

Magnetic Switches

Magnetic switches are used for monitoring the position of automation components. They detect the approach of a magnet without contact and, above a certain switching threshold, enable their output.



Function description

Magnetic switches react to magnetic fields. The resistors in the sensor consist of several ferromagnetic and non-magnetic layers. Two shielded and two non-shielded resistors are combined in a bridge circuit, which produces a signal proportional to the magnetic field when one is present. Above a threshold value, an output signal is switched via a comparator, and the sensor reacts.

Your advantages and benefits

Installation in the sensor slot

for space-saving, simple and fast assembly

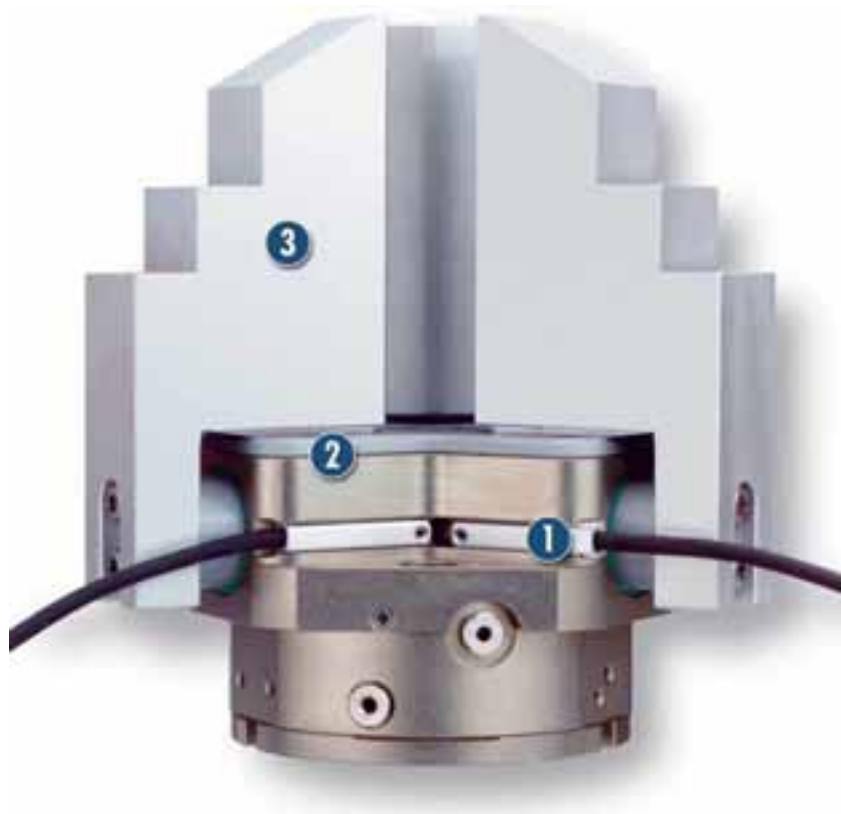
Version with LED display (MMS 22)

for checking the switching position directly at the sensor

Version with connector

for easy, rapid replacement of the extension cable

Application example



1 MMS Electronic Magnetic Switches for mounting in the C-slot of the gripper

2 Sealed 3-Finger Centric Gripper

3 Workpiece-specific Gripper Fingers

Area of application

For use in the monitoring of gripping and rotary modules, linear modules and robot accessories. Magnetic switches from SCHUNK detect metals without contact or wear and are resistant to vibration, dust and humidity. Magnetic switches are fitted in slots and therefore do not form any additional interfering contours.

General information

Material

Sensor housing: PA in the MMS 22, aluminum in the MMS 30
Cable: with PUR sheathing

Mounting

Clamps in the sensor slot

Protection class to DIN 40050

IP 67 when connected

Voltage

10 – 30 V DC at < 10 % residual ripple

Switching method

PNP switching / NPN switching

Warranty

24 months

Notes

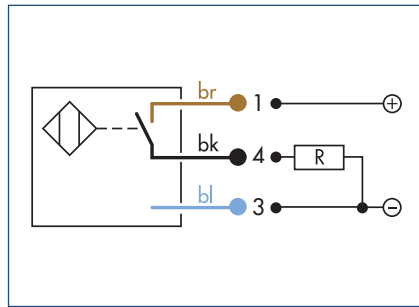
SCHUNK gripper, rotary and linear modules and robot accessory components that are to be monitored with electromagnetic slot-fitted switches can generally only be reliably monitored with the appropriate electromagnetic switches from SCHUNK.

Sensors and products are matched on the basis of the relationships between the parameters type and field strength of the magnet, distance, wall thickness and wall material of the magnet and the sensor, and the orientation and sensitivity of the sensor itself.

