



- robust
- miniature telemetry transmitter
- reliable
- easy installation
  
- universal
- up to 16 simultaneous channels
- measurement range  $-55^{\circ}\text{C}$  to  $+1,250^{\circ}\text{C}$
- operating temperature  $-40^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$
- inductive power supply
- high measurement accuracy
- Anti-EMC for secure data transmission on electric drives

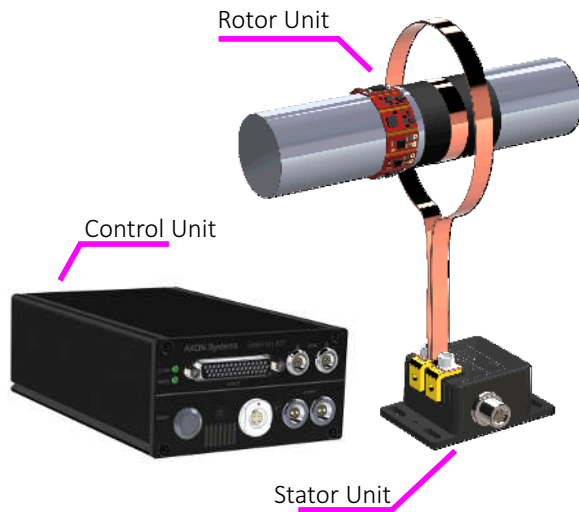


## MULTICHANNEL-TELEMETRY SYSTEM

for temperature measurements on rotating parts

# Principle of Operation

## Telemetry System AXON JXTH



The telemetry system AXON JXTH transmits signals from up to 16 thermocouples wirelessly. The extremely robust system provides reliable measurement results even under the harshest conditions. The compact Rotor Unit is installed on the rotating component and transmits the measurement data wirelessly to the Control Unit, where the data is available both in analog and digital form. The power supply is inductive, and therefore also completely wireless and maintenance-free.



### Rotor Unit:

Captures the measurement signals of the thermocouples, digitizes them, and transmits the digital data stream wirelessly between the rotating shaft and the Stator Unit. The extremely small flex board adapts space-savingly to the shaft. Rotor units are available with up to 16 channels in different designs.



### Control Unit:

The Control Unit and data playback of the telemetry system. It generates the inductive supply voltage for the Rotor Unit and outputs the data measured on the shaft either analog or digital via CAN bus. Inductive power supply and RF data reception are constantly monitored.

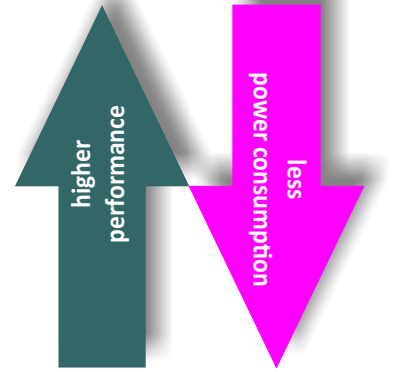


### Stator Unit:

Generates the dynamic inductive field that supplies the Rotor Unit on the rotating shaft with voltage and simultaneously receives the measurement data from the shaft. Distances between the rotor and stator antenna of up to 70mm can be realized. Axial and radial relative movements between the stator and rotor are covered in a wide range of several centimeters.

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### Inductive Power Supply 4.0:

The inductively transmitted power supply received on the Rotor Unit is continuously monitored during operation. The actively regulated inductive supply increases power rapidly where needed and reduces it where possible. In a variety of applications, this reduces the power consumption of the entire telemetry system by up to 60%.

Distances between the stator and rotor antenna of up to 80mm can be achieved. This ensures reliable transmission even for shafts with very large deflections.

### Individual Telemetry Carriers

The JXTH telemetry system enables numerous individual mechanical solutions. This allows for easy integration of the measurement technology even retroactively into existing systems and test benches.

Designed for measurements up to +1,250°C, the maintenance-free measurement system provides the optimal basis for brake temperature measurements, such as on flywheel brake flywheel brake dynamometers.



