



Superior Clamping and Gripping



## Product Information

Programmable magnetic switches MMS 22-PI2 22-PI2

## Programmable. Precise. Easy assembly.

### Programmable magnetic switch MMS 22-PI2

A magnetic switch is used to monitor the status of automation components. They detect the approach of a magnet without contact and above a certain switching value, they put out a digital value. The switching value can be programmed.

#### Field of application

Used for monitoring gripping and rotary modules, as well as 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 installed in slots and thus do not produce any additional interfering contours. For connection with a digital input module (utilization category DC-12).

#### Advantages – Your benefits

**Individual switching point – without interfering contours**

The magnetic switch can be completely inserted, which means that no interfering contours arise due to overhanging sensor systems

**Programmable within no time** due to non-contact adjustment of the switching points and hysteresis

**Adjustable hysteresis** for precise position monitoring – even at very low strokes

**Suitable for narrow installation spaces** due to wired teaching with TeachTool plug

**Version with LED display** for control of the switching position directly at the sensor

**Version with standard plug connector** for fast and easy exchangeability of the extension cable

**Very flexible cable in PUR version** for a long service life

**Installation into the sensor groove** for space-saving, easy, and fast assembly on the product



#### Options and special information

**High protection class:** IP67 when plugged in, for use in clean or dusty environments or in case of contact with water. Operability in case of contact with other media (coolant, acids, bases, etc.) is often given, however cannot be guaranteed by SCHUNK.

**Power supply:** 10 – 30 V DC at < 10% residual ripple

**Sources of interference:** Sensors can be influenced by other magnetic fields in the immediate vicinity. Disturbing magnetic fields can be generated by motors, electric welders, permanent magnets or magnetized material (so-called soft magnets) such as hexagon socket wrenches, chips, etc.

## Application example



① Actuator

② MMS 22-PI2 C-slot sensor

③ Cable-based teaching tool ST

### SCHUNK offers more ...

The following components make the product MMS 22-PI2 even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Plug teaching tool



Sensor cables



Y distributor



Sensor distributor

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com). Please contact us: SCHUNK technical hotline +49-7133-103-2696

