



(1) **EU-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment or Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 11 ATEX 1005 X

Issue: 2

(4) Product: Gas detection transmitters ETR/ITR/XTR 0***, Remote Box RCU 0***

(5) Manufacturer: Dräger Safety AG & Co. KGaA

(6) Address: Revalstraße 1, 23560 Lübeck, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 19-19136.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC60079-0:2018; EN 60079-1:2014+AC:2018;

EN IEC 60079-7:2015+A1:2018; EN 60079-11:2012; EN 60079-31:2014

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

-  **II 2 G Ex db IIC T6/T4 Gb resp.**
-  **II 2 G Ex db eb IIC T6/T4 Gb resp.**
-  **II 2 D Ex tb IIIC T80°C/T130°C Db resp.**
-  **II 2G Ex db ia IIC T6/T4 Gb resp.**
-  **II 2G Ex db eb ia IIC T6/T4 Gb resp.**
-  **II 2 G Ex db [ia] IIC T6/T4 Gb resp.**
-  **II 2 G Ex db ia [ia] IIC T6/T4 Gb resp.**



(1)

EU-TYPE-EXAMINATION CERTIFICATE (Translation)



II 2 G Ex db eb [ia] IIC T6/T4 Gb resp.



II 2 G Ex db eb ia [ia] IIC T6/T4 Gb resp.



II 2 D Ex tb [ia] IIIC T135°C Db

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, December 10, 2019



Dr.-Ing. D. Markus
Direktor und Professor



(13)

SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 11 ATEX 1005 X, Issue: 2**

(15) Description of Product

The Gas detection transmitters ETR/ITR/XTR 0*** consist of three different types of sensor and interfaces. The Gas detection transmitter type ETR 0*** uses the electrochemical sensing principle, the Gas detection transmitter type ITR 0*** uses the infrared sensing principle and the Gas detection transmitter type XTR 0*** uses the catalytic sensing principle or infrared sensing principle with a catalytic sensor interface.

The Remote Box type RCU 0*** shall only be used with separate certified sensors. The sensor frontend (EC sensing head) of the ETR 0*** series comprises a galvanically separating barrier circuit (inside the flameproof enclosure) and intrinsically safe electronics located outside the flameproof enclosure as well as an electro-chemical resp. ultrasonic sensor - all of them being covered by this certificate. The sensors of the ITR 0*** and XTR 0*** series are covered by separate certifications, which are accepted under this certificate.

The internal electronics optionally covers the intrinsically safe fieldbus under consideration of the maximum FISCO input ratings applicable for the operation as both FISCO Field device or alternatively non- intrinsically safe fieldbus Modbus RTU.

The connection of the equipment is made on the one hand via direct cable entries into the flameproof enclosure (E,I,X)TR 0(2...5)*(0...F) or on the other hand via a terminal box of the increased safety type of protection (E,I,X)TR 0(2...5)*(I...X). For remote applications, the equipment can optionally be connected to the flameproof terminal box EAC 01**.

Nomenclature:

* TR 0 * * *
1 2 3 4

1: Sensing principle

E = electrochemical
I = infrared
X = catalytic

2: Series and enclosure material

2 = 02/03 aluminium enclosure
3 = 02/03 series, stainless steel enclosure
4 = 04/05 series, aluminium enclosure
5 = 04/05 series, stainless steel enclosure

sheet 3/7

EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 2

3: Sensor

ITR 0 * * *

3: Sensor

- 0 = IDS 0001
- 1 = IDS 0101
- 2 = IDS 0102
- 5 = IDS 0105

ETR 0 * * *

3: Sensor

- 0 = DrägerSensor or XS with Adapter
- 2 = Ultrasonic sensor

XTR 0 * * *

3: Sensor

- 0 = IDS 0002
- 1 = XDS 020*
- 2 = Ex-Sensor LC NPT

4: Interface

- 0 = "d", 4-20 mA
- 1 = "d", 4-20 mA with Relay
- 2 = "d", Modbus RTU
- A = "d"+"ia", Foundation Fieldbus
- B = "d"+"ia", Foundation Fieldbus SIF
- E = "d"+"ia", Profibus
- F = "d"+"ia", Profisafe
- I = "d"+"e", 4-20 mA
- J = "d"+"e", 4-20 mA with Relay
- K = "d"+"e", Modbus RTU
- S = "d"+"e"+"ia", Foundation Fieldbus
- T = "d"+"e"+"ia", Foundation Fieldbus SIF
- W = "d"+"e"+"ia", Profibus
- X = "d"+"e"+"ia", Profisafe

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 1005 X, Issue: 2

Nomenclature for Junction Box, type EAC 01 (remote sensor)**

EAC 01 $\frac{*}{1} \frac{*}{2}$

- 1: Enclosure material
0 = Aluminium enclosure
1 = Stainless steel enclosure
- 2: Not safety relevant

