# Certificate of Compliance

**Certificate:** 1337352 (LR 82598) **Master Contract:** 160686

**Project:** 2717366 **Date Issued:** April 8, 2014

**Issued to:** **Endress + Hauser Flowtec AG**

**Kagenstrasse 7**
**Reinach, Basel Land 4153**
**Switzerland**
**Attention: Daniel Bosshard**

## *The products listed below are eligible to bear the CSA Mark shown*

*Eshwar Kashyap*

**Issued by:** Eshwar Kashyap

**PRODUCTS**

**CLASS 2258 02** - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

Class I, Division 2, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III; Type 4X:

• Promag 10W/L/P/E/F/H/D/Xbb-cdefg**R**iklmno+#**# Flowmeters, supply rated 85-250Vac 50/60Hz 12VA, 20-28Vac 50/60Hz 8VA or 11-40Vdc 6W. Temperature Codes and Maximum Ambient Temperatures per Control Drawing No. FES0070.

Notes:

1. "b,c,d,e,f,g,i,k,l,m,n,o" in the Model Number may be any number or letter representing specific options;

2. Promag 10 W/L/P/E/F sensors (remote versions) are also certified for Type 6P.

3. ** = Option in two digits (none, two or multiple of two digits); any combination of number or letter. +, # = Signs used as indicator for optional abbreviation of extended order code

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**CLASS 2252 03 - PROCESS CONTROL EQUIPMENT**

• Promag 10W/L/P/E/F/H/D/Xbb-cdefg**A**iklmno+#**# Flowmeters, supply rated 85-250Vac 50/60Hz 12VA, 20-28Vac 50/60Hz 8VA or 11-40Vdc 6W.

Notes:

1. "b,c,d,e,f,g,i,k,l,m,n,o" in the Model Number may be any number or letter representing specific options.

2. Promag 10 W/L/P/E/F sensors (remote versions) are also certified for Type 6P.

3. ** = Option in two digits (none, two or multiple of two digits); any combination of number or letter. +, # = Signs used as indicator for optional abbreviation of extended order code

**APPLICABLE REQUIREMENTS**

CAN/CSA C22.2 No. 0-M91 (R2001) - General Requirements - Canadian Electrical Code, Part II

CSA Std C22.2 No. 25-1966 - Enclosures for Use in Class II, Groups E, F and G Hazardous Locations

CAN/CSA-C22.2 No. 94-M91 - Special Purpose Enclosures

CAN/CSA-C22.2 No. 1010.1-92 - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements

CSA Std C22.2 No. 213-M1987 - Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations

# *Supplement to Certificate of Compliance*

**Certificate:** 1337352 **Master Contract:** 160686

***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 |
|---|---|---|
| 2717366 | Apr 8, 2014 | Update to include a new sensor, model 'E'. |
| 2492274 | Feb 24, 2012 | Update to remove sensor descriptions from the report |
| 2480302 | Dec 15, 2011 | Update to cover new sensor materials, sizes, construction as well as several minor drawing alterations for the Promag 10x Flowmeter |
| 2194697 | Jul 27, 2009 | Update to include alternative Flowmeter Promag 10 "L" and addition of sensors Promag D DN65 and DN100. |
| 2129916 | Jan 22, 2009 | Update to include Promag** D Sensor, Redesign H Sensor & drawing revisions |
| 1714192 | Sep 23, 2005 | Update to cover minor alternative constructions |

### History

| | | |
|---|---|---|
| 1337352 | Feb. 13, 2003 | Original Certification |

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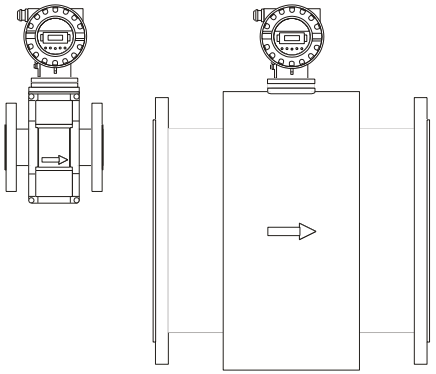
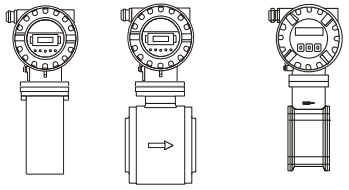
**Hazardous Locations**

Class I Div. 2 Groups ABCD or Class I Zone 2 Groups IIC
and Class II and III Division 1 Groups EFG



PROMAG 10 W / P / E / L



PROMAG 10 H



PROMAG 10 D

**Functional Rating**

These ratings do not supersede Hazardous Location values.

