

# Installation Instructions for ISS-101 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-101 Isolated Switch is UL913 listed as an associated apparatus for interfacing between hazardous and non-hazardous areas. The ISS-101 must be installed in a non-hazardous area. Follow SymCom's Control Drawing ISS-101 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.

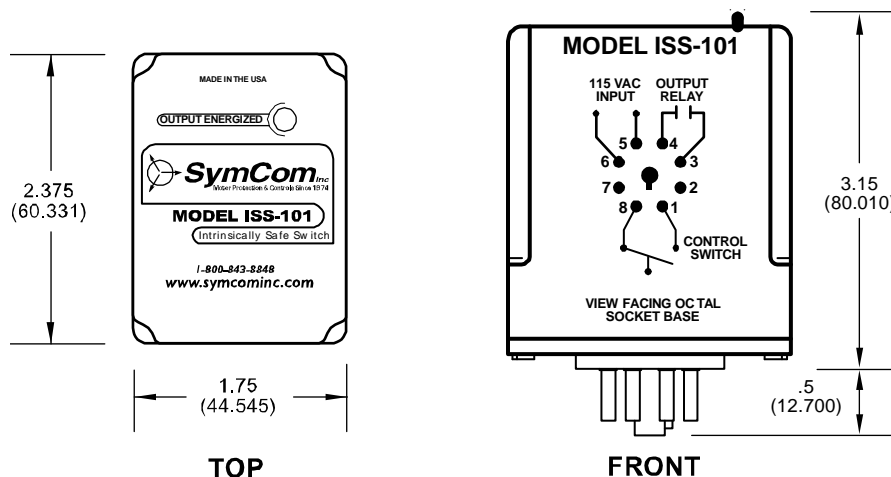
**WARNING:** REMOVE POWER FROM THE SYSTEM PRIOR TO INSTALLING OR SERVICING THE ISS-101.

## Installation:

1. Mount the ISS-101 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-101. Follow all hazardous code requirements while installing wiring to switch input terminals.

## Operation:

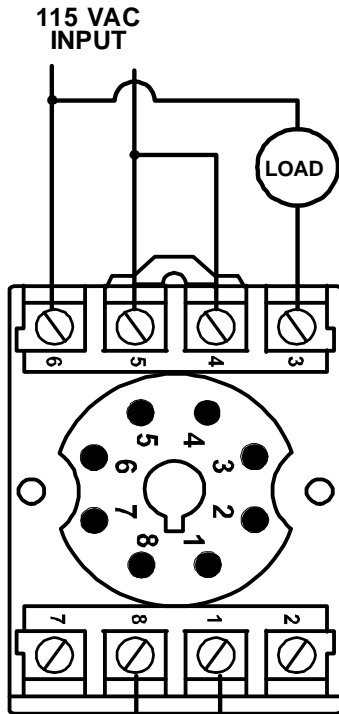
The ISS-101 relay is powered with 115VAC and is designed as an isolated switch suitable for applications with switch inputs in a hazardous location. In a powered state, the ISS-101 will close its output relay when the input switch is closed. The green LED on the cover will illuminate when the relay is energized and extinguish when the relay is de-energized.



II-ISS-101-B

# CONTROL DRAWING ISS-101

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

NOTE: UL Listed when used with p/n OT08-PC manufactured by Custom Connector Corp. or p/n PF083A-E, manufactured by OMRON.

**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:

- Maximum distance between unit and switch contact is 10,000 feet.
- 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.
- All switch contacts shall be non-energy storing, containing no inductance or capacitance.

#### 4. Entity Parameters:

$$\begin{aligned} V_{oc} &= 16.8V & C_a &= 0.39\mu F \\ I_{sc} &= 1.2mA & P_o &= \frac{V_{oc} * I_{sc}}{4} \\ L_a &= 100mH \end{aligned}$$

#### 5. Entity Parameter Relationships:

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

See Notes 1 & 2

See Note 3

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:  $C_{cable} = 60pF/ft.$ ,  $L_{cable} = 0.2\mu H/ft.$