

# Labwatch HOWTO Lab II

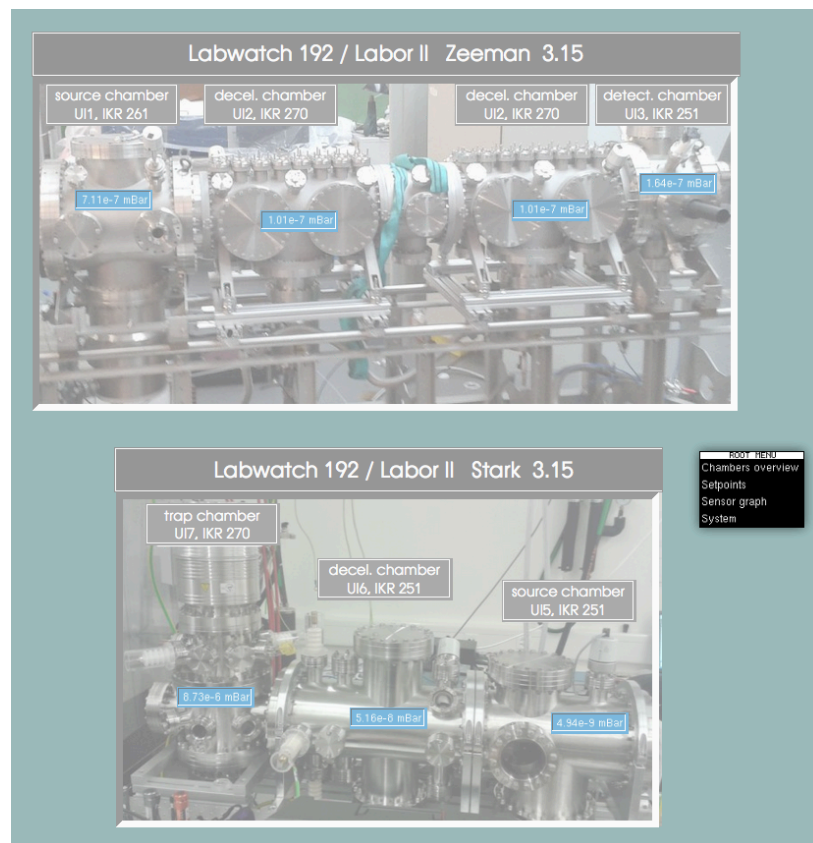
IP address: <http://131.152.105.192>

Link to web interface: <http://131.152.105.192/webui/lweb/project>

To open the web-based interface click onto the blue globe

## 1. Overview

Labwatch gives an overview over the pressure in the chambers. By right clicking you can access the main menu.



## 2. Alarm level settings

Under "Set Soll" you can set your alarm levels. In order to make changes, a password is required. The password is composed of the last three digits of the IP with a leading 0. Click onto the line with the four zeros, enter the password into the box and press enter.

You are now in the modification mode. The ticks next to the sensor entries indicate whether an alarm is active or not. It is possible to set the alarm for each sensor individually. The tick in the middle activates the alarm channel for the whole experiment, taking into account the settings of the leftmost ticks.

The set point hysteresis in per cent specifies by how much the actual pressure value has to be above the set point value in order to trigger an alarm. You will receive an alarm cancellation if the pressure falls below the alarm value by the percentage given in the hysteresis box. The light bulb goes on if an alarm has been triggered.

Here is an example:

Assume you want to change the alarm level for UI1 on the Zeeman decelerator from  $8 \cdot 10^{-6}$  mbar to  $9 \cdot 10^{-6}$  mbar. First you deactivate the green tick in the left column to prevent false alarms. Then you click onto the value displayed under set points. A numeric keyboard is displayed on which you type in 0.000009. It is not possible to use exponential notation. Reactivate the tick on the leftmost column and the new alarm level becomes active. With a hysteresis of 1 % the alarm will be triggered at  $8.8 \cdot 10^{-6}$  mbar and a clearance will be sent at  $7.2 \cdot 10^{-6}$  mbar.

	actual values	setpoints	alarm	sensor alarm on/off	exp. alarm on/off	60 Min. alarm delay time
<b>Zeeman</b>						
UI1 IKR261 / source chamber:	4.21e-9 mBar	> 8.00e-6				
UI2 IKR270 / decelerator chamber:	8.53e-8 mBar	> 8.00e-7				
UI3 PKR251 / detection chamber:	1.45e-7 mBar	> 8.00e-7				
UI4 PBR265 / not in use:	2.32e+0 mBar	> 3.40e-4				
Set sheduler for alarm delay time on or off		Set Sheduler				
Set alarm delay time in minutes		60 Min.				
<b>Stark</b>						
UI5 PKR251 / source chamber:	3.12e-6 mBar	> 5.00e-4				
UI6 PKR251 / decelarator chamber:	4.80e-8 mBar	> 9.00e-7				
UI7 IKR270 / trap chamber:	8.71e-9 mBar	> 9.00e-8				
Set sheduler for alarm delay time on or off		Set Sheduler				
Set alarm delay time in minutes		60 Min.				
Setpoint Hysteresis in percent		1.0 %				
Liob-580 is in manuel mode						
Back						

