KMT
T E L E M E T R Y

CTP8-Rotate

8 (4) channel telemetry for rotating applications like wheels or rotors, high signal bandwidth, 16bit, software programmable


NEW

- Inputs for STG, TH-K, ICP or VOLT
- Simultaneous sampling
- 16 bit resolution
- Software programmable
- Signal bandwidth: up to 24kHz (4 CH)

- Battery power up to 10h
- Radio telemetry transmission
- Output analog +/- 10V
- Digital data interface to PC (option)
- Waterproofed ENC housing (IP65)

General functions:

The CTP8-Rotate is a 8-channel telemetry system for rotating applications with integrated signal conditioning for sensor signals, wireless digital transmission and analog reproduction.

In the encoder/transmitter unit the sensor signals are conditioned, filtered (anti-aliasing) and digitized (16-bit). Simultaneous sampling is provided for all channels. Finally the PCM encoded 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 also 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 provides 8x +/-10V analog outputs via BNC socket (option: digital PC interface).
The analog signal bandwidth is 0-750 Hz (320kbit) and up to 0-12000Hz (5000kbit) for 8 channels.
On request is a 4 CH version with 0-24000Hz (5000kbit) also available
The measurement accuracy is <±0.2 % (without sensor). The CTP8-Rotate is specified for operational temperatures from -20° C to +70° C.
The maximum distance between transmitter and receiving antenna is approx. 10-20 m (30-60 feet) – depending on the application! Mixed configuration available (2-CH-steps).
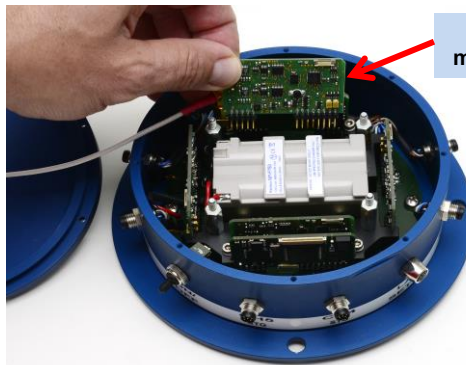
Specify CTP-xx modules at order!!

Frequency table	Cut off frequency from anit-aliasing filter (-3dB) and sampling rate (see red)	
Bit rate	**4 CH (Option)**	**8 CH.**
50000kbit	24000 Hz (62500 Hz)	12000 Hz (31250 Hz)
2500kbit	12000 Hz (31250 Hz)	6000 Hz (15625 Hz)
1250kbit	6000 Hz (15625Hz)	3000 Hz (7812.5 Hz)
625kibt	3000 Hz (7812.5 Hz)	1500 Hz (3906.25 Hz)
312.5kbit	1500 Hz (3906.25 Hz)	750 Hz (1953.125 Hz)

Different applications:

CAR wheel	Truck wheel	Helicopter rotor

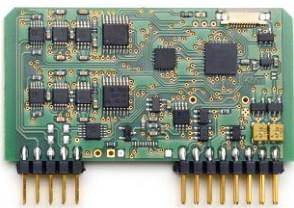## CTP8-Rotate Transmitting Unit Technical Data (Encoder)


Encoder in IP65 Aluminum housing
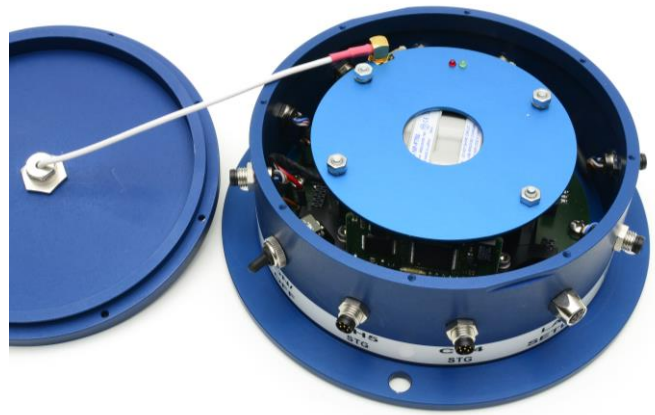

Encoder inside

CTP acquisition modules (rotor side)

