

Made in Russia



“Vibration key” system based on DVA252.XXX sensor and TIK-PLC 121 controller



DVA252.XXX vibration acceleration sensors with voltage output



* Only for SPTA

The appearance of the products may differ a little from those presented in the brochure

Features

They are 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 M6 / M8 / M10 / M12, 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, mV*s ² /m							
80	50	20	12.5	10	6.67	4	2
Measurement ranges for vibration acceleration, m/s ² :							
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

Type of output signal by voltage (two-wire),
 IEPE (ICP compatible)

Supply voltage of the sensor, V 10-12

Power current, mA 4-10

The maximum amplitude value of alternating voltage measured by the channel, V ≈ 5.0

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

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

Explosion protection

Marking 0Ex ia IIC T5...T6 Ga X / PO Ex ia I Ma X

Climatic version

Operating temperature range, °C

► H climatic version -40...+80

► X climatic version -60...+80

Reliability parameters

MTBF, hours, not less than 40 000

Design service life, hours, not less than 80 000

Warranty service life, months 24

Service life, years 10

Verification interval, years 2



Constructive versions

DVA252.104



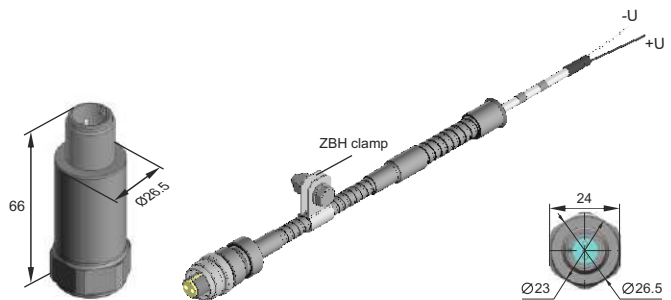
DVA252.132



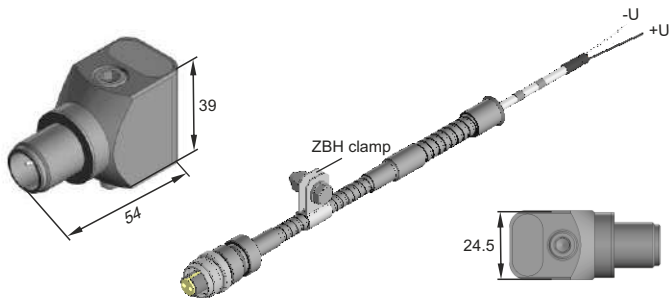
DVA252.164



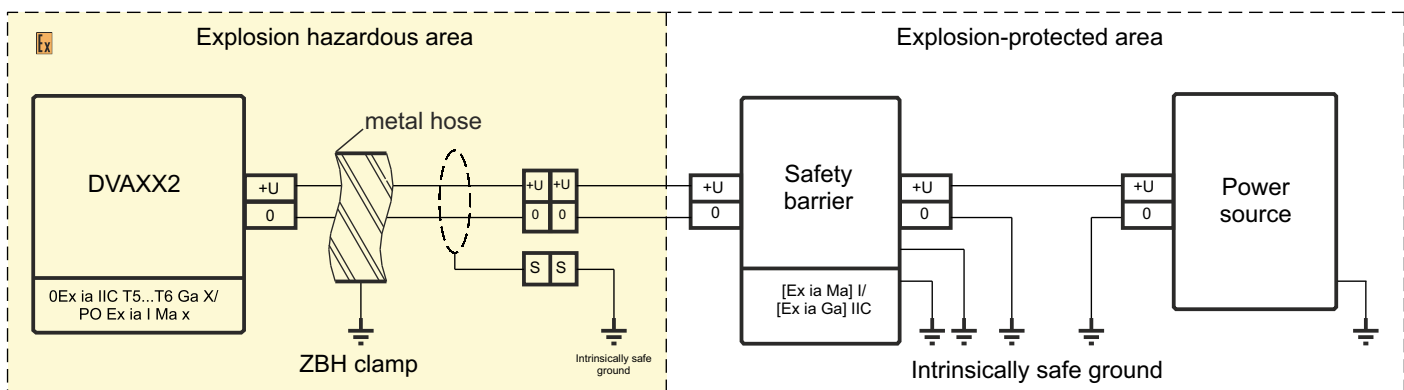
DVA252.214



DVA252.714



Wiring diagram



TIK-PLC 121 type 02 controller (TIK-PLC.121.11)

Designed for recording the signals coming from the external sensors with two-wire voltage output, their processing and transmission to external telemetry and control system



Description

TIK-PLC 121 type 02 controller performs the functions of EPS, power supply for sensors and safety barrier.

The principle of operation is based on receiving an input signal, converting it into digital form and integrating it, software averaging, comparing the obtained value with programmed settings, transmission of the averaged current value via the digital RS-485 communication interface, analog output 4-20 mA, and the generation of control signals to the EPS.

