connection (GND)
2	5V	Power (+) connection
3	RXD	Receive data (RS-232)
4	TXD	Transmit data (RS-232)
5	RTS	Request to send
6	0V	Power (-) connection (GND)

Com Port 3 Specifications
Use: Serial Communication
Physical: 3 pin, RS-485
Communication speed (baud): 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Parity: odd, even, none
Station Address: 1 to 247
Data length: 8 bits (Modbus RTU) or 7, 8 bits (ASCII)
Stop bit: 1,2
Protocol: Modbus RTU (master/slave) or ASCII in/out

Port 3

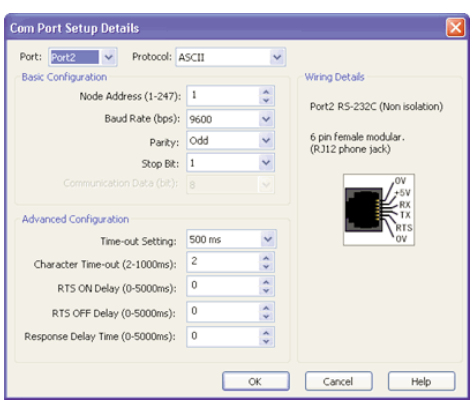
RS-485



Port 3 Pin Descriptions		
1	+ (plus)	Signal A (RS-485)
2	- (minus)	Signal B (RS-485)
3	LG	Logic Ground(0 V)

Port Setup

Use CLICK programming software to easily configure the communication ports.



Networking the CLICK PLC

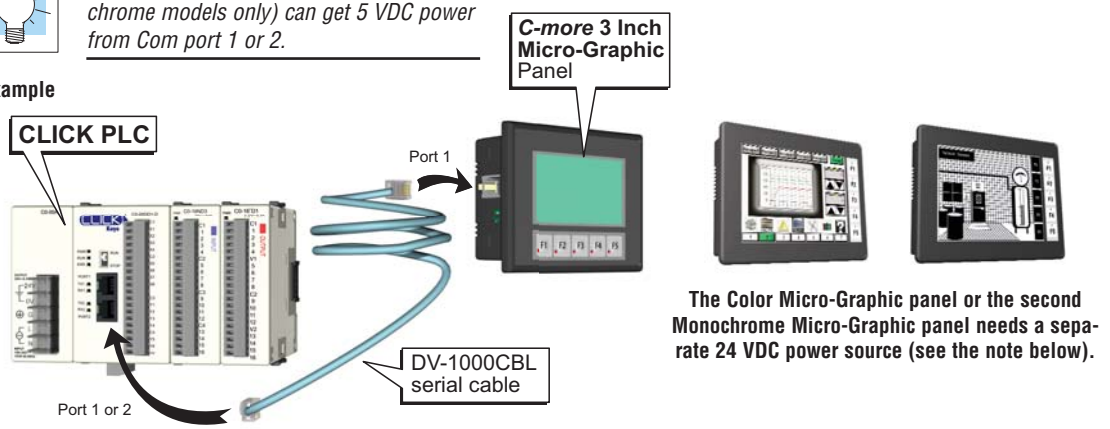
Typical Serial Communication Applications

The diagrams on these two pages illustrate the typical uses for the CLICK CPU's communication ports.

Port 1 (RS-232) – Modbus RTU Slave Mode Only

C-more Micro-Graphic panels (monochrome models only) can get 5 VDC power from Com port 1 or 2.

Example



The Color Micro-Graphic panel or the second Monochrome Micro-Graphic panel needs a separate 24 VDC power source (see the note below).

NOTE: CLICK's Port 1 and Port 2 can provide 5 VDC to power the panel, but not at the same time. If a C-more Micro-Graphic panel is connected to both ports, then at least one of the panels must be powered by a C-more Micro DC power adapter, EA-MG-P1 or EA-MG-SP1, or another 24 VDC power source. Color C-more Micro-Graphic panels must also be powered from a separate 24 VDC source.

Do not use the following *Direct*LOGIC devices with CLICK's Port 1 or 2:

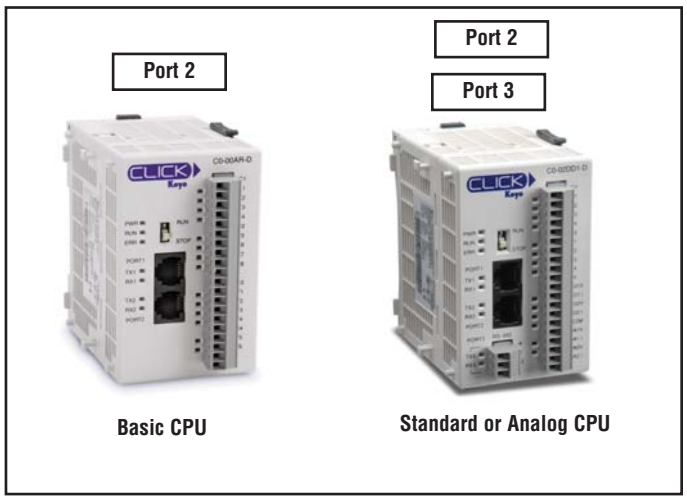
Warning: The following *Direct*LOGIC PLC devices cannot be used with a CLICK CPU's Port 1 or Port 2:
Handheld Programmer for DL05, DL06, DL105, DL205 & D3-350 CPUs, p/n D2-HPP
Handheld Programmer for DL405 CPUs, p/n D4-HPP-1
Timer/Counter Access for DL05, DL06, DL105, DL205, DL405 & D3-350 CPUs, p/n DV-1000

