



READ THIS FIRST

Installation and Startup Guide

Model IZMS Electromagnetic Flowmeter

Version 1.1 Document 1133



Anderson Instrument Co., Inc.

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This product carries a one (1) year warranty against manufacturers defects. A complete warranty statement is available by contacting Anderson, or in downloadable format from the World Wide Web.

PRODUCT DESCRIPTION

The Anderson IZMS Flowmeter is a precision instrument that mounts directly to the process line, and provides real-time information about the process. The IZMS measures voltage generated from conductive product passing through an electromagnetic field. The resulting information that the IZMS generates can be used to provide an instantaneous indication of the rate of a liquid or collected over time to indicate a total of what has passed through the pipe.

Using the above operating principles, the IZMS can accurately provide outputs for control or indication of the flow process.

ORDER MATRIX



Flow Tube

- 015 5/8" Tri-Clamp
- 025 1" Tri-Clamp
- 032 1.5" Tri-Clamp
- 050 2" Tri-Clamp
- 065 2.5" Tri-Clamp
- 080 3" Tri-Clamp
- 100 4" Flange Connection

Display Option

- 0 No Display
- D Display Option

Operating Power

- 0 24VDC
- 1 115 VAC 50/60 Hz
- 2 230 VAC 50/60 Hz

Cable

- 0 Standard 25' cable
- 1 50' cable
- 2 75' cable
- 3 100' cable

Security

- 0 No sealing device
- 1 Sealing screws

Meter Length

- 0 Standard 13.25"
- 1 Optional 9.88"
- 2 Optional 3/4" T.C. on IZMS015 length 10.5"

SPECIFICATIONS

Operational Specifications

Ambient Temperature:	-4 F to 140 F (-20 C to 60 C)
Maximum Product Temp:	300 F / 149 C
Maximum Inlet Pressure:	144 psi / 10 bar
Minimum Inlet Pressure:	7 psi / 0.5 bar
Minimum Fluid Conductivity:	5 µS / cm

Material / Construction

Housing:	304 stainless steel
Connection Box:	Cast aluminum with corrosion-resistant coating (IP67)
Lining:	PTFE (non-filled virgin Teflon®)
Electrodes:	316L stainless steel
Converter Housing:	Cast aluminum with corrosion-resistant coating (IP67)
Process Connection:	Sanitary Clamp

Electronics

Electrical Supply:	16-34 VDC (-.4-.2A) 115 / 230 VAC / (0.10A / 0.05A) -
Power Consumption:	15VA / 8 watt maximum
Magnetic Field:	DC pulsed with adjustment
Digital Pulse Output:	2x Opto-isolated
Load:	30V@80mA max., 500Hz
Analog Output:	4-20mA (ACTIVE) resistive load 500 ohms
Digital Inputs:	4x Opto-isolated
Activation:	30V@10mA 10Hz maximum
Display:	2 line back lit

UNPACKING

Product Check:

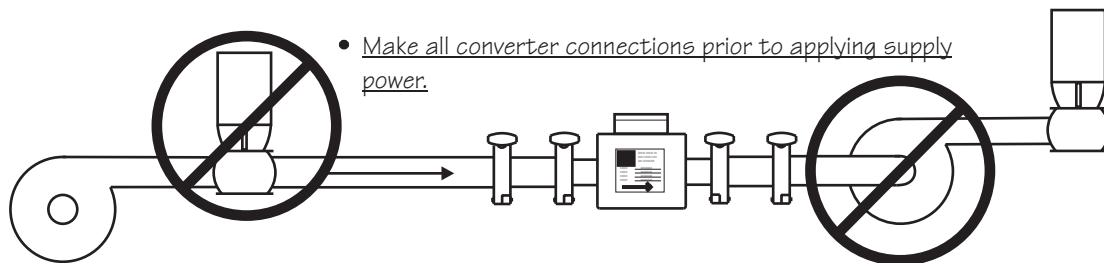
Upon receipt, carefully inspect the product for damage to cables, connectors and sensor face. Damage claims should be made direct with carrier.

