

Preliminary for testing only

Clarity Control

ASI 500/501


LC UNI profile

ENG

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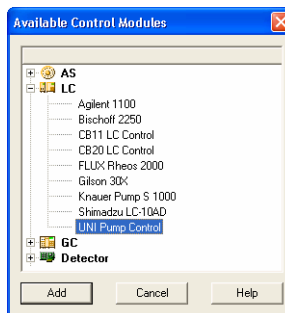
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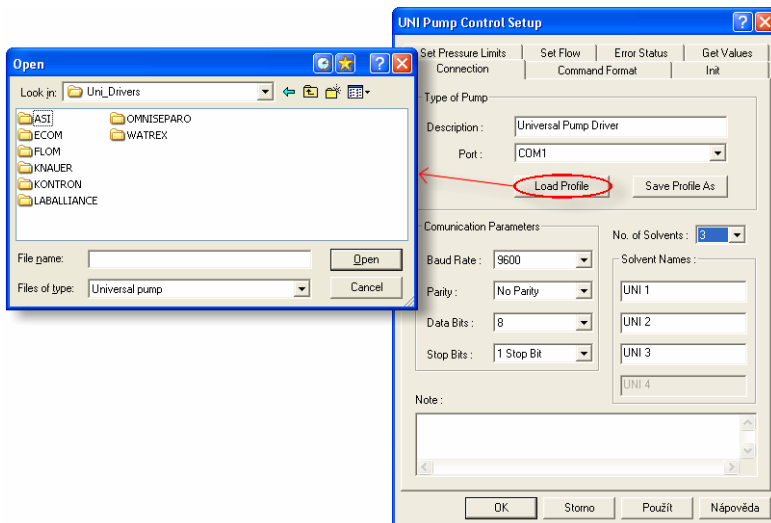
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1 Profile Setup

- Invoke the **System Configuration** dialog accessible from the **Clarity** window using the **System – Configuration** command.
- Press the **Add** button to invoke the **Available Control Modules** dialog.



- Select the **Uni Pump Driver** and press the **Add** button.
- The **Setup - Connection** dialog will appear.



- Use the **Load Profile** button to load the corresponding configuration for your LC pump.

Note: Profile is stored in *.UNI file. You will find profile file for your LC Pump in the C:\CLARITY\UTILS\UNI_DRIVERS\YOURPUMP folder.

- Select the number of controlled solvents in the **No. of Solvents** field.
- Fill in the communication parameters and solvent names.

Caution! The values from Com **Port** and **Baud Rate** fields are not stored in the profile. These values must be set according to the actual configuration. Using an incorrect **Baud Rate** may cause the program to hang-up during opening the Clarity **Instrument** window.

- Press the **OK** button.

Note: Advanced users may create a new profile or customize existing one. Detailed description can be found in the **Universal Pump Control Module** manual.

- Switch to the desired instrument tab in the right part of the **System Configuration** dialog.

