



## **RIPOS / RIVERT**

Absolute rotation and angle transmitters for high precision measurements

# Highly functional, seamlessly integrated

## Intelligent transmitters for various absolute position and angle measurements

Rittmeyer has developed absolute position and angle transmitters for more than 35 years. There are over 10,000 installations worldwide. The newest generation of these rugged rotary and angle transmitters are fully backward compatible with the complete product line that Rittmeyer is famous for, thus ensuring comprehensive investment protection.

The universal transmitters cover a wide area of applications, including the measurement of angles, positions, length or velocity of elements such as gates, flaps, valves, drawbridges, sluiceways, travelling and slewing cranes etc.

Due to absolute measurements, referencing is not required and measured values are available right after power-on.

### Two device models

Both RIPOS and RIVERT are available in two versions with a few options. The two versions differ in the number of I/Os and the communication features. All devices feature very accurate measurements in rugged environments.

#### RIPOS / RIVERT



RIPOS

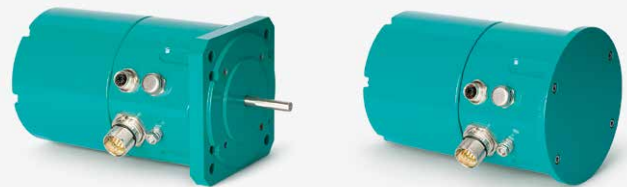
RIVERT

- Full featured HART®-Interface



- Integrated process value calculations (limit values, linearization)
- Cable connection with cable glands
- 1 analogue output with HART® (full featured)
- 22 digital outputs (option)
- 1 status output (option)
- Parallel code output (BCD, Gray, Binary) on up to 22 digital outputs

#### RIPOS / RIVERT *smart*



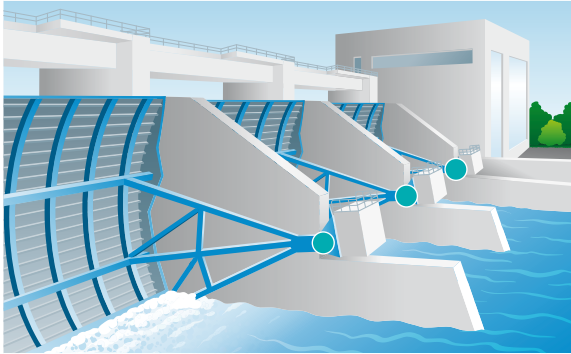
RIPOS *smart*

RIVERT *smart*

- Built-in web server for easy configuration and diagnostics
- Integrated data logger with remote access
- Advanced process value calculations (mathematical functions, conversion tables, integration, limit values)
- Cable connection with connectors
- 4 digital outputs
- 1 status output
- 1 analogue output
- 1 Modbus RTU/TCP (Master+Slave)
- IEC 60870-5-104 - Protocol
- 1 Ethernet 100BaseT-Interface
- Heating (option)

# Precise, maintenance-free and rugged

Reliable and safe measurements in applications of water resources management



## Gate position measurement

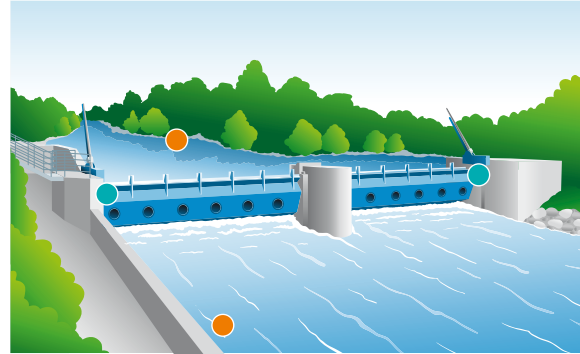
RIPOS and RIVERT can measure the exact position of various gates: radial gate, tainter gate, crest gate, slide gate, roller gate, sluice gate, lock gate, etc.

## Gate misalignment

By mounting two RIPOS or two RIVERT devices on the left and on the right hand side of a gate a misalignment can be detected due to the high accuracy and resolution of the devices.

