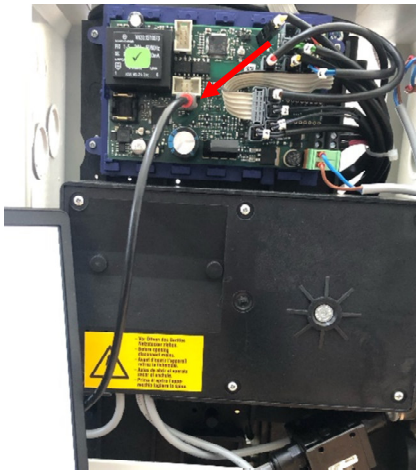
1 STARTING THE SOFTWARE

The service software is started via the „METAdig“ icon.

A grey screen appears.

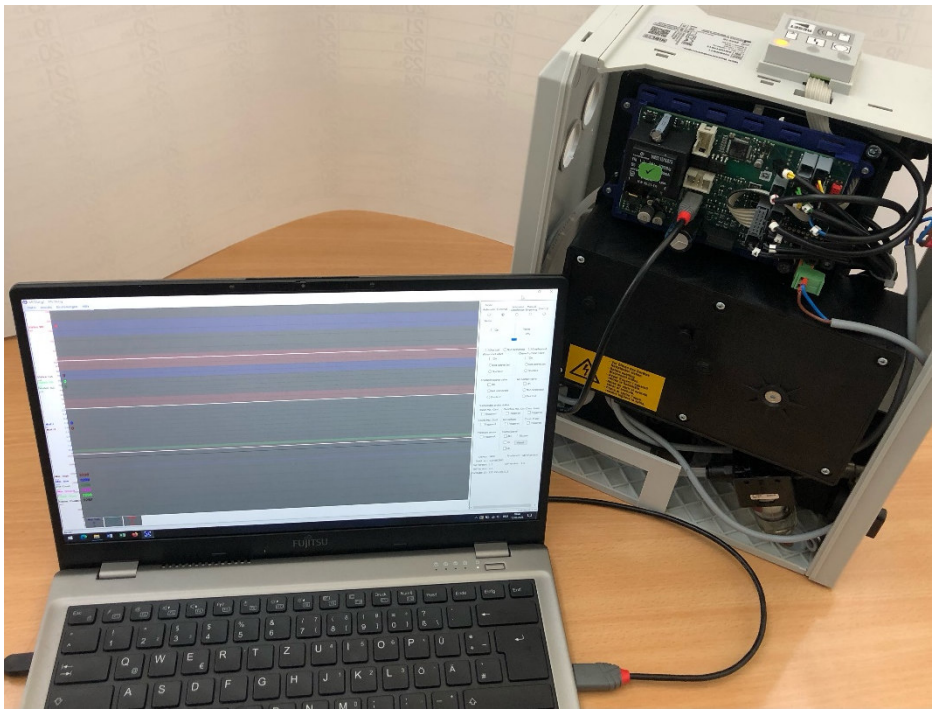
2 CREATE A CONNECTION TO THE WEK

A connection to the device can be established via a mini-USB cable, which is connected to the laptop and the WEK main board.

