



- plug and play
- fully wireless data- and power transmission
- robust
- easy installation
  
- suitable for torque flanges (e.g. HBK T40 series)
- 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

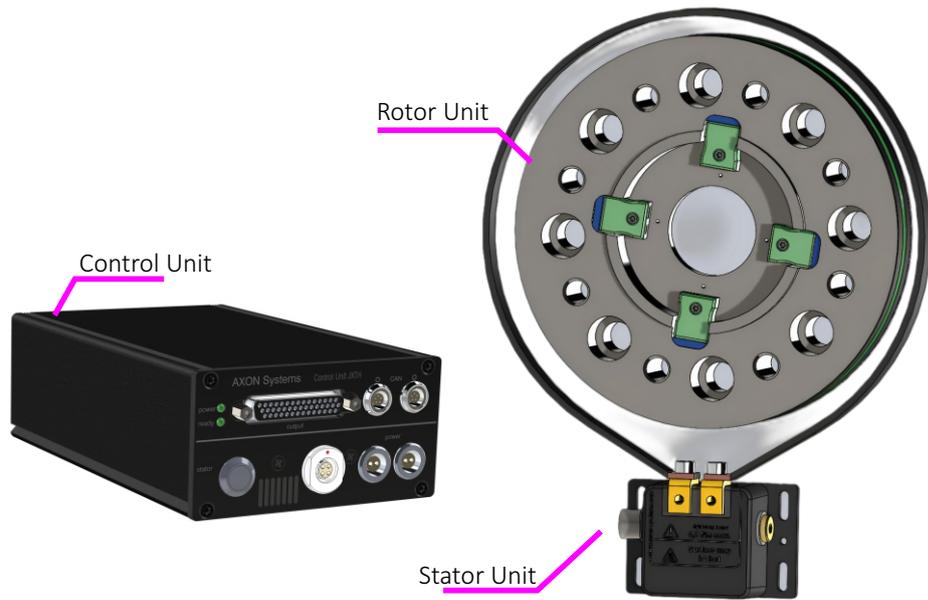


## WIRELESS MEASUREMENT FLANGE

for temperature measurements on rotating parts

# AXON JXTH-AT10

## Principle of Operation



### Rotor Unit:

Acquires the signals from the thermocouples, digitizes them and transmits the digital data stream wirelessly from the rotating shaft to the Stator Unit. Rotor Units are available in various designs and dimensions with up to 16 measurement channels. Each unit is factory-calibrated and designed for reliable operation in extremely harsh environments.



### Control Unit:

The central control and data output unit of the telemetry system. It generates and regulates the inductive power supply for the Rotor Unit and provides the measured data from the rotating shaft either as analog signals or digitally via CAN bus. Inductive power transfer and RF data reception are continuously monitored during operation to ensure stable, reliable data transmission under demanding test conditions.

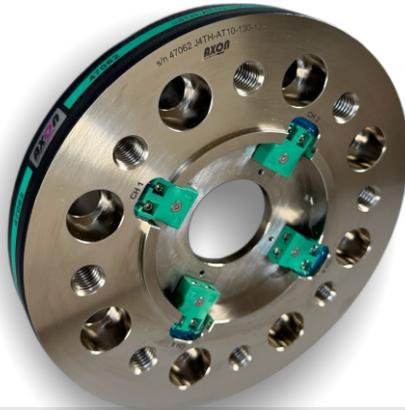


### Stator Unit:

Generates the dynamic inductive field that supplies the Rotor Unit on the rotating shaft with power and simultaneously receives the measurement data from the shaft. Distances of up to 80 mm between rotor and stator antenna can be realized. The inductive transmission is maintenance-free and designed for continuous operation under harsh environmental conditions.

