



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx PTB 13.0037

Issue No: 0

Certificate history:

Issue No. 0 (2013-09-17)

Status: **Current**

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Date of Issue: **2013-09-17**

Applicant: **Hans Turck GmbH & Co. KG**
Witzlebenstr. 7
45472 Mülheim an der Ruhr
Germany

Equipment: **Excom Module Gateway, type GDP-IS...**

Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: Ex ib IIC T4 Gb or Ex ib IIC T4

*Approved for issue on behalf of the IECEx
Certification Body:*

Dr.-Ing. U. Johannsmeyer

Position:

Department Head "Intrinsic Safety and Safety of Systems"

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](#).

Certificate issued by:

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany





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Manufacturer: **Werner Turck GmbH & Co. KG**
Goethestr. 7
58553 Halver
Germany

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2007-10 Explosive atmospheres - Part 0: Equipment - General requirements
Edition: 5

IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition: 6.0

IEC 60079-25 : 2010-02 Explosive atmospheres – Part 25: Intrinsically safe electrical systems
Edition: 2.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[DE/PTB/ExTR12.0051/00](#)

Quality Assessment Report:

[DE/PTB/QAR06.0013/02](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Excom module Gateway, type GDP-IS... is used as an interface between the internal communication circuits of the Excom system and external RS485-IS-bus systems (Profibus DP). In addition, it provides system-internal connections to a second gateway intended for redundant operation, address circuits and Can-bus connections.

For further information see schedule.

SPECIFIC CONDITIONS OF USE: NO

Annex:

[C130037_00_schedule.pdf](#)



Schedule

The Excom module Gateway, type GDP-IS... is used as an interface between the internal communication circuits of the Excom system and external RS485-IS-bus systems (Profibus DP). In addition, it provides system-internal connections to a second gateway intended for redundant operation, address circuits and CAN-Bus connections.

The Gateway, type GDP-IS... is part of the Excom Fieldbus System certified under IECEx PTB 13.0040 U. It may be installed and operated in the module racks of types MT18..., MT9..., and MT5... with backplane of the remote I/O-Fieldbus System. In combination with the enclosure of the module the degree of protection IP20 is provided for.

The equipment is intended for application inside the hazardous area.

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

Electrical data

AC-supply circuit type of protection Intrinsic Safety Ex ib IIC
only for connection to the intrinsically safe
circuit according to IECEx PTB 13.0040 U

Maximum values:

$U = 20 \text{ V AC (Amplitude)}$

$f = 300 \text{ kHz ... 314 kHz}$

$P = 1 \text{ W (power consumption)}$

C_i negligibly low

L_i negligibly low

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

II.) Signal circuit (CAN-Bus)..... system-internal circuit
without facilities for external connections

IIIa.) Adress coding,..... system-internal circuit
internal communication without facilities for external connections

IIIb.) Internal communication system-internal circuit
between GW1 and GW2 without facilities for external connections

IV.) RS485-IS-Fieldbus terminal..... type of protection Intrinsic Safety Ex ib IIC
(via D-SUB connector
on system module rack, pins 3,5,6,8)

Maximum values:

$U_o = 3.6 \text{ V}$

$I_o = 125 \text{ mA}$

$P_o = 112.5 \text{ mW}$

linear characteristic

$U_i = 4.2 \text{ V}$



External RS485-IS-fieldbus terminal..... type of protection Intrinsic Safety Ex ib IIC

Maximum values for each pair of terminals: $U_i = 4.2 \text{ V}$

Maximum value, sum of all pairs of terminals: $I_i = 4.8 \text{ A}$

Cables (loop resistance)..... type of cable A or B acc. to IEC 60079-25
with the following parameters per unit
length:

$$L'/R' \leq 15 \quad \mu\text{H}/\Omega$$

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

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

Concentrated reactances in the cable run
of the external RS485-IS-fieldbus system
are not permitted.

The intrinsically safe Profibus DP, RS485-IS, 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.

Special conditions for safe use

None