Nomenclature for Remote Box, type RCU 0***

RCU 0 $\frac{*}{1} \frac{*}{2} \frac{*}{3}$

- 1: Enclosure Material
2 = Aluminum
3 = Stainless Steel
- 2: Not safety relevant
- 3: Interface
0 = "d", 4-20 mA
1 = "d", 4-20 mA with Relay
2 = "d", Modbus RTU
A = "d"+"ia", Foundation Fieldbus
B = "d"+"ia", Foundation Fieldbus SIF
E = "d"+"ia", Profibus
F = "d"+"ia", Profisafe
I = "d"+"e", 4-20 mA
J = "d"+"e", 4-20 mA with relay
K = "d"+"e", Modbus RTU
S = "d"+"e"+"ia", Foundation Fieldbus
T = "d"+"e"+"ia", Foundation Fieldbus SIF
W = "d"+"e"+"ia", Profibus
X = "d"+"e"+"ia", Profisafe

The relation between ambient temperature and the assigned temperature class is as follows:

Table 1

Type	Ambient temperature range	Temperature class (Gas)	Max. surface temperature (Dust)
ITR 0*0* XTR 0*0*	-40 °C to +65 °C	T4	T130°C
All other ITR 0***-, XTR 0***- versions and RCU 0***	-40 °C to +80 °C	T4	T130°C
All versions	-40 °C to +40 °C	T6	T80°C
ETR 02/032*,	-40 °C to +70 °C	T4	T135°C

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Type	Ambient temperature range	Temperature class (Gas)	Max. surface temperature (Dust)
ETR 04/052*			
ETR 02/030*, ETR 04/050*	-40 °C to +70 °C	T4	T135°C
ETR 02/030*, ETR 04/050*	-40 °C to +40 °C	T6	T135°C

Electrical ratings:

Maximum supply wattage: P_{max} : 5 W

Supply:

ETR 02/03** series	10...30 VDC, 0.08...0.15 A
ITR 02/03** series	10...30 VDC, 0.1...0.75 A
XTR 02/03** series	10...30 VDC, 0.1...0.2 A
ETR 04/05** series	10...30 VDC, 0.1...0.35 A
ITR 04/05** series	10...30 VDC, 0.3...1.0 A
RCU 02/03** series	10...30 VDC, 0.3...1.0 A
XTR 04/05** series	10...30 VDC, 0.15...0.45 A
Relay	5A, 30 VDC or 230 VAC

Fieldbus circuit:

Field device as Fieldbus system in type of protection Intrinsic Safety Ex ia IIC; FISCO in acc. of IEC 60079-11, using only for the interface types A; B; E; F; S; T; W and X

Electrical data,
Maximum values:

Type	Voltage, U_i [VDC]	Current, I_i [mA]	Power, P_i [mW]
ETR 04** ETR 05** ITR 04** ITR 05** RCU 02** RCU 03** XTR 04** XTR 05**	17.5	380	5320

For the Gas detection transmitters series ETR ****

Sensor circuit: in type of protection Intrinsic safety Ex ia IIC / IIIC;
only for connecting DrägerSensor or XS with adapter or ultrasonic sensor

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Changes with respect to earlier issues

Update to newest standard versions.

The modifications include the internal assembly of the electronics used for the connection of external sensors.

Alternate connection of the ultrasonic sensor type LD05.21-*** to the galvanic insulator in the sensor enclosure.

(16) Test Report PTB Ex 19-19136

(17) Specific conditions of use

Repairs on the flameproof joints may only be made in accordance with the manufacturer's structural specifications. Repairs on the basis of the values in tables 1 and 2 of EN 60079-1 are not permitted.

The device variants incorporating a FISCO fieldbus interface as well as the Gas detection transmitter Type ETR 0*** must operate in circuits that are limited to overvoltage category I/II/III in accordance with IEC 60664-1 for FISCO field device operation.

Additional notes for installation and operation

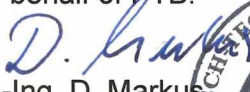
The reference between ambient temperature in dependence of the temperature class and the surface temperature has to be taken from table 1 of this certificate or the operating instructions.

Components that are attached or installed (terminal compartments, bushings, cable glands, connectors) but are not included in the type approval documents shall be of a technical standard that complies with the specifications on the cover sheet. They must be suited for the operating conditions and come with a separate examination certificate. The special conditions specified for the components shall be complied with and the components shall be included in the type test, if necessary. This equally applies to the components that have already been mentioned in the technical description.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:


Dr.-Ing. D. Markus
Direktor und Professor



Braunschweig, December 10, 2019