



Certificate of Compliance

Certificate: 1046905

Master Contract: 151079

Project: 70123140

Date Issued: 2017-04-17

Issued to: Endress + Hauser GmbH + Co. KG
Hauptstrasse 1
Maulburg, Baden-Württemberg 79690
GERMANY
Attention: Burkhard Lutterbeck

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: Anil Sodhi
Anil Sodhi

PRODUCTS

- CLASS 2258 02** - PROCESS CONTROL EQUIPMENT - For Hazardous Locations
CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations – Certified to U.S. Standards

Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G, Class III; Type 4X; IP66/67/68:

LIQUIPHANT M and LIQUIPHANT S, Level Limit Switch, Types FTL50(H)-Tbcdef, FTL51(H)-Tbcdef, FTL51C-Tbcdefg, FTL70-Tbcdefg and FTL71-Tbcdefg; rated as follows: with FEL50A Insert Profibus PA/Foundation Fieldbus: 9-32VDC with FEL50D insert, 21-26 Vdc, 10 mA, connected only to E+H transmitter Type FML621; with FEL51 insert, 19-250VAC, 350 mA, with FEL52 insert, 10-55 VDC, 1.5 W, with FEL54 insert, 19-250 VAC or 19-55VDC, 1.8 W, with FEL54DC insert 10-15 VDC, 1.2 W, with FEL55 insert, 11-36VDC, 4-20 mA, with FEL56 insert, 6.5-9.8 Vdc, NAMUR, with FEL57 insert, 11-16.7VDC, 150 mA, with FEL58 insert, 6.5-9.8 Vdc, NAMUR; Ambient: -50 Deg. C to + 70 Deg. C; Single Seal;

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +300°C (Types FTL70 & FTL71);

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Types FTL51(H), FTL51C);

MWP 928 psi (64 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Type FTL50(H)).



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Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups E, F and G, Class III; Type 4X; IP66/67/68:

LIQUIPHANT M and LIQUIPHANT S, Level Limit Switch, Types FTL50(H)-abcdef, FTL51(H)-abcdef, FTL51C-abcdefg, FTL70-abcdefg and FTL71-abcdefg; rated as follows: with FEL50A Insert Profibus PA/Foundation Fieldbus: 9-32VDC with FEL50D insert, 21-26 Vdc, 10 mA, connected only to E+H transmitter Type FML621; with FEL51 insert, 19-250VAC, 350 mA, with FEL52 insert, 10-55 VDC, 1.5 W, with FEL54 insert, 19-250 VAC or 19-55VDC, 1.8 W, with FEL54DC insert 10-15 VDC, 1.2 W, with FEL55 insert, 11-36VDC, 4-20 mA, with FEL56 insert, 6.5-9.8Vdc, NAMUR, with FEL57 insert, 11-16.7 VDC, 150 mA, with FEL58 insert, 6.5-9.8 Vdc, NAMUR; Ambient: -50 Deg. C to + 70 Deg. C; Single Seal;

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +300°C (Types FTL70 & FTL71);

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Types FTL51(H), FTL51C);

MWP 928 psi (64 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Type FTL50(H)).

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations

CLASS 2258 83 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non- Incendive Systems - For Hazardous Locations – Certified to U.S. Standards

Class I, Zone 0; Ex ia IIC:

Class I, Zone 0; AEx ia IIC:

Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III; Type 4X; IP66/67/68:

LIQUIPHANT M and LIQUIPHANT S, Level Limit Switch, Types FTL50(H)-Sbcdef, FTL51(H)-Sbcdef , FTL51C-Sbcdefg, FTL70-Sbcdefg and FTL71-Sbcdefg; input rated as follows: with FEL50A Insert Profibus PA/Foundation Fieldbus: 9-32VDC with FEL50D insert, 21-26 Vdc, 10 mA, connected only to E+H transmitter Type FML621; with FEL55 insert, 11-36VDC, 4-20 mA; with FEL56 insert, 6.5-9.8 Vdc NAMUR; with FEL57 insert, 11-16.7 Vdc, 150 mA; with FEL58 insert, 6.5-9.8 Vdc, NAMUR; intrinsically safe when connected per installation drawing no. 960392-2060 960009587(FEL50A); Ambient: -50 Deg. C to + 70 Deg. C Single Seal;

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +300°C (Types FTL70 & FTL71);

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Types FTL51(H), FTL51C);

MWP 928 psi (64 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Type FTL50(H)).

