

CUSTOMS UNION

CERTIFICATE OF CONFORMITY

EAC

№ TS RU C-DE.BH02.B.00020
Series RU No. 0325845

CERTIFICATION BODY for Ex-proof measurement instruments, control devices and automation elements FGUP "VNIIFTRI" (OS VSI "VNIIFTRI").

Location address: Russian Federation, 141570, Moscow Region, Solnechnogorsk district, workers settlement Mendeleyevo, Industrial Park VNIIFTRI, block 11;

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The accreditation certificate № RA.RU.11BH02 of 08.07.2015 is issued by Rosakkreditatsia

APPLICANT

Limited liability company "Dräger"

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MANUFACTURER

Dräger Safety AG&Co.KG&A (Germany) Address: Revalstrasse 1, 23560 Lübeck, Germany

PRODUCT

Gas detector Dräger Polytron 5100 of type ETR 0***

Engineering specifications of the manufacturer

Serial production

CODE TN VED TS 9027 10 100 0

MEETS THE REQUIREMENTS

of the Technical Regulations of the Customs Union TR TS 012/2011

"On safety of equipment intended for use in explosive atmospheres"

CERTIFICATE IS ISSUED ON THE BASIS OF

1. Test report No. 15.2041 of 03.08.2015
IL VSI "VNIIFTRI" (№ RA.RU.21IP09 of July 22, 2015)
2. Production status analysis report of 06.05.2014

ADDITIONAL INFORMATION

Conditions and periods of storage, service life - according to the manufacturer's operating manual. The Certificate is valid with 4 sheets of Ex-Annex.

Certification scheme 1c.

VALIDITY FROM 11.08.2015 10.08.2020 INCLUSIVE

SEAL **Head (authorized person) of certification body**

(Signature)

**Expert (auditor expert)
(Experts (auditor experts))**


(Signature)

G.E. Epikhina

(Initials, surname)

N.Yu. Miroshnikova

(Initials, surname)

aFGUP "VNIIFTRI" Certification Center of explosion proof measuring and control devices and automation components SC VSI "VNIIFTRI" The accreditation certificate OS № RA.RU.11BH02 of 08.07.15 The accreditation certificate IL № RA.RU.21IP09 of 22.07.15 141570, Moscow region, PO Mendeleyevo, tel./fax (495) 526-6303		
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Ex – ANNEX

to the Certificate of conformity **№ TS RU C-DE.BH02.B.00020**

Validity **from 11.08.2015 to 10.08.2020**

1 **Gas detector Dräger Polytron 5100 of type ETR 0*****

Code OK 005 (OKP) 43 7114
CODE TN VED TS 9027 10 100 0

2 **Ex marking**

1Exd[ia]IICT6/T4 X or 2Exde[ia]IICT6/T4 X, or Ex tD [ia] A21 IP6X T80 °C/T130 °C

3 **Manufacturer**

Dräger Safety AG&Co.KGaA (Germany)
Revalstrasse 1, 23560 Lübeck, Germany

4 **Conditions of use**

- 4.1 Gas detector Dräger Polytron 5100 of type ETR 0*** should be used according to assigned Ex-marking, requirements of TR TS 012/2011, GOST 30852.13-2002 (IEC 60079-12:1978), effective "Rules for electrical equipment installation" (PUE ch. 7.3), "Rules for Operation of Customer Electrical Installations" (PTEEP, ch. 3.4) and other normative documents regulating the usage of electrical equipment in hazardous areas, and the manufacturer's operating manual.
- 4.2 Allowed explosion-hazard zones for the usage of the gas detector, categories and groups of explosive mixtures of gases and vapours with air are according to the requirements of GOST 30852.9-2002 (IEC 60079-10:1995), GOST 30852.5-2002 (IEC 60079-4:1975) and "Electrical Installations Code" (PUE ch. 7.3).

