

Installation Instructions for ISS-102AA-DCS 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-102 Isolated Switch is UL913 listed (E233355 1.3) as an associated apparatus for interfacing between hazardous and non-hazardous areas. The ISS-102 must be installed in a non-hazardous area. Follow SymCom's Control Drawing ISS-102AA 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-102.

Installation:

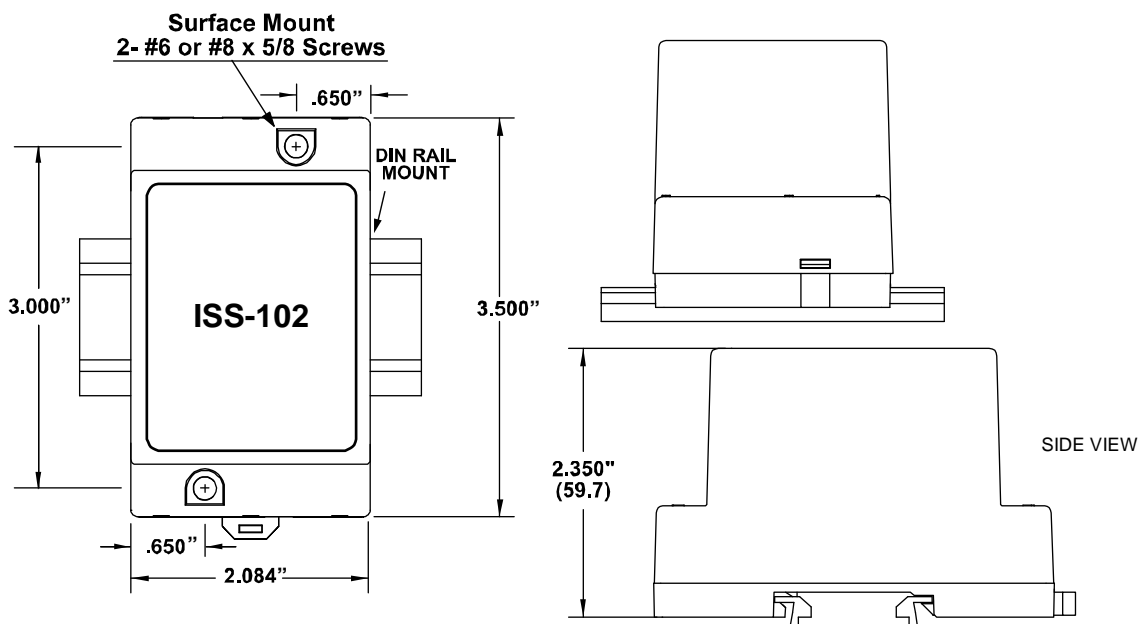
1. Mount the ISS-102 in a non-hazardous location on 35mm DIN rail, or by installing two #6-#8 screws into the surface mounting holes provided.
2. Connect wiring per SymCom's Control Drawing ISS-102AA (on following page). Follow all hazardous code requirements while installing wiring to switch input terminals.

Operation:

The ISS-102AA-DCS is a dual-channel switch with two form A output relays. The input resistance threshold is fixed at 100k Ω . Each output contact closes upon closure (input resistance <100k Ω) of its associated input switch. Resistance probes or switches can be used on the inputs.

The ISS-102AA-DCS has a .5-second debounce time delay—the output contact will not change states until a condition exists for .5 second—to prevent nuisance actuation and rapid cycling.

Green LEDs illuminate on the ISS-102AA-DCS when the associated output relay is energized.



CONTROL DRAWING ISS-102AA

ASSOCIATED APPARATUS / APPAREILLAGE CONNEXE

Non-Hazardous Location

Supply Voltage

120VAC

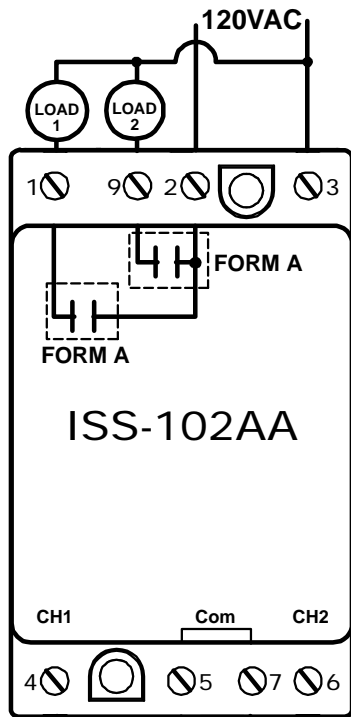
Relay Output Rating

5 Amps @ 120VAC General Purpose

Pilot Duty 180VA @ 120VAC, C150

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:

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

5. Entity Parameter Relationships:

<u>IS Equipment</u>		<u>Associated Apparatus</u>
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)

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