

# CLM8

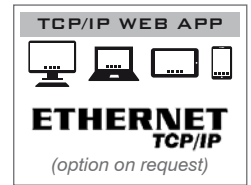
## INTELLIGENT JUNCTION BOXES



### 8 INDEPENDENT READING CHANNELS FOR LOAD CELLS

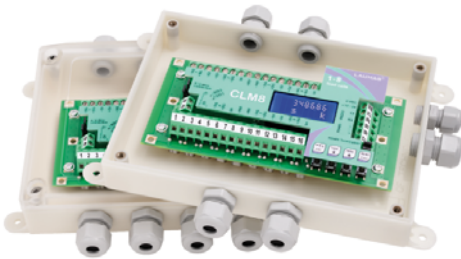
#### MODBUS RTU

SHOCK PROTECTION DEVICE



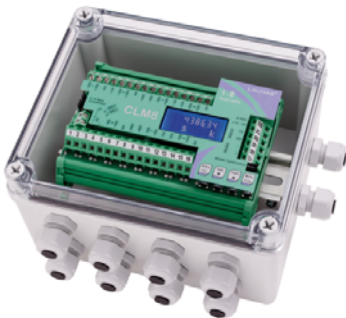
- IP67 AISI 304 stainless steel version.
- Dimensions: 200x148x45 mm; centre distance 148x132 mm.

<b>CLM8INOX</b>	8+2 cable glands-plugs
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- IP67 ABS version with transparent cover.
- Dimensions: 210x130x40 mm; centre distance 196x112 mm.

<b>CLM4ABS</b>	4+2 cable glands-plugs
<b>CLM8ABS</b>	8+2 cable glands-plugs
<b>CLM4ABSR</b>	4+2 PVC end fittings
<b>CLM8ABSR</b>	8+2 PVC end fittings



- IP67 polycarbonate CLM8 boxes with transparent cover.
- Dimensions: 170x140x95 mm; centre distance 152x122 mm.

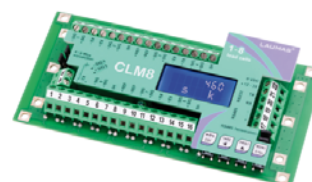
→ *CLM8 instrument not included*

<b>CASTL</b>	-
<b>CASTLPG9</b>	4+2 PG9 cable glands-plugs
<b>CASTL8PG9</b>	8+2 PG9 cable glands-plugs
<b>CASTLGUA</b>	4+2 PVC end fittings
<b>CASTL8GUA</b>	8+2 PVC end fittings



**CLM8**

- Omega/DIN rail mounting version suitable for back panel or junction box.
- Dimensions: 125x92x52 mm.



**CLM8I**

- Naked version, board only.
- Dimensions: 151x72x30 mm.

centre distance: see diagram after table "Technical Features" table

### DESCRIPTION

- The CLM8 intelligent junction boxes series allow to have same benefits and performance of an advanced digital weighing system even using analog load cells.
- Backlit alphanumeric LCD display, 38x16 mm visible area, two-line by eight-digit (5 mm height).
- Four-key keypad for the system calibration.
- Lightning and electrical shock protection device.

### INPUT/OUTPUT AND FIELDBUSES

- RS232 and RS485 serial ports for connection to PC/PLC, remote display and printer.
- ModBus RTU or ASCII Laumas protocol.
- Ethernet TCP/IP port for remote management (option on request).



### CERTIFICATIONS

OIML R76:2006, III class, 3x10000 divisions 0.2  $\mu$ V/VS1

#### CERTIFICAZIONI/ON CERTIFICATION

Initial verification (Legal Metrology)



Complies with the Eurasian Custom Union regulations (Russia, Belarus, Kazakhstan)

### ETHERNET TCP/IP PORT

**TCP/IP WEB APP screen shot**

ETHERNET TCP/IP port for remote management via internet by PC, smartphone or tablet.

