



SYKAM S4300 AMINO ACID ANALYZER

Clarity Control Module

ENG

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Contents

1 Sykam S4300 Amino Acid Reaction Module	1
2 Requirements	2
3 Installation Procedure	3
3.1 Hardware - Wiring	3
3.2 Clarity Configuration	4
4 Using the control module	6
4.1 Method Setup - Thermostat - Detector	6
4.2 Device Monitor	8
4.3 Sykam S4300 Reaction Module Setup	10
5 Report Setup	11
6 Troubleshooting	12

To facilitate the orientation in the **Sykam S4300 Amino Acid Analyzer** manual and **Clarity** chromatography station, different fonts are used throughout the manual. Meanings of these fonts are:

Instrument (blue text) marks the name of the window to which the text refers.

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 (when you already are in the topic describing the window).

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

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

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 Sykam S4300 Amino Acid Reaction Module

This manual describes the setting of the **Sykam S4300 Amino Acid Reaction Module**. The module contains thermostat, integrated pump and a detector with analog output. It uses two wavelengths in order to be able to detect all amino acids .



Fig 1: Sykam S4300 reaction module

The control module enables direct control of the instrument over serial line. Direct control means that the module can be completely controlled from the **Clarity** environment. Instrument method controlling the analysis conditions is saved in the measured chromatograms.

2 Requirements

- **Clarity** Installation USB with LC (p/n A24) Control module.

Caution: Minimal firmware version required of the **Sykam S4300 Reaction Module** is **1.0.4**.

- **Colibrick** A/D converter (p/n U32).
- 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 port, the **MultiCOM** adapter (p/n MC01) is available.

- Serial straight DB9F-DB9M cable (p/n SK02).

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

3 Installation Procedure

3.1 Hardware - Wiring

The **Sykam S4300** reaction module is controlled over serial (RS232) communication. It uses standard serial straight cable DB9F-DB9M wiring described in the picture.

