Load Cell Amplifier with Data Outputs RS232 & RS485

**Introduction**

The LCA20 In-Line Intelligent Strain Gauge Amplifier is a compact microprocessor-based unit specifically designed to control and monitor weighing applications. Its flexibility of design allows for the connection of most load cells and pressure or strain gauges over a wide range of sensitivities. Housed in a light grey, ABS case, it is sealed to IP65 standard to meet most environmental conditions.

The LCA20 takes advantage of new technology with **improved performance** and **increased** functionality from its predecessor, the LCA15. In addition to the introduction of a new microprocessor using the latest RISC technology and high performance analogue to digital converter, the LCA20 has many new features such as the selection of device parameters via a PC or keypad rather than using the traditional on-PCB switches.

A PCB only version, which can be DIN rail mounted, is also available as the LCB20.

**Product Features & Benefits**

- Easy configuration and calibration using LCA Toolkit software
- Analogue outputs – 4 – 20 mA and 0 – 10 V
- Two set point SPCO relays
- RS485 and RS232 digital data outputs for communications and printing
- Up to 10 point autocal and table calibration
- Two programmable gain ranges cover 0.5 mV/V to 7.8 mV/V
- 6 wire measurement to compensate for cable and barrier losses
- Factory calibrated mV/V
- Measurement speeds of up to 80 samples per sec
- 5V excitation supports 10 x 350 R strain bridges
- Configurable digital inputs
- Firmware supports Mantrabus 1 & 2, MANTRA ASCII 2 & MODBUS RTU communication protocols

**Related Products**

- **LCB20**
  - OEM Load Cell Amplifier and Digitiser PCB Module
- **PGM1**
  - Programming cable for the LCA20
- **D2**
  - DIN rail mounting option
- **LCA Toolkit**
  - Quick set up software event monitoring, data logging, calibration and configuration
### Electrical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td><strong>Power Supply Options:</strong></td>
<td></td>
</tr>
<tr>
<td>LS1:</td>
<td>110 V-120 V AC or 220 / 230 V AC</td>
</tr>
<tr>
<td>LS3:</td>
<td>9 to 32 V DC 10 W isolated</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>2.5W typical</td>
</tr>
<tr>
<td><strong>Bridge excitation</strong></td>
<td>4.75 to 5.25 V</td>
</tr>
<tr>
<td><strong>Bridge resistance (minimum for 5V Excitation)</strong></td>
<td>85 Ohms</td>
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<tr>
<td><strong>Bridge sensitivity</strong></td>
<td>0.5 to 7.8 mV/V – two configurable ranges</td>
</tr>
<tr>
<td><strong>Noise Free Resolution at 10 Hz</strong></td>
<td>1:180,000 (17.5 Bits)</td>
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<tr>
<td><strong>Measurement speeds</strong></td>
<td>10 / 80 samples per second</td>
</tr>
<tr>
<td><strong>Analogue outputs</strong></td>
<td>4-20mA and 0-10V</td>
</tr>
<tr>
<td><strong>Analogue output resolution</strong></td>
<td>1:8000 (13 Bits)</td>
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<tr>
<td><strong>Relays</strong></td>
<td>2 set points SPCO</td>
</tr>
<tr>
<td><strong>Relay contacts rating</strong></td>
<td>5A 240V AC / 3A 30V DC</td>
</tr>
<tr>
<td><strong>Isolation</strong></td>
<td>+/- 130V RMS or DC to any port</td>
</tr>
</tbody>
</table>

### Environmental

- Operating temperature range: -10 to 50 °C
- Storage temperature range: -20 to 70 °C
- Maximum Humidity: 95% Non-Condensing
- IP Rating: IP20

### Approvals

- EMC Directive: 2014/30/EC
- RoHS: 2011/65/EU

### Mechanical

- Height: 75 mm
- Width: 200 mm
- Depth: 89 mm
- Mounting Holes ø4 mm

### Order Codes

- **Base Unit**
  - LCA 20: Load Cell Amplifier
- **Display**
  - LP1: On Board Programmer
- **Comms**
  - LP2: Remote Handheld Programmer
- **Relay**
  - LR1: Relay Output Module
- **Extended Mounting**
  - LDC: Die Cast Cast
  - LSS: Stainless steel case
- **Power Supplies**
  - LS1: AC Power Supply 110/120V, or 220/230V AC
  - LS3: DC Power Supply 9-32V
- **Accessories**
  - PGM1: Programming USB Lead
  - JBA: Junction Box Active
  - JPA: Junction Box PCB Active
  - JPP: Junction Box PCB Passive

Manual Reference: 517-182