

Magnet switch iKA209

for intermediate position
measurement and end position
monitoring by means of
magnetically operated contacts

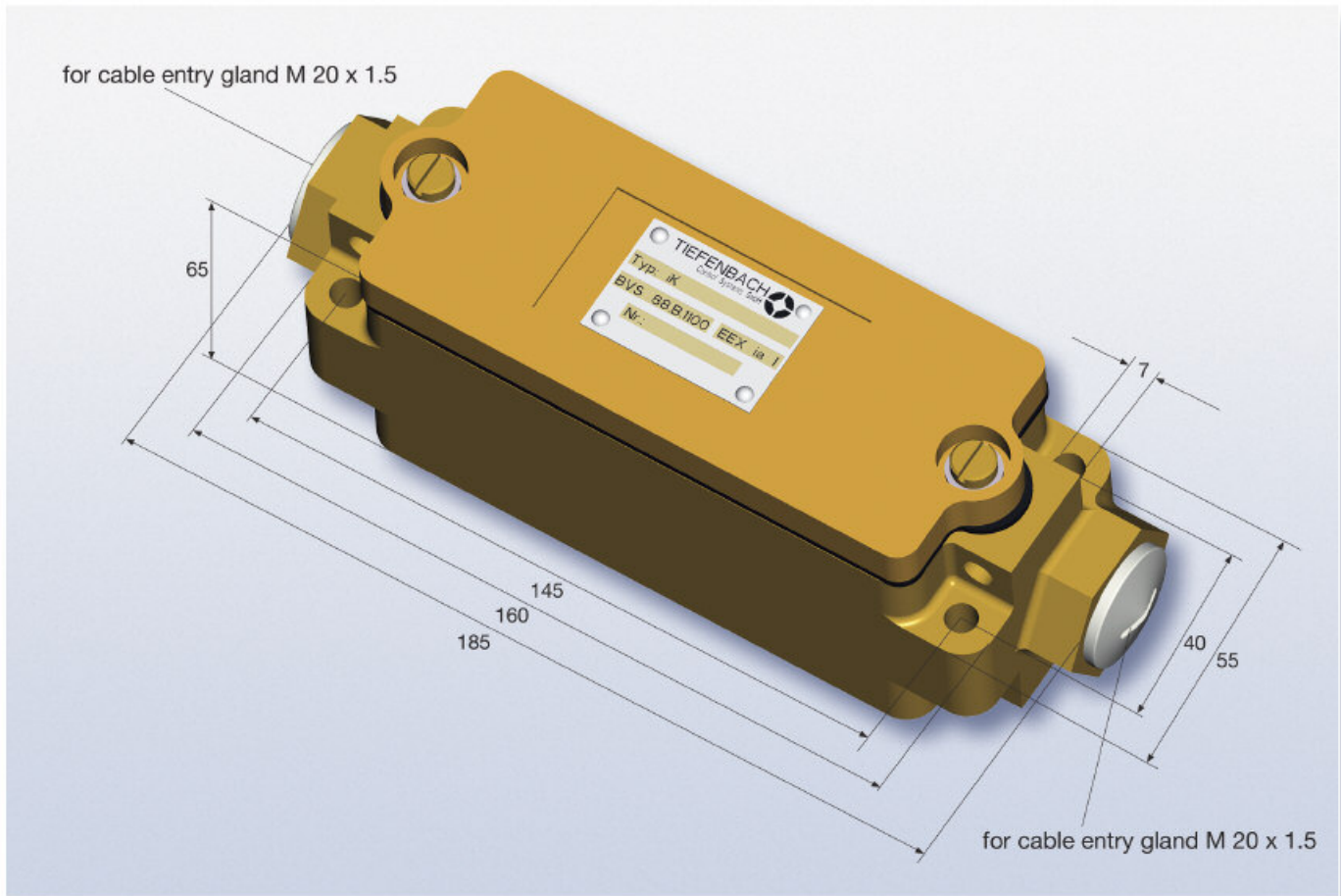
- Small and rugged design
- Connection via terminal housing
- Any fitting position
- Almost inertia-free due to use of reed contacts
- Negligible wear and maintenance free as contacts are operated by magnets
- Type of protection: IP 54 according to EN 60529/IEC 529
- Ex-approval: I M2 EEx ia I intrinsically safe according to Directive 94/9/EC



