



Instrumentos

INSTRUMENTATION

Hydropower and water control applications

INSTRUMENTATION CONTROLLER

for RISONIC modular, RIPRESS smartl and RIPRESS premium



RISONIC modular

Ultrasonic transit time flow measurements

Typical applications

- Penstock leakage detection
- Turbine and pump efficiency measurement
- Irrigation and water supply

Benefits

- Wide range of ultrasonic transducers for pipes and channels
- 1...5 RIMOUSTT modules for up to 20 measurement paths (5 × 4)
- Up to four measurement sections (incl. multi-pipe, multi-channel)
- Flow measurement in both directions (pump storage power plant)
- SMS alarm notification via external GSM/GPRS modem
- Excellent long-term stability, no need for recalibration

Open channel applications
Width 0.75100 m
Waterflow –20 +20 m/s
120m easuring paths
1 or 2 measuring planes
Accuracy of up to 1.0 % of measured value displayed
Sensor installation on duct wall

* e.g. 4 or 8 paths per IEC 60041 [ASME PTC 18]

RISONIC clamp-on

Ultrasonic transit time flow measurement

Permanent installations and mobile inspections

Magnetic frame for easy transducer mounting and positioning (option for adhesive mounting)









RIPRESS premium

High-precision pressure and level measurements

- · Very accurate calculation of storage water volume
- · Cost savings by optimization of the water balance
- Excellent long-term stability and 100 % thermal compensation
- Pressure measurements with a high-precision quartz crystal resonator
- Freely programmable conversion tables (e.g. for lake volume)
- Trend function and limit value monitoring
- Option for code output (BCD, Gray, Binary)

	Hydrostatic measurement	Pneumatic measurement
Maximum level	275mH2O	135 m H₂O
Maximum pressure	400psi/2 8bar	200 psi / 14 bar
Accuracy (typical)	< 0.01 % F S	<0.01 % FS
Resolution	<1 mm H2O	<1 mm H₂O

RIPRESS smart

Smart pressure and level measurements

- Piezoresistive transmitters for pressure and temperature
- Flow formulae for overflow measurements and venturi flumes
- Volume formulae for cylindrical and spherical tanks
- Mathematical functions: Add/Sub/Mul/Div/Pow/Abs/Int/Diff/Filter
- Volume counter with persistent data storage

Piezoresistive transmitters



RIVERT & RIPOS

Absolute angle and position measurements

- Position tracking of valves, gates and sliders
- Rugged and durable design, IP67 and IP68
- Wide operating temperature range: -40...+60°C (with heating option)
- · Four internal relays for use as limit switches, direction indication and more
- 4...20 mA output, Modbus RTU/TCP, IEC 60870-5-104
- Option for code output (BCD, Gray, Binary)

	RIVERT smart RIVERT	RIPOS smart RIPOS	
Meas. range	-180°+180°	0°360°, 4096 turns	
Accuracy	0.044° (1 LSB)	0.088° (1 LSB)	
Resolution	0.044°	0.088° 0.044°	
Meas. value acquisition	Gravity-based pendulum	Shaft with starting drive torque of ≤ 0.01 Nm	







High-precision instruments for hydropower and water control applications

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RISONIC *modular* Ultrasonic transit time flow measurements



RIPRESS premium High-precision pressure and level measurements

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RIPOS Absolute position measurements



RIVERT Absolute angle measurements



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RIPRESS *smart* Smart pressure and level measurements





- Flow measurement
- Level measurement
- Position measurement









Quality and innovation

Rittmeyer offers state-of-the-art instrumentation solutions and process control systems for hydropower and water control applications. From simple components to turn-key installations, Rittmeyer has an answer for today's needs to increase plant efficiency and to improve the management of water resources.

- Founded in 1904
- Headquarters in Switzerland
- Global presence (subsidiaries and partners)
- Member of the BRUGG Group (2000 employees)

Your partner for advanced instrumentation solutions

- System solutions from one source development, production, commissioning
- Wide range of products for flow, level and position measurement
- · Measurement instruments with integrated web server and consistent operation concept
- Over 20000 installations worldwide
- Consulting and engineering services, including CFD analyses
- · Factory tests, installation and commissioning

Flow measurement for pipes



- Filled and partially filled pipes
- Penstock monitoring and leakage detection
- Turbine performance testing per IEC 60041
- Bi-directional flow for pump storage power plants

Flow measurement for channels



- Arbitrary channel profile up to 100 m width
- Robust stainless steel sensors for polluted water
- Multi-channel meter with total flow calculation
- Communication via satellite or GSM/GPRS modem

Level measurement



- Level and volume management
- Piezoresistive and superior quartz crystal sensors
- Hydrostatic or pneumatic measurement
- Trash rack monitoring

Position measurement



- Valve, gate and slider positions
- Synchronization monitoring
- Distance measurement using a rope drum with spring return
- · Remote parameter adjustment and remote monitoring

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