



Member of the FM Global Group

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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS/I, II, III/1/ABCDEFGH/T6** -50°C < Ta < 70°C; Entity – XA00605F Type 4X, 6P*, IP66, IP67, IP68*

I/O/AEx ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

Ui = 30Vdc, Ii = 170mA, Pi = 1W, Li = 0mH, Ci = 16nF

a = Approval: FB

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application A, 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 or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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

Special Conditions of Use:

1 *when housing = D, E, or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

NI/I/2/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00675F; Type 4X, 6P*, IP66, IP67, IP68*

I/2/AEx nA IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

DIP/II, III/2/EFG/T6

a = Approval: FC

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application A, 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 or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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, MQ 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

Special Conditions of Use:

1 *when housing = D, E, or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/I/1/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/I/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries per control dwg. XA00656F; Type 4X, 6P, IP66, IP67, IP68

I/2/AEx nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FD

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application A, C, D or Y

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

h = Surface Refinement: A

i = Sensor Type: AC or AJ

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, MQ 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

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

FTL80-abcdefghij+klmnopq. Liquiphant FailSafe Level Switch

IS /I, II, III/1/ABCDEFGFG/T6** -50°C < Ta < 70°C; Entity – XA00657F Type 4X, 6P, IP66, IP68

XP/I/1/ABCDEFGFG/T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/O/AEx ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

a = Approval: 8A

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application A, C, D or Y

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

h = Surface Refinement: A

i = Sensor Type: AC or AJ

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

Special Condition

1 **refer to control drawing for Temperature Code

FTL81-abcdefghij+klmnopq. Liquiphant FailSafe Level Switch

IS/I, II, III/1/ABCDEFGFG/T6** -50°C < Ta < 70°C; Entity – XA00605F Type 4X, 6P*, IP66, IP67, IP68*

I/O/AEx ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

Ui = 30Vdc, Ii = 170mA, Pi = 1W, Li = 0mH, Ci = 16nF

a = Approval: FB

b = Electronics, Output: S

c = Display, Operating: A

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 or Y = Special version, Ra<0,3um/12uin

i = Sensor Type: BC, BJ, CC, CJ, DC, DJ or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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

Special Conditions of Use:

1 *when housing = D, E or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Limit Switch

NI/1/2/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00675F; Type 4X, 6P*, IP66, IP67, IP68*

I/2/AEx nA IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

DIP/II, III/2/EFG/T6**

a = Approval: FC

b = Electronics, Output: S

c = Display, Operating: A

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

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: BC, BJ, CC, CJ, DC or DJ or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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, LG 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

Special Conditions of Use:

1 *when housing = D, E, or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL81~abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/1/1/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/1/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries per control dwg. XA00656F; Type 4X, 6P*, IP66, IP67, IP68

I/2/AEx nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FD

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D or I

e = Electrical connection: 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

i = Sensor Type: BC, BJ, CC, CJ, DC or DJ

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, MQ, 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

Special Conditions of Use:

1**refer to control drawing for Temperature Code

FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/I/1/BCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/I/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries

I/2/AEx nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FE

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: E

e = Electrical connection: D or E

f = Application A or B

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

h = Surface Refinement: A

i = Sensor Type: BC, BJ, CC, CJ, DC or DJ

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, MQ, MR, MS or M9=Special version

o = Accessory Mounted: NE or O9=Special version

p = Accessory Enclosed: R9 = Special version

q = Marking: Z1

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS /I, II, III/1/BCDEFG/T6** -50°C < Ta < 70°C; Entity – XA00657F Type 4X, 6P, IP66, IP68

XP/I/1/A*BCDEFG/T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/0/AEx ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

a = Approval: 8A

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: 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

i = Sensor Type: BC, BJ, CC, CJ, DC or DJ

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

Special Condition of Use:

1 *When housing = E, then XP/I/1/BCDEFG/T6**

2 **refer to control drawing for Temperature Code

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS/I, II, III/1/ABCEFG/T6** -50°C < Ta < 70°C; Entity – XA00605F Type 4X, 6P*, IP66, IP67, IP68*

I/O/AEx ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

Ui = 30Vdc, Ii = 170mA, Pi = 1W, Li = 0mH, Ci = 16nF

a = Approval: FB

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

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

h = Surface Refinement N, P, Q, R, T or Y = Special version eg. different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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

Special Conditions of Use:

1 *when housing = D, E or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

3 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

4 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.

