



# Certificate of Compliance

**Certificate:** 1185210 (LR 82598)

**Master Contract:** 160686

**Project:** 2567318

**Date Issued:** November 5, 2012

**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*



*Aisha Sreenath*

**Issued by:** Aisha Sreenath

## PRODUCTS

**CLASS 2258 04** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

**Class I, Zone 1, Group IIC:**

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

• “PROline Prosonic” Flow Measurement System Consisting of a Prosonic Flow 9aPb-cdefghNiklmn Transmitter (Explosion-Proof, Type 4X Enclosure) and Prosonic Flow 9aPb-cdefghNiklmn Sensor (Type 6P Enclosure), Prosonic Flow DDU 18-abcd Sensor (Type 6P Enclosure) or Prosonic Flow DDU 19-abcd Sensor (Type 4X Enclosure). Transmitter supply rated 85-260Vac 50/60Hz 18VA, 20-55Vac 50/60Hz 15VA or 16-62Vdc, 15W; relay contacts rated 30Vac / 0.5A or 42Vdc / 0.1A. Explosion-proof with Intrinsically Safe Electronics, Sensors and connections per Control Drawing No. FES0062 (includes Entity Parameters, Temperature Codes and Maximum Ambient Temperatures). Temp. Code T1 – T6 at Ta = - 40°C to + 60°C.

Note: a,b,c,d,e,f,g,h,i,l,m & n in the Model Nos. may be any character or numeral representing specific options.

**Class I, Zone 1, Group IIB + H2:**

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



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Note: a,b,c,d,e,f,g,h,i,l,m & n in the Model Nos. may be any character or numeral representing specific options.

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

#### **Class I, Zone 2, Group IIC:**

#### **Class I, Div. 2, Groups A, B, C and D; Class II, Groups E, F and G; Class III; Type 4X Enclosure:**

- “PROline Prosonic” Flow Measurement System Consisting of a Prosonic Flow 9abc-defghiRklmno Transmitter (Type 4X Enclosure) and Prosonic Flow 9aP\*\*-bcdefgRhiklm sensor (Type 6P), 9aW\*\*-bcdefgRhiklm sensor (Type 4X or 6P, as indicated on nameplate), 9aU\*\*-bcdefgRhiklm (only Certified for use in Class I, Division 2, Groups A, B, C and D), 9aC\*\*-bcdefgRhiklm, Prosonic Flow DDU 18-abcd Sensor (Type 6P Enclosure), Prosonic Flow DDU 19-abcd Sensor (Type 4X Enclosure). Transmitter supply rated 85-260Vac 50/60Hz 18VA, 20-55Vac 50/60Hz 15VA or 16-62Vdc, 15W; relay contacts rated 30Vac / 0.5A or 42Vdc / 0.1A. Dust-tight / suitable for Class I, Div. 2 with non-incendive sensors and sensor circuits for Class I, Div. 2 per Control Drawing No. FES0064 (includes Temperature Codes and Maximum Ambient Temperatures). Temp. Code T1 – T6 at Ta = - 40°C to + 60°C.

Note: \*,a,b,c,d,e,f,g,h,i,k,m,n & o in the Model Nos. may be any character or numeral representing specific options.

#### **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

CSA Std 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

CSA Std C22.2 No. 142-M1987 - Process Control Equipment

CAN/CSA-C22.2 No. 157-92 - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations

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:** 1185210

**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**

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<b>Project</b>	<b>Date</b>	<b>Description</b>
2567318	November 5, 2012	Update to cover minor revision to connector pin assignment on Control Drawing.
2120235	February 4, 2009	Update to include new P Sensor, alternative V16 Amplifier Board and revised Drawings.
1860375	February 9, 2007	Addition of Commoduls C10, C13 & C14, G02 Feed-through, and minor report revisions
1849730	November 22, 2006	Update to cover alternative sensors feed-through
1475971	September 30, 2003	UPDATE TO REPORT 1185210 TO COVER REVISED CONSTRUCTION

### **History**

1368365 November 11, 2002 Update to cover:1. New W-Insertion Sensor2. New C-Sensor3. New Model Code4. Changes to Control Drawing5. New Fieldbus Connector for Class I, Division 26. Revised Connection Plate

