Prices as of April 16, 2014. Check Web site for most current prices.

Automation
Direct

CLICK I/O Module Specifications

Company
Information

Control Systems
Overview

CLICK PLC

Do-More
PLCs Overview

Do-More H2
PLC

Do-More T1H
PLC

DirectLOGIC
PLCs Overview

DirectLOGIC
DL05/06

DirectLOGIC
DL105

DirectLOGIC
DL205

DirectLOGIC
DL305

DirectLOGIC
DL405

Productivity
Controller
Overview

Productivity
3000

Universal
Field I/O

Software

C-More
HMI

C-More Micro
HMI

ViewMarq
Industrial
Marquees

Other HMI

Communications

Appendix
Book 1

Terms and
Conditions

C0-08NA $40.00

8-Point AC Input Module

8-pt 100-120 VAC input module, 2 commons, isolated, removable terminal block included (replacement ADC p/n C0-08TB).
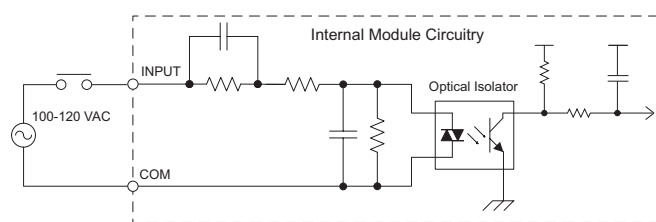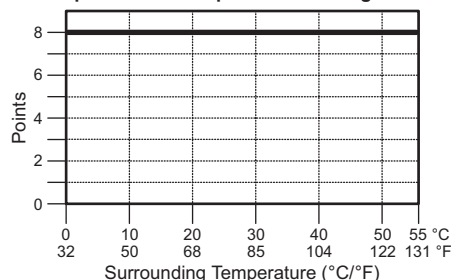
Wiring Diagram

C0-08NA
PWR
100-120V~10mA
50-60Hz
INPUT

C1
1
2
3
4
C2
5
6
7
8
N.C.

100 - 120VAC
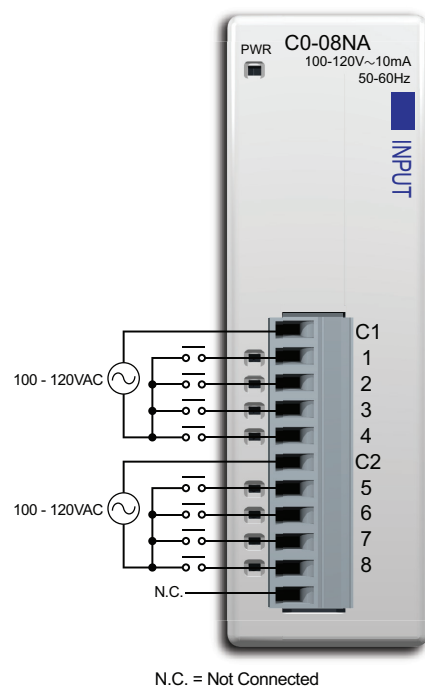
100 - 120VAC

N.C. = Not Connected

C0-08NA Input Specifications	
Inputs per Module	8
Operating Voltage Range	100-120 VAC
Input Voltage Range	80-144 VAC
AC Frequency	47-63 Hz
Input Current	Typ 8.5 mA @ 100 VAC (50Hz) Typ 10 mA @ 100 VAC (60Hz)
Maximum Input Current	16 mA @ 144 VAC
Input Impedance	15 kΩ (50 Hz), 12 kΩ (60 Hz)
ON Voltage Level	> 70 VAC
OFF Voltage Level	< 20 VAC
Minimum ON Current	5 mA
Maximum OFF Current	2 mA
OFF to ON Response	< 40 ms
ON to OFF Response	< 40 ms
Status Indicators	Logic Side (8 points, green LED) Power Indicator (green LED)
Commons	2 (4 points/common) Isolated
Bus Power Required (24 VDC)	Max. 30mA (All Inputs On)
Terminal Block Replacement	ADC p/n C0-8TB
Weight	2.8 oz (80 g)

