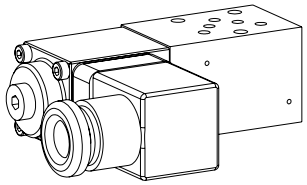
Solenoid operated poppet valve

Sandwich construction

- 2/2-way
- normally open and normally closed
- Q_{max} = 6 l/min
- p_{max} = 350 bar

NG3-Mini

Wandfluh standard



DESCRIPTION

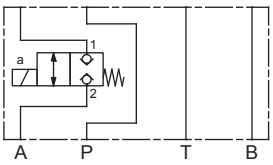
Direct operated 2/2-way solenoid poppet valve in sandwich construction. By means of the pressure tight switching solenoid, the poppet valve spool is opened or closed acting against the spring. Due to the poppet spool construction with pressure compensation on both sides, the flow through the valve is possible in both directions. The seat spool guide is sealed by means of an O-ring. The metallically sealing seat closes the valve virtually leak free.

APPLICATION

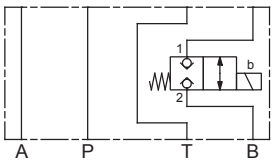
Poppet valves are used where tight closing functions of the valve are essential like leakage-free load holding, clamping or gripping. Miniature values are used where both, reduced dimensions and weight are important.

SYMBOL

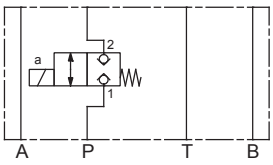
Z.22031A



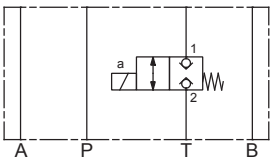
Z.22031B



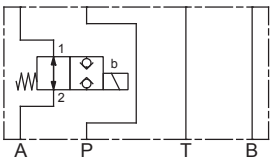
Z.22031P



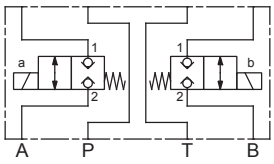
Z.22031T



Z.22030A



Z.22031AB



GENERAL SPECIFICATIONS

Designation	2/2-way poppet valve
Construction	Direct operated
Mounting	Sandwich construction
Nominal size	NG3-Mini according to Wandfluh standard
Actuation	Switching solenoid
Ambient temperature	-25…+70 °C
Weight	0,40 - 0,45 kg (1 solenoid) 0,65 kg (2 solenoids)
MTTFd	150 years

ACTUATION

Actuation	Switching solenoid, wet pin push type, pressure tight
Execution	Medium: SIN29V (Data sheet 1.1-80) Super: SIS29V (Data sheet 1.1-85)
Connection	Connector socket EN 175301 – 803

TYPE CODE

Z ☐ 2 2 03 ☐ ☐ - ☐ - ☐ # ☐

Poppet valve, sandwich construction						
Solenoid, Medium	M					
Solenoid, Super	S					
2 way (connections)						
2 switching positions						
Nominal size 3-Mini						
Normally closed	1					
Normally open	0					
Type list / Function						
Poppet valve	in P	P	in T	T		
	in A and B	AB	in A	A	in B	B
Nominal voltage U_N	12 VDC	G12	115 VAC	R115		
	24 VDC	G24	230 VAC	R230		
Sealing material	NBR					
	FKM (Viton)	D1				
Design index (subject to change)						

1.11-2500

ELECTRICAL SPECIFICATIONS

Protection class	IP65
Relative duty factor	100 % DF
Switching frequency	15'000 / h
Service life time	10^7 (number of switching cycles, theoretically)
Voltage tolerance	± 10 % with regard to nominal voltage
Standard nominal voltage	12 VDC, 24VDC, 115 VAC, 230 VAC AC = 50 to 60 Hz, rectifier integrated in the connector socket

Note! Other electrical specifications see data sheet 1.1-80 (Medium) and 1.1-85 (Super)

