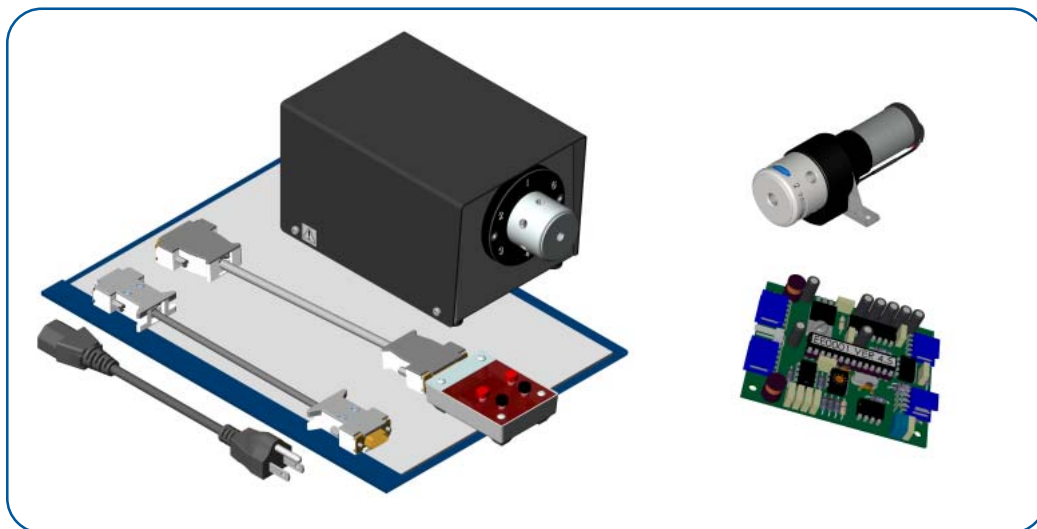




# Electric Rotary Valves



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**Electrically controlled rotary valves in several configurations providing high chemical resistance**

- Exceptional chemical resistance
- Inert PTFE body and Kel-F® rotor
- 4 to 11 ports available
- 1.5mm standard bore size
- Custom designs available for OEM applications

## Electric rotary valves

Omnifit's electrically operated rotary valves are designed for use with aggressive and biologically sensitive materials. Each valve has an inert PTFE body and Kel-f® rotor, 1.5mm bore size, and 1/4"-28 UNF flat-bottomed ports. Omnifit's 1/4"-28 UNF Gripper or Omni-Lok™ fittings are ideal for use with these valves. Standard configurations available include 4, 5, 6 and 10 way selection/distribution and 6 port loop inject valves. Complementary Omnifit products such as fittings, tubing and bottle caps are available to satisfy all your fluid system requirements. Please see relevant specification sheets.

## Small Electric Rotary Valves

Omnifit's small electric rotary valves are designed for integration into an instrument making them particularly suited for OEM applications. The valves are available in 4 or 5 port versions for either flow switching or distribution. The pressure rating for this range is 500 psi (34 bar). The valve is driven by a 12 VDC, 4 Watt motor and is shipped with a controller PCB, TTL control cable and instruction manual. A cable enabling control via RS232 interface is available as an option.

## Large Electric Rotary Valves with smart actuator

Omnifit's large electric rotary valves are designed for use as a stand-alone unit, ideal for bench top fluid management. The valves are available in 6, 7, 10 and 11 port versions for flow switching, sample collecting, distribution and loop inject applications. The valves are controlled by a 'smart actuator' which is controlled via a remote handset with 4 digit display. The option of RS232 control is provided with the valve. The actuator has a universal 100 to 240 VAC power requirement. The valve and actuator combination is shipped complete with a RS232 control, power leads, hand controller and instruction manual.

An overview of flow path configurations available and typical application notes can be found on page 4.

Both ranges of valves can be customized to suit OEM applications, please contact the sales office with your requirements.



## Small Electric Rotary Valves

- Exceptional chemical resistance
- Pressure ratings to 500 psi (33 bar)
- Optoelectronic encoder
- Microprocessor control
- TTL & RS232 interface
- Custom designs available

This range of valves has an optoelectronic encoder and microprocessor-based control that carries out all functions to enable the user to control the valve at all times. The high speed microprocessor accommodates many functions including:

- Automatic initialisation
- Intelligent port alignment
- Manual switch debounce
- Selectable format position output code
- Reset facility
- RS232 interface



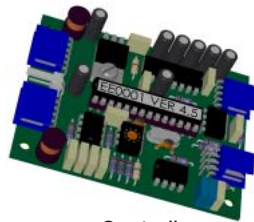
11522  
4 port valve



11526  
5 port valve



11528  
5 port valve



Controller  
PCB

A primary function of the microprocessor is to provide exceptional alignment between the fluid paths of the rotor and valve body. This is achieved by the constant monitoring and minute adjustment of the valve position throughout the life of the valve. All of the valves may be actuated in either direction and programmed to stop at any combination of ports to provide maximum versatility.

