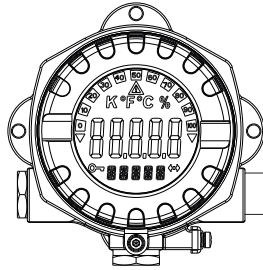


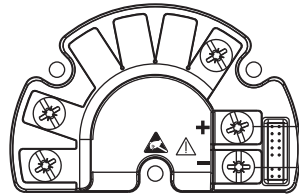
Hazardous (Classified) Location  
 Class I, Zone 0, IIC  
 Class I / Division 1, 2 / Groups ABCD  
 Class II, III, Zone 21, IIIC  
 Class II / Division 1 / Groups EFG  
 Class III / Division 1



Nonhazardous Locations

CSA approved  
 Associated apparatus or  
 barrier resp.  
 Associated Nonincendive  
 Field Wiring  
 suitable for FISCO concept

See also installation notes  
 for using power supply



PROFIBUS®/  
 FOUNDATION Fieldbus™

### Installation Notes RID14

- CSA approved apparatus must be installed in accordance with manufacturer's instructions.
- Use supply wires suitable for 5°C above surroundings.
- Installation should be in accordance with the Canadian Electrical Code (CEC).
- WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.
- AVERTISSEMENT : LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE



### DUST IGNITION PROOF

#### Class II, Div. 1, Groups E, F & G, Class III, Div. 1

- A dust tight seal must be used for conduit entry when the field display is used in a Class II or Class III location.

### INTRINSICALLY SAFE

#### Ex ia IIC T6...T4 Ga

#### Class I, Division 1, Groups A, B, C, D; T6...T4

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

- CSA Approved Associated Apparatus must meet the following parameters:  
 $U_o \leq U_i$     $I_o \leq I_i$     $P_o \leq P_i$     $C_a \geq C_i + C_{cable}$     $L_a \geq L_i + L_{cable}$
- The maximum non-hazardous area voltage must not exceed 250 V.
- Be aware of multiple earthing of screen. The screen must be connected in accordance with Canadian Electrical Code.
- The polarity for connecting + and - is of no importance due to an internal rectifier.
- RID14 is suitable for the connection to a Profibus PA/Foundation Fieldbus system according to Entity- or FISCO Concept

### NONINCENDIVE

#### Ex ic IIC Gc T6...T4 Gc

#### Class I, Division 2, Groups A, B, C, D; T6...T4 (Non Incendive Field Wiring (NIFW))

- Intrinsic safety barrier is required.  $V_{max} \leq 35$  V DC.
- Nonincendive field wiring installation  
 The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive Field Wiring Apparatus with Associated Nonincendive Field Wiring Apparatus or Associated Intrinsically Safe Apparatus or Associated Apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when  $V_{oc} \leq V_{max}$ ,  $C_a \geq C_i + C_{cable}$ ,  $L_a \geq L_i + L_{cable}$ .  
 Field display Nonincendive Field Wiring parameters are as follows:  
 $U_i$  or  $V_{max} \leq 35$  V DC    $C_i \leq 5$  nF    $L_i \leq 10$   $\mu$ F  
 For these current controlled circuits, the parameter  $I_{max}$  is not required and need not to be aligned with parameter  $I_{sc}$  and  $I_t$  of the Associated Nonincendive Field Wiring Apparatus or Associated Apparatus.
- The field display is suitable to be installed according the FNICO concept.

### RID14 with electronic insert for Profibus PA/Foundation Fieldbus

Concept	FISCO	Entity
Ui (Vmax)	17.5 V	24 V
Ii (Imax)	500mA	250mA
Pi (Pmax)	5.5 W	1.2 W
Ci $\leq$ 5nF		Li $\leq$ 10 $\mu$ H
Leakage current $\leq$ 50 $\mu$ A		

