


Superior Clamping and Gripping

# Product Information

## Electronic magnetic switch J02P/N

# Non-contact. Easy. Cost-effective.

# Electronic magnetic switch J02

A magnetic switch is used for monitoring 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 signal.

## Field of application

Used in the monitoring of gripping modules in clean environments with lower requirements on load and service life as well as shorter system run times.

## Advantages – Your benefits

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

**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




## Options and special information

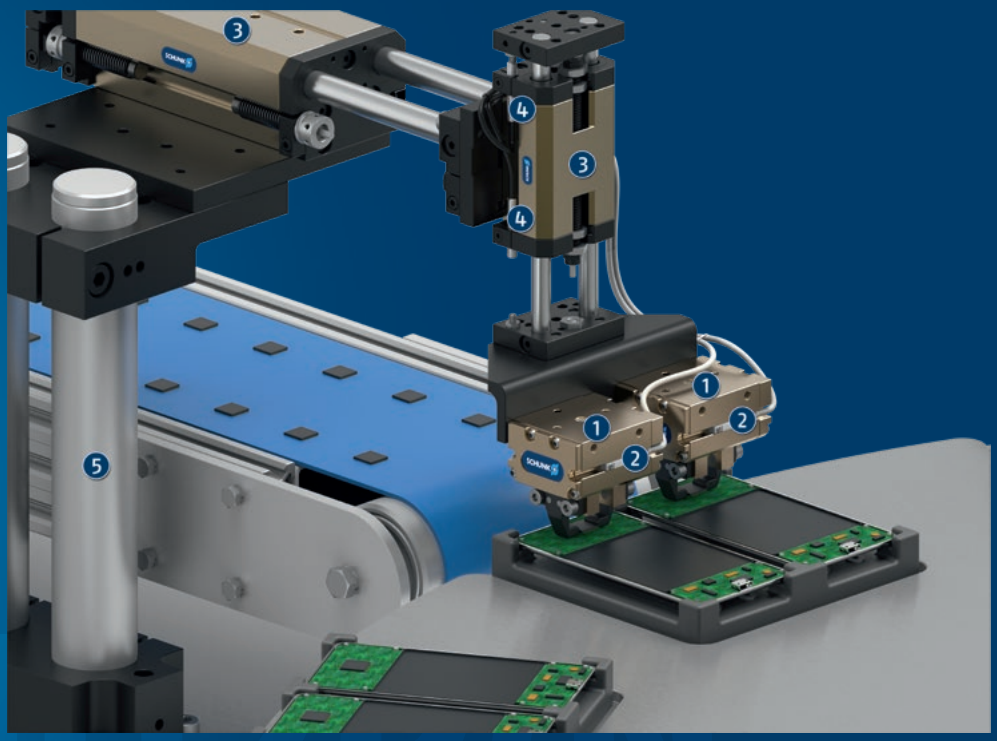
**Functional description:** Magnetic switches respond to magnetic fields. In the sensor, two shielded and two non-shielded resistors are combined with a bridge connection. In case of presence of a magnetic field, a large signal will be obtained, which is proportional to the size of the magnetic field. Starting from a certain threshold, an output signal is switched via a comparator, and the sensor responses.

**Signal output and switching type:** The sensors are available in a design with signal output of closer and in the switching types PNP (J02P) and NPN (J02N).

**Versions with connector or cable end:** The sensor is available in the versions with a plug connector (30 cm cable, M8 connector) or open cable outlet (2 m cable, open strands).

**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




Pick & Place application for loading electronic components with sensor monitoring on the double gripper

① **Gripper for small components MPC**
② **Magnetic switch J02**
③ **Linear module KLM**
④ **Inductive proximity switches IN**
⑤ **Pillar assembly system**

