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, for delivering only what you want for the price you desire.

**A Wealth of Features**
The ELC family offers four styles of controllers. These controllers offer combinations of the following features:

- High speed pulse capture and high speed pulse output on all controllers
-Interrupts
- Large module selection AC/DC in, relay/transistor out
- Large analog selection of analog in, out, combined, thermocouple, RTD platinum
- Over 200 instructions to choose from: Floating point math, communications, hex, decimal, octal, BCD, ASCII conversion, 1, 4, 8, 16, 32, bit manipulations, logical, block move, block compare, retentive data storage, time base from clock/calendar
- 2 Modbus (ASCII or RTU) serial ports: 1 slave only, 1 master/slave
- ELC controller can be wired for remote I/O communications (except the PB model)

**The Right Amount of I/O**
Why pay for functionality you’ll never need? Why be trapped with functionality that you can’t scale to meet changing needs? Eaton is changing everything with the ELC. At less than half the size of most PLCs, the Cutler-Hammer ELC is an ideal solution when space is at a premium and specialized I/O needs present themselves.

**ELC’s Value Added Differences**
4 Controller Styles:
- Basic—14 I/O (8I/6O) Over 130 instructions provide all the power you need; 2 serial ports for master/slave communications
- 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 100 Khz pulses

**Base Models with 10 to 14 I/O, Expandable to 256**
**Half the Size of Most PLCs**
**1-, 4-, 8-, 16-and 32-Bit Instructions**
**DIN Rail Mountable, No Rack Required**
**Built-in Integral LED Display**
**High-level Network Access - MODBUS®, DeviceNet and Profinbus**
**Remote Analog Modules for Analog I/O, Thermocouples and RTDs**
Space Saving, Cost Saving
This space-saving design perfectly fits at home in small machine control stations as well as other enclosed applications where space is critical.

While the ELC is perfectly suited for applications with 40 I/O and less, it can also be expanded to 256 I/O. That means there’s no need to change to a different controller as I/O needs expand. Furthermore, the ELC’s 2 communication ports can provide any networking task. In remote mode, the ELC exchanges and shares information with up to 16 other devices, in normal mode, the ELC can communicate with up to 32 other devices. Its small size allows for reduced panel size, and saves valuable machine space.

Capability
The ELC provides the instruction set of a large PLC in a small package. It is capable of 1-, 4-, 8-, 16- and 32-bit instructions, block compare, block move, communications, interrupts, clock/calendar and logic, over 240 instructions in all (except PB).

No Racks Required
A DIN rail lets you add as many modules as desired. Just snap on, and slide into place. All connections are done automatically.

Built-In Display
An integral LED display provides user-assigned process monitoring, error messages, alarms, display counts and more.

Large PLC Features
Multiple communication ports, remote I/O ability, data storage, high speed counters, high speed pulse outputs, interrupts, timer resolution to 10 ms, PIDs, plus much more.

Easy Connectivity to Drives
ELC communicates easily to MVX drives, eliminating the need to operate drives by analog voltage/current or digital I/O. ELC can access all of the parameters in the MVX by serial communications, saving money.

Remote Communication
All ELC analog type modules are capable of stand-alone operation. Mounted remotely, the ELC communicates to the analog module through its communications port. The ELC also lets you read parameters, set parameters, use scale, offset, and average values.

Software
ELCSoft programs in standard ladder, sequential function chart programming or instruction.

ELC Modules
ELC Expansion Modules
ELC expansion modules provide the correct amount of I/O for application solutions. Choose 8 or 16 I/O expansion modules added to the ELC processor 256 I/O (128 Inputs and 128 maximum).

ELC Specialty Modules
In addition to the expansion specialty modules like analog in, out, Platinum temperature, thermocouple, DeviceNet, PROFIBUS, and simulator switch module; can be added. The ELC-485APTR easily connects the RS485 port of MVX drive, controllers and other devices.
GRAPHIC PANELS

ELC Graphic Panels are simple to program and easily connect to ELC products. ELC graphic panels make modifying an application quick and easy. ELC graphic panels also connect to Cutler-Hammer® MVX drives, IQMODBUS meters and many other devices. With over 30 objects that can be placed anywhere on the display, these tough panels also communicate with other major controllers. These graphic panels have two serial ports which can be used simultaneously to communicate. Transfer applications to or from these graphic panels using the handy transfer module (ELC-GPXFERMOD). Ten programmable functions keys provide easy to change pages, input numeric values, enter alpha-numeric passwords, set, reset and more. Create alarms, password protect, import bitmaps, and use many different fonts.

