

imc TEL1-PCM

The TEL1-PCM-STG module belonging to the TEL1-PCM series is a single-channel measurement amplifier which offers the easiest handling for the wireless transmission of strain gauge signals from rotating shafts. The module can simply be mounted on the rotating shaft with a special fiber reinforced tape.



Power and data transmission between transmitter and receiver is realized inductively. The TEL1-PCM series 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 to the pickup coil. From there the signal is transferred by cable (5 m) to the receiver.

Highlights

- Easy to assemble and operate
- Digital transmission realized inductively
- Strain gauge sensors ($\geq 350 \Omega$)
- Distance up to 25mm (35 mm optional)
- No influence through radio frequency
- Many systems can operated at the same time
- Auto-Zero adjustment - Setting receiver side
- Overload indication

Models and options

Order Code		Artikel Nr.
TEL1-PCM-STG	strain gauges measurement module with integrated 220 nF capacitor for shaft diameters <400 mm	13200030
TEL1-PCM-STG-CAP	strain gauges measurement module for with external 100 nF capacitor for shaft diameters >400 mm	13200031
TEL1-PCM-SET-1_STG	TEL1-PCM-STG module with: Telemetry receiver / decoder with inductive power supply unit, mounting tape with a length of 50 m (2 pieces), special ferrite tape with a length of 1 m (3 pieces), copper wire with a length of 20 m, AC/DC power supply 24 W for the receiver and a DC power cable for the receiver	13200052

Technical Specs - TEL1-PCM-STG

General			
Parameter	Value		Remarks
Input	1		
Measurement mode	full and half bridge		
Measurement input	pin header		
Sampling rate	6.944 kHz		
Signal bandwidth	0 Hz to 1200 Hz		-3 dB
Resolution	12 bit		ADC input
Transmission	inductive		
Powering	inductive		
Bridge measurement			
Parameter	Value typ.	min. / max.	Remarks
Mode	DC		
Measurement ranges	±0.3125 mV/V to ±40 mV/V		
Excitation voltage	4 V		fix
Amplifier gain range	250-500-1000-2000-4000-8000		
Measurement accuracy	<0.2 %		
Operating conditions			
Parameter	Value typ.	min. / max.	Remarks
Operating temperature	-40°C to 85°C		
Pollution degree	2		
Dimensions	35 x 18 x 12 mm		TEL1-PCM-STG
Weight	12 g ±3 g		TEL1-PCM-STG

Technical Specs - TEL1-PCM-DEC



Front side:

Analog output: ± 10 V via BNC
(delay between analog IN/OUT 15 ms)

Gain setting: via screw switch

Autozero setting: via micro switch

Overload LED's (red on) reset:
via micro switch

Green LED's: bargraph \pm

Autozero LED:

yellow ON: successful AZ

yellow OFF: not successful AZ

if flashing: error in EEPROM, call
imc support team

Green LED's: bargraph \pm

SL LED:

red on: if error in data transmitting

red flashing: distance to far

POWER LED:

Red ON = if power is switched on

Rear side:

Output to power head via 6-pin Tuchel

Fuse LED: flashing, if fuse is defect

Power supply: 10 V to 30 V DC

Power consumption: min. 24 W

ON/Off switch

Models and options

Order Code		article no.
TEL1-PCM-DEC	Receiver and Decoder	13200039
Opt. 4-20mA OUT	additional current output at Receiver / Decoder (TEL1-PCM-DEC)	13200040
TEL1-OVR-AZ-KEY	Allen / hexagon key to press the OVR and AZ button	13200253
TEL1-GAIN-KEY	Screw driver to select the gain	13200254

Parameter	Value	Remarks
Static acceleration	up to 200 g	
System accuracy	± 0.2 %	measured with gain 1000, 350 Ω (0.1 %) full bridge
Standard temperature range	-10 °C to +70 °C	
Dimensions	200 x 105 x 44 mm	without connectors
Weight	<1 kg	

TEL1-PCM-Power Head (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 25 mm

(25 mm at diameter <300 mm with 5 m cable, 15 mm with 10 m cable)

(Optional 35 mm at diameter <300 mm - see table in the manual)

Output to TEL1-PCM-Decoder: via 6-pin Tuchel Plug incl. 5m cable

Modelle und Optionen

Order Code		article no.
TEL1-PCM-PHPU-L	Inductive data head (pick up) and Power Head L cable version on the side, for distance up to 25 mm, length 5 m	13200042
TEL1-PCM-PHPU-L-ET	similar to TEL1-PCM-PHPU-L, but for temperature range up to +125 °C	13200234
TEL1-PCM-PHPU-XL	Inductive data head (pick up) and Power Head XL cable version on the side, for distance up to 35 mm, length 5 m	13200253
TEL1-PCM-PHPU-XL	similar to TEL1-PCM-PHPU-XL, but for temperature range up to +125 °C	13200254

Parameter	Value	Remarks
Housing	IP65	except the connector
Cable length	5 m	optional 10 m
Operating temperature	-40 °C to +85 °C	optional -40 °C to 125 °C
Dimensions	53 x 66 x 30 mm	without cable
Weight	200 g	without cable



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imc ACADEMY - Training center

The safe handling of measurement devices requires a good knowledge of the system. At our training center, experienced specialists are here to share their knowledge.

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