

## IKV-1-3-1 ver. A, B, E vibration measuring channel

### Safety

Breakdown and short circuit control of the cable connecting eddy-current probe with AS 131 transducer.



### Reliability

The channel consists of DS-0 (DS-1, DS-2, DS-3) eddy-current transducer, USO AS 131 converter located in the connection box (or USO AS 1312 converter located in the connector) and safety barrier TIK-BIS (connection box and safety barrier are supplied on request)



*Designed to measure the vibration displacement range in diagnostic and emergency protection systems (EPS);  
Output signal type: (4-20) mA, (0-10) V, digital output*

## Specifications

### Metrological parameters

Measurement range of the vibration displacement range, $\mu\text{m}$	
• DS-0, DS-1 eddy-current transducer	0-100, 0-250
• DS-2 eddy-current transducer	0-500, 0-1000
• DS-3 eddy-current transducer	0-2000
Installation gap (default), mm	
• DS-0, DS-1 eddy-current transducer	1.0 $\pm$ 0.2
• DS-2 eddy-current transducer	1.5 $\pm$ 0.2
• DS-3 eddy-current transducer	5.0 $\pm$ 0.2
Operating frequency range, Hz	2-500

### Interface

Output signal type	
• 4-20 mA "current loop" (for ver. A, B, 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, $^{\circ}\text{C}$	
• 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 131 converter for ver. A	98.5x27.5x59
• USO AS 1312 converter for ver. B	Ø30x66.5
• USO AS 131 converter for ver. E	105x22.5x67
• connection box for ver. A, B	277x254.5x83
• connection box for ver. E	304x224x108
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 131 / AS 1312 converter	0.1
• connection box for ver. A, B	2.5
• connection box for ver. E	3.25

Protection class	
• DS-x eddy-current transducer	IP65/IP68 (IP65 for DS-x ver. 02)

• USO AS 131 converter	IP20
• connection box	IP65/IP67

### Versions

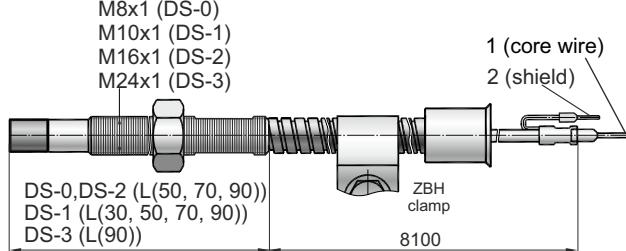
• IKV-1-3-1 ver. A (DS-x ver. 00 or ver. 01 (with connector), USO AS 131 converter, connection box, TIK-BIS.121.0x0x (TIK-BIS.5x7.1002) safety barrier)**;	
• IKV-1-3-1 ver. B (DS-x ver. 02 with USO AS 1312 converter in the socket, connection box, TIK-BIS.121.0x0x (TIK-BIS.5x7.1002) safety barrier)**;	
• IKV-1-3-1 ver. E (DS-x ver. 00 or ver. 01 (with connector), AS 131 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)

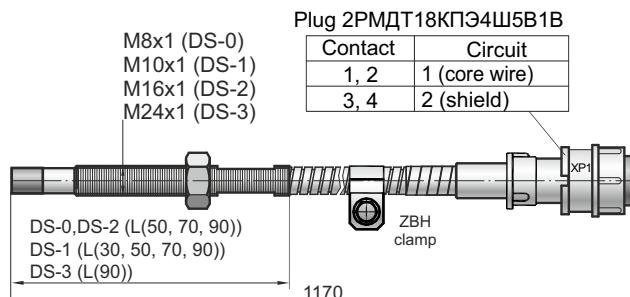


## Constructive designs

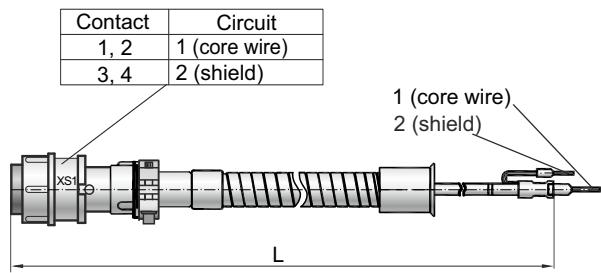
**DS-x type A, ver. 00**  
eddy-current transducer



