

SE03

Gradient analytical system

P/N SE030000



High effective system for sophisticated analysis by **constant flow rate 0,01 - 10 ml/min at wavelengths 190 up to 800 nm** allow:

- Gradient elution
- Wavelength changing during analysis
- Continual mobile phase degassing
- Column temperature stabilization

Manual sample injecting using loop injector, controlling and record of analysis is provided by means of Chromatographic software **ECOMAC**. Analysis evaluation is provided using **SW Clarity** with A/D converter.

BETA 10 PUMP



with flow rate of **0.01 – 10 ml/min** and a pressure limit of **40 MPa**, this pump is suited for **analytical** applications in liquid chromatography. It is designed with main and auxiliary pump heads connected in series with a piston diameter of 1/8". It has a high-performance processor unit and a **three-way gradient valve**. This allows the pumps to be used for creating a **low-pressure gradient**, i.e., **gradual changes of mobile phase composition** by mixing **up to three liquids** at the pump's entry. It is also possible to predefine the percentage of composition when using the pump in isocratic mode. The gradient course can be defined either through the keypad or downloaded from a computer.

A quite innovative concept of electronic control, pump drive, piston suspension, cams shape, pressure transducer and check valves expand functionality and improve reliability.

The pump is equipped with **electronic fuses** which stop the flow when preset either maximum or minimum operating pressure limits are exceeded.

When is necessary it is possible to use **back rinse of pistons** (e.g. after using buffered mobile phases). Ceramic valves in a PEEK housing facilitate cleaning

SAPPHIRE UV-VIS VARIABLE WAVELENGTH DETECTOR



is a detector with continuously variable wavelength in the range of **190 – 800 nm** and a noise level $\pm 0.5 \times 10^{-5}$ AU.

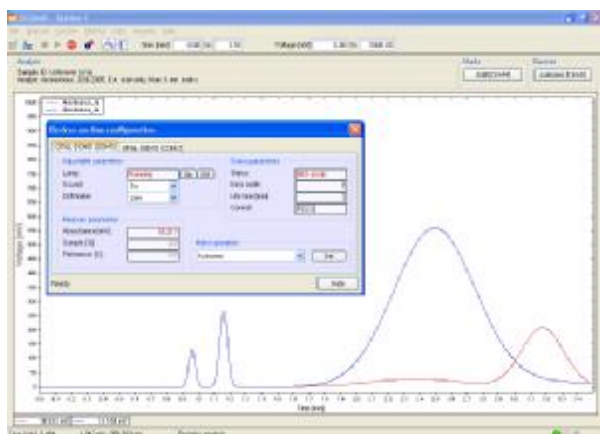
The unit may be used for routine **analytical** chromatography as well as for **preparative** chromatography, according to the selected cell.

The unit is easy to operate, **reference and sample** signals are available for detector **diagnostics** as well as information on **lamp operating hours**.

Output signal is available in both **digital and analogue** form on the output connector. It is possible to **control the unit using the keypad or an RS232 interface** Connecting capillaries are led from the detector's right side panel.

The detector is equipped with a high standard **deuterium lamp** in a special socket that enables **easy changing**. Wavelength can be **programmatically changed** during the performance of an analysis. The detector performs **automatic wavelength calibration** after the lamp has been switched on. A HPLC 04 analytical cell is included as a component of the detector

SOFTWARE ECOMAC is designed with maximal effort



to do **easy operation** of chromatographic systems ECOM. It is suited for **units controlling and data collecting**. Equipments are connected to the PC using **RS232, or USB** (by means of RS232/USB converter). **Software detects automatically almost of all units**, so there is no need complicated communication installation.