# MMS 22-PI2 22

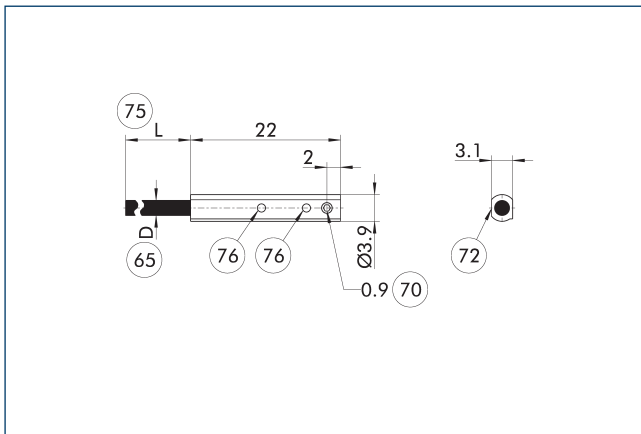
Programmable magnetic switches



## Technical data

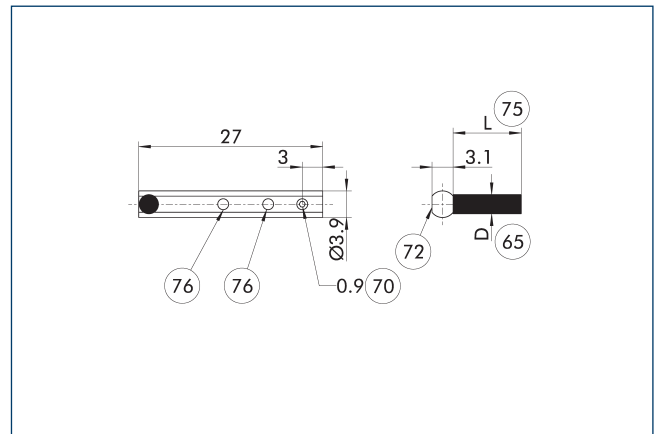
Description		MMS 22-PI2-S-M8-PNP	MMS 22-PI2-S-M8-NPN	MMSK 22-PI2-S-PNP	MMSK 22-PI2-S-NPN
ID		0301180	0301181	0301182	0301183
<b>Principle of function</b>					
Measuring principle		magnetic	magnetic	magnetic	magnetic
Switching function		Closer	Closer	Closer	Closer
Type of switching		PNP	NPN	PNP	NPN
Number of switching points		2	2	2	2
Teach function		yes	yes	yes	yes
<b>General data</b>					
typical switching time	[s]	0.001	0.001	0.001	0.001
Max. switching frequency	[Hz]	1000	1000	1000	1000
Min./max. ambient temperature	[°C]	-10/70	-10/70	-10/70	-10/70
LED display in sensor		yes	yes	yes	yes
<b>Electrical operating data</b>					
Type of voltage		DC	DC	DC	DC
Nominal voltage	[V]	24	24	24	24
Min./max. operating voltage	[V]	10/30	10/30	10/30	10/30
Voltage drop	[V]	2	2	2	2
Max. switching current	[A]	0.03	0.03	0.03	0.03
Short circuit protection		yes	yes	yes	yes
Protected against polarity reversal		yes	yes	yes	yes
<b>Mechanical operating data</b>					
Housing material		PA	PA	PA	PA
Cable connector/cable end		M8, 4-pin Male Connector	M8, 4-pin Male Connector	open wire strands	open wire strands
Cable length L	[cm]	30	30	200	200
Cable diameter D	[mm]	2.5	2.5	2.5	2.5
Cable design (wire cross section / number of wires)		4x 0,05mm <sup>2</sup>	4x 0,05mm <sup>2</sup>	4x 0,05mm <sup>2</sup>	4x 0,05mm <sup>2</sup>
Cable sheath material		PUR	PUR	PUR	PUR
Min. bending radius (dynamic)	[mm]	21	21	21	21
Min. bending radius (static)	[mm]	10.5	10.5	10.5	10.5
Weight	[kg]	0.01	0.01	0.04	0.04
Protection class IP (sensor, plugged)		67	67	67	67
Protection class		III	III	III	III
<b>Options and their characteristics</b>					
Version with lateral cable outlet		MMS 22-PI2-S-M8-PNP-SA	MMS 22-PI2-S-M8-NPN-SA	MMSK 22-PI2-S-PNP-SA	MMSK 22-PI2-S-NPN-SA
ID		0301186	0301187	0301188	0301189
LED display in sensor		yes	yes	yes	yes
Heavy duty version		MMS 22-PI2-S-M8-PNP-HD	MMS 22-PI2-S-M8-NPN-HD	MMSK 22-PI2-S-PNP-HD	MMSK 22-PI2-S-NPN-HD
ID		0301130	0301131	0301132	0301133
Housing material		stainless steel	stainless steel	stainless steel	stainless steel

## MMS(K) 22-PI2 main view



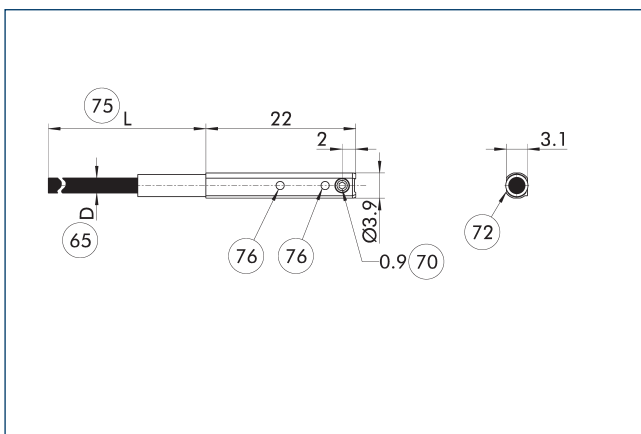
- 65 Cable diameter
- 70 Wrench size
- 72 Active sensor surface
- 75 Cable length
- 76 LED

