TIEFENBACH
Control Systems GmbH

Reed contact rod
iKMA 263
conduit Ø 18 x 2 mm

for path measurements
in hydraulic cylinders
by means of magnetically
operated contacts

- Path measurements from 100 mm to 2.000 mm
- Any fitting position
- Contact spacing 2 mm or 4 mm
- More pipe diameter for larger lengths on request
- Largely unaffected by external influences
- Maintenance free as contacts are operated by magnets
- Type of protection: IP 65 according to EN 60529/IEC 529
- Ex-approval: I M2 EEx ia I intrinsically safe according to Directive 94/9/EC (ATEX)

Installing the reed contact rod into a ranging arm lifting cylinder

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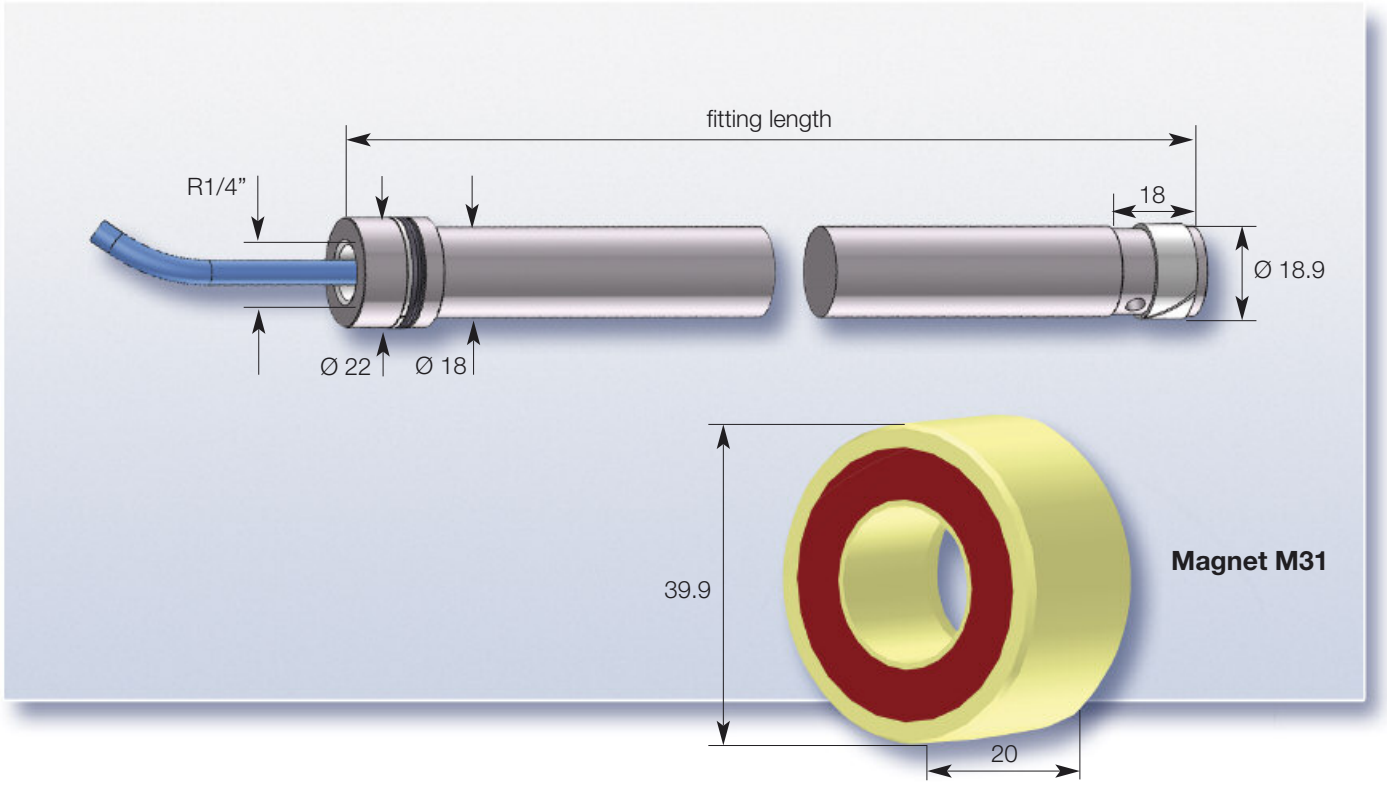


free conductor ends 3 × 0.14 mm²

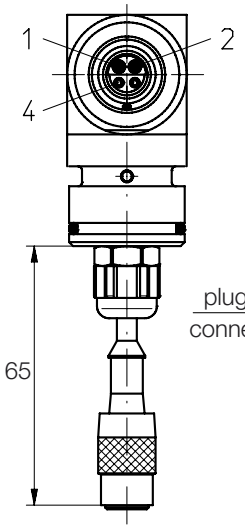
+12 V	black
Output signal	brown
0 V	white

