

Made in Russia



Absolute vibration sensors



ТИК

Research and
production
enterprise

Decoding of absolute vibration sensor markings*

Output signal type	
1	(4-20) mA
2	By voltage (two-wire)
3	By voltage with separate power supply
4	RS-485
5	Voltage with separate power suppl 2 analog outputs (X, Y coordinates)
6	Voltage with separate power supply 3 analog outputs (X, Y, Z coordinates)

Housing	
1	Triangular housing, electronics in the housing of the vibration transducer, mounting with 3 screws
2	Cylindrical small-outline housing, electronics in the housing of the vibration transducer, mounting with a threaded rod
3	Cylindrical housing, electronics in the housing of the vibration transducer, mounting with a threaded rod
4	Triangular housing, electronics in the connector, mounting with 3 screws
5	Triangular housing, electronics in the remote unit, mounting with 3 screws
6	Triangular housing, electronics in the housing and remote unit of the vibration transducer, mounting with 3 screws
7	Rectangular housing, electronics in the housing of the vibration transducer, mounting with 1 screw

Protection class	
1	IP54
2	IP65
4	IP65/68

Frequency range	
A	5-500
B	2-1000
C	3-1000
D	5-1000
E	10-1000
F	2-2000
G	10-2000
H	2-3000
I	10-3000
J	2-5000
K	10-5000
L	2-10000
M	3-10000
N	5-10000
P	10-10000

Parameter of the indicated value	
1	Vibration velocity
2	Vibration acceleration
3	Vibration displacement
4	All parameters

Discrete output	
D	Marked if available discrete output

DVA141.104.E6H1.D

Indicated value	
1	Amplitude
2	RMS value
3	Range
4	RMS value
5	Instantaneous value
6	RMS value for two coordinates. Output for the coordinate with the maximum value
7	RMS value in the plane
8	All values

Nominal conversion coefficient / Range of indicated values				
Marking	4-20 mA output	Two-wire voltage output	Voltage output with isolated power supply	RS-485 output
	Units of measurement: mA/s/mm (for vibration velocity) mA·s ² /m (for vibration acceleration) mA/ μ m (for vibration displacement)	Units of measurement: mV·s/mm (for vibration velocity) mV·s ² /m (for vibration acceleration) mV/ μ m (for vibration displacement)	Units of measurement: mm/s (for vibration velocity) mm ² (for vibration acceleration) mm/ μ m (for vibration displacement)	Units of measurement: mm/s (for vibration velocity) mm ² (for vibration acceleration) mm/ μ m (for vibration displacement)
1	1,6 / (0-10)	25	25	1 / (0-10)
2	1,259 / (0-12,7)	20	20	1 / (0-12,7)
3	0,8 / (0-20)	16	15,6	1 / (0-20)
4	0,64 / (0-25)	12,5	12,5	1 / (0-25)
5	0,63 / (0-25,4)	10	10	1 / (0-25,4)
6	0,533 / (0-30)	8	8,33	1 / (0-30)
7	0,4 / (0-40)	6,67	5	1 / (0-40)
8	0,32 / (0-50)	4	2,5	1 / (0-50)
9	0,315 / (0-50,8)	2	1,25	1 / (0-50,8)
A	0,267 / (0-60)	1	250	1 / (0-60)
B	0,2 / (0-80)	200	196,9	1 / (0-80)
C	0,16 / (0-100)	157,5	125	1 / (0-100)
D	0,128 / (0-125)	100	100	1 / (0-125)
E	0,1 / (0-160)	80	98,43	1 / (0-160)
F	0,08 / (0-200)	78,74	83,33	1 / (0-200)
G	0,064 / (0-250)	66,67	62,5	1 / (0-250)
H	0,0533 / (0-300)	50	50	1 / (0-300)
I	0,032 / (0-500)	40	49,21	1 / (0-500)
J	0,016 / (0-1000)	39,37	41,67	1 / (0-1000)
K	0,008 / (0-2000)	33,33	31,25	1 / (0-2000)

Explosion-proof mark	
1	PO Ex ia I Ma X 0Ex ia IIIC T ₂₀₀ 100°C ... T ₂₀₀ 280°C Da X Ex ib IIIC T 95°C ... T 275°C Db X
2	2Ex nA IIC T6...T2 Gc X
3	PO Ex ia I Ma X
4	0Ex ia IIC T6...T2 Ga X
5	Ex ia IIIC T ₂₀₀ 100°C ... T ₂₀₀ 280°C Da X
6	Ex ib IIIC T 95°C ... T 275°C Db X

Connector	
0	Without a connector
1	TIK-KXX connector on the housing (analogue MIL-C-5015)
2	RS-4 connector on the housing
3	2RM connector on the cable
4	2RMG connector on the housing
5	Joint with a terminal head
6	TIK-KXX connector on the cable

Operating temperature, °C	
H	-40 ... +80
X	-60 ... +80
L	-10 ... +80
K	-196 ... +80

*Descriptions are given for information, not for ordering! For ordering use the configurator on tik.perm.ru



Content

Product name	Brief characteristics of the sensors	Page
Vibration velocity		
DVA111.XXX	Single-coordinate Output value: vibration velocity amplitude; output type: (4-20) mA	4
DVA141.XXX	Single-coordinate Output value: vibration velocity RMS; output type: (4-20) mA	5
DVA143.XXX	Single-coordinate Output value: vibration velocity RMS; output type: voltage with separate power supply	6
DVA161.XXX	Two-axis Output value: vibration velocity RMS by two coordinates X and Y. Output on the coordinate with the maximum value of vibration velocity RMS; output type: (4-20) mA	7
DVA171.XXX	Two-axis Output value: vibration velocity RMS in XY plane; output type: (4-20) mA	
DVA1X4.XXX	Single-, double-axis Output value: vibration velocity (amplitude, RMS, range, instantaneous value, RMS in two coordinates, RMS in plane, all values); output type: RS-485	8
Vibration acceleration		
DVA241.XXX	Single-coordinate Output value: vibration acceleration RMS; output type: (4-20) mA	9
DVA252.XXX	Single-coordinate Output value: instantaneous vibration acceleration value; output type: voltage two-wire (IEPE)	10
DVA2X4.XXX	Single-, double-axis Output value: vibration acceleration (amplitude, RMS, range, instantaneous value, RMS in two coordinates, RMS in plane, all values); output type: RS-485	11
Vibration displacement sensors		
DVA331.XXX	Single-coordinate Output value: vibration displacement range; output type: (4-20) mA	12
DVA3X4.XXX	Single-, double-axis Output value: vibration displacement range (amplitude, RMS, range, instantaneous value, RMS in two coordinates, RMS in plane, all values); output type: RS-485	13
Multifunction sensors (vibration parameters, temperature, tilt angles)		
DVA484.XXX	Three-axis Output value: vibration velocity, vibration displacement, vibration acceleration on three coordinates X, Y, Z; output type: RS-485	14
Wiring diagrams, installation, documentation		
	Versions of housings and connectors Wiring diagrams Installation methods, mounting kit Approval documents	15-17 18-19 20 21

