



# READ THIS FIRST

## Installation and Startup Guide

# Model IZML Electromagnetic Flowmeter

Version 3.1 Document 1139



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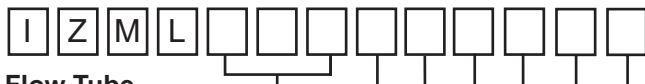
This product carries a one (1) year warranty against manufacturers defects. A complete warranty statement is available by contacting Anderson, or in downloadable format from the World Wide Web.

## PRODUCT DESCRIPTION

The Anderson IZML Flowmeter is a precision instrument that mounts directly to the process line, and provides real-time information about the process. The IZML measures current generated from conductive product passing through an electromagnetic field. The resulting information that the IZML 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 principals, the IZML can accurately provide output variables to control or record the flow process.

## ORDER MATRIX



### Flow Tube

- 015 5/8" Flow tube
- 025 1" Flow tube
- 032 1-1/4" Flow tube
- 050 2" Flow tube
- 065 2.5" Flow tube
- 080 3" Flow tube
- 100 4" Flow tube

### Display Option

- 0 No Display
- D Display Option

### Operating Power

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

### Output Option

- 0 No Analog Output
- 1 Analog Output - Active Output
- 2 Analog output - Passive Output w/HART

### Meter Length

- 0 Standard 13.25"
- 1 Optional 9.88"
- 2 Optional 3/4" T.C. on IZML015 length 10.5"
- 3 4" Tri-Clamp® connection for IZML100
- 7 Cherry I-line connection 13"

### Converter Type

- 00 Integral Converter
- R0 Remote Mount Converter with 25' Cable
- R1 Remote Mount Converter with 50' Cable
- R2 Remote Mount Converter with 75' Cable
- R3 Remote Mount Converter with 100' Cable
- S0 Remote, SS Term. Enc., 25' Cable
- S1 Remote, SS Term. Enc., 50' Cable
- S2 Remote, SS Term. Enc., 75' Cable
- S3 Remote, SS Term. Enc., 100' Cable

## SPECIFICATIONS

### Operational

Ambient Temperature:	-4 F to 140 F (-20 C to 60 C)
Maximum Product Temp:	300 F / 149 C
Maximum Inlet Pressure:	115 psi / 8 bar
Minimum Inlet Pressure:	7 psi / 0.5 bar
Minimum Fluid Conductivity:	5 µS / cm

### Material / Construction

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

### Electronics

Electrical Supply:	16-34 VDC (.4-..2A) 115V/230V 50-60 Hz (0.10A / 0.05A) -15%/+10%
Power Consumption:	10VA / 6 watt maximum
Magnetic Field:	DC pulsed with self-adapting adjustment
Digital Pulse Output:	1x Opto-isolated.
Load:	30V@80mA max., 1,000Hz
Analog Output (optional):	4-20mA (active)500 ohms maximum
Digital Input:	1x Opto-isolated.
Activation:	30V@10ma 10Hz maximum
Display:	2 line back lit

# UNPACKING

## Product Check:

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

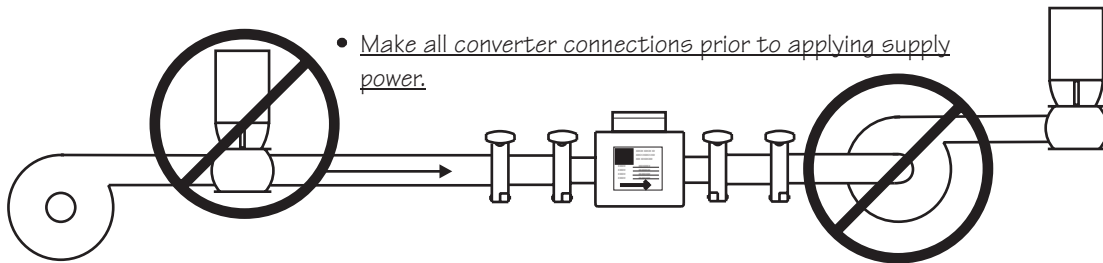
## Major items are:

- IZML configuration record sheet
- meter converter
- meter body with connection adapters assembled to the flow tube
- cord grips
- cables assembled to ordered length
- manual