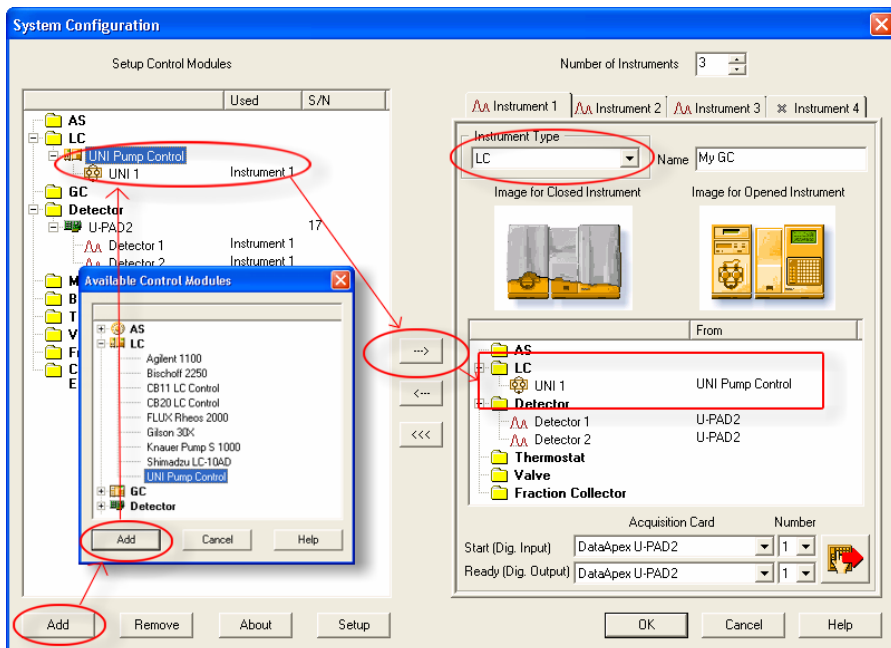


Fig. 1. System Configuration

- Drag and drop the **UNI Pump Driver** from the **Setup Control Modules** in the left to the instrument on the right.

Caution! *All defined solvents must be assigned on the same instrument.*

2 ASI 500/501 pump profile

ASI pump models **500** and **501** can be controlled by the UNI control driver.

Note: *There is also a possibility to use the analog control through the **CB20** pump control board.*

2.1 ASI 500/501

This profile can be used with **ASI** pump models **500** and **501**.

The user must observe the pressure and flow limits according to the pump and head type, sending values outside the valid range will cause communication or pump error.

Communication parameters

Baud rate	9600
Parity	No parity
Data bits	8
Stop Bits	1 Stop bit

2.1.1 Hardware and Software Requirements

Communication cable:

The communication cable is **Sub D 9 pin** receptacle connector (Canon female) on computer side to **xxxxxxx** connector (xxxxxxx) on pump side, connected according to the following table.

Wiring of the cable:

ASI 500/501	9F	Signal
1,6	5	Ground
2	4	DSR
3	3	RXD
4	2	TXD
5	6	DTR

2.1.2 LC Control Specifics and Limitations

- Any errors in communication are reported in **Clarity** as a "*Pump communication error*".

Caution! *This message will be invoked also when the pump does not accept the sent values – please check the pressure limits in the **Gradient Options** dialog and flowrates in the **Method Setup - LC Control** dialog.*

- Exceeded pressure limit will be reported in **Clarity** as "*Pump Error*". The communication can be restored without closing the instrument

3 Profile description

The UNI pump control module pages are described here for documentation of the state, see the Clarity UNI pump manual, chapter 4.4 for reference

3.1 Connection

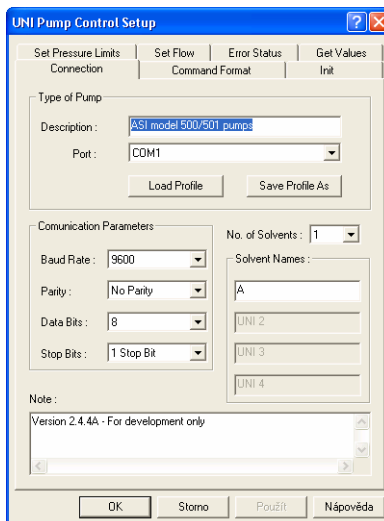


Fig. 2. *UNI Pump Control Setup - Connection*

3.2 Command format

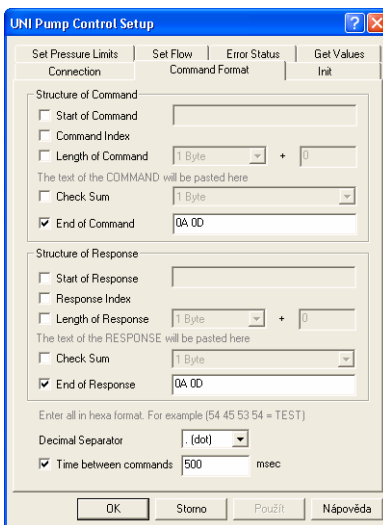


Fig. 3. UNI Pump Control Setup – Command Format

Those settings should ensure the <LF><CR> are used to recognize end of each command and response.

