



RHEODYNE LAB PRO

Clarity Control Module

ENG

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To facilitate the orientation in the **Rheodyne Lab Pro** manual and **Clarity** chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

Open File (italics) describes the commands and names of fields in **Clarity**, parameters that can be entered into them or a window or dialog name.

WORK1 (capitals) indicates the name of the file and/or directory.

ACTIVE (capital italics) marks the state of the station or its part.

Chromatogram (blue underlined) marks clickable links referring to related chapters.

The bold text is sometimes also used for important parts of the text and the name of the **Clarity** station. Moreover, some sections are written in format other than normal text. These sections are formatted as follows:

Note: Notifies the reader of relevant information.

Caution: Warns the user of possibly dangerous or very important information.

█ Marks the problem statement or trouble question.

Description: Presents more detailed information on the problem, describes its causes, etc.

Solution: Marks the response to the question, presents a procedure how to remove it.

1 Rheodyne Lab Pro Control Module

This manual describes the setting of the **Rheodyne Lab Pro** valve. The control module enables direct control of the instrument over serial line.



Fig. 1: Rheodyne Lab Pro

Direct control means that the valve can be completely controlled from the **Clarity** environment. The Instrument method controlling the analysis conditions will be saved in the measured chromatograms.

The control is performed via the **UNI Ruby** control module and the **Rheodyne Lab Pro** script.

2 Requirements

- **Clarity** Installation with LC Control (p/n A24) or GC Control (p/n A23).
- Free serial COM port in the PC.

-
- Note:* Modern computers usually have only one (if any) serial (COM) port installed. To use more devices requiring the RS232 port, the **MultiCOM** adapter (p/n MC01) is available.
- Either serial DB9F-DB25F cable (p/n SK04) or original Rheodyne 5123-067 RS-232 cable.

3 Installation Procedure

3.1 Rheodyne Lab Pro valve communication

It uses a standard serial DB9F-DB25F cross cable (p/n SK04) described in the picture below.

