

## Magnetic rotary angle and position sensor-control

# Miniature Hall-effect Rotary Position Sensor MSC-360



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 <sup>1</sup>	-40°C to +125°C
Sealing	IP67 (electronics)

## Electrical specifications

Linearity <sup>1</sup>	±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

<sup>1</sup> Others: check availability.

## 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

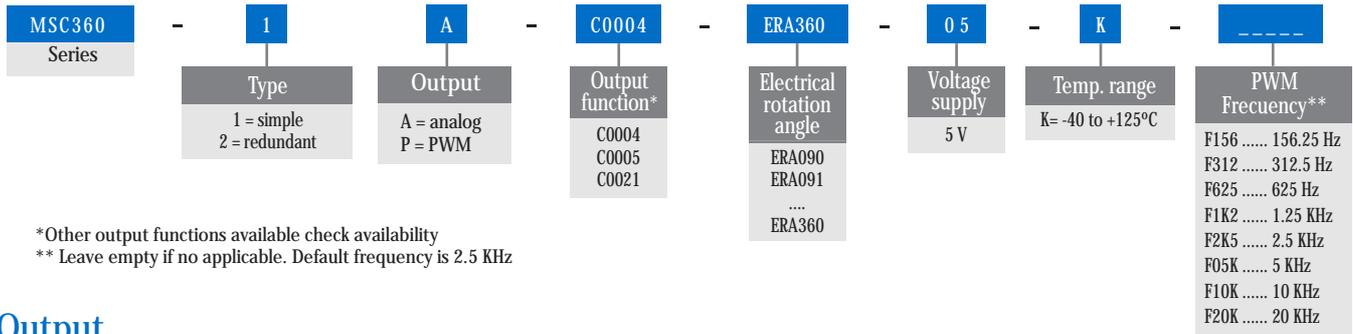
## Applications

- 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.

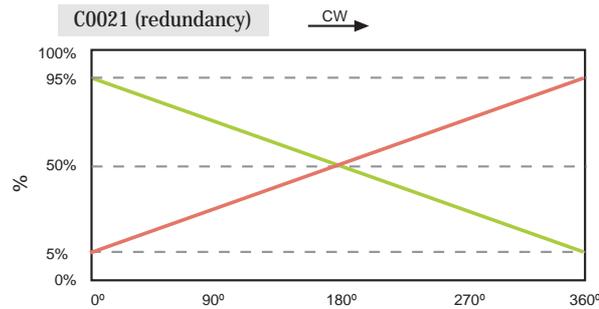
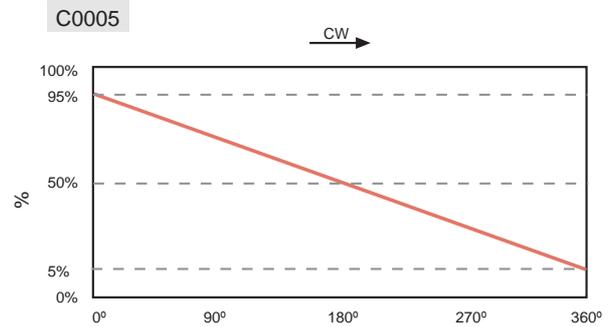
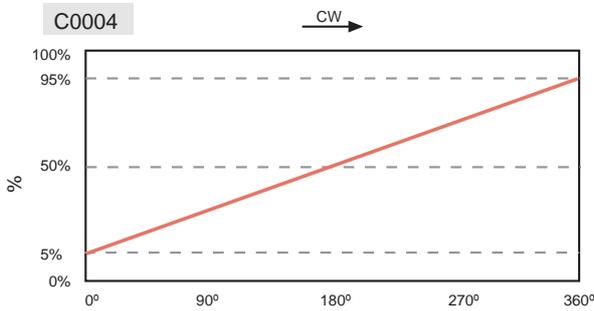
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How to order (examples: MSC360-1A-C004-ERA360-05K- )



