

# EMS PRO - Engine Monitoring System Controller



Shown with optional clear door.



\*Approved by CSA for Non-hazardous locations (Group Safety Publication IEC 61010-1)

## Features

- Supports Mechanical and J1939 Electronic Engines
- Automatic Start/Stop
- Backlit Graphical Display
- Shutdown History File
- First-Out Shutdowns and/or Alarm Indicating LEDs
- Field Adjustable Parameters
- Supports TSC1 Throttle Messaging
- Wide Operating Temperature Range
- IP66 Rated
- Internet Ready Utilizing Modbus® RTU with Auxiliary Equipment
- Real Time Clock in 24 Hour Format
- NEMA 4X Enclosure with Optional Clear Door

The EMS PRO is a flexible all-in-one customizable unit that meets the needs of engine-driven pumping equipment applications. The EMS PRO is a dedicated microprocessor-based, single engine controller. It offers field-adjustable operating parameters that can be changed without the need for a computer. It is also able to support both mechanical and J1939 electronic engines.

The EMS PRO has selectable auto start/stop features with several throttling options. The auto start/stop options (Single Contact, Floats, Momentary, Transducer and Clock) are available at the touch of a button. The Transducer start/stop option includes three settings; pressure, level and temperature. In addition, there are many performance-enhancing features, all of which are available through an operator interface that is easy to learn and use. The EMS PRO is ideal for use with a remote modem or in a SCADA system offering Modbus RTU protocol on either the RS232 or RS485 port.

The EMS PRO has the ability to withstand a wide ambient temperature range and comes standard in a NEMA 4X rated enclosure secured by four rubber shock mounts. Inside is a backlit graphical display visible day or night and under all kinds of conditions.

## Communications

The EMS PRO has RS485, RS232 and J1939 CAN communication ports. The standard unit uses RS485 or RS232 for Modbus RTU. At the same time, the CAN port allows J1939 communication with the engine ECU to display engine parameters and control the throttle via TSC1 if supported by the engine.

## How to Order

P/N 40-70-0301 EMS PRO

P/N 40-70-0302 EMS PRO with Optional Clear Door

**NOTE:** Care should be taken when selecting the optional clear door when used in applications involving direct sunlight exposure. Direct sunlight can cause premature component failure by allowing the sealed enclosure temperature to exceed the rated 80°C/175°F.

## Accessories

The EMS PRO has (2) Deutsch HDP connectors, 21 pin and 31 pin, for easy field wiring.

### Harness Options:

- P/N 40-00-0479 EMS PRO 21-pin & 31-pin Connector Kit
- P/N 40-00-0480 EMS PRO 10' 21-pin & 31-pin Harness Kit
- P/N 40-00-0481 EMS PRO 10' 31-pin I/O Harness
- MEH Adapter Harness: Please contact Industrial Panel Sales for application specific adapter harness.
- MEH Harness: Please contact Industrial Panel Sales for application specific MEH harness.

## Specifications

### Operating Voltage (12 and 24 systems):

- 8 VDC minimum to 32 VDC maximum

### Environmental

#### Operating Temperature: -40° to 80°C (-40° to 176°F)

**NOTE:** Care should be taken when selecting the option clear door when used in applications involving sunlight exposure. Direct sunlight can cause premature component failure by allowing the sealed enclosure temperature to exceed the rated 80°C/175°F.

#### Storage Temperature: -40° to 80°C (-40° to 176°F)

#### Environmental Sealing: IP66

**NOTE:** Meets IP66 when the door is closed **AND** latched.

#### Relative Humidity: 95%RH @ 60°C

#### Standby Current:

- (@ 12VDC) 220mA
- (@ 24VDC) 255mA

#### CAN Bus: SAE J1939 compliant

#### Enclosure: Polycarbonate NEMA 4X (UL Certified)

## Product Dimensions

### Inputs:

Analog Inputs: (12) designated via program; sender/ground digital, 4 -20mA, 0-5 VDC.

Digital Inputs: (8) high/low

Frequency: 1 optically-isolated input for speed reference, magnetic pick-up. (2VAC-50VAC RMS)

Fuel Sender Input: 33 Ohm full, 240 Ohm empty

### Outputs:

Digital Outputs: (3) FET B+ (rated at 1A)

Relays: 1 SPDT and 8 SPST 5 Amp pilot relays (maximum relay ground current limited to 23 amps).

User Interface: (8) button membrane switch

Connectors: 21pin and 31pin Deutsch HDP20 Series

Mounting: 4 isolated .75 inch rubber shock mounts

Shipping Weight: 11 Lb. (5 kg.)

### Shipping Dimensions (all models):

- 15 x 15 x 11 in. (381 x 381 x 279.4 mm)