Note: In model code where e = enclosure = E4=F16plastic (FTL50) and (FTL51), device is suitable for Ex ia IIC; Class I, Zone 0; Class I, Groups A, B, C and D; Class II, Group G and Coal Dust; Class III hazardous locations.



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- CLASS 2258 04** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity – For Hazardous Locations
CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations – Certified to U.S. Standards

Class I, Zone 0; Ex ia IIC:

Class I, Zone 0; AEx ia IIC:

Class I, Division 1, Groups A, B, C and D; Class II, Groups E, F and G; Class III; Type 4X; IP66/67/68:

LIQUIPHANT M and LIQUIPHANT S, Level Limit Switch, Types FTL50(H)-Sbcdef, FTL51(H)-Sbcdef, FTL51C-Sbcdefg, FTL70-Sbcdefg and FTL71-Sbcdefg; input rated as follows: with FEL50A Insert Profibus PA/Foundation Fieldbus: 9-32VDC with FEL50D insert, 21-26 Vdc, 10 mA, connected only to E+H transmitter Type FML621; with FEL55 insert, 11-36VDC, 4-20 mA; with FEL56 insert, 6.5-9.8 Vdc, NAMUR; with FEL57 insert, 11-16.7 Vdc, 150 mA; with FEL58 insert, 6.5-9.8 Vdc, NAMUR; intrinsically safe, with Entity Parameters as listed below, when connected per installation drawing no. 960392-2060; 960009587 (FEL50A); Ambient: -50 Deg. C to + 70 Deg. C; -50 Deg. C to + 60 Deg. C (FEL50A and FEL50D for T6), Single Seal;

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +300°C (Types FTL70 & FTL71);

MWP 1450 psi (100 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Types FTL51(H), FTL51C);

MWP 928 psi (64 bar) -50 Deg. C \leq Process Temp. \leq +150°C (Type FTL50(H)).

FEL50A insert, Profibus PA/Foundation Fieldbus, $V_{max}/U_i=24$ VDC, $I_{max}/I_i=250$ mA, $P_{max}/P_i \leq 1.2$ W, $C_i \leq 5$ nF, $L_i \leq 10$ uH

FEL50A insert, Profibus PA/Foundation Fieldbus FISCO parameters, $V_{max}/U_i=17.5$ VDC, $I_{max}/I_i=500$ mA, $P_{max}/P_i \leq 5.5$ W, $C_i \leq 5$ nF, $L_i \leq 10$ uH

FEL50D insert, $V_{max}/U_i=27.6$ VDC, $I_{max}/I_i=93$ mA, $P_{max}/P_i=640$ mW, $C_i=2$ nF, $L_i=0.133$ mH

FEL55 insert: $V_{max}/U_i=36$ Vdc, $I_{max}/I_i=100$ mA, $P_{max}/P_i=1$ W, $C_i=0$ nF, $L_i=0$ mH

FEL56 and 58 inserts: $V_{max}/U_i=16$ Vdc, $I_{max}/I_i=52$ mA, $P_{max}/P_i=169$ mW, $C_i=30$ nF, $L_i=0$ mH

FEL57 insert: $V_{max}/U_i=16.7$ VDC, $I_{max}/I_i=150$ mA, $P_{max}/P_i=1.0$ W, $C_i=0$ nF, $L_i=0$ mH

Note: In model code where e = enclosure = E4=F16 plastic (FTL50) and (FTL51), device is suitable for Ex ia IIC; Class I, Zone 0; Class I, Groups A, B, C and D; Class II, Group G and Coal Dust; Class III hazardous locations.