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

NI/II/2/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00675F; Type 4X, 6P*, IP66, IP67, IP68*

I/2/AEx nA IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

DIP/II, III/2/EFG/T6**

a = Approval: FC

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

h = Surface Refinement N, P, Q, R, T or Y = Special version different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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

Special Conditions of Use:

1 *when housing = D, E or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

3 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

4 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.

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Limit Switch

XP/I/1/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/I/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries per control dwg. XA00656F; Type 4X, 6P, IP66, IP67, IP68

I/2/AEx nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FD

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

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

h = Surface Refinement N, P, Q, R, T or Y = Special version eg. different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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, MQ, 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

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

2 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

3 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.

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/I/1/BCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/I/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries

I/2/AEx nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FE

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: E

e = Electrical connection: D or E

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

h = Surface Refinement N, P, Q, R, T or Y = Special version different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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, MQ, MR, MS or M9=Special version

o = Accessory Mounted: NE or O9=Special version

p = Accessory Enclosed: R9 = Special version

q = Marking: Z1

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

2 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

3 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.

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS I, II, III/1/A*BCDEFG/T6** -50°C < Ta < 70°C; Entity – XA00657F Type 4X, 6P, IP66, IP68

XP/II/1/A*BCDEFG/T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/O/AEx ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/1/AEx d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

a = Approval: 8A

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

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

h = Surface Refinement N, P, Q, R, T or Y = Special version eg. different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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

Special Condition

1 *when housing = E, then XP/II/1/BCDEFG/T6**

2 **refer to control drawing for Temperature Code

3 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

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.

Equipment Ratings:

Intrinsically safe for Class I, II & III, Division 1, Group A, B, C, D, E, F & G, T6 Ta = +60 °C; alternatively intrinsically safe for Class I, Zone 0, Group IIC T6 Ta = +60 °C in accordance with entity requirements when installed per Installation Drawing XA00605F-B or XA00657F-B

Nonincendive for Class I, Division 2, Group A, B, C & D, T6 Ta = +70 °C; Suitable for Class II & III, Division 2, Group E, F & G, T6 Ta = +70 °C alternatively for Class I, Zone 2, Group IIC T6 Ta = +70 °C per installation Drawing XA00656F-B or XA00675F-B

Explosionproof for use in Class I, Division 1, Groups A, B, C and D Group A not included with type code in the model code structure d=Housing=E T13 and f=Application=A,B Not High Temperature version and sensor length greater than 200mm, alternatively Class I, Zone 1, Group IIC T6 Ta = +70 °C per installation Drawing XA00656F-B or XA00657F-B; and

Dust-ignitionproof for use in Class II/III, Division 1, Groups E, F and G hazardous classified locations, indoors and outdoors Type 4X/6P/IP65/IP66/IP67/IP68, with T6 rating for an ambient temperature range of -50°C to +70°C.

hazardous classified outdoor Type 4X/6P/IP65/IP66/IP67/68 locations.

FM Approved for:

Endress+Hauser GmbH+ Co KG

Hauptstrasse 1

D-79689 Maulburg

Germany

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	2011
Class 3610	2010
Class 3611	2004
Class 3615	2006
Class 3616	2011
Class 3810	2005
ANSI/ISA-12.27.01	2012
ANSI/NEMA250	1991
ANSI/IEC 60529	2004
ANSI/ISA 60079-0	2009
ANSI/ISA 60079-1	2009
ANSI/ISA 60079-11	2011
ANSI/ISA 60079-15	2009
ANSI/ISA 60079-31	2009
ANSI/ISA-82.02.01	2004


Original Project ID: 3044854

Approval Granted: May 29, 2012

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3048191	April 15, 2013		

FM Approvals LLC



J.E. Marquedant
Group Manager, Electrical

15 April 2013
Date



Member of the FM Global Group

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CERTIFICATE OF COMPLIANCE

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS/I, II, III/1/ABCDEFGH/T6** -50°C < Ta < 70°C; Entity – XA00605F Type 4X, 6P*, IP66, IP67, IP68*

I/O/Ex ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

Ui = 30Vdc, Ii = 170mA, Pi = 1W, Li = 0mH, Ci = 16nF

a = Approval: FB

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application A, 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 or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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: HCor 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

Special Conditions of Use:

1 *when housing = D, E, or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

NI/1/2/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00675F; Type 4X, 6P*, IP66, IP67, IP68*

I/2/Ex nA IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

DIP/II, III/2/EFG/T6

a = Approval: FC

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application A, 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 or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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, MQ 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

Special Conditions of Use:

1 *when housing = D, E, or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL80-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/1/1/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/1/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries per control dwg. XA00656F; Type 4X, 6P, IP66, IP67, IP68

I/2/Ex nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FD

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application A, C, D or Y

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

h = Surface Refinement: A

i = Sensor Type: AC or AJ

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, MQ 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

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

FTL80~abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS /I, II, III/1/ABCDEFGH/T6** -50°C < Ta < 70°C; Entity – XA00657F Type 4X, 6P, IP66, IP68

XP/I/1/ABCDEFGH/T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/O/Ex ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

a = Approval: 8A

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application A, C, D or Y

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

h = Surface Refinement: A

i = Sensor Type: AC or AJ

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

Special Condition

1 **refer to control drawing for Temperature Code

FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS/I, II, III/1/ABCDEFGH/T6** -50°C < Ta < 70°C; Entity – XA00605F Type 4X, 6P*, IP66, IP67, IP68*

I/O/Ex ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

Ui = 30Vdc, Ii = 170mA, Pi = 1W, Li = 0mH, Ci = 16nF

a = Approval: FB

b = Electronics, Output: S

c = Display, Operating: A

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 or Y = Special version, Ra<0,3um/12uin

i = Sensor Type: BC, BJ, CC, CJ, DC or DJ or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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

Special Conditions of Use:

1 *when housing = D, E or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Limit Switch

NI/I/2/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00675F; Type 4X, 6P*, IP66, IP67, IP68*

I/2/Ex nA IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

DIP/II, III/2/EFG/T6**

a = Approval: FC

b = Electronics, Output: S

c = Display, Operating: A

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

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: BC, BJ, CC, CJ, DC or DJ or YY=Special version, Ra<0,3um/12uin, AlloyC or 316L

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

Special Conditions of Use:

1 *when housing = D, E, or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

FTL81~abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/I/1/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/I/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries per control dwg. XA00656F; Type 4X, 6P*, IP66, IP67, IP68

I/2/Ex nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FD

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D or I

e = Electrical connection: 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

i = Sensor Type: BC, BJ, CC, CJ, DC or DJ

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, MQ, 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

Special Conditions of Use:

1**refer to control drawing for Temperature Code

FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/I/1/BCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI/I/2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries

I/2/Ex nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FE

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: E

e = Electrical connection: D or E

f = Application A or B

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

h = Surface Refinement: A

i = Sensor Type: BC, BJ, CC, CJ, DC or DJ

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, MQ, MR, MS or M9=Special version

o = Accessory Mounted: NE or O9=Special version

p = Accessory Enclosed: R9 = Special version

q = Marking: Z1

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

FTL81-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS /I, II, III/1/BCDEFG/T6** -50°C < Ta < 70°C; Entity – XA00657F Type 4X, 6P, IP66, IP68

XP/I/1/A*BCDEFG/T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/0/Ex ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

a = Approval: 8A

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: 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

i = Sensor Type: BC, BJ, CC, CJ, DC or DJ

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

Special Condition of Use:

1 *When housing = E, then XP/I/1/BCDEFG/T6**

2 **refer to control drawing for Temperature Code

FTL85-abcdefghij+klmnopq. Liquiphant FailSafe Level Switch

IS/I, II, III/1/ABCEDEFG/T6** -50°C < Ta < 70°C; Entity – XA00605F Type 4X, 6P*, IP66, IP67, IP68*

I/O/Ex ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

Ui = 30Vdc, Ii = 170mA, Pi = 1W, Li = 0mH, Ci = 16nF

a = Approval: FB

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

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

h = Surface Refinement N, P, Q, R, T or Y = Special version eg. different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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

Special Conditions of Use:

1 *when housing = D, E or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

3 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

4 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.

FTL85-abcdefghij+klmnopq. Liquiphant FailSafe Level Switch

NI/II/2/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00675F; Type 4X, 6P*, IP66, IP67, IP68*

I/2/Ex nA IIC T6** -50°C < Ta < 70°C; Type 4X, 6P*, IP66, IP67, IP68*

DIP/II, III/2/EFG/T6**

a = Approval: FC

b = Electronics, Output: S

c = Display, Operating: A

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

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

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

h = Surface Refinement N, P, Q, R, T or Y = Special version different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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

Special Conditions of Use:

1 *when housing = D, E or I then Type 4X, 6P, IP66, IP68

2 **refer to control drawing for Temperature Code

3 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

4 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.

