

Made in Russia



TIK-BIS safety barriers

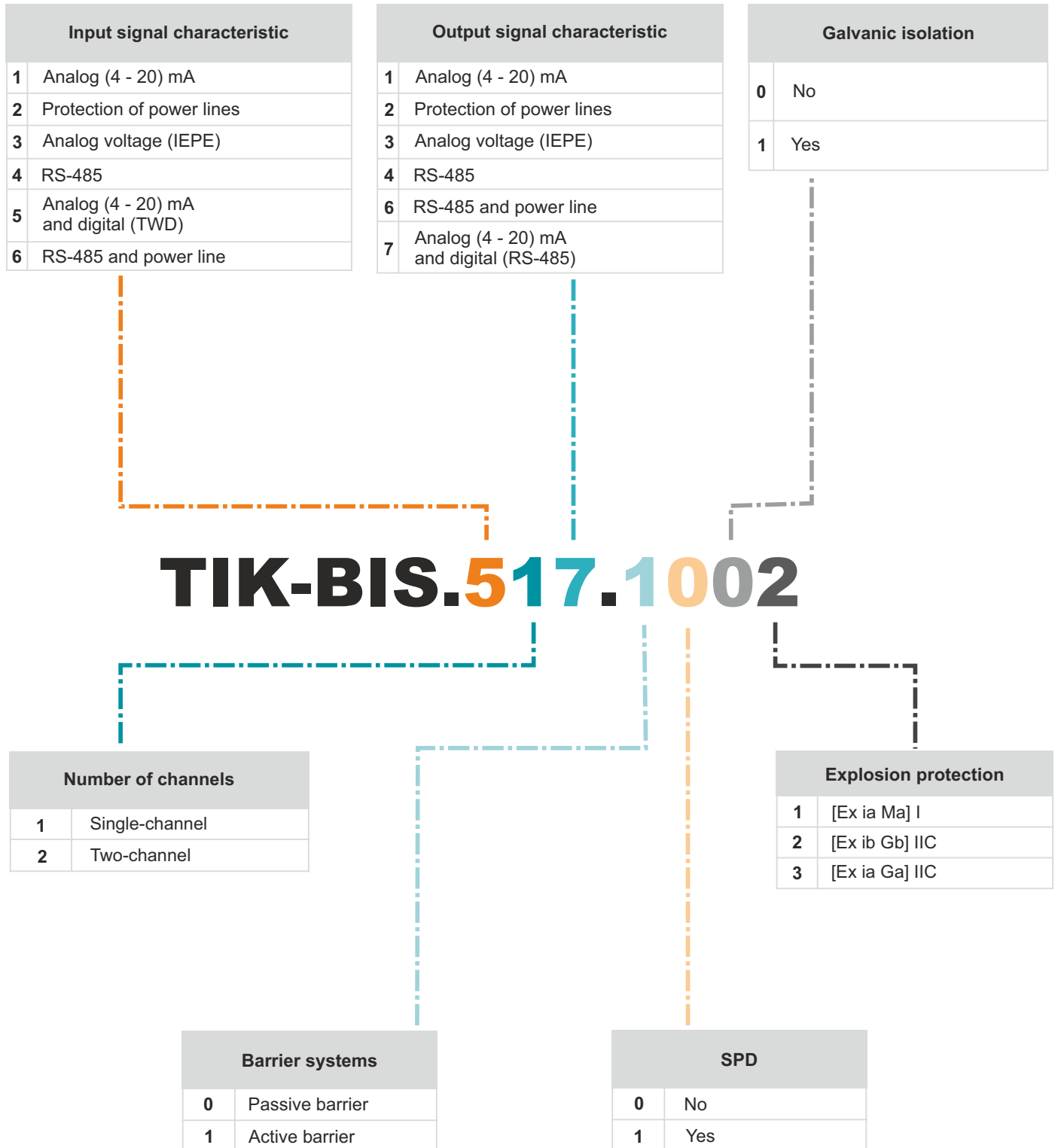




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Safety barriers designation structure





Types of TIK-BIS safety barriers

TIK-BIS.2X2.0X0X

one or two power lines;
passive barriers without
galvanic isolation

TIK-BIS.111.1X1X

single-channels;
4-20 mA analog signal;
active barriers with
galvanic isolation;
certified as measuring instruments

TIK-BIS.1X1.0X0X

single- or two-channels;
4-20 mA analog signal;
passive barriers without
galvanic isolation;
certified as measuring instruments

TIK-BIS.414.000X

single-channels;
RS-485 digital interface;
passive barriers without
galvanic isolation

TIK-BIS.517.1002

single-channel;
RS-485 and TWD digital interface;
OLED display;
active barriers with
galvanic isolation;
certified as measuring instruments

TIK-BIS.527.1002

two independent channels;
RS-485 and TWD digital interface;
two two-digit seven-segment
LED indicators;
active barriers with
galvanic isolation;
certified as measuring instruments



TIK-BIS.3X3.0X0X

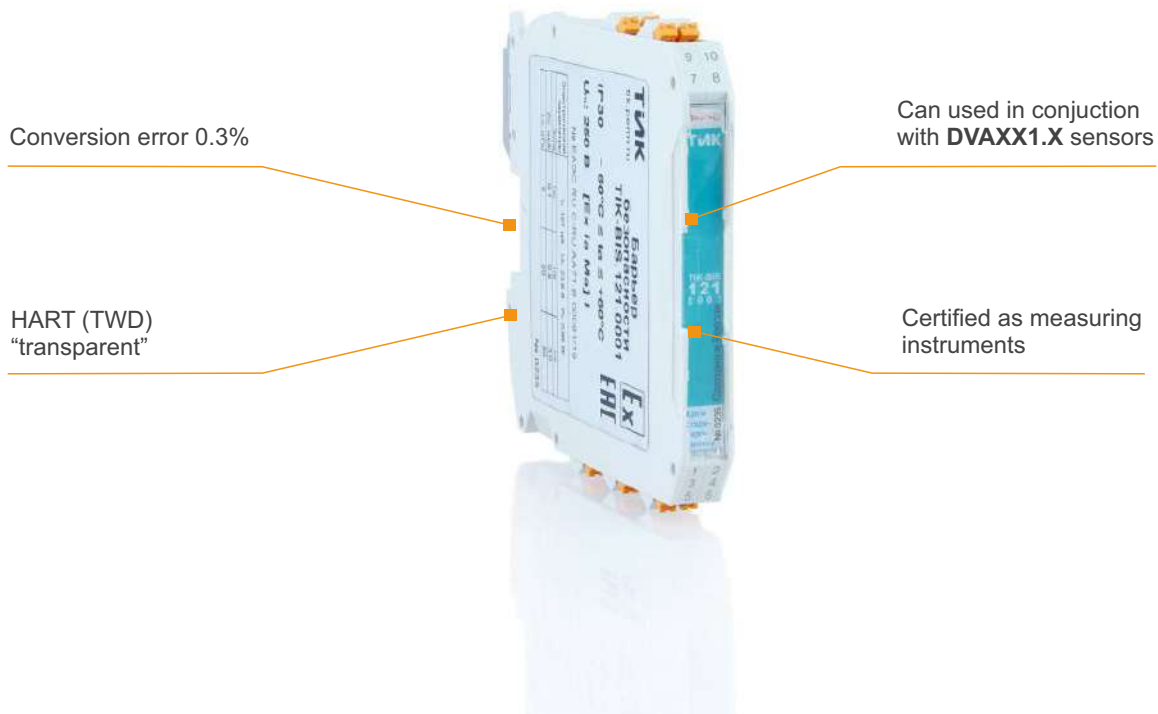
single- or two-channels;
IEPE interface;
passive barriers without
galvanic isolation;
certified as measuring instruments

TIK-BIS.616.1X1X

single-channels;
RS-485 digital interface
and power line;
active barriers with
galvanic isolation

TiK-BIS.1X1.0X0X safety barriers

Single-channel passive barriers without galvanic isolation



Description

Designed for the organization of explosion protection of the "current loop" interface 4-20 mA. The barriers provide long-term protection against short circuits in intrinsically safe circuits (automatically removed after elimination of the short circuit).