### Temperature range

T4	-40°C ... +80°C
T5	-40°C ... +70°C
T6	-40°C ... +55°C

### FISCO-Concept

The FISCO Concept allows interconnection of intrinsically safe apparatus to associated apparatus not specifically 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  $V_{oc}$  or  $V_t$ ), the current ( $I_o$  or  $I_{sc}$  or  $I_t$ ) 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  $\mu$ 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  $V_{oc}$  or  $V_t$ ) of the associated apparatus has to be limited to the range of 14V to 24V d.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 to a leakage current of 50  $\mu$ 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 has to meet the following values:

Loop resistance  $R'$ : 15 ... 150  $\Omega$ /km, inductance  $L'$ : 0.4 ... 1 mH/km   capacitance  $C'$ : 80 ... 200 nF/km

$C' = C' \text{ line}/\text{line} + 0.5 C' \text{ line}/\text{screen}$ , if both lines are floating or

$C' = C' \text{ line}/\text{line} + C' \text{ line}/\text{screen}$ , if the screen is connected to one line

Length of spur cable: 30 m   length of trunk cable: 1 km   length of splice: 1 m

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

$R = 90 \dots 100 \Omega$     $C = 0 \dots 2.2 \mu\text{F}$ .

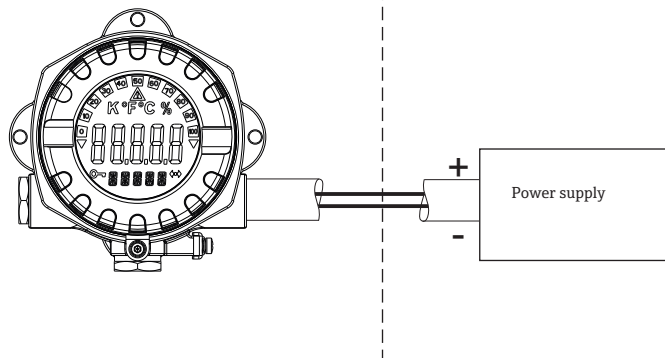
One of the allowed terminations might already be integrated in the associated apparatus.

The number of passive devices 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 the length of trunk cable and all spur cables), the inductance and capacitance of the cable will not impair the intrinsic safety of the installation.

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Hazardous (Classified) Location  
Class I, Zone 2, IIC  
Class I / Division 2 / Groups ABCD

Nonhazardous Locations



#### Temperature range

T4	-40°C ... +80°C
T5	-40°C ... +70°C
T6	-40°C ... +55°C

#### INCREASED SAFETY

Ex ec IIC T6...T4 Gc

Class I, Div. 2, Groups ABCD; T6...T4

- Intrinsic safety barrier is not required.  $V_{max} \leq 35$  V DC.
- **WARNING: EXPLOSION HAZARD - DO NOT CONNECT OR DISCONNECT WHILE CIRCUITS ARE LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.**
- **AVERTISSEMENT: RISQUE EXPLOSIF- NE JAMAIS BRANCHEZ OU DECONNECTEZ QUAND LES CIRCUITS INTERNES SONT SOUS TENSION À MOINS QUE LA ZONE SOIT PAS À RISQUES.**

#### Terminal specification:

	Torque*	Cable version	Cable cross-section
Screw terminals	max. 1 Nm	Solid or flexible	= 2.5 mm <sup>2</sup> (12 AWG) plus ferrules

\*Do not overtighten the screw terminals, as this could damage the field display.

#### Functional ratings

These ratings do not supersede Hazardous Location values

$U_{nom} \leq 35$  DC  $I_{nom} \leq 4$  to 20 mA

#### CONDITIONS OF ACCEPTABILITY

- For the use as an equipment in type of protection increased safety, and for Zone 2 (EPL Gc), and Class I, Division 2 applications, the field display RID14 shall not be connected or disconnected unless the area is known to be non-hazardous.
- If the field display RID14 was used in a Zone 2 (EPL Gc) or Class I, Division 2 application it is not allowed to use it in Zone 1 (EPL Gb), Zone 0 (EPL Ga) or Class I, Division 1 applications in the future.
- Final acceptance of this equipment when installed is subject to the jurisdiction of the local inspection authority.
- The end user shall ensure appropriate earthing of the metallic field housing upon installation.
- The equipment shall only be powered by limited energy circuits such as Class 2 SELV circuits.



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