Custom Solutions

Brake temperature measurements

Plug & Play

# Telemetry System AXON JXTH

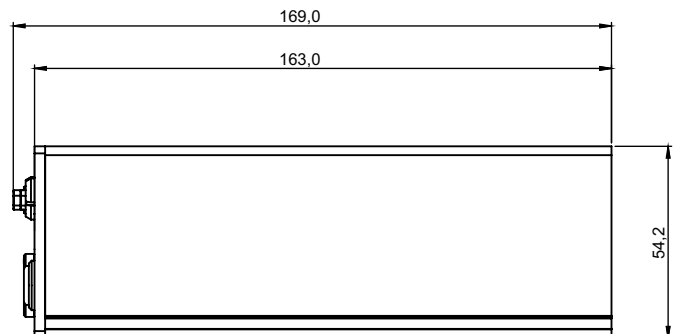
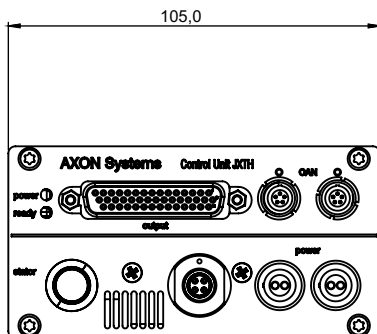
## General Technical Data

Channels	16
Measurement range	-60°C - +1,250°C
Operating temperature range rotor / stator	-40°C....+125°C
Operating temperature range rotor / stator (optional)	-40°C....+140°C
Measuring accuracy (operating temperature <100°C, entire measuring range)	±2°C
Measuring accuracy (operating temperature >100°C, measurements up to 400°C)	±2°C
Measuring accuracy (operating temperature 100°C - 125°C, measurements over to 400°C)	±4°C
Measuring accuracy (operating temperature over 125°C, measurements over to 400°C)	±6°C
Resolution	16 Bit
Sampling Rate	100 samples/s/ch
Supporte thermocouple types	Type K
Signal output analogue (linearised)	5mV/°C
Digital signal output (linearised)	CAN-Bus
CRC (Cyclic Redundancy Check)	integrated
AXON IPT (intelligent power transmission)	integrated
Rotor / stator coil distance	0 - 80 mm

operating temperature	Measurement value: -55°C....+500°C		Measurement value: +500°C....+1.000°C		Measurement value: +1.000°C....+1.250°C	
	Error (typ.)	Error (max.)	Error (typ.)	Error (max.)	Error (typ.)	Error (max.)
-40°C	±2°C	±4°C	±4°C	±6°C	±7°C	±8°C
-30°C	±1°C	±3°C	±2°C	±5°C	±6°C	±7°C
0°C	±1°C	±2°C	±1°C	±2°C	±2°C	±3°C
+20°C	±1°C	±2°C	±1°C	±2°C	±1°C	±2°C
+85°C	±1°C	±2°C	±2°C	±2°C	±3°C	±3°C
+125°C	±1°C	±2°C	±3°C	±4°C	±4°C	±5°C
+140°C	±1°C	±3°C	±5°C	±6°C	±7°C	±9°C

## Control Unit

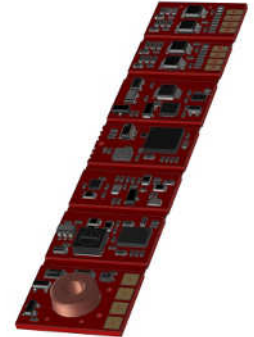
Type	JXTH-CC13
Power Consumption (typ.)	15 VA
Power Consumption (max.)	30 VA
Power Supply	9 - 36 VDC
Carrier frequency (standard)	13,6 MHz
Carrier frequency (optional)	11,6 MHz, 12,6 MHz, 14,6 MHz, 15,6 MHz
Analog Output Connector	44 pol Sub-D
Analog Output	5mV / °C linearized
Digital Output	CAN-Bus 2.0B configurable
Digital Output Connector	2 x Lemo 5 pol
Dimensions (without connectors)	105 x 54 x 169 mm
Weight	720 g
Degree of protection	IP40