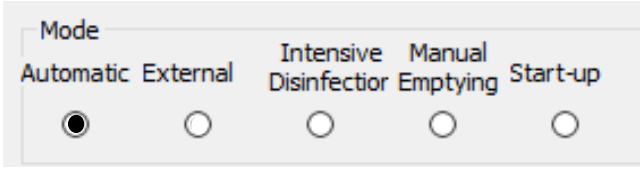


3 SWITCH ON THE DEVICE

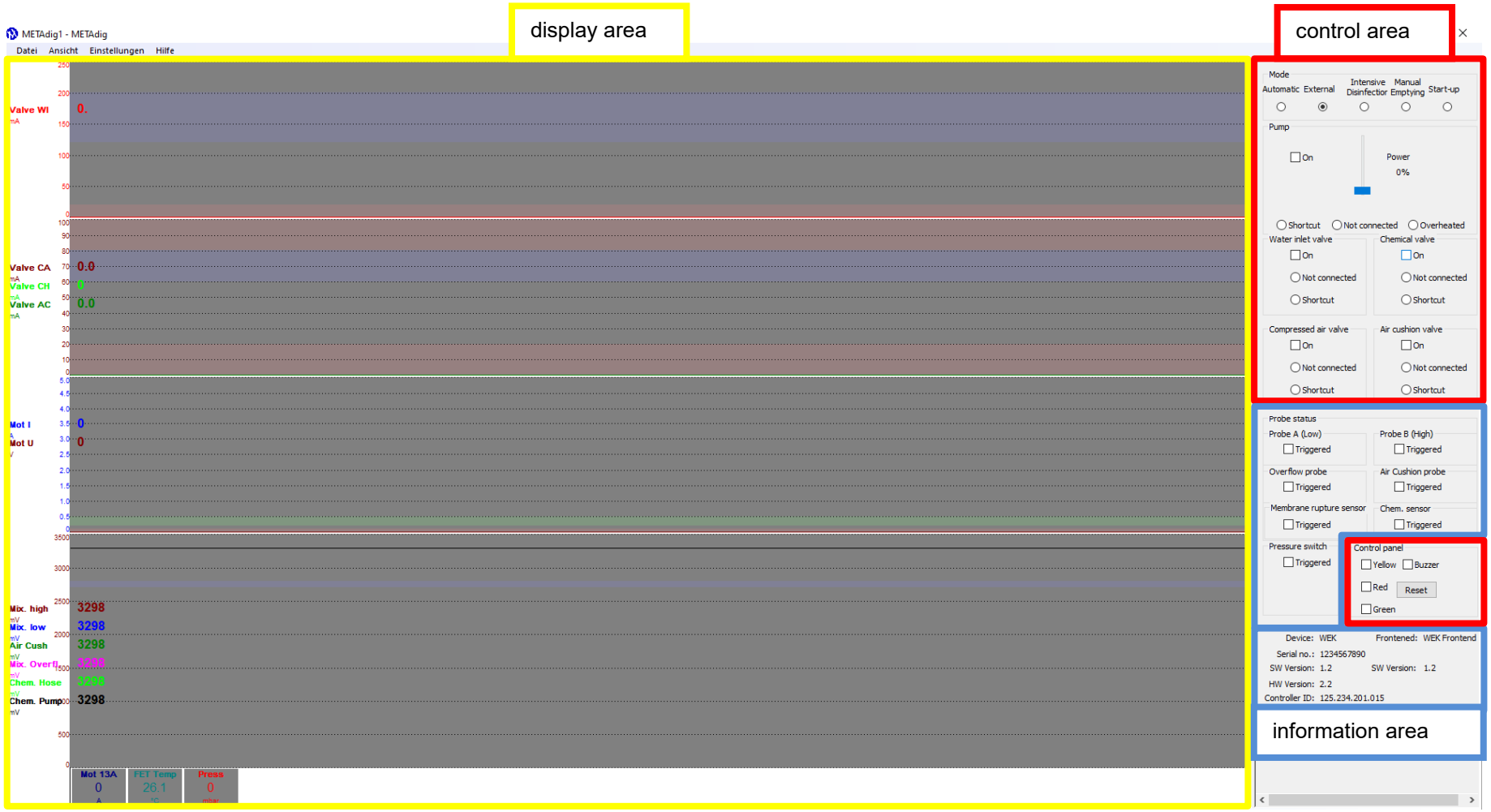
As soon as the WEK is switched on, the "Service" view opens automatically and the WEK starts with the “Start-up” program.



As soon as the test routine is completed (mode is set to “Automatic”), the WEK is ready for operation.