Networking the CLICK PLC

Port 2 (RS-232) – Modbus RTU or ASCII

Port 3 (RS-485; Standard and Analog CPUs Only) – Modbus RTU or ASCII

All CPUs have RS-232 port 2, but only Standard and Analog CPUs have RS-485 port 3.
Ports 2 and 3 allow networking to similar devices.



Modbus RTU

Modbus RTU Master Devices

PC

Another CLICK PLC

C-more and *C-more* Micro-Graphic Panel

See Note on previous page about connecting a C-more Micro-Graphic panel to Port 1 or 2.

Other Devices Supporting Modbus RTU Master Mode

ASCII

Devices that SEND ASCII messages

Barcode Reader

Weigh Scale

Other devices that can send ASCII data.

Devices that RECEIVE ASCII messages

Serial Printer

Serial Text Display

Other devices that can receive ASCII data.

Modbus RTU Slave Devices

Another CLICK PLC

SOLO Temperature Controller (Port 3 Only)

Other Devices Supporting Modbus RTU Slave Mode

Power Supplies

Power Supplies

The CLICK PLC family offers two 24 VDC 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 PLC system. You can use any other 24 VDC power supply that Automationdirect.com offers.

CLICK 24 VDC Power Supply Ratings	
Part Number	**Output Current**
C0-00AC	0.5 A
C0-01AC	1.3 A

C0-00AC Power Supply

Limited auxiliary AC power supply allows you to power the 24 VDC CLICK C0 series CPUs with 100-240 VAC supply power. The 0.5A DC power supply is capable of controlling the CPU plus a limited configuration based on the power budget of each I/O module. The C0-00AC 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.

C0-00AC Power Supply Specifications	
Input Voltage Range	85-264 VAC
Input Frequency	47-63 Hz.
Input Current (typical)	0.3 A @ 100 VAC, 0.2 A @ 200 VAC
Inrush Current	30 A
Output Voltage Range	23-25 VDC
Output Current	0.5 A
Over Current Protection	@ 0.65 A (automatic recovery)
Weight	5.3 oz (150g)

24 VDC Output Power Terminals (for CLICK PLC, I/O or field device, etc.)

85-264 VAC Power Source Input Terminals

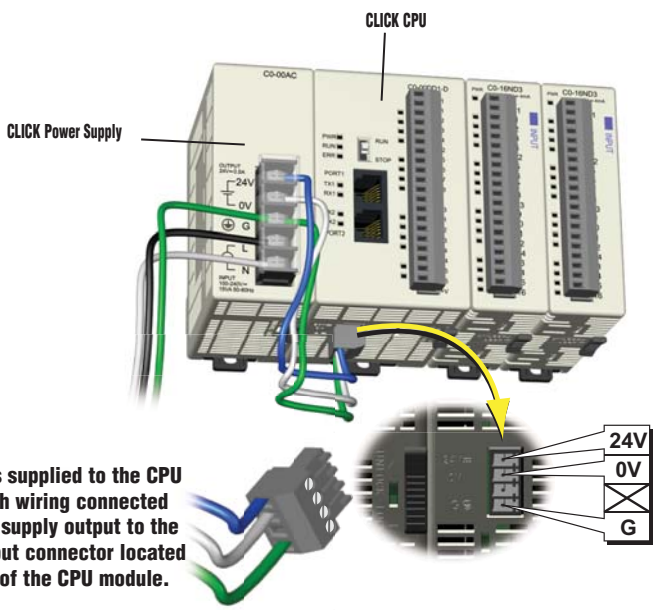
C0-01AC Power Supply

Expanded auxiliary AC power supply allows you to power the 24 VDC CLICK C0 series CPUs with 100-240 VAC supply power. The 1.3A 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.