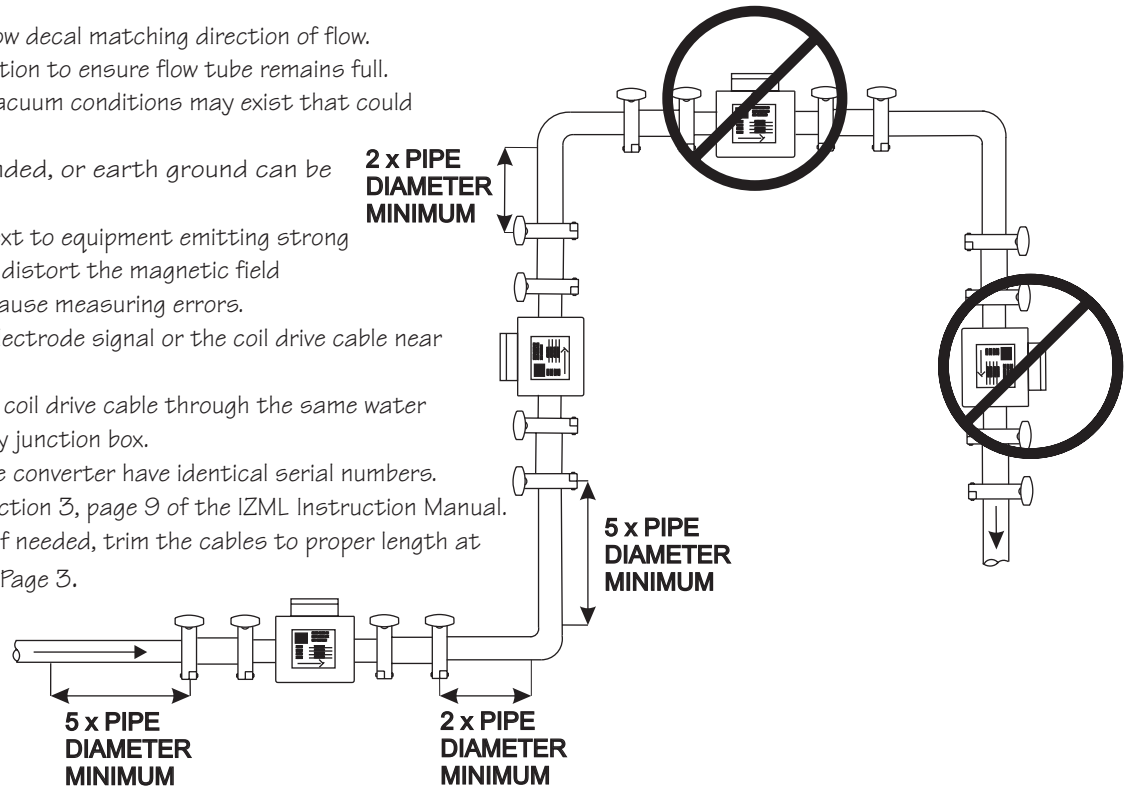
# IZML INSTALLATION

**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.

- Make all converter connections prior to applying supply power.



- 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 IZML 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 IZML 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.



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# CALIBRATION

## 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. 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.
2. 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.
3. Press the Zero Adjust pushbutton (Identified on page 3 of the Startup Guide) momentarily (about two seconds) and then release.
4. Wait 40 seconds for the completion of the hydraulic zero adjustment period.
5. Observe Green status LED (Identified on page 3 of the Startup Guide). Light will change from a continuously on state to a blinking state during the hydraulic zero adjustment procedure. Once the zero procedure is complete the green light will momentarily be off, then return to a continuously on state.
6. If Red status LED (Identified on page 3 of the Startup Guide) remains on after zero adjustment, check terminal connections 11-18 for proper connection.. Return to Step 3 and repeat Hydraulic adjustment procedure.

## Hydraulic Zero Adjustment with Display

1. Follow steps 1 and 2 listed of the "Hydraulic Zero Adjustment without Display" instructions.
2. Press "M">"Enter">"Right Arrow">"Enter". Display will indicate "codeno:\_\_\_\_\_". Enter code "415" using the UP Arrow to increment, and the "Right Arrow" to toggle position. Press enter.
3. Display will count down from 100%, then display "New Zero value". Press "Enter" and return to operation display.
4. Confirm the successful hydraulic zero adjustment by visually inspecting Green and Red LED status listed of the "Hydraulic Zero Adjustment without Display" instructions.

## Simulated Output Procedure without display

The IZML flowmeter offers the ability to test signal communication with a receiving device prior to flowing product.

1. Place switches 3,7, and 8 from the S6 parameter switch (Identified on page 3 of the Startup Guide) to the on position.
2. Press the Abort pushbutton (Identified on page 3 of the Startup Guide) momentarily (about two seconds) and then release.
3. Observe Amber status LED(Identified on page 3 of the Startup Guide). Light will blink approximately once each second.
4. Digital pulses are sent at a rate similar to the LED indication.
5. Flowmeters with the optional analog will observe 4-20mA output current between 11.97 and 12.00mA.
6. Place switches 3,7, and 8 from the S6 parameter switch (Identified on page 3 of the Startup Guide) to the off (number indicated position).
7. Press the Abort pushbutton (Identified on page 3 of the Startup Guide) momentarily (about two seconds) and then release.
8. IZML will return to operational state.

## Simulated Output Procedure with Display

1. Press "M">"Enter">"Right Arrow">"Down Arrow">"Down Arrow". Display will indicate "function 2 / simulation". Press "Enter". Display will indicate "codeno:\_\_\_\_\_". Enter code "415" using the UP Arrow to increment, and the "Right Arrow" to toggle position. Press enter.
  2. Display will indicate "simulation / 50% value with units per minute".
  3. Observe Amber status LED(Identified on page 3 of the Startup Guide). LED will blink a rate based on configured digital output value, and 50% of the maximum flow rate value indicated on the label of the flowmeter cover.
  4. Digital pulses are sent at a rate similar to the LED indication
  5. Flowmeters with the optional analog will observe 4-20mA output current between 11.97 and 12.00mA.
  6. Press "Up Arrow", and "Down Arrow" modify the rate of simulation.
  7. Press "Clear" and return to operation display.
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