Allowed explosion hazardous areas of dusty environments for the gas detector usage are according to GOST IEC 61241-3-2011.
- 4.3 The sign "X", located after the Ex-marking means that gas detector should be used with the cable glands, ensuring required level and type of Ex-protection, and the environment protection not less than IP6X according to GOST 14254-96.
- 4.4 Modifying the design of the gas detectors relating to explosion protection must be agreed with accredited testing organization.

5 Structure, versions and specification of device

Certificate of conformity covers the gas detector Dräger Polytron 5100 of type ETR 0***. Gas detector includes electronic unit and electrochemical gas sensor, collected in single-module design.

6 Destination and intended use

Gas detector Dräger Polytron 5100 of type ETR 0*** is intended for continuous monitoring the concentration of toxic gases or oxygen in the air.

Gas detector Dräger Polytron 5100 of type ETR 0*** having Ex-marking 1Exd [ia] IICT6/T4 or 2Exde [ia] IICT6/T4 is classified as Ex-proof electrical equipment of group II according to GOST 30852.0-2002 and intended for use in explosion hazardous zones of rooms and external installations, according to assigned Ex-marking. Gas detector Dräger Polytron 5100 of type ETR 0*** having Ex-marking Ex tD A21 [ia] IP6X T80 °C/T130 °C is classified as electrical equipment intended for use in zones with the risk of combustion of combustible dust, according to assigned Ex-marking.

7 Main technical data

- 7.1 Explosive mixtures according to GOST 30852.5-2002 categories IIA, IIB, IIC
groups T1...T4/T6
- 7.2 Type of Ex-protection explosion-proof enclosure,
protection of "e" type,
intrinsically safe circuit of "ia" level
- 7.3 Type of Ex-protection according to GOST IEC 61241-0-2011 ... protection by enclosure of "tD" type
intrinsically-safe electric equipment of "iD" type
- 7.4 Ex marking according to GOST 30852.0-2002 1Exd[ia]IICT6/T4 or 2Exde[ia]IICT6/T4
- 7.5 Ex marking according to GOST IEC 61241-0-2011 Ex tD [ia] A21 IP6X T80°C/T130°C
- 7.6 Protection rating of enclosure according to GOST 14254-96 IP6X
- 7.7 Protection against electric shock according to GOST 12.2.007.0-75 class III
- 7.8 Power supply parameters
- Supply voltage, VDC no more than 30
 - Current consumption, mA no more than 350
- 7.9 Operating conditions
- Ambient temperature, °C
 - Temperature class T6 (80 °C) -60 ... +40
 - Temperature class T4 (135 °C) -60 ... +70
 - Atmospheric pressure, kPa..... 84 to 106,7
 - Relative air humidity at 35 °C, % up to 95
- 7.10 Overall dimensions, mm according to manufacturer's technical documentation
- 7.11 Mass, kg according to manufacturer's technical documentation

8 Description of structural components and Ex-protection means

8.1 Structurally, gas detector consists of electronic unit and sensor connected by thread. The envelope of electronic unit of gas sensor is made of metal and consists of a housing and cover. Gas detector can be fitted with input compartment, made of plastic (input compartment is fitted for gas detectors having Ex-marking 2Exde [ia] IICT6/T4 only). Envelope contains microprocessor unit and display. The envelope has threaded holes for fitting the cable glands and gas sensor. The cover of electronic unit has the viewing window.

Gas sensor has a polyamide enclosure of cylindrical shape. The end surface of enclosure has a thread to install the sensor in threaded hole of electronic unit. There is electrochemical cell inside the envelope. Sensor is supplied via intrinsically safe circuit.

8.2 Explosion protection of the gas detector Dräger Polytron 5100 of type ETR 0*** is provided by the following means.

8.2.1 Overpressure stability and explosion resistance of electronic unit envelope correspond to requirements of GOST 30852.1-2002 for electric equipment of subgroup IIC. Parameters of explosion-resistant connections of electronic unit envelope correspond to requirements of GOST 30852.1-2002 for electric equipment of subgroup IIC.