The barriers provide explosion protection due to the limitation of electrical power in the communication circuits with sensors and other technical means located in the explosive zone.

No power is required to operate the barriers.

Specifications

Interface

Signal type	4-20 mA "current loop"
Max. supply voltage, V	25.2
Number of channels	1
Galvanic isolation	no
SPD	yes / no

Explosion protection

Kind intrinsically safe circuit

Marking

- [Ex ia Ma] I (for TiK-BIS.1X1.0X01)
- [Ex ia Ga] IIC (for TiK-BIS.1X1.0X03)

Design features

Overall dimensions, mm	108x114x13
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

Operating temperature range, °C -60...+60

Reliability and manufacturer's warranties

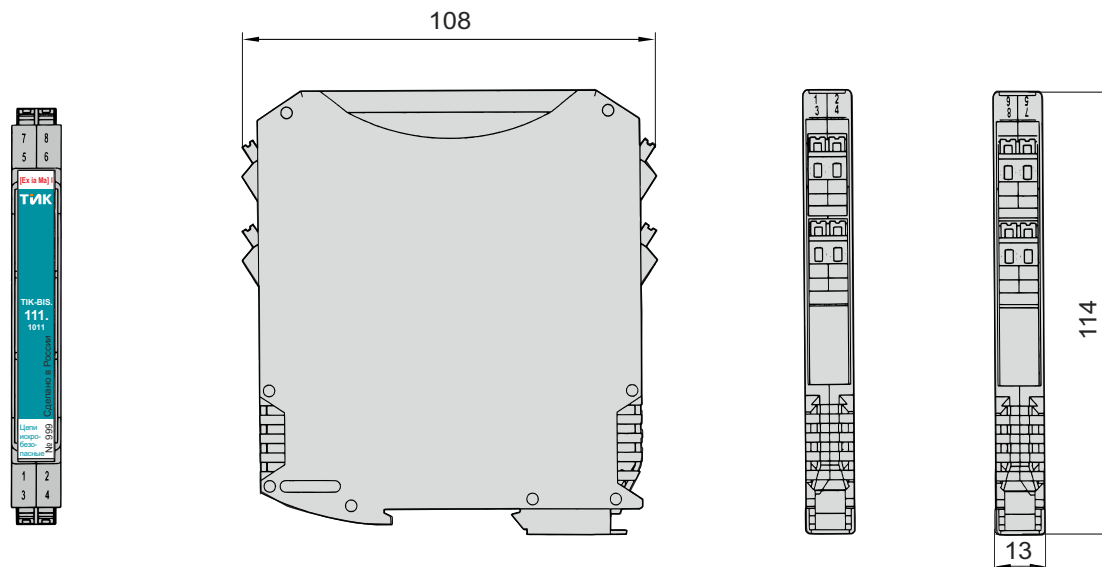
MTBF, hours, not less than 150 000

Warranty service life, months 24

Service life, years, not less than 20

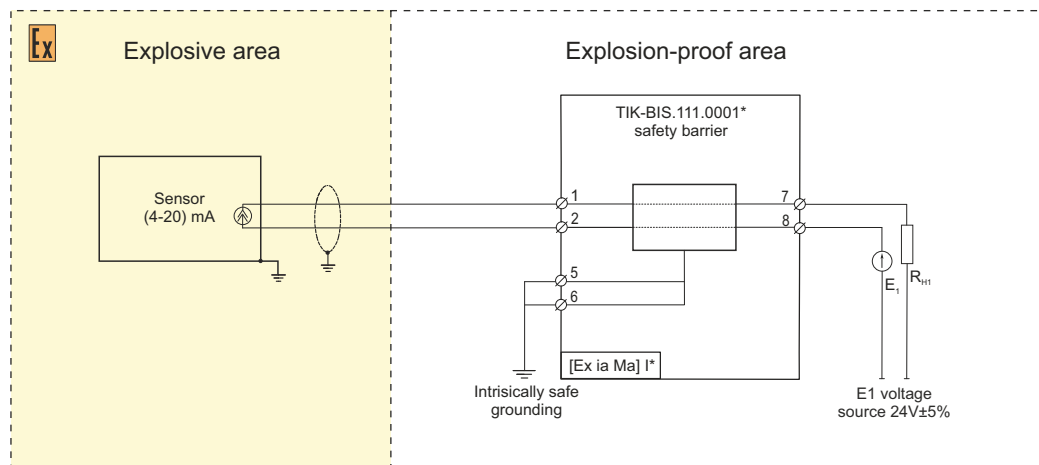


Design parameters

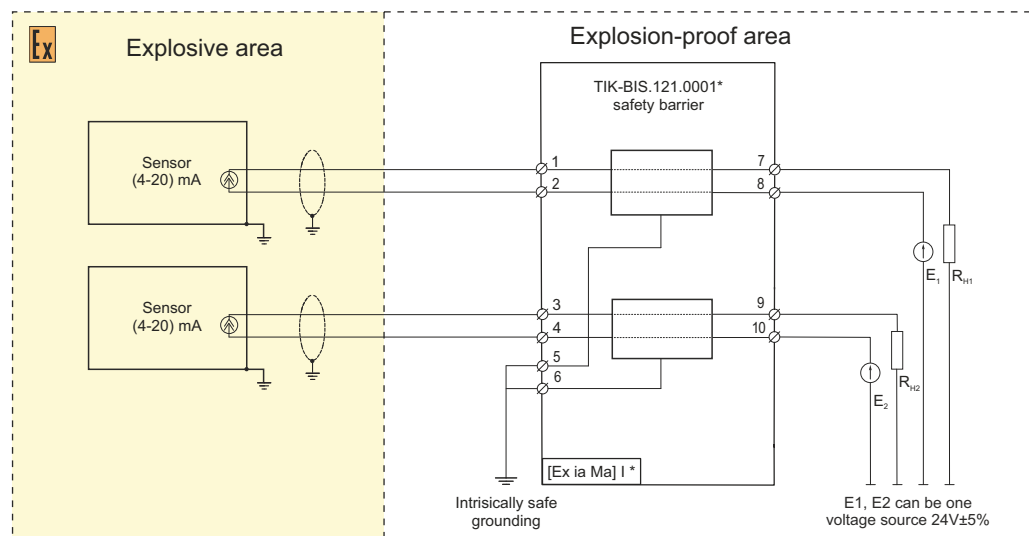


Connection schemes

Two-wire connection scheme of TIK-BIS.111.0X0X safety barriers

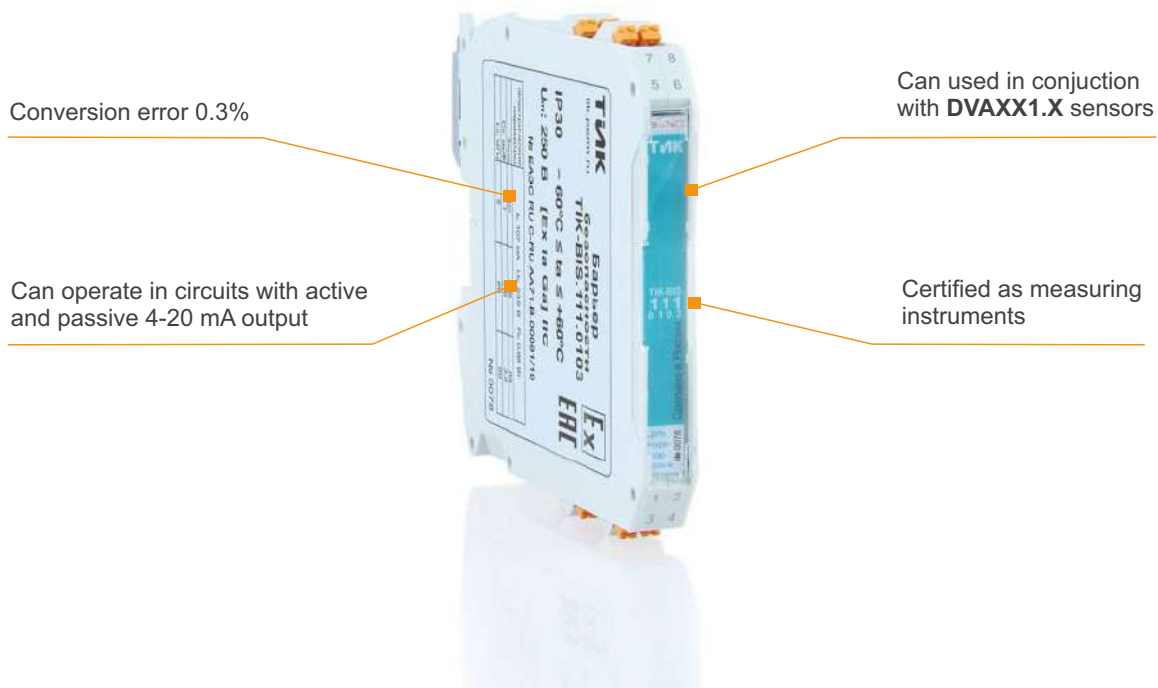


Two-wire connection scheme of TIK-BIS.121.0X0X safety barriers



TiK-BIS.111.1X1X safety barriers

Single-channel active barriers with galvanic isolation



Description

Designed for the organization of explosion protection of the "current loop" interface 4-20 mA. The barriers provide long-term protection against short circuits in intrinsically safe circuits (automatically removed after elimination of the short circuit).

