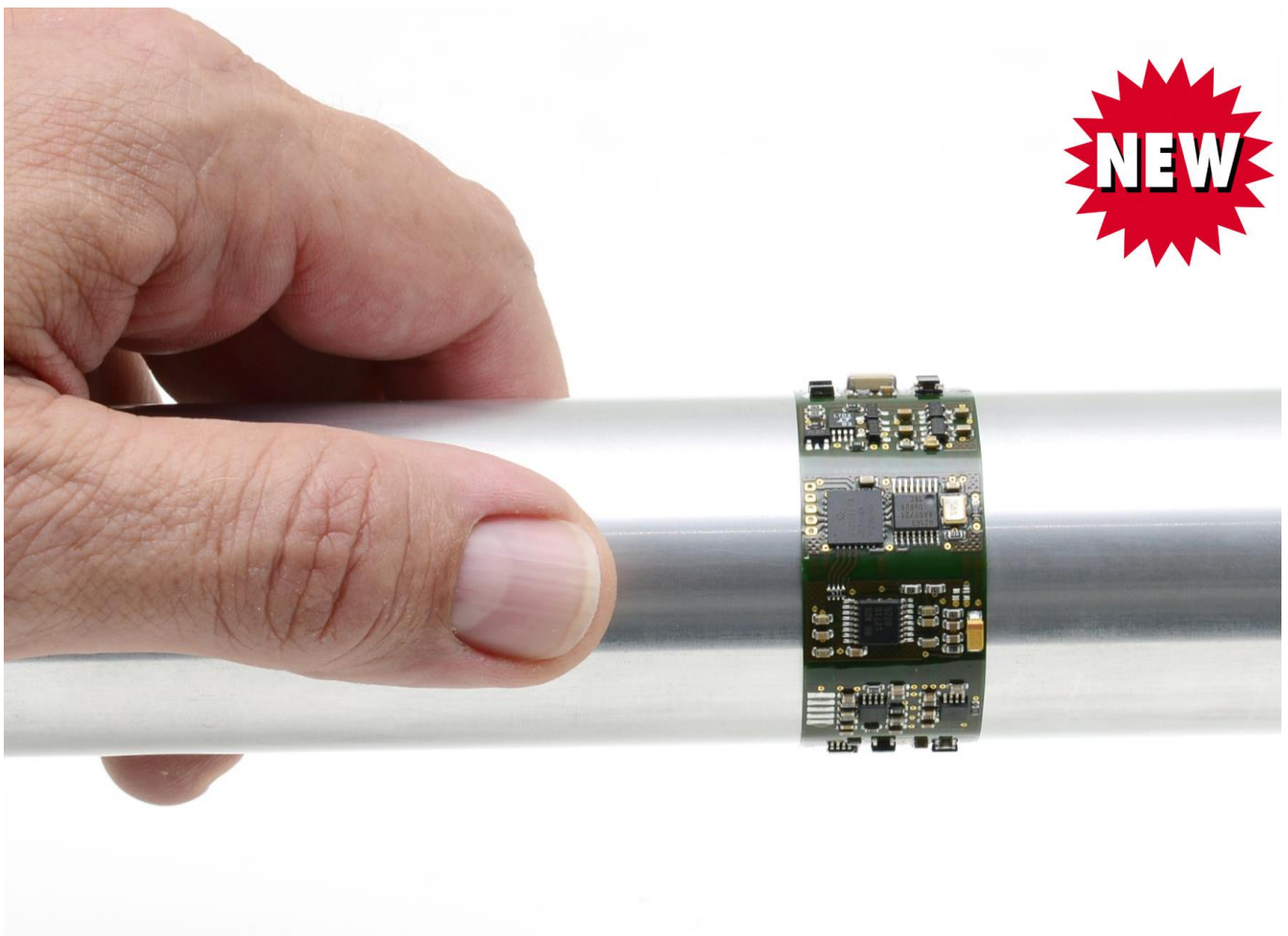**KMT**
T E L E M E T R Y

TEL1-PCM Flex
Flat & Flexible Transmitter for
Torque Measurement

NEW

- Torque measurement in restricted spaces

- Suitable for high rpm shafts

- Strain gage sensors (>=350 Ohm)

