



Certificate of Compliance

Certificate:	1111289	Master Contract:	160686
Project:	80255333	Date Issued:	2025-06-27
Issued to:	Endress+Hauser Flowtec AG Kagenstrasse 7 Reinach, Basel-Country 4153 Switzerland	Issued by:	<i>Anil Sodhi</i> Anil Sodhi, P. Eng.

Attention: Patrick Präger

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.



PRODUCTS

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 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]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



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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]lnnop+***# Remote Magnetic Flowmeter, PROMAG 50/51/53W/P/Hc-defgh[B/D/N/3/4/5/6][T]lnnop+***# 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]lnnop+***# Compact Magnetic Flowmeter, PROMAG 50/51/53W/P/H/Xc-defghN[P]lnnop+***# 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]lnnop+***# Compact Magnetic Flowmeter (Type 4x), Promag50/51/53/55H/Xc-defghR[P/R]lnnop+***# Compact Magnetic Flowmeter (Type 4x, enhanced climate), Promag50/51/53/55H/Xc-defghR[C/3]lnnop+***# Remote Magnetic Flowmeter (Type 4x), Promag50/51/53/55H/Xc-defghR[S]lnnop+***# Remote Magnetic Flowmeter (Type 4x, enhanced climate), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[A/1/6]lnnop+***# Compact Magnetic Flowmeter (Type 4x), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[P]lnnop+***# Compact Magnetic Flowmeter (Type 4x, enhanced climate), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[C/3]lnnop+***# Remote Magnetic Flowmeter (Type 4x), Promag50/51/53/55W/L/P/E/S/D/Xc-defghR[S]lnnop+***# Remote Magnetic Flowmeter (Type 4x, enhanced climate) and Promag50/51/53/55W/L/P/E/S/Xc-defghR[K/5]lnnop+***# 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.

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

CSA C22.2 No. 25-1966(R2009) - Enclosures for Use in Class II Groups E, F, and G Hazardous Locations - Incorporating General Instruction No 1: 9/1966

CSA C22.2 No. 142-M1987 (Third Edition)(R2009) - Process Control Equipment Industrial Products - Third Edition; Incorporating General Instruction No 1: 5/1987; No 2: 6/1987, No 3: 6/1988, No 4: 2/1989, No 5: 9/1990

CSA C22.2 No. 30-M1986 - Explosion-Proof Enclosures for Use in Class I Hazardous Locations Industrial Products - General Instruction No 1-2

CSA C22.2 No. 213-M1987 (First Edition)(R2008) - Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations Industrial Products - General Instruction No 1

CAN/CSA C22.2 No. 60079-0:11 - Second Edition - Explosive atmospheres — Part 0: Equipment — General requirements

CSA C22.2 No. 60079-1:11 - Second Edition - Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

CAN/CSA-C22.2 No. 60079-7:12 - First Edition - Explosive atmospheres - Part 7: Equipment protection by increased safety 'e'

CAN/CSA-C22.2 No. 60079-11:14 - Second Edition - Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

CSA C22.2 No. 94-M91 - Fourth Edition - Special Purpose Enclosures Industrial Products



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ANSI/UL 60079-0 (Fifth Edition; Reprint with Revisions Through and Including December 08, 2009) - UL Standard for Safety Explosive atmospheres – Part 0: Equipment – General requirements

ANSI/UL 60079-1:2009 - Sixth Edition - Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d"

ANSI/UL 60079-11:2013 - Sixth Edition - Standard for Safety Explosive Atmospheres - Part 11: Equipment Protection By Intrinsic Safety "I"

ANSI/ISA-60079-7(12.16.01)-2008 - Explosive Atmospheres - Part 7: Equipment protection by increased safety "e" (Edition 4)



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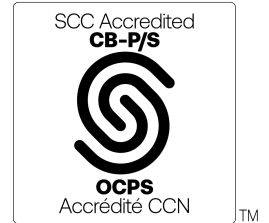
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Notes:

Products certified under Class(es) C225803, C225883 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca



Hazardous Locations

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



Promag 5. W / P / L / E



Promag 5. H

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

Temperature table

Max. ambient temperature	Max. medium temperature depending temperature classes							
	T6	T5	T4A	T4	T3C	T3	T2	T1
50 °C / 122°F	---	50 °C / 122°F	110 °C / 230°F	110 °C / 230°F	110 °C / 230°F	110 °C / 230°F	110 °C / 230°F	110 °C / 230°F
45 °C / 113°F	---	50 °C / 122°F	110 °C / 230°F	130 °C / 266°F	130 °C / 266°F	130 °C / 266°F	130 °C / 266°F	130 °C / 266°F
40 °C / 104°F	---	50 °C / 122°F	110 °C / 230°F	130 °C / 266°F	150 °C / 302°F	150 °C / 302°F	150 °C / 302°F	150 °C / 302°F

Communication Options	Control Drawing
I/O option = F,H,J,Q	See FES 0041-0001
I/O option = G,K	See FES 0041-0002
I/O option = S,T	See FES 0041-0004
I/O option = R,U	see FES 0023-0005

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.

Notes:

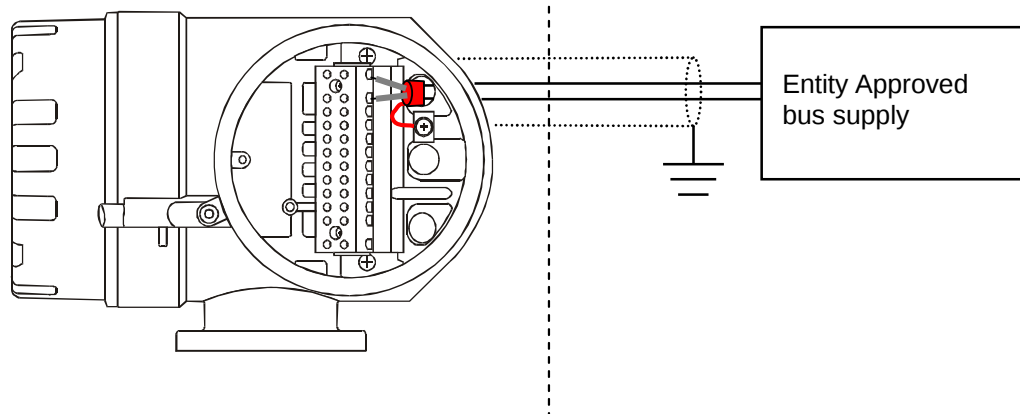
- Control room equipment shall not use or generate more than 250 V rms or VDC.
- Caution: Use supply wires suitable for 20 °C above ambient temperature, but at least for 80 °C / 176°F.
- Class II Group G: The surface temperature of the apparatus cannot exceed 165 °C / 329°F.
- Transmitter enclosure PROline G02 is factory sealed for use in Cl. I Div. 1 Groups B, C, D. Means that a conduit seal is not required within 18 inches (450mm) of the enclosure.
- Install per Canadian Electrical Code
- A dust-tight conduit seal shall be used when installed in Class II & III environments

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	B	03.10.04/MDI	G	21.02.14/BDA				
	C	31.10.05/PAM	H	23.08.17/BDA				
	D	07.10.08/PAM	J					
	E	05.05.09/BDA	K					
CSA Control Drawing Div. 1 / Zone 1 Class I Zone 1 PROMAG 5x compact version						Gezeichnet	03.12.01	MDI
						Geprüft		
						Ex-geprüft	23.08.2017	BDA
						Gesehen		
 Flowtec AG, Kaegenstrasse 7, CH-4153 Reinach BL1, Postfach						FES0041H		

HAZARDOUS LOCATIONS

Cl. I Div. 1 Groups A,B,C,D
Cl. I Zone 1 Group IIC
Cl. I Div. 2 Group A,B,C,D
Cl. I Zone 2 Group IIC
Cl. II, III Div. 1 Group E,F,G

NON HAZARDOUS LOCATIONS



Notes:

Intrinsically safe signal output:

- 1) Wire intrinsically safe circuits per ANSI/ISA-RP 12.06.01 or in conduit per Canadian Electrical Code.
- 2) **WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.
- 3) Control room equipment may not use or generate more than 250 V rms or VDC.

PROMAG Type: 5****_*****F

Terminals: 26 (+), 27 (-) (Profibus PA):

Passive intrinsically safe PROFIBUS PA circuit:

For connecting the intrinsically safe circuit (PROFIBUS PA) according to the FISCO-CONCEPT see FES 0041-0003.

