TLM8

WEIGHT TRANSMITTER - 8 INDEPENDENT CHANNELS

LAUMAS®

IP67 RS485 ANALOG OUTPUT ALIBI Instrument Manager

DESCRIPTION

- Weight transmitter with 8 independent reading channels with display of the total weight.
- The TLM8 series allows to have same benefits and performance of an advanced digital weighing system even using analog load cells.
- TEST key for direct access to the diagnostic functions.
- Back panel mounting on Omega/DIN rail or junction box (on request).
- Dimensions: 148x92x60 mm.
- Backlit LCD graphic display, resolution: 128x64 pixel, visible area: 60x32 mm.
- 5-key keyboard.
- Extractable screw terminal blocks.
- The instrument can be configured and managed using the free "Instrument Manager" PC software, which you can download from www.laumas.com.

IP67 BOX VERSION (on request)

8+3 PG9 cable glands - plugs

8+3 PVC end-fittings for sheath

INPUTS/OUTPUTS AND COMMUNICATION

- RS485 serial port for communication via protocols ModBus RTU, ASCII Laumas bidirectional or continuous one way transmission.
- Current or voltage 16 bit analog output.
- 5 relay outputs controlled by the setpoint values or via protocols.
- 3 optoisolated PNP digital inputs: status reading via serial communication protocols.
- 8 load cell dedicated inputs.

FIELDBUSES

MODBUS RTU · MODBUS/TCP · ETHERNET POWERLINK certified product · DeviceNet · EtherNet/IP · PI CERTIFIED PROFIBUS · PROFINET

PROFIBUS · CC-Link · CANopen · SERCOS interface · ETHERNET TCP/IP · EtherCAT

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	DESCRIPTION	CODE
	**RS485** serial port. Baud rate: 2400, 4800, 9600, 19200, 38400, 115200 (bit/s). 16 bit **analog output.** Current: 0÷20 mA; 4÷20 mA (up to 400 Ω). Voltage: 0÷10 V; 0÷5 V (min 2 kΩ)	TLM8
	**CANopen** port. Baud rate: 10, 20, 25, 50, 100, 125, 250, 500, 800, 1000 (kbit/s). The instrument works as *slave* in a synchronous CANopen network. Equipped with RS485 serial port and analog output.	TLM8CANOPEN
	**DeviceNet** port. Baud rate: 125, 250, 500 (kbit/s). The instrument works as *slave* in a DeviceNet network. Equipped with RS485 serial port and analog output.	TLM8DEVICENET
	**CC-Link** port. Baud rate: 156, 625, 2500, 5000, 10000 (kbit/s). The instrument works as *Remote Device Station* in a CC-Link network and occupies 3 stations. Equipped with RS485 serial port and analog output.	TLM8CCLINK
	**PROFIBUS DP** port. Baud rate: up to 12 Mbit/s. The instrument works as *slave* in a Profibus DP network. Equipped with RS485 serial port and analog output.	TLM8PROFIBUS
	**Modbus/TCP** port. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as *slave* in a Modbus/TCP network. Equipped with RS485 serial port and analog output.	TLM8MODBUSTCP
	**Ethernet TCP/IP** port. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works in an Ethernet TCP/IP network and it is accessible via web browser. Equipped with RS485 serial port and analog output.	TLM8ETHETCP
	**2x Ethernet/IP** ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as *adapter* in an Ethernet/IP network. Equipped with RS485 serial port and analog output.	TLM8ETHEIPN
	**2x PROFINET IO** ports. Type: RJ45 100Base-TX. The instrument works as *device* in a Profinet IO network. Equipped with RS485 serial port and analog output.	TLM8PROFINETION
	**2x EtherCAT** ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as *slave* in an EtherCAT network. Equipped with RS485 serial port and analog output.	TLM8ETHERCAT
	**2x POWERLINK** ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as *slave* in a Powerlink network. Equipped with RS485 serial port and analog output.	TLM8POWERLINK
	**2x SERCOS III** ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as *slave* in a Sercos III network. Equipped with RS485 serial port and analog output.	TLM8SERCOS

