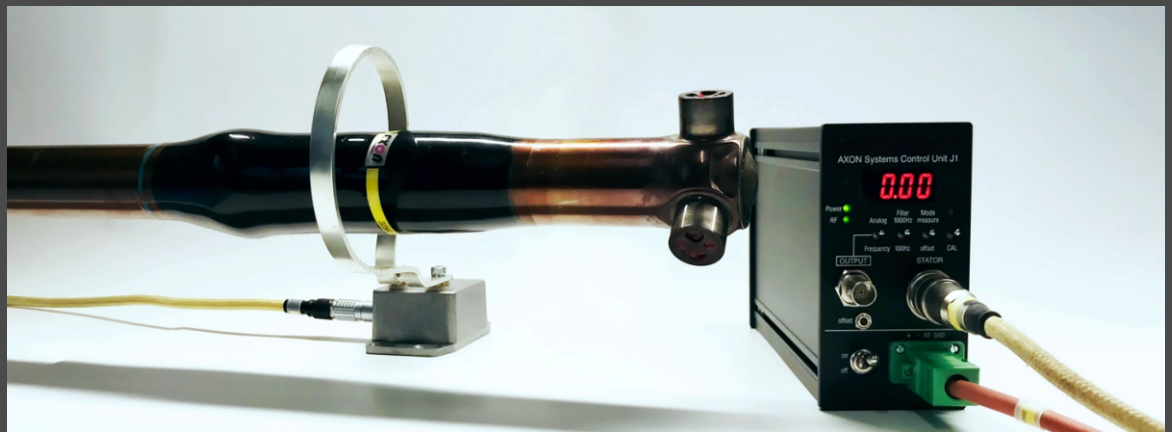




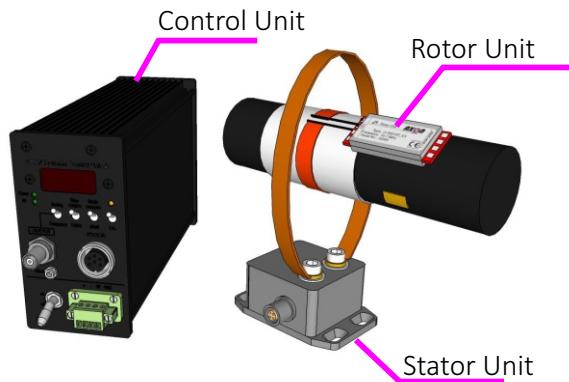
- very rugged
- reliable
- operating temperature up to +140°C
- inductive power supply
- high accuracy
- simple installation



TELEMETRY SYSTEM

for strain gauge measurement on rotating parts

Telemetry System AXON J1



The telemetry system AXON J1 is designed for transmitting strain gauge based measurements from rotating shafts or other mechanical parts. Like all AXON telemetry systems, the J1 is extremely robust and delivers reliable readings at operating temperatures of up to +140°C in continuous operation, even under the toughest conditions. The inductive, contact-free power supply of Rotor Unit and transducer ensures an interruption-free operation.



Rotor Unit:

Supplies the sensor with high-precision voltage, captures and processes the data from the strain gauge and transmits the data contactless between the rotating shaft and the Stator Unit.



Control Unit:

The central control unit and data output of the telemetry system. Generates the inductive supply voltage for the rotor unit and reproduces the data measured on the shaft as a voltage signal. Inductive supply and RF data reception are controlled and continuously optimized during operation to ensure the best possible data transmission.



Stator Unit:

Produces the dynamic inductive field which supplies power to the Rotor Unit on the rotating shaft. Simultaneously it receives the digital data stream from the shaft. Distances up to 70mm between rotor and stator antenna can be realized. Axial and radial relative movements between stator and rotor are covered in an range of several centimeters⁽¹⁾.

(1) Depending on application

Funcional Principle

Telemetry System AXON J1



The highly effective inductive power supply of the rotating components allows an uninterrupted use even under harsh conditions.

Even in oil, a stable power- and data transmission is ensured.

