



PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

***SC100 controller unit
SC1000 controller unit
Probes: SOLITAX sc, pHD sc, LDO***

manufactured by:

Hach Lange GmbH
*Königsweg 10
D14163
Berlin
Germany*

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, Part 2:
online analysers, Version 3.1, dated August 2010**

Certification Ranges :

pH units	1 to 13
DO	0 to 200% sat / 0 to 20 mg/L
Turbidity	0 to 1000 NTU

Project No: 16W22392
Certificate No: Sira MC120214/01
Initial Certification: 01 November 2012
This Certificate Issued: 15 November 2017
Renewal Date: 31 October 2022

Joe Prince MSc MInst MC
Certification Manager

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

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Approved Site Application

Any potential user should ensure, in consultation with the manufacturer, that the monitoring system is suitable for the intended application. For general guidance on monitoring techniques refer to the Environment Agency Monitoring Technical Guidance Notes available at www.mcerts.net

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:

Sira Evaluation Report 16W22392 dated 16/10/2012

Product Certified

The measuring system consists of the following parts:

Controller Units:

- SC100 combined probe/display module serial number 10120C0367, software version V4.0 for internal and external current output

OR

- SC1000 probe and display module serial number 1316666, software version V2.18 for internal current output and 2.17 for external current output

Probes:

- SOLITAX sc serial number 1356000 software version 2.19
- pHD sc serial number 1101XXXXXX software version 1.06
- LDO serial number 0901XXXXXX software version 1.5
- Mounting kit
- Airblast cleaning assembly

This certificate applies to all instruments fitted with the above software versions and serial numbers serial numbers onwards

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Certified Performance

The instrument was evaluated for use under the following conditions:

Ambient Temperature Range: -20°C to +55°C

Sample Temperature Range: 0°C to +40°C

Unless otherwise stated the evaluation was carried out on the certification ranges:
pH 1 to 13, DO 0-200%sat, turbidity 0-1000NTU

Test	Results				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Combined performance characteristic						
pH					0.18	0.3 pH units
DO					4.7	6% reading
Turbidity					2.3	2.5% span
Warm up time						
pH, DO & Turbidity					<2 mins	Value to be reported
Response time						
pH					10s	Value to be reported
DO					39s	
Turbidity						
	Response time adjustable by user: 1s selected = <5s response time 60s selected = <100s response time					
Mean error						
pH	0.13					0.2 pH units
DO					2.7	5% reading
Turbidity	0.37					2% span
Linearity						
pH	0.06					0.1 pH units
DO		0.84				2.5% reading
Turbidity	0.29					1% span

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Test	Results				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Repeatability						
pH	0.08				<0.1mg/L	0.1 pH units
DO		0.65				2.5% reading
Turbidity	0.16					1% span
Sample matrix effects					n/a	
pH						-
DO (salinity compensation)	0.4%					2.5% reading
Turbidity (colour effects)			1.6%			-
Drift						
pH	0.02					0.1 pH units
DO		0.63				2.5% reading
Turbidity		0.56				1% span
Output impedance (50 to 500Ω)						
pH	0.09					0.05 pH units
DO	0.07					1% reading
Turbidity	0.05					0.5% span
Supply voltage (90V to 250V)						
pH	0.00					0.05 pH units
DO	0.00					1% reading
Turbidity	0.00					0.5% span
Ambient temperature (-20°C to +55°C)						
pH	0.01					0.1 pH units
DO	0.05					2.5% reading
Turbidity	0.04					1% span

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Test	Results				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Relative humidity (95% RH)						
pH	0.04					0.1 pH units
DO	0.03					2.5% reading
Turbidity	0.03					1% span
Incident light					n/a	
pH						-
DO		0.55				1% reading
Turbidity						
Simulator (with flicker)	0.3					1% span
Real sunlight	0.1					
Sample temperature (0°C to +40°C)						
pH	0.1					0.1 pH units
DO	2.4					2.5% reading
Turbidity		0.9				1% span
Sample flow rate						
pH	0.01					0.05 pH units
DO	0.06					1% reading
Turbidity	0.05					0.5% span
Sample pressure						
pH (up to 690kPa)	0.02					0.05 pH units
DO (up to 40kPa)		0.87				1% reading
Turbidity (600kPa)					Note 1	0.5% span

Note 1: No water ingress at 600kPa.

