CT16

16- channel telemetry system

Including signal conditioning for strain gage, thermo couples, Pt100, ICP, POT and high-level inputs

- **12 bit resolution**
- **Simultaneous sampling of all channels**
- **Anti aliasing filters**
- **Signal bandwidth 16 x 0 ... 1500Hz (1280kbit)**
- **Signal bandwidth 16 x 0 ... 45Hz (40kbit)**
- **Distance up to 500m (only 40kbit)**

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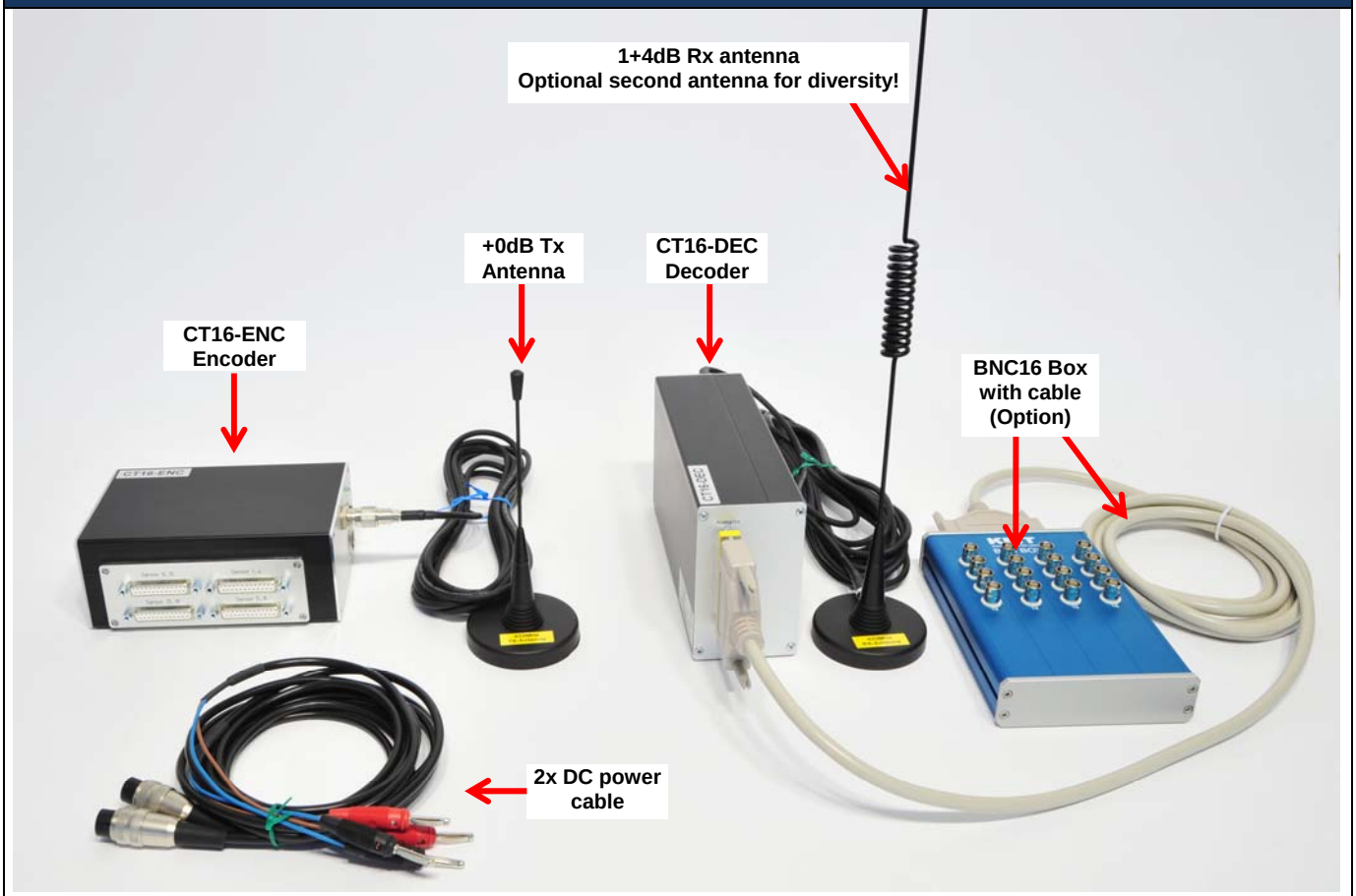
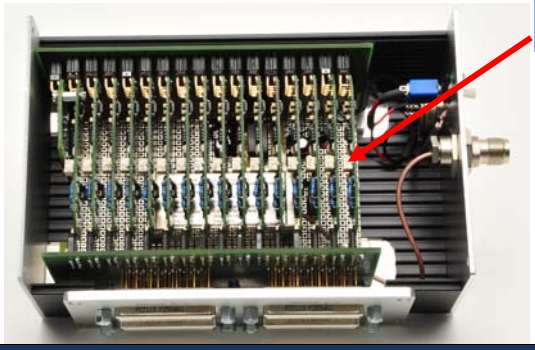
General functions:



