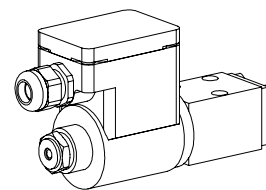


Solenoid poppet valve

- 2/2-, 3/2- and 3/4-way type
- $Q_{max} = 15 \text{ l/min}$
- $p_{max} = 350 \text{ bar}$

NG4-Mini[®]

II 2 G / II 2 D
EEx em II

DESCRIPTION

Direct operated poppet valve flange type NG4-Mini. Activated with explosion proof solenoid. **EEx**: in accordance with european standards EN 50014, EN 50019, EN 50028

e: increased safety

m: encapsulation

Group II:

for all applications except mining

Zone 1 / 21 (and 2 / 22):

explosive mixtures present intermittently

EC-type examination certificate:

PTB 01 ATEX 2129 X

FUNCTION

The central functioning element of all directly controlled poppet valves is the poppet valve cartridge NG4. The valve is operated by a explosion proof type solenoid which in turn either opens or closes the poppet. The design of the poppet spool, which is equal in surface area on both sides and thus pressure balanced, means there are no undue opening and closing hydraulic forces. Due to this the oil flow through the poppet valve is possible in both directions. The valve is tight in both flow directions.

APPLICATION

Wandfluh poppet valves can be used anywhere absolutely leak tight closing functions are important. Completely sealed loading, gripping and clamping operations are all important functions which Wandfluh poppet valves can perform. From a mechanical and functional point of view, poppet valves can replace slide valves at any time. These valves are suitable for hazardous areas in off-shore and shipbuilding applications as well as in chemical, oil and gas industry.

TYPE CODE

2/2- or 3/2-way construction	B	EX	☐	2	04	☐ - S1788 -	☐	/	☐	#	☐
3/4-way construction	B	EX	3	4	04	- S1788 -	☐	/	☐	#	☐
Mounting interface											
Explosion proof solenoid											
2-way (connections)			☐	2							
3-way (connections)			☐	3							
2 position											
4 position											
Nominal size 4-Mini											
Normally closed,											
Normally open,											
Terminal box with out cable											
Standard nominal voltage U_N :	24 VDC	☐	G24			115 VAC	☐	R115			
						230 VAC	☐	R230			
Execution:	T1...T4	☐	T4			T1...T6	☐	T6	(on request)		
Design-Index (Subject to change)											

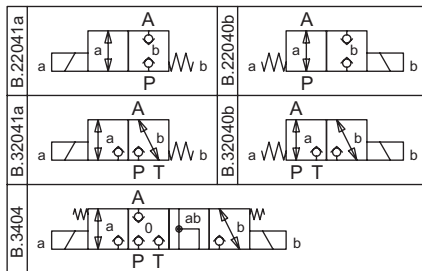
GENERAL SPECIFICATIONS

Description	2/2-, 3/2-and 3/4-way poppet valve
Nominal size	NG4-Mini acc. to Wandfluh standard
Construction	Direct operated poppet valve
Operations	Solenoid
Mounting	Flange
	3 mounting holes for cyl. screws M5x40
	M5x50 with distance plate BDP4/12
Connections	Threaded connection plates
	Multi-flange subplates
	Longitudinal stacking system
Admissible ambient temp. *:	
Execution T4	-20...+40 °C
Execution T6 (on request)	-20...+70 °C (operation as T1...T4)
	-20...+40 °C (operation as T5/T6)
Mounting position	any, preverable horizontal
Fastening torque	$M_D = 5,5 \text{ Nm}$ (quality 8.8)
Weight: 2/2-, 3/2-way	$m = 2,0 \text{ kg}$
3/4-way	$m = 2,9 \text{ kg}$
Volume flow direction	any (see characteristics)

ELECTRICAL CONTROL

Construction	Solenoid, wet pin push, pressure tight
Standard-nominal voltage	$U_N = 24 \text{ VDC}$
	$U_N = 115 \text{ VAC}, U_N = 230 \text{ VAC}$
	DC = Ripple component 20%;
	wired with VDR
	AC = 50 to 60 Hz $\pm 2\%$;
	with integrated half wave rectifier and recovery diode
Voltage tolerance	$\pm 10\%$ of nominal voltage
Protection class	IP65 / IP67 acc. to EN 60 529
Relative duty factor	100 % DF
Switching cycles	12'000/h
Operating life	10^7 (number of switching cycles, theoretically)
Connection/Power supply	Through cable entry for cable diameter 6...12 mm
Designation	
Execution T4:	II 2 G EEx em II T4 (for gas)
	II 2 D IP65 T130°C (for dust)
Execution T6 (on request):	II 2 G EEx em II T6 (for gas)
	II 2 D IP65 T80°C (for dust)
Nominal power	
Execution T4:	17 W (DC), 23 VA (AC)
Execution T6 (on request):	7 W (DC), 11 VA (AC)

