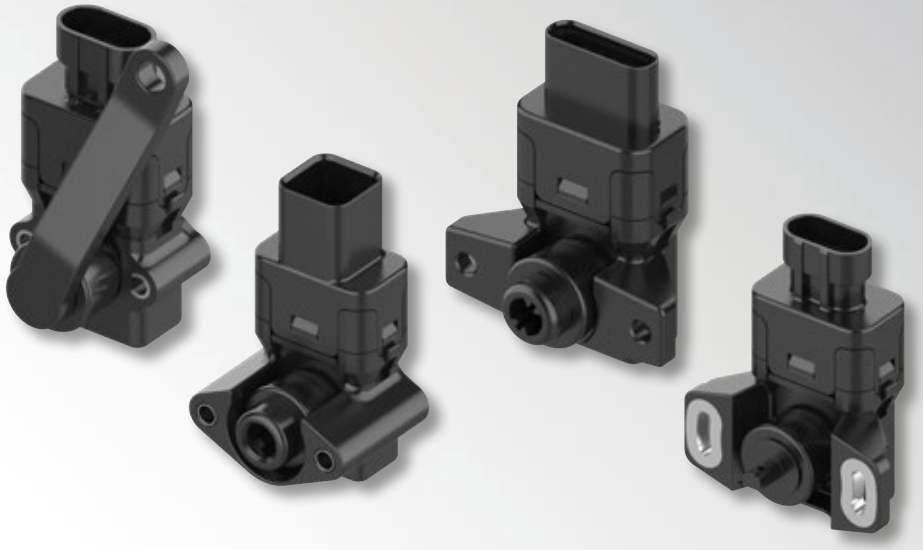


BRIEF INFORMATION

Universal Angular Sensor

- Modular approach ensures a wide range of mechanical interfaces with single or dual channel
- Safety standard up to ASIL-D according to ISO 26262 with dual channel (single channel up to ASIL B)
- Variety of electrical interfaces available
- Thanks to the **C**(ontactless) **I**(nductive) **PO**(sition) **S**(ensor) Technology it is resistant against magnetic fields
- Zero position can be individually programmed
- Various connection elements available

PRODUCT FEATURES

Application
The **U**niversal **A**ngular **S**ensor sensor offers maximum flexibility thanks to its wide range of configuration options. The design enables countless variants and possible applications – customised for all types of vehicles and machines.

Design and function
Thanks to the integrated CIPOS© technology, the universal angular position sensor offers high measuring accuracy and low susceptibility to interference. This means that even the smallest angles can be measured reliably and precisely – even under the most difficult conditions.