C0-01AC Power Supply Specification	
Input Voltage Range	85-264 VAC
Input Frequency	47-63 Hz.
Input Current (typical)	0.9 A @ 100 VAC, 0.6 A @ 200 VAC
Inrush Current	30 A
Output Voltage Range	23-25 VDC
Output Current	1.3 A
Over Current Protection	@ 1.6 A (automatic recovery)
Weight	6.0 oz (170g)

24 VDC Output Power Terminals (for CLICK PLC, I/O or field device, etc.)

85-264 VAC Power Source Input Terminals



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

Power Budgeting

Power Budgeting

There are two areas to be considered when determining the power required to operate a CLICK PLC system. The first area is the power required by the CLICK CPU, along with the internal logic side power that the CPU provides to its own I/O and any connected I/O modules that are powered through the CPU's expansion port; plus any device, such as a C-more Micro-Graphic panel, that is powered through one of the CPU's communication 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 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 that the 24 VDC power source needs to provide to CLICK's logic side, and also a separate calculation of the total current required for all devices operating from the field side of the PLC system.

See the Power Budgeting Example shown to the right. The table shows current requirements for a CLICK CPU, two I/O modules, and a C-more Micro. Use the total amperage values to select a proper sized power supply.

Power Budgeting Using the CLICK Programming Software

The following example shows the logic side current consumption as calculated in the CLICK Programming software. Based on the amperage rating of the power supply selected in the first column, your power budget is calculated by subtracting each consecutive module's power consumption from the total available power budget. If you exceed the maximum allowable power consumption the power budget row is highlighted in red.

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

Current Consumption (mA)		
Part Number	*Power Budget 24 VDC (logic side)*	*External 24 VDC (field side)*
Input Modules		
C0-08ND3	30	0
C0-08ND3-1	30	0
C0-16ND3	40	0
C0-08NE3	30	0
C0-16NE3	40	0
C0-08NA	30	0
Output Modules		
C0-08TD1	50	15
C0-08TD2	50	0
C0-16TD1	80	100
C0-16TD2	80	0
C0-08TA	80	0
C0-04TRS	100	0
C0-08TR	100	0
C-more Micro-Graphic Panel (Monochrome models only)		
All p/n	90	0

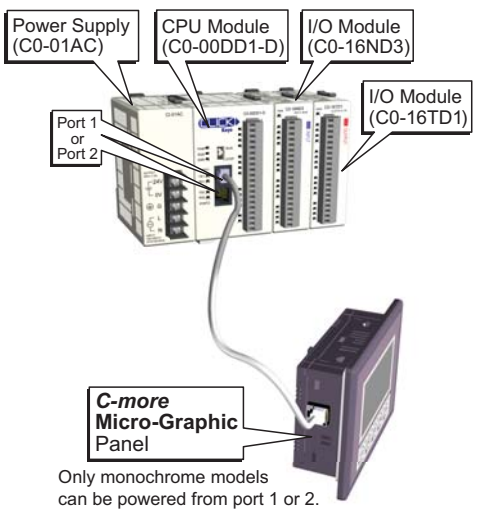
Other 24 VDC Power Supply Example: PSP24-60S

Current Consumption (mA)		
Part Number	*Power Budget 24 VDC (logic side)*	*External 24 VDC (field side)*
Basic CPU Modules		
C0-00DD1-D	120	60
C0-00DD2-D	120	0
C0-00DR-D	120	0
C0-00AR-D	120	0
Standard CPU Modules		
C0-01DD1-D	140	60
C0-01DD2-D	140	0
C0-01DR-D	140	0
C0-01AR-D	140	0
Analog CPU Modules		
C0-02DD1-D	140	60
C0-02DD2-D	140	0
C0-02DR-D	140	0

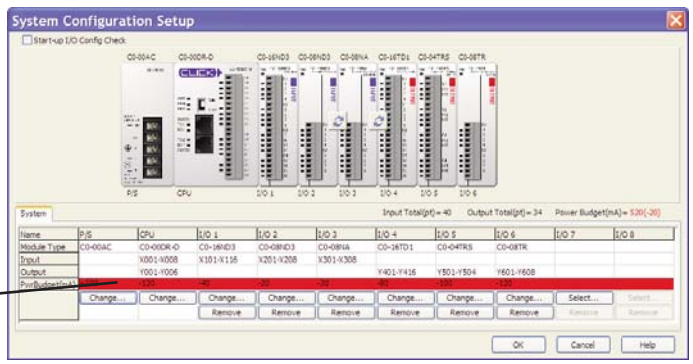
Power Budgeting Example

Current Consumption (mA) Example		
Part Number	**Power Budget 24 VDC (logic side)**	**External 24 VDC (field side)**
C0-00DD1-D	120	60
C0-16ND3	40	0
C0-16TD1	80	100
C-more Micro	90	0
Total:	330	160 *

* Plus calculated load of connected I/O devices.



Only monochrome models can be powered from port 1 or 2.



Power budget row turns red if maximum allowable power consumption is exceeded for the power supply selected.

Choosing the I/O Type

Three types of CPU modules are available:

- Basic CPUs with discrete-only inputs and outputs.
- Standard CPUs with discrete-only inputs and outputs, plus an extra communications port and battery backup.
- Analog CPUs with both discrete and analog inputs and outputs, plus an extra communications port and battery backup.

