

Software Documentation

# HAWE eLink



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## 1 Purpose of eLink

HAWE eLink is an easy to use and helpful software tool to configure, maintenance and supervise sensors that are optional integrated in the HAWE INKA powerpack.

To connect HAWE INKA and computer with eLink, a connection cable is needed that can be purchased from HAWE Hydraulik.

## 2 Software Startup

After the Startup of the application “*HAWE eLink*” a screen appears, where the user can set the role, he/she runs the application.



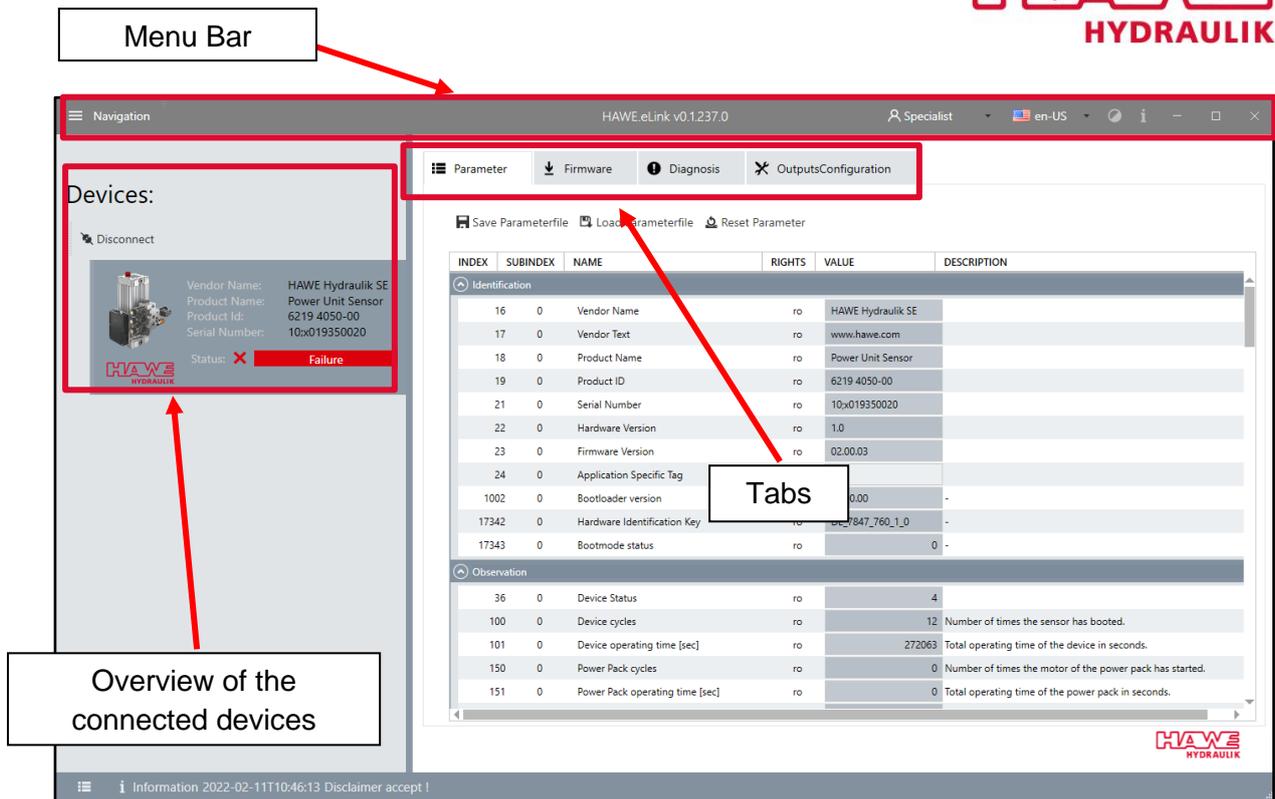
Screen for role selection of the user at application start.

The following roles are available:

- Observer:  
This role is designed for users who may not carry out any modifications of the device.
- Maintenance  
This role is designed for observers and to undertake *uncritical* editing. Furthermore, in *Maintenance* the user has the authorization to run a firmware update of the application.
- Specialist  
If the user is logged in as a *Specialist*, he/she has total access to the device. He is authorized to set all configurable parameters as well as the switching outputs of the connected device.