### OPTIONS ON REQUEST

DESCRIPTION	CODE
 <p>Alibi memory</p>	OPZWALIBI
 <p>Ethernet TCP/IP protocol (ethernet port)</p>	OPZETTCPLM

Rev. 06/08/2015

### MAIN FUNCTIONS

- 8 independent channels for load cells: monitoring and direct management of the individual load cells connected.
  - Instant anomalies report (also on the connected indicator display).
  - All CLM8 series functions can be managed by a W series weight indicator connected (graphic display indicators excluded).
  - RS232/RS485 (Modbus RTU) or TCP/IP (option on request) of the divisions for the 8 independent reading channels.
  - Digital equalization: the instrument allows to equalize the connected load cells response in a fast and reliable over time.
  - Load distribution analysis on 8 channels with archive backups: storing, retrieving, printing.
  - Automatic diagnostics: the instrument is designed to store the percentage value of load distribution for each channel. The diagnostic function makes comparisons between the recorded values and if a significant variation between the values is detected during normal operation, the instrument displays an alarm alternating with the weight value.
- Depending on the weighing system type it's possible to perform:
- Load automatic diagnostics: load distribution control in constant barycentre systems (e.g. liquids silo).
  - Automatic diagnostics on zero: check on load cells drift state (eg. silo, weighbridge, platformes).
- Event log: data backups archive in chronological order of the last 50 events related to calibrations, zero settings, errors and equalizations. The information can be stored, retrieved and printed.
  - Zero-setting of weighing system.
  - Theoretical calibration by using buttons.
  - Real calibration with linearization up to 5 points.
  - Anti-peak.
  - Filter to stabilize the weight variations.
  - Semi-automatic tare and predetermined tare (net/gross weight).
  - Automatic zero setting at power-on.
  - Zero tracking.
  - Semi-automatic zero.

### 8 INDEPENDENT CHANNELS

CH 1	ON
CH 2	ON
CH 3	ON
CH 4	ON
CH 5	ON
CH 6	ON
CH 7	ON
CH 8	OFF

The screen shows the activation/deactivation status of individual channels to indicate the presence/absence of connection with load cells.

**Active Channels:** there is a connection with the load cell.

**Channel not active:** no connection with the load cell.

### LOAD DISTRIBUTION

1C	9.7
2C	13.8
3C	14.9
4C	8.7
5C	20.3
6C	32.5
7C	Err
8C	OFF

The CLM8 displays the current load distribution on each active channel.

**% of distributed load**

**ERROR: Connection problem**

**OFF: Channel not active**

CH 1	1.867
CH 2	2.087
CH 3	2.174
CH 4	1.794
CH 5	2.513
CH 6	3.450
CH 7	Error
CH 8	OFF

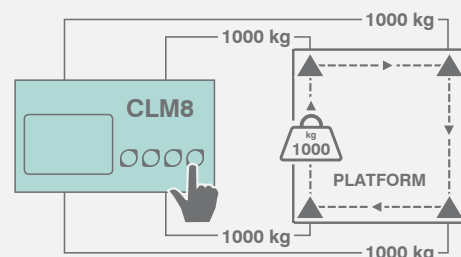
The CLM8 displays the **load cells response signal in mV** for each active channel.

**ERROR: Connection problem**

**OFF: Channel not active**

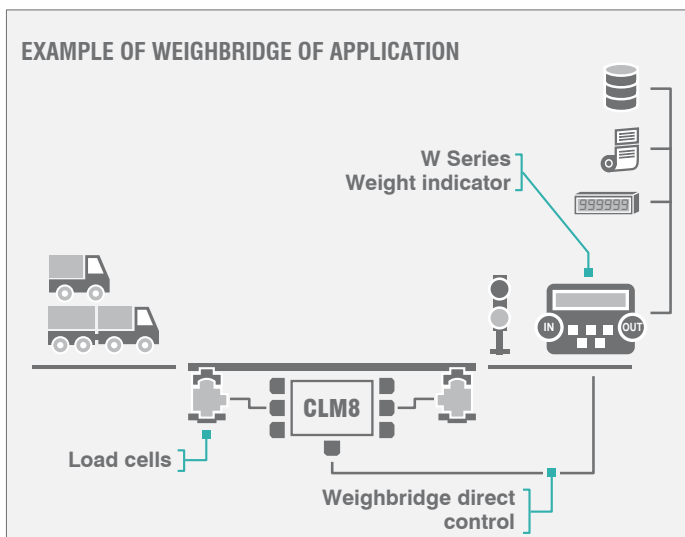
### DIGITAL EQUALIZATION

the digital equalizer function simplifies the procedure to a single step and it is free of drift over time.