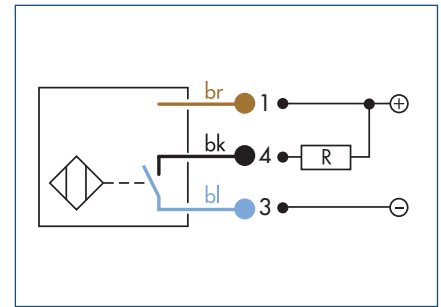
For this reason, sensors from other manufacturers employed in SCHUNK products rarely give satisfactory switching results.



Circuit diagram of closer



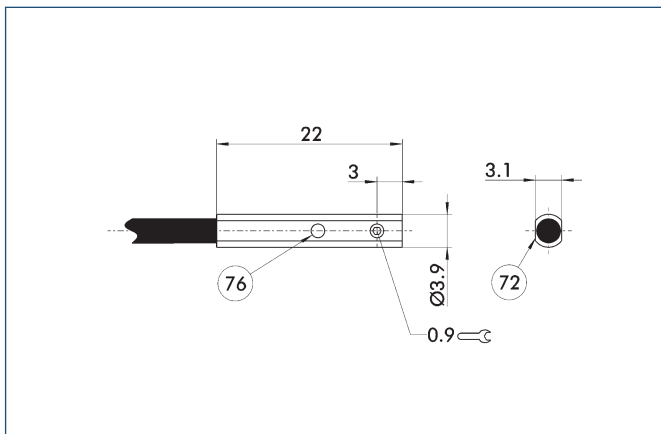
Circuit diagram of NPN closer



Technical data

Description	MMS 22-S-M5-PNP	MMS 22-S-M5-NPN	MMS 22-S-M8-PNP	MMS 22-S-M8-NPN	MMSK 22-S-PNP	MMSK 22-S-NPN
	ID	0301454	0301455	0301450	0301451	0301452
Switching function	Closer	Closer	Closer	Closer	Closer	Closer
Switching method	PNP	NPN	PNP	NPN	PNP	NPN
Cable length [cm]	30.0	30.0	30.0	30.0	200.0	200.0
Cable connector/cable end	M5	M5	M8	M8	Open wire	Open wire
Type of voltage	DC	DC	DC	DC	DC	DC
Nominal voltage [V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage [V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage [V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop [V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact [A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature [°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature [°C]	70.0	70.0	70.0	70.0	70.0	70.0
Typical switching time [s]	0.001	0.001	0.001	0.001	0.001	0.001
IP rating (sensor)	67	67	67	67	67	67
IP rating (connector, plugged in)	67	67	67	67	67	67
LED display on sensor	Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter [mm]	2.1	2.1	2.1	2.1	2.1	2.1
Min. bending radius (dynamic) [mm]	21.0	21.0	21.0	21.0	21.0	21.0
Min. bending radius (static) [mm]	10.5	10.5	10.5	10.5	10.5	10.5
No. of wires	3	3	3	3	3	3
Wire cross section [mm ²]	0.14	0.14	0.14	0.14	0.14	0.14