SPECIFICATIONS

ELECTRICAL/EMC
ESD Immunity: 8 kV air discharge
EFT Immunity:
  Power Line: 2 kV
  Digital I/O: 1 kV
  Analog and Communication I/O: 250 V
Damped-Oscillatory Wave:
  Power Line: 1 kV
  Digital I/O: 1 kV
RS Immunity: 26 MHz to 1 GHz, 10 V/m
OTHER APPROVALS
Agency Certifications: UL 508, cUL, CE, Class 1, Div 2

ENVIRONMENTAL RATINGS

TRANSPORTATION AND STORAGE
Temperature: -25 to 70°C
(-13 to 158°F)
Humidity: 5 to 95%

OPERATING
Temperature: 32 to 131°F (0 to 55°C)
Humidity: 50 to 95%

Power Supply Voltage:
  ELC: 24 Vdc (-15 to 20%) with DC input reverse polarity protection
  Expansion Unit: Supplied by the ELC
Power Consumption: 3 to 6 W
Insulation Resistance: >5 M @ 500 Vdc, between all inputs/outputs and earth

Grounding: The diameter of the grounding wire cannot be smaller than the wire diameter of terminals L and N (all ELC units should be grounded directly to the ground pole)

Vibration/Shock Resistance:
  Standard: IEC1131-2, IEC 68-2-6 (TEST Fc)/IEC1131-2 and IEC 68-2-27 (TEST Ea)
  Approx. Weight: 0.158 kg (0.348 lb)

DC INPUT POINT ELECTRICAL
Input Type: DC (SINK or SOURCE)
Input Current: 24 Vdc 5 mA
Active Level:
  OFF/ON: Above 16 Vdc
  ON/OFF: Below 14.4 Vdc
Response Time: About 10 mS; an adjustment range of 0 to 10,000 mS could be selected through D1020 and D1021

ELC SOFTWARE

- 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, PIUs, and extension module setup

ELCSoft, software
SPECIFICATIONS (CONTINUED)

Maximum I/O: 256 (128 In / 128 out); any number of modules

I/O Type:
- **ELC-PB14 Series**: 14 (8 in/6 out, digital)
- **ELC-PC12 Series**: 12 (8 in/4 out, digital)
- **ELC-PA10 Series**: 10 (4 in/2 out, digital; 2 in/2 out, analog)
- **ELC-PH12NDT**: 12 (8 in/4 out, digital)

DC In Sink/Source: Yes

Execution Speed: Basic commands—2 µ seconds min

Program Language: Boolean + ladder logic + SFC

Program Capacity:
- **ELC-PB14 Series**: 3792 Steps
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 7920 Steps

Data Memory Capacity (bits):
- **ELC-PB14 Series**: 1280 Bits
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 4096 Bits

Data Memory Capacity (words):
- **ELC-PB14 Series**: 744 Words
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 5000 Words

Index Registers:
- **ELC-PB14 Series**: 2 Words
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 8 Words

File Memory Capacity:
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT Only**: 1600 Words

Commands:
- **ELC-PB14 Series**: 32 Basic/107 advanced
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 32 Basic/168 advanced

Floating Point: Yes

SFC Commands:
- **ELC-PB14 Series**: 128 Steps
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 1024 Steps

Timers:
- **ELC-PB14 Series**: 128 (1 to 100 ms)
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 256 (1 to 100 ms)

Counters:
- **ELC-PB14 Series**: 128 (16 bit/32 bit/up/down)
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 250 (16 bit/32 bit/up/down)

High Speed Counters:
- **ELC-PB14 Series**: 1 (14 modes) 10 K maximum
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 1 (14 modes) 20 kHz for PA/PC; 100 kHz for PH

Pulse Output:
- **ELC-PB14 Series**: 2 channels 10 kHz maximum
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 2 channels, 40 kHz maximum for PC/PA, 100 kHz for PH

Master Control Loop:
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT Only**: 8 Loops

Subroutines:
- **ELC-PB14 Series**: 64 subroutines
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 256 subroutines

Interrupts:
- **ELC-PB14 Series**: 6
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT**: 15 (external/time base/HS CNTR /comm)

Real-time Clock/Calendar:
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT Only**: Built-in

Specially Expansions Modules:
- 8 (analog in/analog out/TC/RTD/PT); modules do not count in total I/O

Serial Ports:
- 2 (one RS232, one RS485)

Remote I/O:
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT Only**: With 16 other devices