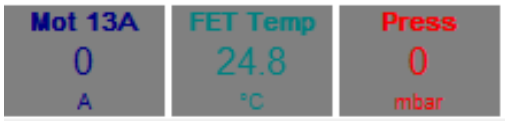


4 DESCRIPTION OF THE SOFTWARE



Legend:

Valve WI [mA]…Valve Water Inlet → current display in mA of the water inlet valve
Valve CA [mA]…Valve Compressed Air → current display in mA of the compressed air valve
Valve CH [mA]…Valve Chemical → current display in mA of the chemical valve
Valve AC [mA]…Valve Air Cushion → current display in mA of the air cushion valve on the pressure tank
Mot I [A]…Membrane pump → actual motor current in A of the membrane pump
Mot U [V]…Membrane pump → actual motor voltage in V of the membrane pump
Mix. High [mV]…Level probe B → voltage display in mV of the upper-level probe in the mixing tank
Mix. Low [mV]…Level probe A → voltage display in mV of the lower-level probe in the mixing container
Air Cush [mV]…Air cushion probe → voltage display in mV of the air cushion probe in the pressure tank
Mix. Overfl [mV]…Overflow probe → voltage display in mV of the overflow probe on the mixing tank
Chem. Hose [mV]…Chemical sensor → voltage display in mV of the chemical sensor
Chem. Pump [mV]…Membrane rupture sensor → voltage display in mV of the membrane rupture sensor

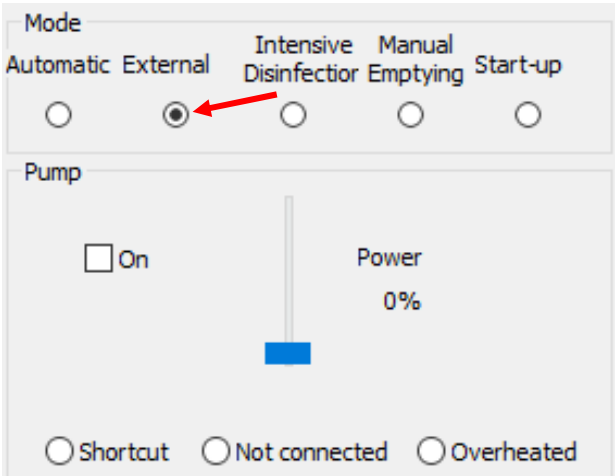


Mot 13A [A]…Membrane pump → actual motor current in A of the membrane pump
FET Temp. [°C]…MOSFET Temperature → temperature display of the transistor
Press [mbar]…Pressure switch → display of the adjusted switching pressure on the pressure switch in mbar (e.g. 2500 mbar corresponds to a set pressure of 2.5 bar)

5 FUNCTIONS

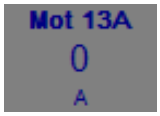
5.1 Function of the membrane pump

In order to start checking the membrane pump, the mode must be switched to „External“ in the control area:

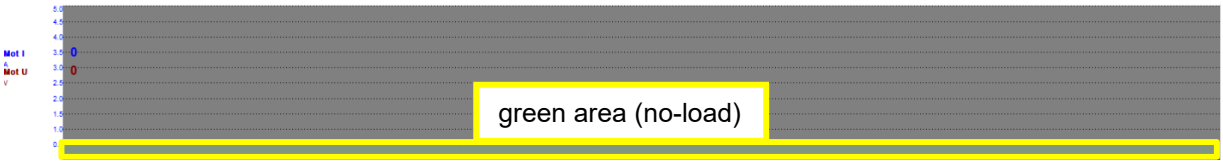


In the next step, the membrane pump can be started by clicking "On" in the pump area and making the setting on the fader (power). The membrane pump starts by increasing the percentage. To be able to check the correct no-load current, the fade must be set to 100% power.

The no-load current must not permanently exceed a value of 0.5A and is also shown in amperes at the bottom of the display area (Mot 13A):

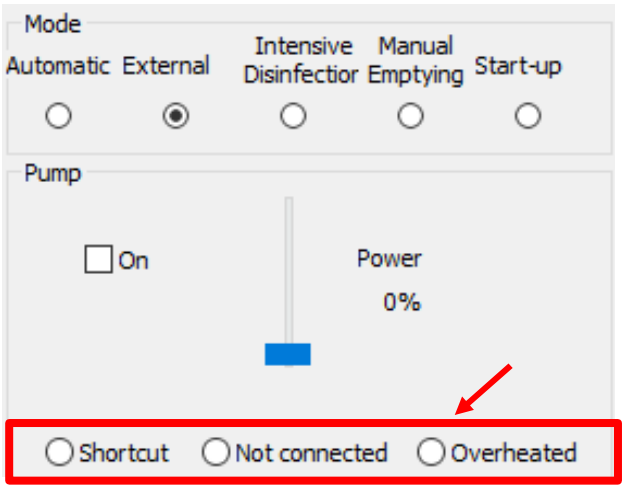


Now the motor current at no-load can be observed in real time in the display area. The current should be in the green area (between 0,1A and 0,5A). By clicking "On" again, the motor stops.



