



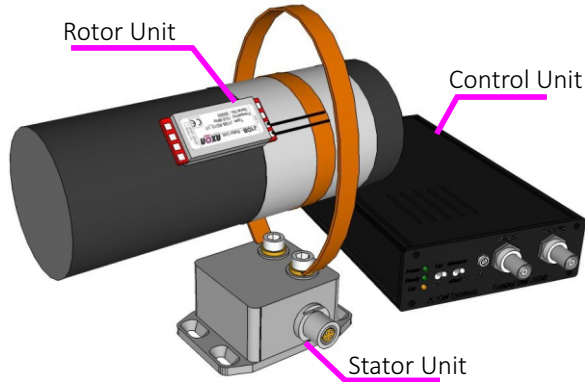
- very rugged
- reliable
- operating temperature up to +140°C
- inductive power supply
- high accuracy
- simple installation



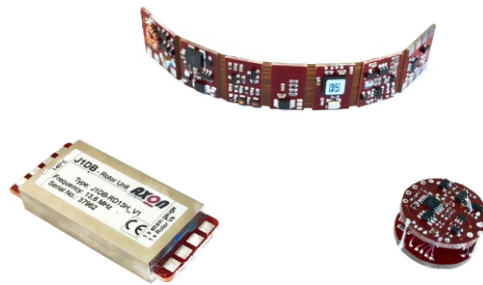
TELEMETRY SYSTEM

for strain gauge measurement on rotating parts

Telemetry System AXON J1DB



The telemetry system AXON J1DB is designed for transmitting strain gauge based measurement signals from rotating shafts under even hardest environments. During operation, a second transmission channel provides information about the inductively provided supply voltage on the rotating part of the system. The quality of the received digital data stream is also displayed via RSSI output. Through this valuable information, all important parameters for operation can be continuously monitored.



Rotor Unit:

Supplies the sensor with high-precision voltage, captures and processes the data from the strain gauge and transmits the fully digitised data stream 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 monitored and always controlled during operation to ensure the best possible data transmission.



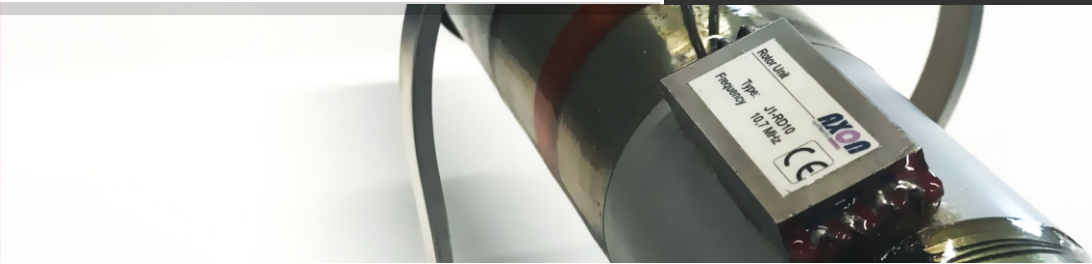
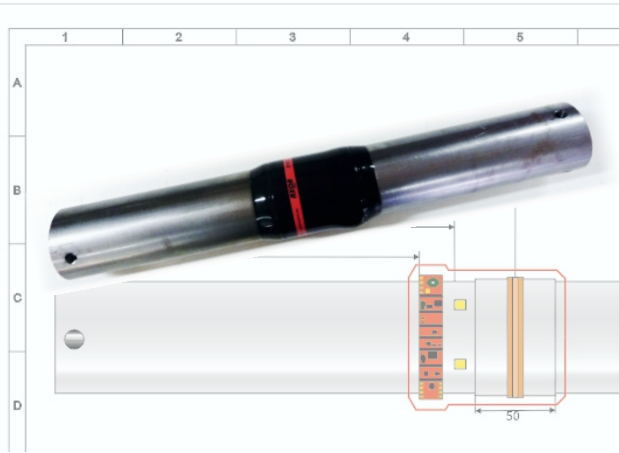
Stator Unit:

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 J1DB



The ideal system for torque measurements

The J1DB 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.

