

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM16US0454X
3. **Equipment:** Pulscon LTC5x Series Level Transmitters
(Type Reference and Name)
4. **Name of Listing Company:** Pepperl+Fuchs GmbH
5. **Address of Listing Company:** Lilienthalstrasse 200
68307 Mannheim Germany
6. The examination and test results are recorded in confidential report number:
3060535 dated 2nd March 2017
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2011, FM Class 3610:2010, FM Class 3611:2004, FM Class 3615:2006, FM Class 3616:2011, FM Class 3810:2005, ANAS/ISA 61010-1:2004, ANSI/NEMA 250:2008, ANSI/IEC 60529:2004, ANSI/ISA 60079-0:2009, ANSI/ISA 60079-1:2009, ANSI/ISA 60079-11:2011, ANSI/ISA 12.27.01:2003
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. **Equipment Ratings:**

Intrinsically Safe for Class I, II and III, Division 1, Groups A, B, C, D, E, F and G Hazardous Locations per control drawing 116-0415 (HART) or 116-0418 (Profibus PA, FISCO).
Intrinsically Safe for Class I, Zone 0, Group IIC Hazardous Locations per control drawing 116-0415 (HART) or 116-0418 (Profibus PA, FISCO).
Explosionproof with Intrinsically Safe outputs for Class I, II and III, Division 1, Groups A, B, C, D, E, F and G

Certificate issued by:

J. E. Marquedant
Manager, Electrical Systems

2 March 2017

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC, 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
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US Certificate Of Conformity No: FM16US0454X

Hazardous Locations per control drawing 116-0416 (HART) or 116-0417 (Profibus PA).
Flameproof for Class I, Zone 1, Group IIC with Intrinsically Safe outputs for Class I, Zone 0, Group IIC
Hazardous Locations per control drawing 116-0416 (HART) or 116-0417 (Profibus PA).
Dust-Ignitionproof for Class II and III, Division 1, Groups E, F and G Hazardous Locations per control drawing 116-0416 (HART) or 116-0417 (Profibus PA).
Nonincendive with Nonincendive Field Wiring for Class I, Division 2, Groups A, B, C and D Hazardous Locations per control drawing 116-0415 (HART) or 116-0418 (Profibus PA).
Dual Seal per ANSI/ISA 12.27.01.
For outdoor use (Type 4X, 6P, IP66 or IP68).
Temperature classifications in accordance with applicable control drawing

11. The marking of the equipment shall include:

IS / I,II,III / 1 / A, B,C,D,E,F,G / T*; Entity and FISCO per control drawings 116-0415 (HART) or 116-0418 (Profibus PA)
I / 0 / AEx ia IIC T*; Entity and FISCO per control drawings 116-0415 (HART) or 116-0418 (Profibus PA)
XP-AIS / I / 1 / A, B, C, D / T* per control drawings 116-0416 (HART) or 116-0417 (Profibus PA)
I / 1 / AEx d [ja] IIC T* per control drawings 116-0416 (HART) or 116-0417 (Profibus PA)
NI / I / 2 / A, B, C, D / T*; NIFW per control drawing 116-0415 (HART) or 116-0418 (Profibus PA)
DIP / II, III / 1 / E, F, G per control drawings 116-0416 (HART) or 116-0417 (Profibus PA)
Type 4, 4X, 6P, IP66, IP68
*For Entity, FISCO and Nonincendive Field Wiring Parameters and temperature class refer to applicable control drawings.

12. **Description of Equipment:**

General - The Pulscon Type LTC5x Series Level Transmitters are "downward-looking" measuring systems that function according to the ToF (Time of Flight) method. The distance from the reference point (process connection) of the measuring device to the product surface is measured. High- frequency pulses are supplied to a probe and led along the probe. The pulses are reflected by the product surface, received by the electronic evaluation unit and converted into level information.

Construction – See **Technical Information** specification documentation.

Ratings – See applicable control drawing.