DVA111.XXX vibration velocity sensors with current output

Housing: type 1,2,7
Connector: type 0,1,5,6



Product appearance may vary slightly from that shown in the brochure

Features

Designed to measure the amplitude of vibration velocity in emergency protection systems (EPS). They consist of a hermetically sealed enclosure containing an integral acceleration sensor and a conversion board.

Depending on the version, the standard M8 stud, 3 screws or 1 screw is used for mounting on the unit. On special order, studs with other threads, including inch threads, are available.

The .214 version allows the use of cable assemblies with a MIL connector from imported transducers.

Metrological parameters

Conversion coefficient, mA*s/mm									
1.6	1.259	0.8	0.64	0.63	0.533	0.4	0.32	0.315	0.267
Measurement ranges for the amplitude value of vibration velocity, mm/s:									
0-10	0-12.7	0-20	0-25	0-25.4	0-30	0-40	0-50	0-50.8	0-60

Operating frequency range, Hz 2-1000;
3-1000;
5-1000;
10-1000

Interface

Output signal type (4-20) mA
Sensor supply voltage, V 10-24
Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA111.104/164/214/714)
- IP65 (DVA111.252)

Reliability parameters

MTBF, hours, not less than	100 000
Warranty service life, months	24
Service life, years	20
Verification interval, years	2

DVA141.XXX vibration velocity sensors with current output

Housing: type 1,2,7
Connector: type 0,1,5,6



Product appearance may vary slightly from that shown in the brochure

Features

Designed for measuring the RMS value of vibration velocity in emergency protection systems (EPS). They consist of a hermetically sealed enclosure containing an integral acceleration sensor and a conversion board.

Depending on the version, the standard M8 stud, 3 screws or 1 screw is used for mounting on the unit. On special order, studs with other threads, including inch threads, are available.

The .214 version allows the use of cable assemblies with a MIL connector from imported transducers.

Metrological parameters

Conversion coefficient, mA*s/mm											
1.6	1.259	0.8	0.64	0.63	0.533	0.4	0.32	0.315	0.267	0.2	0.16

Measurement ranges for the RMS value of vibration velocity, mm/s:											
0-10	0-12.7	0-20	0-25	0-25.4	0-30	0-40	0-50	0-50.8	0-60	0-80	0-100

Operating frequency range, Hz	2-1000; 3-1000; 5-1000; 10-1000
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Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Interface

Output signal type (4-20) mA
Sensor supply voltage, V 10-24
Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA141.104/164/214/714)
- IP65 (DVA141.252)

Reliability parameters

MTBF, hours, not less than 100 000
Warranty service life, months 24
Service life, years 20
Verification interval, years 2

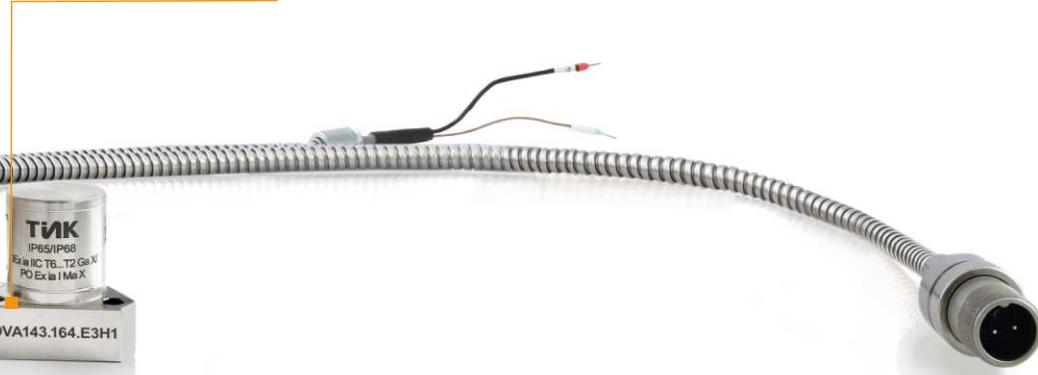
DVA143.XXX vibration velocity sensors with voltage output

Housing: type 1
Connector: type 0,6

DVA143.104
version with **fixed**
cable connection



DVA143.164
version with **TIK-KXX**
connector on the cable



Product appearance may vary slightly from that shown in the brochure

Features

Designed for measuring the RMS value of vibration velocity in emergency protection systems (EPS). They consist of a sealed enclosure containing an integral acceleration sensor and a conversion board

For installation on the unit, a 3 screw mounting is used.

Interface

Output signal type voltage with separate power supply

Sensor supply voltage, V -2.5; +3.6

Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Metrological parameters

Conversion coefficient, mV*s/mm	100
Measurement ranges for the RMS vibration velocity, mm/s:	0-125

Operating frequency range, Hz 2-1000

Protection parameters

Explosion protection

- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA143.104/164)

Reliability parameters

MTBF, hours, not less than 100 000
Warranty service life, months 24
Service life, years 20
Verification interval, years 2

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

DVA16(7)1.XXX vibration velocity sensors with current output

Housing: type 1,2,7
Connector: type 0,1,5,6

DVA1X1.164

version with ТИК-KXX connector on the cable

DVA1X1.104

version with fixed cable connection



DVA1X1.214

version with ТИК-KXX connector on the housing



DVA1X1.252

terminal block version



DVA1X1.714

version with ТИК-KXX connector on the housing

Product appearance may vary slightly from that shown in the brochure

Features

Designed for measuring the RMS value of vibration velocity in two axes simultaneously.

DVA161.XXX - compares measured values and outputs the highest of them;

DVA171.XXX - performs vector addition of measured values and outputs the sum obtained.

