



Certificate of Compliance

Certificate: 2537178

Master Contract: 160686

Project: 70157646

Date Issued: October 18th, 2017

Issued to: Endress+HauserFlowtec AG
Kägenstrasse 7
4153 Reinach
SWITZERLAND

Attention: Reiner Pflieger

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: **E Giusti**
E Giusti

PRODUCTS

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards

Class I, Division 2, Groups A, B, C and D

Ex nA IIC T6...T1 Gc;

Class I, Zone 2, AEx nA IIC T6...T1 Gc

Proline Promass b 100 Types 8b1d**-C4...+###, 8b1d**-C6...+###, 8b1d**-CS...+###, O8b1d**-C4...+###, O8b1d**-C6...+###, O8b1d**-CS...+### and Proline Cubemass C 100 Types 8C1B**-C4*****+###, 8C1B**-CS*****+###, O8C1B**-C4*****+###, O8C1B**-CS*****+### with (b=A, E, F, G, H, I, O, P, S or X and d=B) and with (b=E or S and d=C), rated Umax = 30Vdc for supply and communication circuits, when connected per installation drawing FES0198 (for Promass A/E/F/G/H/I/O/P/S/X 100) or FES0200 (for Cubemass C 100), which also specifies the maximum temperature code T6...T1 function of maximum ambient temperature -50°C to 60°C and maximum process temperature up to 205°C (+140°C for sensor Promass E potted neck version, +240°C for Promass F version with max. Tmed = 240°C). Enclosures IP66/67 and type 4X.

Transmitters composed of Promass A, E, F, G, H, O, P, S, X and Sensor C sensors are dual seal devices. Promass E sensor, potted neck version (8E1B... and O8E1B...) is dual seal device only when equipped with optional rupture disk.



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CNGmass, LPGmass, LNGmass Types D8aB**-C4*****+###, D8aB**-C6*****+###, D8aB**-CS*****+###, OD8aB**-C4*****+###, OD8aB**-C6*****+###, OD8aB**-CS*****+### with a = C, E or L (C for CNGmass, E for LPGmass, L for LNGmass), rated Umax = 30Vdc for supply and communication circuits, when connected per installation drawing FES0215, which also specifies the maximum temperature code T6...T1 function of maximum ambient temperature -50°C to 60°C and maximum process temperature up to 150°C. Enclosures IP66/67 and type 4X.

Transmitters composed of Promass G, E and L sensors are dual seal devices.

Proline Promag D/E/H/L/P/W 100 Types 5a1B**-C6*****+###, O5a1B**-C6*****+###, 5a1B**-CS*****+###, O5a1B**-CS*****+### with a = D, E, H, L, P or W depending on the sensors, rated Umax = 30Vdc for supply and communication circuits, when connected per installation drawing FES0216, which also specifies the maximum temperature code T6...T1 function of maximum ambient temperature -40°C to 60°C and maximum process temperature up to 150°C. Enclosure IP66/67 and type 4X.

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 US Standards

Class I, Division 1, Groups A, B, C and D

Class II, III, Division 1, Groups E, F and G

Ex ia IIC T6...T1 Gb;

Class I, Zone 1, AEx ia IIC T6...T1 Gb

Ex tb IIIC Txx°C Db;

Zone 21, AEx tb IIIC Txx°C Db

Proline Promass b 100 flowmeters Types 8b1d**-C2...+###, 8b1d**-C5...+###, 8b1d**-CM...+###, 8b1d**-CN...+###, 8b1d**-84...+###, 8b1d**-85...+###, O8b1d**-C2...+###, O8b1d**-C5...+###, O8b1d**-CM...+###, O8b1d**-CN...+###, O8b1d**-84...+###, O8b1d**-85...+### and Cubemass C 100 Types 8C1B**-C2...+###, 8C1B**-CM...+###, 8C1B**-85...+###, O8C1B**-C2...+###, O8C1B**-CM...+###, O8C1B**-85...+###, with (b=A, E, F, G, H, I, O, P, S or X and d=B) and with (b=E or S and d=C), intrinsically safe with entity parameters Um=260 Vac for supply and communication circuits, when connected per installation drawing FES0197 (for Promass A/E/F/G/H/I/O/P/S/X 100) or FES0199 (for Cubemass C100), which also specifies the maximum temperature code T6...T1 function of maximum ambient temperature -50°C to 60°C and maximum process temperature up to 205°C (+140°C for Promass E, potted neck version, +240°C for Promass F version with max. Tmed = 240°C)..