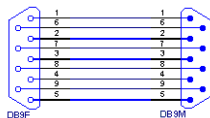


Fig 2: Serial straight DB9F - DB9M cable

3.2 Clarity Configuration

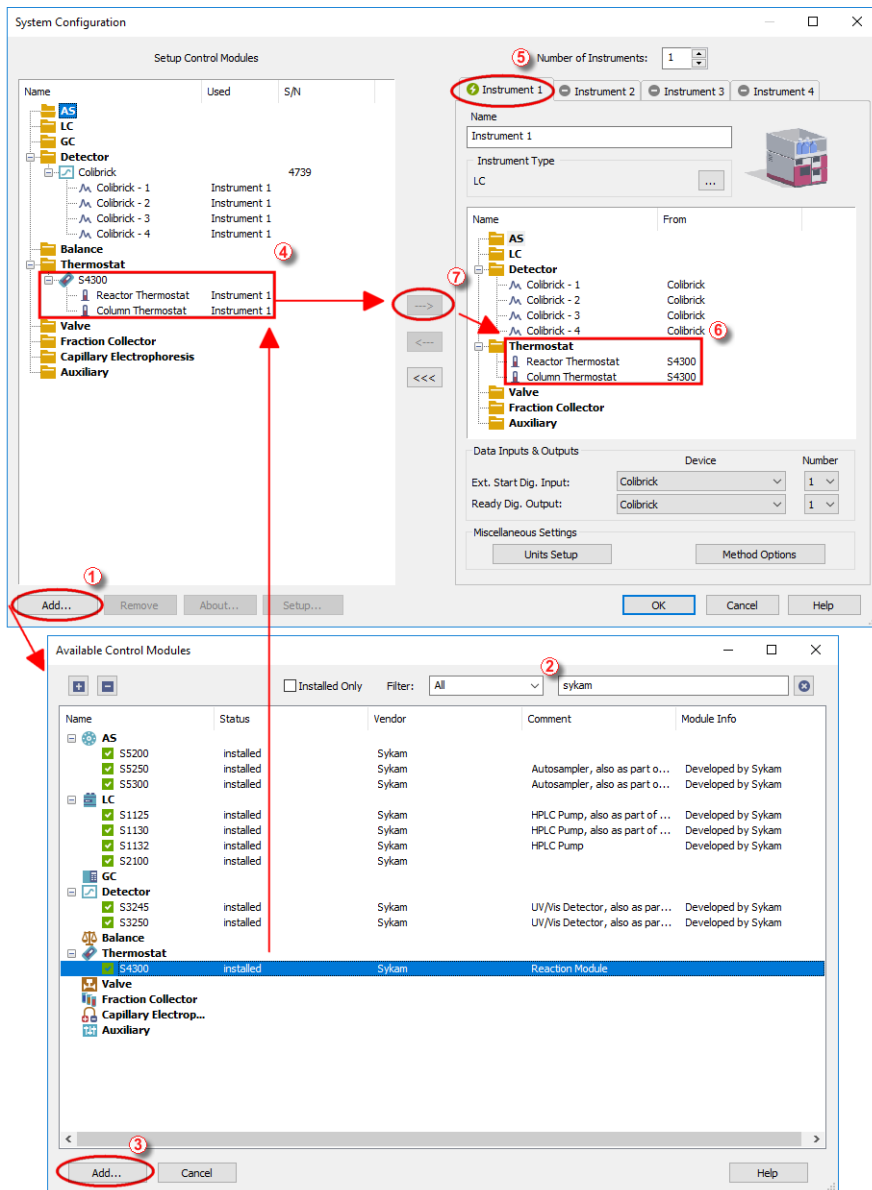



Fig 3: System Configuration

- 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 to invoke the **Available Control Modules** dialog.
- You can specify the searching filter ② to simplify the finding of the driver.
- Select the **Sykam S4300** from the **Thermostats** group and press the **Add** ③ button.
- The **Sykam S4300 Setup** dialog will appear.

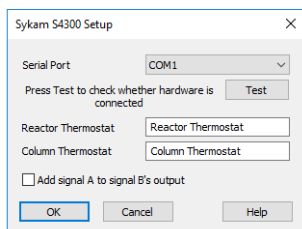



Fig 4: Sykam S4300 Module Setup

- Select the correct **COM Port** and press the **Test** button.
- The **Sykam S4300** item ④ will appear in the **Setup Control Modules** list of the **System Configuration** dialog.
- Drag the whole **S4300** thermostat group from the **Setup Control Modules** list on the left side to the desired **Instrument** tab ⑤ on the right side ⑥, or use the  button ⑦ to do so. The individual thermostat signals cannot be assigned to different **Clarity** Instruments.
- Repeat steps 1 - 7 to add **Colibrick**. Parameters of the **Method Setup – Acquisition** dialog of **Colibrick** depend on the type of analysis (measuring conditions), refer to **Colibrick** manual.

Note: The configuration dialog of the **Sykam S4300** (Sykam S4300 Setup) can be displayed any time by double-clicking on its icon or using the **Setup** button.

4 Using the control module

New **Thermostat** tab for the **Sykam S4300** reaction module appears in the **Method Setup** dialog. This tab allows to set the Detector, Pump and Temperatures settings.

4.1 Method Setup - Thermostat - Detector

Integrated dual-channel photometer for the detection of amino acids at 440 and 570 nm. Signals are available as analog outputs only.

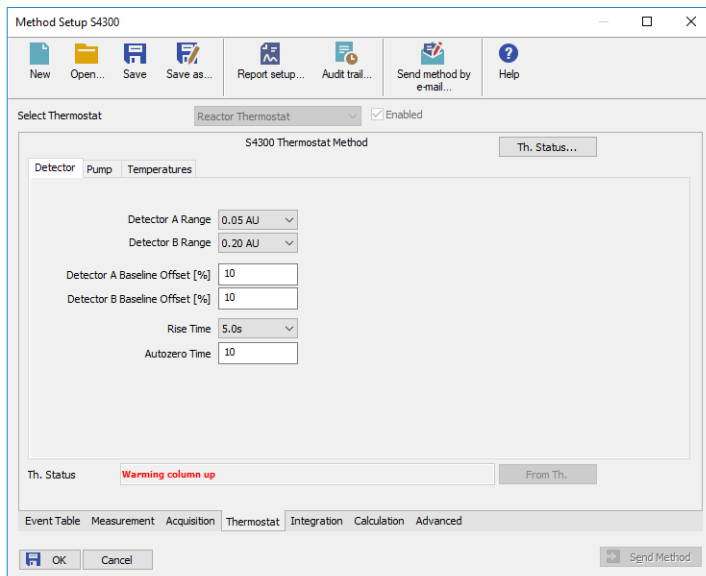


Fig 5: Method Setup - Thermostat - Detector

Detector Range

Sets detector A/B range. Available values are 0.05, 0.1, 0.2, 0.5, 1.0 and 2.0 AU.

Detector Baseline Offset

Shifts the signal value baseline.

Rise Time

Allows to turn on the signal filtering. To turn it on, set the appropriate *Rise Time* in seconds. Available values are 0.1, 1.0 and 5.0 s.

Autozero

Performs the autozero operation on all present signals (it is not possible to autozero particular signals only).

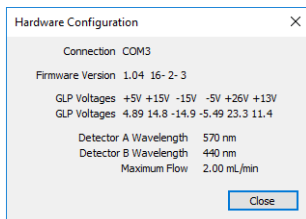
Th. Status...

Fig 6: Hardware Configuration

After pressing the *Th. Status...* button the [Hardware Configuration](#) dialog opens. It displays the serial port through which it is connected, used firmware version, GLP voltages and detector wavelengths and maximum flow.

4.2 Device Monitor

The window with the Reactor Thermostat status can be invoked by the *Monitor - Device Monitor* command from the **Instrument** window. It allows to *Set Volumes*, *Wash* or *Stop* the operation or check the Reactor and Column temperature, Run Time, Flow and Pressure.

