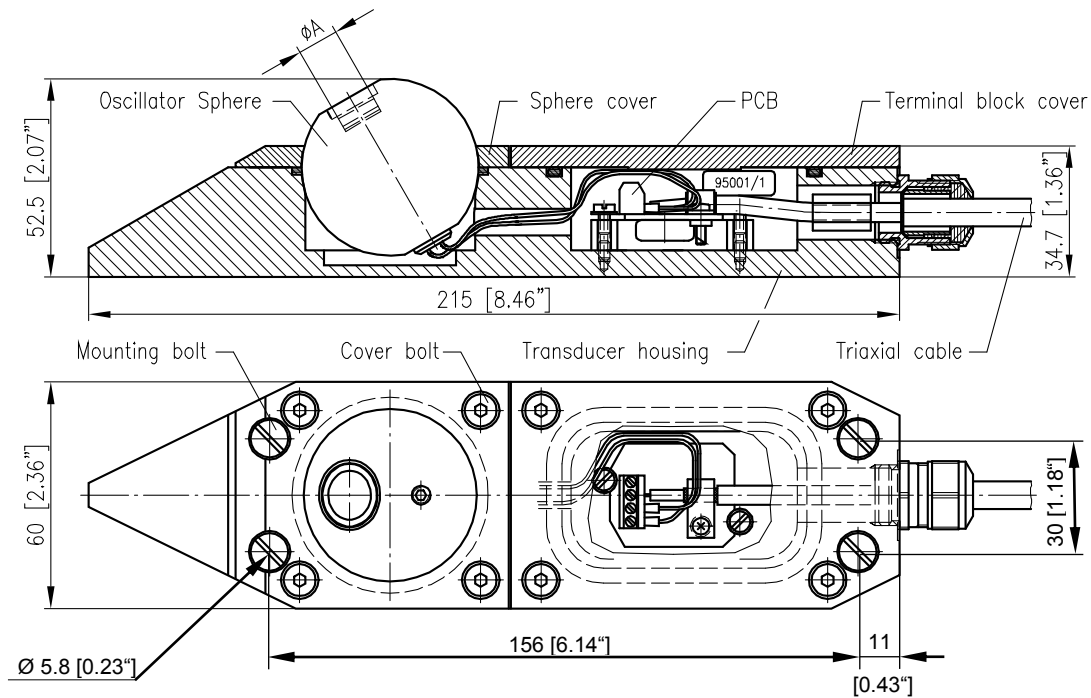


Dimensions



Dimensions in mm [inch]

Application

The RISONIC ultrasonic measurement method uses the travel time difference of ultrasonic sound pulses to determine the flow velocity of liquids in open channels. The ultrasonic pulses are sent out upstream and downstream across the flow with an angle α between the direction of flow and the sonic path. The measurement is carried out with very little restriction of the width of the open channel and therefore causes hardly any head losses.

The transducers of the type MFATKx can be used in open channels (rectangular, trapezoidal, circular) and in pressure tunnels. For installation and doing service the open channels / pressure tunnels have to be dewatered.

The liquid has to be transparent for ultrasonic sound, i.e. the liquid should not contain a high concentration of particles or entrained air bubbles and sediments. In addition, no stratified flows should occur. Furthermore, temperature and/or salinity gradient, if present, should be within acceptable limits (bending of sonic path). High accuracy is guaranteed by independence of parameters such as temperature, pressure, electrical conductivity etc.

Installation of the transducers: The angle α between the sonic path and direction of flow should preferably be 45° . In case of rectangular shape an angle α between $35^\circ \dots 70^\circ$ is admitted, but with less accuracy.

Short description

The RISONIC modular transducers MFATKx serve alternately as transmitter or receiver. A voltage surge excites the piezoceramic oscillator. The ultrasonic sound pulses propagate through the transducer insert and into the medium to be measured. On the opposite side of the pipe, the sound pulses are received, converted into an electrical signal and further processed by the RISONIC Ultrasonic Transit Time and Controller modules.

Given by the operating frequency, the RISONIC modular transducers can be placed away at a maximum distance from the RISONIC Ultrasonic Transit Time module of 300 m / 984 ft.

To prevent cables from damages, protection tubes and/or flexible conduits are to be used.

Types / ordering information

The amount of transducers under Order Number is delivered as one path set including mounting material.

Type	Order-No.	Channel width ¹⁾	Oscillator Ø A	Way of mounting	Frequency
MFATK1	00 66 800.001	0.5...2 m / 1.6...6.6 ft.	10 mm / 0.39"	Surface / Flush mounting	1 MHz
MFATK2	00 66 805.001	0.7...10 m / 2.3...33 ft.	16 mm / 0.63"	Surface / Flush mounting	1 MHz

¹⁾ In practice suitable corresponding channel width at 45° path angle

Technical data

- Protection Class: IP 68 (NEMA 6) submersible
- Minimum Path Length MFATK1: 0.25 m / 0.82 ft. (flush-mounting required)
- Maximum Path Length MFATK1: 3 m / 9.84 ft.
- Minimum Path Length MFATK2: 1 m / 3.28 ft.
- Maximum Path Length MFATK2: 15 m / 49.2 ft.
- Material of Sphere: PVC grey
- Material of Sensor Housing: Stainless steel 316L
- Material of Cover: Stainless steel 316L
- Max. Pressure allowed: 10 bar / 145 psi
- Operating Temperature: -30°C ... +70°C / -22°F ... +158°F
- Humidity: 100% r.F.
- Weight: approx. 4.5 kg / 9.9 lb. per couple of 2 units

Notes on the correct use of ultrasonic flow measurement in open channels

- The layout of the RISONIC-Measurement system has to be done according to the specifications of Rittmeyer AG.
- A sensor alignment of $\pm 1^\circ$ or better under operating conditions is necessary. The survey should preferably be done with a theodolite system.
- No stratified flows should occur. Temperature and/or salinity gradient, if present, should be within acceptable limits (bending of sonic path) and no considerable gas content should be in the water.
- The guidelines in the assembly and setup instructions of the transducers MFATKx are to be followed.

Accessories (optional)

Description	Type	Order No.
Coaxial cable 75 ohm (Refer to data sheet 22.210.04649xx.001)	RIMOZKKxx	04 64 90x
Alignment laser for channel measurement	MFUZKL	00 65 830.001