
Clarity Controls

LabAlliance


LC UNI profile

ENG

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1	Profile specification	4
2	Requirements	4
3	Profile Setup	4
4	LabAlliance pumps profiles	7
	4.1.1 Hardware and Software Requirements.....	8
	4.1.2 LC Control Specifics and Limitations	8
	4.2 LabAlliance.....	9
	4.3 LabAlliance_micro	9
	4.4 LabAlliance_Series_II	9
	4.5 LabAlliance_micro_Series_II	9
	4.6 LabAlliance Q-Grad pump	10

1 Profile specification

LabAlliance LC UNI profile presents features for controlling the LabAlliance Series I, II, III, 1500, prep 100 and Q-grad pumps. It is also suitable for the LabAlliance OEM pumps, such as Alltech/Grace 301, 426, 626 and 726 pumps and ChromTech ISO-100, 1000, 2000 and 1500 pumps.

2 Requirements

- Clarity Installation CD ROM with LC Control module (p/n A24).
- Free serial port in the PC. For the LabAlliance Q-grad (Alltech/Grace 726) pump, four free serial ports are needed.

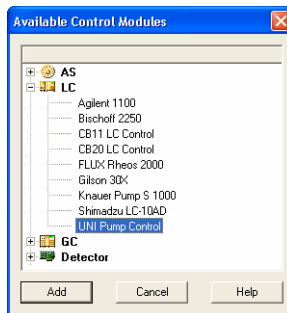
Note: *Modern computers usually have only 1 (if any) serial (COM) port installed. To use more devices requiring the port, the **MultiCOM** adapter (p/n MC01) is available.*

- Serial DB9F-RJ11 cable (p/n SK05). For the LabAlliance Q-grad (Alltech/Grace 726) pump, four DB9F-RJ11 cables are needed.

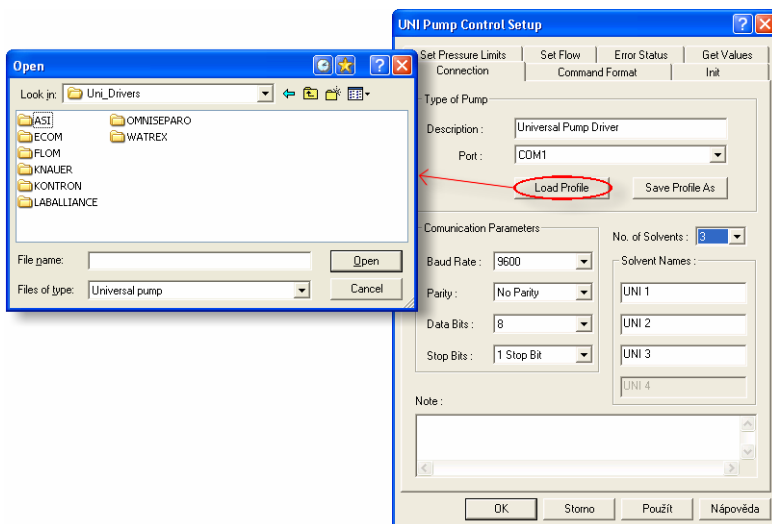
Note: *Cables are not part of **Clarity** Control Module. It is strongly recommended to order required cables together with the Control Module.*

3 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.

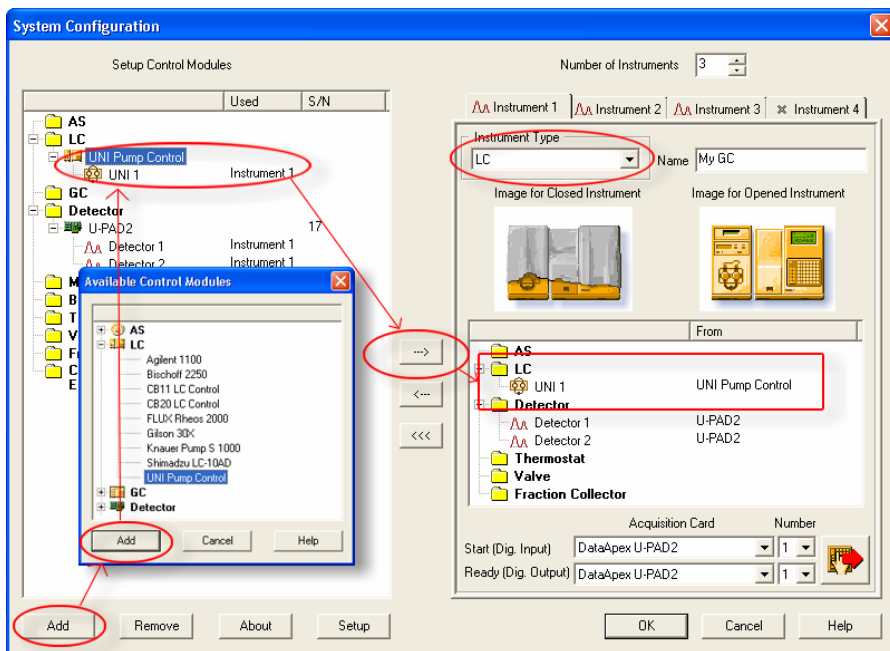


Fig. 1. System Configuration

- 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.

