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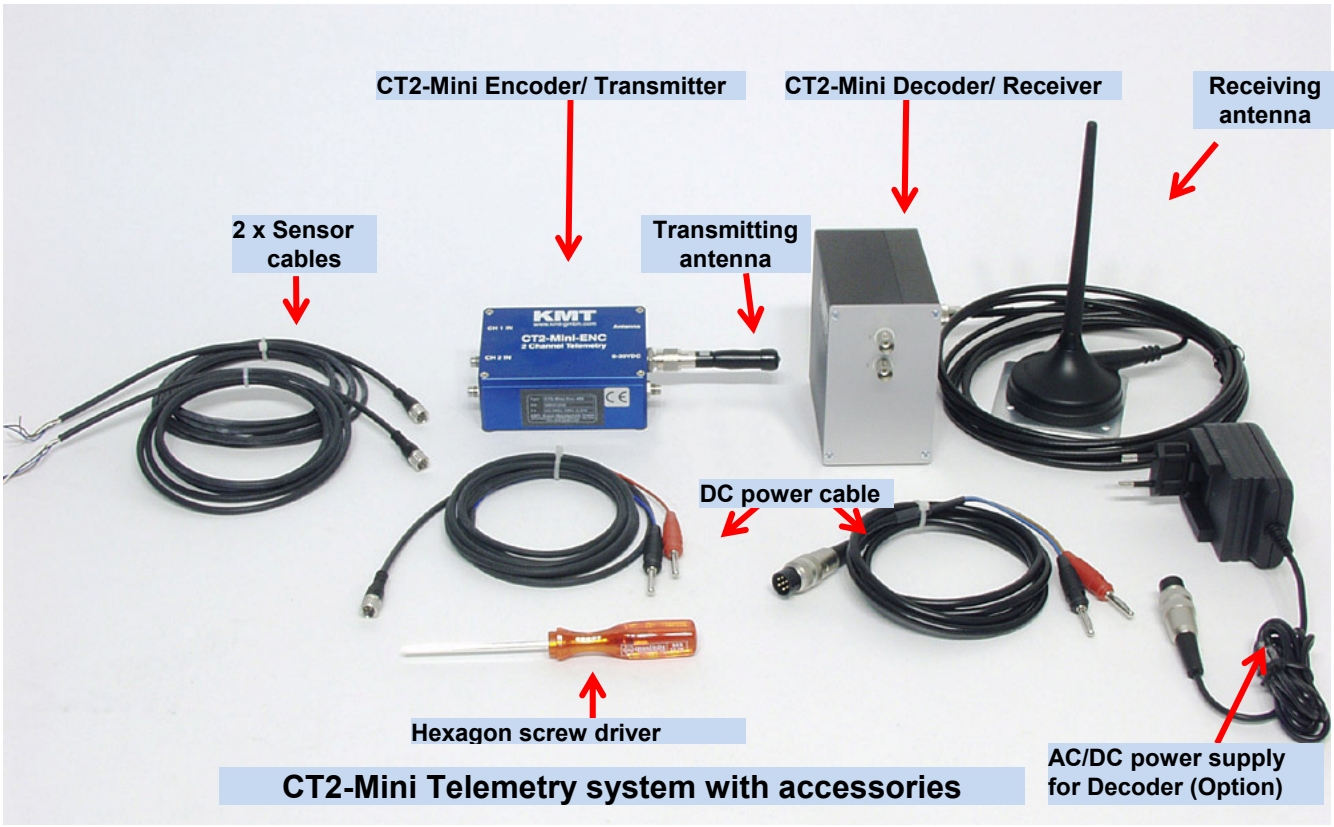
CT2-Mini

2 Channel Telemetry System

- STG offset via potentiometer or optional Auto Zero calibration
- 12 bit ADC resolution, simultaneous sampling of all channels
- Signal bandwidth: 2 x 0-375 Hz –3dB (cut off freq. of anti aliasing filter)
- Output analog (+/- 5V) and digital for PC interface at the receiver side
- 4 different carrier frequencies enable measurements with 4 telemetry systems at the same time
- Water protected encoder housing (IP65)

General functions:



