Five-Channel Intrinsically Safe Switch

Description
The ISS-105 is a “smart” five-channel intrinsically safe relay and pump controller. The ISS-105 can be configured for pump-up or pump-down applications or as a five-channel relay covering a wide variety of applications.

The ISS-105 has a long list of features that are needed for multiple pump applications and can indicate low, high and out-of-sequence alarms. If an out-of-sequence alarm occurs, the skipped pump(s) will be started as intended.

The Model ISS-105 can be set-up to do non-alternating control, alternating control and alternating control with one non-alternating pump. The non-alternating pump is intended for use with an emergency or jockey pump. The ISS-105 can start an emergency pump once every 50 cycles to keep it working freely. Using the built-in DIP switches, individual pumps can be disabled when taken out of service for repair or maintenance.

Features & Benefits
- 5 intrinsically-safe input channels meeting UL913 Sixth Edition
- 4 normally open output relays and 1 SPDT output relay
- Field selectable pump control options
- Monitors float sequencing and sends signal to alarm if out-of-sequence condition occurs
- High and/or low alarm options depending on the number of pumps and settings
- Output contacts for audible alarm
- Meets IEC EMC standards for Electrical Fast Transients (EFT), Electrostatic Discharge (ESD) and Radio Frequency Immunity (RFI)
- DIN rail or surface mountable allows flexibility in panel installation
- User-selectable alternator/non-alternator option
- Non-alternating pump option for emergency or jockey applications
- Pump disable switches make it easy to disable individual pumps when they are out for service or repair
- Adjustable lag pump delay for all pumping modes
- Adjustable delay-on-make/break timer in five-channel relay mode
- Finger-safe terminals meet IEC 61000 safety requirements

Ordering Information

<table>
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<tr>
<th>MODEL</th>
<th>LINE VOLTAGE</th>
<th>DESCRIPTION</th>
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<tr>
<td>ISS-105</td>
<td>120VAC</td>
<td>Intrinsically-Safe &amp; Pump Controller</td>
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<tr>
<td>ISS-105-ISO</td>
<td>120VAC</td>
<td>Intrinsically-Safe Only</td>
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<tr>
<td>ISS-105-ISO-3</td>
<td>120VAC</td>
<td>3-Channel Intrinsically-Safe Only</td>
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<td>ISS-105-ISO-4</td>
<td>120VAC</td>
<td>4-Channel Intrinsically-Safe Only</td>
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<td>ISS-105-ISO-F</td>
<td>120VAC</td>
<td>ISO with Fast Trip Relays</td>
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### Specifications

#### Input Characteristics
- **Supply Voltage**: 120VAC
- **Frequency**: 50*/60Hz

#### Functional Characteristics
- **Probe Sense Voltage**: 5vdc continuous

#### Output Characteristics
- **Relay Output Rating**: 480VA @ 240VAC, B300
- **Pilot Duty**: 7A @ 240VAC
- **Relay Contact Life (Electrical)**: 100,000 cycles min. @ rated load
- **Relay Contact Life (Mechanical)**: 10,000,000 cycles

#### General Characteristics
- **Temperature Range**: -40° to 55°C (-40° to 131°F)
- **Maximum Input Power**: 5 W
- **Wire range**: 12 to 20 AWG
- **Recommended Terminal Torque**: 3.5 to 4.5 in.-lbs. (max. 4.5 in.-lbs.)

#### Provides Intrinsically-Safe Circuits in the following locations:
- Division 1 and 2
- Class I, Groups A,B,C,D
- Class II, Groups E,F,G
- and Class III

#### Entity Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>(V_o)</td>
<td>16.8V</td>
</tr>
<tr>
<td>(I_o)</td>
<td>1.2mA</td>
</tr>
<tr>
<td>(L_a)</td>
<td>100mH</td>
</tr>
<tr>
<td>(C_a)</td>
<td>0.39uF</td>
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</table>

### Standards Passed
- **Electrostatic Discharge (ESD)**: IEC 61000-4-2, Level 3, 6kV contact, 8kV air.
- **Radio Frequency Immunity (RFI)**: IEC 61000-4-3, Level 3, 10V/m
- **Fast Transients**: IEC 61000-4-4, Level 3, 4kV input power 2kV inputs/outputs

#### Safety Marks
- UL
- UL913 Sixth Edition (File #E233355)

#### Dimensions
- **H**: 94.06 mm (3.703”)
- **W**: 127.64 mm (5.025”)
- **D**: 59.69 mm (2.350”)

#### Weight
- 1.2 lbs. (19.2 oz., 544.31 g)

#### Mounting Method
- 35 mm DIN rail or Surface Mount (#6 or #8 screws)

*Note: 50Hz will increase all delay timers by 20%.*