4-20 mA 0-10 V Ex

TIK
Research and production enterprise

Multipurpose

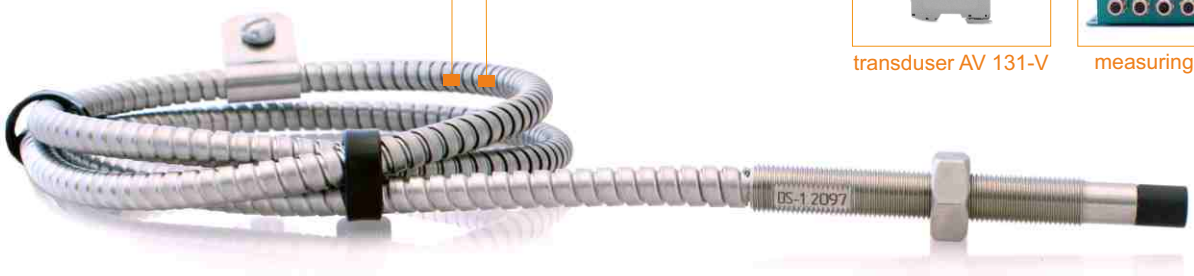
Possibility to control rotating frequency; work in rpm sensor mode, measure amount of clearance to working surface and peak-to-peak vibration displacement

Reliable design

IKV-1-3-1 channel consist of eddy-current transducer DS-1 (DS-2, DS-3) and AV 131-V converter (inside measuring module). For displaying measured parameters, converter has an integrated OLED-display with resolution 64x48 pixels

transduser AV 131-V

measuring module



Measuring channel IKV-1-3-1 type E (multipurpose)

Features

It is designed for measuring peak-to-peak vibration displacement, rotating frequency, axial shift, and detection of mark in systems of vibration monitoring of rotary machines. OLED-indicator allows simultaneously displaying all measured values or one of measured values. Switching of working modes on indicator is performed by pushing button.

Metrological data

Measurement range of the vibration displacement extent with eddy-current transducer, μm:
- eddy-current transducer DS-1 0-250
- eddy-current transducer DS-2 0-500
- eddy-current transducer DS-3 0-800

Range of frequencies of measurement of peak-to-peak vibration displacement - 5-500 Hz

Relative measurement error of peak-to-peak value is 5%
(Higher 0.1 till 1, maximum value of vibration displacement)

Relative measurement error of peak-to-peak value is 15%
(Lower 0.1 maximum value of vibration displacement)

Range of measuring clearance, mm
- eddy-current transducer DS-1 . . . . . 0.25-2.75
- eddy-current transducer DS-2 . . . . . 0.5-5.5
- eddy-current transducer DS-3 . . . . . 1.0-9.0
- eddy-current transducer DS-3 . . . . . 5.5-9.5

Accuracy of measurement clearance, μm
- eddy-current transducer DS-1 . . . . . ±50
- eddy-current transducer DS-2 . . . . . ±100
- eddy-current transducer DS-3 . . . . . ±300

Range of measuring rotating frequency — 30-120000 rpm

Time of measuring cycle — 26,6 μs

Measurement error of rotating frequency — 1%
(Higher 0.01 till 0.1 maximum value of measuring range)

Measurement error of rotating frequency — 2%
(Lower 0.1 till 0.01 maximum value of measuring range)

Installation clearance between eddy-current probe and inspected surface (by default), mm
- eddy-current transducer DS-1 . . . . . 1.5 ± 0.2
- eddy-current transducer DS-2 . . . . . 3.0 ± 0.2
- eddy-current transducer DS-3 (1.0-9.0) . . . . . 5 ± 0,2
- eddy-current transducer DS-3 (5.5-9.5) . . . 7.5 ± 0.2

Interface

Output signal – "current loop" 4-20 mA
(with support of digital transfer of data, protocol Modbus RTU)

"by voltage" 0-10 V

Power-supply voltage – 24 V (12-30)