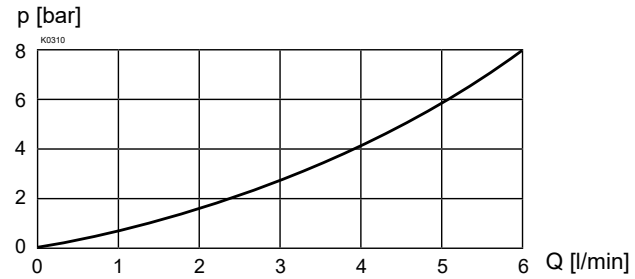
HYDRAULIC SPECIFICATIONS

Working pressure	Medium: p_{max} = 125 bar Super: p_{max} = 350 bar
Maximum volume flow	Q_{max} = 6 l/min, see characteristic
Volume flow direction	Any (see characteristic)
Leakage oil	Poppet type, max. 0,05 ml / min (approx. 1 drop / min) at 30 cSt
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm²/s…320 mm²/s
Temperature range fluid	-25…+70 °C (NBR) -20…+70 °C (FKM)
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade ß 10…16 ≥ 75, see data sheet 1.0-50

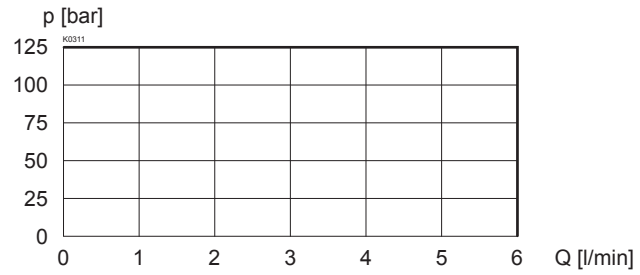
PERFORMANCE SPECIFICATIONS

Oil viscosity υ = 30 mm²/s

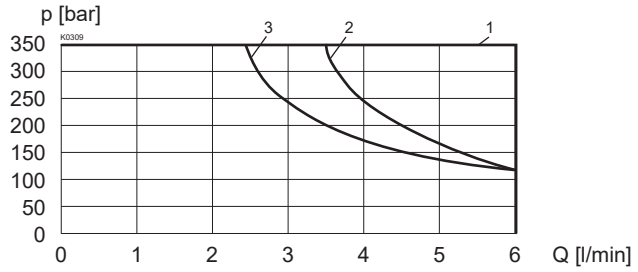
Δp = f (Q) **Pressure drop volume flow characteristics**



p = f (Q) **Performance limits „Medium"**
Measured with nominal voltage -10 %



p = f (Q) **Performance limits „Super"**
Measured with nominal voltage -10 %



	Flow direction	
Symbol	1 → 2	2 → 1
ZS22031.	1	2
ZS22030A	1	3

Attention! Long periods of non-actuation can reduce the switching performance

STANDARDS

Mounting interface	Wandfluh standard
Solenoids	DIN VDE 0580
Connection execution D	EN 175301 – 803
Protection class	EN 60 529
Contamination efficiency	ISO 4406

ACCESSORIES

Fixing screws	Data sheet 1.0-60
Threaded subplates	Data sheet 2.9-05
Multi-station subplates	Data sheet 2.9-45
Horizontal mounting blocks	Data sheet 2.9-85
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50
Relative duty factor	Data sheet 1.1-430

MANUAL OVERRIDE

Screw plug (HB0), no actuation possible
Optionally: HB4,5, HN(K) or HR(K)
→ See data sheet 1.1-311

COMMISSIONING

Attention! When commissioning, the valve must be vented under pressure (max. two rotations of screw E).

