

CT4/8

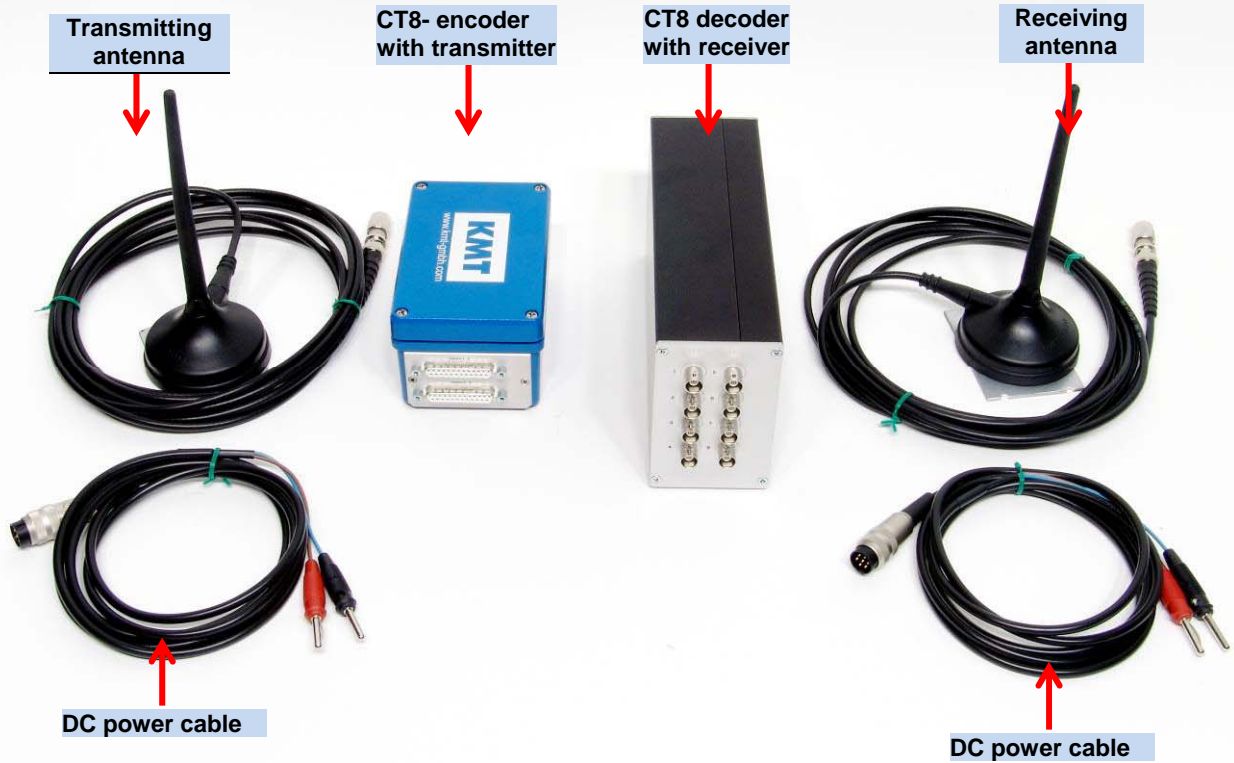
4/8-Channel Compact Telemetry System

Including signal conditioning for STG, ICP, POT, PT100, TH-K or high-level inputs



- 4 or 8 input channels, 12 bit ADC resolution, simultaneous sampling of all channels
- STG offset via potentiometer or optional Auto Zero calibration
- +/- 5V analog output at the receiver side, PCM output via optional special PCM PC interface and Software
- Signal bandwidth:
8 x 0-95 Hz with 40kbit transmitter,
8 x 0-750 Hz with 320kbit transmitter
- Line-of-sight distance between transmitter and receiver up to 500m
- Static acceleration up to 100g in all directions (Transmitter unit)

General functions:

