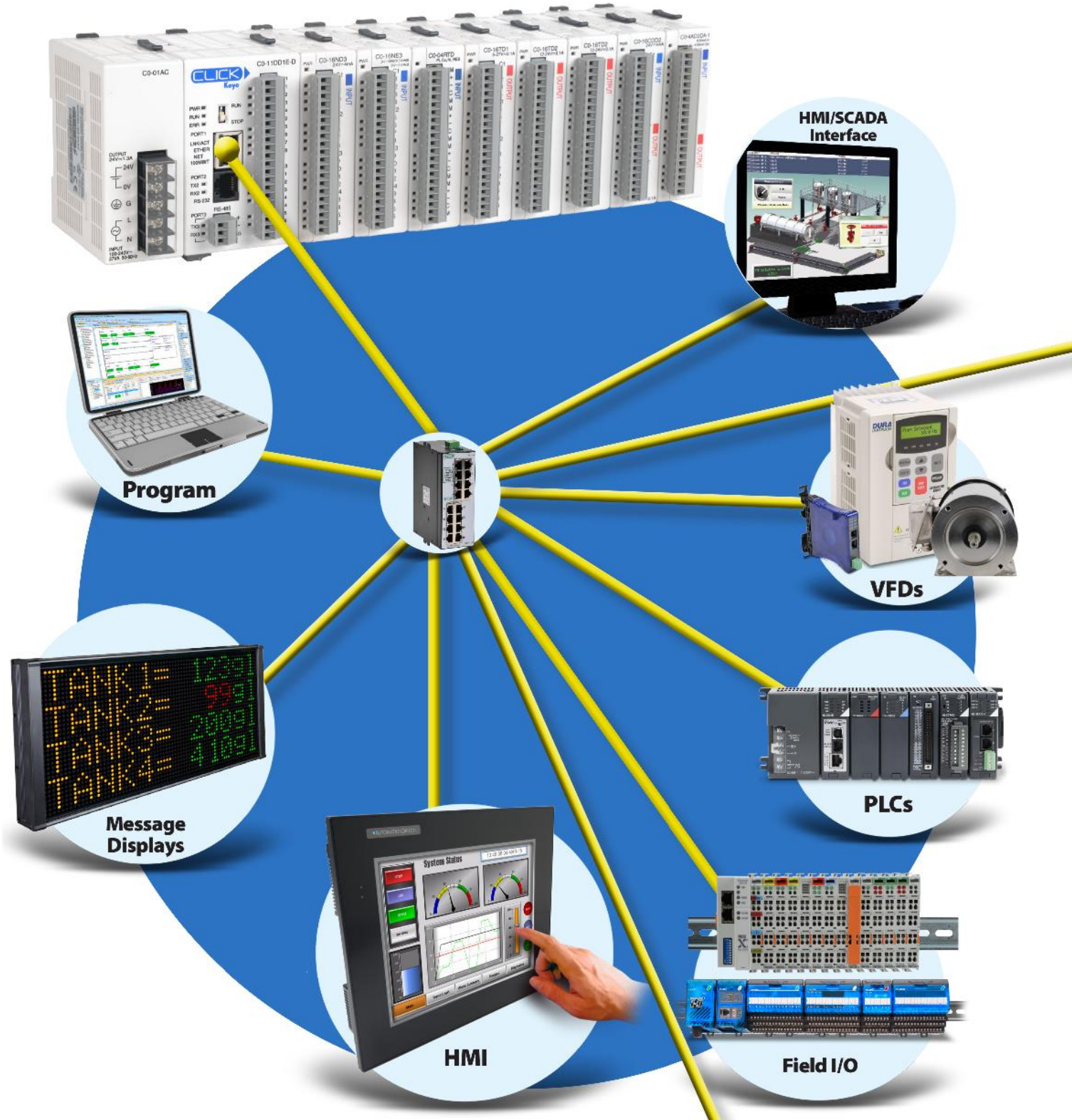
TOPCO

It's all about control



CLICK with Ethernet

The added Ethernet capability gives this mighty micro the versatility needed in today's industrial environment. Connect multiple Modbus TCP servers/clients as well as serial devices to the CLICK Ethernet PLC unit for a low-cost, highly capable control system.

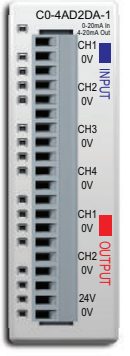
CLICK Koyo

TOPCO
It's all about control

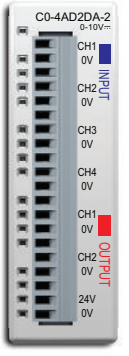
Choosing Expansion I/O Modules

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 PLCs, optional I/O modules, 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	
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

CLICK Specifications

PLC Unit Specifications

Basic, Standard and Analog PLC Unit Specifications			
	Basic PLC	**Standard PLC**	**Analog PLC**
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 PLC	Standard on PLC	Standard on PLC
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 C0-3TB	ADC p/n C0-3TB
24 VDC Power Terminal Block Replacement	ADC p/n C0-4TB	ADC p/n C0-4TB	ADC p/n C0-4TB

CLICK Specifications

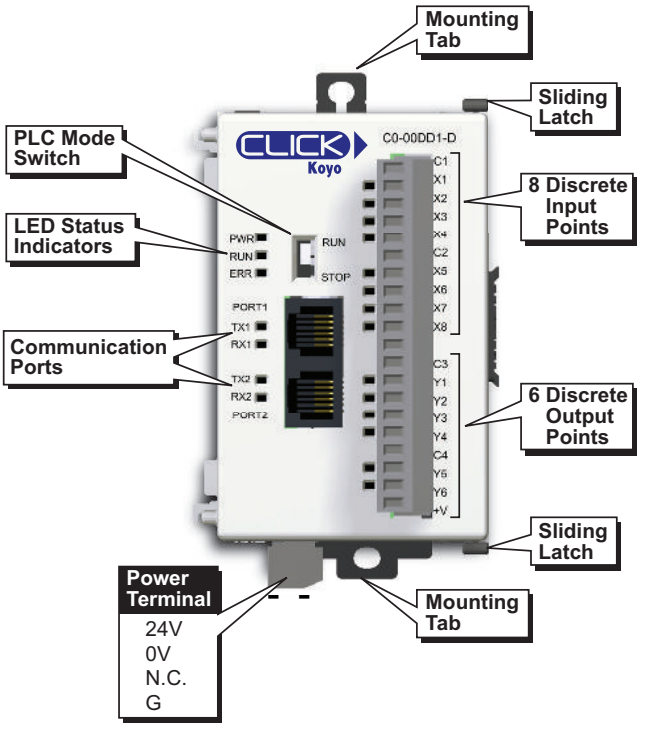
PLC Units Specifications (continued)

Ethernet Basic and Standard PLC Unit Specifications		
	Ethernet Basic PLC	**Ethernet Standard PLC**
Control Method	Stored Program/Cyclic execution method	Stored Program/Cyclic execution method
I/O Numbering System	Fixed in Decimal	Fixed in Decimal
Ladder Memory (steps)	8000	8000
Total Data Memory (words)	8000	8000
Contact Execution (boolean)	< 0.2us	< 0.2us
Typical Scan (1k boolean)	< 1ms	< 1ms
RLL Ladder Style Programming	Yes	Yes
Run Time Edits	Yes	Yes
Scan	Variable / fixed	Variable / fixed
CLICK Programming Software for Windows	Yes	Yes
Built-in Communication Ports	Yes (one Ethernet port and one RS-232 port)	Yes (one Ethernet port, one RS-232 port and one RS-485 port)
FLASH Memory	Standard on PLC	Standard on PLC
Built-in Discrete I/O points	8 inputs, 6 outputs	8 inputs, 6 outputs
Built-in Analog I/O Channels	No	No
Number of Instructions Available	21	21
Control Relays	2000	2000
System Control Relays	1000	1000
Timers	500	500
Counters	250	250
Interrupt	Yes (external: 8 / timed: 4)	Yes (external: 8 / timed: 4)
Subroutines	Yes	Yes
For/Next Loops	Yes	Yes
Math (Integer and Hex)	Yes	Yes
Drum Sequencer Instruction	Yes	Yes
Internal Diagnostics	Yes	Yes
Password Security	Yes	Yes
System Error Log	Yes	Yes
User Error Log	No	No
Memory Backup	Super Capacitor + Battery	Super Capacitor + Battery
Battery Backup	Yes (battery part # D2-BAT-1)	Yes (battery part # D2-BAT-1)
Calendar/Clock	Yes	Yes
I/O Terminal Block Replacement	ADC p/n C0-16TB	ADC p/n C0-16TB
Communication Port & Terminal Block Replacement	N/A	ADC p/n C0-3TB
24 VDC Power Terminal Block Replacement	ADC p/n C0-4TB	ADC p/n C0-4TB

