Enabling the Electronics Revolution



### **MSC-360**

**Miniature Hall-Effect Rotary Position Sensor** 



#### **KEY FEATURES**



#### True, contactless operation

Without any gears or mechanical interfaces the sensor is easily assembled and calibrated and subject to limited wear and tear over lifetime.



#### Fits in the smallest of spaces

With a packaging space of less than 28 x 17 x 13 mm and less than 7g this rotary sensor can be used in even the most space-constraint application.



#### Made for harsh environments

The rugged package protects the sensor from dust, moisture, vibration and extreme temperatures for usage in the most demanding environments.



#### Integrated shaft

The magnet is securely fastened to the shaft and acts as only moving component in the sensor.



#### 360 degree absolute position feedback

Endless mechanical rotational angle without dead band, keeps the position on power loss with programmable electrical angles from 90 to 360 degrees.



#### Adaptable to your requirements

Programmable transfer function as well as different output protocols and redundancy levels available.

#### DESCRIPTION

This rotary sensor provides a perfect fit for preferential use in space constraint applications. Despite its lightweight and miniature size of only 28mm x 17mm, this hall effect sensor delivers high performance with up to 360° electrical angle (without dead zone), 12bit resolution, extended life and EMI & ESD protection.

The MSC-360 can easily be tailored to customers' needs providing high price-performance ratio even for the most demanding environments.

#### APPLICATIONS

Industrial

- Instrumentation
- Autonomous warehouse robotics
- ▶ Robotics and automation feedback
- ► Hand controls
- ► Float level sensor

#### Home and Building Automation

- ► HVAC systems
- ► Valve monitoring

#### Transportation

- ► EGR valve
- Gear position sensor
- Autonomous steering
- Joystick controls
- Hand throttle position

# **MSC-360**

### **Miniature Hall-Effect Rotary Position Sensor**

MECHANICAL SPECIFICATIONS			
Rotational life	Up to 7,000,000 cycles		
Mechanical range	360° (endless rotation)		
Magnetic shielding	Yes, models without shielding also available		
Shaft Diameter	5.9mm		

ELECTRICAL SPECIFICATIONS			
Linearity <sup>1,2</sup>		±1.5% absolute	
Electrical angular range <sup>1</sup>		Programmable from 90° to 360°	
Output protocols		Analog (Ratiometric), PWM	
Output		Simple Redundant	
Resolution	Analog, PWM	Up to 12 bit	
Supply voltage <sup>1</sup>		5V ±10%	
Supply current	Simple output	Тур 12.6 mA	
Voltage protection		+20V / -10V	
Self-diagnostic features		yes	

<sup>1</sup> Other specifications available

<sup>2</sup> Ferromagnetic materials close to the sensor (i.e. mounting surface) may affect the sensor's linearity.

#### **ENVIRONMENTAL SPECIFICATIONS**

Characteristic	Standard	Level
Operating and storage temperature <sup>1</sup>	n/a	-40° to +125°C
Shock	EN 60068-2-27	500 m/s², 11 ms, 3 axis 3 times (Room Temp.)
Vibration	EN 60068-2-6	200 m/s², 5 ~ 500 Hz 10 min, 3 axis 2 hours (Room Temp.)
Sealing	IEC 60529	IP67
EMS	ISO 11452-2, 3	100 V/m, 1 MHz ~ 1 GHz
ESD	IEC 61000-4-2	Contact discharge - case to each terminal: ±15kV Contact discharge - between each terminal: ±15kV

Check availability for other specifications





The analog output is ratiometric, proportional to input supply voltage.
Other output functions available, please check availability. Enter CXXXX as long as the new output function is not defined.
Leave empty if not applicable. Default frequency is 2.5kHz

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#### DIMENSIONS (MM)

Simple output model with shielding



Rotor is shown at 180° position. Sensor is delivered at random position