IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

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

Certificate No.: **IECEx BVS 23.0025X** Page 1 of 3 Certificate history:

Status: **Current** Issue No: 0

Date of Issue: 2024-06-28

Applicant: **Hans Turck GmbH**
Witzlebenstraße 7
45472 Mülheim an der Ruhr
Germany

Equipment: **Media converters type FOCEN11Ex-2G und FOCEN11-3G**

Optional accessory:

Type of Protection: **Intrinsic Safety "i", Encapsulation "m", Optical Radiation "op is", Increased Safety "e"**

Marking: **FOCEN11Ex-2G**

Ex eb mb ib [ia Ga] [op is Ga] IIC T4 Gb
[Ex ia Da] [Ex op is Da] IIIC

FOCEN11-3G

Ex ec mc [op is Ga] IIC T4 Gc
[Ex op is Da] IIIC

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

Position: **Senior Lead Auditor, Certification Manager and officially recognised expert**

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
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Germany

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Manufacturer: **Hans Turck GmbH**
Witzlebenstraße 7
45472 Mülheim an der Ruhr
Germany

Manufacturing locations: **Hans Turck GmbH**
Witzlebenstraße 7
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Werner TURCK GmbH & Co. KG
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58553 Halver
Germany

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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2023 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:7.0

IEC 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

IEC 60079-28:2015 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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/BVS/ExTR24.0016/00

Quality Assessment Report:

DE/PTB/QAR06.0013/11

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Subject and Type

FOCEN11Ex-2G and FOCEN11-3G

Description of the equipment

FOCEN11Ex-2G media converter:

The media converter type FOCEN11Ex-2G has an intrinsically safe (ia) Ethernet interface (IS-100BASE-TX) and an intrinsically interface (transmitter and receiver).

The media converter type FOCEN11Ex-2G converts signals from an intrinsically safe Ethernet interface (IS-100BASE-TX) into intrinsically safe optical signals or signals from the intrinsically safe optical interface (op is) into signals for the intrinsically safe Ethernet interface. The Ethernet circuits may be laid up to Zone 0 for gas applications and up to Zone 20 for dust applications. Light may be emitted up to Zone 0 for gas applications and up to Zone 20 for dust applications.

If the fiber optic cable is connected to a FOCEN11-3G, these two devices are also used to convert non-intrinsically safe Ethernet signals to intrinsically safe Ethernet signals.

FOCEN11-3G media converter
The media converter type FOCEN11-3G has an Ethernet interface and an intrinsically safe optical interface (transmitter and receiver).

The media converter type FOCEN11-3G converts signals from an Ethernet interface into intrinsically safe optical signals or signals from the intrinsically safe optical interface into signals for the Ethernet interface. Light may be emitted up to Zone 0 for gas applications and up to Zone 20 for dust applications.

If the fiber optic cable is connected to a FOCEN11Ex-2G, these two devices are also used to convert non-intrinsically safe Ethernet signals to intrinsically safe Ethernet signals.

For both types
For Group III applications, the FOCEN11Ex-2G and FOCEN11-3G media converters are associated equipment for use outside potentially explosive atmospheres without additional measures. The Ethernet circuits are electrically isolated from the supply lines.

Listing of all components used referring to older standards

The media converters include no components.

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:
For use in potentially explosive gas atmospheres:
The FOCEN11Ex-2G and FOCEN11-3G media converters must be installed in an enclosure that has at least IP54 in accordance with EN IEC 60079-0.

Annex:

BVS_23_0025X_Hans Turck GmbH_Annex_1.pdf

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Certificate No.: **IECEx BVS 23.0025X**
Annex

Parameters

Electrical data

DC supply circuit

Supply terminal Pwr + and -	Type of protection Increased safety Ex eb IIC
Power supply	$U_{nominal}$ = 24 VDC (18...32 VDC)
	U_m = 40 VDC
Input current consumption	$I_{nominal}$ = 116 mA
Power consumption	$P_{nominal}$ = 2.8 W
Maximum Power consumption	$P_{max} \leq$ 3.8 W

The DC-supply circuit is safely electrically isolated from earth and from all other circuits.

IS-100BASE-TX Ethernet Interface (Intrinsically safe)
(only for media converter FOCEN11Ex-2G)

RJ45 socket X300	Type of protection Intrinsic safety
	Ex ia IIC resp. Ex ia IIIC
Maximum output voltage	U_o = 4.1 V
Maximum output current	I_o = 277 mA
Maximum output power	P_o = 283 mW
Linear output characteristics	
Effective internal capacitance	C_i negligible
Effective internal inductance	L_i negligible

The Ethernet interface may only be connected to devices with an identically designed interface: only to Turck IS-100BASE-TX Ethernet interfaces or interfaces approved by Turck with:

Maximum output voltage	U_o = 4.1 V
Maximum output current	I_o = 277 mA
Maximum output power	P_o = 283 mW

The following values apply to the connection cable:

Maximum cable length	100 m
Cable inductance	$L_c \leq$ 0.4 mH/km
Cable capacitance	$C_c \leq$ 52 nF/km

No concentrated external inductances or capacitances are permitted in the Ethernet-System.
The Ethernet interfaces are safely galvanically isolated from earth and from all other circuits of the media converter.

Optical interface

Transmitting diode	Type of protection op is
Wavelength	$\lambda_{nominal}$ = 1300 nm
Optical power (maximum)	$P_{opt,max}$ < 1 mW

Ethernet interface
(only for media converter FOCEN11-3G)

RJ45 socket X300	Type of protection increased safety ec IIC
Signal amplitude Output signal	$U_{nominal}$ = 3.3 V
	$U_{nominal,differential}$ = 1.0 V
Signal amplitude Input signal	$U_{nominal}$ = 3.3 V
	$U_{nominal,\ differential}$ = 1.0 V
	U_m = 40 V

Thermal data

Permissible temperature range at the place of installation of the media converter: T_a: -40 °C…70 °C