

MANUAL

EILC

WEIGHT INDICATOR IN IP67 BOX

Installation and user manual



Document	Version	Date	Applies to
Installation and user manual	V00x	08/2026	EILC (W200BOX)

Weighing and batching without a control panel: the electronics of the panel instrument in a polycarbonate box rated IP67, screwed to the wall and wired through four cable glands. Section 6 describes display and keys, section 9 the menu structure.



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1 Safety and intended use

Read this section before the instrument is installed. The rules below are the manufacturer's; ignoring them can destroy the instrument or falsify the weight.

1.1 Rules for correct use

- Keep the instrument away from heat sources and out of direct sunlight.
- Do not expose it to rain or splashing water beyond its degree of protection.
- Do not immerse it in water and do not clean it with jets of water.
- Do not use solvents for cleaning — a damp cloth is enough.
- Do not subject it to knocks or vibration.
- Do not make any change to the electrical connections while the supply is on.

Warning Installation and electrical connection must be carried out by qualified personnel. The instrument must be disconnected from the supply before the housing is opened.

1.2 Disposal

The instrument must not be disposed of with household waste. At the end of its life it is to be handed over to a collection point for electrical and electronic equipment, or returned to the supplier when an equivalent instrument is bought.

2 Installing the load cells

The instrument is only as good as the mechanical installation it reads. The following points come from the manufacturer's installation manual and are the ones most often skipped.

2.1 Choosing the rated load

- For safety, size the cells so that the maximum load stays below their rated load.
- Take into account the tare of the weighed structure, not only the net load.
- Where several cells carry one structure, the load is rarely distributed evenly — allow for the worst-loaded cell.

2.2 Mounting

- Mount the cells on flat, clean and rigid surfaces; use the mounting kits foreseen for the cell type.
- Protect the cells against lateral forces, torsion and overload.
- Fit the weighed structure so that it cannot move sideways — pipes, cable ducts and hoses attached to it will carry part of the load and falsify the reading.

2.3 Cells in parallel and cable protection

- Up to eight cells of 350 Ω may be connected in parallel; use a junction box, not a terminal strip.
- Do not shorten or lengthen the cell cable if it can be avoided; a change of length changes the resistance of the supply leads and therefore the reading. Where it cannot be avoided, use the 6-wire connection.
- Route the cell cable separately from power cables and away from inverters and contactors; cross power cables at a right angle if crossing cannot be avoided.
- Connect the cable screen at one end only, at the instrument.

Warning Before any welding is carried out on the weighed structure, disconnect the load cells from the instrument. Welding current finding its way through the cell bridge destroys it.

2.4 Earthing the weighed structure

Connect the upper mounting plate of every cell to its lower plate with a copper conductor of adequate cross section, and connect the weighed structure to earth. This keeps welding, lightning and static currents out of the cell.

3 The instrument at a glance

- Weight indicator with an input for a 6-wire load cell.
- 6-digit semi-alphanumeric red LED display, digit height 14 mm.
- 8 signalling LED, 5-key keyboard.
- Clock and calendar with buffer battery.
- Two serial ports, RS232 and RS485, for a PC or PLC (up to 32 instruments, up to 99 with line repeaters) using the Modbus RTU or ASCII protocol, and for a remote display or a printer.
- Optional integrated fieldbus: Profibus DP, DeviceNet, CANopen, Profinet IO, EtherNet/IP, Ethernet TCP/IP, Modbus/TCP.

The instrument can also be connected to an intelligent junction box of the CLM series or to a weight transmitter.

Note The box versions are not available with the optional 115/230 V AC power supply. The W200BOX is supplied with 12 ... 24 V DC only.

3.1 Buffer battery

An internal battery keeps the clock running when the supply fails. At the first switch-on, and after a long period out of service, leave the instrument switched on for at least 12 hours so that the battery recharges completely.

