



# Certificate of Compliance

**Certificate:** 1111289 (082598\_0\_000)

**Master Contract:** 160686

**Project:** 70048686

**Date Issued:** 2015-10-01

**Issued to:** Endress + Hauser Flowtec AG  
Kagenstrasse 7  
Reinach, Basel Land 4153  
SWITZERLAND  
Attention: Utz Dette

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



**Issued by:** Eshwar Kashyap  
Eshwar Kashyap

## PRODUCTS

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

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

• PROMAG 50/51/53W/P/H/Xc-defghN[A/6/U/V]Imnop+#### Compact Magnetic Flowmeter, PROMAG 50/51/53W/P/H/Xc-defghN[P]Imnop+#### Compact Magnetic Flowmeter (enhanced climate) . Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe electrodes, specific Temperature Code and signal output circuits per Control Drawing FES0041. Temperature Code T1 - T5. Ambient Temperature -40°C to +60°C.

\*\* = 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

**Ex de [ia Ga] IIC T6 ... T1 Gb; Type 4X:**

• PROMAG 50/51/53W/P/H/Xc-defgh[B/D/N/3/4/5/6][G/N/W/7/8]Imnop+#### Remote Magnetic Flowmeter, PROMAG 50/51/53W/P/Hc-defgh[B/D/N/3/4/5/6][T]Imnop+#### Remote Magnetic Flowmeter (enhanced climate). Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe electrodes, specific Temperature Code and signal output circuits per Control Drawing FES0240. Temperature Code T1 - T5. Ambient Temperature -40°C to +60°C.



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

- PROMAG 50/51/53W/P/H/Xc-defghN[A/6/U/V]lmnop+#### Compact Magnetic Flowmeter, PROMAG 50/51/53W/P/H/Xc-defghN[P]lmnop+#### Compact Magnetic Flowmeter (enhanced climate). Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe electrodes, specific Temperature Code and signal output circuits per Control Drawing FES0041. FACTORY SEALED. Temperature Code T1 - T5. Ambient Temperature -40°C to +60°C.

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

- Promag50/51/53/55H/Xc-defghR[A/B/1/2]lmnop+#### Compact Magnetic Flowmeter (Type 4x), Promag50/51/53/55H/Xc-defghR[P/R]lmnop+#### Compact Magnetic Flowmeter (Type 4x, enhanced climate), Promag50/51/53/55H/Xc-defghR[C/3]lmnop+#### Remote Magnetic Flowmeter (Type 4x), Promag50/51/53/55H/Xc-defghR[S]lmnop+#### Remote Magnetic Flowmeter (Type 4x, enhanced climate), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[A/1/6]lmnop+#### Compact Magnetic Flowmeter (Type 4x), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[P]lmnop+#### Compact Magnetic Flowmeter (Type 4x, enhanced climate), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[C/3]lmnop+#### Remote Magnetic Flowmeter (Type 4x), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[S]lmnop+#### Remote Magnetic Flowmeter (Type 4x, enhanced climate) and Promag50/51/53/55W/L/P/E/S/Xc-defghR[K/5]lmnop+#### Remote Magnetic Flowmeter (Transmitter Type 4x, Sensor 6P). Transmitter Promag50/51/53 Input rated 16-62Vdc; 20-55Vac; or 85-260Vac, 45/65Hz, 15VA. Transmitter Promag55 Input rated 20-64Vdc, 19W; or 20-260Vac, 45-65Hz, 45VA.

Transmitter Promag50/51/53/55 Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Non-incendive electrodes and specific Temperature Code per Control Drawing FES0042.

Temperature Code T1 - T4A (Compact version Promag50/51/53/55W/L/P/H/S/D), T4A (Remote Transmitter Promag50/51/53), T4 (Remote Transmitter Promag55) and T1 - T6 (Remote Sensors Promag W/L/P/H/S/D). Ambient Temperature -40 °C to +60 °C.

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- PMG-abcdefghi and PMH-abcdefghij compact or remote Magnetic Flowmeter (Type 4X). Transmitter Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Transmitter Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Non-incendive electrodes and specific Temperature Code per Control Drawing Kobold 002. Temperature Code T1 - T4A (Transmitter) and T1- T6 (Remote Sensors). Ambient Temperature -40 °C to +60 °C.



