

The Controller shall be an Intrinsically Safe Duplexer, ISD, built for intrinsically safe duplex pump control operation. The Controller shall be tested to the latest UL standard for Intrinsic Safety, UL913 Version 7. The Controller shall provide intrinsically safe circuits for Class I Groups A,B,C,D, Class II Groups E,F,G, and Class III Hazardous Locations.

The controller shall have (5) intrinsically safe float switch inputs, suitable for connection to either float switches or a conductance level probe. The inputs shall allow the safe handing of the float switches or conductance level probe by lift station personnel.

The Controller shall be SCADA-Ready with a standard Modbus RS232 Serial Port, and have an optional Ethernet Port for Modbus TCP/IP.

The Controller shall be designed to simplify control panel construction by incorporating the following features:

- Five Float and/or Conductance Probe Intrinsically Safe Inputs
- Duplex Alternation
- Level Simulation Pushbutton
- Two HOA Switches
- Lead/Lag/Auto Switch
- Pushbutton for Alarm Reset and Level Simulation
- Power-On Indicator
- Five Level Indicators
- Pump Run Indicators
- High Level Alarm Indicator
- Low Level Alarm Indicator
- Out-of-Sequence Indicator
- Ten Second Power Up Delay
- Adjustable Lag Pump Time Delay
- RS232 Modbus Serial Port
- Phoenix-Style Connectors

The Push-to-Test push-button shall allow the operator to test the automatic pump call function of the unit, as well as reset the high level alarm. By depressing and holding the Alarm / Push-to-Test Push-button, the unit shall automatically step through the level indications and the pump run and alarm functions. A Push-to-Test feature that only tests the Off and Lead inputs shall not be considered equal.

The Out-of-Sequence logic shall give an indication that the float switches or Level Probe inputs are not opening or closing as they should. This logic shall also compensate for float switch failure conditions, and allow for continued pump operation.

The High Level Indicator shall be selectable to be a latched or non-latched indication of the High Level condition. This condition shall be resettable through SCADA.

The Controller shall provide Out-of-Sequence indication for both Pump-up and Pump-down operation.

The Controller shall be SCADA Ready and come standard with an industry standard DSub9 Serial Port for Serial Communication. The Controller shall also be able to be supplied with an Ethernet port as an option.

**The controller shall contain the following setup features, available via the SCADA port:**

- Select Pump Up or Pump Down Mode
- Select Floats or Level Probe Inputs
- Select Sensitivity for Level Probe
- Select Lag Pump Delay
- Select Alarm Indication Reset (Manual or Automatic)
- Select Serial Communication Parameters

**The Controller shall contain the ability to perform the following SCADA features:**

**Monitor the status of:**

- Level Inputs
- Pump (On/Off)
- Push-Button
- Lead – Lag Alternator Switch
- Run Time via Internal ETM register
- Pre-Regulator Power Supply Voltage

**Control:**

- Remotely Reset ETM's
- Remotely Force Pumps On
- Remotely Disable Pumps
- Remotely Reset Alarm
- Remotely Reset Fault Code Registers

**Fault Codes:**

- Status of Current Fault Code (if applicable)
- Status of Last Fault Code
- Status of "Out of Sequence" Registers

The Controller shall be available in three mounting options. The ISD-P option shall be available for inner door mounting. The ISD-D option shall mount on a din-rail track. The ISD-S option is used for back-panel or subpanel mounting.

**ISD Part Number Information:**

ISD-P	Panel Mount Controller
ISD-D	Din-Rail Mount Controller
ISD-S	Surface Mount Controller

For Optional Ethernet Port, add suffix (E) to part number above.

The ISD Controller shall be manufactured by Motor Protection Electronics of Apopka, Florida, (407) 299-3825.