Nonintrinsically safe signal output:

- 4) Transmitter circuit wiring in accordance with Canadian Electrical Code.
- 5) **WARNING:** EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 1 OR CLASS I, ZONE 1
AVERTISSEMENT: RISQUE D'EXPLOSION – LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATÉRIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 1 OU CLASSE I, ZONE 1
- 6) Control room equipment may not use or generate over 250 Vrms or VDC.

PROMAG Type: 5****_*****H

Terminals 26 (+), 27 (-) (PROFIBUS PA)

V ≤ 32 V, I = 10 mA

PROMAG Type:

5***_*****J (PROFIBUS DP)

5***_*****Q (MODBUS RS)

Terminals 24 (+5V), 25 (GND), 26 (DPA/RSA), 27 (DPB/RSB)

Terminals: +5V, GND, DPA, DPB

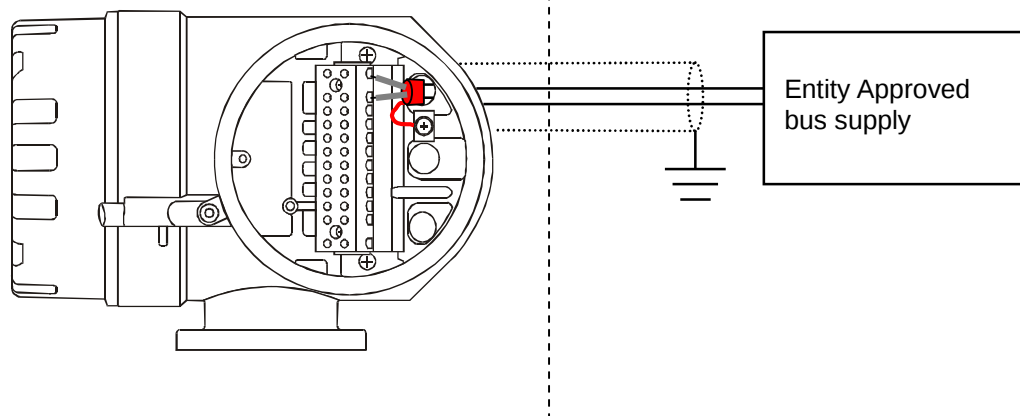
V = 5 V, I = 100 mA

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	C	31.10.05/PAM	H	23.08.17/BDA				
	D	07.10.08/PAM	J					
	E	05.05.09/BDA	K					
CSA Control Drawing Div. 1 / Zone 1 PROMAG 5. W / P / H / L / E PROFIBUS PA / IS installation PROFIBUS PA / DP or MODBUS RS non-IS installation						Gezeichnet	03.12.01	MDI
						Geprüft		
						Ex-geprüft	23.08.2017	BDA
						Gesehen		
 Flowtec AG, Kaegenstrasse 7, CH-4153 Reinach BL1, Postfach						FES0041-0001H		

HAZARDOUS LOCATIONS

Cl. I Div. 1 Groups A,B,C,D
Cl. I Zone 1 Group IIC
Cl. I Div. 2 Group A,B,C,D
Cl. I Zone 2 Group IIC
Cl. II, III Div. 1 Group E,F,G

NON HAZARDOUS LOCATIONS



Notes:

Intrinsically safe signal output:

- 1) Wire all intrinsically circuits per ANSI/ISA-RP 12.06.01 or in conduit per Canadian Electrical Code Part I
- 2) **WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.
- 3) Control room equipment may not use or generate more than 250 Vrms or VDC.

PROMAG Type: 5****-*****G

Terminals: 26, 27 (Foundation Fieldbus):

Intrinsically safe circuit:

V_{max} / U_i	I_{max} / I_i	P_{max} / P_i	C_i	L_i
30 V	600 mA	8.5 W	$\leq 5 \text{ nF}$	$\leq 10 \mu\text{H}$

Connect to entity approved associated apparatus with

$I_{sc} \text{ or } I_o \leq I_{max} \text{ or } I_i$ and

$V_{oc} \text{ or } U_o \leq V_{max} \text{ or } U_i$

($P_o \leq P_{max} \text{ or } P_i$)

Cable parameters for Intrinsic Safety:

$C_{cable} \leq C_a / C_o - \sum C_i$

$L_{cable} \leq L_a / L_o - \sum L_i \text{ OR}$

$L/R_{cable} \leq L/R_{Associated Apparatus} \text{ and } L_i \text{ of each I.S. apparatus } \leq 10 \mu\text{H}$

Alternatively the intrinsically safe circuit (Fieldbus Foundation) can be connected according to the FISCO – Concept (see FES0041).