CLASS 2252 06 - PROCESS CONTROL EQUIPMENT

CLASS 2252 86 - PROCESS CONTROL EQUIPMENT (Certified to U.S. Standards)

LIQUIPHANT M and LIQUIPHANT S, Level Limit Switch, Types FTL50(H)-Ubcdef, FTL51(H)-Uabcdef, FTL51C-Ubcdefg, FTL70-Ubcdefg and FTL71-Ubcdefg; rated as follows: with FEL50A Insert Profibus PA/Foundation Fieldbus: 9-32VDC with FEL50D insert, 21-26 Vdc, 10 mA, connected only to E+H transmitter Type FML621; with FEL51 insert, 19-250VAC, 350 mA, with FEL52 insert, 10-55 VDC, 1.5 W, with FEL54 insert, 19-250 VAC or 19-55VDC, 1.8 W, with FEL55 insert, 11-36VDC, 4-20 mA, with FEL56 insert, 6.5-9.8 Vdc, NAMUR, with FEL57 insert, 11-16.7 VDC, 150 mA, with FEL58 insert, 6.5-9.8 Vdc, NAMUR; Ambient: - 50 Deg. C to + 70 Deg. C;



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MWP 1450 psi (100 bar) -50 Deg. C ≤ Process Temp. ≤ +300°C (Types FTL70 & FTL71);
MWP 1450 psi (100 bar) -50 Deg. C ≤ Process Temp. ≤ +150°C (Types FTL51(H), FTL51C);
MWP 928 psi (64 bar) -50 Deg. C ≤ Process Temp. ≤ +150°C (Type FTL50(H)).

APPLICABLE REQUIREMENTS

C22.2 No. 0-10	General Requirements – Canadian Electrical Code, Part II
C22.2 No. 25-1966	Enclosures for Use in Class II, Groups E, F and G Hazardous Locations
C22.2 No. 30-M1986	Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CAN/CSA-C22.2 No. 94-M91	Special Purpose Enclosures
CAN/CSA C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measuring, Control and Laboratory Use – Part 1 : General Requirements
CAN/CSA-C22.2 No. 157-92	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
C22.2 No. 213-M1987	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
CAN/CSA-C22.2 No. 60079-0: 15	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
CAN/CSA-C22.2 No. 60079-11: 14	Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic Safety "i"
IEC 60079-27 Ed.2:2008	Fieldbus intrinsically safe concept (FISCO)
CAN/CSA-C22.2 No. 60529:05	Degrees of protection provided by enclosures (IP Code)
ANSI/ISA 12.27.01-2011	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
ANSI/ISA-61010-1 3rd Edition	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition
FMRC 3600 – 1998	Electrical Equipment for Use in Hazardous (Classified) Locations, General Requirements
FMRC 3610 – 1999	Intrinsically Safe Apparatus for Use in Class I, II & III, Division 1, and Class I, Zone 0 & 1 Hazardous (Classified) Locations
FMRC 3611 – 1999	Nonincendive Electrical Equipment for Use in Class I and Class II, Division 2, and Class III, Division 1 and 2 Hazardous (Classified) Locations
FMRC 3615 – 2006	Explosionproof Electrical Equipment, General Requirements
FMRC 3810 – 1995	Electrical and Electronic Test, Measuring, and Process Control Equipment
ANSI/NEMA 250 – 1991	Enclosures for Electrical Equipment
ANSI/IEC 60529:2004	Degrees of Protection Provided by Enclosures (IP Code)



Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
70123140	2017-04-17	Update Report 1046905 to include minor modifications to the PCB. Update ordinary location standard 61010-1 and other applicable standards to the latest edition. Update documentation.
70008383	2014-07-21	Update to include a new module (FEL54DC) and revisions to several certification drawings.
2408998	2011-04-27	Update of report 1046905 to cover addition of F27 enclosure; addition of IP ratings for all enclosures; addition of Single Seal rating and related drawings.
2039942	2008-11-21	Update to cover addition of c CSA us coverage, to cover revisions to marking and control drawings, addition of alternative adhesive nameplate types and addition of MWP ratings.
2225271	Nov. 17, 2009	Update to cover addition of new electrostatic insert FEL50A and modifications to FEL58 layout and components
1961325	Nov. 24, 2007	Update to cover addition of a new electronic insert FEL50D and minor modifications.
1510224	Dec. 15, 2003	Update to cover the addition of new models (housing compact).
1305204	Apr. 16, 2002	Extension of sensor "tube" length to 6000 mm maximum.
1200846	May 2, 2001	Addition of Liquiphant S, types FTL70 and FTL71.
1165969	Jan 25, 2001	Addition of T13 enclosure, coated version with new piezo-drive FTL51C-, new electronic insert FEL58, revised entity parameters for FEL56 insert.
1046905	Jan. 13, 2000	Addition of F16 plastic enclosure. Originally issued as 2500007487.
LR53988-136C	Aug. 16, 1999	Original Certification.