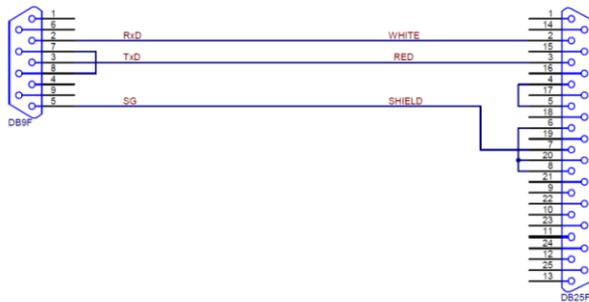


Fig. 2: DB9F-DB25F

3.2 Clarity Configuration

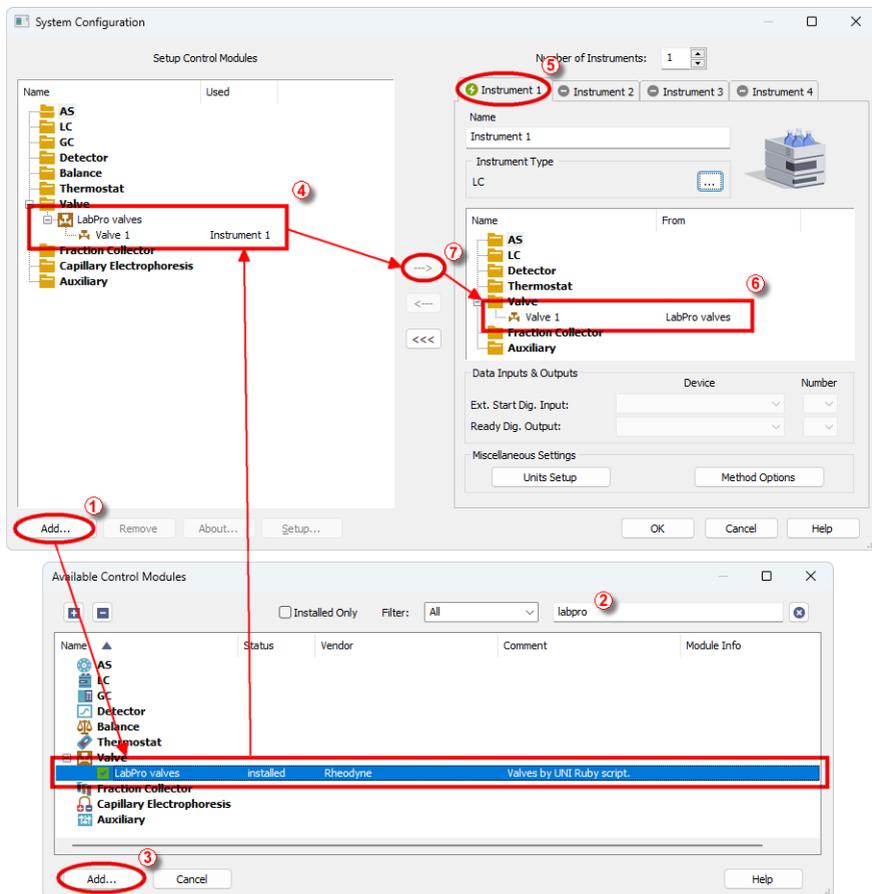


Fig. 3: How to add Rheodyne Lab Pro

- Start the **Clarity** station by clicking on the  icon on the desktop.
- Invoke the *System Configuration* dialog accessible from the *Clarity* window using the *System - Configuration...* command.
- Press the *Add* button (① on Fig. 3 on pg. 4.) to invoke the *Available Control Modules* dialog.
- You can specify the search filter (②) to simplify the finding of the driver.

- Select the correct item and press the *Add* (③ on Fig. 3 on pg. 4.) button. Each device with already created UNI profile should have its own item named accordingly in the *Available Control Modules* dialog.
- The *DataApex UNI Setup* dialog will appear.

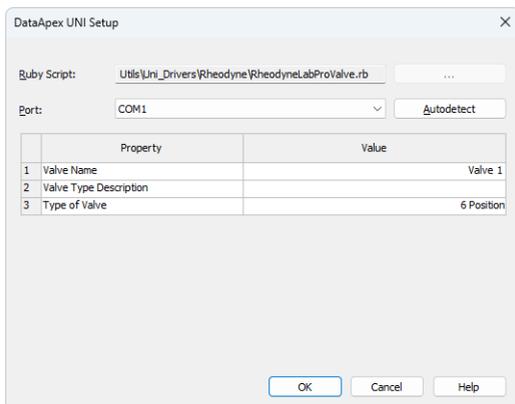


Fig. 4: Rheodyne Lab Pro Setup

- Set the correct communication *Port* and click on the *AutoDetect* button to establish communication with the device.
- You may fill in the custom *Device Name*.

Note: The *DataApex UNI Setup* dialog is described in detail in the chapter "**DataApex UNI Setup**" on pg. 11.

- The **Rheodyne Lab Pro** item (④) will appear in the *Setup Control Modules* list of the *System Configuration* dialog.
- Drag the appropriate item from the *Setup Control Modules* list on the left side to the desired *Instrument* tab (⑤) on the right side (⑥), or click on the (--->) button (⑦).

4 Using the control module

After adding and setting up the **Rheodyne Lab Pro** a new Valves tab will appear in the [Method Setup](#) dialog. A new **Rheodyne Lab Pro** valve section enabling the monitoring of the current valve state will be also created in the *Device Monitor* window.

4.1 Method Setup - Valves

The *Method Setup - Valves* tab is used for preparing and editing the instrument method used by the **Rheodyne Lab Pro** valve.

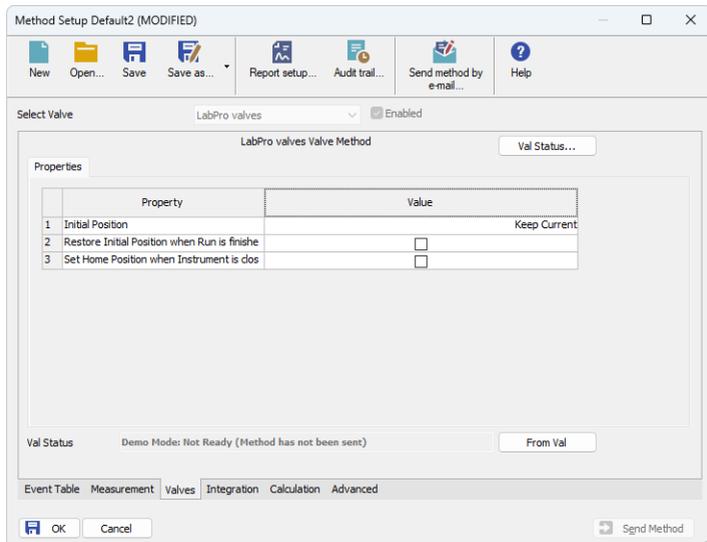


Fig. 5: Method Setup - Valve

Initial Position

Specifies the initial position to which the valve is switched when sending of the method. Possible values are: *Keep Current*, 1, 2, ..., X, where X is the number of positions set for the valve.

