ENGINEERING SPECIFICATION

SYMCOM MODEL ISS-102A-LC Intrinsically Safe Pump Control

PART 1 GENERAL

1.1 REFERENCES

    A. UL 913 Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division I, Hazardous (Classified) locations, Sixth Edition – Underwriters Laboratories

    B. ANSI/IEEE C62.41 – American National Standards Institute/Institute of Electrical & Electronics Engineers

Equipment shall be installed according to the latest version of the National Electrical code.

1.2 WARRANTY

    A. Manufacturer Warranty: The manufacturer shall guarantee the pump control to be free from material and workmanship defects for a period of five years from the date of manufacture when installed and operated according to the manufacturer's requirements.

PART 2 PRODUCTS

2.1 MANUFACTURERS

The equipment specified shall be the Model ISS-102A-LC, manufactured by SymCom, Inc.

2.2 DESCRIPTION

    A. Regulatory Requirements:
        1. The equipment shall be UL Listed as type QUZW—Process Control Equipment for Use in Hazardous Locations, Sixth Edition.

2.3 PERFORMANCE/DESIGN CRITERIA

    A. General IO Capability:

        1. Outputs:
            a. The equipment shall include one SPST output relay contact pilot duty rated at 180VA @ 120VAC, 5 amps @ 120VAC general purpose.

        2. Inputs:
            a. The equipment shall provide two control inputs to the hazardous area.
            b. The equipment shall accept single-phase input voltage rated 120 VAC.

    B. Functions:

        1. The equipment shall provide dual-channel differential/latching logic.
            a. The equipment shall energize the output relay upon activation of input channel #2.
            b. The equipment shall de-energize the output relay upon deactivation of both input channels.
            c. The equipment shall illuminate the LED upon activation of the output relay.
            d. The equipment shall provide a two second debounce delay on both input channels.

    C. Human Interface Features:
        1. The equipment shall provide an indicator LED capable of indicating the status of the output relay.

    D. Intrinsically Safe Requirements:
        1. The equipment shall have the following entity parameters:
            a. $V_{oc}=16.8V$
            b. $I_{sc}=1.2mA$
            c. $L_a=100mH$
            d. $C_a=0.39\mu F$
            e. $P_o= \dfrac{V_{oc} * I_{sc}}{4}$

        2. The equipment shall provide intrinsically safe circuit into the following locations:
            a. Class I, Divisions I & II, Groups A, B, C, & D
            b. Class II, Divisions I & II, Groups E, F & G
            c. Class III

        3. The equipment shall provide two inputs to the hazardous area.

E. Electromagnetic Compatibility:
1. The equipment shall be immune to electrostatic discharge per IEC 61000-4-2, Level 3, 6 kV contact discharge and 8 kV air discharge.
2. The equipment shall be immune to electrical fast transient bursts per IEC 61000-4-4, Level 4, 4 kV power supply port, 2 kV input/output ports.
3. The equipment's power supply port shall be immune to electrical surges per IEC 61000-4-5, Level 4. Specified limits shall be 4kV line-to-line and line-to-ground.
4. The equipment shall be immune to radiated radio frequency emissions. Specified limits shall be 10V/m at 150 MHz.

F. Dielectric Isolation: The equipment shall provide 2000VAC dielectric withstand between the AC mains and the relay contacts and between the AC mains and enclosure for one minute.

G. Enclosure Class of Protection: The equipment shall provide IEC IP20 (finger safe) protection.

H. Environmental Requirements:
1. The equipment shall operate continuously without derating in ambient temperatures of -20° to 55°C (-4° to 131°F).
2. The equipment shall operate continuously without derating in relative humidity of up to 95% non-condensing per IEC 68-2-3.
3. The equipment shall operate properly after storage in ambient temperatures of -40° to 80°C (-40° to 176°F).

I. Dimensions: The equipment dimensions shall not exceed 2.1" in width x 3.5" in length x 2.5" in height.

J. Mounting:
1. The equipment shall be mountable on standard 35 mm DIN rail.
2. The equipment shall be surface mountable on a backplane using two screws, bolts or similar mounting hardware.

<center>End of Section</center>