All CLICK CPU modules offer the same performance, use the same instruction set, and support all optional I/O modules.

Basic and Standard CPU Modules

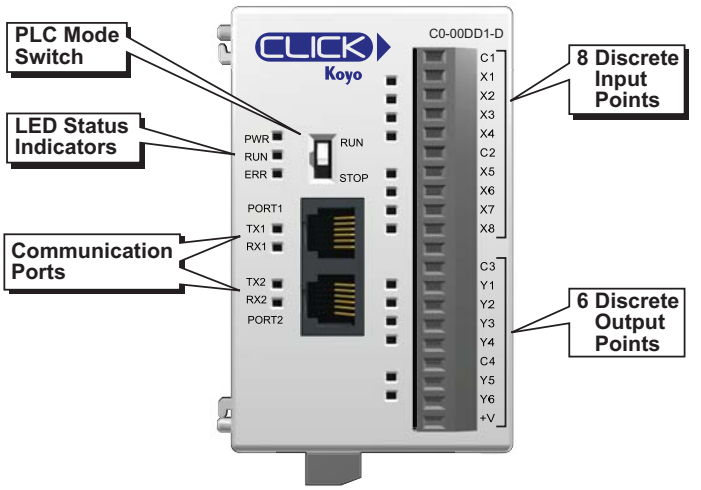
The Basic and Standard CLICK CPU modules are available with different combinations of built-in I/O types (i.e. DC input/DC output, DC input/relay output, and AC input/relay output). With the 14 built-in I/O points (8 inputs/6 outputs), the CPU can be used as a ready-to-go PLC control system without any additional I/O modules. The CPU module just needs 24 VDC, but it can be expanded in the future if the need arises.

The tables list the part numbers showing the various I/O type combinations.

Standard CPU Modules Only

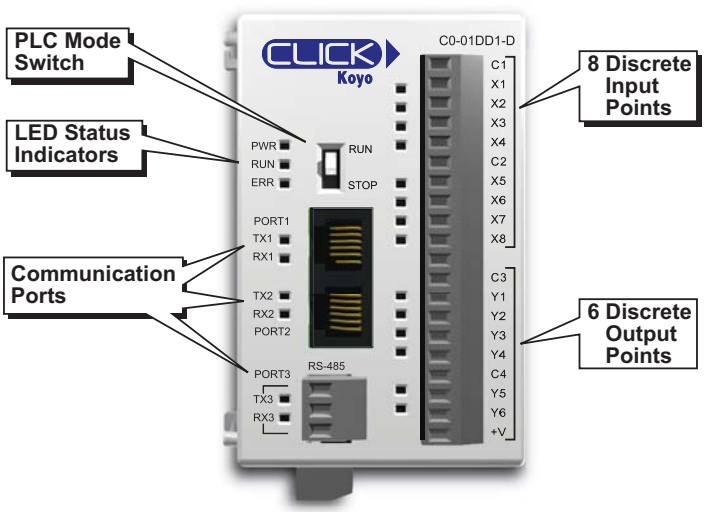
Standard CPU modules also have an RS-485 port for Modbus and ASCII communications, and the battery backup feature which will retain the data in SRAM for 5 years (battery sold separately; part no. D2-BAT-1).

Basic CPU



Basic CLICK CPUs			
Part Number	**Discrete Input Type**	**Discrete Output Type**	**External Power**
C0-00DD1-D	8 DC (sink/source)	6 DC (sink)	24V DC (required for all CPUs)
C0-00DD2-D		6 DC (source)	
C0-00DR-D		6 Relay	
C0-00AR-D	8 AC		

Standard CPU



Standard CLICK CPUs			
Part Number	**Discrete Input Type**	**Discrete Output Type**	**External Power**
C0-01DD1-D	8 DC (sink/source)	6 DC (sink)	24V DC (required for all CPUs)
C0-01DD2-D		6 DC (source)	
C0-01DR-D		6 Relay	
C0-01AR-D	8 AC		

Choosing the I/O Type

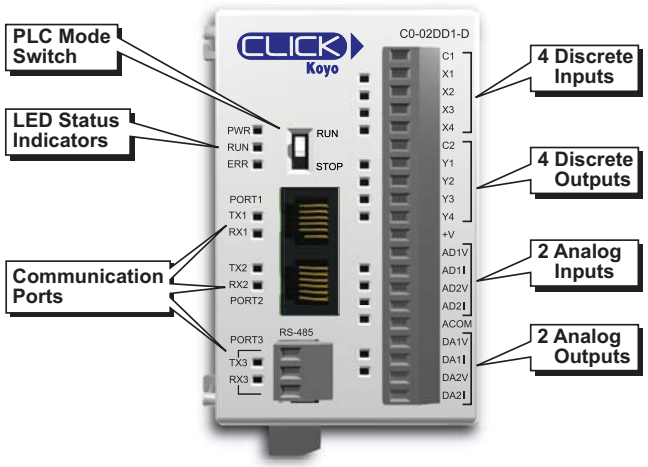
Analog CPU Modules

The Analog CLICK CPU modules are available with different combinations of DC in, DC sinking, sourcing or relay out, and analog in and out.

