

CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **DEKRA 12ATEX0151 X** Issue Number: **4**

(4) Product: **Remote Display Type FHX50**

(5) Manufacturer: **Endress+Hauser SE+Co. KG**

(6) Address: **Hauptstrasse 1, 79689 Maulburg, Germany**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number NL/DEK/ExTR12.0057/03.

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

EN IEC 60079-0 : 2018

EN 60079-11 : 2012

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:



II 1 G Ex ia IIC T6...T1 Ga
II 2 D Ex ia IIIC T100 °C or T105 °C Db

Date of certification: 6 August 2020

DEKRA Certification B.V.

R. Schuller
Certification Manager



(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate DEKRA 12ATEX0151 X**

Issue No. 4

(15) **Description**

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 in 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 EN 60529.

Ambient temperature range:

-40 °C to +55 °C for temperature class T6, for polymeric enclosure,

-50 °C or -40 °C to +60 °C for temperature class T6, for metal enclosure,

-40 °C to +80 °C for temperature class T4, for polymeric enclosure,

-50 °C or -40 °C 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 or Ex ia IIIC, with following maximum values:

$U_i = 7,3 \text{ V}$; $I_i = 327 \text{ mA}$; $P_i = 800 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ }\mu\text{H}$, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]

$U_i = 7,3 \text{ V}$; $I_i = 90 \text{ mA}$; $P_i = 540 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ }\mu\text{H}$, 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 or Ex ia IIIC, for connection of the remote display, with following maximum values:

$U_o = 7,3 \text{ V}$; $I_o = 157 \text{ mA}$; $P_o = 362 \text{ mW}$; $C_o = 388 \text{ nF}$; $L_o = 149 \text{ }\mu\text{H}$, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]

$U_o = 7,3 \text{ V}$; $I_o = 90 \text{ mA}$; $P_o = 362 \text{ mW}$; $C_o = 388 \text{ nF}$; $L_o = 149 \text{ }\mu\text{H}$, when transmitter module is in combination with ProToF Mainboard with TRC[41]

Maximum allowed capacitance and inductance of the interconnection cable:

$C_c \leq 125 \text{ nF}$; $L_c \leq 149 \text{ }\mu\text{H}$.

The value of the parameters of the cable provided with the equipment are:

$C_c \leq 0,2 \text{ nF/m}$; $L_c \leq 1 \text{ }\mu\text{H/m}$.

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate DEKRA 12ATEX0151 X**

Issue No. 4

Supply and input circuit remote display (connector X900, X901):

In type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, with following maximum values:
 $U_i = 7,3 \text{ V}$; $I_i = 157 \text{ mA}$; $P_i = 362 \text{ mW}$; $C_i = 263 \text{ nF}$; $L_i = 0 \text{ }\mu\text{H}$, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]

$U_i = 7,3 \text{ V}$; $I_i = 90 \text{ mA}$; $P_i = 362 \text{ mW}$; $C_i = 263 \text{ nF}$; $L_i = 0 \text{ }\mu\text{H}$, when transmitter module is in combination with ProToF Mainboard with TRC[41]

Supply and output circuit (connector X400 of receiver module):

$U_o = 7,3 \text{ V}$; $I_o = 157 \text{ mA}$; $P_o = 362 \text{ mW}$; $C_o = 0 \text{ nF}$; $L_o = 0 \text{ }\mu\text{H}$, when transmitter module is in combination with ProToF Mainboards with TRC[11;14;12;15]

$U_o = 7,3 \text{ V}$; $I_o = 90 \text{ mA}$; $P_o = 362 \text{ mW}$; $C_o = 0 \text{ nF}$; $L_o = 0 \text{ }\mu\text{H}$, when transmitter module is in combination with ProToF Mainboard with TRC[41]

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/DEK/ExTR12.0057/03.

(17) **Specific conditions of use**

For applications in an explosive atmospheres requiring equipment of category 1 G or 2 D, electrostatic discharges from the polymeric GF27 enclosure and the cable shall be avoided.

For applications in explosive atmospheres requiring equipment of category 1 G in combination with aluminum Remote Display enclosure G327, sparks caused by impact and friction shall be avoided.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR12.0057/03.

(20) **Certificate history**

Issue 1 - 215499600	initial certificate
Issue 2 - 218210500	change of the minimum ambient temperature from $-40 \text{ }^\circ\text{C}$ to $-50 \text{ }^\circ\text{C}$.
Issue 3 - 222382400	additional enclosure G327, changes to entity parameters, changes to ambient temperature range.
Issue 4 - 224773900	evaluation to EN IEC 60079-0 : 2018.