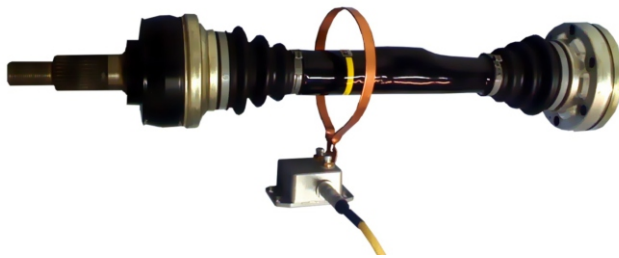
The distance between the stator and rotor antenna can easily vary between 1 and 70mm⁽¹⁾.

The intelligent inductive power transmission IPT continuously optimizes the rotor supply voltage during operation.

In addition, the RSSI output⁽²⁾ of the Control Unit provides information about the quality of the received data stream.

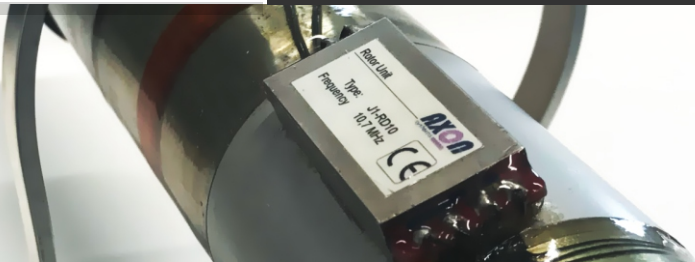
1) Depending on application

2) Receive Signal Strength Indicator



Strain gauge based measurements on:

- Drive shafts
- Prop shafts
- Torque Flanges
- Rotating gearbox parts
- and many more



The ideal system for torque measurements

The J1 telemetry system is the perfect foundation for highly professional torque measurement shafts that deliver stable and highly accurate measurement data, even under the toughest conditions.

Whether in vehicle testing or on the test bench- AXON telemetry systems standing for reliable measurement results under a wide variety of applications.

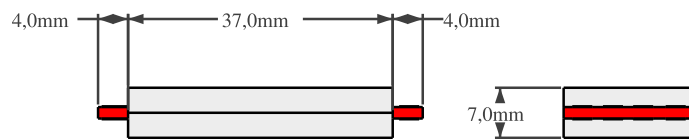
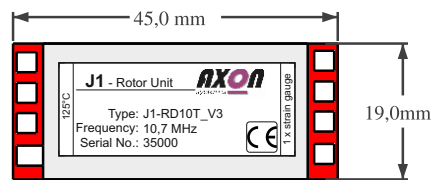


Telemetry System AXON J1

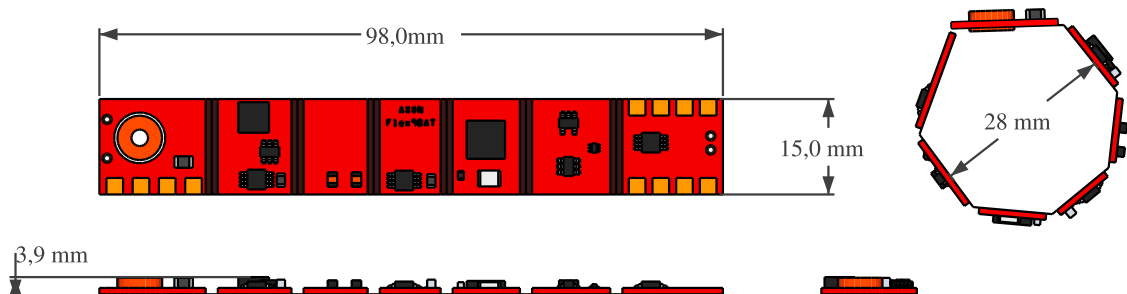
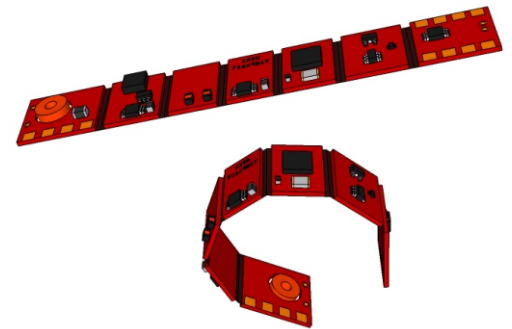
Rotor Units

