KMT - Kraus Messtechnik GmbH

Gewerbering 9, D-83624 Otterfing, Germany, ☎ 08024-48737, Fax. 08024-5532
Home Page: http://www.kmt-telemetry.com, Email: info@kmt-telemetry.com
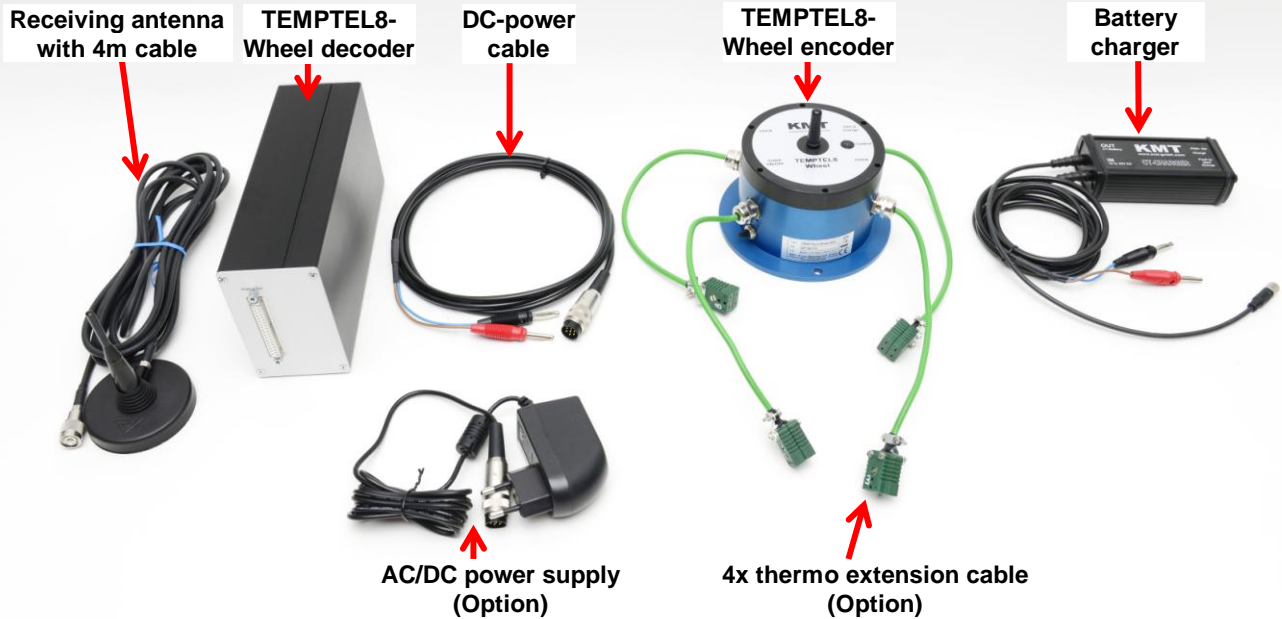
KMT
TELEMETRY

TEMPTEL8-Wheel

8 channel Telemetry System for Thermocouples K or J
up to 50h operating time!

- **8x Thermocouple inputs for K or J**
- **Full galvanic isolated inputs**
- **Temperature range -50 to 1000°C**
- **Signal bandwidth 8x 0-30Hz**
- **12 bit ADC, simultaneous sampling**

- **Linearized output for K or J**
- **Analog output +/- 10V, Opt. CAN-BUS**
- **4 different carrier frequencies**
- **Rechargeable battery**
- **Water protected Tx-housing (IP65)**

Receiving antenna with 4m cable — **TEMPTEL8-Wheel decoder** — **DC-power cable** — **TEMPTEL8-Wheel encoder** — **Battery charger**

AC/DC power supply (Option) — **4x thermo extension cable (Option)**

Picture shows a TEMPTEL8-Wheel telemetry system with standard accessories

TEMPTEL8-Wheel is an telemetry system designed for easy mounting onto rotating Wheels to provide non-contact transmission of temperature measurement.

Sensors inputs are connected via screw clamp. Measured values are prepared in analog format, digitized (12bit) and transmitted via radio frequencies. Four different carrier frequencies are provided, this allows up to four systems (e.g. for four wheels) to operate in parallel. The complete transmitter assembly is waterproofed to IP65 specifications.