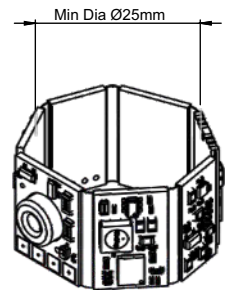
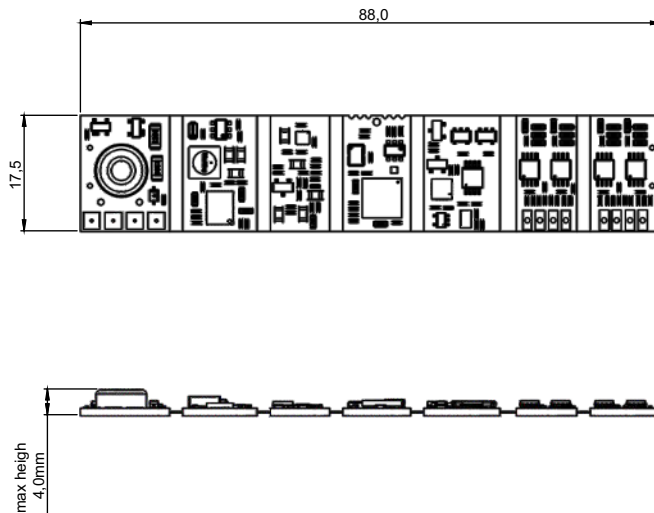
# Telemetry System AXON JXTH

## Rotor Unit

Type	J4TH-RFK13TL	J4TH-RFK13HL
Channels	4	
Signal conditioning	4 x thermocouple type K NiCrNi	
Power supply	inductive or battery	
Modulation	FSK (digital)	
Resolution	16 Bit	
Measurement range	-55°C .... +1,250°C	
Cold Junction Compensation	integrated	
Sensor Break Detection	integrated	
Connections	Solder pads	
Dimensions	88 x 17,5 x 4 mm	
Operating temperature range	-40°C .... +125°C	-40°C .... +140°C
Carrier frequency (standard)	13,6 MHz	
Carrier frequency (optional)	11,6 MHz, 12,6 MHz, 14,6 MHz, 15,6 MHz	
Design	Rigid-Flex PCB	
Minimum beinding radius	12,5 mm	
Weight	4,9 grams	
Degree of protection	IP10, covering material inclusive	



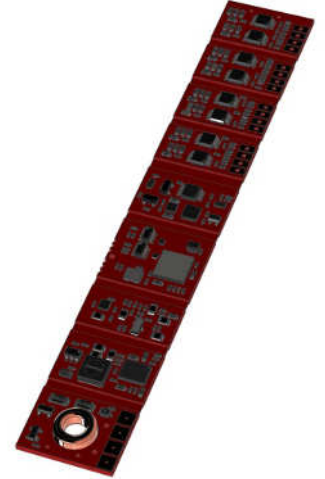
# Technical Data



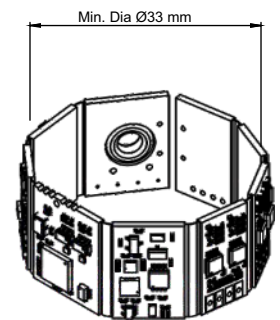
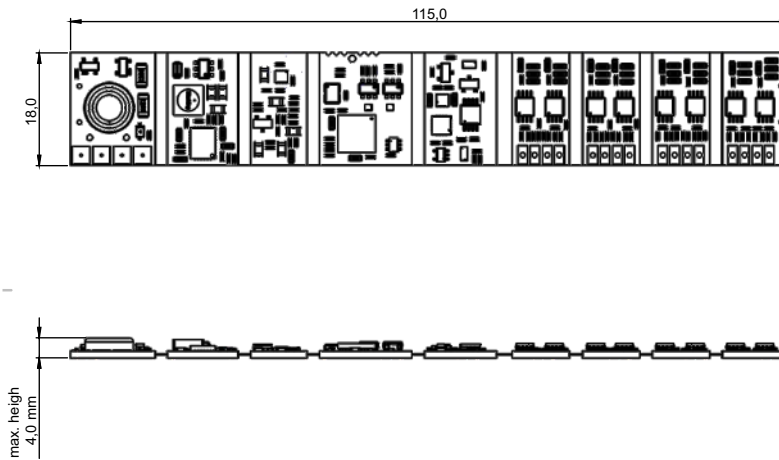
# Telemetry System AXON JXTH