Depending on the version, the standard studs M8.XXX and M8.XXX are used for mounting on the unit. standard M8 stud, 3 screws or 1 screw is used for mounting on the unit. On special order, studs with other threads, including inch threads, are available. The .214 version allows the use of cable assemblies with MIL connector from imported transducers.

Metrological parameters

Conversion coefficient, mA*s/mm

1.6	1.259	0.8	0.64	0.63	0.533	0.4	0.32	0.315	0.267	0.2	0.16
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Measurement ranges for the RMS value of vibration velocity, mm/s:

0-10	0-12.7	0-20	0-25	0-25.4	0-30	0-40	0-50	0-50.8	0-60	0-80	0-100
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Operating frequency range, Hz 2-1000;
3-1000;
5-1000;
10-1000

Interface

Output signal type (4-20) mA

Sensor supply voltage, V 10-24

Connection via the ТИК-PLC controller* or the ТИК-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X
 - 2Ex nA IIC T6...T2 Gc X
 - PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
 - Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
 - Ex ib IIIC T95°C ... T275°C Db X
- Protection class
- IP65/68 (DVA16(7)1.104/164/214/714)
 - IP65 (DVA16(7)1.252)

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Reliability parameters

MTBF, hours, not less than 100 000

Warranty service life, months 24

Service life, years 20

Verification interval, years 2

DVA1X4.XXX vibration velocity sensors with digital output

Housing: type 1,2,7
Connector: type 0,1,6

DVA1X4.214

version with ТИК-KXX connector on the housing



DVA1X4.164

version with ТИК-KXX connector on the cable

DVA1X4.104
version with **fixed** cable connection



DVA1X4.714

version with ТИК-KXX connector on the housing

Product appearance may vary slightly from that shown in the brochure

Features

Designed to measure vibration velocity (along 1 or 2 coordinate(s)).

A vibration acceleration signal, passing through the mathematical processing unit, is converted into a vibration velocity signal (amplitude, root-mean-square (RMS) value, range, instantaneous value). All calculations are performed in a real-time mode with the register data refresh interval of 10 ms. The measurement error for vibration parameters is not more than 5% in the basic frequency range.

Depending on the version, the sensor is installed on the unit using the standard threaded stud M8, fastening with 3 screws or 1 screw. A threaded stud with a different thread, including inch thread, can be supplied on special order.

Metrological parameters

Conversion coefficient	1										
Measurement ranges for vibration velocity, mm/s:											
0-10	0-12.7	0-20	0-25	0-25.4	0-30	0-40	0-50	0-50.8	0-60	0-80	0-100

Operating frequency range, Hz. 2-1000;
3-1000;
5-1000;
10-1000

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Interface

Output signal type RS-485 or RS-485 + discrete output
Sensor supply voltage, V 10-24
Protocol Modbus RTU
Connection via the ТИК-PLC controller* or the ТИК-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- РО Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- РО Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA1X4.104/164/214/714)

Reliability parameters

MTBF, hours, not less than 100 000
Warranty service life, months 24
Service life, years 20
Verification interval, years 2

DVA241.XXX vibration acceleration sensors with current output

Housing: type 1,2,7
Connector: type 0,1,5,6

DVA241.164

version with ТИК-KXX connector on the cable

DVA241.104

version with fixed cable connection



DVA241.214

version with ТИК-KXX connector on the housing



DVA241.714

version with ТИК-KXX connector on the housing



DVA241.252

terminal block version



Product appearance may vary slightly from that shown in the brochure

Features

Designed for measuring the RMS value of vibration acceleration in emergency protection systems (EPS). They consist of a hermetically sealed enclosure containing an integral acceleration sensor and a conversion board.

Depending on the version, the standard M8 stud, 3 screws or 1 screw is used for mounting on the unit. On special order, studs with other threads, including inch threads, are available.

The .214 version allows the use of cable assemblies with a MIL connector from imported transducers.

Metrological parameters

Conversion coefficient, mA*s ² /m		
0.64	0.4	0.16
Measurement ranges for the RMS value of vibration acceleration, m/s ² :		
0-25	0-40	0-100

Operating frequency range, Hz 2-1000;
3-1000;
5-1000;
10-1000

Interface

Output signal type (4-20) mA
Sensor supply voltage, V 10-24
Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA241.104/164/214/714)
- IP65 (DVA241.252)

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Reliability parameters

MTBF, hours, not less than 100 000
Warranty service life, months 24
Service life, years 20
Verification interval, years 2

DVA252.XXX vibration acceleration sensors with voltage output

Housing: type 1,2
Connector: type 0,1,6

DVA252.164

version with ТИК-KXX connector on the cable

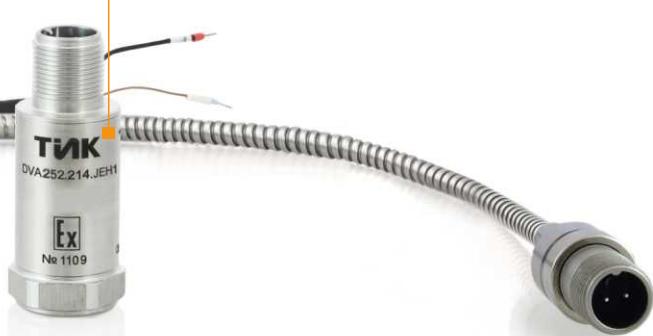
DVA252.104

version with **fixed** cable connection



DVA252.214

version with ТИК-KXX connector on the housing



Product appearance may vary slightly from that shown in the brochure

Features

Designed to measure the instantaneous value of vibration acceleration in diagnostic systems.

Depending on the version, the sensor is installed on the unit using the standard threaded stud M8 or with 3 screws. A threaded stud with a different thread, including inch thread, can be supplied on special order.

For the .214 version, it is possible to use cable assemblies with the MIL connector of imported transducers.

Metrological parameters

Conversion coefficient, mV*s ² /m							
80	50	20	12.5	10	6.67	4	2
Measurement ranges for vibration acceleration, m/s²:							
0-62.5	0-100	0-250	0-400	0-500	0-750	0-1250	0-2500

Operating frequency range, Hz 2-3000;
10-3000;
2-5000;
2-10 000;
3-10 000;
5-10 000;
10-10 000

Interface

Output signal type voltage (two-wire)
Sensor supply voltage, V 17-25
Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA252.104/164/214)

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Reliability parameters

MTBF, hours, not less than	100 000
Warranty service life, months	24
Service life, years	20
Verification interval, years	2

DVA2X4.XXX vibration acceleration sensors with digital output

Housing: type 1,2,7
Connector: type 0,1,6

DVA2X4.214

version with ТИК-KXX connector on the housing



DVA2X4.164

version with ТИК-KXX connector on the cable



DVA2X4.104

version with fixed cable connection



DVA2X4.714

version with ТИК-KXX connector on the housing

Product appearance may vary slightly from that shown in the brochure

Features

Designed to measure vibration acceleration (amplitude, RMS value, range, instantaneous value, along 1 or 2 coordinate(s)).

