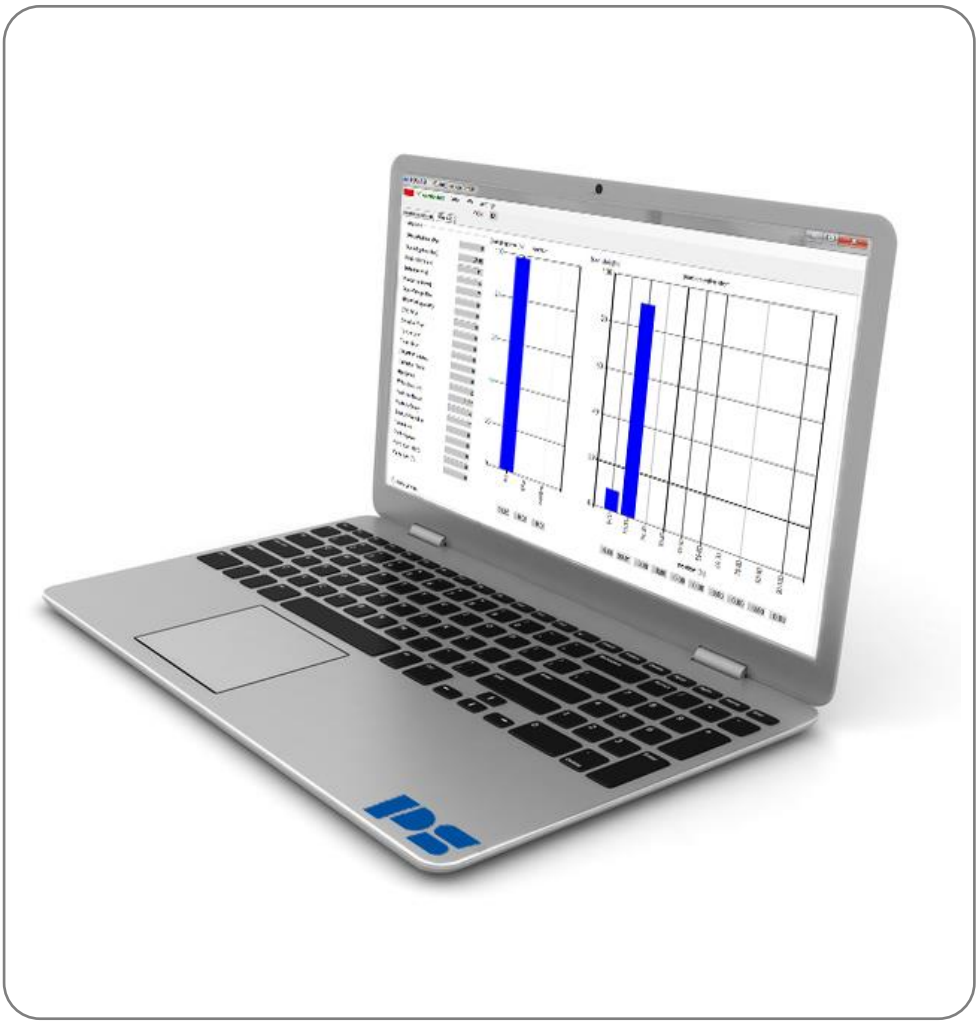
PS Automation
Gesellschaft für Antriebstechnik
We care for actuation.

Operating Instructions

Diagnosis Software PSCS.PSF
for PSF and PSF-M



Version 2019/08/19

Subject to changes!

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1. System Requirements

The following computer requirements have to be met to operate the software PSCS.PSF:
Operating system: Windows 7 or Windows 10
Free RAM: min. 10 MB
Interfaces: USB
CAUTION: The Software can communicate solely with actuators having a serial number 292355 and above!

2. Scope of Supply

The PSCS.PSF is consisting of 2 data cables with a specific dongle for connecting them, and a USB stick containing the PSCS software.

3. License Agreement

During installation of the software, the wording of a license agreement is displayed. Please read this carefully and confirm with OK if you agree in all points.

4. Function

The PSCS.PSF software serves as diagnosis tool for the intelligent PS Automation actuators PSF and PSF-M.