4 LabAlliance pumps profiles

LabAlliance pumps models **Series II**, **Series III**, **Prep 100** or **1500** can be controlled by the UNI control driver. Appropriate profile need to be selected. **Q-Grad** pumps can be controlled also.

Note: *There is also a possibility to use the analog control through the **CB20** pump control board for **Series III**, **Prep 100** or **1500** pumps.*

LabAlliance pumps can be configured with different head types (standard, prep, micro), the proper pump head type must be selected on the pump (Pres RUN on the pump keyboard during pover up). The pump will deliver wrong flowrate, when the configured head type does not match the installed one.

Pump head types Series III, Series II, Series 1, (Q-grad*)

Head Type	High Pressure limit, psi	Flow Rate ml/min	Code	Head Code
10ml steel	6000	0,00-10,00	1	S10
10ml plastic	5000	0,00-10,00	2	P10
40ml steel	1600	0,0 – 40,0	3	S40
40ml plastic	1600	0,0 – 40,0	4	P40
5 ml steel	0-6000 (5000*)	0,00-5,00	5	S5
5 ml plastic	0-5000 (4000*)	0,00-5,00	6	S5

Pump head types 1500, Prep 100

Head Type	High Pressure limit, psi	Flow Rate ml/min	Code	Head Code
12 ml steel	6000	0,00-24,00	1	S12
12 ml plastic	5000	0,00-24,00	2	P12
50 ml steel	4000	0,0 – 100,0	3	S50
50 ml plastic	3200	0,0 – 100,0	4	P50
6 ml steel	6000	0,00-12,00	5	S6
6 ml plastic	5000	0,00-12,00	6	P6

Note: *(Head Code serves for manual setting/check of head type – press **Run/Stop** on the pump keypad during powering on the pump.*

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

4.1.1 Hardware and Software Requirements

Communication cable:

The communication cable is DB9F-RJ11 (computer side / pump side), connected according to the following table:

Wiring of the cable:

LabAll	9F	Signal
1,6	5	Ground
2	4	DSR
3	3	RXD
4	2	TXD
5	6	DTR

4.1.2 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

4.2 LabAlliance

This profile can be used with **LabAlliance** pump models **Series III**, **Prep 100** or **1500**.

4.3 LabAlliance_micro

This profile can be used with **LabAlliance** pump models **Series III** or **1500** equipped with micro heads and capable of microstepping. On the pump display the flow is displayed to three decimals i.e. like 0.000.

The flow can be set to 3 decimal places (the Clarity LC monitor will show only 2 however). To see all three valid digits in Clarity LC Monitor, the flow rate units can be changed to ul/min in the LC control, Options dialog window.

Note: *The difference to the LabAlliance profile is, that the FM command is used instead FO command for sending the flow rate.*

4.4 LabAlliance_Series_II

This profile can be used with **LabAlliance** pump models **Series I** or **Series II**, which do not have the pressure transducer. Series II pumps are usually combined with Series III pumps to form high pressure gradients. In such case, the Series III pumps should be configured as a first pump on the instrument to display the pressure readings in LC Monitor.

Note: *The difference to the LabAlliance profile is, that the Pressure limits are not set and the Error Response field is ammended.*

4.5 LabAlliance_micro_Series_II

This profile can be used with **LabAlliance** pump models **Series I** or **Series II** equipped with micro heads and capable of

microstepping. On the pump display the flow is displayed to three decimals i.e. like 0.000.

The flow can be set to 3 decimal places (the Clarity LC monitor will show only 2 however). To see all three valid digits, the flow rate units can be changed to ul/min in the LC control, Options dialog window.

Series II pumps are usually combined with Series III pumps to form high pressure gradients. In such case, the Series III pumps should be configured as a first pump on the instrument to display the pressure readings in LC Monitor.

Note: *The difference to the LabAlliance Serie II profile is, that the FM command is used instead FO command for sending the flow rate.*

4.6 LabAlliance Q-Grad pump

For control of this pump, each solvent must be configured individually with its own communication cable and separate Com port (Four free Com ports on PC are necessary for control of this pump).

The solvent A should be configured as a Series III pump using the LabAlliance.uni profile, the solvents B, C, D should be configured as Series II pumps using the LabAlliance_Series_II.uni profile. The solvent A must be configured as a first solvent on the instrument.

In case the pump is equipped with micro heads and is capable of microstepping, the respective micro profiles can be used.

Note: *As the pump has no keyboard control, the pump head type could not be set from the pump. In case wrong pump head type is set (the pump delivers different flow rate then set), activate the commdrv communication recording utility and check the reply to the RH command during initialization. To set the correct head type, add command "HT5" (for 5 ml/min steel heads) to the Init commands table with the response "OK"*