

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 24ATEX0011X** Issue Number: **0**

(4) Product: **Level Switch Liquiphant, types FTL41, FTL51B, FTL62, FTL63 and FTL64**

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

(6) Address: **Hauptstr. 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 mentioned in item (16).

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

EN IEC 60079-0 : 2018
EN 60079-11 : 2012

EN 60079-1 : 2014
EN 60079-26 : 2015

EN 60079-7 : 2015 + A1 : 2018
EN 60079-31 : 2014

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

Date of certification: 25 July 2024

DEKRA Certification B.V.

R. Schuller
Certification Manager



Throughout this document, a point is used as the decimal separator.

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(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate DEKRA 24ATEX0011X** Issue No. 0

(15) **Description**

Liquid Level Switches Liquiphant, types FTL41, FTL51B, FTL62, FTL63 and FTL64 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 a LED module in combination with a windowed cover.

For the type designation code, ambient temperature range and electrical data refer to Annex 1 and 2 of test report mentioned in item (16). For detailed thermal data refer to the instructions.

Installation instructions

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

(16) **Report Number**

NL/DEK/ExTR24.0013/00.

(17) **Specific conditions of use**

1. The flameproof joints are not intended to be repaired.
2. The risk of electrostatic discharge from Liquid Level Switches Liquiphant shall be minimized, see instructions.
3. When used as Group III equipment, only cable glands, thread adapters and blanking elements conforming to the requirements of IEC 60079-0 may be used with the apparatus.
4. 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.
5. The FTL63 with a sensor that is mechanically polished and installed in the boundary of EPL Ga/Gb or EPL Da/Db shall not be exposed to environmental conditions that could affect the partition.
6. For maximum surface temperature (temperature class), ambient temperature range and maximum process temperatures see safety instructions.

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

Covered by the standards listed at item (9).

Test documentation

As listed in test report mentioned in item (16).

Electrical data

FEL42/62/62LT DC-PNP Electronic Insert

Pos.	Designation	Input	Load current
1.	Ex e ¹⁾⁵⁾	U = 10...55 V DC ²⁾³⁾ Pmax ≤ 0.5 W Imax = 10 mA	ILmax = ISCmax = 350 mA (incl. overload protection)
2.	Ex t ¹⁾⁵⁾	U = 9.6...55 V DC ²⁾³⁾ U = 9.6...35 V DC ²⁾⁴⁾	
3.	Ex d	Pmax ≤ 0.5 W Imax = 10 mA	

FEL44/64/64E/64LT Electronic Insert

Pos.	Designation	Input	Output
1.	Ex e ¹⁾⁵⁾	U = 19...253 V AC ²⁾³⁾ / 50...60Hz Pmax 25 VA or U = 19...55 V DC ²⁾³⁾ U = 19...35 V 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		
3.	Ex d		

FEL64DC/64DC_E/64DC_LT Electronic Insert

Pos.	Designation	Input	Output
1.	Ex e ¹⁾⁵⁾	U = 9...20 V 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		
3.	Ex d		

FEL61/61LT Electronic Insert

Pos.	Designation	Input	Load current
1.	Ex e ¹⁾⁵⁾	U = 19...253 V AC ²⁾	ILmax = ISCmax = 350 mA
2.	Ex t ¹⁾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) Category 3 (EPL Gc) is not in the scope of ATEX EU-Type Examination Certificate DEKRA 24ATEX0011X

6) When assembled with LED-Module

FEL67 PFM Electronic Insert

Pos.	Designation	Input
1.	Ex i	U _i = 14.6 V I _i = 100 mA P _i = 633 mW C _i = 3 nF L _i = 0 μH
2.	Ex e ¹⁾⁵⁾	Unom = 12.5 V DC ²⁾ Pmax = 100 mW
3.	Ex t ¹⁾⁵⁾	
4.	Ex d	

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 = 0 μH
2.	Ex e ¹⁾⁵⁾	Unom = 9.0 V DC ²⁾
3.	Ex t ¹⁾⁵⁾	
4.	Ex d	

FEL60D Density Electronic Insert

Pos.	Designation	Input
1.	Ex i	U _i = 27.6 V I _i = 93 mA P _i = 640 mW C _i = 3 nF L _i = 3 μH
2.	Ex e ¹⁾⁵⁾	Unom = 26V DC ²⁾ Pmax = 150mW
3.	Ex t ¹⁾⁵⁾	
4.	Ex d	

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) Category 3 (EPL Gc) is not in the scope of ATEX EU-Type Examination Certificate DEKRA 24ATEX0011X

Thermal data

Ambient temperature range: -60 °C to +70 °C

Process temperature range: -60 °C to +300 °C

Note however for both ranges, that various restrictions apply depending on the Type designation.

The relation between ambient temperature, process temperature and temperature class and maximum surface temperature T respectively T₂₀₀ for the different models is listed in the safety instructions, provided with the equipment.