1321269 June 26, 2002 Update to cover minor alternate construction and use of 9aU series of sensor

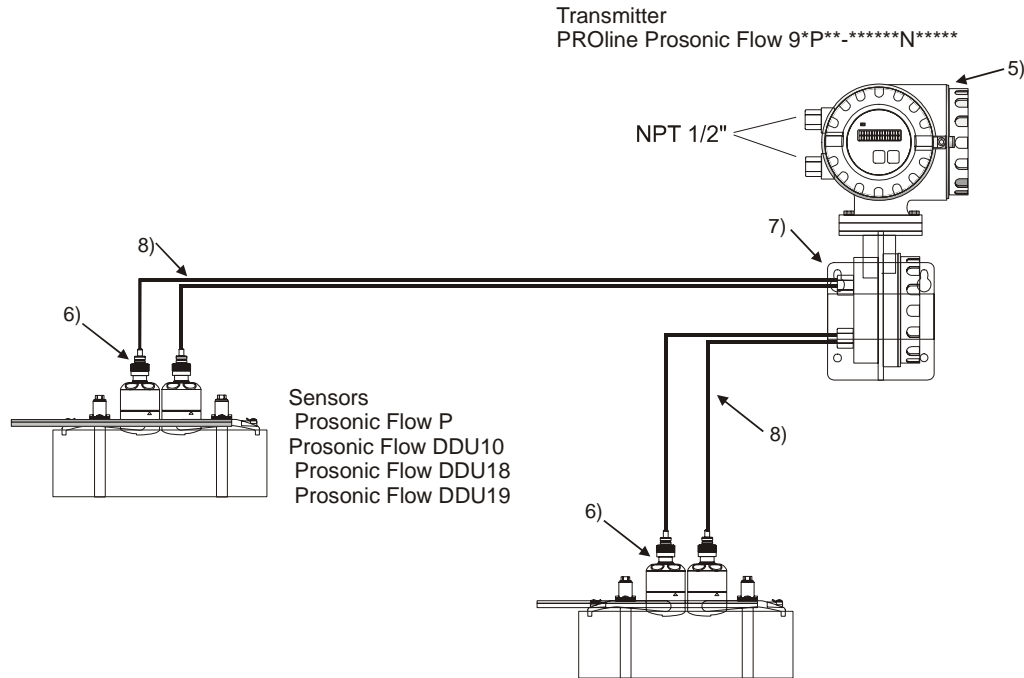
1309556 April 8, 2002 Update to cover revised control drawings FES0062.

1224446 September 4, 2002 Update to cover increase in voltage of pulse outputs.

1185210 April 12, 2002 Original Certification.

### Hazardous Locations

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



### Temperature table

Sensors	maximum medium temperature in °C									
	T6	T5	T4A	T4	T3C	T3B	T3A	T3	T2	T1
<b>at Ta = 60°C</b>										
Pros. Flow 9*PA* - A*****	80	80	80	80	80	80	80	80	80	80
Pros. Flow 9*PA* - B*****	80	80	80	80	80	80	80	80	80	80
Prosonic Flow DDU 10 – A*****	80	80	80	80	80	80	80	80	80	80
Prosonic Flow DDU 10 – C*****	80	80	80	80	80	80	80	80	80	80
Prosonic Flow DDU18-A***	80	80	80	80	80	80	80	80	80	80
Prosonic Flow DDU19-A***	80	80	80	80	80	80	80	80	80	80
<b>at Ta = 60°C</b>										
Pros. Flow 9*PA* - 1*****	80	95	100	100	100	100	100	100	100	100
Pros. Flow 9*PA* - 2*****	80	95	115	130	150	150	150	150	150	150
Pros. Flow 9*PA* - E*****	80	95	115	130	155	160	170	170	170	170
Pros. Flow 9*PA* - F*****	80	95	115	130	155	160	170	170	170	170
Prosonic Flow DDU 10 – B*****	80	95	115	130	155	160	170	170	170	170
Prosonic Flow DDU 10 – D*****	80	95	115	130	155	160	170	170	170	170
Prosonic Flow DDU18-B***	80	95	115	130	155	160	170	170	170	170

