

PRODUCT SPECIFICATION
2 Channel Isolated Solid State Relay, Model: ISSR-2
PN: 9100-010

Function / Purpose

The 2 Channel Isolated Relay (ISSR-2) provides a Galvanically Isolated, Intrinsically Safe connection between equipment located in Division 1/Zone 0,1 hazardous locations and equipment located in division 2/Zone 2 and/or non-hazardous locations. The ISSR-2 allows equipment such as our IS-1400 controller to directly control 12/24V electric actuators without requiring additional barriers or relays. Note that some actuator wiring configurations will require an interposing relay.

Specifications

- Entity Input Parameters allow connection of a wide range of field devices.
 - o $U_i = 23.5V$, $I_i = 55mA$, $C_i = 0.1\mu F$, $L_i = 0.1\mu H$
 - o Minimal Current and Voltage required for operation
 - 5.6mA (typical) at 6Vdc
 - 7mA (typical) at 23.5Vdc
 - o Internal transient diode protection for device protection
- Output designed for direct actuation of large loads
 - o 32Vdc maximum working voltage
 - o 16.5A maximum continuous current per channel
 - o 20A maximum continuous device current (all channels combined)
 - o 0.005 Ohm maximum on state resistance
 - o 400A maximum pulse current (0.1 msec pulse duration, 1 times per sec)
 - o 140A maximum pulse current (1 sec pulse duration, 4 times per minute)
 - o Internal TVS Diode for suppression of inductive loads such as relay coils
- Provides Galvanic Isolation between Input and Output
 - o 4000Vrms Input to Output

Mechanical

- Housing Material: UL 94-V0 (self extinguishing)
- Dimensions: 4.3" x 2.2" x 1.3" / 109 x 56 x 33 mm approx. LxWxH
- Integrated mounting tabs, 3/16" holes x 4. (3.875 x 1.50" square)
- Weight: 0.62 lb / 0.28 kg approx.
- TB-1, Input terminations, screw terminal block.
 - o 22-16AWG, 10A, 300V
- TB-2 Load/Output terminations, screw terminal block.
 - o 22-10AWG, 30A, 300V

Environmental

- -40 to + 80 degrees Celsius ambient operating temperature range
- 5 – 95% Relative Humidity Non-Condensing.

TB1 –Input (Intrinsically Safe Circuits only)

Terminal	Description
IN 1	Intrinsically Safe Signal Positive (min 5.6mA & 3Vdc required for operation)
GND	Intrinsically Safe Signal Ground
IN 2	Intrinsically Safe Signal Positive (min 5.6mA & 3Vdc required for operation)

TB2 – Output (Load Side)

Terminal	Description
OUT 1	Load Signal Positive
NEG	Load Signal Negative (max 20A combined current)
OUT 2	Load Signal Positive

NOTES:

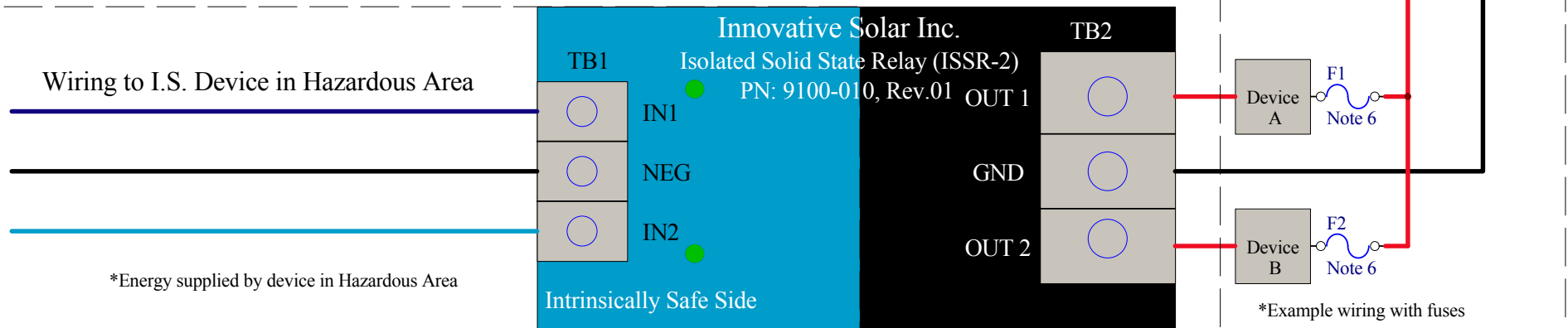
- Reference control drawing 9800-007 for proper installation.
- This equipment is suitable for use in Zone 2, Group IIC or Class I, Division 2, Groups C & D or non-hazardous locations only.
- Installation shall comply with Canadian Electrical Code (CEC) Part I Sec. 18 and/or NFPA National Electrical Code Article 504.
- Refer to the manufacturers' Intrinsically Safe Apparatus Installation Instructions for all barrier connections.
- The Barrier must not be connected to any device that uses or generates in excess of 250 volts RMS or DC unless it has been evaluated for proper isolation from the barrier.
- This barrier is rated "Non-incendive". Use in Division 2 locations requires mounting within an enclosure meeting the requirements of ANSI/ISA S82. The enclosure may be installed in a Class I, Division 2, Group C, or D hazardous location.
- Connection of barrier to ground is not required.
- Fuses are required in series with OUT 1 and OUT 2.
- Total combined fuse ratings for OUT 1 and OUT 2 is 20A.

INTRINSIC SAFETY CONTROL DRAWING #9800-007-01

ASSOCIATED APPARATUS Isolated Solid State Relay (ISSR-2) PN: 9100-010, Rev.01

DEVICE MOUNTING LOCATION

Class I, Div 2 Groups C & D / Zone 2, Groups IIB or Non-Hazardous Locations Only



Entity Parameters Input Terminal TB1	Vmax	Imax	Ci	Li
	Ui	Ii	Ci	Li
IN 1	23.5	55mA	0.1 uF	0.1 uH
IN 2	23.5	55mA	0.1 uF	0.1 uH

TB2 Parameters	Vmax	Imax
OUT 1 (note 7)	32 Vdc	16.5 A
OUT 2 (note 7)	32 Vdc	16.5 A

- NOTES:**
- 1) Installation shall comply with Canadian Electrical Code (CEC) Part I Sec. 18 and/or NFPA National Electrical Code Article 504
 - 2) Refer to the Intrinsically Safe Apparatus manufacturers installation instructions for all barrier connections.
 - 3) This Barrier must not be connected to any device that uses or generates in excess of 250 volts RMS AC or DC.
 - 4) This barrier is rated "Non-incendive". Use in Division 2 locations requires mounting within an enclosure meeting the requirements of ANSI/ISA S82. The enclosure may be installed in a Class I, Division 2, Group C, or D hazardous location.
 - 5) Connection of barrier to ground is not required.
 - 6) Total combined Fuse Rating for F1 and F2 is 20A
 - 7) Fuses are required in series with OUT 1 and OUT 2.

REVISION	DATE	DESCRIPTION	Innovative Solar Inc.	
01	07/04/11	Initial Release	Control Drawing - 2 Channel Isolated Relay (ISSR-2)	
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