## Output



## Tests

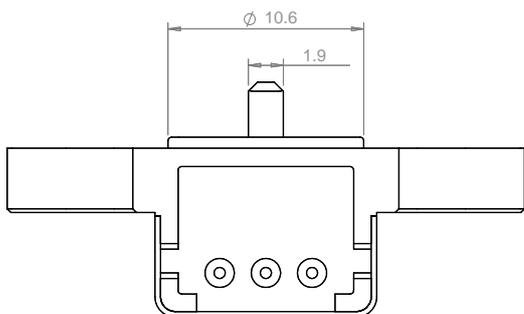
Vibration	EN 60068-2-6	200 m/s <sup>2</sup> , 5 ~ 500 Hz 10 min, 3 axis 2 hours (Room Temp.)
Shock	EN 60068-2-27	500 m/s <sup>2</sup> , 11 ms, 3 axis 3 times (Room Temp.)
IP sealing	IEC 60529	IP67
Operating & storage temperature	°C	-40 to +125
Life	cycles	7.000.000
Mechanical range	degrees	360 (continuous 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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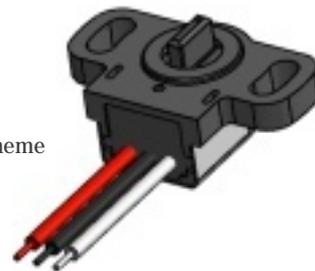
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### Dimensions (simple output model with shielding)

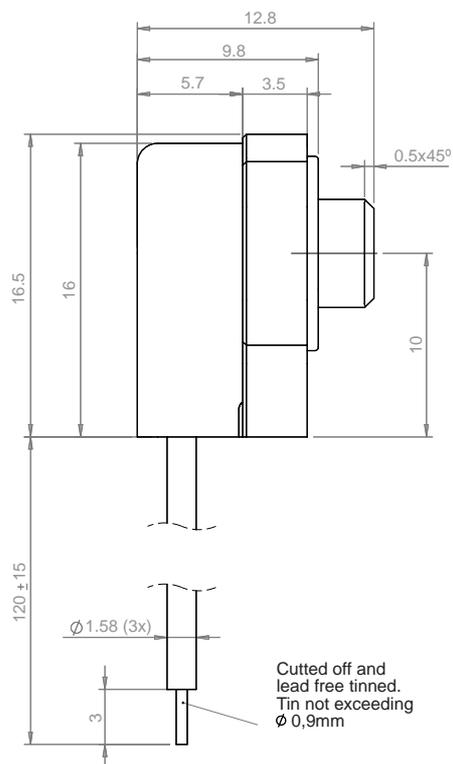
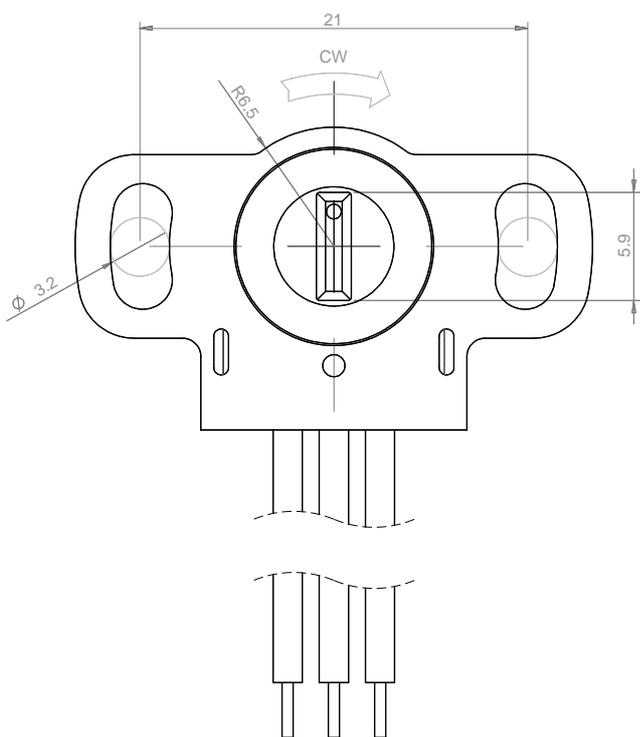


#### Connection scheme

Red = Vcc  
Black = Ground  
White = Out



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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