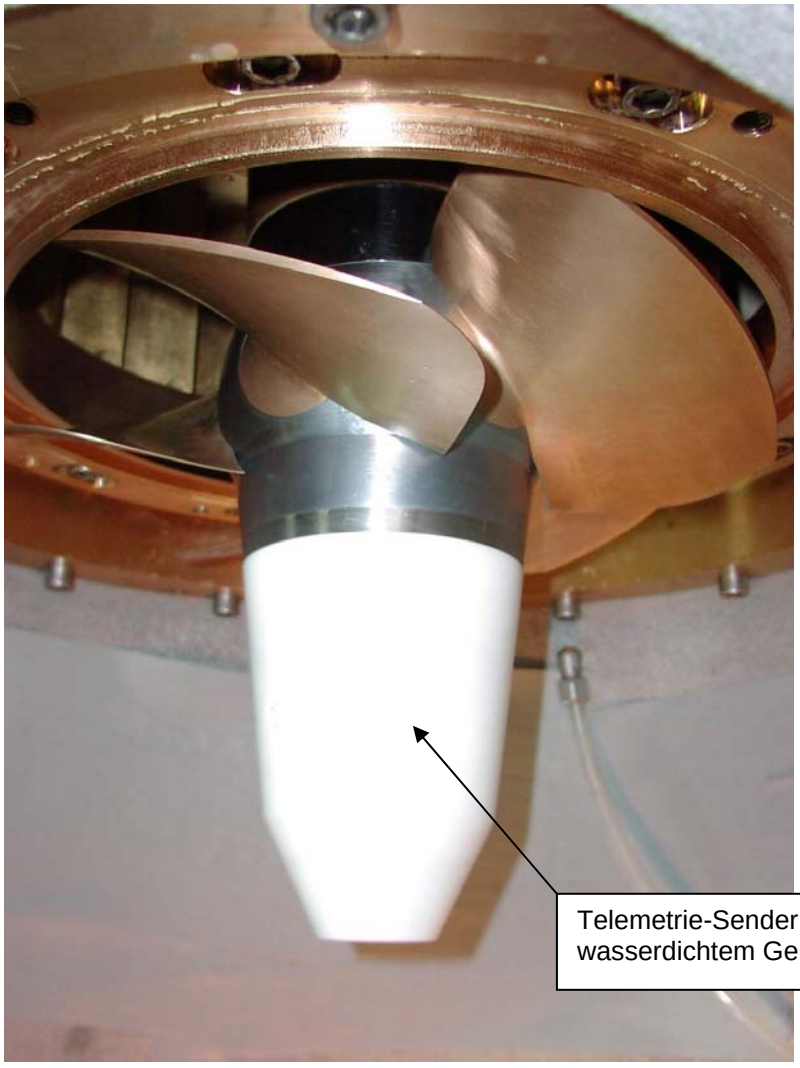
MT32-4CH-Rotate

Telemetrie für Wasserturbine

4-Kanal Telemetrie, zur berührungslosen Signalübertragung von vier DMS-Sensoren auf den Schaufeln einer Wasserturbine

Zur Messung von Kräften an den Schaufeln einer Wasserturbine verwendet Voith-Siemens eine 4-Kanal Telemetrie mit induktiver Signalübertragung. Der Vorteil der induktiven Datenübertragung besteht in der Realisierung sehr **hoher Übertragungsgeschwindigkeiten** und der **störungsfreien Signalübertragung** durch das **umgebende Wasser**. Der digitale Datenfluss beträgt 1,28 Mbit/s, so dass Vibrationen und sonstige schnelle Signaländerungen mit einer analogen Bandbreite von bis zu 6kHz/Kanal zeitgleich erfasst und übertragen werden.
Die wasserdicht auf der Nabe installierte Telemetrie wird von einem Li-Ion Akku versorgt, Betriebszeit ca. 10 Stunden. Der Ausgang des stationären Decoders liefert die verstärkten DMS-Signale im Bereich von +/-5V.



