

Resolute® Flowdrive SU

Easy to Use, Flexible Single-Use
Chromatography Systems



Product Information

The Resolute® Flowdrive SU supports three sizes of flow kit for use in clinical and commercial operations under cGMP*. Conversion kits are available that allow simple swapping between the flow kit sizes. The flow kit volume and flow rate are optimized with near zero hold up valving to deliver high-resolution separations, making Resolute® Flowdrive SU suitable for processing columns, membranes, and monoliths. The system is the preferred and demonstrated choice for customers scaling up the Sartobind® Rapid A membrane family when performing Rapid Cycling Chromatography (RCC).

*Current Good Manufacturing Practice

Main Features

- Three flow rate ranges with optimized hold-up volumes on one system
- Ready to use gamma irradiated flow kits
- Error free flow kit installation through 2D layout and shadow boarding

System Concept

The Resolute® Flowdrive SU provides a combination of hardware, automation, and single-use assemblies designed to work together seamlessly. Flexibility is a key requirement for single-use system design. The system offers the end user a choice of single-use sensors for isocratic, gradient, filter | bubble-trap, column, and outlet flow kits.

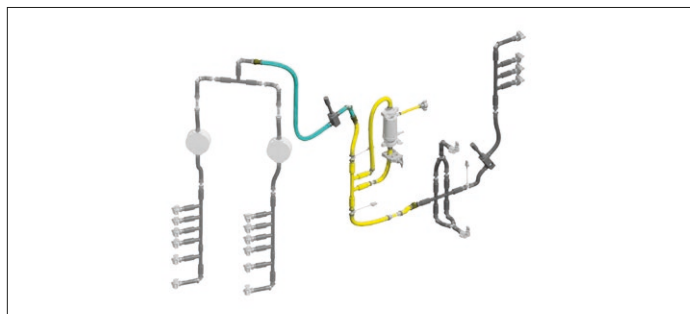


Figure 1: Resolute® Flowdrive Gradient Flow Kit

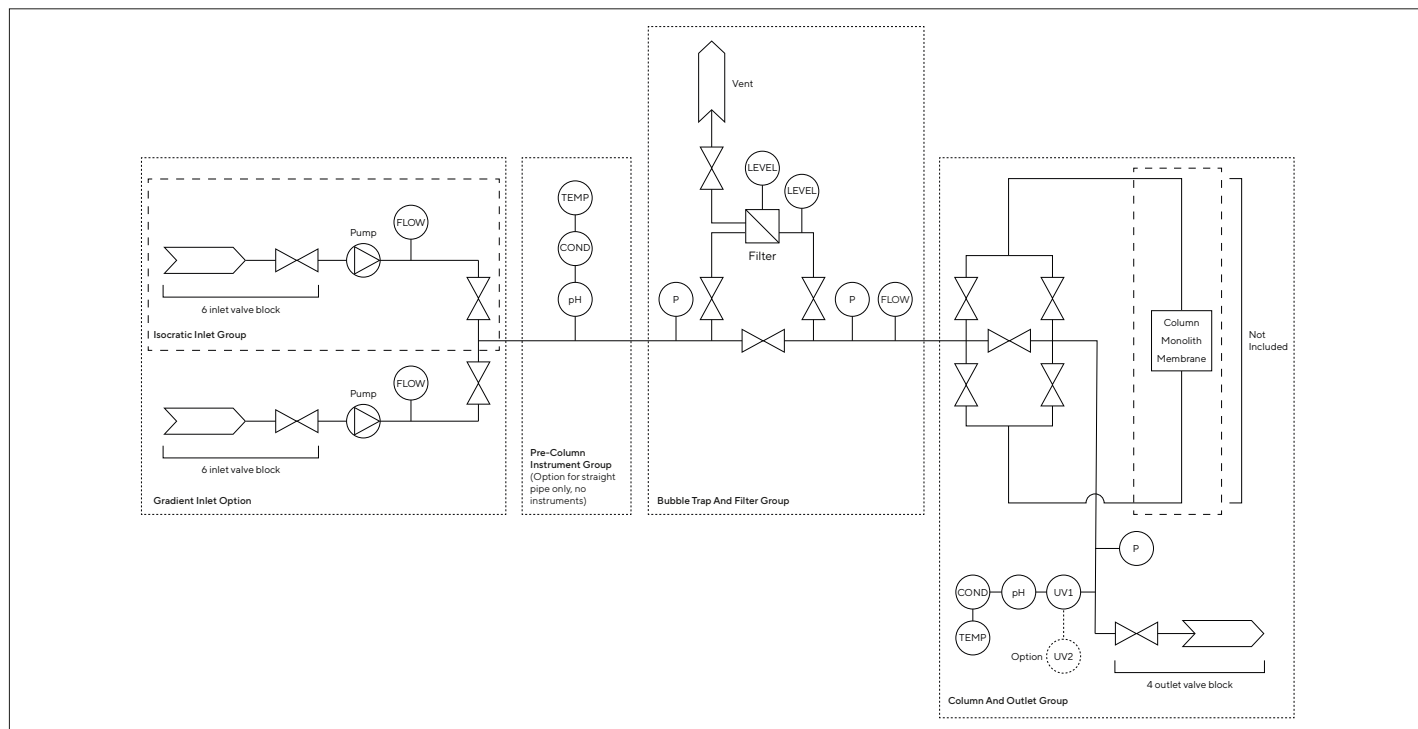


Figure 2: Resolute® Flowdrive SU System P&ID

Process Automation and Control

The Process Step Editor is a programmable logic controller-based automation that enables process robustness in manufacturing environments and complies with 21 CFR Part 11 and cGMP guidelines.



Figure 3: Fully Maneuverable Touchscreen Human Machine Interface (HMI)

