Installation Instructions for
ISS-100 Intrinsically Safe Switch

WARNING: TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTABLE ATMOSPHERES, DISCONNECT POWER FROM THE SYSTEM PRIOR TO INSTALLATION OR SERVICE.

CAUTION: Installation must comply with all national, state, and local codes. Installation of this equipment should only be performed by personnel trained in intrinsically safe systems. Improper installation may result in serious injury or damage. Before proceeding with installation, read and understand these instructions completely.

The ISS-100 Isolated Switch is UL913 listed as an associated apparatus for interfacing between hazardous and non-hazardous areas. The ISS-100 must be installed in a non-hazardous area. Follow SymCom's Control Drawing ISS-100 on the back of this sheet for proper installation.

All wiring connected to a hazardous location must be separated from all non-intrinsically safe wiring. Description of special wiring methods can be found in the National Electrical Code ANSI/NFPA 70, Article 504 Intrinsically Safe Systems. Check your state and local codes for additional requirements.

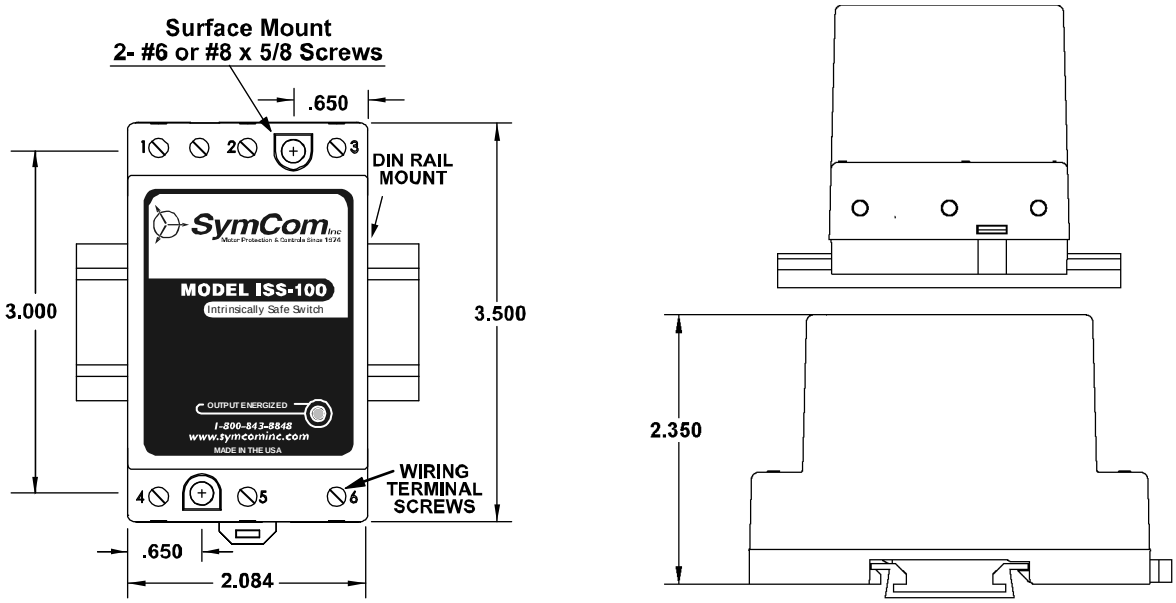
WARNING: REMOVE POWER FROM THE SYSTEM PRIOR TO INSTALLING OR SERVICING THE ISS-100.

Installation:

1. Mount the ISS-100 in a non-hazardous location on 35mm DIN rail, or by installing two #6-#8 screws into the surface mounting holes provided.
2. Connect wiring per SymCom's Control Drawing ISS-100. Follow all hazardous code requirements while installing wiring to switch input terminals.

Operation:

The ISS-100 relay is powered with 115VAC and is designed as an isolated switch suitable for applications with switch inputs in a hazardous location. In a powered state, the ISS-100 will close its output relay when the input switch is closed. The green LED on the cover will illuminate when the relay is energized and extinguish when the relay is de-energized.