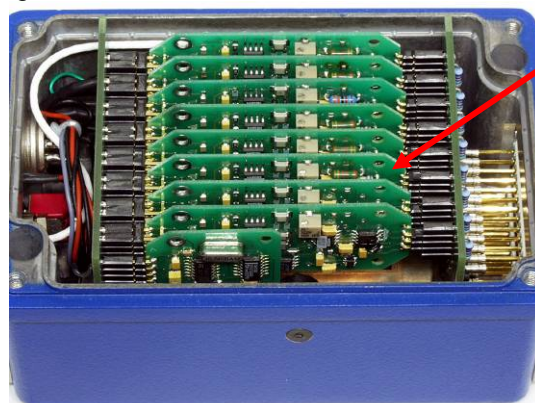


Picture shows a CT8 telemetry system with standard accessories

The CT8 Compact is a 8-channel telemetry system with integrated signal conditioning for sensors, wireless digital transmission and analog reproduction.

The conditioned measured values are routed via anti-aliasing filter to a 12-bit A/D converter, simulate sampling of all channels, encoded in PCM format and transferred to the HF transmitter as modulation variables. Dynamic range is 72dB with a signal-to-noise ratio of approximately 70dB. Four different carrier frequencies available with the 40kbit transmitter (433.3 to 434.5 MHz range) and enable a signal bandwidth of 8 x 0-95 Hz. With the 320kbit/s transmitter only one carrier frequency available in the 433,9 MHz band and enable a signal bandwidth of 8 x 0-750 Hz.

Various configurations of different sensor modules are possible like signal conditioning for strain gages (STG), thermocouples type K (Th-K), thermo sensors Pt100, ICP sensors, potentiometer sensors (POT) and also Voltage inputs (+/-5 or +/-10V). Mixed configuration available.



Specify CT-xx modules at order!!

Frequency table	Cut off frequency from anit-aliasing filter (-3dB) and scanning rate (see red)	
Bit rate	4 CH.	8 CH.
320 kbit/s	1500 Hz (6154 Hz)	750 Hz (3200 Hz)
40 kbit/s	190 Hz (770 Hz)	95 Hz (400 Hz)

Transmitter Device (Encoder)



Front side view

25-pole female SubD input connector for sensors 1 to 4

25-pole female SubD input connector for sensors 5 to 8

Female BNC connector for transmitter antenna

Power ON LED

7-pole female TUCHEL connector for power supply input (10–30V DC)

Auto Zero Switch (option)

Power Switch

2-pole female LEMOSA connector (for test purposes only)



Rear side view

CT-4/8-ENC

CT-STG V1:

Sensor:	strain gage, ≥ 350 Ohms
Bridge completion:	full, half and quarter-bridge (optional)
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 <u>optional</u> Auto-zero function (which is not lost by power-off), offset range up to 80% of full scale.

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

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 (other ranges on request)
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CT-ICP:

Sensor:	For ICP® sensor inputs, Current exc. 1, 4, and 10mA
	Signal gain x 2, 4, 8, 16, 32 - Signal bandwidth 3 Hz up to 3000Hz (depend of transmitter)

