

User Manual

CTP32-Rotate

32 channel telemetry for rotating applications like wheels or rotors, high signal bandwidth, 16bit, software programmable



INSTRUCTIONS FOR QUALIFIED PERSONNEL ONLY!

- Inputs for STG, POT, TH-K, ICP, VOLT ..
- Simultaneous sampling
- 16 bit resolution
- Software programmable
- Signal bandwidth: 32 x 0-3000Hz
- Battery power up to 5h
- Radio telemetry transmission
- Output analog +/- 10V
- Digital data interface to PC (option)
- Waterproofed ENC housing (IP65)

General functions:



The CTP32-Rotate is a 32-channel telemetry system for rotating applications with integrated signal conditioning for sensor signals, wireless digital transmission and analog reproduction.

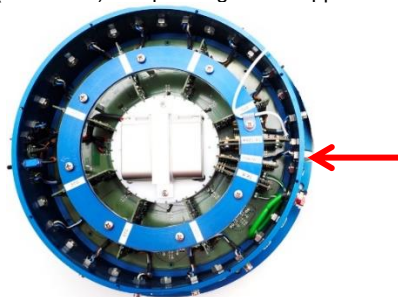
In the encoder/transmitter unit the sensor signals are conditioned, filtered (anti-aliasing) and digitized (16-bit). Simultaneous sampling is provided for all channels. Finally, the PCM encoded data is transmitted via radio frequencies to the receiver.

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!

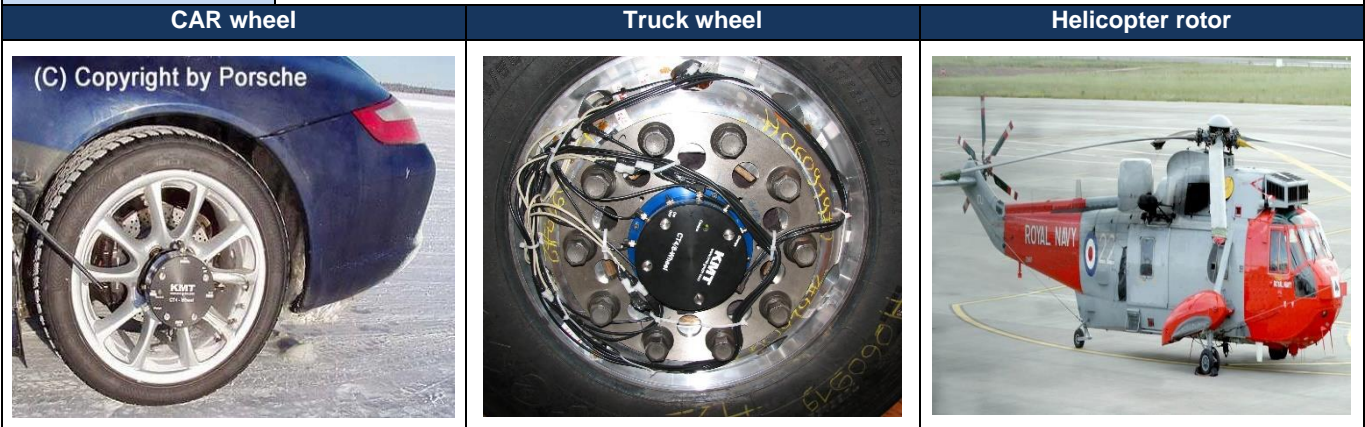
The stationary receiver provides 32 +/-10V analog outputs via Sub-D male socket (option: digital PC interface).

The analog signal bandwidth is 0-190 Hz (320kbit) and up to 0-3000Hz (5000kbit) for 32 channels. The measurement accuracy is $\leq \pm 0.2\%$ (without sensor). The CTP32-Rotate is specified for operational temperatures from -20°C to $+70^{\circ}\text{C}$. 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-acquisition modules at order!!

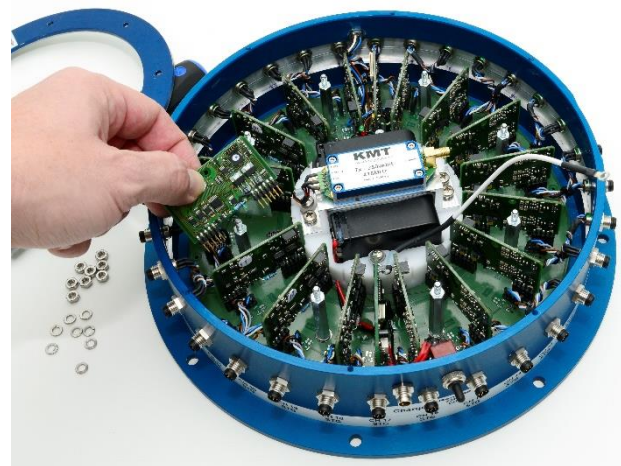
Frequency table	Cut off frequency from anit-aliasing filter (-3dB) and sampling rate (see red)
Bit rate	32 CH.
5000kbit	3000 Hz (7812.50Hz)
2500kbit	1500 Hz (3906.25 Hz)
1250kbit	750 Hz (1953.125 Hz)
625kbit	375 Hz (976.56 Hz)
312.5kbit	190 Hz (488.28 Hz)



CTP32-Rotate Transmitting Unit Technical Data (Encoder)

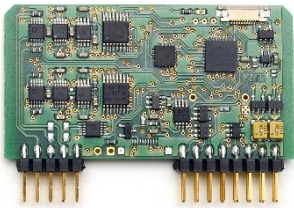


Encoder in IP65 Aluminum housing

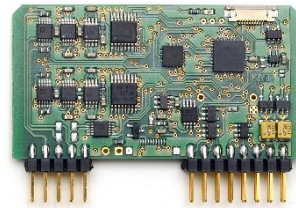


Encoder inside

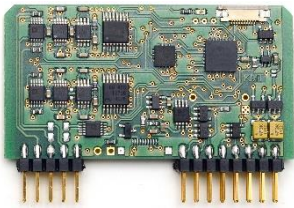
CTP acquisition modules (rotor side)



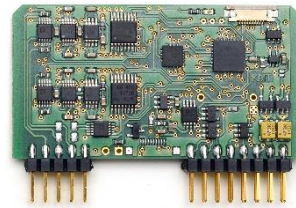
CTP-STG V3
 Acquisition module for 2 strain gages
 Full, half and quarter bridge ($\geq 350\Omega$)
 Fixed excitation 4V DC
 Offset calibration by auto zero
 Gain: 125-250-500-1000-2000
 Signal bandwidth 0 Hz to 3000Hz*
 (*see table of cut-off-frequency)
 Resolution 16bit
 Accuracy <0.2%
 Current consumption with full bridge 350 ohm 75mA



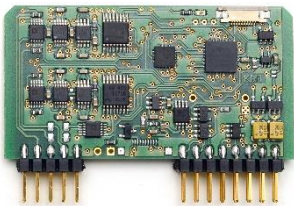
CTP-VOLT V3
 Acquisition module for 2x high level inputs
 Range: $\pm 0,625V, \pm 1,25V, \pm 2,5V, \pm 5V, \pm 10V$
 Signal bandwidth 0 Hz to 3000Hz*
 (*see table of cut-off-frequency)
 Resolution 16bit
 Accuracy <0.2%
 Current consumption 60mA



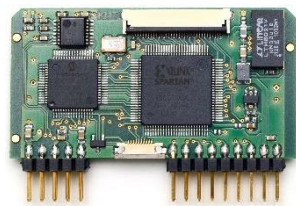
CTP-ICP V3
 Acquisition module for 2 ICP sensors
 Current EXC. 4mA
 Gain: 1-2-4-8-16-32
 Signal bandwidth 3 Hz to 3000Hz*
 (*see table of cut-off-frequency)
 Resolution 16bit
 Accuracy <0.2%
 Current consumption 100mA



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-POT V3
 Acquisition module for 2 poti-sensors with $\geq 350\Omega \dots 10k\Omega$ (typical 1k Ω)
 Fixed excitation 4V DC
 Signal bandwidth 0 Hz to 3000Hz*
 (*see table of cut-off-frequency)
 Resolution 16bit
 Accuracy <0.2%
 Current consumption about 70mA



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:	32
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, 7800mA capacity up to 6 hours
Power consumption:	about 1300mA using 32x STG full bridge sensors 350 Ohms
Analog signal bandwidth:	See table
Transmission:	Digital PCM Miller format - FSK
Transmission Power:	10mW
Dimensions:	Diameter 250mm, bottom plate diameter 280mm, height 80mm (without antenna), 160 with antenna!
Weight:	3.60 kg without sensor cables and antenna
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, 1000 RPM
Shock:	200g in all directions

Technical specifications are subject to change without notice!