The barriers provide explosion protection due to the limitation of electrical power in the communication circuits with sensors and other technical means located in the explosive zone.

An external 24V±5% power supply is required for the operation of the barriers.

Specifications

Interface

Signal type	4-20 mA "current loop"
Supply voltage, V	22.8 - 25.2
Number of channels	1
Galvanic isolation	no
SPD	yes / no

Explosion protection

Kind intrinsically safe circuit

Marking

- [Ex ia Ma] I (for TiK-BIS.111.1X11)
- [Ex ia Ga] IIC (for TiK-BIS.111.1X13)

Design features

Overall dimensions, mm	108x114x13
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

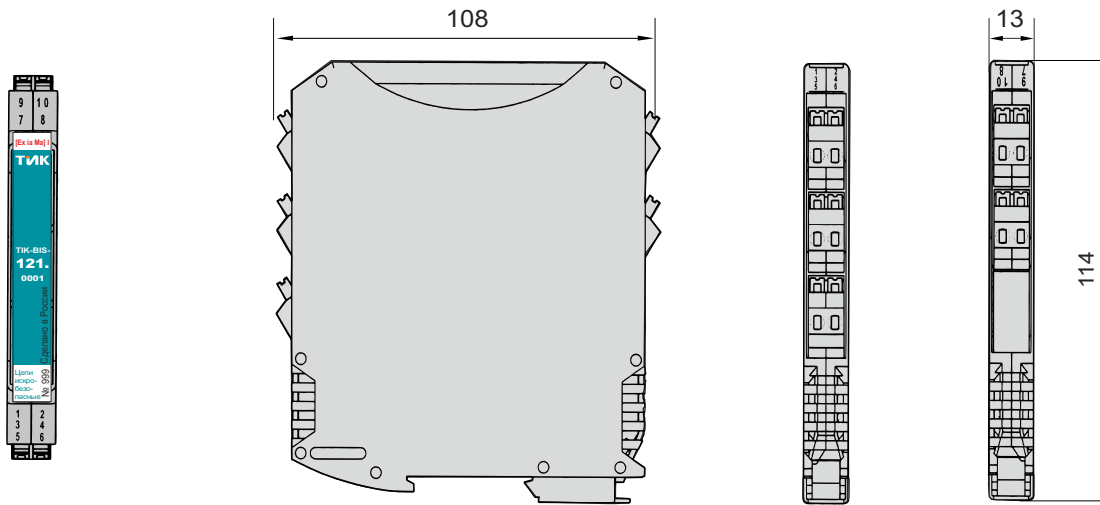
Operating temperature range, °C -60...+60

Reliability and manufacturer's warranties

MTBF, hours, not less than	150 000
Warranty service life, months	24
Service life, years, not less than	20

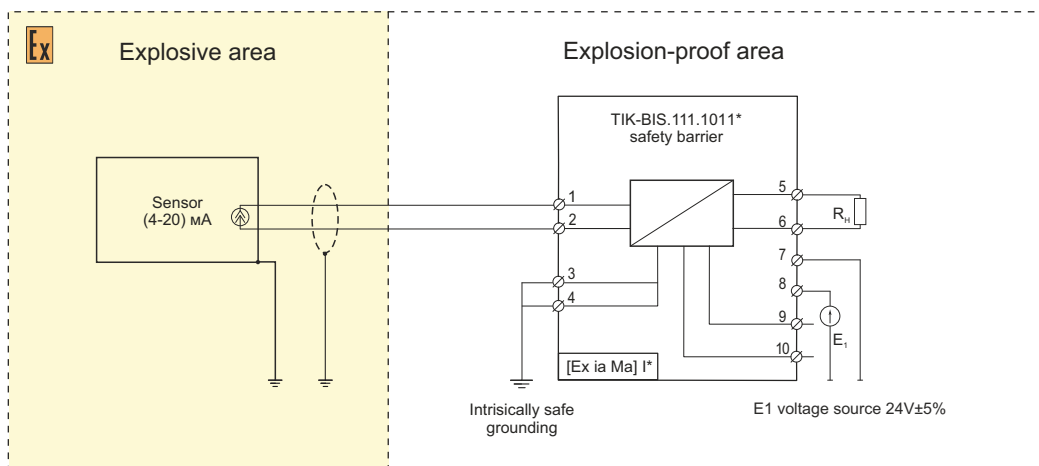


Design parameters

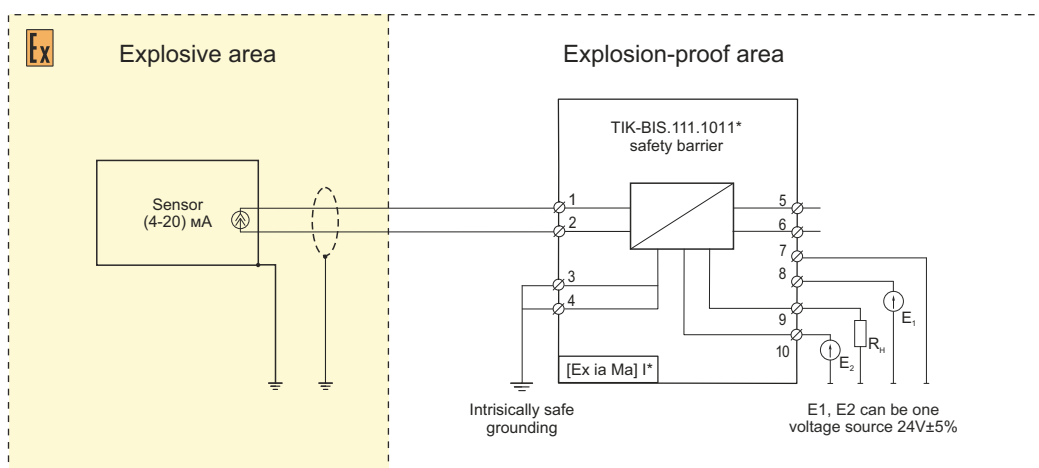


Connection schemes

Two-wire connection scheme of TIK-BIS.111.1X1X safety barriers (active output)



Two-wire connection scheme of TIK-BIS.111.1X1X safety barriers (passive output)



*name, explosion protection of safety barriers are shown in the diagrams conditionally, marked according to order

TIK-BIS.2X2.0X0X safety barriers

One or two power lines



Can be used in conjunction with DVAXX4.X sensors

Description

Designed for the organization of explosion protection of the power line.

