

Angle-of-Rotation Sensor WS

for mobile drive systems

Series 1



WSA90S/10

Features

The WS angle-of-rotation sensor is used for contactless measurement of rotary movements or angular positions, for example for detecting the position of the injection pump lever of a diesel engine.

The sensor has a robust, sealed housing and a built-in electronic unit specially developed for use in motor vehicles.

The voltage supply for the WS angle-of-rotation sensor is supplied directly from a MC microcontroller.

As output variable, the WS angle-of-rotation sensor delivers a voltage proportional to the angle of rotation.

For safety-related system solutions, a partially redundant version with double output signals is available. This sensor has two internal measuring systems with a common voltage supply.

Main components

- Hall-effect semiconductor elements and built-in amplifier
- Robust plastic housing with molded plug
- Metal inner housing and line filters for high electromagnetic compatibility (EMC)
- Control lever with several fixing holes

Special characteristics

- Long service life
- Insensitive to shock and vibration
- No hysteresis

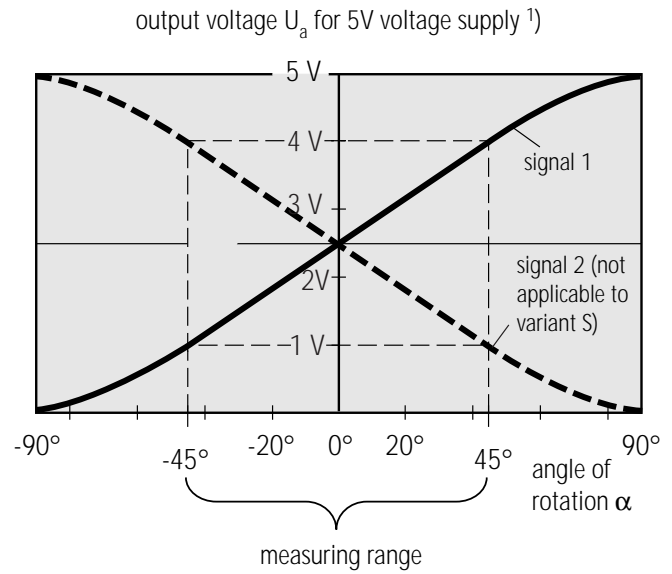
Ordering Code

	WS	A	90	/	1	0
Type	Angle-of-rotation sensor WS					
Design	A					
Measuring range	Rotary angle measuring range: 90° 90					
Safety	Standard (1 output signal)					S
	Part-redundant (2 output signals)					T
Series						1
Index						0

Technical Data

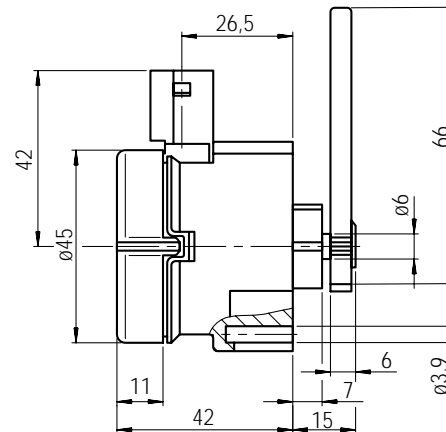
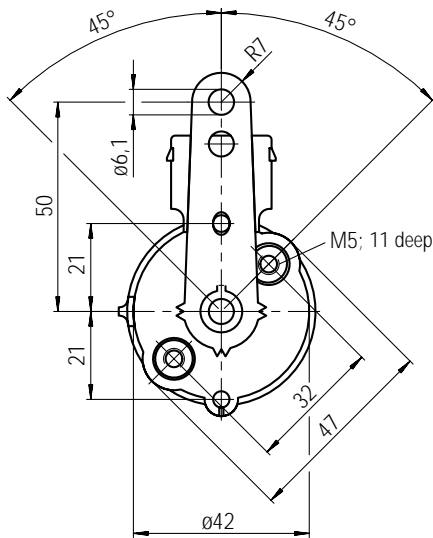
Type	WS
Angle of rotation, mechanical	360° (fully rotatable)
Angle of rotation, measuring range	90° (±45°)
Torque	≤ 10 Ncm
Supply voltage	5 V DC ±0.25 V
Current consumption	approx. 10 mA (variant S) approx. 20 mA (variant T)
Output voltage ¹⁾	1...4 V (with 5V supply)
Output current	max. 1 mA
Short-circuit protection at output	yes
Accuracy	≤ ±1% for -15° ≤ α ≤ +15° ≤ ±4% for -45° ≤ α ≤ +45°
Operating temperature range	-40°C ... +100 °C, short-term +125°C (1h)
Enclosure protection class	IP 6 K 6, IP 6 K 9 K
Noise immunity EMC	200 V/m up to 1 GHz
Service life	> 30 mill. cycles

Performance Curve



¹⁾ The output voltage is ratiometric to the supply voltage

Unit Dimensions



Pin Layout

Pin No.	Variant S	Variant T
1	Signal ground	Signal ground
2	-	-
3	-	-
4	Signal 1	Signal 1
5	Supply	Supply
6	-	Signal 2

Warning: Incorrect connection of the supply voltage (polarity reversal) can lead to destruction of the electronic components in the sensor.

The mating connector, type AMP "MQS 6-pin", code A, is included with the sensor (not illustrated).

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