



**MODBUS RTU**



### DESCRIPTION

- Weight transmitter suitable for back panel mounting on Omega/DIN rail.
- Space-saving vertical shape.
- Dimensions: 25x115x120 mm.
- 6-digit red LED semialphanumeric display (8 mm height), 7 segment.
- 6 indicator LED.
- Four buttons for the system calibration.
- Extractable screw terminal blocks.

### INPUTS/OUTPUTS

- RS485 serial port for communication via ModBus RTU protocol, ASCII Laumas bidirectional 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

**PROFI**  
**BUS**

**CC-Link**

**CANopen**

**SERCOS**  
interface

**ETHERNET**  
TCP/IP

**EtherCAT**

	DESCRIPTION	CODE
	<b>RS485</b> serial port. Baud rate: 2400, 4800, 9600, 19200, 38400, 115200 (bit/s).	TLB485
	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.	TLB
	<b>CANopen</b> port. Baud rate: 10, 20, 25, 50, 100, 125, 250, 500, 800, 1000 (kbit/s). The instrument works as <i>slave</i> in a synchronous CANopen network. Equipped with RS485 serial port.	TLBCANOPEN
	<b>DeviceNet</b> port. Baud rate: 125, 250, 500 (kbit/s). The instrument works as <i>slave</i> in a DeviceNet network. Equipped with RS485 serial port.	TLBDEVICENET
	<b>CC-LINK</b> port. Baud rate: 156, 625, 2500, 5000, 10000 (kbit/s). The instrument works as <i>Remote Device Station</i> in a CC-LINK network and occupies 3 stations. Equipped with RS485 serial port.	TLBCCLINK
	<b>PROFIBUS DP</b> port. Baud rate: up to 12 Mbit/s. The instrument works as <i>slave</i> in a Profibus-DP network. Equipped with RS485 serial port.	TLBPROFI
	<b>Modbus/TCP</b> port. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as <i>slave</i> in a Modbus/TCP network. Equipped with RS485 serial port.	TLBMODBUSTCP
	<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.	TLBETHETCP
	<b>Ethernet/IP</b> port. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as <i>adapter</i> in an Ethernet/IP network. Equipped with RS485 serial port.	TLBETHEIP
	<b>2x PROFINET IO</b> ports. Type: RJ45 100Base-TX. The instrument works as <i>device</i> in a Profinet IO network. Equipped with RS485 serial port.	TLBPROFINETIO
	<b>2x EtherCAT</b> ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as <i>slave</i> in an EtherCAT network. Equipped with RS485 serial port.	TLBETHERCAT
	<b>2x POWERLINK</b> ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as <i>slave</i> in a Powerlink network. Equipped with RS485 serial port.	TLBPOWERLINK
	<b>2x SERCOS III</b> ports. Type: RJ45 10Base-T or 100Base-TX (auto-sensing). The instrument works as <i>slave</i> in a Sercos III network. Equipped with RS485 serial port.	TLBSERCOS

### CERTIFICATIONS



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

#### CERTIFICATIONS ON REQUEST

<b>M</b>	Initial verification in combination with Laumas weighing module
<b>UL US</b>	UL Recognized component - Complies with the United States and Canada standards
<b>ERC</b>	Complies with the Eurasian Custom Union standards (Russia, Belarus, Kazakhstan)
<b>NTEP</b>	NTEP - $n_{max}$ 5000 - Class III - United States and Canada

### TECHNICAL FEATURES

Power supply and consumption	12÷24 VDC $\pm$ 10%; 5 W	
Number of load cells • Load cells supply	up to 8 (350 $\Omega$ ) - 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/ $^{\circ}$ C • <0.003% full scale/ $^{\circ}$ C	
A/D Converter	24 bit (16000000 points) - 4.8 kHz	
Divisions (with measurement range $\pm$ 10 mV and sensitivity 2 mV/V)	$\pm$ 999999 • 0,01 $\mu$ V/d	
Measurement range	$\pm$ 39 mV	
Usable load cells sensitivity	$\pm$ 7 mV/V	
Conversions per second	300/s	
Display range	$\pm$ 999999	
Decimals • Display increments	0÷4 • x1 x2 x5 x10 x20 x50 x100	
Digital filter • Readings per second	0.012÷7 s • 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 $\Omega$ ) 0÷10 V; 0÷5 V; $\pm$ 10 V; $\pm$ 5 V (min 10 k $\Omega$ )	
Humidity (condensate free)	85%	
Storage temperature	-30 $^{\circ}$ C +80 $^{\circ}$ C	
Working temperature	-20 $^{\circ}$ C +60 $^{\circ}$ C	
<b>UL US</b>	Relay outputs	3 - max 30 VAC, 60 VDC/150 mA
	Working temperature	-20 $^{\circ}$ C +50 $^{\circ}$ C
	Power supply device marked "LPS" (limited power source) or "Class 2"	

### 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 $\mu$ V/VSI
Working temperature	-10 $^{\circ}$ C +40 $^{\circ}$ C

### MAIN FUNCTIONS

- Connections to:
  - PLC via analog output or fieldbuses;
  - 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 5 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



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