CTP-DEC32 Receiver unit for max 32 Channels output via 37 pol. Sub D (radio transmission version via **quad** receiver 1250 and 5000kbit)

Front side view

Female 37 pole Sub-D for analog signal output, CH 1 to 32



Rear side view

CTP - DEC32

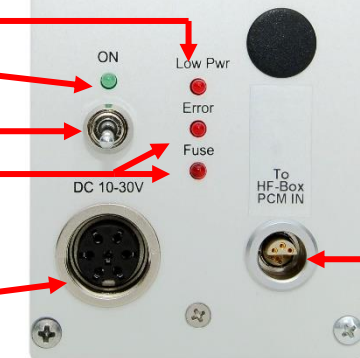
Low Pwr LED ON = BATT empty!

Power ON LED

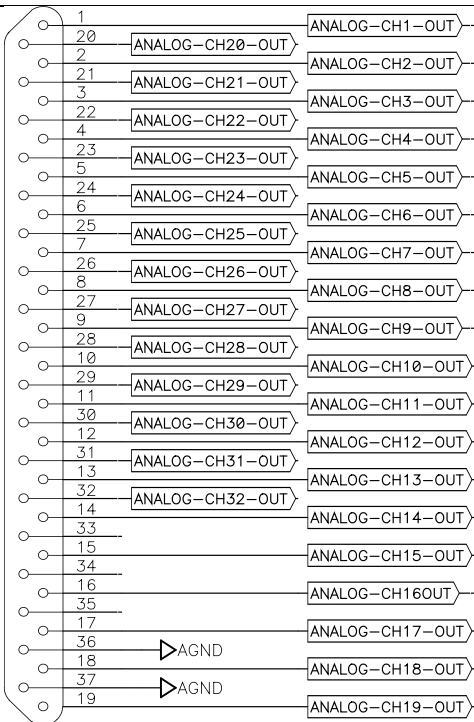
Power Switch

Transmission error LED
Fuse of powering defect LED

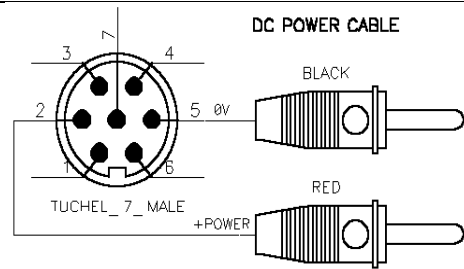
7-pole female TUCHEL connector for power supply input (10-30V DC)



PCM IN coming from HF-BOX



Plug-side

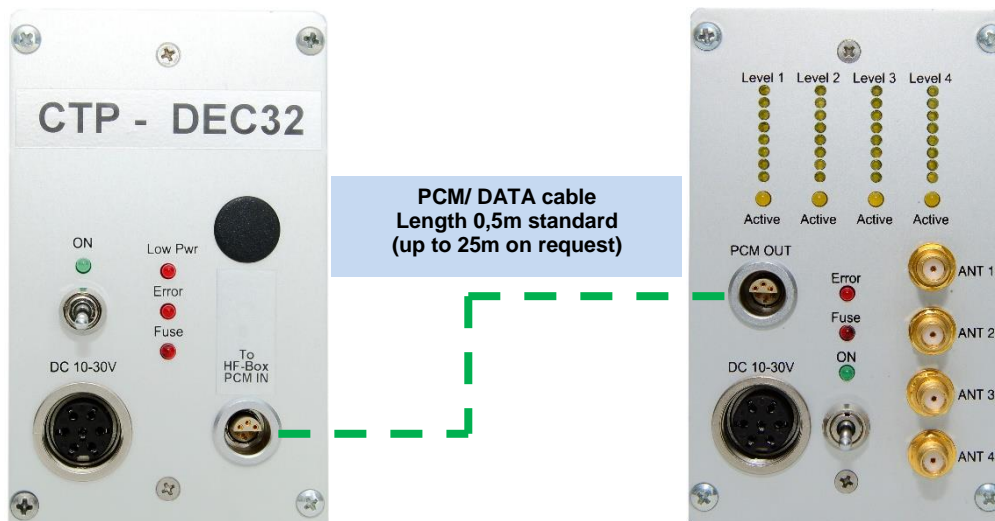
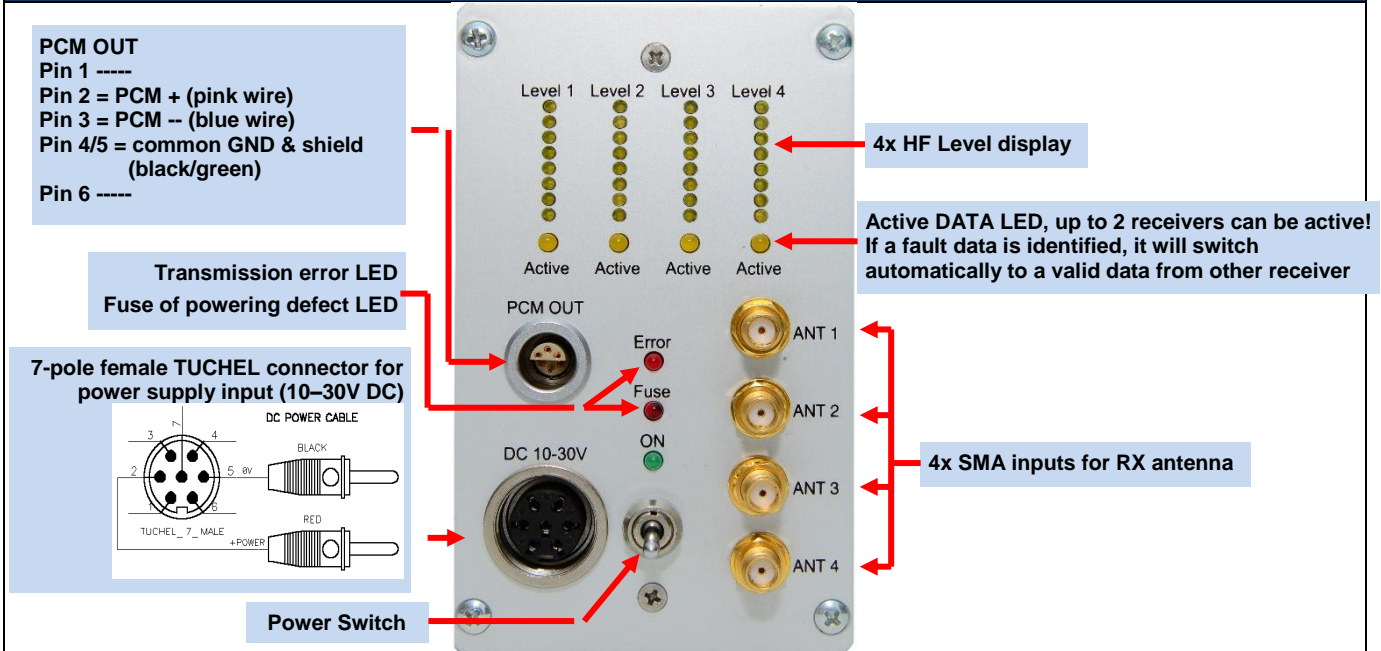


Optional BNC32Box. Connect on 37pol Sub-D

CTP-DEC32 System Parameters:

Channels:	32 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:	1.00kg 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

