

## Radio Telemetry Embedded Strain Gauge Digitiser

### Features



- Very low power consumption for long battery life
- Compact size
- 1 year manufacturer's warranty
- Full CE approval
- European and USA licence exempt radio
- Error free
- Option of hand held remote display or PC interface for data capture and TSC control
- 2 way radio system for remote calibration
- Remote Power on/off
- 300 metre/330 yard range max
- Battery life up to 5 years in low power mode
- Configured and calibrated via PC using TCM module and free software toolkit



### Introduction

The TSC is a high performance strain gauge to radio telemetry OEM converter module, offering precision measurement with high performance telemetry.

For use in wireless load/force applications, offering battery power life of up to 5 years with lithium cells. This module, as part of an overall measurement system offers a wide range of opportunities to collect strain measurements from a variety of sources, enabling accurate and immediate data collection to be achieved without the requirement for extensive and labour intensive cabling operations.

Licence-free radio offers excellent opportunities to collect measurement data up to 300 metre/330 yards radius, which enhances the ability to cover large industrial sites with ease. The use of the latest radio technology ensures the minimum of local radio interference, high-level circuit utilization and data integrity; this allows for a large number of measurement points to be used on the system, so that very large sites are easily integrated.

Its wide temperature operating range and robust technology ensures that it is not susceptible to harsh physical or electrical environments.

### Specifications

	Minimum	Typical	Maximum	Units
Non linearity		0.001	0.005	% FSD
Internal resolution		24		Bits
Resolution at 1Hz sample rate		250,000		Counts/divisions
Resolution at 10Hz sample rate		65,000		Counts/divisions
Temperature effect on zero (ac excitation)		0.0002	0.0005	%FR/°C@2.5mV/V
Temperature effect on span (ac excitation)		0.0002	0.0005	%FR/°C
Offset stability (ac excitation)		0.001	0.002	% first month
Gain stability (ac excitation)		0.002	0.005	% first month
Common mode imbalance offset		0.001		FSD (Typical)
Common mode imbalance gain		0.001		FSD (Typical)
Excitation Voltage (selectable dc or ac)	4.8	5	5.2	Vac/dc
Strain gauge impedance	350	1000	5000	Ohms
Sensor cable length ac excitation			0.5	Metres
Sensor cable length dc excitation			10	Metres
Inputs and outputs for option applications			4	
<b>Electrical</b>				
Battery Voltage - 2 x Alkaline, AA cells 1 x Lithium cells <0.5SR internal impedance	2.6	-	4.0	V dc
Power Supply Current - Dependant on power mode	0.01		75	mA

## Telemetry Data Parameter-License Exempt

Protocol

Radio type transceiver (2 way)

Modulation - FM half duplex

Data rate

1

FM

10

Updates/sec

868 MHz European

Power

1

20

mW

Range

300

metres

Channels

36

915 MHz USA, Canada

Power

10

mW

Range

200

Metres

Channels

130

## Module Transmits & Receives giving:

- |  |  |
|--|--|
| 1. Full error detection and correction                           | 6. Remote tare                           |
| 2. Ability to switch to low power modes                          | 7. Remote calibration stored in the TSC  |
| 3. Calibration & configuration via radio telemetry               | 8. Remote battery check                  |
| 4. Ability to be switched from sleep to operating mode via radio | 9. Data Encryption for complete security |
| 5. Gross and net outputs   |  |

## Product Order Codes

TSC-8

868MHz (European Frequency) Radio Telemetry Embedded Strain Gauge Digitiser, line powered and IP65 cased

TSC-9

915MHz (American Frequency) Radio Telemetry Embedded Strain Gauge Digitiser, line powered and IP65 cased

## Physical

Case dimensions

160 x 80 x 55mm

Case materials

Light grey ABS with IP65 cable glands

Terminals

2.5mm, rising clamp field terminals

Accessibility

All electronics accessible by removing lid

Power Supply

From 'on-board' batteries (2 x AA Alkaline) please note these batteries are not included

## Options

Output for remote control. Contact input for remote re-transmission

## Future Options please enquire

433MHz for greater range

## Support Modules

TCM

Radio Telemetry to RS232/485 Converter

TDM

Radio Telemetry Hand Held Display

TDUDIS

Radio Telemetry Display Module

TIO

Radio Telemetry Input/Output Module

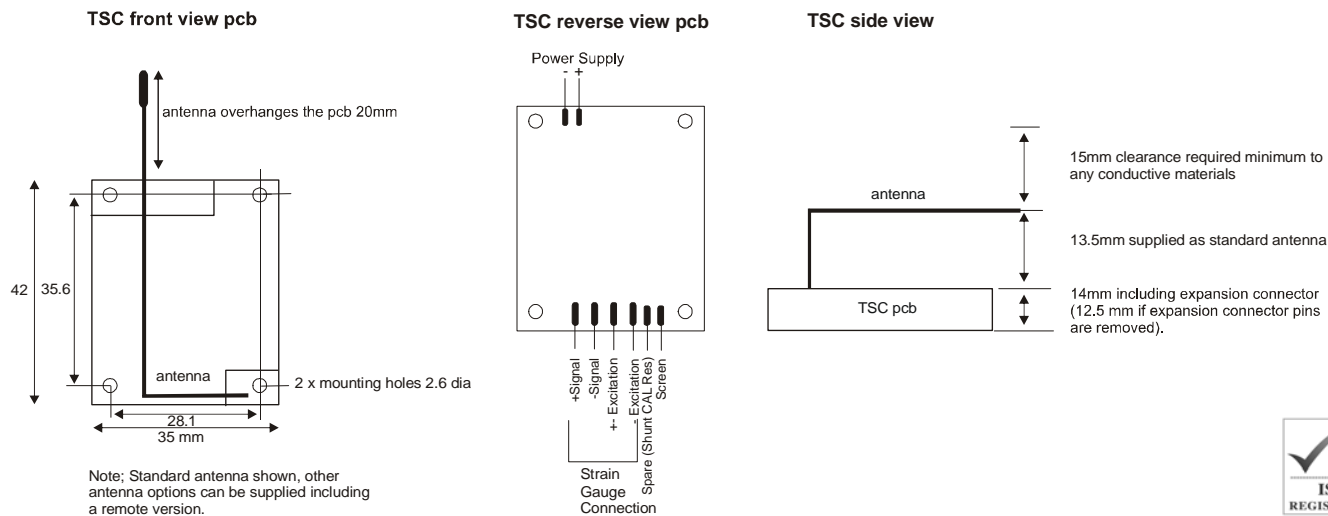
TLC1

Radio Telemetry Strain Gauge or Load Cell

VisualLink

PC SCADA application

## Mechanical Dimensions



CE In the interests of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice.