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CTP4/8/16

4/8/16-channel sensor telemetry system with different sensor inputs. High transmitting rate up to 5Mbit

NEW

- Inputs for STG, TH-K, ICP or VOLT
- Simultaneous sampling
- 16 bit resolution
- Software programmable
- Signal bandwidth up to 24kHz (4-CH)
- Powering 7-30V
- Radio telemetry transmission
- Output analog +/- 10V (Decoder)
- Digital data interface to PC (option)
- Waterproofed ENC housing (IP65)

General functions:

Picture show a 16 CH telemetry system (CTP16-ENC and CTP-DEC16 with accessories)

The CTP4/8/16 is a multi-channel sensor telemetry system for moving or point-to-point applications. The 2-channel plug-in acquisition modules from the encoder are easy to change and include signal condition, anti-aliasing-filter, A/D converter. All channels will simultaneous sampling. All acquisition modules are manage at CTP-Controller and encoded PCM output to the radio transmitter. Finally, PCM data is transmitted via radio frequencies to the receiver.

Various configurations of different sensor modules are available incl. signal conditioning for strain gages (STG), thermocouples type K (TH-K), ICP sensors, potentiometer sensors (POT) and voltage inputs. Mixed configuration available (2-CH-steps). All sensor modules are software programmable via LAN-Adapter. The LAN-Adapter has an integrated web interface and enables easy access!

The stationary receiver (Decoder) provides 4, 8 or 16 +/-10V analog outputs via Sub-D male socket (option: digital PC interface). The analog signal bandwidth can reach up to 24kHz with 5Mbit transmitter in 4-channel mode. The measurement accuracy is <±0.2 % (without sensor). The CTP4/8/16 is specified for operational temperatures from -20° C to +70° C. The maximum distance between transmitter and receiving antenna is approx. 150 m – depending on the application and bitrate!

Signal bandwidth, sampling rates and delay time:

Cut off frequency from anti-aliasing filter (-3dB) and sampling rate (red)

Delay Time from Analog In to Analog Out (theoretical, brown)

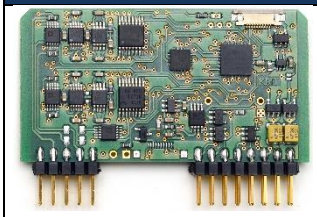
Bit rate	2 Channels	4 Channels	8 Channels	16 Channels
5000 kbit/s	------	24000 Hz max. (62500 Hz) 1,6 ms	12000 Hz (31250 Hz) 2,3 ms	6000 Hz (15625 Hz) 4,5 ms
2500 kbit/s	24000 Hz max. (62500 Hz) 1,6 ms	12000 Hz (31250 Hz) 2,3 ms	6000 Hz (15625 Hz) 4,5 ms	3000 Hz (7812.5 Hz) 8,9 ms
1250 kbit/s	12000 Hz (31250 Hz) 2,3 ms	6000 Hz (15625Hz) 4,7 ms	3000 Hz (7812.5 Hz) 9,1 ms	1500 Hz (3906.25 Hz) 17,9 ms
625 kbit/s	6000 Hz (15625Hz) 4,7 ms	3000 Hz (7812.5 Hz) 9,4 ms	1500 Hz (3906.25 Hz) 18,3 ms	750 Hz (1953.125 Hz) 35,7 ms
312,5 kbit/s	3000 Hz (7812.5 Hz) 9,4 ms	1500 Hz (3906.25 Hz) 19,1 ms	750 Hz (1953.125 Hz) 36,3 ms	375 Hz (976.56 Hz) 71,5 ms

CTP4/8/16 Encoder for 4-8 or 16 channels

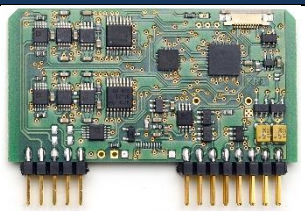
4,8 and 16-CH encoder in IP65 Aluminum housing

Encoder inside (e.g. 4-CH)

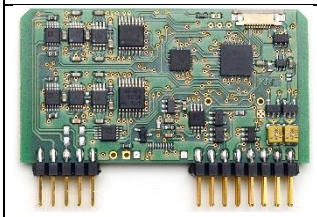
CTP acquisition modules



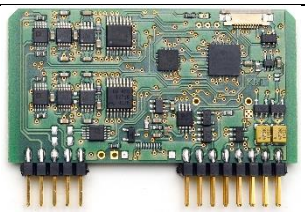
CTP-STG-V3
Acquisition module for 2 strain gages
Full, half and quarter bridge (≥350Ω)
Fixed excitation 4V DC
Offset calibration by auto zero
Manual offset shifting after auto zero
Gain: 125-250-500-1000-2000
Test shunt-cal step
Signal bandwidth 0Hz to 3000Hz*
Resolution 16bit
Accuracy <0.2%
Current consumption with full bridge 350 ohm 75mA



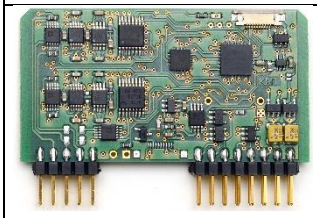
CTP-VOLT-V3
Acquisition module for 2x high level inputs
Range: ±0,625V, ± 1,25V, ±2,5V, ± 5V, ±10V
Signal bandwidth 0Hz to 3000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption 60mA



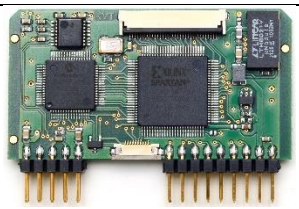
CTP-ICP®-V3
Acquisition module for 2 ICP sensors
Current EXC. 4mA
Gain: 1-2-4-8-16-32
Signal bandwidth 3 Hz to 3000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption 100mA



CTP-TH-K-V3
Acquisition module for 2x TH-K
Inputs galvanic isolated
Range -50 to 1000°C, -50 to 500°C or -50 to 250°C
Cut-off filter 30Hz (more on request)
Resolution 16bit
Accuracy: 0.2% at 1000°C range
Current consumption 110mA



CTP-Pt100/1000 (RTD) V3
Acq. module for 2 RTD sensors
Range -100 to 600°C, -50 to 300°C or -25 to 150°C
Type Pt100 or Pt1000
Current EXC. 1mA
Connection: 4-, 3- and 2 wire
Sensor break detection
Signal bandwidth 6Hz
Resolution 16bit
Accuracy <0.2%
Current consumption 60mA



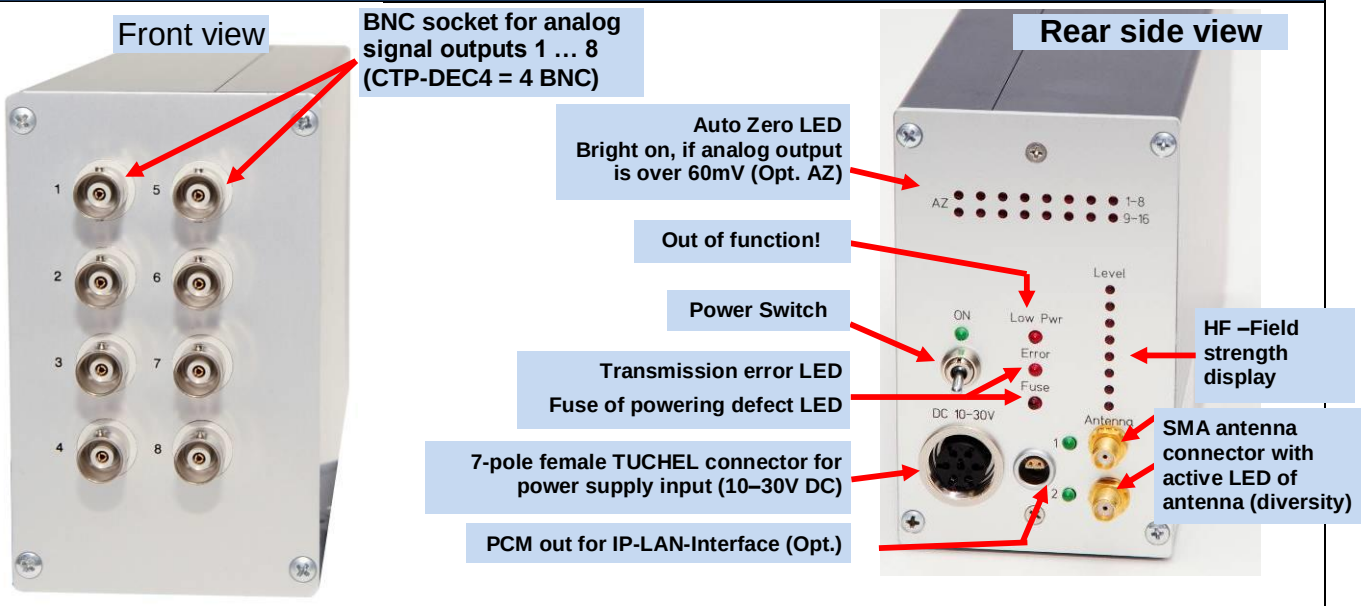
CTP-CONTROL-V3
Controller 1- 32 acquisition modules
Output: PCM
Programmable via LAN adapter
Current consumption 40mA, with LAN-adapter 140mA

System Parameters ENCODER:

Channels:	4,8 or 16
Resolution:	16 bit A/D converter with anti-aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	up to 150m (depends of application and bit rate) More range with special antennas on request!
Powering:	7-30V DC
Analog signal bandwidth:	See table
Transmission:	Digital PCM format
Transmission Power:	10mW!
Dimensions:	CT4= 90x90x52mm, CT8=90x125x52mm, CT16=90x185x52mm (L x W x H)
Weight:	CT4=450g, CT8=580g, CT16=820g
Operating temperature:	- 20 … +80°C
Housing:	Aluminum anodized, waterproofed (IP65)
Humidity:	20 ... 80% no condensing
Vibration:	5g
Static acceleration:	100g in all directions
Shock:	200g in all directions

Technical specifications are subject to change without notice!

