BLU-SENTINEL™ PRO POOL MANAGEMENT SYSTEM

SHORT OPERATING INSTRUCTIONS

NOTICE

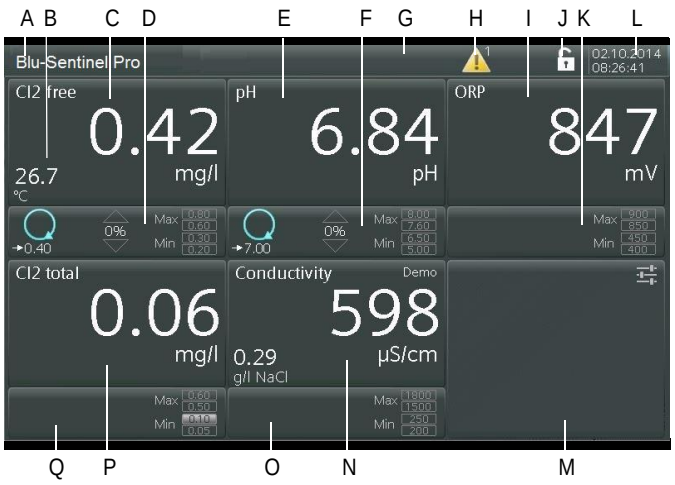
Access and work on system only by authorized and trained personnel! Please read the detailed instruction manual! This short operating instructions does not replace the full instruction manual! Damage caused by incorrect operation are not covered by the warranty!

Display and control elements

⚠ CAUTION

Damage to the touchscreen!

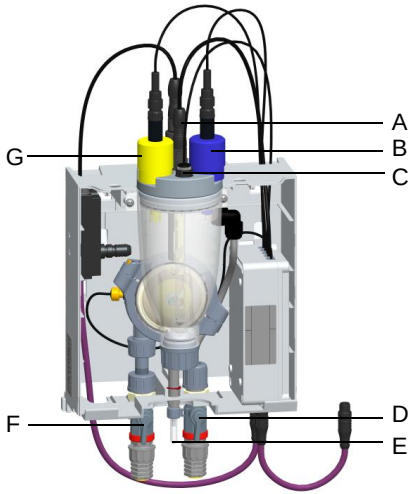
Touching the touchscreen with pointed or sharp objects or striking the touchscreen with hard objects will damage the surface. Only touch the touchscreen with your finger or a pen (PDA pen).



Picture 1 Main screen (example)

A Name of the Pool Management System
B Current pool water temperature
C Menu field Free chlorine measurement with current measuring value
D Menu field Chlorine adjustment with display of operation mode and limit values
E Menu field pH-measurement with current measuring value
F Menu field pH-control with display of operation mode and limit value
G Menu field System
H Symbol for error message with number to show the number of error messages
I Menu field ORP measurement with current measuring value
J Password symbol
K Menu field ORP control with display of limit values
L Current date and time
M Menu field Inputs and outputs
N Menu field Conductivity measurement with current measuring value (optional)
O Menu field Conductivity control with display of operation mode and limit values (optional)
P Menu field Total chlorine measurement with current measuring value (alternative combined chlorine with current calculated value)
Q Menu field Total chlorine control with display of operation mode and limit values

Blu-Sentinel™ Pro flow cell



Picture 2 Blu-Sentinel™ Pro flow cell (cover removed)

A Free chlorine sensor (free chlorine)
B ORP electrode (blue)
C LED glow stick
D Sample water outlet with shut-off ball valve
E Sample water assembly (drain)
F Sample water inlet with shut-off ball valve
G pH electrode (yellow)

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Display and symbols

Display/symbols	Explanation
	Every available main measurement is displayed in a specific display area (menu field) in the display. The menu field shows: • the sensor type (e.g. Cl2 free) • the unit (e.g. mg/l or ppm) • the temperature and unit (for the chlorine value only)
	Operating mode Auto with setpoint display
	Operation mode Manual
	Displays the dosing output of the controller as a percentage • Arrow up = increase output to reach setpoint • Arrow down = decrease output to reach setpoint
	Displays the limit values Max I and Max II as well as Min I and Min II
	Switch to the previous screen
	Switch to the next screen
	Home key (main view)
	Button to open the message window, e.g. for error messages, exceedance of limit values, etc.
	User has logged in with password
	Displays the date and time

Display/symbols	Explanation
	System bar with customer-specific configurable system names. Depending on the status of the messages, it appears in a different color: • white-blue: all OK • yellow-green: warnings present • red: Faults
	ECO mode active - only used with gas feed equipment
	Controller STOP
	Controller output constant
	Controller 100 %
	Pos. motor calibration active - only used with gas feed equipment
	Automatic adaption active
	Super chlorination active
	Double controller output

Explanation of the buttons:

Input field	For text/value entry.
Selection field	If a selection is listed.
Option field	If an option can be selected.

