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# Safety sensors / Magnetic safety sensors / Magnetic sensors

## SAFE SWITCHGEAR FOR DEMANDING AND CRITICAL APPLICATIONS

// Control Technology / Catalogue

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# STEUTE SCHALTGERÄTE IN LÖHNE
# SAFE SWITCHGEAR FOR DEMANDING AND CRITICAL APPLICATIONS




Our location: A good place to live and to work. Löhne, Westphalia, Germany. Embedded between the »Wiehengebirge« and the »Teutoburger Wald«. This is the location of steute Schaltgeräte GmbH & Co. KG. Here, switchgear is designed and produced for explosion protection, medical equipment and control technology.

Historians know our region as the area where the Battle of Varus took place in the year 9 AD. About 1700 years later, the Treaty of Westphalia marked the end of the Thirty Years' War. Gourmets love Westphalian sausage, walkers the beautiful landscape. Briefly: it's a good place to live. It's also a good place to work. The industrial culture of Westphalia is mostly characterised by SME companies; the region is also the home of many hidden champions and world-market leaders, specialist machine and system manufacturers, as well as electronic and connecting technology.

This means we have many important suppliers, customers and partners practically »on our doorstep«. And even so, our employees travel a great deal all over the world. This is because renowned companies in all industrial markets use switchgear by steute when the focus is on high quality and availability. And when they appreciate cooperating with suppliers who can adapt flexibly to their requests.

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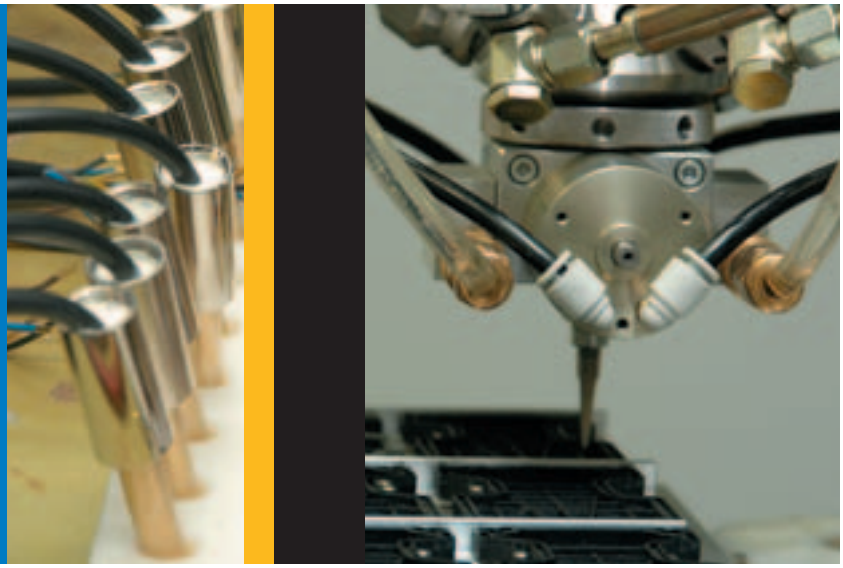
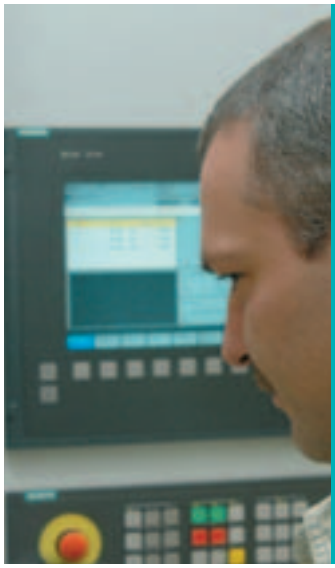
# STEUTE SWITCHGEAR
# MEETS THE HIGHEST QUALITY REQUIREMENTS







Today, the company offers a homogenous product range, drawing on its wide know-how and characterised by a high degree of technological synergy.

180 employees attentively develop and manufacture electrical and electronic components for high-standard and explosive safety applications. These applications comply with established international directives, laws, standards and regulations. In this context, key significance is attributed to a close cooperation with technical certification institutions.

With its high standards and specific orientation, steute lives and breathes the following three QM systems:

- DIN EN ISO 9001: 2000
- DIN EN ISO 13485: 2003
- Certificate of Quality Assurance acknowledgement in accordance with the 94/9/EC Directive (ATEX)

On the following pages you will find an overview of our comprehensive range of safety, magnetic safety and magnetic sensors and their corresponding actuating magnets, each of which can be modified in accordance with customer-specific requirements.

Talk to us. Let us help you find what you are looking for.
The steute team.


steute

// Series HS Si 4
from page 12
// Series BZ 16
from page 14





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## Application

Safety sensors are suitable for the safeguarding of sliding, hinged or removable protective doors that need to be closed to secure the required operators' safety. They are also applicable on profile sections and for retrofitting on existing equipment.

All presented safety sensors achieve, in combination with an appropriate safety relay module, Control Category 3 or 4 to EN 954-1.

Safety sensors are preferably applied as an alternative to mechanically operated limit switches in cases where unfavourable operating conditions, such as high or low actuating speeds, large switching frequencies, extreme dirt or dust production, high humidity, chemical atmospheres, highly fluctuating actuating distances, etc. occur. Even in the presence of aggressive materials, as well as in the food processing industry, safe switching is ensured through encapsulation of the contacts.

## Design and operating principle

The safety sensors are actuated by a coded actuator without any mechanical contact. The devices can be selected with one NC and one NO contact or with two NC contacts.

All described safety sensors have a wiring compartment.

The BZ 16 safety sensor is used in safety circuits for position monitoring of movable safety guards in accordance with EN 1088 and IEC/EN 60947-5-3. The entire system, consisting of the BZ 16 safety sensor (with integrated evaluation) and the BZ 16-B1 actuator, meets the requirements of the IEC/EN 60947-5-3 standard. The safety sensors are classified in level PDF-S to IEC/EN 60947-5-3.

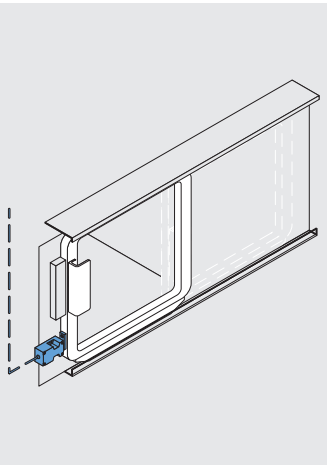
The safety sensors achieve Control Category 3 or 4 to EN 954-1 only in combination with a safety relay module series SRM. Technical details regarding this safety relay module can be found in the »Magnetic safety sensors« chapter.

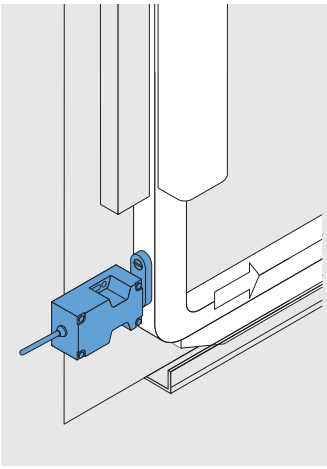
All safety sensors described in this chapter bear the CE mark according to the Machinery Directive 98/37/EC.



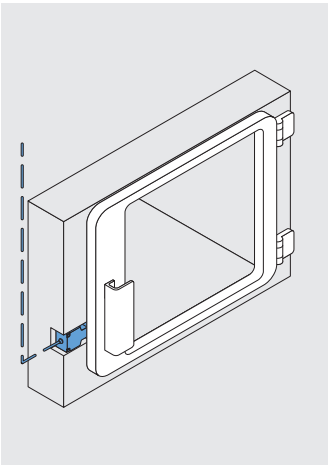
## Application

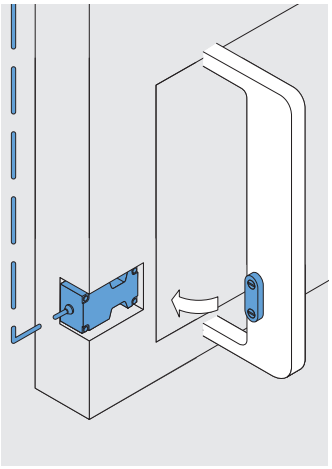
### On hinged doors



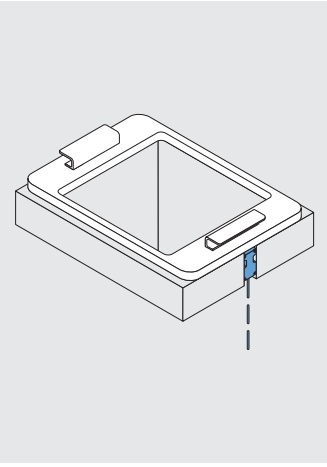


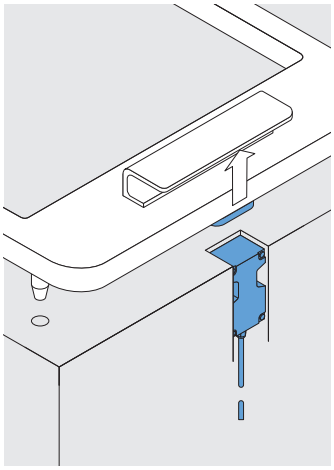
### On sliding doors





### On removable doors

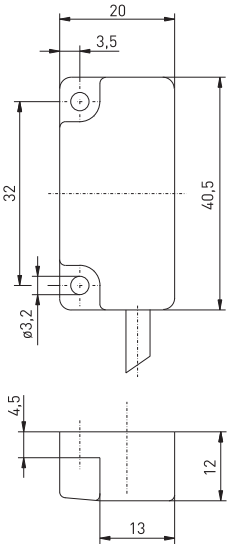




Features/Options
- Thermoplastic enclosure
- Long life
- high shock resistance
- Hall sensor
  1 NC/1 NO or 2 NC contacts
- galvanically separated channels
- Switching capacity $s_{ao}$ 6 mm, $s_{ar}$ 20 mm
- With wire

## // HS SI 4



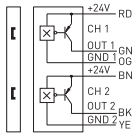

## Technical data

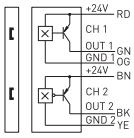
| | |
|---|---|
| **Standards** | IEC/EN 60947-5-2, -3/PDF-M*; EN 954-1; EN 1088; EN ISO 13849-1 |
| **Enclosure** | glass-fibre reinforced thermoplastic, ultramid A3XZG5, self-extinguishing |
| **Defined object** | actuator MC 4 order No. 05.00.8221 |
| **Degree of protection** | IP 67 to IEC/EN 60529 |
| **Switching system** | Hall sensor, 2 channels galvanically separated |
| **Contact types** | 1 NC/1 NO or 2 NC contacts |
| **Connection** | cable, 6 x AWG 26 |
| **Cable length** | 1 m |
| | |
| **safety-related data** | |
| **EN 954-1** | category 4 |
| **EN ISO 13849-1** | PL e |
| **$T_M$** | 10 years |
| **MTTFd** | > 100 years |
| | |
| **$U_{imp}$** | 1 kV |
| **$U_i$** | 75 VDC |
| **Outputs** | PNP semiconductor |
| **Utilisation category** | DC-13, DC-12 |
| **Ie/Ue** | 0,04 A/24 VDC |
| **Ue** | 10 ... 30 VDC |
| **Residual current** | max. 6 mA per channel |
| **Voltage drop** | max. 2.5 VDC |
| **Switch-on/ switch-off time** | < 1 ms |
| **Risk time** | < 100 ms |
| **Max. fuse rating** | < 50 mA internal reversible fuse |
| **Ambient temperature** | -20 °C ... +70 °C |
| **Limit distances** | $s_{ao}$ = 6 mm, $s_{ar}$ = 20 mm |
| **Axial misalignment** | max. 4 mm |

*only in combination with a safety module

### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NC/1 NO contact | HS Si 4 1Ö/1S |
| 2 NC contacts | HS Si 4 1Ö/1S |



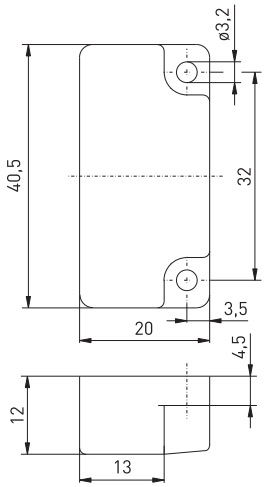

**Ordering data** HS Si 4 1Ö/1S

1 NC/1 NO (2 NC contacts)
Series
Safety sensor
Hall sensor

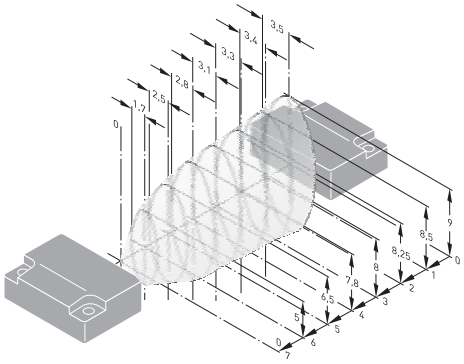
# // Series HS Si 4, actuator

Note
The actuator is not included in the delivery of the switches.