Terminals 26 and 27, Hart current output

$U_{nom}$ = 30V $I_{nom}$ = 4…20mA

Terminals 24 and 25, Pulse output

$U_{nom} \leq$ 30V $I_{nom} \leq$ 250mA

8. The Nonincendive Field Wiring Circuit Concept allowes interconnection of nonincendive field wiring apparatus with associated nonincendive field wiring apparatus or associated apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when:

   $V_{max} \geq V_{oc}$ or $V_t$, $C_a \geq C_i + C_{cable}$, $L_a \geq L_i + L_{cable}$

   Hart, current output , Terminals 26 (+) and 27 (-)
   (current controlled circuit)

| $V_{max}$ | $I_{max}$ | $C_i$ | $L_i$ |
|---|---|---|---|
| 36V | See note 10 | 8 nF | 0.3 mH |

   Pulse output , Terminals 24 (+) and 25 (-)
   (voltage controlled circuit)

| $V_{max}$ | $I_{max}$ | $C_i$ | $L_i$ |
|---|---|---|---|
| 36V | 250mA | 6 nF | 0 |

9. For this current controlled circuit, the parameter $I_{max}$ is not required and need not to be aligned with parameter $I_{SC}$ and $I_t$ of the associated non-incendive field wiring or associated apparatus.

# PROMAG 10 W / P / E / H / D / L

Notes:

1. Control room equipment shall not use or generate more than 250 V rms.
2. Caution: Use supply wires suitable for 5 °C above ambient temperature, but at least for 80 °C / 176°F.
3. Class II Group G: The surface temperature of the apparatus cannot exceed 165 °C / 329°F.
4. Install using conduit per Canadian Electrical Code Part 1
5. WARNING: EXPLOSION HAZARD! DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS
6. WARNING: SUBSTITUTION OF COMPONENTS MY IMPAIR SUITABILITY FOR DIVISION 2 AND ZONE 2

7. Temperature table for compact version

| Max. ambient temperature | Max. medium temperature depending temperature classes | | | | | | |
|---|---|---|---|---|---|---|---|
| | T6 | T5 | T4A | T4 | T3C | T2 | T1 |
| 50 °C / 122°F | — | — | 115°C / 239°F | 115°C / 239°F | 115°C / 239°F | 115°C / 239°F | 115°C / 239°F |
| 45 °C / 113°F | | | | 130°C / 266°F | 130°C / 266°F | 130°C / 266°F | 130°C / 266°F |
| 40 °C / 104°F | | | | | 150°C / 302°F | 150°C / 302°F | 150°C / 302°F |

The minimum ambient temperature is –20°C / -4°F

| Aenderungen: | | | | | Ersteller: FES / **ID 1135**<br>FILE: M:\ZEICHNG\FES0070\FES0070C.DOC |
|---|---|---|---|---|---|
| | A | 14.03.05/MDI | F | | |
| | B | 10.10.08/BDA | G | | |
| | C | 06.05.09/BDA | H | | |
| | D | 01.04.14/BDA | J | | |
| | E | | K | | |

| | | | |
|---|---|---|---|
| CSA Control Drawing Class I Division 2 / Class I Zone 2 Compact version NI Field Wiring / FNICO Concept PROMAG 10 | Gezeichnet | 18.12.02 | Bn |
| | Geprüft | | |
| | Ex-geprüft | 01.04.2014 | BDA |
| | Gesehen | | |

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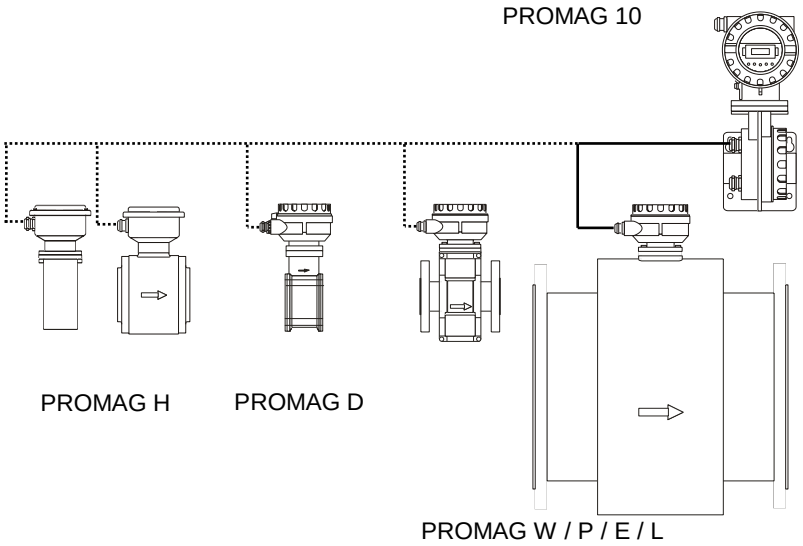
# PROMAG 10 W / P / E / H / D / L