General messages:

Invalid entry	Incorrect entry, ignored by the system

Password protection

To protect against unauthorized or accidental incorrect operation, the Blu-Sentinel™ Pro electronics module works with two password levels:

- System password allows full access to all setting options and display of all menus
- Calibration password allows access for calibration purposes and to display all menus

In the "User" menu field, the individual users and passwords are defined. For the Blu-Sentinel™ Pro electronics module, the following levels are available:

- User level
- Level 1 - Calibration
- Level 2 - Service
- Level 3 - Reset passwords

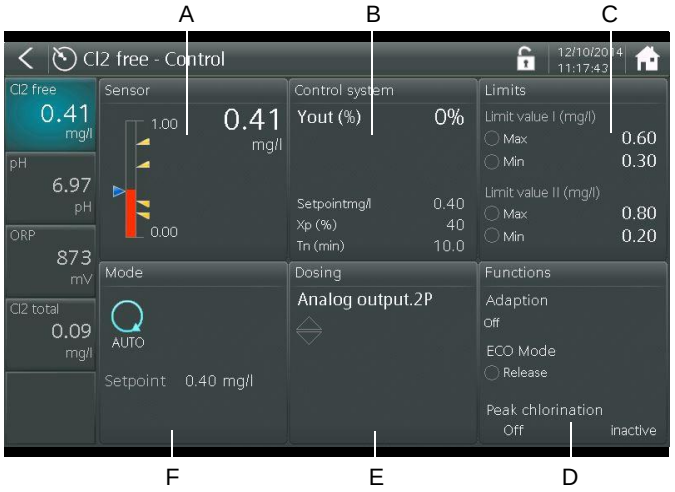
NOTICE

The system is supplied with the default password “0000”. Password protection is only activated if it is not "0000". The system is thereby always logged in to Level 2 and logging off is not possible.
The password consists of multi-digit customer-specific number combinations with a minimum of 3 and a maximum of 24 digits.

NOTICE

To change or enable the passwort, see instruction manual chapter 5. Operation - "Menu field user”.

Control



Picture 3 Control screen is set from the example “Free chlorine”

This display gives the option to switch to subordinate menu fields:

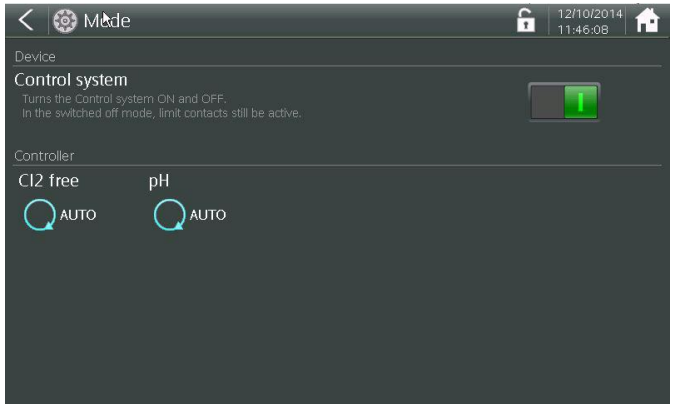
Sensor	• Setpoint - blue arrow • Min/Max limit vlaues - yellow arrows
Control	Adjust control function • Xp = Control Factor • Tn = Integral Time (0 – 100 min) Tn = 0 (on-off control) Tn = 100 (long control interval)
Limit values	Set limit values (during commissioning)
Functions	Special control functions
Dosing	Choose control type for chemical feeders (during commissioning)
Operation mode	Switch control modes • Auto - Manual Adjust % feed output Adjust manual feed time before control switches back to Auto • Manual - Auto Switch back to Auto mode as needed

A Sensor
B Control
C Limit values
D Functions
E Dosing
F Operation mode

Switch control system on or off

The control system can be switched on or off, proceed as follows:

1 Call up the basic screen.
2 Press the menu field "System”. The screen changes to the menu "System”.
3 Press the menu field "Mode - Control system”. The screen changes to the menu "Mode”
4 The control system can be switched on or off. To do so, press the button and select on or off.