## MMS(K) 22-PI2-SA main view



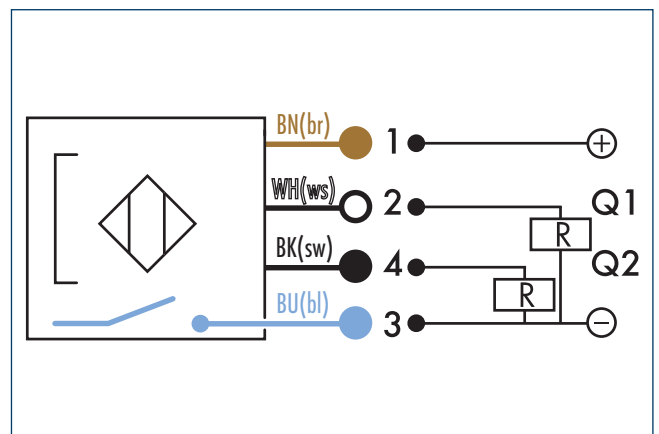
- 65 Cable diameter
- 70 Wrench size
- 72 Active sensor surface
- 75 Cable length
- 76 LED

## MMS(K) 22-PI2-HD main view

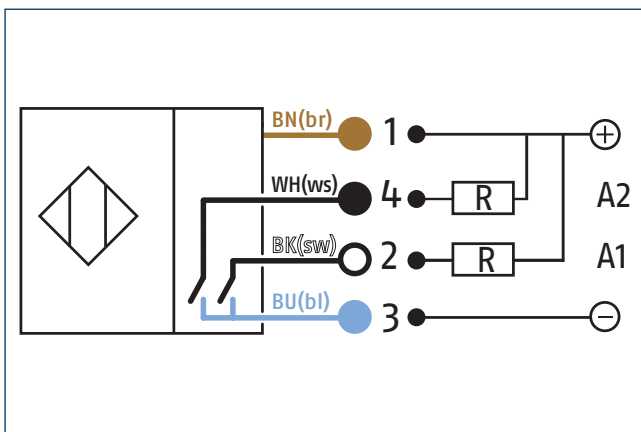


- 65 Cable diameter
- 70 Wrench size
- 72 Active sensor surface
- 75 Cable length
- 76 LED

