

## IKV-1-4-1.1 ver. A, B, V, E vibration measuring channel

### User-friendly

Design having built-in preamplifier and detachable joint allows for connection of any standard cable. Communication link length is up to 700 meters.



Amplifier in USO AS 1412 connector for ver. B, V



### Reliability

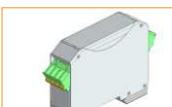
The channel consists of DS-0 (DS-1, DS-2, DS-3) eddy-current transducer, USO AS 141 converter located in the connection box (or USO AS 1412 converter located in the connector), safety barrier TIK-BIS and indication block (connection box and safety barrier are supplied on request)



USO AS 141 for ver. A



USO AS 141 for ver. E



Indication block for ver. V



Connection box for ver. V

Designed to measure rpm (factory mode) and phase angle (set by jumper) in emergency protection systems (EPS)\*;  
Output signal type: (4-20) mA, (0-10) V, digital output

## Specifications

### Metrological parameters

Range of measurement of frequency of rotation, rpm\* ..... 0-16 000

\*Can be modified according to customer requirements

Installation gap (default), mm

- DS-0, DS-1 eddy-current transducer ..... 1.0±0.2
- DS-2 eddy-current transducer ..... 2.0±0.2
- DS-3 eddy-current transducer ..... 3.0±0.2

Minimum dimensions of the mark (depth/width), mm

- DS-0 eddy-current transducer ..... 3/12
- DS-1 eddy-current transducer ..... 3/15
- DS-2 eddy-current transducer ..... 5/15
- DS-3 eddy-current transducer ..... 7/20

Measurement cycle time, s ..... 0.0005

### Interface

Output signal type

- 4-20 mA "current loop" (for ver. A, B, V, E);
- 0-10 V "by voltage" (for ver. E);
- RS-485 digital (for ver. E)

Supply voltage, V\*\* ..... 10-24

\*\*Minimum power supply voltage 10 V, for every 50 Ohms of load +1 V

### Explosion protection

Kind ..... intrinsically safe circuit

DS-x marking ..... 0Ex ia IIC T6...T1 Ga X

USO AS marking ..... 0Ex ia IIC T6...T1 Ga X

Connection box marking ..... 0Ex ia IIC T6...T4 Ga X

Connecting ..... through the TIK-BIS safety barrier

### Operating parameters

Operating temperature range, °C

- DS-x ver. 00 (01) eddy-current transducer ..... -40...+135
- DS-x ver. 02 eddy-current transducer ..... -40...+70
- DS-x ver. 00 (01) eddy-current transducer,  
HL climatic version ..... -60...+135
- DS-x ver. 02 eddy-current transducer,  
HL climatic version ..... -60...+70
- USO AS converter ..... -40...+70
- USO AS converter, HL climatic version ..... -60...+70

### Reliability parameters and manufacturer's warranty

MTBF, hours, not less than ..... 40 000

Warranty service life, months ..... 24

Service life, years, not less than ..... 10

### Design parameters

Mounting type

- DS-0 eddy-current transducer ..... M8x1 threaded hole
- DS-1 eddy-current transducer ..... M10x1 threaded hole
- DS-2 eddy-current transducer ..... M16x1 threaded hole
- DS-3 eddy-current transducer ..... M24x1 threaded hole

Overall dimensions, mm

- DS-0 eddy-current transducer ..... D(6.8) L(50;70;90)
- DS-1 eddy-current transducer ..... D(8.5) L(30;50;70;90)
- DS-2 eddy-current transducer ..... D(14.5) L(50;70;90)
- DS-3 eddy-current transducer ..... D(22.5) L(90)
- USO AS 141 converter for ver. A ..... 98.5x27.5x59
- USO AS 1412 converter for ver. B, V ..... Ø30x66.5
- USO AS 141 converter for ver. E ..... 105x22.5x67
- connection box for ver. A, B, E ..... 277x254.5x83
- connection box for ver. V ..... 304x224x108
- indication block ..... 105x22.5x67

Weight, kg, not more than

- DS-0, DS-1 ver. 00, 01 eddy-current transducer ..... 0.25
- DS-0, DS-1 ver. 02 eddy-current transducer ..... 0.35
- DS-2 ver. 00, 01 eddy-current transducer ..... 0.30
- DS-2 ver. 02 eddy-current transducer ..... 0.40

- DS-3 ver. 00, 01 eddy-current transducer ..... 0.40
- DS-3 ver. 02 eddy-current transducer ..... 0.50
- USO AS 141/AS 1412 converter ..... 0.1

- connection box for ver. A, B, E ..... 2.5

- connection box for ver. V ..... 3.25

- indication block ..... 0.1

Protection class

- DS-x eddy-current transducer ..... IP65/IP68  
(IP65 for DS-x ver. 02)
- USO AS 141 converter ..... IP20

- connection box ..... IP65/IP67
- indication block ..... IP20

Versions

- IKV-1-4-1.1 ver. A (DS-x ver. 00 or ver. 01 (with connector), USO AS 141 converter, connection box, TIK-BIS.121.0x0x (TIK-BIS.5x7.1002)safety barrier)\*\*\*;

- IKV-1-4-1.1 ver. B (DS-x ver. 02 with USO AS 1412 converter in the socket, connection box, TIK-BIS.121.0x0x (TIK-BIS.5x7.1002) safety barrier)\*\*\*;