They also have an RS-485 port for Modbus and ASCII communications, and the battery backup feature which will retain the data in SRAM for 5 years (battery sold separately; part no. D2-BAT-1).

The table lists the part numbers showing the various I/O type combinations.

Analog CPU



Analog CLICK CPUs					
Part Number	Discrete Input Types	Discrete Output Types	Analog Input Types	Analog Output Types	External Power
C0-02DD1-D	4 DC (sink/source)	4 DC (sink)	2 channel; voltage (0-5 VDC) / current (4-20 mA); selectable separately per channel	2 channel; voltage (0-5 VDC) / current (4-20 mA); selectable separately per channel	24 VDC (required for all CPUs)
C0-02DD2-D		4 DC (source)			
C0-02DR-D		4 relay			

Discrete I/O Modules

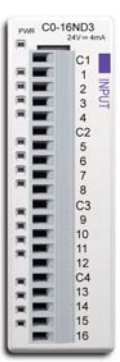
A variety of I/O modules are available for the CLICK PLC system. Up to 8 I/O modules can be connected to a CLICK CPU module to expand the system I/O count and meet the needs of a specific application. Complete I/O module specifications and wiring diagrams can be found later in this section.

Input Modules

Discrete Input I/O Modules					
Part Number	I/O Type	I/O Number	I/O Commons	Sink or Source	Voltage Ratings
C0-08ND3	DC	8	2	Sink or Source	12-24 VDC
C0-08ND3-1	DC	8	2	Sink or Source	3.3-5 VDC
C0-16ND3	DC	16	4	Sink or Source	24 VDC
C0-08NE3	AC/DC	8	2	Sink or Source	24 VAC/VDC
C0-16NE3	AC/DC	16	4	Sink or Source	24 VAC/VDC
C0-08NA	AC	8	2	N/A	100-120 VAC

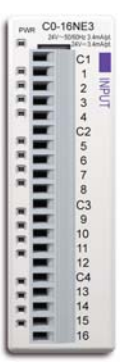
C0-08ND3

C0-08ND3-1



C0-16ND3

C0-08NE3



C0-16NE3

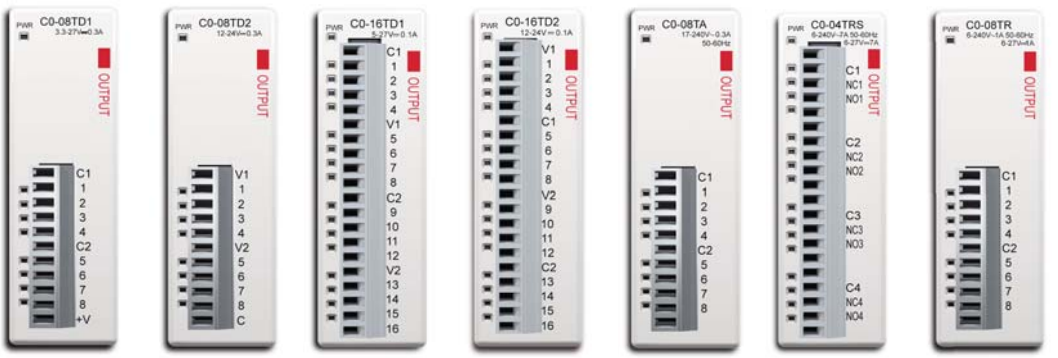
C0-08NA

Choosing the I/O Type / Specifications

Discrete I/O Modules (continued)

Output Modules

Discrete Output I/O Modules					
Part Number	**I/O Type**	**I/O Number**	**I/O Commons**	**Sink or Source**	**Voltage/Current Ratings**
C0-08TD1	DC	8	2	Sink	3.3-27 VDC, 0.3 A
C0-08TD2	DC	8	1	Source	12-24 VDC, 0.3 A
C0-16TD1	DC	16	2	Sink	5-27 VDC, 0.1 A
C0-16TD2	DC	16	2	Source	12-24 VDC, 0.1 A
C0-08TA	AC	8	2	N/A	17-240 VAC, 0.3 A
C0-04TRS	Relay	4	4	N/A	6-27 VDC, 7 A 6-240 VAC, 7 A
C0-08TR	Relay	8	2	N/A	6-27 VDC, 1 A 6-240 VAC, 1 A



