CSA/ATEX/IECEx Intrinsic Safety
Control Drawing & Overview

For TA91X Series

Intrinsic Safety Control Drawing

NON-HAZARDOUS AREA

HAZARDOUS AREA

SIGNAL, TEMPERATURE

COMMON

BARRIER STRIP

(+)

(-)

(+)

SIGNAL, POWER

UNSPECIFIED BARRIER STRIP

SENSOR

STRUCTURE CONNECTED TO SUPPLY SOURCE GROUND

TA91X Series
Ex ia IIC T3 Ga
AEx ia IIC T3 Ga
CLI Groups A, B, C, D
CLII Groups E, F, G; CLIII
CLI, Zone 0

Operating Temperature Code: T3
Ambient Temperature Range = -40°C to +121°C
Control Drawing INS10012
U_i = 28 VDC I_i = 112 mA
P_i = 1W, C_i = 1.5nF, L_i = 0µH
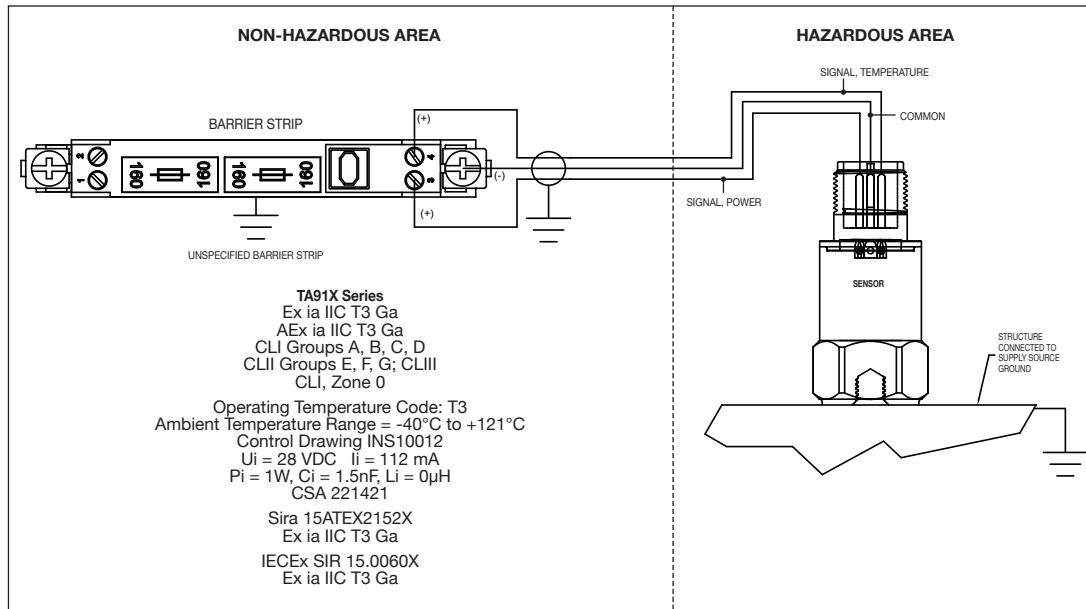CSA 221421

Sira 15ATEX2152X
Ex ia IIC T3 Ga

IECEx SIR 15.0060X
Ex ia IIC T3 Ga

Overview & Requirements

- A barrier is required for the installation of IS sensors. The barrier passes signals in either direction as required but limits the voltage and current that can reach the hazardous area under fault conditions. The barrier is put in series and is installed in a safe area (see Typical Connection Diagram).

  Proper IS Barrier must be used with this sensor to ensure compliance with entity parameters

  - IS131 and IS231 barriers are compatible with TA91X series sensors
  - Please contact a CTC Representative if you require assistance in specifying the correct barrier for CTC sensors

- Approved cabling (maximum 1600 ft./488 m) of CB191 or CB212 must be used to bring the signal from the sensor to the Zener diode barrier or galvanic isolator, which is the energy-limiting interface. The standard cable, for integral cables is CB191 TPE jacketed, 3 conductor shielded cable

- Sensors must be grounded to a grounded structure by stud mounting the sensor directly to the machine surface, ensuring metal (of the sensor) to metal (of the machine surface) contact

Entity Parameters

This information is used to specify the barrier required for the installation of CTC intrinsically safe sensors.

Model	Description	Vmax	Ci	Imax	Li	Pi
TA91X Series	Accelerometer	28 Vdc	1.5 nF	112 mA	0 uH	1 W

Vmax =	Maximum Voltage
Ci =	Total Capacitance of Circuit Allowable
Imax =	Maximum Allowable Current
Li =	Total Inductance of Circuit Allowable
Pi =	Total Power of Circuit Allowable

Regulatory Approvals

Regulatory Approvals			
	US & Canada:	(CSA)	Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III; CL1, Zone 0 Temperature Code T3; ambient temperature range -40°C to +121°C Canada: Ex ia IIC T3 Ga USA: AEx ia IIC T3 Ga
	ATEX:	⟨Ex⟩ II 1 G	Ex ia IIC T3 Ga Temperature Code T3; ambient temperature range -40°C to +121°C
	IECEx:	IECEx	Ex ia IIC T3 Ga Temperature Code T3; ambient temperature range -40°C to +121°C

VIBRATION ANALYSIS HARDWARE