INTRINSICALLY SAFE BARRIER ISB10

UL 913

UL FILE #E189808

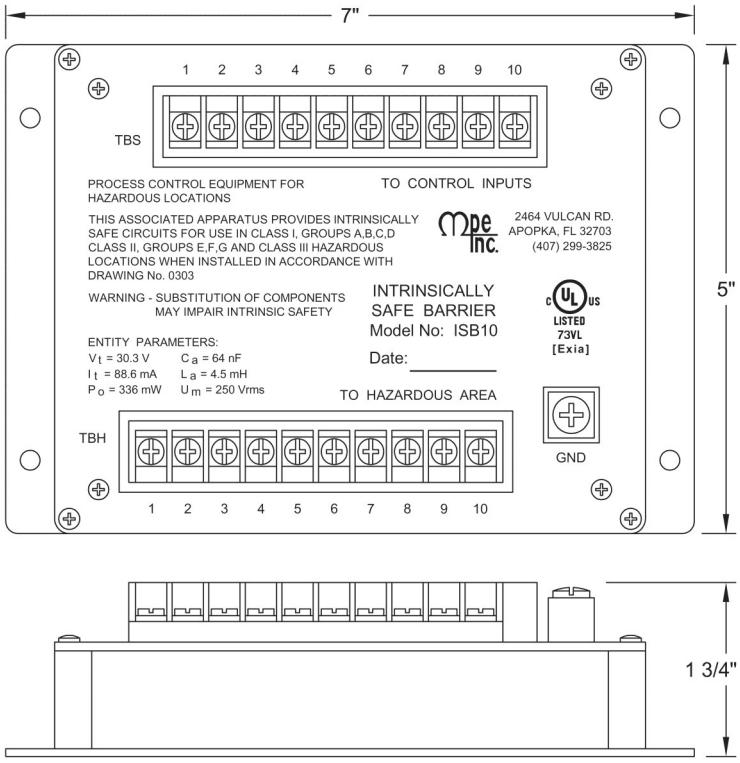
This associated apparatus provides intrinsically safe circuits for use in Class I, Groups A, B, C, D Class II, Groups E, F, G and Class III Hazardous Locations when installed in accordance with drawing No. 0303.

TYPICAL APPLICATIONS

For use with any of MPE's conductance probes where intrinsic safety is required.

DESCRIPTION

The ISB10 provides an intrinsically safe barrier between a 10 channel conductance probe in a hazardous location and pump controls in a non-hazardous area. The barrier is designed to allow the level sense signal (±12V square wave) from the pump control device to pass through unchanged. If an accident or malfunction occurs in the control panel that would potentially connect spark-inducing energy to the probe wiring in the wet well, the barrier clamps to limit the voltage and current to a safe level. The barrier has a fuse in each channel that is capable of disconnecting the barrier from a high energy source that may be present in the control panel.



SPECIFICATIONS

Operating Temp:	-20 to +60 °C
Storage Temp:	-45 to +85 °C
Enclosure:	Aluminum
Rated Operating Voltage:	±12.0 V
Barrier Clamp Voltage:	±15.15 V
Internal Resistance:	1.92 k Ω Nominal Per Channel

