

Description

Intended use	transfer valve / insert for load lock & process module isolation
Valve body	valve type A & B. Insert type C & L *)
Flange	see dimensional drawing
Actuator	pneumatic single-shaft actuator with mechanically triggered sequence control, double acting, with position indicator, with pneumatic lock in closed and open position
Feedthroughs	welded metal bellows *)

Technical Data

LEAK RATES (at room temperature 25°C and under clean environmental conditions)

Sealing surface	FKM seals	FFKM seals	
Metallic blank (milled / ball polished)	Body $1 \cdot 10^{-9}$ mbar l s ⁻¹ Seat $1 \cdot 10^{-9}$ mbar l s ⁻¹	Body $1 \cdot 10^{-8}$ mbar l s ⁻¹ Seat $1 \cdot 10^{-7}$ mbar l s ⁻¹	
Alu, hard anodized	Body $1 \cdot 10^{-5}$ mbar l s ⁻¹ Seat $1 \cdot 10^{-4}$ mbar l s ⁻¹	Body $1 \cdot 10^{-5}$ mbar l s ⁻¹ Seat $1 \cdot 10^{-4}$ mbar l s ⁻¹	Measuring conditions: Body: 30s, He-Conc. ≥ 20% Seat: 15s, He-Conc. ≥ 30%
Alu, Ni plated	Body $1 \cdot 10^{-9}$ mbar l s ⁻¹ Seat $1 \cdot 10^{-9}$ mbar l s ⁻¹	Body $1 \cdot 10^{-8}$ mbar l s ⁻¹ Seat $1 \cdot 10^{-7}$ mbar l s ⁻¹	

PRESSURE RANGES (at room temperature 25°C, under clean environmental conditions)

- Metallic blank or Ni Plated on vacuum side $1 \cdot 10^{-9}$ mbar to 1.1 bar (abs)
- Alu hard anodized $1 \cdot 10^{-6}$ mbar to 1.1 bar (abs)
- Metal seal $5 \cdot 10^{-10}$ mbar to 1.1 bar (abs)
- differential pressure on the gate ≤ 1.1 bar *) in either direction
- differential pressure at opening ≤ 10 mbar *) in either direction *)

CYCLE LIFE between maintenance

(unheated, under clean vacuum conditions, operated with standard actuation speed and standard compression)

- actuator (pneumatic and mechanical parts) 1 million *)
- bellows (AM 350) 1 million *)

OPERATING TEMPERATURES

- valve body aluminum < 120°C
- actuator with position indicator < 80°C
- solenoid valve < 50°C
- heating and cooling rate $\leq 40^\circ\text{C h}^{-1}$

MOUNTING POSITION

Actuator downwards

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VAT Vakuumventile AG
CH-9469 Haag, Schweiz

PRODUCT DATA SHEET 298440EA

Rectangular L-MOTION Valve Size M

Series 043 / 053

MATERIALS

- valve body, service cover, gate EN AW-6082 or EN AW-5083 *)
- bellows end pieces AISI 316L (1.4435, 1.4404)
- bellows AISI 633
- shaft AISI 316L (1.4435, 1.4404)
- service cover seal FKM (VITON®) *
- gate seal FKM (VITON®) vulcanized *)
- actuator, vacuum and pneumatic seals FKM (VITON®) *
- screw for gate fixation on torsion bar AISI 316L (1.4435, 1.4404)
- screw for gate fixation on shaft AISI 316L (1.4435, 1.4404)
- groove ball bearing AISI 440C

COMPRESSED AIR SUPPLY

- pneumatic connection use only clean, dry or slightly oiled air
- required air pressure push lock fittings for tube with O.D. see dimensional drawing
- required air flow 5 – 7 bar
- 600 slm per valve

Action at compressed air failure

- valve closed valve remains closed (>3h)
- valve open valve remains open (>3h)
- valve in motion undefined

Electronical connections

- position indicator contact rating see table below
- action at power failure depends on type of solenoid

Valve equipped with impulse solenoid

- valve closed valve remains closed
- valve open valve remains open
- valve in operation a started movement will be completed

Position indicator version	Standard *)																				
Type of connector	D-SUB 9 PIN, male																				
Sensor type	Microswitch																				
Temperature rating	<80°C																				
Electrical Diagram with logical Diagram	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>OPEN</th> <th>INTERMEDIATE</th> <th>CLOSED</th> </tr> </thead> <tbody> <tr> <td>1,7</td> <td>connected</td> <td>-</td> <td>-</td> </tr> <tr> <td>1,3</td> <td>-</td> <td>connected</td> <td>connected</td> </tr> <tr> <td>2,8</td> <td>-</td> <td>-</td> <td>connected</td> </tr> <tr> <td>2,4</td> <td>connected</td> <td>connected</td> <td>-</td> </tr> </tbody> </table>		OPEN	INTERMEDIATE	CLOSED	1,7	connected	-	-	1,3	-	connected	connected	2,8	-	-	connected	2,4	connected	connected	-
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2,4	connected	connected	-																		
Contact rating	$\leq 0.1A, > 5mA$ $\leq 50VDC$																				

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Rectangular L-MOTION Valve Size M

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ACTUATOR DATA

- vertical stroke 99 mm, depend on opening size

ACTUATION TIME

- opening < 3.0s *)
- closing < 3.0s *)

Valid for flow rate min. 600 SLPM, tube length <2m

*) *Standard specification. Specifications for optional features are provided on the dimensional drawing of the product.*

**) *In order to maximize the life time of the gate, locking pressure should be set as low as possible, but not so low to produce an unacceptable leak rate in the closed position. Due to length of the sealing line (size of gate), tolerances of sealing lip, accuracy of the measurement and the requested leak rate the locking pressure settings might deviate slightly from the recommended pressure range.*



IMPORTANT NOTE:

In order to ensure proper function of the product, the following instructions must be followed.

- Product must not be operated if compressed air supply pressure is < 4 bar

Installation

Leave the product sealed in the plastic bag as long as possible in order to protect it from dust and particles. The seat and seals must not be cleaned before installation. The valve is assembled at VAT in a clean environment and sealed in a plastic bag.

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