Specifications

Type	J1-RD10	J1-RD10T	J1-RD10H
Signal conditioning	Strain gauge full bridge		
Power supply	inductive or battery		
Modulation	FM		
Housing	Aluminium		
Connections	Solder pads		
Dimensions	45 x 19 x 7 mm		
Operating temperature	-15°C +85°C	-40°C +125°C	-40°C +140°C
Carrier frequency (standard)	10,7 MHz		
Carrier frequency (optional)	13,56 MHz, 19,66 MHz, 24,0 MHz, 30,0 MHz		
Weight	10 grams		
Measurement range	0,1 - 500 mV/V adjustable		
Accuracy	±0,2% fs		
Offset zero drift	0,007% fs/K		
Gain drift	0,007% fs/K		
Degree of protection	IP67 with protectional covering of solder pads		
Conformity	CE		



Type	J1-RF10	J1-RF10T	J1-RF10H
Signal conditioning	Strain gauge full bridge		
Power supply	inductive or battery		
Modulation	FM		
Housing	without housing, flexible segment pcb		
Connections	Solder pads		
Dimensions	98 x 15 x 3,9 mm		
Operating temperature	-15°C +85°C	-40°C +125°C	-40°C +140°C
Carrier frequency (standard)	10,7 MHz		
Carrier frequency (optional)	13,56 MHz, 19,66 MHz, 24,0 MHz, 30,0 MHz		
Minimum bending radius	14 mm		
Weight	4,5 grams		
Measurement range	0,1 - 500 mV/V adjustable		
Accuracy	±0,2% fs		
Offset zero drift	0,007% fs/K		
Gain drift	0,007% fs/K		
Degree of protection	IP10, lacquered electronics, needs to be covered with e.g. silicone after installation		
Conformity	CE		



Telemetry System AXON J1

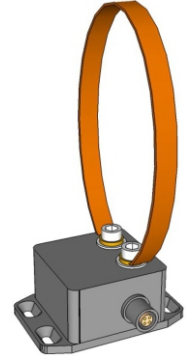
Stator Units

Specifications

Universal ring-stator

Type	JX-SR70	JX-SR70T	JX-SR70P	JX-SR70TP
Type of transmission	inductively with conductor loop (transmission coil)			
Transmission coil	copper free shapeable Ø 40 1000mm			
Transmission distance	0 70 mm ⁽¹⁾			
RF-Reception	wideband (10 MHz 30 MHz)			
Housing	Aluminium			
Connections	LEMO 4-pole, IP50		Fischer 4-pole, IP68	
Dimensions (incl. Connections)	63 x 50 x 34,5 mm			
Operating temperature	-10°C +85°C	-40°C +125°C	-10°C +85°C	-40°C +125°C
Cable length Stator - Control Unit	5m; optional 7m, 8m, 10m, 30m, 50m any cable length up to 200m on request			
Weight	187 grams			
Degree of protection (excl. Connector)	IP68			
Conformity	CE			

(1) Depending on application



Ring stator for high EMC loaded environments

Type	JX-SR70E	JX-SR70TE	JX-SR70PE	JX-SR70TPE
Type of transmission	inductively with conductor loop (transmission coil), additional EMC-terminal for signal analysis and supression of disturbance fields			
Transmission coil	EMC-stator coil JX-ECE02 Ø 40 1000mm			
Transmission distance	0 70 mm ⁽¹⁾			
RF-Reception	wideband (10 MHz 30 MHz)			
Housing	Aluminium			
Connections	LEMO 4-pole, IP50		Fischer 4-pole, IP68	
Dimensions (incl. Connections)	63 x 50 x 34,5 mm			
Operating temperature	-15°C +85°C	-40°C +125°C	-15°C +85°C	-40°C +125°C
Cable length Stator - Control Unit	5m; optional 7m, 8m, 10m, 30m, 50m any cable length up to 200m on request			
Weight	189 grams			
Degree of protection (excl. Connector)	IP68			
Conformity	CE			

