TLB
WEIGHT TRANSMITTER

LAUMAS®

RS485 ANALOG OUTPUT Instrument Manager

DESCRIPTION

- Weight transmitter suitable for back panel mounting on Omega/DIN rail.
- Space-saving vertical shape.
- Dimensions: 115x25x120 mm.
- 6-digit semi-alphanumeric red LED display (8 mm height).
- 6 signalling LED.
- Four buttons for the system calibration.
- 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.

INPUTS/OUTPUTS AND COMMUNICATION

- RS485 serial port for communication via protocols ModBus RTU, ASCII Laumas or continuous one way transmission.
- 3 relay outputs controlled by the setpoint values or via protocols.
- 2 optoisolated PNP digital inputs: status reading via serial communication protocols.
- 1 load cell dedicated input.

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

LAUMAS Elettronica srl • Phone: (+39) 0521 683124 • Fax (+39) 0521 681091
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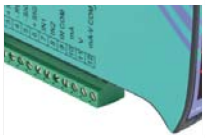
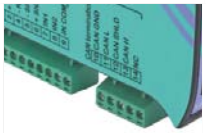
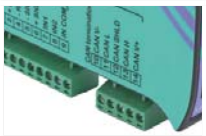
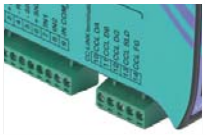
ISO 9001
ISO 14001

	DESCRIPTION	CODE
	**RS485** serial port. Baud rate: 2400, 4800, 9600, 19200, 38400, 115200 (bit/s).	TLB485
	Optoisolated 16 bit **analog output**. Current: 0÷20 mA; 4÷20 mA (up to 300 Ω). Voltage: 0÷10 V; 0÷5 V; ±10 V; ±5 V (min 10 kΩ). Equipped with RS485 serial port.	TLB
	**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.	TLBCANOPEN
	**DeviceNet** port. Baud rate: 125, 250, 500 (kbit/s). The instrument works as *slave* in a DeviceNet network. Equipped with RS485 serial port.	TLBDEVICENET
	**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.	TLBCCLINK
	**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.	TLBPROFI
	**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.	TLBMODBUSTCP
	**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.	TLBETHETCP
	**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.	TLBETHEIPN
	**2x Profinet IO** ports. Type: RJ45 100Base-TX. The instrument works as *device* in a Profinet IO network. Equipped with RS485 serial port.	TLBPROFINETION
	**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.	TLBETHERCAT
	**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.	TLBPOWERLINK
	**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.	TLBSERCOS

CERTIFICATIONS

OIML	OIML R76:2006, class III, 3x10000 divisions, 0.2 μV/VSI / OIML R61 - WELMEC Guide 8.8:2011 (MID)
c UL us	UL Recognized component - Complies with the United States and Canada standards
EAC	Complies with the Eurasian Custom Union standards

CERTIFICATIONS ON REQUEST

M	Conformity assessment (initial verification) in combination with Laumas weighing module
NTEP	NTEP - n_{max} 5000 - Class III - United States and Canada

TECHNICAL FEATURES

Power supply and consumption	12÷24 VDC ±10%; 5 W
Number of load cells • Load cells supply	up to 8 (350 Ω) - 4/6 wires • 5 VDC/120 mA
Linearity • Analog output linearity (only for TLB)	<0.01% full scale • <0.01% full scale
Thermal drift • Analog output thermal drift (only for TLB)	<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 • 0.01 μV/d
Measurement range	±39 mV
Usable load cells sensitivity	±7 mV/V
Conversions per second	300/s
Display range	±999999
Decimals • Display increments	0÷4 • x1 x2 x5 x10 x20 x50 x100
Digital filter • Readings per second	10 levels • 5÷300 Hz
Relay outputs	3 - max 115 VAC/150 mA
Optoisolated digital inputs	2 - 5÷24 VDC PNP
Serial ports	RS485
Baud rate	2400, 4800, 9600, 19200, 38400, 115200 (bit/s)
Optoisolated analog output (only for TLB)	16 bit = 65535 divisions. 0÷20 mA; 4÷20 mA (up to 300 Ω) 0÷10 V; 0÷5 V; ±10 V; ±5 V (min 10 kΩ)
Humidity (condensate free)	85%
Storage temperature	-30 °C +80 °C
Working temperature	-20 °C +60 °C

c UL us	Relay outputs	3 - 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
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

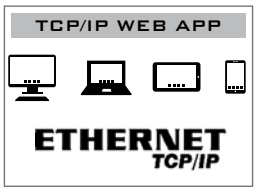
Rev. 0.0

TLB
WEIGHT TRANSMITTER

LAUMAS®

MAIN FUNCTIONS

- Connections to:
  - PLC via analog output or fieldbus;
  - PC/PLC via RS485 (up to 99 instruments with line repeaters, up to 32 without line repeaters);
  - remote display via RS485;
  - up to 8 load cells in parallel by junction box.
- 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.
- Displaying of the maximum weight value reached (peak).
- 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).
- Two operation mode: single interval or multi-interval.
- Net weight zero tracking.
- Calibration.

SPACE SAVING COMPACT DESIGN

Rev. 0.0

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

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