

The Series I-250BR flow sensor features a six bladed impeller design with a proprietary non magnetic sensing mechanism, mounted in a cast bronze housing with female NPT threads.

The unique impeller design is less prone to be fouled by water borne debris. The forward curved shape coupled with the absence of magnetic drag provides improved operation and repeatability even at lower flow rates. This is especially true where the impeller is exposed to metallic or rust particles found in steel or iron pipes. As the liquid flow turns the impeller, a low impedance square wave signal is transmitted with a frequency proportional to the flow rate. The signal can travel up to 2000' between the flow sensor and the receiving unit without the need for amplification. All sensors except irrigation versions are supplied with 20' of 2-conductor 20 AWG shielded U.L. type PTLC 105°C cable and meet **CE** standards for noise immunity and susceptibility.



### I-250BR Series Metal Tee Sensors Ordering Matrix (½" to 1½")

|                            |                                     |    |    |    |   |   |   |   |   |   |   |
|----------------------------|-------------------------------------|----|----|----|---|---|---|---|---|---|---|
| Example I-2                |                                     | 50 | BR | 15 | 0 | 5 | - | 0 | 2 | 1 | 1 |
| <b>STYLE</b>               | Cast Bronze Tee (1/2" to 1.5" only) | 50 |    |    |   |   |   |   |   |   |   |
| <b>MATERIAL</b>            | Brass/Bronze                        |    | BR |    |   |   |   |   |   |   |   |
| <b>Size</b>                |                                     |    |    |    |   |   |   |   |   |   |   |
|                            | 0.5"                                |    |    | 05 |   |   |   |   |   |   |   |
|                            | 0.75"                               |    |    | 07 |   |   |   |   |   |   |   |
|                            | 1"                                  |    |    | 10 |   |   |   |   |   |   |   |
|                            | 1.25"                               |    |    | 12 |   |   |   |   |   |   |   |
|                            | 1.5"                                |    |    | 15 |   |   |   |   |   |   |   |
| <b>Electronics Housing</b> |                                     |    |    |    |   |   |   |   |   |   |   |
|                            | PPS                                 |    |    |    | 0 |   |   |   |   |   |   |
| <b>ELECTRONICS</b>         |                                     |    |    |    |   |   |   |   |   |   |   |
|                            | Magnetic                            |    |    |    |   | 2 |   |   |   |   |   |
|                            | FM/CSA Approved                     |    |    |    |   | 4 |   |   |   |   |   |
|                            | Standard                            |    |    |    |   | 5 |   |   |   |   |   |
|                            | IR-Irrigation                       |    |    |    |   | 6 |   |   |   |   |   |
| <b>O-RING</b>              |                                     |    |    |    |   |   |   |   |   |   |   |
|                            | Viton®                              |    |    |    |   |   |   | 0 |   |   |   |
|                            | EPDM                                |    |    |    |   |   |   | 1 |   |   |   |
|                            | Buna N                              |    |    |    |   |   |   | 8 |   |   |   |
| <b>SHAFT</b>               |                                     |    |    |    |   |   |   |   |   |   |   |
|                            | Zirconia Ceramic                    |    |    |    |   |   |   |   | 0 |   |   |
|                            | Hastalloy C                         |    |    |    |   |   |   |   | 1 |   |   |
|                            | Tungsten Carbide                    |    |    |    |   |   |   |   | 2 |   |   |
|                            | Titanium                            |    |    |    |   |   |   |   | 3 |   |   |
|                            | Monel                               |    |    |    |   |   |   |   | 5 |   |   |
|                            | 316 Stainless Steel                 |    |    |    |   |   |   |   | 6 |   |   |
|                            | Tantalum                            |    |    |    |   |   |   |   | 7 |   |   |
| <b>IMPELLER</b>            |                                     |    |    |    |   |   |   |   |   |   |   |
|                            | Nylon                               |    |    |    |   |   |   |   |   | 1 |   |
|                            | Tefzel®                             |    |    |    |   |   |   |   |   | 2 |   |
| <b>BEARING</b>             |                                     |    |    |    |   |   |   |   |   |   |   |
|                            | Pennlon                             |    |    |    |   |   |   |   |   |   | 1 |
|                            | Tefzel®                             |    |    |    |   |   |   |   |   |   | 2 |
|                            | Teflon®                             |    |    |    |   |   |   |   |   |   | 3 |

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## Features

- Sensor electronics easily removed from tee.
- Impeller/Bearing/Shaft easily replaced in field without changing calibration.
- Two wire sensor. Power and signal transmit on single pair of wires up to the distance of 2000 feet.
- Digital signal easily interfaced with transmitters, monitors, or PLC's.