## Rotor Unit

Type	J8TH-RFK13TL	J8TH-RFK13HL
Channels	8	
Signal conditioning	8 x thermocouple type K NiCrNi	
Power supply	inductive or battery	
Modulation	FSK (digital)	
Resolution	16 Bit	
Measurement range	-55°C .... +1,250°C	
Cold Junction Compensation	integrated	
Sensor Break Detection	integrated	
Connections	Solder pads	
Dimensions	115 x 18 x 4 mm	
Operating temperature range	-40°C .... +125°C	-40°C .... +140°C
Carrier frequency (standard)	13,6 MHz	
Carrier frequency (optional)	11,6 MHz, 12,6 MHz, 14,6 MHz, 15,6 MHz	
Design	Rigid-Flex PCB	
Minimum beinding radius	16,5 mm	
Weight	6,2 grams	
Degree of protection	IP10, covering material inclusive	



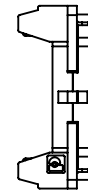
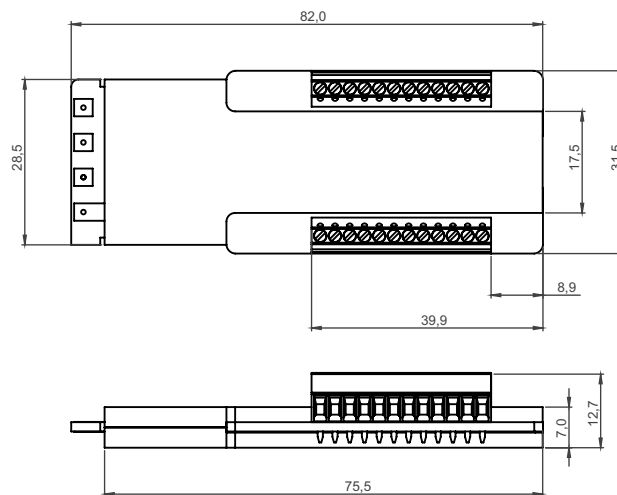
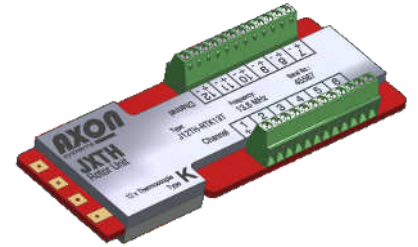
# Technical Data



# Telemetry System AXON JXTH

## Rotor Unit

Type	J12TH-RTK13TS	J12TH-RTK13HS
Channels	12	
Signal conditioning	12 x thermocouple type K NiCrNi	
Power supply	inductive or battery	
Modulation	FSK (digital)	
Resolution	16 Bit	
Measurement range	-55°C .... +1,250°C	
Cold Junction Compensation	integrated	
Sensor Break Detection	integrated	
Connections	Miniature screw terminals	
Dimensions	82 x 31,5 x 13 mm	
Operating temperature range	-40°C .... +125°C	-40°C .... +140°C
Carrier frequency (standard)	13,6 MHz	
Carrier frequency (optional)	11,6 MHz, 12,6 MHz, 14,6 MHz, 15,6 MHz	
Housing	Aluminium	
Weight	33 grams	
Degree of protection	IP67, except contacts	



Technical Data

# Telemetry System AXON JXTH

## Stator Unit

Ring-Stator Unit

Type	JXD-SR80TE	JXD-SR80HE
Type of transmission	inductively with conductor loop (transmission coil)	
Transmission coil	copper or EMC-stator coil JX-ECE02 $\varnothing$ 40 .... 500mm	
Transmission coil optionally	copper or EMC-stator coil JX-ECE02 $\varnothing$ 300 .... 2000mm	
Transmission distance	0 .... 80 mm <sup>(1)</sup>	
Anti-EMC interference suppression	integrated	
RF-Reception	wideband (10 MHz .... 30 MHz)	
Housing	aluminium black powder coated	
Connections	Fischer 4-pole, IP68	
Dimensions (incl. connections)	67,8 x 53 (bottom plate 77) x 33,5 mm	
Operating temperature	-40°C .... +125°C	-40°C .... +140°C
Cable length Stator - Control Unit	5m; optional 7m, 8m, 10m, 30m, 50m any cable length up to 200m on request	
Weight	232 grams	
Degree of protection	IP68	