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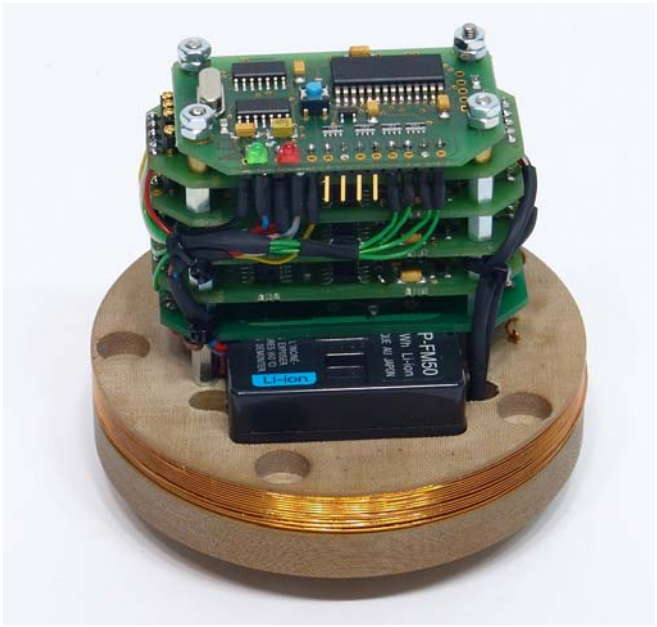
Transmitter Device (Encoder)



MT32-ENC4 with 4x MT-STG modules

SC Module STG:

Sensor:	strain gage, ≥ 350 Ohms
Bridge completion:	full and half -bridge
Excitation:	4 VDC (fixed), short-circuit protection up to 20mA
Gain:	200 or **1000** (factory setting) - selectable by solder jumpers
Offset	Zero adjustment by Auto-zero function (which is not lost by power-off), offset range up to 80% of full scale.

System Parameters:

Channels:	4
Resolution:	12 bit A/D converter with anti aliasing filter, simultaneous sampling of all channels
Transmission:	inductive transmission
Powering:	Li Ion Accumulator 7.2V, 1500mA, capacity for 10 hours
Analog signal bandwidth:	(-3dB cut-off frequency) 4 x 0 … 6000Hz with 1280 kbit/s
Dimensions:	Diameter 80mm, height 80mm
Weight:	0.26 kg without cables
Transmission:	Digital PCM Miller format - FSK
Operating temperature:	- 20 … +70°C
Static acceleration:	100g in all directions
Shock:	200g in all directions

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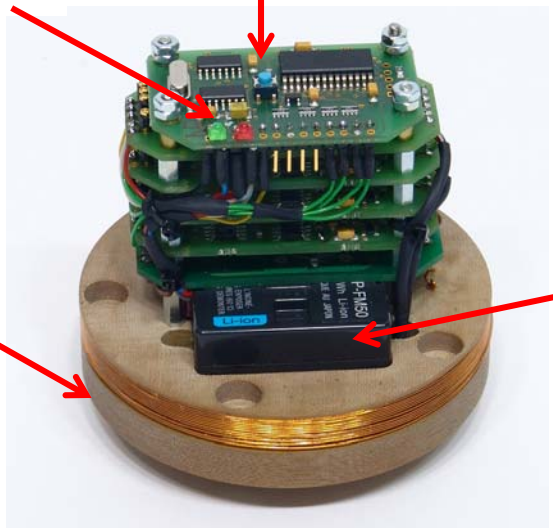
Control LED
Green = power ON
Red = Battery empty

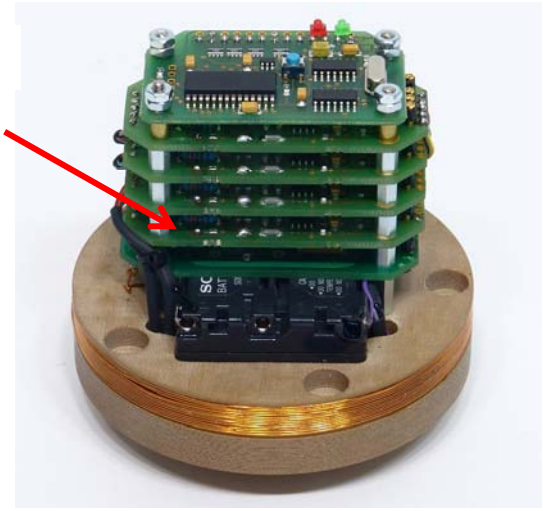
AZ Button, press 1 sec for auto zero balancing



