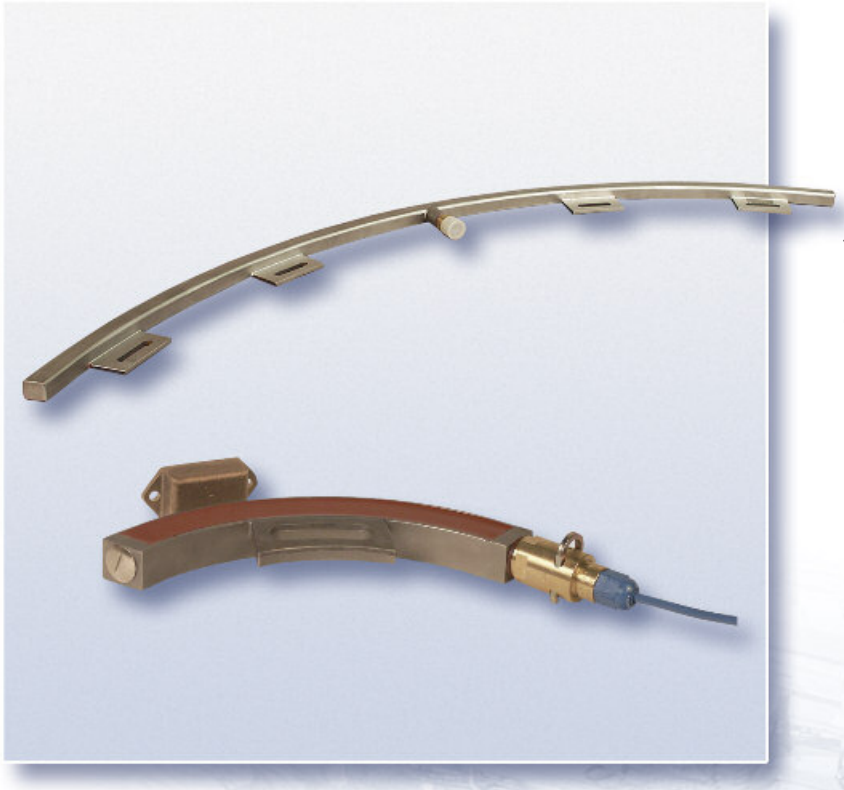
TIEFENBACH
Control Systems GmbH

Reed contact rod

iKMA ...

Channel section rod

for path measurements
by means of magnetically
operated contacts



bent-type rod

- Path measurement:
  bent-type rod: r = 170 mm up to 1000 mm;
  straight-type rod: up to 2500 mm
- Any fitting position
- Contact spacing: 2 mm or 4 mm for the straight type,
  approx. 4 mm for the bent type
- 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)