## // Actuator MC 4



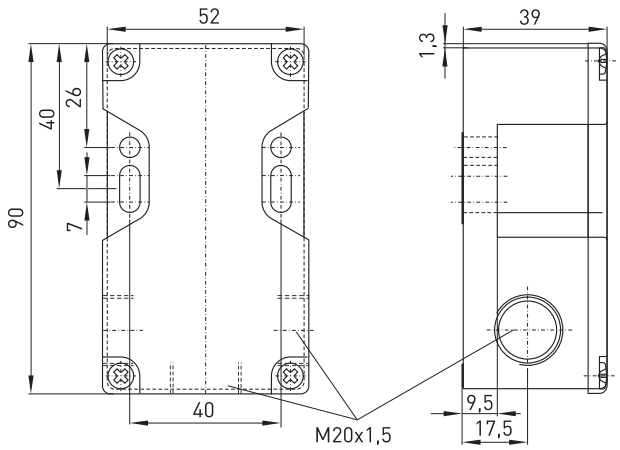

## // Switching capacity



Features/Options
- Thermoplastic enclosure
- Differential inputs:
  induction/Hall sensor operating principle
- Internal monitoring,
  high manipulation protection
- Potential-free outputs
- 1 NC/1 NO contact or 2 NC contacts
- Variable actuation
- Switching capacity $s_{ao}$ 10 mm, $s_{ar}$ 20 mm
- With wiring compartment

## // BZ 16



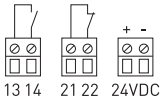



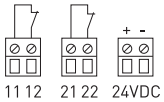

## Technical data

| | |
|---|---|
| **Standards** | EN 61000-6-1, -2, -3, -4; IEC/EN 60947-5-2, -3/ PDF-M; EN 954-1; EN 1088; EN ISO 13849-1; DIN EN 62061; 2004/108/EC |
| **Enclosure** | glass-fibre reinforced thermoplastic, self-extinguishing |
| **Defined object** | actuator BZ 16-B1 order No. 90570007 |
| **Degree of protection** | IP 67 or IP 69K to IEC/EN 60529 |
| **Contact types** | 1 NC/1NO contact or 2 NC contacts |
| **Connection** | terminal space with self-opening terminal for max. 2 x 1.5 $mm^2$ (including conductor ferrules) |
| **Cable entry** | 3 x M20 x 1.5 |
| **safety-related data** | |
| **EN 954-1** | Category 4 |
| **EN ISO 13849-1** | PL e |
| **$T_M$** | 10 years |
| **MTTFd** | 57.8 years |
| **DIN EN 62061** | SIL CL 3 |
| **$PFH_D$** | ≥ 3 x $10^{-8}$ |
| **$U_{imp}$** | 4 kV |
| **Utilisation category** | outputs: AC-15, DC-13 |
| **Ie/Ue** | Input: 0.16 A/24 VDC ± 15% (reverse voltage protected), outputs: 3 A/250 VAC, 4 A/24 VDC |
| **Switching voltage** | max. 250 VAC |
| **Max. fuse rating** | 4 A gL/gG D-fuse incoming series-connected |
| **Switching frequency** | max. 1 Hz |
| **Ambient temperature** | 0 °C ... +55 °C |
| **Mechanical life** | 50 Mio. operations |
| **Limit distances** | $s_{ao}$ = 10 mm, $s_{ar}$ = 20 mm |
| **Hysteresis** | approx. 6 mm |
| **Axial misalignment** | ≤ 3 mm |
| **Repeatability** | < 1 mm |
| **Approvals** | |

### Contact variants: Switch travel/contacts

| | multidirectional actuation |
|---|---|
| 1 NC/1 NO contact | **BZ 16 11** |
| 2 NC contacts | **BZ 16 02** |



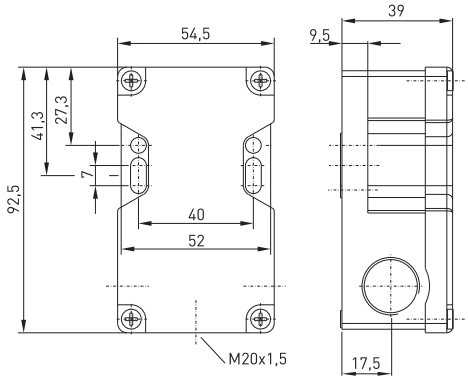

**Ordering data** **BZ 16 11D-IP69K**

- Safety sensor
- Series
- 1 NC/1 NO (2 NC)
- Actuating directions (U, V)
- Degree of protection IP 69K

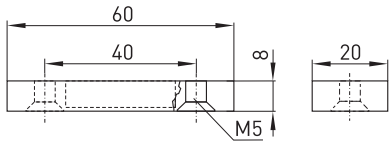
Features/Options
- Please indicate the desired actuating plane when ordering.
- Version with higher protection class IP 69K: suitable for cleaning with 80 °C hot water at 100-bar pressure at a distance of 100 mm from different directions

Note
The actuator is not included in the delivery of the switches.

## // BZ 16 IP 69K



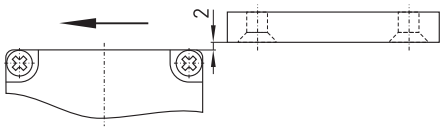

## // Actuator BZ 16-B1



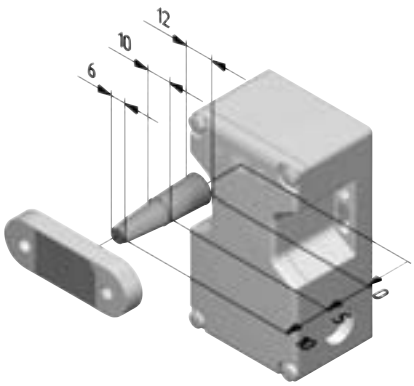



## // Actuating planes

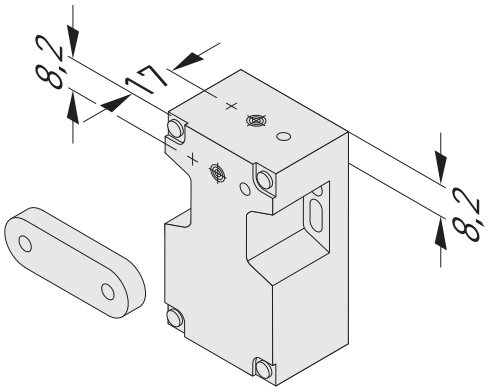

## // Distance for actuation from side




## // Switching capacity




## // Actuator positioning

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# Magnetic safety sensors

## Application

The magnetic safety sensors of the RC Si series are suitable for monitoring the position of sliding, hinged and removable protective doors. They can only be used for safety duties to DIN VDE 0660-209 in combination with a safety guard monitor for protection up to Control Category 4 to EN 954-1.

The use of magnetic safety sensors is of particular advantage in cases where extremely dirty conditions can occur or high hygienic standards need to be maintained. This is provided by the simplicity of cleaning the units. A further advantage is the facility for concealed mounting behind non-magnetic materials.

Working surfaces and storage areas can be arranged without the need for dust-collecting edges or other functionally required cutouts or projections. The magnetic safety sensors of the RC Si series can also be applied in cases where a precise approach is not possible and greater tolerances are required.

## Design and operating principle

These devices comprise a multi-channel magnetic safety sensor and an actuating magnet. The magnetic safety sensors are actuated by a coded magnet without any mechanical contact. The devices can be selected with one NC and one NO contact or with two NC contacts. All described magnetic safety sensors are supplied with a pre-wired cable.

The magnetic safety sensors of the RC Si series are protected to protection class IP 67.

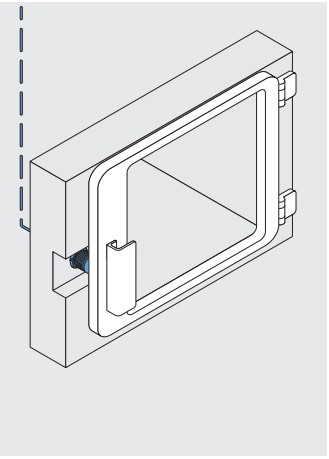
The mounting site of magnetic safety sensors must be free of magnetic fields.

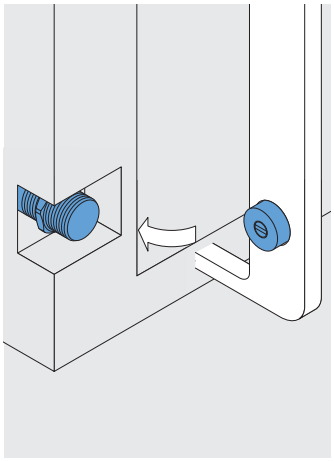
All magnetic safety sensors described in this chapter bear the CE mark according to the Machinery Directive 98/37/EC.



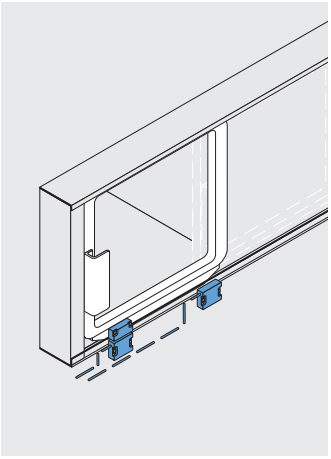
## Application

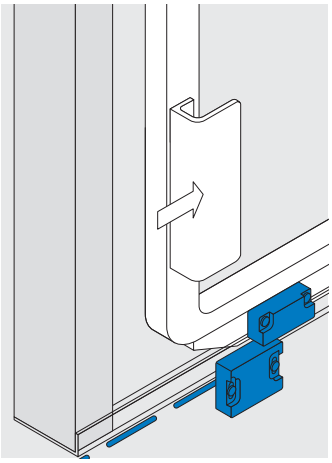
**On hinged doors**





**On sliding doors**



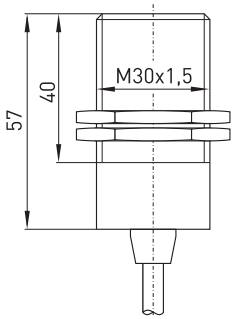


# Magnetic safety sensors, cylindrical form
## // Series RC Si M30

Features/Options
- Metal enclosure
- Long life
- Reed contacts, coded
- Actuation from front
- Switching distance up to 8 mm
- With pre-wired cable, cable length 1 metre
- Available as Ex-version

## // RC SI M30



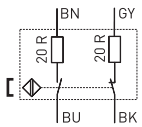
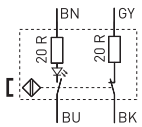
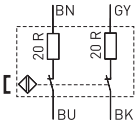
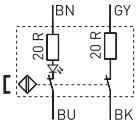



## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-2, -3/PDF-M*; EN 954-1; EN 1088; EN ISO 13849-1 |
| **Enclosure** | aluminium brass, nickeled or stainless steel 1.4571 |
| **Defined object** | actuator MC 30 order No. 05.00.8214, MC 30-NIRO order No. 05.00.8220 |
| **Degree of protection** | IP 67 or IP 69 K to IEC/EN 60529 |
| **Switching system** | Reed contacts |
| **Contact types** | 1NC/1 NO contact or 2 NC contacts |
| **Connection** | Pre-wired cable H05 VV-F 5G |
| **Cable section** | 4 x 0.5 mm |
| **Cable length** | 1 m |
| **$B_{10d}$ (10 % load)** | 1 million |
| **$T_M$** | 10 years |
| **MTTFd** | > 100 years |
| **$U_e$** | max. 30 VDC |
| **$I_e$** | max. 125 mA, with LED: 20 mA / 24 VDC |
| **Voltage drop at $I_{max}$** | 3.15 V, with LED: 3 V |
| **Short-circuit current** | max. 750 mA for 50 ms, with LED: 30 mA |
| **Switching frequency** | max. 5 Hz |
| **Ambient temperature** | -20 °C ... +70 °C |
| **Mechanical life** | > 10 Mio. operations |
| **Limit distances** | $s_{ao}$ = 8 mm, $s_{ar}$ = 24 mm |
| **Axial misalignment** | 6.5 mm |
| **Repeatability** | < 0.5 mm |
| **Approvals** | |

*only in combination with a safety module

### Contact variants: Switch travel/contacts

| | without LED | with LED |
|---|---|---|
| 1 NC/1 NO contact | **RC Si M30 1Ö/1S**  | **RC Si M30 1Ö/1S-LED**  |
| 2 NC contacts | **RC Si M30 2Ö**  | **RC Si M30 2Ö-LED**  |



### Ordering data

**RC Si M30 1Ö/1S-IP69K-NIRO**

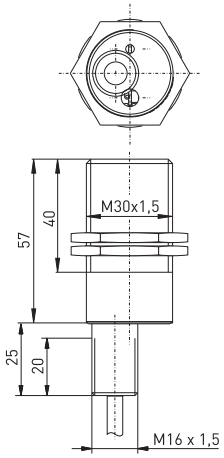
- Stainless steel enclosure
- Degree of protection IP69K
- 1 NC/1 NO contact (2Ö)
- Series, Enclosure diameter M30
- Safety
- Magnetic sensor

# Magnetic safety sensors, cylindrical form
## // Series RC Si M30, actuator

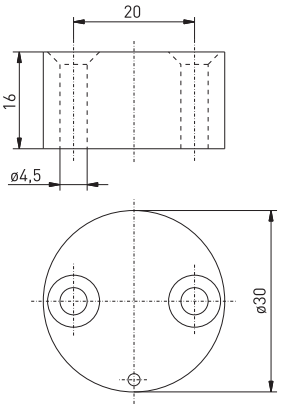
Features/Options
- Version with higher protection class IP 69K:
  suitable for cleaning with 80 °C hot water at 100 bar pressure at a distance of 100 mm from different directions
- RCSi M30-NIRO: stainless steel enclosure 1.4571, actuator available with stainless steel enclosure 1.4571: MC30-NIRO
- RCSi M30-B: variant with mounting thread M16 x 1.5

Note
The actuator is not included in the delivery of the switches.

