The Series UFB Ultrasonic Flowmeter Set utilizes the transit-time difference for measuring flow rates in pipes non-invasively. This is the permanent model, allowing the user to mount the converter on a surface or pipe. The easy-to-use compact and lightweight design is intended for mechanical devices using ideally homogeneous liquids that contain no air pockets. The Series UFB comes with a sturdy IP65 rating, protecting it from dust and direct water contact. The Series UFB has 4 to 20 mA and pulse output capabilities.

**PRINCIPLES OF OPERATION**

Two sensors are placed on the exterior of the pipe, and each transmits an ultrasonic pulse through the pipe and fluid to the other. The velocity of the liquid flowing through the pipes causes the pulse to accelerate or decelerate. The difference in the transit times of the two pulses is used to calculate the flow rate. The use of transit time allows the flowmeter to be unaffected by pressure or temperature changes.

**APPLICATIONS**

- Treated Water
- River Water
- Sea Water
- Potable Water
- Demineralized Water
- Glycol/water mix
- Hydraulic System
- Diesel Oil

**Kit Includes:**

- Converter
- Set of Transducers
- Ruled Guide Rail
- Steel Banding
- Banding Clips
- Set of Transducer Cables
- Set of High Temperature Interface Cables
- Ultrasonic Coupling Grease

**SPECIFICATIONS**

**Service:** Homogeneous liquids that do not contain more than 3% of air bubbles or particulate and capable of ultrasonic wave propagation.

**Inputs:** TNC cable from sensors.

**Range:** 0.33 to 33 ft/s (0.1 to 10 m/s).

**Display:** 240 x 64 pixel graphic display, high contrast black on white with backlight; Languages: English, French, German, Swedish, Italian, Spanish, Portuguese, Russian, Norwegian, and Dutch; 5˝ W x 1.3˝ H (5 x 33.02 mm).

**Accuracy:** ±0.5 to ±2% of flow reading of flow rate > 0.03 ft/s (0.01 m/s) and pipe OD > 3.0 in (75 mm); ±3% of flow reading for flow rate > 0.03 ft/s (0.01 m/s) and pipe OD 0.5 to 3 in (13 to 75 mm); ±6% of flow reading for flow rate < 0.03 ft/s (0.01 m/s).

**Power Requirements:** 86 to 264 VAC (50 to 60 Hz) or 24 VAC/VDC (1 A max).

**Power Consumption:** 10.5 W.

**Temperature Limits:** Transducer: -4 to 275°F (-20 to 135°C); Controller: -4 to 122°F (-20 to 50°C).

**Outputs:**

- Analog:
  - 1 opto-isolated output: 4 to 20 mA, 0 to 16 mA or 0 to 20 mA (selectable);
  - Error current: 0 to 26 mA (selectable);
  - Load resistance: 620 Ω max;
- Alarm:
  - 2 opto-isolated MOSFET NO relays, 48 V at 500 mA, maximum 200 Hz;
- Pulsed:
  - 1 opto-isolated MOSFET relay, 48 V at 500 mA, 1 to 250 pps;
  - Pulse width: 2 to 500 ms (selectable).

**Enclosure Rating:** IP65 when using TNC connector; Transducers IP54.

**Materials:** Plastic ABS and aluminum.

**Repeatability:** ±0.5 % of measured value or 0.03 ft/s (0.01 m/s).

**Electrical Connections:** Removeable screw-in type terminal block.

**Mounting:** Wall mounted using 3 type M4 screws.

**Turbidity:** < 3 % by volume of particulate content.

**Permissible Air Content:** < 3% by volume.

**Response Time:** < 500 ms.

**Weight:** Unit not including accessories: 2.80 lb (1.26 kg);

**Agency Approvals:** CE.

**ADDITIONAL SPECIFICATIONS**

**Applicable Pipe Material:** Carbon steel, SS, copper, UPVC/PVDF, concrete, mild steel, glass, brass.

**Applicable Pipe Lining:** Rubber, glass, concrete, epoxy, steel, other*.

**Pipe Wall Thickness:** 0.04 to 3” (1 to 75 mm).

**Pipe Lining Thickness:** < 1” (< 25 mm).

*Selectable option for special material with known propagation rate of lining material.