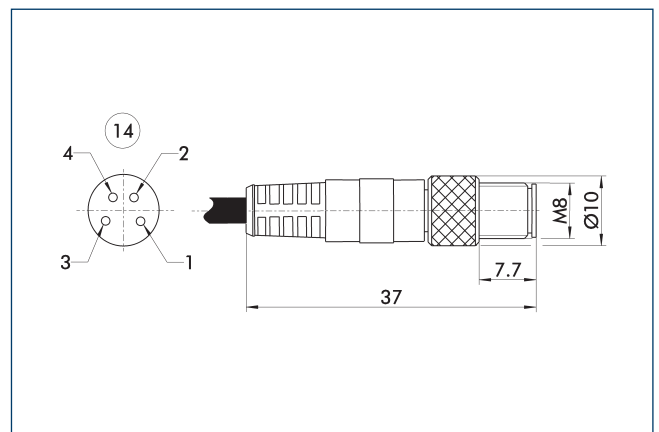
## Wiring diagram closer PNP



## Circuit diagram of NPN closer



## M8, 4-pin Male Connector

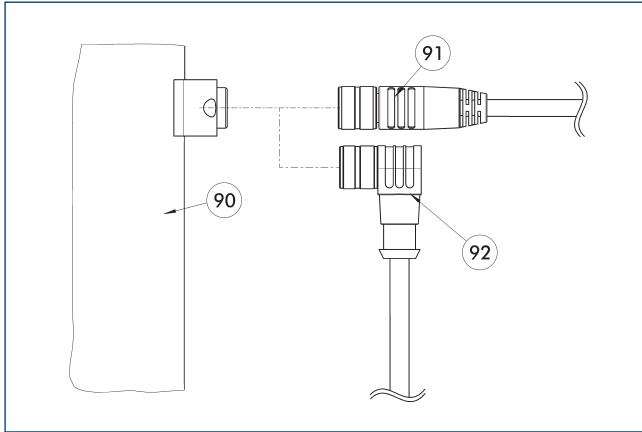


- 14 Connector

# MMS 22-PI2 22

Programmable magnetic switches

## Connection cables

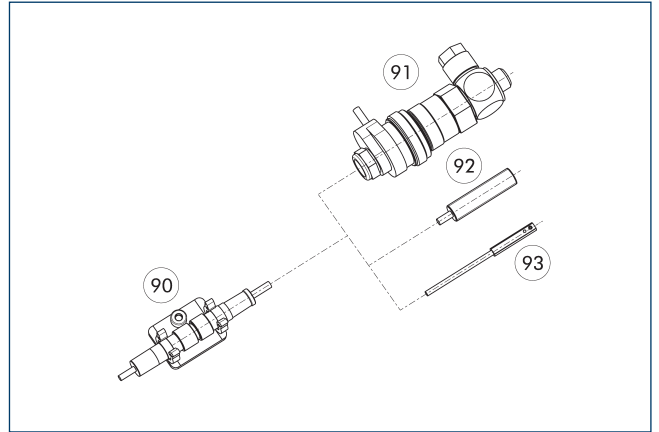


- 90 Electrical connection component
- 91 Cable with straight connector
- 92 Cable with angled connector

Description	ID	Length [m]	Often combined
Connection cables			
KA BG08-L 4P-0500	0307767	5	●
KA BG08-L 4P-1000	0307768	10	
KA BW08-L 4P-0500	0307765	5	
KA BW08-L 4P-1000	0307766	10	

- ① BG stands for a connection cable with a straight female connector and BW for an angled female connector. SG stands for a connection cable with a straight male connector and SW for an angled male connector.

## clip for plug/socket

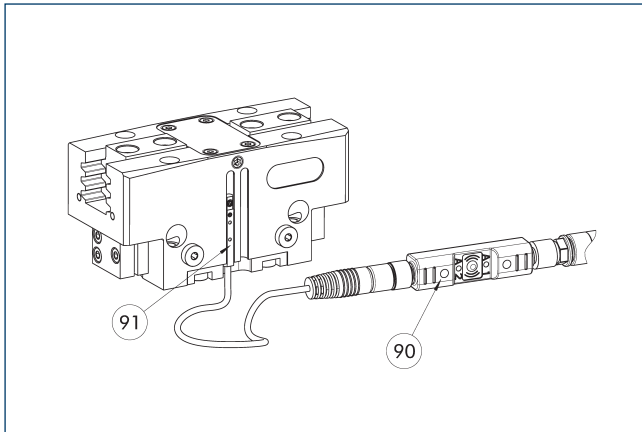


- 90 CLI plug bracket
- 91 MV micro valve
- 92 IN proximity switch
- 93 MMS magnetic switch

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

Description	ID	
clip for plug/socket		
CLI-M8	0301463	

## Pug-in teaching tool ST



- 90 Pug-in teaching tool ST
- 91 Sensor MMS 22-PI...

In addition to the magnetic teach-in tool included in the scope of delivery, the MMS 22-PI sensors can be taught via the plug teach-in tool. The plug teach in tool is inserted into the wiring from sensor to PLC. This makes teaching in possible even in confined spaces on the sensor. The plug teach in tool differs according to the version of the sensor with regard to switching points (1/2) and switching type (PNP / NPN).

Description	ID	
Plug teaching tool		
ST-MMS 22-PI2-NPN	0301028	
ST-MMS 22-PI2-PNP	0301026	

- ① The plug-in teaching tool is only required for teaching in and can be removed from the cabling again after. The sensor maintains its programming.



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Folgen Sie uns



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Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for safe, precise gripping and holding.  
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