II-ISS-100-B

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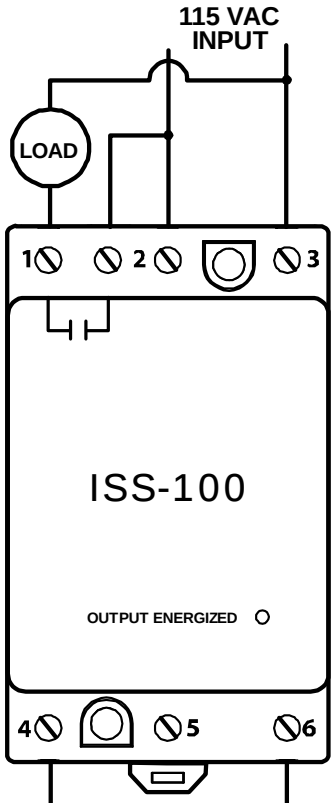
CONTROL DRAWING ISS-100

ASSOCIATED APPARATUS / APPAREILLAGE CONNEXE



Non-Hazardous Location

Supply Voltage
90 - 120VAC

Relay Output Rating
8 Amps @ 120VAC General Purpose
Pilot Duty 180VA @ 120VAC, C300

Maximum Ambient Temperature Rating
55°C

DEVICE MUST BE INSTALLED IN A SUITABLE ENCLOSURE

WARNING!

TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTABLE ATMOSPHERES, DISCONNECT POWER BEFORE SERVICING.

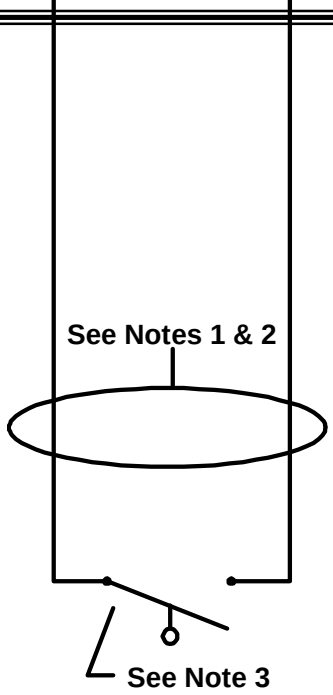
DEVICE MAY ONLY BE REPAIRED BY THE MANUFACTURER

WARNING!

SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

AVERTISSEMENT!

LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE.



Hazardous Location

Class I, Divisions I & II, Groups A, B, C & D;
Class II, Divisions I & II, Groups E, F & G; and
Class III locations

NOTES:

1. Maximum distance between unit and switch contact is 10,000 feet.
2. All non-intrinsically safe wiring shall be separated from intrinsically safe wiring. Description of special wiring methods can be found in the National Electrical Code ANSI/NFPA 70, Article 504 Intrinsically Safe Systems. Check your state and local codes for additional requirements.
3. All switch contacts shall be non-energy storing, containing no inductance or capacitance.
4. Entity Parameters:

V_{oc} = 16.8V	C_a = 0.39µF
I_{sc} = 1.2mA	$P_o = \frac{V_{oc} * I_{sc}}{4}$
L_a = 100mH	

5. Entity Parameter Relationships:

IS Equipment		Associated Apparatus
V_{max} (or U_i)	≥	V_{oc} or V_t (or U_o)
I_{max} (or I_i)	≥	I_{sc} or I_t (or I_o)
P_{max}, P_i	≥	P_o
$C_i + C_{cable}$	≤	C_a (or C_o)
$L_i + L_{cable}$	≤	L_a (or L_o)

Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations as shown in the table above. Cable capacitance, C_{cable}, plus intrinsically safe equipment capacitance, C_i, must be less than the marked capacitance, C_a (or C_o), shown on any associated apparatus used. The same applies for inductance (L_{cable}, L_i and L_a or L_o, respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: C_{cable} = 60pF/ft., L_{cable} = 0.2µH/ft.

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