(1) Depending on application

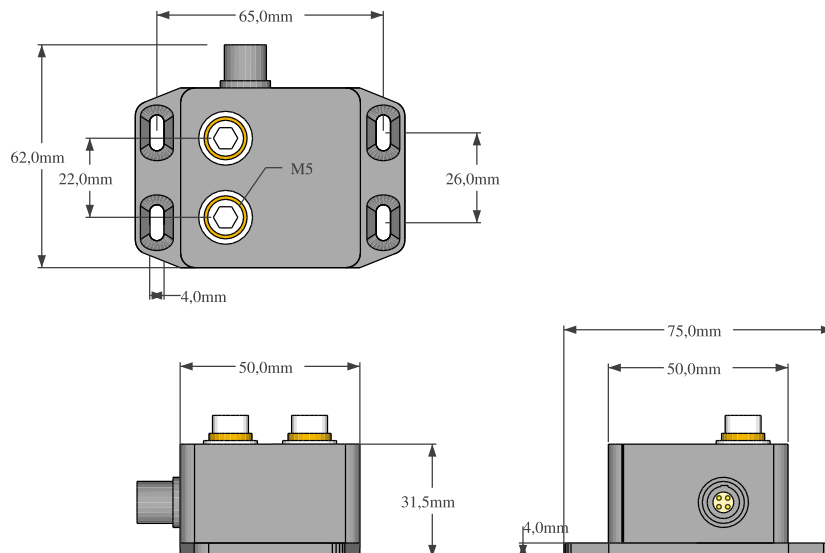


Especially for use in vehicles with electric drive and high EMC load

recommended accessory

JX-ECE02

Free shapeable transmission coil for stator units JX(D)-SR70(T)E with additional EMC-terminal.
Length 1m, shortenable



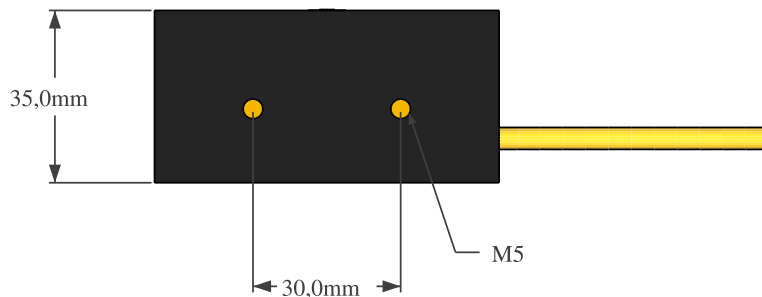
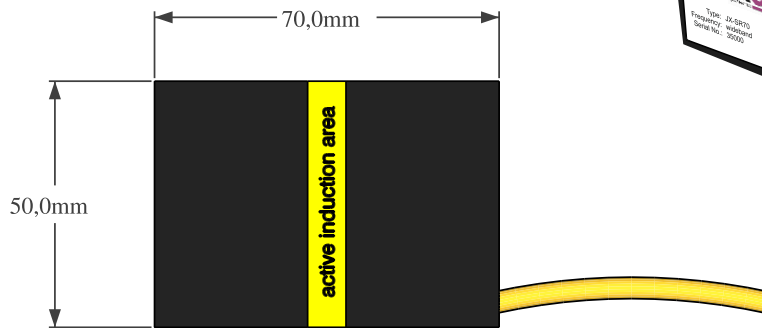
Telemetry System AXON J1

Stator Units

Inductive-Stator without transmission coil

Type	JX-SE60	JX-SE60T
Type of transmission	inductive as pick-up	
RF-Reception	wideband (10 MHz 30 MHz)	
Housing	Plastic	
Transmission distance	0 60 mm ⁽¹⁾	
Dimensions	63 x 50 x 34,5mm	
Operating temperature	-15°C +85°C	-40°C +125°C
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	
Conformity	CE	

