DataApex
Clarity™
CHROMATOGRAPHY SOFTWARE

KONTRON 432

Clarity Control Module   ENG

Author: DM

Contents

To facilitate the orientation in the **Kontron 432** 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 Kontron 432 Control Module

This manual describes the setting of the **Kontron 432** detector. The control module enables direct control of the instrument over serial line.

*Fig. 1: **Kontron 432** detector*

Direct control means that the detector can be completely controlled from the **Clarity** environment, the data acquisition has to be performed using an A/D Converter (e.g. **Colibrick**) still. 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 **Kontron 432** 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.

- Serial DB9F-DIN5M cable (p/n SK09).
- A/D Converter for data acquisition, e.g. Colibrick (p/n U31).

3 Installation Procedure

3.1 Kontron 432 detector communication

The **Kontron 432** is controlled by serial (RS232) communication.

It uses a DB9F-DIN5M cable (p/n SK09) described in the picture below.
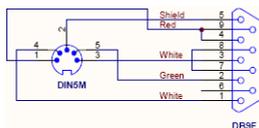
Fig. 2: DB9F-DIN5M cable

On top of that, the detector signal output must be connected to a supported A/D converter (e.g. Colibrick) because the device does not allow the data acquisition using serial line.

3.2 Clarity Configuration

Fig. 3: How to add Kontron 432 control module

- 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.
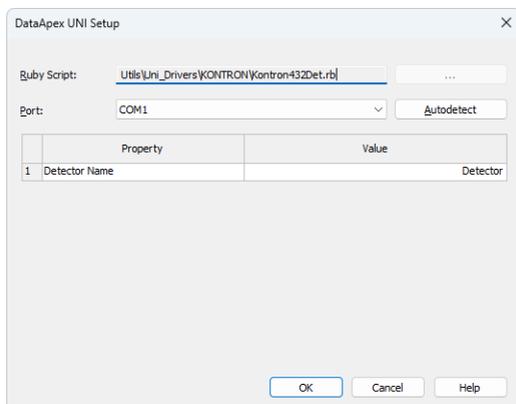
Fig. 4: Kontron 432 Setup

- 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. **12**.

- The **Kontron 432** 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 **Kontron 432** detector a new Aux tab will appear in the Method Setup dialog. A new **Kontron 432** section enabling the monitoring of the current state will be also created in the Device Monitor window.

4.1 Method Setup - Aux - Properties

The *Method Setup - Aux - Properties* tab is used for performing changes (like changing Response Time, Range and Wavelength) on the **Kontron 432** detector.
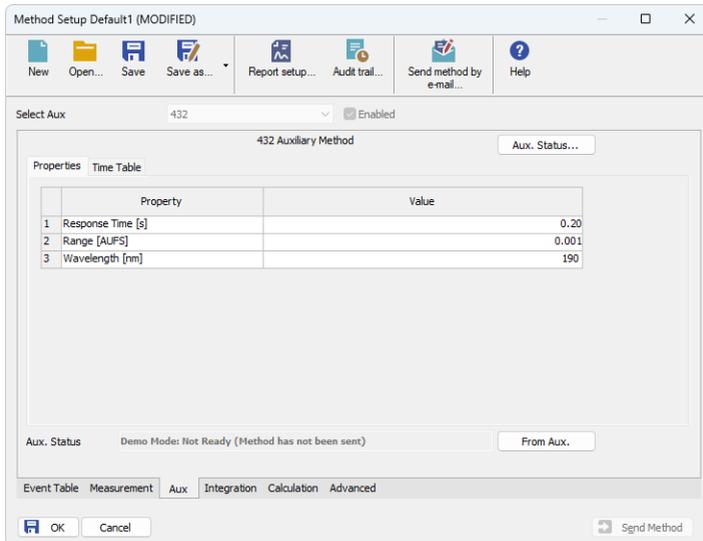
Fig. 5: Method Setup - Aux - Properties

Response Time [s]
Defines the filter for the data produced by the detector. Possible values are *0.20*, *0.50*, *2.00* and *5.00*, where *0.20* is the default value (smallest data filtration).

Range [AUFS]
Defines the output range of the detector signal. AUFS stands for Absorbance Units, Full Scale. Available values are *0.001*, *0.002*, *0.005*, *0.010*, *0.020*, *0.050*, *0.100*, *0.200*, *0.500*, *1.000* and *2.000*.

Wavelength
Specifies the wavelength (in nanometers) of the detector signal. The signal Wavelength can be changed during the analysis using the **Time Table** on the Method Setup - Aux - Properties tab. The allowed values range between *190* and *700* nm.