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Note: Series PMG flowmeters are manufactured under the trade name Kobold.

**CLASS 2258 83** - For Hazardous Locations PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non- Incendive Systems - CERTIFIED TO U.S. STANDARDS

**AEx de [ia Ga] IIC T6 ... T1 Gb; Type 4X:**

- PROMAG 50/51/53W/P/H/Xc-defgh[B/D/N/3/4/5/6][G/N/W/7/8]lmnop+### Remote Magnetic Flowmeter, PROMAG 50/51/53W/P/Hc-defgh[B/D/N/3/4/5/6][T]lmnop+### Remote Magnetic Flowmeter (enhanced climate). Input rated 16-62Vdc, 20-55Vac, 85-260Vac, 50/60Hz, 15VA. Relay contacts rated 42Vdc/100mA and 30Vac/500mA. Explosion-proof with Intrinsically Safe electrodes, specific Temperature Code and signal output circuits per Control Drawing FES0240. Temperature Code T1 - T5. Ambient Temperature -40°C to +60°C.

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**APPLICABLE REQUIREMENTS**

CAN/CSA C22.2 No. 0-M91 (R2001)	General Requirements - Canadian Electrical Code, Part II
C22.2 No. 142-M1987 (R2009)	Process Control Equipment
C22.2 No. 25-1966 (R2009)	Enclosures for Use in Class II, Groups E, F and G Hazardous Locations
C22.2 No. 30-M1986 (R2007)	Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CAN/CSA-C22.2 No. 157-92 (R2006)	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
C22.2 No. 213-M1987 (R2008)	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
CAN/CSA-C22.2 No. 60079-0:11 Ed. 5	Explosive Atmospheres - Part 0: Equipment - General requirements
CAN/CSA-C22.2 No. 60079-1:11	Explosive Atmospheres – Part 1: Equipment protection by flameproof enclosures "d"
CAN/CSA-C22.2 No. 60079-7:12	Explosive Atmospheres – Part 7: Equipment protection by increased safety "e"
CAN/CSA-C22.2 No. 60079-11:14	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CAN/CSA-C22.2 No. 94-M91 (R2006)	Special Purpose Enclosures
ANSI/UL 60079-0:09	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/UL 60079-1:09	Electrical Apparatus for Explosive Gas Atmospheres - Part 1: Flameproof Enclosures "d"
ANSI/UL 60079-11:13	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"
ANSI/ISA-60079-7:13	Explosive Atmospheres - Part 7: Equipment protection by increased safety "e"

### 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 5. W / S / P / L / E



PROMAG 5.H



Promag 5.D

#### Notes:

- Control room equipment shall not use or generate more than 250 V rms or VDC.
- Caution: Use supply wires suitable for 5 °C above ambient temperature, but at least for 80 °C / 176°F.
- Class II Group G: The surface temperature of the apparatus cannot exceed 165 °C / 329°F.
- Install per Canadian Electrical Code
- Fieldbus cable connectors are suitable for Class 1 Div. 2 Groups A,B,C,D if nonincendive circuits are used, see sheet 3.
- A dust-tight conduit seal shall be used when installed in Class II & III environments

#### High temperature version (180 °C / 356°F):

PROMAG 5.P/S\*\*-B\*\*\*\*\*

## PROMAG 5. W / S / P / H / D / L / E

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				130°C / 266°F	150°C / 302°F	150°C / 302°F	150°C / 302°F

#### High temperature version PROMAG 5.P/S\*\*-B\*\*\*\*\* only:

Temperature table for compact version:

Max. ambient temperature	Max. medium temperature depending temperature classes							
	T6	T5	T4A	T4	T3C	T3A	T2	T1
60 °C / 140°F	---	---	---	130°C / 266°F	130°C / 266°F	130°C / 266°F	130°C / 266°F	130°C / 266°F
50 °C / 122°F			115°C / 239°F		150°C / 302°F	150°C / 302°F	150°C / 302°F	150°C / 302°F
40 °C / 104°F			115°C / 239°F		180°C / 356°F	180°C / 356°F	180°C / 356°F	