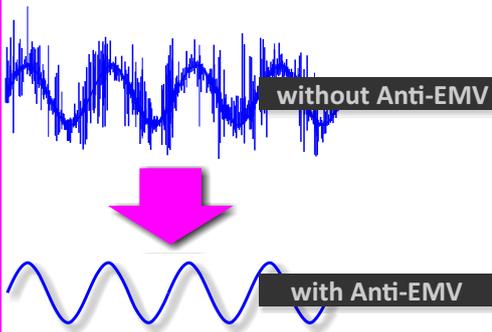
Telemetry System

## AXON JXTH-AT10



**Wireless**  
transmission
**Inductive Power Supply 4.0:**

The inductively transmitted power received by the Rotor Unit is continuously monitored during operation. The actively regulated inductive supply increases power where required and reduces it when possible. This adaptive control can reduce the overall power consumption of the telemetry system by up to 60 % while improving system stability. Large inductive supply distances of several centimeters between stator and rotor antenna can be reliably achieved.

**Anti-EMC: Noise-Cancelling for your measurement**

Test benches with **electric drives and inverters** generate high levels of electromagnetic interference. The AXON JXTH-AT10 features advanced Anti-EMC technology to ensure stable and reliable wireless data transmission under these conditions. Interfering signals from power electronics are **effectively suppressed**, enabling precise temperature measurements even in demanding e-mobility test environments. The Anti-EMC function operates automatically in the background and requires no user intervention, ensuring dependable measurement results where conventional systems often struggle.

**Individual Telemetry Carriers**

The JXTH telemetry system supports a wide range of fully customized mechanical telemetry carriers tailored to specific applications and installation constraints. This flexibility enables seamless, contactless temperature measurement solutions that can be easily integrated into new designs as well as retrofitted into existing test benches and systems. Designed for temperature measurements up to +1,250 °C, the maintenance-free JXTH system provides an ideal foundation for demanding applications such as brake temperature measurements on **flywheel brake dynamometers**. Custom carrier designs ensure optimal sensor positioning, mechanical robustness and reliable operation even under harsh test conditions.

**Custom Solutions**  
**Brake temperature measurements**  
**Plug & Play integration**  
**Retrofit solutions for existing test benches**  
**Rotor and Stator IP68 Oil- and waterproof**

# Telemetry System AXON JXTH

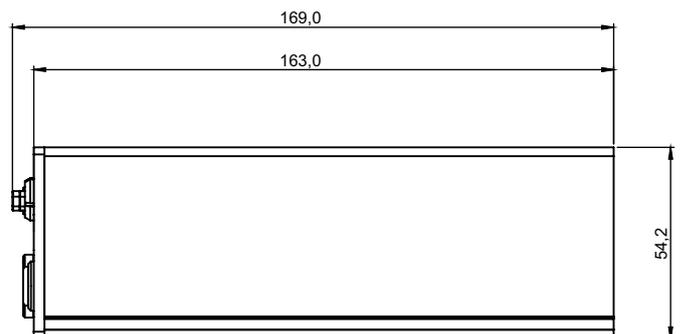
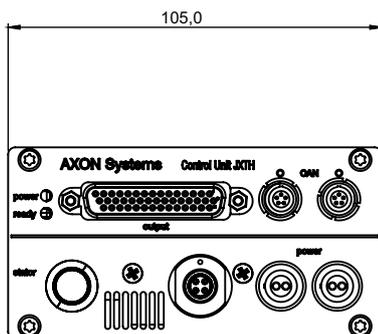
## General Technical Data

Channels	16
Measurement range	-55°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
Supported 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

## 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 custom cable length up to 200m on request	
Weight	232 grams	
Degree of protection	IP68	

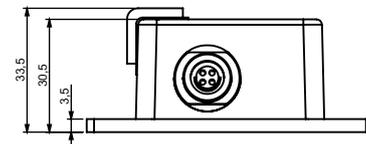
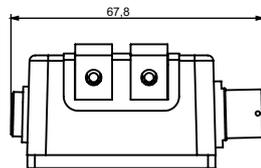
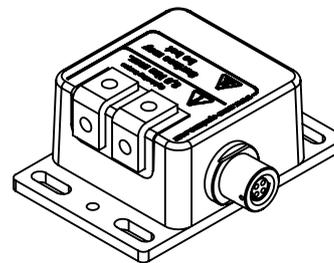
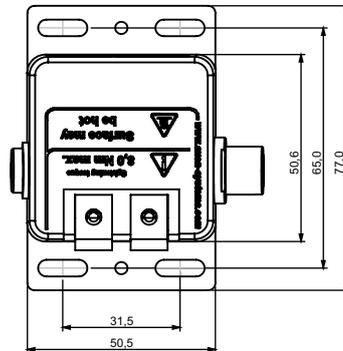
(1) Depending on installation



