



FLOW METERS

Water flow monitoring in open channels is widely employed in environmental and geotechnical field.

Leakage measurement is one of the most important indicator of the overall performance of earth/rock fill and concrete dam. The leakage rate is a function of the water level in the reservoir and depends either of the construction and of the behaviour of the dam.

Consequently, leakage monitoring provides data for the evaluation of the long term stability of the dam constructions.

Leakage water is usually impounded downstream of the dam and diverted to a basin in a weir station.

Working principle

The purpose of the weir is to transform the instantaneous flow values into the

corresponding values of an auxiliary measurement unit. This is a level whose variations are proportional to the variations in the measured flow rate. The weir is made in such a way as to cause level changes in the liquid surface upstream. These changes are directly proportional to the corresponding flow variations.

Taking readings

This measurement involves inserting a weir of a known size inside the canal to induce a level increase, which is subsequently measured by either level or pressure transducer.



FLOW METERS

V-NOTCH WEIRS

The purpose of the weir is to transform the instantaneous flow values into the pressure/level measurement by a specific measuring equipment. For reliable measurements, the canal upstream should have a fair slope (1-3%) and a known upstream section for a length of at least 10L (where L=width of canal).

A level difference in the section downstream prevents turbulent motion which could affect the level upstream and, hence, the flow measurement. The possibility of solid materials being drawn by the current and deposited upstream of the measuring equipment should be kept in mind. Accumulated sediments may affect the reliability of measurements: sediments should therefore be cleared regularly.

Model	OQV45LS1000	OQV60LS2000	OQV90LS5000
Flow range	up to 10 l/sec	up to 20 l/sec	up to 50 l/sec
V-notch angle	45°	60°	rectangular
V-notch dim. (WxH)	195x235 mm	288x250 mm	350x200 mm
Plate dim. (WxH)	490x600 mm	721x700 mm	540x450 mm
Thickness	5 mm	5 mm	5 mm
Material	AISI 304 stainless steel		



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MEASURING EQUIPMENTS



PRESSURE TRANSMITTER (Product code OP251Q10000)

Water level variations are measured by means of a level meter consisting of a vented pressure transmitter housed inside a plastic box placed in the stilling basin side at a lower level compared to the weir sill.

Measuring range	1.000 mm of water
Overpressure	100% FS
Total accuracy	< 0.5% FS with linear sensitivity factor < 0.4% FS with polynomial sensitivity factor
Compensated temp. range	-10°C + 65°C
Output signal	4-20 mA (current loop transmitter)
Power supply	10-32 V DC
Material	stainless steel transducer housing in a plastic protective box
Box dimensions	160 x 220 x 120 mm

LEVEL TRANSDUCER (Product code OQVLIV10000)

Water level variations are measured by means of a level meter which consists of a floating unit placed in the stilling basin inside a stainless steel protective frame. The float loads is a high sensitive load cell housed at the top of the frame.

Measuring range	1.000 mm of water
Overload	20% FS
Sensor resolution	1 mm
Total accuracy	< 0.3% FS with linear sensitivity factor < 0.2% FS with polynomial sensitivity factor
Output signal	4-20 mA (current loop transmitter)
Power supply	12-24 V DC
Material	Aluminium sensor housed in a stainless steel box Plastic floating unit within stainless steel frame
Sensor housing dimensions	225 x 75 x 70 mm (LxWxH)
Floating frame size	100 x 100 x 1218 mm (LxWxH)

CE electromagnetic compatibility according to EN 61326-1 and EN 61326-A1 directives for EMC emission and immunity



STAFF GAUGES

Water level variations in the stilling basin are manually carried out by means of a stainless steel staff gauge with millimeter graduation.

Model	OQVHI030000	OQVHI050000
Length	300 mm	500 mm
Width	40 mm	40 mm



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We reserve the right to change our products and specifications without prior notice.

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