All calculations are performed in a real-time mode with the register data refresh interval of 10 ms. The measurement error for vibration parameters is not more than 5% in the basic frequency range.

Depending on the version, the sensor is installed on the unit using the standard threaded stud M8, fastening with 3 screws or 1 screw. A threaded stud with a different thread, including inch thread, can be supplied on special order.

Metrological parameters

Conversion coefficient	1	
Measurement ranges for vibration acceleration, m/s ² :		
0-25	0-40	0-100

Operating frequency range, Hz 2-1000;
3-1000;
5-1000;
10-1000

Interface

Output signal type RS-485 or RS-485 + discrete output

Sensor supply voltage, V 10-24

Protocol Modbus RTU

Connection via the ТИК-PLC controller* or the ТИК-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- РО Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- РО Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA2X4.104/164/214/714)

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Reliability parameters

MTBF, hours, not less than 100 000

Warranty service life, months 24

Service life, years 20

Verification interval, years 2

DVA331.XXX vibration displacement sensors with current output

Housing: type 1,2,7
Connector: type 0,1,5,6

DVA331.164

version with ТИК-KXX
connector on the cable

DVA331.104

version with fixed
cable connection



DVA331.214

version with ТИК-KXX
connector on the housing



DVA331.714

version with ТИК-KXX
connector on the housing

DVA331.252

terminal block version



Product appearance may vary slightly
from that shown in the brochure

Features

Designed to measure the vibration displacement range. Consists of a sealed housing that comprises an integral acceleration sensor and a conversion board.

Depending on the version, the sensor is installed on the unit using the standard threaded stud M8, fastening with 3 screws or 1 screw. A threaded stud with a different thread, including inch thread, can be supplied on special order.

For the .214 version, it is possible to use cable assemblies with the MIL connector of imported transducers.

Metrological parameters

Conversion coefficient, mA/μm:				
0.16	0.128	0.064	0.032	0.016
Measurement ranges for vibration displacement range, μm:				
0-100	0-125	0-250	0-500	0-1000

Operating frequency range, Hz 5-500;
10-1000

Interface

Output signal type (4-20) mA
Sensor supply voltage, V 10-24
Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
0Ex ia IIC T6...T2 Ga X
Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA331.104/164/214/714)
- IP65 (DVA331.252)

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Reliability parameters

MTBF, hours, not less than	100 000
Warranty service life, months	24
Service life, years	20
Verification interval, years	2



RS-485



DVA3X4.XXX vibration displacement sensors with digital output

Housing: type 1,2,7
Connector: type 0,1,6

DVA3X4.214

version with ТИК-KXX connector on the housing



DVA3X4.164

version with ТИК-KXX connector on the cable



Product appearance may vary slightly from that shown in the brochure

Features

Designed to measure vibration displacement (amplitude, RMS value, range, instantaneous value, along 1 or 2 coordinate(s)).

All calculations are performed in a real-time mode with the register data refresh interval of 10 ms. The measurement error for vibration parameters is not more than 5% in the basic frequency range.

Depending on the version, the sensor is installed on the unit using the standard threaded stud M8, fastening with 3 screws or 1 screw. A threaded stud with a different thread, including inch thread, can be supplied on special order.

Metrological parameters

Conversion coefficient	1							
Ranges of indicated values of vibration displacement, μm:								
0-100	0-125	0-160	0-200	0-250	0-300	0-500	0-1000	0-2000

Operating frequency range, Hz. 5-500;
2-1000;
3-1000;
5-1000;
10-1000

Interface

Output signal type RS-485
Sensor supply voltage, V 10-24
Protocol Modbus RTU
Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA3X4.104/164/214/714)

Climatic version

Operating temperature range, °C

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Reliability parameters

MTBF, hours, not less than 100 000
Warranty service life, months 24
Service life, years 20
Verification interval, years 2

DVA484.XXX multifunctional sensors with digital output

Housing: type 1,2,7
Connector: type 0,1,6

DVA484.214

version with ТИК-KXX connector on the housing



DVA484.164

version with ТИК-KXX connector on the cable



DVA484.104

version with fixed cable connection



DVA484.714

version with ТИК-KXX connector on the housing

Product appearance may vary slightly from that shown in the brochure

Features

Designed to measure vibration acceleration, vibration velocity, vibration displacement along 3 coordinates, as well as angles of inclination and temperature (at the installation place). All calculations are performed in a real-time mode with the register data refresh interval of 10 ms. The measurement error for vibration parameters is not more than 5% in the basic frequency range. Additional error is not more than 2.5%.

The built-in temperature sensor allows controlling the temperature with an accuracy of $\pm 2^{\circ}\text{C}$. Determination of the angles of inclination of each axis with an accuracy of 1° .

Metrological parameters

Conversion coefficient	1	
Ranges of indicated values of vibration velocity amplitude, mm/s:		
0-25	0-40	0-100
Ranges of indicated values of vibration acceleration amplitude, m/s ² :		
0-25	0-40	0-100
Ranges of indicated values of vibration displacement amplitude, μm :		
0-25	0-40	0-100

Operating frequency range, Hz 2-1000;
3-1000;
5-1000;
10-1000

Climatic version

Operating temperature range, $^{\circ}\text{C}$

- H climatic version -40...+80
- X climatic version -60...+80
- K climatic version -196...+80

Interface

Output signal type (4-20) mA
Sensor supply voltage, V 10-24
Connection via the TIK-PLC controller* or the TIK-BIS safety barrier

* The controller operates as EPS, sensor power source, and a safety barrier

Protection parameters

Explosion protection

- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X
- 2Ex nA IIC T6...T2 Gc X
- PO Ex ia I Ma X
- 0Ex ia IIC T6...T2 Ga X
- Ex ia IIIC T₂₀₀ 100°C ... T₂₀₀ 280°C Da X
- Ex ib IIIC T95°C ... T275°C Db X

