

S 1130 HPLC PUMP SYSTEM

The Sykam S 1130 HPLC Pump System is a very flexible and powerful HPLC solvent delivery system. Its modular setup makes the \$ 1130 one of the most versatile pump systems on the market. The possible configurations include a Isocratic, Gradient Quaternary Pump, or a Binary High-Pressure Gradient Pump.



One Pump — Three Configurations

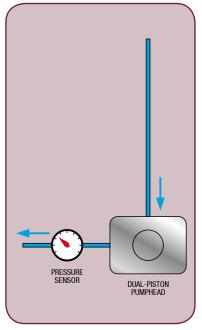


Figure: S 1130 Flowchart

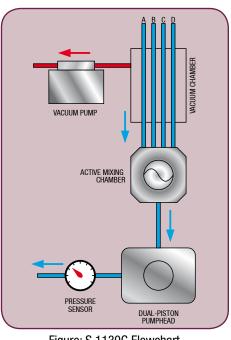


Figure: S 1130G Flowchart

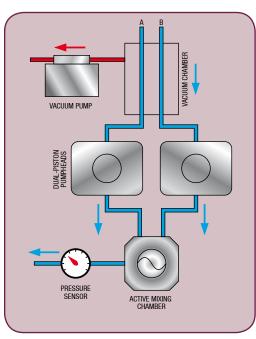


Figure: S 1132 Flowchart



■ S 1130 Pump Details

■ Pump Mechanic

Stepper Motor

The S 1130 is driven by a highpower stepper motor. The stepper motor has a much better resolution in the low-flow range than a conventional DC motor.

stantly lubricated within a sealed chamber to guarantee long lifetime and low maintenance.

Lubrication

Figure: S 1130 Pump Mechanic Details

The S 1130 camshaft is concartly lubricated within a sealed Optional: Active

The S 1130's pump head incorporates an automatic piston backflushing system; this system is interchangeable with old Sykam pumps and does not require an additional motor.

Piston Backflushing

Dual-Piston Pumphead

The S 1130 pumps use a dual-piston pumphead for low pulsation. Together with electronic pressure compensation the S 1130 pumps are suitable for all analytical tasks in HPLC and GPC.

Quaternary Gradient Module

Vacuum Pump

The Quaternary Gradient Module features an integrated vacuum pump for online degassing. The advanced Teflon membrane guarantees a long lifetime and maximum chemical compatibility.

Figure: Quaternary Gradient Module

Vacuum Chamber

The Quaternary Gradient Module's 4 vacuum chambers are fitted with high efficiency Teflon AF® tubings for low volume and increased degassing efficiency.

Active Mixer

The Quaternary Gradient Module incorporates an active mixer with adjustable volume for optimized gradient mixing.

Secure Assembly

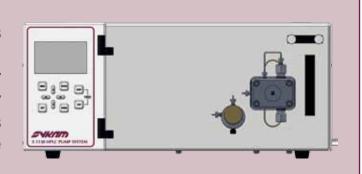
The Quaternary Gradient Module is assembled on a stainless steel tray with a separate drain to protect the instrument in case of leakages.



■ S 1130 Configurations

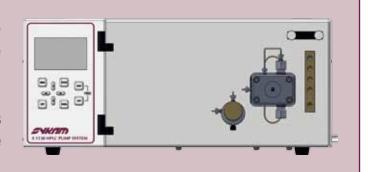
■ S 1130 Isocratic HPLC Pump

The *S 1130 Isocratic HPLC Pump* is a robust, low-pulsation solvent delivery system. The pumphead is easily accessible from the front panel to make routine maintenance, like changing pump seals, easy and fast. The transparent front cover makes it easy for the operator to detect any leakages. The pump is available with Micro, Analytical or Semi-Preparative pumphead in Stainless Steel or PEEK.



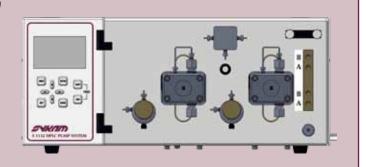
■ S 1130G Low-Pressure Quaternary Gradient Pump

The *S 1130G Quaternary Gradient Pump* incorporates an active low pressure mixer with adjustable mixing volume. The mixing chamber volume can be freely adjusted. An optional integrated vacuum degasser removes dissolved gases in the eluents and prevents air bubbles in the system. The system is available with Micro, Analytical or Semi-Preparative pumphead in Stainless Steel or PEEK.