**Magnet switch iKA209 for
conveyor belt monitoring**



iKA209



| switching distance | magnet switch on non-ferritic base, magnet on iron | | | |
|-----------------------|--|-------|--------|--------|
| switching magnet | M10 | M10/S | M8 | M9/2 |
| pulse contact | 25 mm | 35 mm | 80 mm | 100 mm |
| latching-type contact | 40 mm | 50 mm | 100 mm | 120 mm |

| switch equipment | contact connection | without connection, no numbers or letters | letters for connection with 5 ≙ NAMUR | Code letters for diode connection | | | |
|---|--------------------|---|---------------------------------------|-----------------------------------|---|---|---|
| | | | | A | D | E | G |
| 1 one reed contact | | | | | | | |
| | | | | | | | |
| 2 two reed contacts, electrically isolated, identical switching behaviour | | | | | | | |
| | | | | | | | |
| 3 two reed contacts, electrically isolated, anticoincidence switching behaviour | | | | | | | |
| | | | | | | | |

Extract of our connection list. Further connections upon request.



iKA209

FUNCTION AND DESIGN

The magnet switch is equipped with reed contacts. These can be designed as normally open or change-over contacts. The contacts are activated by a permanent magnet passing by. The physical connection between the air gap of the contact blades getting smaller when the contact closes and the quadratic rise of the magnetic field results in a sudden activation. It is possible to choose between two switching behaviours:

- monostable (pulse switch)
- bistable (latching-type switch)

In the monostable-type switch, the reed contact change-over is effected analogous with the influence by the magnetic field. After the permanent magnet has been removed the respective contact will return to its original position. A maximum of two change-over contacts can be installed.

The latching-type contact as bistable switch has storage characteristics. To this end, the reed contact is magnetically „pretensioned“ in the two switching positions by two holding magnets. By means of the stronger switching magnet the switch can be set or reset. This design also allows to install two change-overcontacts.

To permit line monitoring for equipment integrated in control or monitoring circuits relevant to safety the contacts of the magnet switch can be connected with diode or resistor combinations. This allows for monitoring lines to detect broken conductors and short circuits according to the half-wave or full-wave principle as well as according to NAMUR.

The reed contact is embedded in cast resin. For the attenuation of shocks or vibrations which might result in an unintentional operation of the reed contacts, the switching unit is fastened on rubber bonded metals and located in a gunmetal housing. The gunmetal housing also contains the terminals. This arrangement ensures adequate safety with respect to explosion protection and against mechanical damage.

Application

- The magnet switch can be used for all applications where intermediate position measurement or end position monitoring is required. The connection housing permits flexible retrofits of an installation with the possibility of adapting the length of the cable connecting to upstream devices to the individual requirements.
- A typical application would be belt mistracking monitoring.
- The magnet switch can also be placed on ferritic material, same as the switching magnet. In this connection it should be noted that when installing the magnet switch on iron the magnetic field will be weakened as the switching magnet approaches which will reduce the switching distance. If, on the other hand, the permanent magnet is mounted on iron, the magnetic field will be strengthened.
- **The largest possible switching distance can be achieved by installing the magnet switch on a non-ferritic base and mounting the permanent magnet on iron.**



iKA209

TECHNICAL DATA

| | |
|---------------------|--|
| Switching distance | depending on the magnet used (see table page 2) |
| Type of contact | reed contact |
| Switching behaviour | monostable (pulse switch) or bistable (latching-type switch) |
| Contact equipment | max. 2 change-over contacts |
| Contact connection | diode and resistor combinations for line monitoring |
| Contact capacity | for intrinsically safe circuits |
| Response time | ≤ 2 ms |
| Releasing time | ≤ 0.2 ms |
| Operating life | > 10 ⁹ switching operations |
| Type of connection | terminal housing |
| Temperature range | - 20 °C to 85 °C |
| Fitting position | any |
| Type of protection | IP 54 according to EN 60529/IEC 529 |
| Ex-approval | I M2 EEx ia I acc. to Directive 94/9/EC |
| Certificate number | BVS 03 ATEX E 167 |

TYPE CODE AND ORDERING INFORMATION

| | |
|----------------------------|--|
| * K A 209 K * * * * | Contact connection acc. to table (see page 2) Without connection the last place will be omitted |
| | Contact type code: 2 ▶ NO max. switching current 1,3 A 4 ▶ NO max. switching current 3 A 5 ▶ change-over contact |
| | Number of reed contacts |
| | Switching behaviour: 1 ▶ pulse switch 2 ▶ latching-type switch |
| | Type of connection: terminal |
| | Series |
| | Design acc. to ATEX |
| | Magnet switch |
| | i ▶ intrinsically safe w ▶ non-explosionproofed version |

TYPICAL EXAMPLE

| | | |
|--------------------|---|--|
| iKA209K125D | <ul style="list-style-type: none"> ■ Intrinsically safe magnet switch, acc. to ATEX ■ Connection via terminal ■ Pulse switch | <ul style="list-style-type: none"> ■ 2 change-over contacts ■ Connection with 2 antiparallel diodes each change-over contact |
|--------------------|---|--|

Subject to technical alterations · Version 08/12