TEMPTELE8-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)
General functions:

TEMPTEL8-Wheel is a 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)

**TEMPTEL8-Wheel-ENC**

SC Module TH-K (J):

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

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### 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