Pulscon with Dual Seal. LTC50-abbbcdeeffghh + i

Probe:

- 1 -mm, rod 8mm 316L
- a 5 -inch, rod 1/3" 316L
- 2 -mm, rope 4mm 316
- 3 -inch, rope 1/6" 316
- X - Special version (different rod or rope dimensions, or different corrosion resistant material)

bbb **Process Connection:** not relevant for safety

Electrical Connections:

- c A - Gland M20, IP66/68 NEMA4X/6P (Approval Option: FM only)

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- B - Thread M20, IP66/68 NEMA4X/6P
- C - Thread G1/2, IP66/68 NEMA4X/6P (Approval Option: FM only)
- D - Thread NPT 1/2, IP66/68 NEMA4X/6P
- I - Plug M12, IP66/68 NEMA4X/6P (Approval Option: FM only)
- M - Plug 7/8", IP66/68 NEMA4X/6P (Approval Option: FM only)

Seal:

- d 2 - Viton, -20°C - 80°C (-22°F - 176°F)
- X - Special version

Housing:

- ee A1 - GT19 dual compartment, Plastic PBT (Approval Option: FM only)
- A2 - GT20 dual compartment, Alu coated

Power Supply; Output:

- IH - 2-wire; 4-20mA HART
- ID - 2-wire; 4-20mA HART, PFS = Status C
- ff IE - 2-wire; 4-20mA HART, 4-20mA
- PA- 2-wire; 4-20mA PROFIBUS PA, PFS = Status
- AH - 4-wire; 90-253VAC, 4-20mA HART
- DH - 4-wire; 10.4-48VDC, 4-20mA HART

Display, Operation:

- g B - w/o LCD, via communication
- D - LCD SD02, push button + data backup function
- E - LCD SD03, touch control + data backup function

Approval Option:

- FM - FM IS Cl. I, Div. 1 Gr. A-D, Cl. I, Zn 0, Ex ia IIC
- hh FI - FM IS Cl. I, II, III, Div. 1 Gr. A-G, Cl. I, Zn 0, Ex ia IIC, NI Cl. I Div. 2 Gr. A-D
- FX - FM XP-AIS Cl. I, Div. 1 Gr. A-D
- FN - FM XP-AIS Cl. I, Div. 1 Gr. ABCD, DIP CL. II, III, Div 1 Gr EFG, Ex d [ia], NI Cl. I Div. 2, Gr. A-D
- i **Options:** not relevant for safety

Pulscon with Dual Seal. LTC51-abbbcdeeffghh + i

Probe:

- 1 -mm, rod 8mm 316L
- 5 -inch, rod 1/3" 316L
- 8 -mm, rod 12mm 316L
- 9 -inch, rod 1/2 316L
- 6 -mm, rod 12mm AlloyC
- 7 -inch, rod 1/2 AlloyC
- A -mm, rod 16mm 316L, 500mm divisible
- a B -inch, rod 0.63in 316L 20 inch divisible
- C -mm, rod 16mm 316L, 1000mm divisible
- D -inch, rod 0.63in 316L 40 inch divisible
- 2 -mm, rope 4mm 316
- 3 -inch, rope 1/6" 316
- E -mm, rope 4mm 316, max 300mm
- F - inch, rope 1/6" 316, Max 12 inch
- 4 -mm, coax 316L
- G -inch, coax 316L

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- H -mm, coax AlloyC
- K -inch, coax AlloyC
- X - Special version (different rod or rope dimensions, or different corrosion resistant material)
- bbb **Process Connection:** not relevant for safety
- Electrical Connections:**
 - A - Gland M20, IP66/68 NEMA4X/6P (Approval Option: FM only)
 - B - Thread M20, IP66/68 NEMA4X/6P
 - c C - Thread G1/2, IP66/68 NEMA4X/6P (Approval Option: FM only)
 - D - Thread NPT 1/2, IP66/68 NEMA4X/6P
 - I - Plug M12, IP66/68 NEMA4X/6P (Approval Option: FM only)
 - M - Plug 7/8", IP66/68 NEMA4X/6P (Approval Option: FM only)
- Seal:**
 - 5 - Viton, -30°C - 150°C (-22°F - 302°F)
 - d 3 - EPDM, -40°C - 120°C (-40°F - 248°F)
 - 4 - Kalrez, -20°C - 200°C (-4°F - 392°F)
 - X - Special version
- Housing:**
 - ee A1 - GT19 dual compartment, Plastic PBT (Approval Option: FM only)
 - A3 - GT18 dual compartment, 316L
 - A2 - GT20 dual compartment, Alu coated
- Power Supply; Output:**
 - IH - 2-wire; 4-20mA HART
 - ID - 2-wire; 4-20mA HART, PFS = Status
 - ff IE - 2-wire; 4-20mA HART, 4-20mA
 - PA - 2-wire; 4-20mA PROFIBUS PA, PFS = Status
 - AH - 4-wire; 90-253VAC, 4-20mA HART
 - 4-wire; 10.4-48VDC, 4-20mA HART
- Display, Operation:**
 - g B - w/o LCD, via communication
 - D - LCD SD02, push button + data backup function
 - E - LCD SD03, touch control + data backup function
- Approval Option:**
 - FM - FM IS Cl. I, Div. 1 Gr. A-D, Cl. I, Zn 0, Ex ia IIC
 - hh FI - FM IS Cl. I, II, III, Div. 1 Gr. A-G, Cl. I, Zn 0, Ex ia IIC, NI Cl. I Div. 2 Gr. A-D
 - FN - FM XP-AIS Cl. I, Div. 1 Gr. ABCD, DIP CL. II, III, Div 1 Gr EFG, Ex d [ia], NI Cl. I Div.2, Gr. A-D
- i **Options:** not relevant for safety