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 3 Hz to 12000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption with full
bridge 350 ohm 75mA
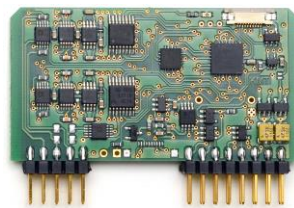
CTP-VOLT-V3
Acquisition module for 2x high level
inputs
Range: ±0,625V, ± 1,25V, ±2,5V, ± 5V,
±10V
Signal bandwidth 3 Hz to 12000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
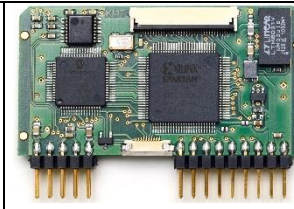Current consumption 60mA
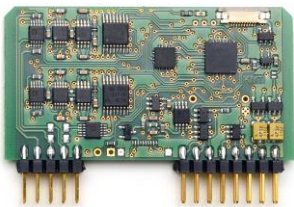
CTP-ICP®-V3‑
Acquisition module for 2 ICP sensors
Current EXC. 4mA
Gain: 1-2-4-8-16-32
Signal bandwidth 3 Hz to 12000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption 100mA
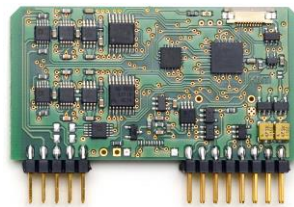
CTP-TH-K-V3
Acquisition module for 2x TH-K
Inputs galvanic isolated
Range -50 to 1000°C, -50 to 500°C
or -50 to 250°C
Cut-off filter 30Hz (more on request)
Resolution 16bit
Accuracy: 0.2% at 1000°C range
Current consumption 110mA
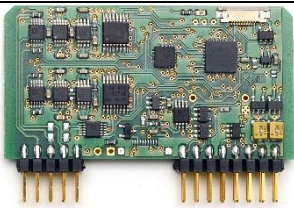
CTP-Pt100/1000 (RTD) V3
Acq. module for 2 RTD sensors
Range -100 to 600°C, -50 to 300°C
or -25 to 150°C
Type Pt100 or Pt1000
Current EXC. 1mA
Connection: 4-, 3- and 2 wire
Sensor break detection
Signal bandwidth 6Hz
Resolution 16bit
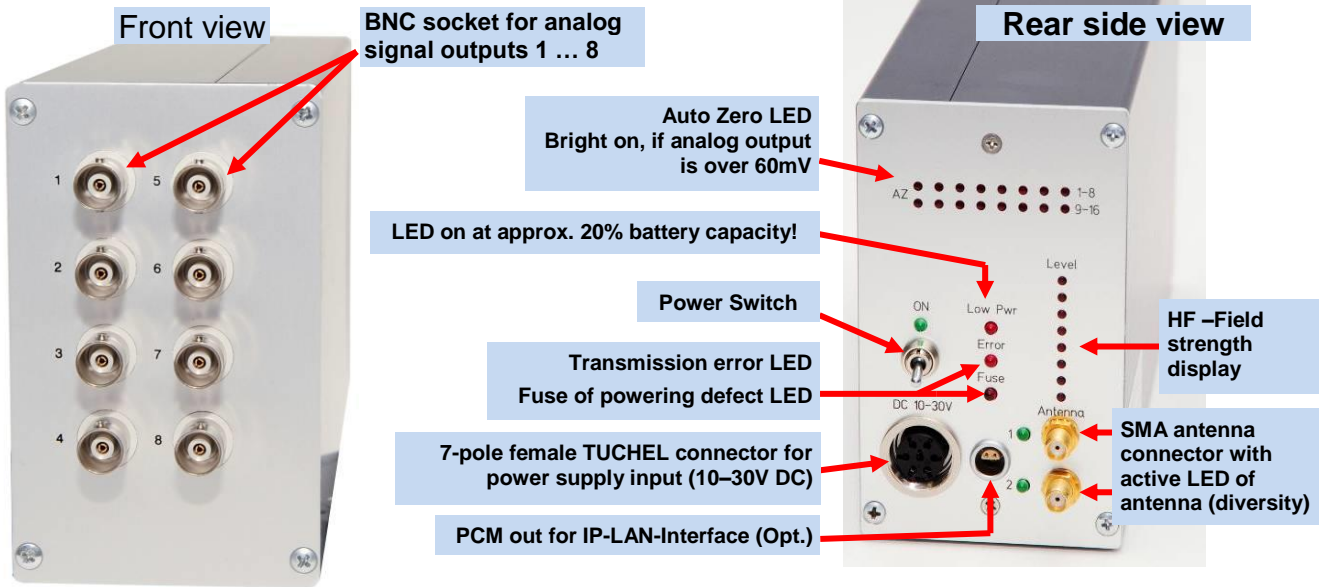Accuracy <0.2%
Current consumption 60mA

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

System Parameters ENCODER:

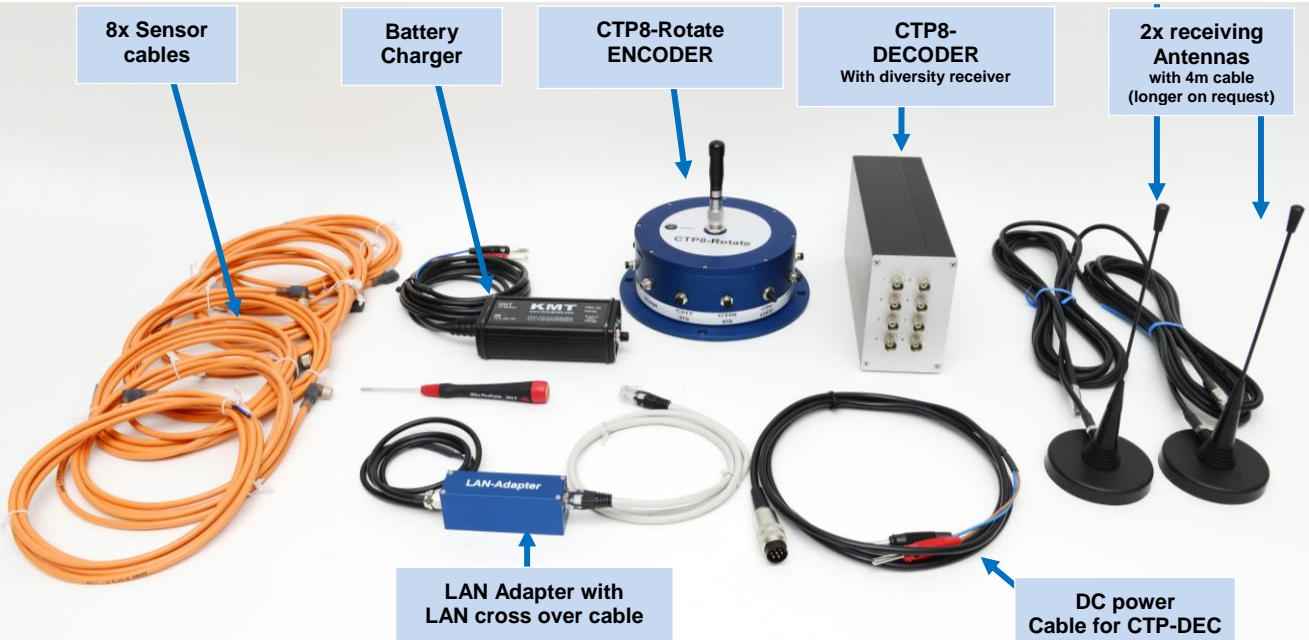|	
Channels:	8 (optional 4 on request)
Resolution:	16 bit A/D converter with anti-aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	up to 20m (depends of application and bit rate)
Powering:	Li Ion Accumulator 7.2V 4600mAh, capacity up to 10 hours
Power consumption:	400 mA using 8x STG full bridge sensors 350 Ohms
Analog signal bandwidth:	See table
Transmission:	Digital PCM Miller format - FSK
Transmission Power:	10mW!
Dimensions:	Diameter 145mm, bottom plate diameter 175mm, height 62mm (without antenna)
Weight:	1.3 kg without sensor 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, 3000 RPM
Shock:	200g in all directions

Technical specifications are subject to change without notice!

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

Front view

BNC socket for analog
signal outputs 1 … 8

Auto Zero LED
Bright on, if analog output
is over 60mV

LED on at approx. 20% battery capacity!

Power Switch

Transmission error LED

Fuse of powering defect LED

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

PCM out for IP-LAN-Interface (Opt.)

Rear side view

HF –Field
strength
display

SMA antenna
connector with
active LED of
antenna (diversity)

CTP –DEC8 System Parameters:

Channel:	8 x +/-10V analog outputs BNC socket
Resolution:	16 bit D/A converter, with smoothing filter
Power supply input:	10-30 VDC, power consumption <24 Watt
Transmission:	Digital PCM Format – FSK,
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
Static acceleration:	10g in all directions
Shock:	100g in all directions

SET of CTP8-Rotate
315.5k…1250kibt telemetry

8x Sensor
cables

Battery
Charger

CTP8-Rotate
ENCODER

CTP8-
DECODER
With diversity receiver

2x receiving
Antennas
with 4m cable
(longer on request)

LAN Adapter with
LAN cross over cable

DC power
Cable for CTP-DEC

Settings CTP-Rotate-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!**	