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

SURFACE TREATMENT

- The sandwich bodies are zinc-phosphated or zinc-nickel coated
- The solenoid and the cover are re zinc-nickel coated
- The socket head screws are zinc coated

INSTALLATION NOTES

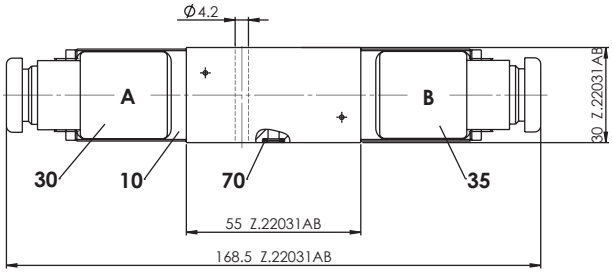
Mounting type	Sandwich mounting 3 fixing holes for socket head screws or studs M4
Mounting position	Any, preferably horizontal
Tightening torque	Fixing screws M_D = 2,6 Nm (quality 8.8, zinc coated)

VALVES INSTALLED

The central functioning element is the poppet valve cartridge NG3, data sheet 1.11-2010.

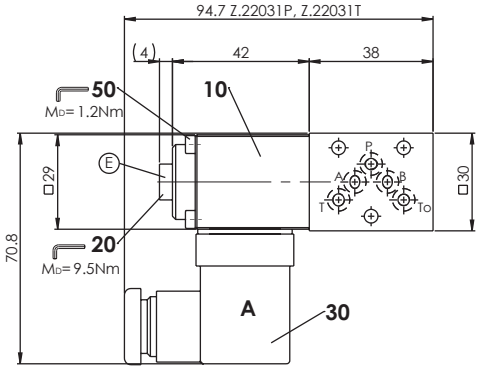
DIMENSIONS

Poppet valves in A and B

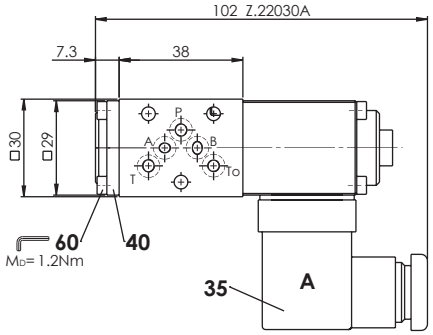


Poppet valve in P or T

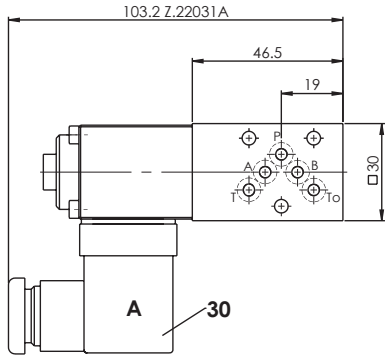
E = Air bleed screw



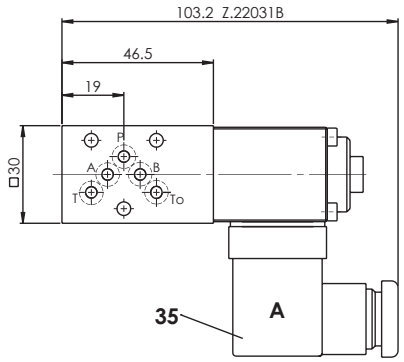
Poppet valve in A



Poppet valve in A



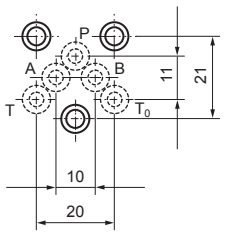
Poppet valve in B



PARTS LIST

Position	Article	Description
10	260.2… 260.3…	Solenoid SIN29V Solenoid SIS29V
20	239.2033	Screw plug HB0 (incl. seal)
30	219.2001	Electric plug A (grey)
35	219.2002	Electric plug B (black)
40	056.4203	Cover
50	246.0141	Socket head screw M3 x 40 DIN 912
60	246.0109	Socket head screw M3 x 8 DIN 912
70	160.2045 160.6045	O-ring ID 4,50 x 1,50 (NBR) O-ring ID 4,50 x 1,50 (FKM)

HYDRAULIC CONNECTION



Wandfluh AG Postfach CH-3714 Frutigen
Tel. +41 33 672 72 72 sales@wandfluh.com