**ECM-S12X-070 Family of Controllers**  
**Engine Control Module—Calibratable / Flash**

### Description

The ECM-S12X-070 family of engine control modules are rugged controllers capable of operating in harsh automotive, marine, and off-highway applications. The module and its connector system are environmentally sealed and suitable for engine mounting in many applications.

This unit provides 70 connector pins with inputs, outputs, and communications interfaces that support a wide variety of applications.

The ECM-S12X-070 is part of the MotoHawk Control Solutions ControlCore® family of embedded control systems. The ControlCore operating system, MotoHawk® code generation product, and MotoHawk’s suite of development tools enable rapid development of complex control systems.

Each controller is available in ‘F’ (Flash) or ‘C’ (Calibratable) versions. Flash modules are typically used for production purposes. Calibratable modules are typically for prototyping/development only; they can be calibrated in real time using MotoTune®.

### Physical Dimensions

- 70-pin platform
- Microprocessor: Freescale S12XE, 50 MHz
- Memory: 256 K flash, 16 K RAM, 4 K internal EEPROM, 64 K serial FRAM
- Calibratable Memory: 1 M flash, 64 K RAM
- Operating Voltage: 6.5–16 Vdc, 24 V (jump start), 5 V (crank)
- Operating Temperature: −40 to +85 °C (105 °C possible in some applications)

### Inputs:
- VR or digital crank position sensor
- Digital cam position sensor
- 17 analog
- 1 oxygen sensor
- 4 switch
- 1 speed
- 1 emergency stop

### Outputs:
- 4 injector (high impedance) drivers
- 3 ignition coil drivers
- 1 tachometer driver
- 9 low-side drivers
- 1 main power relay driver
- 2 sensor supply (5 V) outputs

### Communications:
- 2 CAN 2.0b channels
- 1 RS-485 channel
Simple Block Diagram

Ordering Information

<table>
<thead>
<tr>
<th>Controller</th>
<th>Part No.</th>
<th>w/Mounting Hardware</th>
<th>Boot Key (P/N)</th>
<th>Boot Cable</th>
<th>Desktop Simulator Harness (P/N)</th>
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<tbody>
<tr>
<td>ECMS12X0701001CP0</td>
<td>1751-6466</td>
<td>8923-1640</td>
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<td>5404-1144</td>
<td>5404-1207</td>
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<td>8923-1620</td>
<td>N/A</td>
<td>5404-1144</td>
<td>5404-1207</td>
</tr>
</tbody>
</table>

CP0 suffix indicates calibrated (development) version of a module.

For more information contact:

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