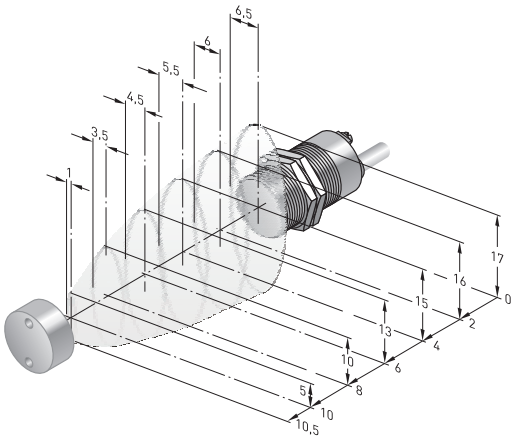
## // Mounting thread B




## // Actuating magnet MC 30




## // Switching capacity

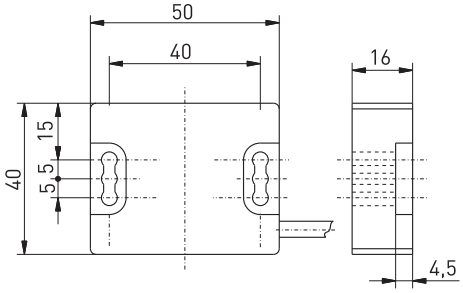


# Magnetic safety sensors, rectangular form
## // Series RC Si 56

Features/Options
- Thermoplastic enclosure
- Long life
- Reed contacts, coded
- Actuation from front
- Switching distance up to 7 mm
- With pre-wired cable, cable length 1 metre

## // RC SI 56



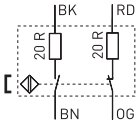
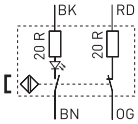
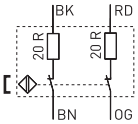
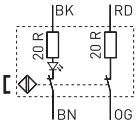




## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1, -2, -3/PDF-M*; EN 954-1; EN 1088; EN ISO 13849-1 |
| **Enclosure** | glass-fibre reinforced thermoplastic |
| **Defined object** | actuator MC 56 order No. 05.00.8217, MC 56-3 order No. 05.00.8215 |
| **Degree of protection** | IP 67 or IP 69K to IEC/EN 60529 |
| **Switching system** | Reed contacts |
| **Contact types** | 1NC/1 NO contact or 2 NC contacts |
| **Connection** | Pre-wired cable AWG 24 |
| **Cable section** | 4 x 0,22 $mm^2$ |
| **Cable length** | 1 m |
| **$B_{10d}$ (10 % load)** | 1 million |
| **$T_M$** | 10 years |
| **MTTFd** | > 100 years |
| **$U_e$** | max. 30 VDC |
| **$I_e$** | max. 157 mA, with LED: 20 mA / 24 VDC |
| **Voltage drop at $I_{max}$** | 3.15 V, mit LED: 3 V |
| **Short-circuit current** | max. 750 mA for 50 ms, with LED: 30 mA |
| **Switching frequency** | max. 5 Hz |
| **Ambient temperature** | -20 °C ... +70 °C |
| **Mechanical life** | > 10 Mio. operations |
| **Limit distances** | $s_{ao}$ = 7 mm, $s_{ar}$ = 23 mm |
| **Axial misalignment** | 2 mm |
| **Repeatability** | < 0.5 mm |

*only in combination with a safety module

### Contact variants: Switch travel/contacts

| | without LED | with LED |
|---|---|---|
| 1 NC/1 NO contact | **RC Si 56 1Ö/1S**  | **RC Si 56 1Ö/1S-LED**  |
| 2 NC contacts | **RC Si 56 2Ö**  | **RC Si 56 2Ö-LED**  |



### Ordering data

**RC Si 56 1Ö/1S-IP69K**

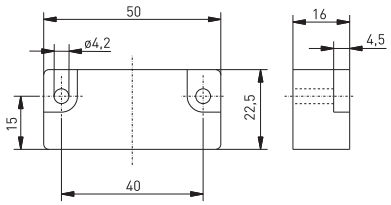
- Degree of protection IP 69K
- 1 NC/1 NO contact (2Ö)
- Series
- Safety
- Magnetic sensor

# Magnetic safety sensors, rectangular form
## // Series RC Si 56, actuator

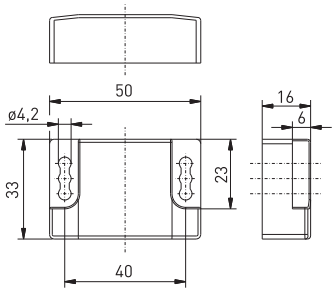
Features/Options
- Version with higher protection class IP 69K:
  suitable for cleaning with 80 °C hot water at 100 bar pressure at a distance of 100 mm from different directions
- MC56: compact design,
  suitable for 30, 40 and 50 mm profiles
- MC56-M: suitable for 30, 40 and 50 mm profiles

Note
The actuator is not included in the delivery of the switches.

## // Actuating magnet MC 56

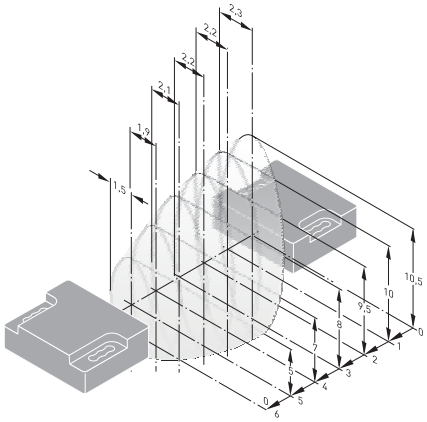



## // Actuating magnet MC 56-M





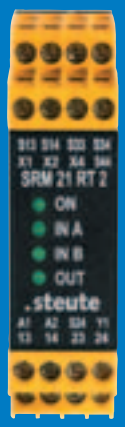

## // Switching capacity



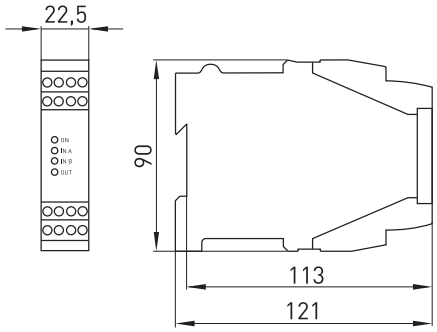
# Safety relay module
## // Series SRM 21 RT2

Features/Options
- Enclosure width: 22.5 mm
- 2 NC contacts or NC/NO combination can be connected
- Feedback circuit
- 2 enabling paths
- 1 transistor output
- Manual or automatic reset
- Switching position indication by LED

## // SRM 21 RT2





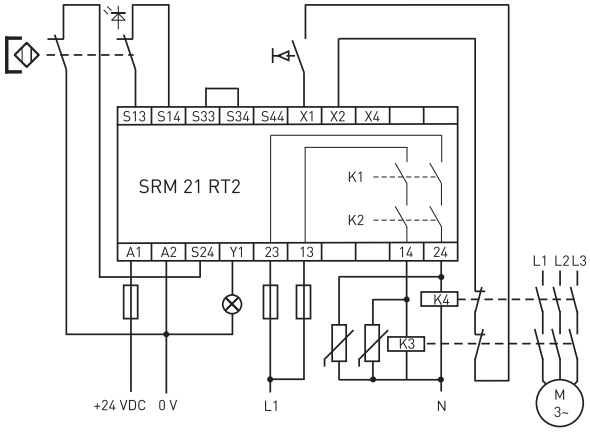

## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60204 -1, IEC/EN 60947-5-3/PDF-M; EN 954-1, BG-GS-ET 20; EN ISO 13849-1 |
| **Enclosure** | black polycarbonate; polyamide terminal clamps, top hat section rail mounting to EN 50022 |
| **Connection** | screw terminals with + and - screws |
| **Cable section** | 1x 2.5 mm²/2x 1.5 mm² strand including conductor ferrules, 1x 4 mm²/2x 2.5 mm² massiv |
| **Degree of protection** | Enclosure IP 40. Terminal block IP 20 to IEC 60529, shock protection to VBG 4 |
| **safety-related data** | |
| **EN 954-1** | category 4 |
| **EN 60204-1** | stop category 0 |
| **EN ISO 13849-1** | PL e in preparation |
| **$T_M$** | 10 years |
| **DIN EN 62061** | SIL CL in preparation |
| **Inputs** | 1 NC/1 NO contact or 2 NC contacts<br>1 feedback input, 1 reset input |
| **Outputs** | 2 enabling paths: positive-guided contacts, 1 transistor output as signalling contact |
| **Utilisation category** | AC-15; DC-13 |
| **$I_e/U_e$** | enabling paths: 3 A/230 V; 2 A/24 V;<br>input: 0.1 A/24 VDC ± 15% |
| **Max. output current transistor output $I_a$** | 20 mA |
| **Max. fuse rating $U_e$** | 2 A gL/gG D-fuse |
| **Enabling paths** | 6 A gL/gG D-fuse |
| **Dropout delay** | < 20 ms |
| **Risk time** | < 200 ms |
| **Mechanical life** | > 50 million operations |
| **LED indications** | 4: operation, authorisation, inputs A and B |
| **Degree of pollution** | 3 to DIN VDE 0110 |
| **Overvoltage category** | III |
| **Ambient temperature** | 0 °C ... +55 °C |
| **Approvals** | |

**Ordering data** SRM 21 RT2

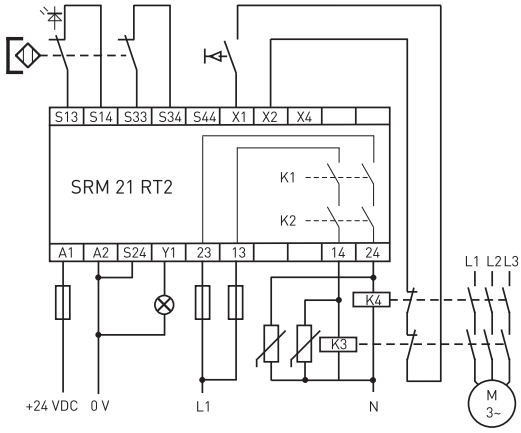
- 2 inputs
- automatic reset
- manual reset
- 1 transistor output
- 2 enabling paths
- Safety relay module

## // Wiring example



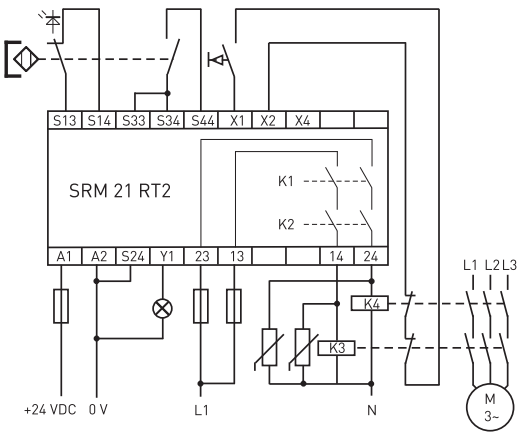

- 2-channel: monitoring of one magnetic safety sensor with 2 NC contacts
- Feedback circuit
- Cross-wire detection
- With manual reset/start
- Y1 high upon authorisation
- Control Category 4

## // Wiring example




- 2-channel: monitoring of one magnetic safety sensor with 2 NC contacts
- Feedback circuit
- Without cross-wire detection
- With manual reset/start
- Y1 high upon authorisation
- Control Category 4

## // Wiring example




- 2-channel: monitoring of one magnetic safety sensor with 1 NC and 1 NO contact
- Feedback circuit
- Without cross-wire detection
- With manual reset/start
- Y1 high upon authorisation
- Control Category 4


steute
RC M20-1SR
2.20 2.3.1.01

# Magnetic sensors



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## Application

Magnetic sensors are preferably applied as an alternative to mechanically operated limit switches in cases where unfavourable operating conditions such as high or low actuating speeds, large switching frequencies, extreme dirt or dust production, high humidity, chemical atmospheres, highly fluctuating actuating distances etc. occur. Even in the presence of aggressive materials, as well as in the food processing industry, safe switching is ensured through encapsulation of the contacts. In this way, magnetic sensors are e.g. suitable for movement and standstill monitoring on machines and systems, as electronic counters, as station switches on conveyor systems and high rack warehouses, as well as for position indication of flaps, slide feeds and valves.