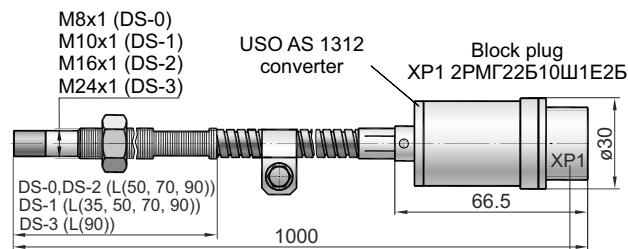
**DS-x type A, ver. 01**  
eddy-current transducer



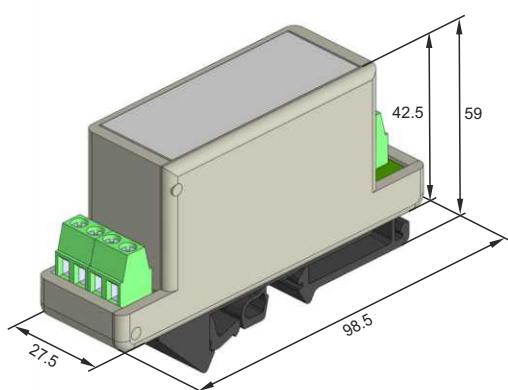
**Connection cable (for ver. 01)**



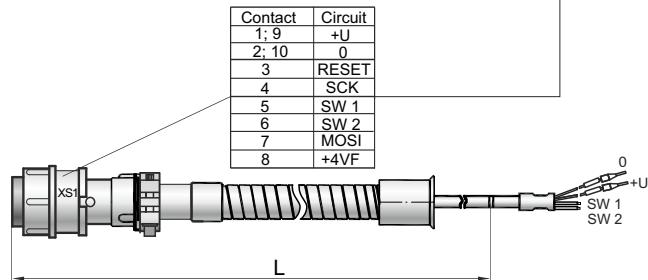
**DS-x type A, ver. 02**  
eddy-current transducer



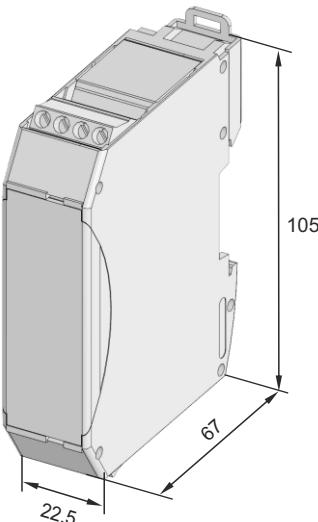
**USO AS 131 converter (for ver. A)**



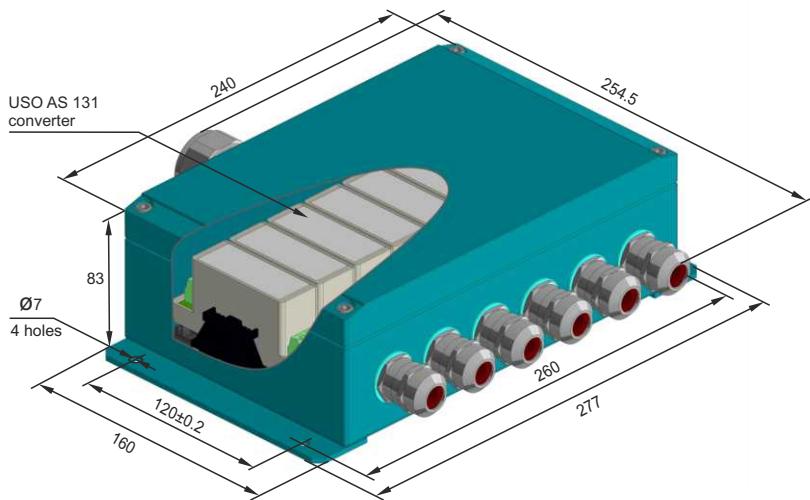
**Connection cable (for ver. 02)**



**USO AS 131 converter (for ver. E)**



**Connection box (for ver. A, B)**



Note: the design versions for the compressors are shown on page 12