

Electronic Control Module



Introduction

The E-Plex 400ECM series combines a master programmer and controller functionality with a customizable touch-screen in one low-cost interface. The 400ECM is housed in a thin structure that extends less than 1/2" from the dash or wall surface. The 400ECM is capable of monitoring and controlling tanks, pumps, lighting, HVAC, gensets, engines and electronic systems.

A 128-character display (8 x 16) provides information, including alerts and diagnostics, from any of the modules within an E-Plex system. Customers have the opportunity to define custom artwork which is EL backlit within the touch-screen to provide the end user with an intuitive E-Plex system control interface.

Key Features

- 255 unique alpha-numeric characters with a 64-position touch glass display.
- System diagnostics and security lockout capabilities.
- Electroluminescent (EL) backlight for night-time display.
- 128KB of onboard memory including a master record of configuration data.
- Custom artwork overlays and bezel finishes.
- Rear 10-pin RS-232 monitor port and front USB service port (optional cables required).
- LEN capacity 250.

Design Specifications

- Shock: Mil Std 202 Method 213 test condition 1.
- Vibration: Tested to Lloyds Registered approval vibration test 2.
- Moisture resistance: IP50.
- PCB characteristics: UL94V-0.
- UVB certification: UVB 400 hours.
- Transient Voltage Protection: EN6100-6-1 (with optional EMI filter).

Electrical Specifications

Description	Minimum	Nominal	Maximum
Operating Voltage	7 VDC	12 / 24 VDC	32 VDC
Operating Current, no E-Plex loads	100 mA	—	160 mA
E-Plex Output Current	—	—	3 A

Physical Specifications

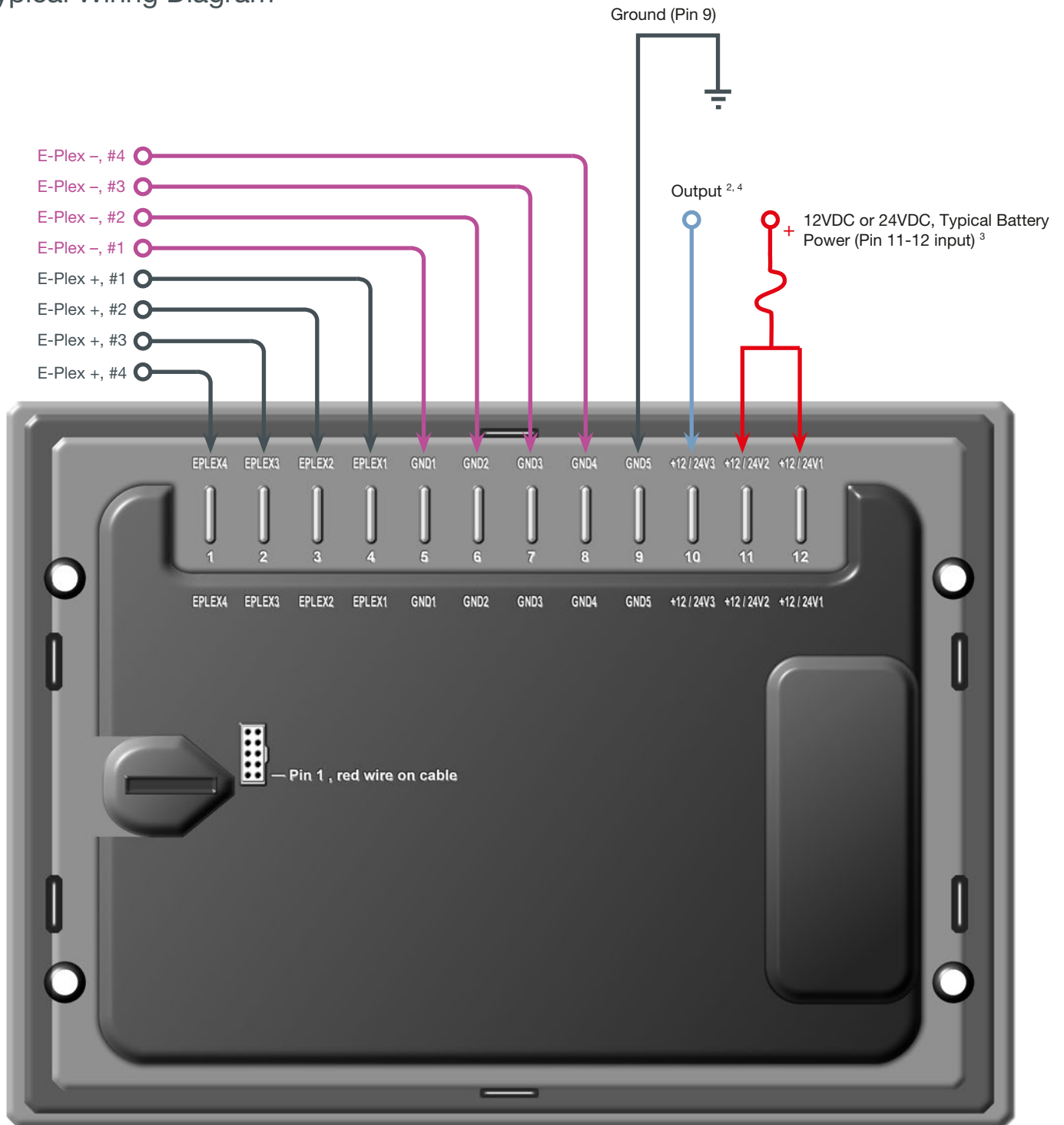
LCD Brightness	100 cd / m ²
Electroluminescent (EL) Brightness	35 cd / m ²
Electroluminescent (EL) Lifespan	5,000 hours typical half-life
Real-Time Clock Battery Life	25,000 hours typical
LCD Horizontal Viewing Angle	-40 / 40
LCD Vertical Viewing Angle	-35 / 35
Front Bezel	UL 94 V-0, approved molded ABS, powder-coat finish
Back Cover	UL 94 V-0, approved molded ABS
Touch Glass Frame	UL 94 V-0
Operating Temperature	-20°C to 50°C
Storage Temperature	-30°C to 85°C
Operating Humidity	5% to 95% (non-condensing)
Weight	0.65 lb (294 grams)
Recommended Wire Specification for E-Plex Twisted Pair ¹	16 AWG (1.3 mm) - Unshielded, twisted pair General purpose: Belden 1035 A - Non-tinned Marine: Belden 9410 - Tinned

