

WIRELESS STRAIN BRIDGE TRANSMITTER

WIRELESS



Type: EFMC

- 4-WIRE BRIDGE, 5 V
- UP TO 200 READINGS/S
- RANGE UP TO 800 M
- IP67 · 2 × AA CELLS



VERSIONS

$\pm 3.1 \text{ mV/V}$	standard
$\pm 4.5 \text{ mV/V}$	option, extended range
20 mV/V	option, high range

All versions in the same IP67 enclosure with 2 × AA.



OVERVIEW

The sealed version of the strain bridge transmitter: the same measuring electronics as the OEM module, but in an IP67 enclosure with screw terminals and two AA cells inside. Load cells, torque sensors, strain gauges and pressure modules go wireless without a cabinet, a supply or a signal cable – the transmitter sits at the sensor and reports to handhelds, base stations, analogue outputs and relay modules at the same time.

MEASUREMENT

- 4-wire bridge from 85 Ω , 5 V excitation
- linearisation up to 9 points
- 18.75 bit noise free at 1 reading/s
- up to 200 readings per second

POWER AND ENCLOSURE

- 2 x AA inside, up to 2 years in field use
- IP67 / NEMA 4, cable gland fitted
- 2.4 GHz DSSS, range up to 800 m
- 128 bit AES encryption



TECHNICAL DATA

INPUT AND MEASUREMENT

Excitation system	4 wire
Bridge excitation	5 V DC (4.5 ... 5.25 V)
Bridge resistance	85 ... 5000 Ω · up to four 350 Ω bridges in parallel
Sensitivity, maximum	± 3.1 mV/V · options ± 4.5 mV/V and 20 mV/V
Calibration	factory 2.5 mV/V · user calibration up to 9 points

PRECISION

Internal resolution	16 000 000 · 24 bit
Noise free at 1 reading/s	400 000 · 18.75 bit
Noise free at 10 ms sample time	15.5 bit
Offset drift	max. 4 ppm/°C
Gain drift	max. 5 ppm/°C
Non-linearity before linearisation	25 ppm of range

ENVIRONMENT AND MECHANICS

Operating temperature	-20 ... +55 °C
Storage temperature (no batteries)	-40 ... +85 °C
Humidity	max. 95 % RH, non-condensing
Protection	IP67 / NEMA 4
Dimensions	80 × 62 × 34 mm · cable gland extends 25 mm
Mounting	2 holes $\varnothing$ 4.8 mm, 66.5 mm apart · lid with 4 screws
Connections	5-way screw terminal · antenna inside the lid

FUNCTIONS

Applications	load cells, torque sensors, strain gauges and pressure modules without cabinet, supply or signal cable
Sleep mode	the transmitter sleeps between sessions; battery life depends on interval and sessions

OUTPUTS AND INTERFACES

Radio	licence exempt transceiver, 2.4 GHz, DSSS
Transmit power	10 mW
Range	up to 800 m (2 600 ft) open field, 3 m above ground
Coexistence	Wi-Fi, Bluetooth, Zigbee
Encryption	128 bit AES
Transmission interval	5 ms ... 1 day · up to 200 readings per second

DISPLAY AND OPERATION

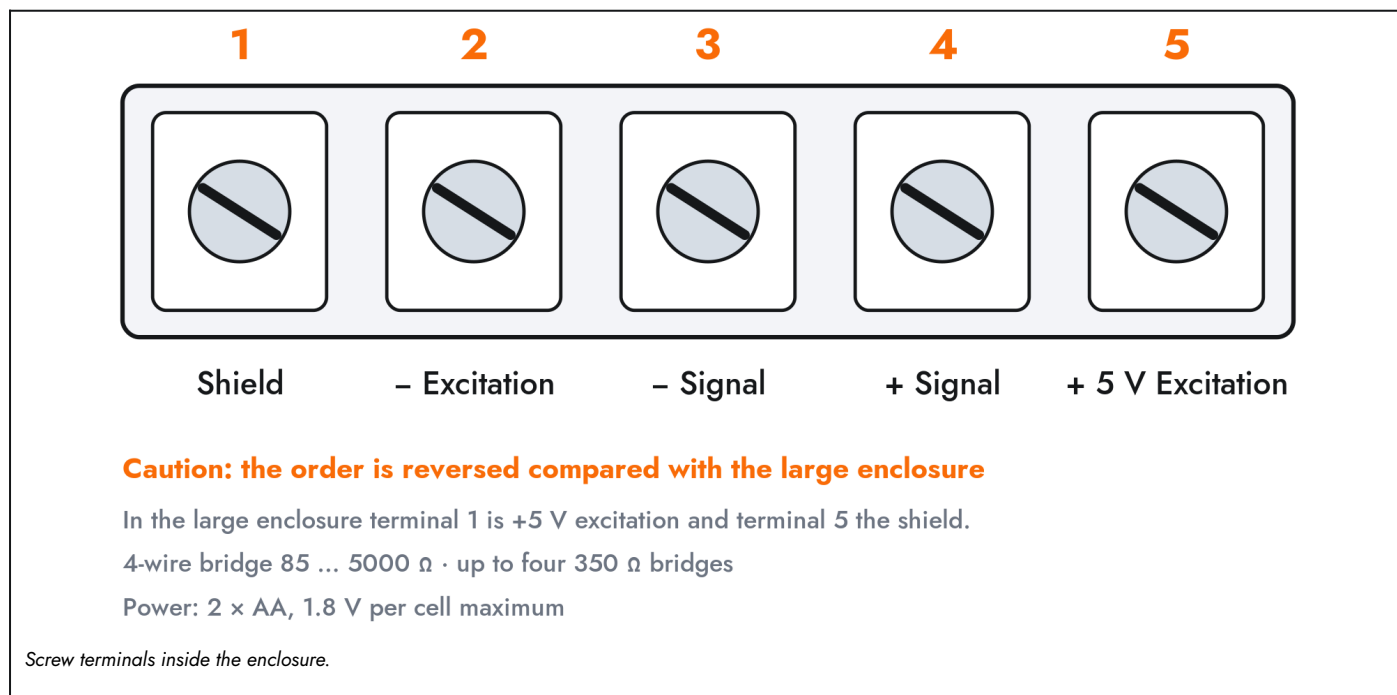
Receivers	handhelds, base stations, analogue outputs and relay modules, also several at a time
Configuration	PC software via the base station · linearisation up to 9 points