**Hazardous Locations**

Class I Div. 2 Groups ABCD or Class I Zone 2 Groups IIC
and Class II and III Division 1 Groups EFG




**Functional Rating**

These ratings do not supersede Hazardous Location values.

Terminals 26 and 27, Hart current output

$U_{nom}$ = 30V $I_{nom}$ = 4…20mA

Terminals 24 and 25, Pulse output

$U_{nom} \leq$ 30V $I_{nom} \leq$ 250mA

**Notes:**

1. Control room equipment shall not use or generate more than 250 V rms.
2. Caution: Use supply wires suitable for 5 °C above ambient temperature, but at least for 80 °C / 176°F.
3. Class II Group G: The surface temperature of the apparatus cannot exceed 165 °C / 329°F.
4. Install using conduit per Canadian Electrical Code Part 1
5. WARNING: EXPLOSION HAZARD! DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS
6. WARNING: SUBSTITUTION OF COMPONENTS MY IMPAIR SUITABILITY FOR DIVISION 2 AND ZONE 2
7. A sensor which is connected to a Promag 50/51/53 transmitter can also be installed to a Promag 10 transmitter. For this case this control drawing is relevant for safe use.

8. Temperature table of remote version

Sensor:

| Max. ambient temperature | Max. medium temperature depending temperature classes | | | | | | |
|---|---|---|---|---|---|---|---|
| | T6 | T5 | T4A | T4 | T3C | | |
| 60 °C / 140°F | 80°C / 176°F | 95°C / 203°F | 115°C / 239°F | 130°C / 266°F | 150°C / 302°F ***)** | 150°C / 302°F ***)** | 150°C / 302°F ***)** |
| 50 °C / 122°F | 80°C / 176°F | 95°C / 203°F | 115°C / 239°F | 130°C / 266°F | 150°C / 302°F | 150°C / 302°F | 150°C / 302°F |

***)** only for PROMAG 10H DN40 – 100

Transmitter:

Temperature class for transmitter in remote version is T4A at 60°C / 140°F ambient temperature.
The minimum ambient temperature is –20°C / -4°F

9. The Nonincendive Field Wiring Circuit Concept allowes interconnection of nonincendive field wiring apparatus with associated nonincendive field wiring apparatus or associated apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when:
$V_{max} \geq V_{oc}$ or $V_t$, $C_a \geq C_i + C_{cable}$, $L_a \geq L_i + L_{cable}$

Hart, current output , Terminals 26 (+) and 27 (-)
(current controlled circuit)

| $V_{max}$ | $I_{max}$ | $C_i$ | $L_i$ |
|---|---|---|---|
| 36V | See note 11 | 8 nF | 0.3 mH |

Pulse output , Terminals 24 (+) and 25 (-)
(voltage controlled circuit)

| $V_{max}$ | $I_{max}$ | $C_i$ | $L_i$ |
|---|---|---|---|
| 36V | 250mA | 6 nF | 0 |

10. For this current controlled circuit, the parameter $I_{max}$ is not required and need not to be aligned with parameter $I_{SC}$ and $I_t$ of the associated non-incendive field wiring or associated apparatus.

| Aenderungen: | | | | | Ersteller: FES / **ID 1135**<br>FILE: M:\ZEICHNG\FES0070\FES0070C.DOC |
|---|---|---|---|---|---|
| | A | 14.03.05/MDI | F | | |
| | B | 10.10.08/BDA | G | | |
| | C | 06.05.09/BDA | H | | |
| | D | 01.04.14/BDA | J | | |
| | E | | K | | |

| | | | |
|---|---|---|---|
| CSA Control Drawing Class I Division 2 / Class I Zone 2 Remote version NI Field Wiring / FNICO Concept PROMAG 10 | Gezeichnet | 18.12.02 | Bn |
| | Geprüft | | |
| | Ex-geprüft | 01.04.2014 | BDA |
| | Gesehen | | |

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FES0070 D 2/2