Wiring Specifications

Terminal Connector Specifications	Tin-plated male 0.250" quick-connect tabs
Mating Connector Specification	0.250" female spade terminal

NOTE: 1. Unrestricted topology: Star, Tree, Daisy Chain configurations all valid.

Typical Wiring Diagram



NOTE:

2. Hardware version B and higher: Pin 10 is configured as a low current DC output.
3. User must install fuse or breaker to protect the circuit, rated for 5 amps or less.
4. Diode auctioneered output from Pins 11 & 12.

Connection Specifications

Pin #	Pin Description	Inputs & Outputs	Remarks
1	E-Plex Data Bus +	I / O	750 mA max E-Plex load
2	E-Plex Data Bus +	I / O	750 mA max E-Plex load
3	E-Plex Data Bus +	I / O	750 mA max E-Plex load
4	E-Plex Data Bus +	I / O	750 mA max E-Plex load
5	E-Plex Data Bus -	I / O	
6	E-Plex Data Bus -	I / O	
7	E-Plex Data Bus -	I / O	
8	E-Plex Data Bus -	I / O	
9	Power Return -	I	Battery – (GND)
10	Power Source 3 +	O	1 amp max load ^{2, 4}
11	Power Source 2 +	I	Battery + connection ³
12	Power Source 1 +	I	Battery + connection ³

Mounting Specifications

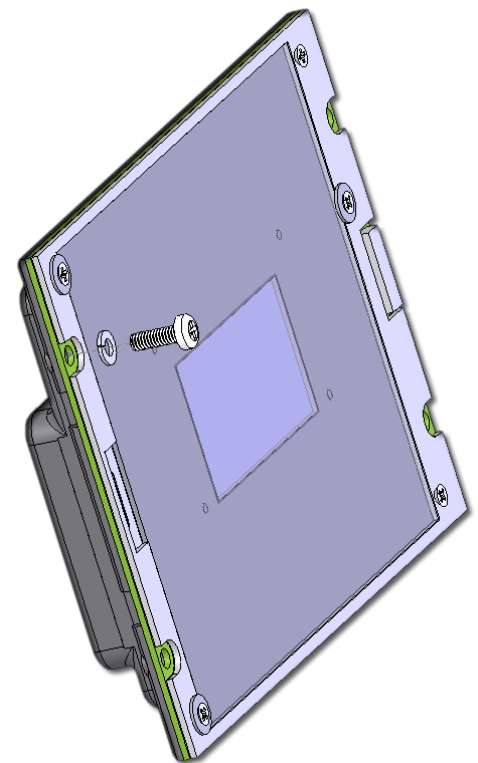
A rectangular hole the size of the 'keep out' area (labeled on the dimensional drawings) must be cut from mounting surface. The 'keep out' area is 163.32mm [6.43"] x 109.73mm [4.32"]. The depth of the module is approximately 19.68mm [0.775"]. Please allow sufficient room for all wires connected to the clock as well.

Mounting Instructions

Metric fasteners: Use M4 size screw with M4 split lock washer and torque to 180~215 N-cm. Do not exceed this torque as it could cause damage to the electronics.

Imperial (English) fasteners: Use #8 size screw with #8 split lock washer and torque to 16~19 in-lb. Do not exceed this torque as it could cause damage to the electronics.