Please visit our website to view the complete instruction manual. [http://www.omnifit.com/erv\\_data.pdf](http://www.omnifit.com/erv_data.pdf)

## Specifications

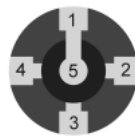
Series 11500		
Wetted materials	Body: Rotor:	PTFE Kel-F®
Number of ports	Standard 4 or 5 port options available with a variety of flow configurations	
Connection options	Hardwall tubing (e.g. PTFE) use Omnifit 1/4"-28 UNF Gripper fittings Softwall tubing (e.g. Silicone) use 1/4"-28 UNF to barb adaptor	
Bore size	1.5mm	
Internal volume	19 - 30 µL depending on configuration	
Max pressure	500 psi (33 bar) at 25° C	
Electrical	Power: Supply:	4 Watts 12 VDC
Step time	≈ 300 milliseconds	
Weight	Complete Unit:	225g

## Flow Configurations



11522

4 port valve allowing flow between 2 pairs of radially adjacent ports



11526

5 port valve allowing flow from the common axial port to exit through one of the 4 radial ports or vice-versa



11528

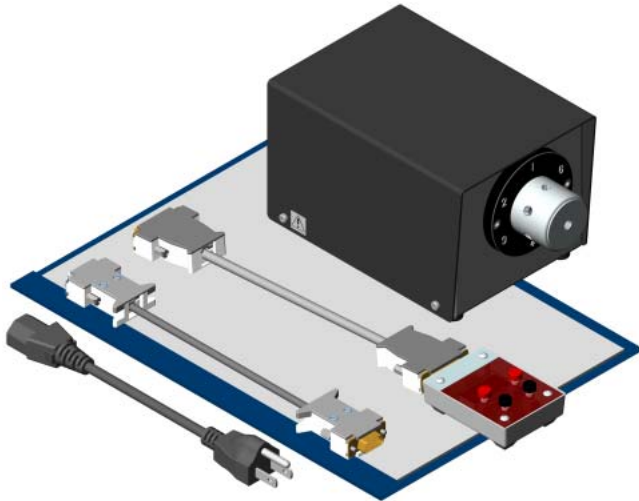
5 port valve connecting 2 radial ports at 90° and the common axial port to one other radial port

## Ordering Information

P/N	Configuration	Ports	Pack Size
11522	Flow between 2 pairs of radially adjacent ports	4	1
11526	Flow from the common port to exit through one port	5	1
11528	Connects 2 ports at 90° and the common port to one other port	5	1
11511	RS232 control/feedback cable	-	1
11510	TTL position feedback cable	-	1

# Large Electric Rotary Valves with Smart Actuator

- Inert PTFE body and Kel-F® Rotor
- Accepts 1/4"-28 UNF fittings
- 30 psi (2 bar) pressure rating
- Remote control handset with 4 digit LED display
- Clockwise and anti-clockwise rotation
- Computer interface
- Software included



11101 Series Smart Actuator shown with a 6 port valve, remote control unit and cable, RS232C interface cable and power lead

Omnifit's large electric rotary valves are the ideal solution for controlling the movement of fluids in the lab or similar applications where a self contained unit is required. The microprocessor-based Smart Actuator operates either a two-position loop inject or multi-position valve. The Smart Actuator allows precise valve positioning for almost any chromatography application, such as sampling and injecting samples on columns.

The actuator accepts input voltages between 100 and 240 VAC. The actuator's configuration can be set or interrogated without removing the cover, via the remote control unit or the RS232C interface with the supplied software. For automated processing, the actuator can be controlled by a PC through the RS232C interface. Multiple actuators may be controlled from a single RS232C interface using a daisy chain cable that is available as an option.

In addition to the flexibility built into every Smart Actuator, several basic features support the functionality needed for precise valve operation:

- Electronic alignment for accuracy, control and ease of use
- Reversible rotor direction for reduced contamination and fast movement
- Automatic switching based on a timer

An overview of flow path configurations available and typical application notes can be found on page 4.

## Specifications

Series 11101		
Wetted materials	Body:	PTFE
	Rotor:	Kel-F®
Number of ports	Standard 6, 7, 10, or 11 port options	
Connection options	Hardwall tubing (e.g. PTFE) use Omnifit 1/4"-28 UNF Gripper or Omni-Lok™ fittings	
	Softwall tubing (e.g. Silicone) use a 1/4"-28 UNF to barb adaptor	
Bore size	1.5mm	
Swept volume @ each position	11106 = 26 µL, 11107 = 26 µL, 11110 = 29 µL, 11111 = 29 µL	
Max pressure	30 psi (2 bar) at 25° C	
Electrical	Supply:	100 to 240 VAC
	Power:	50 Watts
Size	W = 115mm D = 192mm H = 106mm	