- IKV-1-4-1.1 ver. V (DS-x ver. 02 with USO AS 1412 converter in the socket, indication block, connection box, TIK-BIS.121.0x0x (TIK-BIS.5x7.1002)safety barrier)\*\*\*;

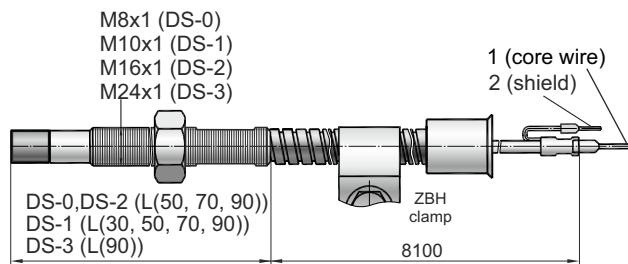
- IKV-1-4-1.1 ver. E (DS-x ver. 00 or ver. 01 (with connector), AS 141 converter with display, connection box, TIK-BIS.121.0x0x (TIK-BIS.5x7.1002)safety barrier)\*\*\*;

\*\*\*Connection box and safety barrier available as an option (on request)

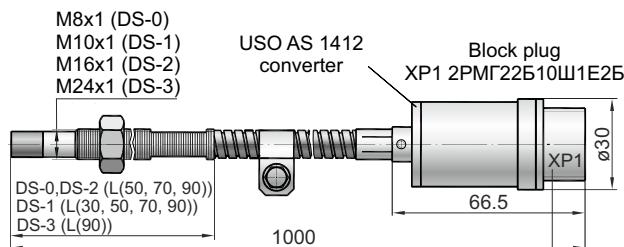


## Constructive designs

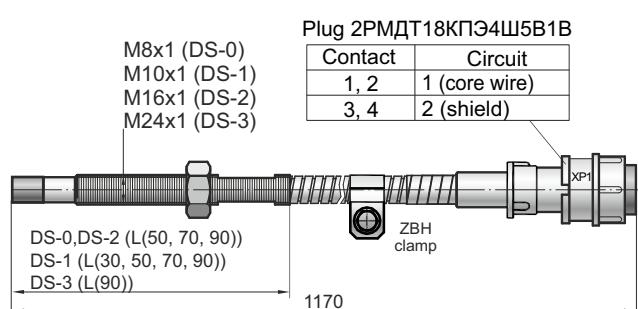
**DS-x type A, ver. 00**  
eddy-current transducer



**DS-x type A, ver. 02**  
eddy-current transducer

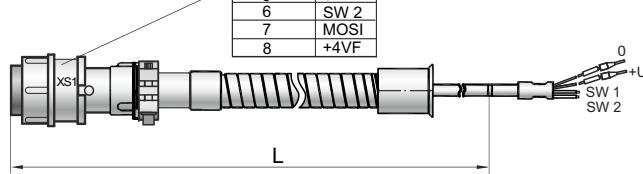


**DS-x type A, ver. 01**  
eddy-current transducer

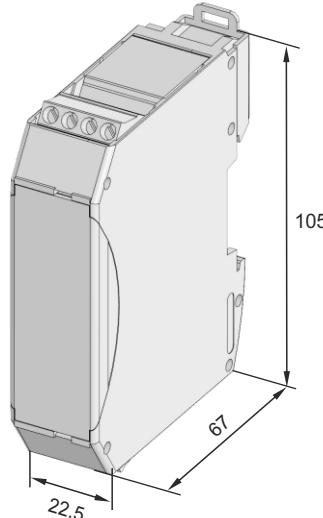


**Connection cable (for ver. 02)**

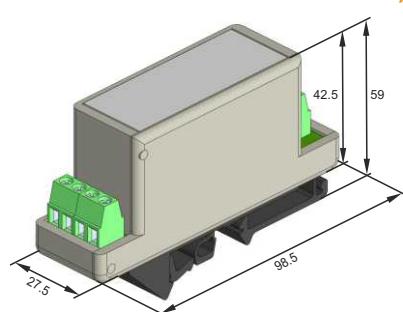
Contact	Circuit
1; 9	+U
2; 10	0
3	RESET
4	SCK
5	SW 1
6	SW 2
7	MOSI
8	+4VF



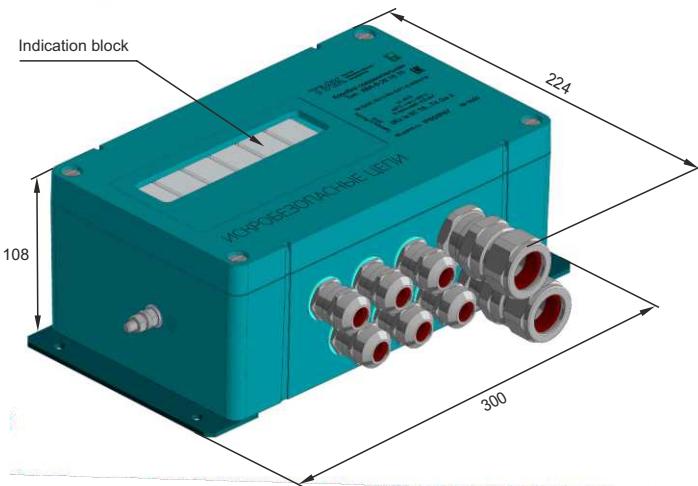
**USO AS 141 converter (for ver. E)**



**USO AS 141 converter (for ver. A)**



**Connection box (for ver. V)**



**Indication block (for ver. V)**