Protection class

- IP65/68 (DVA484.104/164/214/714)

Reliability parameters

MTBF, hours, not less than 100 000
Warranty service life, months 24
Service life, years 20
Verification interval, years 2



Housing: type 1

Triangular housing, electronics in the housing of the vibration transducer, mounting with 3 screws

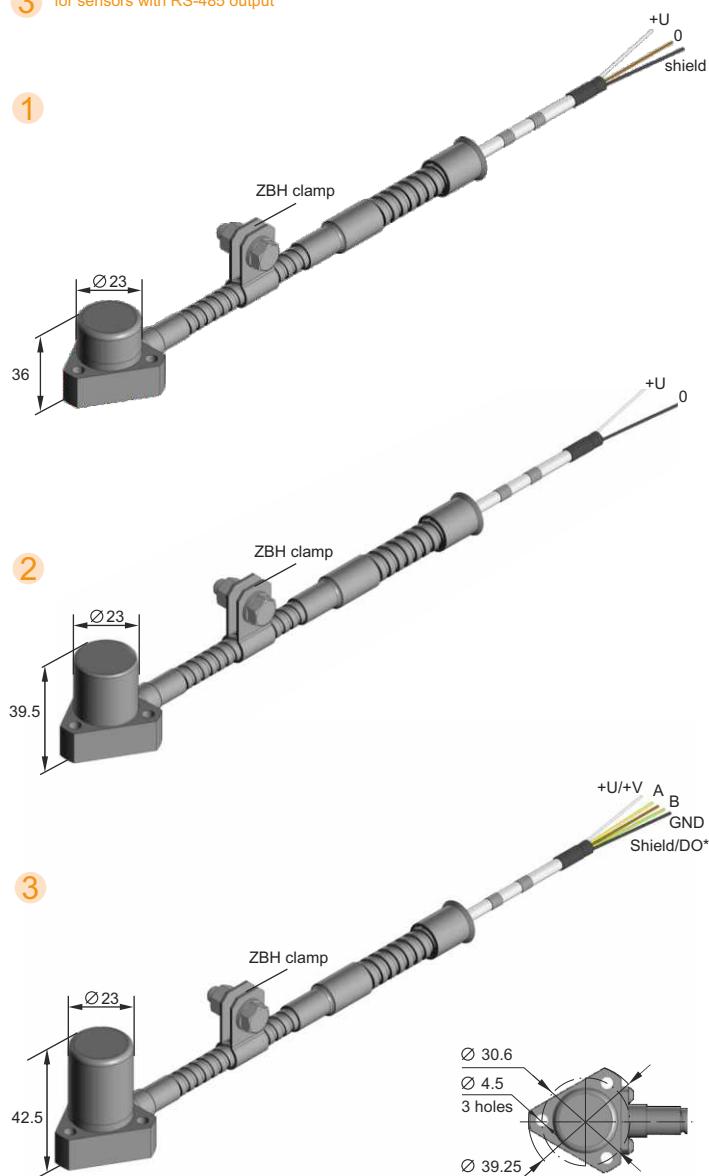
Connector: type 0

Without connector

Specifications

Overall dimensions	Ø 39.25x36 mm Ø 39.25x39.5 mm Ø 39.25x42.5 mm
Weight	100 g
Mount	M4 screw 3 pcs.

- 1 for sensors with 4-20 mA output
- 2 for sensors with voltage output
- 3 for sensors with RS-485 output



*For version with discrete output

Housing: type 1

Triangular housing, electronics in the housing of the vibration transducer, mounting with 3 screws

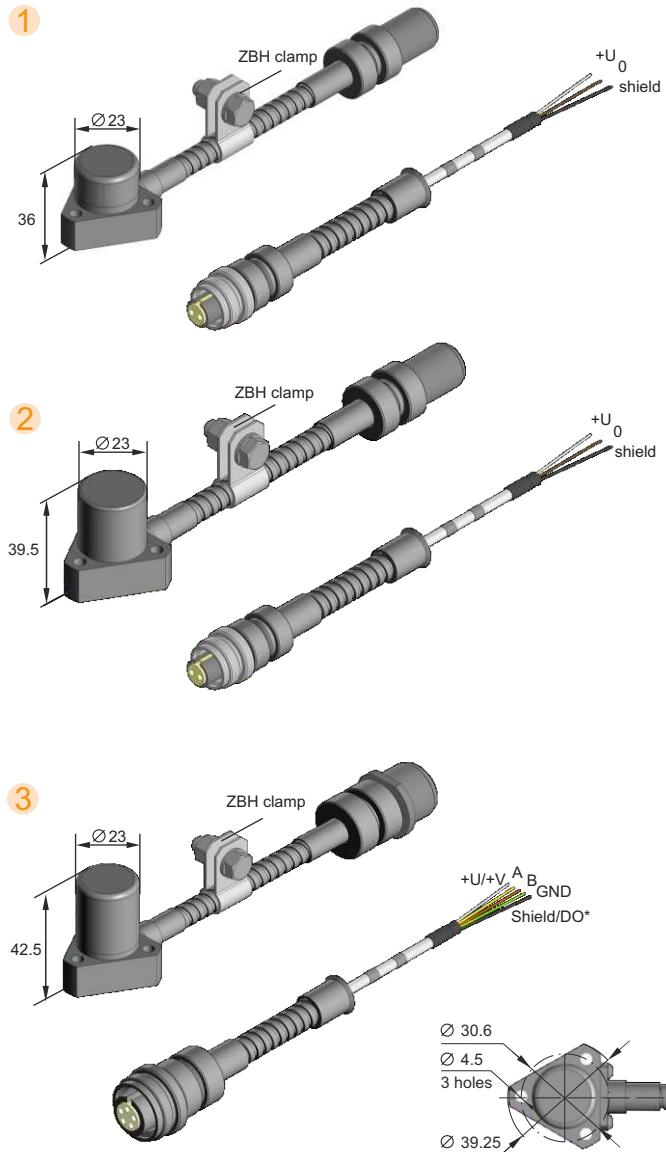
Connector: type 6

TIK-KXX connector on the cable

Specifications

Overall dimensions	Ø 39.25x36 mm Ø 39.25x39.5 mm Ø 39.25x42.5 mm
Weight	100 g
Mount	M4 screw 3 pcs.

- 1 for sensors with 4-20 mA output
- 2 for sensors with voltage output
- 3 for sensors with RS-485 output



*For version with discrete output

Housing: type 2

Cylindrical small-outline housing, electronics in the housing of the vibration transducer, mounting with a threaded stud

Connector: type 1

TIK-KXX connector on the housing (analogue MIL-C-5015)

Specifications

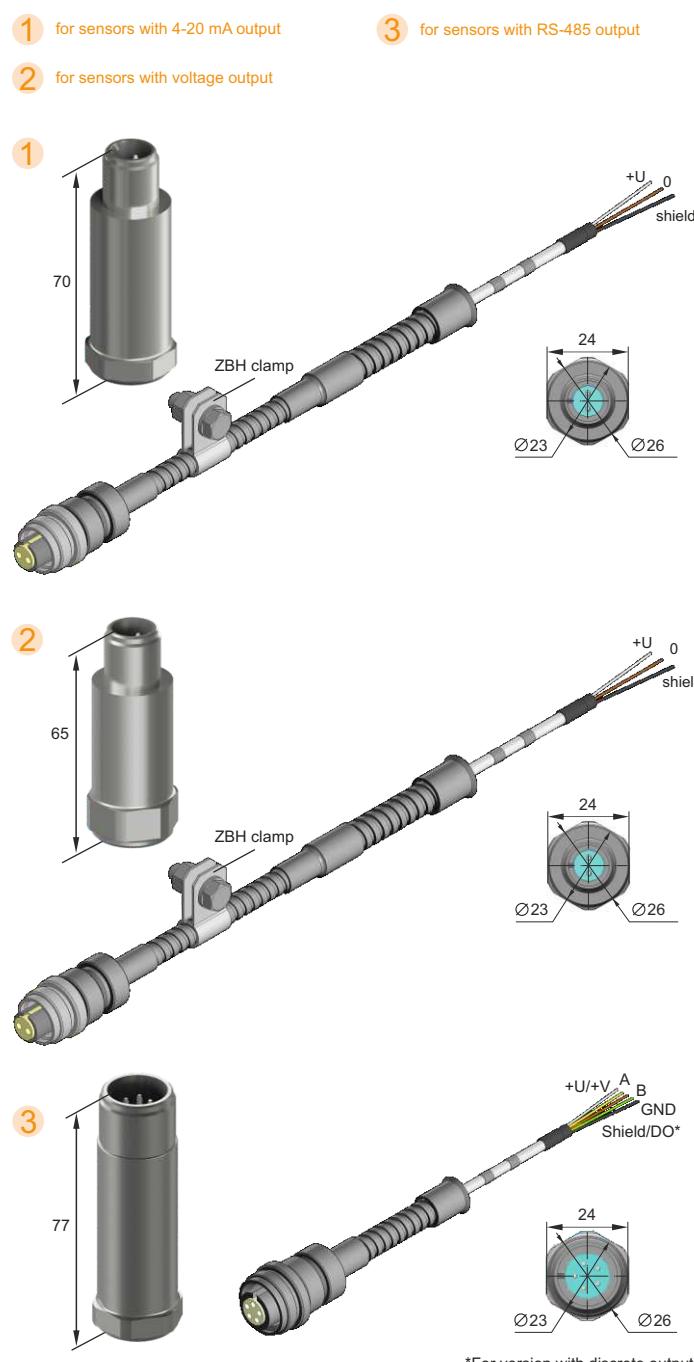
Overall dimensions Ø 26x70 mm

Ø 26x65 mm

Ø 26x77 mm

Weight 130 g

Mount M8 stud 1 pc.



Housing: type 2

Cylindrical small-outline housing, electronics in the housing of the vibration transducer, mounting with a threaded stud

Connector: type 5

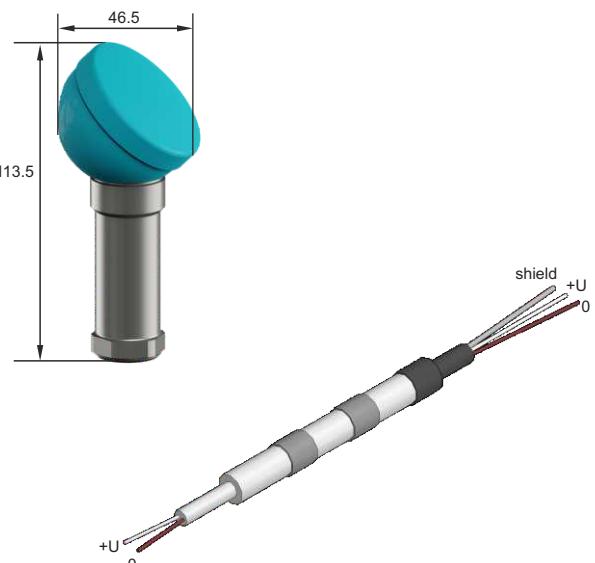
Connection to the terminal block

Specifications

Overall dimensions 113x46.5 mm

Weight 130 g

Mount M8 stud 1 pc.





Housing: type 7

Rectangular housing, electronics in the housing of the vibration transducer, mounting with 1 screw

Connector: type 1

TIK-KXX connector on the housing (analogue MIL-C-5015)

Specifications

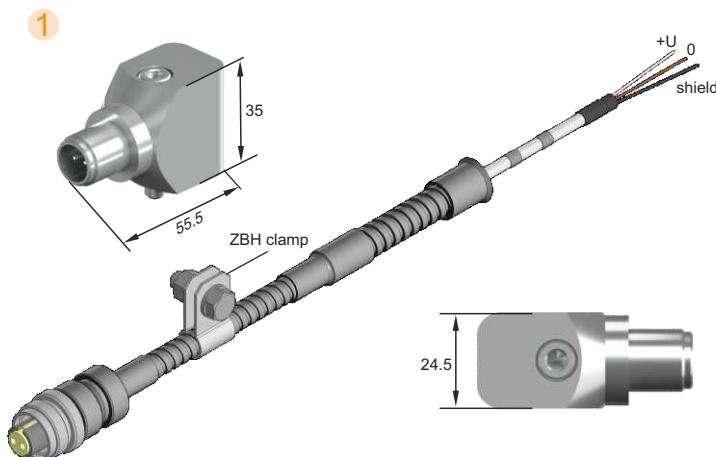
Overall dimensions 35x55.5x24.5 mm
42x55.5x24.5 mm

Weight 250 g

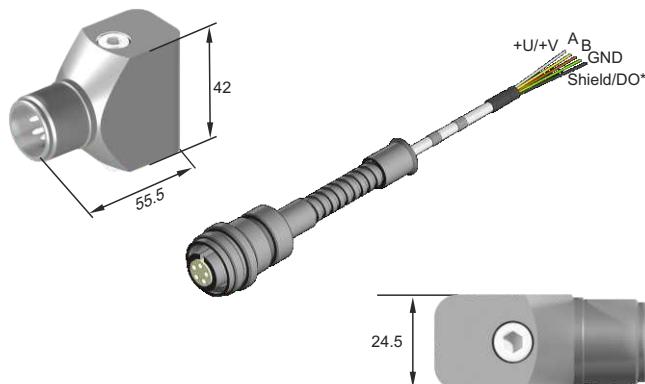
Mount M6 screw 1 pc.

