

## CT4/8

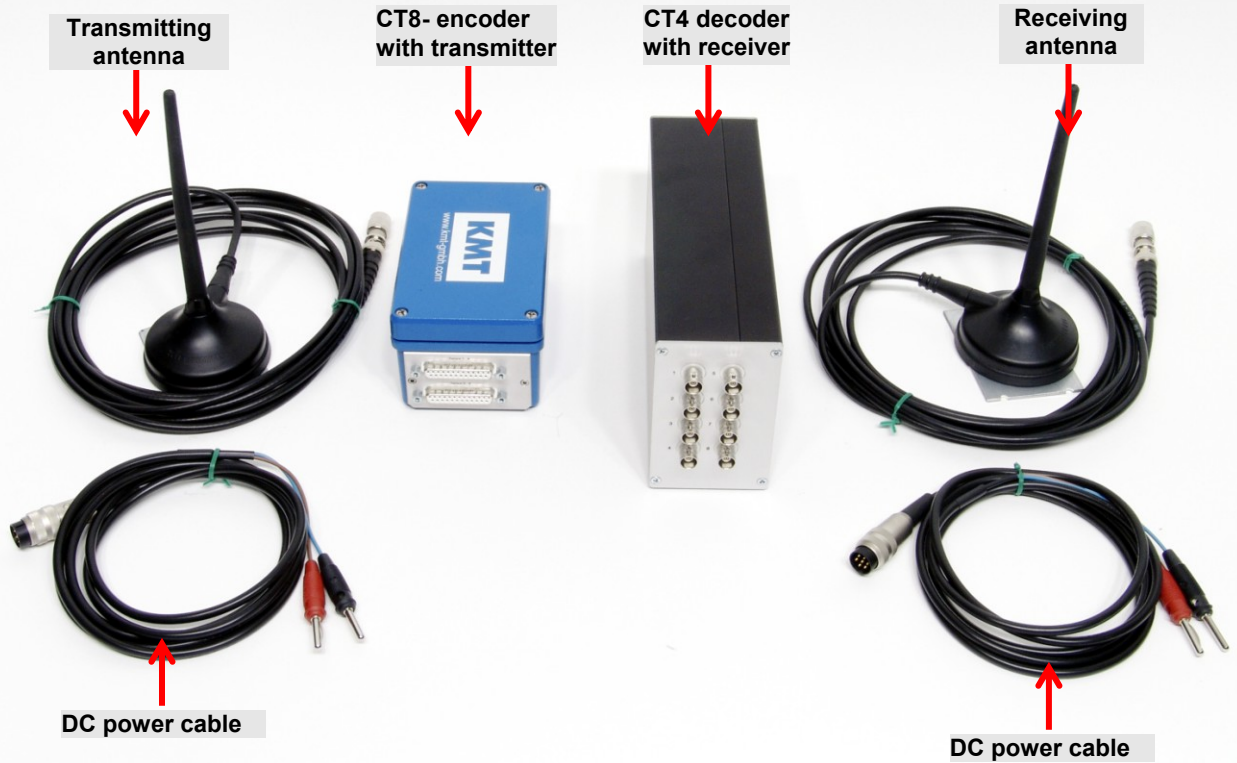
### 4/8-Channel Compact Telemetry System