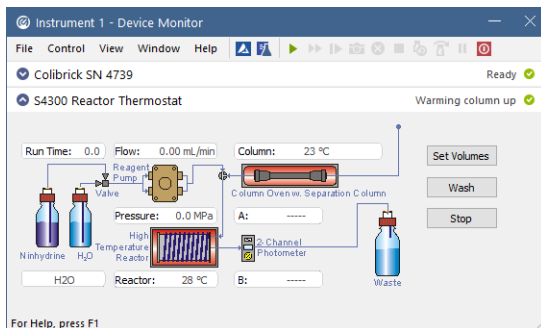


Fig 7: Device Monitor

Set Volumes

The **Set remaining solvents** dialog will be opened. It shows actual volume of solvents and it enables to set refill volume. Warn field allows user to set minimal volume of solvent. When reached, warning message will appear. When the solvent volumes reach zero, the system will be stopped by invoking error.

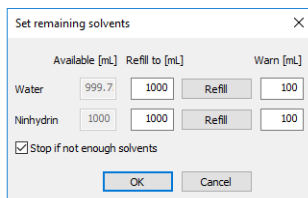


Fig 8: Set remaining solvents

Wash

This dialog allows to manually perform system wash. To set reactor's and column's temperatures, reagent pump flow and choose solvent type.

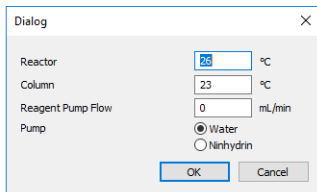


Fig 9: Wash dialog

4.3 Sykam S4300 Reaction Module Setup

To invoke this window, double click on the module in the [System Configuration](#) window or use the *Setup...* button in the same window.

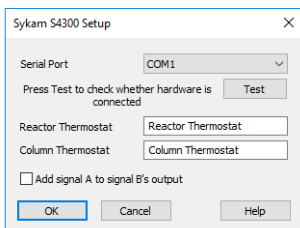


Fig 10: Sykam S4300 Reaction Module Setup

Port

Selection of the communication port.

Test

This button is used to test the connection to the **Sykam S4300** detector using the previously set *Port*.

Reactor Thermostat

In this field it is possible to change the reactor thermostat's name.

Column Thermostat

In this field it is possible to change the column thermostat's name.

Add signal A to signal B's output

This module has two signal outputs. Check to have all result in one signal.

5 Report Setup

All of the module settings accessible on the [Method Setup - Thermostat](#) tab for the **Sykam S4300** module are reported. To do so, it is necessary to check the *Instrument Control* checkbox in the [Report Setup - Method](#) dialog.

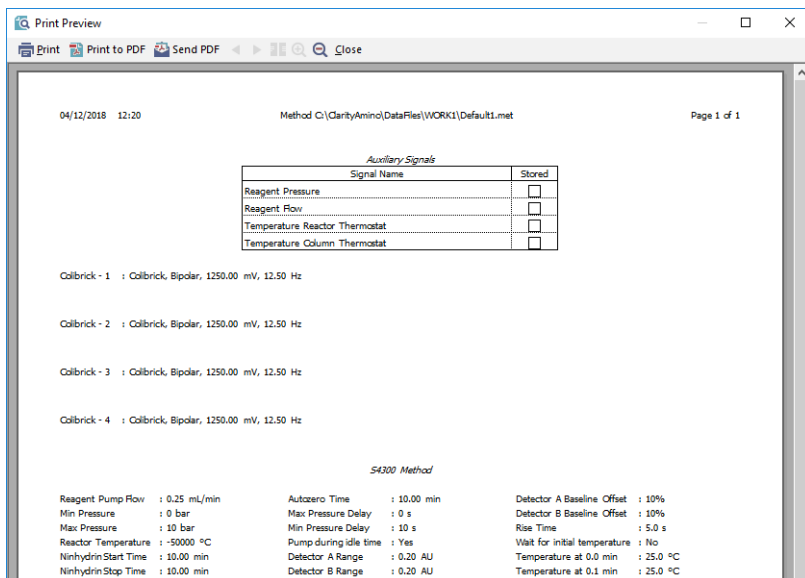


Fig 11: Report Setup

6 Troubleshooting

When the remedy for some problem cannot be discovered easily, the recording of communication between **Clarity** and the module can significantly help the **DataApex** support to discover the cause of the problem.

The 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). Following section should be edited or added:

```
[COM1]
echo=on
textmode=on
filename=SykamS4300_%D.txt
reset=off
```

Note: Instead of COM1 type the correct serial port used to communicate with the **Sykam S4300 Amino Acid Analyzer** module. This port number is displayed when the *Th. Status...* button in the [Method Setup - Thermostat](#) 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 greatly help in diagnosis of unrecognized errors and problems in communication.