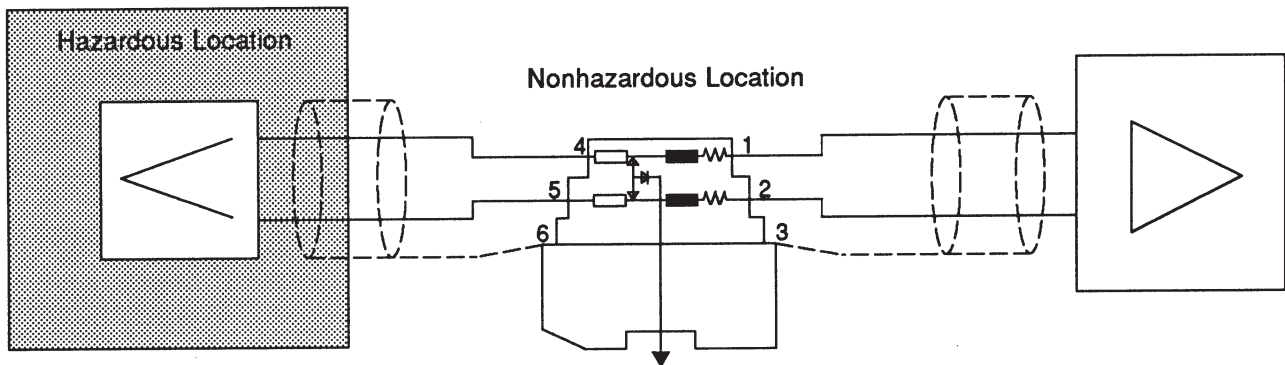


INTRINSICALLY SAFE TEMPERATURE MEASUREMENT CIRCUITS

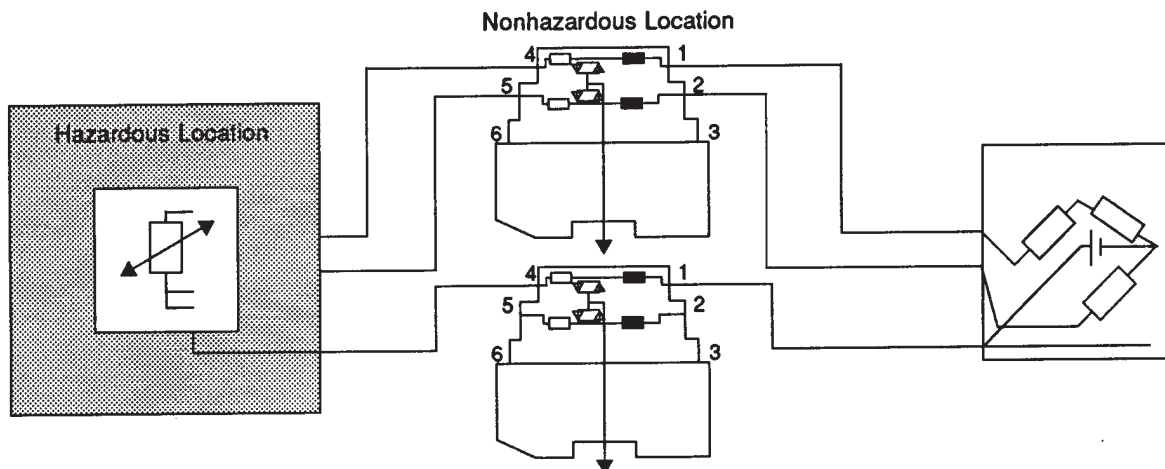
Thermocouple Input for Hazardous Location Groups A - G [using Intrinsic Safety Barriers]



Intrinsic Safety Barrier Selection

Intrinsic Safety Barrier Part Number	Rated Voltage [V]	Maximum Voltage [V max]	Fuse Current [I]	Safety Barrier Resistance [R]	Maximum Leakage Current	Safety Barrier Temperature Coefficient	
						Max.	Min.
MTL 7060ac MTL 7160ac	7.2V 7.2V	8.4V 8.7V	50mA 50mA	101Ω 1101.1Ω	At 7.2V: 10μA 10μA	1.050	354 (PPM/°C)

RTD Input for Hazardous Location Groups A - G [using Intrinsic Safety Barriers]