During normal operation (under load) the current should normally not increase above 5A. If the current in no-load operation is above the green area or above 5A during normal operation, the membrane pump must be investigated in detail or even replaced.

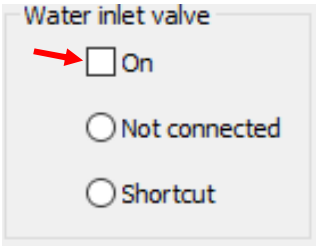
If the membrane pump is not connected to the main board, has a shortcut or is overheated, the respective status („Shortcut“, „Not connected“ or „Overheated“) will be displayed when “On” is clicked (from software version 1.3 onwards):



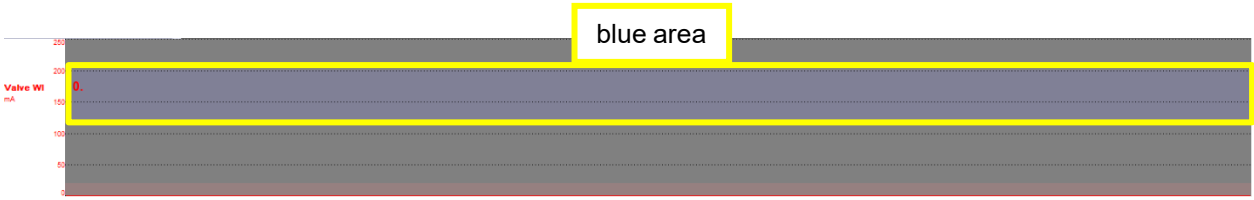
5.2 Testing the valve function

In the next step, the individual valves of the WEK are tested. To do this, click “on” in the area of the respective valve in the control area.

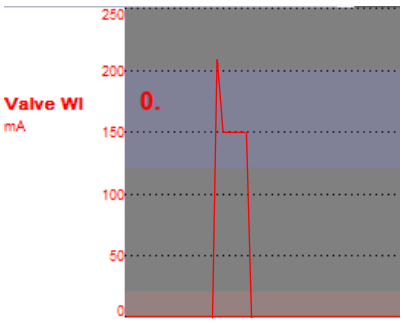
5.2.1 Water inlet valve:



A click should now be heard at the valve and the valve current can be read in real time in the display area.

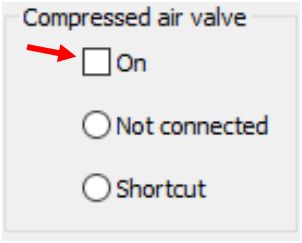


The valve current should be in the blue coloured area (between 100mA and 200mA). When the valve is switched on, the valve current briefly rises to over 200mA:

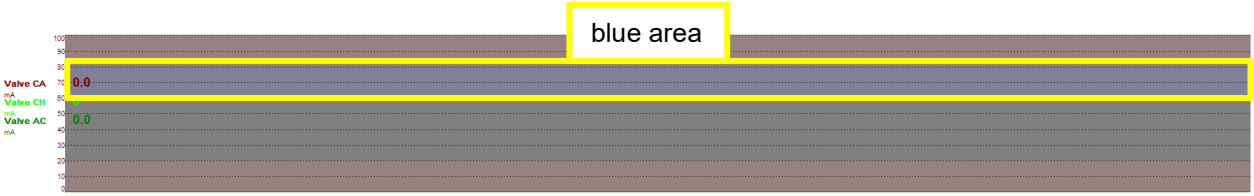


If the valve current is permanent above the blue area (>200mA), the valve must be replaced. Click „On“ again to deactivate the valve.
If the valve is defective or not connected, either the "Shortcut" or "Not connected" item must light up.

