

CLAMP-ON ULTRASONIC FLOW METER

Ideal for measuring the flow rate of clean, non-aerated fluids in full pipes such as water, chemicals and oils.



FEATURES

- Transit Time Ultrasonic Principle of Measurement
- 1/2" through 48" Pipe Size Range
- Simple 5-Key Configuration (English, French, Spanish selectable)
- 4–20mA/0–5V Analog Output (not available on portable unit)
- 26 Million-Point Data Logger
- Password Protected Backlit LCD Display
- Watertight & Dust Tight NEMA4X (IP66) Polycarbonate Enclosure
- Modbus® RTU or HART® Optional (not available on portable unit)
- CE, UL/EN 61010-1 Approvals

TECHNICAL SPECIFICATIONS

BENEFITS

Non-Contacting Flow Measurement

Ultrasonic transducers clamp on the outside of pipes, allowing for installation without system shutdown, and produces no pressure drop.

User-Friendly Operating System

Built-in keypad and simple menu system for fast and easy programming of pipe diameter, pipe material, liquid type, and measurement units. All settings, calibration values, and totalizer are retained during power interruptions.

Industrial Automation Protocols

Modbus RTU and HART communications allow for instantaneous flow rate, volumetotal, run hours, and diagnostic information.

Wide Range of Applications

Compatible with a wide range of pipe materials and fluids, including treated, raw, cooling and low-conductivity water, water/glycol solutions, chemicals, and hydraulic, diesel and fuel oils.

Safe in Wet Locations

IP67 (NEMA 6) rating allows for safe operation during temporary periods of submergence.

Measuring Accuracy

±1.0% of reading from 1.5 to 40 ft/sec (0.5 to 12.0 m/sec) and ±0.015 ft/sec (±0.0046 m/sec) for velocity below 1.5 ft/sec (0.46 m/sec).

Repeatability & Linearity

±0.25%

Flow Measuring Range

±0.07–40 ft/sec (±0.02–12 m/sec)

Pipe Diameter

SE16A: 0.5" to 4" (15 mm to 100 mm)
SE16B: 2" to 48" (50 mm to 1200 mm)

Pipe Materials

Any metal or plastic sonic conducting materials, including carbon steel, stainless steel, ductile iron, concrete lined ductile iron, cast iron, PVC, HDPE, PVDF, fiberglass, copper, brass, aluminum, and pipes with bonded liners, including epoxy, rubber, and PTFE.

Operating Frequency

SE16A: 2.56 MHz
SE16B: 1.28 MHz

Operating Temperature Range

Transducer:
–40°F to 300°F (–40 to 150°C)
Electronics:
–5°F to 140°F (–20 to 60°C)

Power Input

100–240VAC 50–60Hz, 10 VA max.
Optional: 9–32VDC, 10 Watts max.

Analog Output

Isolated 4–20mA/0–5V, 1000 ohm load max., programmable offset

Control Relays

2 Relays, form C dry contacts rated 5 amp SPDT; programmable flow alarm an/or flow proportional pulse
Optional: 4 additional (6 total), rated 5 amp SPDT

Hazardous Area Certifications

Non-Incendive for Class I Division 2, Groups A,B,C,D
Optional: Intrinsically safe for Class I Division 1, Groups A,B,C,D

Approximate Shipping Weight

12 lbs. (5.5kg)

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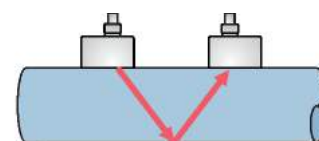
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MEASUREMENT OPERATION

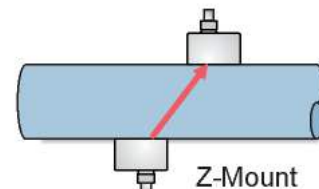
The Transit Time Flow Meter measures flow from the outside of pipes. It works by measuring the time of flight difference for ultrasonic sound pulses transmitted from one transducer to another. Depending on the mounting configuration, the signal may cross the pipe once, twice, or four times. The time between transmitted and received signals is precisely measured by the flow meter. Ultrasonic signals are sent upstream and then downstream with the transducers alternating their functions as transmitters/receivers.