ENTITY PARAMETERS

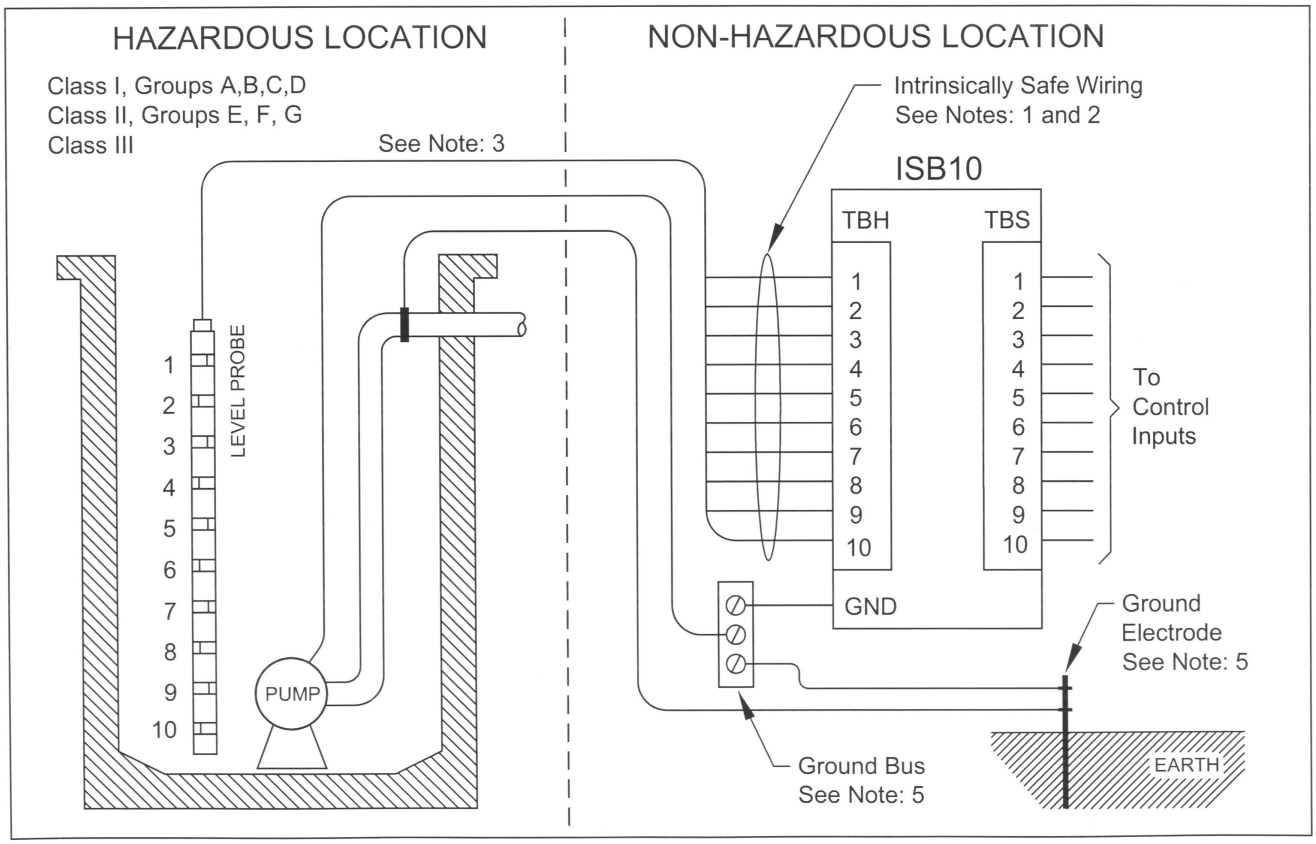
Vt = 30.3 V	Ca = 64 nF
I t = 88.6 mA	La = 4.5 mH
Po = 336 mW	Um = 250 Vrms

ORDERING INFORMATION

Model Number: **ISB10**

INTRINSICALLY SAFE BARRIER ISB10

Control Drawing No. 0303 Page 1 of 2 TYPICAL LIFT STATION APPLICATION



Notes for Control Drawing 0303 Page 1 of 2:

1. All intrinsically safe wiring shall be separated from non-intrinsically safe wiring. Refer to article 504.2 of the National Electric Code (ANSI/NFPA 70), Section 18 of the Canadian Electric Code, or other local codes, as applicable.

2. Maximum distance between Barrier and Probe is 100 feet.

3. The Probe's cable capacitance plus the Probe's intrinsically safe equipment capacitance (Ci) must be less than the marked capacitance of the Barrier (Ca). Also, the Probe's cable inductance plus Probe's intrinsically safe equipment Inductance (Li) must be less than the marked inductance (La) shown on Barrier. If the electrical parameters of the cable are unknown, then a capacitance value of 60 pF/ft – and an inductance of 0.20 µH/ft are to be used. Cable capacitance and cable inductance are calculated as follows: 60 pF/ft x 100 ft = 6 nF 0.2 µH/ft x 100 ft = 20 µH

4. The Barrier must be installed in an enclosure suitable for the application in accordance with the National Electric Code (ANSI/NFPA 70) for installation in the United States, the Canadian Electrical Code for installations in Canada, or other local codes, as applicable.

5. The hazardous location ground and the Barrier ground must be connected to the ground bus in the power distribution panel. The ground bus must be connected to a suitable ground electrode per the National Electric Code (ANSI/NFPA 70), Section 18 of the Canadian Electric Code, or other local codes, as applicable. The resistance of the ground path from the Barrier to the ground electrode must be less than 1 Ohm.

