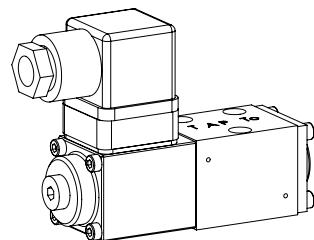


## Solenoid operated poppet valve

### Flange construction

- ◆ 2/2-, 3/2- and 3/4-way
- ◆ normally open and normally closed
- ◆  $Q_{\max} = 6 \text{ l/min}$
- ◆  $p_{\max} = 350 \text{ bar}$

**NG3-Mini**  
**Wandfluh standard**



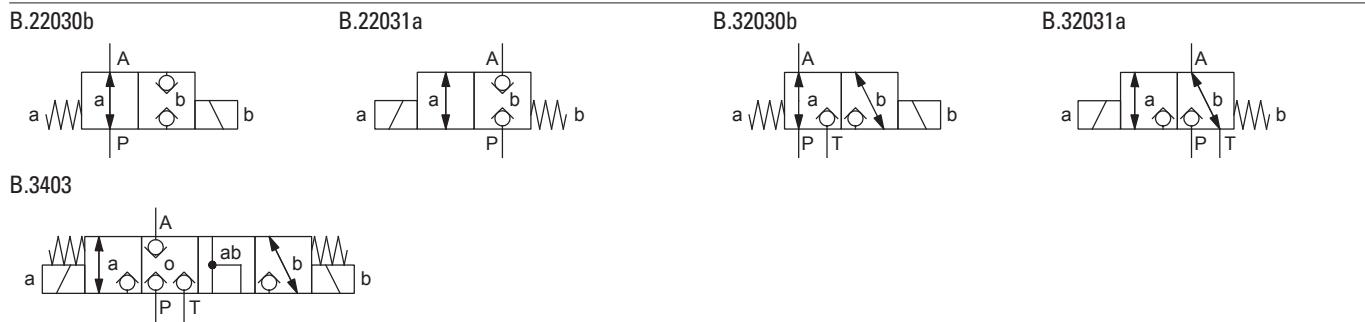
### DESCRIPTION

Direct operated 2/2-, 3/2 and 3/4-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 valves are used where both, reduced dimensions and weight are important.

### SYMBOL



### TYPE CODE

2/2 or 3/2 way execution  
 3/4 way execution

B   2 03  -  -  #   
 B  3 4 03  -  -  #

Mounting interface acc. to Wandfluh standard

Solenoid, Medium  
 Solenoid, Super

M  
 S

2 way (connections)  
 3 way (connections)

2  
 3

2 switching positions  
 4 switching positions

Nominal size 3-Mini

Normally closed  
 Normally open

1a  
 0b

Nominal voltage  $U_N$   
 12 VDC  G12  
 24 VDC  G24

115 VAC  
 230 VAC

R115  
 R230

Sealing material  
 NBR  
 FKM (Viton)

D1

Design index (subject to change)

1.11-2100

## GENERAL SPECIFICATIONS

Designation	2/2-, 3/2- and 3/4-way poppet valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG3-Mini according to Wandfluh standard
Actuation	Switching solenoid
Ambient temperature	-25...+70 °C (NBR) -20...+70 °C (FKM)
Weight	0,46 kg (2/2- and 3/2-way) 0,72 kg (3/4-way)
MTTFd	150 years

## ELECTRICAL SPECIFICATIONS

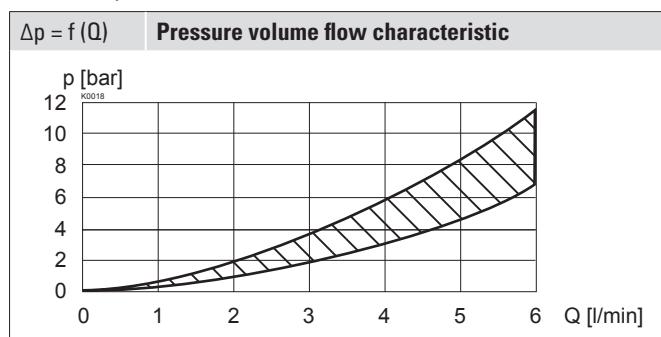
Protection class	IP65
Relative duty factor	100 % DF
Switching frequency	15'000 / h
Service life time	10 <sup>7</sup> (number of switching cycles, theoretically)
Voltage tolerance	± 10 % with regard to nominal voltage
Standard nominal voltage	12 VDC, 24VDC, 115 VAC, 230 VAC AC = 50 to 60 Hz, rectifier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

