TLB
WEIGHT TRANSMITTER

LAUMAS®

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.
- Removable 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

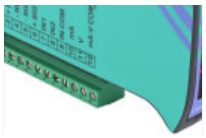
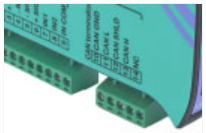
MODBUS RTU · MODBUS/TCP · ETHERNET POWERLINK certified product · DeviceNet · EtherNet/IP · PI CERTIFIED PROFIBUS • PROFINET

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

Rev. 0.0

LAUMAS Elettronica srl • Phone: (+39) 0521 683124 • Fax (+39) 0521 681091
UFFICIO VENDITE ITALIA: commerciale@laumas.it • EXPORT SALES DEPARTMENT: sales@laumas.it

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

TLB
WEIGHT TRANSMITTER

LAUMAS®

CERTIFICATIONS

OIML R76:2006, class III, 3x10000 divisions, 0.2 μV/VSI / OIML R61 - WELMEC Guide 8.8:2011 (MID)

UL Recognized component - Complies with United States and Canada regulations

Complies with the Eurasian Customs Union regulations

Equivalent of the CE marking for the United Kingdom

Complies with United Kingdom regulations for legal for trade use

Measurement Canada - n_{max} 5000 - Class III - Complies with Canadian regulations for legal for trade use

NTEP - n_{max} 5000 - Class III - Complies with United States regulations for legal for trade use

Complies with the Brazilian regulations for legal for trade use

CERTIFICATIONS ON REQUEST

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

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
	Working temperature	-20 °C +60 °C
	Equipment to be powered by 12-24 VDC LPS or Class 2 power source	

METROLOGICAL SPECIFICATIONS OF TYPE-APPROVED INSTRUMENTS	OIML	NTEP	INMETRO
Applied standards by region	EU: 2014/31/UE; OIML R76:2006; EN45501:2015 United Kingdom: Non-automatic Weighing Instrument Regulations 2016	USA: NIST HANDBOOK 44, 2020; NCWM PUB 14, 2021 Canada: Weights and Measures Regulations, 2019	Brazil: Portaria Inmetro N°157/2022
Operation modes	single interval, multi-interval	single interval, multi-interval	single interval, multi-interval, multiple range
Accuracy class	III or IIII	III	III
Maximum number of scale verification divisions	10000 (class III); 1000 (class IIII)	5000 (class III)	10000 (class III)
Minimum input signal for scale verification division	0.2 μV/VSI		0.2 μV/VSI
Working temperature	-10 °C +40 °C	-10 °C +40 °C (+14 °F +104 °F)	-10 °C +40 °C

Rev. 0.0

TLB
WEIGHT TRANSMITTER

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.
- 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 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.

Approved versions for legal for trade use

- 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.

LAUMAS Elettronica srl • Phone: (+39) 0521 683124 • Fax (+39) 0521 681091
UFFICIO VENDITE ITALIA: commerciale@laumas.it • EXPORT SALES DEPARTMENT: sales@laumas.it

ISO 9001
ISO 14001