3.3 Init

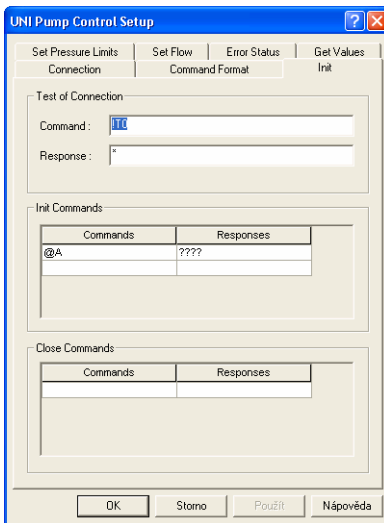


Fig. 4. UNI Pump Control Setup – Init

Usually for the test of connection is used some status or version request, for your pump I suggest to use the turn echo off to stop the sending of display copies. The * in response should accept any strings send by the pump before the command is performed.

As init command, the upper pressure request is send – there is no other sense than to help with the debugging.

3.4 Set pressure limits

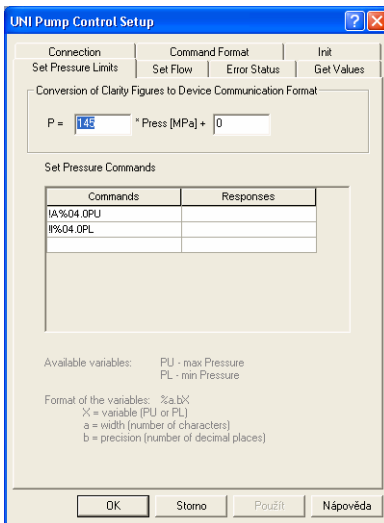


Fig. 5. UNI Pump Control Setup – Set Pressure Limits

The set pressure commands are send at each actualization of the method. MPa are used as units internally, thus the conversion factors must be set.

3.5 Set Flow

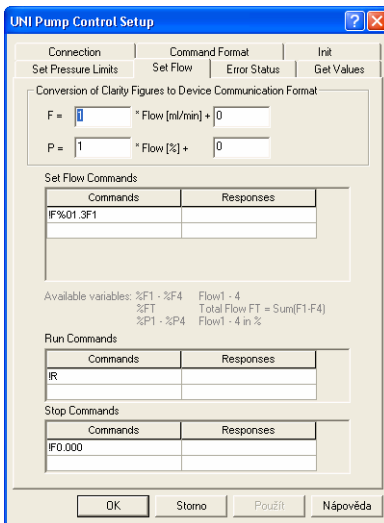


Fig. 6. UNI Pump Control Setup – Set Flow

Use the %F1 variable for isocratic pumps planned to be used in high pressure gradient. As no Stop command is implemented, the setflow to zero is used instead.

The Run command may not be necessary, the flow will be sent at each change of state.

3.6 Get Values

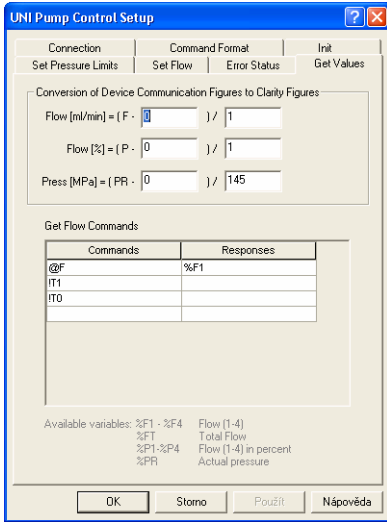


Fig. 7. UNI Pump Control Setup – Get Values

Flow rate will be read from the pump by the @F request. You can try to use this echo on, echo off commands and parse the response for pressure read out, but it must be tested.

3.7 Error Status

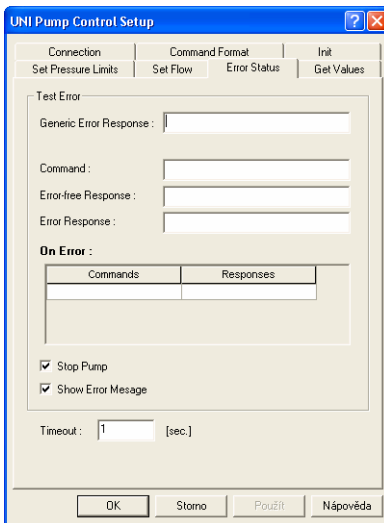


Fig. 8. UNI Pump Control Setup – Error Status

No error request or responses are described in the documentation. When an expected response to a command (i.e the flow rate request) will not come in the set timeout time, Communication error message will appear.