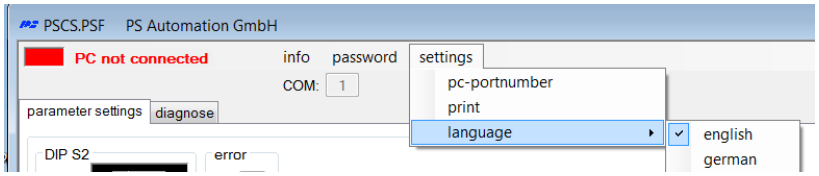
5. Installation

5.1. Installing the Software

The software and all auxiliary files are included in an application of the form 'PSCS_PSF_Setup.exe'. Its most recent version is available on the website www.ps-automation.com in the 'Downloads' section under 'Software' - 'Software PSCS.PSF'.
Store this file to your drive and start the application. An 'Install Shield' will guide you through the whole installation process.
Windows administrator's access rights are required for installing the PSCS.PSF software.

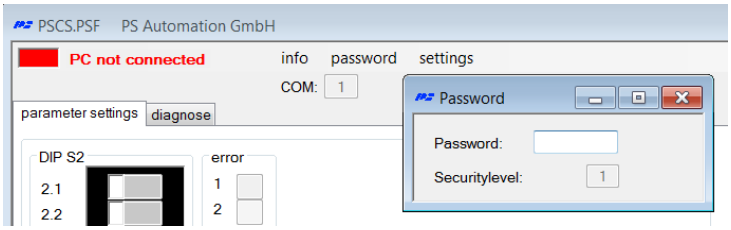
5.2. Language

Select the displayed language between German and English.



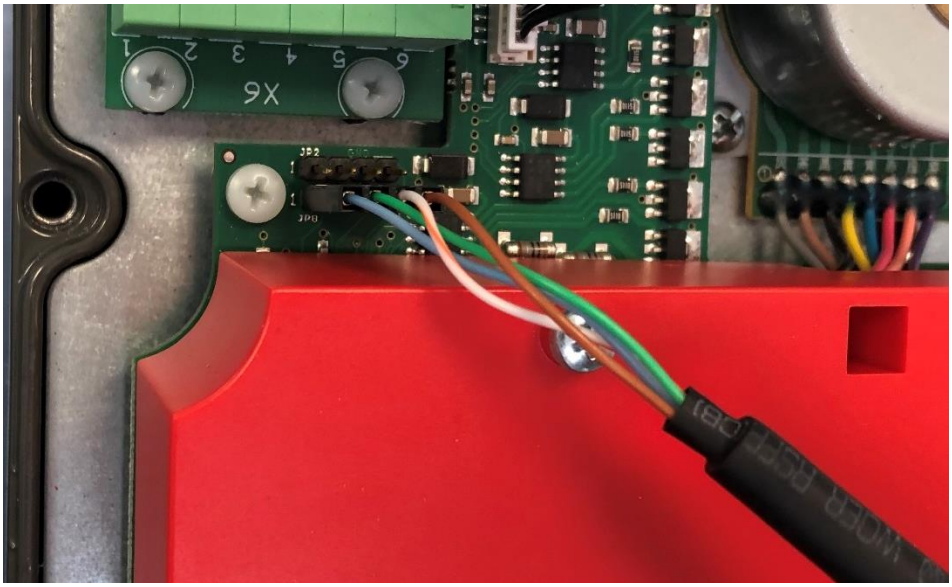
5.3. Password

No password is required for the using the PSCS.PSF software, the normal security level is level 1.
A password is meant for PS Automation service personnel.



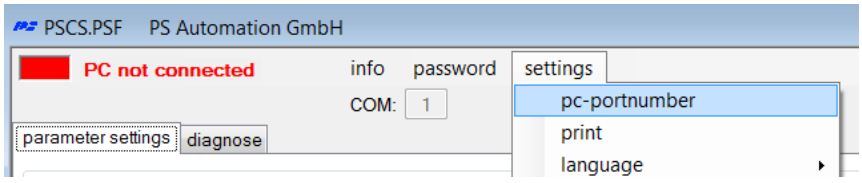
5.4. Establish Communication

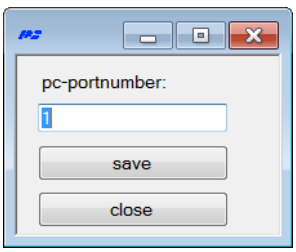
• Use the cables to connect a USB port of your computer to the 4-pin socket on the actuator main board, orientation as shown below.



• Switch on the power supply to the actuator.
• Open the Windows Device Manager of your computer and find the COM-Port which is used by PSCS.PSF.

• Enter the appropriate pc-port number in the PSCS.PSF software as shown and finish with ‘save’.

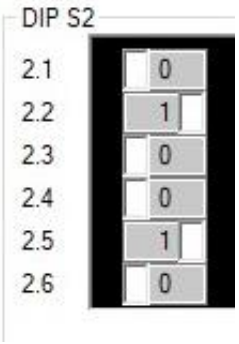




The program will connect automatically to the actuator.
In the upper left corner of the software screen, the green ‘PC connected’ and the red/green blinking window- show a successful connection.

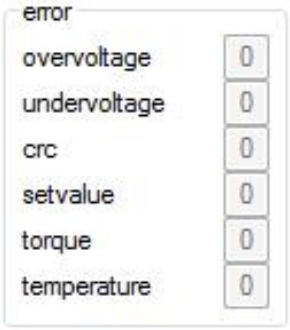
6. Information for Actuator Diagnosis

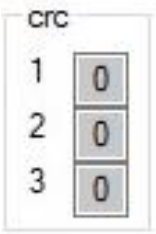
6.1. Parameter Settings



The chart ‘DIP S2’ shows the position of the DIP switches as adjusted on panel S2. Depending on the actuator model, either 6 or 10 DIP switches are shown.
The instruction manual of the respective actuator describes the function of these switches.

The chart ‘error’ shows the actual error status of the actuator.

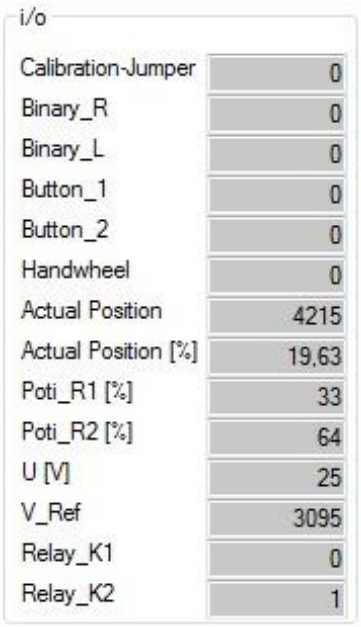




‘crc’ stands for ‘cyclic redundancy check’ and is a verification to check the actuator’s internal flash memory. After each start, a new check sum is calculated and compared to the previous check sum.

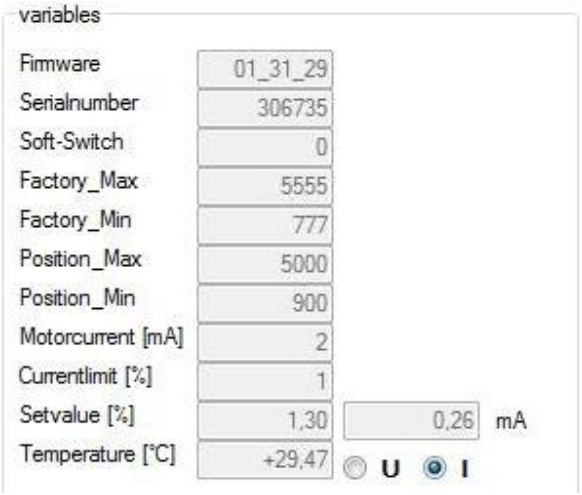
In case an error is shown, switch power off and after 5 seconds switch power on again.
If this procedure does not remove the error, please consult your contact person at PS Automation.

The ‘i/o’-chart displays information (0 = off, 1 = on) about signals and status:



Calibration-Jumper -> internal factory setting
Binary_R -> status of the binary port
Binary L -> status of the binary port
Button_1 -> status of the push button
Button_2 -> status of the push button
Handwheel -> status of the hand wheel (only at PSF-M)
Actual Position -> shows actual absolute position
Actual Position [%] -> shows actual position in % of the adjusted valve stroke
Poti_R1 [%] -> position of the potentiometer (for adjusting position relays)
Poti_R2 [%] -> position of the potentiometer (for adjusting position relays)
U [V] -> actual voltage
V_Ref -> internal reference value
Relay_K1 -> status of the position-feedback relay
Relay_K2 -> status of the position-feedback relay

‘variables’ shows further information about the status and setting of the actuator:

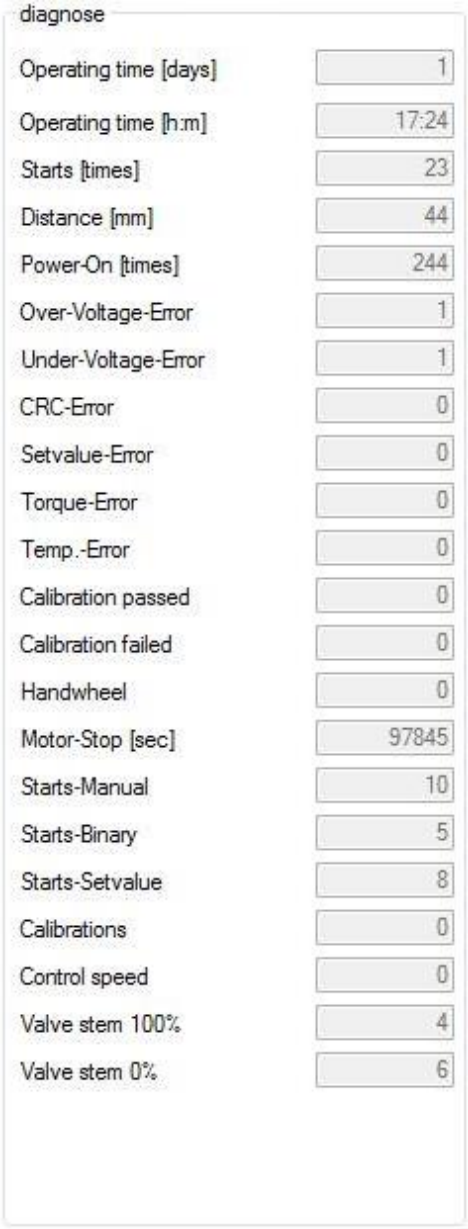


Firmware -> firmware version that is installed on the actuator
Serialnumber -> serial number of the actuator
Soft-Switch -> internal information
Factory_Max -> maximum possible stroke position
Factory_Min -> minimum possible stroke position
Position_Max -> maximum position of the found valve stroke
Position_Min -> minimum position of the found valve stroke
Motorcurrent [mA] -> actually drawn motor current
Currentlimit [%] -> motor current in percentage to momentary current limit
Setvalue [%] -> applied set value in % of maximum adjusted set value
Temperature [°C] -> temperature on the main board
U= voltage I= current

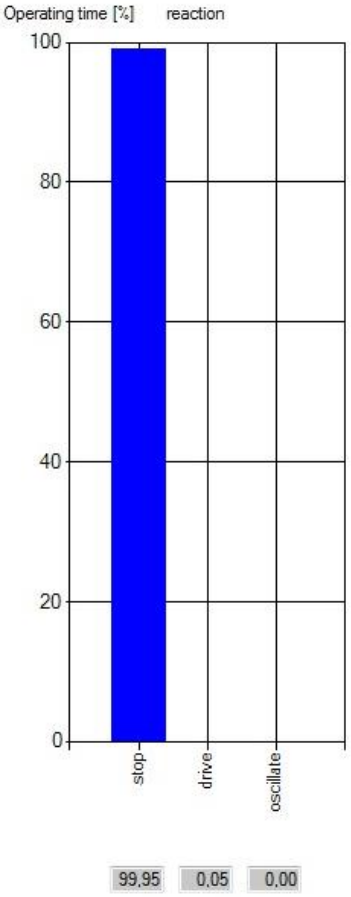
LJ_1 to LJ_4 -> Status of the solder jumpers on the main board

‘write to file’ saves the data to a csv-file on your computer.

