

# RISONIC *modular*

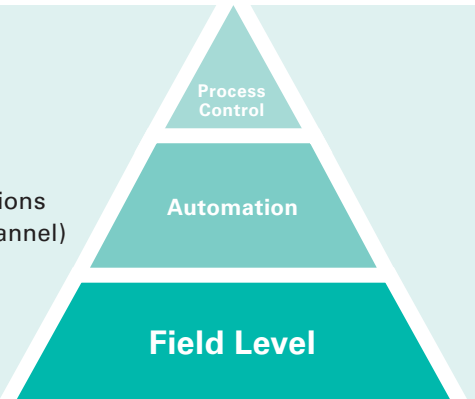
*Ultrasonic Transit Time Flow Measurement*



Flow Control for Pipes and Channels  
Penstock Monitoring  
Turbine and Pump Efficiency Measurement

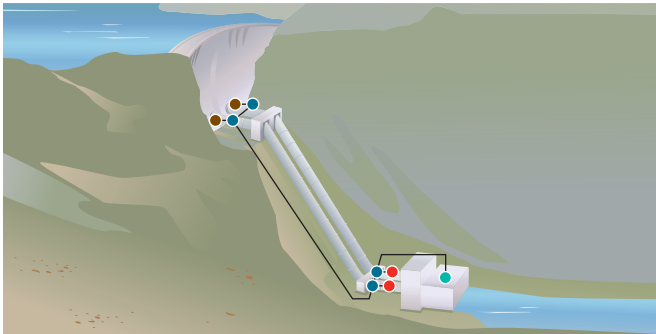
### FEATURES AND BENEFITS

- Wide range of ultrasonic transducers for pipes and channels
- High measuring accuracy of up to 0.5% of measured value displayed
- 1...5 ultrasonic modules for a maximum of 20 measurement paths (5 x 4)
- Modular concept of ultrasonic modules reduces costs for lower paths sections
- Up to four measurement sections per Controller (incl. multi-pipe, multi-channel)
- Flow measurement in both directions (pump storage power plant)
- Controller with built-in web server for easy configuration
- IEC 60870-5-104 and Modbus RTU/TCP communication
- Excellent long-term stability, no need for recalibration

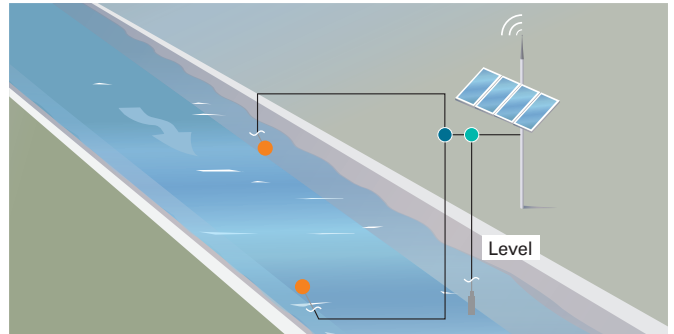


### RISONIC modular Applications

Penstock leakage detection  
Turbine efficiency monitoring



### Irrigation / Water Supply



#### Ultrasonic transit time module

- 4 ultrasonic paths and status LEDs
- Individually galvanically isolated I/O's:
  - 4 x DO (relays)
  - 1 x AO and 1 x AI (4...20 mA)
- Operating temperature -20 ... +70 °C



#### Controller functions

- Integrated data logger
- Limit value monitoring
- Volume counter
- Individually galvanically isolated I/O's
- SMS alarm via external GSM/GPRS modem



Pipe Applications (filled, partially filled)	Open Channel Applications
diameter 0.3 ... 20 m	width 0.75 ... 100 m
water flow 0.5 ... 20 m/s	water flow 0.5 ... 20 m/s
1 ... 20 measuring paths*	1 ... 20 measuring paths
1 or 2 measuring planes	1 or 2 measuring planes
Accuracy of up to 0.5% of measured value displayed	Accuracy of up to 1.0% of measured value displayed
Transducers for inside and outside mounting	Transducers for mounting on channel wall

\* 4 or 8 paths per IEC 60041 [ASME PTC 18]

### Easy commissioning and signal analysis



- No need for additional signal analysis tools as signal graph is provided directly via the built-in web server.
- Remotely check measuring section and signal quality.