General Specifications For All CLICK PLC Products

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

General Specifications	
Power Input Voltage Range	20-28 VDC
Maximum Power Consumption	5 W (No 5 V use from communication port)
Maximum Inrush Current	30 A (less than 1ms)
Acceptable External Power Drop	Max 10 ms
Operating Temperature	32°F to 131°F (0°C to 55°C), IEC 60068-2-14 (Test Nb, Thermal Shock)
Storage Temperature	–4°F to 158°F (–20°C to 70°C) IEC 60068-2-1 (Test Ab, Cold) IEC 60068-2-2 (Test Bb, Dry Heat) IEC 60068-2-14 (Test Na, Thermal Shock)
Ambient Humidity	30% to 95% relative humidity (non–condensing)
Environmental Air	No corrosive gases. Environmental pollution level is 2 (UL840)
Vibration	MIL STD 810C, Method 514.2, EC60068-2-6 JIS C60068-2-6 (Sine wave vibration test)
Shock	MIL STD 810C, Method 516.2, IEC60068-2-27, JIS C60068-2-27
Noise Immunity	Comply with NEMA ICS3-304, Impulse noise 1µs, 1000V EN61000-4-2 (ESD), EN61000-4-3 (RFI), EN61000-4-4 (FTB) EN61000-4-5 (Surge), EN61000-4-6 (Conducted) EN61000-4-8 (Power frequency magnetic field immunity) RFI: No interference measured at 150 and 450 MHz (5w/15cm)
Emissions	EN55011:1998 Class A
Agency Approvals	UL508 (File No. E157382, E316037); CE (EN61131-2)
Other	RoHS

CLICK Specifications

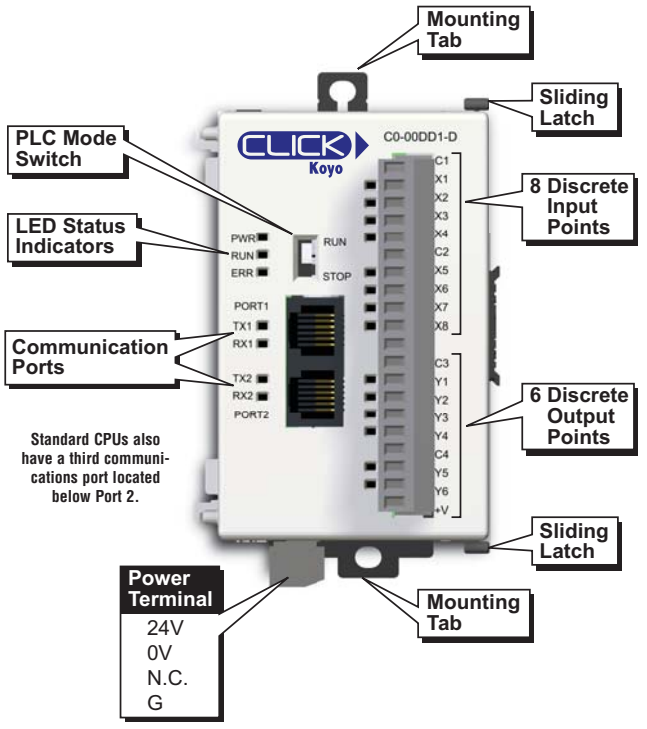
CPU Module Specifications

CPU Module Specifications			
	Basic CPU	**Standard CPU**	**Analog CPU**
Control Method	Stored Program/Cyclic execution method	Stored Program/Cyclic execution method	Stored Program/Cyclic execution method
I/O Numbering System	Fixed in Decimal	Fixed in Decimal	Fixed in Decimal
Ladder Memory (steps)	8000	8000	8000
Total Data Memory (words)	8000	8000	8000
Contact Execution (boolean)	< 0.6us	< 0.6us	< 0.6us
Typical Scan (1k boolean)	1-2 ms	1-2 ms	1-2 ms
RLL Ladder Style Programming	Yes	Yes	Yes
Run Time Edits	No	No	No
Scan	Variable / fixed	Variable / fixed	Variable / fixed
CLICK Programming Software for Windows	Yes	Yes	Yes
Built-in Communication Ports	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)
FLASH Memory	Standard on CPU	Standard on CPU	Standard on CPU
Built-in Discrete I/O points	8 inputs, 6 outputs	8 inputs, 6 outputs	4 inputs, 4 outputs
Built-in Analog I/O Channels	No	No	2 inputs, 2 outputs
Number of Instructions Available	21	21	21
Control Relays	2000	2000	2000
System Control Relays	1000	1000	1000
Timers	500	500	500
Counters	250	250	250
Interrupt	Yes (external: 8 / timed: 4)	Yes (external: 8 / timed: 4)	Yes (external: 4 / timed: 4)
Subroutines	Yes	Yes	Yes
For/Next Loops	Yes	Yes	Yes
Math (Integer and Hex)	Yes	Yes	Yes
Drum Sequencer Instruction	Yes	Yes	Yes
Internal Diagnostics	Yes	Yes	Yes
Password Security	Yes	Yes	Yes
System Error Log	Yes	Yes	Yes
User Error Log	No	No	No
Memory Backup	Super Capacitor	Super Capacitor + Battery	Super Capacitor + Battery
Battery Backup	No	Yes (battery sold separately; part # D2-BAT-1)	Yes (battery sold separately; part # D2-BAT-1)
Calendar/Clock	No	Yes	Yes
I/O Terminal Block Replacement	ADC p/n C0-16TB	ADC p/n C0-16TB	ADC p/n C0-16TB
Communication Port & Terminal Block Replacement	N/A	ADC p/n C0-03TB	ADC p/n C0-03TB
24 VDC Power Terminal Block Replacement	ADC p/n C0-4TB	ADC p/n C0-4TB	ADC p/n C0-4TB

