

V-NOTCH WEIR MONITOR

DATASHEET W10

PRODUCTS



FEATURES

- Accurate and sensitive water level monitoring.
- Low maintenance system.
- Easy to automate via data acquisition and I-Site software.



The Soil Instruments V-notch weir uses the principle of gravitational discharge of water over a triangular or rectangular notched weir plate. Discharge is a function of the head of water at the weir, for a given profile size and shape.

Experimentally determined coefficients relate the head of water to the rate of discharge.

Simple in principle the v notch weir is a low cost and robust instrument ideally suited to the long term monitoring of dams.

THE SOIL INSTRUMENTS V-NOTCH WEIR MONITOR

The V-notch weir uses the principle of gravitational discharge of water over a triangular or rectangular notched weir plate. For a given profile size and shape, discharge is a function of the head of water at the weir.

Experimentally determined coefficients relate the head of water to the rate of discharge.

The head of water may be measured manually or automatically and remotely.

A V-notch weir system comprises a Stainless Steel plate with chosen notch profile to suit predicted flow rates and a means of measuring the head on the weir plate. The weir plate is mounted at the exit of an approach channel or stilling basin through which the flow to be measured is channelled.

The measuring point for the head of water is located upstream of the weir plate within the channel or basin and comprises a stainless steel scale fixed to the basin wall, from where manual readings for head above the vortex of the notch may be read. Alternatively, a Precision Water Level Sensor (PWLS), employing a vibrating wire force transducer may be used to monitor head level. A cylindrical weight suspended from the transducer hangs partially submerged in the head of water, as the water level changes, the change in the buoyancy of the cylinder acts on the transducer, changing its output frequency.

Frequency readings maybe either taken manually with a Soil Instruments portable vibrating wire logger or automatically and remotely with a data acquisition system. Vibrating wire instrument readings are unaffected by cable length and therefore suitable for applications that require long cable runs. Recorded data can be imported automatically into I-Site software and used to control audible or visual alarms, triggered by breaching of user determined alarm thresholds.

Vibrating wire V-notch weir systems will provide a low cost, long term water flow monitoring system that requires minimal maintenance, typically used for monitoring seepage in dams.

APPLICATIONS INCLUDE

- The manual and automatic measurement of water flow volume in open channels

TYPICAL APPLICATIONS

- Drainage systems in dams & tunnels
- Springs and collects from artesian wells

FOR DETAILS ON:

Heavy Duty Piezometer, see data sheet W4.

Vibrating Wire Logger, see data sheet RO-1-VW-2.

Vibrating Wire Handheld Readout, see data sheet: RO-1-VW-3.



SENSOR TYPE

VIBRATING WIRE PRECISION WATER LEVEL SENSOR

Range	300mm
Resolution ¹	0.025%FS (minimum)
Linearity	±0.5%FS
Operating Temperature	+5 to +60°C
Dimensions	150 x 32mmØ
Weight (Sensor Only)	600g
Material	Stainless Steel
Excitation	Sweep Or Pluck

HOUSING

Material	PVC
Dimensions	1025 x 110 Ø max
Weight	2.6kg

CABLE

	4 Core, PUR Sheath, Foil Screen and Drain Wire
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MANUAL MEASUREMENT

Range	300mm
Resolution	1mm
Accuracy ²	±1mm
Material	Stainless Steel

V-NOTCH

Range	15 L/S	30 L/S	60 L/S
V Angle	28.4°	53.8°	90°
Weight (inc fixings)	5.5kg	7.4kg	10.5kg
Dimensions	350 x 410 x 6mm	510 x 410 x 6mm	820 x 410 x 6mm
Material	Stainless Steel		

BAFFLE PLATE

Weight (inc fixings)	8.5kg	8.5kg	13.5kg
Dimensions	680 x 620	680 x 620	980 x 620
Material	Zinc Galvanised Carbon Steel		

¹Dependant On Readout

² dependant On Operator Experience

ORDERING INFORMATION

PART NO. DESCRIPTION

V-NOTCH WEIR SENSOR

W10-1.1 Weir Sensor - Range 300mm: Includes Transducer with Thermistor, Weight, Stilling Housing and Moisture Trap

V-NOTCH WEIR PLATES

W10-3.1 'V' Notch Weir Plate: 28.4° - 15 Litres/second: Includes Weir Plate, Baffle Plate, Stainless Steel Rule and all fixings