In the lift industry, magnetic sensors are suitable for positioning and controlling lift cabins. More information on this subject can be found in our Ex lift switchgear catalogue.

A further field of application is electronic control of the travel and position indication on pneumatic cylinders.

## Design and operating principle

The magnetic sensors are actuated by an M series permanent magnet, described at the end of this chapter, without any mechanical contact. The devices can be selected with NO, NC, change-over or bistable contacts. All magnetic sensors described in this chapter are supplied with pre-wired cable or plug-in connectors.

The magnetic sensors for control and positioning on pneumatic cylinders are actuated by permanent magnets fitted inside on the piston of the pneumatic cylinder.

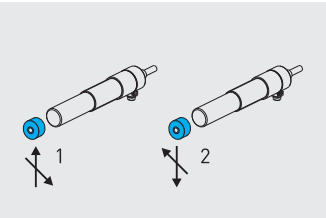
The mounting site of magnetic sensors must be free of magnetic fields.

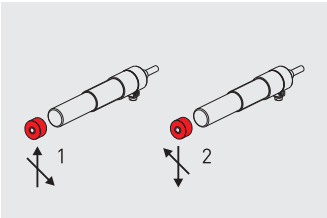
The magnetic sensors described in this chapter bear the CE mark according to the Low Voltage Directive 73/23/EC.

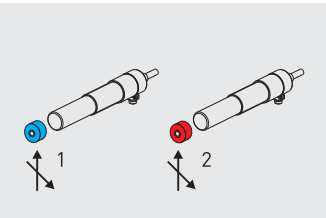


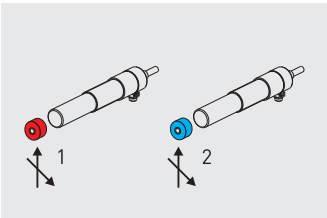
## Operating principle

**Magnetic sensors change-over contact, actuation from front**

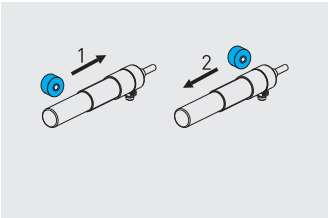


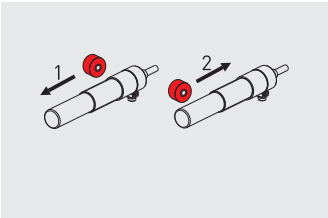



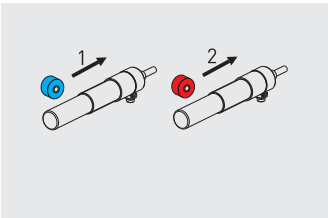



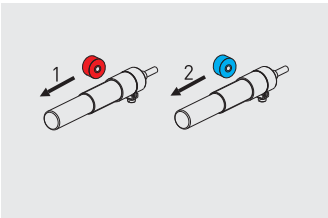




**Magnetic sensors change-over contact, actuation from side**

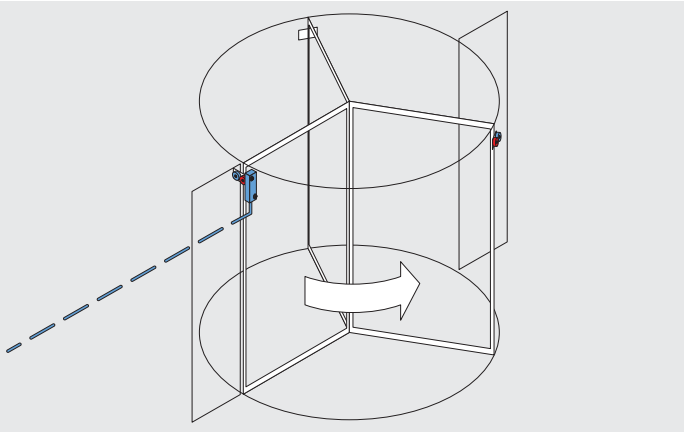


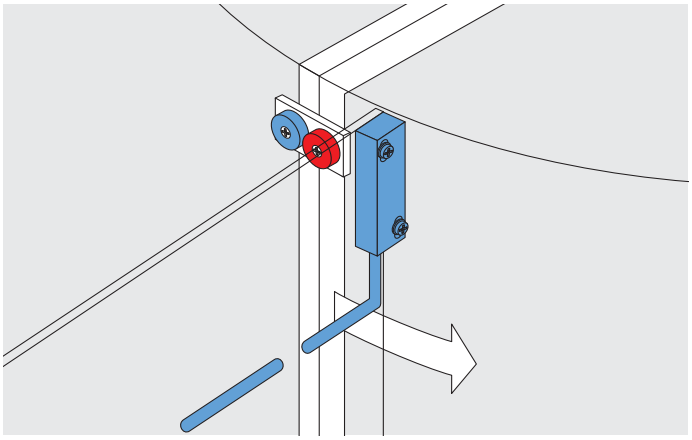




**Magnetic sensors on a revolving door**



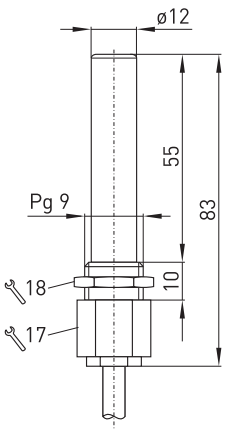


# Magnetic sensors, cylindrical form
## // Series RC 3

Features/Options
- Metal enclosure
- Long life
- 1 Reed contact
- Actuation from side and from front
- Switching distance up to 29 mm, depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

## // RC 3






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | aluminium brass, nickeled |
| **Actuator** | series M magnet |
| **Degree of protection** | IP 67; with plug-in connectors IP 42/65 to EN 60529 |
| **Contact material** | rhodium; -W: tungsten |
| **Switching system** | Reed contacts |
| **Contact types** | NO or change-over contact |
| **Connection** | lead-free pre-wired cable, PVC H05VV-F or 3-pole connector to DIN 41 524 |
| **Cable section** | 2 x 0.5 $mm^2$ |
| **Cable length** | 1.2 or 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1S: 2 A; 1W: 0.5 A; -W: 1 A |
| **Switching capacity** | 1S: max. 50 VA/ W; 1W: max. 15 VA/ W; -W: max. 25 VA/ W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^9$ operations |
| **Electrical life** | $10^9$ operations |
| **Repeat accuracy** | ± 0,02 mm |
| **Resistance to vibrations** | 1S: 20 g, 1W: 10 g |

### Contact variants: Switch travel/contacts

| | bi-directional actuation |
|---|---|
| 1 NO contact | **RC 3 1S**<br>BU — BN |
| 1 change-over contact | **RC 3 1W**<br>BN — BK / BU |

### Ordering data

**RC 3 1W-W-ST**

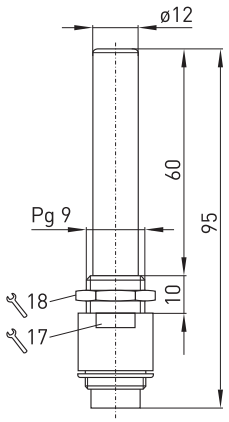
- ST plug-in connector
- Tungsten Reed contacts
- 1 change-over contact (1S 1 NO contact)
- Series
- Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 3, variants

Features/Options
- Coupler for magnetic sensors with plug-in connectors M16 x 1:
  for 24 VDC Hirschmann type Masei 3100 , protection class IP 42
  for 230 VAC Binder series 723, protection class IP 65
- Version for high temperatures up to +130 °C with silicon cable available

## // Connector M 16x1, 3-pole

## // Connector M 16x1, 3-pole



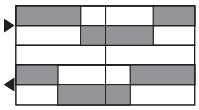



### Actuating distances

| | | |
|---|---|---|
| Actuating direction | from front | from front |
| Switch travel |  |  |
| Contacts | 1 NO contact | 1 change-over contact |
| Actuating direction | N or S | N or S |

| Actuating magnet | Switching distance [mm] on | off | Switching distance [mm] on | off |
|---|---|---|---|---|
| M 50 U | – | – | – | – |
| M 100 | – | – | – | – |
| M 100 U | – | – | – | – |
| M 200 | 3 | 16 | 3 | 5 |
| M 200 U | 4 | 17 | 4 | 6 |
| M 300 | 22 | 39 | 22 | 25 |
| M 300 U | 8 | 11 | 7 | 9 |
| M 300 U B | 22 | 39 | 8 | 10 |
| M 400 U | – | – | 24 | 26 |
| M 400 U B | 29 | 43 | 22 | 24 |
| M 500 | 3 | 17 | 3 | 5 |
| M 600 | 20 | 38 | 21 | 23 |
| M 700 | 21 | 29 | 22 | 25 |

## Actuating distances

| Actuating direction | from side | from side |
|---|---|---|
| Switch travel |  |  |
| Contacts | 1 NO contact | 1 change-over contact |
| Actuating direction | N or S | N or S |
| **Actuating magnet** | **Switching distance [mm]** | **Switching distance [mm]** |
| | **on off** | **on off** |
| **M 50 U** | 5 12 | 9 12 |
| **M 100** | 7 14 | 10 11 |
| **M 100 U** | 8 16 | 11 13 |
| **M 200** | 11 20 | 14 15 |
| **M 200 U** | 12 21 | 15 17 |
| **M 300** | 24 37 | 26 28 |
| **M 300 U** | 15 24 | 18 20 |
| **M 300 U B** | 16 25 | 18 20 |
| **M 400 U** | 27 39 | 29 32 |
| **M 400 U B** | 26 33 | 28 31 |
| **M 500** | 24 37 | 26 29 |
| **M 600** | 23 35 | 26 28 |
| **M 700** | 24 35 | 26 27 |

## ASSEMBLY DEPARTMENT
## MOUNTING OF THE REED CONTACTS



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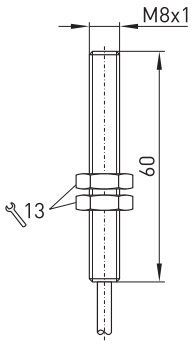
# Magnetic sensors, cylindrical form
## // Series RC 8

Features/Options
- Metal enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 39 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

### // RC 8






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | brass, nickeled |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact |
| **Connection** | pre-wired cable, LiYY 2 x AWG26 |
| **Cable section** | 2 x 0.14 $mm^2$ |
| **Cable length** | 1 m |
| **Switching voltage** | max. 200 VAC/DC |
| **Switching current** | 1 A |
| **Switching capacity** | max. 20 W/VA |
| **Switching frequency** | max. 200 Hz |
| **Bounce duration** | – |
| **Ambient temperature** | –10 °C ... +80 °C |
| **Mechanical life** | $10^9$ Operations |
| **Electrical life** | $10^9$ Operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 20 g |

### Contact variants: Switch travel/contacts

| | bi-directional actuation |
|---|---|
| 1 NO contact | **RC 8 1S**<br>BU ⟶ BN |

### Ordering data

**RC 8 1S**

- 1 NO contact
- Series
- Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 8

Features/Options
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| **M 50 U** | 10 | 15 | 13 | 17 |
| **M 100** | 12 | 18 | 14 | 17 |
| **M 100 U** | 15 | 20 | 16 | 20 |
| **M 200** | 17 | 24 | 19 | 23 |
| **M 200 U** | 19 | 25 | 20 | 25 |
| **M 300** | 36 | 47 | 32 | 40 |
| **M 300 U** | 23 | 29 | 23 | 28 |
| **M 300 U B** | 23 | 30 | 23 | 28 |
| **M 400 U** | 39 | 49 | 35 | 42 |
| **M 400 U B** | 39 | 48 | 34 | 41 |
| **M 500** | 17 | 23 | 32 | 40 |
| **M 600** | 36 | 46 | 31 | 38 |
| **M 700** | 39 | 48 | 31 | 38 |