CLICK Specifications

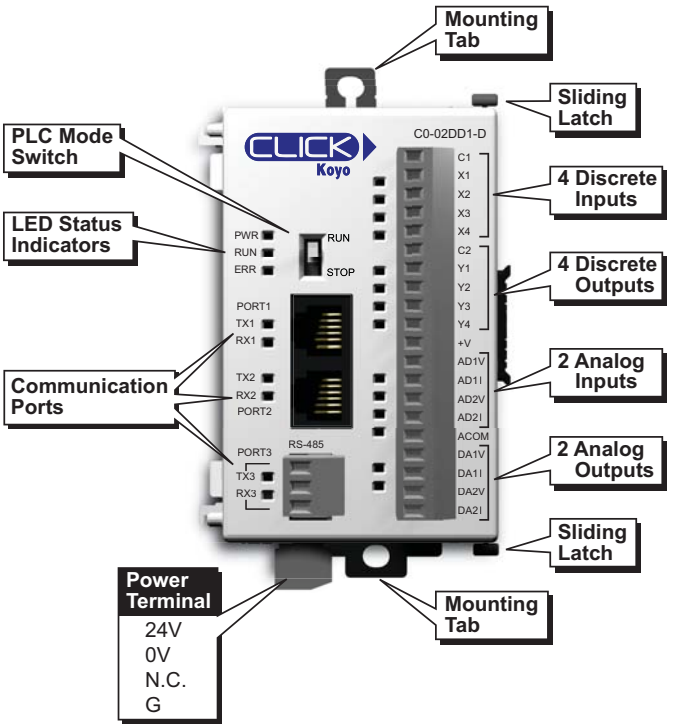
CPU Features

Basic and Standard CPUs

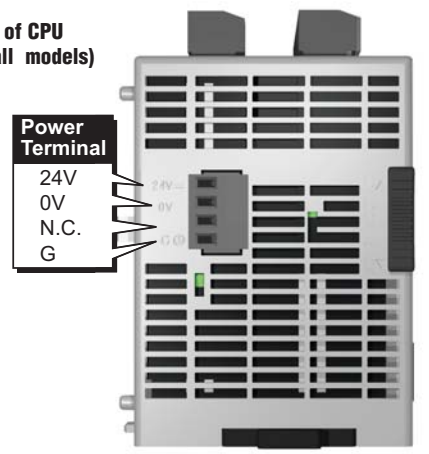


Standard CPUs also have a third communications port located below Port 2.

Analog CPUs



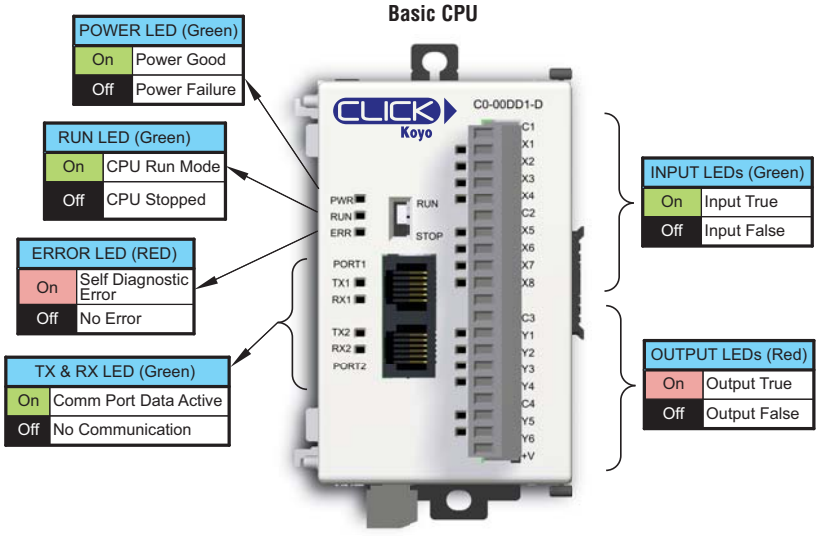
Bottom of CPU (Same on all models)