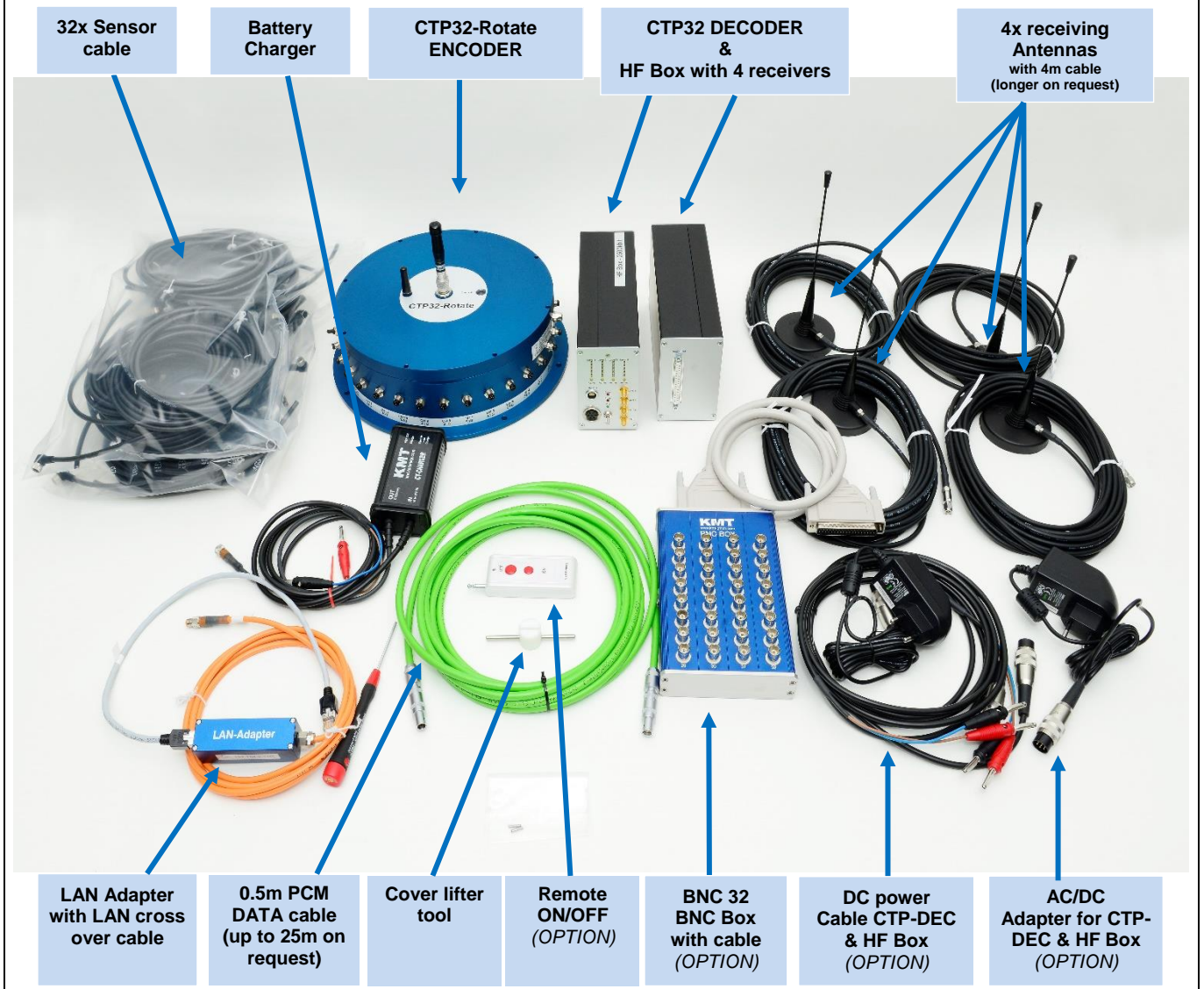
CTP-DEC32 Receiver unit for max 32 Channels output via 37 pol. Sub D (radio transmission version with HF BOX **Quad** with 4 receiver 1250-5000kbit)



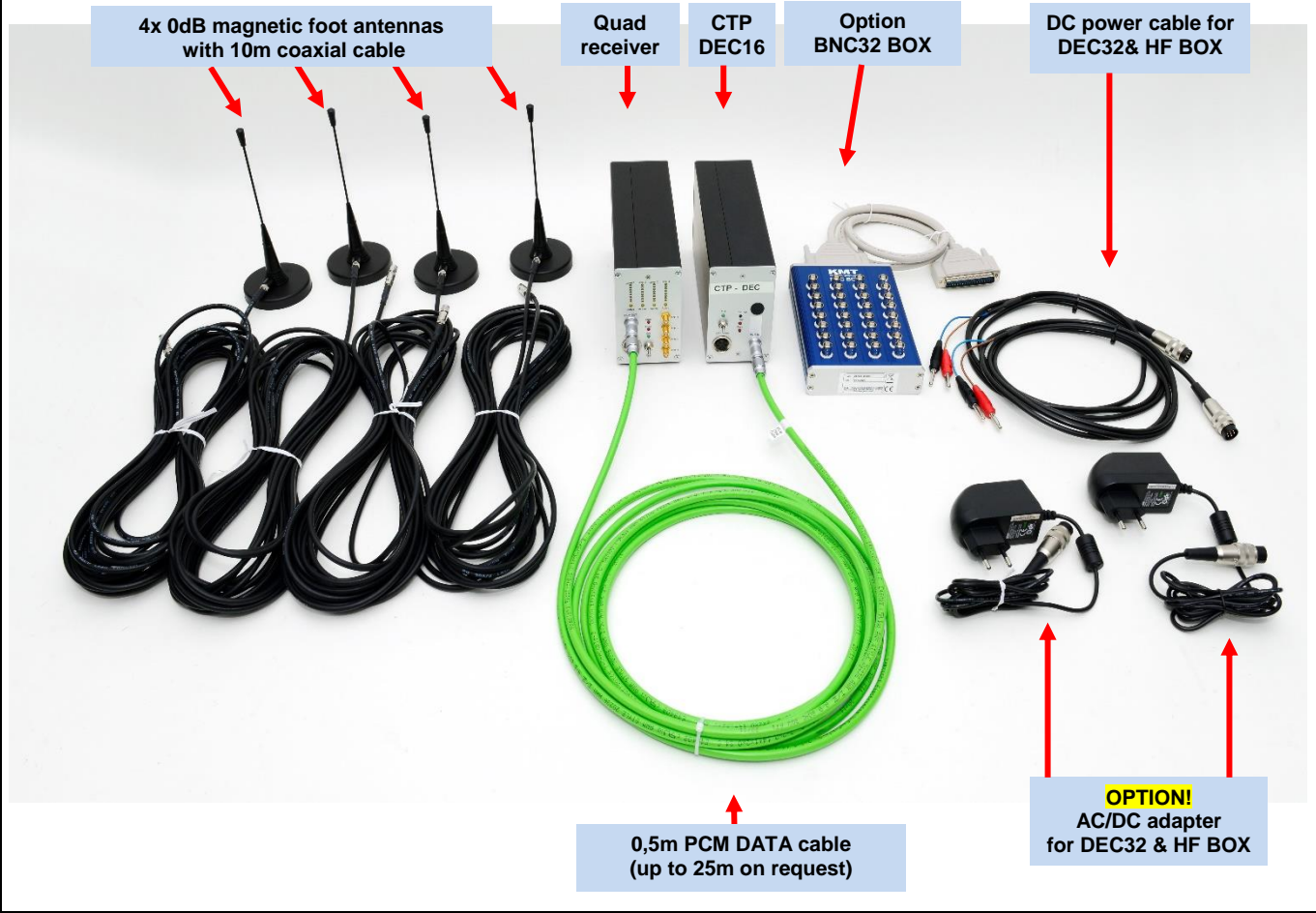
HF BOX **Quad** System Parameters:

HF receivers	4
Antenna connection	SMA
Output	PCM
Power supply input:	10-30 VDC, power consumption <24 Watt
Dimensions:	205 x 105 x 65mm
Weight:	1.050 kg without cables and antenna
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 CTP32-Rotate 1250...5000kbit telemetry with quad receiver



Set of CTP-Decoder with external HF-Box (static part)



CTP-ENCODER (rotating part)

Remote receiving antenna (Option)

-3dB transmitting antenna

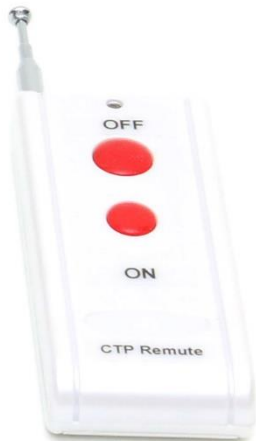


LAN cross-over cable



LAN adapter (LAN to RS232), must connect only for setup or AZ of modules!

Connect e.g. Laptop. Notebook e.g. manual IP 192.168.0.100



Optional Remote for BATT ON/OFF, range about 10m (free view)

Power switch must UP position :
UP = REMOTE (only remote receiver active with about 8-10mA current consumption!)
MIDDLE = OFF (total off without any current consumption)
DOWN = ON

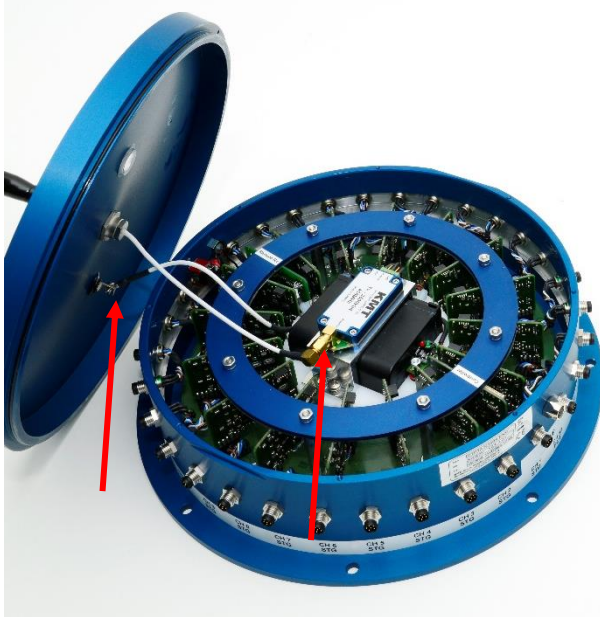
CTP32-Rotate Encoder – How to open device – Normal not necessary, only if you must change modules!