Specifications



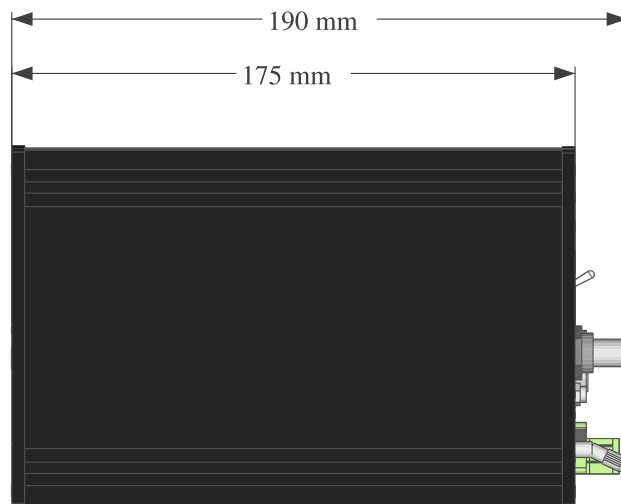
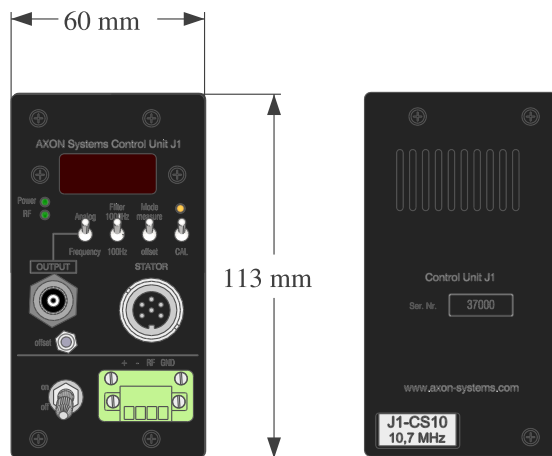
Telemetry System AXON J1

Control Unit

Specifications

Type	J1-CS10
Supply voltage	9 - 36 VDC
Display	3½-digit, 7-Segment LED-Display
Signal bandwidth	switchable 1.000Hz / 100Hz
Signal output	analogue voltage $\pm 10V$ frequency output TTL 10kHz $\pm 5kHz$ selectable by swith
Carrier frequency (standard)	10,7 MHz
Trägerfrequenzen (optional)	13,56 MHz, 19,66 MHz, 24,0 MHz, 30,0 MHz
Dynamic	SNR _{rms} : 63dB with filter setting 1000Hz SNR _{rms} : 70dB with filter setting 100Hz
Offset correction	$\pm 1V$, by Poti
Signal propagation delay	450 μs
Wireless shunt cal	Shunt Cal push button on Control Unit
Degree of protection	IP40
Dimensions	190 x 113 x 60mm
Weight	app. 700 grams
Operating temperature	-20°C - +75°C
Overvoltage protection	integrated
Reverse polarity protection	integrated
RSSI-Output ⁽¹⁾	0 - 4,5 VDC
Conformity	CE

(1) Receive Signal Strength Indicator



The product is in compliance with the requirements of the following European directive:

199/5/EC Radio and Telecommunications Terminal Equipment (R&TTE)

2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

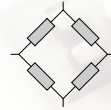
The compliance with the requirements of the European Directive was proved by the application of the following harmonized standards:

R&TTE: EN 300 330-2 V1.5.1
EN 301 489-1 V1.9.2
EN 301 489-3 V1.6.1
EN 50364:2010
EN 55011:2009+A1:2010
EN 60950-1:2006 + A11:2009 + A12:2011 + A1:2010 + A2:2013
RoHS: EN 50581:2012

The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

AXON „J“-series telemetry systems
 as an overview

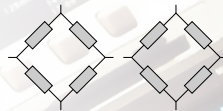
- AXON J1
 robust 1-channel telemetry system
 for strain gauge measurements,
 analogue transmission



- AXON J1DB
 digital 1-channel telemetry system
 for strain gauge measurements with
 monitoring of the rotor power supply



- AXON J2D
 digital 2-channel telemetry system for
 the simultaneous transmission of two
 strain gauge signals



- AXON J2DT
 digital 2-channel telemetry system for
 the simultaneous transmission of one
 strain gauge and one thermocouple signal



- AXON J1T
 digital 1-channel telemetry system for
 the transmission of one thermocouple
 signal



