

WEIGHT TRANSMITTER, 4 CHANNELS



Type: **ETLH**

- 4 INDEPENDENT CHANNELS
- UP TO 16 LOAD CELLS (350 Ω)
- RS485 AND 11 FIELDBUSES
- OIML R76 CLASS III, 3 $\times$ 10 000 e



VERSIONS

ETLH Analog	RS485 + opto-isolated analogue output 0...20 / 4...20 mA · 0...10 / 0...5 / ± 10 / ± 5 V
ETLH485	RS485, 1200 ... 115200 bit/s
ETLHCANOPEN	CANopen, slave · 10 ... 1000 kbit/s
ETLHDEVICENET	DeviceNet, slave · 125, 250, 500 kbit/s
ETLHCCLINK	CC-Link, remote device station (3 stations) · 156 ... 10000 kbit/s
ETLHPROFI	Profibus DP, slave · up to 12 Mbit/s · rail mounting only
ETLHMODBUSTCP	Modbus/TCP, slave · RJ45 10Base-T / 100Base-TX
ETLHETHETCP	Ethernet TCP/IP, web browser · RJ45 10Base-T / 100Base-TX
ETLHETHEIPN	2 $\times$ EtherNet/IP, adapter · RJ45 10Base-T / 100Base-TX
ETLHPROFINETION	2 $\times$ PROFINET IO, device · RJ45 100Base-TX
ETLHETHERCAT	2 $\times$ EtherCAT, slave · RJ45 10Base-T / 100Base-TX
ETLHPOWERLINK	2 $\times$ POWERLINK, slave · RJ45 10Base-T / 100Base-TX
ETLHSERCOS	2 $\times$ SERCOS III, slave · RJ45 10Base-T / 100Base-TX

Every version is equipped with an RS485 serial port.



OVERVIEW

The ETLH puts four independent weighing channels into one device of 26 mm width, with the total weight on the display. Every channel has its own load cell input, and the device detects the connected load cells automatically; up to sixteen 350 Ω load cells can be supplied. Digital equalization, load distribution analysis and the diagnostics of each load cell give an analogue weighing system the behaviour of a digital one, without a junction box. Six red LED digits of 8 mm and four keys are enough to set it up; the free Instrument Manager PC software does the same over RS485. Three relay outputs follow the set points or the protocol, two opto-isolated PNP inputs are read back over the protocol, and the ETLH Analog adds an opto-isolated 16 bit analogue output. Beside RS485 the device is available with eleven fieldbuses, from CANopen and Profibus DP to PROFINET IO, EtherCAT and SERCOS III. It mounts on an Omega/DIN rail behind the panel, or in the panel front with the fixing kit included.

MEASUREMENT AND CHANNELS	OUTPUTS AND DEVICE
• 4 independent channels, 24 bit each • Up to 16 load cells of 350 Ω, 4- or 6-wire • Load cell supply 5 V DC / 240 mA • Measuring range ± 39 mV, ± 7 mV/V • 4.8 kHz, 600 conversions per second • Divisions ± 999999, 0.01 μV/d • Digital filter 21 levels, 5 ... 600 readings/s • Total weight shown beside the channels	• 3 relay outputs, max. 115 V AC / 150 mA • 2 opto-isolated PNP inputs, 5 ... 24 V DC • Analogue output 16 bit, opto-isolated (ETLH Analog) • RS485 on every version, 11 fieldbus versions • Red LED display, 6 digits, 8 mm · 6 LEDs · 4 keys • Dimensions 26 × 115 × 120 mm • Rail or front panel mounting, front IP30 • Supply 12 ... 24 V DC ± 10 %, 5 W



TECHNICAL DATA

INPUT AND MEASUREMENT

Channels	4 independent · automatic detection of the connected load cells
Number of load cells	up to 16 of 350 Ω · 4- or 6-wire
Load cell supply	5 V DC / 240 mA
A/D converter	4 channels · 24 bit (16 000 000 points) · 4.8 kHz
Conversions per second	600
Measuring range	± 39 mV · load cell sensitivity ± 7 mV/V
Divisions	± 999999 · 0.01 μ V/d (range ± 10 mV, sensitivity 2 mV/V)
Digital filter	21 levels · 5 ... 600 readings per second