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:**

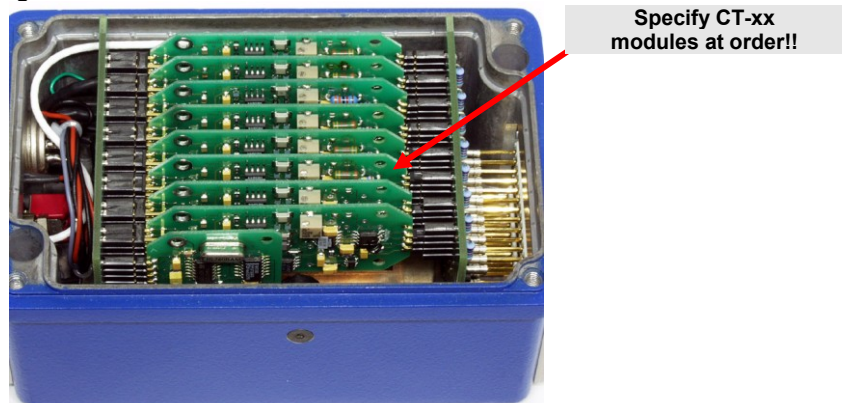


**Picture shows a CT8 telemetry system with standard accessories**

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!!**

<b>Frequency table</b>	Cut off frequency from anit-aliasing filter (-3dB) and scanning rate (see red)	
<b>Bit rate</b>	<b>4 CH.</b>	<b>8 CH.</b>
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,  $\geq 350$  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 optional 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:  $-50^{\circ}\text{C}$  to  $+1000^{\circ}\text{C}$  (other on request) **with galvanic isolation**

**CT-PT100:**

Sensor: resistance temperature detectors (RTDs) with resistance of 100 ohm  
 Temperature measuring range:  $-100^{\circ}\text{C}$  to  $+500^{\circ}\text{C}$

**CT-VOLT:**

High-level inputs:  $\pm 5$  Volt or  $\pm 10$  Volt (other ranges on request)

**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 (depended of transmitter)

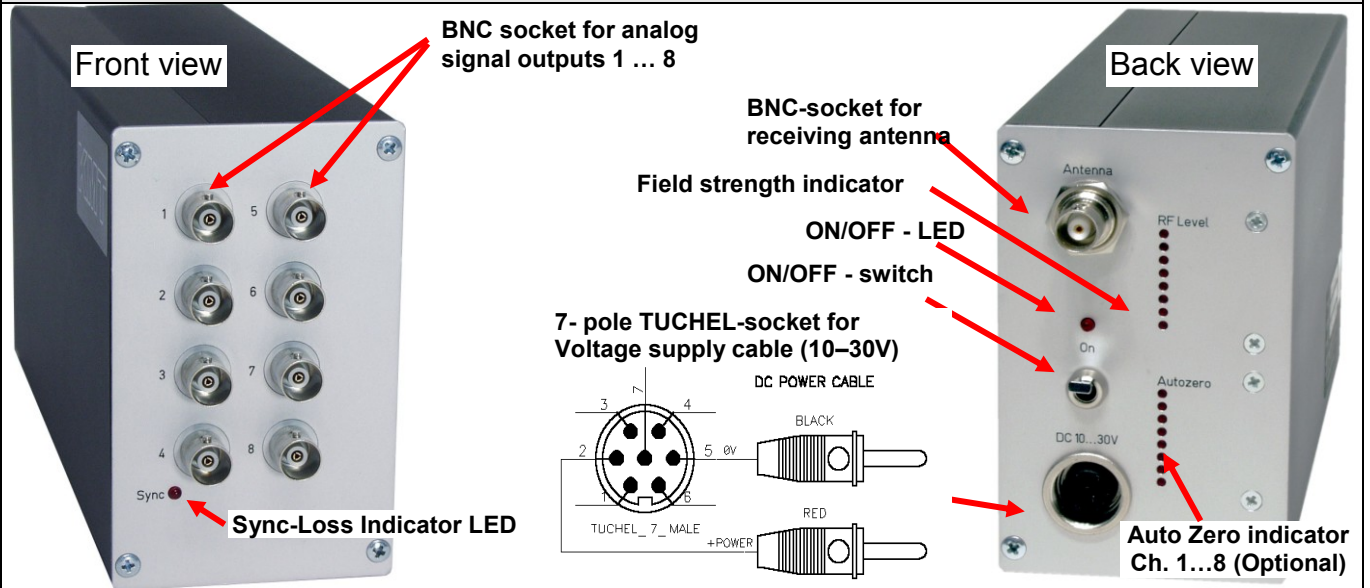
**CT-POT:**

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 40 kbit/s transmitter (433,3, 433.7, 434.1 and 434,5 MHz)  
   8-channel version 8 x 0 ... 95Hz with 40 kbit/s transmitter (433,3, 433.7, 434.1 and 434,5 MHz)  
   4-channel version 4 x 0 ... 1500Hz with 320 kbit/s transmitter (1x 433,9 MHz)  
   8-channel version 8 x 0 ... 750Hz with 320 kbit/s transmitter (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:  $-20 \dots +70^{\circ}\text{C}$   
 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

*Technical specifications are subject to change without notice!*