- AXON J2T
 digital 2-channel telemetry system for
 the simultaneous transmission of two
 thermocouple signals



- AXON J4T
 digital 4-channel telemetry system for
 the simultaneous transmission of four
 thermocouple signals



- AXON J8T
 digital 8-channel telemetry system for
 the simultaneous transmission of eight
 thermocouple signals



Applications

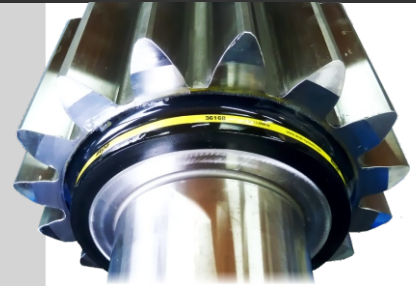
Telemetry System AXON J1

Shaft applications for torque- and temperature measurements
planned in detail - professionally built - delivered quickly

Another focus of AXON is the production of customized torque- and temperature measurement shafts. Careful planning includes the preparation of release drawings, which allow the user to check all dimensions and details for execution.

The flexibility of the AXON telemetry systems enables the construction of measuring shafts that work in the most difficult space conditions.

Sensors and electronics are sealed in multiple layers. A high-strength glass fiber composite protects the application from water, oil and mechanical damage. Thus, the maintenance-free applications are ideally suited for long-term driving tests.



State-of-the-art technology
in a robust package

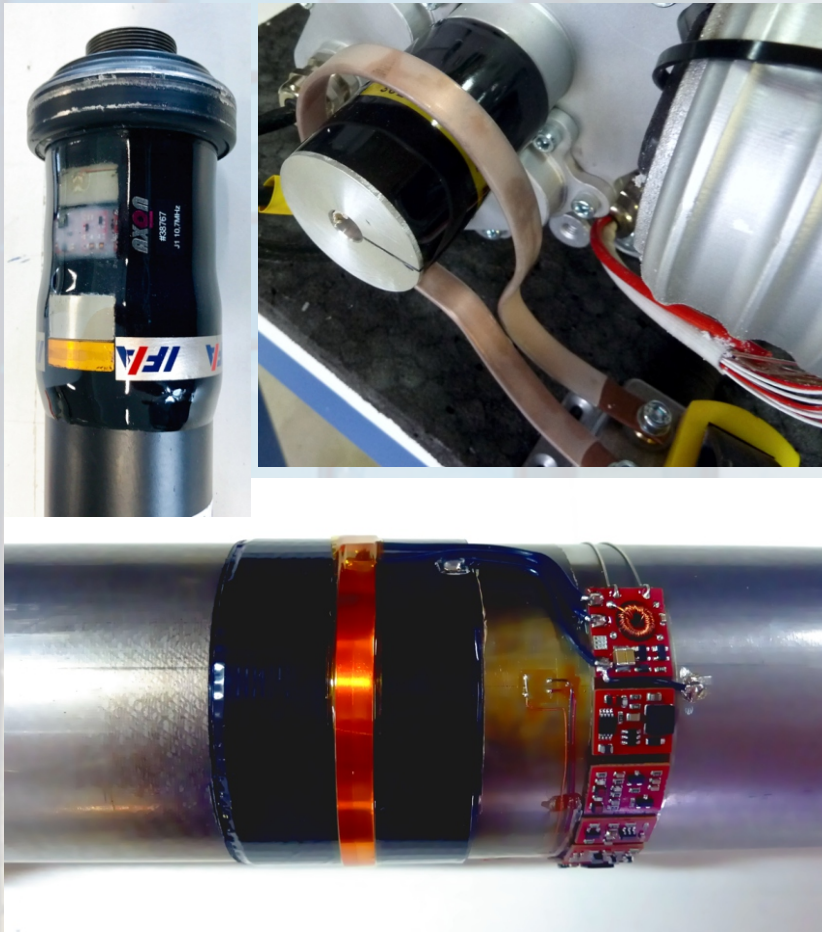
The flexible design options
of the AXON telemetry
systems allow countless
application variants.

- Telemetry
- Application
- Calibration

from one source
fast and reliable

**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.