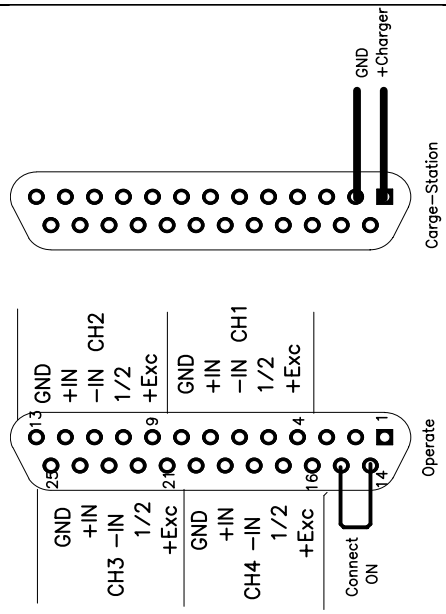
Transmitting coil, 11 winding
CUL 0.5mm wire

Li-Ion battery, 1500mA, 7.2V

Solder bridge for gain setting
<u>1000</u> or 200



Pin connection for STG



Gain setting = 1000
EXC. = 4V

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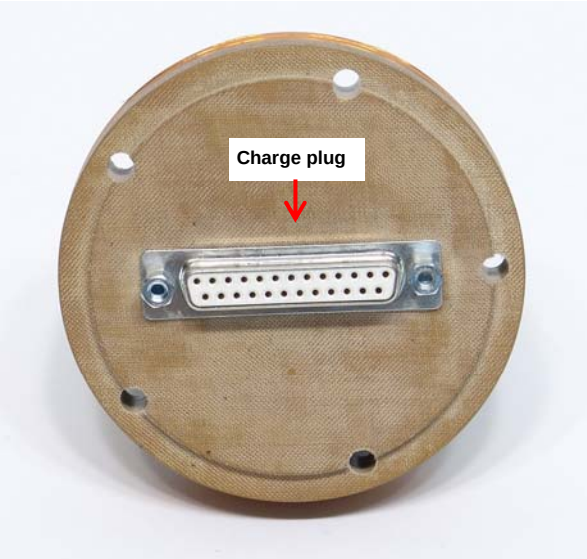
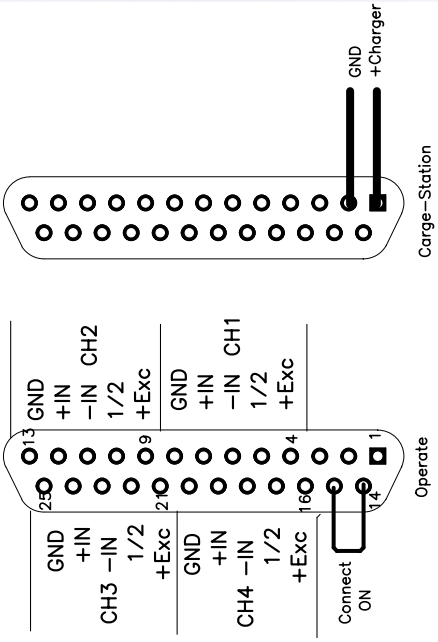
Li Ion Re-Chargeable Battery with Charger Unit for MT32-Rotate

Pin connection





Control LED
Green = power ON
Red = Battery empty

Battery charger MT-Charger

1. **Plug the 25-pole Sub-D female connector of the MT32-ENC4 on the charger 25-pole Sub-D male connector**
2. **Plug banana plugs on to a battery or AC/DC power supply with a voltage range of 10-30**
3. **Press and hold the switch for 1 second to begin charging. The battery will now charge. Charge time 2-3 hours, if the red LED of the Charger is dark!**

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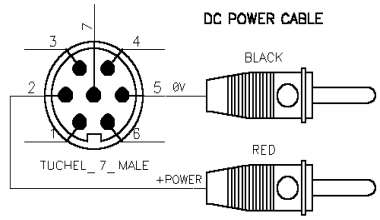
Technical data:
Receiving Unit MT32-Rotate DEC (Decoder)