Nonintrinsically safe signal output:

- 4) Transmitter circuit wiring in accordance with Canadian Electrical Code.
- 5) **WARNING:** EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 1 OR CLASS I, ZONE 1.
AVERTISSEMENT: RISQUE D'EXPLOSION – LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE CE MATÉRIEL INACCEPTABLE POUR LES EMPLACEMENTS DE CLASSE I, DIVISION 1 OU CLASSE I, ZONE 1
- 6) Control room equipment may not use or generate over 250 Vrms or VDC.

PROMAG Type: 5****-*****K

Terminals 26,27 (FIELDBUS FOUNDATION NON I.S.)

$V \leq 32 \text{ V}, I = 10 \text{ mA}$

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	C	31.10.05/PAM	H	23.08.17/BDA				
	D	07.10.08/PAM	J					
	E	05.05.09/BDA	K					
CSA Control Drawing Div. 1 / Zone 1 PROMAG 5. W / P / H / L / E Fieldbus Foundation I.S. installation						Gezeichnet	03.12.01	MDI
						Geprüft		
						Ex-geprüft	23.08.2017	BDA
						Gesehen		
 Flowtec AG, Kaegenstrasse 7, CH-4153 Reinach BL1, Postfach						FES0041-0002H		

FISCO CONCEPT

The FISCO Concept allows interconnection of intrinsically safe apparatus to associated apparatus not specially examined in such combination. The criteria for interconnection is that the voltage (U_i or V_{max}), the current (I_i or I_{max}), and the power (P_i or P_{max}) which intrinsically safe apparatus can receive and remain intrinsically safe, considering faults, must be equal or greater than the voltage (U_o or V_o), the current (I_o or I_{sc}) and the power (P_o or P_{max}) levels which can be delivered by the associated apparatus, considering faults and applicable factors. In addition, the maximum unprotected capacitance (C_i) and inductance (L_i) of each apparatus (other than the termination) connected to the fieldbus must be less than or equal to 5 nF and 10 μ H respectively.

In each segment only one active device, normally the associated apparatus, is allowed to provide the necessary energy for the fieldbus system. The voltage U_o or V_o of the associated apparatus is limited to a range of 14V to 24Vd.c. All other equipment connected to the bus cable has to be passive, meaning that they are not allowed to provide energy to the system, except a leakage current of 50 μ A for each connected device. Separately powered equipment needs a galvanic isolation to assure that the intrinsically safe fieldbus circuit remains passive.

The cable used to interconnect the devices needs to have the parameter in the following range:

Loop Resistance R' :	15...150 Ohm/km
Inductance per unit length L' :	0.4...1 mH/km
Capacitance per unit length C' :	80...200 nF

$C' = C'$ line/line + 0.5 C' line/screen, if both lines are floating, or	
$C' = C'$ line/line + C' line/screen, if the screen is connected to one line	
Length of trunk cable:	≤ 1000 m
Length of spur cable:	≤ 30 m
Length of splice:	≤ 1 m

At each end of the trunk cable an approved infallible line termination with following parameters is suitable:

$$R = 90...100 \text{ Ohm} \quad C = 0...2.2 \text{ } \mu\text{F}$$

One of the allowed terminations might already be integrated in the associated apparatus. The number of passive apparatus connected to the bus segment is not limited due to I. S. reasons. If the above rules are respected, up to a total length of 1000 m (sum of trunk and all spur cables), the inductance and the capacitance of the cable will not impair the intrinsic safety of the installation.