# Magnetic sensors, cylindrical form
## // Series RC 10

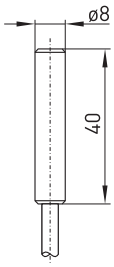
Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 40 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

// RC 10



## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | POM |
| **Actuator** | Series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact |
| **Connection** | pre-wired cable, PVC LiYY |
| **Cable section** | 2 x 0.34 $mm^2$ |
| **Cable length** | 1 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1 A |
| **Switching capacity** | max. 100 W/VA |
| **Switching frequency** | max. 200 Hz |
| **Bounce duration** | – |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0,02 mm |
| **Resistance to vibrations** | 20 g |




### Contact variants: Switch travel/contacts

| | bi-directional actuation |
|---|---|
| 1 NO contact | RC 10 1S<br>BU ⟶ BN |

### Ordering data

RC 10 1S

- 1 NO contact
- Series
- Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 10

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

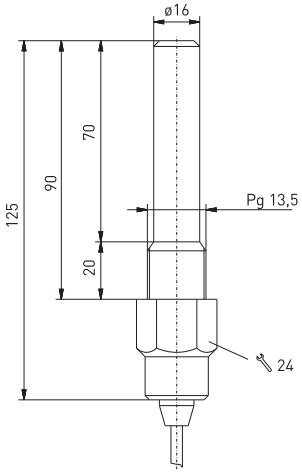
| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| M 50 U | 12 | 17 | 12 | 15 |
| M 100 | 13 | 18 | 14 | 18 |
| M 100 U | 15 | 20 | 15 | 18 |
| M 200 | 19 | 26 | 18 | 23 |
| M 200 U | 21 | 27 | 20 | 23 |
| M 300 | 39 | 49 | 31 | 38 |
| M 300 U | 25 | 32 | 23 | 27 |
| M 300 U B | 26 | 33 | 23 | 29 |
| M 400 U | 38 | 48 | 35 | 40 |
| M 400 U B | 40 | 48 | 32 | 39 |
| M 500 | 20 | 26 | 14 | 18 |
| M 600 | 38 | 48 | 30 | 37 |
| M 700 | 39 | 47 | 30 | 36 |

# Magnetic sensors, cylindrical form
## // Series RC 13,5

Features/Options
- Metal enclosure
- Long life
- 1 Reed contact
- Actuation from front
- Switching distance up to 30 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

## // RC 13,5






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | brass, nickeled |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | silver |
| **Switching system** | reed contacts |
| **Contact types** | NC contact, NO contact or change-over contact |
| **Connection** | pre-wired cable, H05VV-F |
| **Cable section** | 1S: 3 x 0.75 $mm^2$, 1W: 4 x 0.75 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | 250 V |
| **Switching current** | 1.5 A |
| **Switching capacity** | 1Ö, 1W: max. 50 VA/W, 1S: max. 100 VA/W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 50 ... 100 g, 1Ö, 1W: 10 ... 50 g |

### Contact variants: Switch travel/contacts

| | actuation from front |
|---|---|
| 1 NC contact | **RC 13,5 1Ö**   |
| 1 NO contact | **RC 13,5 1S**   |
| 1 change-over contact | **RC 13,5 1W**   |

### Ordering data

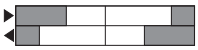
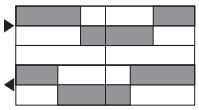
**RC 13,5 1W**

- 1W: 1 change-over contact (1Ö 1 NC contact, 1S 1 NO contact)
- 13,5: Series
- RC: Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 13,5

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

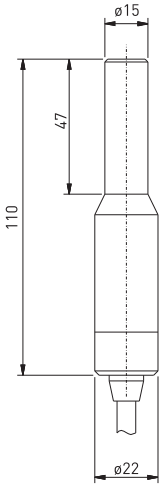
| | | | |
|---|---|---|---|
| Actuating direction | **from front** | **from front** | **from front** |
| Switch travel |  |  |  |
| Contacts | **1 NC contact** | **1 NO contact** | **1 change-over contact** |
| Actuating direction | NC or S | N or S | N or S |
| **Actuating magnet** | **Switching distance [mm]** | **Switching distance [mm]** | **Switching distance [mm]** |
| | **on off** | **on off** | **on off** |
| **M 50 U** | 4 7 | – – | 4 7 |
| **M 100** | 10 13 | 3 11 | 10 13 |
| **M 100 U** | 10 13 | 3 11 | 10 13 |
| **M 200** | 13 16 | 7 17 | 13 16 |
| **M 200 U** | 13 16 | 7 17 | 13 16 |
| **M 300** | 17 20 | 10 24 | 17 20 |
| **M 300 U** | 17 20 | 10 24 | 17 20 |
| **M 400 U** | 33 37 | 28 43 | 33 37 |
| **M 700** | 30 35 | 25 40 | 30 35 |

# Magnetic sensors, cylindrical form
## // Series RC 15

Features/Options
- Metal enclosure
- Long life
- 1 Reed contact
- Actuation from front
- Switching distance up to 25 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

## // RC 15






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | brass, nickeled |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | silver |
| **Switching system** | reed contacts |
| **Contact types** | NC contact, NO contact or change-over contact |
| **Connection** | pre-wired cable, H05VV-F |
| **Cable section** | 1S: 3 x 0.75 $mm^2$, 1W: 4 x 0.75 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1.5 A |
| **Switching capacity** | 1Ö, 1W: max. 50 VA/W, 1S: max. 100 VA/W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 50 ... 100 g, 1Ö, 1W: 10 ... 50 g |

### Contact variants: Switch travel/contacts

| | actuation from front |
|---|---|
| 1 NC contact | **RC 15 1Ö**   |
| 1 NO contact | **RC 15 1S**   |
| 1 change-over contact | **RC 15 1W**   |

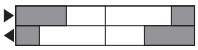
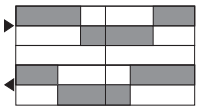
### Ordering data — RC 15 1W

- 1W: 1 change-over contact (1Ö 1 NC contact, 1S 1 NO contact)
- RC 15: Series Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 15

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

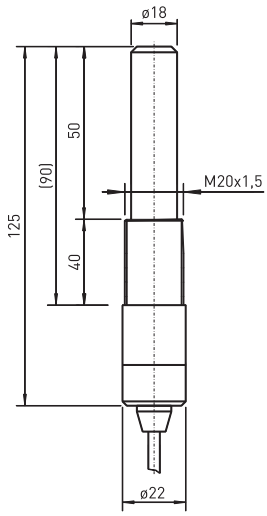
| | | | |
|---|---|---|---|
| Actuating direction | from front | from front | from front |
| Switch travel |  |  |  |
| Contacts | 1 NC contact | 1 NO contact | 1 change-over contact |
| Actuating direction | N or S | N or S | N or S |
| **Actuating magnet** | **Switching distance [mm]** | **Switching distance [mm]** | **Switching distance [mm]** |
| | on off | on off | on off |
| **M 50 U** | 4 7 | – – | 4 7 |
| **M 100** | 10 13 | 3 11 | 10 13 |
| **M 100 U** | 10 13 | 3 11 | 10 13 |
| **M 200** | 13 16 | 7 17 | 13 16 |
| **M 200 U** | 13 16 | 7 17 | 13 16 |
| **M 300** | 17 20 | 10 24 | 17 20 |
| **M 300 U** | 17 20 | 10 24 | 17 20 |
| **M 400 U** | 33 37 | 28 43 | 33 37 |
| **M 700** | 30 35 | 25 40 | 30 35 |

# Magnetic sensors, cylindrical form
## // Series RC M20

Features/Options
- Metal enclosure
- Long life
- 1 Reed contact
- Actuation from front, actuation from side only for change-over contacts
- Switching distance up to 30 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre
- Available in high-grade steel

## // RC M20

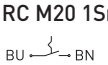





## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | brass, nickeled |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | silver |
| **Switching system** | reed contacts |
| **Contact types** | NO contact or change-over contact, grid or change-over contact latching |
| **Connection** | Pre-wired cable, H05VV-F |
| **Cable section** | 1S: 3 x 0.75 $mm^2$, 1W: 4 x 0.75 $mm^2$ |
| **Cable length** | 1, 2 oder 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1.5 A |
| **Switching capacity** | 1Ö, 1W: max. 50 VA/W, 1S: max. 100 VA/W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 50 ... 100 g, 1Ö, 1W: 10 ... 50 g |

### Contact variants: Switch travel/contacts

| | actuation from front | actuation from side |
|---|---|---|
| 1 NO contact | **RC M20 1S**   | |
| 1 grid | **RC M20 1Sr**   | **RC M20 1Sr**   |
| 1 change-over contact | **RC M20 1W**   | |
| 1 change-over contact latching | **RC M20 1Wr**   | **RC M20 1Wr**   |

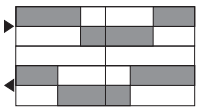
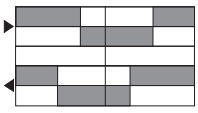
**Ordering data** **RC M20 1W**

- 1 change-over contact (1Ö 1 NC contact, 1S 1 NO contact)
- Series
- Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC M20

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

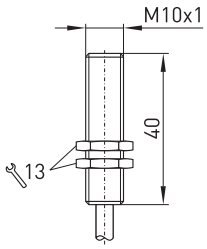
| | | | |
|---|---|---|---|
| Actuating direction | **from front** | **from front** | **from front** |
| Switch travel |  |  |  |
| Contacts | **1 change-over contact** | **1 bistable contact** | **1 bistable change-over contact** |
| Actuating direction | N or S | N/S | N/S |
| **Actuating magnet** | **Switching distance [mm]** | **Switching distance [mm]** | **Switching distance [mm]** |
| | **on off** | **on off** | **on off** |
| **M 50 U** | 4 7 | 12 6 | – – |
| **M 100** | 10 13 | 22 12 | 20 40 |
| **M 100 U** | 10 13 | 22 12 | 20 40 |
| **M 200** | 13 16 | 30 30 | 25 50 |
| **M 200 U** | 13 16 | 30 30 | 25 50 |
| **M 300** | 17 20 | 37 23 | 30 60 |
| **M 300 U** | 17 20 | 37 23 | 30 60 |
| **M 400 U** | 33 37 | 63 43 | 50 90 |
| **M 700** | 30 35 | 60 40 | 50 75 |
| Actuating direction | **from side** | **from side** | |
| Switch travel |  |  | |
| Contacts | **1 bistable contact** | **1 bistable change-over contact** | |
| Actuating direction | N or S | N or S | |
| **Actuating magnet** | **Switching distance [mm]** | **Switching distance [mm]** | |
| | **on off** | **on off** | |
| **M 50 U** | | – – | |
| **M 100** | | 15 20 | |
| **M 100 U** | | 15 20 | |
| **M 200** | | 20 25 | |
| **M 200 U** | | 20 25 | |
| **M 300** | | 25 30 | |
| **M 300 U** | | 25 30 | |
| **M 400 U** | | 30 35 | |
| **M 700** | | 40 50 | |

# Magnetic sensors, cylindrical form
## // Series RC 20

Features/Options
- Metal enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 41 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

## // RC 20






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | brass, nickeled |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67; with plug-in connector IP 42/65 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact or change-over contact |
| **Connection** | lead-free pre-wired cable, PVC H05VV-F or 3-pole connector to DIN 41 524 |
| **Cable section** | 2 x 0.5 $mm^2$ ,3 x 0.5 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | 1S: max. 250 VAC/DC, 1W: max. 175 VAC/DC |
| **Switching current** | 1S: max. 0,5 A, 1W: max. 0.25 A |
| **Switching capacity** | 1S: max. 50 VA/W, 1W: max. 3 VA/W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^9$ operations |
| **Electrical life** | $10^9$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 20 g, 1W: 30 g |

### Contact variants: Switch travel/contacts

| | bi-directional actuation |
|---|---|
| 1 NO contact | **RC 20 1S**   |
| 1 change-over contact | **RC 20 1W**   |

### Ordering data

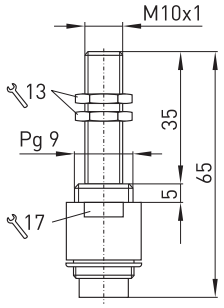
**RC 20 1W-ST**

- with plug-in connector
- 1 change-over contact (1S 1 NO contact
- Series
- Magnetic sensor

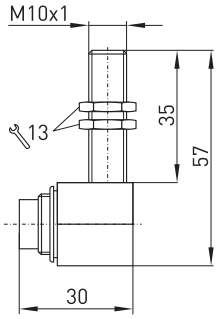
# Magnetic sensors, cylindrical form
## // Series RC 20, variants

Features/Options
- Coupling for magnetic sensors with plug-in connector M16 x 1:
  for 24 VDC Hirschmann Type Masei 3100 , protection class IP 42
  for 230 VAC Binder Series 723, protection class IP 65
- Version for high temperatures up to +130 °C with silicon cable available