The following thermocouples can be connected: Type K -50 to 1000°C (standard) or Type J -50 to 750°C (optional)
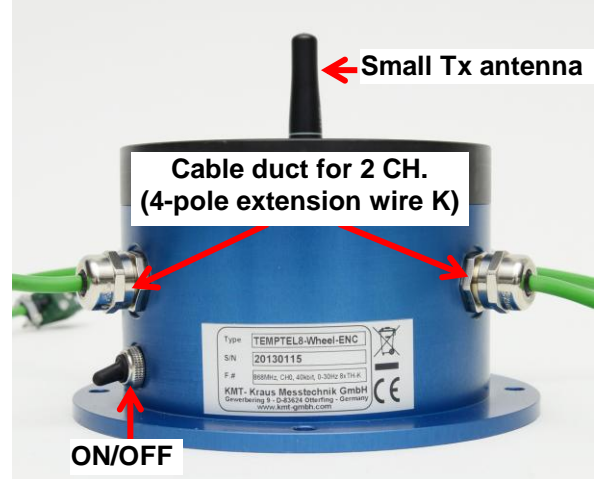
All inputs are full galvanic isolated!

The measured values are processed and output as +/-10V analog signals (linearized for K or J) at the BNC sockets (optional digital output for special PCM interface into a PC) on the stationary receiver located in a vehicle.

Resolution of 12 bits is standard; this enables an amplitude dynamic of 72 dB. The analog signal bandwidth is 0-30 Hz (-3dB) when configured as an eight channel. The measurement accuracy is +/-0.5 % (without sensor). The TEMPTEL8-Wheel is suited for operation at ambient temperatures of -20 to +70°C. The transmission distance between transmitter and receiving antenna is of the order of up to 10m (30 feet) - depend of application!

Transmitter Device (Encoder)

Small Tx antenna

Cable duct for 2 CH.
(4-pole extension wire K)

ON/OFF

TEMPTEL8-Wheel-ENC

SC Module TH-K (J):

Sensor: thermo-couple, type K (with cold junction compensation)

inputs full galvanic isolated!!

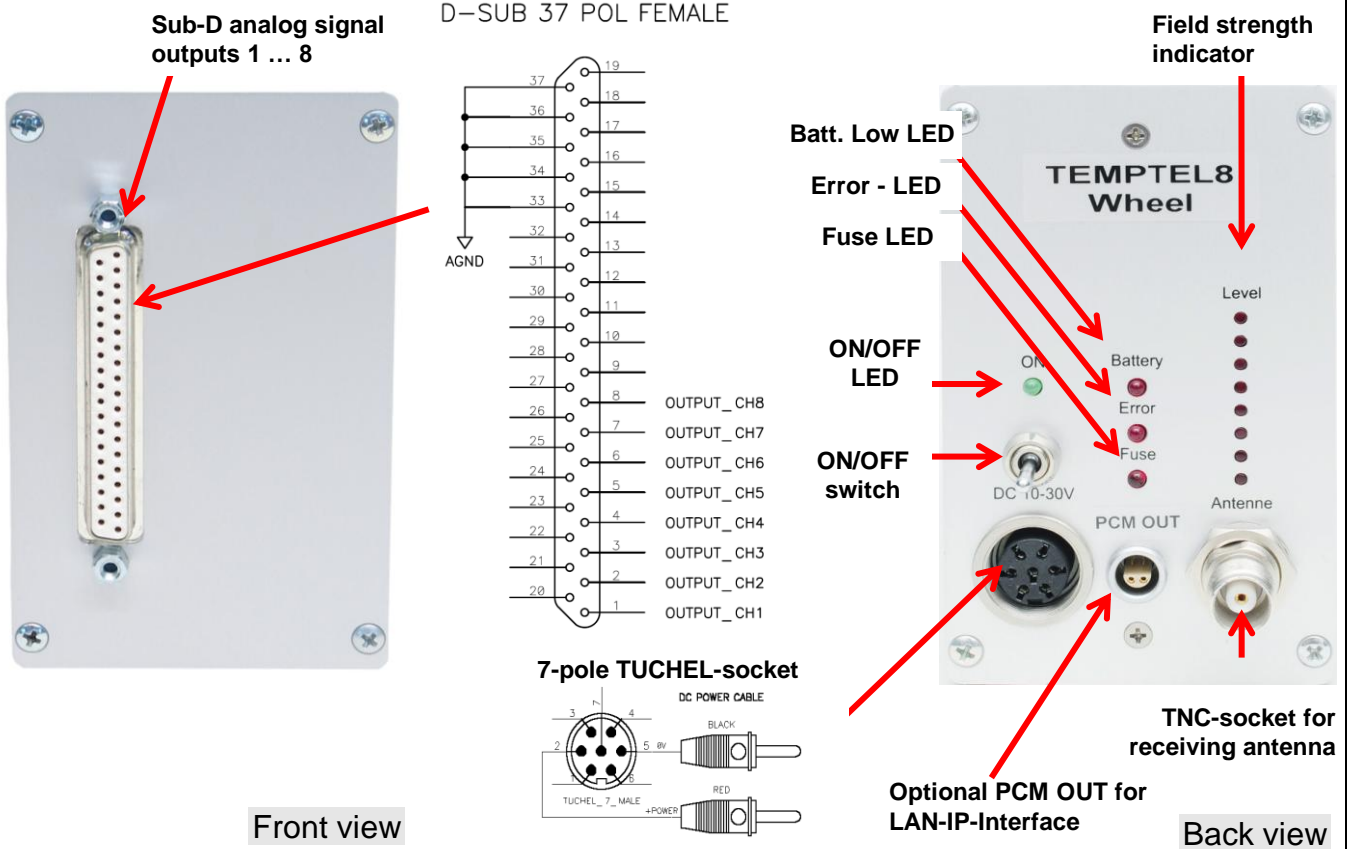Temperature measuring range type K: -50°C to +1000°C (standard)