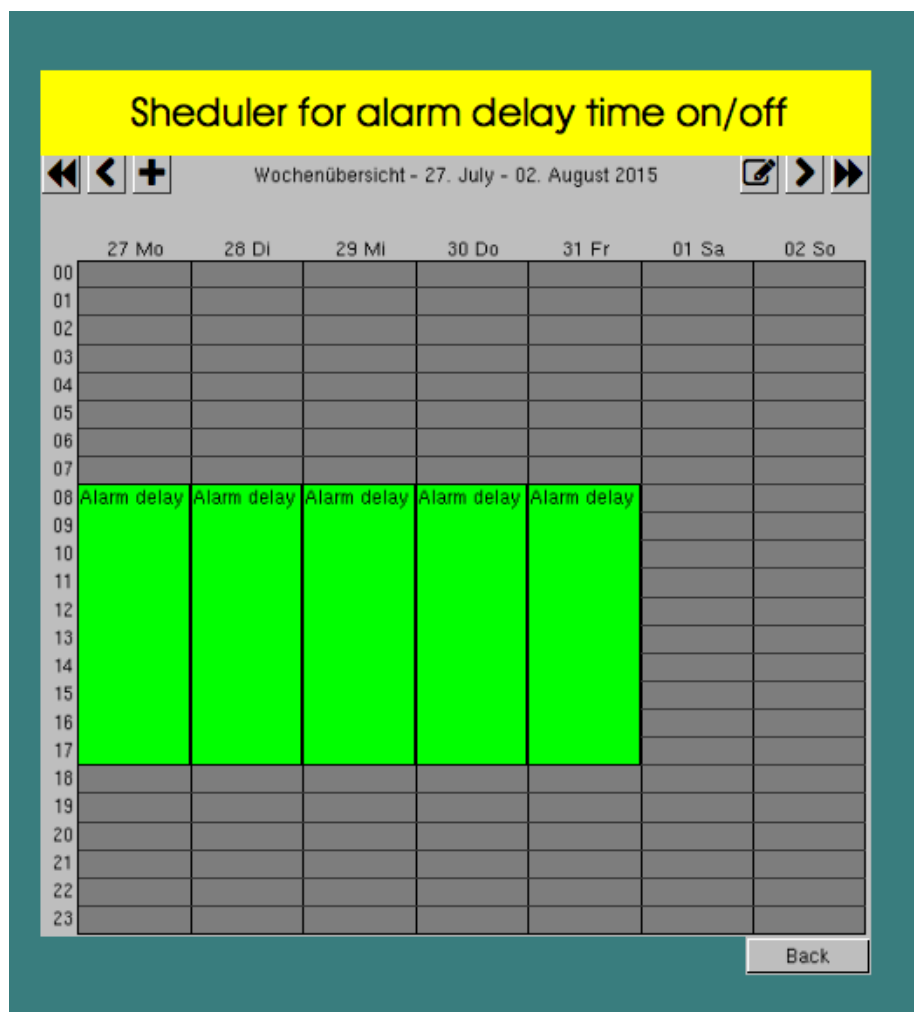
If a sensor field turns red, this means that the sensor is off or displays a nonsensical value.

The alarm is linked to your e-mail address and your mobile number. All persons involved in an experiment will get an alarm.

I suggest you try out which settings work best for you. Keep in mind, that there can be a pressure increase during experiments and also when the Ti-sublimation pump is running.

To allow for more flexibility, an alarm delay has been implemented for each experiment. This allows you to specify the amount of time the pressure needs to be higher than the alarm threshold, before you get a notification. This feature is ideal for preventing false alarms from Ti-sublimation pumps. To set the alarm delay time, click onto the grey “set delay alarm time” field in the menu. A numerical keypad appears on which you can enter the desired value.

As the alarm delay feature could prevent you from being alarmed in time, it is possible to activate the alarm delay function based on a calendar. To set the calendar rules for your experiment, click onto the grey “set scheduler for alarm delay”-field. You should now see the calendar window.



By using the fast forward arrows you can browse through by months or by weeks when using the single headed arrows. By clicking the pen, you can set the scheduler pattern. The default is to set the alarm delay on/off on a weekly basis.