## // Connector M 16x1, 3-pole




## // Angled connector M 16x1, 3-pole






### Actuating distances

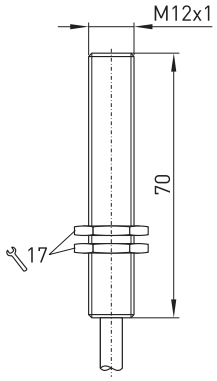
| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | **Switching distance [mm]** | | **Switching distance [mm]** | |
| | **on** | **off** | **on** | **off** |
| **M 50 U** | 12 | 16 | 11 | 14 |
| **M 100** | 14 | 18 | 12 | 15 |
| **M 100 U** | 16 | 19 | 14 | 16 |
| **M 200** | 19 | 24 | 16 | 20 |
| **M 200 U** | 20 | 25 | 17 | 21 |
| **M 300** | 25 | 29 | 21 | 24 |
| **M 300 U** | 25 | 29 | 21 | 24 |
| **M 300 U B** | 25 | 30 | 21 | 24 |
| **M 400 U** | 41 | 47 | 32 | 37 |
| **M 400 U B** | 41 | 47 | 32 | 37 |
| **M 500** | 20 | 25 | 30 | 35 |
| **M 600** | 39 | 47 | 29 | 34 |
| **M 700** | 40 | 47 | 29 | 33 |

# Magnetic sensors, cylindrical form
## // Series RC 23

Features/Options
- Metal enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 30 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre
- Version with doubled switching capacity with tungsten reed contacts available

## // RC 23






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | aluminium brass, nickeled |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67; with plug-in connector IP 42/65 to EN 60529 |
| **Contact material** | rhodium; -W: Tungsten |
| **Switching system** | reed contacts |
| **Contact types** | NO contact or change-over contact |
| **Connection** | lead-free pre-wired cable, PVC H05VV-F |
| **Cable section** | 2 x 0.5 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1S: 2 A; 1W: 0.5 A; -W: 1 A |
| **Switching capacity** | 1S: max. 50 VA/ W; 1W: max. 15 VA/ W; -W: max. 25 VA/ W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 20 g, 1W: 10 g |

### Contact variants: Switch travel/contacts

| | bi-directional actuation |
|---|---|
| 1 NO contact | **RC 23 1S**   |
| 1 change-over contact | **RC 23 1W**   |

### Ordering data — RC 23 1W-W

- Tungsten reed contacts
- 1 change-over contact (1 S 1 NO contact)
- Series
- Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 23

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

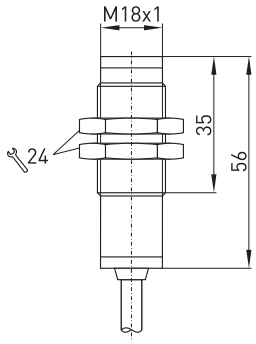
| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| M 50 U | 1 | 8 | 8 | 14 |
| M 100 | 2 | 10 | 9 | 16 |
| M 100 U | 6 | 14 | 11 | 18 |
| M 200 | 8 | 18 | 14 | 21 |
| M 200 U | 10 | 19 | 16 | 22 |
| M 300 | 29 | 42 | 29 | 39 |
| M 300 U | 13 | 23 | 19 | 26 |
| M 300 U B | 14 | 24 | 19 | 27 |
| M 400 U | 30 | 43 | 31 | 42 |
| M 400 U B | 29 | 41 | 30 | 43 |
| M 500 | 10 | 20 | 29 | 39 |
| M 600 | 28 | 41 | 28 | 29 |
| M 700 | 29 | 41 | 27 | 38 |

# Magnetic sensors, cylindrical form
## // Series RC 30

Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 36 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre
- Version with doubled switching capacity with tungsten reed contacts available

## // RC 30






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | glass-fibre reinforced polyamide |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67; with plug-in connector IP 42/65 to EN 60529 |
| **Contact material** | rhodium; -W: Tungsten |
| **Switching system** | reed contacts |
| **Contact types** | NO contact or change-over contact |
| **Connection** | lead-free pre-wired cable, PVC H05VV-F or 3-pole connector to DIN 41 524 |
| **Cable section** | 2 x 0.5 $mm^2$ |
| **Cable length** | 1, 2 oder 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1S; 1W: 0,5 A; -W: 1 A |
| **Switching capacity** | 1S: max. 50 VA/ W; 1W: max. 15 VA/ W; -W: max. 25 VA/ W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 20 g, 1W: 10 g |

### Contact variants: Switch travel/contacts

| | bi-directional actuation |
|---|---|
| 1 NO contact | **RC 30 1S**<br>BU — BN |
| 1 change-over contact | **RC 30 1W**<br>BN — BK / BU |

**Ordering data** RC 30 1W-W

- Tungsten reed contacts
- 1 change-over contact (1S 1 NO contact)
- Series
- Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 30

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

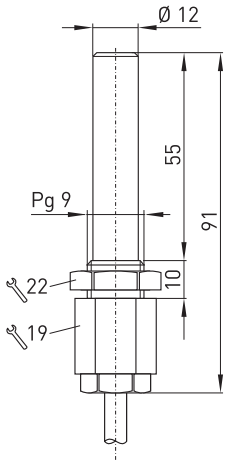
| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| M 50 U | 8 | 10 | 3 | 5 |
| M 100 | 10 | 15 | 5 | 7 |
| M 100 U | 12 | 13 | 4 | 5 |
| M 200 | 16 | 18 | 7 | 9 |
| M 200 U | 17 | 20 | 9 | 10 |
| M 300 | 33 | 37 | 19 | 22 |
| M 300 U | 21 | 24 | 11 | 13 |
| M 300 U B | 20 | 23 | 12 | 14 |
| M 400 U | 36 | 39 | 21 | 24 |
| M 400 U B | 34 | 38 | 21 | 23 |
| M 500 | 13 | 16 | 21 | 24 |
| M 600 | 33 | 36 | 18 | 20 |
| M 700 | 34 | 37 | 18 | 20 |

# Magnetic sensors, cylindrical form
## // Series RC 60

Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 33 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre
- Version with doubled switching capacity with tungsten reed contacts available

### // RC 60






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | glass-fibre reinforced polyamide |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium; -W: tungsten |
| **Switching system** | reed contacts |
| **Contact types** | NO contact, change-over contact or grid |
| **Connection** | lead-free pre-wired cable, PVC H05VV-F or 3-pole connector to DIN 41 524 |
| **Cable section** | 2 x 0.5 $mm^2$ |
| **Cable length** | 1, 2 oder 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1S: 2 A; 1W: 0,5 A; -W: 1 A |
| **Switching capacity** | 1S: max. 50 VA/ W; 1W: max. 15 VA/ W; -W: max. 25 VA/ W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^9$ operations |
| **Electrical life** | $10^9$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 20 g, 1W: 10 g |

### Contact variants: Switch travel/contacts

| | bi-directional actuation |
|---|---|
| 1 NO contact | **RC 60 1S**   |
| 1 grid | **RC 60 1Sr**   |
| 1 change-over contact | **RC 60 1W**   |

### Ordering data — RC 60 1W-W-ST

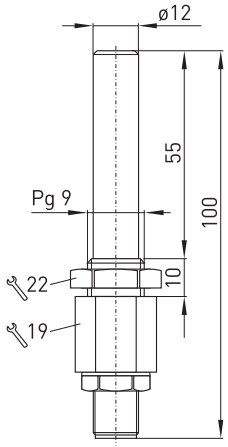
- ST plug-in connector
- Tungsten reed contacts
- 1 change-over contact (1S 1 NO contact, 1Sr 1 Raster)
- Series
- Magnetic sensor

# Magnetic sensors, cylindrical form
## // Series RC 60, variants

Features/Options
- Coupler for magnetic sensors with plug-in connector M12 x 1: for 250 VAC Escha
- Version for high temperatures up to +130 °C with silicon cable available

### // with connector

### // with connector



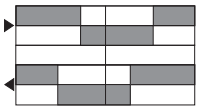



Actuating distances

| Actuating direction | from front | from side |
|---|---|---|
| Switch travel |  |  |
| Contacts | 1 NO contact | 1 NO contact |
| Actuating direction | N or S | N or S |

| Actuating magnet | Switching distance [mm] on | off | Switching distance [mm] on | off |
|---|---|---|---|---|
| M 50 U | 3 | 11 | 9 | 14 |
| M 100 | 4 | 13 | 10 | 16 |
| M 100 U | 6 | 15 | 13 | 18 |
| M 200 | 9 | 19 | 15 | 23 |
| M 200 U | 10 | 20 | 17 | 23 |
| M 300 | 30 | 44 | 29 | 42 |
| M 300 U | 15 | 25 | 20 | 28 |
| M 300 U B | 15 | 25 | 20 | 28 |
| M 400 U | 30 | 45 | 33 | 43 |
| M 400 U B | 30 | 43 | 33 | 43 |
| M 500 | 10 | 20 | 11 | 18 |
| M 600 | 29 | 43 | 29 | 40 |
| M 700 | 30 | 44 | 29 | 40 |

## Actuating distances

| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 change-over contact | | 1 change-over contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | **Switching distance [mm]** | | **Switching distance [mm]** | |
| | **on** | **off** | **on** | **off** |
| **M 50 U** | – | – | 9 | 12 |
| **M 100** | – | – | 10 | 11 |
| **M 100 U** | – | – | 11 | 13 |
| **M 200** | 3 | 5 | 14 | 15 |
| **M 200 U** | 4 | 6 | 15 | 17 |
| **M 300** | 22 | 25 | 26 | 28 |
| **M 300 U** | 7 | 9 | 18 | 20 |
| **M 300 U B** | 8 | 10 | 18 | 20 |
| **M 400 U** | 24 | 26 | 29 | 32 |
| **M 400 U B** | 22 | 24 | 28 | 31 |
| **M 500** | 3 | 5 | 26 | 29 |
| **M 600** | 21 | 23 | 26 | 28 |
| **M 700** | 22 | 25 | 26 | 27 |

# PRODUCTION DEPARTMENT ASSEMBLY
## ENCAPSULATION OF MAGNETIC SENSORS



AUDIN - 8, avenue de la malle - 51370 Saint Brice Courcelles - Tel : 03.26.04.20.21 - Fax : 03.26.04.28.20 - Web : http: www.audin.fr - Email : info@audin.fr

# Magnetic sensors







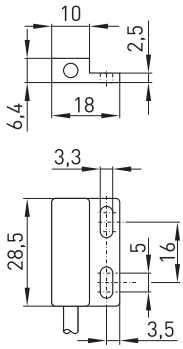
AUDIN - 8, avenue de la malle - 51370 Saint Brice Courcelles - Tel : 03.26.04.20.21 - Fax : 03.26.04.28.20 - Web : http: www.audin.fr - Email : info@audin.fr

# Magnetic sensors, rectangular form
## // Series RC 4

Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 48 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

// RC 4






## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | thermoplastic |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact |
| **Connection** | Pre-wired cable, PVC LiYY 2 x AWG26 |
| **Cable section** | 2 x 0.14 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | max. 230 VDC / 125 VAC |
| **Switching current** | max. 0,5 A |
| **Switching capacity** | max. 15 VA/W |
| **Switching frequency** | max. 200 Hz |
| **Bounce duration** | – |
| **Ambient temperature** | –10 °C ... +80 °C |
| **Mechanical life** | $10^9$ operations |
| **Electrical life** | $10^9$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 20 g |

### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NO contact | **RC 4 1S** BU → BN |

### Ordering data

**RC 4 1S**

1 NO contact
Series
Magnetic sensor

# Magnetic sensors, rectangular form
## // Series RC 4

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

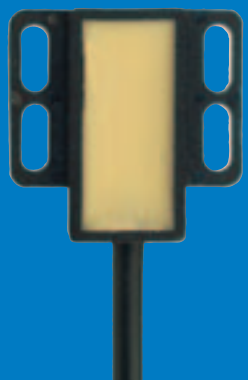
## Actuating distances

| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| M 50 U | 16 | 21 | 17 | 22 |
| M 100 | 18 | 24 | 18 | 23 |
| M 100 U | 21 | 27 | 20 | 25 |
| M 200 | 24 | 32 | 22 | 27 |
| M 200 U | 26 | 33 | 24 | 30 |
| M 300 | 47 | 58 | 38 | 46 |
| M 300 U | 30 | 38 | 27 | 33 |
| M 300 U B | 31 | 38 | 28 | 33 |
| M 400 U | 48 | 59 | 40 | 48 |
| M 400 U B | 46 | 57 | 39 | 46 |
| M 500 | 18 | 23 | 38 | 47 |
| M 600 | 46 | 58 | 37 | 45 |
| M 700 | 47 | 58 | 36 | 45 |