3.2 Technical data

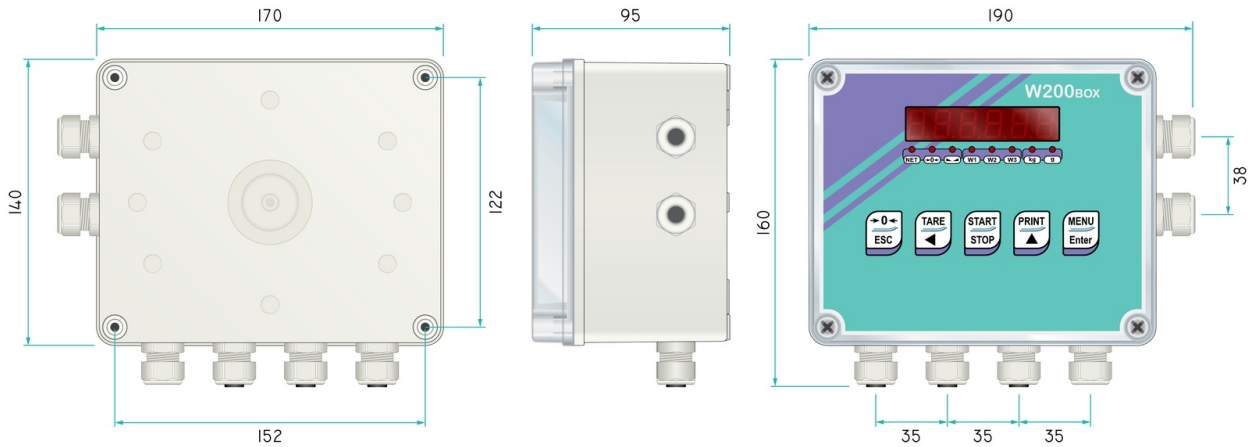
Item	Value
Power supply and consumption	12 ... 24 V DC $\pm$ 10 % · 5 W
Load cells in parallel · supply	max. 8 at 350 Ω · 5 V DC / 240 mA
Linearity · analogue output linearity	< 0.01 % FS · < 0.01 % FS
Thermal drift · analogue output drift	< 0.0005 % FS/ $^{\circ}$ C · < 0.003 % FS/ $^{\circ}$ C
A/D converter	24 bit, 16 000 000 points, 4.8 kHz
Measurement range · usable sensitivity	± 39 mV · ± 7 mV/V
Divisions at ± 10 mV (2 mV/V)	± 999999 · 0.01 μ V/d
Conversions per second	300
Display range · decimals	± 999999 · 0 ... 4
Display increments	x1 x2 x5 x10 x20 x50 x100
Digital filter · readings per second	10 levels · 5 ... 300
Relay outputs	5 · max. 115 V AC / 150 mA (4 with analogue output)
Digital inputs	3 · optoisolated 5 ... 24 V DC PNP (2 with analogue output)
Serial ports · baud rate	RS485, RS232 · 1 200 ... 115 200 bit/s
Analogue output, on request, 16 bit	0/4 ... 20 mA (max. 300 Ω) · 0/ $\pm$ 10 V, 0/ $\pm$ 5 V (min. 10 k Ω)
Humidity, condensate free	85 %
Working · storage temperature	-20 $^{\circ}$ C ... +60 $^{\circ}$ C · -30 $^{\circ}$ C ... +80 $^{\circ}$ C
Working temperature, legal for trade	-10 $^{\circ}$ C ... +40 $^{\circ}$ C
Degree of protection	IP67 · polycarbonate box

Note Under UL recognition the limits are narrower: relay outputs max. 30 V AC / 60 V DC at 150 mA, working temperature -20 $^{\circ}$ C ... +50 $^{\circ}$ C, and the instrument has to be powered from a 12-24 V DC LPS or Class 2 source. These limits are not in the main table of the data sheet — they stand in a separate block under the UL mark.

Values from the data sheet Rev. 0.0 of 2026-08-03. The installation manual version 1.12 states the load cell supply as 5 V DC / 120 mA; the newer figure is given above.

4 Housing and mounting

Item	Value
Box	polycarbonate, IP67
Outer dimensions	170 x 140 x 95 mm
Fixing	4 holes Ø 4 mm · hole pattern 152 x 122 mm
Cable entries	4 cable glands and 2 plugs, M16 x 1.5
Mounting position	wall mounting



Dimensions in mm. Three views: rear with the fixing holes, side, front.

- Screw the box to a flat wall; do not force the housing against an uneven surface, the lid seal depends on the box staying square.
- Two of the six M16 openings are closed with plugs on delivery. Replace a plug with a gland only if the opening is needed, and tighten every gland — an open or loose gland is the usual reason for a box losing its degree of protection.
- Lead the cell cable and the power cable through different glands.

5 Electrical connections

The terminal blocks are removable screw terminals. Terminal 13 is not used; it is listed with a dash so that the numbering is not read one place out.

1	+ Supply 12 ... 24 V DC	13	— not used
2	– Supply · RS232 and RS485 shield, GND	14	Input no. 3 · or + analogue out 0/4 ... 20 mA
3	RS232: TXD	15	Output no. 5 · or + analogue out 0 ... 10 V
4	RS232: RXD	16	E/EC option · or – analogue out common
5	Output no. 1	17	RS485: –
6	Output no. 2	18	RS485: +
7	Output no. 3	19	– Load cell excitation · cell shield
8	Output no. 4	20	+ Load cell excitation
9	Output common	21	+ Load cell sense
10	Input no. 1 (+5 ... 24 V DC)	22	– Load cell sense
11	Input no. 2 (+5 ... 24 V DC)	23	– Load cell signal
12	Input common (0 V)	24	+ Load cell signal

4-wire load cells: link excitation and sense on both poles

Removable screw terminal blocks · ground the negative supply pole

With the analogue output option, input no. 3 and output no. 5 are not available

Terminal assignment, seen from the open box.