### Communication modules , I/O options

Communication options	Control Drawings
I/O option = F, H, J	see FES0062-0001 B
I/O option = G, K	see FES0062-0002 B
I/O option = S, T	see FES0062-0004 A
I/O option = R, U	see FES0062-0005 B

**WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.**

### Notes:

- Control room equipment shall not use or generate more than 250 V rms.
- Wire per Canadian Electrical Code. Wire all intrinsically safe I/O circuits per CEC respecting the Explosionsproof Integrity of the enclosure.
- Transmitter enclosure of PROline Prosonic Flow 9. is factory sealed for use in Cl. I Div. 1 Group B, C, D and dust-ignitionproof for Cl. II, III Div. 1 Groups E, F, G
- Sensor circuits may be installed as intrinsically safe wiring or in conduit per CEC.
- 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. The user must limit the process temperature for Group G to 160°C.
- Cable Type for all Sensors: Use only prefabricated Endress+Hauser Cable. For reasons of safety, the maximum allowed cable length is 30 m per sensor.

Aenderungen:	A	B	C	D	E	F	G	H	J	K
	05.04.02/MDI									
	07.08.06 / Bn									
	13.11.08/SCHK									

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**Mat. Nr. 71091742**

Ersteller: FES / **ID 1100**  
FILE: FES0062C\_081113.doc

**CSA Control Drawing Class I, Div. 1  
Class I Zone 1**

**PROSONIC FLOW 9.**



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

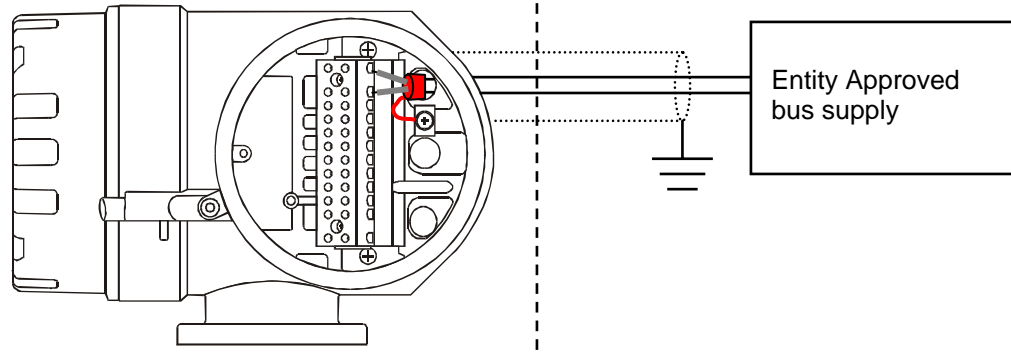
**FES0062 C**

Masstab	Gezeichnet	10.03.01	UD
	Geprüft		
	Ex-geprüft	13.11.08	SCHK
	Gesehen		

**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 safe circuits per Canadian Electrical Code respecting the Explosionsproof Integrity of the enclosure
- 2) **WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
- 3) Control room equipment may not use or generate more than 250 V rms.

**Type: PROSONIC FLOW 9\*\*\*\_\*\*\*\*\*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 FES0062-0003

**Nonintrinsically safe signal output:**

- 4) Transmitter circuit wiring in conduit in accordance with Canadian Electrical Code.
- 5) **WARNING:** EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 1.
- 6) Control room equipment may not use or generate over 250 Vrms.