## Applications

- Energy Management/Building Management Systems
- Btu sub-metering systems
- Cooling tower treatment systems
- Condensate return lines



# Specifications

## Wetted Materials

— See Ordering Matrix

## Tee for I-250BR

— Cast valve bronze, UNS C83600

## Maximum Temperature

— Standard Electronics - 221°F (105°C)  
 — Irrigation Electronics - 150°F (66°C)

## Maximum Pressure

|         | At 100°F | At 300°F |
|---------|----------|----------|
| I-250BR | 400 psi  | 325 psi  |

## Recommended Design Flow Range

— 0.3 to 15 ft/sec for I-250B

## Accuracy

— ± 1.0% of rate

## Repeatability

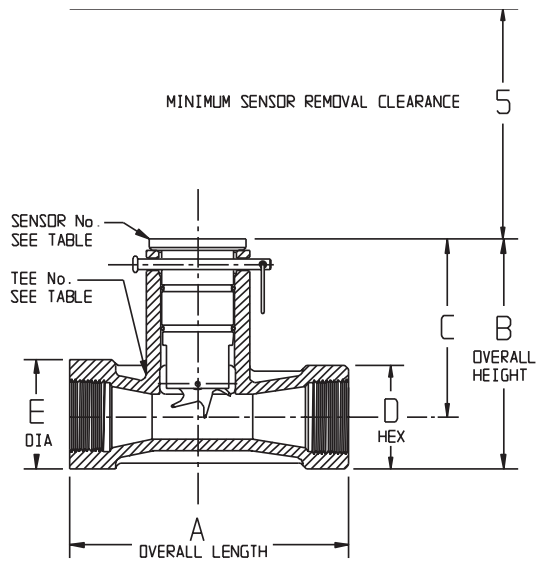
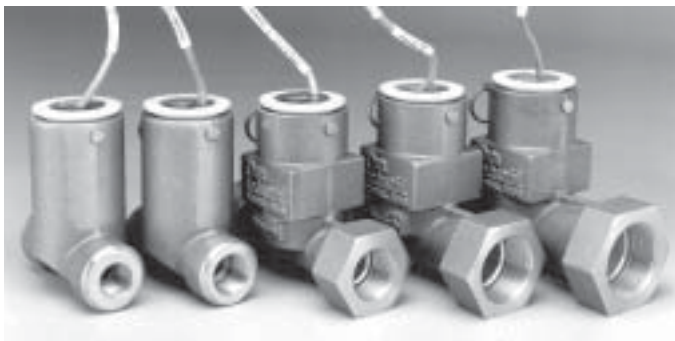
— ± 0.7% over recommended design flow range

## Linearity

— ± 0.7% over recommended design flow range

## Rangeability

— 60:1



| SERIES No. COMPLETE | SENSOR No. | TEE No. | NPT       | A    | B    | C    | D    | E    |
|---------------------|------------|---------|-----------|------|------|------|------|------|
| I-250B-0.5          | SEE MATRIX | 713168T | 1/2-14    | 4.00 | 4.67 | 3.61 | N/A  | 1.63 |
| I-250B-0.75         | SEE MATRIX | 713169T | 3/4-14    | 4.00 | 4.67 | 3.61 | N/A  | 1.63 |
| 250B-1.0            | SEE MATRIX | 71940T  | 1.00-11.5 | 5.45 | 4.75 | 3.75 | 2.00 | 2.12 |
| I-250B-1.25         | SEE MATRIX | 71941T  | 1.25-11.5 | 6.06 | 5.00 | 3.88 | 2.25 | 2.38 |
| I-250B-1.5          | SEE MATRIX | 711193T | 1.50-11.5 | 6.50 | 5.19 | 3.94 | 2.50 | 2.62 |

## Transducer Excitation

- Quiescent current 600uA@8VDC to 35VDC max.
- Quiescent voltage ( $V_{high}$ )  
Supply Voltage  $-(600uA * \text{Supply impedance})$
- ON State ( $V_{Low}$ ) Max. 1.2VDC@40mA current limit (15Ω+0.7VDC)

## Electrical Cable for Standard Sensor Electronics

- 20 feet of 2-conductor 20 AWG shielded U.L. type PTLC wire provided for connection to display or analog transmitter unit. Rated to 105°C. May be extended to a maximum of 2000 feet with similar cable and insulation appropriate for application.

## Electrical Cable for IR Sensor Electronics

- 48 inches of U.L. Style 116666 copper solid AWG 18 wire w/direct burial insulation. Rated to 105°C.

Not a controlled document.