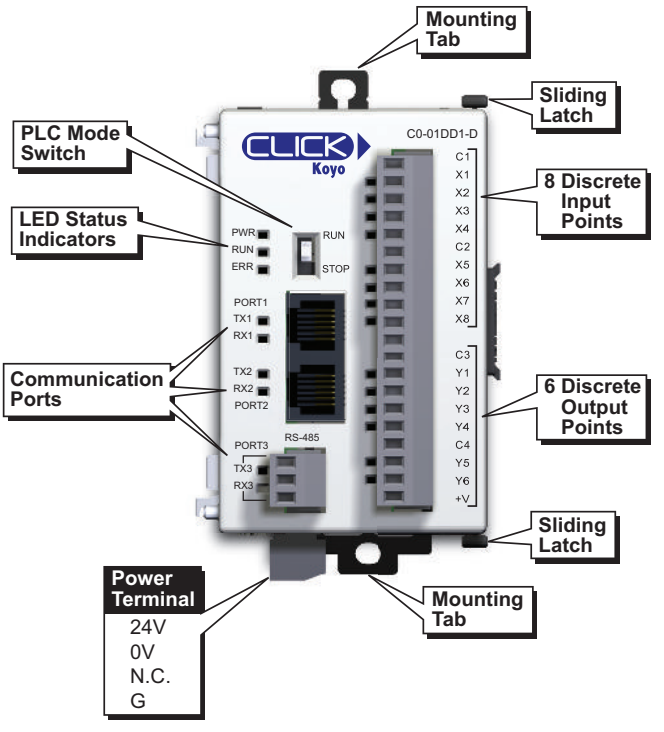
CLICK Specifications

PLC Features

Basic PLCs

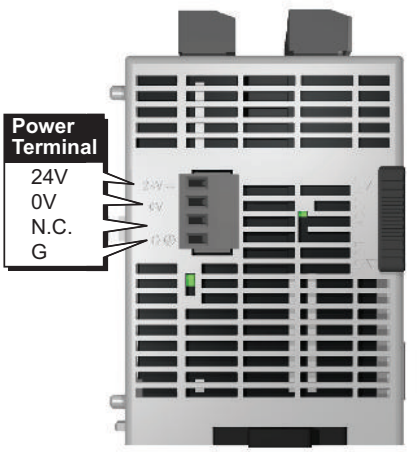


Standard PLCs



Analog PLCs

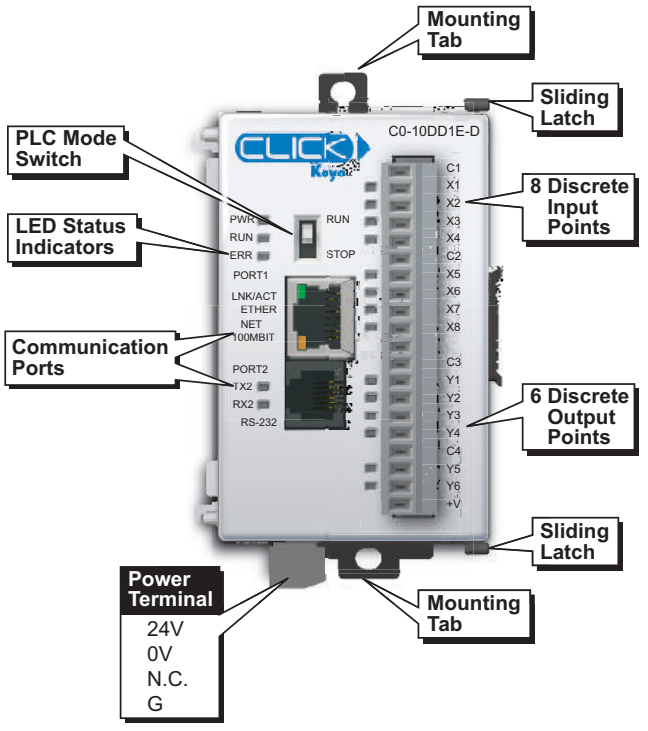
Bottom of PLC (Same on all models)