Run Time Editing:
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT Only**: Yes, also includes PB

Run/Stop Switch:
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT Only**: Yes, also includes PB

Removable Terminal Strips:
- **ELC-PC12 Series, ELC-PA10 Series, ELC-PH12NDT Only**: Yes, also includes PB

Special Features:
- **ELC-PC12 Series**: 2 potentiometers
- **ELC-PA10 Series**: Two 7-segment displays
- **ELC-PH12NDT**: 2 potentiometers
## ELC Expansion Modules

<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
<th>Style</th>
<th>Points</th>
<th>Type</th>
<th>Points</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC-EX08NNAN</td>
<td>AC IN</td>
<td>1</td>
<td>8</td>
<td>120 Vac</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td>ELC-EX08NNDN</td>
<td>DC IN</td>
<td>1</td>
<td>8</td>
<td>DC Sink or Source</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td>ELC-EX08NNNR</td>
<td>Relay OUT</td>
<td>1</td>
<td>0</td>
<td>—</td>
<td>8</td>
<td>Relay</td>
</tr>
<tr>
<td>ELC-EX08NNDT</td>
<td>IN/OUT Combo</td>
<td>2</td>
<td>4</td>
<td>DC Sink or Source</td>
<td>4</td>
<td>Transistor</td>
</tr>
<tr>
<td>ELC-EX08NNNT</td>
<td>Transistor OUT</td>
<td>1</td>
<td>0</td>
<td>—</td>
<td>8</td>
<td>Transistor</td>
</tr>
<tr>
<td>ELC-EX06NNNI</td>
<td>High Current Relay OUT</td>
<td>2</td>
<td>0</td>
<td>—</td>
<td>6</td>
<td>Relay (6 A)</td>
</tr>
<tr>
<td>ELC-EX08NNDR</td>
<td>IN/OUT Combo</td>
<td>2</td>
<td>4</td>
<td>DC Sink or Source</td>
<td>4</td>
<td>Relay</td>
</tr>
<tr>
<td>ELC-EX16NNDR</td>
<td>IN/OUT Combo</td>
<td>2</td>
<td>8</td>
<td>DC Sink or Source</td>
<td>8</td>
<td>Relay</td>
</tr>
<tr>
<td>ELC-EX16NNDT</td>
<td>IN/OUT Combo</td>
<td>2</td>
<td>8</td>
<td>DC Sink or Source</td>
<td>8</td>
<td>Transistor</td>
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## ELC Specialty Modules

<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
<th>Power</th>
<th>Style</th>
<th>Points</th>
<th>Type</th>
<th>Points</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC-AN02NANN</td>
<td>Analog OUT</td>
<td></td>
<td></td>
<td>0</td>
<td>-20 mA to 20 mA</td>
<td>2 (12 bits)</td>
<td>0 to 20 mA, 4 to 20 mA</td>
</tr>
<tr>
<td>ELC-AN04NANN</td>
<td>Analog OUT</td>
<td></td>
<td></td>
<td>0</td>
<td>-10V to +10V</td>
<td>4 (12 bits)</td>
<td>0 to 10V, 2 to 10V</td>
</tr>
<tr>
<td>ELC-AN06AANN</td>
<td>Analog Combo</td>
<td>24 Vdc</td>
<td></td>
<td>4</td>
<td>±10V, ±20 mA</td>
<td>2 (12 bits)</td>
<td>0 to 20 mA, 0 to 10V</td>
</tr>
<tr>
<td>ELC-AN04ANNN</td>
<td>Analog IN</td>
<td></td>
<td></td>
<td>4</td>
<td>(V = 14 bits, I = 11 bits)</td>
<td>±10V, ±20 mA</td>
<td>0</td>
</tr>
<tr>
<td>ELC-PT04ANNN</td>
<td>PT100</td>
<td></td>
<td></td>
<td>4</td>
<td>(V = 14 bits, I = 13 bits)</td>
<td>PT100</td>
<td>0</td>
</tr>
<tr>
<td>ELC-TC04ANNN</td>
<td>Thermocouple</td>
<td></td>
<td></td>
<td>4</td>
<td>J, K, R, S, T</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>ELC-EX08NNSN</td>
<td>Switch Input</td>
<td>24 Vdc</td>
<td></td>
<td>3</td>
<td>Switch</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>ELC-COPBDP</td>
<td>PROFIBUS DP</td>
<td>24 Vdc</td>
<td></td>
<td>4</td>
<td>32</td>
<td>Digital</td>
<td>32</td>
</tr>
<tr>
<td>ELC-CODNET</td>
<td>DeviceNet</td>
<td>24 Vdc</td>
<td></td>
<td>5</td>
<td>32</td>
<td>Digital</td>
<td>32</td>
</tr>
<tr>
<td>ELC-485APTR</td>
<td>RS485 Easy Connect</td>
<td>N/A</td>
<td>6</td>
<td>0</td>
<td>—</td>
<td>0</td>
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</tr>
</tbody>
</table>
## To Order
Visit omega.com/elic_plc for Pricing and Details