The minimum ambient temperature is -40°C / -40°F

Aenderungen:				Ersteller: FES / ID 1077		
A	07.12.01 / MDI	F	05.05.09/BDA	FILE: M:\ZEICHN\GFES0042\J\FES0042J.doc		
B	15.01.03 / MDI	G	03.02.2011/KLI			
C	31.10.05/PAM	H	08.08.2012/BIF			
D	14.07.06/UD	J	21.02.2014/BDA			
E	10.10.08/BDA	K				
CSA Control Drawing Class I Division 2 Class I Zone 2 Compact version PROMAG 5x				Gezeichnet	07.12.01	MDI
				Geprüft		
				Ex-geprüft	21.02.2014	BDA
				Gesehen		
 Flowtec AG, Kaeagenstrasse 7, CH-4153 Reinach BL1, Postfach				FES0042 J      1/4		

### Hazardous Locations

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



Transmitter



PROMAG 5.H



PROMAG 5. W/S/P/L/E



Promag 5.D

#### Notes:

- Control room equipment shall not use or generate more than 250 V rms or VDC.
- Caution: Use supply wires suitable for 5 °C above ambient temperature, but at least for 80 °C / 176°F.
- Class II Group G: The surface temperature of the apparatus cannot exceed 165 °C / 329°F.
- Install per Canadian Electrical Code
- Fieldbus cable connectors are suitable for Class 1 Div. 2 Groups A,B,C,D if nonincendive circuits are used, see sheet 3.
- A dust-tight conduit seal shall be used when installed in Class II & III environments

#### High temperature version (180 °C / 356°F):

PROMAG 5.P/S\*\*-B\*\*\*\*\*

## PROMAG 5.W / S / P / H / D / L / E

Temperature table for sensors in remote version

Max. ambient temperature	Max. medium temperature depending temperature classes						
	T6	T5	T4A	T4	T3C	T2	T1
60 °C / 140°F	80°C / 176°F	95°C / 203°F	115°C / 239°F	130°C / 266°F	130°C / 266°F	130°C / 266°F	130°C / 266°F
50 °C / 122°F *)	---	---	---	---	150°C / 302°F	150°C / 302°F	150°C / 302°F

\*) 60 °C / 140°F for PROMAG 5.H DN40 – 100

#### High temperature version PROMAG 5.P/S\*\*-B\*\*\*\*\* only:

Temperature table for compact version:

Max. ambient temperature	Max. medium temperature depending temperature classes						
	T6	T5	T4	T3C	T3A	T2	T1
60 °C / 140°F	80°C / 176°F	95°C / 203°F	130°C / 266°F	150°C / 302°F	150°C / 302°F	150°C / 302°F	150°C / 302°F
50 °C / 122°F	---	---	---	---	180°C / 356°F	180°C / 356°F	180°C / 356°F

For Promag 50/51/53, temperature class for remote transmitter is T4A at 60°C / 140°F.  
For Promag 55, temperature class for remote transmitter is T4 at 60°C / 140°F.

**The minimum ambient temperature is -40°C / -40°F**

Aenderungen:	A	07.12.01 / MDI	F	05.05.09/BDA	Ersteller: FES / ID 1077 FILE: M:\ZEICHN\FES0042\J\FES0042J.doc
	B	15.01.03 / MDI	G	03.02.2011/KLI	
	C	31.10.05/PAM	H	08.08.2012/BIF	
	D	14.07.06/UD	J	21.02.2014/BDA	
	E	10.10.08/BDA	K		

CSA Control Drawing Class I Division 2  
Class I Zone 2  
Remote version  
PROMAG 5x