free conductor ends 3 × 0.75 mm²

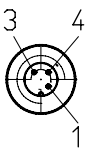
+12 V	black
Output signal	grey
0 V	blue

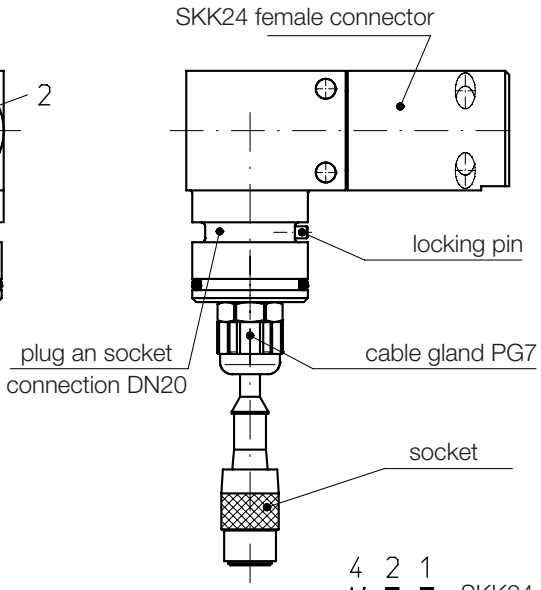
socket

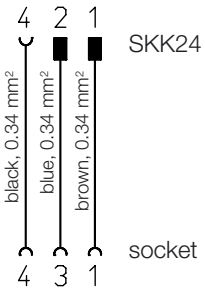
+12 V	1 brown
Output signal	3 blue
0 V	4 black



socket







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FUNCTION AND DESIGN

Path measurements are conducted on the basis of the magnet switch principle with inert gas contacts being strung together over the complete measuring length. The distance between the contacts which is the measure for the resolution is 2 mm or 4 mm. The individual contacts act on a combination of resistors.

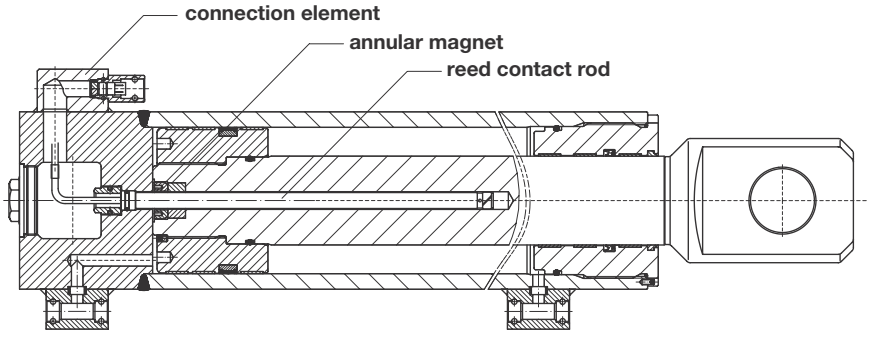
The path over the measuring length is determined by means of a permanent magnet. The latter passes along the reed contacts and the respective contact activated provides a resistance value which will be evaluated to determine the position. A current or voltage output is available for the analog signal. Without additional connection the resistance value can be used direct for evaluation.

The chain of resistors with the reed contacts and the evaluation circuit is embedded in cast resin and housed in a rugged pipe made of stainless steel. This arrangement ensures adequate safety with respect to explosion protection and mechanical damage. The cable leading out of the potting compound largely resists acids and alkaline solutions. In order to enable the user to adapt to the conditions of application the output cable can be provided with free conductor ends or a connector.

The permanent magnet comes in the shape of an annular magnet. The magnet segments are housed in a brass enclosure and are also embedded in cast resin compound.

Application

- The reed contact rod iKMA263 and the annular magnet M31 have been especially designed for installation into a lifting cylinder. The figure below shows the reed contact rod being installed into the cylinder and forming the locally unchanging measuring instrument.
- The annular magnet is fastened to the piston rod. Thus, the path length analogous to the stroke is measured as the piston moves.
- The reed contact rod is available for a stroke range between 100 mm and 2.000 mm.
- The connection of the output cable can be made by the user individually. The type with the free conductor ends has the connection to the evaluation unit made via a connection box attached to the cylinder. For the type using a plug different connection elements are available. The output of the reed contact rod is directed towards the socket while a rugged hose is connected to the evaluation unit via the SKK24 socket.



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TECHNICAL DATA

Measuring length (stroke)	100 mm - 2.000 mm; different lengths upon inquiry
Contact spacing	2 mm or 4 mm
Fitting length with current or voltage output	with 2 mm spacing: measuring length +190 mm with 4 mm spacing: measuring length +150 mm
Fitting position	any
Reproducibility	± 0.2 mm
Input voltage	V_{nom} = 12 V DC; V_{max} = 13.5 V DC
Analog output signal	0.5 V - 4.5 V 2.0 V - 10.0 V 1.0 V - 10.0 V 4.0 mA - 20.0 mA other values upon inquiry
Operating life	> 10^9 measurement cycles
Temperature range	-20 °C to 60 °C
Type of connection	free conductor ends or connector
Cable length	max. 10 m
Type of protection	IP 65 acc. to EN 60529/IEC 529
Ex-approval	I M2 EEx ia I acc. to Directive 94/9/EC
Certificate number	BVS 03 ATEX E 320

TYPE CODE AND ORDERING INFORMATION

i KM A 263 L 167 * **/** ***

- Contact spacing: 2 ➤ 2 mm; 4 ➤ 4 mm
- Stroke length in mm
- Analog signal range
- Output signal: ZU ➤ voltage; ZI ➤ current
- Cable output: L ➤ free conductor ends; S ➤ connector
- Series
- Design acc. to ATEX
- Reed contact rod
- i ➤ intrinsically safe

Note: Cable length (max. 10 m) please specify seperately.

TYPICAL EXAMPLE

iKMA263L167ZU1,0-10,0/12004
Cable length 2 m

- Intrinsically safe reed contact rod acc. to ATEX
- Connection via cable 2 m long
- Output signalrange: 1.0 up to 10.0 V
- 1200 mm stroke length
- Contact spacing: 4 mm

Subject to technical alterations · Version 02/14

We give impulses >>>

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