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

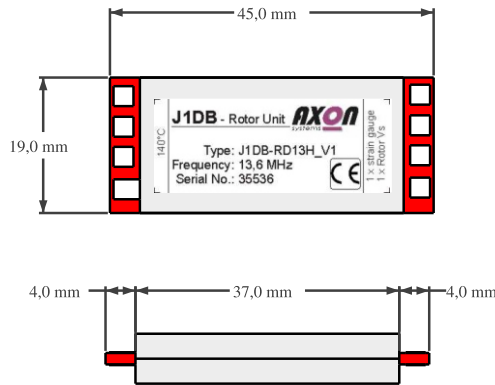
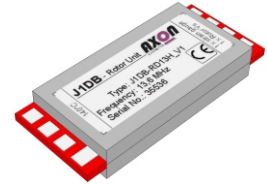


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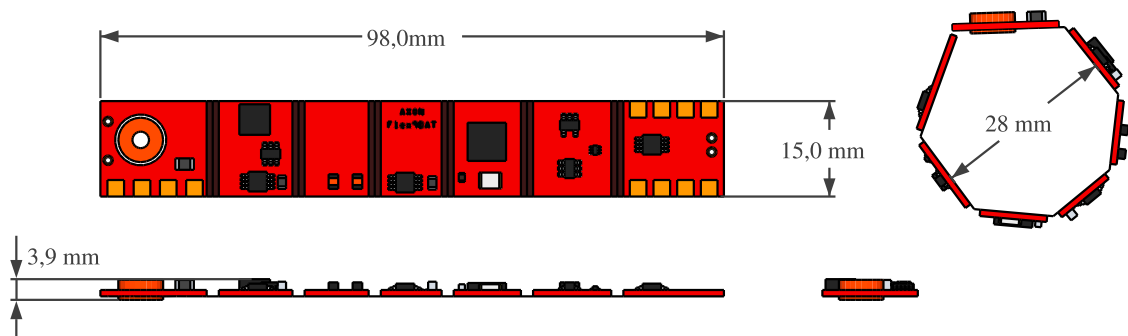
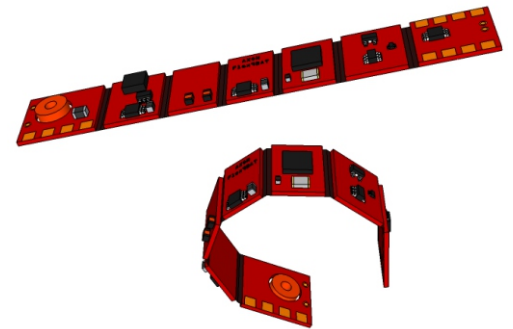
Rotor Units

Specifications

Type	J1DB-RD13	J1DB-RD13T	J1DB-RD13H
Signal conditioning channel 1	Strain gauge full bridge		
Signal conditioning channel 2	internal measurement of supply voltage		
Power supply	inductive or battery		
Modulation	PCM (digital)		
Resolution	12 bit (pure data stream)		
Housing	Aluminium		
Connections	Solder Pads		
Dimensions	45 x 19 x 7 mm		
Operating temperature	-40°C +105°C	-40°C +125°C	-40°C +140°C
Carrier frequency (standard)	13,6 MHz		
Carrier frequencies (optional)	12,6 MHz, 14,6 MHz, 15,6 MHz		
Weight	10 grams		
Measurement range	0,1 - 500 mV/V adjustable		
Degree of protection	IP67 with protection covering of solder pads		
Conformity	CE		



Type	J1DB-RF13	J1DB-RF13T	J1DB-RF13H
Signal conditioning channel 1	Strain gauge full bridge		
Signal conditioning channel 2	internal measurement of supply voltage		
Power supply	inductive or battery		
Modulation	PCM (digital)		
Resolution	12 bit (pure data stream)		
Housing	without housing, flexible segment pcb		
Connections	Solder pads		
Dimensions	98 x 15 x 3,9 mm		
Operating temperature	-40°C +105°C	-40°C +125°C	-40°C +140°C
Carrier frequency (standard)	13,6 MHz		
Carrier frequencies (optional)	12,6 MHz, 14,6 MHz, 15,6 MHz		
Minimum bending radius	14 mm		
Weight	4,5 grams		
Measurement range	0,1 - 500 mV/V adjustable		
Degree of protection	IP10, lacquered electronics, needs to be covered with e.g. silicone after installation		
Conformity	CE		

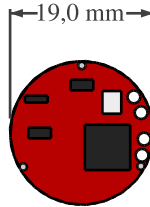


Telemetry System AXON J1DB

Rotor Units

Specifications

Typ	J1DB-RR13	J1DB-RR13T	J1DB-RR13H
Signal conditioning channel 1	Strain gauge full bridge		
Signal conditioning channel 2	internal measurement of supply voltage		
Power supply	inductive or battery		
Modulation	PCM (digital)		
Resolution	12 bit (pure data stream)		
Housing	without housing, cylindric shape		
Connections	Solder pads		
Dimensions	Ø19mm x 12mm		
Operating temperature	-40°C +105°C	-40°C +125°C	-40°C +140°C
Carrier frequency (standard)	13,6 MHz		
Carrier frequencies (optional)	12,6 MHz, 14,6 MHz, 15,6 MHz		
Weight	3,5 grams		
Measurement range	0,1 - 500 mV/V adjustable		
Degree of protection	IP10, lacquered electronics, needs to be covered with e.g. silicone after installation		
Conformity	CE		