Features

- calculation of all vibration parameters (vibration acceleration, vibration velocity, vibration displacement) according to the initial signal;
- custom conversion factor;
- two digital interface RS-485;
- output of any measured parameter to 4-20 mA;
- OLED display for displaying controller parameters and settings;
- 3-color controller status LED;
- 5-position joystick for menu navigation;
- simplified installation of power supply and RS-485 interface through a bus connector (*not included*);
- built-in intrinsic safety barrier in the controller;
- quick-release, spring-loaded terminals for easy and reliable installation.

Specifications

Interface

Input signal type	two-wire voltage (IEPE / ICP compatible); discrete input
Output signal type	4-20 mA "current loop"; relay output
Interface	2*RS-485
Protocol	Modbus RTU
Supply voltage, V	+24±2
Power consumption, W, not more than	2

Explosion protection

Kind	intrinsically safe circuit
Marking	[Ex ib Gb] IIC

Design features

Overall dimensions, mm	99x113.6x22.6
Weight, kg, not more than	0.2
Protection class	IP20
Mounting	on DIN-rail

Performance

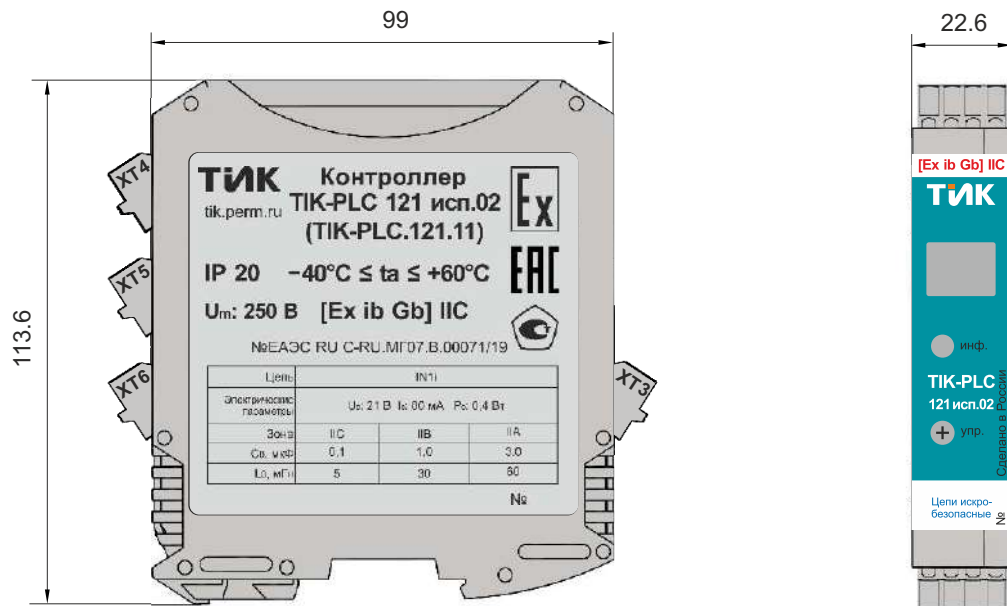
Operating temperature range, °C	-40...+60
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Reliability and manufacturer's warranties

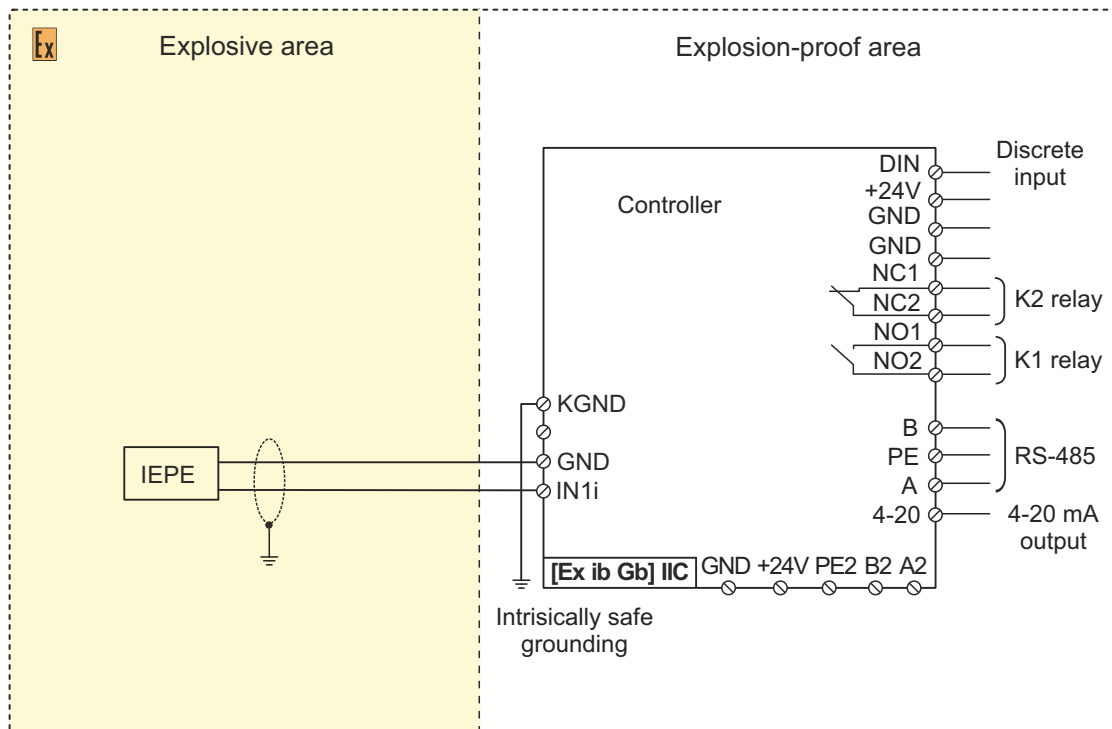
MTBF, hours, not less than	20 000
Service life, years	10
Warranty period, months	18



