EATON | Cutler-Hammer

## Eaton Logic Controller (ELC)

Product Focus

Size
Flexibility
Communications
Large PLC features

### Product Definition

The Eaton Logic Controller (ELC) is Eaton Cutler-Hammer's latest offering into the PLC (Programmable Logic Controller) market. Using the latest technology this reduced sized ELC with its abundant module selection provides a "Just Right" concept of providing only what you want for the price you desire.

**ELC's value added differences.**
4 controller styles:

- **Basic** – 14 I/O (8i/6o) Over 130 instructions provide the all power you need. Two serial ports for master/slave communcations.
- **Clock/Calendar** – Same features as the basic model plus clock/calendar, remote I/O and retentive data storage.
- **Analog** – Same features as Clock/ Calendar plus analog In and Out.
- **High Speed** – All the features of clock/calendar with the ability to capture or output 100Khz pulses.

**More Controller Features**

- High speed pulse capture and high speed pulse output on all controllers
- Large module selection of AC/DC In, relay/transistor Out.
- Large selection of analog In/Out in various I/O counts per module
- 2 Modbus (ASCII / RTU) serial ports: 1 slave only, 1 master/slave
- Over 200 instructions to choose from: Floating point math, communications, 1-, 4-, 8-, 16- and 32-bit manipulations, logical, block move, block compare, retentive data storage, conversion, time base from clock/calendar.
- Network communications on Modbus TCP, DeviceNet, and Profibus.

**ELC benefits solve applications:**
**Size** – large PLC features in a 1" package. One-third the size of competitive offerings. ELC can retrofit more I/O in the same space or allow more cost savings by reducing cabinet size.
**Flexibility** – ELC controllers expand from 10 to 256 I/O using the same controller. No more counting I/O to determine which controller to use.

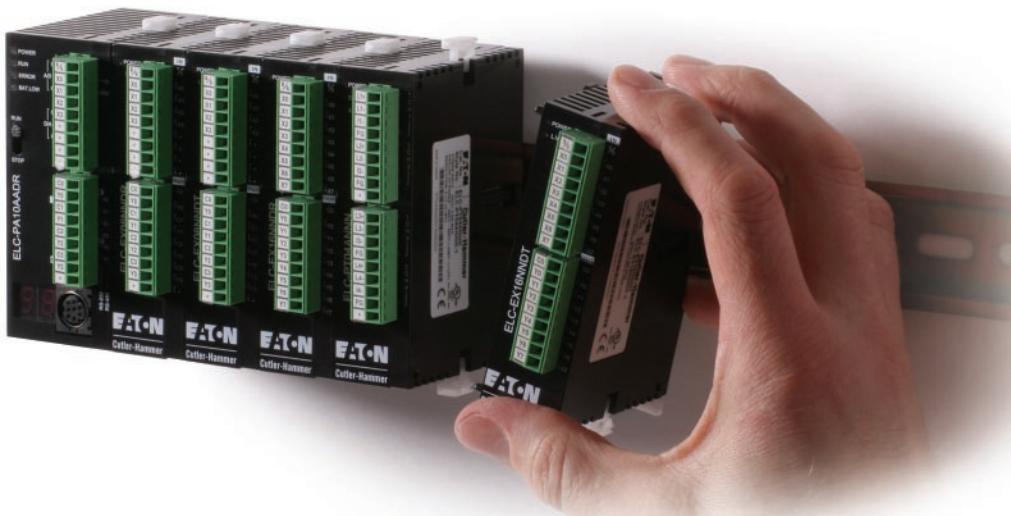
- Add only the amount of I/O you need. Choose I/O counts as small as 4 In / 4 Out to 8 In / 8 Out.
- No racks lets you add as many modules as needed by snapping them into their mating connectors.

**Large PLC Features** – Multiple communications ports, Remote I/O ability, data storage, high speed counters, high speed pulse outputs, interrupts, timer resolution to 1ms, PIDs, plus much more.

**Software** – ELCSoft programs in standard ladder or sequential function chart programming.

- Display registers "in use" and modules attached to the ELC.
- Monitor runtime applications. Force (except basic), and enter/modify register values.
- Wizards aid programming of remote I/O, standard communications, high speed counters, pulse outputs, ELC Link, positioning, interrupts, PIDs, and extension module setup.

**Seamless integration to Eaton products** – The ELC communicates with MVX drives eliminating the need to operate drives by analog voltage/current or digital I/O. Drive parameters are accessed through serial communications saving time and money.
**Communications** – Connecting to other networks is easy. Add slave connectivity to DeviceNet, Profibus, or ModbusTCP and share data with other networks.



