



# 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](http://www.iecex.com)

Certificate No.: **IECEx FMG 12.0014X** Page 1 of 5 [Certificate history:](#)  
Status: **Current** Issue No: 2 [Issue 1 \(2013-04-15\)](#)  
[Issue 0 \(2012-05-23\)](#)  
Date of Issue: 2020-02-05  
Applicant: **Endress+Hauser SE+Co. KG**  
Hauptstraße 1  
79689 Maulburg  
Germany  
Equipment: **FTL80, FTL81, FTL85**  
Optional accessory:  
Type of Protection: **i, d, e, t**  
Marking: Ex ia IIC Ga Ex ia III C Da/Db  
Ex ia IIC Ga/Gb Ex ta IIIC T80C Da/ Ex tb IIIC T80C Db  
Ex db IIC Ga/Gb  
Ex db eb IIC Ga/Gb

Approved for issue on behalf of the IECEx  
Certification Body:

**J. E. Marquedant**

Position:

**VP, Manager - Electrical Systems**

Signature:  
(for printed version)

Date:

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](http://www.iecex.com) or use of this QR Code.



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**FM Approvals LLC**  
1151 Boston-Providence Turnpike  
Norwood, MA 02062  
United States of America





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

Additional manufacturing locations: **Endress+Hauser GmbH+Co.KG** **Endress+Hauser (USA)**  
Hauptstrasse 1 Automation Instrumentation Inc.  
79689 Maulburg 2340 Endress Place  
**Germany** Greenwood, Indiana 46143  
**United States of America**

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 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-11:2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

**IEC 60079-26:2014-10** Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga  
Edition:3.0

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

**IEC 60079-7:2015** Explosive atmospheres – Part 7: Equipment protection by increased safety "e"  
Edition:5.0

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 Reports:

[US/FMG/ExTR12.0011/00](#)

[US/FMG/ExTR12.0011/01](#)

[US/FMG/ExTR12.0011/02](#)

Quality Assessment Report:

[DE/TUN/QAR06.0003/08](#)



# IECEx Certificate of Conformity

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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

See attached list of Equipment covered by this certificate

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface.
2. For Group IIC, if electrostatic charging of the probe cannot be avoided (e.g. through friction, cleaning, maintenance, strong medium flow), a probe coated with non-conductive material can be used.
3. Contact manufacturer for flamepath joint details when repair is necessary



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Update of IEC 60079-0 from Edition 6 (2011) to Edition 7 (2017)

Update of IEC 60079-1 from Edition 6 (2007) to Edition 7 (2014)

Update of IEC 60079-7 from Edition 4 (2006) to Edition 5 (2015)

Update of IEC 60079-26 from Edition 2 (2006) to Edition 3 (2014)

Update of IEC 60079-31 from Edition 1 (2008) to Edition 2 (2013)

Removal of IEC61241-11 from assessment as the requirements now reside in IEC 60079-31

Removal of IEC 60079-15 from assessment

Specific Condition of Use added: "Contact manufacturer for flamepath joint details when repair is necessary"



# IECEX Certificate of Conformity

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**Additional information:**

Reference the attached IECx Listing document for certified product and markings.

**Annex:**

[Annex to IECEx FMG 12.0014X\\_1.pdf](#)

## Annex to IECEx FMG 12.0014X

### Model Codes:

**FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch**

**FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Switch**

**FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch**

Ex ia IIC T6\* Ga

a = Approval: IA

b = Electronics, Output: S or Y = special version FEL85; 2 wire 4-20mA with different switching delays

c = Display, Operating: A or Y = Special version with different LED colors

d = Housing: C, D, E, H or I

e = Electrical connection: A, B, C, D, E or I

f = Application A, B, C, D or Y; For FTL85: N, P, T or Y

g = Sensor Material: 1, 2, 5 or 9 = Special sensor material with higher corrosion protection

h = Surface Refinement: A, N, P, Q, R, T or Y = Special version, Ra<0,3um/12uin

i = Sensor Type: AC, AJ, BC, BJ, CC, CJ, DC, DJ, BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, Ra<0,3um/12uin, AlloyC, 316L or with different individual length ( $\leq 6m$ ) from standard

j = Process connection: triple combinations of numbers or characters representing ANSI DIN JIS flange, threads, hygienic or other standardized process connections

+ Separator symbol: only used when additional options selected

k = Services: HC or I9=Special version of cleaning

l = Test, Certificate: Double combination of numbers or characters representing different types of in- process production tests

m = Additional Approval: LC, LE, LF, LV or L9=Special version, to be specified

n = Sensor Design: MP, MR, MS or M9=Special version

o = Accessory Mounted: NC, ND, NE, NH or O9=Special version

p = Accessory Enclosed: PB or R9 = Special version

q = Marking: Z1

**FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch**

**FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Switch**

**FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch**

Ex ia IIC T6\* Ga/Gb

a = Approval: IB or 8B

b = Electronics, Output: S or Y = special version FEL85; 2 wire 4-20mA with different switching delays

c = Display, Operating: A or Y Special version with different LED colors

d = Housing: A, C, D, E, H or I

e = Electrical connection: A, B, C, D, E or I

f = Application A, B, C, D or Y

g = Sensor Material: 1, 2, 5 or 9 = Special sensor material with higher corrosion protection

h = Surface Refinement: A, N, P, Q, R, T or Y = Special version, Ra<0,3um/12uin

i = Sensor Type: AC, AJ, BC, BJ, CC, CJ, DC, DJ, BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, Ra<0,3um/12uin, AlloyC, 316L or with different individual length ( $\leq 6m$ ) from standard

j = Process connection: triple combinations of numbers or characters representing ANSI DIN JIS flange, threads, hygienic or other standardized process connections