Notes:

Intrinsically safe Class I, Div.1, Groups A,B,C,D

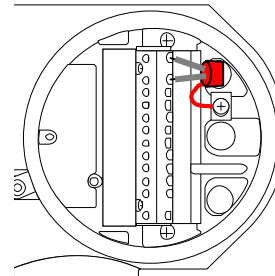
- Approved associated apparatus must be installed in accordance with manufacturers instructions.
- CSA approved associated apparatus must meet the following parameters:
 U_o or $V_o \leq U_i$ (V_{max}) and I_o or $I_{sc} \leq I_i$ (I_{max}) and P_o or $P_{max} \leq P_i$ (P_{max})
- The maximum non-hazardous area voltage must not exceed 250V
- The installation must be in accordance with the Canadian Electrical Code
- Multiple earthing of screen is allowed only, if high integrity equipotential system is realized between the points of bonding (see drawing No. FES 0014).
- Caution: Use only supply wires suitable for 20°C above surrounding temperature.
- WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.
- The polarity for connection PA+ (26) and PA- (27) is of no importance due to an internal rectifier.

HAZARDOUS (CLASSIFIED) LOCATION

Class I, Division 1, Groups A,B,C,D
Class II, Division 1, Groups E,F,G
Class III, Division 1

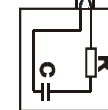
NONHAZARDOUS LOCATION

PROMAG 5****_*****F/G



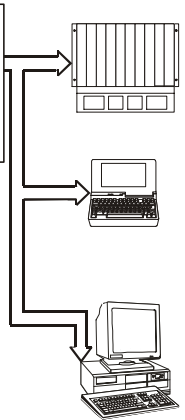
PROMAG 5****_*****F/G Terminal 26 (+) Terminal 27 (-) (FISCO-Model)	
U_i (V_{max}) = 30 V	$C_i \leq 5$ nF
I_i (I_{max}) = 600 mA	$L_i \leq 10$ μ H
P_i (P_{max}) = 8.5 W	
Leakage current : $\leq 50 \mu\text{A}$	
Apparatus provides galvanic isolation up to 250V rms between fieldbus circuit and any other circuit	
Temperature Classification: T6	
Max. ambient Temperature: 50°C / 122°F	

Any CSA Approved Intrinsically Safe Apparatus suitable for FISCO Concept



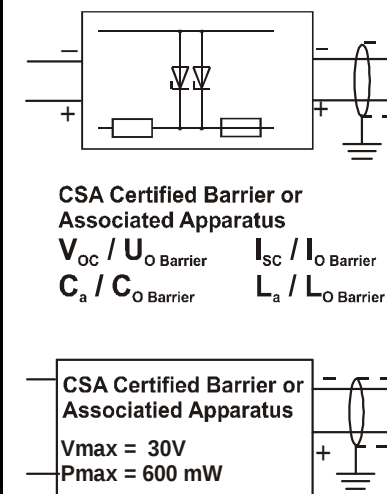
Any CSA Approved Termination with
 $R = 90...100 \Omega$
 $C = 0...2.2 \mu\text{F}$

Any CSA Approved Associated Apparatus
Suitable for Fisco concept



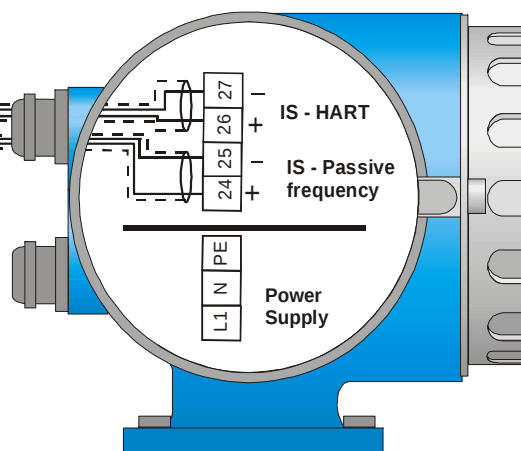
Änderungen:	A	03.12.01/MDI	F	08.02.11/KLI	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	Ersatz für: Ersteller: FES / ID 1077 File: M:\ZEICHN\GES0041\H\FES0041H.doc		
	B	03.10.04/MDI	G	21.02.14/BDA				
	C	31.10.05/PAM	H	23.08.17/BDA				
	D	07.10.08/PAM	J					
	E	05.05.09/BDA	K					
CSA Control Drawing Div. 1 / Zone 1 PROMAG 5. W / P / H / L / E Intrinsically safe PROFIBUS PA FISCO-Concept						Gezeichnet	03.12.01	MDI
						Geprüft		
						Ex-geprüft	23.08.2017	BDA
						Gesehen		
 Flowtec AG, Kaegenstrasse 7, CH-4153 Reinach BL1, Postfach						FES0041-0003H		

NON HAZARDOUS LOCATION



HAZARDOUS LOCATION

Cl. I, II, III Div. 1 Group A,B,C,D,E,F,G or
 Cl. I Div. 2 Group A,B,C,D, and Cl.II,III Div.1 Group E,F,G



Notes:

1) Use supply wires suitable for 20 °C above surrounding ambient, but at least for 80°C / 176°F.