Gezeichnet	07.12.01	MDI
Geprüft		
Ex-geprüft	21.02.2014	BDA
Gesehen		



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

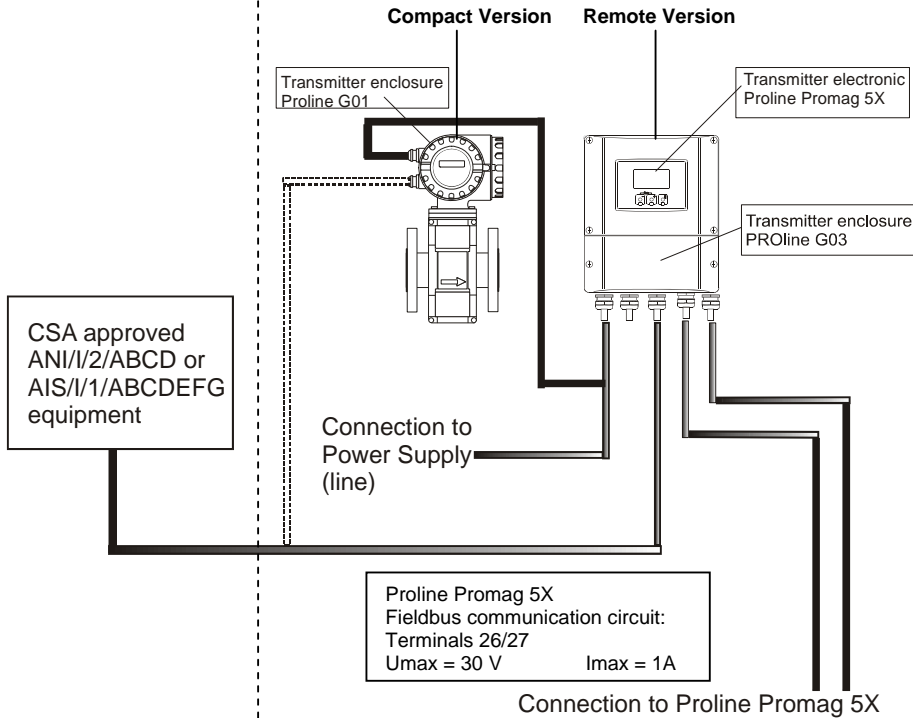
FES0042 J

2/4

# Fieldbus Connector Class I Div.2 Compact /Remote Version

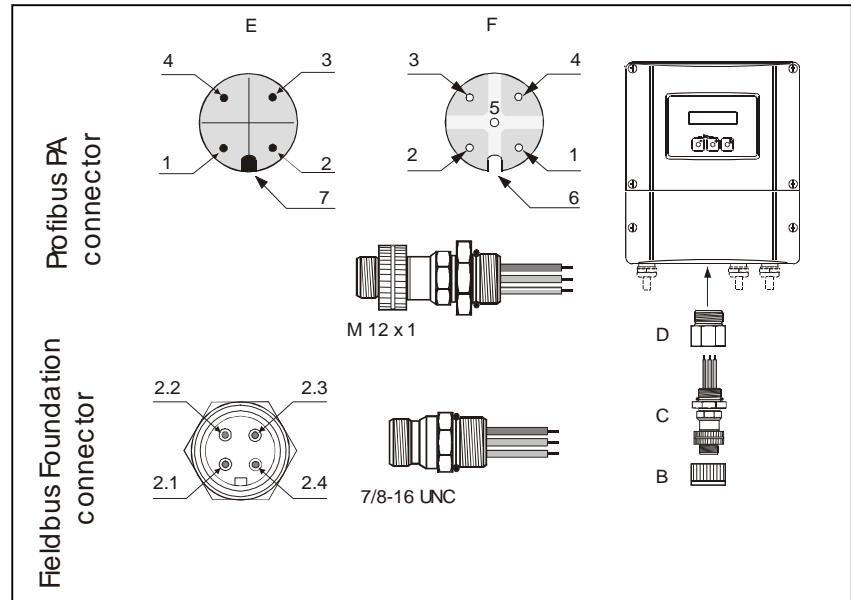
**Non-Hazardous  
Classified Location**

**Hazardous Classified Location**  
Class I Div. 2 Groups ABCD or  
Class I Zone 2 Groups IIC, Class II



**Notes:**

1. Install per Canadian Electrical Code.
2. Fieldbus cable connectors are suitable for Class I Div.2 Groups A, B, C, D if connected to associated nonincendive or associated intrinsically equipment..
3. For nonincendive wiring of fieldbus communication circuit, make sure that  $C_{cable} \leq C_a$  and  $L_{cable} \leq L_a$ .