CT2-Mini Telemetry system with accessories

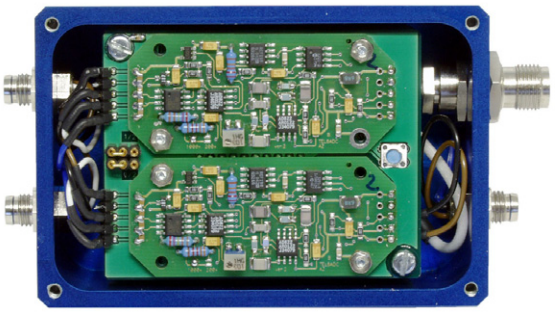
CT2-Mini is a 2-channel telemetry system designed for easy mounting onto rotating and moving parts to provide non-contact transmission of measured parameters such as pressure, force, temperature, acceleration and voltage. Also for point to point application like bridge or buildings testing, you can install CT2 Mini instead long cables from the sensor to the Computer.

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-, and half- bridge configuration (350 ohm or greater), Type K Thermocouples to 1000°C, ICP, potentiometers sensors 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.

Resolution of 12 bits is standard; this enables an amplitude dynamic of 72 dB. The analog signal bandwidth is 2 x 0-375 Hz. The measurement accuracy is +/-0.25 % (without sensor). The CT2-Mini 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 250 m (10mW transmitting power)



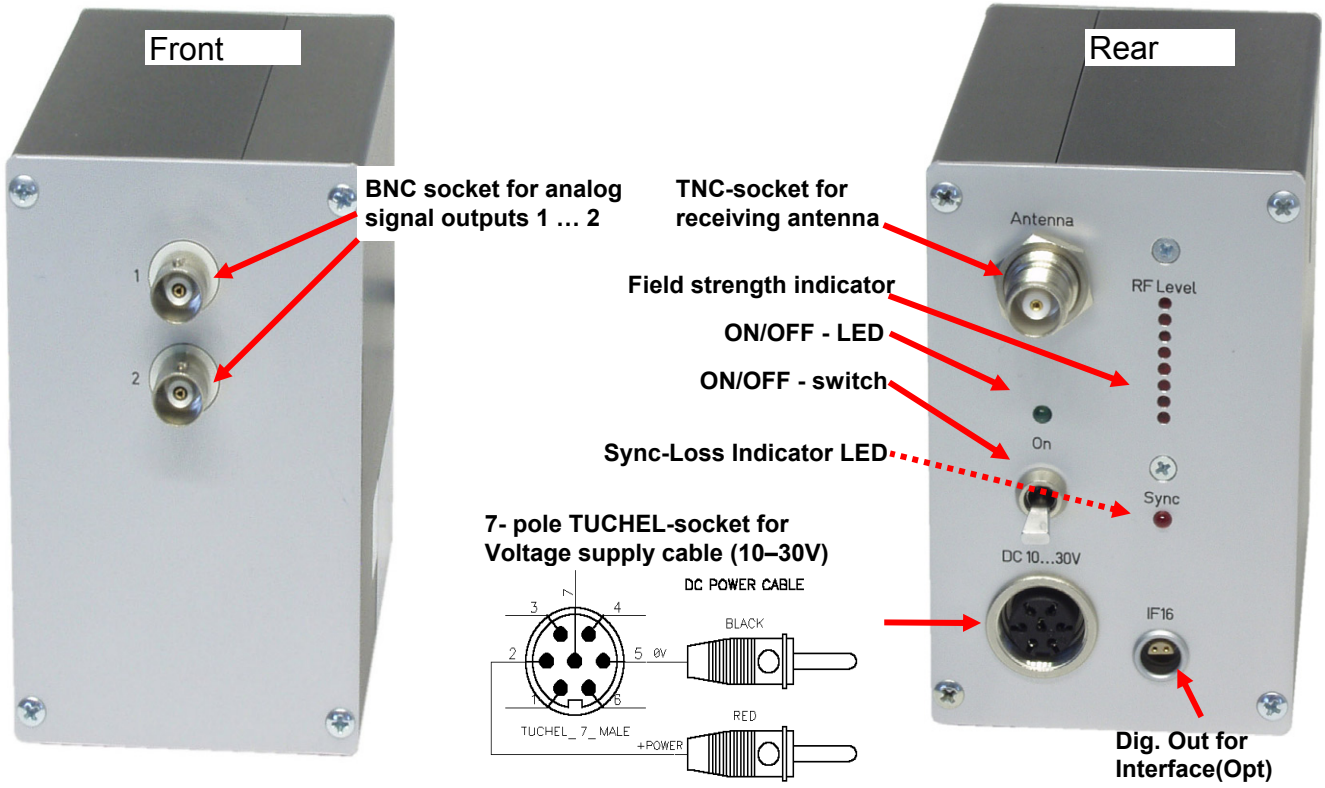
Cut off frequency from anit-aliasing filter & scanning rate (see red)