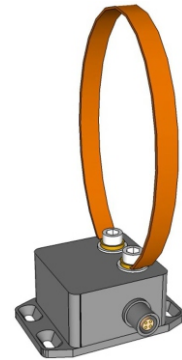


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Stator Units

Standard-ringstator

Type	JXD-SR70	JXD-SR70T
Type of transmission	inductively with conductor loop (transmission coil)	
Transmission coil	copper free shapeable $\varnothing 40 \dots 1000\text{mm}$	
Transmission distance	0 ... 70 mm ⁽¹⁾	
RF-Reception	wideband (10 MHz ... 30 MHz)	
Housing	Aluminium	
Connections	Fischer 4-pole, IP68	
Dimensions (incl. connections)	63 x 50 x 34,5 mm	
Operating temperature	-40°C ... +105°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	IP68	
Conformity	CE	



Ringstator for high EMC loaded environments

Type	JXD-SR70E	JXD-SR70TE
Type of transmission	inductively with conductor loop (transmission coil), additional EMC-terminal for signal analysis and suppression of disturbance fields	
Transmission coil	EMC-stator coil JX-ECE02 $\varnothing 40 \dots 1000\text{mm}$	
Transmission distance	0 ... 70 mm ⁽¹⁾	
RF-Reception	wideband (10 MHz ... 30 MHz)	
Housing	Aluminium	
Connections	Fischer 4-pole, IP68	
Dimensions (incl. connections)	63 x 50 x 34,5 mm	
Operating temperature	-40°C ... +105°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	IP68	
Conformity	CE	



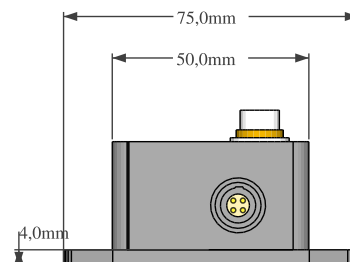
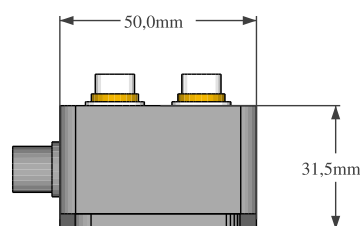
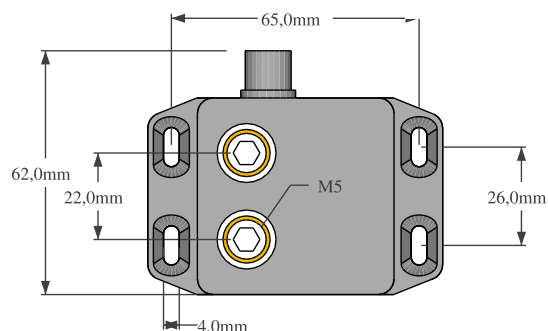
Especially for use in vehicles
with electric drive and high
EMC load

(1) Depending on application

recommended accessory

JX-ECE02

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



Specifications

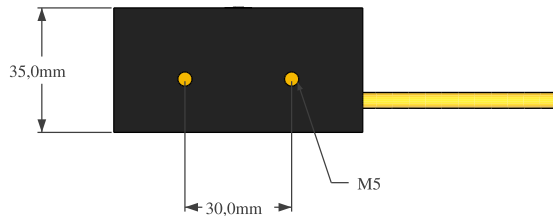
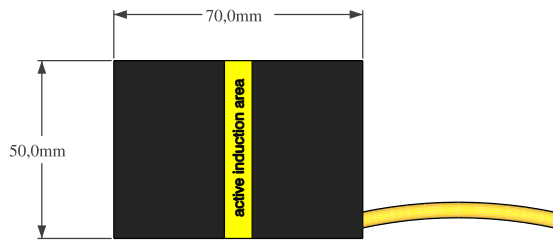
Telemetry System AXON J1DB

Stator Units

Inductive-Stator without transmission coil

Typ	JXD-SE60	JXD-SE60T
Type of transmission	inductive as Pick-Up	
RF-Reception	wideband (10 MHz 30 MHz)	
Housing	Plastic	
Transmission distance	0 60 mm ⁽¹⁾	
Dimensions (without cable)	63 x 50 x 34,5mm	
Operating temperature	-40°C +105°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	

