PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

Rosemount Analytical Model 5081 Two-Wire Transmitter With Model 399, 399VP and 381+ pH sensors

manufactured by:

Rosemount Analytical Inc
(a division of Emerson Process Management)
2400 Barranca Parkway
Irvine
CA 92606
USA

(Certification applies to products manufactured at the above site and Mexico site)

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

MCERTS Performance Standards for Continuous Water Monitoring Equipment, Version 2.1 (July 2006)

Certification Range :

pH units 0 to 14

Note: The MCERTS product certification is only valid for use on non-pressurised applications.

Project No:	674/0203B
Certificate No:	Sira MC 070112/01
Initial Certification:	07 June 2007
This Certificate Issued	14 June 2007
Renewal Date:	06 June 2012

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
Tel: 01322 520500 Fax: 01322 520501

Approved Site Application

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

On the basis of the assessment this instrument is considered suitable for use on non-pressurised treated wastewater, untreated wastewater and receiving water applications. The MCERTS product certification is not valid for use on pressurised applications.

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	Report Number: C1246 dated January 2007
Field Assessment	Report summary dated 06/06/07

Product Certified

This certificate applies to all 5081-P-FF instruments fitted with software version 5.13 onwards & all 5081-P-HT instruments fitted with software version 1.20 onwards (serial number E03-211750 onwards).

Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -10^0C to $+55^0$C

Unless otherwise stated the evaluation was carried out on the certification range 0 to 14 pH units. The following evaluation was performed on 1055 analyser with 399 pH sensor. The 5081 analyser was considered to be equivalent to the 1055 analyser for the majority of the tests.

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Combined performance characteristics					0.13	<.20
Mean error					-0.10 pH units	<0.2 pH units
Linearity					0.04 pH units	<0.1 pH units
Repeatability					0.02 pH units	<0.1 pH units
Drift					0.04 pH units	<0.1 pH units
Output impedance					0.00 pH units	<0.05 pH units
Supply voltage					0.02 pH units	<0.05 pH units
Ambient temperature					0.04 pH units	<0.1 pH units
Relative humidity and temperature					0.05 pH units	<0.1 pH units
Sample temperature					-0.10 pH units	<0.1 pH units
Sample flow rate					0.004 pH units	<0.05 pH units
Sample pressure					See note 1	<0.05 pH units
Response time (lab)					13.7 s	To be reported
Initial warm up					65 s	To be reported
Loss of power					Pass	To be reported

Note 1: Test not applicable as the products are only certified for use on non-pressurised applications.

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Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Field Accuracy [Note 4]					90% Note 2	>90%
Response time (field) [Note 4]					Note 3	To be reported
Up-time [Note 4]					99.9%	>90%

Note 2: The assessment of the field data made no allowance for the test measurement uncertainty.
Note 3: Test was not appropriate to this instrument. In general pH response time is not a significant issue with
instruments operating on this principle except in heavily fouling fluids where more frequent cleaning may be required.
Note 4: Field test: 1055 analyser and 399 sensor was assessed on the basis of one year field test installed on power station application (drum water and saturated steam sampled at a chemical rack with a sample cooling system).

The following evaluation was performed on Model 5081 analyser with mV input.

Test	Results expressed as % of the certification range				Other results	MCERTS specification
	<0.5	<1	<2	<4		
Mean error					<0.01 pH units	<0.2 pH units
Linearity					<0.01 pH units	<0.1 pH units
Repeatability					<0.01 pH units	<0.1 pH units
Drift					0.00 pH units	<0.1 pH units
Output impedance					0.007 pH units	<0.05 pH units
Supply voltage					0.003pH units	<0.05 pH units
Ambient temperature					-0.004 pH units	<0.1 pH units
Relative humidity and temperature					-0.003 pH units	<0.1 pH units
Response time (lab)					6.2 s	To be reported

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Description:

The Model 5081 family is a two wire loop powered 4-20mA transmitters which may be used to measure pH, in a variety of process liquids. The transmitter has a weatherproof, corrosion-resistant enclosure (IP65) of epoxy-painted aluminium. The transmitter has a large two-line digital display with 20mm high numerals for the primary pH variable and 7mm high digits for the secondary variables. The Model 5081 offers automatic two-point buffer calibration, solution temperature compensation and continuous sensor diagnostics to monitor performance and warn the user of failure (fault) or approaching failure (warning). A handheld infrared remote control unit or the HART and Foundation Fieldbus Model 375 communicator may be used to configure and calibrating the transmitter.

The manufacturer states that the remote controller works from as far away as six feet. In addition to 4-20mA the 5081 offers two digital communication protocol options, HART and Foundation Fieldbus. Digital communications allows access to AMS (Asset Management Solutions) to set up and configure the transmitter, read process variables, and troubleshoot problems from a personal computer or host anywhere in the plant.

The Model 399 is a combination pH sensor (pH measurement, reference, and temperature elements within the sensor body) designed to measure pH of aqueous solutions in pipelines, open tanks, or ponds. The Model 399 is housed in a moulded Tefzel body with Viton o-rings and is fully encapsulated. The manufacturer states that the sensor is designed so that it does not require electrolyte (KCl) replenishment. An optional preamplifier converts the high impedance pH signal into a signal where greater separation is required between the sensor and analyser. The 399 has 1 inch (MNPT) front and rear facing connections for insertion, submersion, or flow-through applications.

The manufacturer states that the Rosemount Analytical Model 381+ Sensor measures the pH of aqueous solutions in pipelines, open tanks, or ponds and the sensor is suitable for use in most industrial applications, including water and waste treatment plants. The sensor is housed in a moulded PES body and has two O-ring seals with breach lock threads to secure the PES cover and provide a waterproof union.

General Notes

1. This certificate is based upon the equipment 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 MC 070112/00.

2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.

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.