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T1-PCM-IND

Digital telemetry system for strain gage applications on rotating shafts

- Easy to assemble and operate
- Strain gage sensors (>=350 Ohm)
- Full- and half bridge configuration
- Excitation fixed 4 Volt DC
- Auto-Zero adjustment
- Gain: 250-500-1000-2000 or 1000-2000-4000-8000
- 16 bit ADC
- Digital transmission realized inductively
- Distance up to 30mm (Range)
- Powering of transmitter part inductive
- No influence through radio frequency
- Many systems can operated at the same time
- Signal bandwidth 0…1200Hz (-3dB)
- Output +/-10V
- Output 4-20mA (Option)
- System accuracy <0.2%

General description

The T1-PCM-IND single-channel telemetry system offers the easiest handling for the wireless transmission of strain gage signals from rotating shafts. The encoder 35x24x14mm with a weight of 16g. The transmitter (encoder) part is simply mounted on the rotating shaft with a special fiber reinforced tape.

The data transfer between transmitter and receiver is digital. The powering of the transmission part by the T1-PCM-IND is **inductive**!.

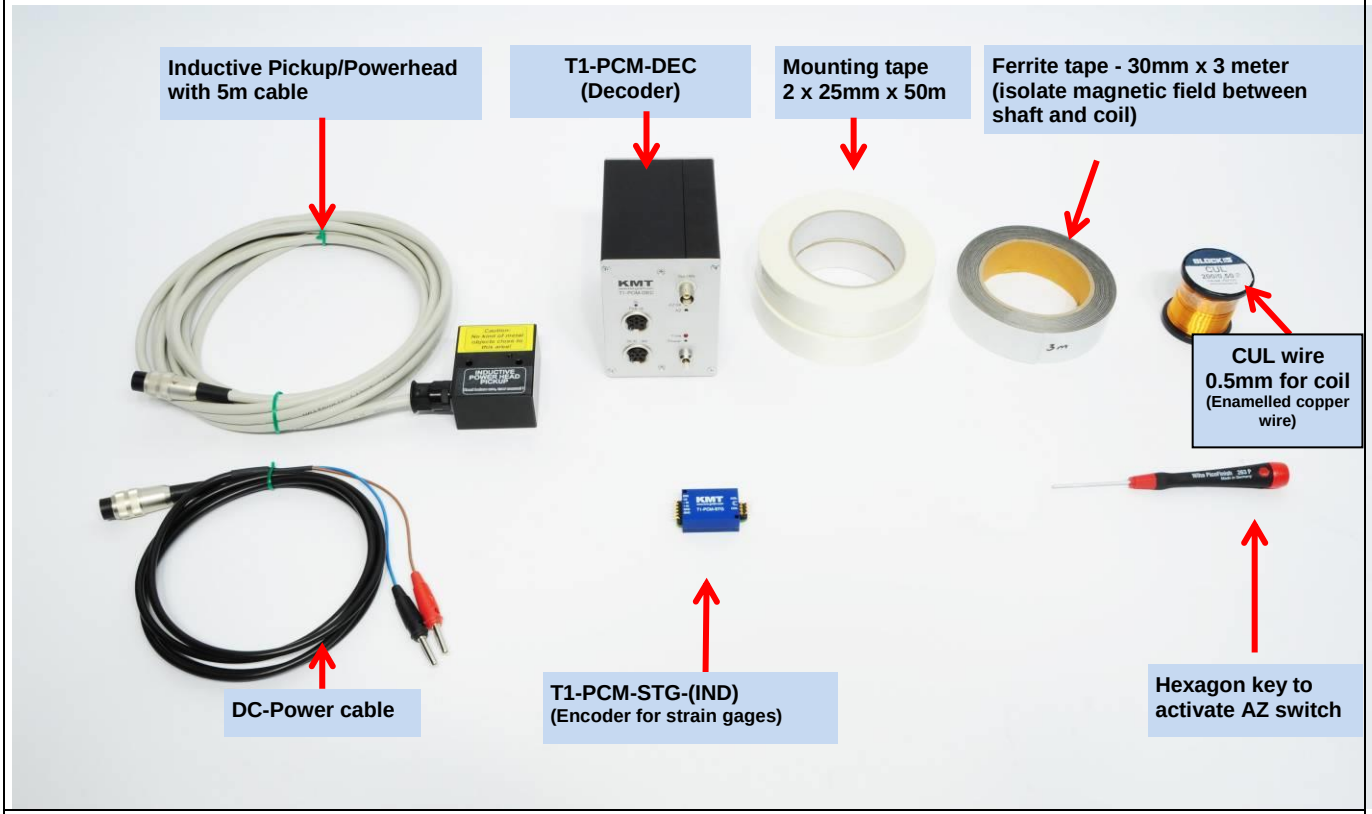
Functional description

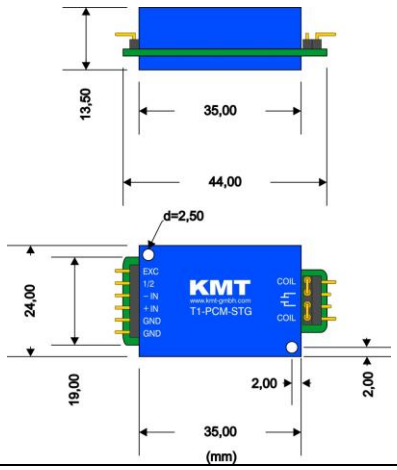
The T1-PCM-IND transmitter provides a pulse code modulated signal (PCM) to an induction winding around the shaft. The magnetic field of this winding enables the inductive transmission of the signal from coil to pickup. From there the signal is transferred by cable (5 m) to the receiver. The maximum distance between the transmitter coil and the pickup/powerhead is 30mm.