SYMBOLS



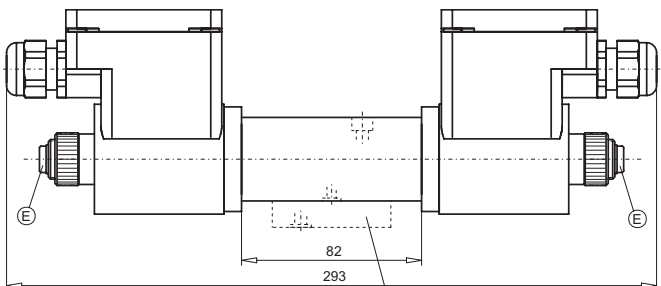
HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406: 1999, class 20/18/14 (Required filtration grade $\beta_{10...16} \geq 75$) refer to data sheet 1.0-50/2
Viscosity range	12 mm ² /s...320 mm ² /s
Admissible fluid temp. *: Execution T4	-20...+40 °C
Execution T6 (on request)	-20...+70 °C (operation as T1...T4) -20...+40 °C (operation as T5/T6)
Working pressure	$p_{max} = 350$ bar
Max. volume flow	$Q_{max} = 15$ l/min see characteristics

* Deviating pressure medium - or ambient temperatures are possible for special arrangements after checking and authorisation by a responsible inspector. Measures for the prevention of the exceeding of the admissible solenoid surface - and internal temperatures can be: a good ventilation, low ambient temperatures (for higher pressure medium temperatures), limitation of the maximum possible power supply voltage, a short switching-on duration, installation on large heat dissipating blocks, etc. The responsibility in all cases lies with the operator, resp. with his inspector.

DIMENSIONS

3/4-way poppet valve



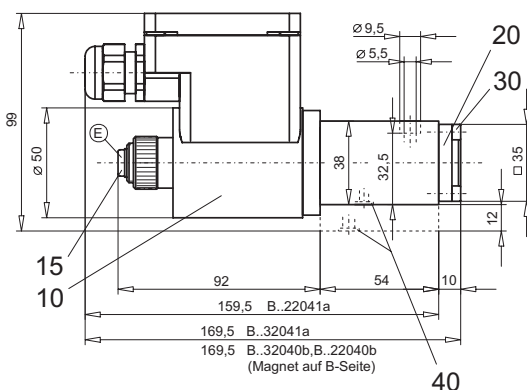
E = air bleed screw

50

Order distance plate
BDP4/12 separately

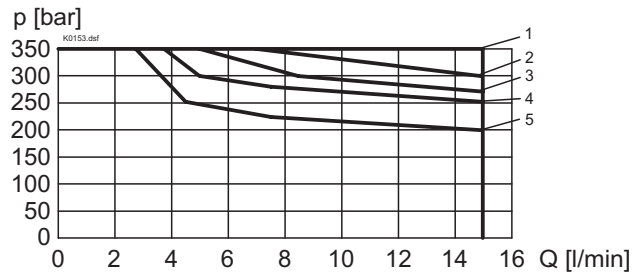
2/2-way poppet valve

3/2-way poppet valve



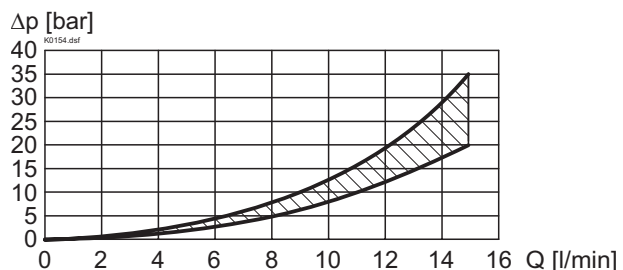
CHARACTERISTICS (T6 on request) Oil viscosity $\nu = 30$ mm²/s

$p = f(Q)$ Performance limits with standard voltage -10 %



Type	Flow direction			
	P - A	A - T	A - P	T - A
BEX22041a	1	-	2	-
BEX22040b	1	-	4	-
BEX32041a	1	3	5	1
BEX32040b	1	4	5	1
BEX3404	1	1	2	2

$\Delta p = f(Q)$ Pressure drop volume flow characteristics



START-UP

1. In the power supply for each solenoid a fuse of an appropriate rating (max. 3 times I_B of solenoid, DIN 41571 or IEC 127) respectively a motor circuit breaker with electromagnetic and thermal interruption must be installed. The fuse may be located in the power supply unit for the solenoid or between power supply and solenoid. The voltage rating for the fuse must be equal or higher than the one for the solenoid.
2. The solenoid coils must only be operated on the valve belonging to them. More information concerning the installation and commissioning is contained in the operating instructions supplied together with the solenoid coil.

PARTS LIST

Position	Article	Description
10	207.5 ...	Coil type EExem
15	239.2033	Plug HB0 (incl. seal)
20	057.4202	Cover
30	246.1113	Socket head cap screw M4x12 DIN 912
40	160.2052	O-ring ID 5,28x1,78
50	173.1450	Distance plate BDP4/12

ACCESSORIES

Threaded connecting plates see Reg. 2.9

Mounting interface Wandfluh-norm see data sheet 1.11-3131E

Technical explanation see data sheet 1.0-100E