Pulscon with Dual Seal. LTC57-abbbcdeeffghh + i

- Probe:**
 - L -mm, rod 16mm 316L
 - P -inch, rod 16mm 316L
 - a 2 -mm, rope 4mm 316
 - 3 -inch, rope 1/6" 316
 - M -mm, rope 6mm 316
 - Q -inch, rope 1/4inch 316
 - N -mm, rope 6mm PA>Steel

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- R -mm, rope 8mm PA>Steel
- S -inch, rope 1/4in PA>Steel
- T -inch, rope 1/3inch PA>Steel
- X - Special version (different rod or rope dimensions, or different corrosion resistant material, different coatings or platings have to be evaluated for electrostatic)

Process Connection: not relevant for safety

bbb

Electrical Connections:

- A - Gland M20, IP66/68 NEMA4X/6P (Approval Option: FM only)
- B - Thread M20, IP66/68 NEMA4X/6P
- c C - Thread G1/2, IP66/68 NEMA4X/6P (Approval Option: FM only)
- D - Thread NPT 1/2, IP66/68 NEMA4X/6P
- I - Plug M12, IP66/68 NEMA4X/6P (Approval Option: FM only)
- M - Plug 7/8", IP66/68 NEMA4X/6P (Approval Option: FM only)

Seal:

- d 5 - Viton, -30°C - 150°C (-22°F - 302°F)
- 3 - EPDM, -40°C - 120°C (-40°F - 248°F)
- X - Special version, other seal material in combination with gastight glass feed through

Housing:

- ee A1 - GT19 dual compartment, Plastic PBT (Approval Option: FM only)
- A3 - GT18 dual compartment, 316L
- A2 - GT20 dual compartment, Alu coated

Power Supply; Output:

- ff IH - 2-wire; 4-20mA HART
- ID - 2-wire; 4-20mA HART, PFS = Status
- IE - 2-wire; 4-20mA HART, 4-20mA
- PA - 2-wire; 4-20mA PROFIBUS PA, PFS = Status
- AH - 4-wire; 90-253VAC, 4-20mA HART
- DH - 4-wire; 10.4-48VDC, 4-20mA HART

Display, Operation:

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- D - LCD SD02, push button + data backup function
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Approval Option:

- hh FM - FM IS Cl. I, Div. 1 Gr. A-D, Cl. I, Zn 0, Ex ia IIC
- FI - FM IS Cl. I, II, III, Div. 1 Gr. A-G, Cl. I, Zn 0, Ex ia IIC, NI Cl. I Div. 2 Gr. A-D
- FN - FM XP-AIS Cl. I, Div. 1 Gr. ABCD, DIP CL. II, III, Div 1 Gr EFG, Ex d [ia], NI Cl. I Div. 2, Gr. A-D
- FE - FM DIP Cl. II, III, Div. 1, Gr. E-G

i **Options:** not relevant for safety

13. Specific Conditions of Use:

1. Potential electrostatic discharge hazard, do not rub plastic surfaces with a dry cloth.
2. For enclosures made of aluminum, avoid impacts that can cause sparking. Refer to applicable control drawing for instructions.
3. For Div 2 installations, do not disconnect equipment unless power has been switched off.
4. For Explosionproof installations, do not open covers when explosive atmosphere is present.
5. Factory sealed, Explosionproof Seals not required. Refer to control drawing for instructions.

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6. Contact manufacturer for flamepath joint details when repair is necessary.

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
2 nd March 2017	Original Issue.

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