4.2 Method Setup - Aux - Time Table

The *Method Setup - Aux - Time Table* tab is used for performing changes (like changing Wavelength, Zeroing the detector, changing it's signal range) on the **Kontron 432** detector during run. Please note some of the actions may take extensive amount of time to happen.
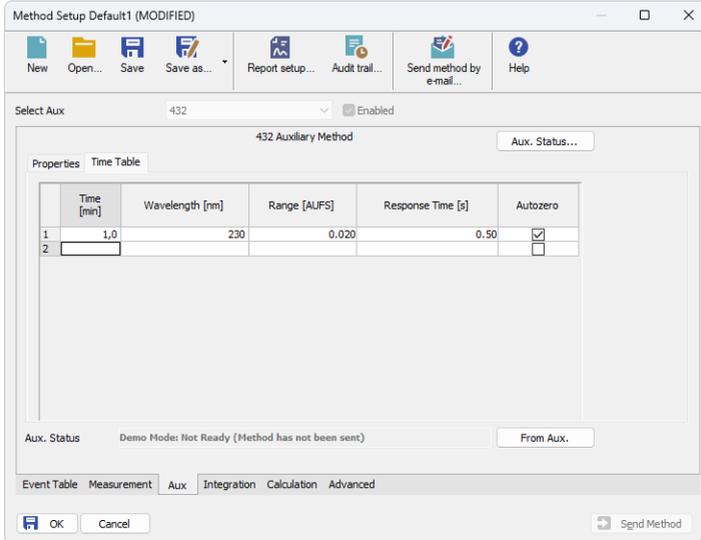
Fig. 6: Method Setup - Aux - Time Table - Kontron 432

To set any action to happen at set time, fill in the time of the event into the *Time* column of the first free row of the **Time Table**. To leave some of the parameters unchanged, set them to the same value as they are set on the previous row of the table or on the Method Setup - Aux - Properties tab (for the first row of the table).

Note: The values have to be entered exactly in the format described in the warning messages invoked after wrong value is entered (including redundant zeroes after decimal point etc.).

Wavelength
Changes the wavelength of the detector cell. The change of the wavelength may take about 3 seconds.

Range [AUFS]
Changes the signal range of the detector analog output. The change of signal range takes about 0.1 seconds.

Response Time [s]
Changes the response time (filter constant) of the detector analog output. The change of response time takes about 0.1 seconds.

Autozero

Zeroes the detector signal. Performing the Autozero will take about 5 seconds.

Note: All times considered above are cumulative, thus changing both the *Wavelength* and *Autozero* the signal after will take about 8 seconds.

4.3 Hardware Configuration

The *Hardware Configuration* dialog (invoked by using the *Aux Status* button from the Method Setup - LC Method Setup - ValvesMethod Setup - Aux - Properties dialog) displays the configuration of the **Kontron 432**.
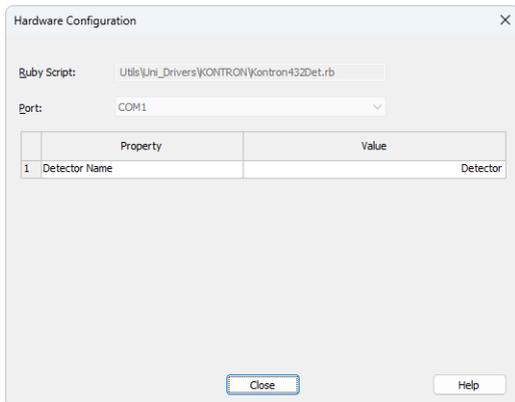
Fig. 7: Hardware Configuration Kontron 432

4.4 Device Monitor

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

Device Monitor - Detector
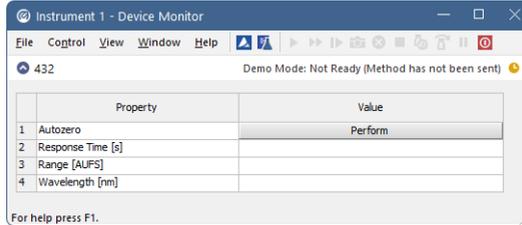
Fig. 8: Device Monitor - Detector

Autozero
Zeroes the connected detector.

Response Time [s]
Displays the actual value of response time.

Range [AUFS]
Displays the actual value of output signal range.

Wavelength
Displays the actual value of wavelength.

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.
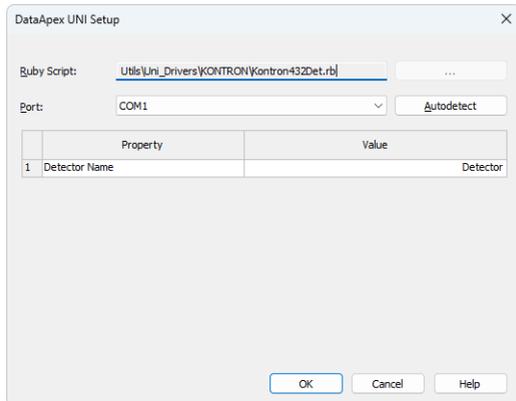
Fig. 9: Kontron 432 Setup

Ruby Script
Displays the selected Ruby Script. The correct KONTRON432DET.RB script for the **Kontron 432** instrument can be found in the UTILS/UNI_DRIVERS/KONTRON 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.

5 Troubleshooting

When the solution to a problem cannot be found easily, a recording of the communication between **Clarity** and the detector 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 detector. This port number is displayed when the *Aux Status* button in the *Method Setup - Aux* 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.