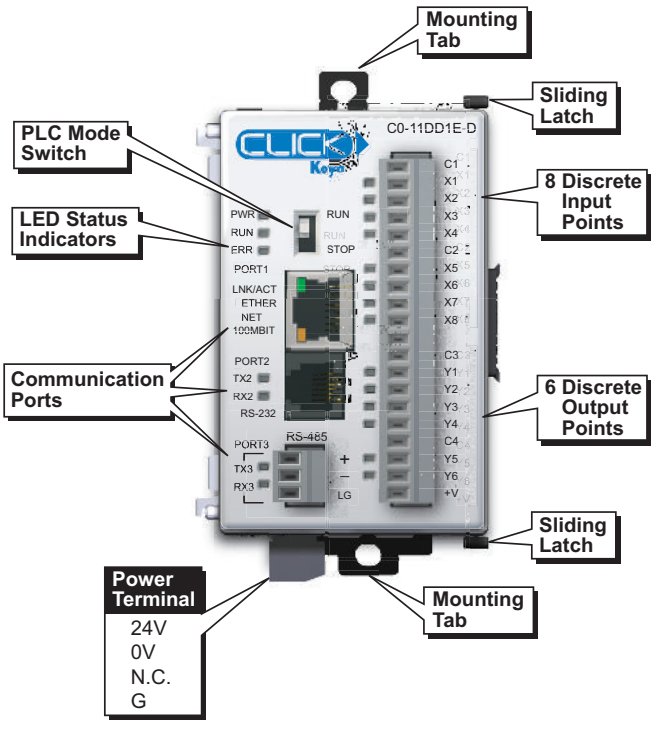
CLICK Specifications

PLC Features (continued)

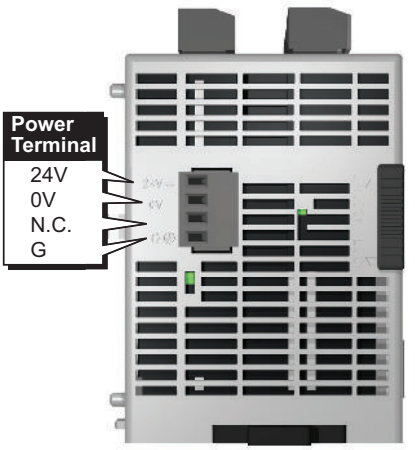
Ethernet Basic PLCs



Ethernet Standard PLCs

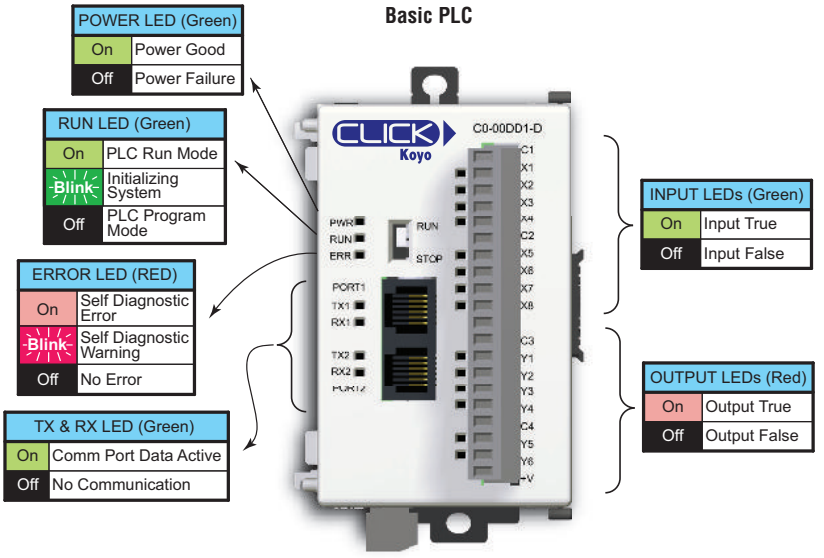


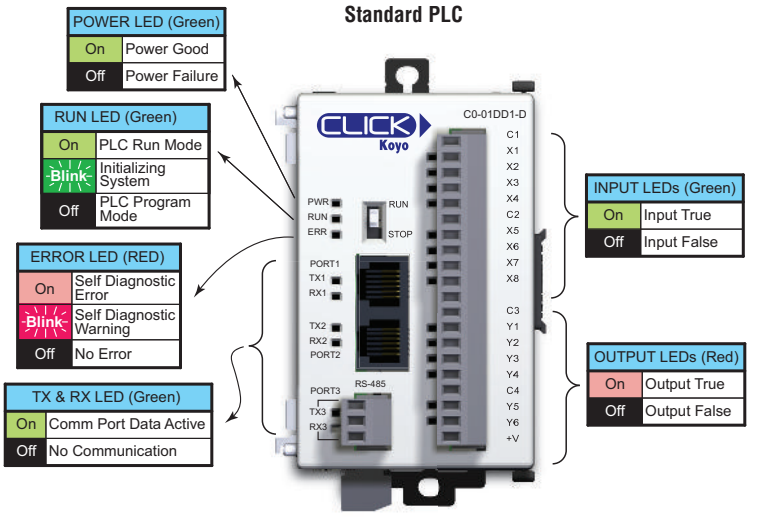
Bottom of Ethernet PLC
(Same on all models)