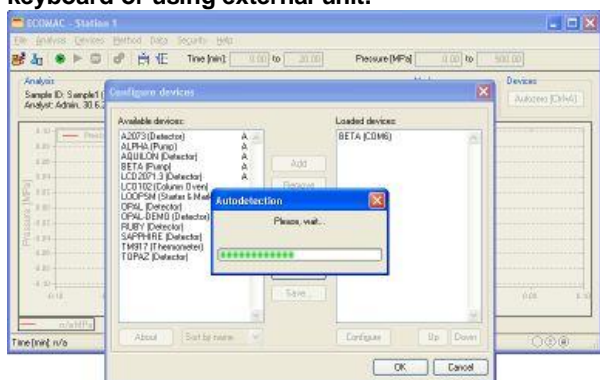
Program most important features:

- **Easy installation**
- **Connecting using USB or RS232**
- **No need A/D converter**
- **Possibility to start up to 8 stations at the same time**
- **Possibility of external start and external mark**
- **Secured access**
- **Units controlling and data collecting from one place**
- **Data export in various formats:**

Text formats: native text format, two column text format and CSW Clarity text format

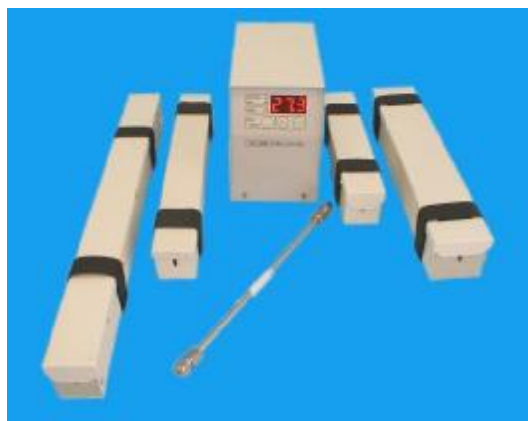
Binary formats: native binary CH-format, CSW (1.7) Raw format and Matlab MAT format

Start of data collecting and eventual marks (for example by fraction collecting) is it possible to do using **keyboard or using external unit.**



Note: Software **ECOMAC** allows displaying, storage and export of data, but does not allow peaks shape calculation, calibration etc. If is need to use such functions, is it necessary to use SW **Clarity** and A/D converter (**both are included**)

Column ovens LCO 102 is supplied in four versions



and is important to achieve better temperature stability of HPLC columns by analysis. Using it we get:

- **Better reproducibility**
- **Higher separation performance**
- **Reduced analysis time**

Range of temperature regulation is from **ambient temperature up to 99°C**. Actual oven temperature is shown on display. Temperature stability is $\pm 0.1^\circ\text{C}$.

Internal temperature controlled area is described below and it can accommodate column from 15 cm up to 300 cm with pre-column depending of oven type.

The unit is great at its **small dimensions**. Heated part is separated from controlling unit which allow to install it easy into chromatography configuration. With regard to its small weight is it possible to easy hang it onto column.

Closing using fastening system make easy to install column into heating unit.

Required temperature setting is simple by means of arrow buttons and storing. After unit turning off remembers the oven its last used temperature so there is not need to enter it again by repeated analysis.

An independent **safety circuit** turns the heater off and transmits an acoustic signal, when set temperature is exceeded by 10°C .

System contains:

Description	P/N
BETA 10 Gradient Pump	PC000000
SAPPHIRE UV-VIS DETECTOR	67000000
Column oven LCO 102 SINGLE	64000000
Degasser DG 3014 on-line, four channels	49000000
Analytical Injection Loop Valve D	54300000
External sample loop 20 ul SS	54293000
Column 250x4.6mm Kromasil 100-7umC18	CO-C25A7
Box for Bottles MF1	ZA000000
3x Mobil phase reservoir LCT 02, 1L	56940000
3x SS Mobile Phase Filter 2um, 1/8"	JR-3670082
705NR 50ul Hamilton Syringe	80565
ECOMAC Chromatographic software	AF000000
Clarity - Station for 1 instrument	C50
A/D Converter Board INT7, 1 channel	I71
LC Direct Control of LC Pumps Clarity	A24
3x Crossed serial cable 9pin RS 232	EKAB-024
3x Cable with converter RS232 - USB	EKAB-025
Panda 30 Start + Mark - USB	SA020000
Accessories for analytical system	SE010100

Computer is not include but could be delivered separately