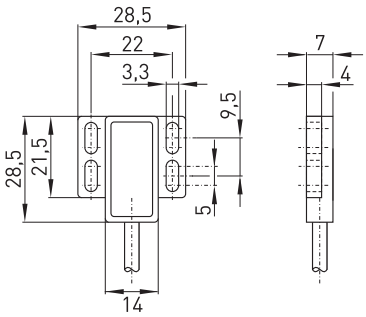
# Magnetic sensors, rectangular form
## // Series RC 5

Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 31 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

// RC 5








## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | thermoplastic |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contacts |
| **Connection** | pre-wired cable, PVC LiYY 2 x AWG 26 |
| **Cable section** | 2 x 0.14 $mm^2$ |
| **Cable length** | 1, 2 oder 5 m |
| **Switching voltage** | max. 200 VAC |
| **Switching current** | max. 1 A |
| **Switching capacity** | max. 20 W |
| **Switching frequency** | max. 200 Hz |
| **Bounce duration** | – |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 20 g |

### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NO contact | **RC 5 1S**<br>BU — BN |

### Ordering data

**RC 5 1S**

- 1 NO contact
- Series
- Magnetic sensor

# Magnetic sensors, rectangular form
## // Series RC 5

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

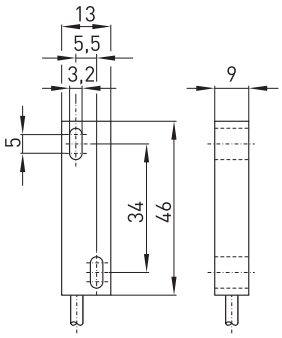
| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| M 50 U | – | – | 12 | 18 |
| M 100 | 1 | 10 | 12 | 19 |
| M 100 U | 3 | 13 | 15 | 21 |
| M 200 | 6 | 18 | 17 | 23 |
| M 200 U | 9 | 19 | 19 | 24 |
| M 300 | 26 | 42 | 29 | 40 |
| M 300 U | 11 | 23 | 21 | 28 |
| M 300 U B | 10 | 13 | 21 | 28 |
| M 400 U | 28 | 44 | 31 | 42 |
| M 400 U B | 28 | 44 | 31 | 41 |
| M 500 | 6 | 19 | 29 | 41 |
| M 600 | 25 | 41 | 27 | 39 |
| M 700 | 26 | 42 | 27 | 39 |

# Magnetic sensors, rectangular form
## // Series RC 40

Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 29 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre

## // RC 40




## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | glass-fibre reinforced polyamide |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact, change-over contact, change-over or bi-stable latching contact |
| **Connection** | pre-wired cable, 1W: PVC LiYY, 1S: AWG 26 |
| **Cable section** | 2 x 0.14 $mm^2$ / 3 x 0.14 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | 1 S: max. 250 VDC / 1 W: max. 175 VDC |
| **Switching current** | 1 S: max. 1 A / 1 W = max. 0,25 A |
| **Switching capacity** | 1 S: max. 15 W / 1 W = max. 3 W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | –10 °C ... +80 °C |
| **Mechanical life** | $10^9$ operations |
| **Electrical life** | $10^9$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 20 g |

### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NO contact | **RC 40 1S** BU → BN |
| 1 bi-stable contact | **RC 40 1Sr** BU → BN |
| 1 change-over contact | **RC 40 1W** BN → GN / WH |
| 1 change-over contact latching | **RC 40 1Wr** BN → BK / BU |

### Ordering data

**RC 40 1W**

- 1W: 1 change-over contact (1S 1 NO contact, 1Sr 1 change-over contact, 1Wr 1 change-over contact latching)
- RC 40: Series Magnetic sensor

# Magnetic sensors, rectangular form
## // Series RC 40

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

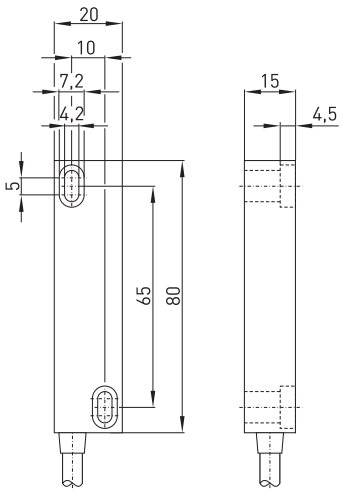
| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | **Switching distance [mm]** | | **Switching distance [mm]** | |
| | **on** | **off** | **on** | **off** |
| **M 50 U** | 15 | | | |
| **M 100** | 15 | | | |
| **M 100 U** | 15 | | | |
| **M 200** | 15 | | | |
| **M 200 U** | 15 | | | |
| **M 300** | 15 | | | |
| **M 300 U** | 15 | | | |
| **M 300 U B** | 22 | 39 | 15 | 24 |
| **M 400 U** | – | – | 27 | 39 |
| **M 400 U B** | 29 | 43 | 29 | 43 |
| **M 500** | 3 | 17 | 24 | 37 |
| **M 600** | 20 | 38 | 23 | 35 |
| **M 700** | 21 | 29 | 24 | 35 |

# Magnetic sensors, rectangular form
## // Series RC 42

Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 33 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre
- Version with doubled switching capacity with tungsten reed contacts available

## // RC 42

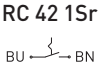



## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | glass-fibre reinforced polyamide |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to IEC/EN 60529 |
| **Contact material** | rhodium; -W: Tungsten |
| **Switching system** | reed contacts |
| **Contact types** | NO contact, change-over contact, bi-stable or change-over contact latching |
| **Connection** | lead-free pre-wired cable, PVC H05VV-F or 3-pole connector to DIN 41 524 |
| **Cable section** | 2 x 0.5 $mm^2$ |
| **Cable length** | 1, 2 orr 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1S: 2 A; 1W: 0,5 A; -W: 1 A |
| **Switching capacity** | 1S: max. 50 VA/ W; 1W: max. 15 VA/ W; -W: max. 25 VA/ W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 1S: 20 g, 1W: 10 g |

### Contact variants: Switch travel/contacts

| | actuation from side | latching |
|---|---|---|
| 1 NC contact | **RC 42 1Ö**   | |
| 1 NO contact | **RC 42 1S**   | **RC 42 1Sr**   |
| 1 change-over contact | **RC 42 1W**   | **RC 42 1Wr**   |

### Ordering data — RC 42 1W-W

- Tungsten reed contacts
- 1 change-over contact (1Ö 1 NC contact, 1S 1 NO contact,1Sr 1 bi-stable contact, 1Wr 1 change-over contact latching)
- Series
- Magnetic sensor

# Magnetic sensors, rectangular form
## // Series RC 42

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

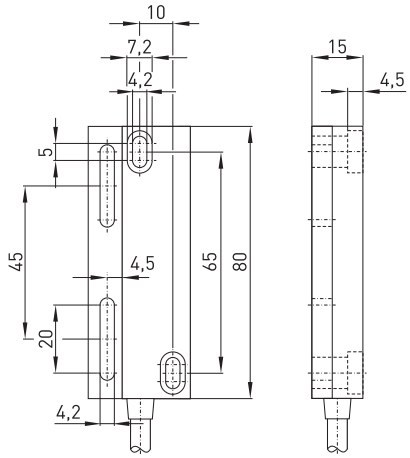
| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| **M 50 U** | – | – | 9 | 15 |
| **M 100** | – | – | 11 | 17 |
| **M 100 U** | 1 | 10 | 13 | 20 |
| **M 200** | 6 | 15 | 15 | 23 |
| **M 200 U** | 6 | 16 | 17 | 25 |
| **M 300** | 26 | 40 | 31 | 42 |
| **M 300 U** | 10 | 20 | 20 | 28 |
| **M 300 U B** | 10 | 21 | 20 | 29 |
| **M 400 U** | 26 | 40 | 33 | 43 |
| **M 400 U B** | 26 | 40 | 32 | 43 |
| **M 500** | 6 | 16 | 25 | 37 |
| **M 600** | 25 | 38 | 30 | 40 |
| **M 700** | 26 | 40 | 30 | 41 |

# Magnetic sensors, rectangular form
## // Series RC 50

Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- Switching distance up to 33 mm depending on the actuating magnet
- With pre-wired cable, cable length 1 metre
- Version with doubled switching capacity with tungsten reed contacts available

## // RC 50




## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | glass-fibre reinforced polyamide |
| **Actuator** | series M permanent magnet |
| **Degree of protection** | IP 67 to IEC/EN 60529 |
| **Contact material** | rhodium; -W: Tungsten |
| **Switching system** | reed contacts |
| **Contact types** | NC, NO or change-over contact |
| **Connection** | lead-free pre-wired cable, PVC H05VV-F or 3-pole connector to DIN 41 524 |
| **Cable section** | 2 x 0.5 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | 1S: 2 A; 1W: 0,5 A; -W: 1 A |
| **Switching capacity** | 1S: max. 50 VA/ W; 1W: max. 15 VA/ W; -W: max. 25 VA/ W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0,02 mm |
| **Resistance to vibrations** | 1S: 20 g, 1W: 10 g |

### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NC contact | **RC 50 1Ö**   |
| 1 NO contact | **RC 50 1S**   |
| 1 change-over contact | **RC 50 1W**   |

### Ordering data — RC 50 1W-W

- Tungsten reed contacts only available for change-over contacts
- 1 change-over contact (1Ö 1 NC contact, 1S 1 NO contact)
- Series
- Magnetic sensor

# Magnetic sensors, rectangular form
## // Series RC 50

**Features/Options**
- Version for high temperatures up to +130 °C with silicon cable available

## Actuating distances

| Actuating direction | from front | | from side | |
|---|---|---|---|---|
| Switch travel |  | |  | |
| Contacts | 1 NO contact | | 1 NO contact | |
| Actuating direction | N or S | | N or S | |
| **Actuating magnet** | Switching distance [mm] on | off | Switching distance [mm] on | off |
| **M 50 U** | – | – | 9 | 12 |
| **M 100** | 26 | 33 | 10 | 13 |
| **M 100 U** | 1 | 6 | 12 | 15 |
| **M 200** | 4 | 9 | 15 | 19 |
| **M 200 U** | 4 | 10 | 16 | 20 |
| **M 300** | 25 | 32 | 30 | 35 |
| **M 300 U** | 10 | 15 | 20 | 23 |
| **M 300 U B** | 10 | 16 | 20 | 24 |
| **M 400 U** | 25 | 32 | 33 | 37 |
| **M 400 U B** | 10 | 15 | 31 | 37 |
| **M 500** | 5 | 11 | 29 | 34 |
| **M 600** | 24 | 31 | 29 | 34 |
| **M 700** | 25 | 32 | 29 | 34 |

# Magnetic sensors, rectangular form
## // Series RC 80

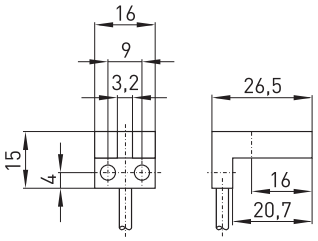
Features/Options
- Thermoplastic enclosure
- Long life
- 1 Reed contact
- Actuation from front and from side
- With pre-wired cable, cable length 1 metre
- Version for high temperatures up to +130 °C with silicon cable available

## // RC 80



## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | glass-fibre reinforced thermoplastic |
| **Actuator** | metal |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact or change-over contact |
| **Connection** | pre-wired cable, PVC LiYY AWG 26 |
| **Cable section** | 1S: 2 x 0.14 $mm^2$, 1W: 3 x 0.14 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | max. 175 VAC/DC |
| **Switching current** | max. 0.25 A |
| **Switching capacity** | max. 3VA/W |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | –10 °C ... +80 °C |
| **Mechanical life** | $10^9$ operations |
| **Electrical life** | $10^9$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 20 g |



