

ISS-102 SERIES

Two-Channel Intrinsically Safe Switch





Wiring Diagrams



For more wiring diagrams and notes, see next page.

Description

The ISS-102 is a two-channel, intrinsically-safe switch designed for multiple uses including a pump-up/pump-down (latching) controller or two-channel switch. LEDs indicate the state of the intrinsically-safe inputs and output relays and user-selectable options are available including a variable resistance threshold for float inputs. The ISS-102 enclosure is surface or DIN rail mountable.

-LC Each input channel is active when the corresponding switch is closed. When the lag input (CH2) is activated, the output closes. Applying latching logic, the output contact remains closed until the lead (CH1) and the lag (CH2) inputs are deactivated. Sensitivity is fixed at 100kOhms with a debounce time delay of 2 seconds.

-DCS This dual-channel switch has two Form A output relays. Two LEDs illuminate the output state of their respective Form A relay. Resistance probes or switches can be used on its inputs. Sensitivity is fixed at 100kOhms with a debounce time delay of 0.5 seconds.

-MC By selecting the proper functionality through the DIP switches, you can define a pump-up or pump-down, single or dual channel non-latching switch. The sensitivity adjustment (4.7k-100kOhms) allows you to define the input impedance at which the output relays (one Form A & one Form C) will change state, with a debounce time delay of 0.5 or 2 seconds.

Features & Benefits

FEATURES	BENEFITS	
Finger-safe terminals	Meets IEC 61000 safety requirements	
Compact design for DIN rail or surface mount	Allows flexiblility in panel installation	
LED status indicator	Visual indication of relay engagement	
Two input channels	Flexibility for pump up/pump down latching controller or two-channel switch applications	

Ordering Information

MODEL	LINE VOLTAGE	DESCRIPTION
ISS-102A-LC	120VAC	Latching Controller
ISS-102AA-DCS	120VAC	Dual Channel Switch
ISS-102ACI-MC	120VAC	Multi-function Controller
ISS-102C-M-LC	120VAC	MSHA* evaluated
ISS-102CCI-M-MC	120VAC	MSHA* evaluated

* Mine Safety and Health Administration

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Wiring Diagrams (continued)





NOTES:

- 1. 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.
- 3. All switch contacts shall be non-energy storing, containing no inductance or capacitance.

Specifications

Functional Characteristics Debounce Time Probe Sense Voltage

Output Characteristics Output Contact Rating

Pilot Duty General Purpose Relay Contact Life (Electrical) Relay Contact Life (Mechanical) Output Relay Type ISS-102A-LC ISS-102AA-DCS ISS-102ACI-MC ISS-102CCI-M-LC ISS-102CCI-M-MC General Characteristics Temperature Range

Temperature Range Maximum Input Power Wire Range Terminal Torque 0.5 or 2 seconds 5vdc pulsed

180VA @120VAC, C150 5A @120VAC 100,000 cycles min. @ rated load 10,000,000 cycles

One Form A Two Form A One Form A & One isolated Form C One Form C Two Form C (one isolated)

-20° to 55°C (-4° to 131°F) 2 W 12 to 20 AWG 3.5 to 4.5 in.-lbs. (max. 4.5 in.-lbs.)

Provides Intrinsically-Safe Circuits in the following locations:

Entity Parameters

Standards Passed

Electrostatic Discharge (ESD) Radio Frequency Immunity (RFI) Fast Transients Safety Mark UL

Dimensions

Weight Mounting Method $\begin{array}{l} \mbox{Division 1 and 2} \\ \mbox{Class I, Groups A,B,C,D;} \\ \mbox{Class II, Groups E,F,G;} \\ \mbox{Class III} \\ \mbox{V}_{oc} = 16.8V \\ \mbox{Po} = \underline{Voc^*Isc} \\ \mbox{I}_{sc} = 1.2mA \\ \mbox{L}_a = 100mH \\ \mbox{C}_a = 0.39uF \end{array}$

IEC 61000-4-2, Level 3, 6kV contact, 8kV air. IEC 61000-4-3, Level 3, 10V/m IEC 61000-4-4, Level 3, 4kV input power

UL913 Sixth Edition (File #E233355) (except Models ISS-102C-M-LC & ISS-102CCI-M-MC which have been evaluated by MSHA) H 88.9 mm (3.5"); W 52.93 mm (2.08"); D 59.69 mm (2.35") 0.7 lb. (11.2 oz., 317.51 g) 35mm DIN rail or Surface Mount (#6 or #8 screws)



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Littelfuse:

ISS-102ACI-MC ISS-102AA-DCS ISS-102A-LC ISS-102CCI-M-MC ISS-102C-M-LC