## Flow Configurations



**11106**  
For loop injection



**11107**  
For sample collection and stream selection



**11110**  
For double loop injection



**11111**  
For sample collection and stream selection

# Large Electric Rotary Valves with Smart Actuator (contd.)

## Ordering Information

P/N	Description	Voltage	Ports	Pack Size
11101A/11106	Smart Actuator with 6 port loop injection valve USA power lead	100 to 240 VAC	6	1
11101A/11107	Smart Actuator with 7 port distribution valve USA power lead	100 to 240 VAC	7	1
11101A/11110	Smart Actuator with 10 port loop injection valve USA power lead	100 to 240 VAC	10	1
11101A/11111	Smart Actuator with 11 port distribution valve USA power lead	100 to 240 VAC	11	1
11101E/11106	Smart Actuator with 6 port loop injection valve European power lead	100 to 240 VAC	6	1
11101E/11107	Smart Actuator with 7 port distribution valve European power lead	100 to 240 VAC	7	1
11101E/111010	Smart Actuator with 10 port loop injection valve European power lead	100 to 240 VAC	10	1
11101E/11111	Smart Actuator with 11 port distribution valve European power lead	100 to 240 VAC	11	1
11101U/11106	Smart Actuator with 6 port loop injection valve UK power lead	100 to 240 VAC	6	1
11101U/11107	Smart Actuator with 7 port distribution valve UK power lead	100 to 240 VAC	7	1
11101U/11110	Smart Actuator with 10 port loop injection valve UK power lead	100 to 240 VAC	10	1
11101U/11111	Smart Actuator with 11 port distribution valve UK power lead	100 to 240 VAC	11	1

## Application and set up notes.

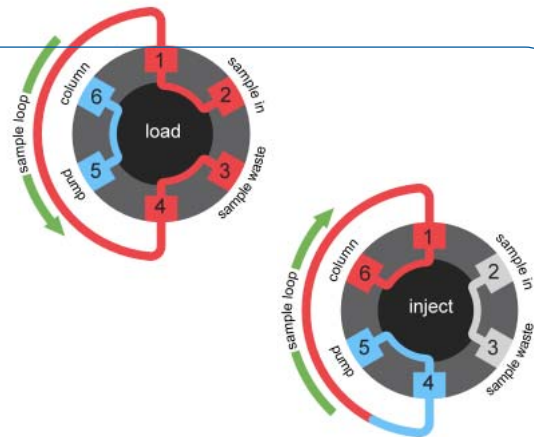
The images below show Omnifit loop inject valves in use as sample injection devices in a chromatography system. These are the most common applications but the use of the valves is not limited to these.

### 6 port loop inject valve used as a sample injector

With the valve in the load position the sample can be injected into the sample loop while the mobile phase is pumped directly through to the column.

When the valve is switched to the inject position, the pump is then connected to the sample loop and the sample is carried onto and through the column. The 'sample in' and 'waste' ports are joined but isolated from the loop.

It is suggested that ports are connected to the corresponding lines as shown. This ensures that the flow of the mobile phase is in opposite directions during the load and inject operations.

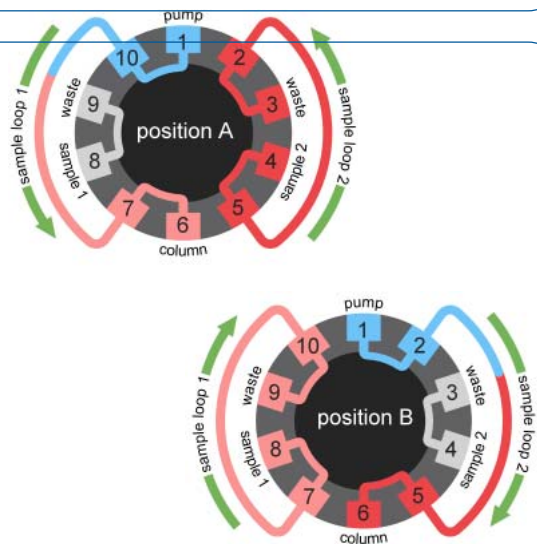


### 10 port loop inject valve used as a sample injector

This valve allows alternate injection from two different sample loops, either identical or of different sizes. This application can alternatively be satisfied with a 4 port switching valve and a 6 port loop inject valve.

With the valve in position A, sample 2 can be loaded into sample loop 2 while the mobile phase is pumped through sample loop 1 and carries sample 1 onto the column. The 'sample 1 in' and 'waste' ports are connected but isolated from the loop.

When the valve is switched to position B, the pump is connected to sample loop 2 and sample 2 is carried onto and through the column. The 'sample 2 in' and 'waste' ports are connected but isolated from the loop. Whilst sample 2 is pumped onto the column, sample loop 1 can be re-loaded.



Trademarks: \_\_\_\_\_

Kel-F® is a registered trademark of the 3M Company  
Omni-Lok™ is a trademark of Omnifit Ltd.

Rev. 0205


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