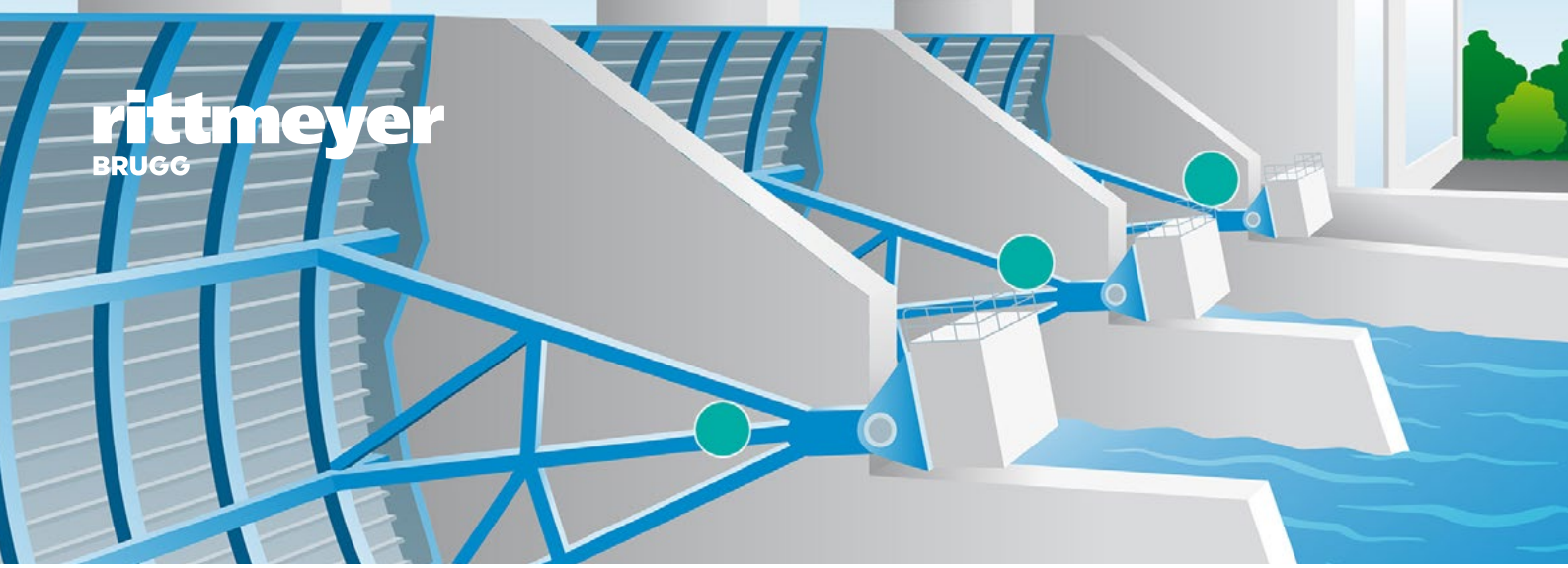


Do you know?

By adding sensors to our rotation and angle transmitters RIPOS smart and RIVERT smart, you can realize the following applications:

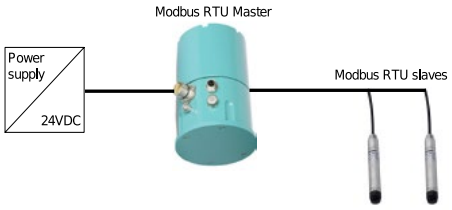
- Gate skew monitoring
- Gate discharge flow measurement

Customer benefits

- **Additional measurement**: by adding various sensors you can measure the level or flow
- **Inexpensive cabling:** directly connected probes, sensors and transmitters to the RIPOS smart or RIVERT smart
- Use the **built-in communication** capabilities for a combined data transfer to PLC/SCADA systems
- **Efficient:** use a single instrumentation device for different applications by re-using available resources

Description

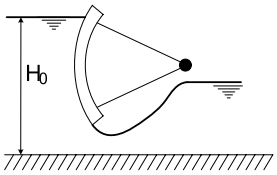
The rotation and angle transmitters RIPOS smart and RIVERT smart have versatile processing functions, communication interfaces and various other, highly competitive, features.



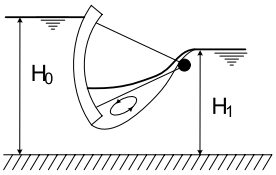
The built-in Modbus RTU interface allows the connection of various external probes, sensors and transmitters as well as displays and output modules.