CTP-DEC8 (4) Receiver unit for max 8 (4) Channels output via BNC (radio transmission version with diversity receiver 312.5 … 1250kbit)

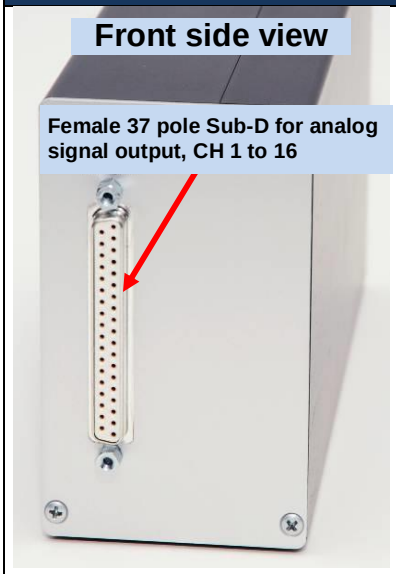


System Parameters:

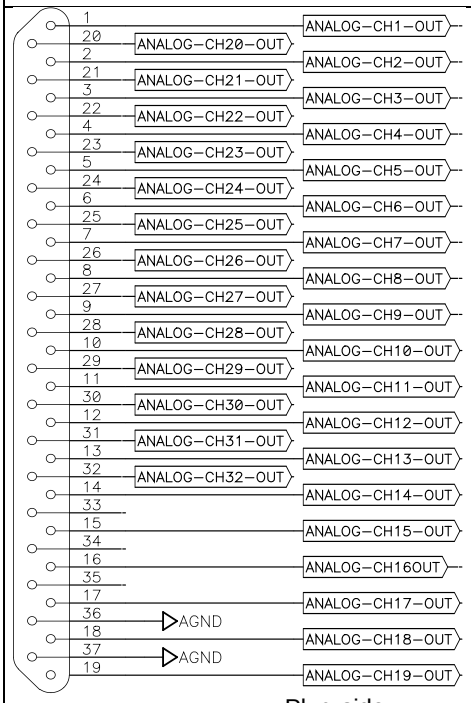
Channels:	8 x +/-10V analog outputs via BNC or 4x BNC at CTP-DEC4
Resolution:	16 bit D/A converter, with smoothing filter
Power supply input:	10-30 VDC, power consumption <24 Watt
Analog signal bandwidth:	see frequency table
Transmission:	Digital PCM Format
Dimensions:	205 x 105 x 65mm
Weight:	1.25 kg without cables and antenna
Overall system accuracy between encoder input and decoder output:	+/-0.2% without sensor influences
Environmental	
Operating:	-20 … +70°C
Humidity:	20 ... 80% not condensing
Vibration:	5g
Static acceleration:	10g in all directions
Shock:	100g in all directions

CTP-DEC16 Receiver unit for max 16 Channels output via 37 pol. Sub D (radio transmission version with diversity receiver 312.5 … 1250kbit)

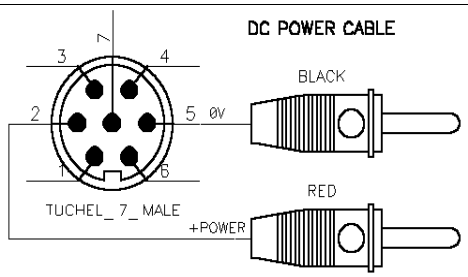
Front side view



Rear side view



Plug-side



Optional BNC16Box. Connect on 37pol Sub-D

CTP –DEC16 System Parameters:

Channels:	16 x +/-10V analog outputs via Sub-D male socket
Resolution:	16 bit D/A converter, with smoothing filter
Power supply input:	10-30 VDC, power consumption <24 Watt
Analog signal bandwidth:	see frequency table
Transmission:	Digital PCM Format
Dimensions:	205 x 105 x 65mm
Weight:	1.25 kg without cables and antenna
Overall system accuracy between encoder input and decoder output:	+/-0.2% without sensor influences
Environmental	
Operating:	-20 … +70°C
Humidity:	20 ... 80% not condensing
Vibration:	5g
Static acceleration:	10g in all directions
Shock:	100g in all directions

Settings CTP--ENC	Programmable via web interface
Web interface address: **IP 192.168.0.110** **Settings:** **STG** Gain 125-250-500-1000-2000 Half- and full bridge Make Auto Zero YES/NO **ICP** Gain 1-2-4-8-16 **VOLT** Range ±0,625V, ± 1,25V, ±2,5V, ± 5V, ±10V **TH-K** Range -50 to 1000°C, -50 to 500°C or -50 to 250°C **Selectable for each channel!**