Major items are:

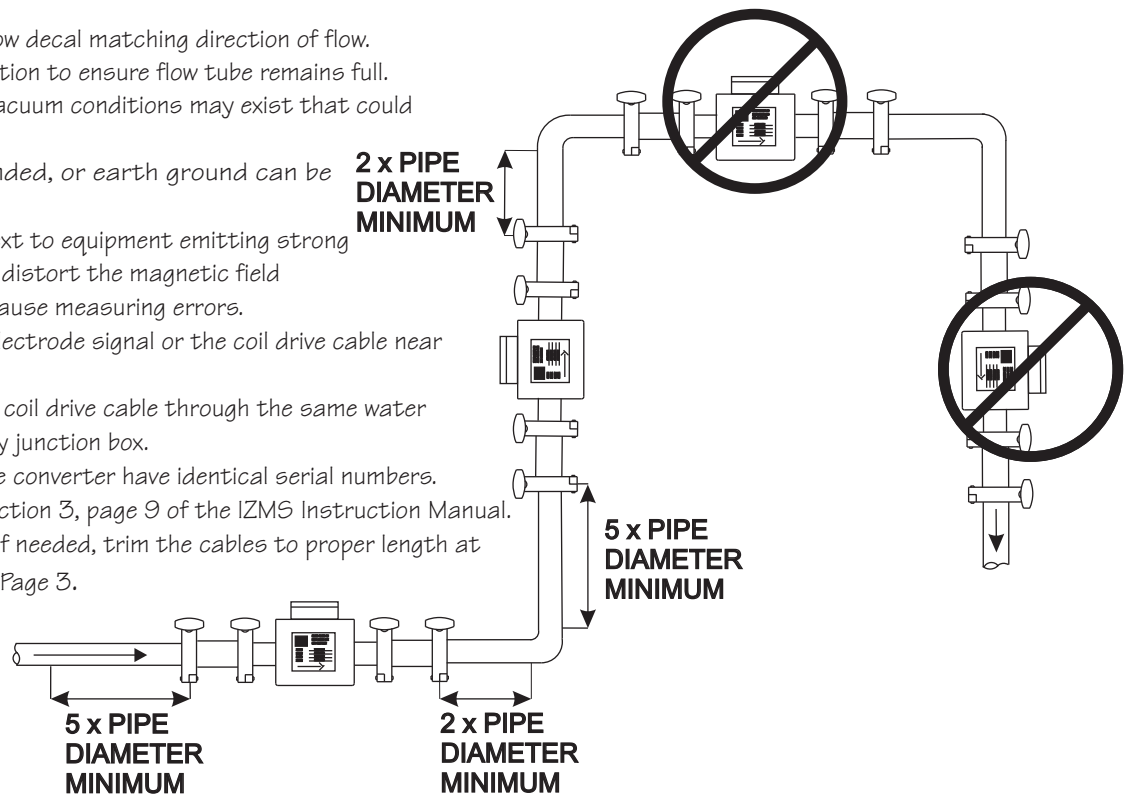
- IZMS configuration record sheet
- meter converter
- meter body with connection adapters assembled to the flow tube
- cord grips and conduit adapter sack
- cables assembled to ordered length
- manual

IZMS INSTALLATION

Warning: • Before welding on a pipeline with a flowmeter installed, disconnect the signal electrode wires from the meter body at terminals 14, 16, and 18 at the convertor.



- Install meter body in-line with arrow decal matching direction of flow.
- Install in process line with orientation to ensure flow tube remains full.
- Do not install meter body where vacuum conditions may exist that could collapse the Teflon liner.
- Pipeline must be properly grounded, or earth ground can be landed to the flow tube lug.
- Avoid installing the meter body next to equipment emitting strong electromagnetic fields that could distort the magnetic field generated by the flowmeter and cause measuring errors.
- Never bundle or route either the electrode signal or the coil drive cable near any AC power line.
- Do not route electrode signal and coil drive cable through the same water tight connector at the meter body junction box.
- Make sure the meter body and the converter have identical serial numbers.
- For Cable Field Preparation see section 3, page 9 of the IZMS Instruction Manual.
- Keep cable as short as possible. If needed, trim the cables to proper length at converter end of installation. See Page 3.