By using the numerous processing rules, the user can easily combine external measurement values together with the main angle or position measurement and realize advanced measurement applications, e.g. gate discharge / flow measurements: the gate discharge formula allows to measure the flow on a gate, by calculating the open area below the gate and using one or two water level values before/ after the gate:

$$Q = C \cdot A \cdot \sqrt{2 \cdot g \cdot H_0}$$



$$Q = C \cdot A \cdot \sqrt{2 \cdot g \cdot (H_0 - H_1)}$$



The internal diagnostics, trend graph and data logger allow a very easy commissioning by visualizing all measurement values; most of them as “live data” i.e. with continuous update and status information. Additionally quality information are available for some probes and sensors, further improving the stability and long-term stability of the measurement system.

Output rules, together with digital communication interfaces, directly connect to alarming or actor devices, or to PLC and SCADA systems.

Gate skew monitoring

Install two RIVERT smart (or RIPOS smart, with chain/spring drum) and connect their Modbus RTU interfaces together, one acting as Master and the other as Slave.

Use the intelligent application on the device acting as Master: subtract the angle values and calculate the absolute value, damp the difference and define limit values at which alarms should be triggered:

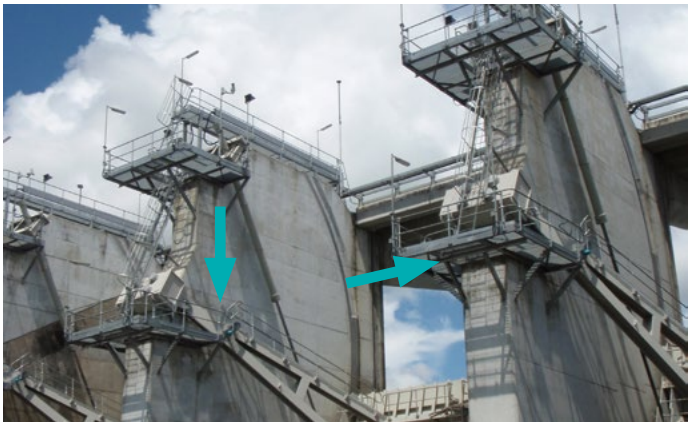
Section A

Status:	OK							
Intelligent applications								
ID	Description	Type	Unit	Process value	Status	External inputs	Unit	Value
1	Gate skew relative	Subtraction	°	-2.008	OK	RIVERT_smart_slave_angle	°	-17.943
2	Gate skew absolute	Absolute value	°	2.008	OK	RIVERT_smart_slave_sec_state		0.000
						RIVERT_smart_slave_sys_state		0.000

Section 1

Status:	OK							
ID	Description	Type	Unit	Process value	Status	External inputs	Unit	Value
1	Angle_calc	RIVERT calculation	°	-19.951	OK			

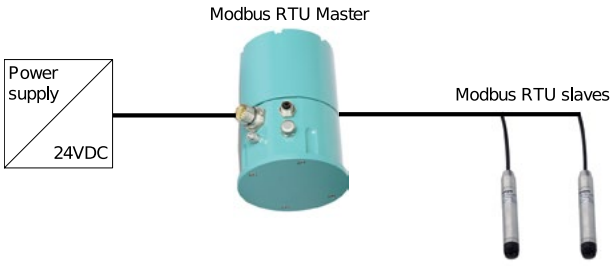
Screenshot Webinterface



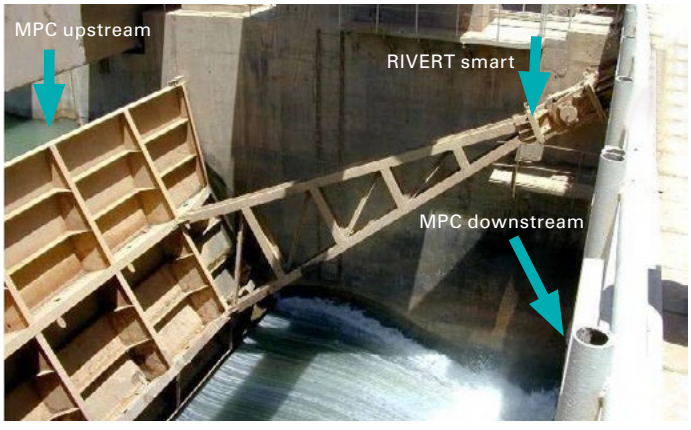
Picture of installation

Gate discharge / flow measurement monitoring

Install a RIVERT smart (or RIPOS smart, with chain/spring drum) and connect one or two pressure probes by using the Modbus RTU interface together:



Use the intelligent appliation and the built-in gate discharge / flow measurement processing rule, together with the information from the level probe(s), to calculate the flow. Measurement values can be delivered to PLC/SCADA systems by means of the analog /digital outputs or the IEC 60870-5-104 interface. The data logger and trend graph allow long-term data collection and also visualization.



Picture of installation

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