The receiver unit offers a BNC connector at the front panel with analog outputs ± 10 V and optional a current output of 4-20mA

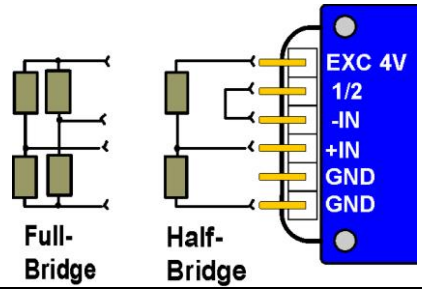
Strain gage sensors (>=350 Ohm) in full- and half- bridge configuration can be directly connected to the transmitter. The excitation is fixed to 4 Volt DC and the gain is set by plug-In bridge in 4 steps (250-500-1000-2000 or 1000-2000-4000-8000). An auto-zero (AZ) adjustment is executed by pressing the AZ button on the front side of the receiver. The successful AZ operation is indicated by a yellow LED. The yellow LED flashes as long as the AZ is in progress. When the AZ completes the LED continuously illuminates. The AZ setting is stored in a Flash-RAM and thus is not lost during power-off.

T1-PCM-IND set contains:





Technical data transmitting part:



T1-PCM-STG

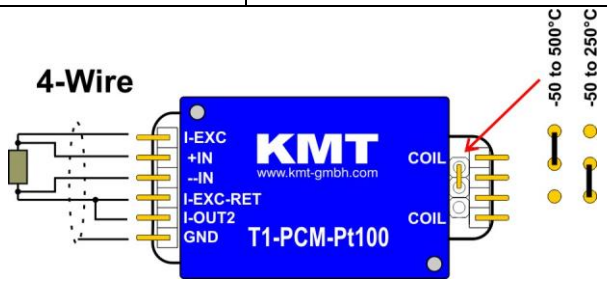
Strain gage: Full and half bridge >=350 Ohm,
Excitation: 4 VDC (fixed)
Gain: 250-500-1000-2000 standard
1000-2000-4000-8000 **on request!**

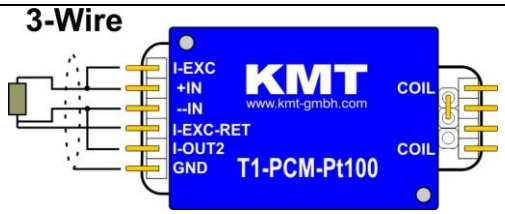
Gain and Sensitivity	
Gain 250 = +/-10mV/V	Gain 2000 = +/-1.250mV/V
Gain 500 = +/-5mV/V	Gain 4000 = +/-0.625mV/V
Gain 1000 = +/-2.5mV/V	Gain 8000 = +/-0.3125mV/V

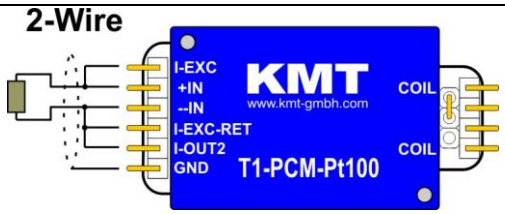
AZ: Auto Zero calibration (via AZ button from receiver side)
Analog signal bandwidth: 0 - 1200 Hz (-3 dB)
Operating temperature: - 40 to + 85 °C
Resolution 16bit
Scanning rate 6.41 kHz
Static acceleration: up to 3000g
Powering: inductive
Dimensions: 35x24x14mm, weight 16g
Housing: splash-water resistant IP65 (except the connector pins)

T1-PCM-Pt100

Pt100 thermo sensor
Measurement range -50 to 250°C or -50 to 500°C (select by jumper)
Analog signal bandwidth: 0 - 10 Hz (-3 dB)
Operating temperature: - 40 to + 85 °C
Resolution 16bit
Scanning rate 6.41kHz
Static acceleration: up to 3000g
Powering: inductive
Dimensions: 35x24x14mm, weight 16g
Housing: splash-water resistant IP65 (except the connector pins)







Technical data receiving part

Front

Rear

Optional top-hat rail clip

T1-PCM-DEC

Analogue output: +/-10V via BNC output 1200Hz

(delay between analog IN/OUT 1.8mS constant!!)

Optional add. 4-20mA output to the analog output

Auto Zero setting: via AZ button

Autozero LED:

Yellow ON- successful AZ

Yellow OFF- not successful AZ

if flashing, call support of KMT, error in EPROM

SL LED: Red ON = if error of data transmitting

SL LED: Red Flashing = distance to far

Power ON LED: Red ON = if power switch on

Output to Powerhead: via 6-pol. Tuchel

Fuse LED: Flashing if fuse is defect

Powering: 10-30V DC, Input via 7-pol. Tuchel

Switch: ON/OFF

Operating temperature: - 40 to +70 °C

Dimensions: 75 x 105 x 105 (without connectors!)

Weight 750 grams

Static acceleration: up to 200g

System accuracy*: +/- 0.2 %

<*measure with gain 1000, 350ohm (0.1%) full bridge - test bridge!!>

T1-PCM-Pickup/Powerhead (standard version) other on request!!

Function: Receiving inductive PCM modulated data from the coil of the T1-PCM-STG unit

Inductive frequency is 60kHz

Distance between the transmitter coil and the pickup is 5-30*mm

Output to T1-PCM-Decoder: Via 6-pol. Tuchel plug incl. 5m cable

Operating temperature: - 40 to +80 °C

Dimensions: 53x66x30mm (without cable)

Weight: 200 grams (without cable!)

Housing: splash-water resistant IP65 (except connector).

Cable length standard 5m! Optional 10, 15, 20 or 25m

*(depend of shaft diameter!)