



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **KIWA 19ATEX0017X** Issue: **2**

4 Equipment: **Level Switch Liquiphant, model FTL41, FTL51B, FTL62 and FTL64 (and OEM versions OFTL41, OFTL51B, OFTL62 and OFTL64)**

5 Applicant: **Endress+Hauser SE+Co. KG**

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

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

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0: 2018	EN 60079-1: 2014	EN 60079-7: 2015 + A1: 2018
EN 60079-11: 2012	EN 60079-26: 2015	EN 60079-31: 2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 1/2G or 2G Ex db IIC T6...T1 Ga/Gb or Gb
II 1/2G or 2G Ex db eb IIC T6...T1 Ga/Gb or Gb
II 1/2D Ex ta/tb IIIC Tx °C Da/Db
II 2D Ex tb IIIC Tx °C Db
II 1G, 1/2G or 2G Ex ia IIC T6...T1 Ga, Ga/Gb or Gb
1/2G or 2G Ex db ia IIC T6...T1 Ga/Gb or Gb
II 1/2D or II 2D Ex ia IIIC Tx °C Da/Db or Db

Project Number 80070890

Signed: J Ensminger

Title: Certification Engineer

CSA Group Netherlands B.V.
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SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

KIWA 19ATEX0017X
Issue 2

13 DESCRIPTION OF EQUIPMENT

Liquid Level Switches Liquiphant, types FTL41, FTL51B, FTL62 and FTL64 (and OEM versions OFTL41, OFTL51B, OFTL62 and OFTL64) for use in explosive atmospheres caused by the presence of combustible gases, fluids, vapours or dusts, directly detect a liquid level by means of a symmetrical vibrating fork. The different electronic inserts in the transmitter enclosure, convert the fork frequency into an electrical signal.

The Liquid Level Switches Liquiphant are used for the measurement of the density or concentration of a process fluid, if provided with the electronics insert type FEL60D and connected to the Endress+Hauser Interface type FML621.

The enclosure is either a single electronics compartment version made of plastic, aluminium or stainless steel or a dual compartment version made of aluminium providing a separate electronics and a terminal compartment. The stainless-steel sensor is directly fitted to the enclosure.

Optionally the electronics compartment can be equipped with either a Bluetooth or an LED module in combination with a windowed cover.

For the type designation code, electrical or thermal data refer to Annex 1 to 3 on IECEx KIWA 19.0010X Issue 1.

Variation 1 - This variation introduced the following changes:

- i. Addition of a types FTL62 (coated (ECTFE, PFA non-conductive and conductive, Enamel) sensor version) and FTL64 (high temperature (HT) sensor version with sensor lengths up to 6 meter in type of protection Ex-d) (and OEM versions OFTL62 and OFTL64);
- ii. Addition of a -50 °C version with an alternative potting material
- iii. Addition of new O-ring Material (FPM) at position Probe to Enclosure and 2nd-Source Suppliers for Blind Plug/Cable Gland Position;
- iv. Addition of an alternative BT module version VU121 (VA13-01 extended with model code VA13-02) with a closed battery lid to allow a T6 classification (T4 classification was based on cell temperature);
- v. Change of electronic module FEL61 (not relevant for the type of protection (only used for Ex-d and Ex t));
- vi. Correction of typos in descriptive documents.
- vii. The report is also to facilitate the transfer of certificates KIWA 19ATEX0017X from Kiwa Nederland B.V., Unit Kiwa ExVision, Wilmersdorf 50, 7327 AC Apeldoorn, The Netherlands to CSA Group.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

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14.2 Associated Reports and Certificate History

Issue	Date	Report number	CommentR8
1	24 June 2019	161000594	The release of the prime certificate.
2	03 February 2021	R80070890A	This Issue covers the following changes: <ul style="list-style-type: none">• Transfer of certificate KIWA 19ATEX0017X from KIWA Nederland B.V. to CSA Group Netherlands B.V.• The introduction of Variation 1.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

- 15.1 The flameproof joints are not intended to be repaired.
- 15.2 The Liquid Level Switches Liquiphant shall be installed and maintained such that hazards caused by electrostatic discharge are excluded.
- 15.3 For Liquid Level Switches Liquiphant with an aluminium enclosure, when used as EPL Ga equipment, shall be installed in such a way that, even in the event of rare incidents, ignition sources due to impact and friction between the enclosure and iron or steel are excluded.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF MANUFACTURE

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 Each welded sensor and each cemented windowed cover shall be routine tested with at least 3.6 MPa (1.5 times reference pressure)
- 17.4 For type of protection Ex ia a dielectric test has to be performed in accordance with IEC 60079-11 clause 10.3 at a test voltage of 500 Vac for at least 60 seconds between both supply circuit and the enclosure.

