



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 24.0010X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2024-07-25

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

Equipment: **Level Switch Liquiphant, types FTL41, FTL51B, FTL62, FTL63 and FTL64**

Optional accessory:

Type of Protection: **Ex d, Ex e, Ex i, Ex nC and Ex t**

Marking: Ex db IIC T6...T1 Ga/Gb or Gb
Ex db eb IIC T6...T1 Ga/Gb or Gb
Ex ta/tb IIIC Tx °C Da/Db
Ex tb IIIC Tx °C Db
Ex tc IIIC Tx °C Dc
Ex ia IIC T6...T1 Ga, Ga/Gb or Gb
Ex db ia IIC T6...T1 Ga/Gb or Gb
Ex ia IIIC Tx °C Da/Db or Db
Ex ec IIC T6...T1 Gc
Ex ec nC IIC T6...T1 Gc

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

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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Hauptstraße 1
79689 Maulburg
Germany

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

Endress+Hauser (Suzhou)
Automation Instrumentation Co. Ltd.
Suzhou Industrial Park
491 Su Hong Zhong Road No.
Jiangsu Province
Suzhou 215021
China

Endress+Hauser (Brasil)
Instrumentação e Automação Ltda.
Estrada Municipal Antonio Sesti 600
Recreio Costa Verde
Itatiba - SP 13254-085
Brazil

See following pages for more 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 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

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

IEC 60079-15:2017 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

IEC 60079-26:2021 Explosive atmospheres - Part 26: Equipment with Separation Elements or combined Levels of Protection
Edition:4.0

IEC 60079-31:2022 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

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:

[NL/DEK/ExTR24.0013/00](#)

Quality Assessment Report:

[DE/TUN/QAR06.0003/11](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

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 an LED module in combination with a windowed cover.

For the type designation code and electrical data refer to Annex 1 and Annex 2.

For the thermal data refer to the safety instructions.

SPECIFIC CONDITIONS OF USE: YES as shown below:

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, see ExTR part IEC 60079-11 cl. 6.2.5.1 for further details.
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.
7. For Liquid Level Switches Liquiphant, when used as EPL Gc equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.



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Additional manufacturing locations:

**Endress+Hauser (USA) Automation
Instrumentation Inc.**
2340 Endress Place
Greenwood , Indiana 46143
United States of America

**Endress+Hauser (India) Automation
Instrumentation Pvt. Ltd.**
M-192, Waluj MIDC, Aurangabad - 431 136
Maharashtra State
India

Annexes:

[228381300-Annex 1 to ExTR24.0013.00.pdf](#)
[228381300-Annex 2 to ExTR24.0013.00.pdf](#)

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⁾ P _{max} ≤ 0.5 W I _{max} = 10 mA	I _{Lmax} = I _{SCmax} = 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	P _{max} ≤ 0.5 W I _{max} = 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 P _{max} 25 VA or U = 19...55 V DC ²⁾³⁾ U = 19...35 V DC ²⁾⁴⁾ P _{max} = 1.3 W ≤ 2.0 W ⁶⁾	2 potential free change over contacts (DPDT) U _{max} =253 V AC ²⁾³⁾ I _{max} = 6 A P _{max} = 1500 VA; cosφ=1 P _{max} = 750 VA; cosφ=0.7 or U _{max} = 30 V DC I _{max} = 6 A U _{max} = 125 V DC ²⁾³⁾ U _{max} = 35 V DC ²⁾⁴⁾ I _{max} = 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⁾ P _{max} = 1.0 W; ≤ 1.7 W ⁶⁾	2 potential free change over contacts (DPDT) U _{max} = 253 V AC ²⁾³⁾ I _{max} = 6 A P _{max} = 1500 VA; cosφ=1 P _{max} = 750 VA; cosφ=0.7 or U _{max} = 30 V DC I _{max} = 6 A U _{max} = 125 V DC ²⁾³⁾ U _{max} = 35 V DC ²⁾⁴⁾ I _{max} = 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⁾	I _{Lmax} = I _{SCmax} = 350 mA
2.	Ex t ¹⁾⁵⁾	P _{max} < 2 VA at I _{Lmax}	
3.	Ex d	I _{max} = 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.