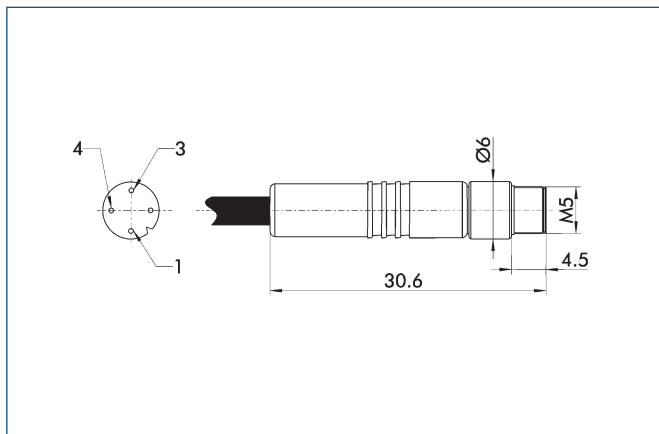
MMS 22 sensor



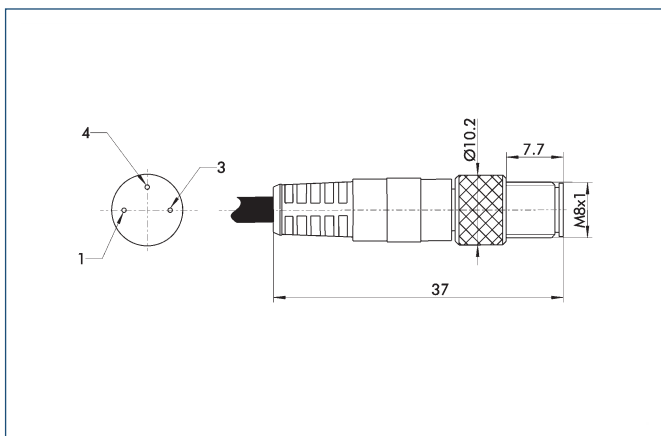
72 Active sensor surface

76 LED

M5 connector

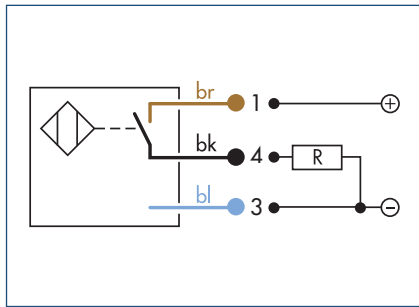


M8 connector

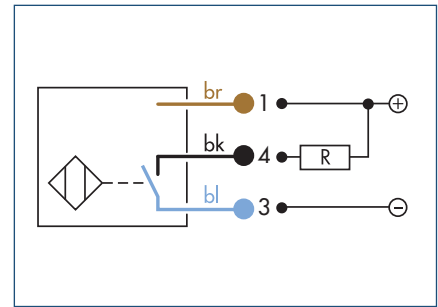




Circuit diagram of closer



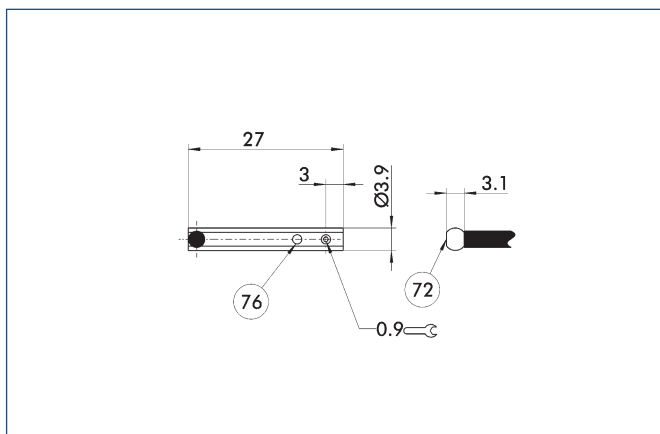
Circuit diagram of NPN closer



Technical data

Description	MMS 22-S-M5-PNP-SA	MMS 22-S-M5-NPN-SA	MMS 22-S-M8-PNP-SA	MMS 22-S-M8-NPN-SA	MMSK 22-S-PNP-SA	MMSK 22-S-NPN-SA	
	ID	0301460	0301461	0301456	0301457	0301458	0301459
Switching function	Closer	Closer	Closer	Closer	Closer	Closer	
Switching method	PNP	NPN	PNP	NPN	PNP	NPN	
Cable length	[cm]	30.0	30.0	30.0	30.0	200.0	200.0
Cable connector/cable end		M5	M5	M8	M8	Open wire	Open wire
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2	0.2	0.2	0.2
Min. ambient temperature	[°C]	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
Max. ambient temperature	[°C]	70.0	70.0	70.0	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001	0.001	0.001	0.001
IP rating (sensor)		67	67	67	67	67	67
IP rating (connector, plugged in)		67	67	67	67	67	67
LED display on sensor		Yes	Yes	Yes	Yes	Yes	Yes
Cable diameter	[mm]	2.1	2.1	2.1	2.1	2.1	2.1
Min. bending radius (dynamic)	[mm]	21.0	21.0	21.0	21.0	21.0	21.0
Min. bending radius (static)	[mm]	10.5	10.5	10.5	10.5	10.5	10.5
No. of wires		3	3	3	3	3	3
Wire cross section	[mm ²]	0.14	0.14	0.14	0.14	0.14	0.14

