

Level instruments

Continuous measurement - Open channel flow - Ultrasonic controller

OCM III

Overview



The OCM III is a high accuracy ultrasonic flow monitor for open channels.

Benefits

- Influent and effluent monitor
- BS 3680 calculations provide exceptional accuracy in measuring flow
- 1 to 24 months data log, subject to logging rate
- RS-232 serial communication
- 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, OCM III can monitor industrial discharge, rainfall/storm water studies, in-flow/infiltration studies and sewer system evaluations. As well as being compatible with many standard weirs and flumes, 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 minimum/maximum 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 ¹⁾	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 SPDT Form C 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	
<u>Installation conditions</u>	
Location	Indoor/outdoor
Installation category	II
Pollution degree	4
<u>Ambient conditions</u>	
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
<u>Cable</u>	
Transducer and mA output signal	<ul style="list-style-type: none"> • Transducer: co-axial to be RG62-A/U low capacity • 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 5 A contact rating
Max. separation between transducer and transceiver	183 m (600 ft)
Displays and controls	
Programming	Via removable programmer and communication link
Memory	3 V 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.

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Certificates and approvals	CE, FM, CSA _{US/C} , MCERTS, C-TICK ²⁾	Selection and Ordering data	Order No.
Communication	RS-232 or ± 20 mA bipolar current loop, 300, 600, 1200, 2400, 4800, 9600, 19200 baud	OCM III	C) 7ML1002-
Options		High accuracy ultrasonic flow monitor for open channels.	A 0
Temperature sensor	TS-2	Input voltage	0
Remote monitoring	Flow Reporter, a Windows®-based configuration software and data extractor	AC, voltage selector switch	A B
Velocity sensor	Consult with factory	Enclosure	5 6
		Wall mount, standard enclosure	
		Wall mount, 6 entries, M20 holes ¹⁾	
		Approvals	
		CSA _{US/C} , FM, CE (EN61326), C-TICK CE ²⁾	
		Instruction manual	
		English	C) 7ML1998-5AB01
		French	C) 7ML1998-1AB11
		Spanish	C) 7ML1998-1AB21
		German	C) 7ML1998-1AB31
		Note: The instruction manual should be ordered as a separate line on the order.	
		This device is shipped with the Siemens Milltronics manual CD containing the complete Quick Start and instruction manual library.	
		Required equipment	
		TS-2 Temperature Sensor	
		TS-2, 1 m cable	C) 7ML1812-1AA1
		TS-2, 5 m cable	C) 7ML1812-2AA1
		TS-2, 10 m cable	C) 7ML1812-3AA1
		TS-2, 30 m cable	C) 7ML1812-4AA1
		TS-2, 50 m cable	C) 7ML1812-5AA1
		TS-2, 70 m cable	C) 7ML1812-6AA1
		TS-2, 90 m cable	C) 7ML1812-7AA1
		TS-2 Instruction manual	C) 7ML1998-5EW01
		Note: The TS-2 instruction manual should be ordered as a separate line item on the order.	
		Accessories	
		Handheld programmer	7ML1830-2AA
		Tag, stainless steel, 12 x 45 mm (0.47 x 1.77"), one text line, suitable for enclosure	7ML1930-1AC
		M20 cable gland kit (6 M20 cable glands, 6 M20 nuts, 3 stop plugs)	7ML1830-1GM
		Flow Reporter software license	B) 7ML1930-1AK
		Flow Reporter Kit (includes disk, authorization code and cable)	B) 7ML1930-1AL
		Spare parts	
		Card, Mother, main	C) 7ML1830-1MG
		Card, daughter/display	C) 7ML1830-1LT
		Card, LCD	7ML1830-1KY
		Eprom	C) 7ML1830-1KW
		Battery	C) 7ML1830-1JV
		OCM III Lid overlay	7ML1830-1KV