- Ground the negative pole of the supply.
- With a 4-wire load cell, link excitation and sense on both poles: EX- to REF- and EX+ to REF+. Without these links the instrument reports a cell alarm.
- The screen of the cell cable goes to terminal 19 together with the negative excitation; the screens of RS232 and RS485 go to terminal 2.
- With the analogue output option fitted, input no. 3 and output no. 5 are not available — terminals 14 and 15 carry the analogue output instead.

Warning Make and change all connections with the supply switched off. Close the lid and tighten the glands before switching on.

6 Display, LED and controls

6.1 The eight LED

Each LED has a primary and a secondary function. To show the secondary function, hold **MENU** and immediately after it the up key while the weight is displayed; the LED then report the state of the inputs and outputs.

LED	Primary function	Secondary function
NET	net weight (semi-automatic or preset tare)	input 1 closed
0	zero, deviation not more than ± 0.25 divisions	input 2 closed
~	stability	input 3 closed
kg	unit of measurement kg	output 4 closed
g	unit of measurement g	output 5 closed
W1	—	output 1 closed
W2	—	output 2 closed
W3	—	output 3 closed

Note While a menu is open the LED light up one after the other. That is the signal that the display is not showing a weight.

6.2 The five keys

Key	Short press	Long press, 3 s	In the menus
ZERO / ESC	semi-automatic zero	zero the tare	cancel, back to the previous menu
TARE / left	gross to net	net to gross	select the digit to change, previous menu item
START-STOP / right	activate peak value, if enabled	deactivate peak value	—
PRINT / up	print the current weight	mV test of the load cell	change the digit, next menu item
MENU / ENTER	setpoint and hysteresis programming	—	confirm, enter the submenu

Two combinations open the menus that are not reachable with a single key: **MENU** and immediately after it **ESC** open the system parameters, **MENU** and immediately after it the tare key open the preset tare.

7 Commissioning

At switch-on the display shows, one after the other: a note that the program is type-approved (approved programs only), the model of the instrument, **SW** with the software code, the program type, **rEU** with the software revision, **Hd** with the hardware code, and the serial number.

Check that the display shows a weight and that the reading rises when the cells are loaded. If it does not, check the connections and the position of the cells before going further.

7.1 If the instrument is already calibrated

A calibrated instrument carries a system label, and the values from the load cell certificate are already entered. Zero the weight, then check the calibration with test weights and correct the displayed value if necessary.

7.2 If the instrument is not calibrated

- If the load cell data are known, enter them with the theoretical calibration.
- If they are not known, calibrate with test weights.
- Zero the weight, then check the calibration with test weights and correct it if necessary.

7.3 What else has to be set

- The type and the full scale of the analogue output, if the option is fitted.
- The serial parameters, if serial communication is used.
- The setpoint values and the configuration of outputs and inputs, if the setpoints are used.
- The date and the time of the internal clock.

8 Calibration

8.1 Theoretical calibration

Theoretical calibration uses the figures from the load cell certificate. Enter the full scale **FS-tE0** — the sum of the rated loads of all cells — and the sensitivity **SEnS1b** as the average of the mV/V values of the cells. Then set the division **dIU1S** and the unit of measurement.

8.2 Real calibration with test weights

Real calibration corrects the theoretical one with known weights. Up to eight points can be entered, which linearises the scale over its range. After the eighth value the display shows **MAH-PU**: no further point can be added.

Note A significant change of the calibration sets the setpoint and hysteresis values to zero. Note the values down before recalibrating.

8.3 Checking the cell signal

Holding the print key for three seconds shows **MU-CEL**, the millivolt signal of the cell. It is the quickest check of whether a cell is connected and loaded: the value has to change when the structure is loaded.

9 Menu structure

Changes take effect as soon as **ENTER** is pressed; no further confirmation is asked for. **ESC** leaves a menu without changing the value that is being edited.

9.1 Setpoints

From the weight display, press **MENU**.

Level	Items
1	CLASS · HYS tE1 ... HYS tE5
2	C 01 ... C 12 — the 12 groups; without the E/EC option only C 01
3	SEt 01 ... SEt 05 — the five setpoint values of the group

A setpoint is the weight at which the contact changes over. The hysteresis is subtracted from the setpoint to give the switching point on falling weight: with a setpoint of 100 and a hysteresis of 10, the contact changes back at 90.

9.2 System parameters

From the weight display, press **MENU** and immediately after it **ESC**.

