

Magnet switch iKA168

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



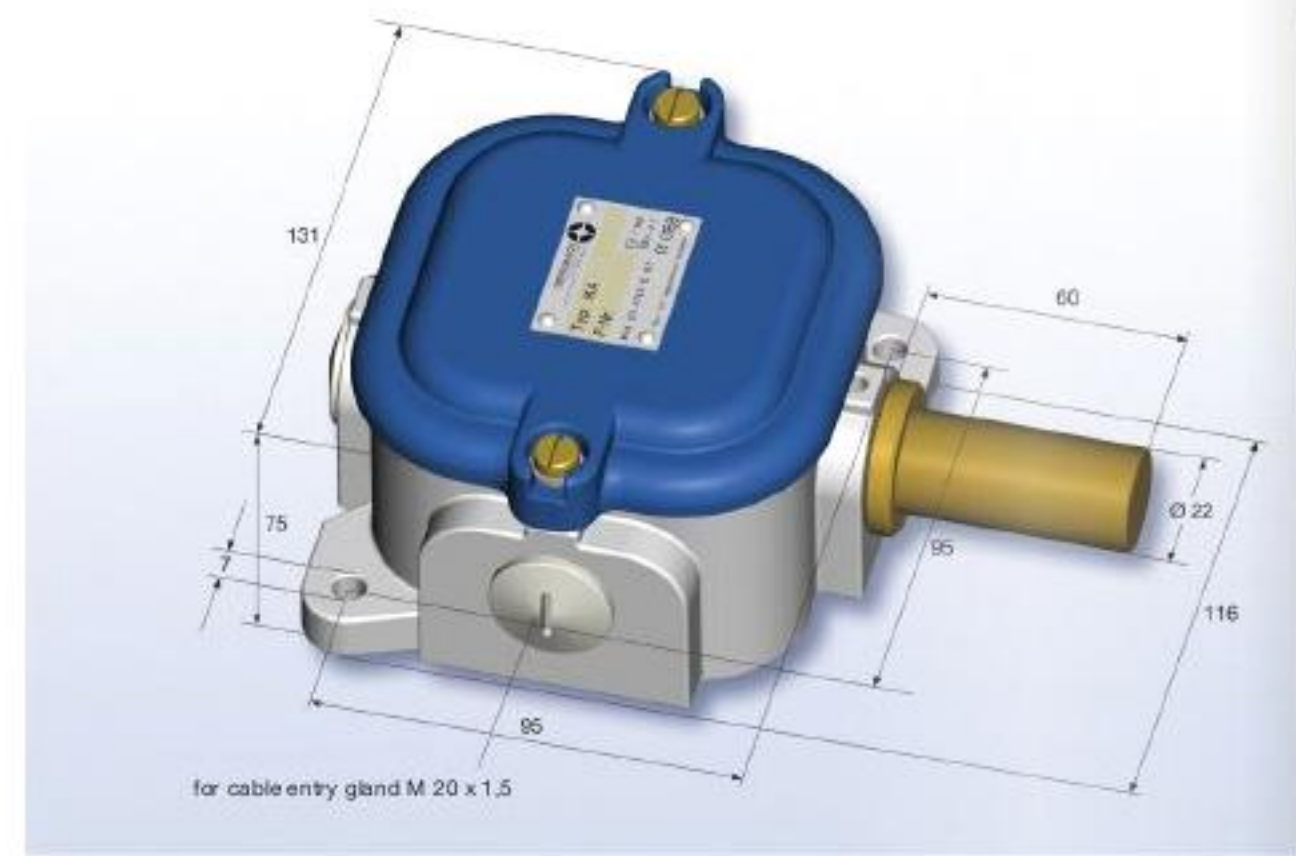
- small and rugged design
- connection via terminal housing
- any fitting position
- almost inertia-free due to use of reed contacts
- negligible wear and maintenance free as contacts are operated by magnets
- Type of protection: IP 65 according to EN 60529/IEC 529; EEx ia I intrinsically safe according to Directive 94/9/EC



Magnet switch iKA168
used for securing a pit gate



iKA168



switching distance	magnet switch on non-ferritic base, magnet on iron			
switching magnet	M10	M10/S	M8	M9/2
pulse contact	30 mm	40 mm	85 mm	105 mm
latching-type contact	45 mm	55 mm	105 mm	125 mm

switch equipment	contact connection		Code letters for diode connection			
	without connection, no numbers or letters	letters for connection with 5 Δ NAMUR	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						

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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 bistable latching-type 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 allows to install only one changeover contact.

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 cast-resin encapsulated reed contact is located in a rugged brass tube extending into 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. Thanks to its small overall dimensions it is also suitable for use in confined spaces. 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.
- An example for such an application would be monitoring doors and gates for access control.
- 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.

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TECHNICAL DATA

Switching distance	depending on the magnet used (see table)
Type of contact	reed contact
Switching behaviour	monostable (pulse switch) or bistable (latching-type switch)
Contact equipment	max. 2 change-over contacts as pulse switches; 1 change-over contact as latching-type switch
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 ⁶ switching operations
Type of connection	terminal housing
Temperature range	-20 °C to 85 °C
Fitting position	any
Type of protection	IP 65 according to EN 60529/IEC 529; IM2 EEx ia I acc. to Directive 94/9/EC
Certificate number	BVS 03 ATEX E 167

CONTACTS AND CONTACT CONNECTION

see table, further connections upon request

TYPE CODE AND ORDERING INFORMATION

Typ iKA168K****	contact connection: acc. to table, without connection the last place will be omitted
	contact type code: 2 or 4 = NO, 5 or 6 = change-over contact
	number of reed contacts
	switching behaviour: 1 = pulse switch, 2 = latching-type switch

TYPICAL EXAMPLE

iKA168K215	>	without contact connection	
	5	>	change-over contact
	1	>	number of contacts
	2	>	pulse switch

For industrial applications, the magnet switch is also available **non**-explosion proof. Designation: **wK168...**

Subject to technical alterations

We give impulses >>>

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