



(1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**



(3) EC-type-examination Certificate Number:

PTB 03 ATEX 2152 X

(4) Equipment: Sheathed resistance thermometer, type PT-100 Ex Typ 27-71...-3./...

(5) Manufacturer: BARTEC GmbH

(6) Address: Max-Eyth-Straße 16, 97980 Bad Mergentheim, Germany

(7) This equipment and any acceptable variation thereto are 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 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 03-22160 .

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 + A1 + A2 EN 50028:1987 EN 50281-1-1:1998

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

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

II 2 G EEx m II T6 and II 2D IP65 T80 °C

Zertifizierungsstelle Explosionsschutz

Braunschweig, September 17, 2003

By order:

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2152 X**

(15) Description of equipment

The sheathed resistance thermometer consists of a flexible mineral insulated cable of different lengths. A Pt-100 measuring resistor inside a rigid protective tube and a potted entry fitting with flexible connecting line are arranged at the cable ends. The temperature at the entry fitting shall not exceed 70 °C.

Electrical data

Maximum values of the signal circuit:

U = 6 V
I = 10 mA
P = 60 mW
max. 60 V
20 mm

Rated voltage:

Lowest bending radius of the sheathed cable:

(16) Test report PTB Ex 03-22160

(17) Special conditions for safe use

The sheathed resistance thermometer shall be operated in the signal circuit of an automatic electrical control unit.

It shall be guaranteed that the maximum permissible ambient temperature at the potted entry fitting is not exceeded.

For connection in the hazardous area, the connecting line shall be connected inside an enclosure which meets the requirements of an acknowledged type of protection in accordance with EN 50014 section 1.2 .

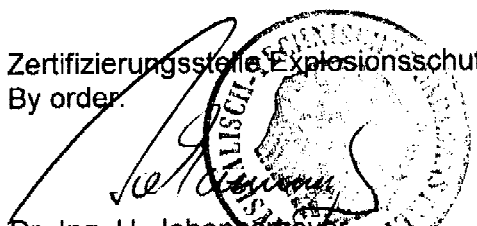
The resistance thermometer shall be included in the equipotential bonding measures of the system by using the yellow/green marked conductor.

The permissible range of the ambient temperature of -40 °C up to +70 °C depends on the type of the connecting line used.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
By order:


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



Braunschweig, September 17, 2003

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1. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2152 X

(Translation)

Equipment: Sheathed resistance thermometer PT-100 Ex type 27-71**.*3**/****

Marking:  II 2 G Ex mb II T6 and II 2 D Ex mbD 21 T80 °C

Manufacturer: BARTEC GmbH

Address: Max-Eyth-Straße 16, 97980 Bad Mergentheim, Germany

Description of supplements and modifications

The EC-type examination certificate for the sheathed resistance thermometer PT-100 Ex type 27-71**.*3**/**** is supplemented as follows:

1. Depending on the applied type of the connecting cable and its anti-kink device the permissible range of the ambient temperature is extended
to -50 °C up to +70 °C
or to -55 °C up to +70 °C respectively.
2. The metallic anti-kink device is connected firmly and electrically conductive with the body of resistance thermometer.
3. Instead of the marking label, a thermally shrinking marking sleeve may be affixed to the connecting cable alternatively.

All further specifications of the EC-type examination certificate as well as the "Special Conditions" apply without changes.

Applied standards

EN 60079-0:2004

EN 60079-18:2004

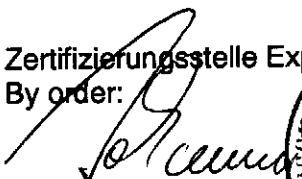
EN 61241-18:2004

prEN 61241-0:2004

Test report: PTB Ex 06-26105

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



Braunschweig, November 15, 2006

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EC-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.

2. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2152 X

(Translation)

Equipment: Sheathed resistance thermometer PT-100 Ex type 27-71**-*3**/****

Marking:  II 2 G EEx mb II T6 and II 2 D Ex mbD 21 T80 °C

Manufacturer: BARTEC GmbH

Address: Max-Eyth-Straße 16, 97980 Bad Mergentheim, Germany

Description of supplements and modifications

The sheathed resistance thermometer PT-100 Ex type 27-71**-*3**/**** has been revised according to the test specification stated below and according to the current state of technical knowledge. The previous specifications are substituted as follows.

Description of the equipment

The sheathed resistance thermometer Pt 100 Ex is used for the measurement of temperatures inside of hazardous areas of zone 1 and zone 21 where it is installed as stationary equipment. The installation length is chosen according to the length of the mineral-insulated sheathed cable so that a part of the junction sleeve and the connecting cable of the sheathed resistance thermometer are located outside of a thermal insulation.

The sheathed resistance thermometer is operated in the signal circuit of an electrical control device.

Design of the measuring sensor

Minimum length	300 mm
Diameter	3 mm
Minimum bending radius	30 mm
Rigid range of sensor tip	50 mm

Operating specifications

Rated voltage	60 V	AC/DC
Maximum permissible current	I_{max}	7 mA
Maximum permissible power		18 mW
Ambient temperature range at the entry fitting depending on the type of connecting cable		-50 °C up to +70 °C
Temperature range of the measuring point at the sensor tip		-70 °C up to +600 °C -200 °C up to +600 °C

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2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2152 X

Special conditions

1. The permissible ambient temperature range depends on the type of connecting cable used and shall be specified on the type label.
2. With the installation it shall be ensured that the maximum permissible ambient temperature of +70°C at the entry fitting cannot be exceeded.
3. The sheathed resistance thermometer shall be included in the local equipotential bonding system.
4. An insulation test with 500 V DC between conductor and outer sheath of the sheathed resistance thermometer shall be performed after installation.
5. Type 27-71*5-*3**/*
The sheathed resistance thermometer shall be operated with a limiting device that effectively limits the maximum permissible current I_{max} . The safety level of this limiting device shall at least comply with the requirements to category-2 equipment according to Directive 94/9/EC or it shall correspond to comparable safety levels from other applicable international standards.
6. Type 27-71*8-*3**/****
A fuse according to IEC 60127-2-1 with a nominal current of 50 mA shall be connected in series to the sheathed resistance thermometer. The breaking capacity of the fuse shall be the same as or higher than the maximum short-circuit current assumed to occur at the place of installation. The fuse may be accommodated in the associated control unit.

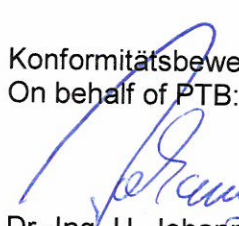
Applied standards

EN 60079-0:2012 + A11:2013, EN 60079-18:2015

Test report: PTB Ex 15-23129

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, January 6, 2016


Dr.-Ing. U. Johannsmeyer
Direktor und Professor