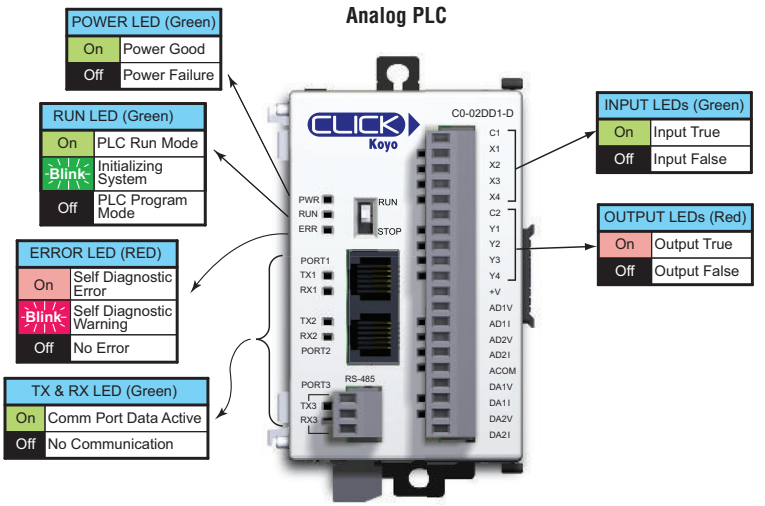


CLICK Specifications

PLC LED Status Indicators

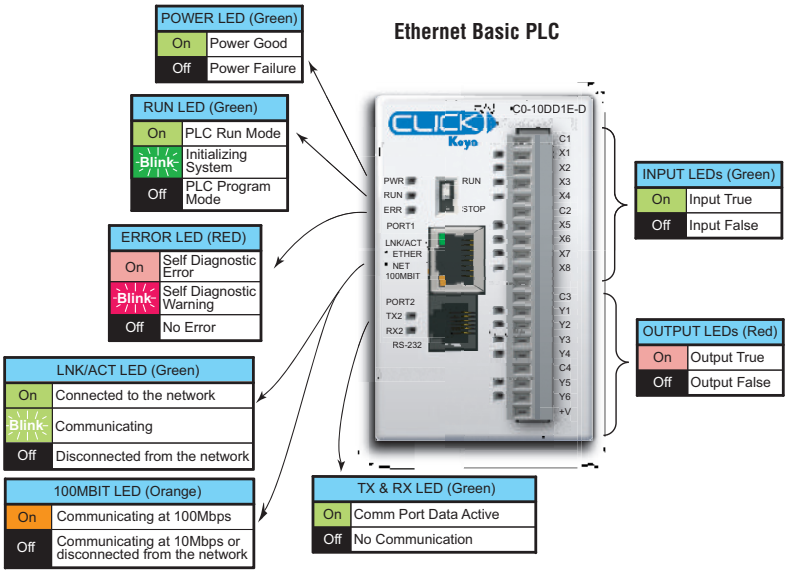


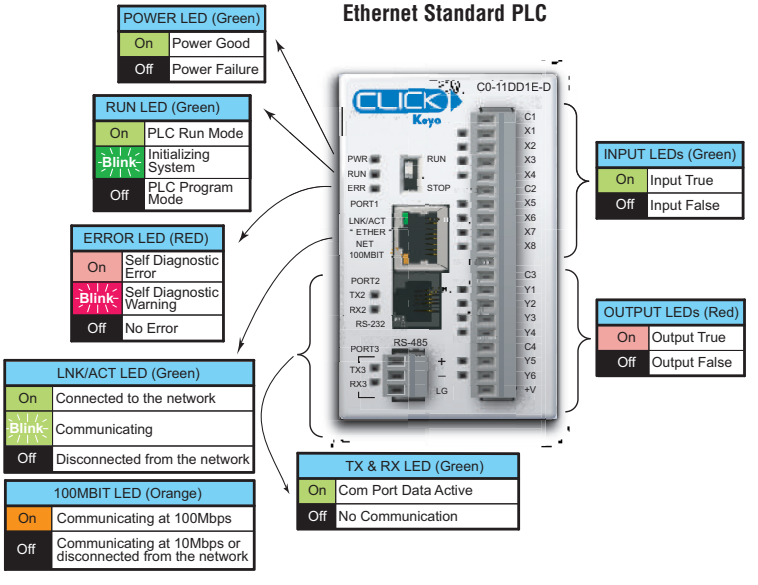




CLICK Specifications

PLC LED Status Indicators

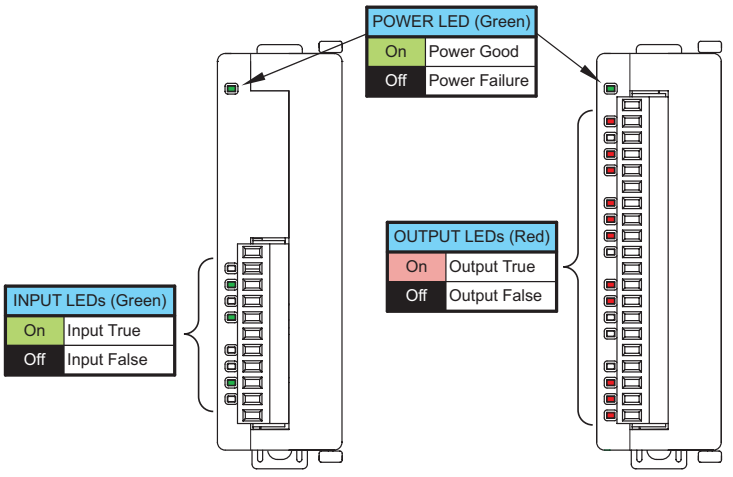




CLICK Specifications

I/O Module LED Status Indicators

I/O Module LED Status Indicators

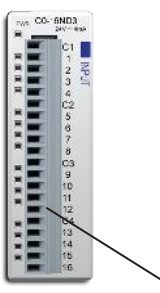


Note: There are no LED indications on the Analog I/O modules.

I/O Terminal Block Specifications for PLCs 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	Analog, analog combo I/O modules only: 1.7 lb-in; All other modules: 2.0 to 2.2 lb-in
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	Analog, analog combo I/O modules only: 1.7 lb-in; All other modules: 2.0 to 2.2 lb-in
ADC Part Number	C0-16TB

Choosing a PLC Unit

Five types of CLICK PLC units are available:

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

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

Basic and Standard PLC Units

The Basic and Standard CLICK PLC units 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 PLC can be used as a ready-to-go PLC control system without any additional I/O modules. The PLC unit only requires a 24 VDC power supply.

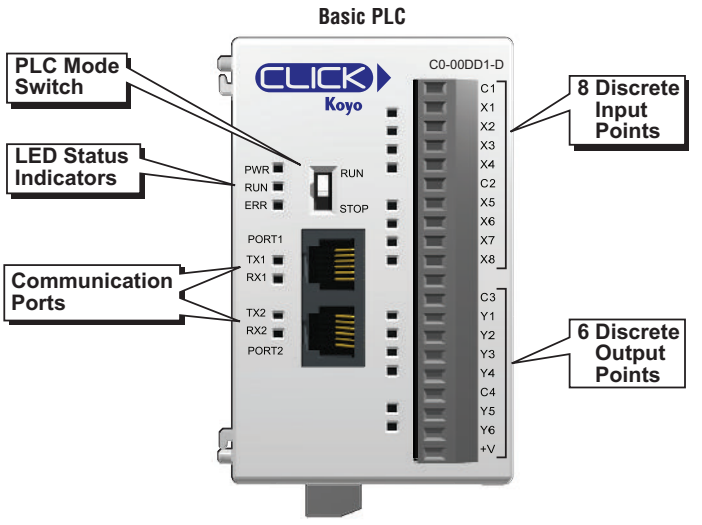
Each PLC I/O can be easily expanded in the future with optional I/O modules as the need arises.

The tables on the right list the part numbers and the various I/O type combinations.

Standard PLC Units

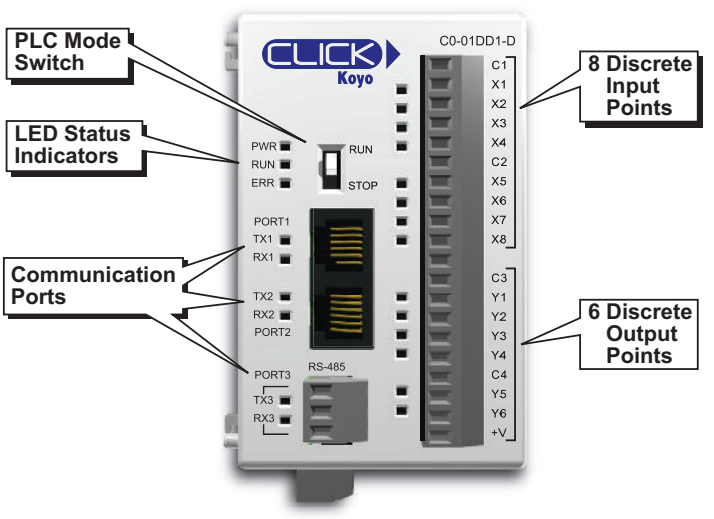
Standard PLC modules also have an RS-485 port for Modbus and ASCII communications, and the battery backup feature which will retain the data in SRAM for 5 years (battery sold separately; part no. D2-BAT-1).