Transmitters composed of Promass A, E, F, G, H, O, P, S, X and Sensor C sensors are dual seal devices. Promass E sensor, potted neck version (8E1B... and O8E1B...) is dual seal device only when equipped with optional rupture disk.

CNGmass, LPGmass, LNGmass flowmeters Types D8aB**-C2*****+###, D8aB**-CM*****+###, D8aB**-85*****+###, OD8aB**-C2*****+###, OD8aB**-CM*****+###, OD8aB**-85*****+### with a = C, E or L (C for CNGmass, E for LPGmass, L for LNGmass), intrinsically safe with entity parameters Um=260Vac for supply and communication circuits, when connected per installation drawing FES0214, which also specifies the maximum temperature code



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T6...T1 function of maximum ambient temperature -50°C to 60°C and maximum process temperature up to 150°C. Enclosures IP66/67 and type 4X.

Transmitters composed of Promass G, E and L sensors are dual seal devices.

Note:

When the safety barrier Promass 100 is located in Class I Division 2 (respectively safe area) it shall be mounted inside an additional enclosure which meets the requirements of CSA C22.2 No. 213, CAN/CSA 60079-15, ANSI/ISA 60079-15 and FM 3611 (respectively as CAN/CSA C22.2 No. 61010-1 and FM 3810).



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APPLICABLE REQUIREMENTS

CSA C22.2 No. 0-10	General Requirements - Canadian Electrical Code, Part II
CAN/CSA C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements - Second Edition
CSA C22.2 No. 213-16 Non-Incendive	Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
CSA C22.2 No 60079-0:11	Explosive atmospheres - Part 0: Equipment - General requirements
CSA C22.2 No 60079-11:14	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
CSA C22.2 No 60079-15:16	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus
CSA C22.2 No. 60079-31:15	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
CAN/CSA C22.2 No. 25-1966	Enclosures for Use in Class II Groups E, F, G Hazardous Locations
CAN/CSA C22.2 No.94.1-07	Enclosures for Electrical Equipment for Measurement, Control, and Laboratory Use
FM 3810: 2005	Approval Standard for Electrical Equipment for Measurement, Control, and Laboratory Use
ANSI/ ISA-61010-1 (82.02.01): 2012	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1 General Requirements
FM 3600:2011	Approval Standard for Electrical Equipment for use in Hazardous (Classified) Locations General Requirements
FM 3610:2015	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, III, Division 1, Hazardous (Classified) Locations
FM 3611:2016	Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III Divisions 1 and 2, Hazardous (Classified) Locations
FM 3616:2011	Dust-Ignitionproof Electrical Equipment General Requirements
ANSI/ ISA 60079-0 (12.00.01): 2013	Electrical Apparatus for Use in Class I, Zone 0, 1 & 2 Hazardous (Classified) Locations: General requirements
ANSI/ ISA 60079-11 (12.02.01):2013	Electrical Apparatus for Use in Class I, Zone 0, 1 & 2 Hazardous (Classified) Locations - Intrinsic Safety "i"
ANSI/ ISA 60079-15 (12.12.02): 2013	Electrical Apparatus for Use in Class I, Zone 2 Hazardous (Classified) Locations: Type of protection "n"
ANSI/ ISA 60079-31 (12.10.03): 2015	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
ANSI/ ISA 12.27.01: 2011	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Fluids



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MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

Nameplate adhesive label material approval information:

Markings appear (laser printed) on self-adhesive nameplate label as per Letter of Attestation 1593474 (LR 82598-10)

Or on self-adhesive nameplate label 3M Type 7847 on powder coated aluminum IGP Type Durapol 6403A or stainless steel

Or stamped, engraved, etched, laser printed or embossed on the metallic enclosure

Or stamped, engraved, etched, laser printed or embossed on stainless steel nameplate mechanically fixed by welding, rivets, screws or key ring.

