

## SV9 TERMINAL BOARD

Clarity Hardware

ENG

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To facilitate the orientation in the **SV9 Terminal Board** 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:

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**Note:**           Notifies the reader of relevant information.

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

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**█ 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 SV9

This manual describes the use of the **SV9** Terminal Board with available **DataApex A/D Converters**.

**SV9** is external terminal board which allows the connection of larger number of wires (signal cables, digital inputs and outputs etc.) than it would be normally physically possible with the standard cable.

The connection between the **Clarity Chromatography Station's A/D** converters and the instruments is usually made using the standard **INT7** compatible cable supplied with the station. The leads in the cable are soldered to a D-SUB 37 pin (CANNON) connector. Any change in the wiring then requires skills with soldering.

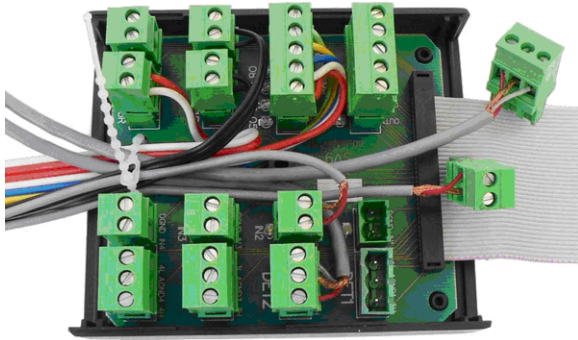
Moreover, even in the cable for 4-channel detectors, there are only 4 digital output cables prepared, which is perfectly sufficient to operate the ready out signals for all 4 instruments, but may be too few if any other device (valve, fraction collector...) needs another digital output. **DataApex Colibrick** and **INT9, NT7 A/D cards** provide 8 digital outputs regardless of the number of their channels.



*Fig. 1: SV9 terminal board – face*

## 1.1 SV9 Terminal board

The **SV9** Terminal board with easily accessible screw contacts and LED status indication is very suitable for users who will often need to change the configuration of their instrument connections or plan to use the additional digital inputs and outputs for instrument control, for example to use the digital output lines for controlling gradient, fraction collector, detector program start, detector autozero or valves switching.



*Fig. 2: SV9 terminal board – Inside look*

## 2 Requirements

- The PC must have an A/D converter connected. Any type of **DataApex A/D** converter with D-SUB 37-pin (CANNON) connector (**Colibrick**, **INT7**, **INT9**, **U-PAD**, **U-PAD2**, **Net-PAD** or **Colibrick**) will work, although the most beneficial use of the **SV9** terminal board is with the **INT7** or **INT9** A/D converters.

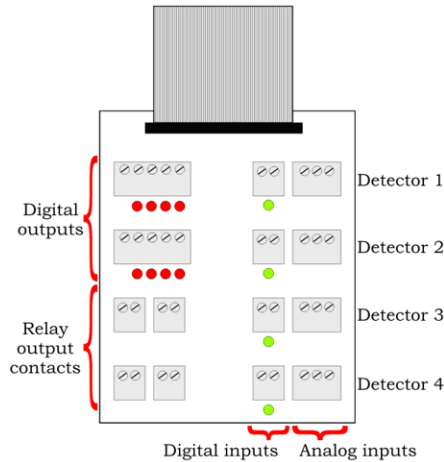
## 3 Installation

The **SV9** terminal board doesn't need any special installation procedure, simply fasten the leads to desired positions and connect the flat cable to the A/D converter installed in the PC.



## 4 Using the SV9 terminal board

Open the **SV9** terminal board and look at the setup of screw contacts.



*Fig. 3: SV9 – Setup of screw contacts*

From right to left, there are 4 sockets (with 3 screws each) for the analog inputs (analog detector signal) and 4 sockets – each with a LED diode – for digital inputs. On the left side, there are 2 sockets (each with 5 screws) for the digital outputs (each socket holds 4 digital outputs and 1 digital ground contact), each with its own LED diode, and four sockets (2 screws each) for relay output contacts. These relay outputs use the same wiring as digital outputs 1-4.

Each socket can be removed for easier manipulation and its particular contacts are clearly described on the main board.

## 5 Tables and specifications

Tab. 1: Technical data:

Parameter	Value
<b>Analog inputs</b>	4, for unipolar or bipolar signal.
<b>Connectors</b>	<b>INT7</b> -compatible (D-SUB 37-pin) connector for connection to the A/D converter, screw contacts for detector signal/input/output/output relay wiring
<b>Digital inputs</b>	4 – can be controlled using either a contact or a TTL (5 V) output. Green LEDs shine when the logical value is HIGH.
<b>Digital outputs</b>	8 TTL (5 V), maximum current load 10 mA at both levels. Red LEDs shine when the logical value is HIGH.
<b>Relay contacts</b>	4 – closed when the output logical value is LOW. (switching contacts rating: max. switching current 0.5 ADC, max. contact resistance 150 m $\Omega$ , max. voltage 200 V)
<b>Dimensions</b>	110 x 90 x 40 mm + 60 cm flat cable
<b>Weight</b>	280 g (including the cable)