Keep Current option does not change the valve position when sending of the method.

Restore Initial Position when Run is Finished

This checkbox specifies what will happen after the acquisition is finished. If checked, the valve will return to the state specified in the *Initial Position* field.

Set Home Position when Instrument is closed

This checkbox specifies what will happen after the Instrument is closed. When checked, the valve will return to the home position. When unchecked, the valve will stay in its current position or move to the position set in Event Table. Default state is "unchecked".

4.2 Method Setup - Event Table

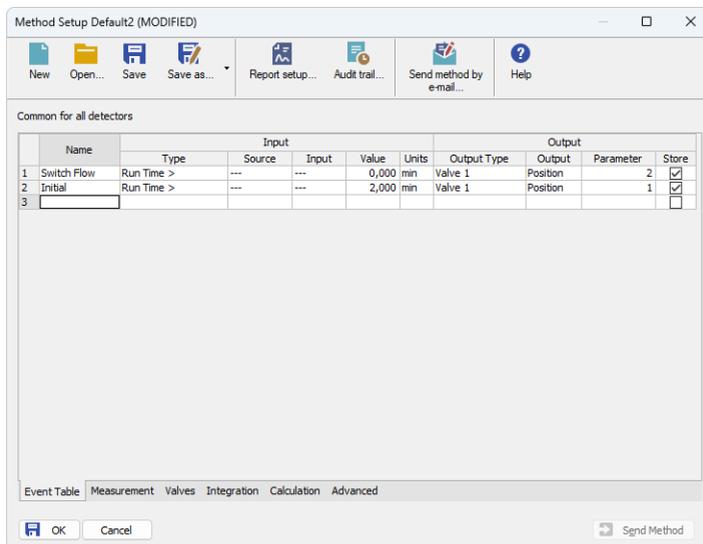


Fig. 6: Method Setup - Event Table

The *Method Setup - Event Table* tab is, apart from other things, also used for switching the positions of the **Rheodyne Lab Pro** valves based on selected events (run time, signal level etc.). For complete description of the available events in the *Method Setup - Event Table* please check **Clarity Reference Guide** or online help.

4.3 Hardware Configuration

The *Hardware Configuration* dialog (invoked by using the *From Val* button from the Method Setup - LC Method Setup - Valves dialog) displays the configuration of the **Rheodyne Lab Pro**, namely the communication type and its parameters.

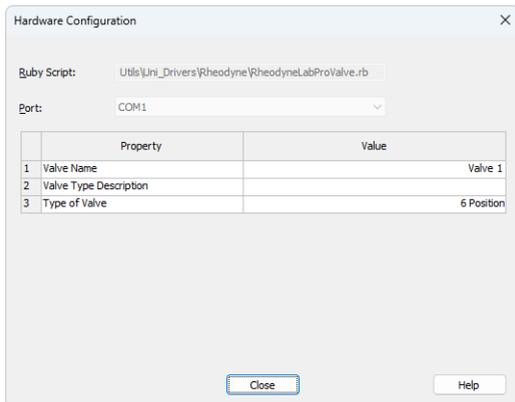


Fig. 7: Hardware Configuration

4.4 Device Monitor

The window with the valve status can be invoked by the *Monitor - Device Monitor* command from the *Instrument* window or using the  *Device Monitor* icon.

Device Monitor - Valve

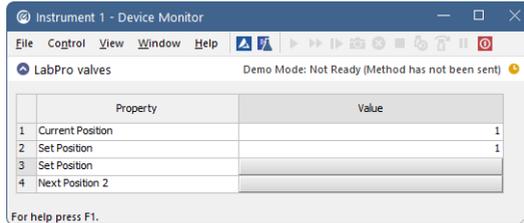


Fig. 8: Device Monitor - Valve

Current Position

Indicates the current position of the valve.