The CT16 Compact is a 16-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. Different carrier frequencies available with the 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.



Frequency table	Cut off frequency from anit-aliasing filter (-3dB) and scanning rate (see red)
Bit rate	**16 CH.**
1280kbit	1500Hz (6530Hz)
640kibt	750Hz (3265Hz)
320kbit	375Hz (1632Hz)
40kbit	47Hz (204Hz)

CT16-ENC (Encoder)

Front side with the Sensor inputs

CT-STG V1:

Sensor:	strain gage, ≥ 350 Ohms
Bridge completion:	full, half and quarter-bridge competition 350Ohm
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°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)

CT-ICP:

Sensor:	For ICP® sensor inputs, Current exc. 4mA (fixed)
	Signal gain x 2, 4, 8, 16, 32 - Signal bandwidth 3 Hz up to 1500Hz (depended of transmitter)

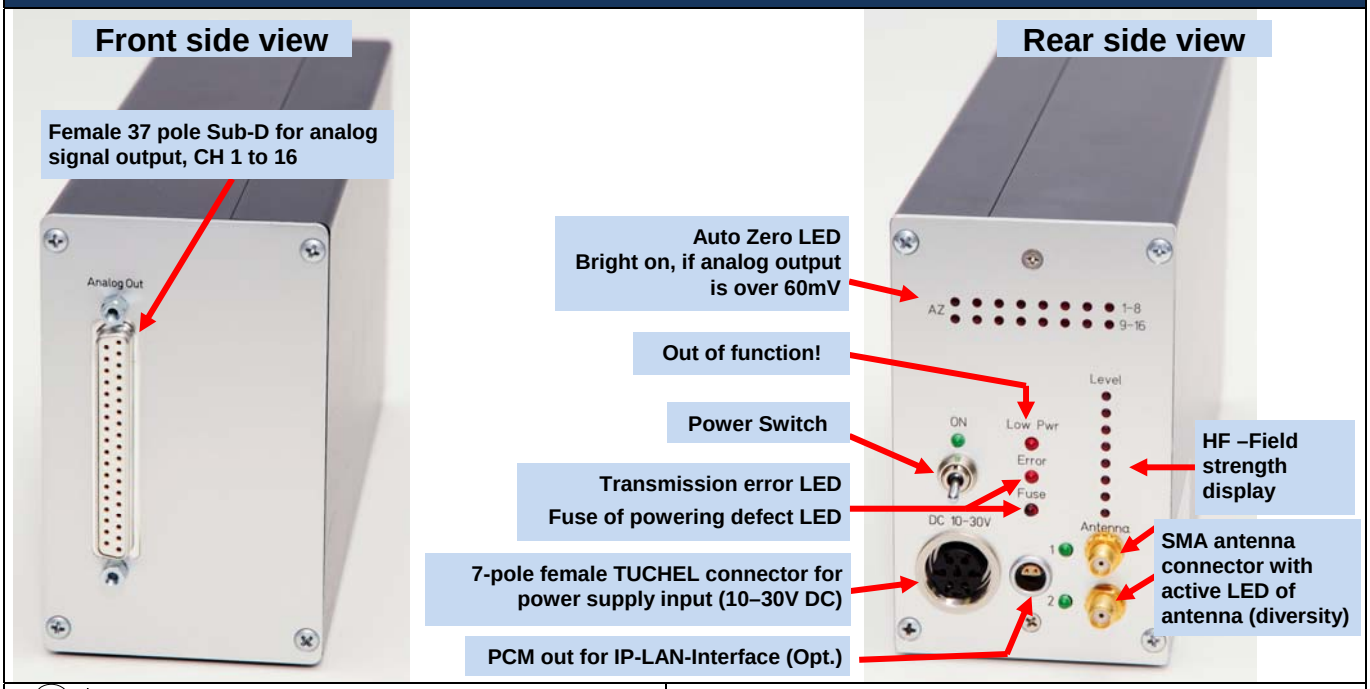
CT-POT:

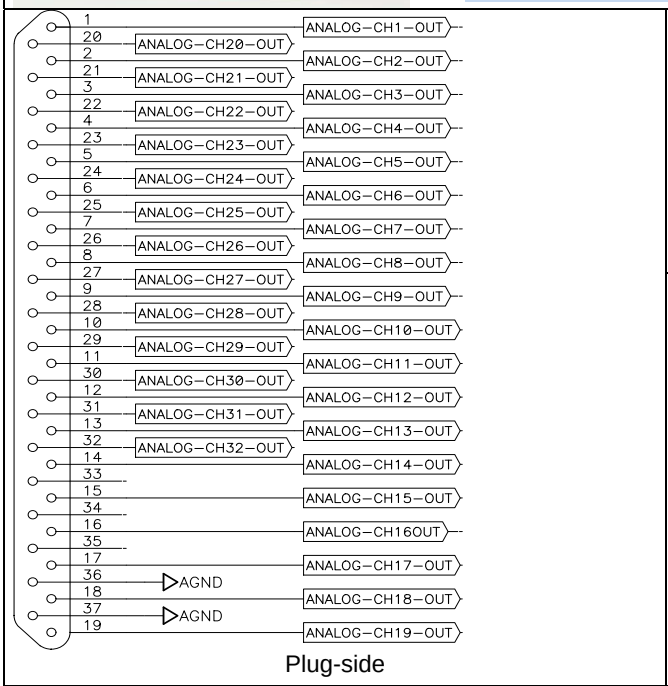
Sensor:	Potentiometer Sensor >350 Ohms to 10kOhm
Excitation:	4 VDC (fixed)

System Parameters:

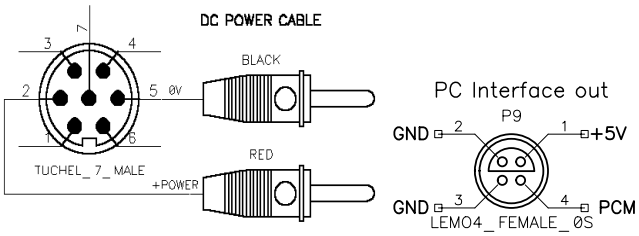
Channels:	16
Resolution:	12 bit A/D converter with anti aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	500 m with 10mW transmitting power (433MHz Band, 40kbit, FSK modulation)
Powering:	10-30V DC
Power consumption:	400 mA (at 12V) using 16 STG sensors at 350 Ohms and 40kbit transmitter
Analog signal bandwidth:	*(-3dB cut-off frequency)
Dimensions:	165 x 105 x 65mm (without connectors)
Weight:	0.970 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

CT-DEC16 Receiver unit for max 16 Channels output via 37 pol. Sub D





Plug-side



Optional BNC16 Box. Connect on 37pol Sub-D

CT16- -DEC16 System Parameters:

Channel:	16x +/-5V (+/-10V Option) 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 10 Watt
Current consumption:	300mA at 10V, 100mA at 30V
Transmission:	Digital PCM Miller Format – FSK, diversity receiver
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
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