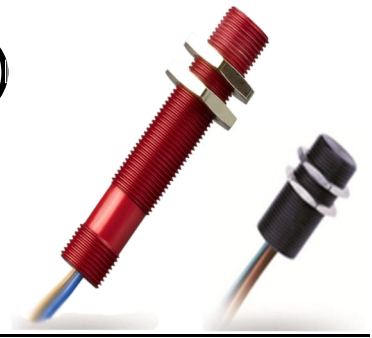# Magnetic Proximity Sensors (Hall Effect)

MP1005 - MP1007 Sensors
Solid state magnetic proximity sensor
with electrical immunity protection

Description

The MP1 Series sensors are one-piece non-contact solid-state position sensors. The sensors operate through the use of Hall Effect technology with magnetic fields generated by permanent magnets. They provide a sinking current output.

Features

- Solid state reliability
- Stable output over operating temperature range
- Compatible with unregulated power supply
- South pole activated
- Open collector (sinking or NPN) output can be used with bipolar or CMOS logic circuits with suitable pull-up resistor
- RoHS compliant
- IP67

Typical Applications

- Door position & interlock
- Limit switch
- Flow/speed
- Home security
- Pedal switch

Environmental Specifications

Operating Temperature (MP100502)	-40 °C to 85 $^{\text{u}}$C (-40 $^{\text{u}}$F to 185 $^{\text{u}}$F)
Operating Temperature (MP100701)	-40 °C to 150 $^{\text{0}}$C (-40 $^{\text{0}}$F to 302 $^{\text{0}}$F)
Storage Temperature (MP100502)	-40 °C to 85 $^{\text{u}}$C (-40 $^{\text{u}}$F to 185 $^{\text{u}}$F)
Storage Temperature (MP100701)	-40 °C to 150 $^{\text{0}}$C (-40 $^{\text{0}}$F to 302 $^{\text{0}}$F)
Ingress Protection	IP67

Electrical Specifications

Operating Supply Voltage	5 to 24 VDC
Supply Current	4.1 mA typ., 7.5 mA max.
Output Current (Sink)	25 mA max.
Output Off Voltage	30 VDC
Maximum Input Voltage	30 VDC
Maximum Reverse Voltage	30 VDC
Pull-up Resistor	See chart

Mechanical Specifications

Housing Material	Aluminium
Maximum Installation Torque Limit	50 in lbs on threads

Products

Part Number	Housing Color	Termination
MP100502	Red	20 AWG x 1 m
MP100701	Black	20 AWG x 1 m

Note: An external pull-up resistor is required, the value of which is dependent on the supply voltage. The resistor should be connected between the output and Vcc. Refer to the wiring diagram for lead colors or pin numbering as applicable.
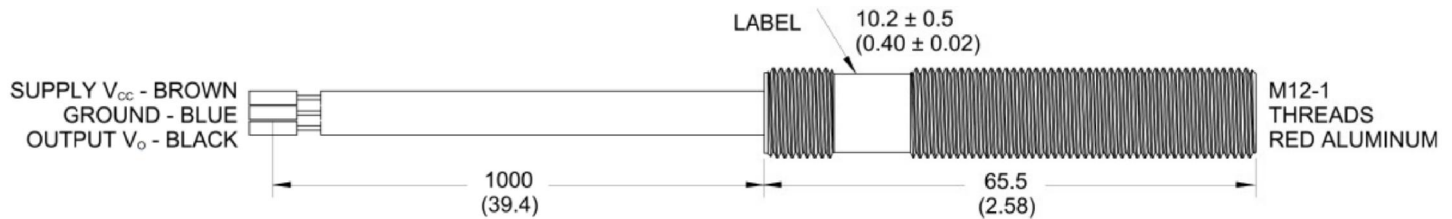
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Recommended External Pull-Up Resistor

Volts DC	5	9	12	15	24
Ohms	1k	1.8k	2.4k	3k	3k

Open Collector Sinking Block Diagram
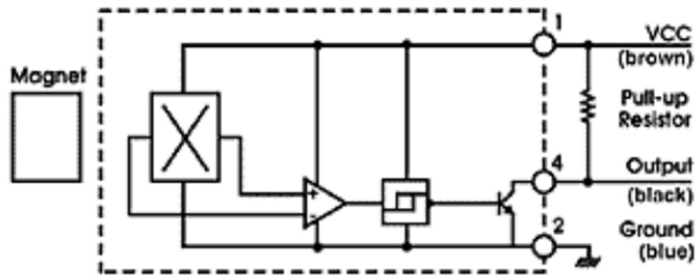
Dimensions mm (inches)

MP100502

MP100701

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