Nameplates are as per drawings 322541-0001, 322738-0000, 322927-0001, 322927-0003, 322928-0001, 323096-0001, 323097-0001 and 340934-0001. Applicable installation drawings FES0197, FES0198, FES0199, FES0200, FES0214, FES0215 and FES0216 are shipped with each product.

Note - Jurisdictions in Canada may require these markings to also be provided in French language. It is the responsibility of the manufacturer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the manufacturer to determine this requirement and have bilingual wording added to the "Markings".

Proline Promass A/E/F/G/H/I/O/P/S/X 100

Hazardous Locations:

Class I Division 2 Groups ABCD;

Ex nA IIC T6...T1 Gc; Class I Zone 2, AEx nA IIC T6...T1 Gc

8b1d**- CS/C4/C6**A..., O8b1d**- CS/C4/C6**A...,

8b1d**- CS/C4/C6**BA..., O8b1d**- CS/C4/C6**BA...

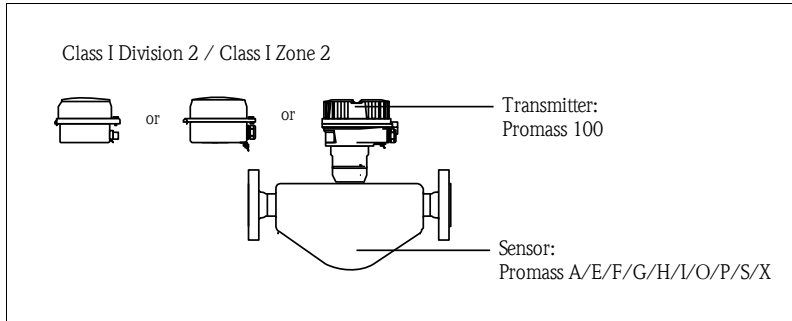
with b=A, E, F, G, H, I, O, P, S or X and d=B, and with b=E or S and d=C

Class I Division 2 Groups ABCD

8b1d**- CS/C4/C6**BB..., O8b1d**- CS/C4/C6**BB...,

8b1d**- CS/C4/C6**BC..., O8b1d**- CS/C4/C6**BC...

with b=A, E, F, G, H, I, O, P, S or X and d=B, and with b=E or S and d=C



Notes:

1. Install all per Canadian Electrical Code (CEC) resp. National Electrical Code (NEC) ANSI/NFPA 70.
2. Caution: Use supply wires suitable for 20 °C above ambient temperature, but at least for 80 °C/176 °F.
3. The following sensors are Dual Seal devices in accordance with ANSI/ISA-12.27.01-2003: Promass A, E, F, G, H, O, P, S and X. Promass E, potted neck version (8E1B... and O8E1B...) is a Dual Seal device if the optional rupture disk is present.
4. **WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.**
AVERTISSEMENT - RISQUE D'EXPLOSION - LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATÉRIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 2.
5. **WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.**
AVERTISSEMENT - RISQUE D'EXPLOSION - AVANT DE DÉCONNECTER L'EQUIPMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DÉSIGNÉ NON DANGEREUX.