8.2.2 Electric leakage paths and clearances of terminal blocks of input compartment of electronic unit corresponds to requirements of GOST 30852.8-2002.

8.2.3 Intrinsic Safety of the sensor supply circuit is provided by IS barriers, providing the current and voltages limitation in normal and emergency operating conditions up to values, correspond to requirements of GOST 30852.10-2002 for electric circuits of subgroup IIC.

Electric load of elements, providing intrinsic safety, doesn't exceed 2/3 of corresponding rating values.

8.2.4 Gas detectors Dräger Polytron 5100 of type ETR 0*** are provided with explosion protection against the dust ignition of "TD" and "iaD" type according to GOST IEC 61241-0-2011, GOST IEC 61241-1-1-2011 and GOST IEC 61241-11-2011.

Sealing and joints of structural components provide degree of protection not less than IP64 according to GOST 14254-96 and correspond to requirements of GOST IEC 61241-1-1-2011. Parameters of intrinsic safe circuits correspond to requirements of GOST IEC 61241-11-2011.

8.2.5 Maximum heating temperature of electronic unit envelope and sensor's elements as part of the gas detector does not exceed the values, allowed for the respective temperature class according to GOST 30852.0-2002.

8.2.6 Design of gas detector is made in consideration of General Requirements of GOST 30852.0-2002 for electrical equipment for explosion-hazard areas. Mechanical strength of the enclosures of electronic unit conforms to the requirements of GOST 30852.0-2002 for group II electrical equipment with high risk of mechanical damage. Structural materials provide frictional and electrostatic intrinsic safety according to GOST 30852.0-2002.

8.3 Electronic unit envelope has a table attached indicating explosion-proof marking and warnings.

9 Information about the tests

Results of checking the construction and of testing the gas detector Dräger Polytron 5100 of type ETR 0*** for compliance the parameters of explosion protection with requirements of TR TS 012/2011, GOST 30852.0-2002 (IEC 60079-0:1998), GOST 30852.1-2002 (IEC 60079-1:1998), GOST 30852.10-2002 (IEC 60079-11:1999), GOST 30852.8-2002, GOST IEC 61241-0-2011, GOST IEC 61241-1-1-2011, GOST IEC 61241-11-2011 are presented in Test report IL-VSI "VNIIFTRI" № 15.2041 of 03.08.2015.

Operational documentation for gas detector Dräger Polytron 5100 of type ETR 0*** provides the necessary instructions concerning installation conditions and safe operation.

10 Ex marking

Taking into account the results of the examination of technical and operational documentation, inspections and testing the design according to Ex protection and in accordance with the requirements of TR TS 012/2011, GOST 30852.0-2002 (IEC 60079-0:1998), GOST 30852.1-2002 (IEC 60079-1:1998), GOST 30852.10-2002 (IEC 60079-11:1999), GOST 30852.8-2002, GOST IEC 61241-0-2011, GOST IEC 61241-1-2011 IEC and GOST IEC 61241-11-2011, gas detector Dräger Polytron 5100 of type ETR 0 *** has received the explosion protection marking

**1Exd[ia]IICT6/T4 X or
2Exde[ia]IICT6/T4 X or
Ex tD [ia] A21 IP6X T80 °C/T130 °C**

Ex-protection mark applied on to equipment and specified in technical documentation of the manufacturer should contain special Ex-proof sign in accordance with Annex 2 of TR TS 012/2011 "On safety of equipment intended for use in explosive atmospheres".

11 List of documents containing information on explosion protection

- 11.1 Dräger Polytron 5100 Operating Manual
- 11.2 Dräger Polytron 5100 Certificate of Conformity PTB ATEX 11 1005 X
- 11.3 Test report of IL VSI "VNIIFTRI" No. 15.2041

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