Wireless Strain Bridge Transmitter Module

Product Features

- Simple wireless configure and calibration
- Wireless range up to 800 m (2,600 ft)
- Low power mode for long battery life
- 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

Introduction

The T24-ACMi-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-ACMi-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-ACMi-SA 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.

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

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

Battery Life

- Based on transmitting results at 3 per second, 350R strain bridge
- Pair AA cells constantly on: 3 weeks
- Pair AA cells 12 sessions per day of 5 mins: 2 years

Power Supply

- ACMi and OEM module: 2.1 to 3.6 Vdc
- ACM: 5 to 18 Vdc

Radio

- Radio type: Licence exempt transceiver
- Radio frequency: 2.4 GHz
- Transmit power: 10 mW
- Range: Up to 800 m

Environmental

- Operating temperature range: -20 to 55 ºC
- Storage temperature range (no batteries): -40 to 85 ºC
- Maximum humidity: 95% non-condensing
- IP rating (ACMi and ACMi): IP67/Nema4

Order Codes

T24-ACMi-SA
Wireless strain bridge transmitter module in IP67 enclosure for two AA batteries

Mantracourt Electronics Ltd
The Drive, Farringdon
Exeter, Devon, UK
EX5 2JB
Tel: +44 (0)1395 232020
Email: sales@mantracourt.com
mantracourt.com
1 SENSOR INPUT

3 HOUSING OPTIONS

MADE TO PROTECT

Every T24 transmitter module can be ordered in **one of three** IP rated enclosures.

To aid your work, they provide:

- Power Supply
- Water & Dust Protection
- Field Connectivity
- Ready-Made Mounting Solution

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**ACM**

*Not available to purchase online. Please request a quote or contact us for more information.*

**ACMi**

**ACMm**

*Not available to purchase online. Please request a quote or contact us for more information.*
<table>
<thead>
<tr>
<th>Enclosure</th>
<th>ACM</th>
<th>ACMi</th>
<th>ACMm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless range / m</td>
<td>800 m (2,600 ft)</td>
<td>800 m (2,600 ft)</td>
<td>500 m (1,600 ft)</td>
</tr>
<tr>
<td>Power supply</td>
<td>3-18 Vdc or 2xD cell</td>
<td>3 Vdc (2xAA)</td>
<td>3 Vdc (2xAAA with BB1)</td>
</tr>
<tr>
<td>Battery life at 1 transmission per second*</td>
<td>1 year</td>
<td>5 months</td>
<td>2 months</td>
</tr>
<tr>
<td>Antenna</td>
<td>ANTA</td>
<td>ANTA</td>
<td>PCB Printed</td>
</tr>
<tr>
<td>Radio frequency</td>
<td>2.4 GHz</td>
<td>2.4 GHz</td>
<td>2.4 GHz</td>
</tr>
<tr>
<td>Operating temperature /°C</td>
<td>-20 to +55</td>
<td>-20 to +55</td>
<td>-20 to +55</td>
</tr>
<tr>
<td>Environmental protection</td>
<td>IP67</td>
<td>IP50</td>
<td></td>
</tr>
<tr>
<td>Module size / mm</td>
<td>164 x 84 x 57</td>
<td>80 x 62 x 34</td>
<td>76 x 35 x 20</td>
</tr>
</tbody>
</table>

Software & configuration

- T24 Toolkit & T24LOG100

Input modules (determined by order code)

- Strain
  - SA
  - SA f
  - Strain (2kHz)

- Current
  - IA

- Voltage
  - VA

- Temperature
  - TA

- Pulse
  - PA

- Potentiometer
  - RA

Order codes:

- T24-ACM-SA
- T24-ACM-SA
- T24-ACMi-SA
- T24-ACMi-SA
- T24-ACMm-SA
- T24-ACMm-SA
- T24-ACM-IA
- T24-ACMi-IA
- T24-ACMm-IA
- T24-ACMm-IA
- T24-ACM-VA
- T24-ACMi-VA
- T24-ACMm-VA
- T24-ACMm-VA
- T24-ACM-TA
- T24-ACMi-TA
- T24-ACMm-TA
- T24-ACMm-TA
- T24-ACM-SA
- T24-ACMi-SA
- T24-ACMm-SA
- T24-ACMm-SA
- T24-ACM-RA
- T24-ACMi-RA
- T24-ACMm-RA
- T24-ACMm-RA

*For more information please refer to the T24 Acquisition Module Battery Life Calculator

Not available to purchase online. Please request a quote or contact us.