Scheduler for alarm delay time on/off		
Alle Schaltzeitpunkte		
00:00 - 24:00 Alarm delay time off (Startwert)	Startwert	Startwert
08:00 - 18:00 Alarm delay time on	Priorität 6	Mo, jede Woche (Mo)
08:00 - 18:00 Alarm delay time on	Priorität 6	Di, jede Woche (Di)
08:00 - 18:00 Alarm delay time on	Priorität 6	Mi, jede Woche (Mi)
08:00 - 18:00 Alarm delay time on	Priorität 6	Do, jede Woche (Do)
08:00 - 18:00 Alarm delay time on	Priorität 6	Fr, jede Woche (Fr)


Back

To add a new entry, click onto the cross. In order to change the alarm delay schedule, click onto the pen. This results in the following window:

**Edit event**

Name


Wert **Alarm delay time on**  


Priorität  

Start  End

---

**Event Details**

Event Typ **Wöchentlich** 

jede Woche **Monday** 

**Delete** **OK** **Cancel**

You can specify the day, time and the event type, as well as the repetition pattern.

- Wert = logical value whether the alarm is on or off
- Priorität = priority, nothing to be changed here
- Event Typ = event type, wöchentlich = weekly
- jede Woche = weekly

### 3. Alarm

A typical Alarm Mail notification looks like this:

Vacuum is bad!!!

Pressure higher than set point.

