

Magnetic rotary angle and position sensor-control

Miniature Hall-effect Rotary Position Sensor MSC-360



Key features

- Simple & Robust magnetic compact design
- Endless rotation
- Up to 360° of electrical angle
- Magnetic shielding (models without shielding are available for better cost-effectiveness)
- Programmable linear transfer characteristics (positive slopes & negative slopes can be programmed)
- Self-diagnostic features
- Over voltage protection and reverse voltage protection
- Analog and PWM output
- Simple or redundant output

Despite its lightweight and miniature size of only 21mm., 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 value at the lowest cost even for the most demanding environments.

Mechanical specifications

Rotational life (depends on application and mounting)	7.000.000 cycles
Operating temperature ¹	-40°C to +125°C
Sealing	IP67 (electronics)

Electrical specifications

Linearity ¹	±1.5% absolute
Angular range	Programmable from 90 to 360 degrees (without dead band)
Output	Analog, PWM
Over voltage protection	+10V
Reverse voltage protection	-10V
Angular resolution	12 bit
Supply voltage	5V ±10%
Supply current	Typ 12,6mA

¹ Others: check availability.

Applications

- Non-Contacting long life angle/position sensor.
- Absolute rotary position sensor
- Pedal position sensor.
- Throttle/EGR valve and gear position sensor.
- Height & suspension sensor.
- Non-contacting potentiometer.
- Float-level sensor.
- Joysticks and hand controls.
- Automatic guided vehicles (AGVs) steering sensor.
- Robotics, material handling, industrial equipment, HVAC monitoring & control, etc.

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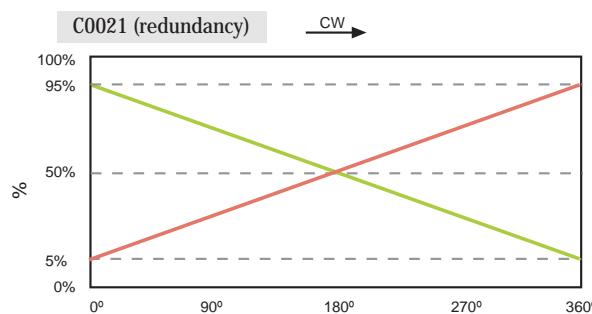
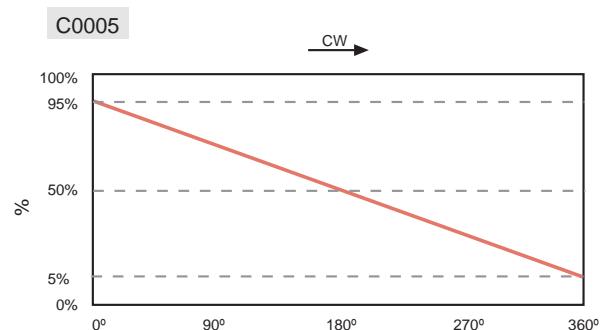
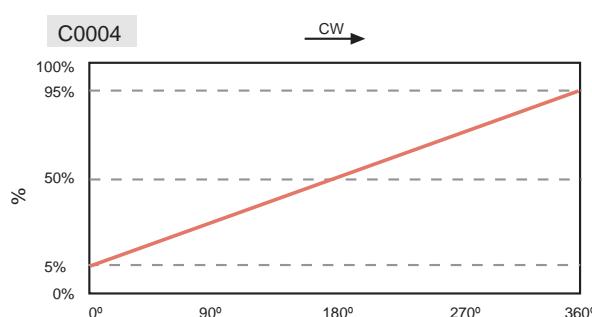
How to order (examples: MSC360-1A-C004-ERA360-05K; MSC360-1P-C004-ERA360-05K-F2500)

MSC360 Series	-	1	A	-	C0004	-	ERA360	-	0 5	-	K	-	
Type		1 = simple 2 = redundant	Output		Output function*		Electrical rotation angle		Voltage supply		Temp. range		PWM Frequency**
					C0004 C0005 C0021		ERA090 ERA091 ...	ERA360		K= -40 to +125°C			
									5 V				
												F156 156.25 Hz F312 312.5 Hz F625 625 Hz F1K2 1.25 kHz F2K5 2.5 kHz F05K 5 kHz F10K 10 kHz F20K 20 kHz	