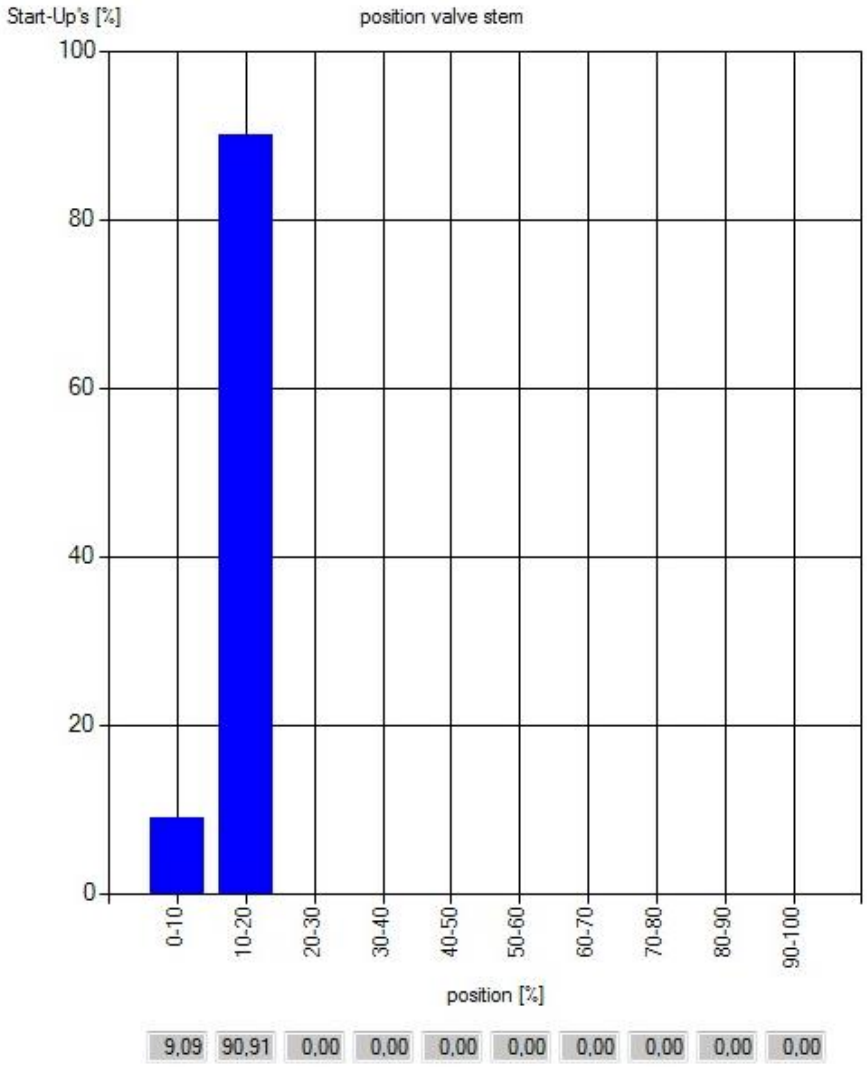
6.2. Diagnosis



Diagnose	Explanation
Operating time [days]	Number of days during which the actuator was under power
Operating time [h:m]	Time in hours and minutes during which the actuator was under power
Start-Up's [times]	Number of starts (at least 250 rpm of the motor)
Distance [mm]	Accumulated stroke in mm
Power-On [times]	Number of power-ons
Over-Voltage-Error	Number of over-voltage-errors (supply voltage above 39 V, only for 24 V supply))
Under-Voltage-Error	Number of under-voltage-errors (voltage supply below 18 V, only for 24 V supply)
CRC-Error	Number of CRC-errors
Setvalue-Error	Number of set value errors (50% below adjusted lowest set value)
Torque-Error	Number of torque errors
Temperature-Error	Number of temperature errors
Calibration passed	Number of successful calibrations
Calibration failed	Number of failed calibrations
Handwheel	Number of hand wheel activations (only PSF-M)
Motor-Stop [sec]	Time during which the motor was staying in position while under power
Start-Up Manual	Number of starts prompted by the push buttons
Start-Up Binary	Number of starts prompted by the binary input signal
Start-Up Setvalue	Number of starts prompted by analogue set value
Calibrations	Number of calibrations started (successful and failed)
Control speed	Number of changes of actuation speed (only PSF-M)
Valve stem 100%	Number of times when valve stem reached fully extended position
Valve stem 0%	Number of times when valve stem reached fully retracted position



The chart ‘reaction’ shows the percentage of the motor movement compared to the total operating time.
In case the chart shows ‘oscillating’ movement predominantly, the control loop needs optimisation.



The chart ‘position valve stem’ displays the distribution of the positions in which the actuator stopped its movements as percentage over the valve stroke (histogram).
In case the actuator modulates near the upper or lower position limits, the valve selection or the control range might need optimisation.

7. Tracing Faults

In case of communication problems, please check the following steps:

- Is correct supply voltage connected and switched on?
- Are the plugs of the communication cable firmly plugged in the sockets of actuator and computer?
- Is the plug to the actuator main board fitted in the correct orientation?
- Has the correct COM port been selected, and not assigned to other devices? At laptop PCs, COM 1 is often used internally for a touch pad.
- In case 'CRC error' is shown, switch power off and after 5 seconds switch power on again. If this procedure does not remove the error, please consult your contact person at PS Automation.

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