## SCHUNK offers more ...

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


Gripper for small components


Connection cables


Sensor distributor


Sensor Tester

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

# J02P/N J02P/N

Electronic magnetic switch

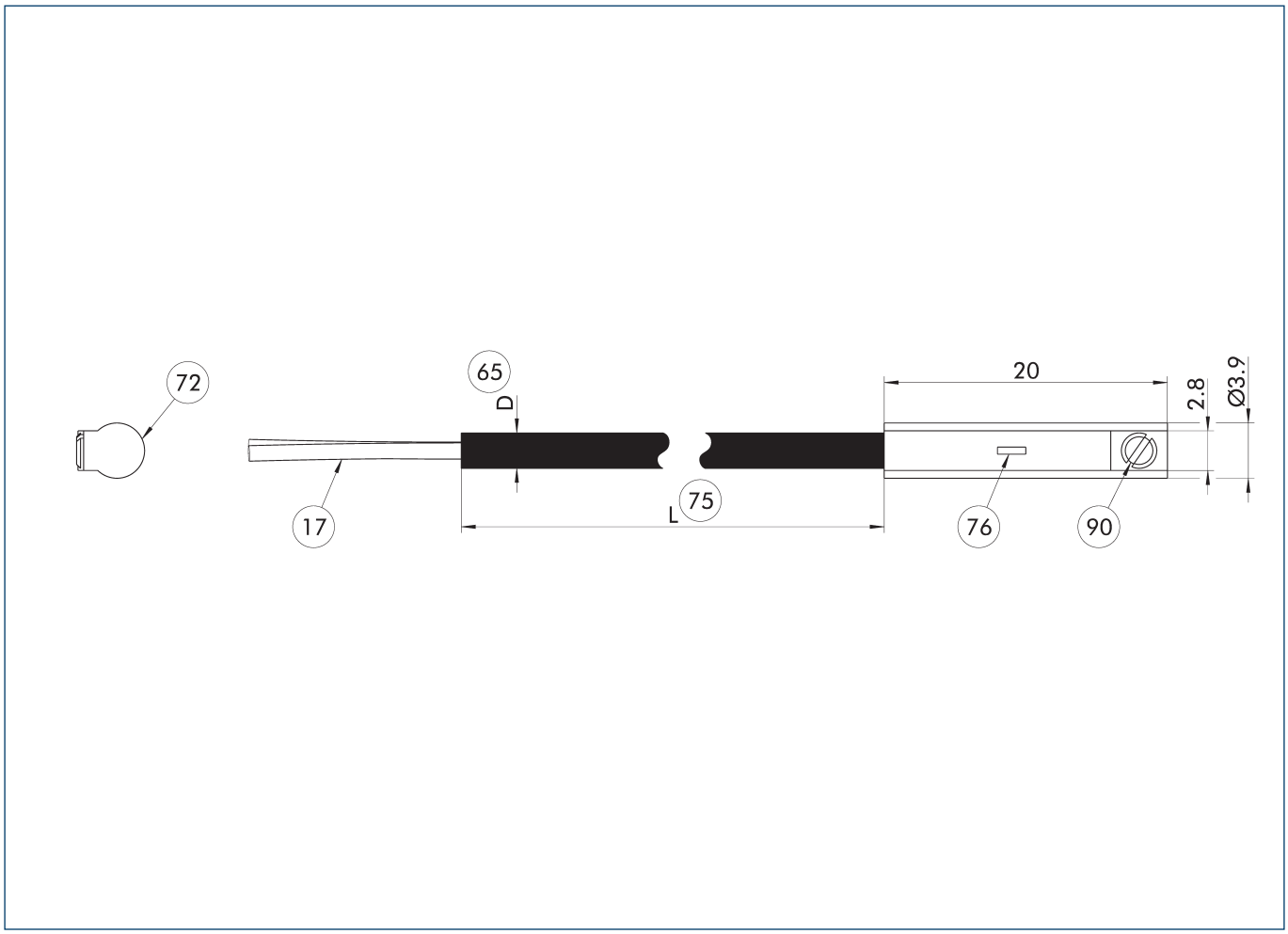


## Technical data

| Description | | J02P-2M | J02P-Q8 | J02N-2M | J02N-Q8 |
|---|---|---|---|---|---|
| ID | | 1353035 | 1353072 | 1353058 | 1353073 |
| **Principle of function** | | | | | |
| Switching function | | Closer | Closer | Closer | Closer |
| Type of switching | | PNP | PNP | NPN | NPN |
| Number of switching points | | 1 | 1 | 1 | 1 |
| Teach function | | no | no | no | no |
| **General data** | | | | | |
| Max. switching frequency | [Hz] | 3000 | 3000 | 3000 | 3000 |
| Min./max. ambient temperature | [°C] | -25/70 | -25/70 | -25/70 | -25/70 |
| LED display in sensor | | yes | yes | yes | yes |
| **Electrical operating data** | | | | | |
| Type of voltage | | DC | DC | DC | DC |
| Nominal voltage | [V DC] | 24 | 24 | 24 | 24 |
| Min./max. operating voltage | [V DC] | 10/28 | 10/28 | 10/28 | 10/28 |
| Voltage drop | [V] | 0.8 | 0.8 | 0.8 | 0.8 |
| Max. switching current | [mA] | 50 | 50 | 50 | 50 |
| Short circuit protection | | yes | yes | yes | yes |
| Protected against polarity reversal | | yes | yes | yes | yes |
| **Mechanical operating data** | | | | | |
| Housing material | | PA | PA | PA | PA |
| Cable connector/cable end | | open wire strands | M8 connector, 3-pin | open wire strands | M8 connector, 3-pin |
| Cable length L | [cm] | 200 | 30 | 200 | 30 |
| Cable diameter D | [mm] | 2.6 | 2.6 | 2.6 | 2.6 |
| Cable design (wire cross section / number of wires) | | 3x 0,13 mm2 | 3x 0,13 mm2 | 3x 0,13 mm2 | 3x 0,13 mm2 |
| Cable sheath material | | PVC | PVC | PVC | PVC |
| Min. bending radius (static) | [mm] | 26 | 26 | 26 | 26 |
| Weight | [g] | 22 | 7 | 22 | 7 |
| Protection class IP (sensor, plugged) | | 67 | 67 | 67 | 67 |
| Protection class | | III | III | III | III |

