

## Easy Open Channel Flow Estimation

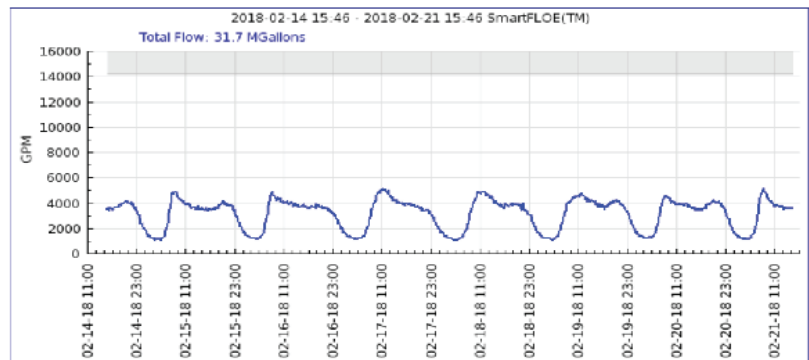
**SmartFLOE™** provides a low cost, low maintenance, high reliability means for flow measurement and data communication. Flow measurement is highly valuable for any open channel water conveyance. Conventional flow measurement methods can be expensive and complex where reliability, ease of maintenance and data communications are often challenging.

**SmartFLOE** can be used in various applications including:

- Capacity assessment
- Inflow and infiltration (I&I) detection
- Influent & effluent measurements
- Environmental and storm water flows

## About Flow Estimation

Flow level optimized estimation (FLOE) is a new approach to using the well-proven Manning's equation providing users with a cost effective means to acquire data for estimating flow rates in open channels.



SmartFLOE displays both real-time instantaneous flow and integrated flow over user selectable period

## System Status Alerts and Alarms

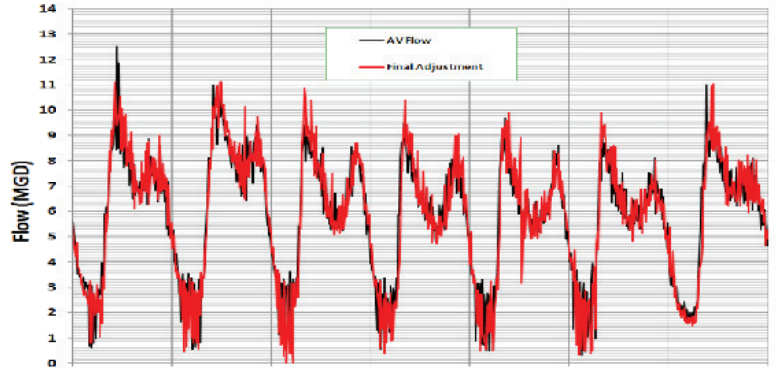
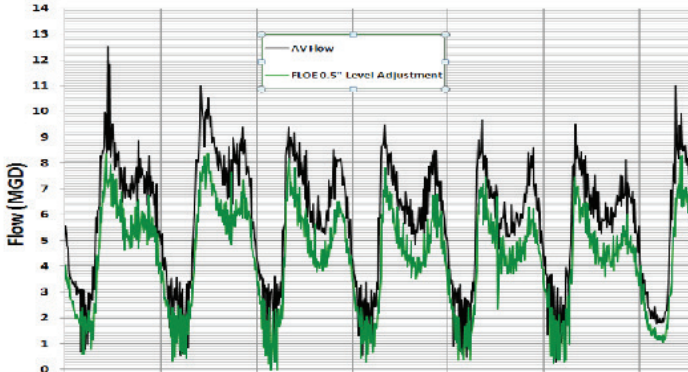
In addition to flow measurements, **SmartFLOE** enables receipt of vital information including level alarms and water flows to prevent SSO/CSOs. With user-defined alarm settings, the system warns of impending overflow issues before they occur, communicating to assigned personnel via email or text. Users are informed of the system's operating status so maintenance can be planned well in advance.

## Flexible Modeling and Calibration

The **SmartFLOE** user-configurable algorithm provides flow rate data. For modeling, users can change parameters, such as pipe diameter or slope for an instantaneous view. Calibration can be performed with adjacent A/V meters or hand-held velocity meters.

## Features and Specifications

- No water contact minimizes maintenance.
- NO CONFINED SPACE ENTRY for most installations, lowering costs and risks.
- Ongoing data capture and transmission for remote analysis.
- Highly secure and easy-to-use web browser viewing.
- Flexible installation options - compact and lightweight sensors.



Example of calibration of Manning parameters using adjacent A/V meter. Calibration to A/V meter results can be matched to within 1%.

| SmartLevel™ Unit          |   |
|---------------------------|---|
| Weight                    | 4.5 lbs.  |
| Size                      | 5" x 6" x 6"  |
| Power                     | 3.6 VDC SmartCover® PowerPack™                      |
| Battery Life              | 24 months - nominal                                 |
| Environmental             | NEMA 6P, IP-68                                      |
| Mounting                  | Manhole cover attachment<br>No confined space entry |
| Antenna                   | Low profile traffic rated reflector or snowplow     |
| Level Sensor Range        | 4 inches to 79 inches with option to 20 feet        |
| Level Sensor Resolution   | 0.1"  |
| Intrusion Detection Alarm | Detect unauthorized entry, dumping                  |
| Temperature Range         | -40°C to 80°C                                       |

| SmartFLOE™            |  |
|-----------------------|--|
| Communication Method  | 2 way, military-grade Iridium® satellite.  |
| Internal Reporting    | Upon alarm and at 1 hour intervals (nominal)   |
| Status Data           | Flow rate estimates, water level, PowerPack™ voltage, radio signal strength, maintenance alerts, alarms and acknowledgements |
| User Interface        | Simple map GIS, graphs, maintenance and location logs, report and downloads  |
| Security              | 2048-bit, SSL, username and password protection  |
| Measurement Intervals | 1,2,5,10,15 minutes  |

### Local SmartCover Support Provided By



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