**Type: PROSONIC FLOW 9\*\*\*\_\*\*\*\*\*H**

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

V ≤ 32 V, I = 10 mA

**Type: PROSONIC 9\*\*\*\_\*\*\*\*\*J**

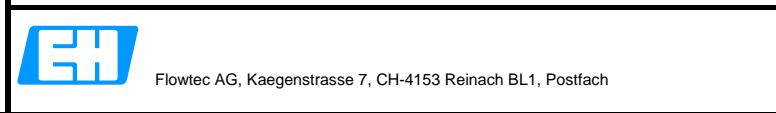
**Terminals: 24 (+5V),25 (GND), 26 (DPA), 27 (DPB) (PROFIBUS DP)**

Terminals: +5V, GND, DPA, DPB  
V = 5 V, I = 100 mA

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	B	07.08.06 / Bn	G		
	C	13.11.08/SCHK	H		
	D		J		
	E		K		

**CSA Control Drawing Classl, Div. 1 / Zone 1  
PROSONIC FLOW 9.  
PROFIBUS PA / IS installation  
PROFIBUS PA / DP non-IS installation**

Masstab	Gezeichnet	10.03.01	UD
	Geprüft		
	Ex-geprüft	13.11.08	SCHK
	Gesehen		

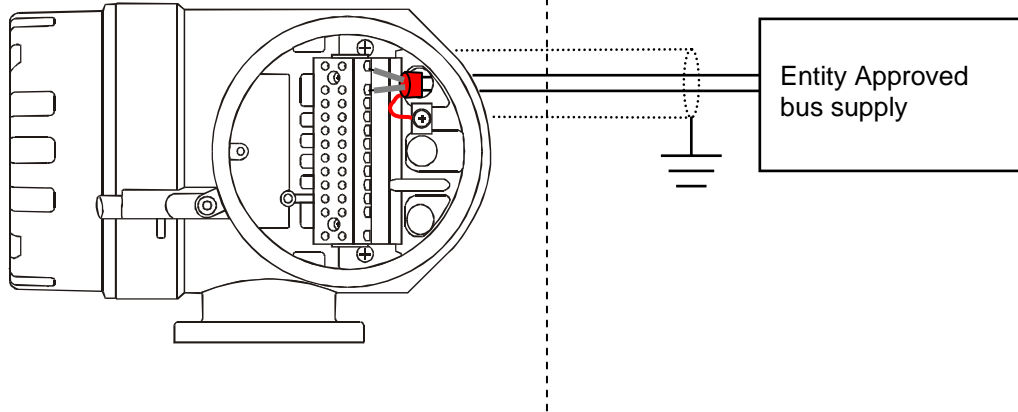


**FES0062-0001 C**

**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 ISA RP 12.6. or in conduit per Canadian Electrical Code.
- 2) **WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
- 3) Control room equipment may not use or generate more than 250 Vrms.

**Type: PROSONIC 9\*\*\*\_\*\*\*\*\*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	$\leq 5$ nF	$\leq 10$ $\mu$ H

Connect to entity approved associated apparatus with

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

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

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

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 FES 0062-0003).

**Nonintrinsically safe signal output:**

- 4) Wire all intrinsically safe circuits per Canadian Electrical Code respecting the Explosionsproof Integrity of the enclosure
- 5) **WARNING:** EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 1.
- 6) Control room equipment may not use or generate over 250 Vrms.

**Type: PROSONIC FLOW 9\*\*\*\_\*\*\*\*\*K**

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

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

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	C	13.11.08/SCHK	H		
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	E		K		

**CSA Control Drawing Class I, Div.1/ Zone PROSONIC FLOW 9.**  
**Fieldbus Foundation IS installation**  
**Fieldbus Foundation non-IS installation**

Massstab	Gezeichnet	10.03.01	UD
	Geprüft		
	Ex-geprüft	13.11.08	SCHK
	Gesehen		



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

**FES0062-0002 C**

**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 (Ui or V<sub>max</sub>), the current (Ii or I<sub>max</sub>), and the power (Pi or P<sub>max</sub>) which intrinsically safe apparatus can receive and remain intrinsically safe, considering faults, must be equal or greater than the voltage (Uo or Voc), the current (Io or Isc) and the power (Po or P<sub>max</sub>) levels which can be delivered by the associated apparatus, considering faults and applicable factors. In addition, the maximum unprotected capacitance (Ci) and inductance (Li) of each apparatus (other than the termination) connected to the fieldbus must be less than or equal to 5 nF and 10 μH 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 Uo or Voc 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 50μA 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 Ohm      C = 0...2.2 μF