- Full- and half bridge configuration

- Excitation fixed 4 Volt DC

- Digital transmission realized inductively

- No influence through radio frequency

- Many systems can operated at the same time

- Signal bandwidth 0…1200Hz (-3dB)

- Inductive power supply – no batteries

General Description

Torque now measured in confined spaces: The new TEL1-PCM Flex

The new transmitter electronics TEL1-PCM Flex couples the efficiency of the existing TEL1-PCM transmitter with new flexibility. With a maximum overall height of less than 2 mm, the rotor electronics unit is extremely flat. Mounted on a flexible, foil substrate its space-saving design enables it be easily applied to rotating shafts or similar machine parts. The rotor electronic includes the sensor supply, signal processing and the transmitter for the contact less data transmission of the measured signal.
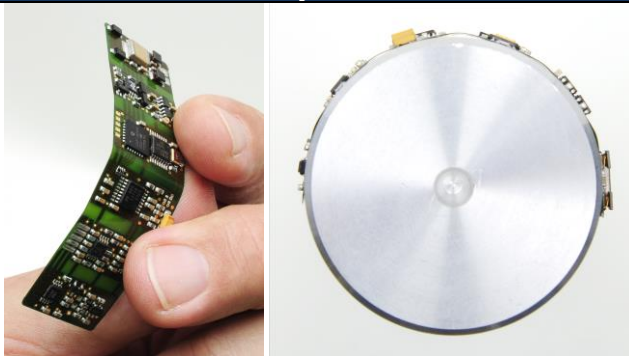
The low-profile TEL1-PCM Flex is also ideally suited for applications involving high rotational speeds. Supplementary the on-board inductive power supply ensures continuous and reliable measurements from the rotating shaft.

TEL1-PCM Flex Rotor Electronics

Today it's more important than ever to have reliable, detailed information about torque, vibration or other feedback signals by metering the different types of applications. The telemetry system TEL1-PCM Flex helps you to capture this data even from rotating applications. A very small rotor electronic, installed directly on the shaft captures, conditions and transmits the measuring data to an inductive Powerhead (Pickup). After this the information can be reproduced on the output of a stationary Decoder. Because it's easy to install and it can be powered inductively or with battery, it's a real all-rounder for measurements on rotating machinery.

There's no easier way to run wireless data transmission!

| Extremely flat & flexible		Technical Data	
		Standard Temperature	Range -10°C to +85°C
		Sensor Input	Strain gage 350 Ω to 1 kΩ
		Measurement Accuracy	0.2 %
		Amplifier Gain Range	250-500-1000-2000-4000-8000
		Sensor Supply	+4 V
		Signal Bandwidth	0-1200 Hz (-3 dB)
		Sampling rate:	6.944kHz
		Transmission	inductive
		Powering	inductive
		Dimensions (l x w x h)	70 mm x 20 mm x 2 mm (incl. solder pads)
		Minimum Bending Radius	12.5 mm (diameter 25mm)
		Weight	<2 grams

