

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the
HACH LANGE BÜHLER Automatic Wastewater Sampler Models
4010 to 4012,
4210 to 4212,
4410 to 4412

HACH LANGE BÜHLER Automatic Wastewater Samplers
installed in
Model 6010 Large Measuring Station

Manufactured by:

HACH LANGE GmbH
Königsweg 10
D-14163
Berlin, Germany

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 1 – Performance standards and test procedures for Automatic
Water Sampling Equipment, version 4, April 2017**

Certification Ranges :

Lift height 0 to 7 metre

Project No.: 80036361
Certificate No: Sira MC 120203/01
Initial Certification: 25 September 2012
This Certificate issued: 12 June 2020
Renewal Date: 24 September 2022

Emily Alexander
Environmental Project Engineer

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

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:

WRc Report	Ref: UC4092 dated December 2002
WRc Report	Ref: UC4092A dated June 2005
WRc Report	Ref: UC 13641 dated February 2020
Sira Report	Ref: 70057180 dated March 2016

Product Certified

The principal purpose for each model is as follows:

4010 standard pressure/vacuum automatic water sampler; 4410 self-emptying version; 4210 for high suspended solids content sampling; 6010 measuring station comprising stationary sampler and with separate flow cell and analysers.

This certificate applies to all instruments fitted with software version 2.56 (with various suffixes) onwards. From serial number 1070010.

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Certified Performance

The instrument was evaluated for use under the following conditions:
Ambient Temperature Range: -10°C to +40°C

The following data was performed on BÜHLER 4010 Automatic Wastewater Sampler.

Test	Results	MCERTS specification										
Sample Collection	Flow proportional and timed sampling available Certified for use with 25 litre composite or multiple bottle sample	Clause 3.1.3										
Sample Volume <ul style="list-style-type: none"> Max discrete sample Storage capacity 	Sample volume adjustable 350 ml stated Composite 1 x 25L, 1 x 50L or discrete: 2 x 10L, 4 x 6.3L, 4 x 10L, 4 x 14L, 12 x 2.0L, 12 x 2.9L, 24x 1L available Sample bottle material: PE Plastic or Glass	Clause 3.2.1										
Sampling head <ul style="list-style-type: none"> Max sampling head 	8 metres *Certified for maximum of 7 metres	Clause 3.2.2										
Sample interval <ul style="list-style-type: none"> Time proportional sampling Flow proportional sampling 	1 min intervals is selectable 4-20mA and digital outputs are available Facility for flowmeter pulse input. Number of pulses per sample adjustable	Clause 3.1.4 & 3.1.5										
Sample failure	Sample failures are recorded. Fault indicated on display	Clause 3.1.6 & 3.1.7										
Sample line diameter	12 mm	Clause 3.1.8 >9 mm										
Sample volume error	<table border="0"> <tr> <td>Expanded Uncertainty (U):</td> <td>Mean Error (X):</td> </tr> <tr> <td>-0.8% at 1m</td> <td>2.6% at 1m</td> </tr> <tr> <td>-0.8% at 3.5m</td> <td>3.1% at 3.5m</td> </tr> <tr> <td>-0.8% at 7m</td> <td>2.6% at 7m</td> </tr> <tr> <td>Overall: -0.8%</td> <td>Overall: 2.8%</td> </tr> </table>	Expanded Uncertainty (U):	Mean Error (X):	-0.8% at 1m	2.6% at 1m	-0.8% at 3.5m	3.1% at 3.5m	-0.8% at 7m	2.6% at 7m	Overall: -0.8%	Overall: 2.8%	NOTE 1 Clause 6.2.1a <5% <5% <5% <5%
Expanded Uncertainty (U):	Mean Error (X):											
-0.8% at 1m	2.6% at 1m											
-0.8% at 3.5m	3.1% at 3.5m											
-0.8% at 7m	2.6% at 7m											
Overall: -0.8%	Overall: 2.8%											

