# AXON J1

## Wireless data transmission for rotating applications

Highly reliable datatransmission

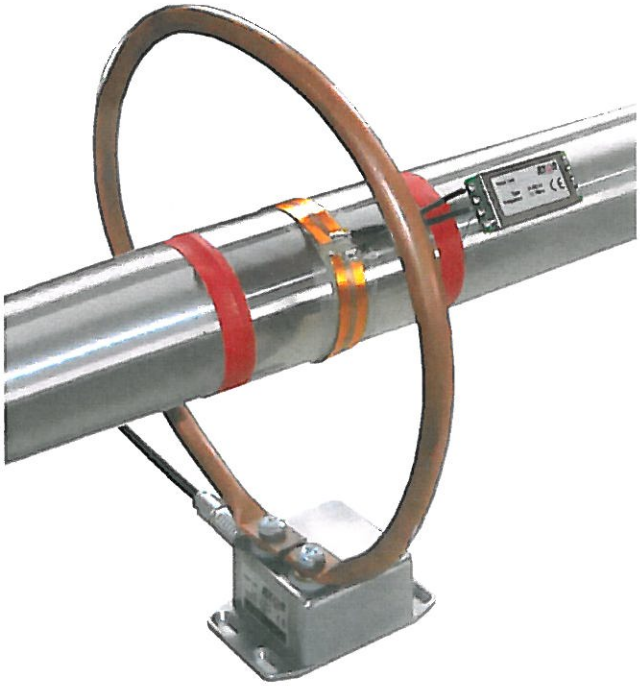
Support on the spot

Application & calibration service

Customer-specific solutions

# IPT - Intelligent Power Transmission

## Routine Condition



Today, it's more important than ever to have reliable, detailed information about torque, temperature or other feedback signals by metering the different types of applications. The telemetry system AXON J1 helps you to capture this data even from rotating applications. A very small rotor electronic, installed directly on the shaft captures, conditions and transmits the measuring data to a Stator Unit. After this the information can be reproduced on the Control Unit

Because it's easy to install and it can be powered inductively or with battery, it's a real all-rounder for measurements on rotating machinery.

There's no easier way to run wireless data transmission!

Intelligent Power Transmission allows a significant improvement of the transmission distance and temperature stability as well as a compensation of any influence in terms of aging.

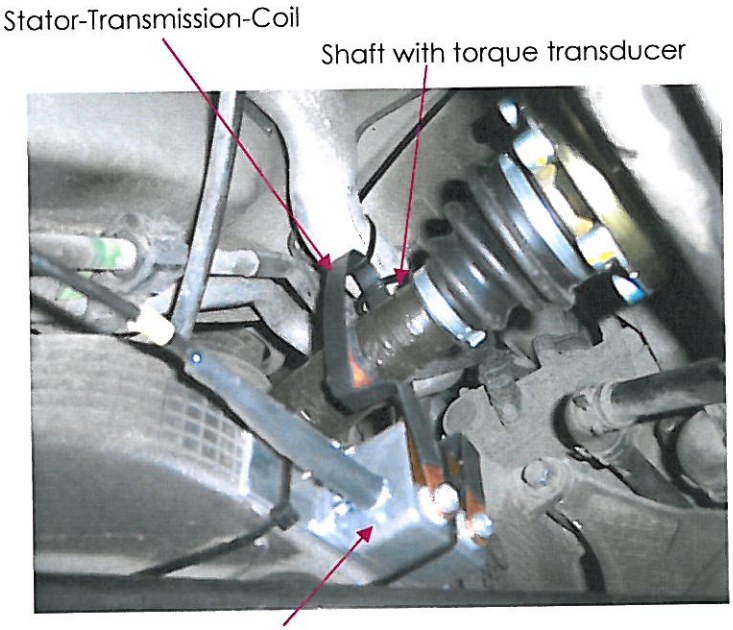
Particularly the Ring-Stator JX-SR70 ensures in connection with Intelligent Power Transmission a permanent data stream even from shafts with a high degree of displacement.

The system components can be exchanged easily with use of Plug&Play allowing flexible use. For example the individual alignment of the Stator-Transmission-Coil AXON JX-SR70 compensates for shaft and axis deviations however large and can supply the rotor side with energy reliably.

# Best performance for torque measurement

## The Telemetry System AXON J1 is in permanent use by many automotive companies

To meet the requirements of measuring torque on shafts in vehicles, it is important to provide continuous data transmission, even while measuring torque on drive shafts under a high degree of deflection. With the Ring-Stator JX-SR70, the System represents the perfect solution for measurements in vehicles on rotating machinery provided by rapid installation. The stator is equipped with a flexible transmission coil, which provides inductive power in every operating point of the suspension. Under permanent operation if on the road or on the race track, customers can confirm the reliability of the AXON J1-System.
To manage a professional and solid mounting of the shafts, AXON Systems offers application, calibration and installation of the shafts as a complete service.

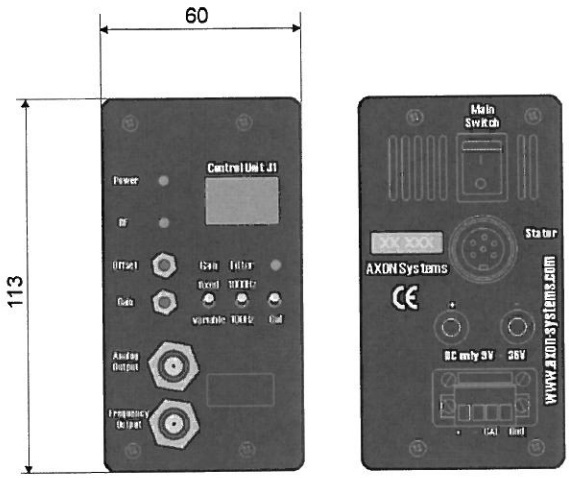



Ring-Stator AXON J1-SR70

Driveshaft with appltication

Shaft after application and calibration with waterproof and shock resistant encapsulation

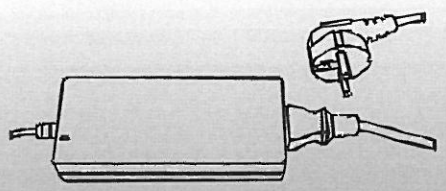
# Technical Data
## Control Unit




### Control Unit
**J1-CS10**

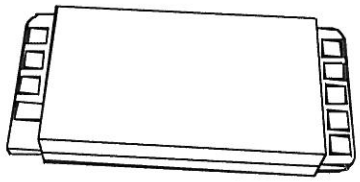
| | |
|---|---|
| Supply voltage | 9 .... 36 VDC |
| Display | 3½-digit, 7-Segment LED-Display |
| Signal bandwith | switchable 1 000 Hz / 100 Hz<br>optional 2 500 Hz / 100 Hz |
| Frequency output | 10 kHz +/- 5 KHz |
| Voltage output analog | +/- 10 V |
| CAN-Bus interface | optional |
| Carrier frequency | 10,7 MHz<br>optional 13,56 MHz, 19,66 MHz,<br>24 MHz, 30 MHz |
| Signal to noise ratio | 65dB<br>at signal bandwith 100 Hz: 83dB |
| Signal propagation delay | 450 µs |
| Wireless shunt calibration | Pushbutton on Control Unit |
| Degree of protection | IP40 |
| Weight | 700 Gramm |
| Temperature range | -10 °C ... + 75°C |
| Power consumption | 30 VA max. |

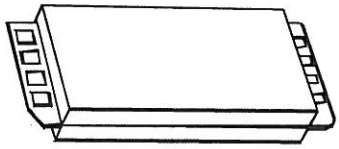
### Control Unit Accessories
**JX-EI02 (Mountig kit for J1-CS10)**

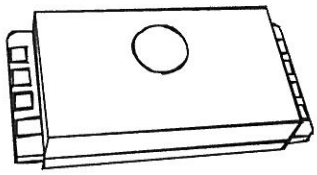


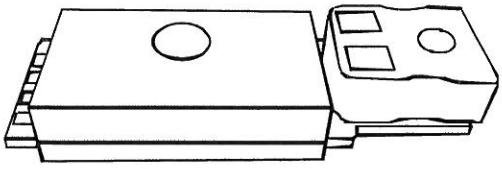
### Control Unit Accessories
**JX-EP60 (100...250VAC Power pack for Control Unit)**

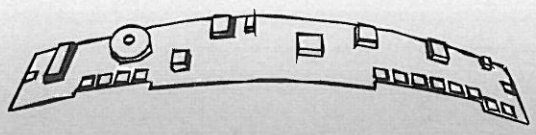
# Technical Data
## Rotor Units

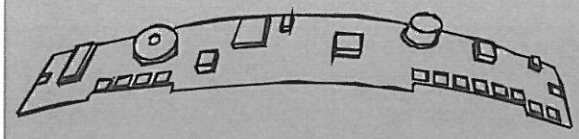






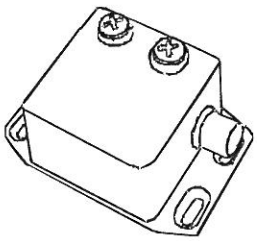


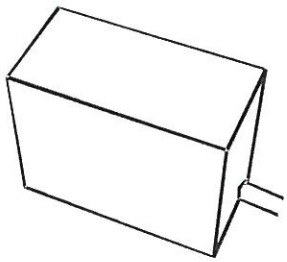


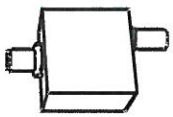


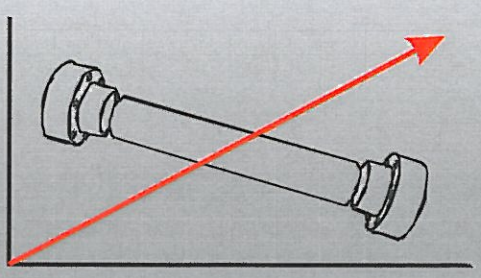
| Rotor unit | |
|---|---|
| **J1-RE10** | |
| Signal conditioning | Strain gauge and thermocouple |
| Housing | Aluminium |
| Dimensions (incl. solder pads) | 46 x 21 x 7 mm |
| Weight | app. 11 g |
| Connections | Solder pads |
| Temperature range | -10°C ... +85°C |
| **J1-RD10** | |
| Signal conditioning | Strain gauge |
| Housing | Aluminium |
| Dimensions (incl. solder pads) | 45 x 19 x 7 mm |
| Weight | app. 10 g |
| Connections | Solder pads |
| Temperature range | -10°C ... + 85°C |
| **J1-RD10T** | |
| Signal conditioning | Strain gauge |
| Housing | Aluminium |
| Dimensions (incl. solder pads) | 45 x 21 x 9,5 mm |
| Weight | app. 15g |
| Connections | Solder pads |
| **Temperature range** | **-40°C ... + 125°C** |
| **J1-RT10T** | |
| Signal conditioning | Thermocouple |
| Housing | Aluminium |
| Dimensions (incl. solder pads) | 61 x 21 x 9,5 mm |
| Weight | app. 19g |
| Connections | Solder pads / Thermocouple connector |
| **Temperature range** | **-40°C ... + 125°C** |
| **J1-RF10** | |
| Signal conditioning | Strain gauge |
| Housing | No housing; flexible rotor |
| Dimensions | 102 x 17 x 4,2 mm |
| Weight | app. 3,2 g |
| Connections | Solder pads |
| Temperature range | -10°C ... + 85°C |
| **J1-RF10T** | |
| Signal conditioning | Stran gauge |
| Housing | No housing; flexible rotor |
| Dimensions | 102 x 17 x 6 mm |
| Weight | app. 3,8 g |
| Connections | Solder pads |
| **Temperature range** | **-40°C ... + 125°C** |

# Technical Data
## Stator Units
## Application & Calibration









| Stator Unit | |
|---|---|
| **Ring-Stator AXON JX-SR70(T)** | |
| Transmission distance | 0 ... 70 mm |
| Dimensions (incl. connector) | 61 x 50,5 x 33 mm |
| Carrier frequency | wideband (10,7 ... 30 MHz) |
| Cable to Control Unit | 5 m |
| | optional 7, 10, 30 m |
| Degree of protection | IP 67 |
| Transmission coil | copper, free shapeable up to Ø 30 cm |
| Temperature range | -10°C ... +85°C |
| | **optional -40 ... +125°C (T)** |

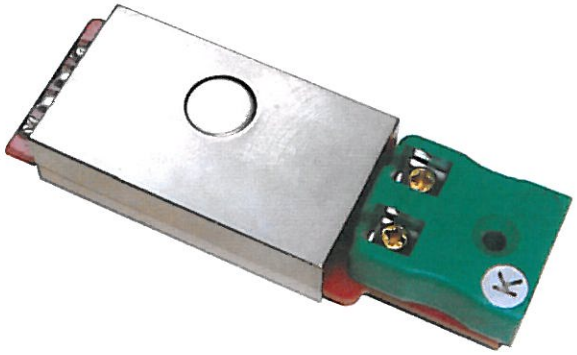
| **Inductive stator AXON JX-SE60** | |
|---|---|
| Transmission distance | 0 ... 60 mm |
| Dimensions | 70 x 50 x 35 mm |
| Carrier frequency | wideband (10,7 ... 30 MHz) |
| Cable to Control Unit | 3 m |
| | optional 5, 10, 30 m |
| Degree of protection | IP 67 |
| Temperature range | -10°C ... +85°C |

| **Receiver stator AXON JX-SB01 (only for battery supplied rotor unit)** | |
|---|---|
| Transmission distance | 0 ... 2 m (by using a wire antenna) |
| Dimensions (incl. connector) | 46 x 25 x 14 mm |
| Carrier frequency | wideband (10,7 ... 30 MHz) |
| Cable to Control Unit | 3 m |
| | optional 5, 10, 30 m |
| Degree of protection | IP 40 |
| | optional IP 67 |

| **Application & calibration of shafts for torque measuerement** |
|---|
| Strain gauge application |
| Installing of telemetry |
| Water– and shockproof covering |
| Calibration up to 10.000 Nm |
| Documentation |

# J1-RT10T

## Thermocouple rotor up to 125°C environmental temperature



To meet the sometimes high ambient temperatures, the new Rotor Unit AXON J1-RT10T is avalilable now. According to all AXON J1 high temperature rotors it is equipped with MIL-components to ensure a highly reliable datatransmission from rotating shafts on temperatures up to +125°C. If the temperature is even exceeding the specified range, the Rotor Unit switches off to avoid wrong measurements or even a damaging of the electronic. The standard connector for thermocouple allows a easy and quick wiring of the thermocouples. Also, connectors can be removed and the wires can be soldered to the Rotor Unit. The rotors are avaliable for type K and type J thermocouples. A cold junction compensation is implemented.

To transmit strain gauge signals even under very limited free space, the rotors AXON J1-RF10 and AXON J1-RF10T can be even „wrapped" around any surface. The flexible circuit board can be adapted to almost any shape - with a radius down to 1,5 cm.