6. The Barrier must not be connected to devices that use or generate more than 250 Vrms or dc with respect to earth.

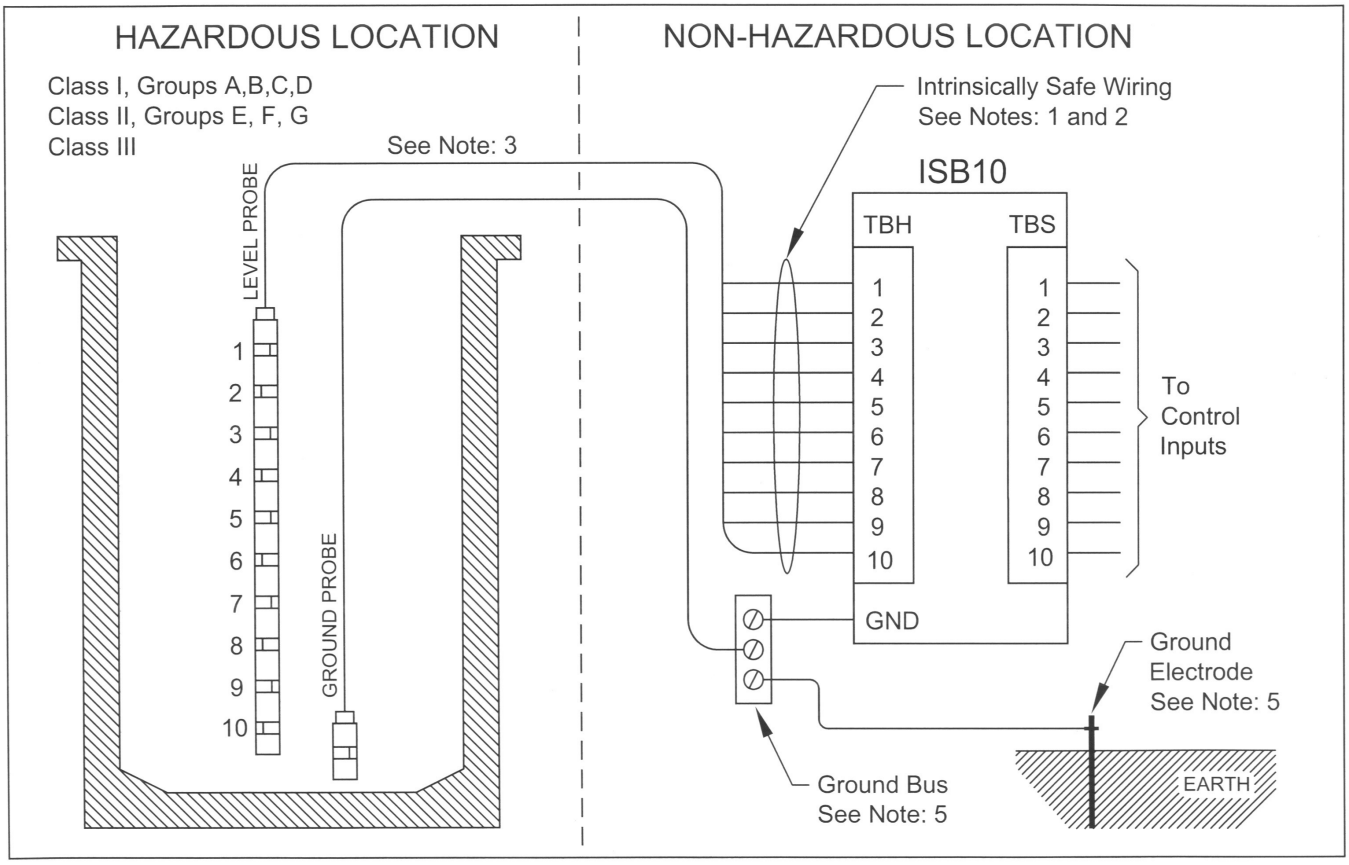
7. This associated apparatus (Barrier) has not been evaluated for use in combination with another associated apparatus.

Barrier Entity Parameters: Vt = 30.3 V It = 88.6 mA Ca = 64 nF La = 4.5 mH Po = 336 mW Um = 250 Vrms

Revision Date: 6-19-15

INTRINSICALLY SAFE BARRIER ISB10

Control Drawing No. 0303 Page 2 of 2 UNGROUNDED TANK APPLICATION



Notes for Control Drawing 0303 Page 2 of 2:

1. All intrinsically safe wiring shall be separated from non-intrinsically safe wiring. Refer to article 504.2 of the National Electric Code (ANSI/NFPA 70), Section 18 of the Canadian Electric Code, or other local codes, as applicable.

2. Maximum distance between Barrier and Probe is 100 feet.

3. The Probe's cable capacitance plus the Probe's intrinsically safe equipment capacitance (Ci) must be less than the marked capacitance of the Barrier (Ca). Also, the Probe's cable inductance plus Probe's intrinsically safe equipment Inductance (Li) must be less than the marked inductance (La) shown on Barrier. If the electrical parameters of the cable are unknown, then a capacitance value of 60 pF/ft – and an inductance of 0.20 µH/ft are to be used. Cable capacitance and cable inductance are calculated as follows: 60 pF/ft x 100 ft = 6 nF 0.2 µH/ft x 100 ft = 20 µH

4. The Barrier must be installed in an enclosure suitable for the application in accordance with the National Electric Code (ANSI/NFPA 70) for installation in the United States, the Canadian Electrical Code for installations in Canada, or other local codes, as applicable.

5. The hazardous location ground probe and the Barrier ground must be connected to the ground bus in the power distribution panel. The ground bus must be connected to a suitable ground electrode per the National Electric Code (ANSI/NFPA 70), Section 18 of the Canadian Electric Code, or other local codes, as applicable. The resistance of the ground path from the Barrier to the ground electrode must be less than 1 Ohm.

6. The Barrier must not be connected to devices that use or generate more than 250 Vrms or dc with respect to earth.

7. This associated apparatus (Barrier) has not been evaluated for use in combination with another associated apparatus.

Barrier Entity Parameters: Vt = 30.3 V It = 88.6 mA Ca = 64 nF La = 4.5 mH Po = 336 mW Um = 250 Vrms

Revision Date: 6-19-15