

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

Q45P/R pH Measuring System

manufactured by:

ATI, Analytical Technology Inc

*6 Iron Bridge Drive
Collegeville, PA 19426
USA*

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

Performance Standards and Test Procedures for Continuous Water Monitoring Equipment, Part 2: On-line analysers, Version 3 dated June 2009

Certification Ranges :

pH units 2 - 12

Project No: 674/0322A
Certificate No: Sira MC090149/03
Initial Certification: 11 August 2009
This Certificate Issued 24 December 2013
Renewal Date: 10 August 2014

Technical Director

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

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Registered Office: Rake Lane, Eccleston, Chester, UK CH4 9JN*

Approved Site Application

Any potential user should ensure, in consultation with the manufacturer, 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 treated wastewater, untreated wastewater and receiving water 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:

Environment Agency Report: EA-MCERTS-09, Issue 1, dated October 2008

Field Assessment: Summary report 1.1t dated 18 May 2009

Product Certified

The measuring system consists of the following parts:

A) Q45P-B-C-D pH monitor where the suffix denotes:

Suffix B – Power; **6** - Auto-Clean (115 VAC); **7** - Auto-Clean (230 VAC)

Suffix C – Heater; **1** - None N/C; **2** - Heater/thermostat

Suffix D – Cleaner Fail Alarm; **1** – None N/C; **2** – With Cleaner Fail Alarm System

B) Q25P1-5-C pH sensor where the suffix denotes:

Suffix C – Cable length; **1** – 5m; **2** – 10m; **9** Special

This certificate applies to all instruments fitted with software version 3.02 (serial numbers 1076 – monitor, and 0503 – sensor, onwards).

Certified Performance – Lab Test Results

The instrument was evaluated for use under the following conditions:
Ambient Temperature Range: -20°C to +60 °C

Unless otherwise stated the evaluation was carried out on the certification range 2-12 pH units

Test	Results expressed as pH units				Other results	MCERTS specification
	<0.05	<0.1	<0.2	<0.5		
Combined performance characteristic				0.225		0.3
Mean error, x			-0.140			<0.2 pH units
Linearity, X _L		0.080				<0.1 pH units
Repeatability, U _R	0.030					<0.1 pH units
Drift, X _D		0.060				<0.1 pH units
Output impedance, X _O	0.030					<0.05 pH units
Supply voltage, X _V	0.000					<0.05 pH units
Ambient temperature, X _T	0.005					<0.1 pH units
Relative humidity and temperature, X _{RH}	0.005					<0.1 pH units
Incident Light, X _{LX}						<0.05 pH units
Sample temperature, X _{ST}		0.073				<0.1 pH units
Sample flow rate					See Note 1	<0.05 pH units
Sample pressure					See Note 2	<0.05 pH units
Response time (lab)					10s	Value reported
Initial warm up time					44s	Value reported
Loss of power					Pass	Value reported

Note 1. Test not applicable

Note 2. Test not conducted. The Sensor should not be subjected to elevated pressure.

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Certified Performance – Field Trial Results

The field trial was conducted over a period of 9 months on an effluent discharge at The Royal Mint. The data for error under field conditions was collated over a 3 month period.

Test	Results expressed in pH units				Other results	MCERTS specification
	<0.05	<0.1	<0.2	<0.5		
Error under field conditions					91.7%	<Uc in at least 90% of reference measurements
Response time – beginning of trial					10s Note 3	Value reported
Response time – and of trial					<20s	Value reported
Up-time					100%	>95%
Maintenance	Routine maintenance only					<0.2 pH units

Note 3. The response time stated is from the lab test. A response time could not be determined at the beginning of the field trial as the pH monitors had already been installed for a significant period of time.

Description:

The Q45P AutoClean pH monitoring system consists of a Q45P transmitter/display unit, a Q25P1 pH sensor with integrated AutoClean nozzle and an integrated cleaning system consisting of a compressor, accumulator and solenoid valve.

The pH sensor is a differential pH sensor. This type of sensor is more appropriate to monitoring pH in waste water than combination type sensors as it is resistant to poisoning by chemicals. Combination type electrodes have an open Ag Ag/Cl electrode. Chemicals that diffuse through the junction/salt bridge will affect the reference electrode. A differential pH sensor has a sealed reference electrode that is impervious to chemical attack.

The cleaning system has a programmable cycle which allows the cleaning frequency and number of cycles to be adapted to site conditions. A powerful air blast removes biological growth from the glass and the salt bridge to maximise run time between maintenance.

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 MC090149/03.
2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.
2. 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'.
3. This document remains the property of Sira and shall be returned when requested by the company.

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