TEL1-PCM-FLEX BRIDGE CONNECTIONS

Full Bridge — EXC+, IN+, IN−, GND, Ind. Coil

Half Bridge — EXC+, IN+, GND, Ind. Coil
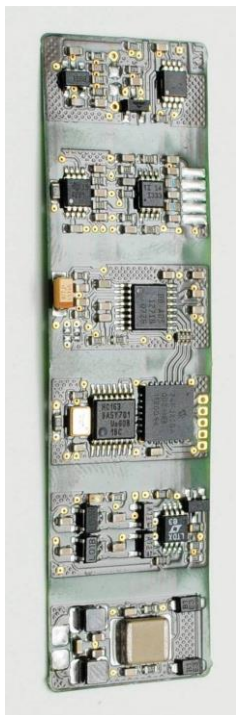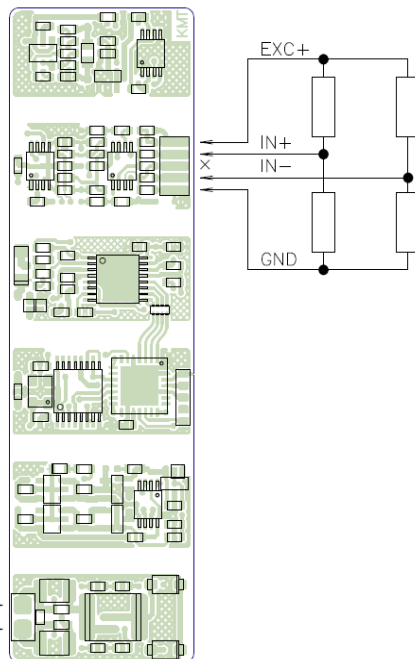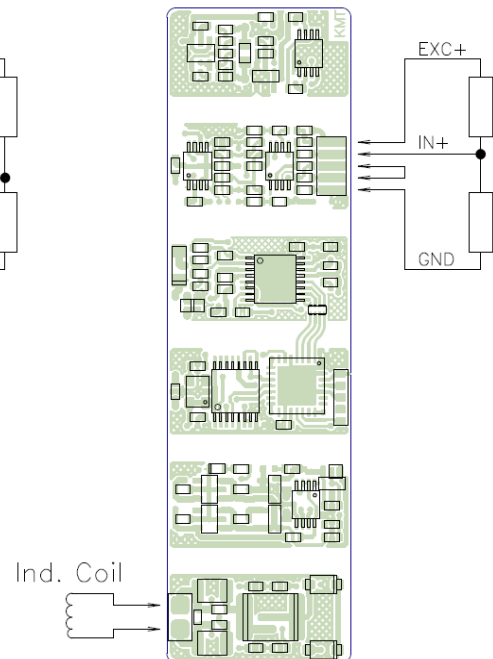
Technical Data Receiving Part

Front **Rear**	**TEL1-PCM-DEC**
	Front side:
	Analogue output: +/-10V via BNC **(Optional 4-20mA output)**
	(delay between analog IN/OUT 15mS constant!!)
	Digital output for PCM Interface IF16 (ECIA100) OPTION
	Gain setting : via screw switch
	Auto Zero setting: via micro switch
	Overload LED's (Red ON) reset: via micro switch
	Green LED's: Bargraph +/-
	Autozero LED:
	    Yellow ON- successful AZ
	    Yellow OFF- not successful AZ
	    if flashing, call support of KMT, error in EPROM
	Green LED's: Bargraph +/-
	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
	Rear side:
	Output to Powerhead: via 6pol. Tuchel
	Fuse LED: Flashing if fuse is defect
	Powering: 10-30V DC (min. 24Watt), Input via 7pol. Tuchel
	Switch: ON/OFF
	Operating temperature: - 10 to +70 °C
	Dimensions: 200 x 105 x 44 (without connectors!)
	Weight 950 grams
	Static acceleration: up to 200g
	System accuracy*: +/- 0.2 %
	<*measure with gain 1000, 350ohm (0.1%) full bridge - test bridge!!>

	TEL1-PCM-Powerhead/Pickup (standard version) Function: Inductive powering of the TEL1-PCM-STG unit and receiving PCM magnetic field in PCM modulated code Distance between the transmitter coil and the pickup is 25mm **(25mm at diameter <300mm with 5m cable, 15mm with 10m cable)** (Optional 35mm at diameter <300mm - see table) Output to TEL1-PCM-Decoder: Via 6pol. Tuchel Plug incl. 5m cable Operating temperature: - 10 to +80 °C Dimensions: 53x66x30mm (without cable) Weight: 200 grams (without cable!) Housing: splash-water resistant IP65 (except connector). Cable length standard 5m! 10m optional!

Full-Bridge
GND
--IN
+IN
+EXC

Half-Bridge
GND
1/2
--IN
+IN
+EXC

GND
1/2
--IN
--IN
+IN
+EXC

Ind.Pwr.Coil
5-18 Wdg
CU 0.5 d

Distance
up to 5-25mm
(Optional 35mm))

Magnetic field

TEL1-PCM
Powerhead
Pickup

Tel1-PCM Decoder

OVL
AZ
OVL

OUT ±10V

8000
4000
2000
1000
500
250

GAIN

OVR
SL
AZ
Power

Digital data transfer
&
Inductive powering