straight-type rod variant 393

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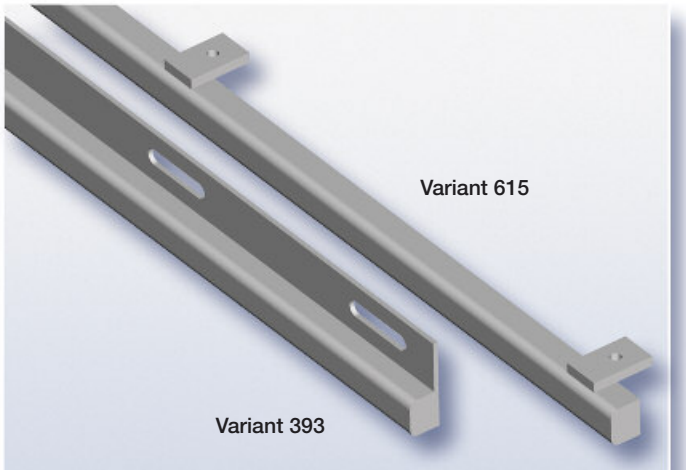
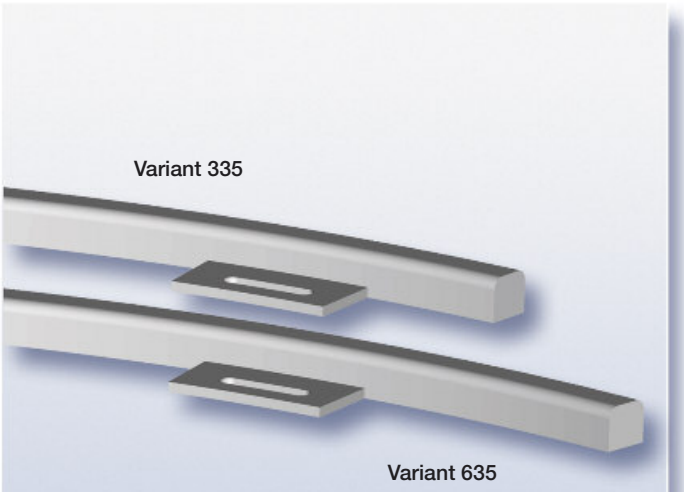
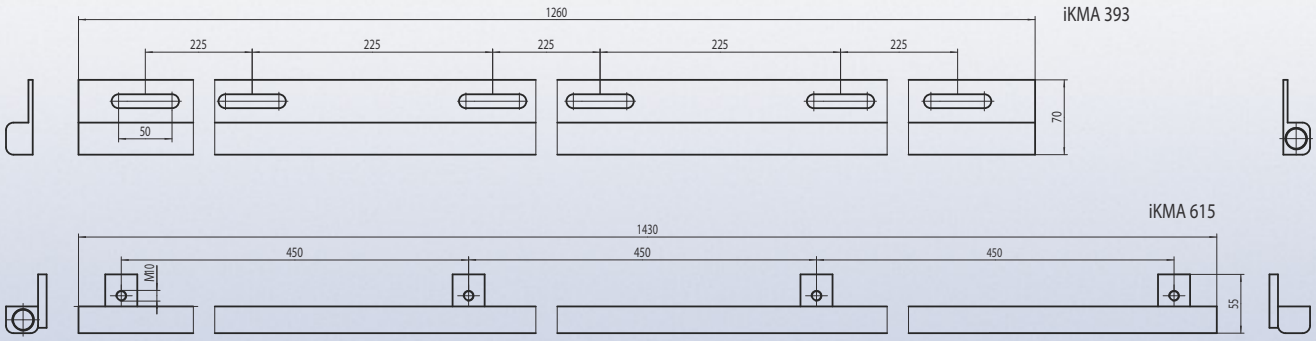