The barriers provide long-term protection against short circuits in intrinsically safe circuits (automatically removed after elimination of the short circuit).

The barriers provide explosion protection due to the limitation of electrical power in the communication circuits with sensors and other technical means located in the explosive zone.

No power is required to operate the barriers.

Specifications

Interface

Signal type	power line
Max. supply voltage, V	25.2
Number of channels	1 (2)
Galvanic isolation	no
SPD	yes / no

Explosion protection

Kind

Marking

- [Ex ia Ma] I (for TIK-BIS.2X2.0X01)
- [Ex ia Ga] IIC (for TIK-BIS.2X2.0X03)

Design features

Overall dimensions, mm	108x114x13
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

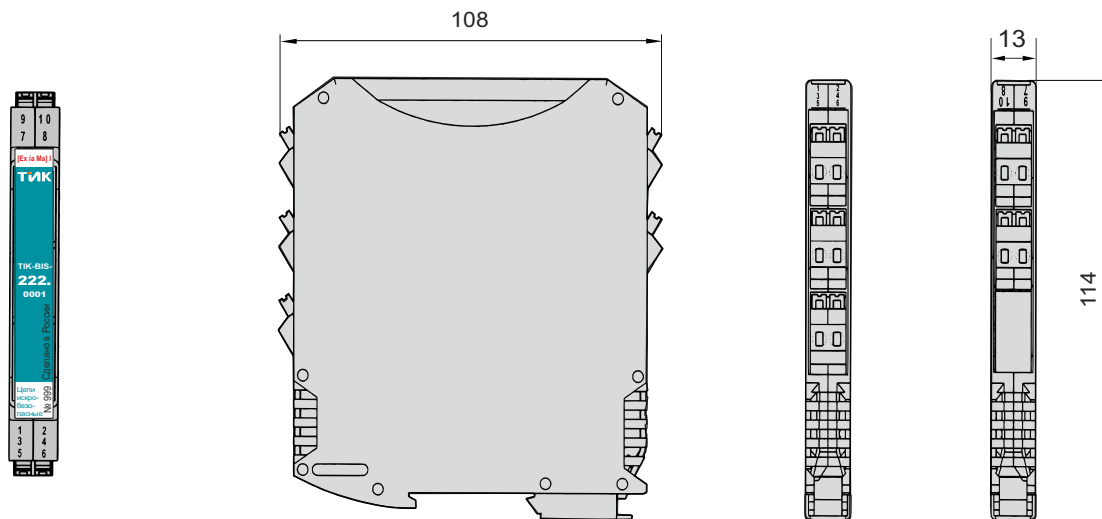
Operating temperature range, °C

Reliability and manufacturer's warranties

MTBF, hours, not less than	150 000
Warranty service life, months	24
Service life, years, not less than	20

