

LOAD CELL DIGITIZER



Type: **EMLC**

- 1 LOAD CELL INPUT, 24 BIT
- IO-LINK, FIELDBUSES, ANALOGUE
- IP67 BOX, M12
- 12 ... 24 V DC · 5 W



VERSIONS

RS485 + analogue	male + female M12, A-coded, 5-pin
IO-Link	2 × male M12, A-coded, 4-pin · device
CANopen	male + female M12, A-coded, 5-pin · slave
CC-Link IE Field Basic	2 × female M12, D-coded, 4-pin · slave
Modbus/TCP	2 × female M12, D-coded, 4-pin · slave
EtherNet/IP	2 × female M12, D-coded, 4-pin · adapter
PROFINET IO	2 × female M12, D-coded, 4-pin · device
EtherCAT	2 × female M12, D-coded, 4-pin · slave
POWERLINK	2 × female M12, D-coded, 4-pin · slave
SERCOS III	2 × female M12, D-coded, 4-pin · slave

In preparation at the manufacturer: RS485 only, CC-Link, Profibus DP and Ethernet TCP/IP (with web app).



OVERVIEW

The EMLC transforms an analogue load cell (mV/V output) into a digital one; it can also be used on existing load cells to digitise the weighing system and is conceived for IoT applications. The IP67 box in AISI 304 stainless steel or glass-fibre reinforced PA66 is wall-mounted or fitted directly to the load cell body via a standard ¼ GAS fitting; three M12 flying connectors are included. Depending on the version it outputs the weight via RS485 with analogue output, IO-Link or one of the fieldbuses from CANopen to SERCOS III. Three relay outputs follow the set points or the protocol, two digital inputs are read via the protocol. It is configured with the free Instrument Manager PC software via micro USB.

MEASUREMENT	OUTPUTS AND DEVICE
• 24 bit, 4.8 kHz, 500 conversions/s • divisions ± 999999, 6.6 nV/d • measuring range ± 26 mV, ± 7 mV/V • up to 4 load cells 350 Ω • linearity < 0.01 % full scale	• 3 relay outputs, 2 digital inputs • RS485 + analogue, IO-Link, 8 fieldbuses • micro USB for configuration • IP67, stainless steel or PA66 • 12 ... 24 V DC, 5 W



TECHNICAL DATA

INPUT AND MEASUREMENT

Load cell input	1 · up to 4 load cells 350 Ω in parallel via junction box · 4- or 6-wire
Load cell supply	3.3 V DC / 40 mA
A/D converter	24 bit (16 000 000 points) · 4.8 kHz
Conversions per second	500
Measuring range	± 26 mV
Usable load cell sensitivity	± 7 mV/V
Divisions	$\pm 999999 \cdot 6.6$ nV/d (range ± 10 mV, sensitivity 2 mV/V)

PRECISION

Linearity	< 0.01 % full scale
Thermal drift	< 0.0005 % full scale / °C
Analogue output linearity	< 0.01 % full scale
Analogue output thermal drift	< 0.003 % full scale / °C
Digital filter	3 filter types · 5 ... 500 readings per second

ENVIRONMENT AND MECHANICS

Working temperature	-20 ... +50 °C
Storage temperature	-30 ... +80 °C
Humidity	85 %, condensate free
Box	IP67, AISI 304 stainless steel or glass-fibre reinforced PA66
Dimensions	90 × 40 × 107 mm including flying connectors
Mounting	wall (2 × Ø 6 mm, centre distance 68 mm) or on the load cell (¼ GAS)

FUNCTIONS

Connections	PLC via analogue output or fieldbuses · PC/PLC via RS485 · up to 4 load cells in parallel by junction box · direct connection between RS485 and RS232 without converter
Calibration	theoretical (PC software), real with sample weights (linearisation up to 8 points) or via the characterization values of the load cell
Zero and tare	tare weight zero setting · automatic zero at power-on · gross weight zero tracking · semi-automatic and preset tare · semi-automatic zero
Base program	set point values and hysteresis
Single product loading	99 settable formulas · automatic fall calculation · tolerance error control · precision batching through slow and tapping function · consumption storage · batching start via external contact or fieldbus

OUTPUTS AND INTERFACES

Relay outputs	3 · max. 115 V AC / 150 mA · 24 V DC / 200 mA · controlled by set points or via protocols
Digital inputs	2 · 5 ... 24 V DC · status read via serial communication protocols
Analogue output	version RS485 + analogue: 0 ... 20 / 4 ... 20 mA (up to 400 Ω) · 0 ... 10 / 0 ... 5 V (min. 2 k Ω)
Serial port	RS485 · 2400 ... 115200 bit/s · up to 99 instruments with, 32 without line repeaters
Fieldbus	depending on the version, see VERSIONS
Micro USB port	B type · USB 2.0 (full speed) · for configuration

DISPLAY AND OPERATION

Indication	status LED of the communication interface
Configuration	Instrument Manager PC software via micro USB, with backup and restore
Decimals · display increments	0 ... 4 · x1 x2 x5 x10 x20 x50 x100

POWER SUPPLY

Power supply	12 ... 24 V DC ± 10 %
Consumption	5 W



COMPLIANCE AND CERTIFICATION



EAC

complies with the Eurasian Customs Union regulations



UK

equivalent of the CE marking for the United Kingdom



UL

UL Recognized component – United States and Canada

UL version: relay outputs max. 30 V AC, 60 V DC; max. wall mounting height 2 m; to be powered by a PS2 power source.

ACCESSORIES AND OPTIONS

Wall mounting supports	included · 2 fixing holes Ø 6 mm, centre distance 68 mm
M12 connectors	3 × IP67 flying connectors, included
Adapters	for threads other than ¼ GAS on request
Instrument Manager	free PC software
Wiring	load cell + instrument wiring, on request

Manufacturer type: LCB.

