



PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

OCM III non-contact level flow monitor with TS-2 Temperature Sensor & Echomax XRS-5 ultrasonic transducer

manufactured by:

Siemens Milltronics Process Instruments Inc.

*1954 Technology Drive, P.O. Box 4225
Peterborough
Ontario
K9J 7B1
Canada*

has been assessed by Sira Certification Service
and for the conditions stated on this certificate complies with:

**MCERTS Performance Standards and Test Procedures for
Continuous Water Monitoring Equipment Part 3, Version 2.1 dated March 2008**

Certification Range

0 to 2 metres (nominal)

Project No: 16W0430
Certificate No: Sira MC 050058/04
Initial Certification: 29 June 2005
This Certificate Issued: 23 July 2010
Renewal Date: 29 June 2015

Technical Director

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

12 Acorn Industrial Park, Crayford Road, Crayford
Dartford, Kent, UK, DA1 4AL
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Approved Site Application

The product may be used on all MCERTS applications including abstraction, effluent discharge, ultraviolet disinfection and industrial processing.

Any potential user should ensure, in consultation with the manufacturer, that the product is suitable for the process on which it will be installed.

The manufacturer states that the OCM III is suitable for indoor and outdoor use up to a maximum altitude of 2000m. The OCM III enclosure is IP65 rated.

The TS-2 temperature sensor is suitable for use in -40°C to 70°C (-40°F to 158°F) ambient conditions while the intrinsically safe hand-held programmer is suitable for use in potentially explosive atmospheres as per certificate No. SIRA 01ATEX2147.

The Echomax XRS-5 Transducer is suitable for indoor and outdoor use up to a maximum altitude of 2000m. The XRS-5 enclosure is IP68 rated.

Field Test

A three month field test was performed to meet the MCERTS requirements.

Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

Sira Report	Reference No: C 1224 dated July 2005
Sira Report	Reference No: C 1266 dated June 2010
WRc Report	Reference No: UC 8313 dated May 2010

Product Certified

The OCM III measuring system consists of the following parts:

- OCM III non-contact level monitoring controller
- XRS-5 ultrasonic transducer
- TS-2 temperature sensor

This certificate applies to all instruments fitted with software version 3.32 onwards (serial number PBD/A705001 onwards).

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -25°C to $+55^{\circ}\text{C}$ (Note 1)

The instrument meets MCERTS Class 1 requirements for the combined performance characteristic as specified in Table 7 of the MCERTS performance standard. Details of individual performance characteristics are summarised below:

Results are expressed as error % of certification range, unless otherwise stated.

Test	Results expressed as error % of certification range				Other results	MCERTS specification
	<0.1	<0.2	<0.5	<1.5		
Protection against unauthorised access	The unit is password protected					Clause 3.1.2
Units of measurement	The indicating device and output are scaled in metric units					Clause 3.1.6
Indicating device	The flowmeter incorporates an indicating device, analogue and digital output signal					Clause 3.1.3
Flow computation	The flowmeter incorporates a facility for a user defined stage/discharge curve to be entered					Clause 3.1.11
Combined performance characteristic		0.14				$\pm 0.2\%$ Class 1 $\pm 0.5\%$ Class 2 $\pm 1.5\%$ Class 3 Clause 4.3.1
Mean error	0.073					Clause 6.3.2 $\pm 0.1\%$ Class 1
Repeatability	0.014					Clause 6.3.2 0.05% Class 1
Resolution					0.2mm	Clause 3.1.15 <2mm Class 1
Supply voltage	0.01				99-121 V ac 207-253 V ac	Clause 6.3.3 0.025% Class 1
Output impedance	-0.006				1 Ω – 1k Ω	Clause 6.3.4 0.025% Class 1

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Test	Results expressed as error % of certification range				Other results	MCERTS specification
	<0.1	<0.2	<0.5	<1.5		
Ambient air temperature	-0.088				-25 to +55 ⁰ C Note 1	Clause 6.3.6 0.025% Class 1 0.075% Class 2 0.25% Class 3
Accuracy of computation	0.013					Clause 6.3.11 0.025% Class 1
User defined stage-discharge equation	-0.002				result not included in combined performance characteristic Note 2	Clause 6.3.12 0.025% Class 1
Warm up time	the unit stabilises after energising within 5 seconds					Clause 6.1.2 to be reported
Loss of Power for electronic flowmeters	no changes in pre-set data					Clause 6.3.1 to be reported
Relative humidity			0.22		result not included in combined performance characteristic Note 3	Clause 6.3.6 0.025% Class 1 0.075% Class 2 0.25% Class 3
Sonic velocity compensation and response	0.02					Clause 6.3.10 0.05% Class 1
Response time					25s	Clause 6.3.19 <30 seconds
Error under field test conditions	error range -0.5% to +0.5% field test error is <0.2% for 86% of readings field test error is <0.5% for 100% of readings					Clause 7.3 0.2% Class 1 0.5% Class 2 1.5% Class 3

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Test	Results expressed as error % of certification range				Other results	MCERTS specification
	<0.1	<0.2	<0.5	<1.5		
Up time					100%	Clause 7.4 >95%
Maintenance					None	Clause 7.5 to be reported

Note 1 : The manufacturer specifies an ambient temperature of -20 to +50°C

Note 2 : User defined curve 1 (f= 38537.5, n+ 1.55) & User defined curve 2 (f = 21481.8, n= 2.50)

Note 3 : Test performed at 35°C and 93% RH and not 40°C and 93% RH as specified in the MCERTS standard

Note 4 : The following tests are not applicable to the flowmeter:

6.3.5	Fluid temperature	6.3.15	Ancillary devices
6.3.7	Incident light	6.3.16	Effect of conduit material
6.3.8	Sensor location	6.3.17	Effect of conduit size
6.3.9	Presence of stray currents	6.3.18	Fill level
6.3.13	Bi-directional flow	6.3.20	Vibration
6.3.14	Flow reversal		

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Description

The OCM III is an electronic instrument designed to measure flow in open channels. It is housed in a polycarbonate enclosure and comes with a removable infra-red programmer. As a system, it is used in conjunction with a remote ultrasonic transducer and a TS-2 temperature sensor.

The OCM III transmits a pulse signal to the transducer that is then emitted as ultrasonic pulses. The pulses echo off the water surface and are then sensed by the transducer. The time for a pulse to echo back from the water surface is temperature compensated and converted into a measurement of head. It uses an algorithm to convert the head measurement into flow rate, but also provides a velocity sensor input for applications where a flow velocity measurement is required to perform the flow calculation. The flow rate is totalised and stored in a data log to provide detailed flow analysis.

The remote control device is a hand-held, infra-red programming unit that offers access to the configuration parameters of Siemens Milltronics products, including OCM III. When in use, the programmer should be pointed at the instrument display window. The programmer is powered by a non-replaceable 3V lithium battery.

General Notes

1. This certificate is based upon the product tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. The Manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of Sira Certificates'. The design of the product certified is defined in the Sira Design Schedule for certificate No. Sira MC050058/04
2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on page 1.
3. The Certification Marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of Sira Certificates'.
4. This document remains the property of Sira and shall be returned when requested by the company.

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