ENCARDIO RITE
METASENSING FOR MEGA STRUCTURES

WEIR FOR SEEPAGE MONITORING

MODEL ESM-10

DATASHEET

OVERVIEW

The Encardio Rite model ESM-10 Weir is an essential component of seepage monitoring systems, specifically designed to measure water seepage through, around, or under earth and concrete dams. It also enables the monitoring of water flow in weirs, tanks, reservoirs, and open channels. The weir is available in different sizes and angles to accommodate specific flow rates and project requirements .

DESCRIPTION

The ESM-10 Weir is constructed from a stainless steel plate, manufactured in diverse shapes, sizes, and angles to suit expected flow rates, and is produced according to Indian Standard IS: 14750:2000. The shape of the opening determines the type of weir, with commonly used weirs being either rectangular or triangular (V-notch).

In the a rectangular weir, the bottom edge is referred to as the crest, while the side edges are known as the weir ends. The sheet of water flowing over the crest is termed the nappe. Weirs operate optimally when discharging freely into the atmosphere. Generally, rectangular suppressed weirs or 90° V-notch weirs provide the most accurate flow measurements. For low flow rates, a V-notch weir with an angle of less than 90° is employed.

The weir operates by controlling water flow through triangular (V)-notch or rectangular-notch plates. As water flows over this plate, the height (or head) of water above the weir crest can be measured. This head, along with the size and shape of the discharge area , and an experimentally determined discharge coefficient, determines the flow rate. The discharge coefficient accounts for the head of the water above the weir, the geometry of the approach channel, and the water's physical properties and flow characteristics.

FEATURES

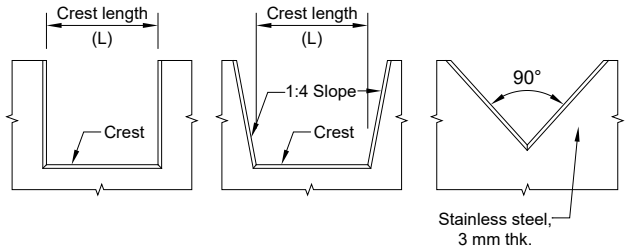
- **Variety of sizes:** Available in 22.5°, 45°, 90°, and rectangular configurations to suit different project needs.
- **Wide flow range:** Capable of measuring flow rates from 10 to 70 liters per second.
- **Low maintenance:** Operates on a simple principle requiring very low maintenance.
- **Corrosion resistant:** Constructed from high-quality, corrosion-resistant stainless steel.
- **Manual and online data collection**: Readings can be taken manually with a staff gauge or stainless steel scale, or in near real-time using the model ESM-12S digital seepage monitoring system (with both Modbus and SDI-12 options)
- **Flexible integration and advanced data management:** ESM-12S seepage system can work with any manufacturer's Dataloggers and Data Management Systems.

  Encardio Rite offers a range of **NexaWave dataloggers** equipped with GSM/GPRS or RF communication capabilities, ensuring reliable and efficient data transmission.

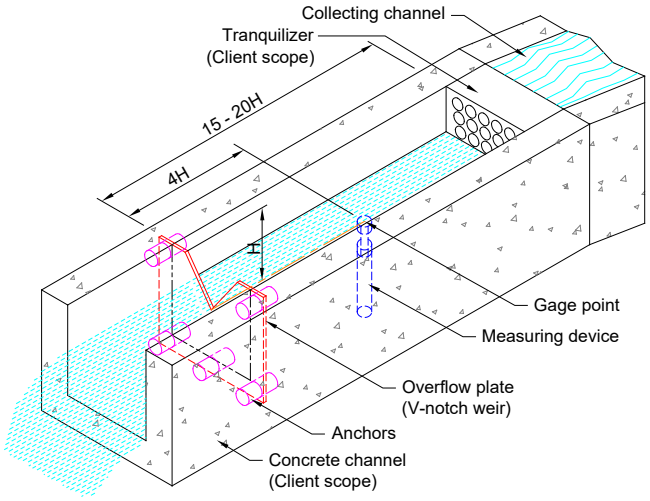
  The **Proqio software** offered by Encardio Rite, facilitates data processing, analysis, and real-time visualization, providing 24/7 insights. Users benefit from instant alerts for critical events and automated reports, supporting informed decision-making.

SPECIFICATIONS

Material	High-quality stainless steel
Sizes available	22.5°, 45°, 90°, and rectangular
Flow range	10 to 70 liters/second
Compliance	Manufactured as per Indian Standard IS: 9117-1979



Different types of weirs



Typical installation scheme for V-notch

*All specifications are subject to change without prior notice

DATASHEET | 2015-20 R2

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Encardio-Rite Electronics Pvt. Ltd. A-7, Industrial Estate, Talkatora Road, Lucknow, UP-226011, India | info@encardio.com | T: +91 522 2661039-320