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

Windows® is a registered trademark of Microsoft Corporation

¹⁾ Available with approval option 6 only

²⁾ Available with enclosure option B only

B) Subject to export regulations AL: N, ECCN: EAR99S

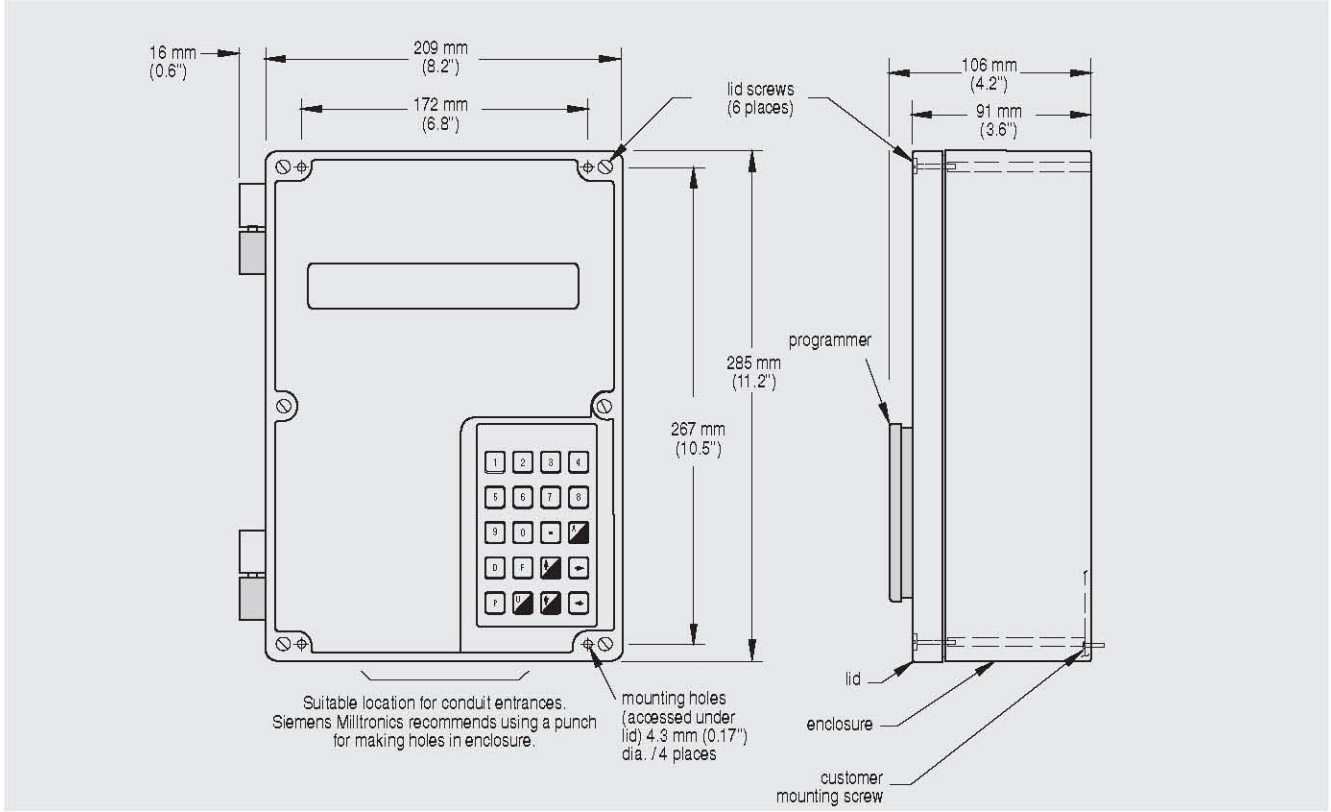
C) Subject to export regulations AL: N, ECCN: EAR99

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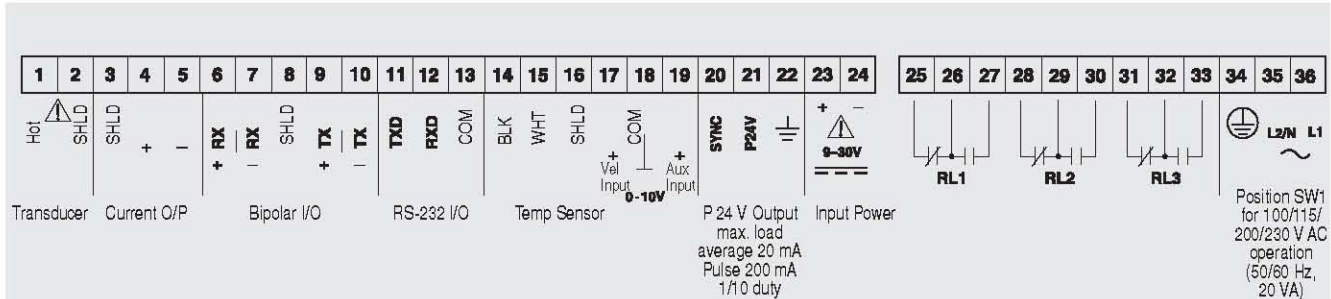
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Dimensional drawings



OCM III dimensions

Schematics



Notes:

1. Use RG62-A/U Coaxial (or equivalent) for extensions up to 183 m (600 ft). Run in grounded metal conduit, separate from other wiring.
2. Each relay has 1 set of form 'C' (SPDT) contacts, relay rated at 5A, 250 V AC, non-inductive, when equal or lower rated limiting fuses are installed. Relay de-energized when in alarm conditions and energized for pump control.

OCM III connections