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**Annex 2 to
Certificate of Conformity IECEx KIWA 19.0010X, issue 1
EU – Type Examination Certificate KIWA 19ATEX0017 X Iss. 2
and Test Report NL/KIWA/ExTR19.0011/01**

Electrical data

FEL42/62/62LT DC-PNP Electronic Insert

Pos.	Designation	Input	Load current
1.	Ex e ⁵⁾	U = 10 ... 55V DC ¹⁾²⁾ Pmax ≤ 0.5 W Imax= 10 mA	ILmax = ISCmax = 350 mA (incl. overload protection)
2.	Ex t ⁵⁾	U = 10 ... 55V DC ¹⁾²⁾ U = 10 ... 35V DC ¹⁾³⁾	
3.	Ex d	Pmax ≤ 0.5 W; ≤ 1.2 W ⁶⁾ Imax= 10 mA	

FEL44/64/64E/64LT Electronic Insert

Pos.	Designation	Input	Output
1.	Ex e ¹⁾⁵⁾	U = 19...253V AC ²⁾³⁾ / 50...60Hz Pmax 25 VA or U = 19...55V DC ²⁾³⁾ U = 19...35V DC ²⁾⁴⁾ Pmax = 1.3 W; ≤ 2.0 W ⁶⁾	2 potential free change over contacts (DPDT) Umax=253 V AC ^{2);3)} Imax=6 A Pmax=1500 VA; cosφ=1 Pmax= 750 VA; cosφ=0.7 or Umax=30 V DC Imax=6 A Umax=125 V DC ²⁾³⁾ Umax=35 V DC ²⁾⁴⁾ Imax=0.2 A
2.	Ex t	Refer to pos. 1.	
3.	Ex d	Refer to pos. 1.	

FEL64DC/64DC_E/64DC_LT Electronic Insert

Pos.	Designation	Input	Output
1.	Ex e ¹⁾⁵⁾	U = 9...20V DC ²⁾³⁾⁴⁾ Pmax = 1.0 W; ≤ 1.7 W ⁶⁾	2 potential free change over contacts (DPDT) Umax=253 V AC ^{2);3)} Imax=6 A Pmax=1500 VA; cosφ=1 Pmax= 750 VA; cosφ=0.7 or Umax=30 V DC Imax=6 A Umax=125 V DC ²⁾³⁾ Umax=35 V DC ²⁾⁴⁾ Imax=0.2 A
2.	Ex t	Refer to pos. 1.	
3.	Ex d	Refer to pos. 1.	

FEL61/61LT Electronic Insert

Pos.	Designation	Input	Load current
1.	Ex e ⁵⁾	U = 19...253 V AC ¹⁾	ILmax = ISCmax = 350 mA
2.	Ex t ⁵⁾	Pmax < 2 VA at ILmax	
3.	Ex d	Imax= 10 mA	

1) This rating is fully compatible with Ex nA acc. to EN/IEC 60079-15.

2) The range specified are maximum values which include 10% safety margin for typical power line variations.

3) Ambient temperature -50 °C... +70 °C

4) Ambient temperature -60 °C... +70 °C

5) Not applicable for ATEX Category 3 EU -Type Examination Certificate

6) When assembled with LED-Module

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FEL67 PFM Electronic Insert

Pos.	Designation	Input
1.	Ex i	U _i =14,6V I _i =100mA P _i =633mW C _i =3nF L _i =0μH
2.	Ex e ¹⁾⁵⁾	U _{nom} =12,5V DC ²⁾ U _m =250V P _{max} =100mW
3.	Ex t ⁵⁾	Refer to pos. 2.
4.	Ex d	Refer to pos. 2.

FEL48/68 NAMUR Electronic Insert

Pos.	Designation	Input
1.	Ex i	U _i = 16 V I _i = 52 mA P _i = 170 mW C _i = 30 nF L _i = N/A μH
2.	Ex e ⁵⁾	U _{nom} = 9.0 V DC ¹⁾ U _m = 250 V ²⁾
3.	Ex t ⁵⁾	Refer to pos. 2.
4.	Ex d	Refer to pos. 2.

FEL60D Density Electronic Insert

Pos.	Designation	Input
1.	Ex i	U _i = 27,6V I _i = 93mA P _i = 640mW C _i = 3nF L _i = 3μH
2.	Ex e ¹⁾⁵⁾	U _{nom} = 26V DC ²⁾ U _m = 250V P _{max} = 150mW
3.	Ex t ⁵⁾	Refer to pos. 2.
4.	Ex d	Refer to pos. 2.

1) This rating is fully compatible with Ex nA acc. to EN/IEC 60079-15.

2) The range specified are maximum values which include 10% safety margin for typical power line variations.

5) Not applicable for ATEX Category 3 EU -Type Examination Certificate

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LED Module

Pos.	Designation	Input
1.	Ex e ⁵⁾	Unom = 19..253 V AC ²⁾ ; 12..55 V DC ²⁾ P _{max} = < 6 VA; <0.7 W Um = 250 V
2.	Ex t ⁵⁾	Refer to pos. 1.
3.	Ex d	Refer to pos. 1.

BT Module

Pos.	Designation	Input
1.	Ex i	Ui = 10.0 V Ii = 16.0 mA ¹⁾ Pi = 40.0 mW Ci = N/A µF Li = N/A µH
2.	Ex e ⁵⁾	Unom = 3.3 V DC ²⁾ Um = 250 V
3.	Ex t ⁵⁾	Refer to pos. 2.
4.	Ex d	Refer to pos. 2.

1) This rating is fully compatible with Ex nA acc. to EN/IEC 60079-15.

2) The range specified are maximum values which include 10% safety margin for typical power line variations.

5) Not applicable for ATEX Category 3 EU -Type Examination Certificate