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:**

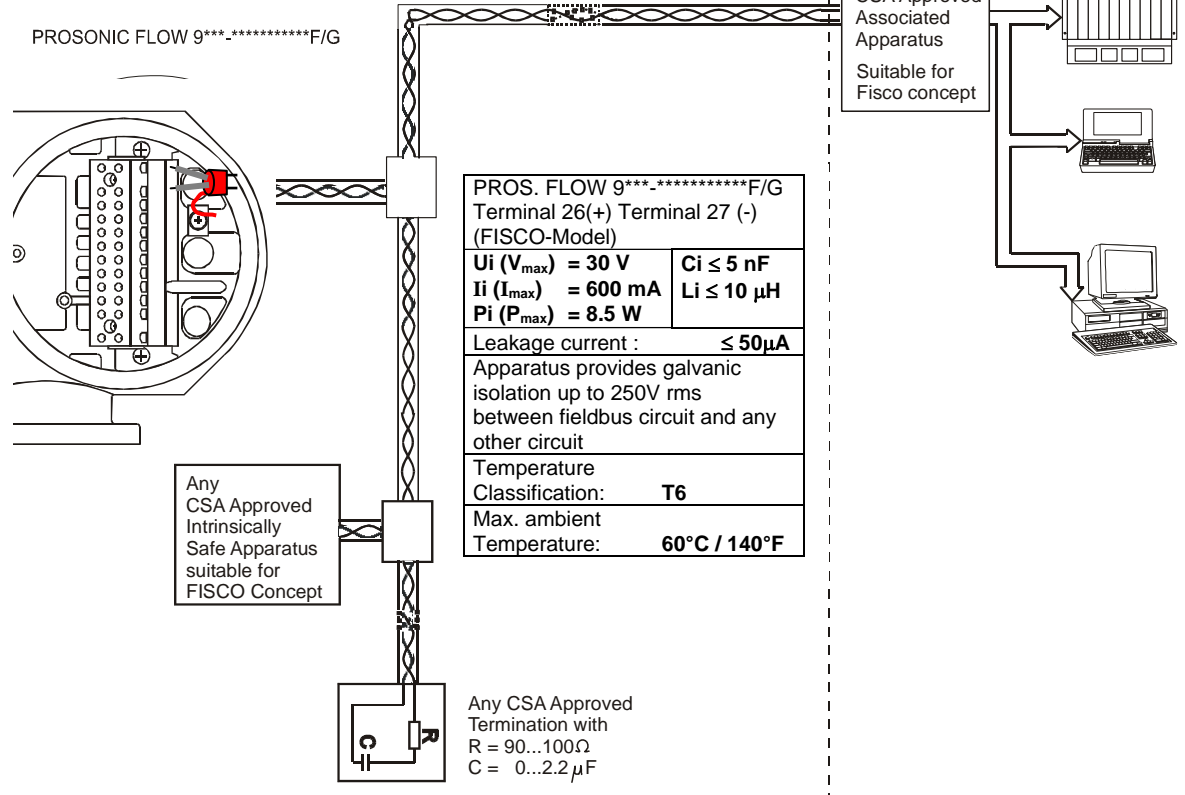
Intrinsically safe Class I, Div.1, Groups A,B,C,D

- Approved associated apparatus must be installed in accordance with manufacturers instructions.
- CSA approved associated apparatus must meet the following parameters:  
Uo or Voc ≤ Ui (V<sub>max</sub>) and Io or Isc ≤ Ii (I<sub>max</sub>) and Po or P<sub>max</sub> ≤ Pi (P<sub>max</sub>)
- The maximum non-hazardous area voltage must not exceed 250V
- Wire all intrinsically safe circuits per Canadian Electrical Code respecting the Explosionsproof Integrity of the enclosure
- 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 5°C above surrounding temperature.
- Warning : Substitution of components may impair intrinsic safety.
- 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**



