

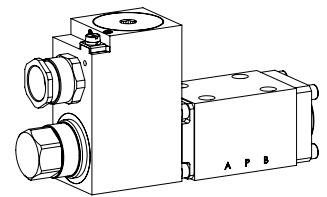
## Solenoid operated spool valve stainless

### Flange construction

- ◆ 4/2-way impulse valve
- ◆ 4/3-way with spring centred mid position
- ◆ 4/2-way with spring reset
- ◆  $Q_{max} = 50 \text{ l/min}$
- ◆  $p_{max} = 350 \text{ bar}$

### NG6 ISO 4401-03

- ⊕ II 2 G Ex db IIC
- ⊕ II 2 D Ex tD A21 IP65
- ⊕ I M2 Ex db I Mb
- Class I Division 1
- Class I Zone 1



## DESCRIPTION

Direct operated solenoid spool valve with 4 connections in 5 chamber design. With the solenoids deenergised, the spool is held in the center position by the spring (4/3), or switched back to the offset position (4/2). With the impulse spool (4/2), the spool is held in the switching position by the detent. The pressure tight encapsulated Ex-protection solenoid coil prevents an explosion on the inside penetrating to the outside as well as an ignitable surface temperature.

## APPLICATION

These valves are suitable for applications in explosion-hazard areas, open cast and also in mines. The stainless execution is especially suitable for the use in wet and salty environment. Spool valves are mainly used for controlling direction of movement and stopping of hydraulic cylinders and motors. The direction of movement is determined by the position of the spool and its symbol.

## CERTIFICATES

	Surface	Mining	Standard -25 °C to...	Z604 -40 °C to...
ATEX	x	x	x	x
IECEX	x	x	x	x
EAC	x	x	x	x
Australia	x	x	x	x
Inmetro	x	x	x	x
Nepsi	x		x	x
MA		x	x	
UL / CSA	x		x	x

The certificates can be found on [www.wandfluh.com](http://www.wandfluh.com)

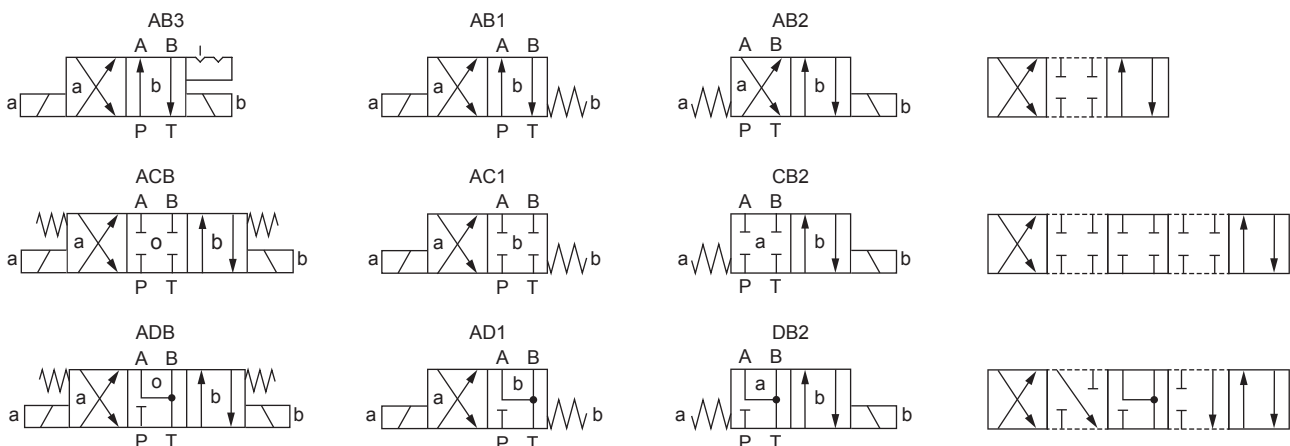
## ACTUATION

Actuation	Switching solenoid, wet pin push type, pressure tight
Execution	MKY45 / 18x60 (data sheet 1.1-183) MKU45 / 18x60 (data sheet 1.1-184)
Connection	Cable gland for cable $\varnothing 6,5 \dots 14 \text{ mm}$