■ S 1132 High-Pressure Binary Gradient Pump

The *S 1132 High-Pressure Binary Gradient Pump* incorporates two pump systems with active high pressure mixer with adjustable chamber volume. An optional integrated vacuum degasser removes dissolved gases in the eluents and prevents air bubbles in the system. The system is available with Micro, Analytical or Semi-Preparative pumpheads in Stainless Steel or PEEK.





Technical Specifications

Wetted Materials: Stainless Steel / PEEK*, Teflon AF®, PVDF, Ceramics,

Sapphire, Ruby

Flow Rate: Programmable

Micro: 0.001 - 4.000 ml/min Analytical: 0.001 - 10.000 ml/min Semi-Preparative: 0.1 - 40.000 ml/min

Flow Accuracy: $\pm 1.0 \% 1.000 \text{ ml / min}$ Flow Precision: $\pm 0.1 \% \text{ RSD } 1.000 \text{ ml/min}$ Pressure Range: 0 - 40 MPa (0 - 6000 PSI)

Semi-Preparative: 20 MPa (up to 20.000 ml/min); 10

MPa (up to 40.000 ml/min)

Pressure Pulsation: typical < 0.1 MPa or < 1.0 %

Compressibility Compensation:

user-adjustable for different solvents

Dimensions: (W x H x D) 396 x 165 x 478 mm

Power Supply:

100 - 250 ~V (47 - 63 Hz)

■ S 1130G Quaternary Gradient Pump

Vacuum Degassing: optional: < 20% dissolved gases remain-

ing in water @ 1.000 ml/min

Gradient Range: 0.0 – 100.0 %, 4 channels

Gradient Accuracy: < 0.50 %
Gradient Mixing: Active

Mixer Volume: adjustable: 10 – 500 μl

■ S 1132 Binary Gradient Pump

Vacuum Degassing: optional: < 20% dissolved gases remain-

ing in water @ 1.000 ml/min

Gradient Range: 0.0 – 100.0 %, 2 channels

Gradient Accuracy: < 0.50 %
Gradient Mixing: Active

Systeme & Komponenten analytischer Meßtechnik

Mixer Volume: adjustable: $10 - 500 \mu$ l

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Order Information

■ S 1130 Isocratic HPLC Pump

Catalog No	Description
10 10 078	S 1130 Isocratic HPLC Pump – Micro – SS
10 10 080	S 1130 Isocratic HPLC Pump – Micro – PEEK
10 10 077	S 1130 Isocratic HPLC Pump – Analytical – SS
10 10 079	S 1130 Isocratic HPLC Pump – Analytical – PEEK
10 10 120	S 1130 Isocratic HPLC Pump – Semi-Preparative – SS
10 10 121	S 1130 Isocratic HPLC Pump – Semi-Preparative – PEEK
20 20 061	option: Active Piston Backflushing

■ S 1130G Quaternary Gradient Pump

Catalog No	Description
10 10 082	S 1130G Quaternary Gradient Pump – Micro – SS
10 10 084	S 1130G Quaternary Gradient Pump – Micro – PEEK
10 10 081	S 1130G Quaternary Gradient Pump – Analytical – SS
10 10 083	S 1130G Quaternary Gradient Pump – Analytical – PEEK
10 10 118	S 1130G Quaternary Gradient Pump – Semi-Prep. – SS
10 10 119	S 1130G Quaternary Gradient Pump – Semi-Prep. – PEEK
20 20 061	option: Active Piston Backflushing
10 10 085	option: Vacuum Degasser

■ S 1132 Binary Gradient Pump

Catalog No	Description
10 10 091	S 1132 Binary Gradient Pump – Micro – SS
10 10 093	S 1132 Binary Gradient Pump – Micro – PEEK
10 10 090	S 1132 Binary Gradient Pump – Analytical – SS
10 10 092	S 1132 Binary Gradient Pump – Analytical – PEEK
10 10 123	S 1132 Binary Gradient Pump – Semi-Prep. – SS
10 10 122	S 1132 Binary Gradient Pump – Semi-Prep. – PEEK
20 20 061	option: Active Piston Backflushing
10 10 098	option: Vacuum Degasser



^{*} depending on configuration