

SITRANS L Level instruments

Continuous measurement - Open channel flow

OCM III

Overview



The OCM III is a high accuracy ultrasonic flow monitor for open channels to complete system studies.

Benefits

- Influent and effluent monitor
- BS 3680 calculations provide exceptional accuracy in measuring flow
- 1 to 24 months data log, subject to logging rate
- Extensive serial communication, including RS-232
- High accuracy on unique or non-standard weirs and flumes
- AC and DC operation. Automatically switches to battery operation for uninterrupted power.
- Dual power input
- Low power remote monitoring
- Flow Reporter software available for remote monitoring, configuration, and data retrieval

Application

In addition to monitoring flowrate in sewage works, the OCM III can monitor industrial discharge, rainfall/storm water studies, inflow/infiltration studies, and sewer system evaluations. The programmable head versus flow curve (up to 16 points) accurately defines flow rate on unique or non-standard weirs and flumes.

The OCM III has data logging and is adjustable from once per minute to once a day. It records the average flow rate for that time period. Daily, it records min/max of temperature and flow rates, and the time they occurred, as well as the daily total. Advanced functions include variable rate logging. It can be pre-programmed to log at a higher rate when needed. Under steady conditions, the OCM III automatically logs less frequently to conserve data log space.

The OCM III has two-way communication via RS-232 with a modem or a bi-polar current loop with a current-to-voltage communication converter. Data logs can be downloaded to a file that can be manipulated into a spreadsheet or ASCII format.

Technical specifications

Mode of Operation

Measuring range 0.3 to 1.2 m (1 to 4 ft) or 0.6 to 3 m (2 to 10 ft)

Output

Transducer Echomax® XRS-5, 44 kHz
 Relays 3 alarm/control relays, 1 form 'C' SPDT contact per relay, rated 5 A at 250 V AC non-inductive or 30 V DC
 mA output 0/4 to 20 mA, isolated
 - Max. load 1 K Ω max. load
 - Resolution 5 μ A
 - Isolation 300 V AC continuous
 - DC output +24 V DC, 20 mA average to 200 mA at 1/10 duty cycle max.0 to 20

Accuracy

Error in measurement \pm 1 mm/m, calculated error less than 0.02%
 Resolution 0.2 mm (0.007")

Rated operating conditions

Installation conditions

Location Indoor / outdoor
 Installation category II
 Pollution degree 4

Ambient conditions

Ambient temperature (enclosure) -20 to +50 °C (-5 to 122 °F)

Design

Weight 2.3 kg (5.1 lbs)
 Material (enclosure) Polycarbonate
 Degree of protection (enclosure) IP65 / Type 4X / NEMA 4X

Cable

Transducer and mA output signal

- transducer: co-axial to be RG62-A/U low capacitance
- mA output signal to be 2 copper conductors, twisted, with foil shield/drain wire, 300 V 0.5 to 0.75 mm² (22 to 18 AWG)
- relay/power to be copper conductors per local requirements to meet 250 V 5A contact rating

Max. separation between transducer and transceiver 365 m (1200 ft)

Displays and controls

Programming LCD 5 x 7 dot matrix display with 2 lines of 40 characters each via removable programmer and communication link

Memory 3V battery (NEDA 5003LC or equivalent), operating life 1 year, 'SuperCap' capacitor for back-up during battery replacement

Power supply

AC version 100/115/200/230 V AC \pm 15%, 50/60 Hz, 20 VA max.
 DC version 9 to 30 V DC(8 W max.)

Certificates and approvals

CE²⁾, FM, CSA_{NRTL/C}

Communication

RS-232 or \pm 20 mA bipolar current loop, 300, 600, 1200, 2400, 4800, 9600, 19200 baud

1) Program range is defined as the empty distance to the face of the transducer plus any range extension.

2) EMC performance available upon request.

| Ordering data | Order No. |
|--|---|
| OCM III High accuracy ultrasonic flow monitor for open channels to complete system studies | 7ML1002 - A 0 |
| Input Voltage AC, voltage selector switch | 0 |
| Enclosure Standard, N4 6 entries, M20 (approval option 6 only) | A B |
| Approvals CSANRTL/C, FM, CE (EN61326) CE (for use with enclosure option B only) | 5 6 |
| Instruction Manual English French Spanish German Note: The instruction manual should be ordered as a separate line on the order. | C) 7ML1998-5AB01 C) 7ML1998-5AB11 C) 7ML1998-5AB21 C) 7ML1998-5AB31 |
| Required Equipment <u>TS-2 Temperature Sensor</u> TS-2, 1 m cable TS-2, 5 m cable TS-2, 10 m cable TS-2, 30 m cable TS-2, 50 m cable TS-2, 70 m cable TS-2, 90 m cable TS-2 Instruction Manual Note: The TS-2 instruction manual should be ordered as a separate line item on the order. | C) 7ML1812-1AA1 C) 7ML1812-2AA1 C) 7ML1812-3AA1 C) 7ML1812-4AA1 C) 7ML1812-5AA1 C) 7ML1812-6AA1 C) 7ML1812-7AA1 C) 7ML1998-1EW01 |
| Accessories Hand-held programmer VS 100 Velocity Sensor (Order information in next column) Tag, stainless steel, 12 x 45 mm, one text line, suitable for enclosure M20 cable gland kit (6 M20 cable glands, 6 M20 nuts, 3 stop plugs) Flow Reporter software license Flow Reporter Kit (includes disk, authorization code C) and cable) | 7ML1830-2AA PBD-45000786 7ML1830-1GM C) PBD-51034499 C) PBD-51035195 |
| Spare Parts Card, Mother, main Card, Daughter/display Card, LCD Eprom Battery OCM III Lid overlay | PBD-51033263 PBD-51034009 PBD-51033961 PBD-45000739 PBD-20200020 PBD-24250561 |

C) Subject to export regulations AL: N, ECCN: EAR99.

| Ordering data | Order No. |
|---|--|
| VS 100 Velocity Sensor Provides velocity input for flowrate and volume in a channel with no flume or weir | C) 7ML1030 - A |
| Sensor Sensor with 7.5 m (25 ft) cable Sensor with 15 m (50 ft) cable | 1 2 |
| Instruction Manual English French Spanish German Dutch Note: The instruction manual should be ordered as a separate line on the order. | 7ML1998-1FA01 7ML1998-1FA11 7ML1998-1FA21 7ML1998-1FA31 7ML1998-1FA41 |
| Optional Equipment <u>Screw Jack Band</u> 150 mm (6") 200 mm (8") 250 mm (10") 300 mm (12") 380 mm (15") 460 mm (18") 500 mm (20") 560 mm (22") 610 mm (24") 760 mm (30") 915 mm (36") Mounting Plate 300 mm x 300 mm (12" x 12") | PBD-20502076 PBD-20502077 PBD-20502078 PBD-20502079 PBD-20502080 PBD-20502081 PBD-20502082 PBD-20502083 PBD-20502084 PBD-20502085 PBD-20502086 PBD-20502087 |

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