(1) Depending on installation

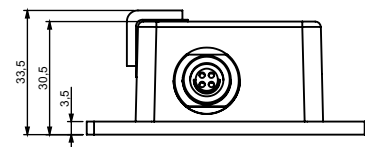
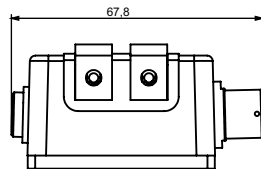
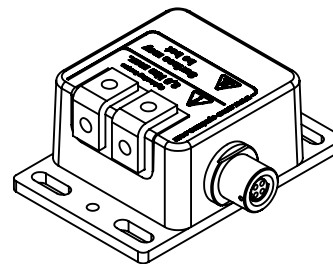
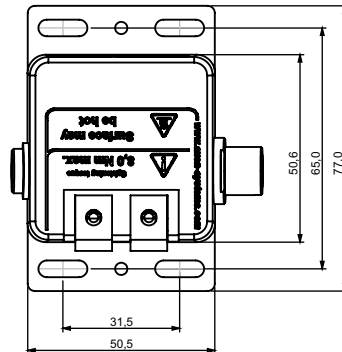


### Recommended Accessories

#### JX-ECE02

Freely formable transmission coil for ring stators JX-SR70 with "E" option with an additional connection for the EMC terminal. Length 1m

# Technical Data



dimensions in mm, tolerance  $\pm 0,5$ mm



# Telemetry System AXON JXTH

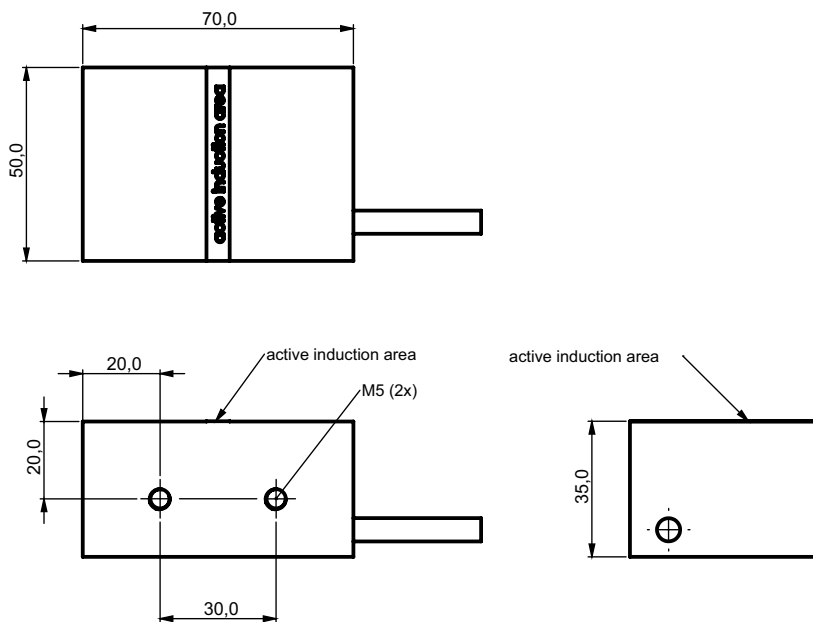
## Stator Unit

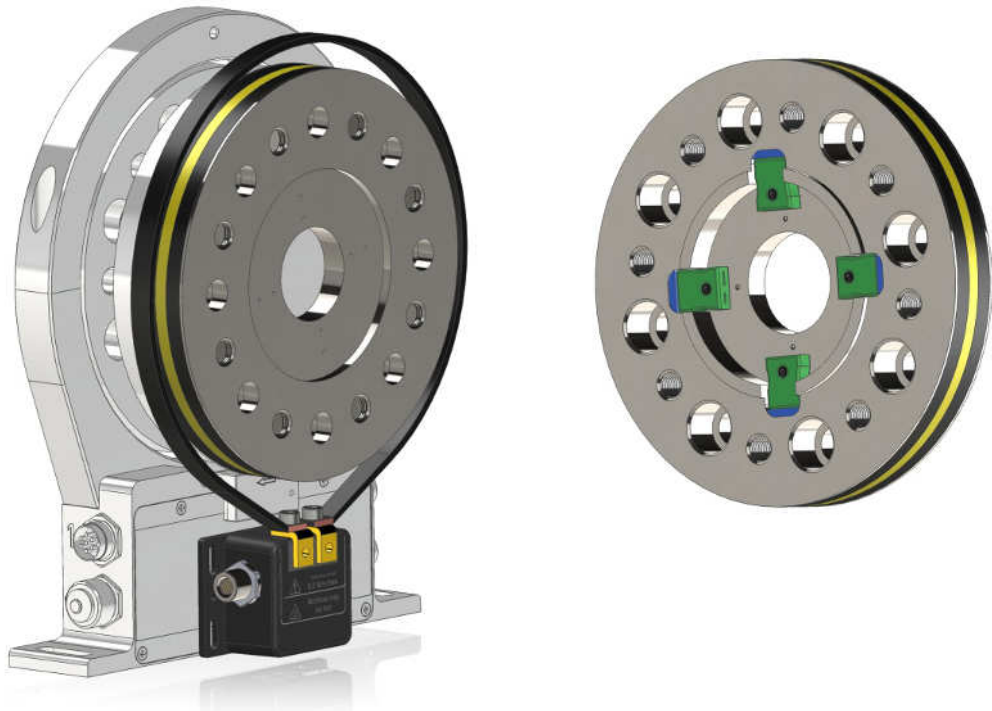
Induktive-Stator Unit without transmission coil