Menu	Submenu items
CALIB	FS-tE0 SEN Sib dIUIS MASS ZER0 INP 0 UEIGH t unIt COEFF nEt tEn
FILtEr	digital filter, 10 levels
PARA 0	0 SEt AUt0 0 trAC 0 — zero range, zero at power-on, zero tracking
AnALOG	tYPE MOdE AnA 0 AnA FS C0r 0 C0r FS — option only
SERIAL	rS485 and rS232 , each with the protocol (nOnE MOdbUS ASCII COn tIn rIP HdrIP HdrIPn YHL PrIntr UEIMod UEIrIP) and bAUd Addr dELAY PARItY StOP
Out-In	Out 1 ... Out 5 and In 1 ... In 3
LIMIt	limit values
tEST	In Out , and AnALOG and EC where the options are fitted
dAtE	date and time
PEAHOn	peak value function
PSuBLc	access code
InFO	GE n rIC OP2 — instrument and option data

Two entries are reached differently: holding **ESC** for three seconds from the weight display opens **ZER0** directly, and **MENU** followed by the tare key opens the preset tare **P-tArE**.

Note This manual describes the menu structure and the settings needed for installation and commissioning. For the meaning of every single parameter, refer to the manufacturer's installation and user manual, version 1.12 or later.

10 Serial communication

Both ports are available at the terminal block: RS232 on terminals 3 and 4, RS485 on 17 and 18, with the common ground and the screens on terminal 2. RS485 and RS232 can be connected directly to one another without a converter.

Item	Value
Protocols	Modbus RTU · ASCII · continuous transmission one way
Baud rate	1 200 · 2 400 · 4 800 · 9 600 · 19 200 · 38 400 · 115 200 bit/s
Instruments on one line	up to 32 · up to 99 with line repeaters
Parity	none (default) · even · odd
Connects to	PC · PLC · remote display · printer

- In a two-instrument arrangement the transmitting instrument is the one the load cells are connected to; the receiving instrument shows its weight.
- Set the same protocol, baud rate and parity at both ends. **no con** on the display means the two do not agree, or the wiring is wrong.
- Terminate the RS485 line at both ends where the line is long or the baud rate high.

11 Alarms

Display	Meaning
ErCEL	The cell is not connected or not connected correctly, the cell signal exceeds 39 mV, or the A/D converter is defective. With a 4-wire cell: the links between EX- and REF- and between EX+ and REF+ are missing.
n0 COn	Communication trouble between the transmitting and the receiving instrument. Check the supply and the settings of both.
Er OL	The displayed weight exceeds 110 % of full scale.
EErOL	The weight at the transmitting instrument exceeds 110 % of full scale.
Er Ad	The internal converter is defective. Check the connections, then contact service.
- - - - -	The weight exceeds the maximum capacity by 9 divisions.
Er OF	The display range is exceeded: above 999999 or below -999999.
EErOF	The display range at the transmitting instrument is exceeded.
t - - - -	The weight is too high, zeroing is not possible.
MAH-PU	Shown during real calibration after the eighth test weight has been entered.
Error	The value set for the parameter is outside the permitted range. ESC leaves the setting and keeps the stored value.
bLOC	The menu, keyboard or display lock is active.

12 Information for the installer

12.1 Menu lock

Any menu of the instrument can be locked, so that the operator cannot change the calibration or the system parameters. The lock is set with an access code; a locked menu answers with **bLOC**.

12.2 Resetting to the factory settings

Hold **ESC** at switch-on until the display shows the reset prompt, then confirm. After the confirmation the instrument is set back to the default values and the stored data are deleted.

Warning A reset deletes the calibration. The instrument has to be calibrated again afterwards, and the setpoints have to be entered again.

12.3 Legal for trade use

- In the approved versions the system parameters are protected by qualified access — by software password, by hardware or over the fieldbus.
- The working temperature range is then -10 °C ... +40 °C.
- Weight subdivisions (1/10 e) can be displayed, and the operation mode is single interval, multiple range or multi-interval.
- The alibi memory is available as an option; it stores the weighings with an ID code that can be printed.

13 Declarations of conformity

The W200BOX carries the CE marking and the UKCA marking. The declarations of conformity, EU and UKCA, are part of the manufacturer's documentation and are available from octogon on request.

Approval	Scope
CE	European conformity
UKCA	equivalent of the CE marking for the United Kingdom
OIML	R76:2006, class III, 3 x 10000 divisions, 0.2 μ V/VSI · R61 · WELMEC 8.8:2011
NTEP	n max 10000, class III / IILL, United States
UL	recognized component, United States and Canada
EAC	Eurasian Customs Union
Further	NMI Australia · New Zealand · Brazil · China
On request	ATEX zone 2-22 · EAC Ex · China Ex · Russian Federation legal for trade · initial verification with a weighing module

Note With the ATEX version the external relay modules have to be protected.