source chamber vacuum: ok

decelerator chamber vacuum: ok

detection chamber vacuum: ok

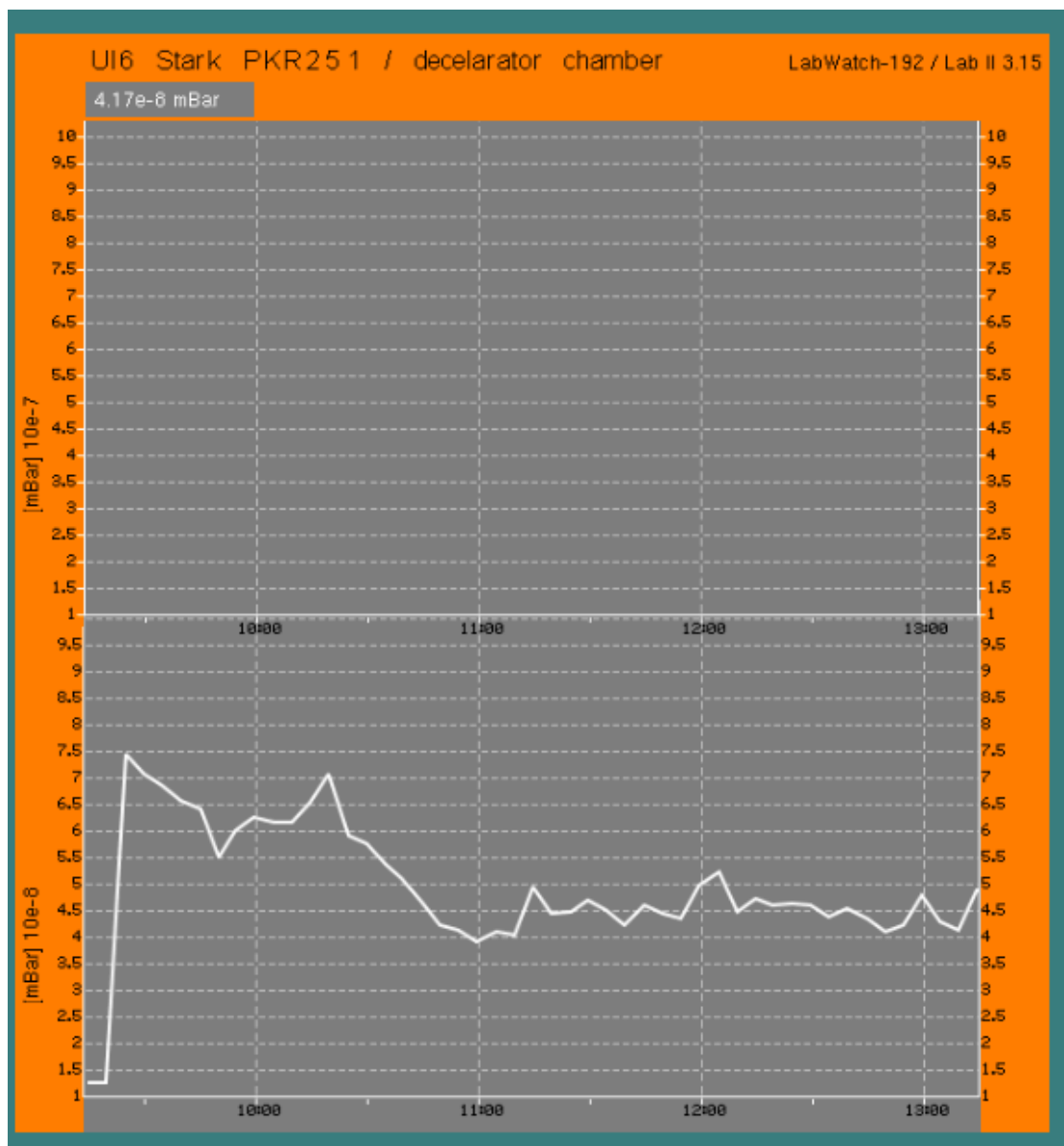
your vacuum chamber: bad

Pressure:  $2.32 \times 10^{-8}$

The pressure of the chamber whose value lies above the threshold is given below.

## 4. Data visualisation

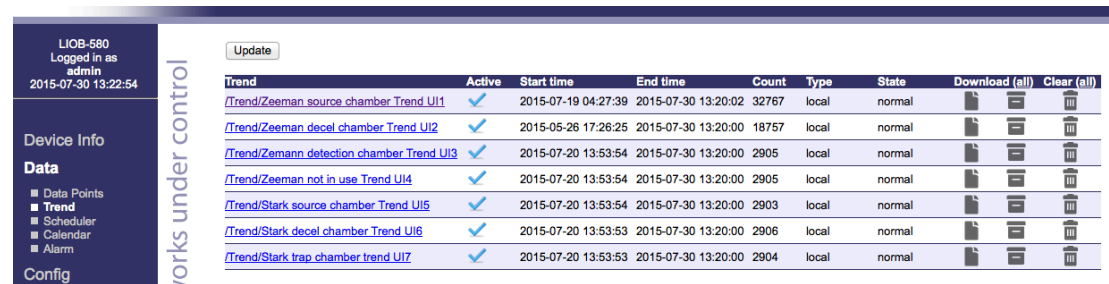
To monitor the pressure over time, perform a right click to access the main menu. Choose the tab "Sensor graph". This will result in a list with all sensors. Choose the sensor you want to monitor. If you would like to monitor your pressure over a wider range, please contact me.



It is also possible to download the pressure vs. time data over a longer period of time. This cannot be done from within the user interface. You need to access the device homepage under:

[http://131.152.105.192/webui/device\\_info/device\\_info](http://131.152.105.192/webui/device_info/device_info)

1. Click onto Data on the blue left margin
2. Click the trend subentry
3. You will now see a list of all sensors. Downloading the data is possible under the download section. The data format is .csv and can be opened with Excel.



The screenshot shows the Labwatch web interface. On the left is a navigation menu with 'Data' selected. The main area displays a table of trends with columns for Trend, Active status, Start time, End time, Count, Type, State, and Download/Action options. A vertical watermark 'works under control' is visible on the left side of the table.

Trend	Active	Start time	End time	Count	Type	State	Download (all)	Clear (all)
<a href="#">/Trend/Zeeman source chamber Trend UI1</a>	✓	2015-07-19 04:27:39	2015-07-30 13:20:02	32767	local	normal		
<a href="#">/Trend/Zeeman decel chamber Trend UI2</a>	✓	2015-05-26 17:26:25	2015-07-30 13:20:00	18757	local	normal		
<a href="#">/Trend/Zemann detection chamber Trend UI3</a>	✓	2015-07-20 13:53:54	2015-07-30 13:20:00	2905	local	normal		
<a href="#">/Trend/Zeeman not in use Trend UI4</a>	✓	2015-07-20 13:53:54	2015-07-30 13:20:00	2905	local	normal		
<a href="#">/Trend/Stark source chamber Trend UI5</a>	✓	2015-07-20 13:53:54	2015-07-30 13:20:00	2903	local	normal		
<a href="#">/Trend/Stark decel chamber Trend UI6</a>	✓	2015-07-20 13:53:53	2015-07-30 13:20:00	2906	local	normal		
<a href="#">/Trend/Stark trap chamber trend UI7</a>	✓	2015-07-20 13:53:53	2015-07-30 13:20:00	2904	local	normal		

4. The pressures in the .csv file have to be multiplied with a factor of  $10^{20}$  for the values to be right. If the Date/Time column is filled with ####, the data does not fit into the field and you have to enlarge it a bit.

## 5. Holidays

If someone is abroad or is on holidays, please find a replacement who takes care of the Labwatch alarms for your project. Please let me know in advance, such that I can disable the SMS function for your mobile number.