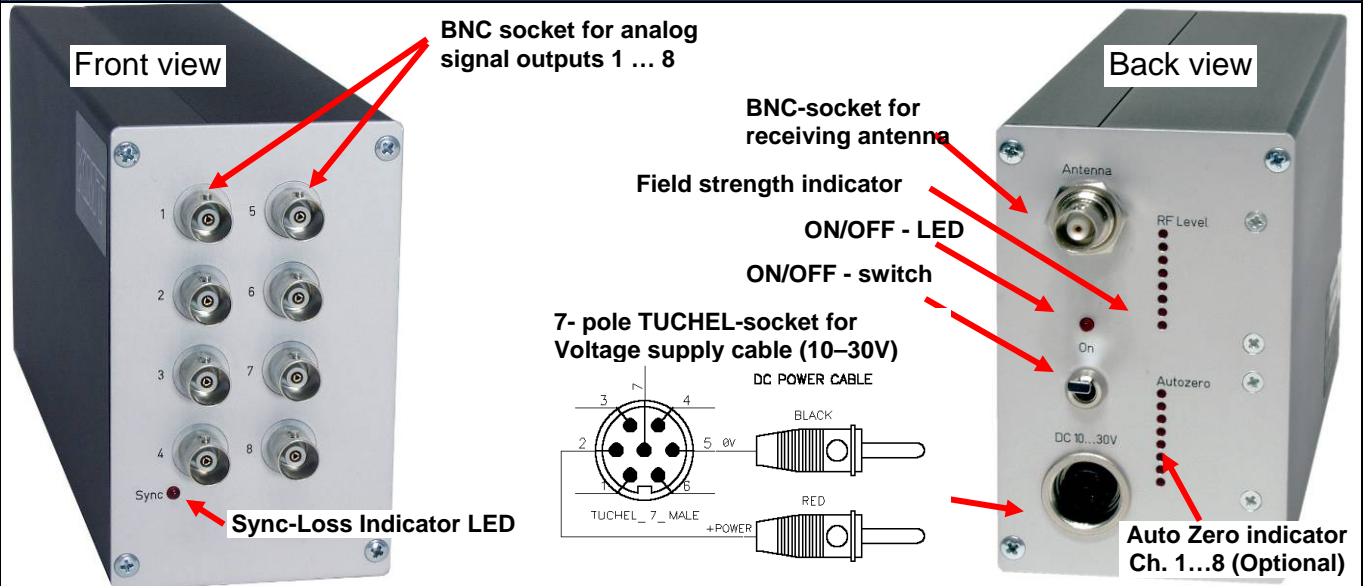
CT-POT:

Sensor:	Potentiometer Sensor >350 Ohms to 10kOhm
Excitation:	4 VDC (fixed)

System Parameters:

Channels:	4 or 8
Resolution:	12 bit A/D converter with anti aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	500 m with 10mW transmitting power (433MHz Band, FSK modulation)
Powering:	10-30V DC
Power consumption:	200 mA (at 12V) using 8 STG sensors at 350 Ohms and 40kbit transmitter
Analog signal bandwidth:	(-3dB cut-off frequency)
4-channel version	4 x 0 ... 190Hz with <u>40 kbit/s transmitter</u> (433,3, 433.7, 434.1 and 434,5 MHz)
8-channel version	8 x 0 ... 95Hz with <u>40 kbit/s transmitter</u> (433,3, 433.7, 434.1 and 434,5 MHz)
4-channel version	4 x 0 ... 1500Hz with <u>320 kbit/s transmitter</u> (1x 433,9 MHz)
8-channel version	8 x 0 ... 750Hz with <u>320 kbit/s transmitter</u> (1x 433,9 MHz)
Dimensions:	132 x 85 x 68mm
Weight:	0.8 kg without cables
Transmission:	Digital PCM Miller format - FSK
Transmission Power:	10mW
Operating temperature:	- 20 ... +70°C
Housing:	Aluminum
Humidity:	20 ... 80% no condensing
Static acceleration:	100g in all directions
Shock:	200g in all directions

Technical data:
Receiving Unit CT4/8 DEC (Decoder)



System Parameters:

Channel:	8 analog outputs via (BNC) +/-5V (optional +/-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:	(-3dB cut-off frequency)
4-channel version	4 x 0 ... 190Hz with <u>40 kbit/s transmitter</u> (433,3, 433.7, 434.1 and 434,5 MHz)
8-channel version	8 x 0 ... 95Hz with <u>40 kbit/s transmitter</u> (433,3, 433.7, 434.1 and 434,5 MHz)
4-channel version	4 x 0 ... 1500Hz with <u>320 kbit/s transmitter</u> (1x 433,9 MHz)
8-channel version	8 x 0 ... 750Hz with <u>320 kbit/s transmitter</u> (1x 433,9 MHz)
Dimensions:	205 x 105 x 65mm
Weight:	1.00 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!