Equivalent Input Circuit

Internal Module Circuitry

INPUT

Optical Isolator

COM

100-120 VAC

Input Module Temperature Derating Chart

Points

8
6
4
2
0

0   10   20   30   40   50   55 °C
32   50   68   85   104   122   131 °F

Surrounding Temperature (°C/°F)

ZipLink Pre-Wired PLC Connection Cables and Modules

ZL-RTB20 20-pin feed-through connector module

11-pin connector cable
ZL-C0-CBL11 (0.5 m length)
ZL-C0-CBL11-1 (1.0 m length)
ZL-C0-CBL11-2 (2.0 m length)

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 CLICK Programming software can also be used for power budgeting. 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

Other 24 VDC Power Supply Example: PSP24-60S

CPU 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

I/O Module Current Consumption (mA)

Part Number	Power Budget 24 VDC (logic side)	External 24 VDC (field side)
Discrete 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
Discrete 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

I/O Module Current Consumption (continued) (mA)

Part Number	Power Budget 24 VDC (logic side)	External 24 VDC (field side)
Discrete Combo I/O Modules		
C0-16CDD1	80	50
C0-16CDD2	80	0
C0-08CDR	80	0
Analog Input Modules		
C0-04AD-1	20	65
C0-04AD-2	23	65
C0-04RTD	25	0
C0-04THM	25	0
Analog Output Modules		
C0-04DA-1	20	145
C0-04DA-2	20	85
Analog Combo I/O Modules		
C0-4AD2DA-1	25	75
C0-4AD2DA-2	20	65
C-more Micro-Graphic Panel		
Monochrome only	90	0

Power Budgeting Example

Part Number	Power Budget 24 VDC (logic side)	External 24 VDC (field side)
Current Consumption (mA) Example		
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.

Power Supply (C0-01AC) — CPU Module (C0-00DD1-D) — I/O Module (C0-16ND3) — I/O Module (C0-16TD1)

Port 1 or Port 2

C-more Micro-Graphic Panel

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

System Configuration — Start-up I/O Config Check

C0-01AC C0-01DD2-D C0-08ND3 C0-08NE3 C0-16NE3 C0-16TD1 C0-04TRS C0-08TR

P/S   CPU   I/O 1 I/O 2 I/O 3 I/O 4 I/O 5 I/O 6

Input Total(pt)= 40   Output Total(pt)= 34   Power Budget(mA)= 520

Name	P/S	CPU	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	C0-01DD2-D	C0-08ND3	C0-08NE3	C0-16NE3	C0-16TD1	C0-04TRS	C0-08TR		
Input(X)		X001-X008	X101-X108	X201-X208	X301-X316					
Input(DF)										
Output(Y)		Y001-Y006				Y401-Y416	Y501-Y504	Y601-Y608		
Output(DF)										
PwrBudget(mA)	+1300	-140	-30	-30	-40	-80	-100	-100		
	Select...	Select...	Select...	Select...	Select...	Select...	Select...	Select...	Select...	Select...
			Remove	Remove	Remove	Remove	Remove	Remove	Remove	Remove
			Config...	Config...	Config...	Config...	Config...	Config...	Config...	Config...

Assign Nicknames & Comments when Analog I/O Used   OK   Cancel   Help

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.
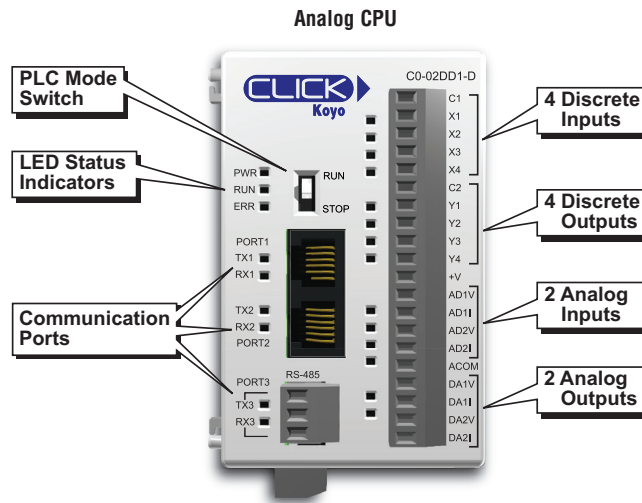
Analog CPU