Intrinsic Safety Barrier Selection

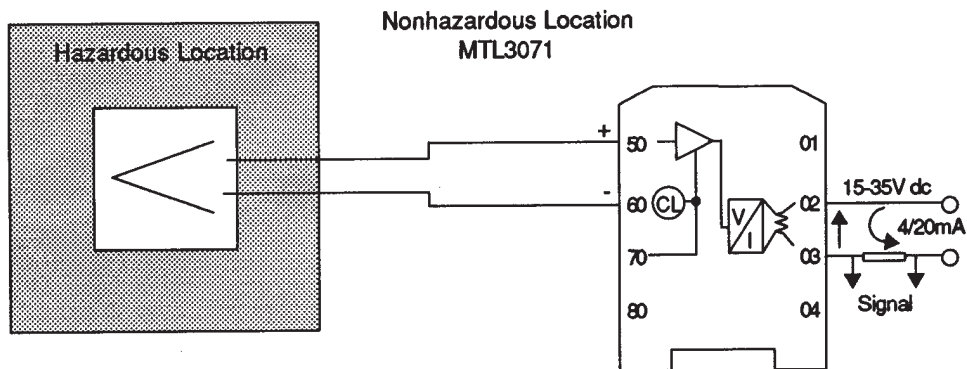
Intrinsic Safety Barrier Part Number	Rated Voltage [V]	Maximum Voltage [V max]	Fuse Current [I]	Safety Barrier Resistance [R]	Maximum Leakage Current	Safety Barrier Temperature Coefficient	
						Max.	Min.
MTL 7055ac	0.6V	3.0V	100mA	24Ω*	At 0.6V: 1μA	973	202 (PPM/°C)

*24Ω ±0.15Ω @ 20°C, Channels track within 0.15Ω from -20 to +60°C

JMS recommends and uses MTL Intrinsic Safety and Galvanic Isolation Barriers

ISOLATED INTRINSICALLY SAFE TEMPERATURE

Thermocouple Input for Hazardous Location Groups A - G [using Galvanic Isolation Devices]



Technical Data

Rated Supply Voltage	24V (15 to 35Vdc)
Protection Fuse	50 mA
Power Consumption	0.46 watts max.

Input Data

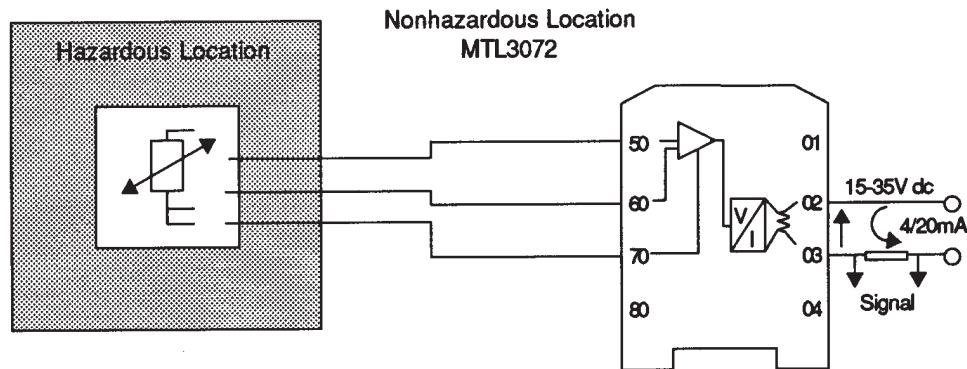
T/C type:	J, K, E, T, R, N (or mV)
Span:	4-60mV
Zero:	-12 to +60mV

Load Specification

4-20mA

A simple apparatus is a device which will not generate nor store more than 1.2 V, 0.1A, 25mW, or 20 uJ. Some examples include switches, RTDs, thermocouples, and LEDs. Since these devices cannot contribute energy of sufficient magnitude to ignite a hazardous mixture under a fault condition, they may be connected to a certified intrinsically safe circuit, via an associated apparatus, without the evaluation of a third party testing agency.

RTD Input for Hazardous Location Groups A - G [using Galvanic Isolation Devices]



Technical Data

Rated Supply Voltage	24V (15 to 35Vdc)
Protection Fuse	50 mA
Power Consumption	0.46 watts max.
Current Supplied to Field	400µA
Line Resistance:	100Ω max. each line

Input Data

RTD:	2-3 wire 100Ω Platinum
Span:	25 to 800°C
Zero:	-200 to +400°C
Potentiometer:	0-300Ω

Load Specification

4-20mA

For all practical reasons no electrical circuit is inherently intrinsically safe. An intrinsically safe system consists of an Associated Apparatus, either a simple or Intrinsically Safe Apparatus, and interconnecting wiring. When properly installed, the incidence of abnormal spark-causing conditions such as electrical equipment failure, miswiring, overvoltage application to the circuit, or grounding, shorting, or open-circuiting of any lead(s) in the presence of a hazardous mixture, shall not be of sufficient energy to cause ignition.

JMS recommends and uses MTL Intrinsic Safety and Galvanic Isolation Barriers