



Marine & Offshore

Certificate number: 33553/C0 BV

File number: AP4397

Product code: 3840H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**ENDRESS + HAUSER SE + Co. KG**

Maulburg - GERMANY

*for the type of product*

**LEVEL SWITCH**

Liquiphant FailSafe FTL80, FTL81 and FTL85

### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 41S / 31, (see item 4.3)

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 09 Oct 2028**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 09 Oct 2023,

Dirk Hoepfner

***This certificate was created electronically and is valid without signature***



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

The **Liquiphant FailSafe FTL80, FTL81** and **FTL85** series are level switches with integrated electronic insert FEL85 for minimum or maximum detection of liquids.

#### **1.1 - Main characteristics:**

Sensor: FTL80: compact sensor  
FTL81: sensor with pipe extension  
FTL85: with coated pipe extension

Length: Short pipe version for FTL81, -85: up to 118mm  
Pipe extension for FTL81, -85: up to 3m (to be fixed between each 1m and free end up to 150mm)

Power supply: 24V DC

Output: 4-20mA with LIVE signal.  
For the use together with the units: Nivotester FailSafe FTL825 or a PLC/Safety-PLC.  
(Units to be either BV type approved or design-appraised on a case by case basis.)

Process connection: Flange, thread

Cable entry: Gland, thread, connector

Housing: Aluminium or stainless steel

Degree of protection: IPx6; IPx7; IPx8

#### **1.2 - Variants:**

Type (in acc. with: 960016113-- Rev. 0 dated 26.06.2013):

FTL80 **aa S A b c d e A ff ggg** \_\_\_ \_\_\_ MP **hh**

**aa = Approval:** Ex-approval, as relevant

**b = Housing:** C; D; E; I

**c = Electrical Connection:** A; B; C; D; E; I

**d = Application:** A; C\*; D\* (\*not in combination with enclosure F27)

**e = Sensor Material:** 1; 2; 5

**ff = Sensor Type:** AC; AJ

**ggg = Process Connection:** AAJ - XDJ except for thread #1/2"; except for synthetic material

**hh = Accessory Mounted:** NC; ND; NE

Type (in acc. with: 960016112-- Rev. 0 dated 26.06.2013):

FTL81 **aa S A b c d e A ff ggg** \_\_\_ \_\_\_ MP **hh**

**aa = Approval:** Ex-approval, as relevant

**b = Housing:** C; D; E; I

**c = Electrical Connection:** A; B; C; D; E; I

**d = Application:** A; B; C\*; D\* (\*not in combination with enclosure F27)

**e = Sensor Material:** 1; 2; 5

**ff = Sensor Type:** BC; BJ; CC; CJ; DC; DJ

**ggg = Process Connection:** AAJ-XDJ; except for thread #1/2"; except for synthetic material

**hh = Accessory Mounted:** NC; ND; NE

Type (in acc. with: 960016114-- Rev. 0 dated 26.06.2013):

FTL85 **aa S A c d e f gg hhh** \_\_\_ \_\_\_ MP **ii**

**aa = Approval:** Ex-approval, as relevant

**b = Housing:** C; D; E; I

**c = Electrical Connection:** A; B; C; D; E; I

**d = Application:** N; P; T

**e = Sensor Material:** 1; 5

**f = Surface Refinement:** N; P; Q; R; T

**gg = Sensor Type:** BN; BP; BQ; BR; BT; CN; CP; CQ; CR; CT; DN; DP; DQ; DR; DT; ET; FE; GT; HT; IT

**hhh = Process Connection:** ADT- PDR; except for thread #1/2"; except for synthetic material

**ii = Accessory Mounted:** NC; ND; NE

### 2. DOCUMENTS AND DRAWINGS:

- TI01026F/00/EN dated 01.11; 960016112-- Rev. 0 dated 26.06.2013; 960016113-- Rev. 0 dated 26.06.2013

- 960016114-- Rev. 0 dated 26.06.2013

### 3. TEST REPORTS:

- Phoenix Testlab GmbH: E125167E3 dated 18.04.2013; U125167E2 dated 29 May 2013

For C0 version:

- Endress + Hauser: 970009444\_AK dated 2023-09-27; 970009445\_AK dated 2023-09-27

**4. APPLICATION/LIMITATION:**

4.1 - Bureau Veritas Rules for the Classification of Steel Ships

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - Bureau Veritas Environmental Category, **EC Code: 41S** (for stainless steel housing), **EC Code: 31** (for aluminium housing).

4.4 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.

4.5 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev8.

4.6 - Ex-certification is not covered by this certificate. Applications in hazardous areas are to be approved in each case according to the Rules and Conditions for Safe Use specified in a valid Ex-Certificate issued by a Notified Body.

4.7 - The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.

4.8 - May not be used for flammable oil tanks in passenger ships where penetration below tank top would be necessary.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The above mentioned products are to be supplied by **Endress + Hauser SE + Co. KG** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **Endress + Hauser SE + Co. KG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

**Endress + Hauser SE + Co. KG**  
**Hauptstraße 1**  
**79689 Maulburg**  
**GERMANY**

**6. MARKING OF PRODUCT:**

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number
- Ex marking, as relevant

**7. OTHERS:**

7.1 - It is the responsibility of **Endress + Hauser SE + Co. KG - GERMANY** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 33553/B0 BV issued on 28 Jan 2019 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*