Lambda Measurement

LSU-310

Product Summary
The LSU-310 Lambda Measurement Unit is a dual channel interface for Bosch LSU4.9 Lambda probes. Versions for other types of wideband probes can also be configured, upon request. The Lambda value of each sensor is output as an analogue voltage in the 0 to 5 volt range.

Probe calibration must be stored in the host unit.

The interface does not include Lambda heater control which must be provided external to the unit, where used.

Application
• Wide-band Lambda measurement for ECUs which do not have wide-band Lambda inputs

Electrical
• Supply Voltage 10V to 16V DC
• Transzorb protection allowing short term operation with supply voltage above 16V. Sustained operation above 17.1V may cause damage to the unit
• Reverse voltage protection
• Supply Current 60mA typical (110mA max)

Mechanical
• Case material Aluminium alloy, hard black anodised
• Weight less than 34g

Electro Magnetic Compatibility
• Complies with the essential protection requirements of 89/336/EEC

Environmental
• Splash resistant to standard motorsport fluids
• Lids and screws sealed with silicone rubber
• Unit is splash-proof but should not be immersed in water
• Maximum humidity 100%
• Operating Temperature 0°C to 60°C ambient
• Storage temperature -10 to 85°C
• Vibration 100 to 1000Hz, all axes, 12 hours, random spectrum

Connection Definition
• Integral, sealed, military standard connector HES.2F.319.XDLP

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lambda 1 IP</td>
</tr>
<tr>
<td>2</td>
<td>Lambda 1 VM</td>
</tr>
<tr>
<td>3</td>
<td>Lambda 1 analog output</td>
</tr>
<tr>
<td>4</td>
<td>Output 1 + 2 reference ground output</td>
</tr>
<tr>
<td>5</td>
<td>Lambda 2 analog output</td>
</tr>
<tr>
<td>6</td>
<td>Lambda 2 VM</td>
</tr>
<tr>
<td>7</td>
<td>Lambda 2 UN</td>
</tr>
<tr>
<td>8</td>
<td>Lambda 2 IP</td>
</tr>
<tr>
<td>9</td>
<td>Supply input 14V</td>
</tr>
<tr>
<td>10</td>
<td>Ground</td>
</tr>
<tr>
<td>12</td>
<td>Lambda 1 UN (black)</td>
</tr>
</tbody>
</table>
### Lambda Measurement

<table>
<thead>
<tr>
<th>Pins 11, 13 to 19</th>
<th>NC</th>
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- LUS4.9 green wire (IS) not used

**Sensor Inputs**
- Two wideband Lambda sensors $0.65\lambda$ to air

**Analogue Outputs**
- Two Lambda value analogue outputs 0.164V to 4.686V ($0.65\lambda$ to air)
- Output voltage of 2.25V nominal at $\lambda=1.0$

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**Diagram:**
- LEMO Connector
- Major Keyway
- Pressure Test-Port Indicator
- Titanium Wire-Lock Nut
- Silicon Seal All Around
- Order Number
- Serial Number

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