

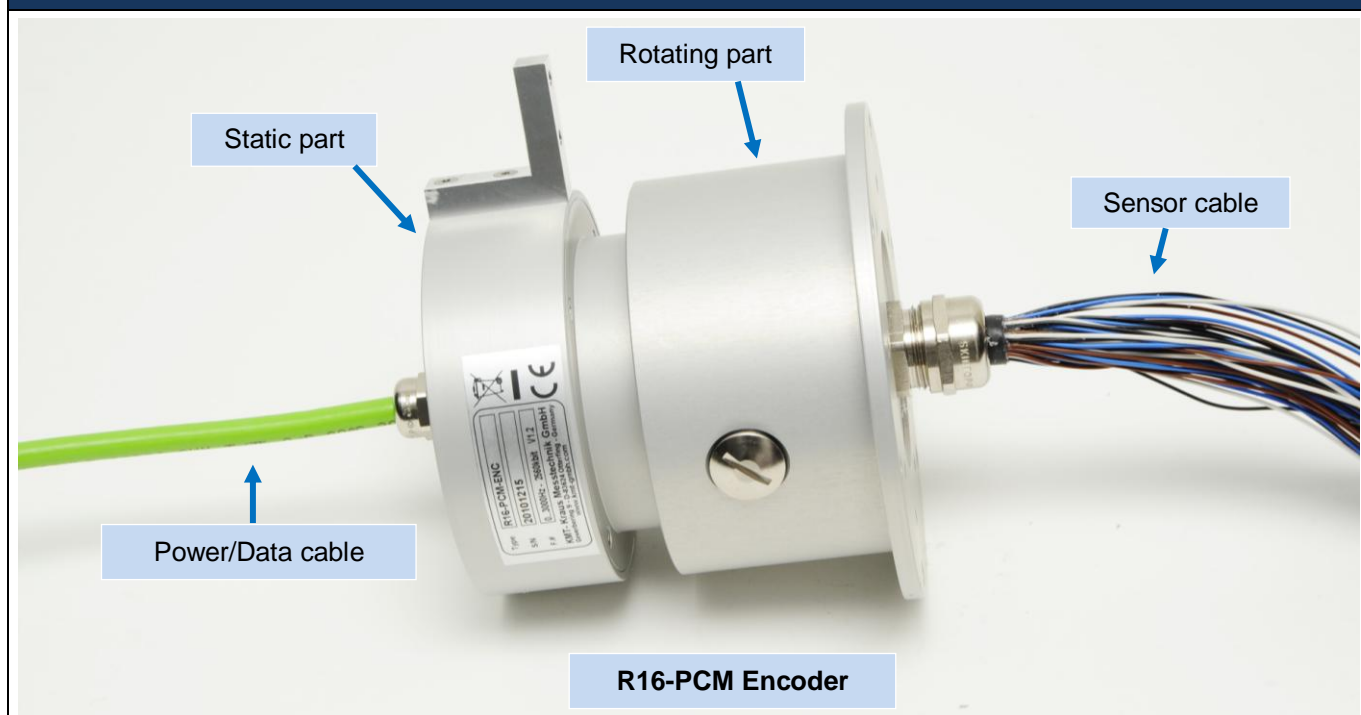
R16-PCM-Rotate

Fast, simple assembly and trouble free wireless data transmission with the new axial 16-channel 16bit telemetry system for strain gages



- Full- and half bridge
- Auto Zero Offset calibration
- 4V bridge Excitation
- 16 bit resolution
- Simultaneous sampling
- Transmitting rate 2.5Mbit or 5Mbit
- Signal bandwidth: 16x 0-3 or 0-6 kHz
- Software programmable
- Gain 125-250-500-1000-2000
- Inductive power transfer
- Wireless digital data transmission
- Output analog +/- 10V
- Digital data interface to PC (option)
- Waterproofed housing (IP65)

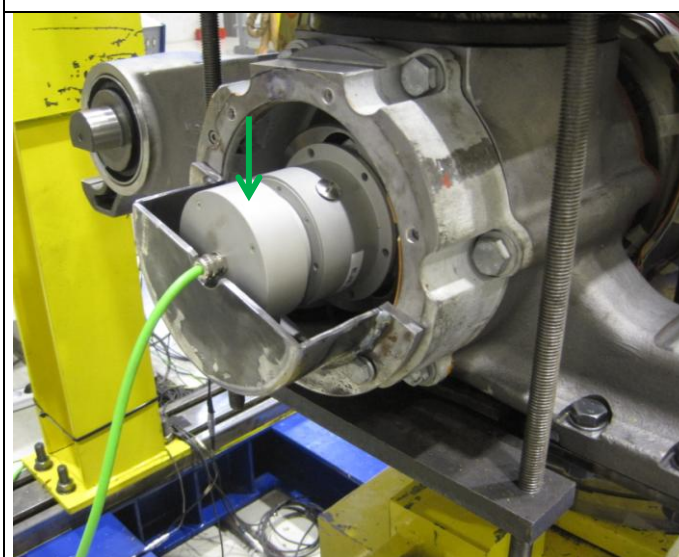
R16-PCM-Rotate - General description:



