

CT16-Wheel

16 Channel Telemetry for rotation applications

Including signal conditioning for STG, Th K, ICP, POT or high-level inputs



- STG offset via potentiometer or optional Auto Zero calibration
- 12 bit ADC resolution, simultaneous sampling of all channels
- Signal bandwidth: 16 x 0-375Hz (-3dB) (cut off freq. of anti aliasing filter)
- Water waterproofed housing (IP65)
- Output analog (+/- 5V) and digital for PC interface at the receiver side
- Carrier frequency 433.3 MHz
10mW transmitting power
- Line-of-sight distance up to 20m (with 10mW and 0 dB Antenna)
- Accumulator powered (up to 8h)

General functions:



CT16-Wheel is an telemetry system designed for easy mounting onto rotating Wheels to provide non-contact transmission of measured parameters such as pressure, force, temperature, acceleration and voltage.

Sensors inputs are connected via screw on, waterproof connectors. Measured values are prepared in analog format, digitized 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 sensors can be connected to the system: (STG) Strain gages sensors in full-, half- and quarter-bridge configuration (350 ohm or greater), Type K Thermocouples -50 to 1000°C (**full galvanic isolated**), ICP and capacitive sensors. Voltage inputs of +/-5V and +/-10V are available.

The measured values are processed and output as +/-5V analog signals at the BNC sockets (optional digital output for special PCM interface into a PC) on the stationary receiver located in a vehicle.

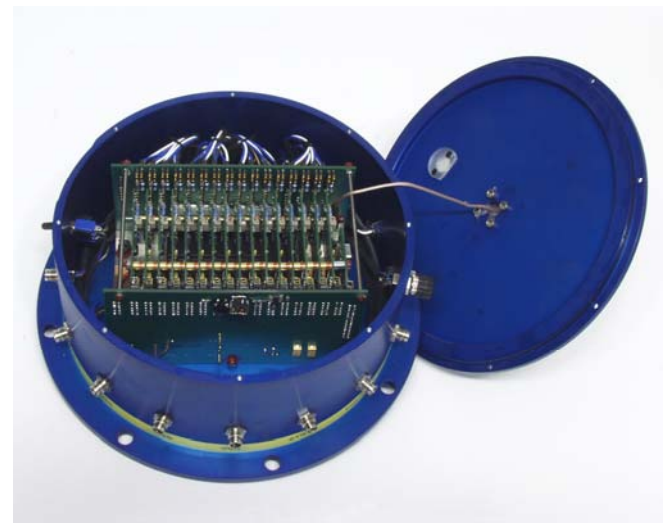
Resolution of 12 bits is standard; this enables an amplitude dynamic of 72 dB. The analog signal bandwidth is 0-95 Hz (-3dB) when configured as an eight channel unit, other bandwidth on request! The measurement accuracy is +/-0.25 % (without sensor). The CT4/8-Wheel is suited for operation at ambient temperatures of -20 to +70°C. The transmission distance between transmitter and receiving antenna is of the order of 20m (60 feet) - depend of application!



CT16-Wheel Transmitting Unit Technical Data (Encoder)



Encoder in IP65 Aluminum housing



Encoder inside

SC Module STG:

Sensor:	strain gage, > 350 Ohms
Bridge completion:	full, half and quarter-bridge (optional quarter-bridge with 120Ohme)
Excitation:	4 VDC (fixed), short-circuit protection up to 20mA
Gain:	200 or 1000 - selectable by solder jumpers (5mV/V or 1mV/V)
Offset	Zero adjustment by potentiometer or <u>optional</u> Auto-zero function (which is not lost by power-off), offset range up to 80% of full scale.

SC Module ICP:

Constant current:	1, 4, or 10mA
Gain:	2x, 4x, 8x, 16x or 32x

SC Module POT:

Sensor:	Potentiometer Sensor >350 Ohms
Excitation:	4 VDC (fixed)

SC Module TH-K:

Sensor:	thermo-couple, type K (with cold junction compensation)
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Inputs full galvanic isolated!