Straight type rod

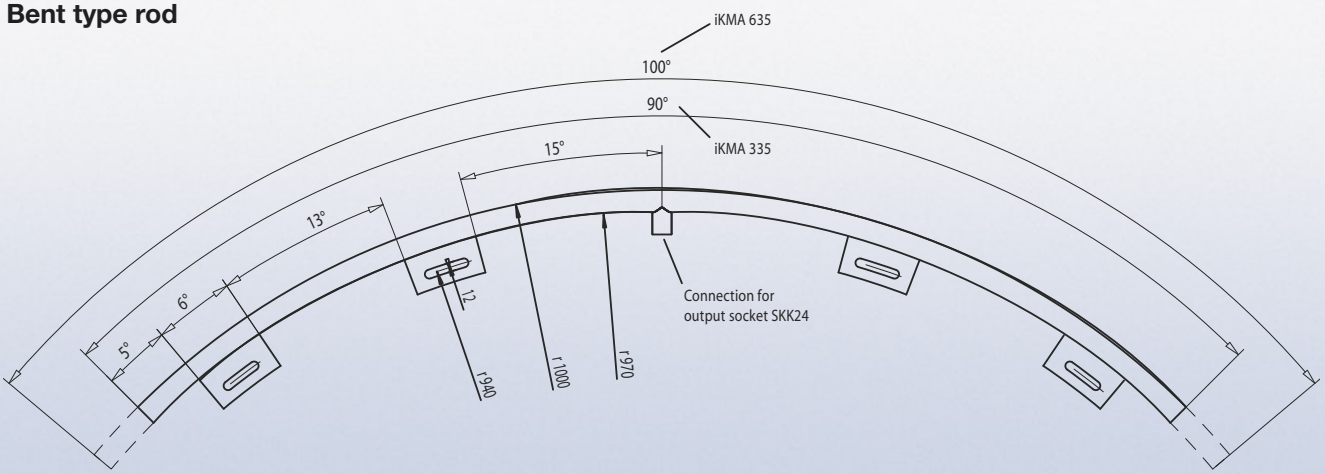


Bent type rod

Straight type rod



Bent type rod



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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 is the measure for the resolution; it is 2 mm or 4 mm for the straight-type and approx. 3 mm for the bent-type rod. 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 channel section bar made of stainless steel. This arrangement ensures adequate safety with respect to explosion protection and mechanical damage.

The connection led out of the cast resin leads to an SKK24 connector which forms an integral unit with the reed contact rod.

For path measurements a series M8 to M10 permanent magnet can be used. The permanent magnet preferrably used is type M10.

Application

- The design has been made such that the reed contact rods can be easily integrated into new or retrofit installations. Thus, the reed contact rods are e.g. installed in a roadheader for monitoring the movements of a cutting arm. While the vertical deflection is measured using model 263 (see information sheet iKMA 263) installed in the lifting cylinder, the horizontal deflection is measured by means of the bent-type rod.

- As standard, the reed contact rods of the bent type are available up to a radius of 1,000 mm with the arc length of a circular sector of 90° and of the straight-type up to a length of 2.500 mm. If different sizes are required an inquiry should be sent.

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iKMA...

Channel section rod

TECHNICAL DATA

Measuring length	bent type straight type	arc length acc. to requirements, radius of circular sector: 170 mm to 1000 mm, 100 mm to 2500 mm (different lengthand sizes upon requiry)
Contact spacing		bent type: approx. 4 mm; straight type: 2 mm and 4 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 / 1.0 V - 10.0 V / 2.0 V - 10.0 V / 4.0 mA - 20.0 mA (other values upon requiry) without connection*
Temperature range		-20°C to 60°C
Type of connection		SKK24-connector
Type of protection		IP 65 acc. to EN 60529/IEC 529
Ex-approval		I M2 EEx ia I acc to Directive 94/9/EC (ATEX)
Certificate number		BVS 03 ATEX E 320

* Without connection the ohmic resistance of the respective measurement chain is present at the output.

TYPE CODE AND ORDERING INFORMATION

iKMA * *167 * ****-**** / **** r = **** *** °**

- Angle circular sector
- Radius in mm
- SKK24 connector
- Analog signal range
- Output signal: ZU ➤ voltage ZI ➤ current 9 ➤ without connection*
- Connection: S ➤ connector SKK24
- Series: 335 ➤ bent type channel section rod 90°; 635 ➤ bent type channel section rod 100°
- Intrinsically safe reed contact rod – design acc. to ATEX

* The ohmic resistance at the output is the value determined by means of the chain of resistors.

iKMA * *167 * ****-**** / **** ***

- Contact spacing: 2 ➤ 2mm 4 ➤ 4mm
- Stroke length in mm
- Analog signal range
- Output signal: ZU ➤ voltage ZI ➤ current 9 ➤ without connection*
- Connection: S ➤ connector SKK24
- Series: 393 ➤ straight type channel section rod; 615 ➤ straight type channel section rod
- Intrinsically safe reed contact rod – design acc. to ATEX

* The ohmic resistance at the output is the value determined by means of the chain of resistors.

TYPICAL EXAMPLE

iKMA335S167ZI4.0-20.0/SKK24 r=1000 90°

- Intrinsically safe reed contact rod acc. to ATEX
- Bent type: channel section rod 90°
- Connection via connector
- Output signal range: 14.0 up to 20.0 V
- SKK24 connector
- Radius: 1000 mm

iKMA393S167ZI4.0-20.0/11002

- Intrinsically safe reed contact rod acc. to ATEX
- Straight type: channel section rod
- Connection via connector
- Output signal range: 14.0 up to 20.0 V
- Stroke length: 1100 mm
- Contact spacing: 2 mm

Subject to technical alterations · Version 07/13

We give impulses >>>

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