

Dimensions

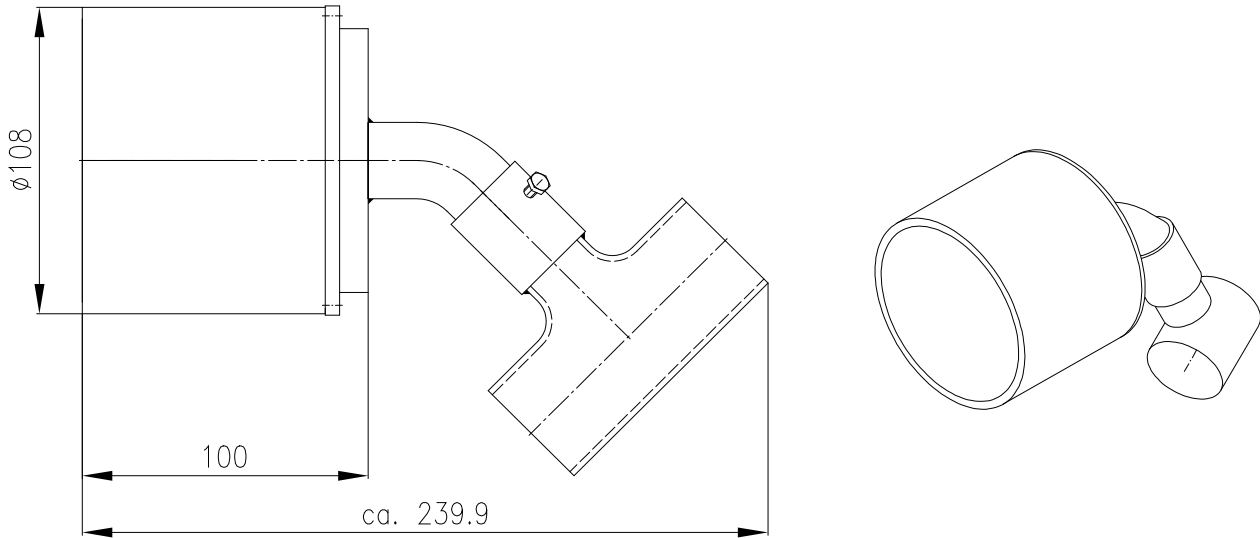


Figure 1: Channel Transducer

Dimensions in mm

Short Description

The RISONIC modular channel transducers MFATK02 serve alternately as transmitter or as receiver. The piezo-ceramic oscillator is excited with a voltage surge of 200 kHz. The ultrasonic impulse propagates through the medium to be measured. On the opposite side of the channel, the impulse is received, converted into an electrical signal and further processed by the RISONIC Ultrasonic Transit Time and Controller modules.

The 200 kHz transducers are connected to the RISONIC Ultrasonic Transit Time module via coaxial cables. Maximum cable lengths of 1000 m are allowed. Protection tubes should be foreseen in order to prevent damage to the cables.

Ordering Information

Channel transducers as in Fig. 1 are delivered in sets of 2 and can be used for one measuring path. For multi-path measurements, the respective number of transducer pairs should be ordered.

Path No.	RISONIC modular Channel Transducer (Figure 1)			
	Type	Part No.	Transducers	Weight [kg] ¹
1	MFATK02	P.MFATK02	2	Approx. 6.0

Table 1: Ordering Information

¹ Weight of transducers packed in a box.
201709 WAL/Ges/Pen, Hir

Application

Drawings of path orientations for the example 2E20P in a trapezoidal channel:

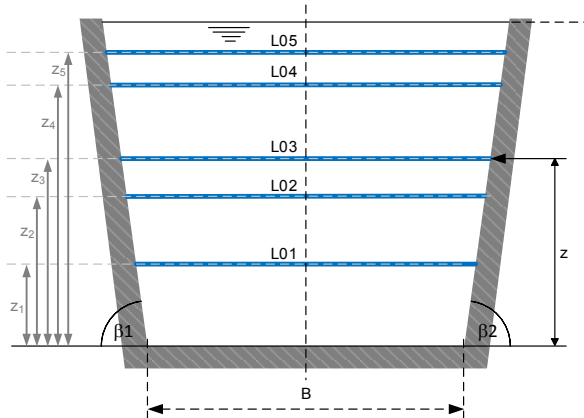


Figure 2: View in channel direction

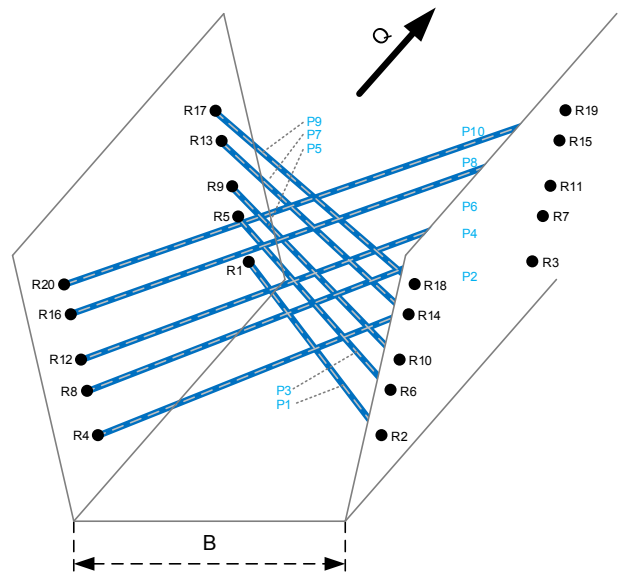


Figure 3: Bird's eye / skewed view

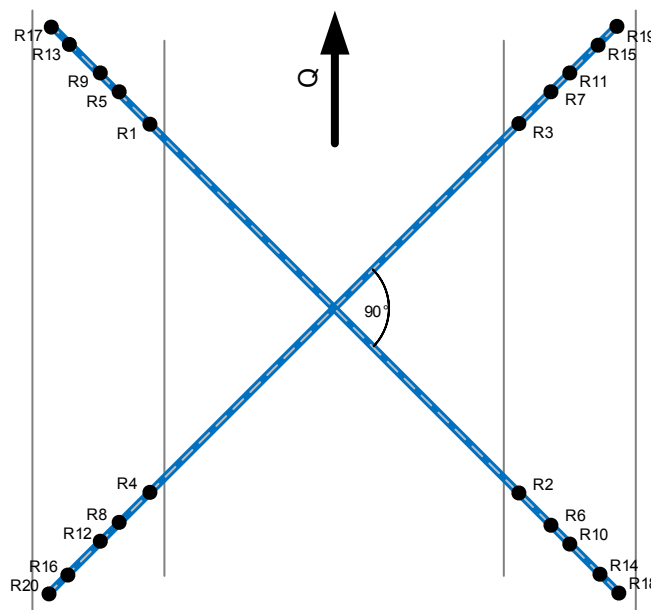


Figure 4: Bird's eye / vertical view

Technical Data

- Protection class transducer housing:.....IP68 (NEMA 6) submersible
- Oscillator frequency:200 kHz
- Minimal Sound Path Length²: 15 m
- Minimal channel width³: 10 m
- Maximal Sound Path Length:..... 150 m
- Maximal channel width*): 100 m
- Transducer material:.....Stainless steel 316Ti, epoxy front
- Maximum permitted pressure: 10 bar / 145 psi
- Operating temperature:-30 °C to +70 °C / -22 °F ... +158 °F
- Humidity:100 % relative humidity

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

- The RISONIC modular channel transducers MFATK02 should be installed in accordance with the specifications from Rittmeyer. The position of the measurement is dependent on current and contamination. Depending on the application and accuracy, the customer can install the transducers himself or installation has to be carried out by Rittmeyer or their representative. The guidelines in the Assembly and Commissioning instructions are to be observed for measuring, installation and commissioning of the RISONIC modular channel transducers.
- For all channel dimensions, an alignment accuracy of greater than ±1° is necessary for the transducers. Determining the transducer positions is preferably to be carried out with a theodolite system or similar.
- The fresh / potable water must not contain too high concentration of air bubbles or entrained particles and sediments.
- The surface of the embankments must be suitable for fixing the transducers and if necessary adapted.
- Suitable measures must be taken in order to protect the transducers from heavy objects carried with the current.

Permissible Contamination in the Water

Type of Contamination	
Concentration suspended particles	For max. measuring distance ≤ 0.2g/l
Particle size	≤ 0.5 mm

² For use with clean water. With additional sediment contents, these limits may be reduced; please contact a Rittmeyer AG representative for more information.

³ Corresponding channel width at 1E1P and 45° path angle.

Accessories (options)

Designation	Type	Part No.
Coaxial cable 75 ohm (refer to data sheet)	RIMOZKKxx	04 64 90x
Replacement transducer complete	---	00 67 150.001
Laser alignment channel measurement	MFUZKL	00 65 830.001
Support plate for dry mounting	MFATZKSP	00 67 168.001