### Recommended Accessories

#### JX-ECE02

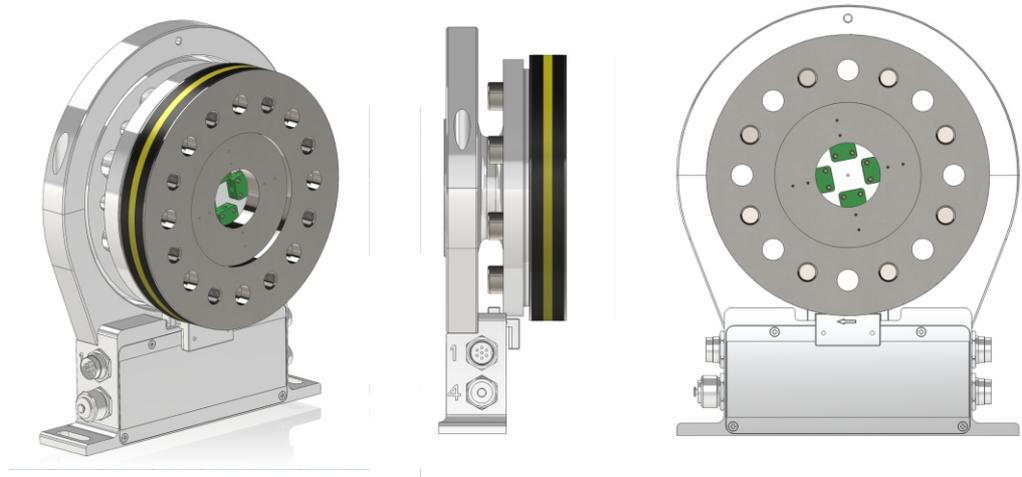
Freely formable transmission coil for ring stators JX-SR70 with "E" option with an additional connection for the EMC terminal. Length 1m



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.

