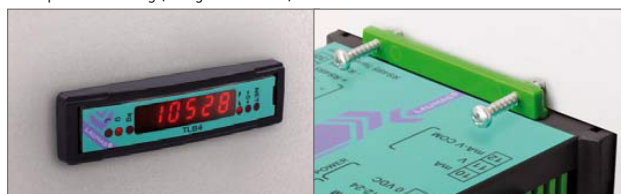




**TLB4**  
Weight Transmitter - 4 Independent Channels



Front panel mounting (fixing kit included)



**DESCRIPTION**

- Weight transmitter with 4 independent reading channels with display of the total weight.
- The TLB4 series allows to have same benefits and performance of an advanced digital weighing system even using analog load cells.
- Back panel mounting on Omega/DIN rail (space-saving vertical shape).
- Front panel mounting (except PROFIBUS DP version) with fixing kit included (panel drilling template: 96x23 mm; panel thickness: 2.5 mm).
- Dimensions: 115x26x120 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

**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.
- 4 load cell dedicated inputs

**FIELD BUSES**



**DESCRIPTION**

DESCRIPTION	CODE
 <p><b>RS485</b> serial port. Baud rate: 2400, 4800, 9600, 19200, 38400, 115200 (bit/s).</p>	TLB4RS485
 <p>Optoisolated 16 bit <b>analog output</b>. 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.</p>	TLB4
 <p><b>CANopen</b> 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.</p>	TLB4CANOPEN
 <p><b>DeviceNet</b> port. Baud rate: 125, 250, 500 (kbit/s). The instrument works as slave in a DeviceNet network. Equipped with RS485 serial port.</p>	TLB4DEVICENET
 <p><b>CC-Link</b> 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.</p>	TLB4CCLINK
 <p><b>Profibus DP</b> port. Baud rate: up to 12 Mbit/s. The instrument works as slave in a Profibus DP network. Equipped with RS485 serial port.</p>	TLB4PROFIBUS
 <p><b>Modbus/TCP</b> 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.</p>	TLB4MODBUSTCP
 <p><b>Ethernet TCP/IP</b> 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.</p>	TLB4ETHETCP
 <p><b>2x Ethernet/IP</b> 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.</p>	TLB4ETHEIP
 <p><b>2x Profinet IO</b> ports. Type: RJ45 100Base-TX. The instrument works as device in a Profinet IO network. Equipped with RS485 serial port.</p>	TLB4PROFINETIO
 <p><b>2x EtherCAT</b> ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as slave in an EtherCAT network. Equipped with RS485 serial port.</p>	TLB4ETHERCAT
 <p><b>2x POWERLINK</b> ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as slave in a Powerlink network. Equipped with RS485 serial port.</p>	TLB4POWERLINK
 <p><b>2x SERCOS III</b> 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.</p>	TLB4SERCOS



## CERTIFICATIONS



OIML R76:2006, class III, 3x10000 divisions, 0.25  $\mu\text{V}/\text{VSI}$  / OIML R61, R51 - WELMEC Guide 8.8:2017 (MID)



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



Complies with the Eurasian Custom Union standards

CERTIFICATIONS ON REQUEST



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




NMI Trade Approved - Complies with Australian market regulations for legal for trade use





Complies with New Zealand regulations for legal for trade use

## OPTIONS ON REQUEST

	DESCRIPTION	CODE
	Alibi memory.	OPZWALIBI

## TECHNICAL FEATURES

Power supply and consumption	12÷24 VDC $\pm 10\%$ ; 5 W
Number of load cells · Load cells supply	up to 16 (350 $\Omega$ ) - 4/6 wires · 5 VDC/240 mA
Linearity · Analog output linearity (only for TLB4)	< 0.01% full scale · < 0.01% full scale
Thermal drift · Analog output thermal drift (only for TLB4)	<0.0005% full scale/°C · <0.003% full scale/°C
A/D Converter	4 channels - 24 bit (16000000 points) - 4.8 kHz
Divisions (with measurement range $\pm 10$ mV and sensitivity 2 mV/V)	$\pm 999999$ · 0.01 $\mu\text{V}/\text{d}$
Measurement range	$\pm 39$ mV
Usable load cells sensitivity	$\pm 7$ mV/V
Conversions per second	600/s
Display range	$\pm 999999$
Decimals · Display increments	0÷4 · x1 x2 x5 x10 x20 x50 x100
Digital filter · Readings per second	21 levels · 5÷ 600 Hz
Relay outputs	3 - max 115 VAC / 50 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 TLB4)	16 bit = 65535 divisions. 0÷20 mA; 4÷20 mA (up to 300 $\Omega$ ) 0÷10 V; 0÷5 V; $\pm 10$ V; $\pm 5$ V (min 10 k $\Omega$ )
Humidity (condensate free)	85%
Storage temperature	-30 °C +80 °C
Working temperature	-20 °C +60 °C
 Relay outputs	3 - max 30 VAC , 60 VDC / 50 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	0.25 $\mu\text{V}/\text{VSI}$
Working temperature	-10 °C +40 °C

## MAIN FUNCTIONS

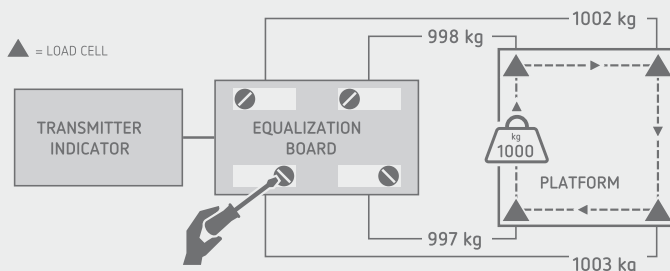
- 4 independent channels for load cells: monitoring and direct management of each connected load cell.
- Immediate reporting of anomalies (also on the connected weight indicator display).
- All the TLB4 functions can be managed by a W series weight indicator connected via RS485 serial port (excluding instruments with graphic display).
- Digital equalization of the 4 channels.
- Load distribution analysis on the 4 channels with backups archive: storing, consultation, printing.
- Detailed diagnostics of each load cell (max 4): 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  $\pm 10$  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 4 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 or 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).
- Two operation mode: single interval or multi-interval.
- Net weight zero tracking.
- Calibration.
- Alibi memory (option on request).

### 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 TLB4 does not require the use of the junction box thanks to the support of 4 independent channels; the digital equalization function simplifies the procedure to a single step and it is free of drift over time.