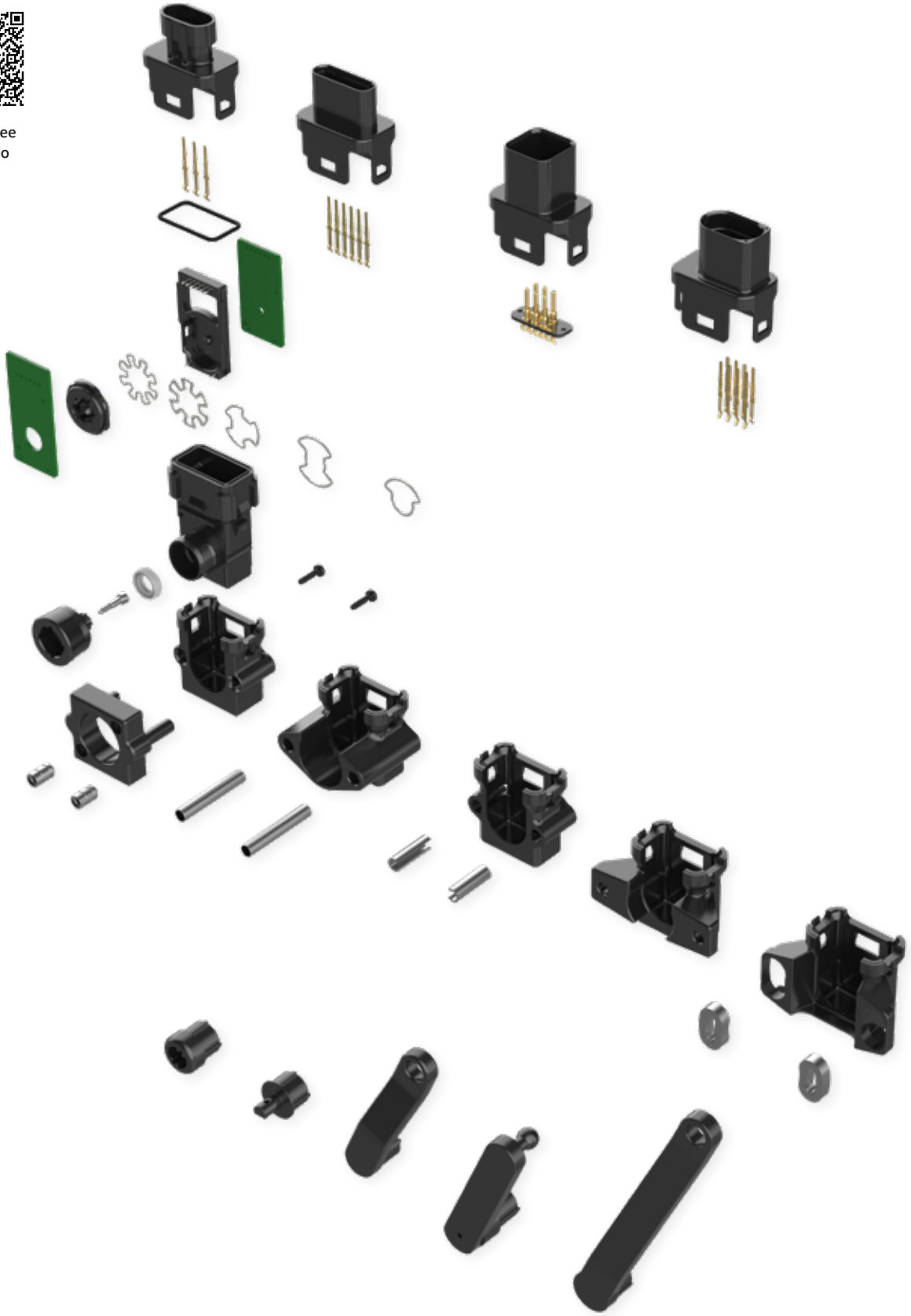
CIPOS© technology offers many advantages over state-of-the-art potentiometers or magnetic position sensors.

Starting from the basic element, the sensor is configured with additional components. There is a choice of:
- Rotors for different measuring ranges
- Freely selectable output PCBs
- Various connector types
- Various mounting geometries
- Plus a wide variety of fastening elements with flexible hole dimensions

EXTREMELY MODULAR – FOR A WIDE RANGE OF APPLICATIONS

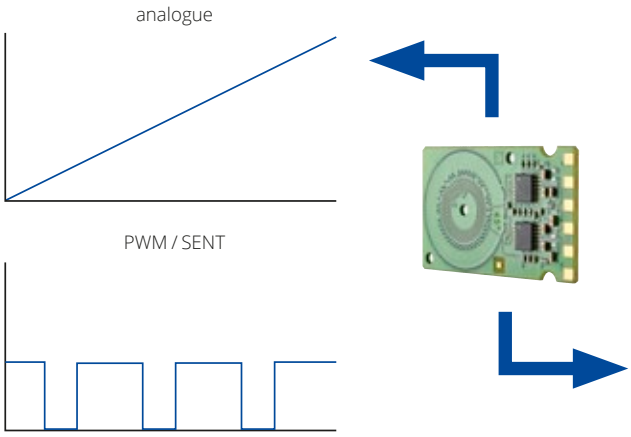
Thanks to this modularity, the sensor can be used in a wide variety of applications. For example, the sensor can be used to measure different levels and inclinations. Also the wheel angle can be measured at different points on a vehicle. Any pedals can be equipped with the universal angular position sensor to convert the mechanical movement into an electronic signal. It is irreplaceable for measuring a wide range of rotational positions on vehicles and machines.

