

Product data sheet Transfer valve L-VAT

Series 042 / 052

Description

Intended use	transfer valve / insert for load lock & process module isolation
Valve body	type A & B
Insert bonnet flange	type L
Interface	see dimensional drawing
Actuator	single-shaft double acting J-motion actuator
Feedthrough	welded metal bellows, protected convolutions

Technical Data

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

Sealing surface	FKM seals	FFKM seals (FKM Zalak [®] 5100)	
Metallic blank (milled / ball polished)	Body <1.10 ⁻⁹ mbar l s ⁻¹ Seat <1.10 ⁻⁹ mbar l s ⁻¹	Body <1.10 ⁻⁸ mbar l s ⁻¹ Seat <1.10 ⁻⁷ mbar l s ⁻¹	
Alu, hard anodized	Body <1.10 ⁻⁵ mbar l s ⁻¹ Seat <1.10 ⁻⁴ mbar l s ⁻¹	Body $<1.10^{-5}$ mbar l s ⁻¹ Seat $<1.10^{-4}$ mbar l s ⁻¹	Measuring conditions: Body: 30s, He-Conc. ≥ 20% Seat: 15s, He-Conc. ≥ 30%
Alu, Ni plated	Body <1.10 ⁻⁹ mbar l s ⁻¹ Seat <1.10 ⁻⁹ mbar l s ⁻¹	Body $<1.10^{-8}$ mbar l s ⁻¹ Seat $<1.10^{-7}$ mbar l s ⁻¹	Automatic leak rate supervision dp = 1bar

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

1 • 10 ⁻⁹ mbar to 1.2 bar (abs)
$1 \cdot 10^{-6}$ mbar to 1.2 bar (abs)
1.2 bar *) in either direction
≤30 mbar *) in either direction

CYCLE LIFE (between maintenance)

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

	•	•	•
- actuator (p	neumatic and mechanical parts)	3 million *)	
- bellows (A	M 350)	3 million *)	

OPERATING TEMPERATURES

 valve body / gate aluminum 	<150°C (recommended <120°C)
- pneumatic actuator	<80°C *)
- position indicator	<80°C *)
Temperature difference between seat and gate	≤40°C
Heating and cooling rate	≤40°C h ⁻¹

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MOUNTING POSITION	Actuator downwards
MATERIAL	
- valve body / gate aluminum	EN AW-6061
- bellows end pieces, rod	AISI 316L (1.4435, 1.4404)
- bellows	AISI 633 (AM 350)
- gate seal vulcanized	FKM Viton [®] *)
- bonnet flange seal	FKM Viton [®] *)
- valve body seal	FKM Viton [®] *)
- bellows seal	FKM Viton [®] *)
WEIGHTS TYPICALLY	
- 04210-BA24-000x (valve)	≈14.2kg
- 04212-BA24-000x (valve)	≈15.6kg
- 05210-LA24-000x (insert)	≈11.1kg
- 05212-LA24-000x (insert)	≈11.6kg
- actuator with gate w/o bonnet flange	≈10.7kg
ACTUATOR DATA	
- volume of air cylinder	0.11
- stroke vertically	59mm
COMPRESSED AIR SUPPLY	use only clean, dry or slightly oiled air
- standard w/o check valve	5.0 – 7.0 bar / 72.5 – 101.5 psi *)
- incl. check valve (option)	5.5 – 7.0 bar / 79.8 – 101.5 psi *)
COMPRESSED AIR CONNECTIONS	connections for "open" and "close"
- without solenoid	internal threads 1/8" (ISO /NPT) *)
- with solenoid	internal thread M5 *)
ACTION AT COMPRESSED AIR FAILURE	
- valve closed	undefined *)
	valve remains closed if non-return valve installed (>6h)
- valve open	undefined *)
	valve remains open if non-return valve installed (>6h)
ACTUATION TIME	
- closing time	≤1 s
- opening time	≤1 s

Valid for flow rate min. 300 SLPM, tube length <2m, operational pressure >5.0 bar.

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ELECTRICAL CONNECTION

Type of connector Position indicator contact rating Action during power failure Valve equipped with impulse solenoid - valve closed

- valve open
- valve in operation

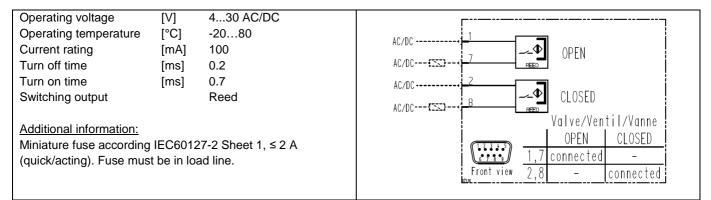
D-Sub; 9 PIN male see tables below depends on type of solenoid valve

valve remains closed valve remains open a started movement will be completed

10...30 DC 1) Operating voltage [V] Operating temperature < 85 [°C] 100 Current rating [mA] (10...30 VDC)---{353-Minimum load current [mA] 5 OPEN (GND)---{:::::: yes (non-latching) Short-circuit protection Reverse polarity protection yes CLOSED Overload protection yes Voltage drop [V] < 3.5 Leakage current [mA] < 0.8 Valve/Ventil/Vanne Hysteresis < 0.5 [mm] OPEN CLOSED Repeatability < 0.2 [mm] connected Power-on delay time [ms] 30 2.8 Switching frequency [Hz] 4000 Front view _ connected 1) Operating voltage "supply class 2" to cULus. Load can also be in the lead wire (NPN).

Option 1: Magnetic REED, 2-wire (single, 1x open / 1x close)

Standard: Magnetic GMR, 2-wire (single, 1x open / 1x close)

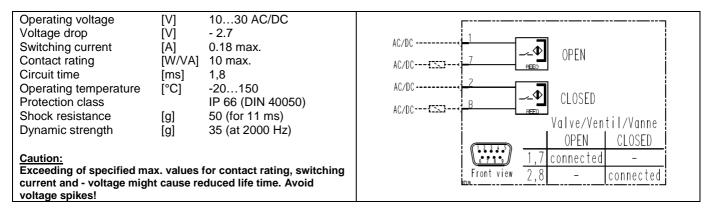


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Option 2: Magnetic REED, 2-wire 150°C (single, 1x open / 1x close)



- Other options like double PI for open and close on request
- *) Standard specification. Specifications of optional features provided on the dimensional drawing of the product.

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