GNW Instrumentation
www.gnw.co.uk
Tel: 01704 536010
Email: sales@gnw.co.uk

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CERTIFICATIONS

OIML R76:2006, class III, 3x10000 divisions, 0.2 μV/VSI

UL Recognized component - Complies with the United States and Canada standards

Complies with the Eurasian Custom Union standards

CERTIFICATIONS ON REQUEST

M	Conformity assessment (initial verification) in combination with Laumas weighing module

TECHNICAL FEATURES

Power supply and consumption	12÷24 VDC ±10%; 5 W
Number of load cells • Load cells supply	up to 16 (350 Ω) - 4/6 wires • 5 VDC/240 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	8 channels - 24 bit (16000000 points) - 4.8 kHz
Divisions (with measurement range ±10 mV and sensitivity 2 mV/V)	±999999 • 0.01 μV/d
Measurement range	±39 mV
Usable load cells sensitivity	±7 mV/V
Conversions per second	600/s
Display range	±999999
Decimals • Display increments	0÷4 • x1 x2 x5 x10 x20 x50 x100
Digital filter • Readings per second	21 levels • 5÷600 Hz
Relay outputs	5 - max 115 VAC/150 mA
Optoisolated digital inputs	3 - 5÷24 VDC PNP
Serial ports	RS485
Baud rate	2400, 4800, 9600, 19200, 38400, 115200 (bit/s)
Analog output	16 bit = 65535 divisions. 0÷20 mA; 4÷20 mA (up to 400 Ω) 0÷10 V; 0÷5 V (min 2 kΩ)
Humidity (condensate free)	85%
Storage temperature	-30 °C +80 °C
Working temperature	-20 °C +60 °C

Relay outputs	5 - max 30 VAC, 60 VDC/150 mA
Equipment to be powered by 12-24 VDC LPS or Class 2 power source	

METROLOGICAL SPECIFICATIONS OF TYPE-APPROVED INSTRUMENTS

Applied standards	2014/31/UE - EN45501:2015 - OIML R76:2006
Operation modes	single interval, multi-interval, multiple range
Accuracy class	III or IIII
Maximum number of scale verification divisions	10000 (class III); 1000 (class IIII)
Minimum input signal for scale verification division	0.2 μV/VSI
Working temperature	-10°C +40°C

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www.gnw.co.uk
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MAIN FUNCTIONS

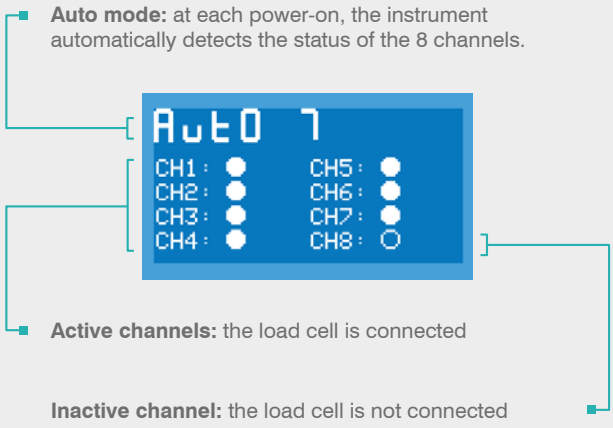
- 8 independent channels for load cells: monitoring and direct management of each connected load cell.
- Immediate reporting of anomalies (also on the connected weight indicator display).
- All the TLM8 functions can be managed by a W series weight indicator connected via RS485 serial port (excluding instruments with graphic display).
- Digital equalization of the 8 channels.
- Load distribution analysis on the 8 channels with backups archive: storing, consultation, printing.
- Detailed diagnostics of each load cell (max 8): depending on the type of weighing system you can perform:
  - load automatic diagnostics;
  - automatic diagnostics on zero.
- Tilt compensation of the weighing system up to ±10 degrees via inclinometer (not included). The weight correction is also valid for systems approved for legal for trade use.
- Archive of the last 50 significant events (zeroing, calibration, equalization, alarms): storing, consultation, printing.
- Transmission via RS485 (Modbus RTU) or fieldbus of the divisions for the 8 reading channels. Only the points of each load cell connected are transmitted, with no filter applied; the calculation of the weight value, the zero setting and calibration are made by the customer.
- Connections to:
  - PLC via analog output and fieldbus;
  - PC/PLC via RS485 (up to 99 instruments with line repeaters, up to 32 without line repeaters);
  - remote display, inclinometer and printer via RS485;
  - up to 16 load cells in parallel;
  - W series weight indicator via RS485.
- Digital filter to reduce the effects of weight oscillation.
- Theoretical calibration (via keyboard) and real calibration (with sample weights and the possibility of weight linearization up to 8 points).
- 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.
- Hysteresis and setpoint value setting.
- TCP/IP WEB APP
  Integrated software in combination with the Ethernet TCP/IP version for remote supervision, management and control of the instrument.