Intrinsically safe signal output:

- 2) Wire all intrinsically circuits per Canadian Electrical Code
- 3) **WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.
- 4) Control room equipment may not use or generate more than 250 Vrms or VDC.

PROMAG Type: 5** **_*****S

Terminals: 26, 27 (HART current output):

Active intrinsically safe circuit:

V_{OC} / U_O	I_{SC} / I_O	P_{max} / P_O	C_a / C_O	L_a / L_O
21.8 V	90 mA	490 mW	0.15 μF	4.1 mH

V_{max} / U_i	I_{max} / I_i	P_{max} / P_i	C_i	L_i
30 V	10 mA	300 mW	6 nF	0

Cable parameters for Intrinsic Safety:

$$C_{\text{cable}} \leq 0.15 \mu F \quad \text{if } V_{OC} / U_O \text{ (of Barrier)} \leq 21.8 V$$

$$C_{\text{cable}} \leq C_a / C_O \text{ Barrier} - 6 \text{ nF} \quad \text{if } V_{OC} / U_O \text{ (of Barrier)} \geq 21.8 V$$

$$L_{\text{cable}} \leq 4.1 \text{ mH}$$

Terminals 24, 25 (Passive intrinsically safe circuit):

V_{max} / U_i	I_{max} / I_i	P_{max} / P_i	C_i	L_i
30 V	300 mA	600 mW	6 nF	0

Entity approved supply must meet the following requirements:

$$V_{OC} \text{ or } U_O \leq V_{max} / U_i \quad P_{max} \text{ or } P_O \leq P_{max} / P_i$$

Cable parameters for Intrinsic Safety:

$$C_{\text{cable}} \leq C_a (C_O) - 6 \text{ nF} \quad L_{\text{cable}} \leq L_a (L_O)$$

PROMAG Type: 5** **_*****T

Terminals: 26, 27 (HART current output):

Passive intrinsically safe circuit:

V_{max} / U_i	I_{max} / I_i	P_{max} / P_i	C_i	L_i
30 V	100 mA	1.25 W	6 nF	negligible

Connect to entity approved Barrier with

$$V_{OC}, V_t \text{ or } U_O \leq V_{max} / U_i$$

$$I_{SC}, I_t \text{ or } I_O \leq I_{max} / I_i$$

Cable parameters for Intrinsic Safety:

$$C_{\text{cable}} \leq C_a \text{ Barrier or } C_O \text{ Barrier} - 6 \text{ nF}$$

$$L_{\text{cable}} \leq L_a \text{ Barrier or } L_O \text{ Barrier}$$

Terminals 24, 25 (Passive intrinsically safe circuit):

V_{max} / U_i	I_{max} / I_i	P_{max} / P_i	C_i	L_i
30 V	300 mA	600 mW	6 nF	0

Entity approved apparatus must meet the following requirements:

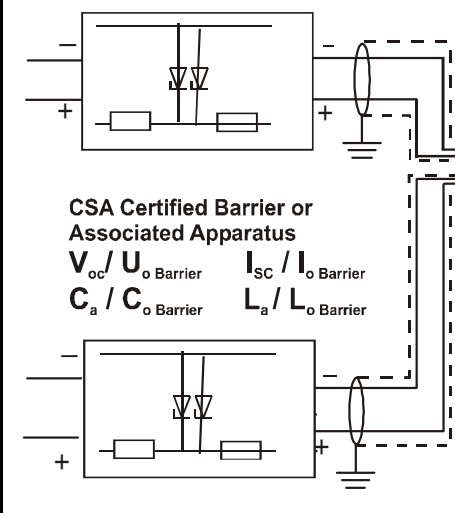
$$V_{OC}, V_t \text{ or } U_O \leq V_{max} \quad P_{max} \text{ or } P_O \leq P_{max} / P_i$$

