



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00002W0
Revision No:
2

This is to certify:
that the Level Switches

with type designation(s)
Liquiphant FTL31

issued to
Endress+Hauser SE+Co. KG
Maulburg, Baden-Württemberg, Germany

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	C, D (cable version only)

Issued at **Hamburg** on **2025-09-03**

This Certificate is valid until **2030-10-05**.

DNV local unit: **Augsburg**

Approval Engineer: **Holger Jansen**



for **DNV**

Digitally signed by: Dariusz Lesniewski
Location: DNV SE, Germany

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Switching behaviour: on/off

Function:

- 3-wire DC-PNP: Positive signal at the switch output of the electronics
- 2-wire AC/DC: Load switching in the power supply line

Supply voltage:

- DC-PNP: 10 to 30 V DC, 2-wire
- AC/DC: 20 to 252 V AC/DC, 2-wire

Electrical connection: valve plug, M12 connector or cable (5m)

Housing versions: compact or short tube

LED display: green, yellow, red

Test magnet for function test

Degree of protection: IP 65 - valve plug

IP 65/67 - M12 connector

IP 66/68 (24h) - cable

Order code:

Selection code	Description
10 Approval	
AA	Non Ex-area
CA	CSA C/US General Purpose
20 Power supply	
1	20-253VAC/DC; 2-Wire
2	10-30VDC; 3-Wire PNP
40 Electrical Connection	
M	Connector M12, IP65/67 NEMA Type 4X Encl.
S	Cable 5m, IP66/68 NEMA Type 4X/6P Encl.
U	Valve plug ISO4400 M16, IP65 NEMA Type 4X
V	Valve plug ISO4400 NPT1/2, IP65
W	Valve plug QUICKON, IP65
50 Sensor Design	
2	Max. Process temperature 100°C
3	Max. Process temperature 150°C
60 Sensor Type	
AA	Compact version 316L Ra <3,2µm
BA	Short rode version 316L Ra <3,2µm
110 Process connection	
VAJ	Thread ASME MNPT1/2, 316L
VBJ	Thread ASME MNPT3/4, 316L
VCJ	Thread ASME MNPT1, 316L
WBJ	Thread ISO228 G1/2, 316L
WCJ	Thread ISO228 G3/4, 316L
WDJ	Thread ISO228 G1, 316L
WSJ	Thread ISO228 G1, 316L, with mounting adapter
W5J	Thread ISO228 G3/4, 316L, with mounting adapter
XBJ	Thread EN10226 R1/2, 316L
XCJ	Thread EN10226 R3/4, 316L
XDJ	Thread EN10226 R1, 316L
590 Further approvals	
LC	WHG Overfill prevention (certificate)
LE	DNV Marine approval

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Place of production

Endress+Hauser SE+Co. KG
Hauptstr. 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

Type Approval documentation

Test Reports: MTN No. 07310.185.14 V1.0, MTN 07310.186.14 V1.0
Test Reports: paconsult No.14-6106, paconsult No. 14-5891a
Test Reports: E+H No. 970004180, E+H No. 970004181, E+H 970004182
Test Reports: E+H No. 970007893_AK, E+H No. 970007894_AK
Technical Information: TI01147F/00/EN/05.22-00 dated 2022-07-12
Technical Drawings according to 'E+H Document List' dated 20 Febr. 2015
E+H Document: 'Liquiphant Transducer Line, Liquiphant FTL3x, Ver. 02.00'
Type approval assessment report issued at Augsburg on 2025-07-17
Type approval assessment report issued at Shanghai on 2025-07-24

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE