



T24-SAe/i



# Amber Instruments Ltd

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## Wireless Strain Bridge Transmitter Module



### Introduction

The T24-SA transmitter connects to strain bridge transducers such as load cells, torque sensors, strain gauges and pressure modules and forms part of the T24 modular telemetry system. The data transmitted by the T24-SA can be received by multiple T24 receivers that include displays, handheld readers, analogue outputs, relay modules and computer interfaces.

T24 transmitters have been designed for battery operation and support an ultra low-power sleep mode whilst offering class leading wireless coverage and range. Configurable transmission rates from once per day to 200 per second cope with a wide range of measurement and monitoring applications. A choice of enclosures enabling battery connection, field connectivity and environmental sealing up to IP67 ensure these modules provide a flexible solution to your wireless sensor requirements.

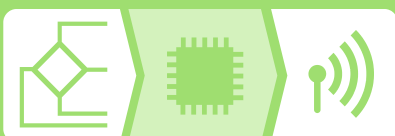
The T24-SA provides 5 V excitation to drive transducer loads down to 85 ohms. This transmitter is highly accurate, low noise and uses up to nine point linearisation giving quality measurements from a wide range of strain bridge transducers.

### Product Features

- Simple wireless configure and calibration
- Wireless range up to 800 m (2,600 ft)
- Low power mode for long battery life
- Miniature PCB for OEM integration
- Free Visualisation software

### Industry Solutions

- **Construction**  
Monitoring tension & compression on shoring struts  
Crane/Under Hook Scales
- **Automotive**  
Torque measurement on rotating shaft  
Wheel balance in high performance cars



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### T24 System Overview



T24 Wireless Telemetry Sensor System is a modular wireless solution for industrial sensor applications.

High accuracy, high quality measurement is interfaced with simple yet powerful configuration and monitoring software.

## Specifications

### Measurement Specifications

<b>Strain gauge excitation system</b>	4 wire
<b>Strain gauge excitation</b>	5 Vdc
<b>Strain gauge resistance (min)</b>	85 Ω
<b>Strain gauge sensitivity (max)</b>	±3.1 mV/V
<b>Offset temperature stability (max)</b>	4 ppm/°C
<b>Gain temperature stability (max)</b>	5 ppm/°C
<b>Non linearity before linearization (max)</b>	25 ppm of FR
<b>Internal resolution/Bits</b>	16,000,000 / 24
<b>Noise free resolution at 1 sample per second</b>	400,000/ 18.75
<b>Transmission rates</b>	From 5ms to 1 day

### Battery Life

Based on transmitting results at 3 per second , 350R strain bridge

<b>Pair AA cells constantly on</b>	3 weeks
<b>Pair AA cells 12 sessions per day of 5 mins</b>	2 years
<b>Pair DD cells constantly on</b>	3.5 months
<b>Pair DD cells 12 sessions per day of 5 mins</b>	5 years

### Power Supply

<b>ACMi and OEM module</b>	2.1 to 3.6 Vdc
<b>ACM</b>	5 to 18 Vdc

### Radio

<b>Radio type</b>	Licence exempt transceiver
<b>Radio frequency</b>	2.4 GHz
<b>Transmit power</b>	10 mW
<b>Range</b>	Up to 800 m

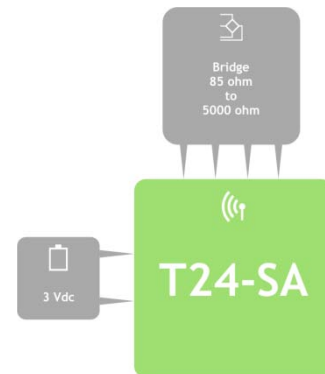
### Environmental

<b>Operating temperature range</b>	-20 to 55 °C
<b>Storage temperature range (no batteries)</b>	-40 to 85 °C
<b>Maximum humidity</b>	95% non-condensing
<b>IP rating (ACM and ACMi)</b>	IP67/Nema4

## Mechanical



## Electrical



## Order Codes

### T24-SAe

Wireless strain bridge OEM transmitter module for external antenna

### T24-SAi

Wireless strain bridge OEM transmitter module with antenna

### T24-ACM-SA

Wireless strain bridge transmitter module in IP67 enclosure supporting two D batteries or external power supply.

### T24-ACMi-SA

Wireless strain bridge transmitter module in IP67 enclosure for two AA batteries

### T24-ACMm-SA

Wireless strain bridge transmitter module in miniature IP50 enclosure