

ATEX WIRELESS STRAIN TRANSMITTER

WIRELESS



- ATEX / IECEx ZONE 1 AND 2
- EX IB IIC T4 GB · I M2
- RANGE UP TO 800 M
- IP67 · 2 × L91 LITHIUM AA

Type: EFMH



KEY DATA

Marking, gas	II 2G · Ex ib IIC T4 Gb · Ta = -20 ... +50 °C
Marking, mining	I M2 · Ex ib I
Input	strain gauge full bridge, 4 wire, ± 3.1 mV/V
Radio	2.4 GHz, up to 800 m

For fixed installation.



OVERVIEW

Strain measurement inside the hazardous area: intrinsically safe electronics, approved for ATEX and IECEx zone 1 and zone 2, in a sealed IP67 enclosure with two lithium cells. The reading travels by radio to receivers – intrinsically safe modules inside the hazardous area, base stations, gateways and outputs outside it. Calibration and linearisation to engineering units run in the free PC software.

MEASUREMENT

- 4-wire bridge from 85 Ω , 5 V excitation
- ± 3.1 mV/V, 9-point linearisation
- 18.75 bit noise free at 1 reading/s

HAZARDOUS AREA

- ATEX and IECEx, zone 1 and zone 2
- Ex ib IIC T4 Gb · Ta -20 ... +50 °C
- up to 5 years on two L91 cells



TECHNICAL DATA

INPUT AND MEASUREMENT

Excitation system	4 wire
Bridge excitation	5 V DC
Bridge resistance	min. 85 Ω
Sensitivity, maximum	± 3.1 mV/V
Calibration	to engineering units, linearisation up to 9 points

PRECISION

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

ENVIRONMENT AND MECHANICS

Ambient temperature (Ta)	-20 ... +50 °C
Storage temperature	-40 ... +85 °C
Humidity	0 ... 95 % RH
Protection	IP67 with cable diameter 3.0 ... 6.5 mm
Dimensions	76.6 × 59 × 31 mm · cable gland extends 25 mm
Connections	5-way screw terminal · lid with 4 screws
Antenna	inside the enclosure

FUNCTIONS

Applications	strain measurement inside the hazardous area, zone 1 and 2, fixed installation
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OUTPUTS AND INTERFACES

Radio	licence exempt transceiver, 2.4 GHz
Transmit power	10 mW
Range	up to 800 m
Transmission interval	5 ms ... 1 day
Receivers	intrinsically safe modules inside the hazardous area · base stations, gateways and outputs outside only

DISPLAY AND OPERATION

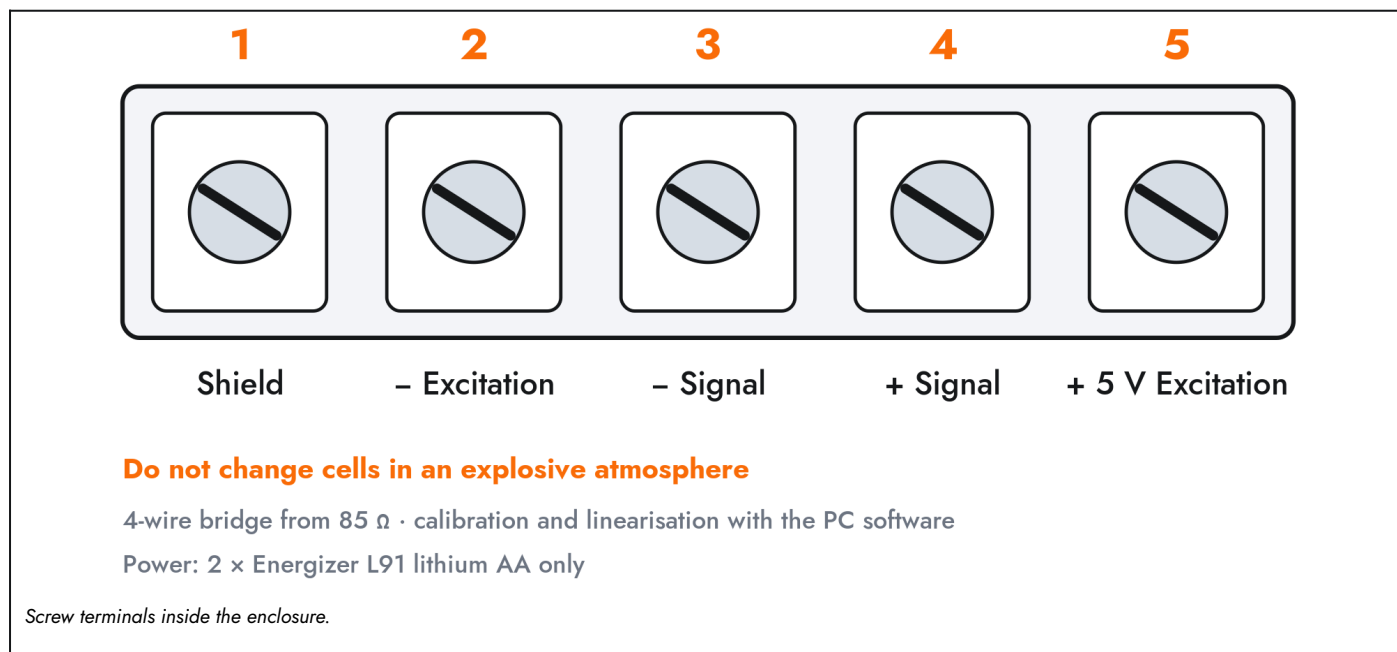
Configuration	free PC software via a base station
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POWER SUPPLY

