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# 2. Installation

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## Receiving/Inspection

- Unpack carefully.
- Verify that all items in the packing list are received and are correct.
- Inspect all instruments for damage or contaminants prior to installation.

If the above three items are satisfactory, proceed with the installation. If not, then stop and contact a customer service representative.

## Packing/Shipping/Returns

These issues are addressed in Appendix C - Customer Service

## Factory Calibration Note

The instrument is factory calibrated to the flow range specified in the order. There is no need to perform any verification or calibration steps prior to installing and placing the instrument in service.

## Required Materials

Appropriate wire, cable, and conduit.



**Note:** Potting Y's for all the interconnecting wires are recommended when installing the instrument's control circuit in an enclosure. Other requirements may vary based on local wiring codes.

## Pre-Installation Procedure



**Warning:** Only qualified personnel should install this instrument. Install and follow safety procedures in accordance with the current National Electrical Code. Ensure that power is off during installation. Any instances where power is applied to the instrument will be noted in this manual. Where the instructions call for the use of electrical current, the operator assumes all responsibility for conformance to safety standards and practices.



**Caution:** Damage resulting from moisture penetration of the local or remote (optional) enclosure is not covered by product warranty.

## Verify Serial Numbers

Verify that the flow element serial number matches the control circuit serial number.

## Verify Installation Location

Prepare the vessel for installation, or inspect the already prepared location to ensure that the instrument will fit into the system. The location that should have been prepared at the time of order should be at least 20 pipe diameters downstream and 10 pipe diameters upstream from any bends or interference in the process pipe or duct to achieve the greatest accuracy.

## Flow Element Installation

Verify the correct orientation of the flow element. Install the flow element in-line with the process media flow. See the specifications in Chapter 1 for the various process connections available. See Appendix A for the dimensions of the flow element.

## Wiring Installation

### Conduit Routing

All socket and/or terminal block connections are to be made through openings in the remote enclosure if used. FCI strongly recommends that all electrical cables be run through an appropriate conduit for the protection of the instrument and personnel if a remote enclosure is used.

Protection of the control circuit from moisture is an important consideration. Keep the entry of the conduit into the enclosure in the downward direction so condensed moisture that collects in the conduit will not drain into the enclosure. In addition, FCI recommends sealing off the conduit with a potting Y or other sealing method to prevent moisture from entering the remote enclosure if used.

### Minimum Wire Size

Table 2-1 shows the smallest (maximum AWG number) copper wire that is to be used in the electrical cables for connecting the instrument to the customer alarms and power. Use a lower gauge of wire for less of a voltage drop. Contact FCI concerning greater distances than those listed in the table.

**Table 2-1. Interconnecting Cable Size (AWG)**

Connection	Maximum Distance for AWG					
	10ft. (3m)	50 ft. (15m)	100 ft (31 m)	250 ft. (76m)	500 ft. (152m)	1000 ft. (305m)
Input Power	22	22	22	20	18	16
Relay	24	22	20	16	12	10

### Cable Connections



**Caution:** In order to prevent circuit or component damage, remove the control circuit from the remote enclosure (if present) prior to the pulling of conduit wire.



**Note:** The installation of an AC line switch between the AC power source and the instrument is recommended. This facilitates easy power disconnection and is an added safety feature.

Unplug the control circuit from its socket by pulling up on the transformer in the center of the circuit. Then connect the relay outputs to the customer alarms. Also connect the power to the instrument power input. See Appendix A for the appropriate connection information.

Replace the control circuit. Be sure any customer supplied gaskets, O-rings, seals or washers are correctly installed to prevent moisture from getting on the control circuit.