

Introducing GMR Precision Switching Sensors for Airpel® Cylinders

Airpot Corporation offers non-contact electronic switching sensors from Sick, Inc. using state-of-the-art GMR technology. These are the most precise and accurate magnetically activated cylinder sensors on the market.

You're Assured Safe and Accurate Feedback Every Time.

A magnetic field has secondary maximum levels that can cause double switching behavior in Hall effect and reed sensors. But GMR (Giant Magneto Resistive) technology is based on the measurement of the average strength of the magnetic field. This gives GMR sensors some important advantages over other types of sensors:

- GMR sensors greatly reduce the potential for troublesome double switching, ensuring better accuracy.
- GMR sensors do not need to be adjusted to magnetic field polarity.

Compact Profile

The GMR sensor chip is encased in a small, rugged plastic shell. The entire sensor can fit in a common soda straw less than 1.25 inches long. There is a small LED window in the shell to allow visible indication of the switching signal.

Installation is Easy, Secure and User Friendly, too.

The Sick, Inc. GMR sensor is specially shaped to allow for easy installation in our T-slot aluminum track. The track comes permanently bonded along the entire length of the cylinder in the location you specify when ordering sensor-ready Airpels.

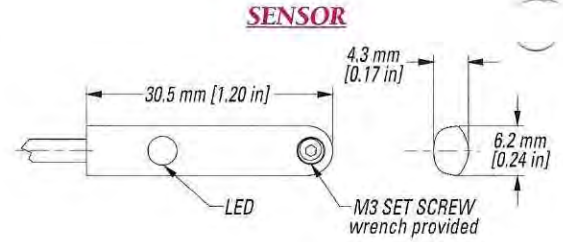
The sensors are sold separately and when ready to be installed, can be slid into the track through the end of the slot or simply angled into the slot at any point along the top of the track. Turning a screw in the sensor tightens it securely against the track. This versatile installation allows for easy mounting and positioning of the sensor at any time, even if the cylinder has been installed close to obstructions near the ends of the cylinder. In addition, the sensor's tightening screw and epoxy bonded track avoid the vulnerabilities common to typical mounting straps and clamps when subjected to vibration, shock, or extreme thermal changes.



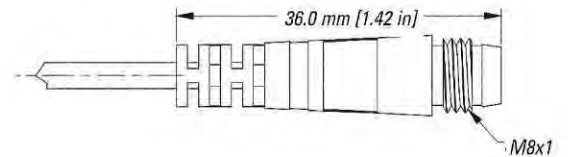
[Specifications](#) ▶

Specifications

Operating voltage	10 to 30 V DC
Ripple	≤ 10% of operating voltage
Voltage drop	≤ 2 V at current max.
Power consumption (without load)	≤ 10 mA
Continuous current	≤ 150 mA
Time delay before availability	≤ 2 ms
Hysteresis	≤ 2 mm
Repeatability	≤ 0.2 mm assuming constant temperature, voltage and rod rotation
EMC	to EN 60 947-5-2
Wire-break protection	Yes
Short circuit protection (pulsed)	Yes
Reverse polarity protection	Yes
Power-up pulse suppression	Yes
Enclosure rating to DIN 40050	IP 67 - Water tight and dirt resistant
Shock and vibration stress	30 g, 11 ms, 10 to 55 Hz, 1 mm
Ambient temperature	-13 to 167°F (-25 to 75°C)
Housing material	Polyamide
Connection cable 2 m or 5 m	Polyurethane - PVC, 3 x 0.25 mm ²
Connection cable with M8 x 1 mm	Polyurethane, 3 x 0.25 mm ²



