

The M Series Engine Control Module is a microprocessor-based controller providing engine monitoring and control for tier 4, SAE J1939 marine diesel engines. The module is available individually or with a complete panel.

## EASY-TO-READ DISPLAY (Standard or Metric Selectable)

- Engine Temperature
- Engine RPM
- Oil Pressure
- Battery Voltage
- Fuel Usage (GPH) or Fuel %
- Engine Hours

## EMISSIONS INFORMATION

Emissions information for tier 4 engines is provided via simple display messages with the associated indication lamps.



## FAULT CODE READER

Fault codes are provided along with easy-to-read display messages, the occurrence count and associated indication lamps for pre alarm and alarm conditions.



## FLEX INPUTS/OUTPUTS

Configurable "Flex" inputs and outputs can be assigned for different functions such as low coolant level or alarm relay output.

## ENCLOSURE

The enclosure is water tight, constructed of a durable polycarbonate. Large tactile dome buttons insure positive feedback for operators with gloves. A water-tight 14-pin connector is utilized for simple plug-in installation.

## MULTIPLEXING

The M-100 module can be configured for multiplex operation. Multiple panels can be installed on a single engine with each panel providing start/stop, engine display and engine ECU fault codes. Please contact Controls, Inc. to review your application requirements. We can also provide wire harnessing for a simple and complete installation.

## KEEP IT SIMPLE

A complete engine control solution is available that combines one or more C series module or panels with the harnessing necessary for your application. Standard panel with C series module and key switch is P/N M-2651. Standard panel that includes gauges is P/N M-4652.



## SPECIFICATIONS

### GENERAL

OPERATING VOLTAGE.....	5.5 VDC to 36 VDC
MAXIMUM CURRENT CONSUMPTION AT 12.6V.....	150mA
OPERATING TEMPERATURE.....	-20°C to +70°C
STORAGE TEMPERATURE.....	-30°C to +80°C
HUMIDITY.....	95% Non-condensing
REVERSE POLARITY PROTECTION.....	Yes
TRANSIENT VOLTAGE SUPPRESSION.....	Yes
LOAD DUMP PROTECTION.....	Yes
DISPLAY.....	LCD, 1"H X 4"W, (2 lines x 16 characters/line)
ENCLOSURE.....	Polycarbonate
OVERLAY/INTERFACE.....	Autotex Polyester
APPROX. WEIGHT.....	1.5 lbs
APPROX. DIMENSIONS.....	5.69"H x 6.57"W x 1.61"D

### COMMUNICATIONS

ENGINE COM PORT.....	CAN bus J1939 Protocol
----------------------	------------------------

### INPUTS

ANALOG INPUT.....	1
DIGITAL FLEX INPUT.....	1
<i>Configurable as: 1) Normally open or normally closed, 2) Relay closure, pre alarm or alarm, 3) User defined message for display</i>	

### FLEX OUTPUTS

5A FORM A DRY CONTACTS.....	2
5A OR 10A FORM A DRY CONTACTS (Specification Dependent).....	2
<i>Each output is configurable as: 1) Normally open or normally closed, 2) Pre alarm, alarm, throttle or tied to flex input</i>	

### THROTTLE CONFIGURATION

.....	SELECTABLE
-------	------------

1) Standard 2) Multi-State 3) Analog In 4) Disabled

### CONNECTOR

TYCO AMPSEAL 14-PIN.....	ENVIRONMENTALLY SEALED
--------------------------	------------------------

### OTHER

ENGLISH/METRIC DISPLAY.....	SELECTABLE
DISPLAY BACKLIGHT ADJUSTMENT.....	SELECTABLE
DISPLAY TEMPERATURE CONTRAST ADJUSTMENT.....	AUTOMATIC
<u>Extreme Cold Weather Option</u>	
OPERATING TEMPERATURE.....	-45°C to +85°C
STORAGE TEMPERATURE.....	-55°C to +95°C