

Digital Fluidic Tilt Sensors



ASC TSF-360-CAN

- ▶ Uniaxial
- ▶ Digital Output
- ▶ Anodised Aluminium Housing
- ▶ Protection Class IP67
- ▶ Made in Germany



Digital Tilt Sensors

Features

- ▶ Range: 360°
- ▶ DC Response
- ▶ High Resolution
- ▶ Temperature Compensated
- ▶ Low Transverse Tilt Sensitivity
- ▶ Excellent Long-Term Bias Stability
- ▶ Industrial Temperature Range
- ▶ High Shock Limit

Options

- ▶ Digital Interfaces:
 - CAN/CANopen

Applications

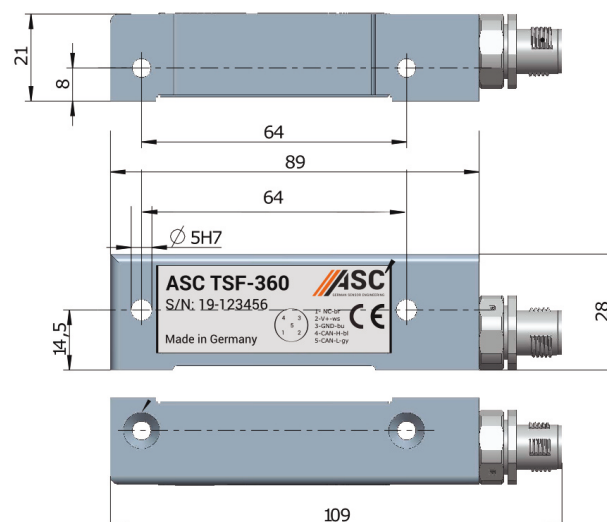
- ▶ Automotive
- ▶ Special Vehicle Construction
- ▶ Mechanical Engineering
- ▶ Civil Engineering
- ▶ Aviation Technology
- ▶ Marine Engineering
- ▶ Environmental Engineering
- ▶ Solar Technology

The new sensor ASC TSF-360 uses the physical effect that the surface of liquids is always aligned exactly horizontally due to gravity. By means of a suitable electrode arrangement, the angle between the sensors and the horizontal is capacitively measured with a dielectric liquid. The analog measurements are digitized, calculated and output as angles via a digital interface (CAN/CANopen). Therefore the user doesn't need a separate data acquisition system anymore. In contrast to the MEMS-based tilt sensors, the ASC TSF-360 has a very low transverse tilt sensitivity due to the liquid-based measuring principle.

Description

Compared to conventional tilt sensors, this sensor can be used as a 360° version. The sensor with internal temperature compensation operates with a high accuracy of $< \pm 0.1^\circ$ over the entire measuring range. The sensor can be used anywhere on earth because the measured value is independent of the magnitude of the acceleration due to gravity at the measuring point. The sensor's aluminium housing complies with protection class IP67 and is therefore also suitable for use in harsh environments.

Mechanical Drawing



Typical Specifications

ASC TILT SENSOR: ASC TSF-360-CAN

DYNAMIC

Angular Range	°	360
Resolution	°	0.01
Accuracy (+10 °C - +40 °C)	°	0.1
Other Temperature Ranges	°	0.15
Measurement Rate	ms	< 180

ELECTRICAL

Excitation voltage	V DC	+9 to +36
Data Transfer Rate	kbit/s	250

ENVIRONMENTAL

Temperature Coefficient		internally compensated
Operating Temperature	°C	-40 to +85
Storage Temperature	°C	-40 to +85
Protection Class		IP67

PHYSICAL

Sensing Element		Fluidic Capacitive
Case Material		Anodised Aluminium
Connector		CAN: M12-5pol.
Mounting		Screw Holes
Weight (excl. cable)	gram	80

ORDERING INFORMATION

Model number
ASC TSF-360-CAN-D2

QUALITY

- ▶ ASC GmbH is ISO 9001:2015 certified.
- ▶ All ASC products are CE-compliant.

ASC GmbH

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