

HAZARDOUS (CLASSIFIED) LOCATION

Class I, Zone 0, IIC
Class I, Division 1, 2, Groups A,B,C,D
Class II, Division 1, 2, Groups E,F,G
Class III

NONHAZARDOUS LOCATION

INTRINSICALLY SAFE
CLASS I, DIV.1, GROUPS A,B,C,D CLASS II, DIV.1, GROUPS E,F,G CLASS III
Ex ia IIC T6

1. CSA certified apparatus must be installed in accordance with manufacturer instructions
2. CSA certified associated apparatus must meet the following requirements:
Uo or Voc or Vi ≤ Ui (Vmax) and Io or Isc or Ii ≤ Ii (Imax) and Po or Pmax ≤ Pi (Pmax)
3. The maximum non-hazardous area voltage must not exceed 250 V
4. The installation must be in accordance with the Canadian Electrical Code or National Electrical Code (ANSI/NFPA70) and ISA RP 12.06.01
5. Be aware of multiple earthing of screen. The screen must be connected in accordance with Canadian Electrical code or National Electrical Code (ANSI/NFPA70) and ISA RP 12.06.01
6. Caution: Use only supply wires suitable for 5 °C above surrounding temperature
7. Warning: Substitution of components may impair intrinsic safety.
8. The polarity for connecting is of no importance due to an internal rectifier.

PPC-M51, LHC-M51 electronic insert for Profibus PA (Entity-Concept)	
Ui (Vmax) = 24 V	Temperature classification T6 T4
Ii (Imax) = 250mA	Max. ambient temperature 40°C 70°C
Pi (Pmax) = 1.2 W	104 °F 158 °F
Ci ≤ 5nF Li ≤ 10 µH	Min. ambient temp: -40°C (optional -50°C)
Leakage current ≤ 50 µA	

PPC-M51, LHC-M51 electronic insert for Profibus PA (FISCO-Concept)	
Ui (Vmax) = 17.5 V	Temperature classification T6 T4
Ii (Imax) = 500mA	Max. ambient temperature 40°C 70°C
Pi (Pmax) = 5.5 W	104 °F 158 °F
Ci ≤ 5nF Li ≤ 10 µH	Min. ambient temp: -40°C (optional -50°C)
Leakage current ≤ 50 µA	

PPC-M51, LHC-M51 is suitable for the connection to a Profibus PA system according to the Entity- or FISCO-concept (as described below).
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 (Ui or Vmax), the current (Ii or Imax) and the power (Pi or Pmax) which intrinsically safe apparatus can receive and remain intrinsically safe, considering faults, must be equal or greater than the voltage (Uo or Voc or Vi), the current (Io or Isc or Ii) and the power (Po or Pmax) 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 or Vi) 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 µA 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 parameters 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/km
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 spur cable: 30 m length of trunk cable: 1 km length of splice: 1 m
At each end of the trunk cable an approved inalterable line termination with the 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.

116-0387

LHC-M51, PPC-M51 PROFIBUS PA
CSA control drawing

71265717

Control Drawing no. 116-0387

This document contains safety-relevant information. It must not be altered without the authorization of the norm expert (NE Ex)!

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