Supervisory control and data acquisition (SCADA) process data is captured using the integrated analytical tool software module via open platform communications (OPC) and saved to a discrete database. Data can be displayed in customized charts, and historical trend analysis can be carried out for comparison of batches. Calculation and reporting of critical process indicators, such as transition analysis, peak asymmetry, and height equivalent to a theoretical plate (HETP), is simplified with the analytical tool.



Figure 4: Pinch Valve Buffer Inlet Block (Left); Compact Single-Use Flow Cell (Right)

Technical Data

System Specifications

System Dimensions and Weight		System Capacity	¼ in. Flow Kits	⅜ in. Flow Kits	½ in. Flow Kits
Dimensions (W×D×H)	186×80×180 cm (73×31.6×71 in.)	Volumetric Flow	8 to 150 L/hr	18 to 600 L/hr	36 to 900 L/hr
Weight (Net)	550 kg (1213 lb)	Tubing ID	¼ in. (0.64 cm)	⅜ in. (0.95 cm)	½ in. (1.27 cm)
		Column Diameter*	15–25 cm	20–50 cm	30–60 cm
		Pressure Rating	0 to 4 bar		
		System Pumps	Up to ×2 diaphragm (single-use)		
		Inlets	6 per pump		
		Outlets	4		

*Based on operational range of 50-300 cm/hr

Component Specifications

Instruments	Range	Accuracy	Location
Flow Meter (¼ in. Flow Kit)	8–150 L/hr	±3.6 L/hr or 5% of reading (whichever is greater)	Pre-column, post pump
Flow Meter (⅜ in. Flow Kit)	18–600 L/hr	±5.4 L/hr or 3% of reading (whichever is greater)	Pre-column, post pump
Flow Meter (½ in. Flow Kit)	36–900 L/hr	±10.8 L/hr or 3% of reading (whichever is greater)	Pre-column, post pump
Pressure Sensor	0 to 4 bar	±0.07 over range 0-2.07 ±0.15 over range 2.07-4.14	Post pump, pre-column, post-column
Conductivity Sensor	0–150 mS/cm	±5% at 1.332 mS/cm ±5% at 12.154 mS/cm*	Pre-column, post-column
Temperature Sensor	4–40 °C	1 °C	Part of conductivity sensor
pH Sensor	0–14 pH	±0.2 pH	Pre-column, post-column
UV Sensor	0–2 AU	±0.03 AU	Post-column
Air Sensor	Integrated in pre-column flow sensor	N/A	Pre-column (integrated into flow sensor)
Level Sensor	Capacitive	N/A	Bubble trap (filter)

*Calibration standards at 22 °C; values will be different at other temperatures.