The transit time in the direction of flow is always faster than the transit time against the flow. By comparing these differences with precision timing circuits, the meter is able to accurately calculate the flow rate. Because the ultrasonic signal is transmitted across the pipe, an average of the flow profile is calculated.

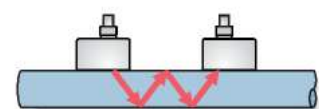
The transducers can be mounted on vertical or horizontal pipes, and the pipe must be full. Choice of V, Z, or W mounting method depends on the application and pipe diameter.



V-Mount

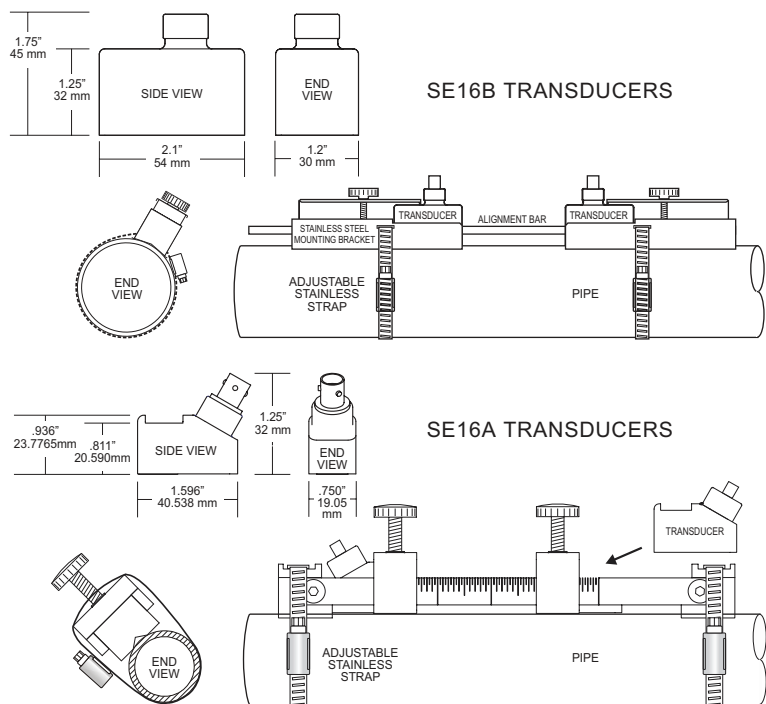
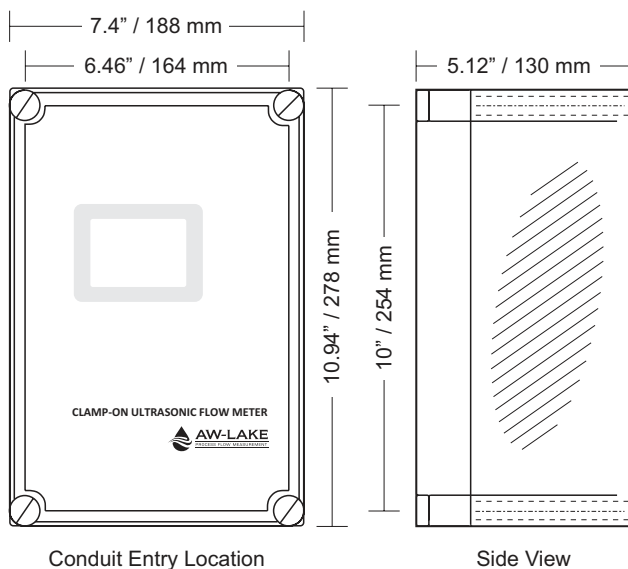