<b>Type</b>	<b>JXD-SE60</b>
Type of transmission	inductively as pick up
Transmission distance	0 ... 60 mm <sup>(1)</sup>
RF-Reception	wideband (10 MHz ... 30 MHz)
Housing	thermoplast
Connections	Fischer 4-pole, IP68
Dimensions (excl. Connector / cable)	70 x 50 x 35 mm
Operating temperature	<b>-40°C ... +125°C</b>
Cable length Stator - Control Unit	5m; optional 7m, 8m, 10m, 30m, 50m any cable length up to 200m on request
Weight	220 grams
Degree of protection	IP68
<small>(1) Depending on installation</small>	



# Technical Data



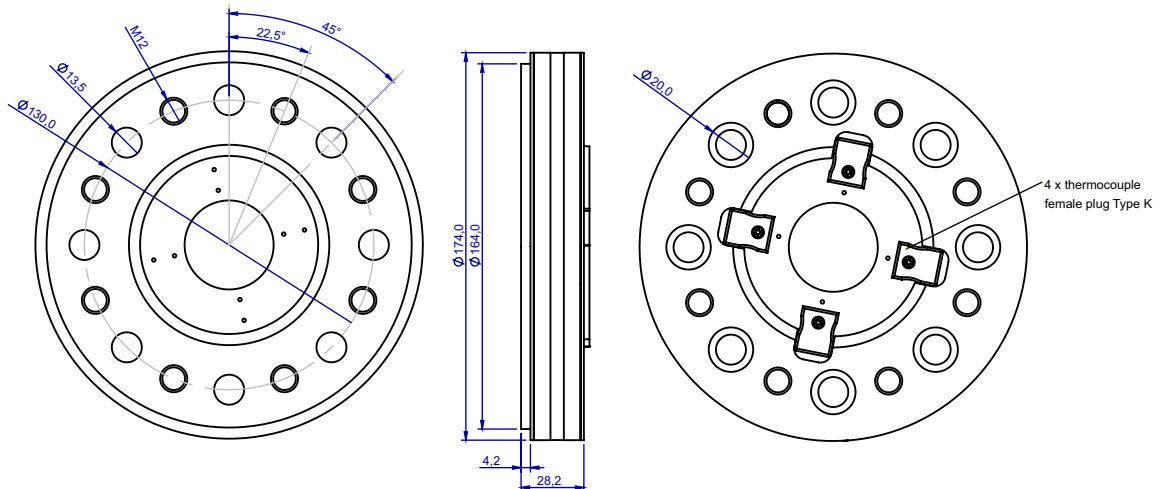


J4TH-AT10

### Plug & Play:

Based on the JXTH system, the temperature measurement flange offers an easy connection to existing torque measurement flanges (e.g., HBM T40B), thus enabling straightforward temperature measurement on the drivetrain. The extremely slim design allows for easy integration.

Example J4TH-AT10-130-13T (suitable for e.g., HBM T40B 3kNm):



**From development to  
customized solutions -  
all from one hand**

- Development and production
- Application of measurement shafts
- Strain gauge application and calibration



Whether by phone, e-mail or in person - our support is always available for questions about our systems - fast and easy!

Our experienced engineers and technicians will be happy to assist you in planning your measurement tasks - contact us!

Contents and illustrations of this datasheet have been elaborated to the best of our knowledge and with utmost diligence we reserve the right of error and technical modifications.