Scan to see the video

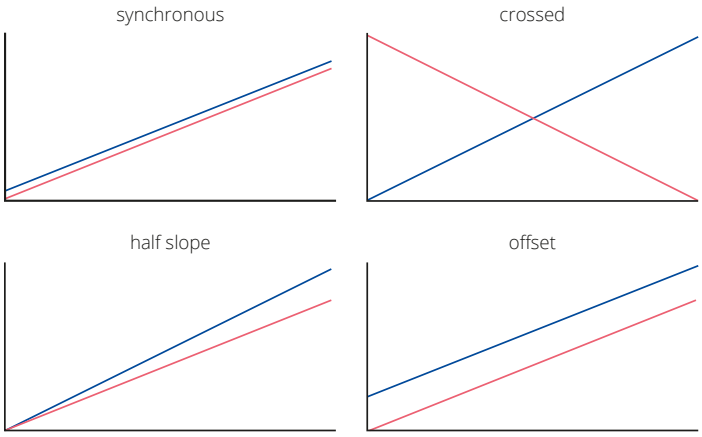


OVERWIEV OF TYPICAL INTERFACES

Output Signal



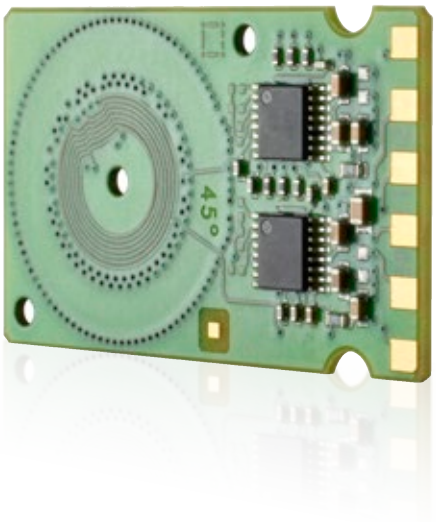
Characteristics curves for redundant (dual channel sensor) systems



CIPOS® – INDUCTIVE POSITION SENSOR TECHNOLOGY

CIPOS® enables a contactless, highly accurate, secure and robust measurements of linear and angular positions by using electromagnetic alternating fields.

Benefits of the CIPOS® Technology:
- EMC robustness; no impact of external magnetic fields
- High reliability and accuracy
- High measurement speed
- Various options for redundant signals
- Different rotors for a wide range of measuring ranges up to 360°
- Mechanical robustness
- Chemical resistance
- Temperature independent sensor performance

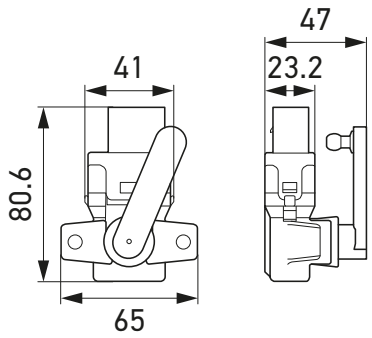


TECHNICAL DETAILS

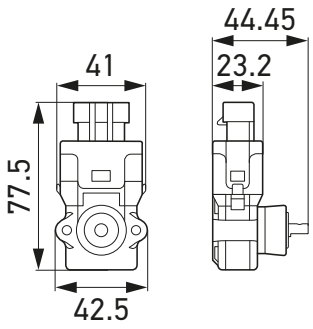
Technical data	
Supply voltage	U_s 5 V ± 10 % or 9 – 32 V
Current consumption	< 20 mA (after start up phase)
Mechanical angle range	360° (without electrical multiturn)
Zero position	According to customer request
Temperature range	- 40 °C to +125 °C
Protection class	IP 6K9K (with connected mating connector)
Protection	Complies to flammability regulation (burn rate < 100 mm / min)
Approved	ECE-R10
Compliant	CISPR 25 Class 4, SAE J-1113-41, ISO26262 ASIL-D (AgPL e)

Mating connector	**Molex** 31402-6110 **TE Connectivity** - TE AMP Seal 16 6P Key 1 - TE 1-967616-1 - TE 1394416-1 - TE 776434-1 - TE 282087-1 **APTIV** 12015793
Lever arm options	**D-shaft** **Hole** Various options available **Levers** Various options available
Fixation variants	α) 32 mm blind hole β) 32 mm through hole γ) 38 mm through hole δ) 40 mm through hole ε) 50 mm through hole ζ) 50 mm with long through hole γ) various other options available
Electrical Interfaces	Single / double analogue, SENT or switch function, PWM

Dimensional sketch*



With 50 mm lever and 2-chan 6 pin connector, fastening element with 50 mm. holes.



With D-shaft and 1-chan 3-pin connector, fastening element with 32 mm holes.

* The outer dimensions are determined by the selection of bracket, connector type and connection element.

Sensor configuration and related accuracy overview

	Use case				
Nominal measurement range	11.25° – 45°	15° – 60°	30° – 120°	45° – 180°	90° – 360°
ASIL accuracy	± 1.2°	± 1.2°	± 2.4°	± 3.6°	± 7.2°
QM accuracy	± 0.6°	± 0.6°	± 1.2°	± 1.8°	± 3.6°
Used structure angle	45°	60°	120°	180°	360°

PROGRAM OVERVIEW

Description	Part number
Universal Angular Sensor	**6PD 018 101-00**