5.2.2 Compressed air valve – Valve CA:

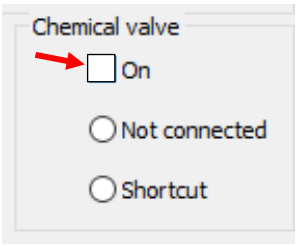


A click should now be heard at the valve and the valve current can be read in real time in the display area.

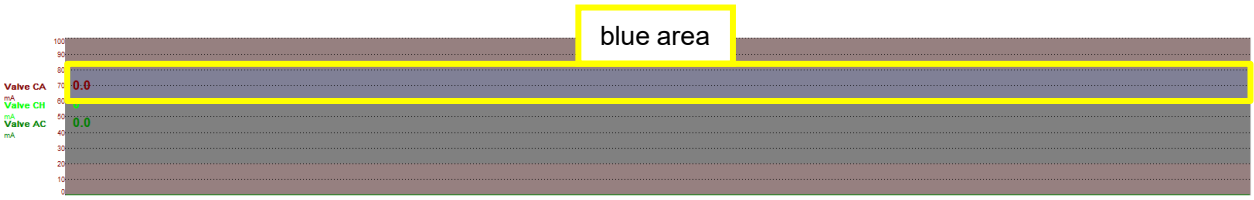


The valve current should be in the blue coloured area (between 60mA and 80mA). If the valve current is permanent above the blue area (>80mA), the valve must be replaced. Click „On“ again to deactivate the valve.
If the valve is defective or not connected, either the "Shortcut" or "Not connected" item must light up.

5.2.3 Chemical valve – Valve CH:

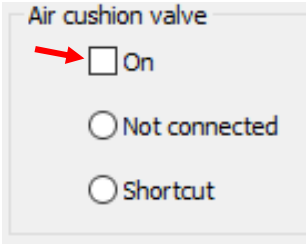


A click should now be heard at the valve and the valve current can be read in real time in the display area.

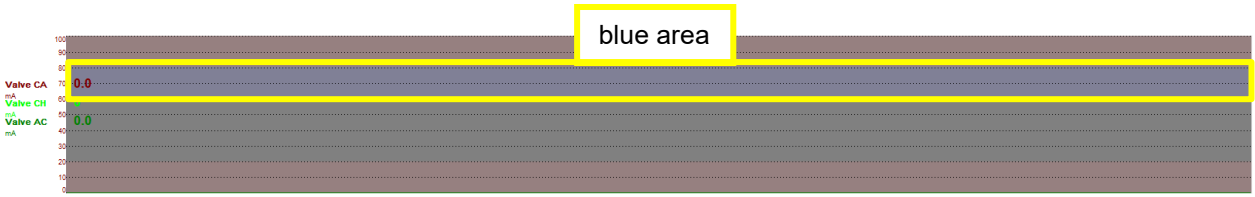


The valve current should be in the blue coloured area (between 60mA and 80mA). If the valve current is permanent above the blue area (>80mA), the valve must be replaced. Click „On“ again to deactivate the valve.
If the valve is defective or not connected, either the "Shortcut" or "Not connected" item must light up.

5.2.4 Air cushion valve – Valve AC:



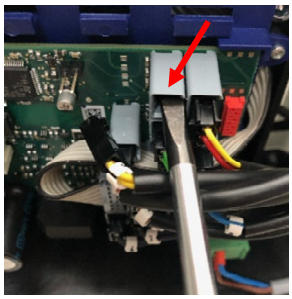
A click should now be heard at the valve and the valve current can be read in real time in the display area.

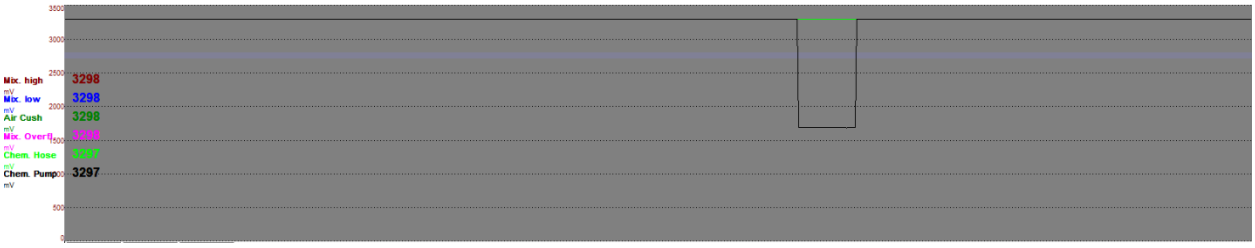


The valve current should be in the blue coloured area (between 60mA and 80mA). If the valve current is permanent above the blue area (>80mA), the valve must be replaced. Click „On“ again to deactivate the valve.
If the valve is defective or not connected, either the "Shortcut" or "Not connected" item must light up.