**Attention!** The UL execution is always supplied without cable gland



## SYMBOL



**TYPE CODE**

		WD Y F A06 - <input type="checkbox"/> - <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> - <input type="checkbox"/> K9 # <input type="checkbox"/>			
Spool valve direct operated					
Explosion proof execution Ex d					
Flange construction					
International standard interface ISO, NG6					
Designation of symbols acc. to table					
Nominal voltage $U_N$	12 VDC <input type="checkbox"/> <b>G12</b> 24 VDC <input type="checkbox"/> <b>G24</b>	115 VAC <input type="checkbox"/> <b>R115</b> 230 VAC <input type="checkbox"/> <b>R230</b>			
Nominal power $P_N$	9 W <input type="checkbox"/> <b>L9</b> 15 W <input type="checkbox"/> <b>L15</b> 17 W <input type="checkbox"/> <b>L17</b>	Ambient temperature up to: 40 °C or 90 °C 70 °C 70 °C (only UL / CSA)			
Certification	ATEX, IECEx, EAC <input type="checkbox"/> Australia <input type="checkbox"/> <b>AU</b> MA <input type="checkbox"/> <b>MA</b>	Inmetro <input type="checkbox"/> <b>IM</b>	Nepsi <input type="checkbox"/> <b>NP</b>	UL / CSA <input type="checkbox"/> <b>UL</b>	
Sealing material	NBR <input type="checkbox"/> FKM (Viton) <input type="checkbox"/> <b>D1</b> NBR 872 <input type="checkbox"/> <b>y-Z604</b>	(only with 15 W)			
Stainless					
Design index (subject to change)					
1.3-34S					

**GENERAL SPECIFICATIONS**

Designation	4/2-, 4/3-spool valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG6 according to ISO 4401-03
Actuation	Ex-protection switching solenoid
Ambient temperature	<b>Operation as T6</b> -25...+40 °C (L9) <b>Operation as T4</b> -25...+90 °C (L9) -25...+70 °C (L15 / L17) -40...+70 °C (L15 / L17) In case of $U_N = 12$ VDC, the max. ambient temperature has to be reduced by 10 °C.
Weight	2,8 kg (1 solenoid) 4,6 kg (2 solenoids)
MTTFd	150 years

**HYDRAULIC SPECIFICATIONS**

Working pressure	$p_{max} = 350$ bar
Tank pressure	$p_{Tmax} = 200$ bar
Maximum volume flow	$Q_{max} = 50$ l/min, see characteristics
Leakage oil	See characteristics
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Temperature range fluid	<b>Operation as T6</b> NBR -25...+40 °C (L9) FKM -20...+40 °C (L9) <b>Operation as T4</b> NBR -25...+70 °C (L9 or L15 / L17) FKM -20...+70 °C (L15 / L17) FKM -20...+90 °C (L9) NBR 872 -40...+70 °C (L15 / L17)
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade $\beta_{10...16} \geq 75$ , see data sheet 1.0-50

**ELECTRICAL SPECIFICATIONS**

Protection class	IP65 / 66 / 67
Relative duty factor	100 % DF
Switching frequency	12'000 / h
Voltage tolerance	± 10 % with regard to nominal voltage
Standard nominal voltage	12 VDC, 24VDC, 115 VAC, 230 VAC AC = 50 to 60 Hz ± 2 %, with built-in two-way rectifier
Standard nominal power	9 W, 15 W, 17 W
Temperature class	Nominal power 9 W: T1...T6 Nominal power 15 W / 17 W: T1...T4

