

Solenoid operated poppet valve

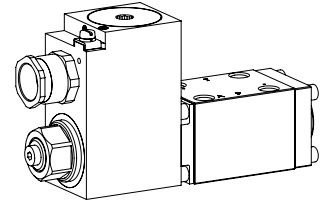
Flange construction

- ◆ 2/2-, 3/2- and 3/4-way
- ◆ normally open and normally closed
- ◆ $Q_{max} = 40 \text{ l/min}$
- ◆ $p_{max} = 350 \text{ bar}$

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 2/2-, 3/2 and 3/4-way solenoid poppet valve in flange 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 metallic sealing seat closes the valve virtually leak free. 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. Poppet valves are used where tight closing functions of the valve are essential like leakage-free load holding, clamping or gripping.

CERTIFICATE

	Surface	Mining	Standard -25 °C to...	Z604 -40 °C to...	Z591 -60 °C to...
ATEX	x	x	x	x	x
IECEx	x	x	x	x	x
EAC	x	x	x	x	x
Australia	x	x	x	x	
Inmetro	x	x	x	x	x
Nepsi	x		x	x	x
MA		x	x		
UL / CSA	x		x	x	

The certificates can be found on 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

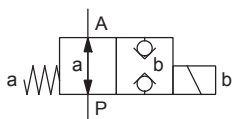


STANDARDS

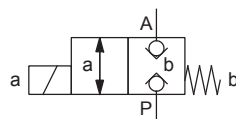
Explosion protection	Directive 2014 / 34 / EU (ATEX)
Flameproof enclosure	EN / IEC 60079-1 / 31
Cable entry	EN 60079-0, 1, 7, 15, 31
Mounting interface	ISO 4401-03
Protection class	EN 60 529
Contamination efficiency	ISO 4406

SYMBOL

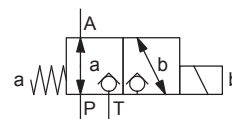
A.22060b



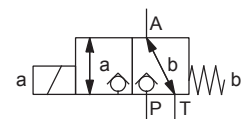
A.22061a



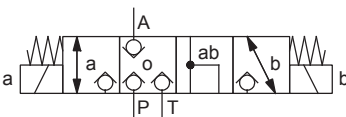
A.32060b



A.32061a



A.3406



TYPE CODE

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

 A Exd 2 06 - / / - #
 A Exd 3 4 06 - / / - #

International standard interface ISO

Explosion-proof execution, Ex d

 2 way (connections) 2
 3 way (connections) 3

 2 switching positions
 4 switching positions

Nominal size 6

 Normally closed Solenoid on A-side 1a
 Normally open Solenoid on B-side 0b

 Nominal voltage U_N 12 VDC G12 115 VAC R115
 24 VDC G24 230 VAC R230

 Nominal power P_N 9 W L9
 15 W L15
 17 W L17
Ambient temperature up to:
 40 °C or 90 °C
 70 °C
 70 °C (only UL / CSA)

 Certification ATEX, IECEx, EAC
 Australia AU Inmetro IM NEPSI NP UL / CSA UL MA MA

 Sealing material / Temperature range NBR
 FKM (Viton) D1
 NBR -40 °C Z604 (only with 15 W)
 -60 °C to... Z591 (only with 15 W / ATEX and IECEx / Surface)

Design index (subject to change)

1.11-3143

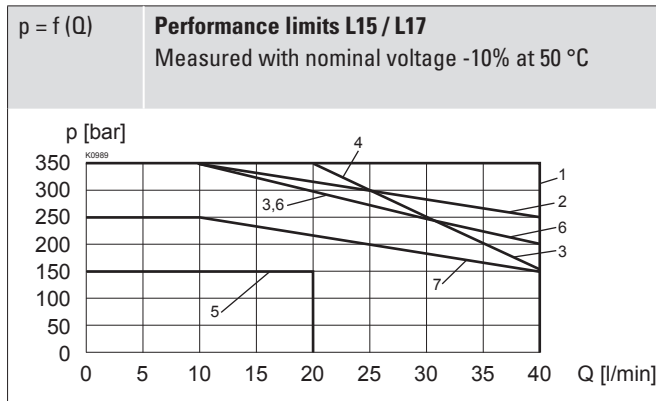
GENERAL SPECIFICATIONS

Designation	2/2-, 3/2- and 3/4-way poppet valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG6 according to ISO 4401-03
Actuation	Ex-protection switching solenoid
Ambient temperature	Execution L9 -25...+40 °C (operation as T1...T6 / T80 °C) -25...+90 °C (operation as T1...T4 / T130 °C) Execution L15 / L17 -25...+70 °C (operation as T1...T4 / T130 °C) -40...+70 °C (operation as T1...T4 / T130 °C) -60...+70 °C (operation as T1...T4 / T130 °C) In case of $U_N < 20$ V, the max. ambient temperature has to be reduced by 10 °C.
Weight	3,3 kg (2/2- and 3/2-way) 5,4 kg (3/4-way)
MTTFd	150 years