Bit rate	per channel
40 kbit/s	375 Hz (-3dB) (1428 Hz)
320 kbit/s	3000 Hz (-3dB) (11428 Hz)

CT2 Mini Transmitting Unit Technical Data (Encoder)

CT-STG-V1:	
Sensor:	strain gage, > 350 Ohms
Bridge completion:	full and half bridge
Excitation:	4 VDC (fixed), short-circuit protection up to 20mA
Gain:	200 or 1000 - selectable by solder jumpers **Optional Gain: 250-500-1000-2000 with new CT-STG-V2 module**
Offset	Zero adjustment by potentiometer or optional Auto-zero function (which is not lost by power-off), offset range up to 80% of full scale.
Signal bandwidth:	0...375 Hz -3dB (optional 0-3000Hz)
CT-ICP:	
Constant current:	1, 4, or 10mA
Gain:	2x, 4x, 8x, 16x or 32x
Signal bandwidth:	3...375 Hz -3dB (optional 3-3000Hz)
CT-POT:	
Sensor:	Potentiometer Sensor >350 Ohms to 10kOhms
Excitation:	4 VDC (fixed)
Signal bandwidth:	0...375 Hz -3dB (optional 0-3000Hz)
CT-TH-K-ISO:	
Sensor:	thermo-couple, type K (with cold junction compensation)
Temperature measuring range:	-50°C to +1000°C (other on request) **with galvanic isolation, Accuracy 1%**
Signal bandwidth:	0...10 Hz -3dB
CT-PT100:	
Sensor:	resistance temperature detectors (RTDs) with resistance of 100 ohm
Temperature measuring range:	-100°C to +500°C
CT-VOLT:	
High-level inputs:	+/- 5 Volt or +/- 10 Volt
Signal bandwidth:	0...375 Hz -3dB (optional 0-3000Hz)
System Parameters:	
Channels:	2
Resolution:	12 bit A/D converter with anti aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	250 m with 10mW transmitting power, (433MHz Band, FSK modulation) 5 km with 250mW booster transmitting power and special 10dB antennas (option)
Powering:	6-30 V DC
Power consumption:	100 mA at 12V using 2 STG sensors at 350 Ohms
Analog signal bandwidth:	2 x 0 … 375Hz with 40 kbit/s transmitter (-3dB cut-off frequency at receiver side)
	2 x 0... 3000Hz with 320kbit/s transmitter (-3dB cut-off frequency at receiver side) **Option**
Transmitter carrier frequency:	433MHz,CH1-4; 868MHz,CH1-4 with 40 kbit/s, 10mW or 1x 433MHz 320 kbit/s, 10mW
Transmission:	Digital PCM Miller format - FSK
Transmission Power:	10mW (enable a range up to 250m) or optional 250mW booster (only 40kb) transmitting power
Dimensions:	102 x 68 x 41 mm (without connectors)
Weight:	0.45 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 CT2-Mini DEC (Decoder)



System Parameters:

Channel:	2 analog outputs via (BNC) +/-5V
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
Carrier frequencies:	433MHz,CH1-4; 868MH,CH1-4 with 40 kbit/s transmitting rate FSK modulation
	433.3 MHz with 320kbit transmitting rate FSK modulation (Option)
Dimensions:	105 x 105 x 65mm
Weight:	0.60 kg without cables and antenna
Overall system accuracy between encoder input and decoder output:	+/-0.25% 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