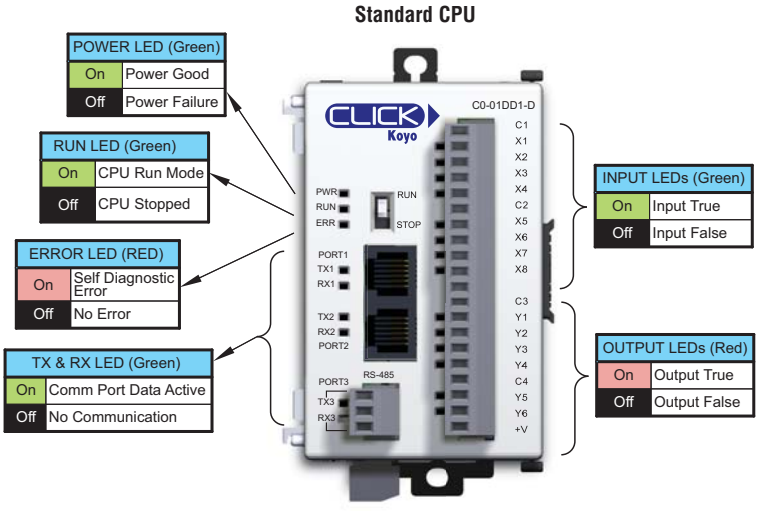
CLICK Specifications

CPU LED Status Indicators

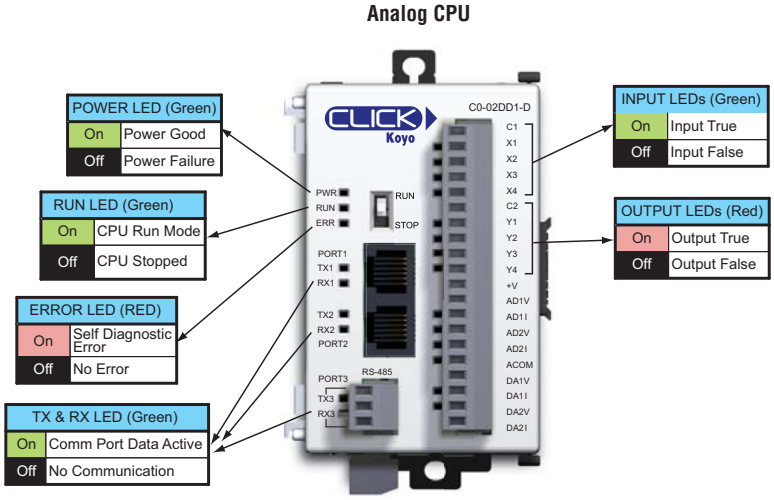
Basic CPU



Standard CPU



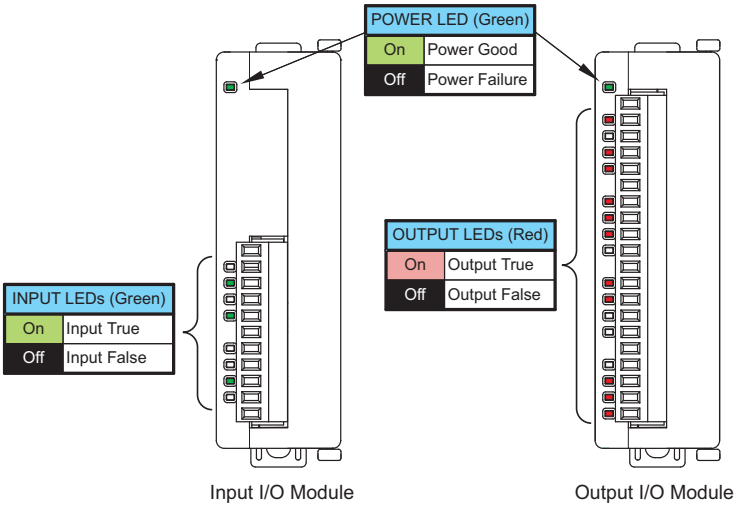
Analog CPU



CLICK Specifications

I/O Module LED Status Indicators

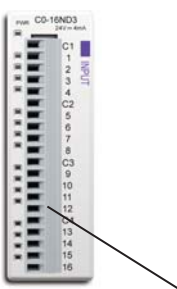
I/O Module LED Status Indicators



I/O Terminal Block Specifications for CPUs and I/O Modules

11-Pin Terminal Block, C0-8TB

11-pin Terminal Block Specifications	
Connector Type	Pluggable Terminal Block
Number of Pins	11 pt
Pitch	3.50 mm
Wire Range	28-16 AWG
Wire Strip Length	7 mm
Screw Size	M2.0
Screw Torque	2.0 to 2.2 lb-inch
ADC Part Number	C0-8TB



20-Pin Terminal Block, C0-16TB

20-pin Terminal Block Specifications	
Connector Type	Pluggable Terminal Block
Number of Pins	20 pt
Pitch	3.50 mm
Wire Range	28-16 AWG
Wire Strip Length	7 mm
Screw Size	M2.0
Screw Torque	2.0 to 2.2 lb-inch
ADC Part Number	C0-16TB