POWER SUPPLY

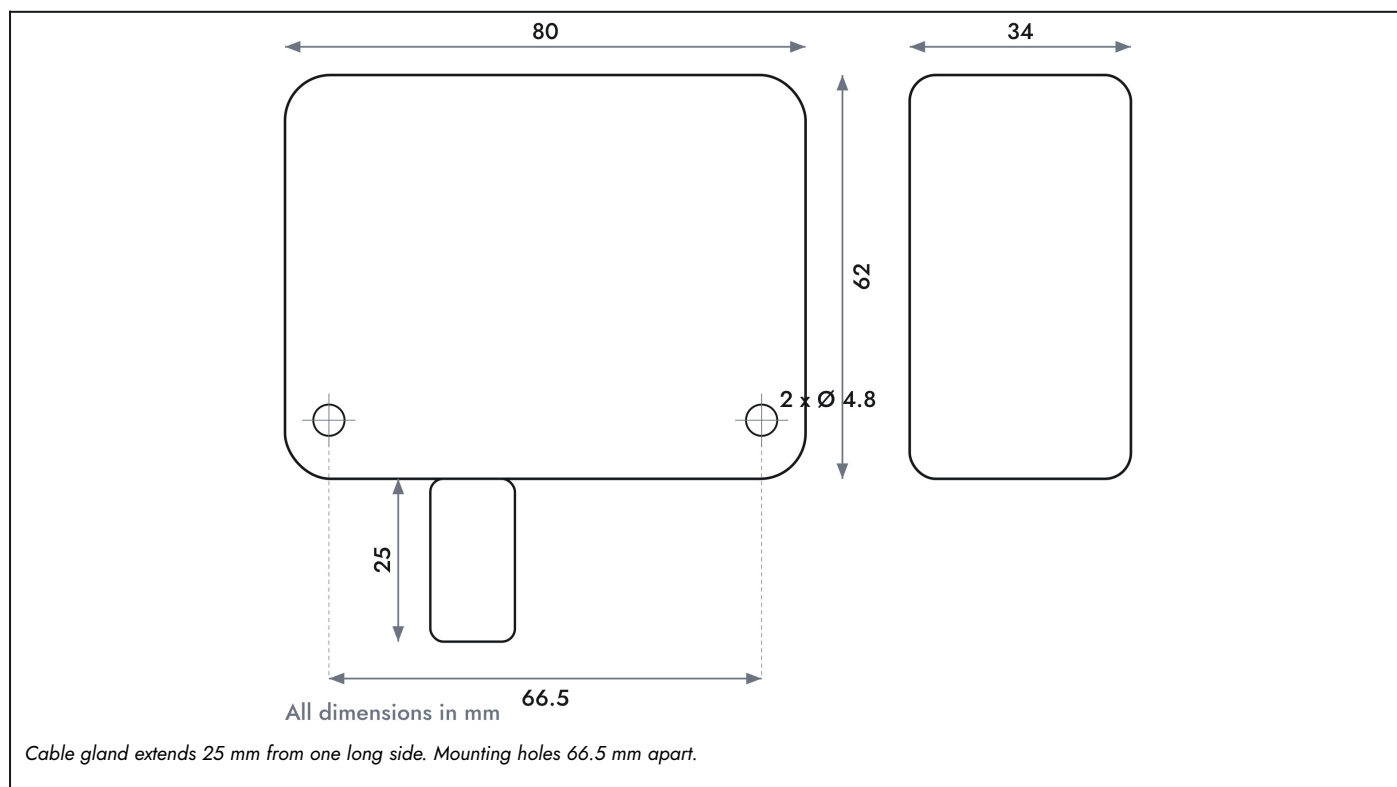
Batteries	2 × AA inside, max. 1.8 V per cell
Supply voltage	2.1 ... 3.6 V DC · typical 3.0 V
Current, sleep mode	5 ... 20 μ A
Current, normal mode	60 ... 65 mA at 1 k Ω bridge
Battery life 2 × AA	continuous 3 weeks · 12 sessions of 5 min per day: 2 years



ELECTRICAL CONNECTION



DIMENSIONS (mm)



COMPLIANCE AND CERTIFICATION

 IP67	IP67 / NEMA 4	with suitable cables through the cable gland
 2,4 GHz	Radio approvals	FCC · ETSI · IC

ACCESSORIES AND OPTIONS

Radio repeater	doubles the range, once per link
Charger and power module	with Li-ion cell
Receivers	handheld EFMD · USB base station EFME · large display EFMG
OEM version	EFMF — measuring electronics as a board for building into the sensor

Manufacturer type: T24-ACMi-SA (± 4.5 mV/V: -A, 20 mV/V: -B).