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)	2 channel; voltage (0-5 VDC) / current (4-20 mA); selectable separately per channel; 12 bit	2 channel; voltage (0-5 VDC) / current (4-20 mA); selectable separately per channel; 12 bit	24 VDC (required for all CPUs)
C0-02DD2-D	4 DC (sink/source)	4 DC (source)			
C0-02DR-D		4 relay			

I/O Modules

A variety of discrete, combo, and analog I/O modules are available for the CLICK PLC system. Up to eight 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.
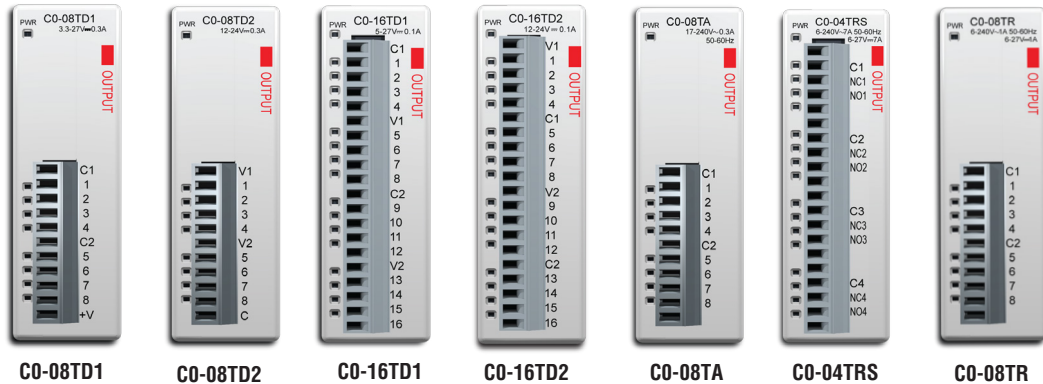
Discrete Input Modules

| C0-08ND3 | C0-08ND3-1 | C0-16ND3 | C0-08NE3 | C0-16NE3 | C0-08NA |
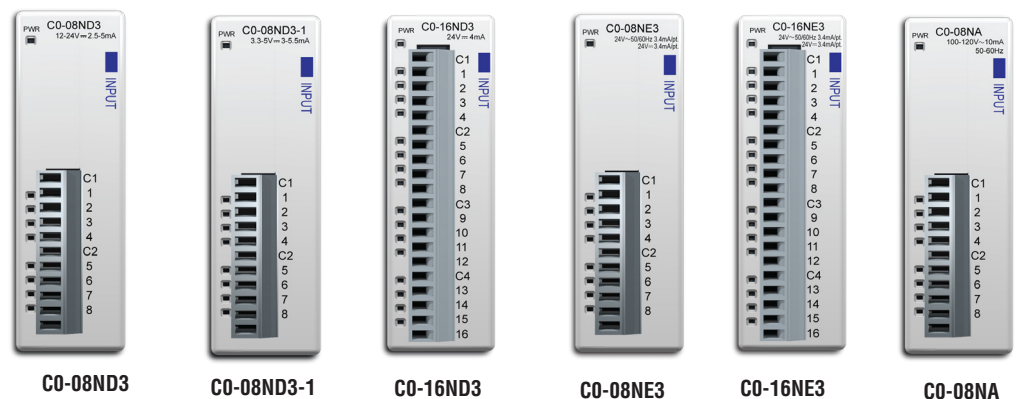
Discrete Input Modules