The selected user role is not final and can be changed even after the selection at the program start in the menu bar of the application. ([cf. chapter 3.3](#))

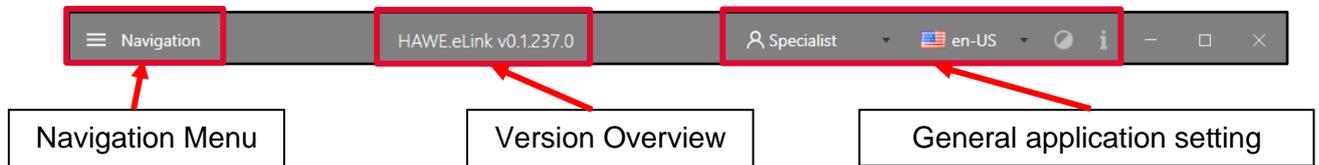
The user interface of the application is structured as follows:



The individual sections of the user interface will be discussed in the following chapters.

### 3 Menu Bar

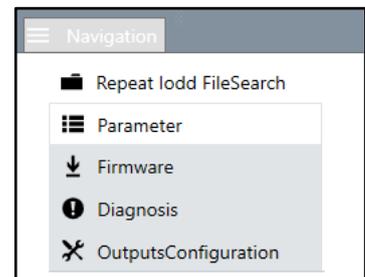
The menu bar of the application is partitioned in three areas.



#### 3.1 Navigation Menu

In the navigation menu of the application the user has the following possibilities to interact with the system:

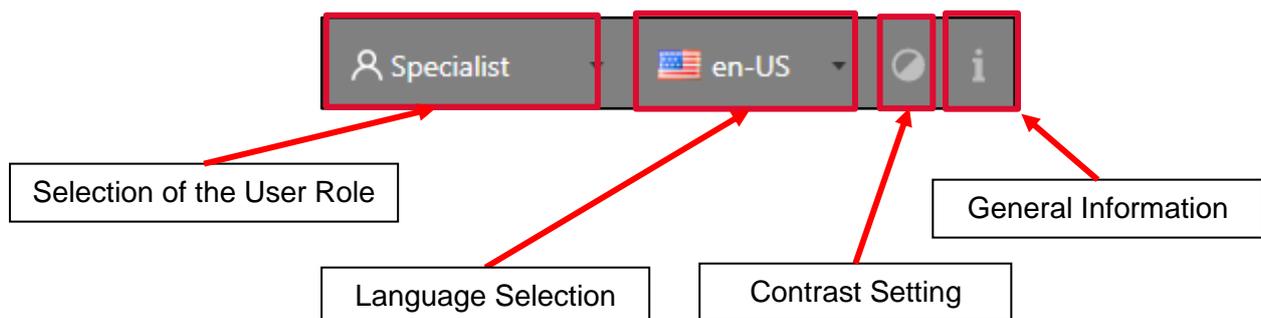
- Repeat IODD FileSearch:  
The tool will repeat the search for suitable interface descriptions for the connected devices.
- Parameter, Firmware, Diagnosis, OutputsConfiguration  
Selecting the respective file opens the tab of the same name of the currently selected device ([cf. chapter 5](#))



#### 3.2 Version Overview

In this area, the user is shown the current version number of the application.

#### 3.3 Configuration of the Application



##### Selection of the User Role

A "click" on the representation of the currently selected user role opens a drop-down menu with all user roles stored in the application. By selecting a different role, the user can change his user role at any time. ([cf. chapter 2](#))

##### Language Selection

When the user selects the *Language Selection* field, a drop-down menu opens with the two languages available in the application. By selecting a language, the entire system is displayed in the selected language. The currently set language is displayed in the menu bar.

### Contrast Setting

The *Contrast Setting* gives the user the possibility to display the application with higher contrast in the *dark mode*. To undo the view in *dark mode*, the user must actuate the contrast-button () again.

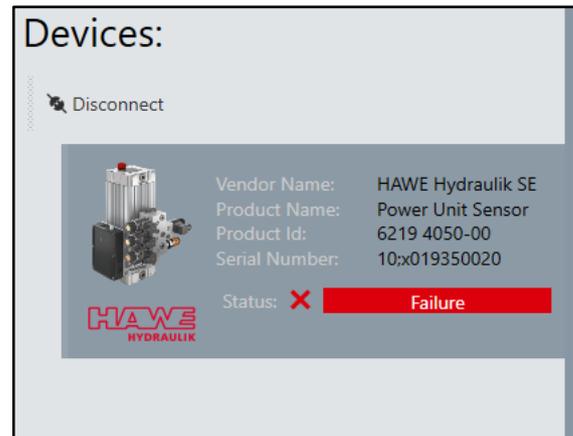
### General Information

A „click“ on the -button opens an overview of the different versions of the application.