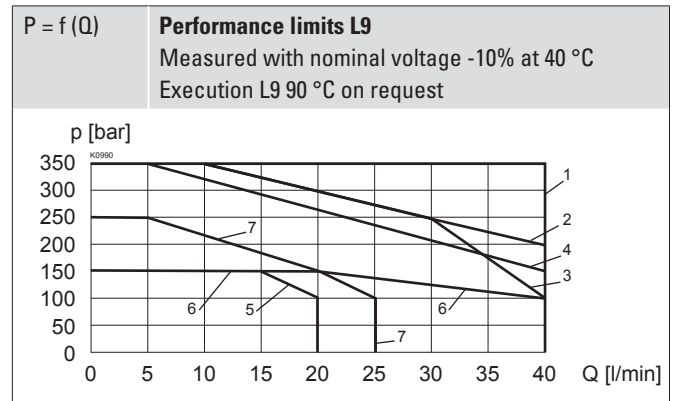
HYDRAULIC SPECIFICATIONS

Working pressure	$p_{max} = 350$ bar
Maximum volume flow	$Q_{max} = 40$ l/min, see characteristic flow
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 ² /s...320 mm ² /s
Temperature range fluid	Execution L9 -25...+40 °C (operation as T1...T6 / T80 °C) -25...+70 °C (operation as T1...T4 / T130 °C) Execution L15 / L17 -25...+70 °C (operation as T1...T4 / T130 °C) -40...+70 °C (operation as T1...T4 / T130 °C) -60...+70 °C (operation as T1...T4 / T130 °C)
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade $\beta_{10...16} \geq 75$, see data sheet 1.0-50

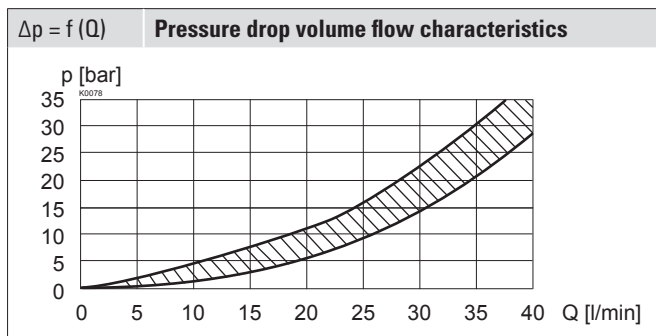
PERFORMANCE SPECIFICATIONS


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



Type	Flow direction			
	P - A	A - T	A - P	T - A
AEXd22061a	1	-	6	-
AEXd22060b	1	-	3	-
AEXd32061a	1	2	5	1
AEXd32060b	1	4	7	1
AEXd3406	1	1	6	6



Type	Flow direction			
	P - A	A - T	A - P	T - A
AEXd22061a	1	-	6	-
AEXd22060b	1	-	3	-
AEXd32061a	1	2	5	1
AEXd32060b	1	4	7	1
AEXd3406	1	1	6	6



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

SURFACE TREATMENT


- ◆ The valve body is painted with a two component paint
- ◆ The slip-on coil is zinc-nickel coated
- ◆ The armature tube, the cover and the socket head screws are zinc coated

VALVES INSTALLED

The central functioning element is the poppet valve cartridge NG6, data sheet 1.11-2030.

ELECTRICAL SPECIFICATIONS

Protection class	IP67
Relative duty factor	100 % DF
Switching frequency	12'000 / h
Voltage tolerance	$\pm 10 \%$ with regard to nominal voltage
Standard nominal voltage	12 VDC, 24VDC, 115 VAC, 230 VAC AC = 50 to 60 Hz $\pm 2 \%$, 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

MANUAL OVERRIDE

Screw plug (HB0), no actuation possible
 Optionally: HB6, HN(K) or HR(K)
 → See data sheet 1.1-311

