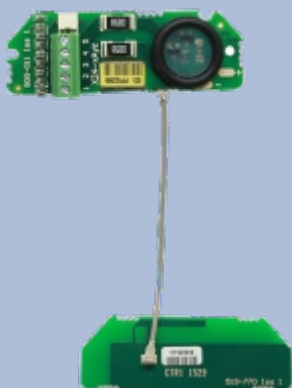




## TYPE: X24-SAe



# X24-SAe Wireless ATEX/IECEX Strain Gauge Transmitter OEM Module

## Description

The X24-SAe ATEX / IECEx telemetry transmitter module measures strain input and periodically transmits data for receipt by X24 or T24 receivers to provide a quick route to the manufacture and supply of approved strain bridge sensor products. This intrinsically safe board is approved for Zone 1 and 2 explosive atmospheres and has been designed to fit into most load cells, with the efficient omnidirectional antenna removing the requirement for an external enclosure antenna.

High accuracy ratio-metric input allows for calibration and linearisation for pressure, force and weight measurement in explosive atmospheres. The X24-SAe provides 5V excitation to drive transducer loads down to 85 ohms. This transmitter is highly accurate, low noise and uses up to nine point linearisation, giving quality measurements from a wide range of strain bridge transducers.

The OEM product X24-SAe has component approvals which allow holders of a QAN or a QAR to "fast track" the design and manufacture of their own ATEX/IECEX products through the equipment certification process, using a notified body.

The licence-free 2.4GHz radio signal provides a line-of-sight communication range of up to 800 metres (2600 feet), approved for FCC, IC and European use. The flexible transmission rates and low power usage allows for long battery/cell life, and the use of the latest DSSS radio technology minimises local radio interference and ensures data integrity and security.

## Specification

Strain gauge excitation system	4 wire
Strain gauge excitation	5 Vdc
Strain gauge resistance	85Ω (min) to 5000Ω (max)
Strain gauge sensitivity (max)	±3.1mV/V
Offset temperature stability (max)	4 ppm/°C
Gain temperature stability (max)	5 ppm/°C
Non linearity before linearisation (max)	25 ppm of FR
Internal resolution/Bits	16,000,000/24
Noise free resolution at 1 sample per second	400,000/18.25
Transmission rates	From 5ms to 1 day
Radio type	Licence exempt transceiver
Radio frequency	2.4GHz
Transmit power	10mW
Range	Up to 800m (2,600ft)
Power supply voltage	2.1 to 3.6 Vdc
Battery life	30 days - constantly on transmitting at 3Hz
(must use 2 x Energizer L91 batteries)	2 years - 12 sessions per day of 5 minutes at 3 Hz 5 years - constantly on transmitting every 20 seconds
Operating temperature range	-20 to +50 °C
Storage temperature	-40 to +85 °C
Humidity	95% non condensing
ATEX certification details	II 2GD Ex ib IIC Gb II 2GD Ex ib IIIC T135 °C Db Ta = -20 to +50°C I M2 Ex ib I

(Specification based on 1000R bridge, 2.5mV/V at 3V supply at 25 °C)

## Features

- High performance PCB for OEM integration
- Long battery life of up to 5 years
- High quality measurements
- Calibration and linearisation to engineering units
- Operates with X24 and T24 receivers
- Worldwide licence exempt 2.4GHz radio
- Up to 800 metre (2600 feet) range maximum
- Approved for use in explosive atmospheres, Zones 1 & 2

## Typical Applications

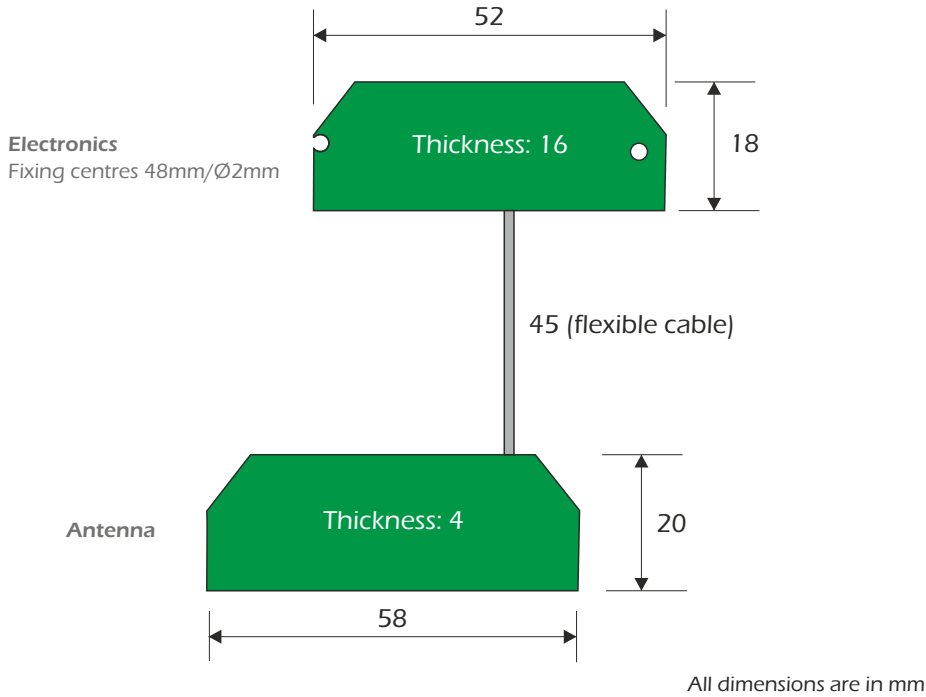
- Wireless load cells
- Hoist load monitoring
- Cable tension measurement
- Crane safe load monitoring

Ex i



# X24-SAe Wireless ATEX/IECEX Strain Gauge Transmitter OEM Module

## Dimensions



### LCM Systems Ltd

Unit 15, Newport Business Park, Barry Way  
 Newport, Isle of Wight PO30 5GY UK  
 Tel: +44 (0)1983 249264  
 sales@lcm systems.com  
 www.lcm systems.com

### LCM Systems (România)

Strada Ștefan Cel Mare 26a,  
 Tunari, cod.077180, Ilfov, România  
 Tel: +40 (0)77 4641899  
 ro@lcm systems.com  
 www.lcm systems.ro

Due to continual product development, LCM Systems Ltd reserves the right to alter product specifications without prior notice.

CE Complies with EMC directive. 2004/108/EC  
 FC The Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive, 1999/5/EC. Family: RAD24  
 Industry Canada Industrie Canada IC:7224A-RAD24

### Issue No. 1

Issue date: 08/07/2021  
 APPROVED  
 (unapproved if printed)