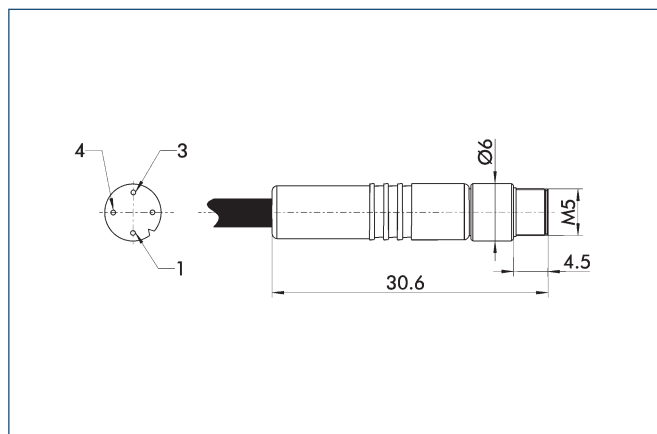
MMS 22-SA sensor



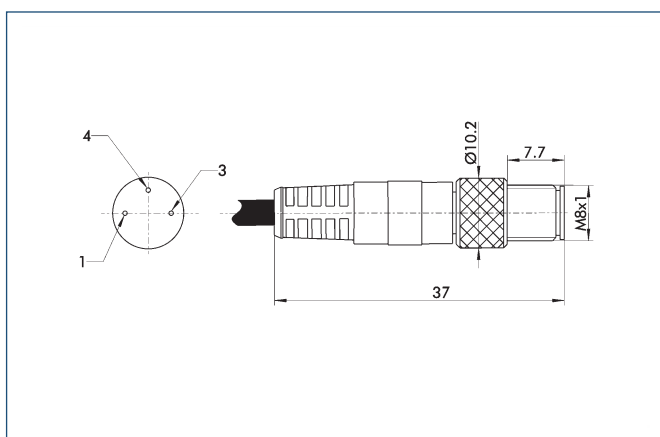
72 Active sensor surface

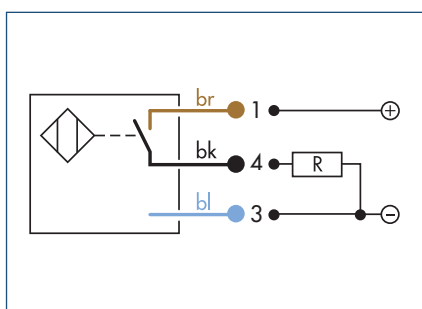
76 LED

M5 connector



M8 connector

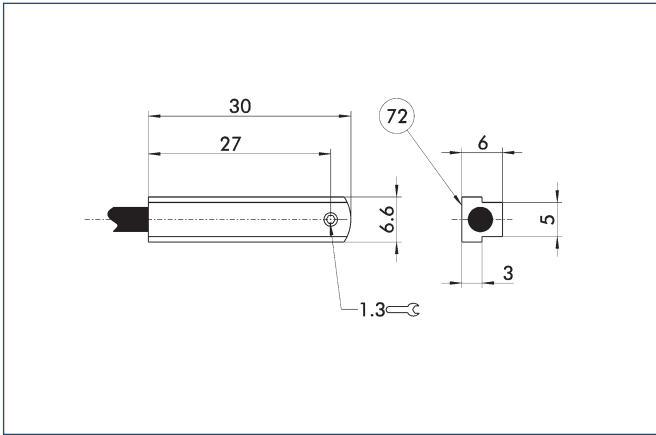




Technical data

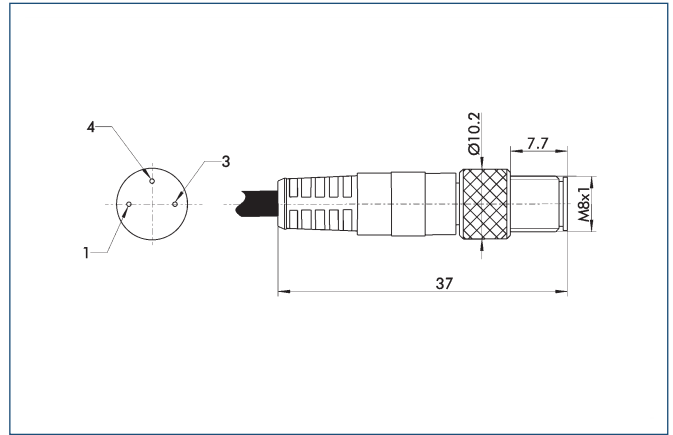
Description		MMS 30-S-M8-PNP	MMS 30-S-M12-PNP	MMSK 30-S-PNP
	ID	0301471	0301571	0301563
Switching function		Closer	Closer	Closer
Switching method		PNP	PNP	PNP
Cable length	[cm]	30.0	30.0	200.0
Cable connector/cable end		M8	M12	Open wire
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24.0	24.0	24.0
Min. voltage	[V]	10.0	10.0	10.0
Max. voltage	[V]	30.0	30.0	30.0
Voltage drop	[V]	1.5	1.5	1.5
Max. power on contact	[A]	0.2	0.2	0.2
Min. ambient temperature	[°C]	-25.0	-25.0	-25.0
Max. ambient temperature	[°C]	70.0	70.0	70.0
Typical switching time	[s]	0.001	0.001	0.001
IP rating (sensor)		67	67	67
IP rating (connector, plugged in)		67	67	67
LED display on sensor		No	No	No
Cable diameter	[mm]	3.5	3.5	3.5
Min. bending radius (dynamic)	[mm]	35.0	35.0	35.0
Min. bending radius (static)	[mm]	17.5	17.5	17.5
No. of wires		3	3	3
Wire cross section	[mm ²]	0.14	0.14	0.14

MMS 30 sensor



72 Active sensor surface

M8 connector



M12 connector