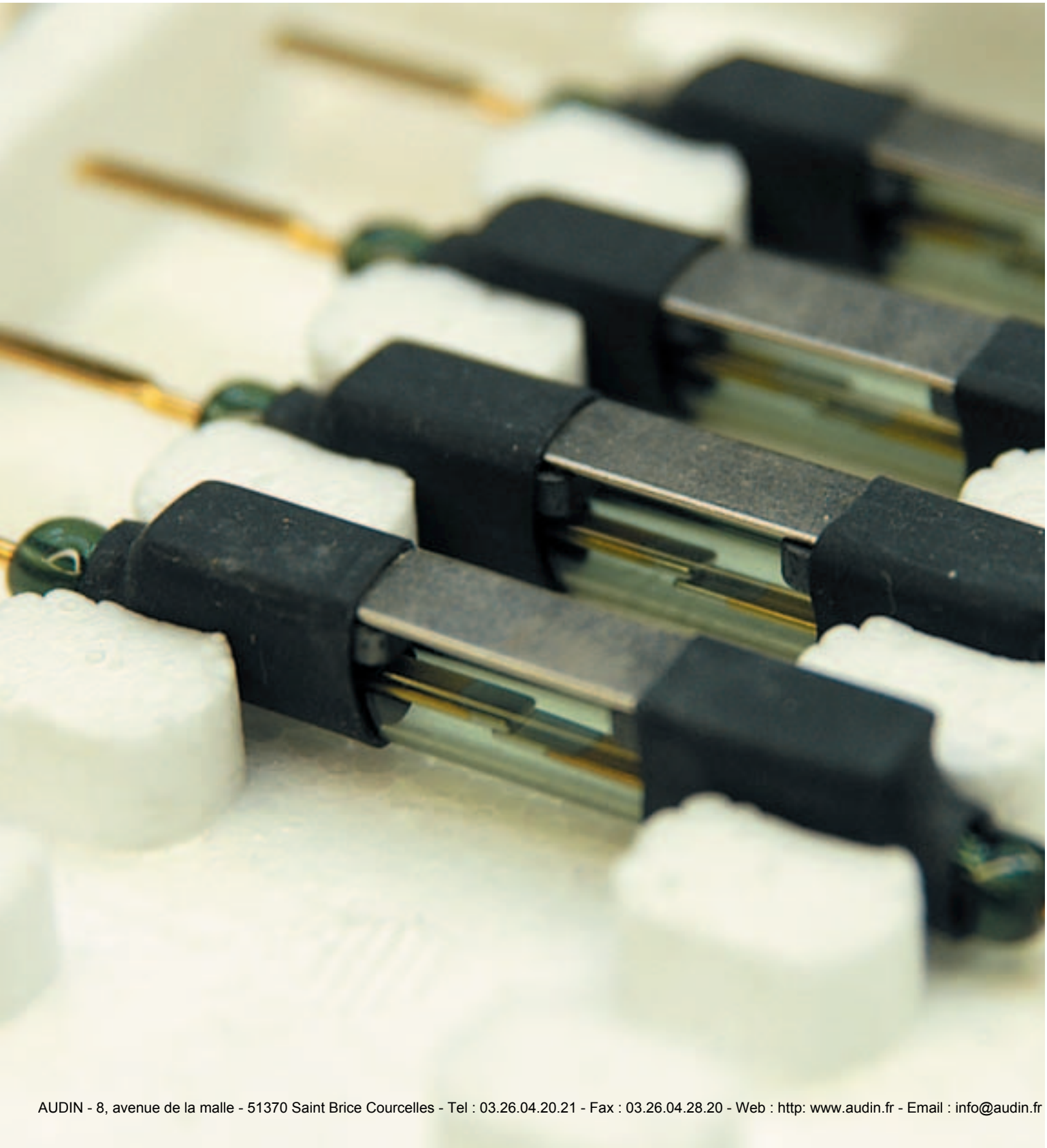

### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NO contact | **RC 80 1S**   |
| 1 change-over contact | **RC 80 1W**   |

### Ordering data — RC 80 1W

- 1W: 1 change-over contact (1S 1 NO contact)
- RC 80: Series Magnetic sensor

## ASSEMBLY DEPARTMENT
## FITTING OF REED CONTACTS





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# Magnetic sensors, rectangular form
## // Series RC 90

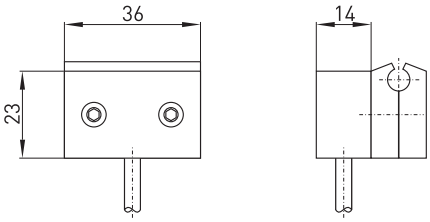
Features/Options
- Thermoplastic enclosure
- Application on pneumatic cylinders
- Long life
- 1 Reed contact
- Actuation from front and from side
- With pre-wired cable, cable length 1 metre

// RC 90




## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | glass-fibre reinforced polyamide PA 6.6 |
| **Actuator** | magnet |
| **Degree of protection** | IP 65 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact |
| **Connection** | pre-wired cable, PVC LiYY |
| **Cable section** | 2 x 0.34 $mm^2$ |
| **Cable length** | 1, 2 oder 5 m |
| **Switching voltage** | max. 250 VAC/DC |
| **Switching current** | max. 1 A |
| **Switching capacity** | max. 100 W/VA |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 20 g |




### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NO contact | **RC 90 1S**<br>BU — BN |

### Ordering data

**RC 90 1S-ST-250VA**

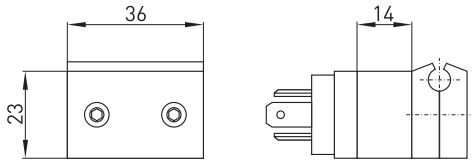
- Switching capacity 250 VA (30VA)
- with plug-in connector
- 1 NO contact
- Series
- Magnetic sensor

# Magnetic sensors, rectangular form
## // Series RC 90, variants

Features/Options
- Coupler for magnetic sensors with plug-in connector: Klar + Beilschmidt
- Version for high temperatures up to +130 °C with silicon cable available
- Available with LED for operating voltage indication

### // Connector


### // Connector



# Magnetic sensors, rectangular form
## // Series RC 96

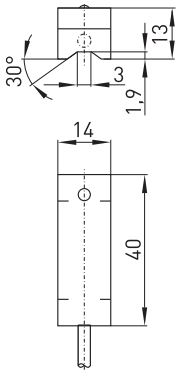
Features/Options
- Thermoplastic enclosure
- Application on pneumatic cylinders
- Long life
- 1 Reed contact
- Actuation from front and from side
- With pre-wired cable, cable length 1 metre
- With LED
- Version for high temperatures up to +130 °C with silicon cable available

// RC 96




## Technical data

| | |
|---|---|
| **Standards** | IEC/EN 60947-5-1 |
| **Enclosure** | thermoplastic |
| **Actuator** | magnet |
| **Degree of protection** | IP 67 to EN 60529 |
| **Contact material** | rhodium |
| **Switching system** | reed contacts |
| **Contact types** | NO contact |
| **Connection** | pre-wired cable, LiYY 2 x AWG26 |
| **Cable section** | 2 x 0.14 $mm^2$ |
| **Cable length** | 1, 2 or 5 m |
| **Switching voltage** | max. 200 VDC / 150 VAC |
| **Switching current** | max. 1,5 A |
| **Switching capacity** | max. 50 W/VA |
| **Switching frequency** | max. 200 Hz |
| **Ambient temperature** | -10 °C ... +80 °C |
| **Mechanical life** | $10^7$ operations |
| **Electrical life** | $10^7$ operations |
| **Repeat accuracy** | ± 0.02 mm |
| **Resistance to vibrations** | 20 g |




### Contact variants: Switch travel/contacts

| | actuation from side |
|---|---|
| 1 NO contact | **RC 96 1S**  |



### Ordering data

**RC 96 1S**

- RC 96: Magnetic sensor
- 1: Series
- S: 1 NO contact

## ASSEMBLY DEPARTMENT
## ENCAPSULATION OF MAGNETIC SENSORS



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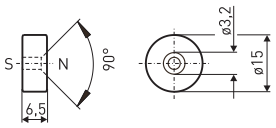
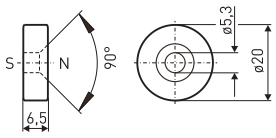
Features/Options
M 50 N U, M 100 N U, M 200 N U
- Not encapsulated
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

Features/Options
M 100 S, M 100 N, M 200 S, M 200 N
- Thermoplastic enclosure polyamide 6.6, blue S or red N
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

## // Actuating magnet M 50 N U

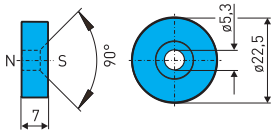



## // Actuating magnet M 100 N U

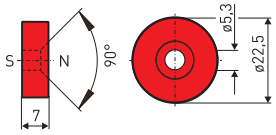




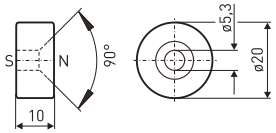

## // Actuating magnet M 100 S



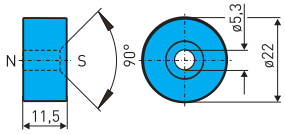

## // Actuating magnet M 100 N




## // Actuating magnet M 200 N U



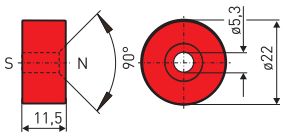

## // Actuating magnet M 200 S



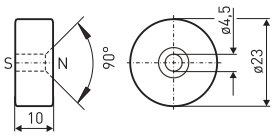
Features/Options
M 300 N U, M 300 U B, M 400 N U
- Not encapsulated
- M 300 U: North pole with colour marking (red dot)
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

Features/Options
M 200 N, M 300 S, M 300 N
- Thermoplastic enclosure polyamide 6.6, blue S or red N
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

## // Actuating magnet M 200 N

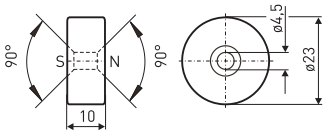



## // Actuating magnet M 300 N U

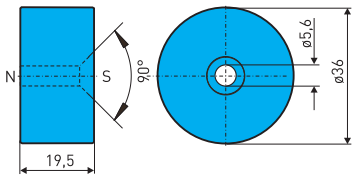




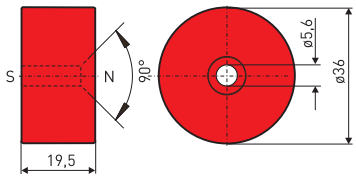

## // Actuating magnet M 300 U B



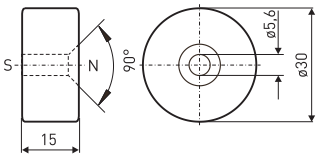

## // Actuating magnet M 300 S




## // Actuating magnet M 300 N




## // Actuating magnet M 400 N U



# Magnetic sensors
## // Actuating magnets

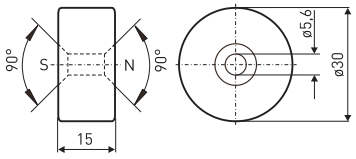
**Features/Options**
**M 400 U B, M 20 U**
- Not encapsulated
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

**M 700 N**
- Thermoplastic enclosure polyamide 6.6, red N
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

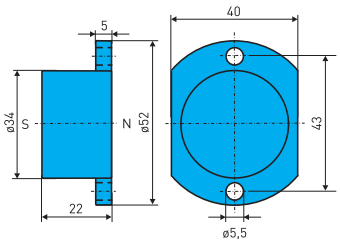
**Features/Options**
**M 700 S**
- Thermoplastic enclosure polyamide 6.6, blue S
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

**M 500**
- Thermoplastic enclosure glass-fibre reinforced polyamide
- Barium ferrite
- Ambient temperature: –20 °C ... +80 °C

## // Actuating magnet M 400 U B

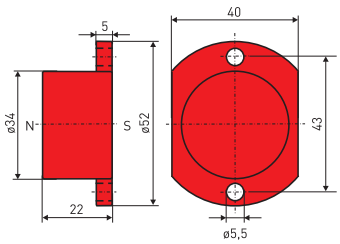



## // Actuating magnet M 700 S

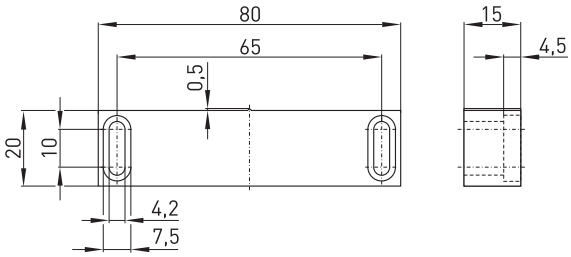




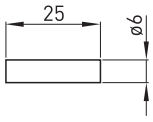

## // Actuating magnet M 700 N




## // Actuating magnet M 500



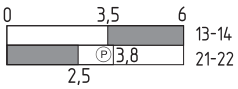

## // Actuating magnet M 20 U



# Explanation of symbols

| | |
|---|---|
| ⚷ | A/F |
| CE | Directive-compliant, see Declaration of Conformity |
| $I_e$ | Rated operating current |
| $I_{the}$ | Thermal test current rating |
| $s_{ao}$ | Assured operation distance |
| $s_{ar}$ | Assured release distance |
| $U_e$ | Rated operating voltage |
| $U_i$ | Rated insulation voltage |
| $U_{imp}$ | Rated impulse withstand voltage |

**Explanation of the switch travel diagrams**




Contact open
Contact closed

| | |
|---|---|
| X1-X2 | NC contact |
| X3-X4 | NO contact |
| X5-X6 | Overlapping contacts |

**Colour code designation to DIN IEC 757**

| | |
|---|---|
| BK | black |
| BN | brown |
| BU | blue |
| GN | green |
| GY | grey |
| OG | orange |
| PK | pink |
| RD | red |
| TQ | turquoise |
| VI | violet |
| WH | white |
| YE | yellow |

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**steute**
**Schaltgeräte GmbH & Co. KG**
**Brückenstraße 91**
**32584 Löhne, Germany**
**Phone +49 (0) 57 31 745-0**
**Telefax +49 (0) 57 31 745-200**
**E-mail info@steute.com**
**www.steute.com**

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