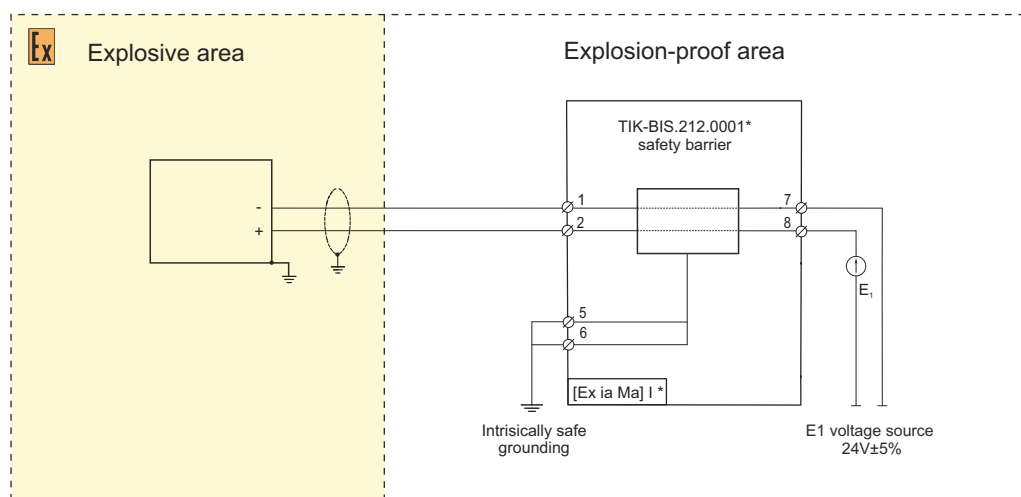


Design parameters

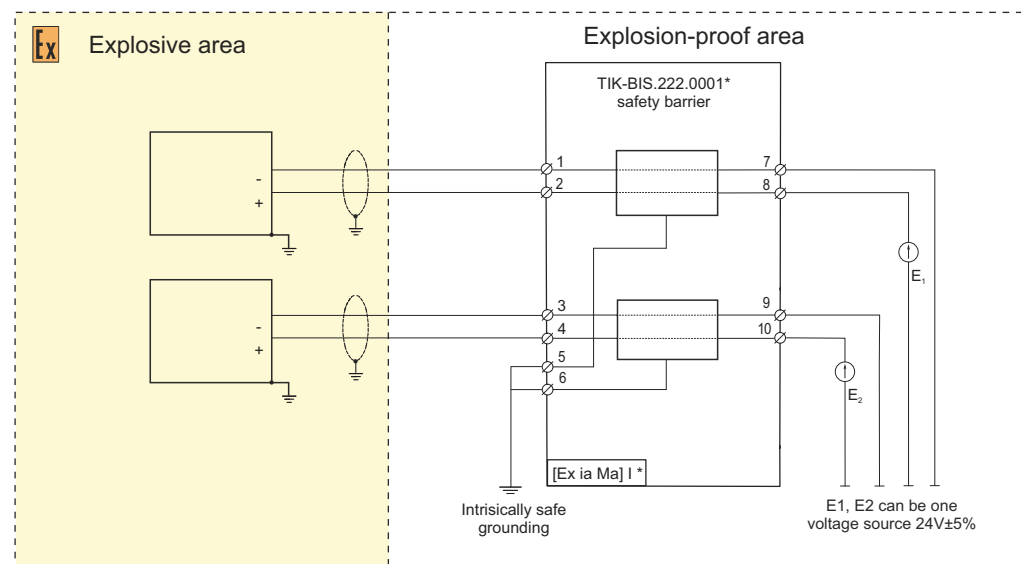


Connection schemes

Two-wire connection scheme of TIK-BIS.212.0X0X safety barriers



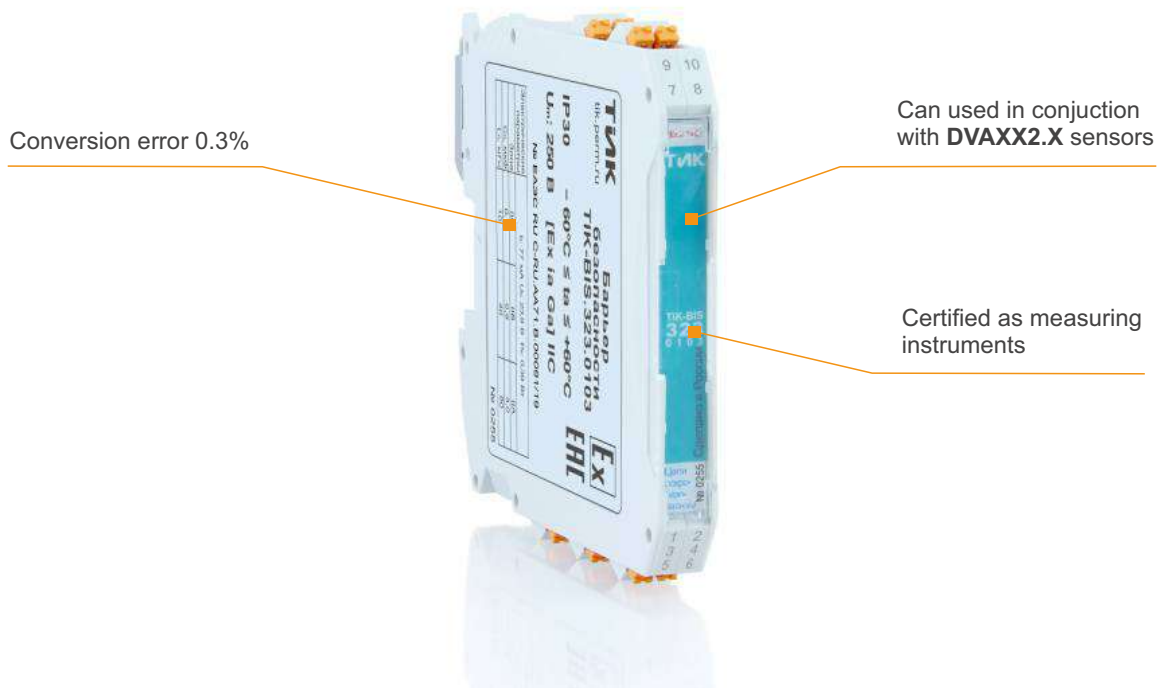
Two-wire connection scheme of TIK-BIS.222.0X0X safety barriers



*name, explosion protection of safety barriers are shown in the diagrams conditionally, marked according to order

TIK-BIS.3X3.0X0X safety barriers

Single or two-channel passive barriers without galvanic isolation



Description

Designed for the organization of explosion protection of the IEPE interface.

The barriers provide explosion protection due to the limitation of electrical power in the communication circuits with sensors and other technical means located in the explosive zone.

No power is required to operate the barriers.

Specifications

Interface

Signal type	IEPE
Max. supply voltage, V	25.2
Number of channels	1/2
Galvanic isolation	no
SPD	yes / no

Explosion protection

Kind

Marking

- [Ex ia Ma] I (for TIK-BIS.3X3.0X01)
- [Ex ia Ga] IIC (for TIK-BIS.3X3.0X03)

Design features

Overall dimensions, mm	108x114x13
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

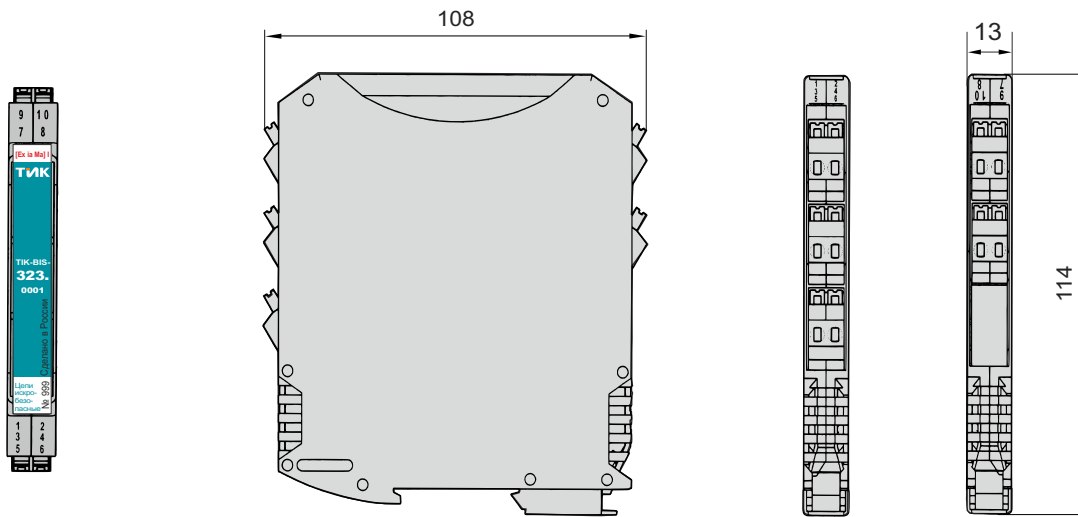
Operating temperature range, °C	-60...+60
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Reliability and manufacturer's warranties

MTBF, hours, not less than	150 000
Warranty service life, months	24
Service life, years, not less than	20