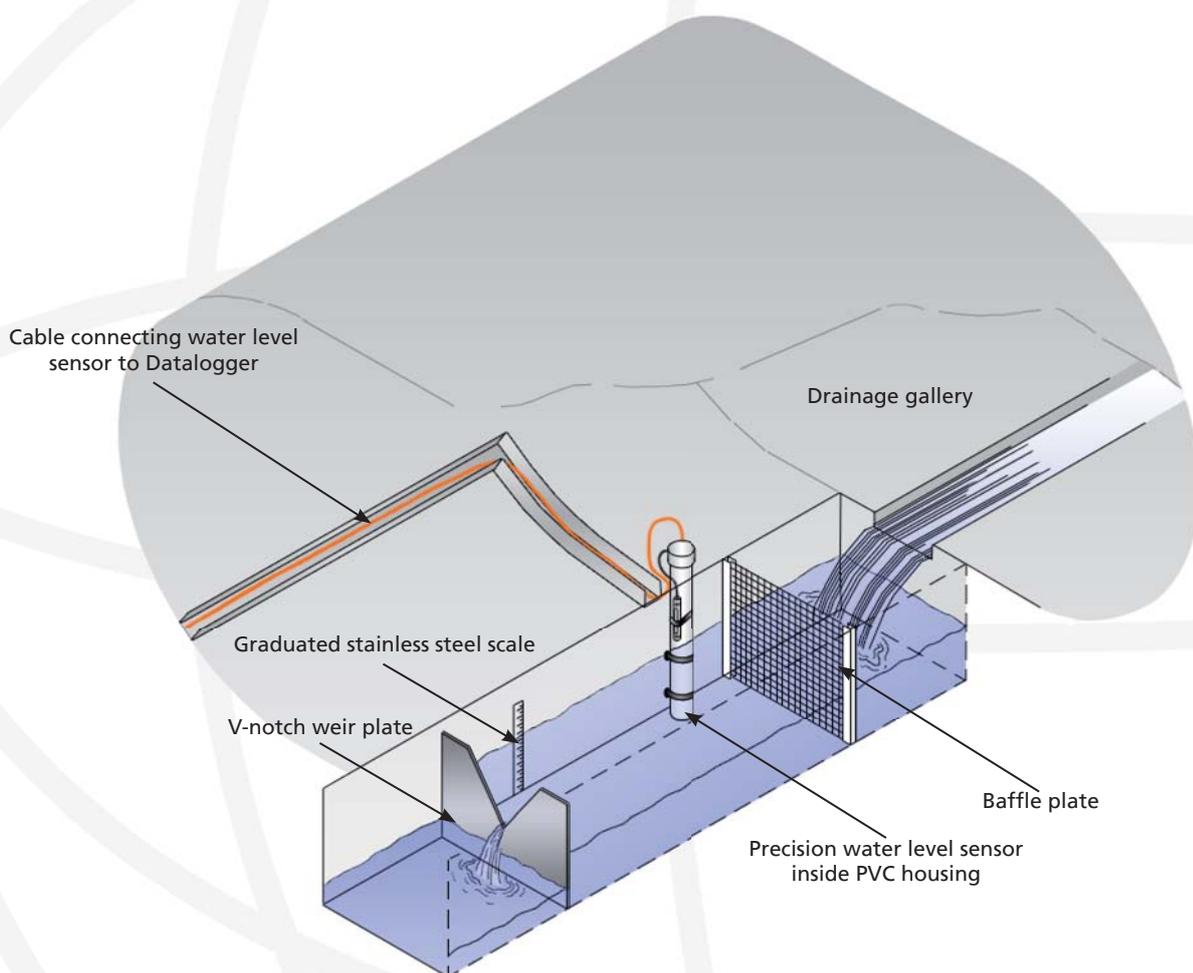
W10-3.2 V' Notch Weir Plate: 53.8° - 30 Litres/second. Includes Weir Plate, Baffle Plate, Stainless Steel Rule and all fixings

W10-3.3 V' Notch Weir Plate: 90° - 65 Litres/second. Includes Weir Plate, Baffle Plate, Stainless Steel Rule and all fixings

ADDITIONAL PARTS

W10-2.1 Dessicant Tubes

V-NOTCH WEIR MONITORING SYSTEM



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