



**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 2021**
- (4) Equipment: Multi-barrier, type MBD...
- (5) Manufacturer: Hans Turck GmbH & CO KG
- (6) Address: Witzlebenstraße 7, 45472 Mülheim an der Ruhr, 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 04-23389.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 50014:1997 + A1 + A2    EN 50020:2002    EN 50019:2000**  
**EN 50028:1987**
- (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(1G/D)G EEx m e [ia] IIC T4**

Zertifizierungsstelle Explosionsschutz Braunschweig, March 9, 2004

By order:

(signature)

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor

**3 pages, correct and complete as regards content.**  
By order:  
  
Dr.-Ing. Johannsmeyer  
Direktor und Professor



sheet 1/3

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.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

**SCHEDULE**

- (13)
- (14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2021**

(15) Description of equipment

The multi-barrier, type MBD... is used in the hazardous area for the distribution of energy and for the bi-directional transmission of fieldbus signals in fieldbus systems according to IEC 61158-2.

The multi-barrier is supplied by a fieldbus of type of protection Increased Safety. The safe electrical isolation is provided internally between the encapsulated supply module and the also encapsulated output modules with intrinsically safe bus outputs.

The permissible range of the ambient temperature is: -20 °C up to 70 °C.

The type of protection of the equipment is: **II 2(1G/D)G EEx m e [ia] IIC T4**

Electrical data

Supply ..... type of protection Increased Safety EEx e  
(terminals + and -) < 32 V DC, < 10 A, approx. 6.5 W  
Maximum voltage U<sub>m</sub> = 253 V AC

Shield connection ..... only for connection of the cable shields  
(terminal S) connected to PA through a capacitor ≤ 1 nF

connection bolt ..... only for connection of the equipotential bonding conductor

Output circuits..... type of protection Intrinsic Safety EEx ia IIC/IIB  
(terminals +, -, S)..... Maximum values per circuit:

U<sub>o</sub> = 14.3 V  
I<sub>o</sub> = 268 mA  
P<sub>o</sub> = 958 mW  
R = 53.3 Ω  
C<sub>i</sub> ≈ 0  
L<sub>i</sub> ≈ 0

linear output characteristic

FISCO-supply units according to TS 60079-27

The shield terminal of each output circuit is connected to PA through an RC-element (capacitor, 1 nF and resistor, 470 kOhm)

sheet 2/3

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.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

The intrinsically safe outputs are safely electrically isolated from the supply up to a peak value of the nominal voltage of 375 V. The intrinsically safe outputs are safely electrically isolated from each other up to a peak value of the nominal voltage of 60 V.

(16) Test report PTB Ex 04-23389

(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:

Braunschweig, March 9, 2004

(signature)

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor

sheet 3/3

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.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig



## Konformitätserklärung Nr. 3143M Declaration of Conformity

Diese Konformitätserklärung entspricht der Europäischen Norm EN 45014 "Allgemeine Kriterien für Konformitätserklärungen von Anbietern". Die Grundlage der Kriterien sind internationale Dokumente, insbesondere ISO/IEC Leitfaden 22, 1982: "Information on manufacturer's declaration of conformity with standards or other technical specifications".

This "Declaration of Conformity" complies with the European Standard EN 45014 "General criteria for a supplier's declaration of conformity". These criteria are based on the relevant international documentation, particularly the ISO/IEC Guide 22, 1982: "Information on the manufacturer's declaration of conformity with standards or other technical specifications".

Wir/ We HANS TURCK GMBH & CO KG  
WITZLEBENSTR. 7, D - 45472 MÜLHEIM A.D. RUHR

erklären in alleiniger Verantwortung, dass die Produkte  
declare under our sole responsibility that the products

Multibarriere Typ MBD...

auf die sich die Erklärung bezieht, mit den folgenden Normen übereinstimmen  
to which this declaration relates are in conformity with the following standards

EN 61000-6-2 / 2002  
EN 61000-6-4 / 2002

und wo anwendbar  
and where applicable

EN 50014 + A1 +A2 / 1997 EN 50020 / 2002 EN50019 / 2000  
EN 50028 / 1987

Gemäß den Bestimmungen der Richtlinie (falls zutreffend)  
Following the provisions of Directive (if applicable)

|                      |                       |                |               |
|----------------------|-----------------------|----------------|---------------|
| EMV - Richtlinie     | / EMC Directive       | 89 / 336 / EWG | 3. Mai 1989   |
| Richtlinie ATEX 100a | / Directive ATEX 100a | 94 / 9 / EG    | 23. März 1994 |

Weitere Normen  
additional standards

Aussteller der EG-Baumusterbescheinigung:  
Physikalisch - Technische Bundesanstalt  
Bundesallee 100, D-38116 Braunschweig  
Kenn-Nr. 0102, Registriernummer: PTB 04 ATEX 2021

Mülheim, den 23.04.04

(i.V. W. Stoll)

Ort und Datum der Ausstellung /  
Place and date of issue

Name und Unterschrift des Befugten /  
Name and signature of authorized person

**1. SUPPLEMENT**

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 04 ATEX 2021

(Translation)

Equipment: Multi-barrier, type MBD...

Marking: II 2(1G/D)G EEx m e [ia] IIC T4

Manufacturer: Hans Turck GmbH & Co KG

Address: Witzlebenstraße 7, 45472 Mülheim an der Ruhr, Germany

Description of supplements and modifications

The electrical data are extended for the use in the entity-model.

Output circuits  
(terminals X1 +, X1 -,X1 shield,  
terminals X2 +, X2 -,X2 shield,  
terminals X3 +, X3 -,X3 shield,  
terminals X4 +, X4 -,X4 shield)

type of protection Intrinsic Safety EEx ia IIC/IIB (entity-concept)

Maximum values per circuit:

- U<sub>o</sub> = 14.3 V
- I<sub>o</sub> = 268 mA
- P<sub>o</sub> = 958 mW
- R<sub>i</sub> = 53.3 Ω
- C<sub>i</sub> negligibly low
- L<sub>i</sub> negligibly low
- Linear output characteristic

| EEx ia                     | IIC    | IIB    |
|----------------------------|--------|--------|
| Inductance L <sub>o</sub>  | 0.5 mH | 2 mH   |
| Capacitance C <sub>o</sub> | 430 nF | 1.7 μF |

The shield terminal of each output circuit is connected to the equipotential bonding system through an RC-element (capacitor 1nF and resistor 470 kOhm).

The other electrical data apply without changes.

Sheet 1/2

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.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig, Germany

Zertifizierungsstelle Explosionsschutz

By order:

Dr.-Ing. U. Johannsmeyer  
Direktor und Professor



Braunschweig, March, 12, 2007

Sheet 2/2

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.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig, Germany