Part Number	I/O Type/ Number/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

Choosing the I/O Type

Discrete I/O Modules
(continued)

Discrete Output Modules

C0-08TD1   C0-08TD2   C0-16TD1   C0-16TD2   C0-08TA   C0-04TRS   C0-08TR

Discrete Output Modules			
Part Number	I/O Type/ Number/ 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

Discrete Combo I/O Modules

C0-16CDD1   C0-16CDD2   C0-08CDR
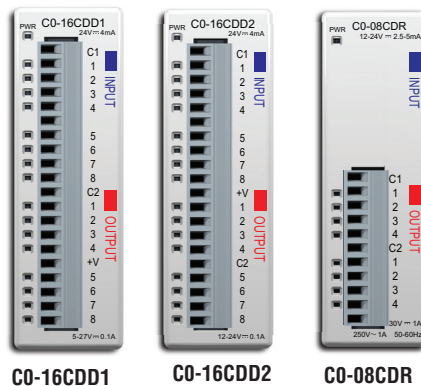
| Discrete Combo I/O Modules				
Part Number	Input Type	Input Voltage	Output Type	Output Voltage / Current Ratings
C0-16CDD1	8 DC (source/sink)	24 VDC	8 DC (sink)	5-27 VDC / 0.1 A
C0-16CDD2	8 DC (source/sink)	24 VDC	8 DC (source)	12-24 VDC / 0.1 A
C0-08CDR	4 DC (source/sink)	12-24 VDC	4 (relay)	6.25-24 VDC, 1 A 6-240 VAC, 1 A

Automation Direct

Company Information

Control Systems Overview

CLICK PLC

Do-More PLCs Overview

Do-More H2 PLC

Do-More T1H PLC

DirectLOGIC PLCs Overview

DirectLOGIC DL05/06

DirectLOGIC DL105

DirectLOGIC DL205

DirectLOGIC DL305

DirectLOGIC DL405

Productivity Controller Overview

Productivity 3000

Universal Field I/O

Software

C-More HMI

C-More Micro HMI

ViewMarq Industrial Marquees

Other HMI

Communications

Appendix Book 1

Terms and Conditions

Choosing the I/O Type

Analog I/O Modules

Analog Input Modules

C0-04AD-1 C0-04AD-2 C0-04RTD C0-04THM
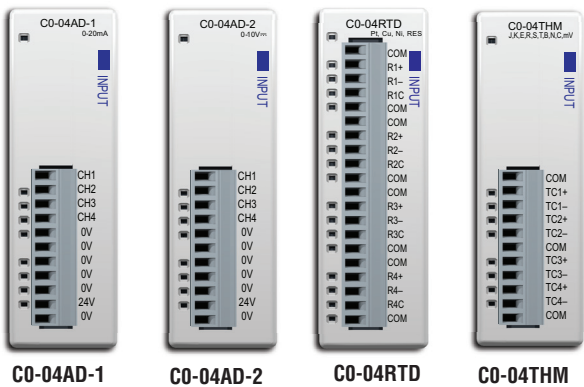
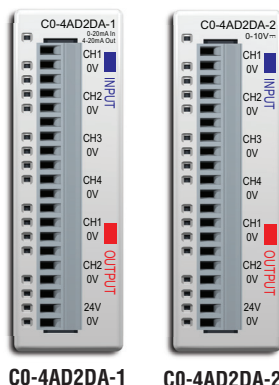| Analog Input Modules		
Part Number	**Analog Input Types**	**External Power Required**
C0-04AD-1	4 channel, current (0-20 mA), 13 bit	24 VDC
C0-04AD-2	4 channel, voltage (0-10 V), 13 bit	24 VDC
C0-04RTD	4 channel RTD input (0.1 degree °C/°F resolution), or resistive input (0 to 3125 ohms)	None
C0-04THM	4 channel thermocouple input (0.1 degree °C/°F resolution), or voltage input (-156.25 mV to 1.25 V), 16 bit	None