▲ = LOAD CELLS

### EXAMPLE OF WEIGHBRIDGE OF APPLICATION





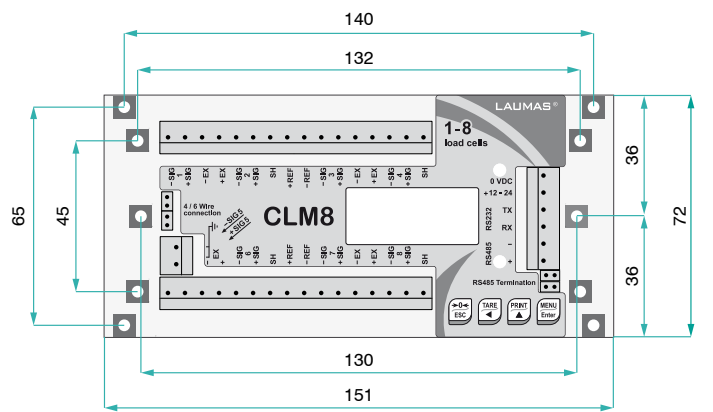
### METROLOGICAL SPECIFICATIONS OF TYPE-APPROVED INSTRUMENTS

- Three operation mode: single interval or multiple ranges (max 3) or multi-interval (max 3).
- Calibration via keyboard is protected through seals for the access to a setting jumper or installer password or hardware device
- Semi-automatic tare and predetermined tare.
- Semi-automatic zero.
- Weight subdivisions displaying (1/10 e).
- Alibi memory (option on request).

### TECHNICAL FEATURES

Power supply and Consumption	12-24 VDC $\pm 10\%$ ; 5 W
Number of load cells • Connection	max 16 (350 $\Omega$ ) • 4 or 6 wires
Load cells supply	5 VDC/240 mA
Load cell's sensitivity • Measure range	max 7 mV/V • max $\pm 39$ mV
Linearity • Linearity of the analog output	<0.01% Full scale • <0.01% Full scale
Thermal drift • Thermal drift of the analog output	<0.0005% Full scale/ $^{\circ}\text{C}$ • <0.003% Full scale/ $^{\circ}\text{C}$
A/D Converter	8 channels - 24 bit (16000000 points) 4.8 kHz
Divisions	max 999999 • 0,01 $\mu\text{V/d}$ (with measure range $\pm 10$ mV and sensitivity 2 mV/V)
Divisions (CE-M approved)	max 3x10000e • 0,2 $\mu\text{V/VSI}$ (with measure range $\pm 10$ mV and sensitivity 2 mV/V)
Conversion per second	max 600
Decimals • Display increments	0 - 4 • x1 x2 x5 x10 x20 x50 x100
Digital filter • Conversion rate	0.006 - 7 s • 5 - 600 Hz
Relay logic outputs	n. 5 - max 115 VAC/150 mA
Logic inputs	n. 3 - optoisolated 5 - 24 VDC PNP
Analog output	16 bit, 0-20 mA; 4-20 mA (max 300 $\Omega$ ); 0-10 V; 0-5 V (min. 10 k $\Omega$ ).
Serial port	RS485 / RS232
Baud rate	2400, 4800, 9600, 19200, 38400, 115200 (bit/s)
Humidity (condensate free)	85%
Storage temperature	-30 $^{\circ}\text{C}$ +80 $^{\circ}\text{C}$
Working temperature	-20 $^{\circ}\text{C}$ +60 $^{\circ}\text{C}$
Working temperature (CE-M approved)	-10 $^{\circ}\text{C}$ +40 $^{\circ}\text{C}$

CLM8I DETAIL: centre distance



Dimensions in mm

The Company reserves the right to make changes to the technical data, drawings and images without notice, if it deems appropriate for the Product improvement.