## Redundant measurement

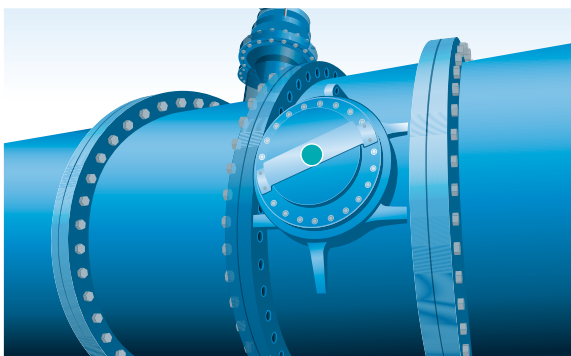
Two independent devices – RIVERT to measure the angle, and RIPOS connected via spring rope drum measuring the gate position – enable the setup of a redundant measurement.



## Gate automation

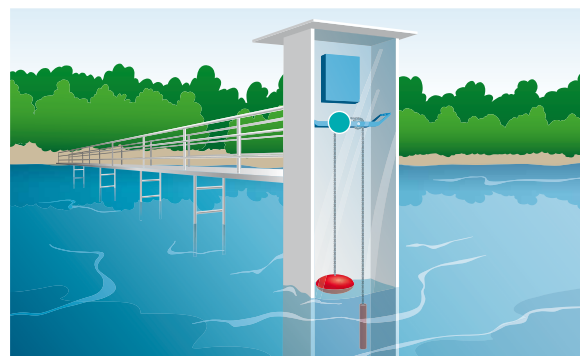
The various communication options and the integrated process calculation rules establish RIPOS *smart* and RIVERT *smart* as the intelligent centerpiece of an automatic level control: The pressure sensors for level measurements can be directly connected to the transmitter device.

This can be compared to the measured gate position and the opening or closing can be controlled autonomously.



## Valve position

RIPOS and RIVERT are extremely rugged. They are built for demanding applications and are resistant to vibrations occurring at valves and flaps.



## Level measurement with float

By the use of a float connected by a chain and sprocket to a RIPOS, water level can be measured in a very simple and reproducible way.

- Position transmitter (RIPOS or RIVERT)
- Level transmitter

# Specifications

Convincing technical data

	RIPOS <i>Absolute rotation transmitter</i>	RIPOS <i>smart</i>	RIVERT <i>Absolute angle transmitter</i>	RIVERT <i>smart</i>
<b>Technical data</b>				
Measuring range	4,096 revolutions	4,096 revolutions	-180° ... +180°	-180° ... +180°
Measuring accuracy	0.088° (1 LSB)	0.088° (1 LSB)	0.044° (1 LSB)	0.022° (1 LSB)
Measuring resolution	0.044°	0.088°	0.044°	0.0055°
<b>Outputs</b>				
Analogue (4 ... 20 mA)	1	1	1	1
Status (relays)	1 (option)	1	1 (option)	1
Digital (relays)	21 + 1 (option)	4	21 + 1 (option)	4
<b>Interfaces</b>				
HART®	Yes	-	Yes	-
RS485 Modbus RTU	-	1	-	1
Modbus TCP	-	1	-	1
Ethernet 100BaseT	-	1	-	1
IEC 60870-5-104	-	1	-	1
<b>Operating conditions</b>				
Protection class	IP67	IP67	IP68	IP67
Operating temperature	-40°C ... +60°C	-20°C ... +60°C *	-40°C ... +60°C	-20°C ... +60°C *
Operating voltage	19.2 ... 60VDC			
Vibration IEC (EN)60068-2-6	20 ms <sup>-2</sup> (10 ... 500 Hz)			
Shock IEC (EN)60068-2-27	200 ms <sup>-2</sup> (12 ms)			
<b>Other</b>				
Status information	LED, status out, AO	Status out, AO	LED, status out, AO	Status out, AO
Cable connection	Terminal block	Connector	Terminal block	Connector
Certificates	CE, UL	CE, UL	CE, UL	CE, UL

\* RIPOS/RIVERT *smart*: -20°C ... +60°C without heating, -40°C ... +60°C with heating