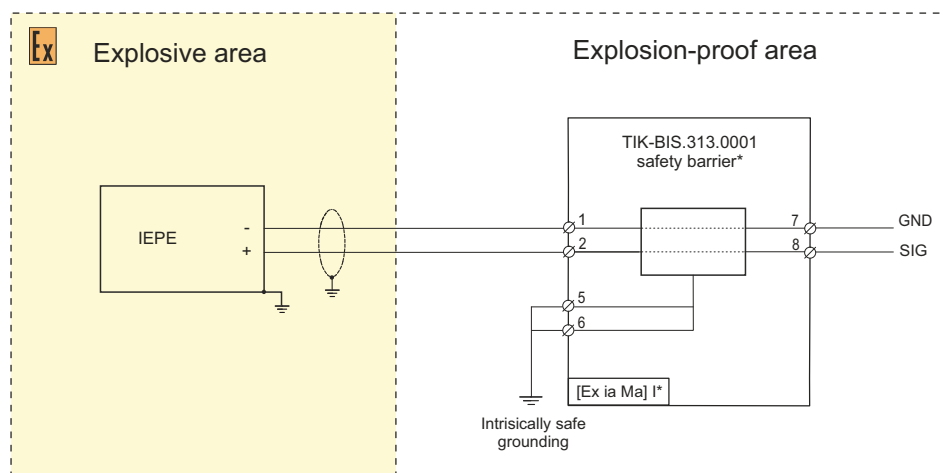


Design parameters

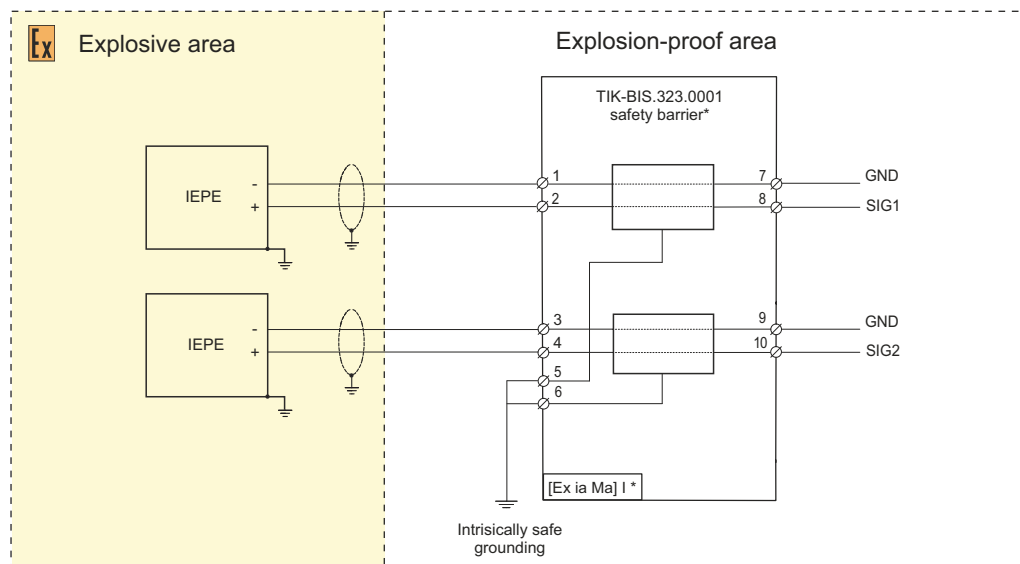


Connection schemes

Two-wire connection scheme of TIK-BIS.313.0X0X safety barriers



Two-wire connection scheme of TIK-BIS.323.0X0X safety barriers



*name, explosion protection of safety barriers are shown in the diagrams conditionally, marked according to order

TIK-BIS.414.000X safety barriers

Single-channel passive barriers without galvanic isolation



Can used in conjunction with DVAXX4.X sensors (power must be supplied through another barrier)

Description

Designed for the organization of explosion protection of the RS-485 interface. The barriers provide explosion protection due to the limitation of electrical power in the communication circuits with sensors and other technical means located in the explosive zone. No power is required to operate the barriers.

Specifications

Interface

Signal type	RS-485
Max. supply voltage, V	5.5
Number of channels	1
Galvanic isolation	no
SPD	no

Explosion protection

- Kind intrinsically safe circuit
- Marking
- [Ex ia Ma] I (for TIK-BIS.414.0001)
 - [Ex ia Ga] IIC (for TIK-BIS.414.0003)

Design features

Overall dimensions, mm	108x114x13
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

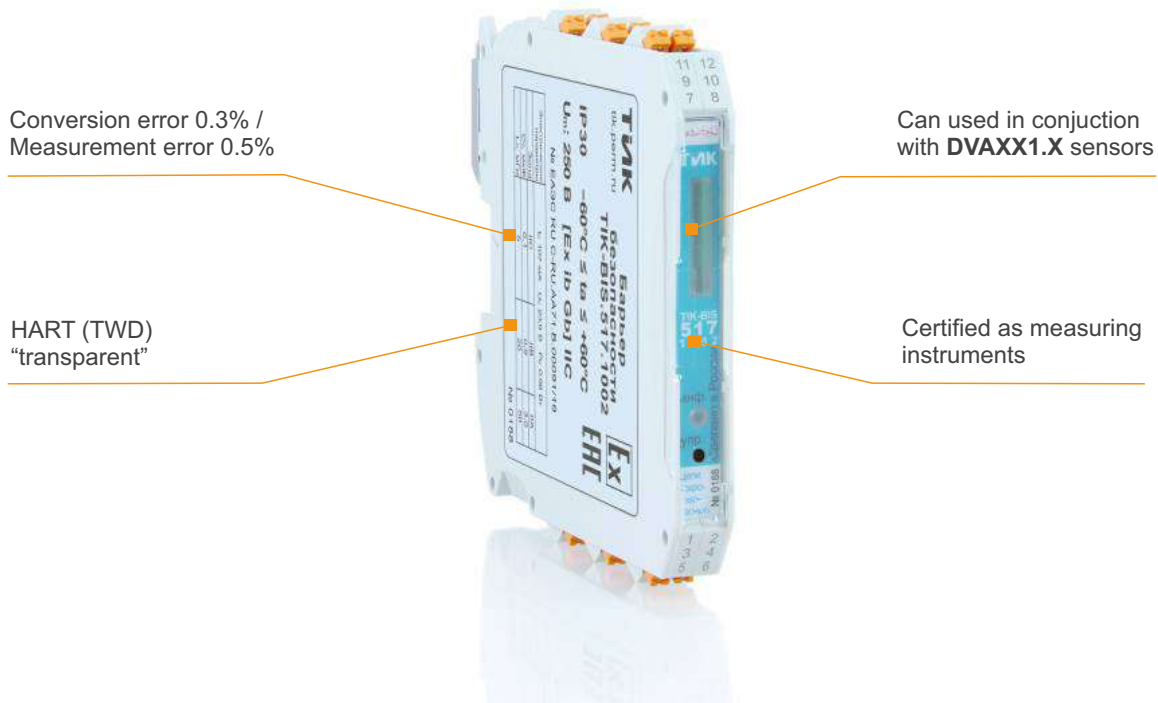
Operating temperature range, °C	-60...+60
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Reliability and manufacturer's warranties

MTBF, hours, not less than	150 000
Warranty service life, months	24
Service life, years, not less than	20

TiK-BIS.517.1002 safety barrier

Single-channel active barrier with galvanic isolation



Description

Designed for the organization of explosion protection of the “current loop” interface, current measurement and transmission of the obtained value through the RS-485 interface.

The barrier has an OLED indicator to display the parameters of the barrier and a three-color LED indicator to indicate the status of the channel.

The barrier provide long-term protection against short circuits of intrinsically safe circuits (automatically removed after eliminating the short circuit).

An external 24V±5% power supply is required for the operation of the barriers.

Specifications

Interface

Input signal type	4-20 mA “current loop”; TWD
Output signal type	4-20 mA “current loop”; RS-485
Supply voltage, V	22.8 - 25.2
Number of channels	1
Galvanic isolation	no
SPD	no

Design features

Overall dimensions, mm	108x114x13
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

Operating temperature range, °C	-60...+60
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Explosion protection

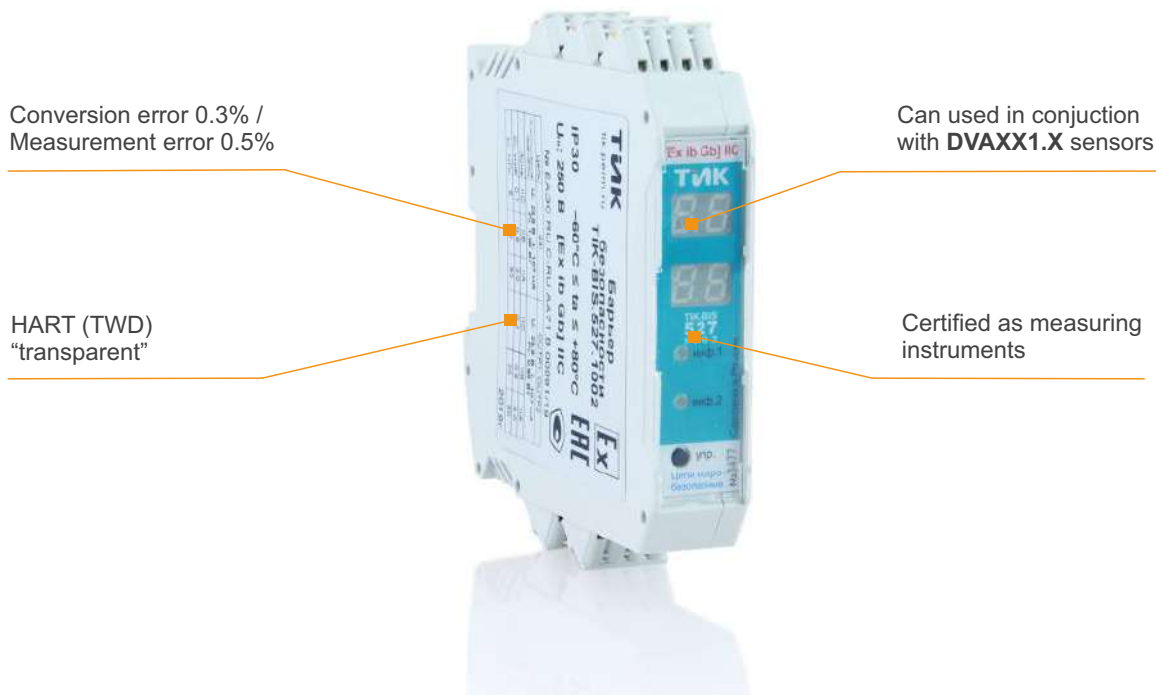
Kind	intrinsically safe circuit
Marking	[Ex ib Gb] IIC