Picture 4 Mode screen

Calibration

Chlorine calibration

The free chlorine and total chlorine sensor (if installed) are calibrated separately. The free chlorine calibration is always a two-point calibration process: zero point followed by DPD calibration.

NOTICE

During the calibration procedure, feeder output signals can be maintained at constant output by enabling the "Hold function" first.

Free chlorine calibration

Zero-point calibration

1 Starting from the main screen press the Cl2 free screen.
2 Next press "calibration".
3 Close the sample water inlet and outlet valves.

When the sample water supply has been stopped, the display first drops rapidly, and after one minute slowly approaches zero. If necessary, wait for the reading to be stable. During the initial commissioning, it is essential to wait for 5 minutes of stable measurements.

4 Select "zero".
5 Wait until the displayed chlorine measurement value is steady.
6 Press "apply" to set the display to "0.00".
7 Open the sample water inlet and outlet valves.

DPD calibration

8 After the zero-point calibration wait at least 2 minutes before proceeding.
9 Collect a sample of pool water at or near the flow cell.
10 Determine the free chlorine concentration using a photometer.
11 Select the parameter "DPD".
12 Use the input field to enter the measured chlorine concentration.
13 Confirm by pressing Enter.
14 Calibration is now complete.

NSF 50 certification requires a re-calibration when the measurement result varies by more than plus or minus 1.5 ppm from the grab sample DPD result.

Total chlorine calibration

NOTICE

The total chlorine calibration requires a one point calibration.

1 Starting from the main screen press the Cl2 total screen.
2 Next press calibration.
3 Collect a sample of pool water at or near the flow cell.
4 Determine the total chlorine concentration using a photometer.
5 Use the input field to enter the measured value.
6 Confirm the entry with the Enter key.
7 Calibration is now complete.

Two-point pH calibration

NOTICE

pH buffer solutions should be close to sample water temperature for greatest calibration accuracy.

pH 7 calibration

1 From the main screen press the pH value.
2 Next press "calibration" and the select "pH7".
3 Fill a beaker with the pH 7 buffer solution.
4 Close the sample inlet and outlet valves.
5 Open the flow cell drain briefly just relieve pressure.
6 Unscrew the pH sensor from the flow cell.
7 Submerge the pH sensor in the buffer solution to above the sensor tip.
8 Swirl the sensor in the buffer solution.
9 Once the measured value is constant enter the published value for the buffer at the corresponding temperature.
10 Confirm the entry with the enter key.
11 Remove the sensor from the pH 7 buffer solution.
12 Thoroughly wash the sensor off with water.

Span calibration

13 Next select "pH X".

If buffer solutions other than those supplied by the manufacturer are to be used for the pH X calibration, the buffer solution must have a pH lower than 6.0 or high than 8.0 for proper span calibration.

14 Fill a beaker with the pH 4.65 buffer solution.
15 Submerge the pH sensor in the buffer solution to above the sensor tip.
16 Swirl the sensor in the buffer solution.
17 Once the measured value is constant enter the published value for the buffer at the corresponding temperature.
18 Confirm the entry with the enter key.
19 Re-install the pH sensor in the flow cell.
20 Open the sample inlet and outlet valves.
21 This completes a "two-point" pH calibration.

Single point offset calibration

An offset calibration can be used for alignment to a hand held analysis result.

1 From the main screen press the "pH" value.
2 Next press "calibration".
3 Select "offset".
4 Using the keypad, enter a comparative pH value obtained from a reliable hand held test.
5 Confirm by pressing Enter.

ORP Calibration (mV)

One-point ORP calibration

1 From the main screen, press the ORP value.
2 Next press "calibration" and the select ORP calibration.
3 Fill a beaker with ORP calibration solution.
4 Close the sample inlet and outlet valves.
5 Open the flow cell drain briefly just relieve pressure.
6 Inscrew the ORP sensor from the flow cell.
7 Submerge the ORP sensor in the calibration solution to above the sensor tip.
8 Swirl the sensor in the calibration solution.
9 Once the measured value is constant enter the published value for the calibration solution.
10 Confirm the entry with the enter key.
11 Re-install the ORP sensor in the flow cell .
12 Open the sample inlet and outlet valves.
13 This completes the ORP sensor calibration.

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