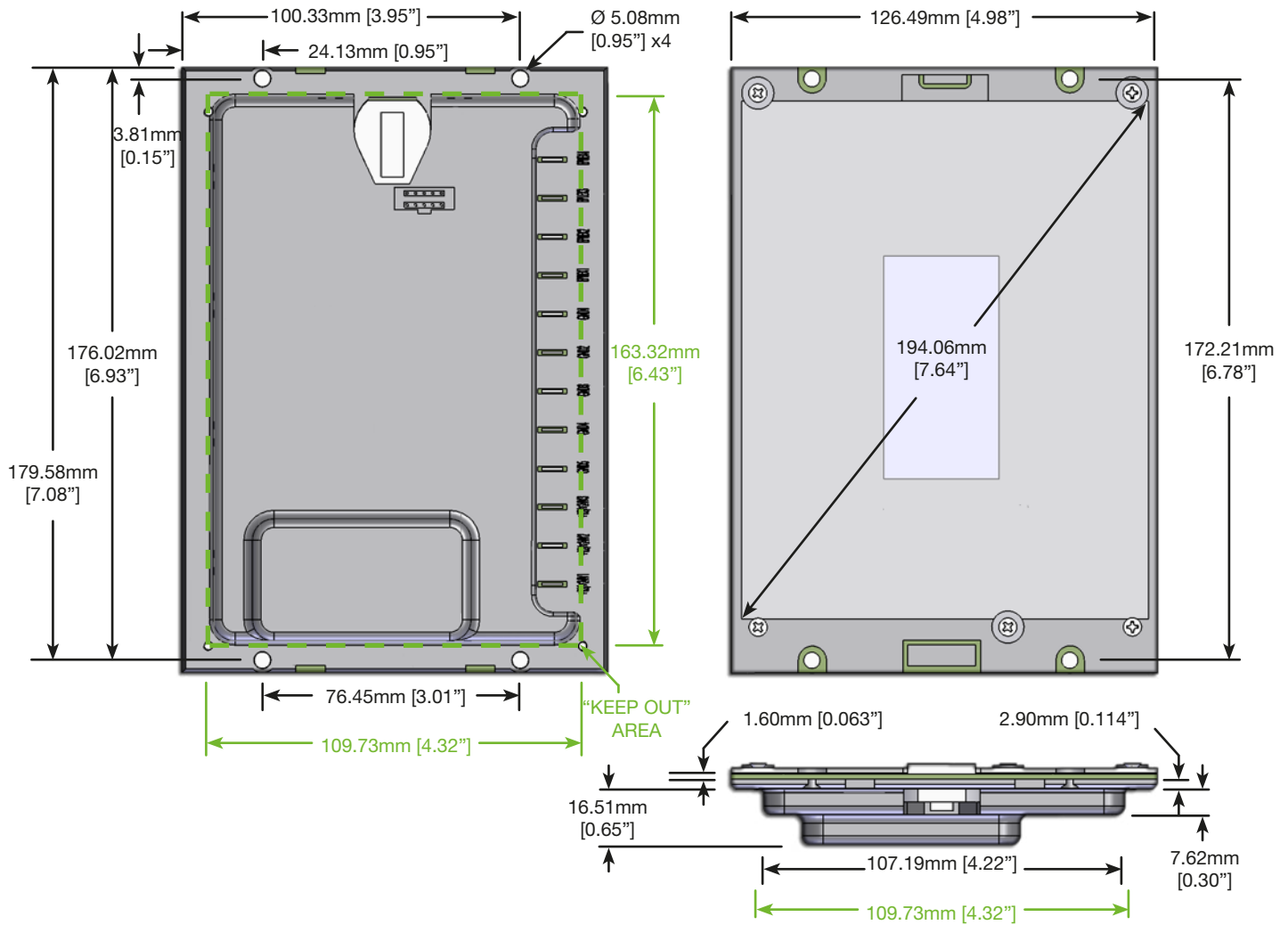
Height of mounting screw head and split lock washer must be less than 0.3556mm [0.014"] Screw assembly to flat mounting surface in 4 places, as shown to the right.



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4. Diode auctioneered output from Pins 11 & 12.







Dimensional Diagram



Ordering Information

Description	E-Plex Part Number
400ECM Series - Electronic Control Module	EP-CLOCK-400ECM-B3
Customer Defined Bezel (see below)	EP-BEZEL-CLOCK-MC0067-XX

Standard Bezel Options

					
Flat Black Bezel EP-BEZEL-CLOCK-MC0067-FB	Black Gloss Bezel EP-BEZEL-CLOCK-MC0067-GB	Grey Gloss Bezel EP-BEZEL-CLOCK-MC0067-GR	White Gloss Bezel EP-BEZEL-CLOCK-MC0067-GW	Silver Chrome Gloss Bezel EP-BEZEL-CLOCK-MC0067-SR	Metallic Nickel Gloss Bezel EP-BEZEL-CLOCK-MC0067-NI



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