Ambient temperature range: - 40 °C ... +60 °C

Medium temperature range: - 50 °C ... +150 °C (- 40 °C ... +140 °C for Promass E, potted neck version)
- 50 °C ... +205 °C (for extended temperature version) ⁴⁾

Temperature table (Tmed, max = 150 °C)

Type of Sensor:	Approval:	Housing:	Ambient Temp. Ta [°C]	Max. medium temperature Tmed [°C]			
				T6	T5	T4	T3-T1
A, E, F, G, H, I, O, P, S, X	CS, C4, C6	A, B	35	50	85	120	150 ¹⁾
			50	--	85	120	150 ¹⁾
			60	--	--	120	150 ¹⁾
		C	50	--	85	120	150 ¹⁾
			60	--	--	120	150 ¹⁾

¹⁾ For Proline Promass E 100 (8E1B... and O8E1B...), the max. medium temperature is +140°C (potted neck sensor version)

Temperature table (Tmed, max = 205 °C/240°C, for extended temperature version only)

Type of Sensor:	Approval:	Housing:	Ambient Temp. Ta [°C]	Max. medium temperature Tmed [°C]				
				T6	T5	T4	T3	T2-T1
A, E ²⁾ , F, H, O, P, S, X	CS, C4, C6	A, B	35	50	85	120	170	205 ⁴⁾
			50	--	85	120	170	205 ⁴⁾
			60	--	--	120	170	205 ⁴⁾
		C	50	--	85	120	170	205 ⁴⁾
			60	--	--	120	170	205 ⁴⁾

²⁾ Proline Promass E 100 (8E1C... and O8E1C...), non-potted neck sensor version

⁴⁾ Tmed = 240°C for Promass F version with max. Tmed = 240°C. For medium temperature above 205°C, the transmitter shall not be installed above the sensor.

Änderungen:	A	30.01.2013/SCHK	F	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersetzt durch: Ersatz für: Ersteller: FES FILE:
	B	25.02.2014/SCHK	G		
	C	20.10.2014/SCHK	H		
	D	13.09.2017/PLR	J		
	E		K		

CSA_{us} Control Drawing

Class I Division 2 / Class I Zone 2

Proline Promass A/E/F/G/H/I/O/P/S/X 100



Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach

FES0198D

1/2

Gezeichnet	30.01.2013	SCHK
Geprüft		
Ex-geprüft	13.09.2017	PLR
Gesehen		

Proline Promass A/E/F/G/H/I/O/P/S/X 100

Hazardous Locations:

Class I Division 2 Groups ABCD;

Ex nA IIC T6...T1 Gc; Class I Zone 2, AEx nA IIC T6...T1 Gc

Notes:

1. Class I Division 2 Groups ABCD or Class I Zone 2 (Ex nA IIC):

Flow meter with threaded cable entries (e.g. M20x1.5 or NPT1/2"):

- Install all per Canadian Electrical Code (CEC) resp. National Electrical Code (NEC) ANSI/NFPA 70 and use supply wires suitable for 20 °C above ambient temperature.

2. Class I Division 2 Groups ABCD or Class I Zone 2 (Ex nA IIC):

Flow meter with CSA resp. FM approved receptacles (plug-in connector) suitable for Class I, Div. 2 or Class I, Zone 2 installation:

- Install per Canadian Electrical Code (CEC) resp. National Electrical Code (NEC) ANSI/NFPA 70.
- Install tool secured guard on the connection to render the connection normally not arcing.
- Final installation shall provide mechanical protection of the plug-in connector.
- Equipment shall be marked in close proximity to the plug-in connection with the following warning:
DO NOT DISCONNECT WHEN ENERGIZED - NE PAS DÉCONNECTER SOUS TENSION

3. Non-hazardous classified areas:

All of the above described cable entries are suitable for installations in non-hazardous areas:

- Install per Canadian Electrical Code (CEC) resp. National Electrical Code (NEC) ANSI/NFPA 70.

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	B	25.02.2014/SCHK	G						
	C	20.10.2014/SCHK	H						
	D	13.09.2017/PLR	J						
	E		K						
cCSA_{us} Control Drawing Class I Division 2 / Class I Zone 2 Proline Promass A/E/F/G/H/I/O/P/S/X 100							Gezeichnet	30.01.2013	SCHK
							Geprüft		
							Ex-geprüft	13.09.2017	PLR
							Gesehen		
 Flowtec AG, Kägenstrasse 7, CH-4153 Reinach BL1, Postfach						FES0198D 2/2			