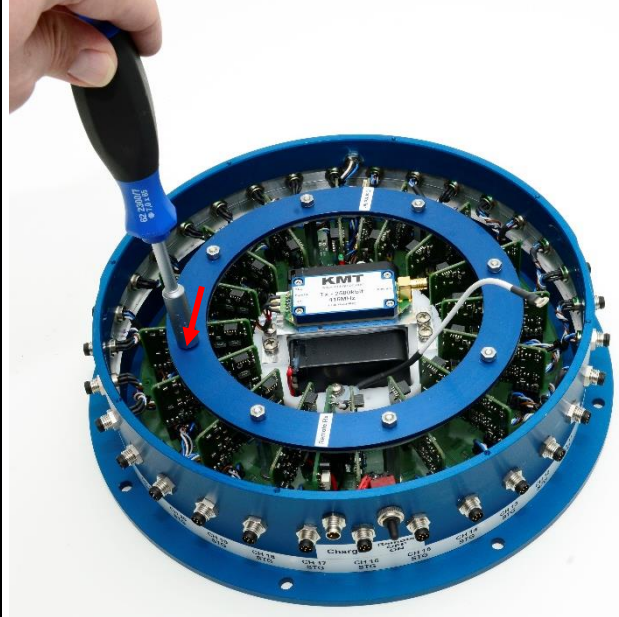
1. Open hexagon screw (2.5mm) with 2mm screw driver



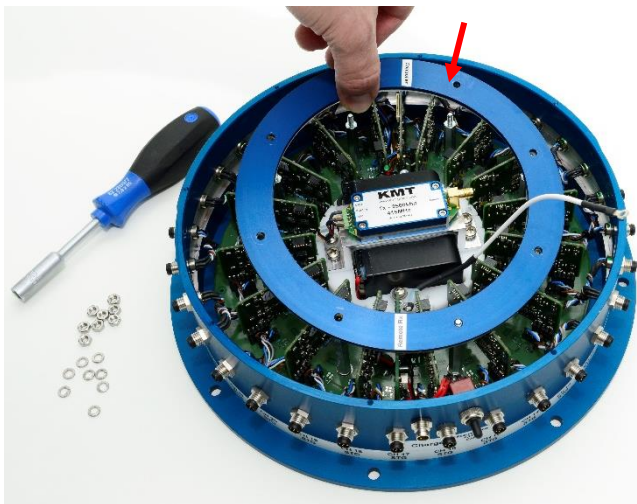
2. Use cover lifter to open the cover carefully



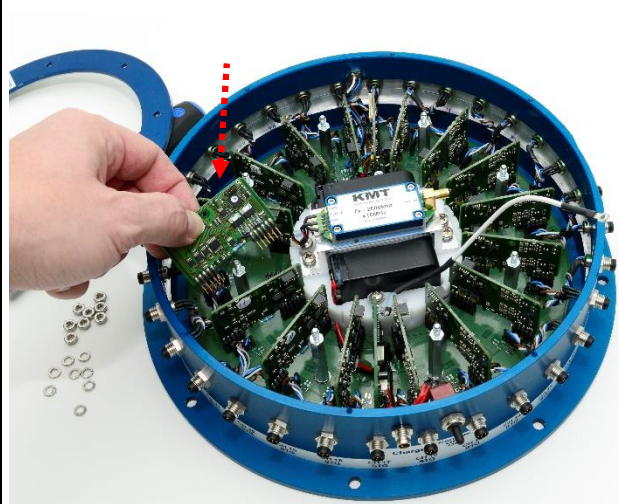
3. Disconnect remote and transmitting antenna carefully!



