# LCB

## UNIVERSAL LOAD CELLS DIGITIZER




### DESCRIPTION

- LCB transforms an analog load cell (mV/V output) into a digital one; it can also be used on existing load cells to digitize the weighing system.
- Conceived for IoT applications (Internet of Things).
- PC configuration software via micro USB port.
- Status LED of the communication interface.
- Mounting: wired or integral to the load cell body via standard ¼ GAS fitting (specific adapters for different threads are supplied on request).
- IP67 box in AISI 304 stainless steel or PA66 nylon reinforced with glass fiber (dimensions: 90x40x107 mm including flying connectors).
- Suitable for wall mounting (supports included: 2 fixing holes Ø 6 mm; centre distance: 68 mm).
- 3x IP67 M12 flying connectors included in the supply.
- The instrument can be configured and managed using the free "Instrument Manager" PC software, which you can download from www.laumas.com.

### INPUTS/OUTPUTS AND COMMUNICATION

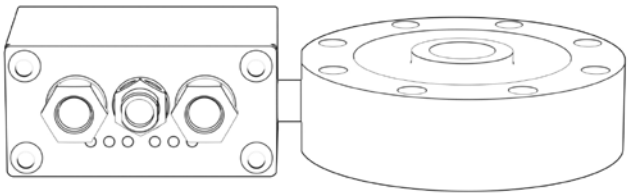
- 1 micro USB port.
- 3 relay outputs controlled by the setpoint values or via protocols.
- 2 digital inputs: status reading via serial communication protocols.
- 1 load cell input.

SUPPORTS FOR WALL MOUNTING



MICRO USB FOR PC CONFIGURATION





EXAMPLE OF APPLICATION WITH LOAD CELL

### CERTIFICATIONS

- Complies with the Eurasian Customs Union regulations
- Equivalent of the CE marking for the United Kingdom
- UL Recognized component - Complies with United States and Canada regulations

### FIELDBUSES

MODBUS RTU · MODBUS/TCP · ETHERNET TCP/IP · ETHERNET POWERLINK · EtherCAT · EtherNet/IP · PROFIBUS · PROFINET · CC-Link · CC-Link IE Field Basic · IO-Link · CANopen · SERCOS interface

Rev. 0.0

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ISO 9001
ISO 14001

www.laumas.com

## INTERFACES AND FIELDBUSES

**RS485**.
Male M12 circular connector, A-coded, 5-pin.
Female M12 circular connector, A-coded, 5-pin.
Baud rate: 2400, 4800, 9600, 19200, 38400, 115200 (bit/s).
*coming soon*

**RS485 + analog output.**
Current: 0÷20 mA; 4÷20 mA (up to 400 Ω).
Voltage: 0÷10 V; 0÷5 V (min 2 kΩ).
Male M12 circular connector, A-coded, 5-pin.
Female M12 circular connector, A-coded, 5-pin.

**IO-Link.**
**2x** male M12 circular connector, A-coded, 4-pin.
The instrument works as *device* in a IO-Link network.

**CANopen.**
Male M12 circular connector, A-coded, 5-pin.
Female M12 circular connector, A-coded, 5-pin.
The instrument works as *slave* in a CANopen synchronous network.

**CC-Link IE Field Basic.**
**2x** female M12 circular connectors, D-coded, 4-pin.
The instrument works as *slave* in a CC-Link IE Field Basic network.

**CC-Link.**
Male M12 circular connector, A-coded, 4-pin.
Female M12 circular connector, A-coded, 5-pin.
The instrument works as *Remote Device Station* in a CC-Link network and occupies 3 stations.
*coming soon*

**Profibus DP.**
Male M12 circular connector, B-coded, 5-pin.
Female M12 circular connector, B-coded, 5-pin.
The instrument works as *slave* in a Profibus DP network.
*coming soon*

**Modbus/TCP.**
**2x** female M12 circular connectors, D-coded, 4-pin.
The instrument works as *slave* in a Modbus/TCP network.

**Ethernet TCP/IP.**
Female M12 circular connector, D-coded, 4-pin.
The instrument works in an Ethernet TCP/IP network and it is accessible via web browser.
*coming soon*

**Ethernet/IP.**
**2x** female M12 circular connectors, D-coded, 4-pin.
The instrument works as *adapter* in an Ethernet/IP network.

**PROFINET IO.**
**2x** female M12 circular connectors, D-coded, 4-pin.
The instrument works as *device* in a PROFINET IO network.

**EtherCAT.**
**2x** female M12 circular connectors, D-coded, 4-pin.
The instrument works as *slave* in an EtherCAT network.

**POWERLINK.**
**2x** female M12 circular connectors, D-coded, 4-pin.
The instrument works as *slave* in a Powerlink network.

**SERCOS III.**
**2x** female M12 circular connectors, D-coded, 4-pin.
The instrument works as *slave* in a Sercos III network.



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LAUMAS®

### MAIN FUNCTIONS

- Connections to:
  - PLC via analog output or fieldbuses;
  - PC/PLC via RS485 (up to 99 instruments with line repeaters, up to 32 without line repeaters);
  - up to 4 load cells in parallel by junction box.
- TCP/IP WEB APP: integrated software in combination with the Ethernet TCP/IP version for remote supervision, management and control of the instrument.
- Digital filter to reduce the effects of weight oscillation.
- Theoretical calibration (via PC software) and real calibration (with sample weights and the possibility of weight linearization up to 8 points).
- Calibration via characterization values of the load cell.
- Tare weight zero setting.
- Automatic zero setting at power-on.
- Gross weight zero tracking.
- Semi-automatic tare (net/gross weight) and preset tare.
- Semi-automatic zero.
- Direct connection between RS485 and RS232 without converter.
- Configuration backup and restore via PC software.

**BASE PROGRAM**

- Hysteresis and setpoint value setting.

**SINGLE PRODUCT LOADING PROGRAM**

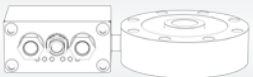
- 99 settable formulas.
- Automatic fall calculation.
- Tolerance error control.
- Precision batching through slow function.
- Precision batching through tapping function.
- Consumption storage.
- Batching start via external contact or fieldbus.

### TECHNICAL FEATURES

| | |
|---|---|
| Power supply and consumption | 12÷24 VDC ±10%; 5 W |
| Number of load cells • Load cells supply | up to 4 (350 Ω) - 4/6 wires • 3.3 VDC/40 mA |
| Linearity • Analog output linearity | <0.01% full scale • <0.01% full scale |
| Thermal drift • Analog output thermal drift | <0.0005% full scale/°C • <0.003% full scale/°C |
| A/D Converter | 24 bit (16000000 points) - 4.8 kHz |
| Divisions (with measurement range ±10 mV and sensitivity 2 mV/V) | ±999999 • 6.6 nV/d |
| Measurement range | ±26 mV |
| Usable load cells sensitivity | ±7 mV/V |
| Conversions per second | 500 |
| Decimals • Display increments | 0÷4 • x1 x2 x5 x10 x20 x50 x100 |
| Digital filter • Readings per second | 3 filter types • 5÷500 |
| Relay outputs | 3 - max 115 VAC/150 mA - 24 VDC/200 mA |
| Digital inputs | 2 - 5÷24 VDC |
| Micro USB port | B type - USB 2.0 (full-speed) |
| Humidity (condensate free) | 85% |
| Storage temperature | -30 °C +80 °C |
| Working temperature | -20 °C +50 °C |

| | | |
|---|---|---|
| c UL us | Relay outputs | 3 - max 30 VAC, 60 VDC |
| | Max wall mounting height | 2 m |
| | Equipment to be powered by PS2 power source | |

### OPTIONS ON REQUEST

| | DESCRIPTION |
|---|---|
|  | Load cell + instrument wiring. |

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*The Company reserves the right to make changes to the technical data, drawings and images without notice.*

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