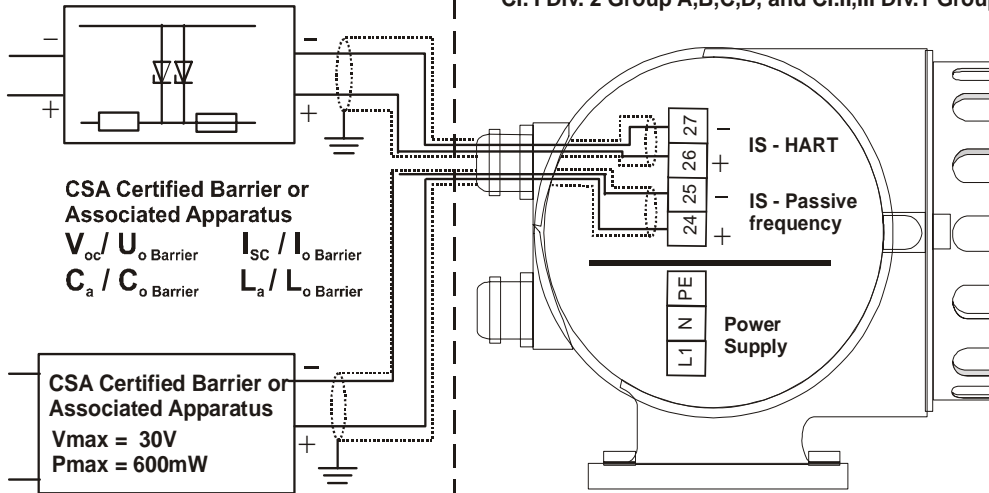
Anderungen:	A	05.04.02/MDI	F	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	<b>Mat. Nr. 71091742</b>  Ersatz für: Ersteller: FES / ID 1100 File: FES0062C_081113.doc
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	E		K		

<p><b>CSA Control Drawing Cl. I, Div.1 / Zone 1</b></p> <p><b>PROSONIC FLOW 9.</b></p> <p><b>Intrinsically safe PROFIBUS PA</b></p> <p><b>FISCO-Concept</b></p>	<p>Masstab</p>	Gezeichnet	10.03.01	UD
		Geprüft		
		Ex-geprüft	13.11.08	SCHK
		Gesehen		

**NON HAZARDOUS LOCATION**

**HAZARDOUS LOCATION**

Class I Zone 1 IIC  
 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



CSA Certified Barrier or Associated Apparatus  
 $V_{oc} / U_o$  Barrier     $I_{sc} / I_o$  Barrier  
 $C_a / C_o$  Barrier     $L_a / L_o$  Barrier

CSA Certified Barrier or Associated Apparatus  
 $V_{max} = 30V$   
 $P_{max} = 600mW$

**Type: PROSONIC FLOW 9\*\*\*-\*\*\*\*\*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

$V_{oc}$  or  $U_o \leq V_{max} / U_i$   
 $I_{sc}$  or  $I_o \leq I_{max} / I_i$

Cable parameters for Intrinsic Safety:

$C_{cable} \leq C_a$  Barrier or  $C_o$  Barrier - 6 nF  
 $L_{cable} \leq L_a$  Barrier or  $L_o$  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	600mW	6 nF	0

Entity approved apparatus must meet the following requirements:

$V_{oc}$  or  $U_o \leq V_{max}$      $P_{max}$  or  $P_o \leq P_{max} / P_i$

Cable parameters for Intrinsic Safety:

$C_{cable} \leq C_a (C_o) - 6 nF$      $L_{cable} \leq L_a (L_o)$

**Notes:**

1) Use supply wires suitable for 5 °C above surrounding ambient, but at least for 80°C / 176°F

**Intrinsically safe signal output:**

- Install all intrinsically safe circuits per Canadian Electrical Code respecting the Explosionproof Integrity of the enclosure
- WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
- Control room equipment may not use or generate more than 250 Vrms.