Basic PLC



Basic PLCs			
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 PLCs)
C0-00DD2-D		6 DC (source)	
C0-00DR-D		6 Relay	
C0-00AR-D	8 AC		

Standard PLC



Standard PLCs			
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 PLCs)
C0-01DD2-D		6 DC (source)	
C0-01DR-D		6 Relay	
C0-01AR-D	8 AC		

Choosing a PLC Unit

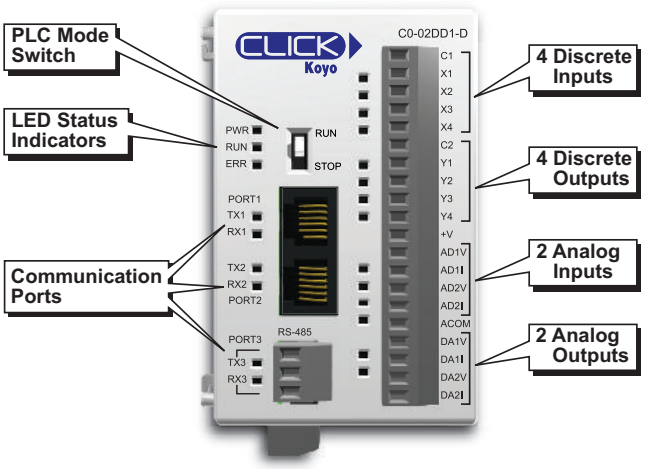
Analog PLC Units

The Analog CLICK PLC units 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 PLC



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

Ethernet Basic and Standard PLC Units

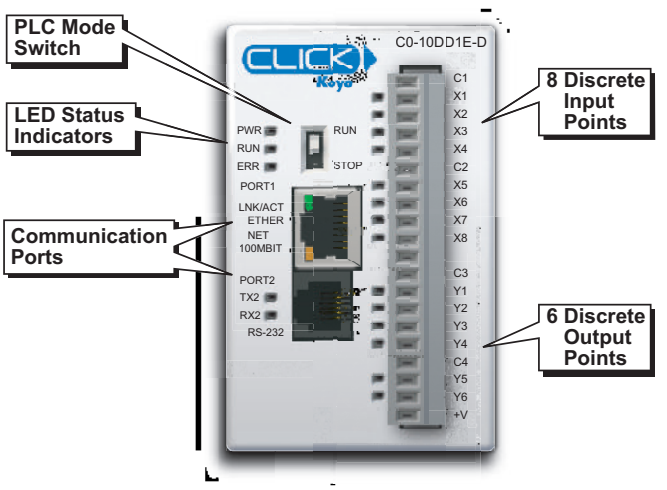
CLICK Ethernet Basic and Standard PLC units have one built-in Ethernet communications port and one standard RS-232 serial communications port. Additionally, Ethernet Standard PLC Units have an RS-485 port for Modbus and ASCII communication.

The Ethernet Basic and Standard CLICK PLC units 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 PLC Units can be used as a ready-to-go PLC control system without any additional I/O modules. The PLC Unit only requires a 24 VDC power supply.

The table on the right lists the PLC Unit part numbers and the various I/O type combinations.

All Ethernet PLC Units have a battery backup feature which will retain the data in SRAM for 5 years (battery sold separately; part no. D2-BAT-1).