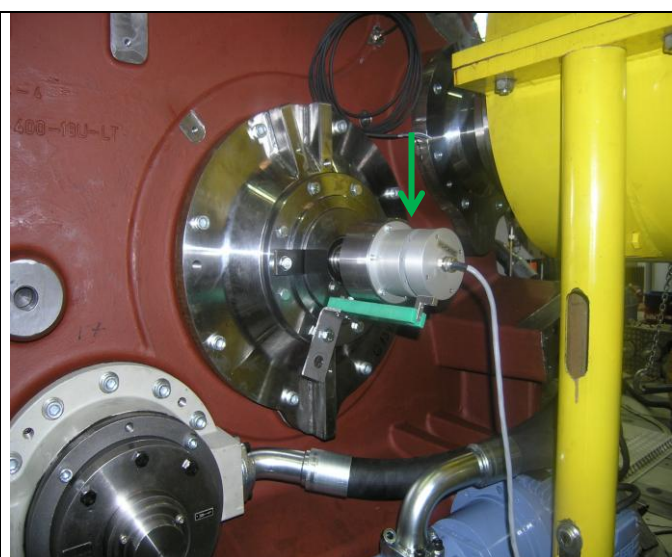
The new R16-PCM is a rugged, waterproof axial unit for collecting dynamic measurements from rotating devices under shock and vibration loads like railway wheels, gear boxes, test rigs or other axial applications. It enables conditioning, digitization and wireless transmission of up to 16 parallel strain gage (STG) signals. Signal and power transfer is contactless, data being transmitted optically and power inductively. No batteries and no routine maintenance! The fully sealed environmental housing and extended operating temperature range make it particularly suitable for off-road and winter testing in arduous conditions.

On the rotating side the strain gage signals are conditioned and amplified. The analog strain gage signals are converted into a 16 bit digital format. Data transmission from the rotating to the stationary side is achieved by an infrared telemetry link along the centerline of the axis for a serial bit stream. The power for the rotating amplifiers sensor excitation and signal conditioning is supplied via induction. This ensures uninterrupted continuous power supply. The rotating strain gage amplifiers are software programmable via web interface. The settings are gain, auto-zero and type of strain gauge.

On the stationary side the digital output is connected to the decoder unit via a standard data cable. The decoder unit converts and de-multiplexes the serial bit stream into a parallel format. This parallel signal along with address and clock information is converted to 16 each analog signals (+/-10V) and made available on a Sub-D connector on the decoder unit. Optional is an IP-LAN interface for digital transfer of data's into the PC available.



Railway wheels



Gear box

R16-PCM-Rotate - Technical Data:



Front side

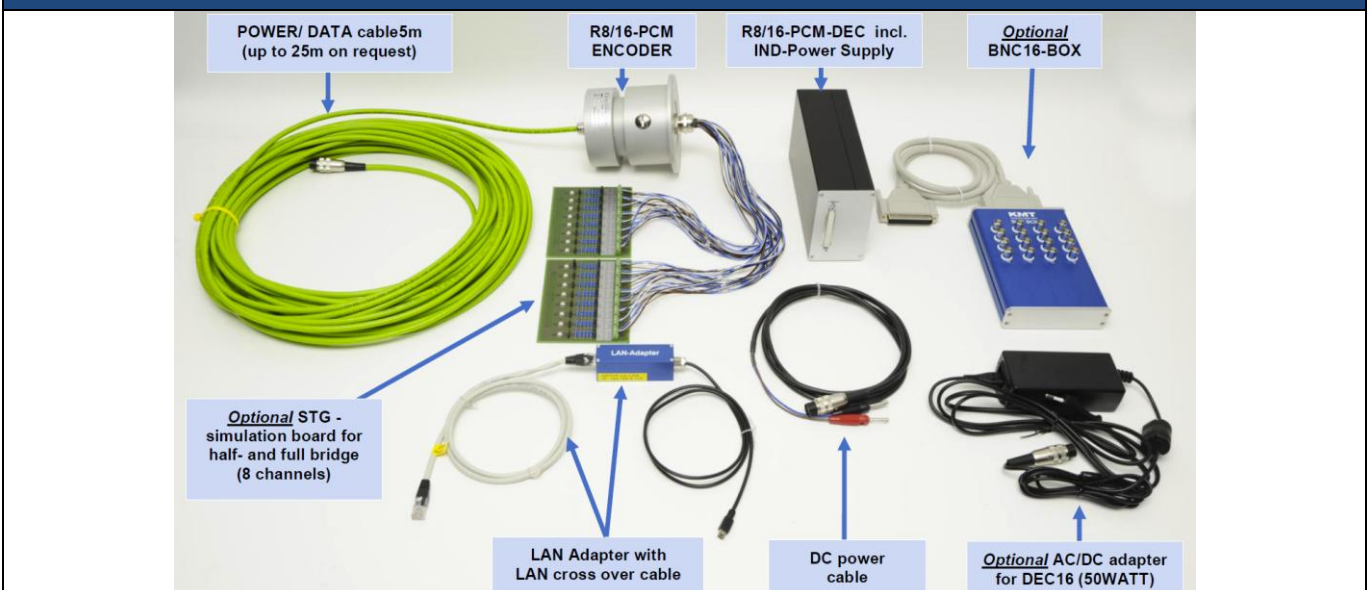
Rear side

Encoder (Rotor Electronic)

Decoder / IND-PWR

Number of channels:	16	Number of channels:	16
Sensor support	Strain gages full and half bridge $\geq 350\Omega$	Analog Output	+/-10V via 37-Sub-D connector
Excitation	4V for all channels	Digital Output	PCM serial (optional IP-LAN interface for PC)
Gain	125-250-500-1000-2000 (selectable by software)		
Offset calibration	Automatically (Auto Zero)		
Anti-aliasing filter	5-pole Butterworth and 2-stages digital down sampling filter		
Band width	3000 Hz or 6000 Hz per channel	Band width	3000 Hz or 6000 Hz per channel
Sampling rate	7812.5 Hz or 15625 Hz per channel		
Resolution	16 bit ADC	DAC (digital to analog converting)	16 bit
Powering	Inductive	Powering	10-30V, ~ 50 Watt (e.g. 24V 2A)
Data transmission	PCM digital infrared link	Data receiving	PCM
Operating temperatures	-30 ... 80°C	Operating temperatures	-20 ... 70°C
RPM	Max. 3600		
Dimensions	100 diameter, 110 Lengths (mm)	Dimensions	205 x 105 x 120 (mm)
Weight	1250 gram	Weight	1050 gram
Housing protection type	IP65	Housing protection type	IP54
Housing material	Aluminum anodized	Housing material	Aluminum anodized
Humidity	20... 100%	Humidity	20 ... 80% (not condensing)
Shock	1000g	Shock	100g
Vibration	+/- 10g	Vibration	5g
Power/Data cable	Length up to 25m, 5m is standard (between Encoder /Decoder)	System accuracy	$\pm 0.25\%$ (without sensor)

SET and cable connection of R8/16-PCM-Rotate



Settings	Programmable via web interface																																								
<p>Web interface address: IP 192.168.0.110</p> <p><u>Settings:</u> Gain 125-250-500-1000-2000 Half- and full bridge Make Auto Zero YES/NO</p> <p>Selectable for each channel!</p>	<h3 style="text-align: center;">KMT R8-PCM Analog Channel Setup</h3> <table border="0"> <tr> <td>Channel 1</td> <td>Gain: <input type="text" value="125"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 1</td> </tr> <tr> <td>Channel 2</td> <td>Gain: <input type="text" value="2000"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 2</td> </tr> <tr> <td>Channel 3</td> <td>Gain: <input type="text" value="1000"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 3</td> </tr> <tr> <td>Channel 4</td> <td>Gain: <input type="text" value="500"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 4</td> </tr> <tr> <td>Channel 5</td> <td>Gain: <input type="text" value="250"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 5</td> </tr> <tr> <td>Channel 6</td> <td>Gain: <input type="text" value="125"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 6</td> </tr> <tr> <td>Channel 7</td> <td>Gain: <input type="text" value="125"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 7</td> </tr> <tr> <td>Channel 8</td> <td>Gain: <input type="text" value="125"/></td> <td>Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/></td> <td>Make Autozero: <input type="checkbox"/></td> <td>Channel 8</td> </tr> </table> <p style="text-align: center;">Upload Parameters to R8-PCM and perform Autozero</p> <p style="text-align: center;">Download Parameters from R8-PCM</p> <p style="text-align: right; color: red;">*** Parameters saved ***</p>	Channel 1	Gain: <input type="text" value="125"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 1	Channel 2	Gain: <input type="text" value="2000"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 2	Channel 3	Gain: <input type="text" value="1000"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 3	Channel 4	Gain: <input type="text" value="500"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 4	Channel 5	Gain: <input type="text" value="250"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 5	Channel 6	Gain: <input type="text" value="125"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 6	Channel 7	Gain: <input type="text" value="125"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 7	Channel 8	Gain: <input type="text" value="125"/>	Type of Strain Gauge: <input type="text" value="HALF-BRIDGE"/>	Make Autozero: <input type="checkbox"/>	Channel 8
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