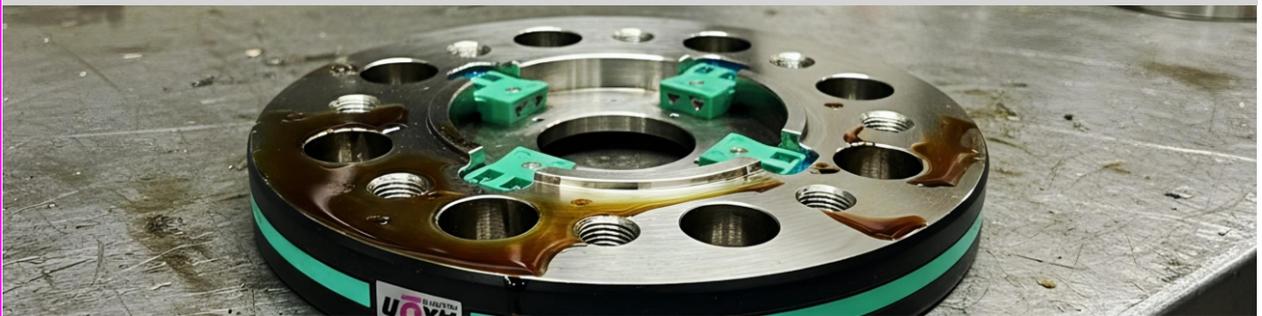
Telemetry System

# AXON JXTH-AT10



## Plug & Play:

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

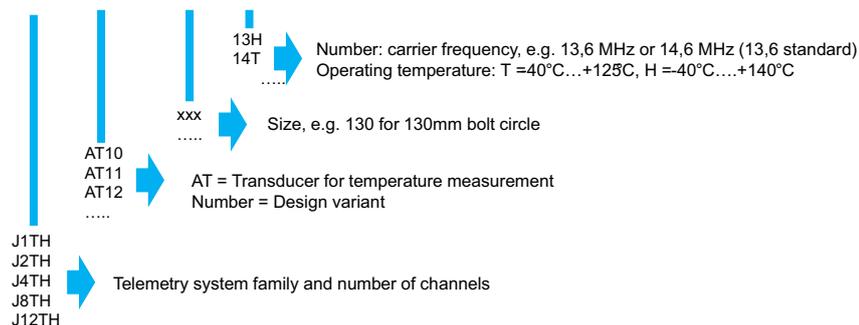


## Reliable Performance in harsh Environments

Designed for demanding test bench and vehicle applications, the JXTH telemetry system delivers reliable temperature measurement even under extreme environmental conditions. High rotational speeds, strong vibrations, hot oil, dirt and electromagnetic interference are typical challenges in modern test environments. Thanks to robust mechanical design, inductive power supply and advanced digital signal processing, the JXTH system ensures stable operation and accurate data transmission where conventional solutions reach their limits. This makes it ideally suited for long-term testing and highly dynamic measurement tasks in automotive and industrial applications.