Z-Mount



W-Mount

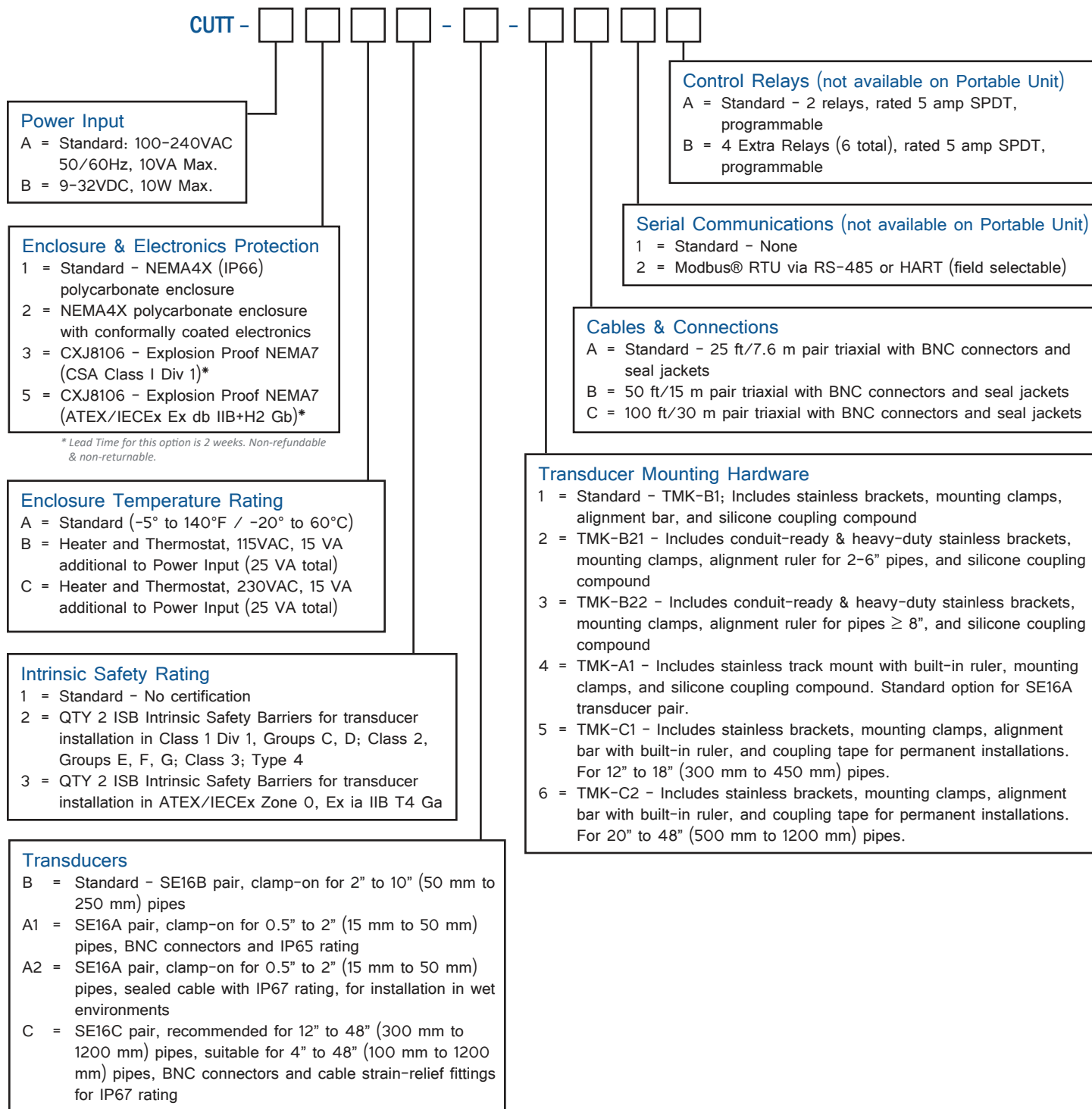
DIMMENSIONS



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PART NUMBER GUIDE



Products may be subject to change without notice - Contact factory for the most up-to-date product information.