## 4 Device Overview

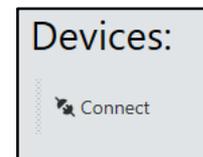
In *Device Overview*, all devices connected to the application are displayed one below the other. This overview is constantly displayed on the left side of the user interface. The device whose parameters are displayed in the tabs ([cf. chapter 5](#)) is displayed with a dark background.

Every connected device is displayed with a product image as well as information on its vendor's name, product name, product ID, serial number and the actual status.



The -button can be used to disconnect a device from the application.

To reconnect a device with the application, the -button, appearing after the disconnecting of a device, must be used.



## 5 Tabs

Parameterization, firmware updates, error diagnostics, as well as the configuration of the switching outputs of the currently used device can be performed in the various tabs of the system.

### 5.1 Parameter

INDEX	SUBINDEX	NAME	RIGHTS	VALUE	DESCRIPTION
Parameters					
301	0	Orientation override	rw	2	Value to give a fixed orientation (1 = horizontal / 2 = vertical).
406	0	Slip at full load [permille]	rw	200	Slip of the motor at full load.
413	0	Mains frequency	rw	50	Frequency of the motor supply.
500	0	Fan switch-on temperature [°C]	rw	50	The fan will be turned on, if the measured oil temperature reaches this temperature in degree celsius or rises above.
501	0	Fan switch-off temperature [°C]	rw	45	The fan will be turned off, if the measured oil temperature goes below this temperature in degree celsius.
602	0	Fluid temperature low warn limit [Celsius]	rw	-40	The device triggers a warning if the fluid temperature is below this value.
603	0	Fluid temperature high warn limit [Celsius]	rw	70	The device triggers a warning if the fluid temperature is above this value.
701	0	Geometric output volume [mm³]	rw	1	Geometric output volume per pump cycle.
902	0	Slow channel override	rw	0	Value to temporarily override the outputs of the interface electronics.
Fluid level - Calibration					
201	0	Electrode Horizontal Period A	ro	5610756	Period of the measurement signal at the horizontal electrode in measurement mode A
202	0	Electrode Horizontal Period B	ro	7163613	Period of the measurement signal at the horizontal electrode in measurement mode B
203	0	Electrode Vertical Period A	ro	5625202	Period of the measurement signal at the vertical electrode in measurement mode A
204	0	Electrode Vertical Period B	ro	7179232	Period of the measurement signal at the vertical electrode in measurement mode B
205	0	Internal Period A	ro	4912628	Period of the internal oscillator in measurement mode A
206	0	Internal Period B	ro	6494613	Period of the internal oscillator in measurement mode B
210	0	Electrode Ratio A	ro	10211	Ratio of the periods in measurement mode A

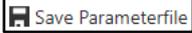
*Display of the tab „Parameter“ in the „Specialist“ user role. Unchangeable parameter values have a dark background in the system, changeable parameter values have **no** highlighted background.*

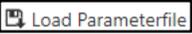
In the tab *Parameter*, various parameters of the connected device can be read out and/or set, depending the chosen user role. The device parameters are displayed in tabular form in this tab.

The column *RIGHTS* provides the user with information about his authorizations for he respective parameter. A distinction is made between the following authorizations:

- ro  
(= read only); the user can only read this parameter value but cannot change it. The value that cannot be changed by the user are highlighted in dark gray in the system.
- rw  
(= read and write); the user can both read out and configure this parameter value. The parameter values that can be configured by the user are not highlighted in color in the system.

Above the tabular overview the user has the possibility to save the set parameters, load them from a file or reset them.

By selecting the -button, the user can save the parameter values currently stored in the system to an XML file.

Via the -button, the user has the option of reading in previously values from an XML file and uploading them to the device.

**This function can only be performed in the *Specialist* user role.**

The -button enables the user to reset the device used to its **delivery state** regarding the parameters set.

**This function can only be performed in the *Specialist* user role.**

## 5.2 Firmware

The tab *Firmware* gives the user the option, to perform a firmware update of the application.

**This function can only be performed in the user roles *Specialist* and *Maintenance*!**



Overview of the tab „Firmware“ in the User-Role „Maintenance“ resp. „Specialist“.

To perform the update, the user must use the -button. An explorer window opens, and the user is able to select the update file (format: iolfw).

After selecting the correct file, the update will be performed. The progress of the update is shown in the displayed status bar and as a percentage value.

## 5.3 Diagnosis

In the *Diagnosis* tab, the user gets a tabular representation of the current and recorded errors that were detected by the application on the current device. The columns of the tables provide the user with information about the type of registered errors.

In the column *CODE*, the error code is specified.

The column *NAME* shows the name of the error associated with the error code.

The respective errors are described in more detail in the column *DESCRIPTION*, and depending on the error code, the user also receives recommended actions for debugging.