## Type Designation

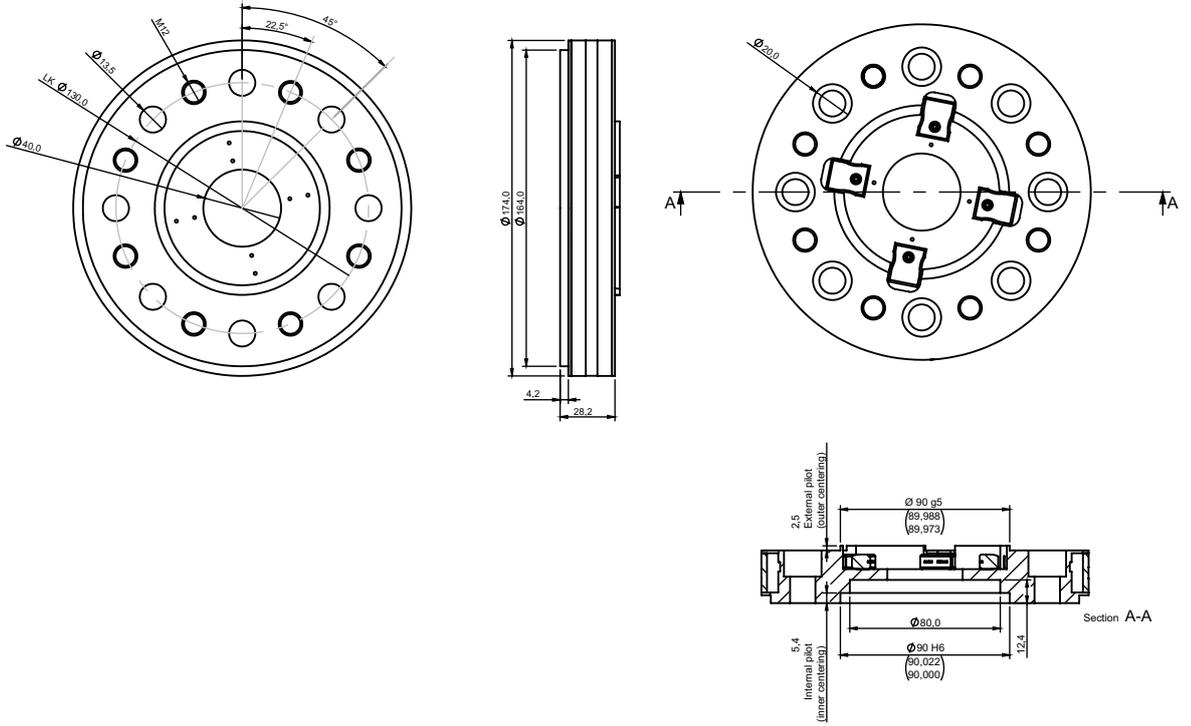
J4TH-AT10-130-13T



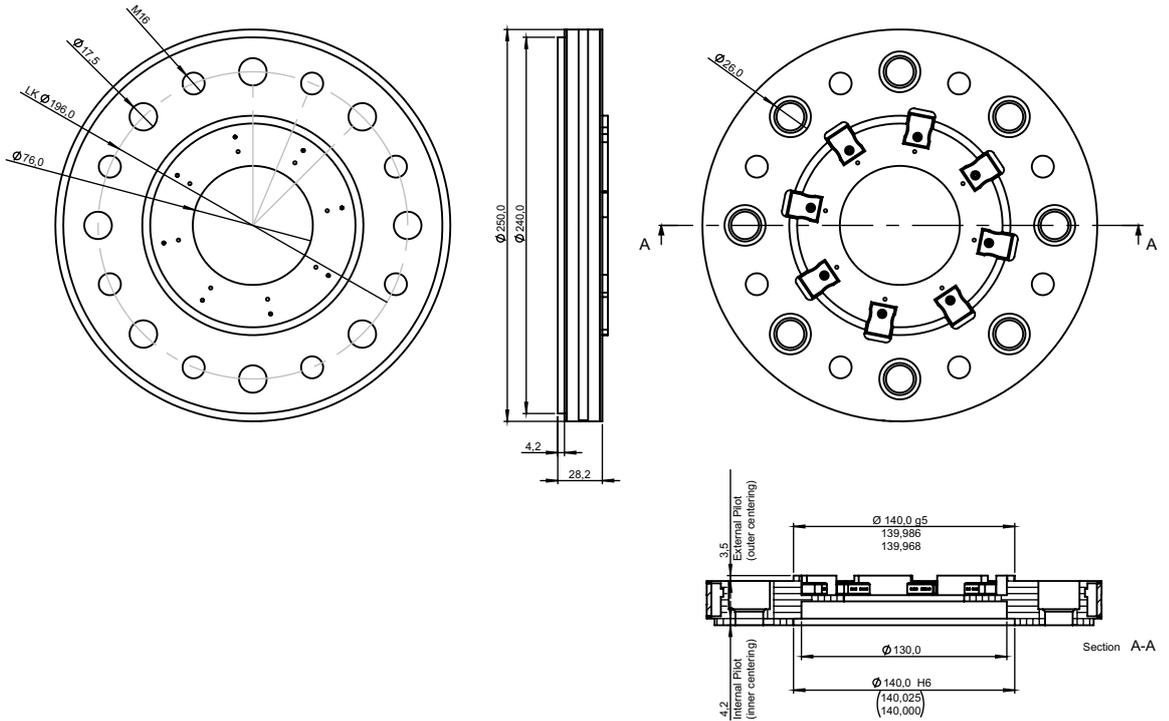
# AXON JXTH-AT10

Dimensions

Dimensions: J4TH-AT10-130-13T 4-channel Temperature Telemetry Flange (suitable for e.g., HBM T40B 2 and 3 kNm):



Dimensions: J8TH-AT10-196-13T 8-channel Temperature Telemetry Flange (suitable for e.g., HBM T40B 10 kNm):



*Engineering  
Trust  
in  
Motion*

**AXON Systems GmbH** stands for telemetry solutions engineered with passion, precision and a deep understanding of real-world measurement challenges. Founded in Germany and driven by engineering excellence for more than two decades, AXON develops high-end telemetry systems for strain gauge, torque and temperature measurements on rotating components – wherever accuracy, robustness and reliability truly matter.

Our systems are designed to perform under the harshest conditions: high temperatures, limited installation space, strong electromagnetic interference and demanding test environments. Whether in vehicle testing, e-mobility applications, test benches or industrial R&D, AXON telemetry solutions deliver stable, trustworthy measurement data when conventional approaches reach their limits.

Development, production, calibration and application engineering are combined under one roof. This allows us to create not only technically advanced products, but also application-specific solutions tailored precisely to our customers' needs – including fully customized mechanical integrations for contactless temperature measurement. AXON systems are trusted worldwide by automotive manufacturers, suppliers and research institutions. We follow uncompromising quality standards and continuously strengthen our processes, including information security, to ensure long-term reliability and confidence.

Behind every system stands a dedicated team. For technical support and application assistance, our engineers are directly reachable via [support@axon-systems.com](mailto:support@axon-systems.com) – personal, fast and free of charge.

