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 DEK 12.0046X**

Certificate history:
Issue 2 (2018-01-24)
Issue 1 (2015-10-30)
Issue 0 (2012-09-14)

Status: **Current**

Issue No: 3

Date of Issue: 2020-08-06

Applicant: **Endress+Hauser SE+Co. KG**
Hauptstraße 1
79689 Maulburg
Germany

Equipment: **Remote display, Model FHX50**

Optional accessory:

Type of Protection: **Ex i**

Marking: Ex ia IIC T6...T1 Ga
Ex ia IIIC T100 °C or T105 °C Db
Ex ic IIC T6...T1 Gc
Ex ic IIIC T100 °C or T105 °C Dc

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

Position: **Certification Manager**

Signature: (for printed version)

Date: 2020-08-06

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 www.iecex.com or use of this QR Code.

Certificate issued by:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
Netherlands

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Certificate No.: **IECEx DEK 12.0046X**

Date of issue: 2020-08-06 Issue No: 3

Manufacturer: **Endress+Hauser SE+Co. KG**
Hauptstraße 1
79689 Maulburg
Germany

Additional manufacturing locations: **Refer to Annex 1 for additional manufacturing locations**

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

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:

NL/DEK/ExTR12.0057/03

Quality Assessment Report:

DE/TUN/QAR06.0003/08

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

Remote Display Model FHX50 intended for use with transmitters of the ProToF platform or equivalent, to remotely provide display of the measurement values and configuration and control of the transmitter to which the display is connected.
The Remote Display is connected to the transmitter via a pluggable cable with a maximum length of 60 m as supplied by the manufacturer. A connection module is provided that is mounted inside the transmitter. This transmitter module is connected to the transmitter's display interface and may replace the internal display.
Alternate cables of different length may be used if the cable parameters comply with the electrical data.

The FHX50 remote display consists of a metal or polymeric enclosure, including a module for connection of the pluggable connection cable (receiver module) and a separately certified display unit complying with the specifications of the ProToF platform.

The Remote Display is provided with keys for local configuration and control.

The enclosure provides a degree of protection of at least IP20 according to IEC 60529.

SPECIFIC CONDITIONS OF USE: YES as shown below:
For applications in explosive atmospheres requiring equipment of EPL Ga or EPL Db, electrostatic charges on the non-metallic parts of the polymeric GF27 enclosure and the cable shall be avoided.

For applications in explosive atmospheres requiring equipment of EPL Ga in combination with aluminum Remote Display enclosure G327, sparks caused by impact and friction shall be avoided.

Equipment (continued):

Thermal data

-40 °C to +55 °C for temperature class T6, for polymeric enclosure,
-50 °C or -40 ºC to +60 ºC for temperature class T6, for metal enclosure,
-40 °C to +80 °C for temperature class T4, for polymeric enclosure
-50 °C or -40 ºC to +80 °C for temperature class T4, for metal enclosure.

The maximum surface temperature of the enclosure T100 °C (metal enclosure) respectively 105 °C (polymeric enclosure) is based on the maximum ambient temperature of 80 °C.

Electrical data

Supply and input circuit (connector X800 of transmitter module):
In type of protection intrinsic safety Ex ia IIC, Ex ia IIIC, Ex ic IIC or Ex ic IIIC, with following maximum values:
Ui = 7.3 V; Ii = 327 mA; Pi = 800 mW; Ci = 0 nF; Li = 0 µH, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]
Ui = 7.3 V; Ii = 90 mA; Pi = 540 mW; Ci = 0 nF; Li = 0 µH, when transmitter module is in combination with ProToF Mainboard with TRC[41]

Output circuit (connector X900, X901):
In type of protection intrinsic safety Ex ia IIC, Ex ia IIIC, Ex ic IIC or Ex ic IIIC, for connection of the remote display, with following maximum values:
Uo = 7.3 V; Io = 157 mA; Po = 362 mW; Co = 388 nF; Lo = 149 µH, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]
Uo = 7.3 V; Io = 90 mA; Po = 362mW; Co = 388 nF; Lo = 149 µH, when transmitter module is in combination with ProToF Mainboard with TRC[41]

Maximum allowed capacitance and inductance of the interconnection cable:
Cc ≤ 125 nF; Lc ≤ 149 µH.
The value of the parameters of the cable provided with the equipment are:
Cc ≤ 0.2 nF/m; Lc ≤ 1 µH/m.

Supply and input circuit remote display (connector X900, X901):
In type of protection intrinsic safety Ex ia IIC, Ex ia IIIC, Ex ic IIC or Ex ic IIIC, with following maximum values:
Ui = 7.3 V; Ii = 157 mA; Pi = 362 mW; Ci = 263 nF; Li = 0 µH, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]
Ui = 7.3 V; Ii = 90 mA; Pi = 362 mW; Ci = 263 nF; Li = 0 µH, when transmitter module is in combination with ProToF Mainboard with TRC[41]

Supply and output circuit (connector X400 of receiver module):
Uo = 7.3 V; Io = 157 mA; Po = 362 mW; Co = 0 nF; Lo = 0 µH, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]
Uo = 7.3 V; Io = 90 mA; Po = 362 mW; Co = 0 nF; Lo = 0 µH, when transmitter module is in combination with ProToF Mainboard with TRC[41]

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
1. Assessed per IEC 60079-0 Ed. 7

Annex:

224773900-Annex1.pdf

Annex 1 to Certificate of Conformity IECEx DEK 12.0046X

Manufacturing locations

1. Endress+Hauser SE+Co. KG
   Hauptstraße 1
   79689 Maulburg
   Germany

2. Endress+Hauser GmbH+Co. KG
   Miramstraße 87
   34123 Kassel
   Germany

3. Endress+Hauser (USA) Automation Instrumentation Inc.
   2340 Endress Place
   Greenwood, Indiana 46143
   USA

4. Endress+Hauser (Suzhou) Automation Instrumentation Co. Ltd.
   China-Singapore Industrial Park (SIP)
   Su-Hong-Zhong-Lu, No. 491
   Jiangsu Province, 215021 Suzhou
   China

5. Endress+Hauser (India) Automation Instrumentation Pvt. Ltd.
   M-192, Waluj
   Aurangabad - 431136
   Maharashtra State
   India

6. Endress+Hauser Yamanashi Co. Ltd.
   862-1, Sakaigawa-cho
   Fuefuki-shi
   406 0846 Yamanashi
   Japan

7 Endress+Hauser (Brasil),
   Instrumentação e Automação Ltda.,
   Avenida Antonio Sesti, 600, Itatiba/SP
   Brasil