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Test	Results	MCERTS specification								
Sample line velocity	1.11m/s at 1m sampling head 0.75m/s at 2m sampling head 1.02m/s at 3m sampling head 0.90m/s at 4m sampling head 1.01m/s at 5m sampling head 0.91m/s at 6m sampling head 0.78m/s at 7m sampling head	Clause 4.1.2 >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s >0.5 m/s								
Sample integrity	No statistically significant difference was found in analysis for BOD, COD, suspended solids, total N and total P	Clause 6.2.3								
Sample timing	5 sec	Clause 6.2.4 < ±10 sec/24h								
Ambient temperature • Sampler with sample temperature control (maintain sample between 0°C to 5°C)	<table border="0"> <tr> <td>During sample period:</td> <td>24hrs after sample period:</td> </tr> <tr> <td>4.40°C at -10°C</td> <td>3.90°C at -10°C</td> </tr> <tr> <td>4.90°C at 15°C</td> <td>4.05°C at 15°C</td> </tr> <tr> <td>4.60°C at 40°C</td> <td>3.85°C at 40°C</td> </tr> </table>	During sample period:	24hrs after sample period:	4.40°C at -10°C	3.90°C at -10°C	4.90°C at 15°C	4.05°C at 15°C	4.60°C at 40°C	3.85°C at 40°C	Clause 6.2.5b
During sample period:	24hrs after sample period:									
4.40°C at -10°C	3.90°C at -10°C									
4.90°C at 15°C	4.05°C at 15°C									
4.60°C at 40°C	3.85°C at 40°C									
Sampling Principles a) CVVT impulse	10 pulses	Clause 10 pulses								
Power Supply	0.78m/s at 7m - the maximum rated lift height	Clause 4.1.3 >0.5 m/s								

Note 1: The sampler was only tested operating on the time proportional sampling principle (clause 6.2.1a), not on flow proportional sampling – CVVT and CTVV (clauses 6.2.1b and 6.2.1c)

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Description

The 4010 is a fixed site water sampler in stainless steel double-walled housing (SS304 is standard, SS316 or EPOXY coated SS optional) with thermostatic control for sample extraction according to the vacuum principle. The sample has consistent separation between control unit and sample unit of the sample into two compartments with 2 lockable doors. The thermostatic control is self-contained and provides automatic cooling and heating of the sample compartment to +4°C, and is independent of the programmable controller, with protection against overheating. The refrigeration is provided by a cooling compressor mounted above the sample compartment to avoid corrosion.

The microprocessor control is a battery-backed real time clock and is operated by a numeric keyboard. Programming for time display options are sampling with time-related, volume-related, flow-related with a digital or analogue input or event-related. The sampler uses a motor driven valve system instead of magnetic valve for pressure/vacuum control. The pinch valve is motor driven instead of pneumatic. The sampler has various sampling bottle options (1 x 25L PE, 1 x 50L PE, 2 x 10L PE, 4 x 6,3L PE, 4 x 10L PE, 4 x 14L PE, 12 x 2,9L PE, 12 x 2,0L Glass, 24 x 1,0L PE, 24 x 0,9L Glass).

The choice of sampling vessel is dependent upon application time, volume proportional and event based sampling is standard, flow proportional (variable volume/constant time) or flow through vessel is optional. Connectivity: data exchange (e.g. sample temperature history download) is available via a cable, and has an optional modem for wireless communications (for data up and download, online programming, alarms via SMS or fax).

Differences of Models 4011 to 4012 compared to BUHLER 4010

- | | |
|--------------------|--|
| BUHLER 4011 | Identical to 4010 plus a large window in the upper door, counterweight, 1 relay. |
| BUHLER 4012 | Identical to 4011 plus 4 relays in total, internal light which comes on when the door is opened, RS232 optional remote transmission. |

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Differences of Series compared to BUHLER 4010

- BUHLER 4210** As 4010 requires water supply for rinsing, for use with samples with higher suspended solids concentration, direct distribution of samples without distribution plate, bottle options vary to BUHLER 4010. See contact the manufacturer for details.
- BUHLER 4410** As 4010 permanent installed self-emptying bottle with additional water rinsing for monitoring application instead of exchangeable bottle try, direct distribution of samples without distribution plate, bottle options vary to BUHLER 4010. See contact the manufacturer for details.
- BUHLER 6010** Combination of BUHLER 4010 with optional sc1000 Controller for additional connection of HACH LANGE online probes, analyzer and Network connectivity. Probes are integrated into sampler.

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'.
2. The design of the product certified is defined in the Sira Design Schedule version 1 for certificate No. Sira MC120203/01.
3. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.
4. 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'.
5. This document remains the property of Sira and shall be returned when requested by the company.

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