# TECHNICAL BULLETIN

## SUBJECT: EB 08-001 e-Stroke Technical Specification

### e-Stroke System Specifications

<table>
<thead>
<tr>
<th>System General Specifications: GEN 3 (Tractor / Truck / Bus), GEN 1 (Trailer)</th>
</tr>
</thead>
</table>

**CCM P/N Prefix:** GEN 3 - 8291XXX, GEN 1 & 2 - 8290XXX,

**Operating Temperature**  
-40C to 80C

**Power Requirement**  
9.5V DC to 30V DC Ignition Switched

**Maximum Current Draw**  
1.5 amps

**System Fuse**  
GEN 3: 5 amps, GEN 1 & 2: 10 amps

**Environmental Protection**  
SAE J1455 Compliant

**Electrical Protection**  
SAE J1455 and SAE J1113 Compliant

**System Component Specifications:**

#### Chassis Communications Module (CCM)

<table>
<thead>
<tr>
<th>GEN 3 CCM:</th>
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</thead>
<tbody>
<tr>
<td>STR750 Flash Micro Controller</td>
</tr>
<tr>
<td>FSK (PLC), JTAG, RS-232, J1708, J1939 interface support</td>
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<tr>
<td>Internal 10 bit A/D, external 12 bit A/D</td>
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<tr>
<td>Extended I/O support (Digital &amp; Analog)</td>
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<tr>
<td>RS-232 and J1939 firmware re-programmable</td>
</tr>
<tr>
<td>Configurable from 2 to 8 wheel ends</td>
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<tr>
<td>Truck, Tractor, Bus, Trailer configurations available</td>
</tr>
<tr>
<td>Diagnostic interface: RS-232, J1708, J1939</td>
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<tr>
<td>CCM Mounting Options: (2) ¼&quot; Fasteners, Pre Applied Double Sided Tape</td>
</tr>
</tbody>
</table>

- GEN 1 Trailer approved for exterior mounting.
- GEN 3 approved for interior mounted applications only

#### Pressure Transducer

| GEN 3: 110psi Brake Application Pressure Sensing Capability |
| Burst Pressure Rating – 1000psi |
| Pneumatic Connection – ¼” NPT Male |
| Application Torque not to exceed 30Nm (22 ft-Lbs.) |
| Material – Stainless Steel |

#### Wire Harnesses

- Power Harness – 5ft to 30ft
- Pressure Transducer Harness – 5ft to 20ft
- Sensor Harness – 10ft to 60ft
- All exterior cables double insulated with high strength jacket

**Note:** Most Harnesses available in 5 ft increments

- Power Harnesses:
  - GEN 1 Trailer: Connector Metri-Pack 280 type 4-pin sealed.
  - GEN 3: Molex 5557 series 10 pin non sealed
- Sensor assemblies and sensor harnesses: Packard 150 type 3-pin sealed Metri-Pac at sensor end.

- See System Schematics for all connection designations.
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| System Warning Device | • Warning Lamp Outputs: Tractor / Truck / Bus Brake Monitor, Lining Wear, Trailer Brake Monitor, Lining Wear  
• Fault Code Transmission via J1708 & J1939 |
|-----------------------|--------------------------------------------------------------------------------------------------|
| S-CAM / Drum Brake Actuator Sensor | One piece environmentally sealed Hall Effect sensor  
Packard Metri-Pac 150 type 3-pin connector  
60 inch standard sensor length  
Serviceable independent from Actuator |
| S-CAM / Drum Brake Actuators | • External Piston Rod Brake Actuators are available for a wide range of vehicle applications. It is necessary to select the appropriate actuators for the vehicle application.  
• e-Stroke S-CAM / Drum Brake Actuators are designated with an “ESH” at the end of the MGM P/N  
• Consult MGM Brakes Sales (800) 527-1534 |
| Air Disc Brake Actuator Sensor | Environmentally Sealed Hard Coat Anodized Aluminum / Potted Sensor Assembly  
Packard Metri-Pac 150 type 3-pin connector  
60 inch standard sensor length  
Supplied with e-Stroke Disc Actuator Assembly |
| Air Disc Brake Actuators | • Disc Brake Actuators are available for a wide range of vehicle applications. It is necessary to select the appropriate actuators for the vehicle application.  
• e-Stroke Air Disc Brake Actuators are designated with an “ESK” at the end of the MGM P/N  
• Consult MGM Brakes Sales (800) 527-1534 |
| e-Stroke Diagnostic Tools | • Warning Light Blink Codes  
• Laptop Based Diagnostic Software / RS-232 serial connection to CCM or J1939  
• Hand Held e-DT Display Diagnostic Tool / J1939 |
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Product Compliance

SAE J1455  Environmental testing for Electronic Equipment (Heavy-Duty Trucks)
Section 4.1  Temperature Cycle, Thermal Shock, Thermal Stress
Section 4.2  Humidity
Section 4.3  Salt Spray Atmosphere
Section 4.4  Immersion and Splash (Water Chemicals, and Oils)
Section 4.5  Steam Cleaning and Pressure Washing
Section 4.7  Dust Exposure & Gravel Bombardment
Section 4.9  Mechanical Vibration
Section 4.10 Mechanical Shock
Section 4.11 General Heavy-Duty Truck Electrical Environment – Steady State Electrical Characteristics

SAE J1113/4  Immunity to Radiated Electromagnetic Fields – Bulk Current Injection (BCI) Method
SAE J1113/11 Immunity to Conducted Transients on Power Leads
SAE J1113/12 Electrical Interference by Conduction and Coupling – Coupling Clamp
SAE J1113/13 Immunity to Electrostatic Discharge (ESD)
SAE J1113/21 Immunity to Electromagnetic Fields, 10kHz to 18GHz, Absorber-Lined Chamber (Radiated Susceptibility)
SAE J1113/22 Immunity to Radiated Magnetic Fields from Power Lines
SAE J1113/41 Test Limits and Methods of Measurement of Radio Disturbance Characteristics from Vehicle Components and Modules, Narrowband, 150kHz to 1000 MHz (Conducted & Radiated Emissions)
SAE J1113/42 Conducted Transient Emissions

SAE J1708  Serial Data Communications between Microcomputer Systems in Heavy-Duty Vehicle Applications
SAE J1587  Electronic Data Interchange between Microcomputer Systems in Heavy-Duty Vehicle Applications
SAE J1939  Recommended Practice for a Serial Control Vehicle Communications Network
SAE J1128  Recommended Practices for Vehicle Wiring
UL 94 Fire Rating  UL 94B (Tractor / Truck / Bus CCM Only)