4. Open 8 nuts from modules holder ring (nut with spring washer!)



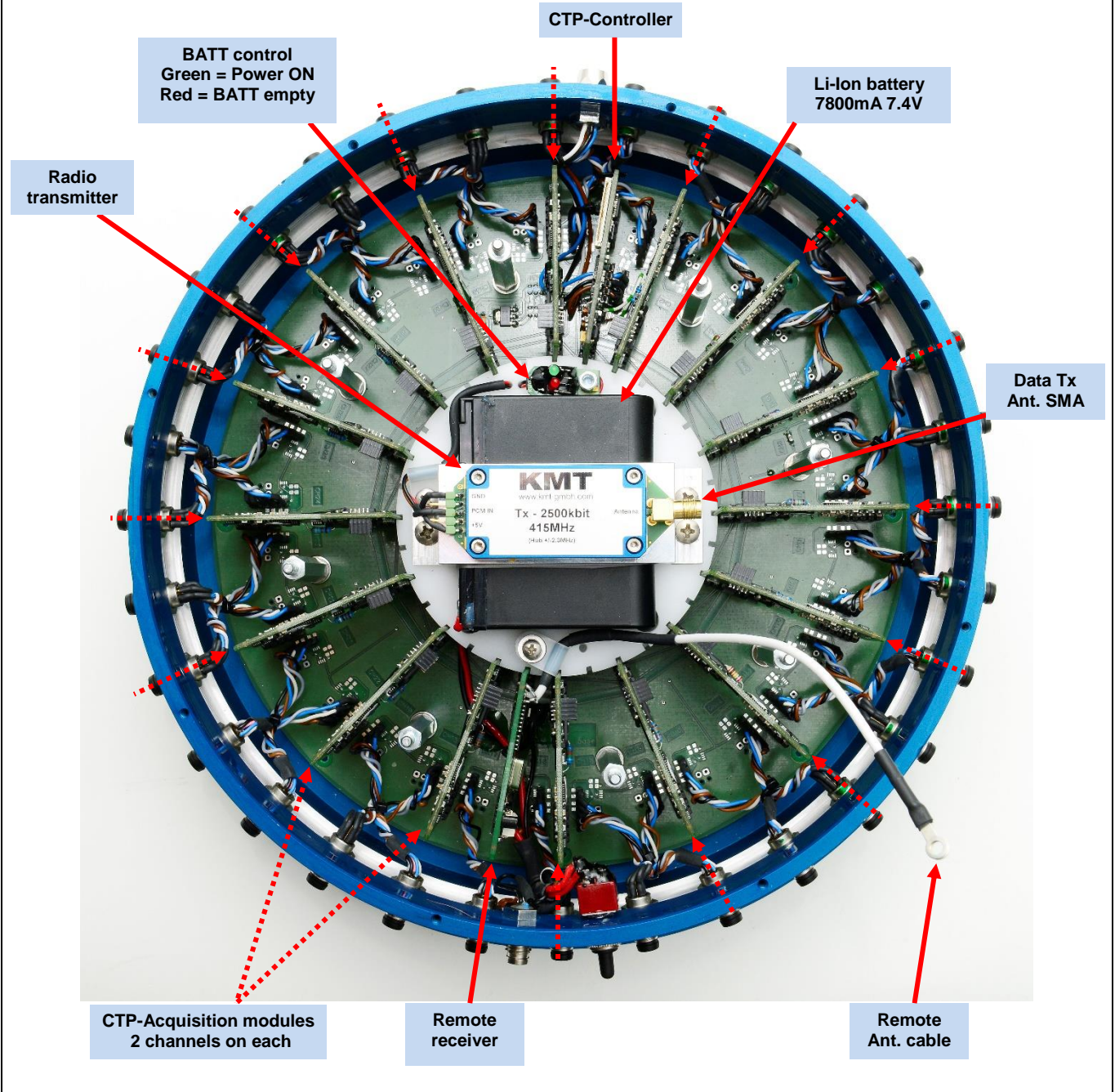
5. Remove holder ring



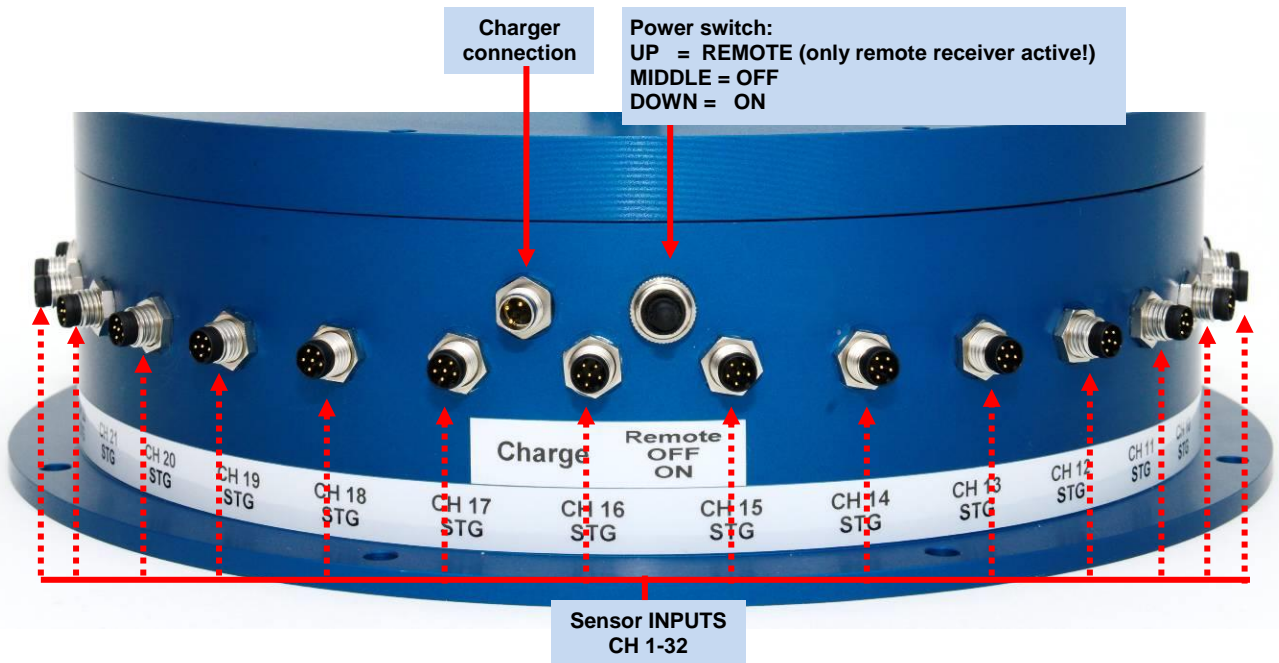
6. Now you can change CTP-Acquisition modules

Take care with connectors of modules. Be sure that all pins are in right in the connection!

CTP32-Rotate Encoder – Modules

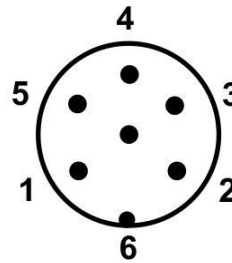
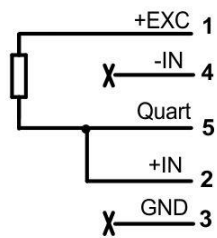
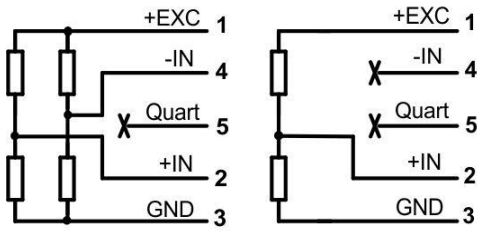


CTP32-Rotate Encoder – Pin connection



CTP32-Rotate Encoder – Pin connection

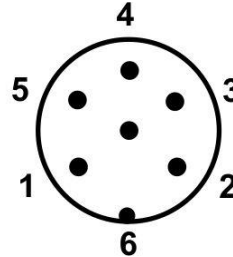
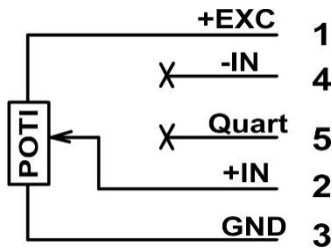
Strain gage connection



Cable colors:

- 1= brown / +EXC
- 2= white / +IN
- 3= blue / -EXC
- 4= black / -IN
- 5= grey / Quart
- 6= pink / ----

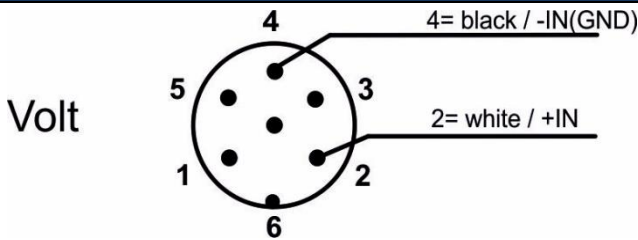
Potentiometer



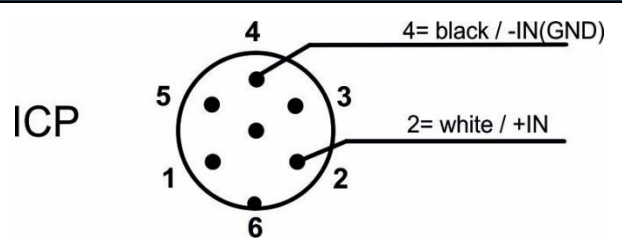
Cable colors:

- 1= brown / +EXC
- 2= white / +IN
- 3= blue / -EXC
- 4= black / -IN
- 5= grey / Quart
- 6= pink / ----

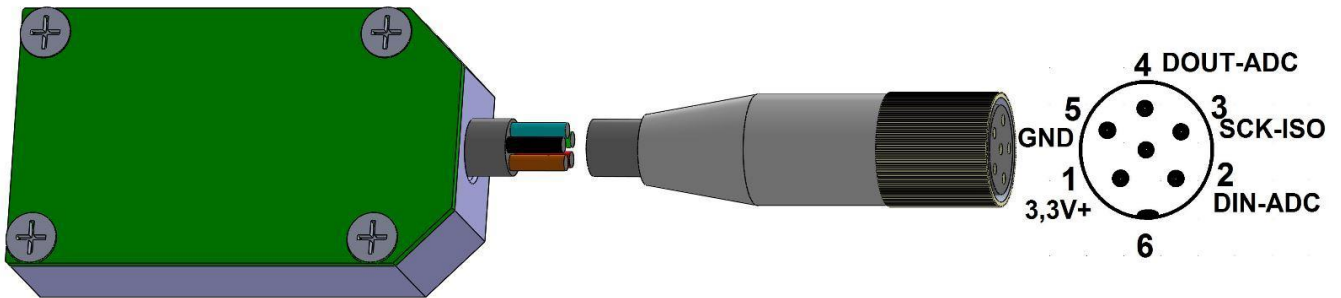
VOLT connection



ICP connection

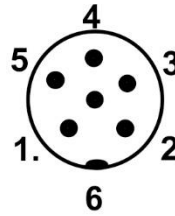
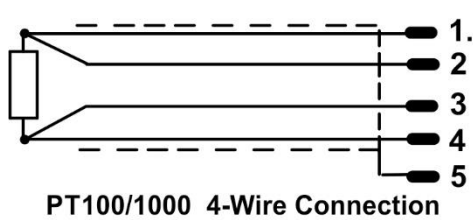


Th-K connection

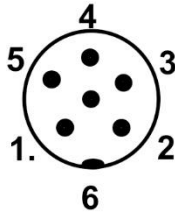
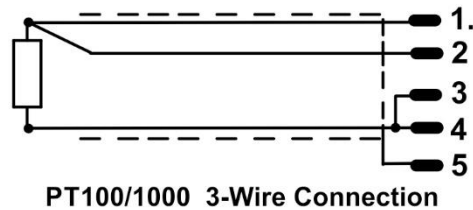


CTP32-Rotate Encoder – Pin connection

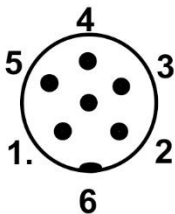
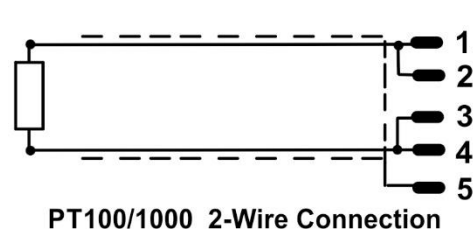
Pt100/1000



1= brown / +EXC
 2= white / +IN
 3= blue / -EXC
 4= black / -IN
 5= grey / Shield
 6= pink / NU

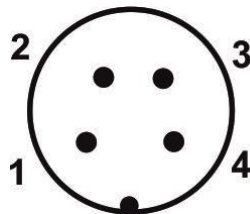


1= brown / +EXC
 2= white / +IN
 3= blue / -EXC
 4= black / -IN
 5= grey / Shield
 6= pink / NU



1= brown / +EXC
 2= white / +IN
 3= blue / -EXC
 4= black / -IN
 5= grey / Shield
 6= pink / NU

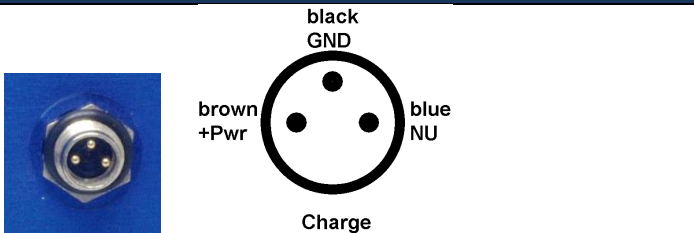
Setup LAN connection



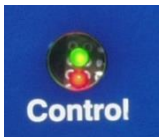
Cable colors:

1= brown / +6,5V
 2= black / RX
 3= white / TX
 4= blue / ----

Li Ion re-chargeable battery with charger unit for CTP32-Rotate



Charge plug at CTP16-Rotate ENC



Attention:

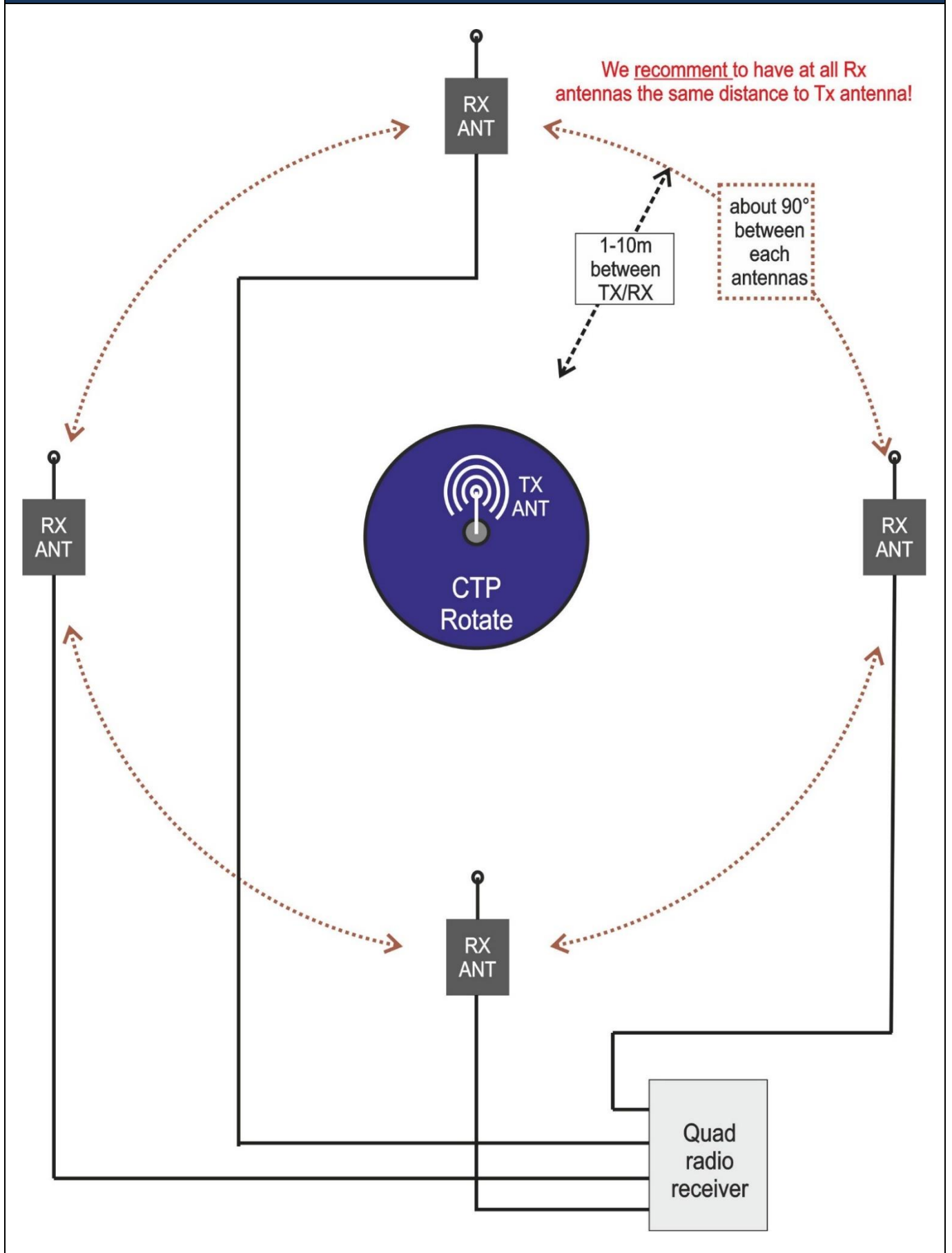
Li Ion Accumulator 7.2V 7600mAh has a capacity for about 5-6h.
 If the green LED indicator is ON, system is power ON
 If the red LED indicator is ON, battery is about 90% discharged and the device will switch off after 20-30 minutes!



CT-CHARGER XL for CTP-Rotate

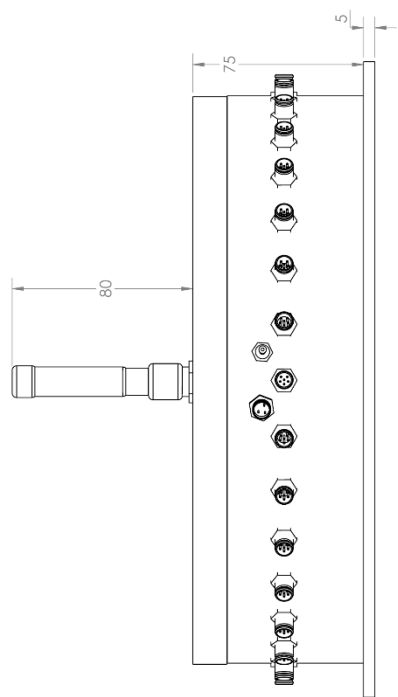
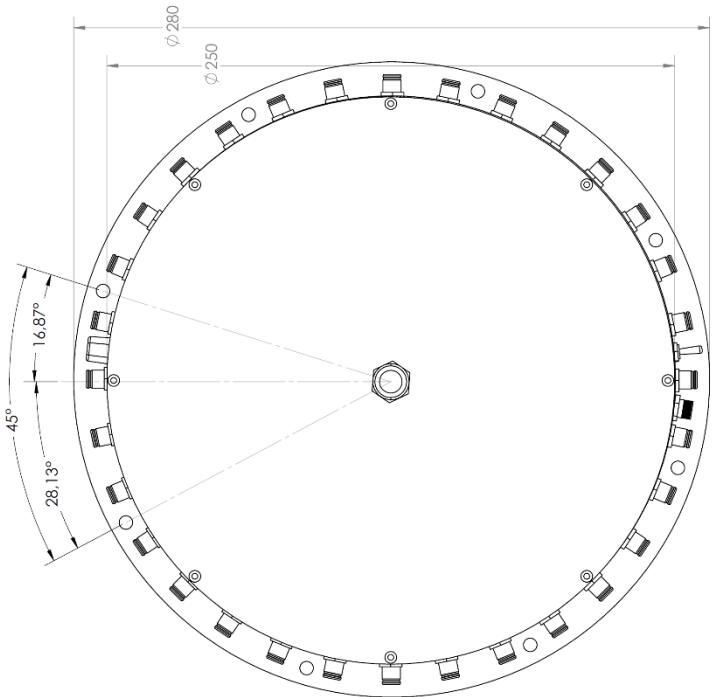
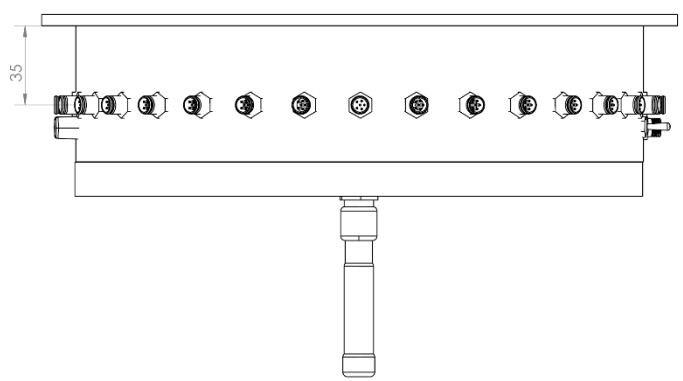
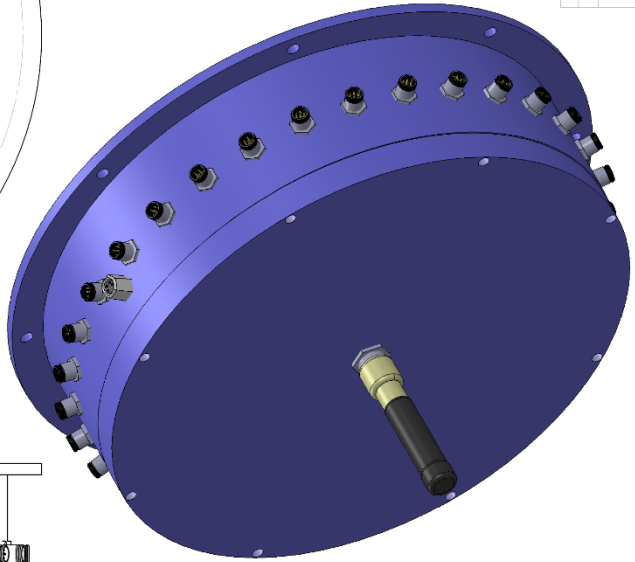
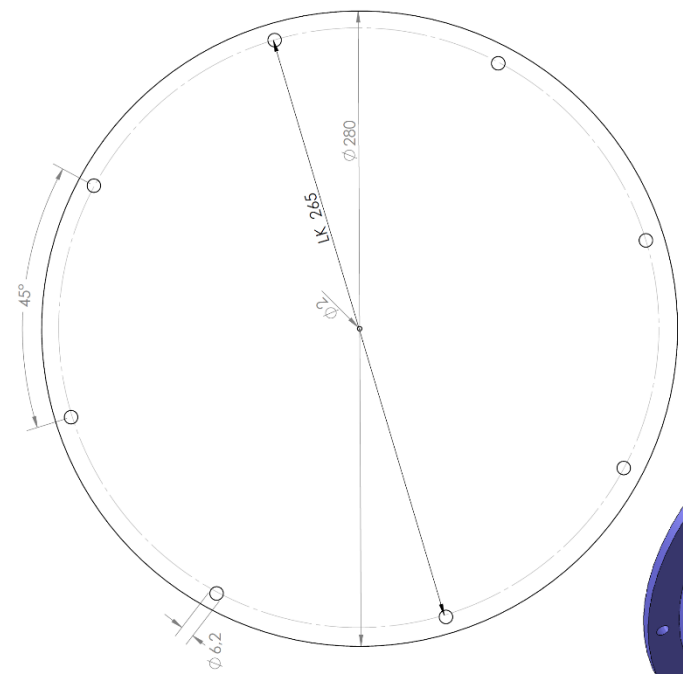
1. Plug the 3-pole socket (charger) in to the CTP-Rotate encoder.
2. Plug banana plugs on to a battery or AC/DC power supply with a voltage range of 10-30V, 30 WATT
3. Press and hold the switch for 1 second to begin charging. The battery will now charge. Charge time 8 hours!

