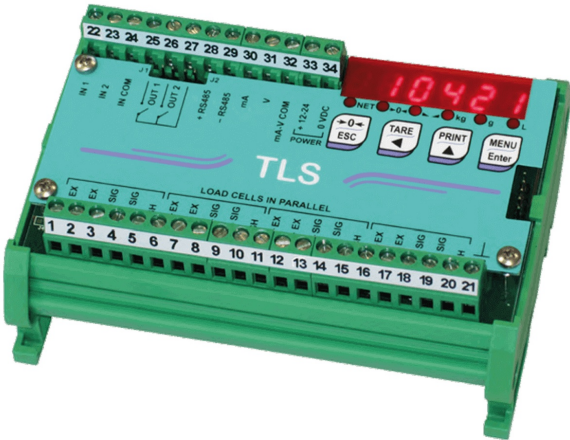


WEIGHT TRANSMITTER WITH DISPLAY

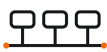




WEIGHT
TRANSMITTER

Type: **TLS**

- UP TO 8 LOAD CELLS
- LED DISPLAY, 6 DIGITS, 8 mm
- 2 RELAYS · 2 PNP INPUTS
- RS485 · ModBus RTU



RS485



4...20 mA
0...10 V



Display

ORDERING

Basic device	TLS — weight transmitter with display and keypad
Mounting	omega or DIN rail; IP67 box CASTL or CASTLAST on request
ATEX box	CASTLASTATEX for zone 2-22, on request

OVERVIEW

The TLS is a weight transmitter that can be operated on its own. Six red LED digits of 8 mm and four keys are enough to calibrate it, set a tare or enter a set point — no PC is needed, although the free Instrument Manager software can configure and manage it over RS485. Up to eight load cells are connected in parallel; the value leaves the device over an opto-isolated 16-bit analogue output in current or voltage, over two opto-relay outputs switched by set points or by protocol, and over the serial interface, which also drives a remote display. Two opto-isolated PNP inputs are read back over the protocol. Calibration is theoretical over the keys or real with test weights, with linearisation over up to eight points; the digital filter has ten levels. The device sits on an omega or DIN rail on the back wall of the cabinet; an IP67 box is available on request, with an external keypad and in an ATEX version for zone 2-22.

MEASUREMENT AND OUTPUTS

- Up to 8 load cells of 350 Ω , 4- or 6-wire
- Load cell supply 5 V DC / 120 mA
- Measuring range ± 19.5 mV, ± 3 mV/V
- A/D 24 bit, 80 Hz, 80 conversions/s
- Analogue output 16 bit, opto-isolated
- 2 opto-relay outputs, 24 V DC / 60 mA
- 2 opto-isolated PNP inputs, 5 ... 24 V DC
- RS485 — ModBus RTU, ASCII

OPERATION AND DEVICE

- LED display, 6 digits, 8 mm high
- 6 indicator LEDs, 4 keys
- Free Instrument Manager software
- Supply 12 ... 24 V DC ± 10 %, 5 W
- Dimensions 123 $\times$ 92 $\times$ 50 mm
- Omega or DIN rail mounting
- Operating temperature -20 ... $+60$ °C
- Option IP67 box, keypad, ATEX 2-22



TECHNICAL DATA

LOAD CELLS AND MEASUREMENT

Number of load cells	up to 8 of 350 Ω · 4- or 6-wire
Load cell supply	5 V DC / 120 mA
Measuring range	± 19.5 mV · load cell sensitivity ± 3 mV/V
A/D converter	24 bit (16 000 000 digits) · 80 Hz · 80 conversions per second
Calibration values	± 999999 · 0.01 μ V/d at ± 10 mV and 2 mV/V
Linearity	< 0.01 % of full scale · thermal drift < 0.0005 % per °C

INTERFACE AND OPERATION

Serial interface	RS485 — ModBus RTU, ASCII or continuous one-way transmission · direct connection between RS485 and RS232 without a converter
Baud rate	1200 · 2400 · 4800 · 9600 · 19200 · 38400 · 115200 bit/s
Instruments on one line	up to 99 with amplifiers, up to 32 without
Display	6-digit semi-alphanumeric red LED display, digit height 8 mm · 6 indicator LEDs · 4 keys
Display range	± 999999 · decimals 0 ... 4 · resolution $\times 1$... $\times 100$
Digital filter	10 levels · 5 ... 80 readings per second