Set Position

Allows you to set the position you want the valve to go.

Set Position Button

Click on the button on the Value column for the valve to move to the position indicated above, on Set Position.

Next Position X Button

Click on the button on the Value column for the valve to move to the next position. X stands for the exact position where the valve will be moved to.

4.5 DataApex UNI Setup

The appearance of the *DataApex UNI Setup* dialog depends on the presence of the selected Ruby Script - if the script is not present, only the *Ruby Script* field is visible.

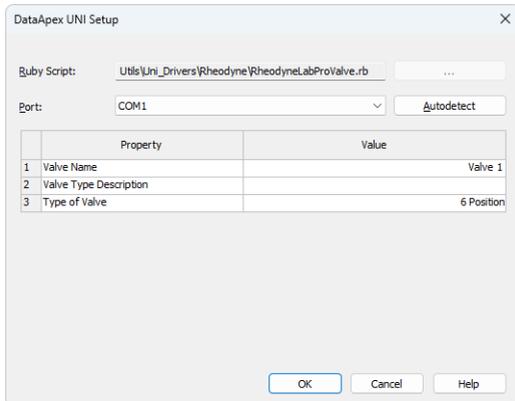


Fig. 9: Rheodyne Lab pro Setup

Ruby Script

Displays the selected Ruby Script. The correct RHEODYNELABPROVALVE.RB script for the **Rheodyne Lab Pro** instrument can be found in the UTILS/UNI_DRIVERS/RHEODYNE subdirectory (accessible through the button) of the **Clarity** installation folder (C:\CLARITY\BIN by default).

Port

Defines the communication port used, possible values dependent on the type of communication of the device and/or available ports in the PC.

AutoDetect

It is used for verifying the device communication over the serial port selected above.

Instrument Name

Allows you to set the custom name of the instrument. This name (entered into the *Value* column) will be used throughout the **Clarity** station.

Device Type Description

Here you can write a short description of the type of device.

Device Type

Displays the subtype of the valve.

5 Report Setup

The valve section on the method report can be enabled by checking the *Instrument Control* checkbox on the *Method* tab of the *Report Setup* dialog.

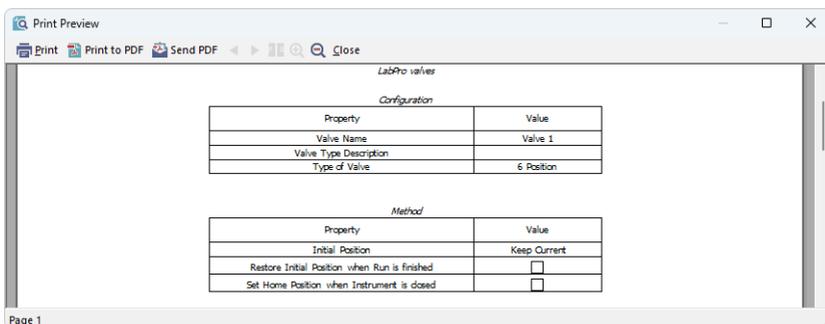


Fig. 10: Report Setup

All of the parameters set in the Method Setup - Valve dialog are reported, as well as the custom *Valve Name* and other parameters set in the *DataApex UNI Setup* dialog.

6 Troubleshooting

When the solution to a problem cannot be found easily, a recording of the communication between **Clarity** and the valve will significantly help **DataApex** support.

The data recording can be enabled by adding or amending the COMMDRV.INI file in the **Clarity** installation directory (C:\CLARITY\CFG by default). The file can be edited in any text editor (e.g. Notepad). The following section should be edited or added:

```
[COM1]
echo=on
textmode=on
filename=CommDrvCOM1_%D.txt
reset=off
```

Note: Instead of COM1, type the communication port used to communicate with the **Rheodyne Lab Pro** valve. This port number is displayed when the *From Val* button in the Method Setup - Valves dialog is invoked.

Note: *%D* (or *%d*) in the filename parameter means that the log will be created separately for each day. The *reset=off* parameter disables deleting the content of the log each time the station is started during the same day.

The created *.TXT files will be of great help in the diagnosis of not documented errors and communication issues.