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AC</td>
<td>DC</td>
</tr>
<tr>
<td>ELC-PB14NNDR</td>
<td>14 I/O PB Series</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>ELC-PB14NNDT</td>
<td>14 I/O PB Series</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>ELC-PC12NNAR</td>
<td>12 I/O PC Series</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>ELC-PC12NNDR</td>
<td>12 I/O PC Series</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>ELC-PH12NNDT</td>
<td>12 I/O PH Series</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>ELC-PA10AADR</td>
<td>10 I/O PA Series</td>
<td>4</td>
<td>2</td>
</tr>
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### DIGITAL I/O EXPANSION MODULES

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC-EX06NNNI</td>
<td>6 I/O expansion</td>
<td>6 A outputs</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>ELC-EX08NNAN</td>
<td>8 I/O expansion</td>
<td>AC in</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ELC-EX08NNDN</td>
<td>8 I/O expansion</td>
<td>DC in</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ELC-EX08NNNR</td>
<td>8 I/O expansion</td>
<td>Relay out</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ELC-EX08NNDR</td>
<td>8 I/O expansion</td>
<td>in/out combo</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>ELC-EX16NNDR</td>
<td>16 I/O expansion</td>
<td>in/out combo</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>ELC-EX08NNDT</td>
<td>8 I/O expansion</td>
<td>in/out combo</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>ELC-EX16NNDT</td>
<td>16 I/O expansion</td>
<td>in/out combo</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>ELC-EX08NNSN</td>
<td>8 I/O expansion</td>
<td>Switch in</td>
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### ANALOG I/O MODULES

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>ANALOG IN</th>
<th>ANALOG OUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC-AN04ANNN</td>
<td>4 I/O analog in</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ELC-AN02NANN</td>
<td>2 I/O analog out</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ELC-AN04NANN</td>
<td>4 I/O analog out</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ELC-AN06AANN</td>
<td>6 I/O analog in/out</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>ELC-TC04ANNN</td>
<td>4 I/O thermocouple J, K, R, S, T</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ELC-PT04ANNN</td>
<td>4 I/O platinum RTD, PT100</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

### ACCESSORIES

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC-CO2N</td>
<td>ELC expansion module for DeviceNet e</td>
</tr>
<tr>
<td>ELC-CO2P</td>
<td>ELC expansion module for ProfibusDP slave</td>
</tr>
<tr>
<td>ELC-M01</td>
<td>ELC motion control for 1 axis, use with ELC-PH00NT</td>
</tr>
<tr>
<td>ELC-A0PGM</td>
<td>Program transfer module for ELC controllers</td>
</tr>
<tr>
<td>ELC-GP02</td>
<td>ELC graphics panel, monochrome, 160x32 pixels, 10 keys</td>
</tr>
<tr>
<td>ELC-GP04</td>
<td>ELC graphics panel, monochrome, 128x64 pixels, 10 keys</td>
</tr>
<tr>
<td>ELC-GP0F</td>
<td>ELC graphics panel transfer module</td>
</tr>
<tr>
<td>ELC-PS01</td>
<td>ELC power supply, 24 W, 1 A</td>
</tr>
<tr>
<td>ELC-PS02</td>
<td>ELC power supply, 48 W, 2 A</td>
</tr>
<tr>
<td>ELC-SOFT</td>
<td>ELC programming software for ELC controllers</td>
</tr>
<tr>
<td>ELC-SOFTGP</td>
<td>ELC programming software for ELC graphics panels</td>
</tr>
<tr>
<td>ELC-CBPC1</td>
<td>Cable to connect a PC or a GP unit to ELC, 1 m (3.3') (DB9 pin female to 8 pin DIN)</td>
</tr>
<tr>
<td>ELC-CBPC1C3</td>
<td>Cable to connect a PC or a GP unit to ELC, 3 m (9.8') (DB9 pin female to 8 pin DIN)</td>
</tr>
</tbody>
</table>

Ordering Example: ELC-PB14NNDR, ELC-SOFT.