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Field test results

The field trial was conducted > 3 months on a Water Treatment Works and for 2 weeks on a river.

Test	Results				Other results	MCERTS specification
	<0.5	<1	<2	<5		
Error under field conditions						
pH					92%	>90% of errors ≤ Uc value
DO					100%	
Turbidity					100%	
Response time (start)						To be reported
pH					10s	
DO					39s	
Turbidity					Response time adjustable by user: 1s selected = <5s response time 60s selected = <100s response time	
Response time (end)						To be reported
pH					10s	
DO					<30s	
Turbidity					15s	
Up time						>95%
pH					99.9%	
DO					99.9%	
Turbidity					100%	>95%
Maintenance	Routine maintenance only					To be reported

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Description:

SC1000

The SC1000 is a digital controller system comprising a single display module and at least one probe module. The modular design enables the instrument to be extended with measuring points or sensors, input and output modules, BUS interfaces and relays. An SC1000 network can be generated by networking several probe modules. The data transferred by probes and sensors can be displayed numerically or graphically on the display module and also processed or forwarded. By integrating with a GSM module, the system can be remotely interrogated and send text messages to a dedicated mobile phone to warn of process alarm status for immediate intervention.

SC100

The SC100 is a digital controller system comprising a single combined display and probe module with 2 independent sensor connection ports. The data transferred by probes and sensors is displayed numerically on the screen but can be downloaded direct to PC/laptop for further processing. The controller has in-built: 2 configurable 0/4-20mA outputs, 3 relays user configurable for alarm, status or timer and optional BUS communications. The controller is network compatible using the optional Fieldbus communication.

Solitax sc

The Solitax SC is a process probe for continuous monitoring and control of turbidity (0.001-4000NTU) or Total Suspended Solids (0.001-150g/L) in water (e.g. in the sewage plant outfall, surface water or drinking water) or in a pipeline. The measuring principle is based on a combined infra red absorption scattered light technique that measures the lowest turbidity values in accordance with DIN EN 27027 as precisely and continuously as high sludge content. Using this system, the light scattered sideways at an angle of 90° is measured.

The probe is available in stainless steel or rugged plastic options (the latter typically for saltwater applications) and with or without an automatic self cleaning wiper mechanism.

PHD

The PHD Differential Electrode Measurement Technique is a wide range pH electrode (range 0-14pH) for measurement in a tank, flow stream or pipe, which uses 3 electrodes instead of the 2 normally used in conventional pH sensors. Process and reference electrodes measure the pH differentially with respect to a third group electrode. The end result is unsurpassed measurement accuracy, reduced reference junction potential and elimination of sensor ground loops. Due to its special design, the reference system of the PHD sc is protected by a salt bridge and does not come into contact with the media. As a result, poisoning of the reference electrode cannot attack the electrode and reduces necessary cleaning and maintenance intervals, while dilution of the electrolyte is prevented.

An optional cleaning unit is designed for automatically cleaning the sensor head membranes at user defined intervals. A High Output Airblast system in weather proof housing is recommended for the compressed air supply. This is operated through the relay units of the controller system.

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LDO

The Luminescent Dissolved Oxygen probe is an optical process sensor for measuring dissolved oxygen 0-20mg/L in a tank or flow stream. The measurement technique measures the interval between the excitation of luminescent material by a pulse of light and the resultant emission of luminescence. The interval depends on the oxygen present (having a lower amplitude and shorter delay time in proportion to the load of oxygen). The method is independent of all types of interference and thus has none of the disadvantages of conventional electrochemical methods. Furthermore measurements are flow independent. The optical measurement principle guarantees extremely precise and reliable measured values over a long period of time. The LDO probe does not need to be calibrated, nor are there any membranes or electrolyte to replenish. Maintenance is limited to the biennial replacement of the sensor cap.

An optional cleaning unit is designed for automatically cleaning the sensor head membranes at user defined intervals. A High Output Airblast system in weather proof housing is recommended for the compressed air supply. This is operated through the relay units of the controller system

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 MC120214/00
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.

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