1 for sensors with 4-20 mA output

2 for sensors with RS-485 output



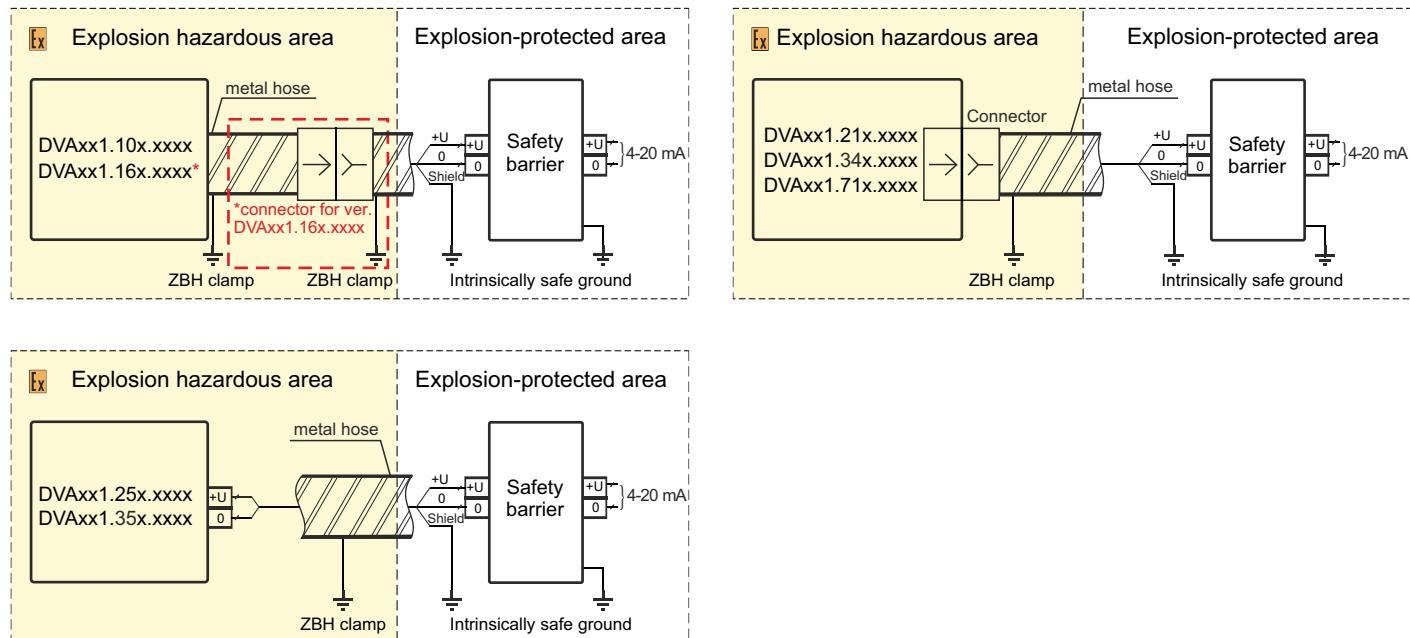
2



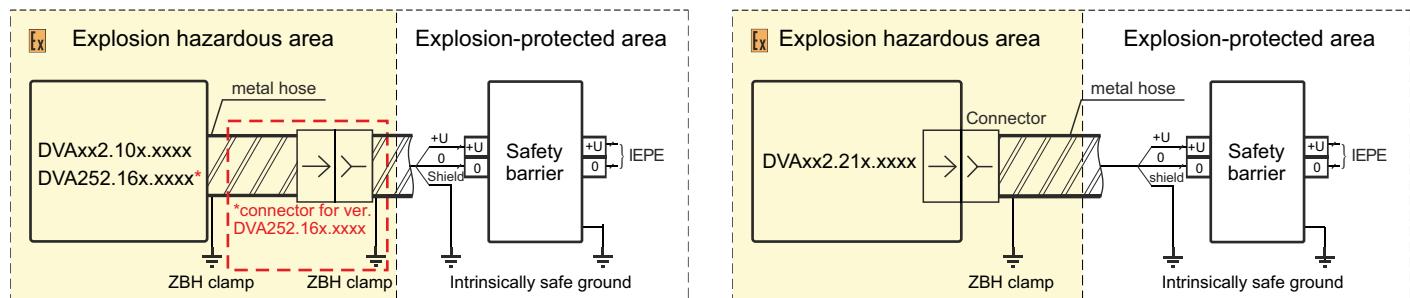
*For version with discrete output

Wiring diagrams

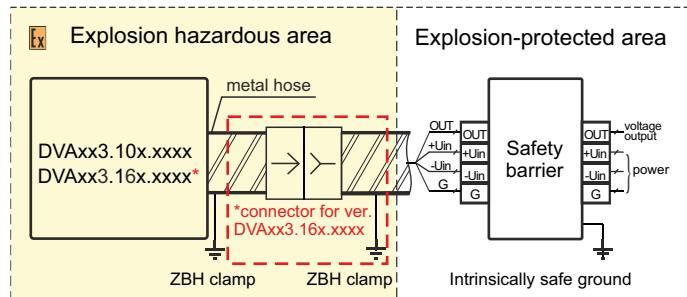
DVA sensors with current output



DVA sensors with voltage output

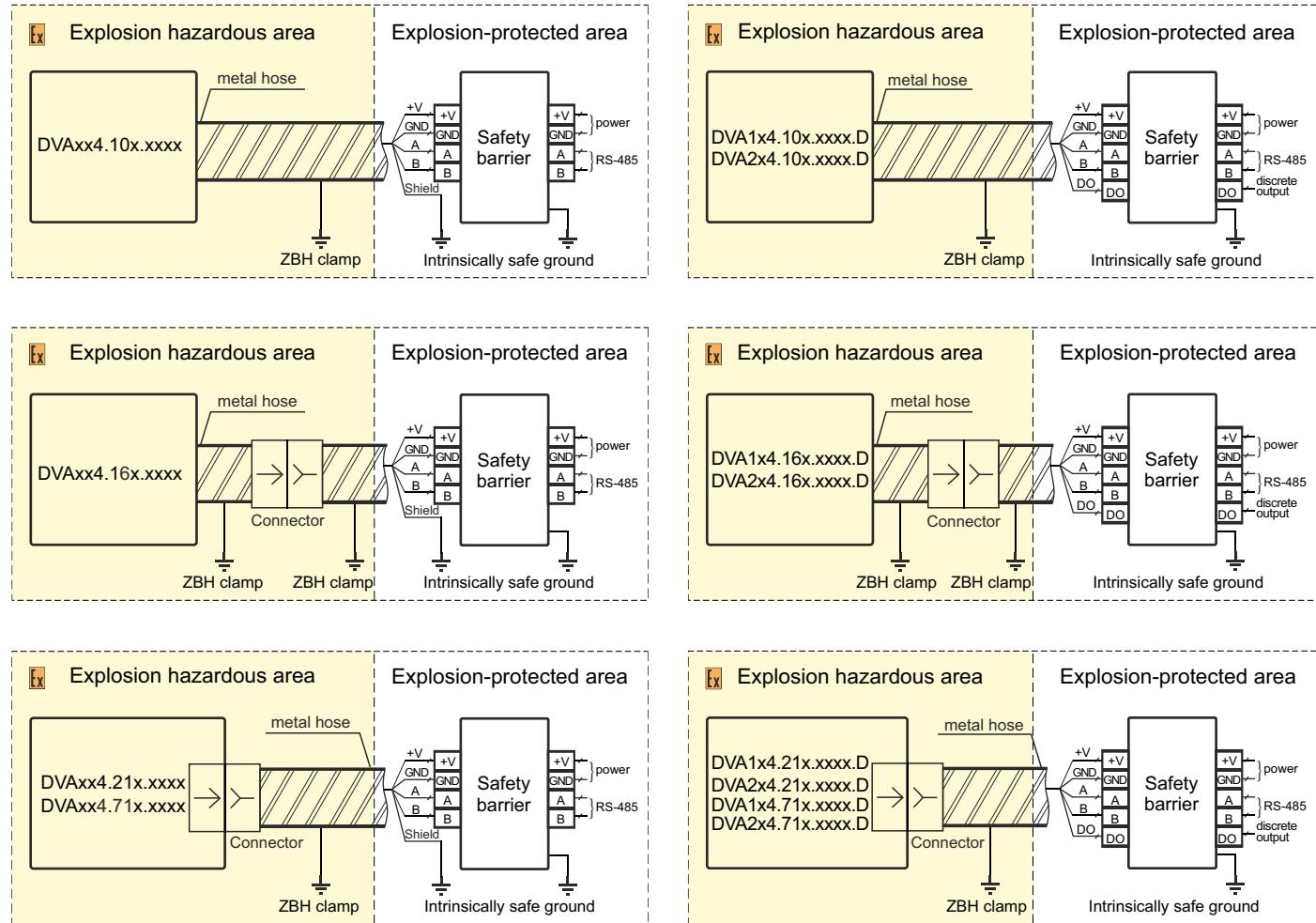


DVA sensors with voltage output with separate power supply



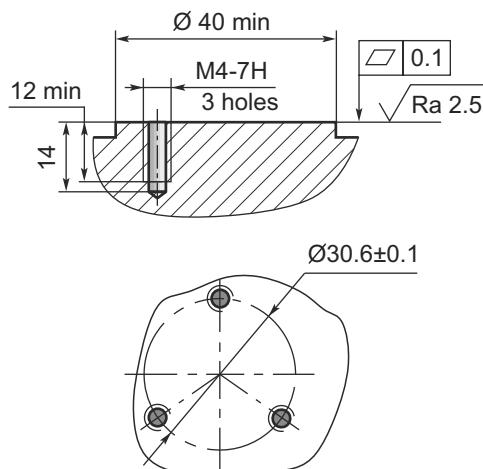
Wiring diagrams

DVA sensors with digital output

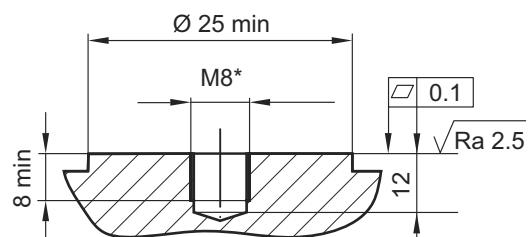


Installation methods

Screw mounting (for DVAXXX.1)

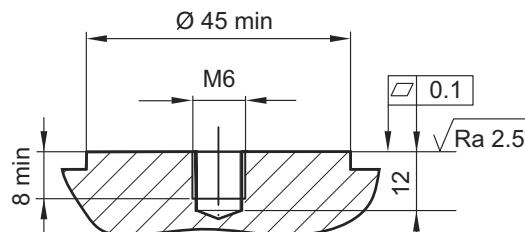


Stud mounting (for DVAXXX.2)



*On special order we can supply studs with other threads, including inch threads

Screw mounting (for DVAXXX.7)



Mounting kit (optional)



Rotating mounting kit designed for mounting multi-axis sensors with stud mounting and for sensors with terminal head.



Approval documents

Certificate of type approval of measuring instruments No. 69044-17 for vibration transducers DVA



Certificate of Conformity to TP TC 012/2011 "On safety of equipment for operation in explosive environments" for DVA vibration transducers, EAEC registration number RU C-RU.AЖ58.B.04937/24



Declaration of conformity to TP TC 020/2011 "Electromagnetic compatibility of technical means" for vibration converters DVA, EAEC registration number RU Д-RU.PA06.B.22753/22



Certificate of type approval for DVA vibration transducers in the Republic of Belarus No. 15786



Certificate of type approval for DVA vibration transducers in the Republic of Kazakhstan, registration number KZ.02.03.08032-2022/69044-17





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