Temperature measuring range type J: -50°C to +750°C (on request)

System Parameters:

Channels: 8

Resolution: 12 bit A/D

Line-of-sight distance: 10 m with 10mW transmitting power
(433MHz or 868MHz Band, FSK modulation)

Powering: Li Ion battery 7.2V, 2200mA, capacity for ~16 hours operation
(Li Ion battery 7.2V, 8000mA for ~50h operation as option!!

Power consumption: 130 mA

Analog signal bandwidth: 8x 0-30Hz (scanning rage 312.5Hz/CH)

Dimensions: Diameter 110mm, bottom plate diameter 140mm, height 78mm

Weight: 1.10 kg without cables

Transmission: Digital PCM Miller Format - FSK

Transmission Power: 10mW

Operating temperature: - 20 … +70°C

Housing: Water resistant (IP65)

Humidity: 20 ... 80% no condensing

Static acceleration: 200g in all directions

Shock: 500g in all directions

Technical data:
Receiving Unit TEMPTEL8-Wheel DEC (Decoder)

Sub-D analog signal outputs 1 … 8

D−SUB 37 POL FEMALE

Field strength indicator

Batt. Low LED

Error - LED

Fuse LED

ON/OFF LED

ON/OFF switch

AGND

OUTPUT_CH8
OUTPUT_CH7
OUTPUT_CH6
OUTPUT_CH5
OUTPUT_CH4
OUTPUT_CH3
OUTPUT_CH2
OUTPUT_CH1

7-pole TUCHEL-socket

DC POWER CABLE

BLACK

RED

TUCHEL_7_MALE

TNC-socket for receiving antenna

Optional PCM OUT for LAN-IP-Interface

TEMPTEL8 Wheel

Level

ON   Battery
        Error
        Fuse

DC 10-30V

PCM OUT

Antenne

Front view

Back view

System Parameters:

Channel:	8 analog outputs via 37-pole Sub-D +/-10V
Resolution:	12 bit D/A converter, with smoothing filter
Dynamic:	72dB
Power supply input:	10-30 VDC
Current consumption:	300mA at 10V, 100mA at 30V
Analog signal bandwidth:	8 x 0 … 30Hz
Dimensions:	205 x 105 x 65mm
Weight:	1.00 kg without cables and antenna
Overall system accuracy between encoder input and decoder output:	+/-0.5% without sensor influences
Environmental	
Operating:	-20 … +70°C
Humidity:	20 ... 80% not condensing
Vibration:	5g Mil Standard 810C, Curve C
Static acceleration:	10g in all directions
Shock:	100g in all directions