*Other output functions available check availability

** Leave empty if no applicable. Default frequency is 2.5 kHz

Output



Tests

Vibration	EN 60068-2-6	200 m/s ² , 5 ~ 500 Hz 10 min, 3 axis 2 hours (Room Temp.)
Shock	EN 60068-2-27	500 m/s ² , 11 ms, 3 axis 3 times (Room Temp.)
IP sealing	IEC 60529	IP67
Operating & storage temperature	°C	-40 to +125
Life	cycles	7.000.000
Mechanical range	degrees	360 (continuous rotation)
EMS	ISO 11452 - 2, 3	100 V/m, 1 MHz ~ 1 GHz
ESD	IEC 61000-4-2	Contact discharge - case to each terminal: ±15 KV Contact discharge - between each terminal: ±15 KV
Wire	SAE J1128	3x 22 AWG TXL. Temp. -40 to +125°C

Check availability for other specifications

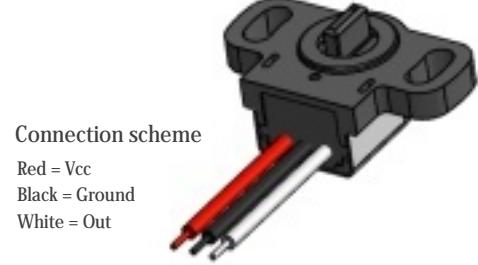
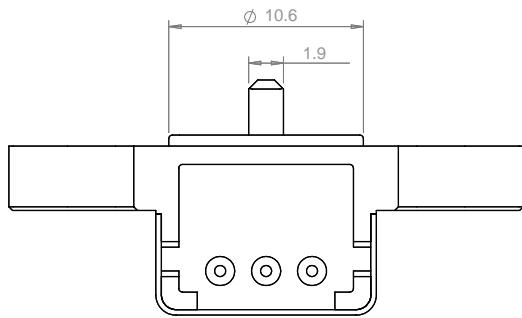
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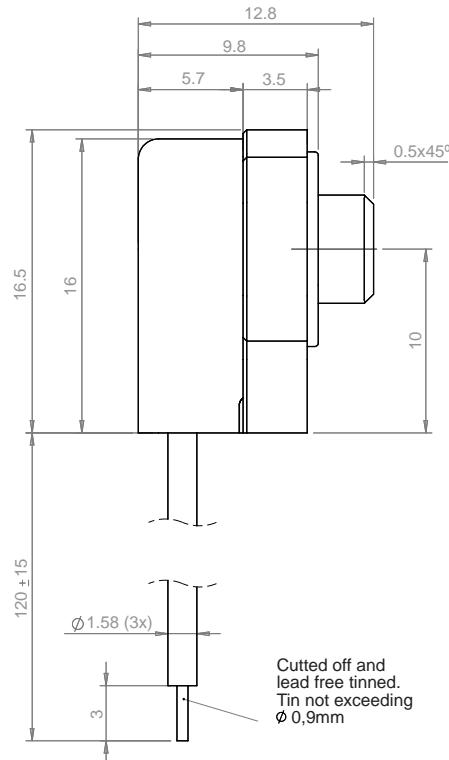
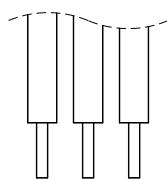
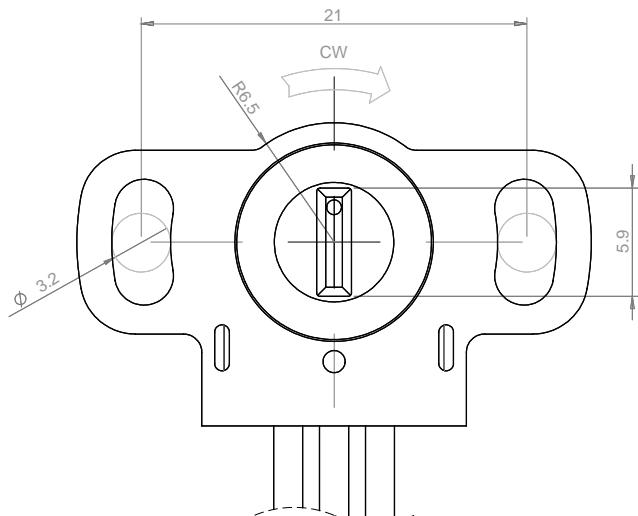
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Dimensions (simple output model with shielding)



Rotor is shown at 180° position.
The sensor is delivered at random position.



Download the STEP file here:
<https://piher.net/piher/?p=1700>

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