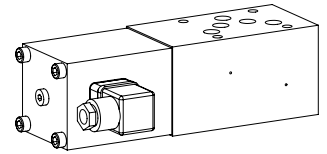


## Solenoid operated poppet valve

### Sandwich construction

- ◆ 2/2-way
- ◆ normally open and normally closed
- ◆  $Q_{max} = 80 \text{ l/min}$
- ◆  $p_{max} = 350 \text{ bar}$

**NG10**  
**ISO 4401-05**



## DESCRIPTION

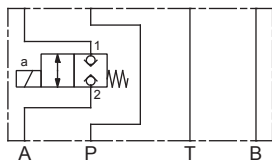
Direct operated 2/2-way solenoid poppet valve in sandwich construction. By means of the pressure tight switching solenoid, the poppet valve spool is opened or closed acting against the spring. Due to the poppet spool construction with pressure compensation on both sides, the flow through the valve is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

## APPLICATION

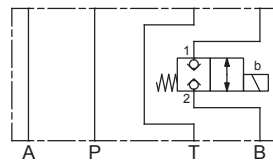
Poppet valves are used where tight closing functions of the valve are essential like leakage-free load holding, clamping or gripping.

## SYMBOL

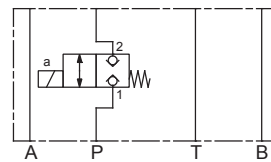
Z.22101A



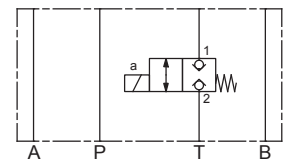
Z.22101B



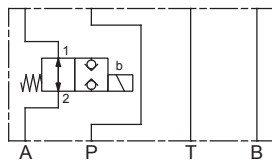
Z.22101P



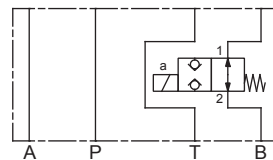
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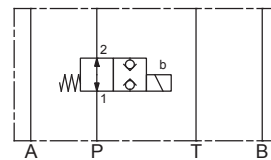
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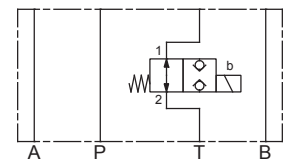
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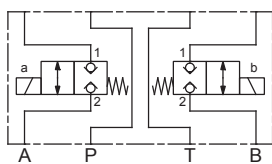
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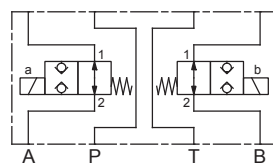
Z.22100T



Z.22101AB



Z.22100AB



## GENERAL SPECIFICATIONS

Designation	2/2-way poppet valve
Construction	Direct operated
Mounting	Sandwich construction
Nominal size	NG10 according to ISO 4401-05
Actuation	Switching solenoid
Ambient temperature	-25...+70 °C (NBR) -20...+70 °C (FKM)
Weight	4,7 kg (1 solenoid) 7,0 - 11,0 kg (2 solenoids)
MTTFd	150 years

## ACTUATION

Actuation	Switching solenoid, wet pin push type, pressure tight
Execution	Medium: SIN60V (Data sheet 1.1-145) Super: SIS60V (Data sheet 1.1-150)
Connection	Connector socket EN 175301 – 803

**TYPE CODE**

Poppet valve, sandwich construction		Z	<input type="checkbox"/>	2	<input type="checkbox"/>	2	<input type="checkbox"/>	10	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	#	<input type="checkbox"/>
Solenoid, Medium	<input type="checkbox"/>	M													
Solenoid, Super	<input type="checkbox"/>	S													
2 way (connections)															
2 switching positions															
Nominal size 10															
Normally closed	<input type="checkbox"/>	1													
Normally open	<input type="checkbox"/>	0													
Type list / Function															
Poppet valve	in P	<input type="checkbox"/>	P	in T	<input type="checkbox"/>	T									
	in A and B	<input type="checkbox"/>	AB	in A	<input type="checkbox"/>	A	in B	<input type="checkbox"/>	B						
Nominal voltage U <sub>N</sub>	12 VDC	<input type="checkbox"/>	G12	115 VAC	<input type="checkbox"/>	R115									
	24 VDC	<input type="checkbox"/>	G24	230 VAC	<input type="checkbox"/>	R230									
Sealing material	NBR	<input type="checkbox"/>													
	FKM (Viton)	<input type="checkbox"/>	D1												
Design index (subject to change)															

1.11-2560

**ELECTRICAL SPECIFICATIONS**

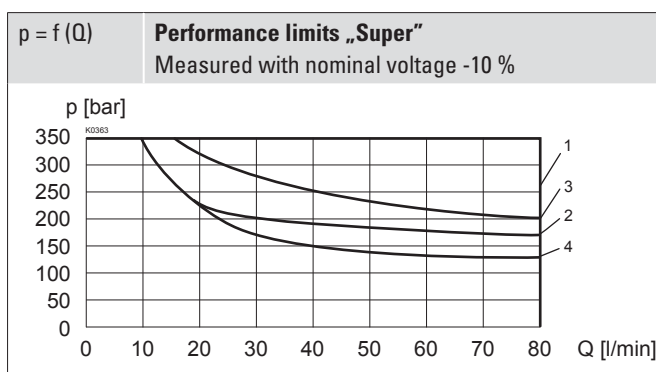
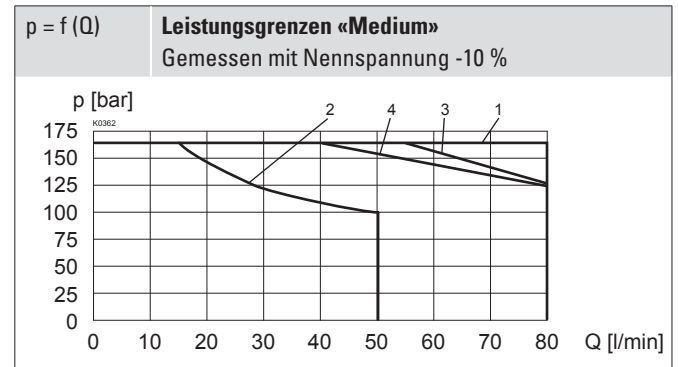
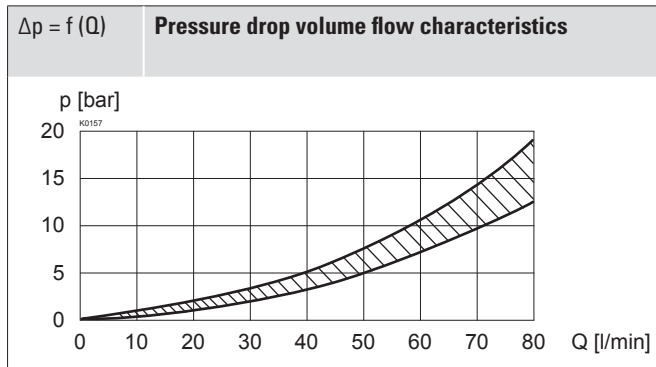
Protection class	IP65
Relative duty factor	100 % DF
Switching frequency	15'000 / h
Service life time	10 <sup>7</sup> (number of switching cycles, theoretically)
Voltage tolerance	± 10 % with regard to nominal voltage
Standard nominal voltage	12 VDC, 24VDC, 115 VAC, 230 VAC AC = 50 to 60 Hz, rectifier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

**Note!** Other electrical specifications see data sheet 1.1-145 (Medium) and 1.1-150 (Super)


**HYDRAULIC SPECIFICATIONS**

Working pressure	Medium: p <sub>max</sub> = 160 bar Super: p <sub>max</sub> = 350 bar
Maximum volume flow	Q <sub>max</sub> = 80 l/min, see characteristic
Volume flow direction	Any (see characteristic)
Leakage oil	Seat tight, max. 0,05 ml / min (approx. 1 drop / min) at 30 cSt
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Temperature range fluid	-20...+70 °C
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade β 10...16 ≥ 75, see data sheet 1.0-50

**PERFORMANCE SPECIFICATIONS**

 Oil viscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 


Type	Flow direction	
	1 → 2	2 → 1
Z.22101.	1	2
Z.22100.	1	3
Z.22100AB	1	4

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


**STANDARDS**

Mounting interface	ISO 4401-05
Solenoids	DIN VDE 0580
Connection execution D	EN 175301 – 803
Protection class	EN 60 529
Contamination efficiency	ISO 4406

**MANUAL OVERRIDE**

Screw plug (HB0), no actuation possible

Optionally: HB8,5, HN(K) or HR(K)

→ See data sheet 1.1-311

**SEALING MATERIAL**

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

**SURFACE TREATMENT**

- ◆ The sandwich bodies made of steel are zinc-phosphated
- ◆ The solenoid and the cover are zinc coated
- ◆ The socket head screws are zinc coated

**VALVES INSTALLED**

The central functioning element is the poppet valve cartridge NG10, data sheet 1.11-2040.

