

OVERVIEW



Figure 1: 1 channel transmitter

Transmission Dynamics have developed a novel, wireless Temperature Telemetry Transmitter which measures 42 x 27 x 11 mm. The transmitter is fully autonomous and contains Bluetooth wireless technology, an integrated battery and microprocessor. To use the system, simply solder the temperature probes or configured resistive based sensor, and turn on the receiver unit.

Ideal applications include measurements on rotating machinery, such as bearings, gearboxes and shafts. The transmitter can be programmed to transmit data at the requested sampling rate and has a typical battery life of up to 2 years (depending on sampling rate and application).

There are 3 types of receivers available with the Temperature Telemetry Transmitters.

- A 1 to 4 channel receiver with outputs for connection to a Data Acquisition System.
- A USB transceiver which allows streaming and saving of data directly onto a PC or laptop.
- A remote transceiver which automatically uploads all data online onto our secure Global Data Network (GDN).

The 1 to 4-channel receiver offers analogue telemetry output signals for each channel via SMB connections which can be interfaced to any data acquisition or control system (0-5 V or 4-20 mA output), using SMB to BNC coaxial cables (3m length per cable supplied as standard). The receiver can also be supplied with a Bluetooth extension antenna, allowing the receiver to be positioned in a suitable location, with the antenna routed (for example) into a gearbox housing allowing communication with the transmitter within. Up to four Wireless Temperature Monitoring MiniTemp-CCs can be paired with a single 4-channel receiver.

When using with the remote transceiver, if the temperature of any of the transmitters increases beyond the user definable limit, an automated SMS and/or email notification is dispatched within minutes - allowing swift action to be taken. This allows the Temperature Telemetry Transmitter to be ideal for condition monitoring of industrial systems.



Figure 2:
4-channel receiver

SIGNAL CONDITIONING

Transducer supply	1.8 V fixed—other optional
Input protection	± 40 V
Output protection	Continuous short-circuit to GND
Input Gain	1x–1,000x
Input bandwidth	<ul style="list-style-type: none"> Gain dependant, typ. 50 kHz @ G = 300 Other available
CMRR	> 100 dB @ G=1000
Nonlinearity	± 0.02% of FSR
Gain Tempco	< ± 25 ppm/ °C

DIGITAL

A/D Converter:	16-bit (300x input amplifier gives > 24-bit effective resolution)
Sampling rate	Up to 0.5 Hz per channel
Radio transmission	2.4 GHz ISM (licence free) Up to 30 m signal range depending on installation arrangements

PHYSICAL (TRANSMITTER)

Size (transmitter)	42 x 27 x 11 mm
Weight (transmitter)	16 grams
Size (receiver)	116 x 112 x 32mm
Weight (receiver)	340 grams

ELECTRICAL

Power supply (transmitter)	Internal CR2450 battery
Power supply (receiver)	5.0V USB-C. Suitable mains supply to 5VDC power supply adaptor supplied.
Operation temp.	-40 °C to +85 °C

INGRESS PROTECTION

Transmitter	Not dust or waterproof as standard. Can be made IP68 standard by adding sealant and encapsulant, for an extra cost.
Receiver (figure 2)	Not rated, designed to be mounted in proximity (within 3m) of the data acquisition system.

1-CHANNEL TRANSMITTER DIMENSIONS

Model	JRD-1026-01-01-R1
Channel configuration	Thermocouple, PRT

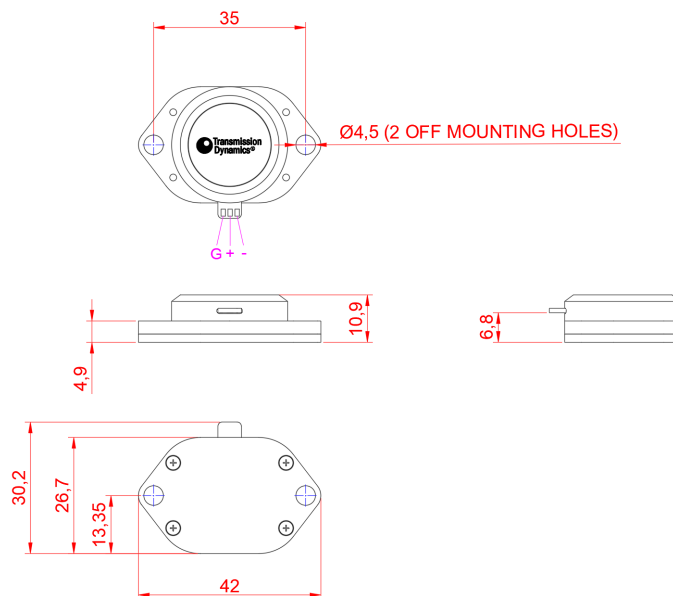


Figure 3:
MiniTemp Dimensions

RECEIVER DIMENSIONS

Model	JRD-1026-01-02-R1
Output signal connectors	SMB
Input power cable	USB-C
Power switch	Yes
Status LED	Green if connected to the transmitter Red if not connected to the transmitter
Receiver side antenna connector	SMA Female
Receiver mounting nuts	Schroff: HF Frame Slide Nut M2.5 [CATALOG #: 21100-112]