Reliability and manufacturer’s warranties

MTBF, hours, not less than	150 000
Warranty service life, months	24
Service life, years, not less than	20

TIK-BIS.527.1002 safety barrier

Two-channel active barrier without galvanic isolation



Description

Designed for the organization of explosion protection of the “current loop” interface, current measurement and transmission of the obtained value through the RS-485 interface.

The barrier has two two-digit seven-segment indicators for displaying the parameters of the barrier and two three-color LED indicators for indicating the status of the channel.

The barrier provide long-term protection against short circuits of intrinsically safe circuits (automatically removed after eliminating the short circuit).

An external 24V±5% power supply is required for the operation of the barriers.

Specifications

Interface

Input signal type	4-20 mA “current loop”; TWD
Output signal type	4-20 mA “current loop”; RS-485
Supply voltage, V	22.8 - 25.2
Number of channels	2
Galvanic isolation	no
SPD	no

Design features

Overall dimensions, mm	118.5x114x23
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

Operating temperature range, °C	-60...+60
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Explosion protection

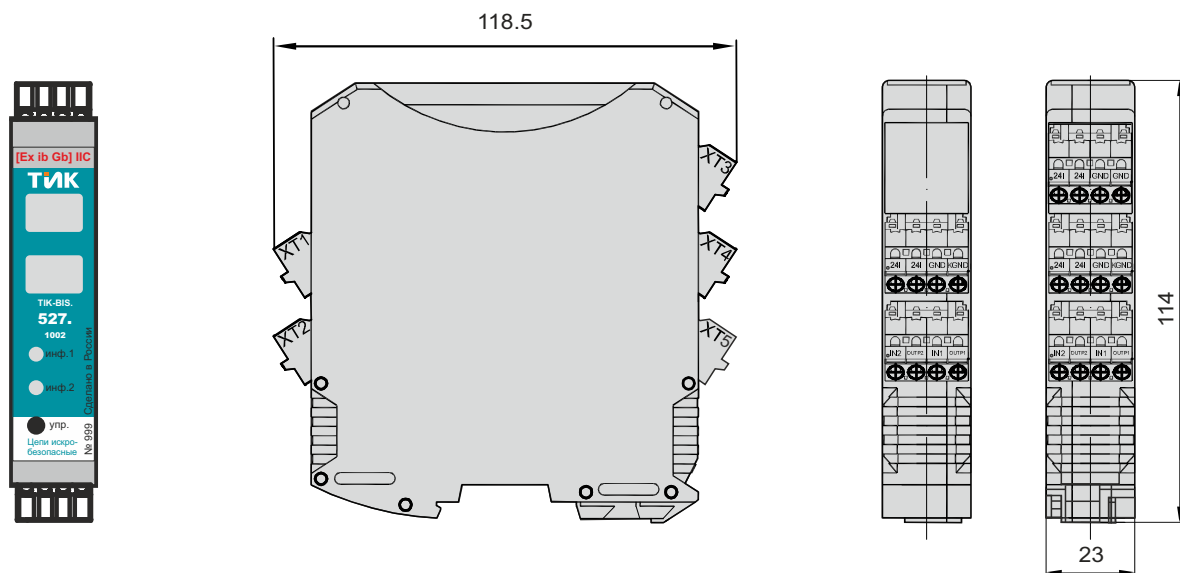
Kind	intrinsically safe circuit
Marking	[Ex ib Gb] IIC

Reliability and manufacturer’s warranties

MTBF, hours, not less than	150 000
Warranty service life, months	24
Service life, years, not less than	20

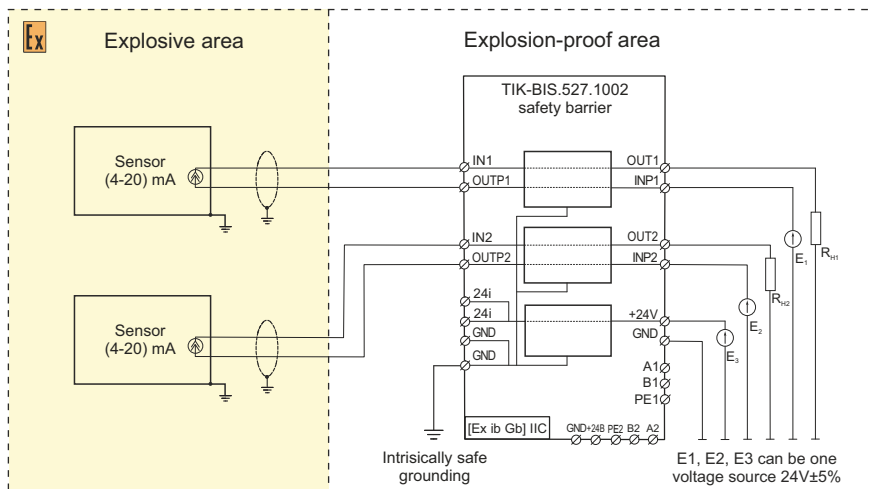


Design options

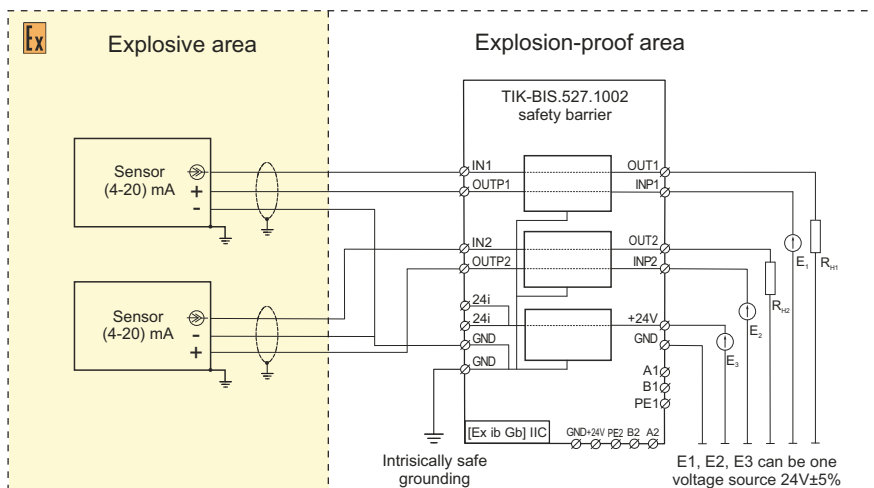


Connection schemes

Two-wire connection scheme for TIK-BIS.527.1002 safety barrier



Three-wire connection scheme of TIK-BIS.527.1002 safety barrier



TiK-BIS.616.1X1X safety barriers

Single-channel active barriers with galvanic isolation



Can used in conjunction with DVAXX4.X sensors

Description

Designed for the organization of explosion protection of the RS-485 interface and power line.