OPTIONAL MALE 3-PIN CONNECTOR

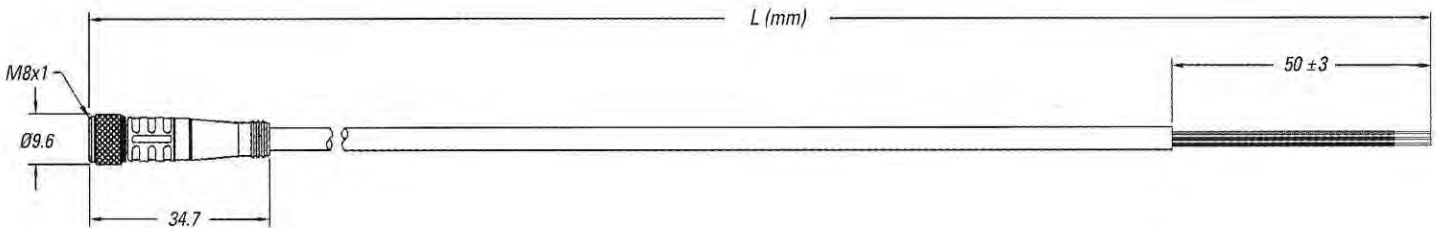


SELECTION TABLE

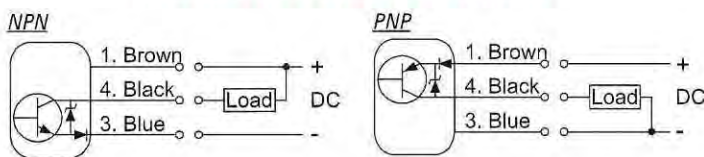
Airpel P/N	Switching output	Cable Connections	Output function	Switching frequency f in Hz	Response sensitivity in mT (gauss)	SICK, Inc. Product
GLN-1	NPN	2 m plain end		5000	3 (30)	MZTI-03VNS-KUO
GLNC-1	NPN	234 mm w. M8 x 1mm connector		5000	3 (30)	MZTI-03VNS-KP0
GLP-1	PNP	2 m plain end		5000	3 (30)	MZTI-03VPS-KW0
GLP-2	PNP	5 m plain end		5000	3 (30)	MZTI-03VPS-KUB
GLPC-1	PNP	234 mm w. M8 x 1mm connector		5000	3 (30)	MZTI-03VPS-KP0

OPTIONAL ACCESSORY EXTENSION CABLES

Airpel P/N	Description	L (mm)	Sick, Inc. Product
GCS2-1	2 meter cable with straight, 8 mm female connector	2000 ⁺⁵⁰ ₋₀	KD3-SUM82
GCS5-1	5 meter cable with straight, 8 mm female connector	5000 ⁺²⁰⁰ ₋₀	KD3-SUM85



SENSOR CONNECTION DIAGRAM



Wire color	Contact	Assignment	Male 3-pin Connector
brown	1	+ V DC	
black	4	NO	
blue	3	- V DC	



Position Sensing Configurations for Airpel® Cylinders

If you need electrical output of piston position, Airpot Corporation offers an easy-to-install, secure, and reliable solution. Read on...

For customers desiring electrical output of piston position, most Airpel models are offered with an optional switch-activating magnet on the piston, as well as one or more optional aluminum tracks attached to the cylinder.

The tracks are specially designed for easy, secure mounting of the Sick, Inc. position sensors which we offer separately. We stock popular models of these extremely reliable GMR sensors along with matching accessory extension cables.

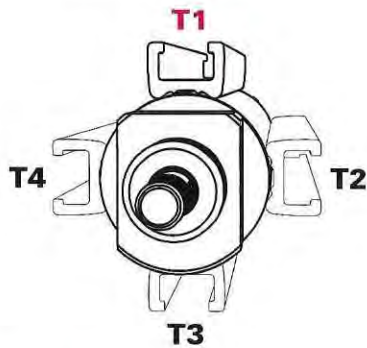
To Specify Magnet and Tracks

Simply add the appropriate letter designator(s) to the end of a basic Airpel part number.

M = Magnet attached to piston

Example: Basic Model E16D1.5U becomes E16D1.5U**M**

T# = Magnet plus sensor track(s) attached to the cylinder at position **T#** as shown in the diagram below.



View from front (rod end) with front and rear ports aligned along position **T1** axis

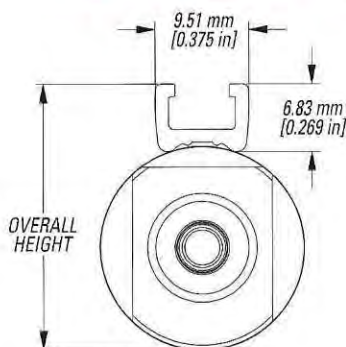
Example:

Basic Airpel model E16D1.5U with a magnet and one track at the 90 degree position (clockwise) becomes E16D1.5U**T2**

and with a **second track** attached to the cylinder

at the 270 degree position the part number becomes E16D1.5U**T2T4**

Airpel Sensor Track Information



Model	Overall Height
E9/M9	20.3 mm (0.80 in.)
E16/M16	27.0 mm (1.06 in.)
E24/M24	38.2 mm (1.51 in.)



Sensors sold separately.

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