Analog Output Modules
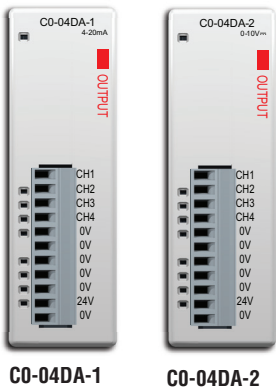
C0-04DA-1 C0-04DA-2

Analog Output Modules		
Part Number	**Analog Output Types**	**External Power Required**
C0-04DA-1	4 channel, current sourcing (4-20 mA), 12 bit	24 VDC
C0-04DA-2	4 channel, voltage (0-10 V), 12 bit	24 VDC

Prices as of April 16, 2014. Check Web site for most current prices.

Automation Direct

Choosing the I/O Type / Specifications

**Analog I/O Modules
(continued)**

Analog Combo I/O Modules

C0-4AD2DA-1   **C0-4AD2DA-2**

Analog Combo I/O Modules			
Part Number	**Analog Input Type**	**Analog Output Type**	**External Power Required**
C0-4AD2DA-1	4 channel, current (0-20 mA), 13 bit	2 channel, current sourcing (4-20 mA), 12 bit	24 VDC
C0-4AD2DA-2	4 channel, voltage (0-10 V), 13 bit	4 channel, voltage (0-10 V), 12 bit	24 VDC

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	Analog, analog combo I/O modules only: 32°F to 140°F (0°C to 60°C); All other modules: 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

Wiring System for CLICK PLCs

Wiring Solutions using the *ZIP*Link Wiring System

*ZIP*Links eliminate the normally tedious process of wiring between devices by utilizing prewired cables and DIN rail mount connector modules. It's as simple as plugging in a cable connector at either end or terminating wires at only one end. Prewired cables keep installation clean and efficient, using half the space at a fraction of the cost of standard terminal blocks.

*ZIP*Links are available in a variety of styles to suit your needs, including feedthrough connector module. *ZIP*Links are available for all Basic and Standard CLICK CPU modules and most discrete and analog I/O modules. Pre-printed I/O-specific adhesive label strips for quick marking of *ZIP*Link modules are provided with *ZIP*Link cables.

Solution 1: CLICK CPU and I/O Modules to *ZIP*Link Connector Modules

When looking for quick and easy I/O-to-field termination, a *ZIP*Link connector module used in conjunction with a prewired *ZIP*Link cable, consisting of an I/O terminal block at one end and a multi-pin connector at the other end, is the best solution.

Using the PLC CPU and I/O Modules to *ZIP*Link Connector Modules selector tables located in this section,

1. Locate your CPU or I/O module.
2. Select a *ZIP*Link Module.
3. Select a corresponding *ZIP*Link Cable.

Solution 2: CLICK CPU and I/O Modules to 3rd Party Devices

When wanting to connect I/O to another device within close proximity of the I/O modules, no extra terminal blocks are necessary when using the *ZIP*Link Pigtail Cables. *ZIP*Link Pigtail Cables are prewired to an I/O terminal block with color-coded pigtail with soldered-tip wires on the other end.

Using the I/O Modules to 3rd Party Devices selector tables located in the *ZIP*Link section,

1. Locate your CPU or I/O module.
2. Select a *ZIP*Link Pigtail Cable that is compatible with your 3rd party device.

Solution 3: GS Series and DuraPulse Drives Communication Cables

Need to communicate via Modbus RTU to a drive or a network of drives?

*ZIP*Link cables are available in a wide range of configurations for connecting to PLCs and SureServo, SureStep, Stellar Soft Starter and AC drives. Add a *ZIP*Link communications module to quickly and easily set up a multi-device network.

Using the Drives Communication selector tables located in the *ZIP*Link section,

1. Locate your Drive and type of communications.
2. Select a *ZIP*Link cable and other associated hardware.

Solution 4: Serial Communications Cables

*ZIP*Link offers communications cables for use with CLICK CPUs that can also be used with other communications devices. Connections include a 6-pin RJ12 connector which can be used in conjunction with the RJ12 Feedthrough module.