CE-M version: 2014/31/EU-EN45501:2015-OIML R76:2006

- System parameters management protected by qualified access via software (password), hardware or fieldbus.
- Weight subdivisions displaying (1/10 e).
- Three operation mode: single interval or multiple ranges or multi-interval.
- Net weight zero tracking.
- Calibration.
- Alibi memory (option on request).

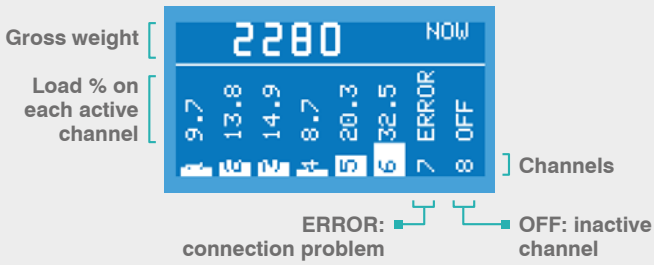
8 INDEPENDENT CHANNELS

The screen shows the standard automatic operating mode: the activation/deactivation status of each channel indicates the presence/ absence of connection with the load cells.



LOAD DISTRIBUTION

The TLM8 displays, in graphical form, the current load distribution on each active channel.



LOAD CELLS INPUT TEST

The TLM8 displays, in graphical form, the load cells response signal in mV for each active channel.

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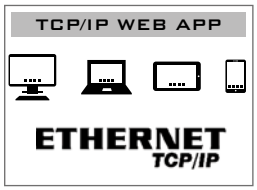
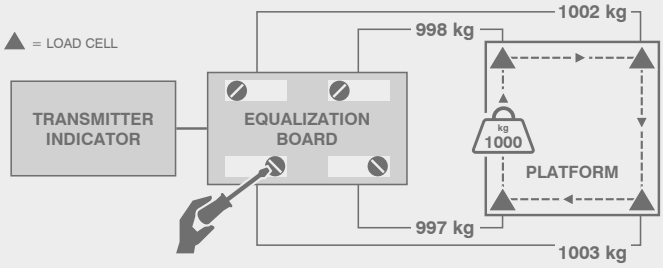


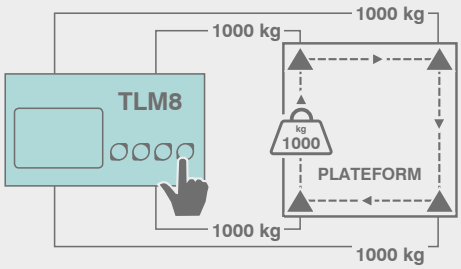
EQUALIZATION WITH JUNCTION BOXES

The equalization with junction boxes and trimmers requires several manual steps and can suffer drift over time, requiring subsequent repetitions of the same procedure.



DIGITAL EQUALIZATION

The TLM8 does not require the use of the junction box thanks to the support of 8 independent channels; the digital equalization function simplifies the procedure to a single step and it is free of drift over time.



OPTIONS ON REQUEST

	DESCRIPTION	CODE
	Alibi memory.	OPZWALIBI
	IP67 polycarbonate box; dimensions: 188x188x130 mm (4x fixing holes Ø4 mm; centre distance: 164x164 mm)	
	- transparent cover - transparent cover; 8+3 PG9 cable glands - plugs - transparent cover; 8+3 PVC end-fittings for sheath	CASTLG CASTLG8PG9 CASTLG8GUA
	- external keyboard - external keyboard; 8+3 PG9 cable glands - plugs - external keyboard; 8+3 PVC end-fittings for sheath	CASTLGTAST CASTLGTAST8PG9 CASTLGTAST8GUA

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