**Type: PROSONIC FLOW 9\*\*\*-\*\*\*\*\*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:

$C_{cable} \leq 0.15 \mu F$     if  $V_{oc} / U_o$  (of Barrier)  $\leq 21.8 V$   
 $C_{cable} \leq C_a / C_o$  Barrier - 6 nF    if  $V_{oc} / U_o$  (of Barrier)  $\geq 21.8 V$   
 $L_{cable} \leq 4.1 mH$

**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	600mW	6 nF	0

Entity approved supply must meet the following requirements:

$V_{oc}$  or  $U_o \leq V_{max} / U_i$      $P_{max}$  or  $P_o \leq P_{max} / P_i$

Cable parameters for Intrinsic Safety:

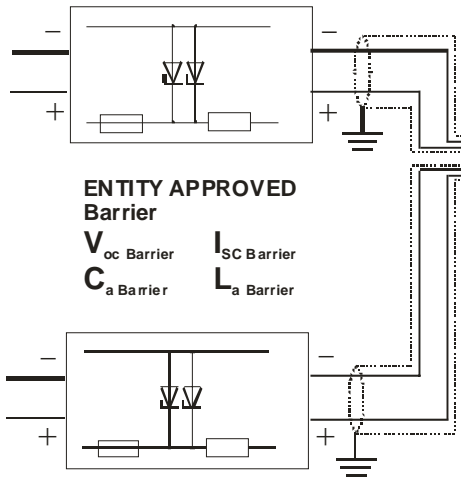
$C_{cable} \leq C_a (C_o) - 6nF$      $L_{cable} \leq L_a (L_o)$

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	C	13.11.08/SCHK	H		
	D		J		
	E		K		

<b>CSA CONTROL DRAWING Cl.1, Div. 1                  PROSONIC FLOW 9.                  Entity concept Commodul HART IS</b>	Masstab	Gezeichnet	10.03.01	UD
		Geprüft		
		Ex-geprüft	13.11.08	SCHK
		Gesehen		

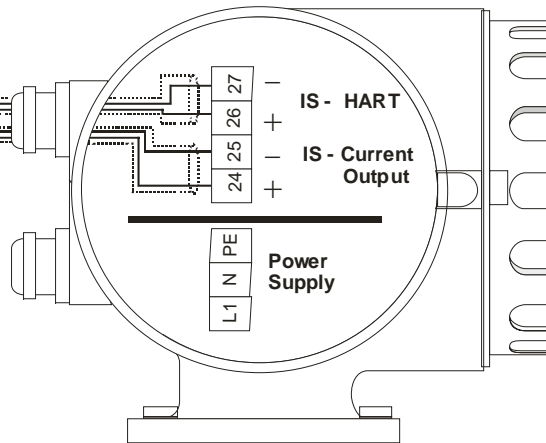


**NON HAZARDOUS LOCATION**



**HAZARDOUS LOCATION**

Cl. I, Zone 1 IIC  
 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 5 °C above surrounding ambient, but at least for 80°C / 176°F

**Intrinsically safe signal output:**

- 2) Install all intrinsically safe circuits per Canadian Electrical Code respecting the Explosionproof Integrity of the enclosure
- 3) **WARNING:** SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
- 4) Control room equipment may not use or generate more than 250 Vrms.

**Type: PROSONIC FLOW 9\*\*\*\_\*\*\*\*\*R**

Terminals: 26, 27 (HART current output):

Terminals: 24, 25 (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 $\mu$ 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:

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

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

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

**Type: PROSONIC FLOW 9\*\*\*\_\*\*\*\*\*U**

Terminals: 26, 27 (HART current output):

Terminals: 24, 25 (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

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

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

Cable parameters for Intrinsic Safety:

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

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

Aenderungen:	A	05.04.02/MDI	F	Alle gesetzlichen Urheberrechte vorbehalten. Diese Zeichnung darf ohne unsere Genehmigung weder vervielfältigt werden noch dritten Personen und Konkurrenzfirmen zugänglich gemacht werden.	<b>Mat. Nr. 71091742</b>  Ersatz für: Ersteller: FES / ID 1100 File: FES0062C_081113.doc
	B	07.08.06 / Bn	G		
	C	13.11.08/SCHK	H		
	D		J		
	E		K		

**CSA CONTROL DRAWING Cl.1, Div. 1  
 PROSONIC FLOW 9.  
 Entity concept Commodul HART IS**

Masstab	Gezeichnet	10.03.01	UD
	Geprüft		
	Ex-geprüft	13.11.08	SCHK
	Gesehen		



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**FES0062-0005 C**