Using the Serial Communications Cables selector table located in the *ZIP*Link section,

1. Locate your connector type
2. Select a cable.

Wiring System for CLICK PLCs

Automation Direct

Company Information

Control Systems Overview

CLICK PLC

Do-More PLCs Overview

Do-More H2 PLC

Do-More T1H PLC

DirectLOGIC PLCs Overview

DirectLOGIC DL05/06

DirectLOGIC DL105

DirectLOGIC DL205

DirectLOGIC DL305

DirectLOGIC DL405

Productivity Controller Overview

Productivity 3000

Universal Field I/O

Software

C-More HMI

C-More Micro HMI

ViewMarq Industrial Marquees

Other HMI

Communications

Appendix Book 1

Terms and Conditions

CLICK PLC CPU Module ZIPLink Selector

PLC		ZIPLink		
CPU Module	# of Terms	Component	Module Part No.	Cable Part No.
C0-00DD1-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-00DD2-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-00DR-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-00AR-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-01DD1-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-01DD2-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-01DR-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-01AR-D	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-02DD1-D	20			
C0-02DD2-D	20	No ZIPLinks are available for analog CPU modules.		
C0-02DR-D	20			

CLICK PLC Discrete Input Module ZIPLink Selector

I/O Module		ZIPLink		
Input Module	# of Terms	Component	Module Part No.	Cable Part No.
C0-08ND3	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-08ND3-1	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-08NE3	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-08NA	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-16ND3	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
		Sensor	ZL-LTB16-24	ZL-C0-CBL20*
C0-16NE3	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
		Sensor	ZL-LTB16-24	ZL-C0-CBL20*

CLICK PLC Discrete Output Module ZIPLink Selector

I/O Module		ZIPLink		
Output Module	# of Terms	Component	Module Part No.	Cable Part No.
C0-08TD1	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-08TD2	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-08TR	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-08TA	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-16TD1	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
		Fuse	ZL-RFU20[2]	ZL-C0-CBL20*
		Relay (sinking)	ZL-RRL16-24-1	ZL-C0-CBL20*
C0-16TD2	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
		Fuse	ZL-RFU20[2]	ZL-C0-CBL20*
		Relay (sourcing)	ZL-RRL16-24-2	ZL-C0-CBL20*
C0-04TRS[1]	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*

[1] Note: The C0-04TRS relay output is derated not to exceed 2A per point maximum when used with the ZIPLink wiring system.

[2] Note: Fuses (5 x 20 mm) are not included. See Edison Electronic Fuse section for (5 x 20 mm) fuse. S500 and GMA electronic circuit protection for fast-acting maximum protection. S506 and GMC electronic circuit protection for time-delay performance. Ideal for inductive circuits.
To ensure proper operation, do not exceed the voltage and current rating of ZIPLink module. ZL-RFU20 = 2A per circuit.

CLICK PLC Combo I/O Module ZIPLink Selector

I/O Module		ZIPLink		
Combo Module	# of Terms	Component	Module Part No.	Cable Part No.
C0-16CDD1	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-16CDD2	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-08CDR	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*

CLICK PLC Analog I/O Module ZIPLink Selector

I/O Module		ZIPLink		
Analog Module	# of Terms	Component	Module Part No.	Cable Part No.
C0-04AD-1	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-04AD-2	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-04RTD	20	No ZIPLinks are available for RTD and thermocouple modules.		
C0-04THM	11			
C0-04DA-1	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-04DA-2	11	Feedthrough	ZL-RTB20	ZL-C0-CBL11*
C0-4AD2DA-1	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*
C0-4AD2DA-2	20	Feedthrough	ZL-RTB20	ZL-C0-CBL20*

* Select the cable length by replacing the * with: Blank = 0.5m, -1 = 1.0m, or -2 = 2.0m.