Temperature measuring range:	-50°C to +1000°C (other on request)
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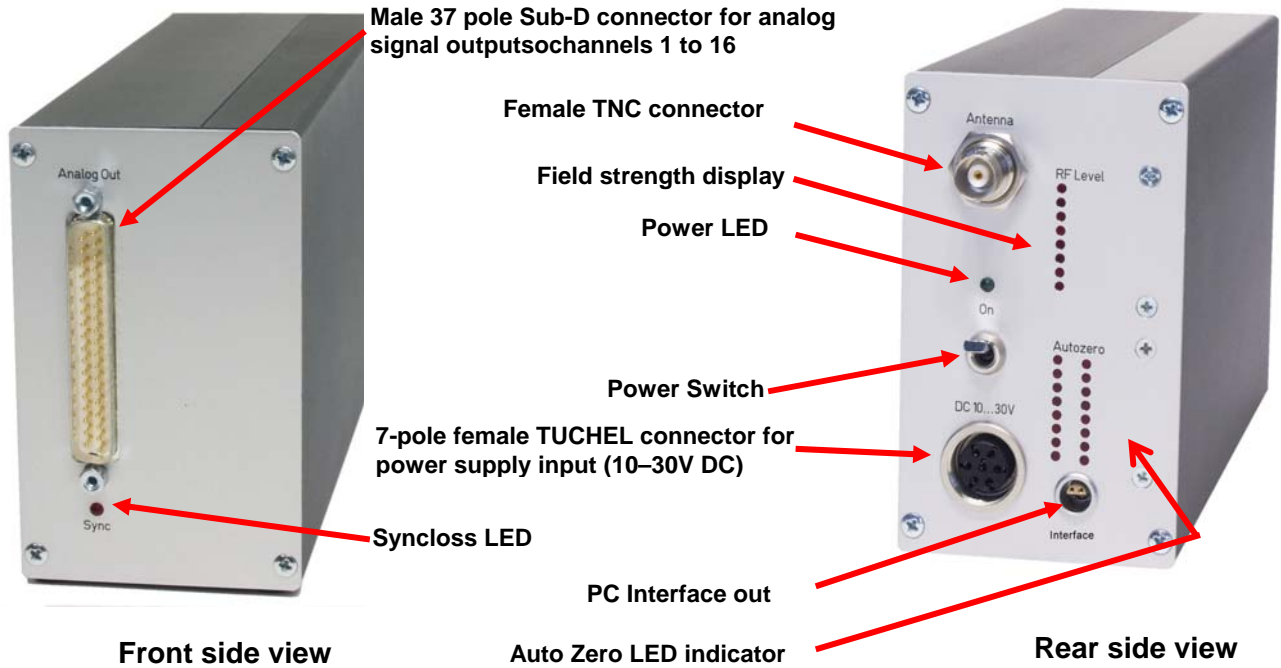
SC Module VOLT:

High-level inputs:	+/- 5 Volt or +/- 10 Volt
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System Parameters:

Channels:	16 (may be configured using 1 to 16 channels)
Resolution:	12 bit A/D converter with anti aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	20m with 10mW transmitting power, (433MHz Band, FSK modulation)
Powering:	Li Ion Accumulator 7.2V, 2000mA, capacity for 6-8 hours.
Power consumption:	350 mA using 16x STG full bridge sensors 350 Ohms
Analog signal bandwidth:	16 x 0...375Hz (scanning rate 1632Hz) with 320kbit/s transmitter (-3dB)
Transmitter carrier frequency:	1 x 433,3 MHz <u>with 320kbit/s</u>
Transmission:	Digital PCM Miller format - FSK
Transmission Power:	10mW
Weight:	2.1 kg without cables
Operating temperature:	- 20 ... +70°C
Housing:	Aluminum anodized, waterproofed (IP65)
Humidity:	20 ... 80% no condensing
Vibration:	5g Mil Standard 810C, Curve C
Static acceleration:	100g in all directions
Shock:	200g in all directions

Technical data:
Receiving Unit CT16-Rotate DEC with analogue and digital out (Decoder)



System Parameters:

Channel:	16 +/-5V analog outputs via Sub-D male socket
Resolution:	12 bit D/A converter, with smoothing filter
Dynamic:	72dB
Power supply input:	10-30 VDC, power consumption 3 Watt
Current consumption:	300mA at 10V, 100mA at 30V
Transmitter carrier frequency:	433,3 MHz with 320kbit/s
Transmission:	Digital PCM Miller Format - FSK
Dimensions:	205 x 105 x 65mm
Weight:	1.25 kg without cables and antenna
Overall system accuracy between encoder input and decoder output:	+/-0.25% without sensor influences
<u>Environmental</u>	
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

Adapter BOX from multiple 37pole Sub-D to 32 single BNC connectors