+ Separator symbol: only used when additional options selected

k = Services: HC or I9=Special version of cleaning

l = Test, Certificate: Double combination of numbers or characters representing different types of in- process production tests

m = Additional Approval: LC, LE, LF, LV or L9=Special version, to be specified

n = Sensor Design: MP, MR, MS or M9 = Special version

o = Accessory Mounted: NA, NC, ND, NE, NH or O9=Special version

p = Accessory Enclosed: PB or R9 = Special version

q = Marking: Z1

## Annex to IECEx FMG 12.0014X

**FTL80-abcdefghijklmno. Liquiphant FailSafe Level Switch**  
**FTL81-abcdefghijklmno. Liquiphant FailSafe Level Switch**  
**FTL85-abcdefghijklmno. Liquiphant FailSafe Level Switch**

Ex db IIC T6\* Ga/Gb

a = Approval: IC or 8C  
b = Electronics, Output: S or Y = special version FEL85; 2 wire 4-20mA with different switching delays  
c = Display, Operating: A or Y Special version with different LED colors  
d = Housing: D, E or I  
e = Electrical connection: B, C, D or E  
f = Application A, B, C, D or Y  
g = Sensor Material: 1, 2, 5 or 9 = Special sensor material with higher corrosion protection  
h = Surface Refinement: A, N, P, Q, R, T or Y = Special version, Ra<0,3um/12uin  
i = Sensor Type: AC, AJ, BC, BJ, CC, CJ, DC, DJ, BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, Ra<0,3um/12uin, AlloyC, 316L or with different individual length ( $\leq 6m$ ) from standard  
j =Process connection: triple combinations of numbers or characters representing ANSI DIN JIS flange, threads, hygienic or other standardized process connections  
+ Separator symbol: only used when additional options selected  
k = Services: HC or I9=Special version of cleaning  
l = Test, Certificate: Double combination of numbers or characters representing different types of in- process production tests  
m = Additional Approval: LC, LE, LF, LV or L9=Special version, to be specified  
n = Sensor Design: MP, MR or MS  
o = Accessory Mounted: ND, NE or O9=Special version  
p = Accessory Enclosed: PB or R9 = Special version  
q = Marking: Z1

**FTL80-abcdefghijklmno. Liquiphant FailSafe Level Switch**  
**FTL81-abcdefghijklmno. Liquiphant FailSafe Level Switch**  
**FTL85-abcdefghijklmno. Liquiphant FailSafe Level Switch**

Ex db eb IIC T6\* Ga/Gb

a = Approval: ID  
b = Electronics, Output: S or Y = special version FEL85; 2 wire 4-20mA with different switching delays  
c = Display, Operating: A or Y Special version with different LED colors  
d = Housing: E  
e = Electrical connection: A, B, C, D or E  
f = Application A, B, C, D or Y  
g = Sensor Material: 1, 2, 5 or 9 = Special sensor material with higher corrosion protection  
h = Surface Refinement: A or Y = Special version, Ra<0,3um/12uin  
i = Sensor Type: AC, AJ, BC, BJ, CC, CJ, DC, DJ, BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, Ra<0,3um/12uin, AlloyC, 316L or with different individual length ( $\leq 6m$ ) from standard  
j =Process connection: triple combinations of numbers or characters representing ANSI DIN JIS flange, threads, hygienic or other standardized process connections  
+ Separator symbol: only used when additional options selected  
k = Services: HC or I9=Special version of cleaning  
l = Test, Certificate: Double combination of numbers or characters representing different types of in-process production tests  
m = Additional Approval: LC, LE, LF, LV or L9=Special version, to be specified  
n = Sensor Design: MP, MR, MS or M9=Special version  
o = Accessory Mounted: NE or O9=Special version  
p = Accessory Enclosed: PB or R9 = Special version  
q = Marking: Z1

## Annex to IECEx FMG 12.0014X

### **FTL80-abcdefghijklmno. Liquiphant FailSafe Level Switch** **FTL81-abcdefghijklmno. Liquiphant FailSafe Level Switch** **FTL85-abcdefghijklmno. Liquiphant FailSafe Level Switch**