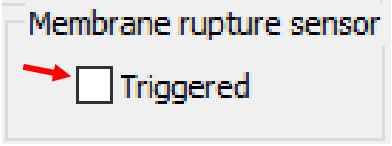
5.3 Function of the membrane rupture sensor

The function of the membrane rupture sensor can also be tested. To do this, the membrane rupture sensor (cable number 8) must be disconnected from the main board.
The two pins can be connected smoothly with a screwdriver (place the screwdriver without applying pressure) and the following graphic should then show that the sensor responds (Chem. Pump):



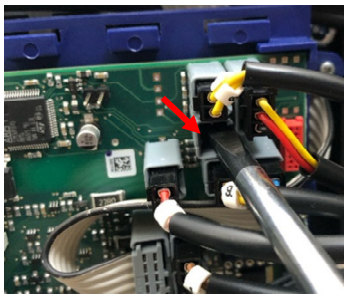


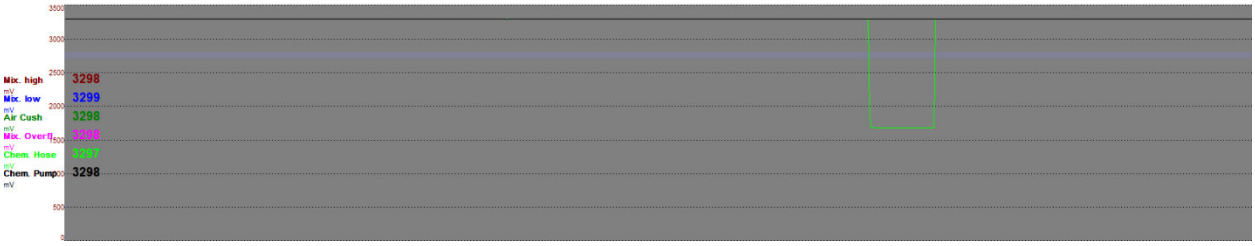
As soon as the sensor responds, “Triggered” is also displayed in the information area of the membrane rupture sensor:



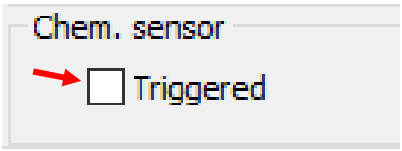
5.4 Function of the chemical sensor

The function of the chemical sensor on the mixing tank can also be tested. To do this, the chemical sensor (cable number 7) must be disconnected from the main board.
The two pins can be connected smoothly with a screwdriver (place the screwdriver without applying pressure) and the following graphic should then show that the sensor responds (Chem. Hose):



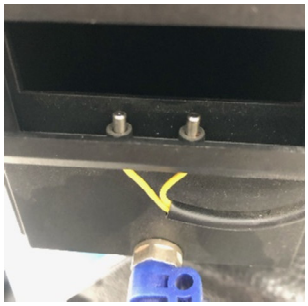


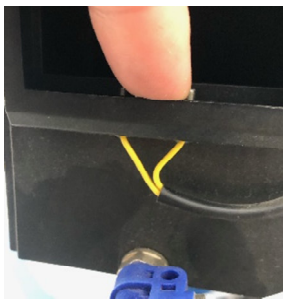
As soon as the sensor responds, “Triggered” is also displayed in the information area of the chemical sensor:



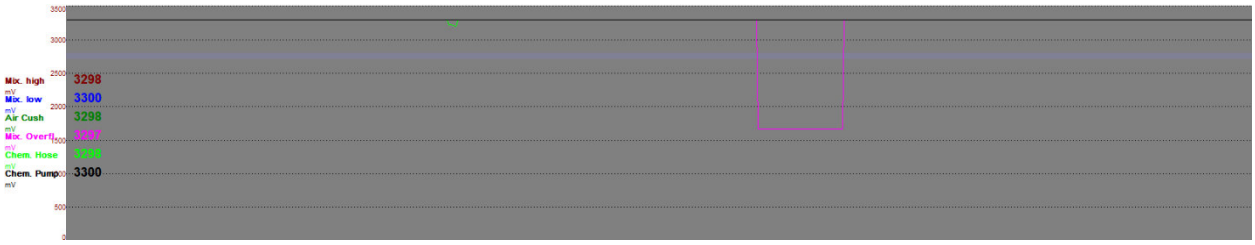
5.5 Function of the overflow probe on the mixing tank

The overflow probe on the mixing tank can be checked with a moistened finger. To do this, contact must be made with the finger between the two probes.

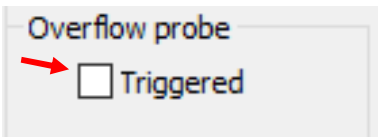




The function of the overflow probe can be seen in the following graphics (Mix. Overfl):

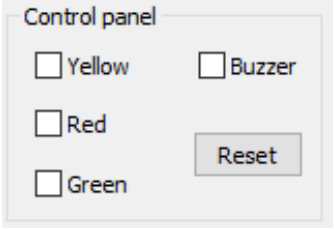


As soon as the sensor responds, “Triggered” is also displayed in the information area of the overflow sensor:



5.6 Function of the external display – Control panel (software version 1.3)

The function of the external display can also be tested beginning with software version 1.3. For this purpose, the individual LEDs on the external display can be switched on and off via the control area in the "Control panel" domain. The signal tone can also be checked.

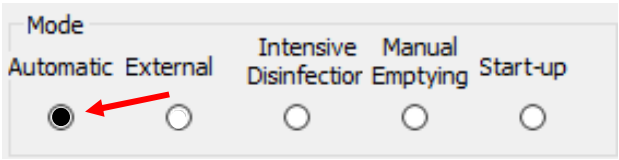


Yellow…LED Disinfection display – colour: yellow, disinfection display
Red…LED Malfunction – colour: red, malfunction
Green…LED mains voltage – colour: green, ready for operation
Buzzer… audible buzzer signal
Reset…Alarm reset button

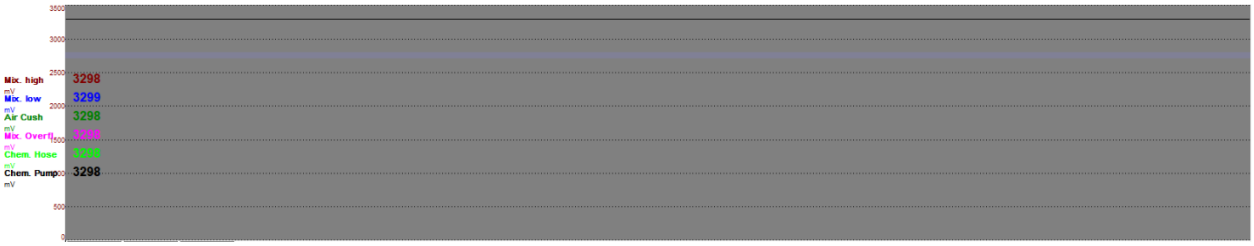
By clicking on the individual LEDs, the selected LED is switched on at the external display and switched off again by clicking again.

5.7 Checking the probe functions during operation

In the next step, the individual probes are checked for function in automatic mode. To do this, the mode is switched to “Automatic” in the control area with a mouse click.



A consumer (mouth glass filler, etc.) must then be activated on the dental unit. The function of the probes can be seen in the following graphics:



Mix. High [mV]…Level probe B → voltage display in mV of the upper-level probe in the mixing tank
Mix. Low [mV]…Level probe A → voltage display in mV of the lower-level probe in the mixing container
Air Cush [mV]…Air cushion probe → voltage display in mV of the air cushion probe in the pressure tank
Mix. Overfl [mV]…Overflow probe → voltage display in mV of the overflow probe on the mixing tank

In addition, “Triggered” is displayed in the information area of the respective probes when the respective probe responds.