(1) Depending on application



Specifications

Telemetry System AXON J1DB

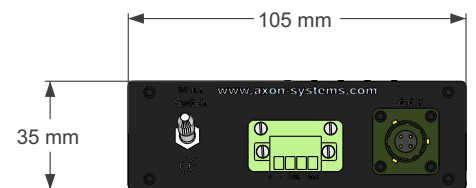
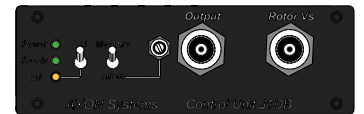
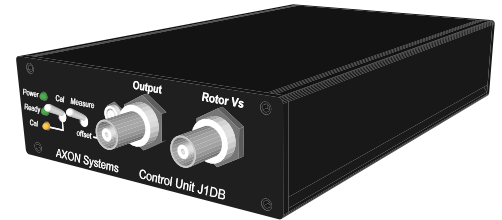
Control Unit

Specifications

Type	J1DB-CE13-10	J1DB-CE13-05
Dimensions	205 x 105 x 35mm (incl. connectors)	
Supply voltage	9 - 36 VDC	
Signal bandwidth	1000 Hz (-3dB)	500 Hz (-3dB)
Signal output strain gauge	BNC; analog Voltage $\pm 10V$	
Signal output Rotor Vs ⁽¹⁾	BNC; analog voltage $\pm 10V$, (factor 3:1)	
Carrier frequency (standard)	13,6 MHz	
Carrier frequency (optional)	12,6 MHz, 14,6 MHz, 15,6 MHz	
Offset correction	$\pm 0,5V$, by Poti	
Signal propagation delay	450 μs	
Wireless shunt cal	Shunt Cal push button on Control Unit	
Degree of protection	IP40	
Weight	app. 450 grams	
Operating temperature	$-20^{\circ}C$ - $+75^{\circ}C$	
Overvoltage protection	integrated	
Reverse polarity protection	integrated	
RSSI-Output ⁽²⁾	0 - 4,5 VDC	
Conformity	CE	

(1) Supply voltage Rotor Unit

(2) 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:

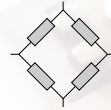
R&TTE: EN 300 330-2 V1.5.1
EN 301 489-1 V1.9.2
EN 301 489-3 V1.6.1
EN 50364:2010
EN 55011:2009+A1:2010
EN 60950-1:2006 + A11:2009 + A12:2011 + A1:2010 + A2:2013
RoHS: EN 50581:2012

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.

Telemetry System AXON J1DB

AXON „J“-series telemetry systems as an overview

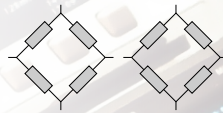
- AXON J1
robust 1-channel telemetry system
for strain gauge measurements,
analogue transmission



- 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

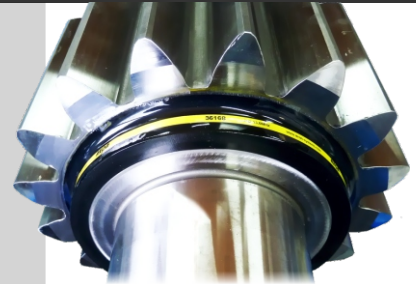
Telemetry System AXON J1DB

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

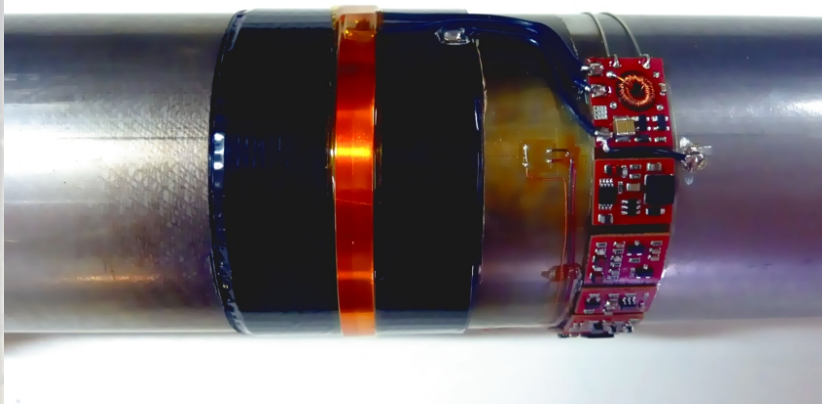
The flexible design options
of the AXON telemetry
systems allow countless
application variants.

- 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.