Front view



Back view

System Parameters:

Channel:	4 analog outputs via (BNC) +/-5V
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 … 6000Hz with 1280 kbit/s inductive transmission
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
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

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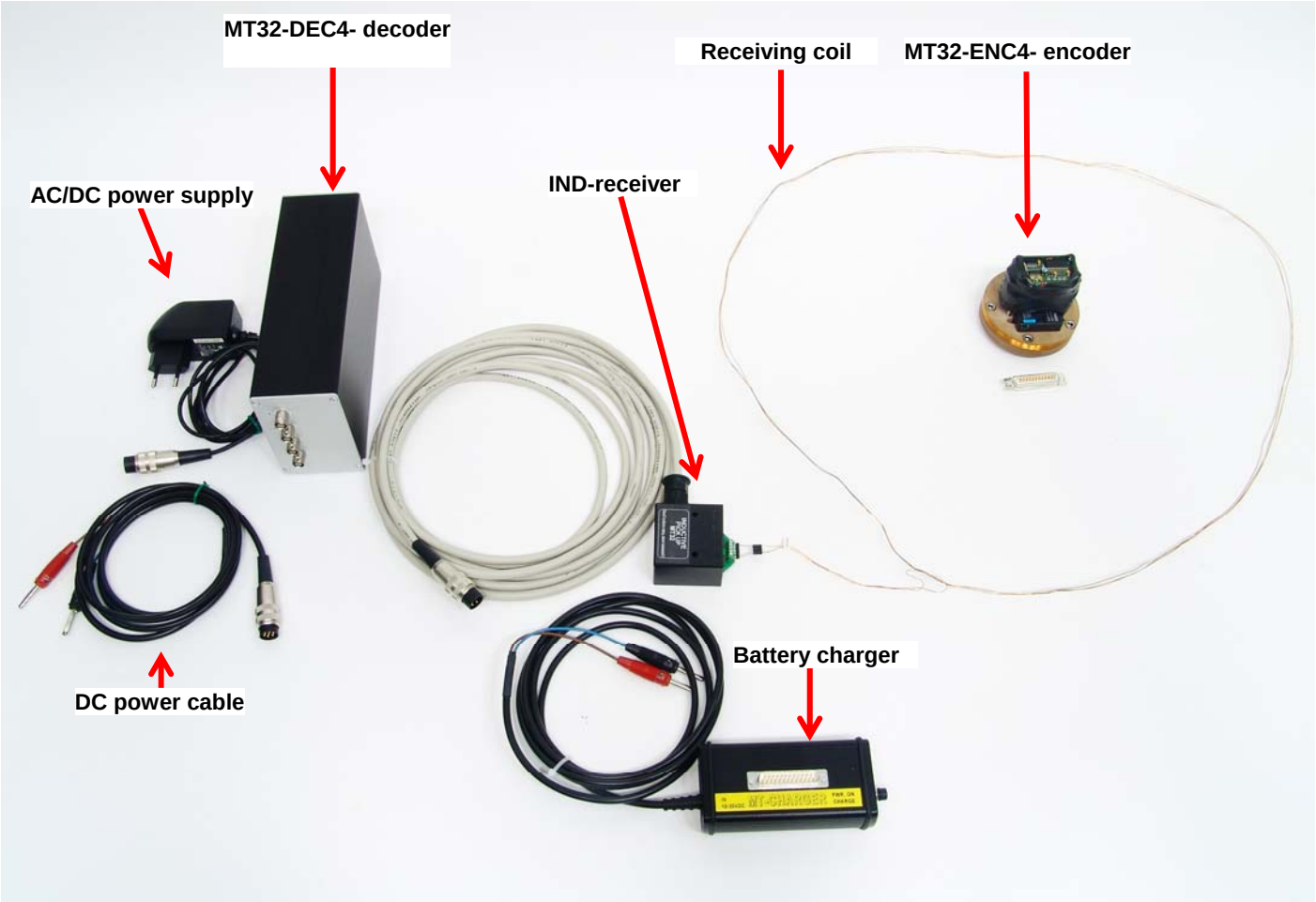
Set includes:



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