B = Protection cap for connector, C = Fieldbus connector, D = Thread adapter  
E = Connector on housing (male), F = Connector (female)

**Pin assignment:**

**Profibus PA**  
1 = Brown wire, PA+ (terminal 26)  
2 = Not connected  
3 = Blue wire, PA- (terminal 27)  
4 = Black wire, ground  
5 = Female connector not assigned  
6 = Positioning groove  
7 = Positioning key

**Fieldbus Foundation**  
2.1 = Brown wire, FF+ (terminal 26)  
2.2 = Blue wire, FF- (terminal 27)  
2.3 = Grey wire, ground  
2.4 = Not assigned

Aenderungen:	A	07.12.01 / MDI	F	05.05.09/BDA
	B	15.01.03 / MDI	G	03.02.2011/KLI
	C	31.10.05/PAM	H	08.08.2012/BIF
	D	14.07.06/UD	J	21.02.2014/BDA
	E	10.10.08/BDA	K	

Ersteller: FES / **ID 1006**  
FILE: M:\ZEICHNUNG\FES0042\J\FES0042J.doc

**CSA Control Drawing Class I Division 2  
Class I Zone 2 - Fieldbus Connector  
Compact version / Remote version  
PROMAG 5x**

Gezeichnet	15.01.2003	MDI
Geprüft		
Ex-geprüft	21.02.2014	BDA
Gesehen		



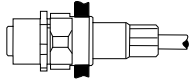
Flowtec AG, Kaeagenstrasse 7, CH-4153 Reinach BL1, Postfach

**FES0042 J**

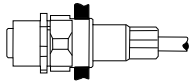
**3/4**

1) Thread: M20x1.5, NPT ½", NPT¾" or G ½"

2) Approved / Certified receptacle for process wiring for Cl.I, Div. 2



3) Listed receptacle for process wiring (general purpose)



Notes:

1. Class I Division 2 Groups ABCD, Class II Division 1 Groups EFG and Class III

Flow meter with cable entry M20x1.5 thread, NPT1/2" thread, NPT ¾" thread:

- Install all per National Electrical Code CEC and use supply wires suitable for 10 °C / 18 °F above ambient temperature.
- Class II Group G: The surface temperature of the apparatus cannot exceed 165 °C / 329°F

2. Class I Division 2 Groups ABCD

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

- Install per National Electrical Code CEC
- Install tool secured guard on the connection to render the connection normally not arcing.

3. Class I Division 2 Groups ABCD:

Flowmeters with listed cable glands, pig tails or receptacles (plug in connector):

- The connector must not be removed when energized. Therefore the warning "Do not separate when energized" must be readable after installation.
- Install per National Electrical Code CEC

4. Non-hazardous classified areas:

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


- Install per National Electrical Code CEC

Component ratings:

- Wire at least AWG 28
- Dielectric strength of wire insulation at least 50 V
- Current rating of components at least 1 A
- Temperature range at least -40 °C ... +70 °C

Aenderungen:	A	07.12.01 / MDI	F	05.05.09/BDA	Ersteller: FES / ID 1006 FILE: M:\ZEICHNG\FES0042J\FES0042J.doc
	B	15.01.03 / MDI	G	03.02.2011/KLI	
	C	31.10.05/PAM	H	08.08.2012/BIF	
	D	14.07.06/UD	J	21.02.2014/BDA	
	E	10.10.08/BDA	K		

<b>CSA Control Drawing Class I Division 2 Cable entries</b>  <b>PROMAG 50/51/53/55 W/P/H/S/D/L/E</b>	Gezeichnet	15.01.2003	MDI
	Geprüft		
	Ex-geprüft	21.02.2014	BDA
	Gesehen		

 Flowtec AG, Kaegenstrasse 7, CH-4153 Reinach BL1, Postfach	FES0042 J		4/4
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