Ordering Information

Resolute® Flowdrive SU System

The system can be ordered under the following part numbers with options on size, electrical rating, and UV wavelength support.

For quotation please contact your local Sales Representative.

Part Number	Description
FD900SUCEA	Resolute® Flowdrive SU, 0.5 inch 280 nm, CE
FD900SUCEB	Resolute® Flowdrive SU, 0.5 inch 280 – 300 nm, CE
FD900SUCEC	Resolute® Flowdrive SU, 0.5 inch 254 – 280 nm, CE
FD600SUCEA	Resolute® Flowdrive SU, 0.375 inch 280 nm, CE
FD600SUCEB	Resolute® Flowdrive SU, 0.375 inch 280 – 300 nm, CE
FD600SUCEC	Resolute® Flowdrive SU, 0.375 inch 254 – 280 nm, CE
FD150SUCEA	Resolute® Flowdrive SU, 0.25 inch 280 nm, CE
FD150SUCEB	Resolute® Flowdrive SU, 0.25 inch 280 – 300 nm, CE
FD150SUCEC	Resolute® Flowdrive SU, 0.25 inch 254 – 280 nm, CE
FD900SUULA	Resolute® Flowdrive SU, 0.5 inch 280 nm, UL
FD900SUULB	Resolute® Flowdrive SU, 0.5 inch 280 – 300 nm, UL
FD900SUULC	Resolute® Flowdrive SU, 0.5 inch 254 – 280 nm, UL
FD600SUULA	Resolute® Flowdrive SU, 0.375 inch 280 nm, UL
FD600SUULB	Resolute® Flowdrive SU, 0.375 inch 280 – 300 nm, UL
FD600SUULC	Resolute® Flowdrive SU, 0.375 inch 254 – 280 nm, UL
FD150SUULA	Resolute® Flowdrive SU, 0.25 inch 280 nm, UL
FD150SUULB	Resolute® Flowdrive SU, 0.25 inch 280 – 300 nm, UL
FD150SUULC	Resolute® Flowdrive SU, 0.25 inch 254 – 280 nm, UL

Resolute® Flowdrive Flow Kits

For quotation please contact your local Sales Representative.

The table below provides part numbers for the standard product line. Please contact Sartorius for a customized solution.

Part Number	Description
7450-0481A	Resolute® Flowdrive STD ⅜" inlet gradient
7450-0481B	Resolute® Flowdrive STD ⅜" pre-column
7450-0481C	Resolute® Flowdrive STD ⅜" bubble trap
7450-0481D	Resolute® Flowdrive STD ⅜" column and outlet
7450-0481E	Resolute® Flowdrive STD ⅜" inlet isocratic
7450-0481F	Resolute® Flowdrive STD ½" inlet gradient
7450-0481G	Resolute® Flowdrive STD ½" pre-column
7450-0481H	Resolute® Flowdrive STD ½" bubble trap
7450-0481J	Resolute® Flowdrive STD ½" column and outlet
7450-0481K	Resolute® Flowdrive STD ½" inlet isocratic
7450-0481L	Resolute® Flowdrive STD ⅜" pH and conductivity bypass line
7450-0481M	Resolute® Flowdrive STD ½" pH and conductivity bypass line
7455-0982S	Resolute® Flowdrive STD ¼" inlet gradient

Resolute® Flowdrive Conversion Kits

For quotation, please contact your local Sales Representative.

The following conversion kits are available to allow conversion between the different sizes of system, they comprise of flowmeter sensors and where applicable pump adaptors that are easily interchangeable either by the customer or by Sartorius Service.


Part Number	Description
FD150-600CONVKIT	Resolute® Flowdrive SU, 0.25 to 0.375 inch conversion kit
FD150-900CONVKIT	Resolute® Flowdrive SU, 0.25 to 0.5 inch conversion kit
FD900-150CONVKIT	Resolute® Flowdrive SU, 0.5 to 0.25 inch conversion kit
FD900-600CONVKIT	Resolute® Flowdrive SU, 0.5 to 0.375 inch conversion kit
FD600-150CONVKIT	Resolute® Flowdrive SU, 0.375 to 0.25 inch conversion kit
FD600-900CONVKIT	Resolute® Flowdrive SU, 0.375 to 0.5 inch conversion kit

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