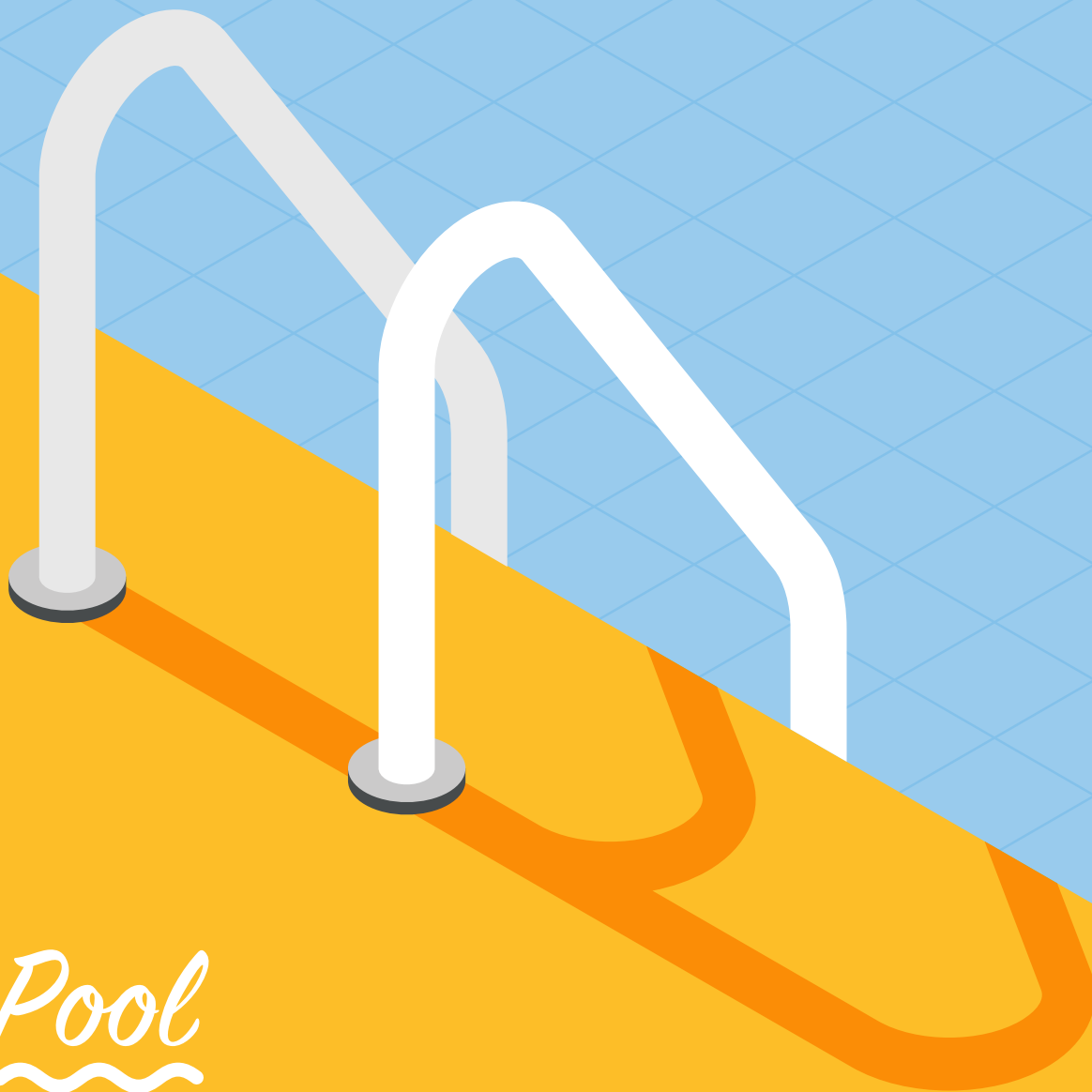




Pool Chemical Controllers



*Pool
Line*

Pool Line



The BL122 connects to the internet to allow remote monitoring of your pool or hot-tub

The all-in-one solution for automatic control of pH and chlorine content in pool and spa water

BL12series controller are compact digital monitoring and dosing systems ideal for hotel pools, private pools and spas

The Hanna pool controllers are supplied complete with dosing pumps and a digital multi-parameter smart electrode.

Unique concept

- ✓ Accurately and reliably measures pH, ORP and °C simultaneously
- ✓ Simple and faster to install
- ✓ Silent peristaltic pumps with adjustable flow (0.5 to 3.5 l/h) for spas to large swimming pools
- ✓ Proportional dosing
- ✓ Delay time adjustable at system start
- ✓ pH, ORP and temperature are simultaneously displayed on a large backlit LCD display
- ✓ Logging function and GLP values of electrodes, memory with last calibration data, password protection
- ✓ Automatic calibration (will refuse calibration if deviation from electrodes is too great)
- ✓ High and low alarm
- ✓ Analogue output for PLC control or data transfer to PC
- ✓ Multi-coloured LED for indication measure / dose / alarm condition
- ✓ BL122 version: with internet

Safe and efficient

- ✓ Digital combination pH, ORP and temperature electrode with built-in ground pin
- ✓ Mains power is supplied through the circulation pump electrical circuit
- ✓ Connection of flow switch optionally possible
- ✓ Adjustable alarm to avoid overdosing of chemicals
- ✓ "Intelligent" dosage dependent on correct pH value

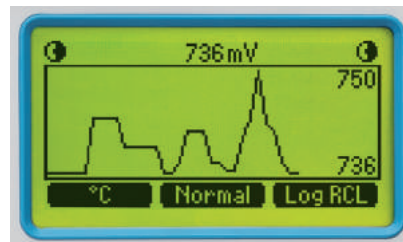
Complete Kit

Hanna BLcontrollers come complete with a full installation kit:

- Combination pH and ORP electrode with temperature sensor and earth pin
- Suction and injection lines
- Tapping saddles (diam. 50 mm)
- Coupling for injectors
- Calibration solutions pH and ORP

Log automatically

The values for each parameter are logged automatically every 10 seconds: pH, ORP and temperature values, last calibration data, configuration settings and event data, if any. For evaluation and storage, data can be easily transferred to a PC using a flash drive and the USB port.



