

Instrument Quality Certificate

Instrument:

SN:

Software version:

HI98194

02210036991

1.06

Description: Multiparameter Waterproof Meter

Hanna Instruments certifies that this instrument has been produced, calibrated and tested to meet all applicable Hanna procedures, using standards and reference instruments, the accuracy of which is traceable to the National Institute of Standards (NIST) in the USA or to internationally acceptable national physical standards. The standards and reference instruments used in calibration and testing are supported by a calibration system which meets requirements of ISO 9001. The following tests have been performed according with the reference from the QC Procedure (QCP) and Work Procedure (WP) of the meter.

The results are listed below:

A. Functionality tests	Reference	Result	B. Aesthetic Control	Reference	Result
A.1. Switch ON/OFF tests	QCP_5.	PASSED	B.1. Instrument aesthetic check	QCP_4.	DONE
A.2. LCD test	QCP_5.1.	PASSED			
A.3. Sound test	QCP_5.2.	PASSED	C. Packing	Reference	Result
A.4. Keyboard test	QCP_5.3.	PASSED	C.1. Instrument	WP_11.	CHECKED
A.5. Real Time Clock test	QCP_5.4.	PASSED	C.2. Probe	WP_11.	CHECKED
A.6. Eeprom test	QCP_5.5.	PASSED	C.3. Chemical pack	WP_11.	CHECKED
A.7. Measurement test (pH, ORP, EC, DO, T)	QCP_5.6.	PASSED	C.4. Accessories	WP_11.	CHECKED
A.8. USB Port test	QCP_5.7.	PASSED	C.5. USB cable	WP_11.	CHECKED
A.9. Power consumption test	QCP_5.8.	PASSED	C.6. Instruction Manual	WP_11.	CHECKED
A.10. Factory Calibration test	QCP_6.	PASSED	C.7. Meter and probe quality certificate	WP_11.	CHECKED

Calibration, functionality test, aesthetic control and packing have been met.

Date: 2017-05-24

Inspector: HERLE BENIAMIN / Engineer
(Name / Title of Signatory)

Signature: 

Probe Quality Certificate

Probe:
HI 7698194

SN:
K3401332

Software version:
1.01

Description: Digital probe with three connections for pH (ORP), EC and DO sensors and integral temperature sensor

Hanna Instruments certifies that this instrument has been produced, calibrated and tested to meet all applicable Hanna procedures, using standards and reference instruments, the accuracy of which is traceable to the National Institute of Standards (NIST) in the USA or to internationally acceptable national physical standards. The standards and reference instruments used in calibration and testing are supported by a calibration system which meets requirements of ISO 9001. The following tests have been performed according to the test instruction WP7698194, Rev.0.6.

The results are listed below:

External references devices*: mV: SN US36095802 [HP, 34401A]
Ω: SN 06111204 [resistors box, IET]

Factory calibration: mV (pH):2017.05.17 mV (ORP):2017.05.17 EC:2017.05.17 DO:2017.05.17 °C:2017.02.01

Tests performed using reference devices:

Temperature:	RES [Ω], 0.1%:	32650	10000	3603		
	Tolerance [°C]:	0.00 ± 0.10	25.00 ± 0.10	50.00 ± 0.10		
	Reading [°C]:	0.00	25.00	50.00		
mV [pH input]:	Ref. mV*:	-500.0	-177.5	0.0	177.5	500.0
	Tolerance [mV]:	± 0.2	± 0.1	± 0.1	± 0.1	± 0.2
	Reading [mV]:	-500.1	-177.6	0.0	177.5	500.0
mV [ORP input]:	Ref. mV*:	-1900.0	1900.0			
	Tolerance [mV]:	± 1.0	± 1.0			
	Reading [mV]:	-1900.3	1900.0			
EC [with simulator]:	EC [μS/cm]:	1403	2000	x		
	EC [mS/cm]:	x	x	12.80		
	Tolerance [μS/cm]:	± 4	± 4	x		
	Tolerance [mS/cm]:	x	x	± 0.04		
	Reading [μS/cm]:	1406	2000	x		
	Reading [mS/cm]:	x	x	12.83		
DO (@ 20 °C) [with simulator]:	DO [mV]:	0	45			
	Tolerance [%]:	0.0	100.0 ± 1.0			
	Reading [%]:	0.0	100.0			

*) All external references are periodically checked and are used only if are inside certification interval; NP = not performed; RES = Resistance value

Calibration and testing criteria have been met.

Ref. No.: 1720e17-ca-012

Inspector:

Coman Andrei / QC engineer

(Name / Title of Signatory)

Date: 2017-05-17

Signature:



QC_pH/ORP/EC/DO/T_rev.1_04/15

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Electrode Quality Certificate

Electrode:
HI7698194-2

Parameter:
DO

SN:
Q3330

Recommended for:
HI98194

Description: DO sensor with screw type connector

Hanna Instruments certifies that this electrode has been produced, calibrated and tested to meet all applicable Hanna procedures, using standards and reference instruments, the accuracy of which is traceable to the National Institute of Standards (NIST) in the USA or to internationally acceptable national physical standards. The standards and reference instruments used in calibration and testing are supported by a calibration system which meets requirements of ISO 9001.

Standard Reference Materials: DO: Certified Zero Oxygen Solution

Tests results listed below:

DO (@ 25 °C):	100% saturation (air) [%]:	100.0	
	Tolerance [%]:	90.0 - 120.0	
	Reading [%]:	115.0	PASSED
	0% saturation (zero oxygen solution) [%]:	0.0	
	Tolerance [%]:	≤ 10.0	
	Reading (after 1 minute) [%]:	10.0	PASSED
	Slope tolerance [%]:	85.0 - 120.0	
	Slope calculated [%]:	105.0	PASSED

NP = not performed.

Quality control and testing criteria have been met.

Date: 2017-05-04

Inspector: lepure Florina / Engineer
(Name / Title of Signatory)

Signature: 

Electrode Quality Certificate

Electrode:
HI7698194-3

Parameter:
EC

SN:
Q49177

Recommended for:
HI98194

Description: EC sensor with screw type connector

Hanna Instruments certifies that this electrode has been produced, calibrated and tested to meet all applicable Hanna procedures, using standards and reference instruments, the accuracy of which is traceable to the National Institute of Standards (NIST) in the USA or to internationally acceptable national physical standards. The standards and reference instruments used in calibration and testing are supported by a calibration system which meets requirements of ISO 9001.

Standard Reference Materials: EC: SRM 2201, SRM 2202 [NIST]

Tests performed using reference devices:

EC (@ 25 °C):	Offset (air) [$\mu\text{S}/\text{cm}$]:	0	
	Tolerance [$\mu\text{S}/\text{cm}$]:	+ 1	
	Reading [$\mu\text{S}/\text{cm}$]:	0	PASSED
	Slope (EC standard) [mS/cm]:	12.88	
	Tolerance [mS/cm]:	10.30 - 15.46	
EC response time (Cal.: 12.88 mS/cm ; Reading: 5.00 mS/cm)*:	Reading [mS/cm]:	1393	PASSED
	Standard time [s]:	< 5	PASSED
	Tolerance [s]:	+ 1	

*) Evaluated for 90 % of step; NP = not performed

Quality control and testing criteria have been met.

Date: 2017-01-27

Inspector: Goia Radu / Engineer
(Name / Title of Signatory)

Signature: 