



(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 00 ATEX 2162



(4) Equipment: Gateway, type GDP1,5
(5) Manufacturer: Hans Turck GmbH & Co. KG
(6) Address: 45472 Mülheim a.d. 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 01-20143.

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

EN 50014:1997 + A1 + A2 EN 50020:1994 EN 50039:1980

(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 SYST EEx ib IIC T4**

Zertifizierungsstelle Explosionsschutz

Braunschweig, April 18, 2001

By order:

(signature)

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

4 pages, correct and complete as received content.
By order:

Dr.-Ing. Johannsmeyer
Direktor und Professor



Braunschweig, June 29, 2005

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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.

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(13)

SCHEDULE

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2162**

(15) Description of equipment

The gateway, type GDP1,5 is used to connect the remote I/O-fieldbus system excom to Profibus networks by means of an RS 485 interface. The gateway, type GDP1,5 forms part of the fieldbus system excom according to the separate examination certificate PTB 00 ATEX 2194 U. The gateway, type GDP1,5 can be plugged and operated in the module subrack with backplane of the remote I/O-fieldbus system excom. The degree of protection IP20 is safeguarded in combination with the module's housing.

The maximum permissible range of the ambient temperature is -20 °C up to +60 °C.

Electrical data

I.) AC-supply circuit

type of protection Intrinsic Safety EEx ib IIC / IIB
only for connection to the certified intrinsically safe circuit according to PTB 00 ATEX 2194 U.

Maximum values:

U = 20 V AC (amplitude)

f = 300 kHz ... 314 kHz

P = 2.8 W (power consumption)

C_i negligibly low

L_i negligibly low

The intrinsically safe AC-supply circuit is safely electrically isolated from ground and - up to a peak value of the nominal voltage of 60 V - from all other intrinsically safe circuits.

II.) Signal circuit (CAN-BUS)

(exclusively system-internal circuit, no external connection facilities)

III.) Address encoding, internal communication, psu-monitoring

(exclusively system-internal circuits, no external connection facilities)

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IV.) RS 485 Fieldbus connector type of protection Intrinsic Safety EEx ib IIC/IIB

(via D-SUB connection socket on system module subrack)

Maximum values:
 $U_o = 3.72 \text{ V}$
 $I_o = 157 \text{ mA}$
 $P_o = 146 \text{ mW}$
 characteristic: linear
 $U_i = 3.75 \text{ V}$

External RS 485 Fieldbus system type of protection Intrinsic Safety SYST EEx ib IIC/IIB

Maximum value for each pair of terminals:
 $U_i = 3.75 \text{ V}$

Maximum value for all pairs of terminals in total:
 $I_i = 2.66 \text{ A}$

Cables

Cable, type A or B acc. to EN 50039 with the following reactances per unit length:
 $L'/R' \leq 28.5 \text{ } \mu\text{H} / \Omega \text{ (loop resistance)}$
 $C' \leq 250 \text{ nF / km}$

strand diameter $\geq 0.2 \text{ mm}$

lumped inductances and capacitances along the cable run of the external RS 485 fieldbus system are not permitted.

The intrinsically safe fieldbus terminal is safely electrically isolated from ground and from all other circuits of the fieldbus system, type excom.

Additional note

The maximum permissible external inductances and capacitances specified for the fieldbus terminals of the bus-sharing units of the external RS 485 fieldbus network do not apply within the scope of this system-certificate.

(16) Test report PTB Ex 01-20143

(17) Special conditions for safe use

cf. operating instructions

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(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionsschutz
 By order:

Braunschweig, April 18, 2001

(signature)

Dr.-Ing. U. Johannsmeyer
 Regierungsdirektor

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1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2162

1. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2162

(Translation)

Equipment: Gateway, type GDP1,5
 Marking:  II 2 G SYST EEx ib IIC T4
 Manufacturer: Hans Truck GmbH & Co. KG
 Address: 45472 Mülheim a. d. Ruhr, Deutschland

Description of supplements and modifications

The gateway, type GDP1,5 may also be operated with the "Electrical data" listed below. All further specifications remain without changes.

Electrical data

- VI.) RS 485 field bus terminals** type of protection Intrinsic Safety EEx ib IIC/IIB
 terminal posts: J3: 5 and 6 to
 D-SUB terminal socket on
 system mounting rack
 maximum values:
 $U_o = \pm 3.72 \text{ V}$
 $I_o = \pm 157 \text{ mA}$
 $P_o = 146 \text{ mW}$
 linear characteristic
 $U_i = \pm 4.2 \text{ V}$
- The RS 485 field bus terminal is safely electrically isolated from ground and from all other intrinsically safe circuits up to a peak value of the nominal voltage of 60 V.
- VII.) External RS 485 field bus system** type of protection Intrinsic Safety SYST EEx ib IIC/IIB
 D-SUB terminal socket on
 system mounting rack
 maximum value for each terminal pair:
 $U_i = \pm 4.2 \text{ V}$
 maximum value of total terminal pairs:
 $I_i = \pm 2.66 \text{ A}$
- Cables**
 cable type A resp. B according to EN 50039 with the
 following line reactances per unit length:

$L'/R' \leq 15 \mu\text{H} / \Omega$ (loop resistance)

$C' \leq 250 \text{ nF} / \text{km}$

strand diameter $\geq 0.2 \text{ mm}$

lumped inductances and capacitances are not permissible along the cable run of the external RS 485 field bus system.

Additional note

The values of the maximum permissible external inductance and capacitance at the field bus terminals of stations of the external RS 485 field bus system are not applicable within the scope of this system certificate.

Test report: PTB Ex 01-21392

Zertifizierungsstelle Explosionsschutz

By order:

Dr.-Ing. U. Johannsmeyer
 Regierungsdirektor



Braunschweig, October 29, 2001

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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.

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2. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 2162

(Translation)

Equipment: Gateway, type GDP1,5

Marking:  II 2 (1) G EEx ib [ia] IIC T4

Manufacturer: Hans Turck GmbH & Co. KG

Address: Witzlebenstr. 7, 45472 Mülheim an der Ruhr, Germany

Description of supplements and modifications

The Gateway, type GDP1,5 will be equipped with a modified housing. In future it may also be manufactured in accordance with the test documents listed in the test report.

The circuitry and the layout are adopted without modification.

In future the modified variant of the equipment will be marked with the following type designation:

8/GDP1,5

The electrical data and all other specifications apply without changes also for this 2nd supplement.

Test report: PTB Ex 04-24275

Zertifizierungsstelle Explosionschutzes
By order:



Dr.-Ing. U. Johannsmeyer
Regierungsdirektor

Braunschweig, August 12, 2004

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Konformitätserklärung Nr. 3026 M
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

Feldbussystem Excom Gateway GDP1,5

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

EN 61326 / 1998; A1 / 1999
DIN EN 61010-1 / 1994

und wo anwendbar
and where applicable

EN 60947-5-2 / 1997
EN 50014 + A1 +A2 / 1997 EN 50020 / 1994

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

EMV - Richtlinie / EMC Directive 89 / 336 / EWG 3. Mai 1989

Weitere Normen
additional standards
EN 50039 / 1980

Aussteller der EG-Baumusterbescheinigung:

Physikalisch - Technische Bundesanstalt
Bundesallee 100, D-38116 Braunschweig
Kenn-Nr. 0102, Registriernummer: PTB 00 ATEX 2162

Mülheim, den 06.06.01

(ppa. F. Denk)

Ort und Datum der Ausstellung /
Place and date of issue

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

Form/L 04/12/01.03.01/KONFORMITÄTSEKRLÄRUNG.DOT

06.06.01/3026M.doc