**Note!** Other electrical specifications see data sheet 1.1-183 and 1.1-184


**SEALING MATERIAL**

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

**SURFACE TREATMENT**

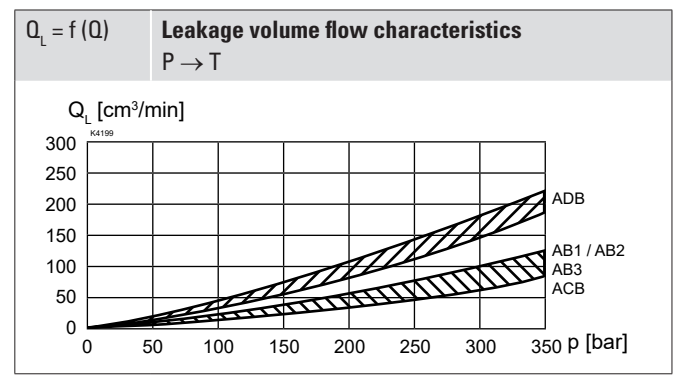
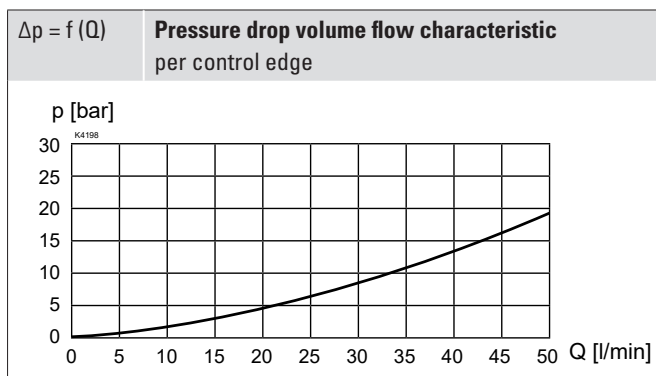
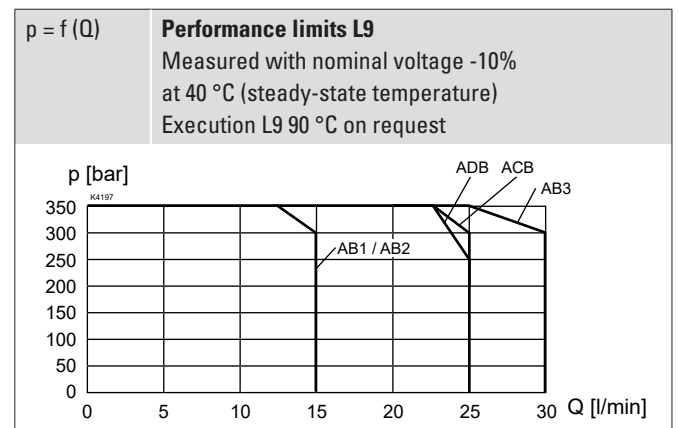
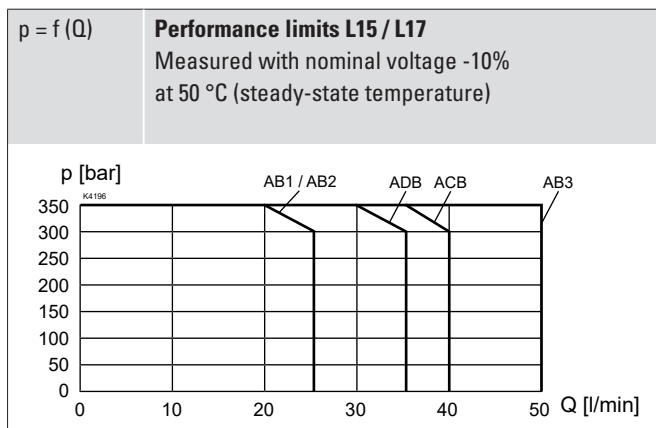
- ◆ The valve body, the cover and the socket head screws are made of stainless steel
- ◆ The slip-on coil and the armature tube are zinc nickel coated

**COMMISSIONING**

**Attention!** The solenoid coil must only be put into operation, if the requirements of the operating instructions supplied are observed to their full extent. In case of non-observance, no liability can be assumed.


**PERFORMANCE SPECIFICATIONS**

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



**Note!** With the L15 / L17 execution for ambient temperatures up to 70 °C, the performance specifications have been evaluated with an ambient temperature of 50 °C



**Attention!** For valves for the temperature ranges „-40 °C to...“ (Z604) the leakage volume flow can be up to eight times higher.