CONVERTER INSTALLATION

To protect the IZMS converter from damage select a location that meets the following requirements.

- Ambient temperature is between -4 and 130 °F.
- Unit is protected from excessive vibration.
- Limit exposure of water or product to the converter housing.
- Wiring connections should be protected against moisture entry.
- For units with an integral display a convenient viewing location should be selected.

Start-Up and Commissioning



Checking Flowmeter Configuration

All IZMS Electromagnetic Flowmeters are flow tested and factory calibrated with water according to the flow conditions reported by the customer at the time of order. The factory pre-programs the calibration data unique to each flowmeter and the operational parameters necessary to meet the customer's specific application requirements. The pre-programmed data is retained in EEPROM memory in the converter. Therefore, the only on-site adjustment necessary will be the hydraulic zero adjustment.

The nameplate affixed to the converter provides information on the flowmeter configuration. Before operating the flowmeter, make sure that the serial number of the meter body matches the serial number on the converter. Attempting to operate an unmatched flowmeter pair will result in improper operation or malfunction.

Converter without LCD Display

A sample nameplate for a converter without an LCD display follows. The information presented on the nameplate is described to the right.

 800.833.0081 Fultonville, New York 12072	Anderson Instrument Co. www.andinst.com	VOLTAGE 120V/60Hz Power Consumption 20VA
		SERIAL NUMBER OF FLOW TUBE AND ELECTRONIC CONVERTER MUST MATCH
MAX. FLOWRATE		MODEL #
DIGITAL OUTPUT 1		SERIAL #
DIGITAL OUTPUT 2		SPAN
ANALOG OUTPUT		OFFSET
M.SPE		VERSION

Hydraulic Zero Adjustment without Display

Utilizing the following procedure will establish a no flow reference point compliant with the specific hydraulic conditions of the application.

1. Make sure the wiring between the meter body and converter is set in the final position. All wiring connections must be in proper terminal locations with tight dry connections.
2. Allow 5 minutes for the flowmeter to warm up to operating temperature. In order to maintain thermal stability, Close but do not tighten the convertor cover during the hydraulic zero adjustment procedure, except when access to the convertor is necessary to press buttons or observe the LED status.
3. Fill the flow tube of the meter body with liquid or water. The electrical conductivity of the product must be greater than 100 micromhos. It is essential that the fluid remain static (no flow or leakage whatsoever) and there is no entrained air in the product during the hydraulic zero adjustment procedure.
4. Open the cover of the converter. Slide the CAL/MEAS switch (Identified on page 3 of the Startup Guide) to the CAL position.
5. Press the Zero Adjust pushbutton (Identified on page 3 of the Startup Guide) momentarily (about two seconds) and then release.
6. Waite 40 seconds for the completion of the hydraulic zero adjustment period.
7. Observe (error condition) LED D8 (Identified on page 3 of the Startup Guide). If the hydraulic zero procedure has not been successful, there will be an error condition. LED D8 will be continuously on or blinking on and off every 1/2 second.
8. If LED D8 is indicating an error condition, check all cable connections for proper location and tightness. Make sure that the meter body flow tube is full of liquid and there is absolutely no flow or leakage. Return to Step 5 and repeat the hydraulic zero adjustment procedure. At the completion of a successful hydraulic zero, LED D8 will be off.
9. Observe LED indicator D7 (Identified on page 3 of the Startup Guide), which is the indicator for the output IMP3, forward-reverse flow. After successful hydraulic zero adjustment, LED D7 will flash on and off at a random frequency under no-flow conditions and LED D8 will be off.
10. Slide the CAL/MEAS switch to the right to the MEAS position. The flowmeter is ready for normal operation.
11. If, after repeating the hydraulic zero adjustment procedure, LED D8 is still blinking, there may be a malfunction.

The most common cause for failure of hydraulic zero adjustment at initial installation is improper or loose connections. Use a needle-nose pliers to gently tug in each individual wire connection at the meter body as well as the convertor terminals to make sure that all connections are correct and fully engaged in the terminal.

Consult factory for help with troubleshooting the issue.