Recommend position of receiving antennas

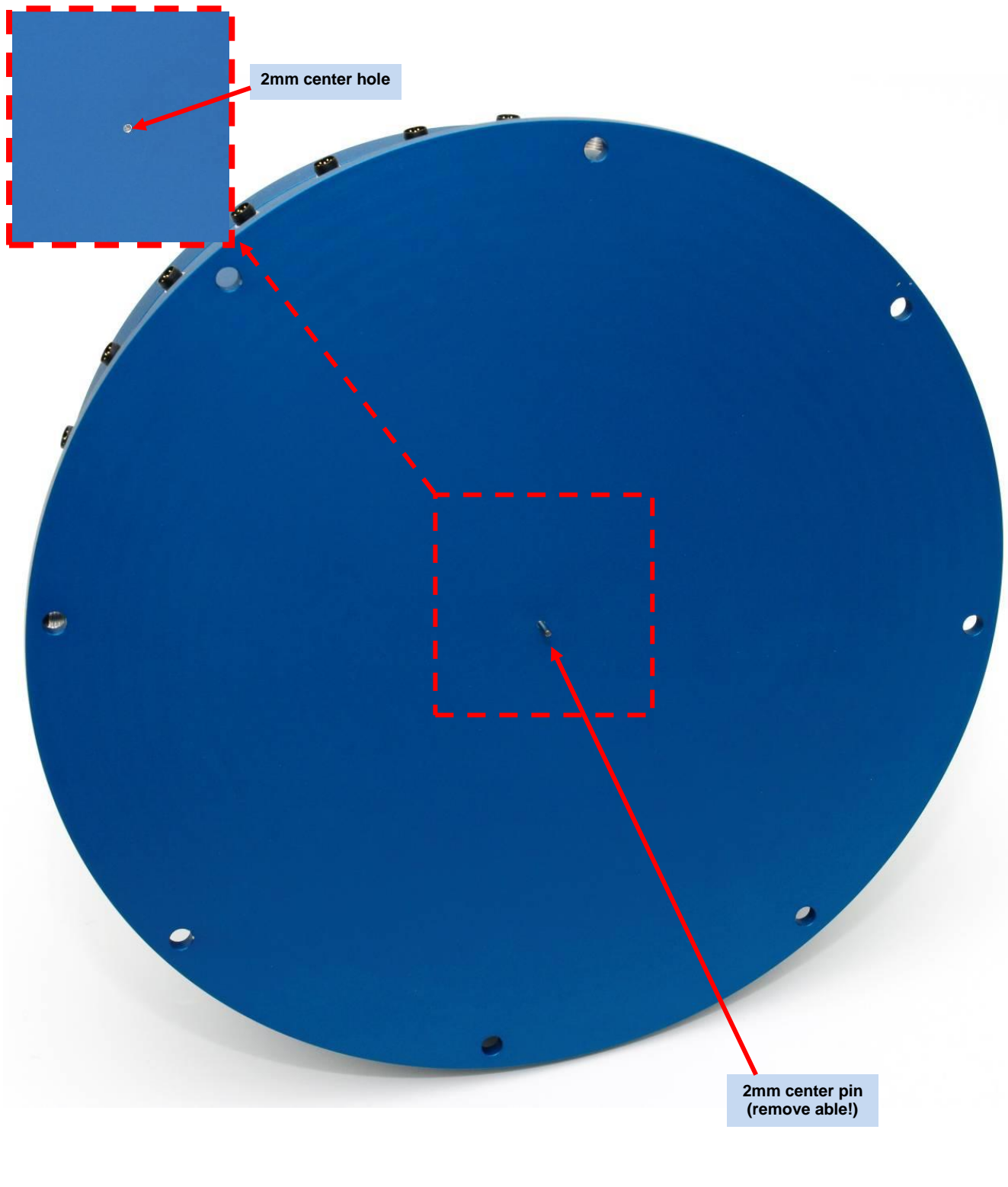


Dimensions CTP32-Rotate-ENC

Date	Version	Mat.	Remarks:
10.02.2014			Scale
			2:3
			Part: CTP32-ROT
			Email: info@am-gmbh.com
			Tel: 0802-48757 Fax: 0802-9322



CTP32-Rotate-ENC – bottom side with 2mm center pin



Settings CTP-Rotate-ENC

Web interface address LAN adapter:
e.g. IP 192.168.0.110 or 111, 112
(see current IP no. on LAN-Adapter!!)

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 $\pm 0,625V$, $\pm 1,25V$, $\pm 2,5V$,
 $\pm 5V$, $\pm 10V$

TH-K

Range -50 to 1000°C, -50 to 500°C
or -50 to 250°C

PT100/1000

Type:	PT100	4 Wire
	PT100	3 Wire
	PT100	2 Wire
	PT1000	4 Wire
	PT1000	3 Wire
	PT1000	2 Wire

Range: -25..150 °C
-50..300 °C
-100..600 °C

Selectable for each channel!

Programmable via web interface

Web interface address LAN adapter:
e.g. IP 192.168.0.110 or 111, 112
(see current IP no. on LAN-Adapter!!)

KMT MT-PRO Analog Channel Setup

Channel	Type	Gain	Make Autozero
Channel 1	Strain Gauge	1000	<input type="checkbox"/>
Channel 2	Strain Gauge	1000	<input type="checkbox"/>
Channel 3	Strain Gauge	1000	<input type="checkbox"/>
Channel 4	Strain Gauge	1000	<input type="checkbox"/>
Channel 5	Strain Gauge	1000	<input type="checkbox"/>
Channel 6	Strain Gauge	1000	<input type="checkbox"/>
Channel 7	Strain Gauge	1000	<input type="checkbox"/>
Channel 8	Strain Gauge	1000	<input type="checkbox"/>
Channel 9	Strain Gauge	1000	<input type="checkbox"/>
Channel 10	Strain Gauge	1000	<input type="checkbox"/>
Channel 11	Strain Gauge	1000	<input type="checkbox"/>
Channel 12	Strain Gauge	1000	<input type="checkbox"/>
Channel 13	Strain Gauge	1000	<input type="checkbox"/>
Channel 14	Strain Gauge	1000	<input type="checkbox"/>
Channel 15	Strain Gauge	1000	<input type="checkbox"/>
Channel 16	Strain Gauge	1000	<input type="checkbox"/>
Channel 17	Strain Gauge	1000	<input type="checkbox"/>
Channel 18	Strain Gauge	1000	<input type="checkbox"/>
Channel 19	Strain Gauge	1000	<input type="checkbox"/>
Channel 20	Strain Gauge	1000	<input type="checkbox"/>
Channel 21	Strain Gauge	1000	<input type="checkbox"/>
Channel 22	Strain Gauge	1000	<input type="checkbox"/>
Channel 23	Strain Gauge	1000	<input type="checkbox"/>
Channel 24	Strain Gauge	1000	<input type="checkbox"/>
Channel 25	Strain Gauge	1000	<input type="checkbox"/>
Channel 26	Strain Gauge	1000	<input type="checkbox"/>
Channel 27	Strain Gauge	1000	<input type="checkbox"/>
Channel 28	Strain Gauge	1000	<input type="checkbox"/>
Channel 29	ICP	1	<input type="checkbox"/>
Channel 30	ICP	1	<input type="checkbox"/>
Channel 31	ICP	1	<input type="checkbox"/>
Channel 32	ICP	1	<input type="checkbox"/>