| Controller | ELC-PB14xxxx | ELC-PC12xxxx | ELC-PA10xxxx | ELC-PH12xxxx |
|---|---|---|---|---|
| Dimensions WxHxD (mm) | 25.2 x 90 x 60 | 37.4 x 90 x 60 | | |
| Maximum I/O | 256 (128 In / 128 Out) Any number of modules | | | |
| I/O Type | 14 (8 DI / 6DO) | 12 (8 DI / 4 DO) | 10 (4DI/2DO/2AI/2AO) | 12 (8 DI / 4 DO) |
| DC In Sink/Source | Yes | | | |
| Execution Speed | Basic commands – 2m seconds minimum | | | |
| Program language | Commands + Ladder Logic + SFC | | | |
| Program Capacity (Steps) | 3792 | 7920 | | |
| Data Memory Capacity (bits) | 1280 | 4096 | | |
| Data Memory Capacity (words) | 744 | 5000 | | |
| Index Registers | 2 | 8 | | |
| File Memory Capacity (words) | - | 1600 Words | | |
| Retentive Storage | Yes | | | |
| Commands Basic/Advanced | 32 / 107 | 32 / 168 | | |
| Floating Point | Yes | | | |
| SFC Commands (Steps) | 128 | 1024 | | |
| Timers Qty / ( resolution ms) | 128 / 1 – 100 | 256 / 1 – 100 | | |
| Counters Qty / bits / direction | 128 /16-32 / Up-Down | 250 / 16-32 / Up-Down | | |
| High Speed counters | 13 (20Khz) | 15 (20Khz) 1 ph – 2 ph | | 100Khz |
| Pulse Output | 2 channels 10KHz Max | 2 channels, 50KHz Max | | 100Khz |
| PID | Yes | Yes | | |
| Master Control Loop | 8 Loops | 8 Loops | | |
| Subroutines | 64 Subroutines | 256 Subroutines | | |
| For/Next Loops | Yes | | | |
| Interrupts | 6 | 15 | | |
| Real-time Clock / Calendar | - | Built-in | | |
| Password Security | Yes | | | |
| Diagnostic Relays | Yes | | | |
| Diagnostic Word registers | Yes | | | |
| Specialty Expansion modules | 8 (Analog In / Analog Out / TC / RTD / PT) Modules do not count in total I/O | | | |
| Serial Ports | 2 Modbus (ASCII/RTU) 1= Slave (RS-232) / 1=Master-Slave (RS-485) | | | |
| Remote I/O | - | With 16 other devices | | |
| Run Time Editing | YES | | | |
| Run / Stop Switch | YES | | | |
| Removable Terminal Strips | YES | | | |
| Special Features | - | 2 Potentiometers | 2 7-SEGMENT DISPLAYS | 2 Potentiometers |

| Digital I/O Model | Power | Input Unit | | Output Unit | |
|---|---|---|---|---|---|
| | | Point | Type | Point | Type |
| Dimensions WxHxD (mm) | 25.2 x 90 x 60 | | | | |
| ELC-EX08NNAN | 24VDC | 8 | AC | 0 | - |
| ELC-EX08NNDN | | 8 | DC Sink or Source | 0 | - |
| ELC-EX08NNNR | | 0 | | 8 | Relay |
| ELC-EX08NNNT | | 0 | | 8 | Transistor |
| ELC-EX06NNNI | | 0 | | 6 | Relay |
| ELC-EX08NNDR | | 4 | | 4 | Relay |
| ELC-EX16NNDR | | 8 | | 8 | |
| ELC-EX08NNDT | | 4 | | 4 | Transistor |
| ELC-EX16NNDT | | 8 | | 8 | |

| Analog I/O Model | Power | Input Unit | | Output Unit | |
|---|---|---|---|---|---|
| | | Point | Type | Point | Type |
| Dimensions WxHxD (mm) | 25.2 x 90 x 60 | | | | |
| ELC-AN02NANN | 24VDC | 0 | -20mA~20mA -10V ~ +10 V | 2 | 0~20mA 0V ~ +10 V |
| ELC-AN04NANN | | 0 | | 4 | |
| ELC-AN06AANN | | 4 | | 2 | |
| ELC-AN04ANNN | | 4 | | 0 | - |
| ELC-PT04ANNN | | 4 | Platinum Temp. | 0 | |
| ELC-TC04ANNN | | 4 | Thermocouple | 0 | |
| ELC-RT08ANNN | | 8 | Resistive | 0 | |

| Power Supply Model | ELC-PS01 | ELC-PS02 |
|---|---|---|
| Dimensions WxHxD (mm) | 1.44" x 3.54" x 2.36" (36.5 x 90 x 60) | 2.17" x 3.54" x 2.36" (55 x 90 x 60) |
| Input Power | 100~240VAC 50/60Hz | |
| Output Volts | 24VDC | |
| Output Current (A) | 1 A | 2 A |

| Electrical Specifications | |
|---|---|
| **Power supply voltage** | ELC: 24VDC (-15%~20%) (With DC input reverse polarity protection), Expansion Unit: supplied by the ELC |
| **Power Consumption** | Typically 3.- 6W |
| **Insulation Resistance** | > 5 MΩ at 500 VDC (Between all inputs / outputs and earth) |
| **Noise Immunity** | ESD: 8KV Air Discharge EFT: Power Line: 2KV, Digital I/O: 1KV, Analog & Communication I/O: 250V Damped-Oscillatory Wave: Power Line: 1KV, Digital I/O: 1KV RS: 26MHz~1GHz, 10V/m |
| **Temperature** | Operation: 0°C~55°C (Temperature), 50~95% (Humidity), Pollution degree 2; Storage: -25°C~70°C (Temperature), 5~95% (Humidity) |
| **Vibration / Shock Resistance** | Standard: IEC1131-2, IEC 68-2-6 (TEST Fc) / IEC1131-2 & IEC 68-2-27 (TEST Ea) |
| **Certified to:** | CE/UL/CSA |
| **Weight (approx.) (g)** | 158 |

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