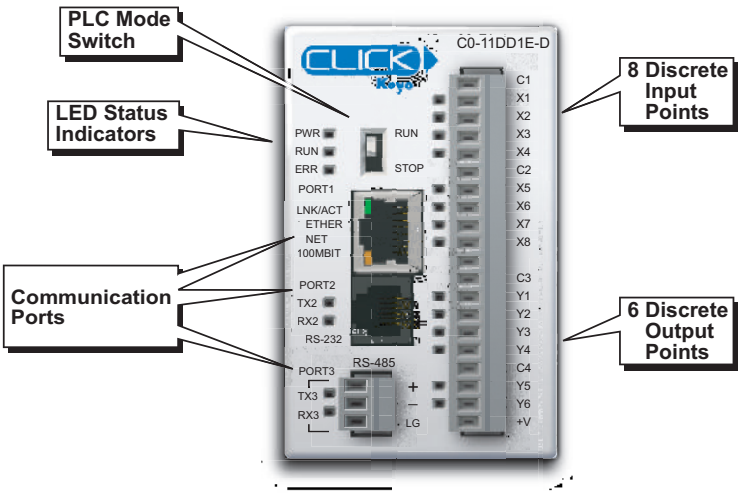
Ethernet Basic PLC



Ethernet Basic PLCs			
Part Number	**Discrete Input Type**	**Discrete Output Type**	**External Power**
C0-10DD1E-D	8 DC (sink/source)	6 DC (sink)	24VDC (required for all PLCs)
C0-10DD2E-D		6 DC (source)	
C0-10DRE-D		6 Relay	
C0-10ARE-D	8 AC		

Choosing a PLC Unit

Ethernet Standard PLC



Ethernet Standard PLCs			
Part Number	**Discrete Input Type**	**Discrete Output Type**	**External Power**
C0-11DD1E-D	8 DC (sink/source)	6 DC (sink)	24V DC (required for all PLCs)
C0-11DD2E-D		6 DC (source)	
C0-11DRE-D		6 Relay	
C0-11ARE-D	8 AC		

Choosing Expansion I/O Modules

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 PLC unit 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.

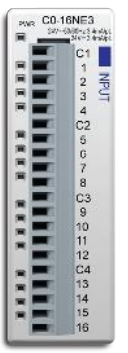
Discrete Input Modules

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

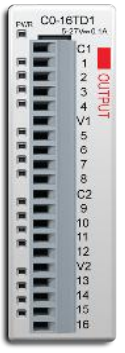
Choosing Expansion I/O Modules

Discrete I/O Modules (continued)

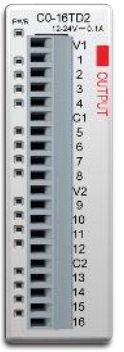
Discrete Output Modules

C0-08TD1

C0-08TD2



C0-16TD1



C0-16TD2

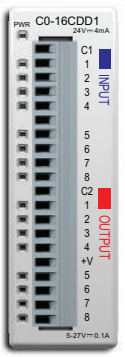
C0-08TA

C0-04TRS

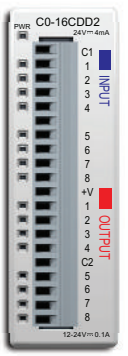
C0-08TR

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

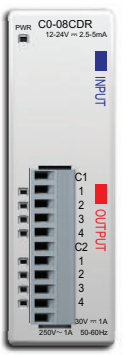
Discrete Combo I/O Modules



C0-16CDD1



C0-16CDD2



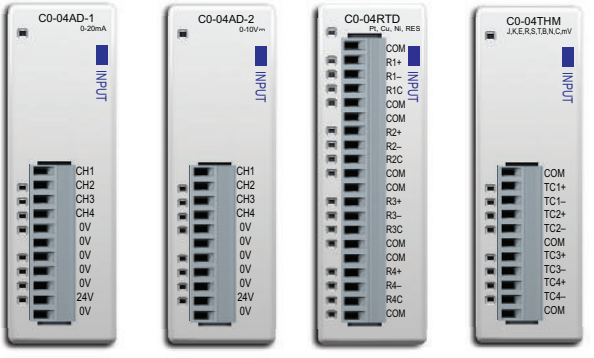
C0-08CDR

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

Choosing Expansion I/O Modules

Analog I/O Modules

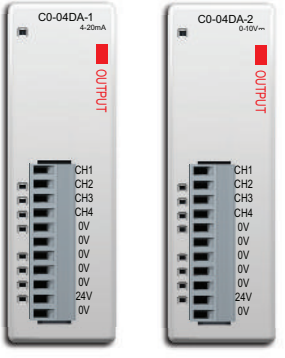
Analog Input Modules



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



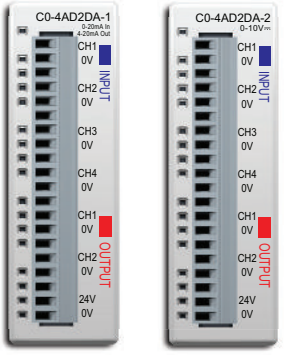
C0-04DA-1 C0-04DA-2

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

Choosing Expansion I/O Modules

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 PLCs, optional I/O modules, 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	
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