Upload Parameters to MT-PRO and perform Autozero

Download Parameters from MT-PRO

*** Download success ***

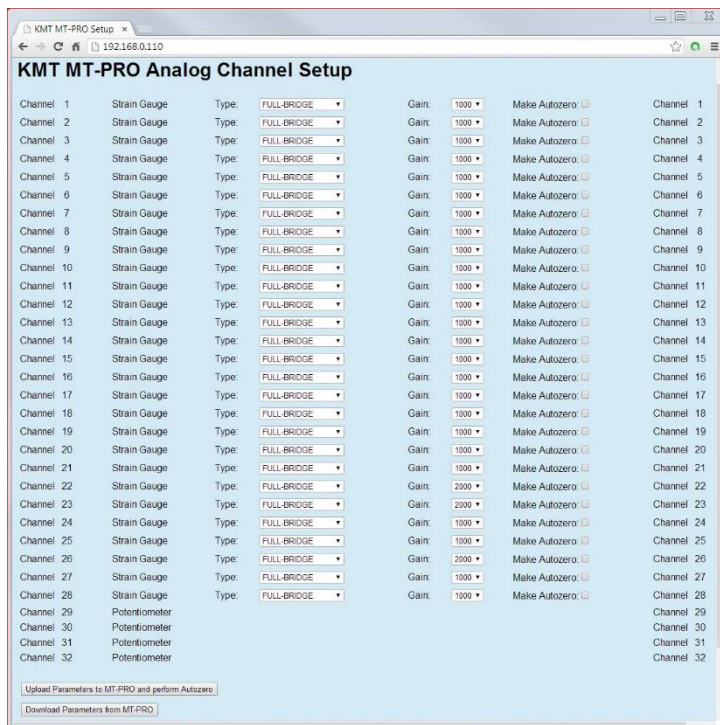
KMT Kraus Messtechnik GmbH
Gewerbering 9
D-83624 OTTERFING
Germany
www.kmt-gmbh.com
info@kmt-gmbh.com

CTP ENCODER

Software setup via LAN-Adapter and notebook



- 1) Power ON the CTP32-Rotate ENCODER
- 2) Connect the LAN-Adapter on the SETUP connector of CTP32-Rotate ENCODER
- 3) Adjust your notebook to manual on e.g. IP 192.168.0.100 (see current IP no. of LAN-Adapter!!)
- 4) Connect LAN-Adapter with your notebook via **cross-over** LAN cable
- 5) Open e.g. Microsoft Internet Browser and enter IP address **192.168.0.110** of LAN-Adapter
- 6) Now you get access on the web-interface and can adjust the CTP acquisition module



MTP-CONTROL V1 - Software setup

DOWNLOAD parameters for device

Channel	Type	Type	Gain	Make Autozero
Channel 1	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 2	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 3	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 4	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 5	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 6	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 7	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 8	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 9	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 10	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 11	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 12	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 13	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 14	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 15	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 16	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 17	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 18	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 19	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 20	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 21	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 22	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>
Channel 23	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>
Channel 24	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 25	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 26	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>
Channel 27	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 28	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>
Channel 29	Potentiometer			
Channel 30	Potentiometer			
Channel 31	Potentiometer			
Channel 32	Potentiometer			

Upload Parameters to MT-PRO and perform Autozero

Download Parameters from MT-PRO

*** Download success ***

First you can download the stored parameters from the acquisition modules via LAN adapter from the controller module . All connected acquisition modules will detect!

Caution:

Never use the refresh button  on your browser; otherwise the parameters of you browser cash will upload to the MTP-STG!®

BRIDGE setting STG

Channel	Strain Gauge	Type:	Gain:	Make Autozero:	Channel
Channel 1	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 1
Channel 2	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 2
Channel 3	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 3
Channel 4	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 4
Channel 5	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 5
Channel 6	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 6
Channel 7	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 7
Channel 8	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 8
Channel 9	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 9
Channel 10	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 10
Channel 11	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 11
Channel 12	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 12
Channel 13	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 13
Channel 14	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 14
Channel 15	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 15
Channel 16	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 16
Channel 17	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 17
Channel 18	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 18
Channel 19	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 19
Channel 20	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 20
Channel 21	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 21
Channel 22	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>	Channel 22
Channel 23	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>	Channel 23
Channel 24	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 24
Channel 25	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 25
Channel 26	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>	Channel 26
Channel 27	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 27
Channel 28	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 28
Channel 29	Potentiometer				Channel 29
Channel 30	Potentiometer				Channel 30
Channel 31	Potentiometer				Channel 31
Channel 32	Potentiometer				Channel 32

Upload Parameters to MT-PRO and perform Autozero

*** Parameters saved ***

Download Parameters from MT-PRO

Select full-, half- or quarter-bridge by popup window

Execute through "Upload Parameters to MT-PRO and perform Autozero" button

GAIN setting STG

KMT MT-PRO Setup x
192.168.0.110

KMT MT-PRO Analog Channel Setup

Channel	Type	Type	Gain	Make Autozero	Channel
Channel 1	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 1
Channel 2	Strain Gauge	HALF-BRIDGE	1000	<input type="checkbox"/>	Channel 2
Channel 3	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>	Channel 3
Channel 4	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 4
Channel 5	Strain Gauge	FULL-BRIDGE	500	<input type="checkbox"/>	Channel 5
Channel 6	Strain Gauge	FULL-BRIDGE	250	<input type="checkbox"/>	Channel 6
Channel 7	Strain Gauge	FULL-BRIDGE	125	<input type="checkbox"/>	Channel 7
Channel 8	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 8
Channel 9	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 9
Channel 10	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 10
Channel 11	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 11
Channel 12	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 12
Channel 13	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 13
Channel 14	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 14
Channel 15	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 15
Channel 16	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 16
Channel 17	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 17
Channel 18	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 18
Channel 19	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 19
Channel 20	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 20
Channel 21	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 21
Channel 22	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>	Channel 22
Channel 23	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>	Channel 23
Channel 24	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 24
Channel 25	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 25
Channel 26	Strain Gauge	FULL-BRIDGE	2000	<input type="checkbox"/>	Channel 26
Channel 27	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 27
Channel 28	Strain Gauge	FULL-BRIDGE	1000	<input type="checkbox"/>	Channel 28
Channel 29	Potentiometer				Channel 29
Channel 30	Potentiometer				Channel 30
Channel 31	Potentiometer				Channel 31
Channel 32	Potentiometer				Channel 32

Upload Parameters to MT-PRO and perform Autozero

Download Parameters from MT-PRO

*** Parameters saved ***

Select gain of 125-250-500-1000 or 2000 by popup window

After change the gain you must make a new autozero!!

Execute through "Upload Parameters to MT-PRO and perform Autozero" button

AutoZero setting STG

KMT MT-PRO Setup | 192.168.0.110

KMT MT-PRO Analog Channel Setup

Channel 1	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 1
Channel 2	Strain Gauge	Type: HALF-BRIDGE	Gain: 500	Make Autozero: <input checked="" type="checkbox"/>	Channel 2
Channel 3	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 3
Channel 4	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 4
Channel 5	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 5
Channel 6	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 6
Channel 7	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 7
Channel 8	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 8
Channel 9	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 9
Channel 10	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 10
Channel 11	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 11
Channel 12	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 12
Channel 13	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 13
Channel 14	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 14
Channel 15	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 15
Channel 16	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 16
Channel 17	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 17
Channel 18	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 18
Channel 19	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 19
Channel 20	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 20
Channel 21	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 21
Channel 22	Strain Gauge	Type: FULL-BRIDGE	Gain: 2000	Make Autozero: <input type="checkbox"/>	Channel 22
Channel 23	Strain Gauge	Type: FULL-BRIDGE	Gain: 2000	Make Autozero: <input type="checkbox"/>	Channel 23
Channel 24	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 24
Channel 25	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 25
Channel 26	Strain Gauge	Type: FULL-BRIDGE	Gain: 2000	Make Autozero: <input type="checkbox"/>	Channel 26
Channel 27	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 27
Channel 28	Strain Gauge	Type: FULL-BRIDGE	Gain: 1000	Make Autozero: <input type="checkbox"/>	Channel 28
Channel 29	Potentiometer				Channel 29
Channel 30	Potentiometer				Channel 30
Channel 31	Potentiometer				Channel 31
Channel 32	Potentiometer				Channel 32

*** Parameters saved ***

Select Auto-Zero per channel. The Auto-Zero function will be executed only one time per upload the parameters to CTP-STG! It will be stored also after power off in the CTP-STG until you make a new Auto-Zero on this channel!

Execute through **“Upload Parameters to MT-PRO and perform Autozero”** button