The column *TIME SINCE* displays the operating time of the device that has elapsed since the registration of the error.

The information provided in the columns *IN MODULE* and *IN LINE* enable a more in-depth diagnosis by HAWE service if required.

Parameter   Firmware <b>Diagnosis</b> OutputsConfiguration						
<b>Current Errors and Warnings:</b>						
	CODE	NAME	DESCRIPTION	TIME SINCE	IN MODULE	IN LINE
✘	25376 (0x6320)	Parameter error	Check data sheet and values	02:29:11	Modul Id: 6	290
✘	25376 (0x6320)	Parameter error	Check data sheet and values	02:29:10	Modul Id: 6	297
⚠	6146 (0x1802)	Fluid level unknown	Fluid level cannot be measured.	02:29:10	Modul Id: 6	343
✘	6149 (0x1805)	Below minimum fluid level	Fluid level is too low. Refill the power pack to avoid damage.	02:29:10	Modul Id: 6	230
<b>Logged Errors and Warnings:</b>						
	CODE	NAME	DESCRIPTION	TIME SINCE	IN MODULE	IN LINE
✘	6149 (0x1805)	Below minimum fluid level	Fluid level is too low. Refill the power pack to avoid damage.	3:04:34:30	Modul Id: 6	230
✘	6149 (0x1805)	Below minimum fluid level	Fluid level is too low. Refill the power pack to avoid damage.	3:04:19:53	Modul Id: 6	230
✘	25376 (0x6320)	Parameter error	Check data sheet and values	3:04:03:48	Modul Id: 6	290
✘	25376 (0x6320)	Parameter error	Check data sheet and values	3:04:03:48	Modul Id: 6	297
✘	25376 (0x6320)	Parameter error	Check data sheet and values	3:01:58:01	Modul Id: 6	297
✘	6149 (0x1805)	Below minimum fluid level	Fluid level is too low. Refill the power pack to avoid damage.	3:01:58:01	Modul Id: 6	230
✘	25376 (0x6320)	Parameter error	Check data sheet and values	3:01:58:02	Modul Id: 6	290
✘	25376 (0x6320)	Parameter error	Check data sheet and values	02:29:11	Modul Id: 6	290
✘	6149 (0x1805)	Below minimum fluid level	Fluid level is too low. Refill the power pack to avoid damage.	02:29:11	Modul Id: 6	230
✘	25376 (0x6320)	Parameter error	Check data sheet and values	02:29:11	Modul Id: 6	297

Overview of the tab „Diagnosis“.

The table *Current Errors and Warnings* displays all errors, that are currently registered on the device.

In the table *Logged Errors and Warnings*, the 10 errors that were last registered on the device are listed. Errors that have already been corrected are also displayed in this overview.

## 5.4 OutputsConfiguration

In the tab *OutputsConfiguration*, the user can view the parameters to which the switching outputs of the device react. The associated threshold and the polarity of the output signal can also be configured here.

**To change these parameters or their values, the user must act in the role *Specialist*.**

NO.	NAME OF OUTPUT	OBSERVED PARAMETER	VALUE	OPERATOR	REFERENCE VALUE	STATUS
1	Switching output 1	[600,0] Oil temperature [°C]	28	<=	20	0 <input type="radio"/>
2	Switching output 2	[151,0] Power Pack operating time [sec]	0	<=	20	1 <input checked="" type="radio"/>
3	Switching output 3	[36,0] Device Status	4	<=	1	0 <input type="radio"/>

Overview of the tab „OutputsConfiguration“.

The column *OBSERVED PARAMETER* displays the parameter to which the switching output reacts. To change this, the user must select the parameter of the adequate switching output. A drop-down menu opens where the user can select the desired parameter.

The current value of the respective parameter is displayed in the column *VALUE*.

The columns *OPERATOR* and *REFERENCE VALUE* show the reference value, as well as the operator (<= “less than or equal to” and >= “greater than or equal to”), which shows the logical way the actual parameter value is linked to the stored reference value.

The operator can be changed analogously to the *OBSERVED PARAMETER* via a drop-down menu.

The change of the operator leads to the change of the polarity of the output signal.

The reference value can be entered manually by the user within the column *REFERENCE VALUE*.

The column *STATUS* displays the current output signal of each switching output.

If the condition, that is set to the *OBSERVED PARAMETER* in the columns *VALUE*, *OPERATOR* and *REFERENCE VALUE*, is fulfilled, the switching output is in status 1. In this status the supply voltage is switched through to the switching output.

If the condition is not fulfilled, the switching output is in status 0, showing the output is currently passive.