Ex ia IIC T6\* Ga/Gb  
Ex ia IIIC T80°C Da/Db

a = Approval: I2  
b = Electronics, Output: S or Y = special version FEL85; 2 wire 4-20mA with different switching delays  
c = Display, Operating: A or Y Special version with different LED colors  
d = Housing: C, D, E, H or I  
e = Electrical connection: A, B, C, D, E or I  
f = Application A, B, C, D or Y  
g = Sensor Material: 1, 2, 5 or 9 = Special sensor material with higher corrosion protection  
h = Surface Refinement: A, R, T or Y = Special version, Ra<0,3um/12uin  
i = Sensor Type: AC, AJ, BC, BJ, CC, CJ, DC, DJ, BR, BT, CR, CT, DR, DT, ET, FT, GT, HT, IT or  
YY=Special version, Ra<0,3um/12uin, AlloyC, 316L or with different individual length (<6m) from  
standard  
j =Process connection: triple combinations of numbers or characters representing ANSI DIN JIS flange,  
threads, hygienic or other standardized process connections

+ Separator symbol: only used when additional options selected

k = Services: HC or I9=Special version of cleaning

l = Test, Certificate: Double combination of numbers or characters representing different types of in- process  
production tests

m = Additional Approval: LC, LE, LF, LV or L9=Special version, to be specified

n = Sensor Design: MP, MR, MS or M9=Special version

o = Accessory Mounted: NC, ND, NE, NH or O9=Special version

p = Accessory Enclosed: PB or R9 = Special version

q = Marking: Z1

### **FTL80-abcdefghijklmno. Liquiphant FailSafe Level Switch** **FTL81-abcdefghijklmno. Liquiphant FailSafe Level Switch** **FTL85-abcdefghijklmno. Liquiphant FailSafe Level Switch**

Ex db IIC T6\* Ga/Gb  
Ex ta IIIC T80°C Da / Ex tb IIIC T80°C Db

a = Approval: I3

b = Electronics, Output: S or Y = special version FEL85; 2 wire 4-20mA with different switching delays

c = Display, Operating: A or Y Special version with different LED colors

d = Housing: D, E or I

e = Electrical connection: B, C, D or E

f = Application A, B, C, D or Y

g = Sensor Material: 1, 2, 5 or 9 = Special sensor material with higher corrosion protection

h = Surface Refinement: A, R, T or Y = Special version, Ra<0,3um/12uin

i = Sensor Type: AC, AJ, BC, BJ, CC, CJ, DC, DJ, BR, BT, CR, CT, DR, DT, ET, FT, GT, HT, IT or  
YY=Special version, Ra<0,3um/12uin, AlloyC, 316L or with different individual length (<6m) from  
standard

j =Process connection: triple combinations of numbers or characters representing ANSI DIN JIS flange,  
threads, hygienic or other standardized process connections

+ Separator symbol: only used when additional options selected

k = Services: HC or I9=Special version of cleaning

l = Test, Certificate: Double combination of numbers or characters representing different types of in- process  
production tests

m = Additional Approval: LC, LE, LF, LV or L9=Special version, to be specified

n = Sensor Design: MP, MR, MS or M9=Special version

o = Accessory Mounted: ND, NE or O9=Special version

p = Accessory Enclosed: PB or R9 = Special version

q = Marking: Z1

## Annex to IECEx FMG 12.0014X

**FTL80-abcdefghijklmno. Liquiphant FailSafe Level Switch**

**FTL81-abcdefghijklmno. Liquiphant FailSafe Level Switch**

**FTL85-abcdefghijklmno. Liquiphant FailSafe Level Switch**

Ex ia IIC T6\* Ga/Gb

Ex db IIC T6\* Ga/Gb

a = Approval: I4

b = Electronics, Output: S or Y = special version FEL85; 2 wire 4-20mA with different switching delays

c = Display, Operating: A or Y Special version with different LED colors

d = Housing: D, E or I

e = Electrical connection: B, C, D or E

f = Application A, B, C, D or Y

g = Sensor Material: 1, 2, 5 or 9 = Special sensor material with higher corrosion protection

h = Surface Refinement: A, N, P, Q, R, T or Y = Special version,  $R_a < 0,3\mu\text{m}/12\text{in}$

i = Sensor Type: AC, AJ, BC, BJ, CC, CJ, DC, DJ, BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version,  $R_a < 0,3\mu\text{m}/12\text{in}$ , AlloyC, 316L or with

different individual length ( $\leq 6\text{m}$ ) from standard

j = Process connection: triple combinations of numbers or characters representing ANSI DIN JIS flange, threads, hygienic or other standardized process connections

+ Separator symbol: only used when additional options selected

k = Services: HC or I9=Special version of cleaning

l = Test, Certificate: Double combination of numbers or characters representing different types of in-process production tests

m = Additional Approval: LC, LE, LF, LV or L9=Special version, to be specified

n = Sensor Design: MP, MR, MS or M9=Special version

o = Accessory Mounted: ND, NE or O9=Special version

p = Accessory Enclosed: PB or R9 = Special version

q = Marking: Z1

*\*refer to control drawing for Temperature Code*

- 1. In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface.*
- 2. For Group IIC, if electrostatic charging of the probe can be avoided (e.g. through friction, cleaning, maintenance, strong medium flow), a probe coated with non-conductive material can be used.*
- 3. Contact manufacturer for flame path joint details when repair is necessary*