PRECISION

Linearity	< 0.01 % of full scale
Thermal drift	< 0.0005 % of full scale per °C
Analogue output linearity	< 0.01 % of full scale (ETLH Analog)
Analogue output drift	< 0.003 % of full scale per °C (ETLH Analog)

ENVIRONMENT AND MECHANICS

Operating temperature	-20 ... +60 °C
Storage temperature	-30 ... +80 °C
Humidity	85 %, non-condensing
Dimensions	26 x 115 x 120 mm
Mounting	Omega/DIN rail behind the panel, or front panel with the fixing kit
Front	protection rating IP30
Terminals	removable screw terminal blocks

FUNCTIONS

Channels and diagnostics	each load cell monitored · anomalies reported at once · automatic load and zero diagnostics · overload per channel · last 50 events
Equalization	digital, per load cell (CORNER) or axis (AXIS), no junction box · load distribution with archive, percentages via RS485 or fieldbus
Calibration and tare	theoretical or with sample weights, linearisation up to 8 points · zero setting, zero tracking, semi-automatic and preset tare
Connections	PLC via analogue output or fieldbus · RS485 to PC/PLC, remote display, indicator, inclinometer, printer, IoT gateway · divisions per channel
Batching program	single product: formula, automatic fall, tolerance, slow and tapping, consumption, printing, autotare

OUTPUTS AND INTERFACES

Relay outputs	3 · max. 115 V AC / 150 mA · by set points, protocol or alarm
Digital inputs	2 · opto-isolated · 5 ... 24 V DC PNP · read via protocol
Analogue output	ETLH Analog: opto-isolated, 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 k Ω)
Serial port	RS485 · ModBus RTU, ASCII Laumas, continuous one-way transmission
Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 115200 bit/s
RS485 network	up to 32 instruments, 99 with line repeaters
Fieldbus	depending on the version, see VERSIONS

DISPLAY AND OPERATION

Display	6-digit semi-alphanumeric red LED display, 8 mm · 6 indicator LEDs
Keys	4, for the system calibration
Display range	± 999999
Decimals · increments	0 ... 4 · x1 x2 x5 x10 x20 x50 x100
Configuration	free Instrument Manager PC software

POWER SUPPLY

Supply voltage	12 ... 24 V DC ± 10 %
Power consumption	5 W



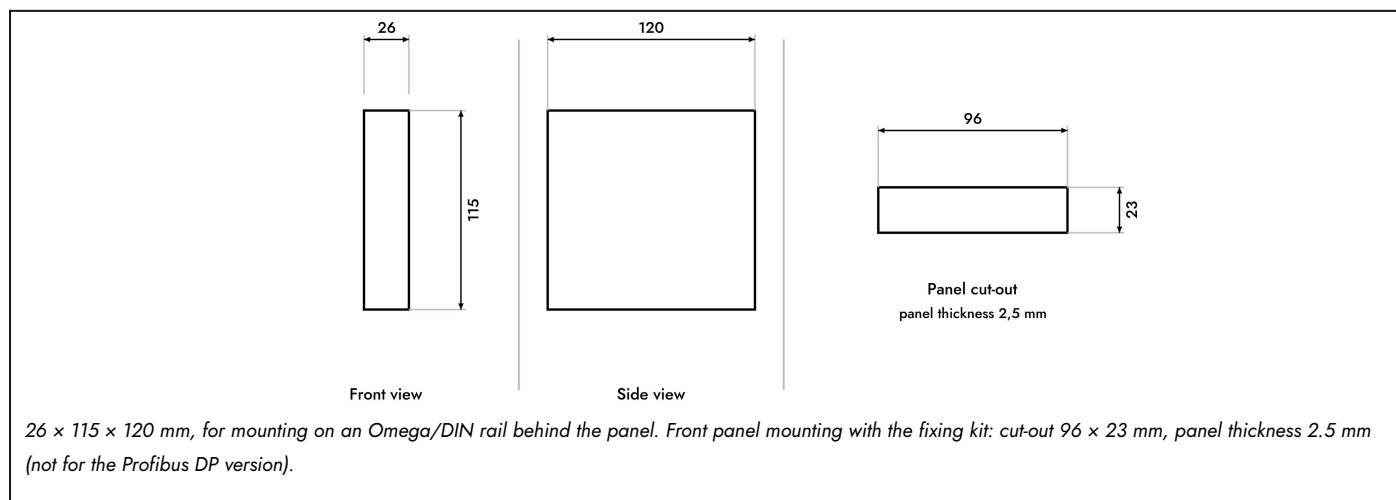
ELECTRICAL CONNECTION

1	output no. 1	17	+excitation load cells 1 and 2 (+EX)
2	output no. 2	18	-excitation load cells 1 and 2 (-EX) · shield
3	output no. 3	19	+signal load cell 2
4	common of the outputs	20	-signal load cell 2
5	input no. 1 (+5 ... 24 V DC)	21	+REF / SENSE load cells
6	input no. 2 (+5 ... 24 V DC)	22	-REF / SENSE load cells
7	common of the inputs (0 V)	23	+signal load cell 3
8	+supply 12 / 24 V DC	24	-signal load cell 3
9	-supply · RS485 shield, GND	25	+excitation load cells 3 and 4 (+EX)
10	+analogue output 0...20 or 4...20 mA ¹	26	-excitation load cells 3 and 4 (-EX) · shield
11	+analogue output 0...10 V ¹	27	+signal load cell 4
12	-common of the analogue output ¹	28	-signal load cell 4
15	+signal load cell 1	29	RS485 +
16	-signal load cell 1	30	RS485 -

¹ ETLH Analog only

Terminals 13 and 14 are not used. Every channel has its own signal pair; two channels share one excitation pair. If all load cells are 4-wire, bridge -EX (26) to -REF (22) and +EX (25) to +REF (21). Manufacturer type: TLB4.

DIMENSIONS (mm)



COMPLIANCE AND CERTIFICATION

	OIML R76:2006	class III, 3 × 10000 divisions, 0.25 µV/VSI · EU type examination 0200-NAWI-04346 Rev. 2 to 2014/31/EU · OIML R61 and R51 / WELMEC Guide 8.8:2017 (MID), evaluation certificates 0200-WL-06378 and 0200-WL-07067
	UL	recognised component for the USA and Canada, file E365453
	INMETRO	Portaria Inmetro N° 157/2022 — class III, up to 10000 verification divisions, Brazil
	NMI	trade approved — Australia (National Measurement Regulations 1999)
	New Zealand	certificate of approval 2295 — Weights and Measures Regulations 1999
	UK	Non-automatic Weighing Instrument Regulations 2016 — United Kingdom
	EAC	Eurasian Customs Union — TR CU 020/2011

Equivalent of the CE marking for the United Kingdom. Approved versions (parameters protected by password, hardware or fieldbus; display of 1/10 e): class III or IIII, 10000 (class IIII) or 1000 (class IIII) verification divisions, single interval or multi-interval, metrological range -10 ... +40 °C. UL version: relay outputs max. 30 V AC, 60 V DC / 150 mA; to be powered by a 12 ... 24 V DC LPS or Class 2 power source. Initial verification together with a Laumas weighing module on request.

ACCESSORIES AND OPTIONS

Front panel fixing kit	included · panel cut-out 96 × 23 mm, panel thickness 2.5 mm · not for the Profibus DP version
Instrument Manager	free PC software for configuring and managing the device
Inclinometer	tilt compensation of the weighing system up to ± 10 degrees (not included) · the correction is also valid for approved systems
Web app	integrated in the ETLHETHECP version for remote supervision, management and control
Alibi memory	option on request
Approved versions	for legal-for-trade use — see COMPLIANCE AND CERTIFICATION

The load cells are not included. No junction box is needed.

