



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Endress+Hauser SE + Co. KG
Address	Hauptstrasse 1, 79689 Maulburg, Germany
Type	Switches - Level
Description	Level switch Liquiphant Failsafe Refer to the Appendix for further details.
Trade Name	FTL80, FTL81 and FTL85
Application	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 (ENV5 for level switches with [40] = Housing: I) as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2002.
Specified Standard	Manufacturer's specification IACS unified requirements E10 (Rev.8 Feb 2021)
Ratings	Power supply: 24 V DC Output: 4-20 mA
Other Conditions	Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificates. The pipe extension of level switches FTL81, 85 is to be supported every 1000

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mm and the max. free length at the end is not to exceed 150 mm.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: 13/20046 (E1)

The Design Appraisal Document HPC1962006-23/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Appendix

TYPES

FTL80[10][20][30][40][50][60][70][80][90][100][600][610][620]

[10] = Approval: Any double letter and/or number combination

[20] = Electronics; Output: S

[30] = Display; Operating: A

[40] = Housing: C, D, E, H, I

[50] = Electrical Connection: Any single letter and/or number

[60] = Application: A, B, C*, D* (*not in combination with enclosure F27)

[70] = Sensor Material: 1, 2, 5

[80] = Surface Refinement: Any single letter and/or number

[90] = Sensor Type: BC, BJ, CC, CJ, DC, DJ, YY* (*except for safety-relevant characteristics)

[100] = Process Connection: Any triple letter and/or number combination;

except for thread $\leq 1/2''$; except for synthetic material

[600] = Sensor Design: MP

[610] = Accessory Mounted: Any double letter and/or number combination, except for safety-relevant characteristics

[620] = Accessory Enclosed: No option allowed

FTL81[10][20][30][40][50][60][70][80][90][100][600][610][620]

[10] = Approval: Any double letter and/or number combination

[20] = Electronics; Output: S

[30] = Display; Operating: A

[40] = Housing: C, D, E, H, I

[50] = Electrical Connection: Any single letter and/or number

[60] = Application: A, B, C*, D* (*not in combination with enclosure F27)

[70] = Sensor Material: 1, 2, 5

[80] = Surface Refinement: Any single letter and/or number

[90] = Sensor Type: BC, BJ, CC, CJ, DC, DJ, YY* (*except for safety-relevant characteristics)

[100] = Process Connection: Any triple letter and/or number combination;

except for thread $\leq 1/2''$; except for synthetic material

[600] = Sensor Design: MP

[610] = Accessory Mounted: Any double letter and/or number combination, except for safety-relevant characteristics



[620] = Accessory Enclosed: No option allowed

FTL85[10][20][30][40][50][60][70][80][90][100][600][610][620]

[10] = Approval: Any double letter and/or number combination

[20] = Electronics; Output: S

[30] = Display; Operating: A

[40] = Housing: C, D, E, H, I

[50] = Electrical Connection: Any single letter and/or number

[60] = Application: N, P, T

[70] = Sensor Material: 1, 5

[80] = Surface Refinement: Any single letter and/or number

[90] = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FE, GT, HT, IT, YY* (*except for safety-relevant characteristics)

[100] = Process Connection: Any triple letter and/or number combination;
except for thread $\leq 1/2''$; except for synthetic material

[600] = Sensor Design: MP

[610] = Accessory Mounted: Any double letter and/or number combination, except for safety-relevant characteristics

[620] = Accessory Enclosed: No option allowed