**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
Hydraulic fluids	Data sheet 1.0-50
Filtration	Data sheet 1.0-50
Relative duty factor	Data sheet 1.1-430

**COMMISSIONING**

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

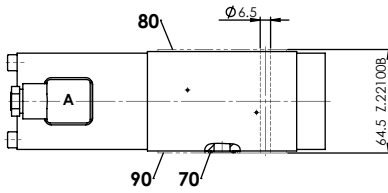

**INSTALLATION NOTES**

Mounting type	Sandwich mounting 4 fixing holes for socket head screws or studs M6
Mounting position	Any, preferably horizontal
Tightening torque	Fixing screws $M_0 = 8,9 \text{ Nm}$ (quality 8.8, zinc-coated)

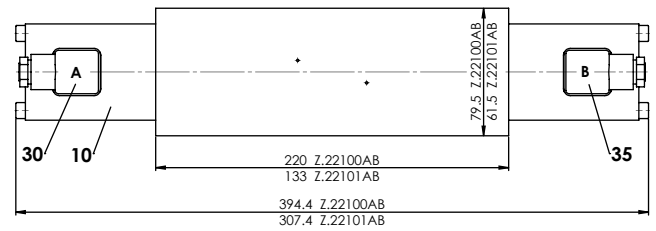
**DIMENSIONS**

Poppet valve in B

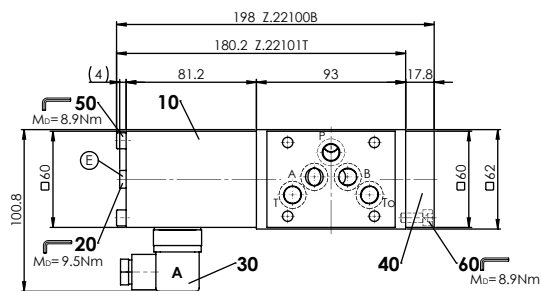
E = Air bleed screw



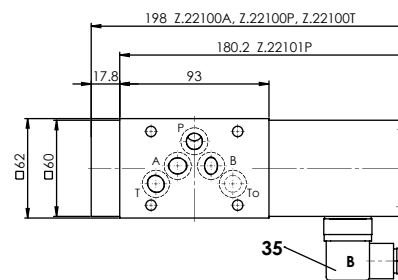
Poppet valves in A and B



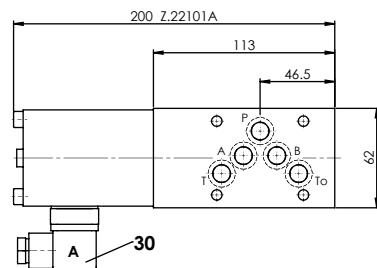
Poppet valve in B or T



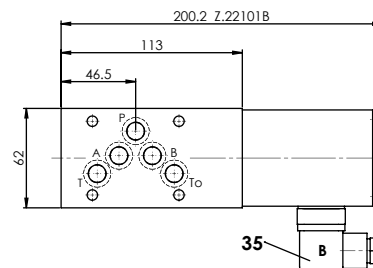
Poppet valve in A, P or T



Poppet valve in A



Poppet valve in B


**PARTS LIST**

Position	Article	Description
10	260.8...	Solenoid SIN60V
	260.9...	Solenoid SIS60V
20	239.2033	Screw plug HB0 (incl. seal)
30	219.2001	Electric plug A (grey)
35	219.2002	Electric plug B (black)
40	059.2200	Cover
50	246.3190	Socket head screw M6 x 90 DIN 912
60	246.3121	Socket head screw M6 x 20 DIN 912
70	160.2140	O-ring ID 14,00 x 1,78 (NBR)
	160.6141	O-ring ID 14,00 x 1,78 (FKM)
80	173.4700	Intermediate plate AZB10 (only for Z.22100B)
90	173.4650	Sealing plate ADB10 (only for Z.22100B)

**HYDRAULIC CONNECTION**