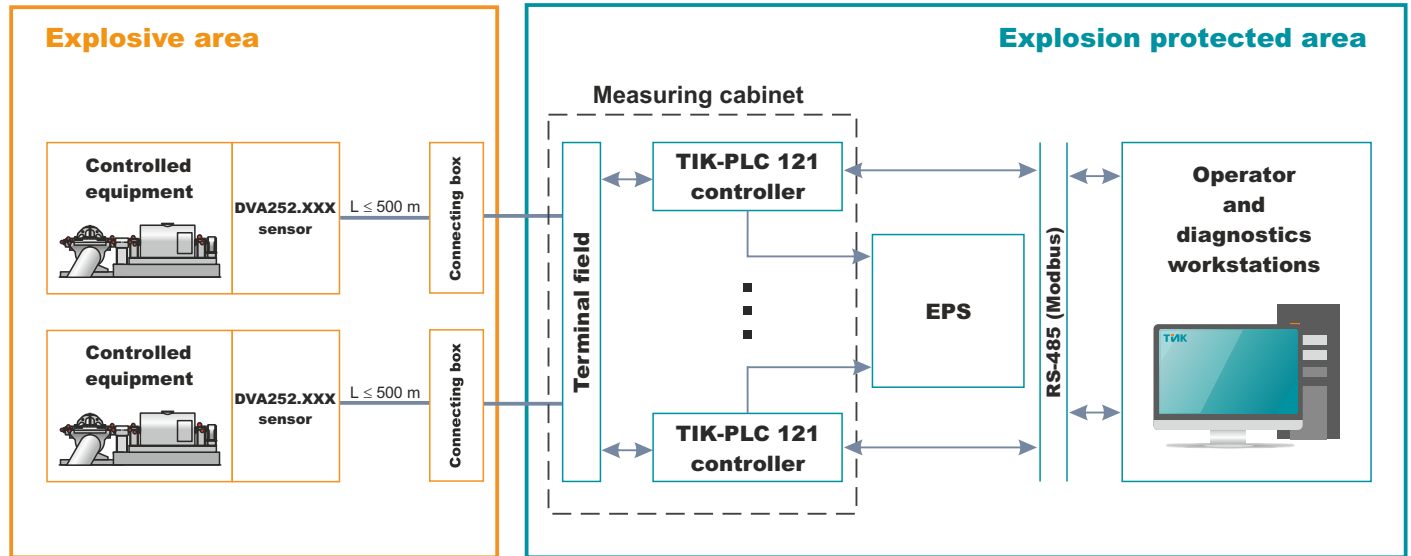
General view, dimensions and mounting dimensions



Wiring diagrams



Block diagram of the “vibration key” system





Approval documents

Certificate of Type Approval of Measuring Instruments No.69044-17
for the DVA vibration transducers

Valid till 10/25/2027



Certificate of Conformity RU C-RU.AA71.B.00397 Series RU No. 0162217
for the DVA vibration transducers

Valid till 07/26/2023



Certificate of Conformity No. POCC.RU.HX37.H09404
for the DVA vibration transducers

Valid till 03/24/2024



Certificate of conformity with TP TC 012/2011 "About safety of equipment for operation in explosive environments" for TIK-PLC equipment, EAEC registration number RU C-RU.MГ07.B.00071/19, Series RU №0127612
Test Report №20И-19 of 08/02/19

Valid till 08/05/2024



Type Approval Certificate No. 62594-15 for TIK-PLC equipment

Valid till 10/22/2025





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