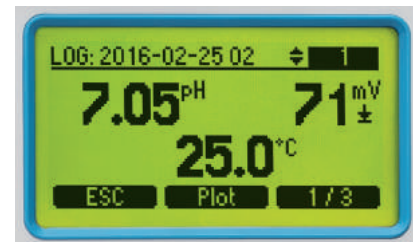
Proportional dosage

The BL121-BL122 is equipped with proportionally controlled dosing pumps. Based on the sensitivity of the process to chemical addition, the proportional band can be adjusted. This setting determines the time the pumps dose as a percentage of the deviation from the set point. For example, a large amount of water will use a small proportional band. A small band (e.g. 0.1 pH) will cause the pumps to dose more often when the value is close to the set point.

For baths or spas it is more useful to set a larger proportional band (e.g. 1.0 pH). When the value is close to the set point, the time the dosing pump is running is minimal, in order to avoid large fluctuations in pH or ORP. This valuable feature provides very fine control in maintaining the desired set point.

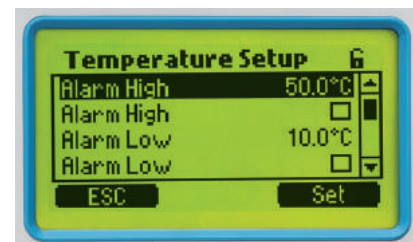
Adjustable flow rate

The flow rate of the dosing pump is adjustable from 0.5 to 3.5 l/h. Larger pools require more chemicals to be dosed than small ones because more chemicals are required to see a change in the measurement. The adjustable flow rate, such as the proportional band, provides better control in maintaining a desired set point.



Programmable alarm

Low and high alarm levels can be set for all parameters. When an alarm is triggered, all dispensing stops. The system also provides protection against overdosing if the value is not corrected within a specified time interval.



Digital inputs

Via the digital inputs you can add a number of interesting options to the system: for example a flow switch to control the circulation of the pump or a level controller to check the liquid level in the chlorine or acid tank.

Unique 3-in-1 digital sensor



The 3-in-1 sensor can be fitted directly into the circulation pipework or into the Hanna flow-cell

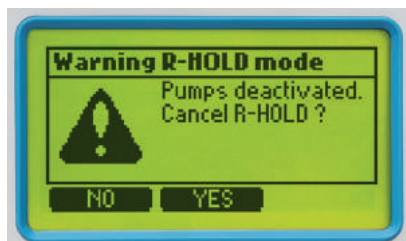
The world's first process digital pH/ORP electrode with built-in temperature sensor and earth pin

Supplied with the Hanna controller is the unique to Hanna multi-parameter digital electrode. Unlike other pool electrodes, the Hanna electrode is uniquely configured for use in Chlorinated water and the built in digital amplifier and earthing pin remove any risk of interference from other cables or stray currents from other plant equipment such as pool circulation pumps.

- ✓ Measure pH, ORP and temperature with one probe
- ✓ Easy to install, calibrate and replace
- ✓ Not subject to interference from cables or stray currents
- ✓ Accurate and stable measurement results
- ✓ Long service life
- ✓ Measurement of the water temperature
- ✓ Display of calibration history and quality of the pH electrode
- ✓ Available in various cable lengths

Remote Hold

The reagent pumps can be turned off with Hanna Cloud's Remote Hold function. They can be reactivated on the controller or via Hanna Cloud.



USB connection

For review and storage, you can easily transfer data to a PC using a USB key.



Password protected

The BL12x has a password protection that provides limited access to calibration, configuration and verification of logged data.

Multiple configurations

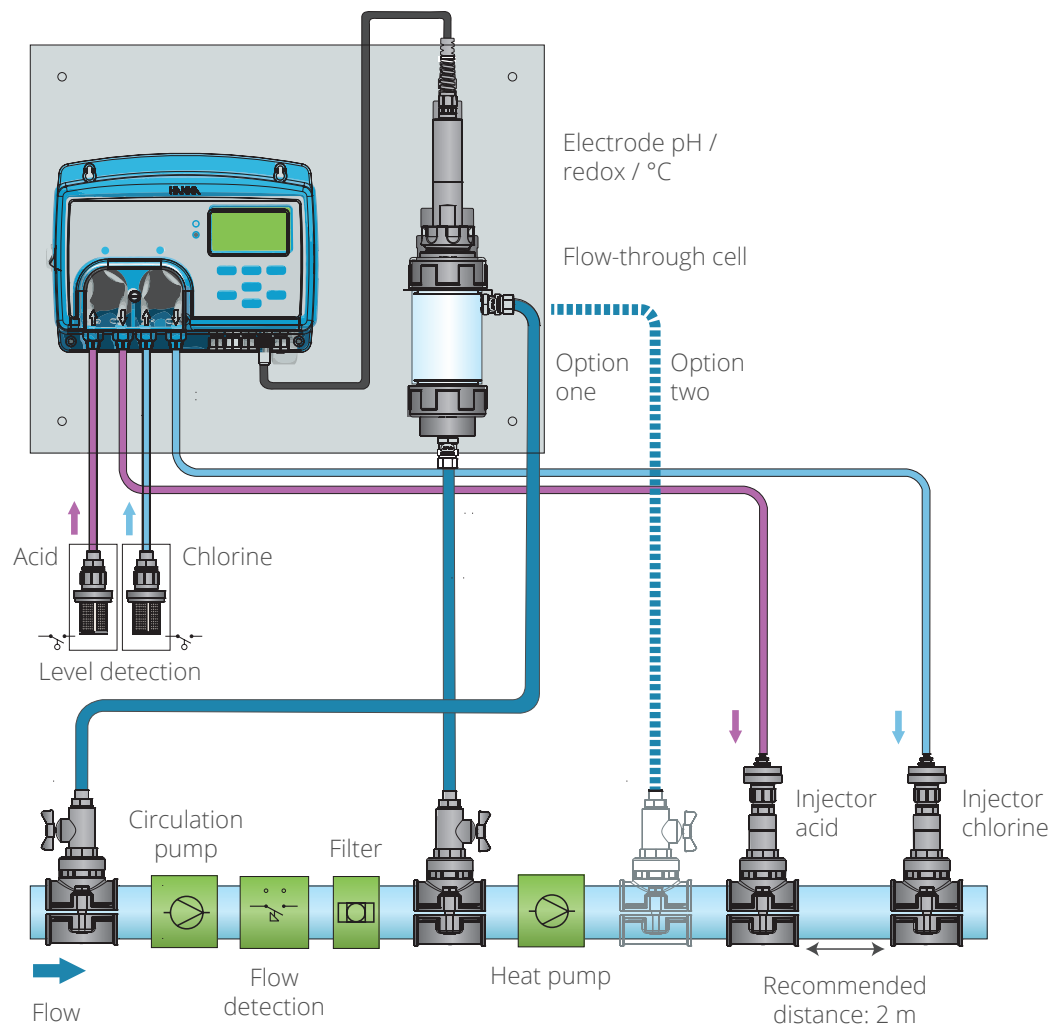
These controllers are also available panel mounted with flow cell. The cell allows calibration and maintenance of the probe without having to shut down the recirculation pump.

Specifications		BL121-10	BL121-20	BL122-10	BL122-20
Range	pH	0.00 to 14.00 pH			
	Redox	±2000 mV			
	Temperature	-5.0 to 105.0 °C			
Resolution	pH	0.01 pH			
	Redox	1.mV			
	Temperature	0.1 °C			
Accuracy	pH	±0.05 pH			
	Redox	±5 mV			
	Temperature	±1 °C			
pH calibration		Automatically at 2 points			
Temperature compensation		Automatically from -5.0 to 105.0 °C			
Alarm		High and low, separately adjustable for each parameter			
pH and ORP control		Proportional with adjustable set point and proportional band, delay time and overdosing protection			
Analogue outputs		Three		-	
Memory		Measurements pH, ORP, temp., data (error, alarm, power failure)			
Pump control		Manually, from 0.5 to 3.5 l/h for each pump			
Safety		Programming and calibration password protected			
Connection		USB		USB/ethernet	
GLP		pH/redox/°C			
Nutrition		Adapter 220 V			
Dimensions controller		245 x 188 x 55 mm			
Panel dimensions		Between 7.0 and 7.6., Between 7.2 and 7.4			
Weight		1700g	3320g	1700g	3320g

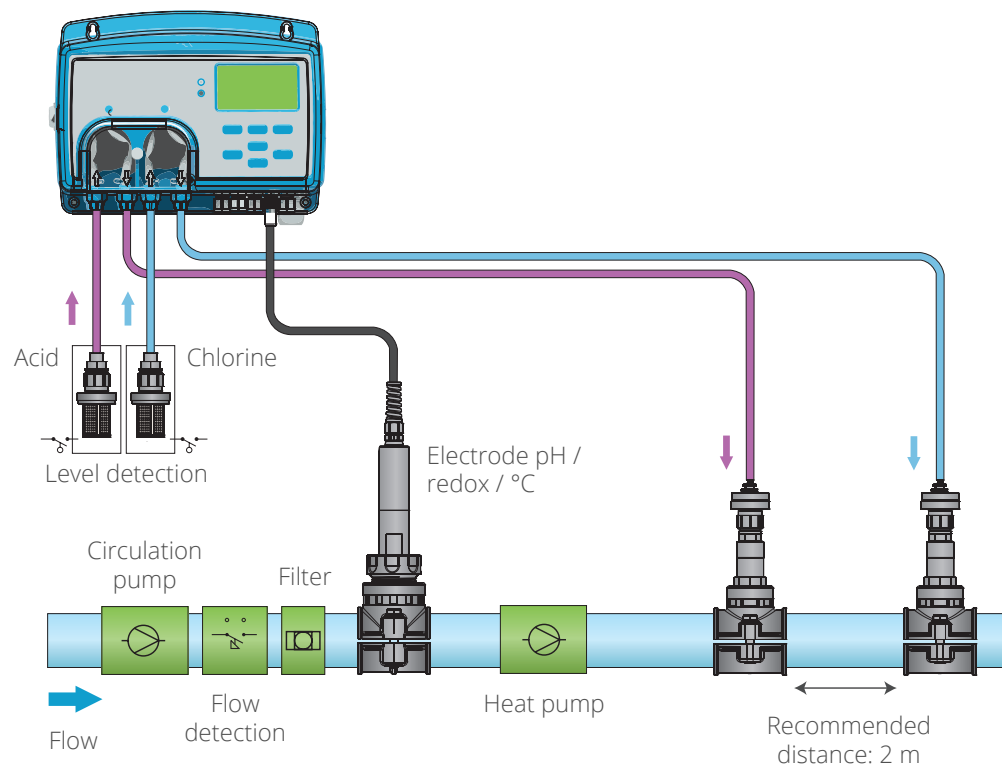
Ordering information	BL121-10	BL121-10D63	BL121-110	BL121-15	BL121-20	BL121-20D63	BL122-10	BL122-10D63	BL122-110	BL122-15	BL122-20	BL122-20D63
pH/ORP-electrode	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrode cable length	2m	2m	10m	5m	2m	2m	2m	2m	2m	5m	2m	2m
Pool installation kit	✓	✓	✗	✓	✓	✓	✓	✓	✗	✓	✓	✓
Installation Kit spa	✗	✗	✓	✗	✗	✗	✗	✗	✓	✗	✗	✗
Diam. tapping saddles	50 mm	63 mm	50 mm	50 mm	50 mm	63 mm	50 mm	50 mm	50 mm	50 mm	50 mm	63 mm
Panel / flow cell	✗	✗	✗	✗	✓	✓	✗	✗	✗	✗	✗	✗
Analogue outputs	3	3	3	3	3	3	✗	✗	✗	✗	✗	✗
Ethernet connection	✗	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓

BL121-BL122 - Installation examples

BL121-20



BL121-10



Recommended values for spa or pool water

pH	Between 7.0 and 7.6. , Between 7.2 and 7.4
Total Alkalinity (TAC)	Between 80 and 120 mg / l (Carbonate hardness or TAC)
Calcium hardness (CaCO₃) (TH)	100-200 mg / l / 10 mg / l CaCO ₃ = 1 ° fH = 0.562 dH°
Copper (Cu)	Between 0.3 and 0.8 mg / l
Iron (Fe)	< 0.2 mg/l
Cyanuric acid	<70 mg / l (or ideally 0 mg / l)
Free chlorine	Outdoor pools 0.5 - 3.0 mg / l, Indoor pools 0.5 - 1.5 mg / l, Spas 1 - 3 mg / l
Bound chlorine	<0.6 mg / l (totally free chlorine)
Phosphate	<2.5 mg/l
Conductivity (EC)	<2100 µS / cm or 2.1 mS / cm
Nitrate	<50 mg / l

Ideal for small spas and hot-tubs

Conventional automatic pool dosing controllers are not precise enough to dose a small volume of water such as in a small spa or hot-tub. When using a conventional controller wide swings in pH and Chlorine levels may be experienced as a result of the controller adding too much chemical to the water or not responding proportionally to bather load.

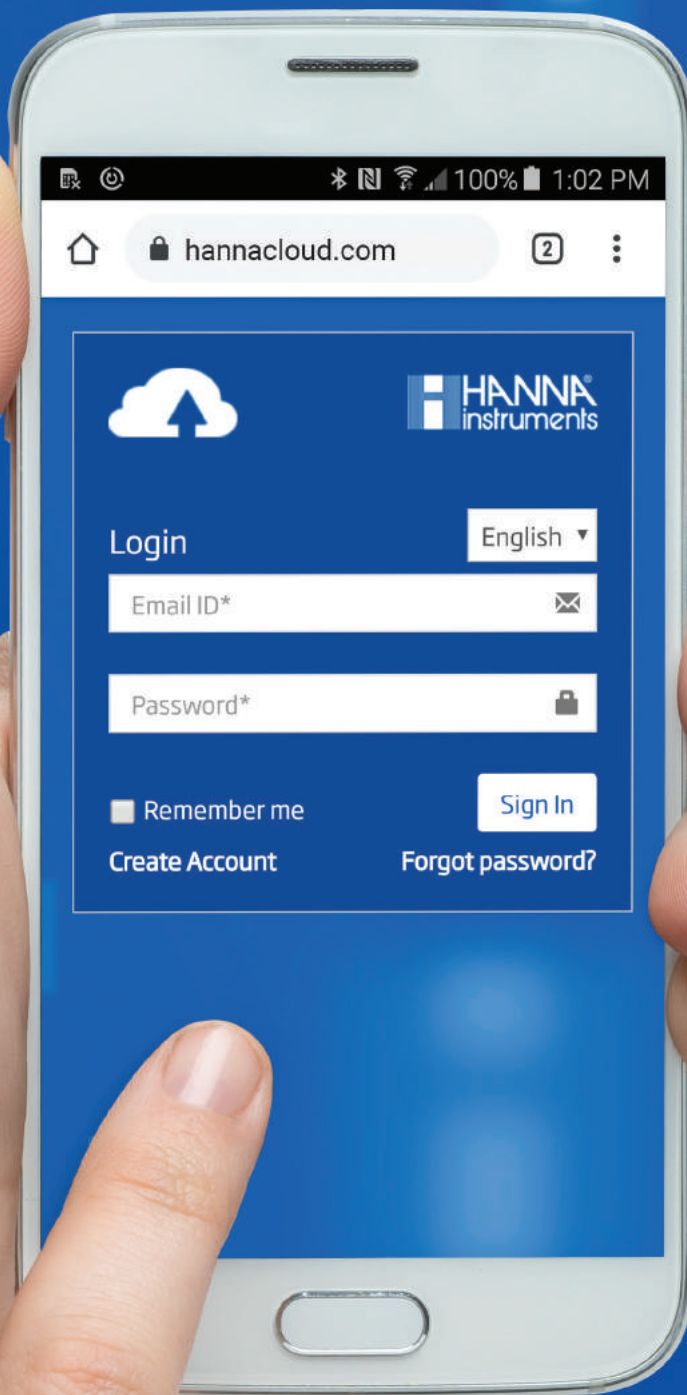
Hanna Pool Controllers utilise a unique precision 3-in-1 sensor and advanced circuitry to offer full proportional dosing control of the chemicals. This means they can be used to precisely control the pool chemicals in even the smallest hot-tub, indeed Hanna pool controllers have even be used to control pet hydrotherapy spas!

Ideal for Hotel and Gym pools/ spas and holiday park hot-tubs

If you have a pool, spa or hot-tub which you make available for the public you will know the importance of ensuring the water is safe to swim in. Not only do Hanna controllers offer precise chemical control they also automatically store a reading of your pool water chemistry every 10 minutes which can be reviewed on the system LCD display, on a personal computer via a USB stick or even on a mobile device via the Hanna cloud on internet ready model.



Hanna Cloud: online dashboard for pool controllers - for BL122



hannacloud.com

The Hanna Cloud is a web-based application that connects you to the BL122. Measurement results and stored data are accessible from your PC, tablet or smartphone. Multiple controllers can be registered!

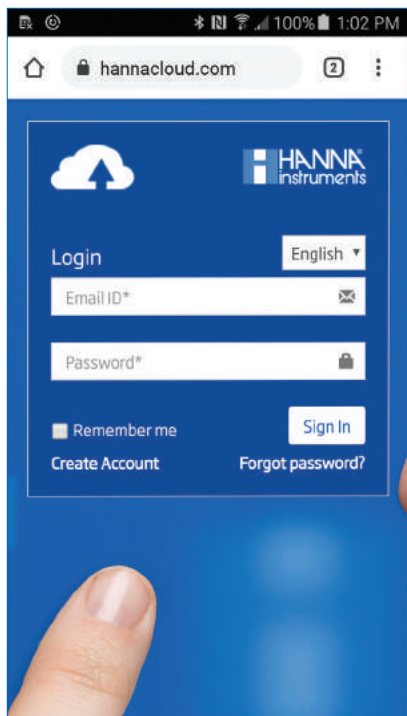
While the BL122 measures and monitors your process, measurement results, trends, history, device settings, alarms and messages are sent to your online dashboard.

A secondary user can also be added to your device account to track measurement results and receive email or pop-up messages from your process device.

Hanna Cloud provides security for your personal information. We protect your information with help of technical and administrative security measures to reduce the risk of loss or misuse. It concerns a secure connection, device identity registration and password locking.



The Hanna Cloud application is compatible with most modern web browsers.



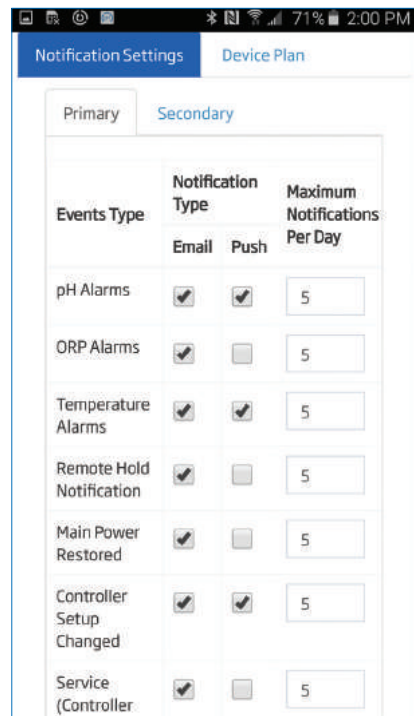
Login

Log in with your personal account at hannacloud.com.



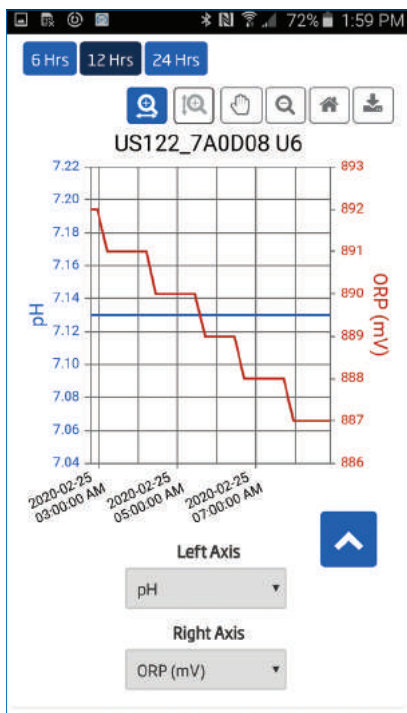
Measure

Easily view readings, alarm, hold and pump status.



Notifications

Choose whether you want to receive notifications or e-mail messages.



Graphs

View the trends of the last 6, 12 or 24 hours in a graph.

pH	ORP (mV)	Temp (°C)	Acid/Base (mL)	Cl ₂ (mL)
7.13	882	22.9	0.0	0.0
7.13	882	22.8	0.0	0.0

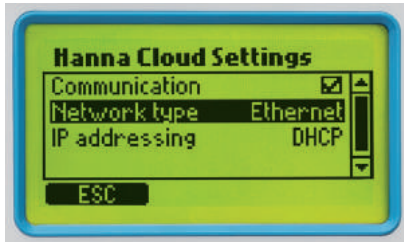
Logging

Log history can be downloaded as a PDF or CSV file.

Calibration Date	Offset (mV)	Slope (%)	Calibration Point 1	Calibration Point 2
2019-11-18 04:21:14 PM	35.3	100.2	4.01 pH, 35.6 mV, 21.5 °C	7.01 pH, -141.2
2019-11-18 04:13:53 PM	43.8	99.7	4.01 pH, 44.1 mV, 21.6 °C	7.01 pH, -131.9

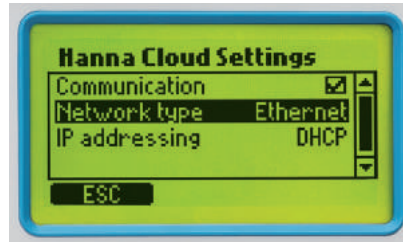
GLP

GLP data is readily available.



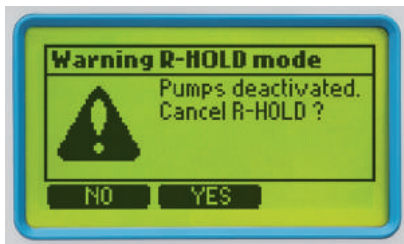
Settings

Configure your cloud connectivity settings including enable / disable.



Hanna Cloud options

Choose from static or DHCP connection. Navigate to the Status, Settings and R-HOLD (Remote Hold) menus via Hanna Cloud options in the menu.



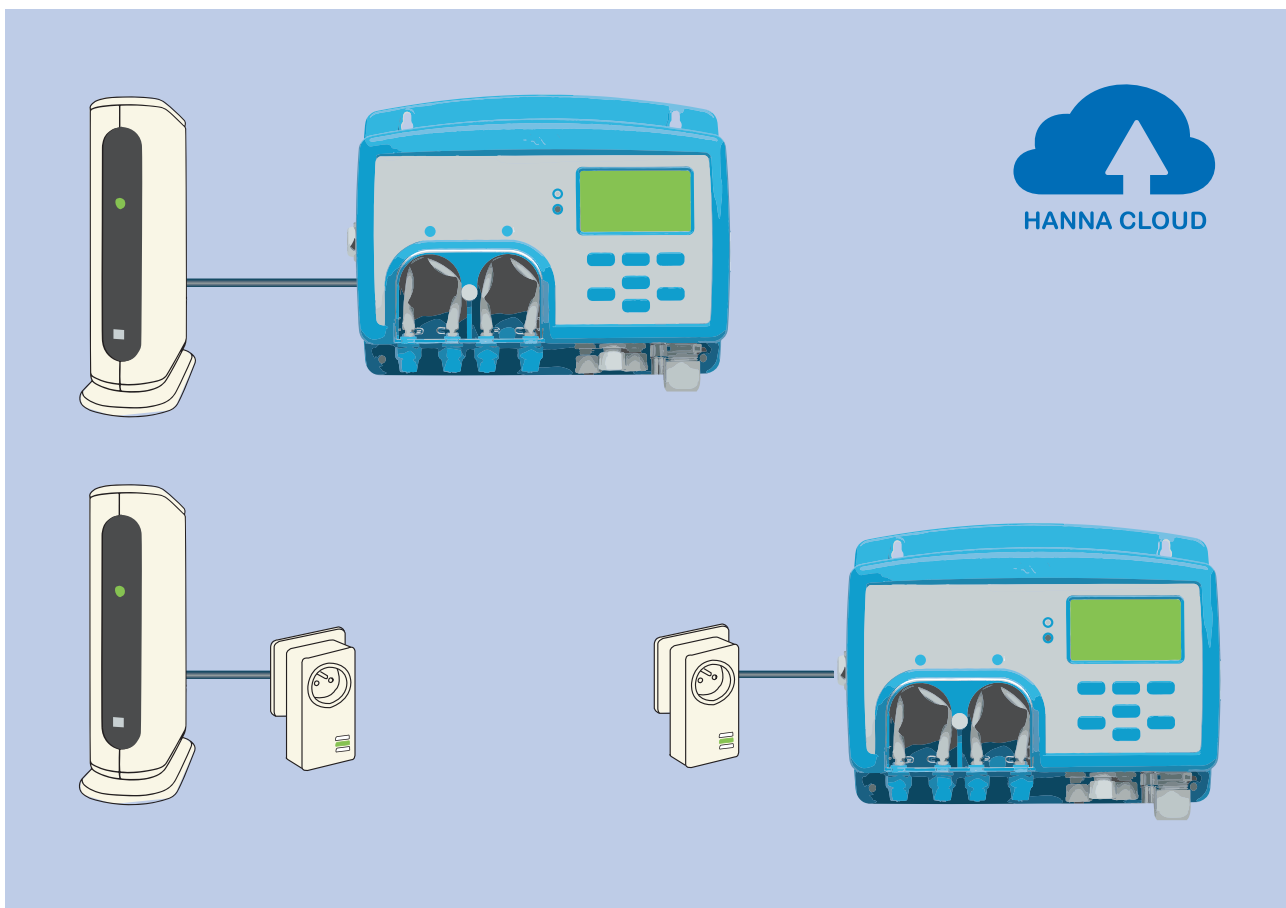
Remote hold

The regent pumps can be turned off with Hanna Cloud's Remote Hold function. They can be reactivated on the controller or via Hanna Cloud.



Ethernet

Ethernet port for Hanna Cloud connectivity. Can be connected directly to the modem or via powerline homeplugs on the electricity network. A simple solution for the internet in the garden house, for example.





Stay informed on
 your pool or hot-tub
 wherever you go
 with Hanna Cloud

BL100-BL101 Controllers for pH or ORP - for private pools and spas



Pool
Line

The BL100 pH and BL101 ORP controllers are designed for maintaining pH and chlorine in swimming pools, hot tubs and spas, respectively. Simply place the electrode and injection valve in line with the recirculation pump!

- ✓ Peristaltic dosing pump
- ✓ Electrode with quick coupling
- ✓ Adjustable flow
- ✓ Proportional dosing
- ✓ Programmable alarms and overdose protection
- ✓ Input level / flow switch
- ✓ Multi-colour display

The BL10x are available in several configurations: with in-line mounting kit, panel mounted with flow cell or single electrode. The set for in-line or panel mounting includes suction hoses with filter and dosing hoses with injection valve.

Peristaltic dosing pump

The BL10x has a durable built-in peristaltic chemical feed pump that uses a stepper motor without gears or brushes. This design ensures a long service life and low maintenance.

Quick Connect

The Quick Connect DIN connector provides a water-resistant seal, which reduces electrical noise problems.

Adjustable flow rate

The flow rate of the dosing pumps is adjustable from 0.5 to 3.5 l/h. A large swimming pool requires more chemicals to be dosed than with a jacuzzi. The adjustable flow rate, such as the proportional band provides better control in maintaining a desired set point.

Automatic proportional control

The peristaltic dosing pump can be controlled by a simple on / off or more advanced proportional control that prevents the set point from being exceeded. When using the proportional control, the flow rate that is programmed will be affected by the proportional band used. The closer the reading gets to the set point, the longer it will take before the pump has completed one revolution. If the reading is out of the proportional band, the time it takes to complete one revolution is based on the programmed flow rate.

Programmable alarm

When an alarm is triggered, all dosing stops. For added safety, the alarm system also provides overdose protection, because if the set value is not corrected within a programmed time interval, the meter will go into alarm state.

Multi-coloured LCD screen

The BL10x features a multi-colour LCD screen that takes care of a quick way to see pool controller status. In operating mode, the display is green. When the controls are not enabled, the display is light green and in an alarm mode the display flashes red.



Specifications	BL100-10	BL100-20	BL101-10	BL101-20
Range	0.00 to 14.00 pH, -5.0 to 105 °C		-2000 to 2000 mV, -5.0 to 105 °C	
Resolution	0.01 pH, 0.1 °C		0.01 pH, 0.1 °C	
Accuracy	±0.10 pH, ±0.5 °C (at 25 °C)		±5 mV, ±0.5 °C (at 25 °C)	
Calibration	User: auto, 1 or 2 points (4.01, 7.01 or 10.01 pH) process: 1 point, adjustable (± 0.50 pH around measured pH) - process: 1 point, adjustable (± 50 mV around measured ORP)			
Temperature compensation	Automatically -			
Dosing control	On / off with adjustable set point (6.00 to 8.00 pH) with adjustable hysteresis (0.10 to 1.00 pH) proportional with adjustable set point (6.00 - 8.00 pH) with adjustable band (0.10 up to 2.00 pH) - on / off with adjustable set point (200 to 900 mV) with adjustable hysteresis (10 to 100 mV)			
Dosing activation	Dosing when reading is higher or lower than high or low set point			
Dosing delay	0 to 600 s after switching on			
Max. dosing time	Overdose protection with safety timer 1 to 180 min, or off			
Flow control	Adjustable 0.5 to 3.5 l / h, 0.13 to 0.92 G / h, manual control for venting			
Alarms	High and low with on / off option / after 5 sec, if series of consecutive measurements over / below threshold level with on / off option / overdose protection (1 to 180 min, or off) / intuitive alarm system with red, light green and green backlighting			
Alarm relay output	High and low, separately adjustable for each parameter			
Inputs	Input for level controller or flow switch to switch off dosing pump in case of no chemicals, galvanically isolated			
Electrode	HI10053 reinforced digital pH / temperature electrode with DIN quick coupling, double cloth junction, earth pin, galvanically isolated - HI20083 ORP / temperature electrode with platinum tip with DIN quick coupling, double cloth junction, earth pin, galvanically isolated			
Nutrition	100—240 VAC, 50/60 Hz			
Consumption	15 VA			
Environment	0-50°C, max. 95 % RH niet-condenserend			
Panel dimensions	-	30 x 25 x 5 mm	-	30 x 25 x 5 mm
Dimensions controller	90 x 142 x 80 mm/910 g			
Controller weight	910 g			
Housing	For wall mounting, IP65 spray-proof			

Ordering information

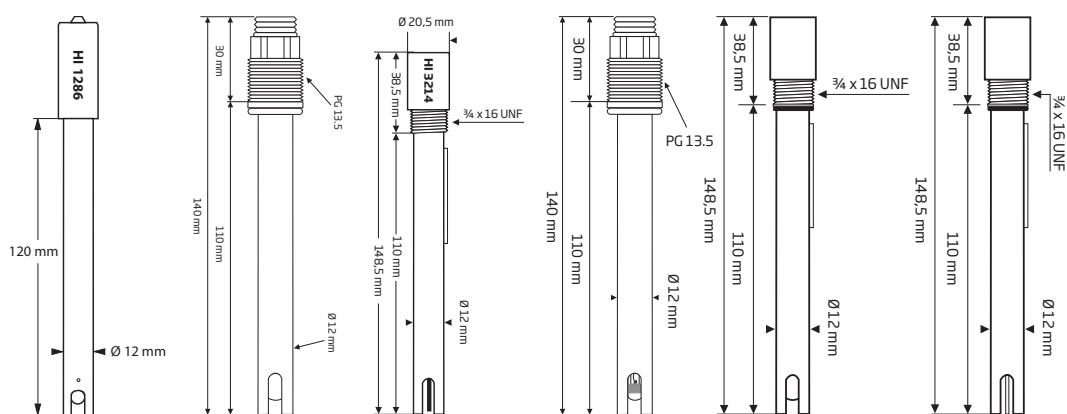
BL100-00	with HI10053 pH electrode
BL100-00	with HI10053 pH electrode
BL100-20	on panel with flow cell, HI10053 pH electrode
BL101-00	with HI20083 ORP electrode
BL101-10	with in-line mounting kit, with HI20083 ORP electrode
BL101-20	on panel with flow cell, with HI20083 ORP electrode

Pool controller electrodes for non-Hanna makes of controller

If you need a new electrode for an existing pool dosing system then Hanna electrodes are compatible and offer superior performance in terms of accuracy and long operational life.



Code	HI1286A	HI1211T	HI3214P	HI3211T	HI6291005	HI6293005
Parameter	pH	pH	redox	redox	pH	redox
Max. pressure	3 bar	3 bar	3 bar	3 bar	3 bar	3 bar
Range	0÷13 pH 0÷80 °C	0÷12 pH -5÷80 °C	±2000 mV 0÷80 °C	±2000 mV -5÷80 °C	0÷12 pH -5÷80 °C	±2000 mV -5÷80 °C
Temperature	No	No	No	No	No	No
Amplifier	No	No	No	No	Yes	Yes
Housing	PEI	PEI	PEI	PEI	PEI	PEI
Cable	2 m	No	2 m	Yes	5 m	5 m
Dimensions	120 mm, Ø 12 mm	110 mm, Ø 12 mm	110 mm, Ø 12 mm	110 mm, Ø 12 mm	110 mm, Ø 12 mm	110 mm, Ø 12 mm



Connection	BNC	Screw	BNC	Screw	BNC	BNC
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HANNA universal BNC connector electrodes, compatible with almost all brands of pool controller!

Flexible and compatible

Hanna electrodes are valued in the swimming pool sector for providing reliable pH measurements and the variety of electrodes within our pool range provide compatibility with any electrode you might want to replace.

Featuring a BNC connector they are compatible with the vast majority of pool controllers on the market.

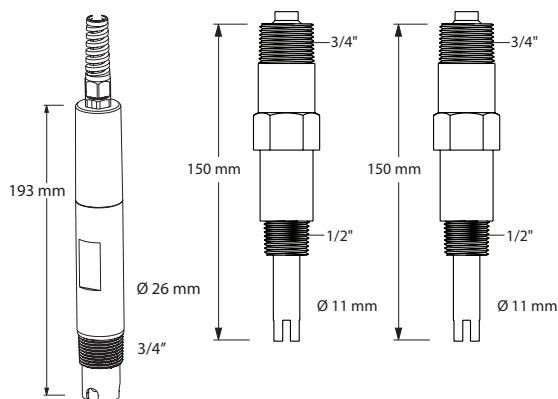
Amplified or standard?

Hanna pioneered amplified pH electrodes with their AmpHel electrode and it is an ideal solution for pool applications. By amplifying the signal at source, our AmpHel electrodes overcome signal loss and distortion as a result of damp or wet conditions that the electrode cable might be exposed to.

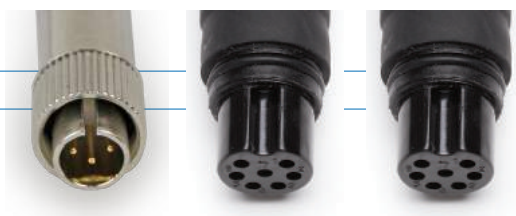
Hanna also manufacture and supply non-amplified electrodes and like all non-amplified electrodes the maximum cable length recommended is up to 20m. An amplified electrode can be used in applications where cable length exceeds that and can easily be used up to 100m away from the controller location without signal loss or distortion.



Code	HI1036-1802	HI10053	HI20083
Parameter	pH/redox BL12x	pH BL100	redox BL101
Max. pressure	3 bar	3 bar	3 bar
Range	0÷14 pH, ±2000 mV -5,0÷105,0 °C	0÷12 pH -5÷70 °C	±2000 mV -5÷70 °C
Temperature	Yes	Yes	Yes
Amplifier	Yes	Yes	Yes
Housing	Plastic	PVDF	PVDF
Cable	2 m	No	2 m
Dimensions	193 mm, Ø 26 mm	150 mm, Ø 11 mm	150 mm, Ø 11 mm



Cable





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