ⓘ The connection cable of the sensor may only be laid statically. A dynamic payload is not permitted.

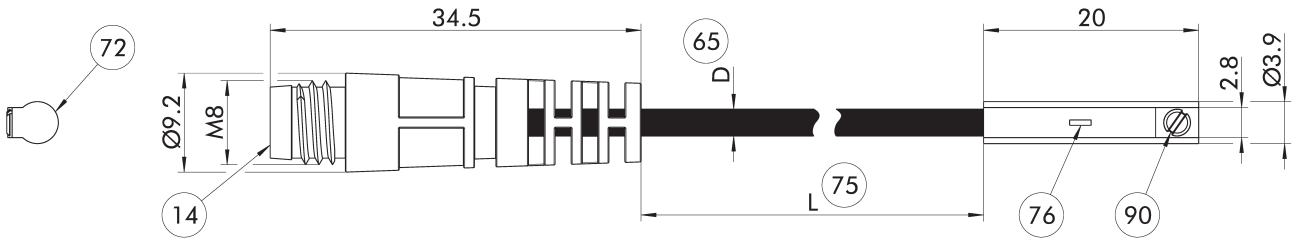
### J02x-2M – Main view




The drawing shows the sensor with a connection cable. For further information, including among other things details on cable diameter and cable length, see the technical data table.

- 17 Cable outlet
- 65 Cable diameter
- 72 Active sensor surface
- 75 Cable length
- 76 LED
- 90 Fastening screw

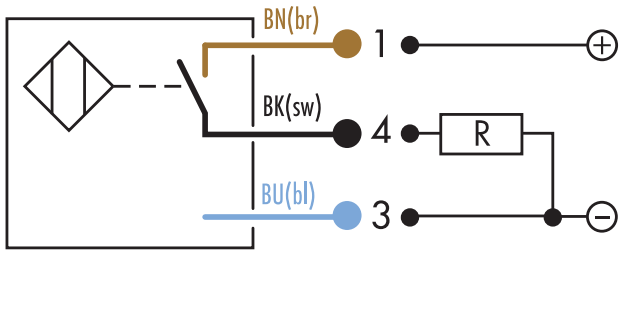
## J02x-Q8 – Main view



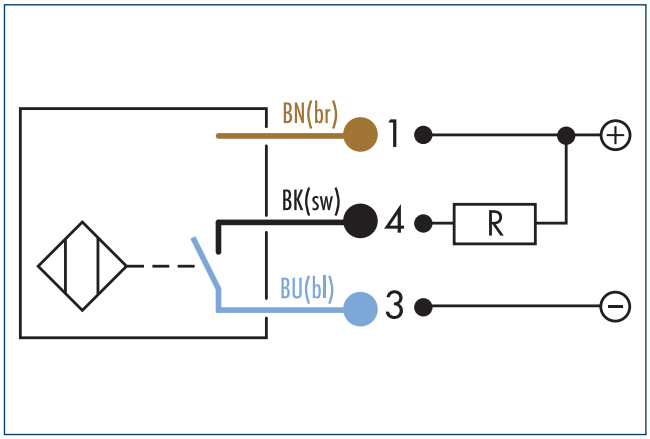

The drawing shows the sensor with a connection cable and plug connector. For further information, for example on cable diameter and cable length, see the technical data table.

14 Connector
65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED
90 Fastening screw

## Wiring diagram closer PNP




## Circuit diagram of NPN closer



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