The barriers provide long-term protection against short circuits in intrinsically safe circuits (automatically removed after elimination of the short circuit).

The barriers provide explosion protection due to the limitation of electrical power in the communication circuits with sensors and other technical means located in the explosive zone.

An external 24V±5% power supply is required for the operation of the barriers.

Specifications

Interface

Signal type	RS-485; power line
Supply voltage, V	22.8 - 25.2
Supply voltage between A and B lines, V	5.5
Number of channels	1
Galvanic isolation	yes
SPD	yes / no

Explosion protection

Kind intrinsically safe circuit

Marking

- [Ex ia Ma] I (for TiK-BIS.616.1X11)
- [Ex ia Ga] IIC (for TiK-BIS.616.1X13)

Design features

Overall dimensions, mm	108x114x13
Weight, kg, not more than	0.2
Protection class	IP30
Mounting type	on DIN-rail

Performance

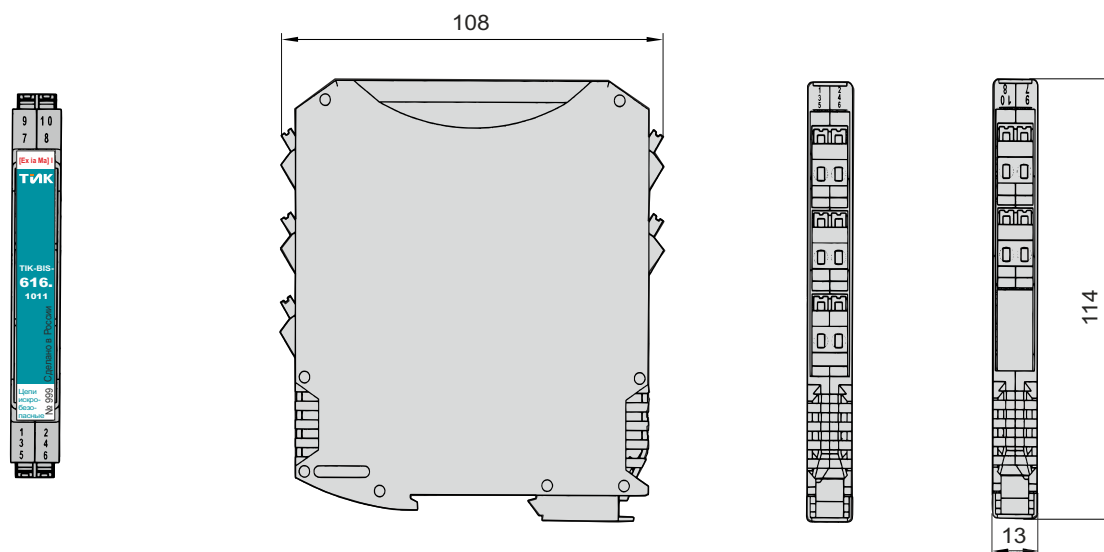
Operating temperature range, °C	-60...+60
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Reliability and manufacturer's warranties

MTBF, hours, not less than	150 000
Warranty service life, months	24
Service life, years, not less than	20

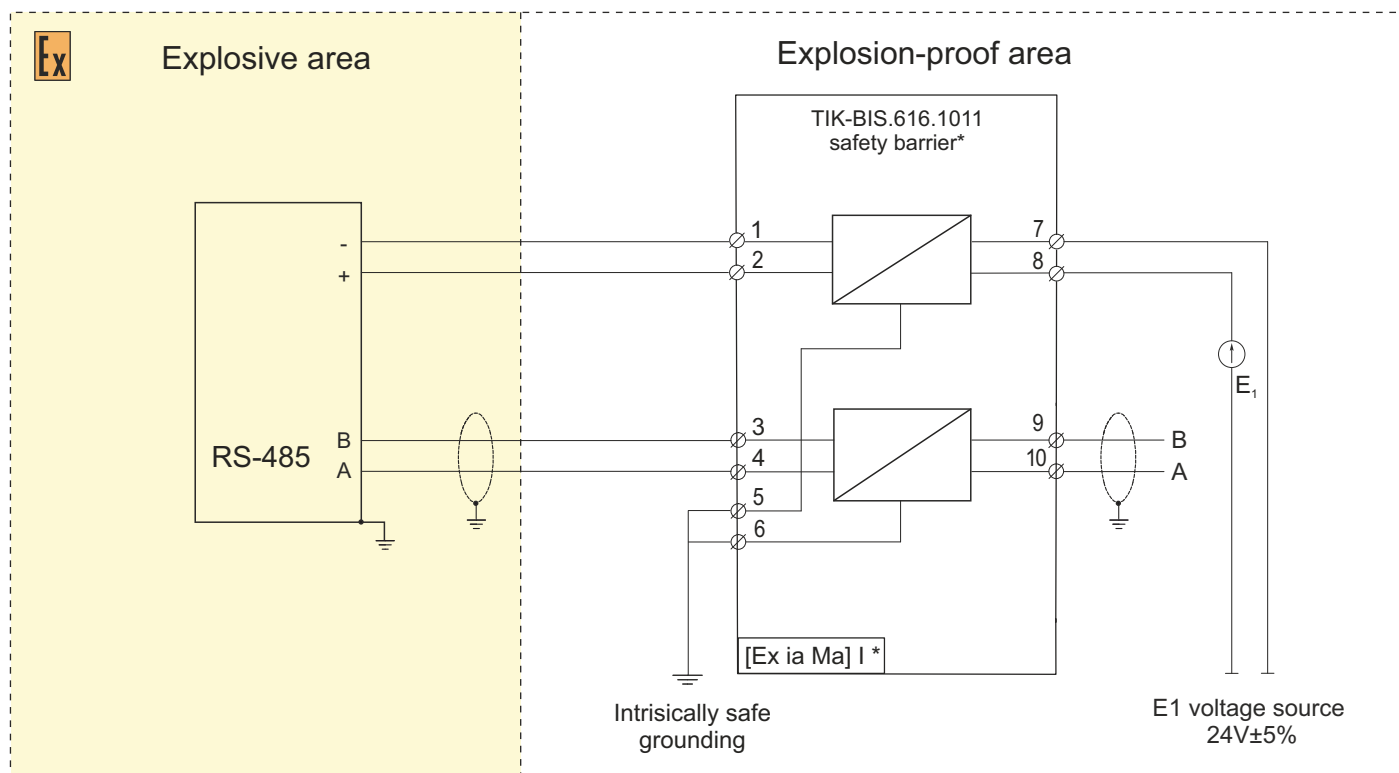


Design parameters



Connection schemes

Two-wire connection scheme of TIK-BIS.616.1X1X safety barriers



*name, explosion protection of safety barriers are shown in the diagrams conditionally, marked according to order

Approval documents

Type Approval Certificate No. 82188-21 for TIK-BIS.XXX.XXXX safety barriers



Certificate of conformity with TP TC 012/2011 "About safety of equipment for operation in explosive environments" for TIK-BIS.XXX.XXXX safety barriers, registration number of EEU RU C-RU.AA71.B.00091/19



Declaration of conformity of TP TC 020/2011 "Electromagnetic compatibility of technical devices" for TIK-BIS.XXX.XXXX safety barriers, registration number of EEU N RU D-RU.HB27.B.13862/20





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