DEVICE, SUPPLY AND MOUNTING

Supply	12 ... 24 V DC ± 10 % · 5 W · use an external LPS or class 2 power supply
Dimensions	123 × 92 × 50 mm
Mounting	back wall of the control cabinet, omega or DIN rail — or in a box on request
Option box	CASTL, IP67 polycarbonate, 170 × 140 × 95 mm — transparent lid or external keypad, with 4 + 2 M16 × 1.5 cable glands or 4 + 2 PVC sleeve connections
Option box ATEX	CASTLTASTATEX, zone 2-22, external keypad, 4 + 2 M16 × 1.5 cable glands

OUTPUTS AND INPUTS

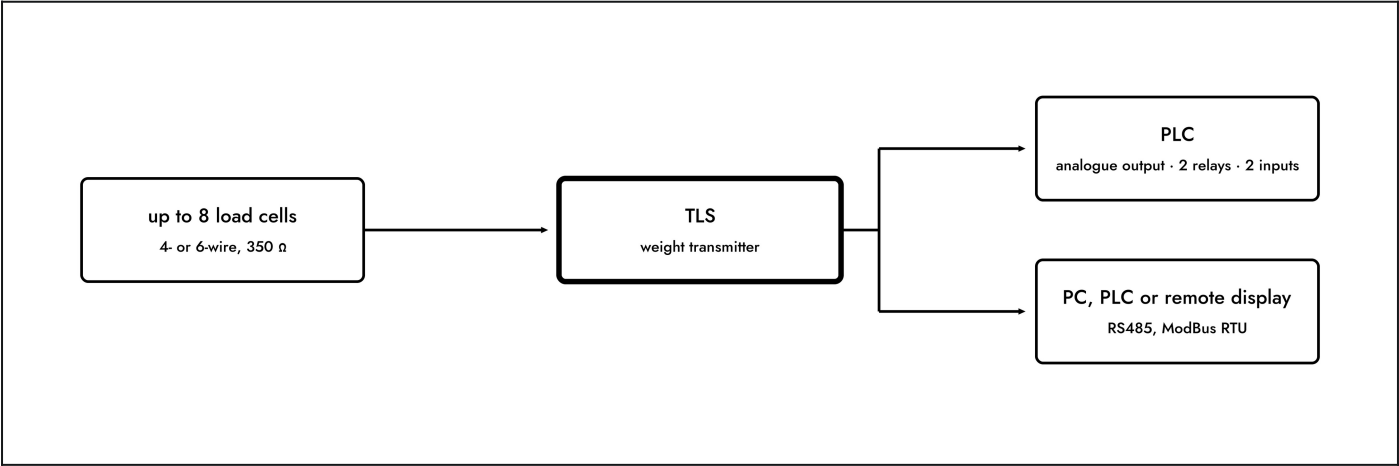
Analogue output	opto-isolated, 16 bit = 65535 calibration values
Current	0 ... 20 mA · 4 ... 20 mA, up to 300 Ω
Voltage	0 ... 10 V · 0 ... 5 V · ± 10 V · ± 5 V, minimum 10 k Ω
Linearity of the output	< 0.01 % of full scale · thermal drift < 0.003 % per °C
Opto-relay outputs	2 · max. 24 V DC / 60 mA · driven by set points or by protocol
Digital inputs	2 · opto-isolated · 5 ... 24 V DC PNP · state read over the protocol

FUNCTIONS AND ENVIRONMENT

Calibration	theoretical over the keys or real with test weights, linearised over up to 8 points
Weighing functions	tare to zero · auto zero at switch-on · zero setting of the gross weight · semi-automatic and preset tare · peak value · set point and hysteresis
Humidity	85 %, no condensation
Storage temperature	-30 ... +80 °C
Operating temperature	-20 ... +60 °C



CONNECTIONS



ACCESSORIES

Junction box	for connecting up to 8 load cells in parallel
CASTL · CASTLTAST	IP67 polycarbonate box, with transparent lid or with an external keypad
CASTLTASTATEX	the same box with keypad in the ATEX version for zone 2-22
Instrument Manager	free PC software

A remote display can be driven over the same RS485 line as the PC or the PLC.

COMPLIANCE

 RS485	Serial interface	RS485 — ModBus RTU, ASCII, continuous
 4...20 mA 0...10 V	Analogue output	opto-isolated, 16 bit — 0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V, ± 10 V, ± 5 V
 Display	Display	red LED display, 6 digits, digit height 8 mm

Approvals: UL recognized component for the USA and Canada · conforming to the rules of the Eurasian Customs Union · equivalent to the CE certification for the United Kingdom.

DIMENSIONS (mm)

Item	Value
Device	123 × 92 × 50 mm
IP67 box CASTL	170 × 140 × 95 mm, polycarbonate
Fixing holes of the box	4 × Ø 4 mm, spacing 152 × 122 mm
Display	6 digits, digit height 8 mm

