

IQ-300

Single-Point Microwave Radar Level Measurement System

Part 1. General

1.1 Scope

- A.** This section describes the requirements for a Single-Point Microwave Radar Level Measurement System.
- B.** Under this item, the contractor shall furnish and install the single-point level measuring system as indicated on the plans and as herein specified.

1.2 Submittals

- A.** The following information shall be included in the submittal for this section:
 - 1. Data sheets and catalog literature for microprocessor transceiver electronics
 - 2. Interconnection and dimensional drawings.

Part 2. Products

2.1 Single-Point Microwave Radar Level Measurement System

- A.** The controller shall provide one 4-20 maDC output signal proportional to material level in one vessel into a maximum of 450 ohms with optical isolator.
- B.** The controller shall provide the following communication options HART, Profibus PA and RS-485 Modbus.
- C.** The controller shall provide optional two-way infrared adapter (Dolphin Plus) and software to facilitate programming and troubleshooting.
- D.** The output signal shall be proportional to material level from 0 to 100% for an optimum accuracy of +/- 15mm over a .4 to 10 meter range and .15% over a 10 to 20 meter range

- E.** Programming shall be accomplished via a removable, infrared programmer without the need to open the enclosure for programming thus maintaining the Nema 4 integrity of the enclosure. There shall be no internal potentiometers or switches used in programming the controller.
- F.** The indicator display shall be a backlit, alpha-numeric and multi-graphic liquid crystal for measurement readings and operational status.
- G.** The controller shall have an EEPROM memory and shall not require a battery to ensure protection of entered parameters and operational data.
- H.** Communications Protocol

 - a. Shall be compatible to accept two-way infrared / RS485 communications for parameter input and data acquisition. Communications software shall be Windows 3.1 (trademark of Microsoft Corp) based. Software will be capable of downloading, storing and uploading data. Communications module shall be portable.
- I.** The echos shall be processed comparing returns for largest area echo, tallest echo spike and first echo returned. The patented **Sonic Intelligence™** shall compare the various returns and select the echo with the greatest confidence factor.
- J.** This unit shall have a range of 1' to 66' from antenna tip.
- J.** The equipment shall be the Milltronics model IQ-300 Microwave Radar.

Part 3. Operator Functions

3.1 Calibration

- A.** Calibration of the single-point controller shall be accomplished by the entry of all operating data through the removable keypad via infrared link. No additional equipment shall be required.

- B. Internal self diagnostics shall be available to assist in maintenance of the single-point controller.

Part 4. Execution

4.1 Installation

- A. Follow manufacturers recommendations for the minimum separation between the sensor and the maximum expected material level.
- B. Mount the sensor to ensure a clear path to the material surface.

Part 5. Warranty

5.1 Terms

- A. The manufacturer of the above specified equipment shall guarantee for twenty four (24) months from equipment startup or thirty (30) months from date of shipment, whichever occurs first, that the equipment shall be free from defects in design, workmanship or materials.
- B. In the event a component fails to perform as specified or is proven defective in service during the warranty period, the manufacturer shall promptly repair or replace the defective part at no cost to the owner.

Part 6. Options

6.1 Related Equipment

- A. Dolphin two-way communications package

Part 7. Spare Parts

7.1 Recommended Spare Parts

- A. Programmer