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



## PERFORMANCE SPECIFICATIONS

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



## 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

## COMMISSIONING

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



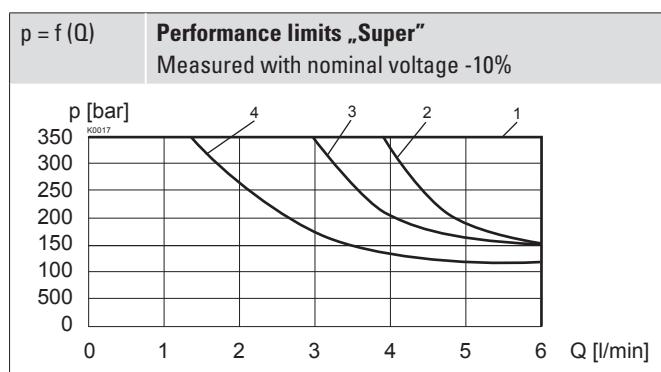
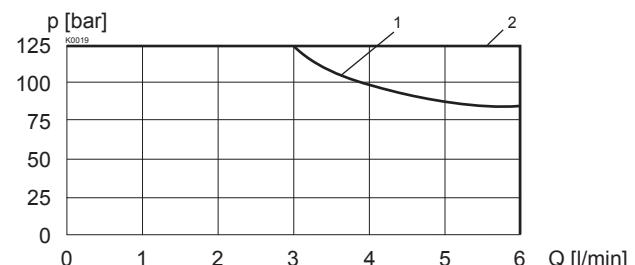
## HYDRAULIC SPECIFICATIONS

Working pressure	Medium: $p_{\max} = 125 \text{ bar}$ Super: $p_{\max} = 350 \text{ bar}$
Maximum volume flow	$Q_{\max} = 6 \text{ l/min}$ , 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	-20...+70 °C
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade $\beta_{10...16} \geq 75$ , see data sheet 1.0-50

$p = f(Q)$

### Performance limits „Medium”

Measured with nominal voltage -10%  
1: 3/2-way valves, flow direction from A → P  
2: All other valves and flow directions



Type	P - A	A - T	A - P	T - A
BS22031a	1	-	2	-
BS22030b	1	-	3	-
BS32031a	1	2	4	1
BS32030b	1	2	4	1
BS3403	1	1	2	4

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

## INSTALLATION NOTES

Mounting type	Flange mounting 3 fixing holes for socket head screws M4 x 30
Mounting position	Any, preferably horizontal
Tightening torque	Fixing screws $M_D = 2,6$ Nm (quality 8.8, zinc coated)

**Note!** The length of the fixing screw depends on the base material of the connection element.



## MANUAL OVERRIDE

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

## SEALING MATERIAL

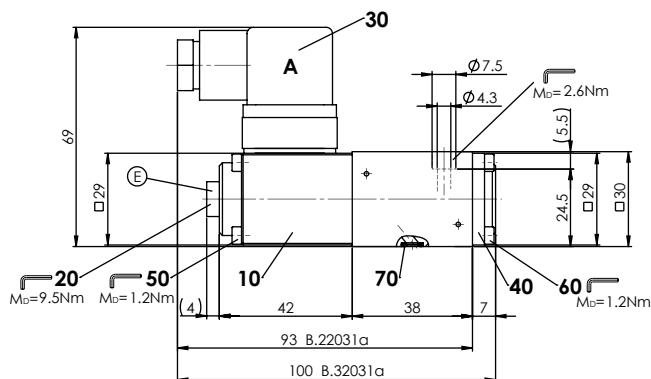
NBR or FKM (Viton) as standard, choice in the type code

## VALVES INSTALLED

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

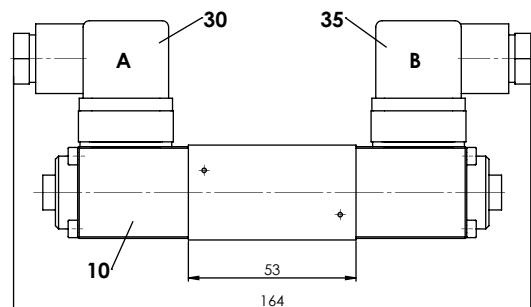
## DIMENSIONS

3/2-; 2/2-way

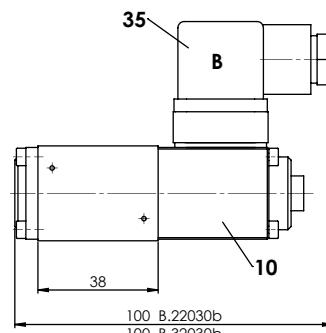


E = Air bleed screw

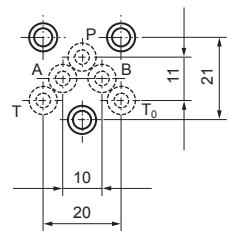
3/4-way



3/2-; 2/2-way



## HYDRAULIC CONNECTION



## SURFACE TREATMENT

- ◆ The valve body is painted with a two component paint
- ◆ The solenoid and the cover are zinc coated
- ◆ The socket head screws are zinc coated

## PARTS LIST

Position	Article	Description
10	260.2...	Solenoid SIN29V
	260.3...	Solenoid SIS29V
20	239.2033	Screw plug HBO (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)