



(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 04 ATEX 2075

(4) Equipment: Humidity measuring probe, type L16...

(5) Manufacturer: BARTEC GmbH

(6) Address: Schulstraße 30, 94239 Gotteszell, 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 04-22029 .

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997+A1+A2 EN 50020:2002 EN 50284:1999

(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 1/2 G EEx ia IIC T6 ... T3**

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, August 18, 2004


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



SCHEDULE

(13)

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2075

(15) Description of equipment

The humidity measuring probe, type L16... is part of a system for the humidity measurement of gases in pipings, containers or tanks in hazardous areas.

Category 1/2-equipment

The connection facilities are installed in hazardous areas, where an apparatus of category 2 is required. The glands are mounted into the partition which separates areas from each other where apparatus of category 2 or 1 are required. The sensor is installed in hazardous areas for category-1-equipment.

Category 2-equipment

The humidity measuring probes are installed in hazardous areas, where apparatus of category 2 are required.

Category 1/2-equipment

Electrical data

Optical waveguide for all types
(terminal 1 or 2)

Only for connection to an optical interface with the following specifications.

Maximum radiated optical power 15mW

e.g. terminal 1 or 2 of the analyzing and monitoring unit „Hygrophil F, type 5672-..“

Intrinsically safe Pt100-circuit
(terminals 1, 2, 3, 4)

Types L166x

type of protection Intrinsic Safety EEx ia IIC

For connection to a certified intrinsically safe circuit.

For relationship between temperature class and permissible maximum input power, reference is made to the following table:

temperature class	maximum input power P_i
T6	62 mW
T5	246 mW
T4	677 mW
T3	1.48 W

internal capacitance C_i negligibly low

internal inductance L_i negligibly low

sheet 2/4

Permissible ambient temperature T_a (atmospheric conditions) -20 bis +60 °C

For applications requiring category-1-equipment, the process pressure of the media shall range from 0.8 bar to 1.1 bar.

For operating conditions without explosive mixtures reference is made to the manufacturer's specifications.

Category 2-equipment

Electrical data

Optical waveguide for all types
(terminal 1 or 2)

Only for connection to an optical interface with the following specifications.

Maximum radiated optical power 15mW

e.g. terminal 1 or 2 of the analyzing and monitoring unit „Hygrophil F, type 5672-..“

Intrinsically safe Pt100-circuit
(terminals 1, 2, 3, 4)

type of protection Intrinsic Safety EEx ia IIC

For connection to a certified intrinsically safe circuit.

For relationship between temperature class and permissible maximum input power, reference is made to the following table:

temperature class	maximum input power P_i
T6	308 mW
T5	538 mW
T4	1.08 W
T3	2.08 W

internal capacitance C_i negligibly low

internal inductance L_i negligibly low

These values apply for a maximum ambient temperature of +60°C. For other ambient temperatures the maximum input power shall be calculated using the equation:

$$P_i = (T_{\text{temperature class}} - 5K - T_{a,\text{max}}) / 65 \text{ KW}$$


Permissible range of the ambient temperature T_a -50 up to +100 °C

For permissible operating temperatures and pressures reference is made to the manufacturer's specifications.

- (16) Test report PTB Ex 04-22029
- (17) Special conditions for safe use
none
- (18) Essential health and safety requirements
met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



Braunschweig, August 18, 2004

1. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2075

(Translation)

Equipment: Humidity measuring probe, type L16...

Marking:  II 1/2 G EEx ia IIC T6 ... T3

Manufacturer: BARTEC GmbH

Address: Schulstraße 30, 94239 Gotteszell, Germany

Description of supplements and modifications

The humidity measuring probe, type L16... may also be manufactured and operated according to the test documents listed in section 3 of the test report.

The modifications concern the mechanical structure.

All other specifications apply without changes.

Test report: PTB Ex 06-26026

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



Braunschweig, February 9, 2006

2. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2075

(Translation)

Equipment: Humidity measuring probe, type L16...