Operational data

Operating temperature, °C

DS-X -60...+125

AV 131-V -40...+60

Reliability and manufacturer warranty

Average time operating time – 40 000 hours

Metrological verification – 2 years

Guarantee period – 18 month

Life time – 10 years

Design data

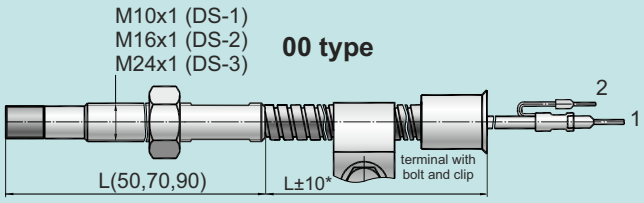
DS-1 (DS-2, DS-3)

eddy-current transducer

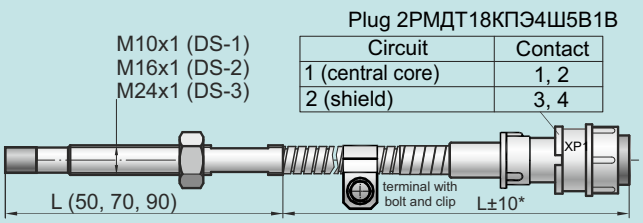
IP67

⌀ 10 mm (16 mm; 24 mm)

0,35 (0,40; 0,50) kg



01 type



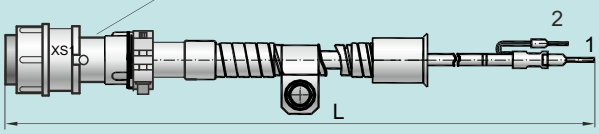
Plug 2РМДТ18КПЭ4Ш5В1В

Circuit	Contact
1 (central core)	1, 2
2 (shield)	3, 4

Connecting cable

Socket 2РМД18КПЭ4Г

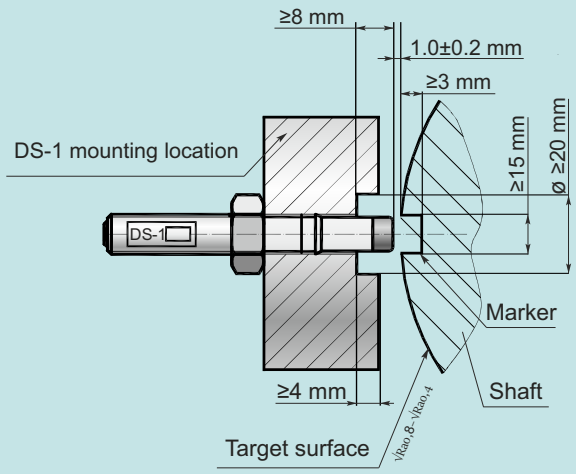
Circuit	Contact
1 (central core)	1, 2
2 (shield)	3, 4



0ExiallCT6

intrinsically safe circuit

Standard mounting



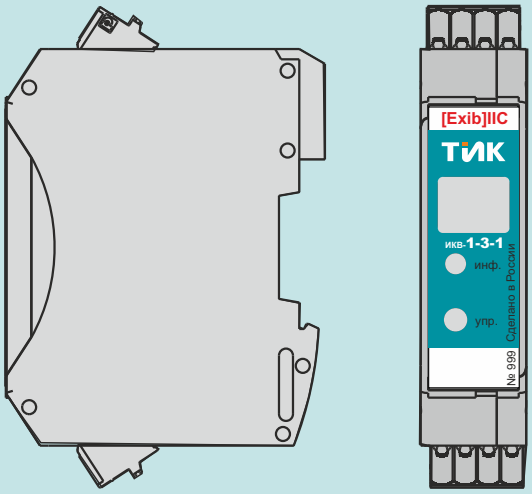
AV 131-V

converter (inside measuring module)

IP20

105x22,5x67 mm

0,2 kg

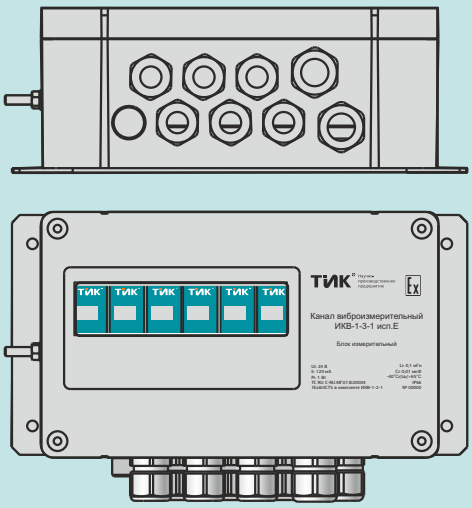


Measuring module

IP66

277x217x84 mm

2,5 kg



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intrinsically safe circuit