

Position measurement of floodgates

Industries: Geodesy and Construction, Hydro-Tech
Application type: Position measurement, Monitoring

Description



Fig 1: Floodgates under construction

In times of flooding, flood gates guarantee the controlled efflux of the enormous storage of water. It is necessary to know the exact position of the flood gates in order to determine the amount of overflow. For this purpose, the locks of the Yeongsan River in South Korea use Dimetix Laser Distance Sensors which measure the position of the flood gates millimeter-precise and absolutely contactless.

Since the sensors do not consist of any movable parts, they are maintenance free. The flood gates at the Yeongsan River locks are lifted to a height to 15 meters. Neither this measured distance nor environmental temperatures of up to -20°C cause any problems for the laser sensors. This is thanks to an integrated heater which enables the use of the sensors even at temperatures of -40°C.

The solution with the Dimetix laser distance sensors enables the customer to permanently monitor the position of any flood gate and thus know its flow rate at any time.

Customer advantage

- Easy installation thanks to visible laser beam
- Operation in the largest temperature range (-40..+60°C) possible
- Measuring ranges up to 100 m on natural surfaces
- Measuring ranges up to 500 m on reflective foil
- Accuracy ± 1mm
- Repeatability ± 0.3 mm
- Maintenance-free operation



Fig 2: Sensor for position measuring



DIMETIX APPLICATION EXAMPLE

AE-0104

Dimetix Sensors – the solution for applications with high precision requirements

Thanks to the clearly arranged product portfolio the evaluation of a suitable Dimetix distance laser sensor is simple and uncomplicated.

Dimetix sensors offer numerous features, which are integrated in each and every device as standard, including, among others, various interfaces like SSI, RS-422/485, RS-232 and 2 digital outputs.

Optionally, the Industrial Ethernet interfaces PROFINET, EtherNET/IP and EtherCAT are also available. Furthermore, all devices are IP65-protected and impress with a weight of less than 500 grams!

Particularly noteworthy, however, is the accurate measurement of 1 millimeter over distances of up to 500 meters, even under the most extreme conditions. This is possible with the sensors of the types DPE, DEN and DEH.

No less interesting are sensors of types DAE, DAN and DBN. Preferably, they can be used for projects which do not require a range over 500 meters or are cost-sensitive.

	DPE-10-500	DPE-30-500	DEN-10-500	DEH-30-500
PARTNUMBER	500630	500636	500637	500638
SPECIFICATION				
Typical accuracy $\cong \pm 2\sigma$	± 1 mm	± 3 mm	± 1 mm	± 3 mm
Mensurierung range on natural surfaces	0.05...~100 m	0.05...~100 m	0.05...~100 m	0.05...~100 m
Measuring range on reflective foil	~0.5...500 m	~0.5...500 m	~0.5...500 m	~0.5...500 m
Max. measuring rate	250 Hz	250 Hz	100 Hz	100 Hz
Operating temperature	-40...+60°C	-40...+60°C	-10...+50°C	-10... +60°C

	DAE-10-050	DAN-10-150	DAN-30-150	DBN-50-050
PARTNUMBER	500633	500632	500634	500635
SPECIFICATION				
Typical accuracy $\cong \pm 2\sigma$	± 1 mm	± 1 mm	± 3 mm	± 5 mm
Mensurierung range on natural surfaces	0.05...~50 m	0.05...~100 m	0.05...~100 m	0.05...~50m
Measuring range on reflective foil	~40...50 m	~40...150 m	~40...150 m	
Max. measuring rate	100 Hz	100 Hz	100 Hz	10 Hz
Operating temperature	-40...+60°C	-10...+50°C	-10...+50°C	-10...+50°C