Marking:  II 1/2 G EEx ia IIC T6...T3

Manufacturer: BARTEC BENKE GmbH

Address: Schulstraße 30, 94239 Gotteszell, Deutschland

Description of supplements and modifications

The humidity measuring probes, type series L16... will be extended for the type L1661 and may be made and operated in accordance with the test documentation listed under section 3 of the test report.

Further modifications concern the name of the company, the test specification, the marking and the electrical data.

In future the name of the company is: BARTEC BENKE GmbH

The marking is changed as follows:

 II 1/2 G Ex ia IIC T6 Ga/Gb

Category 1/2-equipment

Electrical data

Optical waveguide for all types
(terminal 1 or 2)

Only for connection to an optical interface with the following specifications.

Maximum radiated optical power 15 mW

e.g. terminal 1 or 2 of the analyzing and monitoring unit „Hygrophil F, type 5672-...or 5673-...“(PTB 04 ATEX 2076).

Intrinsically safe Pt100-circuit
(terminals 1, 2, 3, 4)

Type series L166x

type of protection Intrinsic Safety Ex ia IIC

For connection to a certified intrinsically safe circuit.

$U_i = 10 \text{ V}$

Sheet 1/3

2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2075

For relationship between temperature class and permissible maximum input power, reference is made to the following table:

temperature class	maximum input power P_i
T6	62 mW
T5	246 mW
T4	677 mW
T3	1.48 W

internal capacitance C_i negligibly low
 internal inductance L_i negligibly low

Permissible ambient temperature range T_a (atmospheric conditions) -20 up to +60 °C

For applications requiring category-1-equipment, the process pressure of the media shall range from 0.8 bar to 1.1 bar.

For operating conditions without explosive mixtures reference is made to the manufacturer's specifications (allowed ambient temperature range -30 °C up to +60 °C, $P_{max} = 250$ bar)

Category 2-equipment

Electrical data

Optical waveguide for all types
 (terminal 1 or 2)

Only for connection to an optical interface with the following specifications.

Maximum radiated optical power 15 mW

e.g. terminal 1 or 2 of the analyzing and monitoring unit „Hygrophil F, type 5672-.. or 5673-..“ (PTB 04 ATEX 2076).

Intrinsically safe Pt100-circuit
 (terminals 1, 2, 3, 4)

Type series L166x

type of protection Intrinsic Safety Ex ia IIC

For connection to a certified intrinsically safe circuit.
 $U_i = 10$ V

For relationship between temperature class and permissible maximum input power, reference is made to the following table:

temperature class	maximum input power P_i
T6	308 mW
T5	538 mW
T4	1.08 W
T3	2.08 W

internal capacitance C_i negligibly low
 internal inductance L_i negligibly low

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2075

These values apply for a maximum ambient temperature of +60 °C. For other ambient temperatures the maximum input power shall be calculated using the equation:

$$P_i = (T_{\text{temperature class}} - 5K - T_{a,\text{max}}) / 65 \text{ KW}$$

Permissible range of the ambient temperature T_a -50 up to +100 °C

For permissible operating temperatures and pressures reference is made to the manufacturer's specifications ($P_{\text{max}} = 250 \text{ bar}$).

Applied standards

EN 60079-0:2009, EN 60079-11:2007, EN 606079-26:2007

Assessment and test report: PTB Ex 10-29178

Zertifizierungssektor Explosionsschutz
By order:

Braunschweig, July 23, 2010

Dr.-Ing. U. Johannsmeyer
Direktor und Professor



3. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2075

(Translation)

Equipment: Humidity measuring probe, type L16..

Marking:  II 1/2 G Ex ia IIC T6 Ga/Gb

Manufacturer: Bartec Benke GmbH

Address: Schulstraße 30, 94239 Gotteszell, Deutschland

Description of supplements and modifications

The humidity measuring probes, type L16.. may also be manufactured and operated according to the test documents listed in section 3 of the test report.

The modifications concern to the applied standards an the internal construction.

All other specifications apply without changes.

Applied standards

EN 60079-0:2012, EN 60079-11:2012, EN 60079-26:2007

Test report: PTB Ex 13-20294

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, June 6, 2013


Dr.-Ing. U. Johannsmeyer
Direktor und Professor



Sheet 1/1