Cable parameters for Intrinsic Safety:

$$C_{\text{cable}} \leq C_a (C_O) - 6 \text{ nF} \quad L_{\text{cable}} \leq L_a (L_O)$$

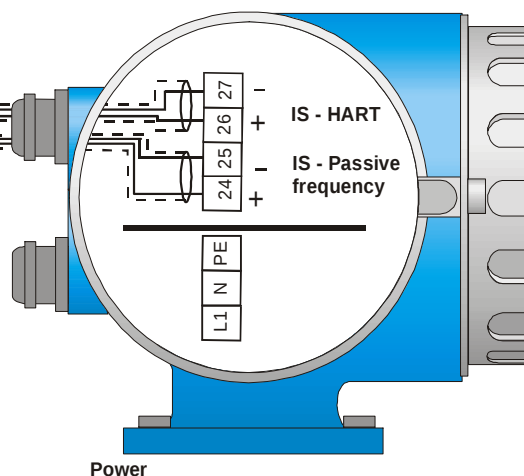
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	B	03.10.04/MDI	G	21.02.14/BDA				
	C	31.10.05/PAM	H	23.08.17/BDA				
	D	07.10.08/PAM	J					
	E	05.05.09/BDA	K					
CSA CONTROL DRAWING Cl.1, Div. 1					Massstab	Gezeichnet	03.12.01	MDI
PROMAG 5. W / P / H / L / E						Geprüft		
Entity concept Commodul HART IS						Ex-geprüft	23.08.2017	BDA
						Gesehen		
 Flowtec AG, Kaegenstrasse 7, CH-4153 Reinach BL1, Postfach					FES0041-0004H			

NON HAZARDOUS LOCATION



HAZARDOUS LOCATION

Cl. I, II, III Div. 1 Group A,B,C,D,E,F,G or
Cl. I Div. 2 Group A,B,C,D, and Cl.II,III Div.1 Group E,F,G



Notes:

- 2) Use supply wires suitable for 20 °C above surrounding ambient, but at least for 80°C / 176°F

Intrinsically safe signal output:

- 2) Install all intrinsically safe circuits per NEC ANSI/NFPA 70 and ANSI/ISA-RP 12.06.01 respecting the Explosionproof Integrity of the enclosure
- 3) **WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.
- 4) Control room equipment may not use or generate more than 250 Vrms or VDC.

PROMAG Type: 5** **_*****R

Terminals: 26, 27 (HART current output):

Terminals: 24, 25 (current output):

Active:

V_{oc} / U_o	I_{sc} / I_o	P_{max} / P_o	C_a / C_o	L_a / L_o
21.8 V	90 mA	490 mW	0.15 μ F	4.1 mH

V_{max} / U_i	I_{max} / I_i	P_{max} / P_i	C_i	L_i
30 V	10 mA	300 mW	6 nF	0

Cable parameters for Intrinsic Safety:

$$C_{cable} \leq 0.15 \mu F \quad \text{if } V_{oc} \text{ (of Barrier)} \leq 21.8 V$$

$$C_{cable} \leq C_a \text{ Barrier} - 6 nF \quad \text{if } V_{oc} \text{ (of Barrier)} \geq 21.8 V$$

$$L_{cable} \leq 4.1 mH$$

Type: PROMAG Type: 5** **_*****U

Terminals: 26, 27 (HART current output)

Terminals: 24, 25 (current output)

Passive:

V_{max} / U_i	I_{max} / I_i	P_{max} / P_i	C_i	L_i
30 V	100 mA	1.25 W	6 nF	negligible

Connect to entity approved Barrier with

$$V_{oc}, V_t \text{ or } U_o \leq V_{max} / U_i$$

$$I_{sc}, I_t \text{ or } I_o \leq I_{max} / I_i$$

Cable parameters for Intrinsic Safety:

$$C_{cable} \leq C_a \text{ Barrier or } C_o \text{ Barrier} - 6 nF$$

$$L_{cable} \leq L_a \text{ Barrier or } L_o \text{ Barrier}$$

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CSA CONTROL DRAWING Cl.1, Div. 1					Massstab	Gezeichnet	03.12.01	MDI
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