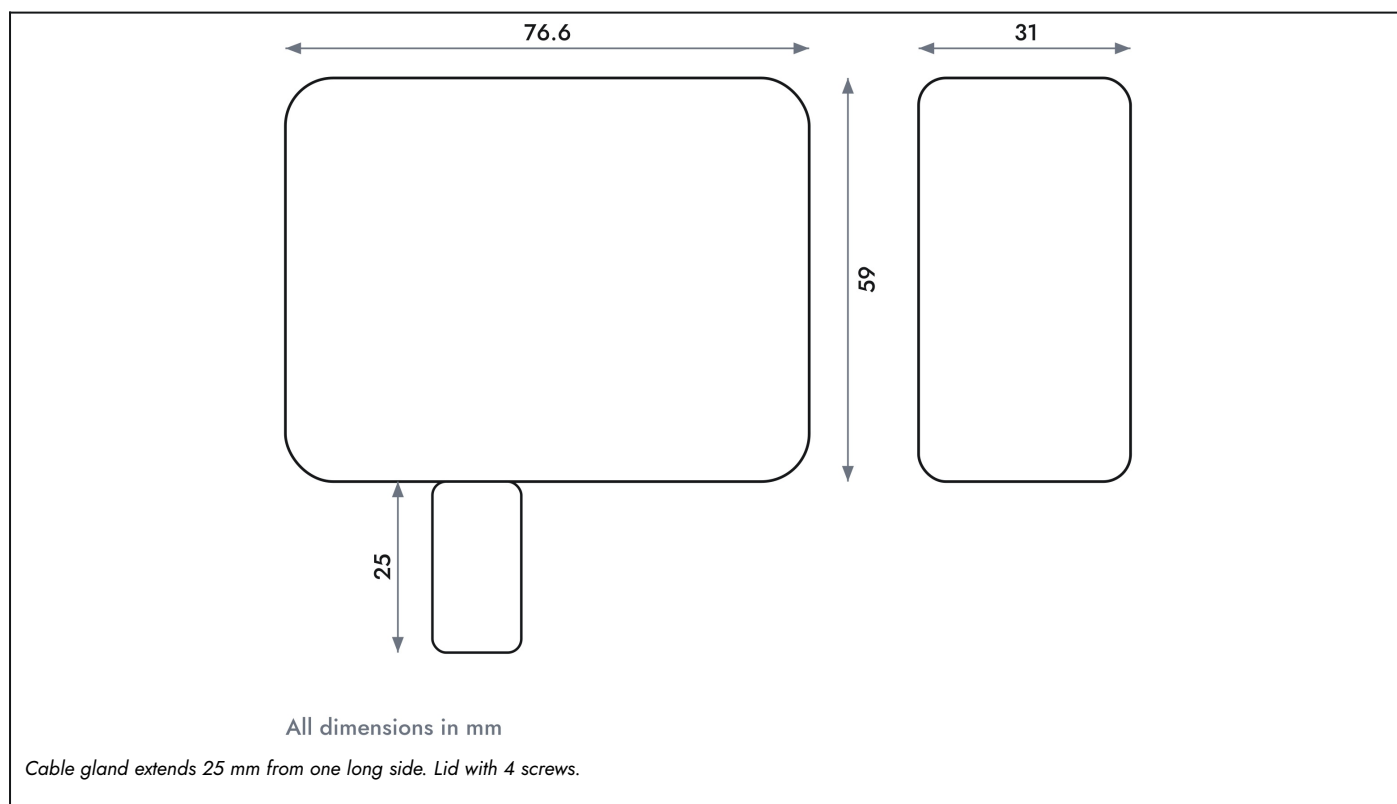
Internal batteries	2 × Energizer L91 lithium AA – use only these cells
Supply voltage	2.1 ... 3.6 V DC
Battery life	continuous at 3 readings/s: 30 days · 12 sessions of 5 min per day: 2 years · one reading every 20 s: 5 years



ELECTRICAL CONNECTION



DIMENSIONS (mm)



COMPLIANCE AND CERTIFICATION

	ATEX	Sira 15ATEX2344X · II 2G Ex ib IIC T4 Gb · I M2 Ex ib I
	IECEX	IECEX SIR 15.0124X · Ex ib IIC T4 Gb · Ex ib I
	Radio approvals	FCC · IC · Europe
	IP67	with cable diameter 3.0 ... 6.5 mm

Special condition: permitted cell type Energizer Lithium L91, size AA only.

ACCESSORIES AND OPTIONS

Handheld display	EFMI – intrinsically safe, for the hazardous area
OEM version	the same electronics as a bare board, on request

Manufacturer type: X24-ACMi-SA.