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Limit Switch

XP/1/1/ABCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI//2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries per control dwg. XA00656F; Type 4X, 6P, IP66, IP67, IP68

I/2/Ex nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FD

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

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

h = Surface Refinement N, P, Q, R, T or Y = Special version eg. different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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, MQ, 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

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

2 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

3 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.

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

XP/1/1/BCD/T6** -50°C < Ta < 70°C; per control dwg. XA00656F; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

NI//2/ABCD T6** -50°C < Ta < 70°C; only for conduit entries

I/2/Ex nA IIC T6** -50°C < Ta < 70°C

DIP/II, III/1/EFG/T6** -50°C < Ta < 70°C;

a = Approval: FE

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: E

e = Electrical connection: D or E

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

h = Surface Refinement N, P, Q, R, T or Y = Special version different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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, MQ, MR, MS or M9=Special version

o = Accessory Mounted: NE or O9=Special version

p = Accessory Enclosed: R9 = Special version

q = Marking: Z1

Special Conditions of Use:

1 **refer to control drawing for Temperature Code

2 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

3 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.

FTL85-abcdefghijklmnpq. Liquiphant FailSafe Level Switch

IS /I, II, III/1/A*BCDEFG/T6** -50°C < Ta < 70°C; Entity – XA00657F Type 4X, 6P, IP66, IP68

XP/II/1/A*BCDEFG/T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/O/Ex ia IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

I/1/Ex d IIC T6** -50°C < Ta < 70°C; Type 4X, 6P, IP66, IP68

a = Approval: 8A

b = Electronics, Output: S

c = Display, Operating: A

d = Housing: D, E or I

e = Electrical connection: D or E

f = Application N, P, T or Y = ECTFE, PFA or Enamel, Process max 300°C/572°F 100bar/1450psi

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

h = Surface Refinement N, P, Q, R, T or Y = Special version eg. different color

i = Sensor Type: BN, BP, BQ, BR, BT, CN, CP, CQ, CR, CT, DN, DP, DQ, DR, DT, ET, FT, GT, HT, IT or YY=Special version, eg. different sensor length

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

Special Condition

1 *when housing = E, then XP/II/1/BCDEFG/T6**

2 **refer to control drawing for Temperature Code

3 In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surface

4 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.

Equipment Ratings:

Intrinsically safe for Class I, II & III, Division 1, Group A, B, C, D, E, F & G, T6 Ta = +60 °C; alternatively intrinsically safe for Class I, Zone 0, Group IIC T6 Ta = +60 °C in accordance with entity requirements when installed per Installation Drawing XA00605F-B or XA00657F-B

Nonincendive for Class I, Division 2, Group A, B, C & D, T6 Ta = +70 °C; Suitable for Class II & III, Division 2, Group E, F & G, T6 Ta = +70 °C alternatively for Class I, Zone 2, Group IIC T6 Ta = +70 °C per installation Drawing XA00656F-B or XA00675F-B

Explosionproof for use in Class I, Division 1, Groups A, B, C and D (Group A not included with type code in the model code structure d=Housing=E(T13) and f=Application=A,B(Not High Temperature version) and sensor length greater than 200mm), alternatively Class I, Zone 1, Group IIC T6 Ta = +60 °C per installation Drawing XA00656F-B or XA00657F-B; and

Dust-ignitionproof for use in Class II/III, Division 1, Groups E, F and G hazardous (classified) locations, indoors and outdoors (Type 4X/6P/IP65/IP66/IP67/IP68), with T6 rating for an ambient temperature range of -60°C to +70°C.

hazardous (classified) outdoor (Type 4X/6P/IP65/IP66/IP67/68) locations.

FM Approved for:

Endress+Hauser GmbH+ Co KG
Hauptstrasse 1
D-79689 Maulburg
Germany

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

C22.2 No. 0.4-04	2008
C22.2 No. 0.5	1982 (R2008)
C22.2 No. 25	1966 (R2009)
C22.2 No. 94-M91	1991 (R2011)
C22.2 No.142-M1987	1987 (R2009)
CAN C22.2 No. 157-92	1992 (R2012)
CAN C22.2 No. 213-	1987 (R2008)
C22.2 No. 1010.1	2004
CAN/CSA E60079-0	2002 (R2011)
CSA-C22.2 No. 60529	2005
CAN/CSA-E60079-11	2002 (R2011)
CAN/CSA-E60079-15	2012

Original Project ID: 3044854

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Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3048191	April 15, 2013		

FM Approvals LLC



J.E. Marquedant
Group Manager, Electrical

15 April 2013
Date