

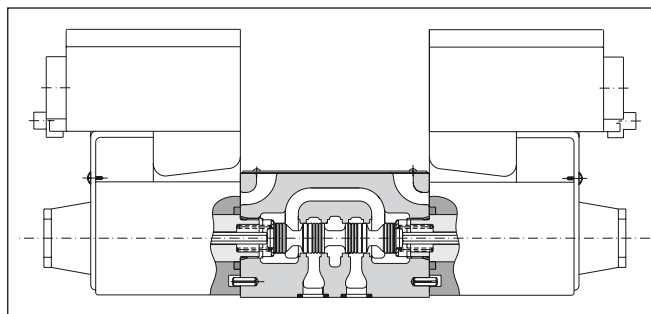
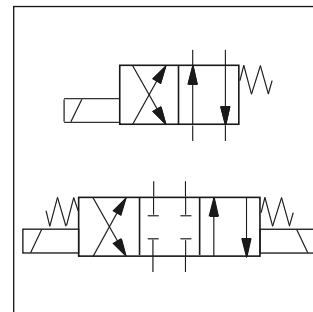
The D1VW is a 3-chamber, electrically controlled 4/3 or 4/2 way directional control valve. It is activated directly by solenoids with screwed-in wet pin armature.

The explosion proof class is

CE  II 2 G
EEx me II T4

for use in zone 1.

All explosion proof solenoids are DC design. For AC (code P and N) the input voltage is internally rectified.

**2****Technical data**

General				
Design		Directional spool valve		
Actuation		Solenoid		
Size		DIN NG06 / CETOP 03 / NFPA D03		
Mounting interface		DIN 24340 A6 / ISO 4401 / CETOP RP 121-H / NFPA D03		
Mounting position		unrestricted, preferably horizontal		
Ambient temperature	[°C]	-25...+50		
Weight	[kg]	1.8 (1 solenoid), 2.7 (2 solenoids)		
Hydraulic				
Max. operating pressure	[bar]	P, A B: 350 T: 210		
Fluid		Hydraulic oil in accordance with DIN 51524 / 51525		
Fluid temperature	[°C]	-25 ... +60		
Viscosity permitted	[cSt] / [mm²/s]	2.8...400		
Viscosity recommended	[cSt] / [mm²/s]	30...80		
Filtration		ISO 4406 (1999); 18/16/13 (meet NAS 1638: 7)		
Flow max.	[l/min]	80		
Leakage at 50 bar	[ml/min]	Up to 10 per flow path, depending on spool		
Static / Dynamic				
Step response at 95%	[ms]	Energized: 32 (DC) De-energized: 40 (DC)		
Electrical characteristics				
Duty ratio		100% ED; CAUTION: coil temperature up to 130 °C possible		
Max. switching frequency	[1/h]	15000		
Protection class		CE  II 2 G , EEx me II T4, IP66		
	Code	J	P	N
Supply voltage / ripple	[V]	24 V =	110/50Hz	230/50Hz
Tolerance supply voltage	[%]	±10	±5	±5
Current consumption	[A]	1.25	0.32	0.15
Power consumption	[W]	30	30	30
Solenoid connection		Box with M20x1.5 entry for cable glands. Solenoid identification as per ISO 9461.		
Wiring min.	[mm²]	3 x 1.5 recommended		
Wiring length max.	[m]	50 recommended		

With electrical connections the protective conductor (PE ) must be connected according to the relevant regulations.

Ordering Code

Directional Control Valve
Series D1VW Explosion Proof**D**Directional
control
valve**1**Size
DIN NG06
CETOP 03
NFFA D03**V**3-chamber
valve**W**Wet pin
solenoidSpool
typeSpool
position

Seals

Solenoid
voltage**E**Connection:
Explosion
proof
with cable
glands**E**Solenoid
options:
Explosion
proof
EEx me IIDesign
series
(not required
for ordering)

2

3 position spools		
Code	Spool type	
	a	0 b
1		
2		
3		
4		
5		
6		
7		
8 ¹⁾		
9 ¹⁾		
10		
11		
14		
15		
16		
21		
22		
31		
32		
76		
78		
81		
82		
102		

2 position spools		
Code	Spool type	
	a	b
20		
26		
30		
101		

¹⁾ Consider specific spool position.

Code	Voltage
J	24V=
P	110V 50Hz
N	230V 50Hz

Code	Seals
N	NBR
V	FPM

3 position spools		
Code	all 3 position spools	
C		3 positions. Spring offset in position "0". Operated in position "a" or "b".
	Standard	Spool type 8 and 9
E	 Operated in position "a".	 Operated in position "b".
F	 Spring offset in position "b".	 Spring offset in position "a".
K	 Operated in position "b".	 Operated in position "a".
M	 Spring offset in position "a".	 Spring offset in position "b".

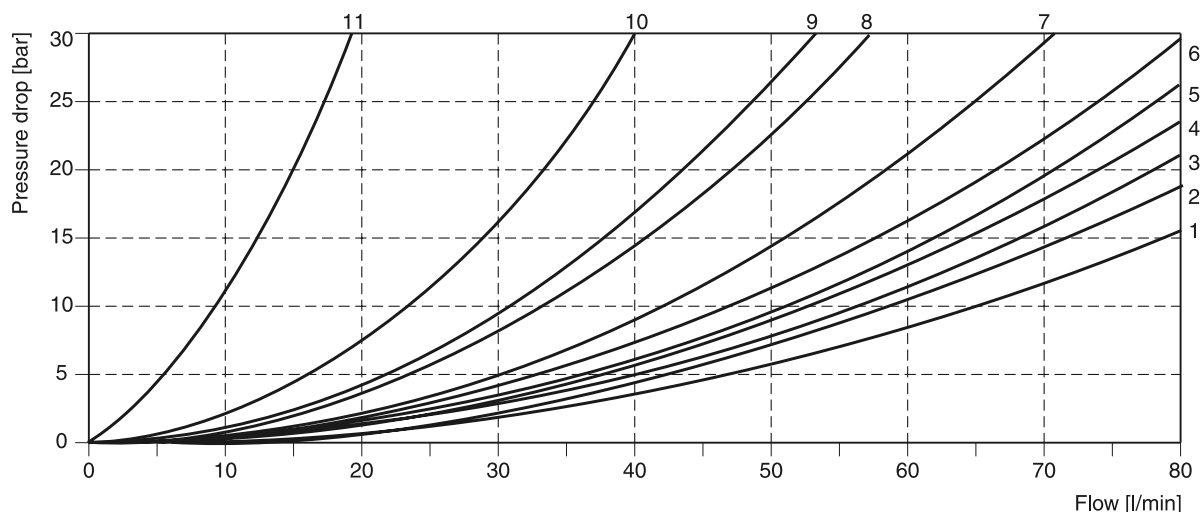
2 position spools		
Code	Spool position	
B		2 positions. Spring offset in position "b". Operated in position "a".
D		2 positions. Operated in position "a" or "b". No centre or offset position.
H		2 positions. Spring offset in position "a". Operated in position "b".

Further spool types, styles, and combinations on request.

The flow curve diagram shows the flow versus pressure drop curves for all spool types. The relevant curve number is given in the table below.

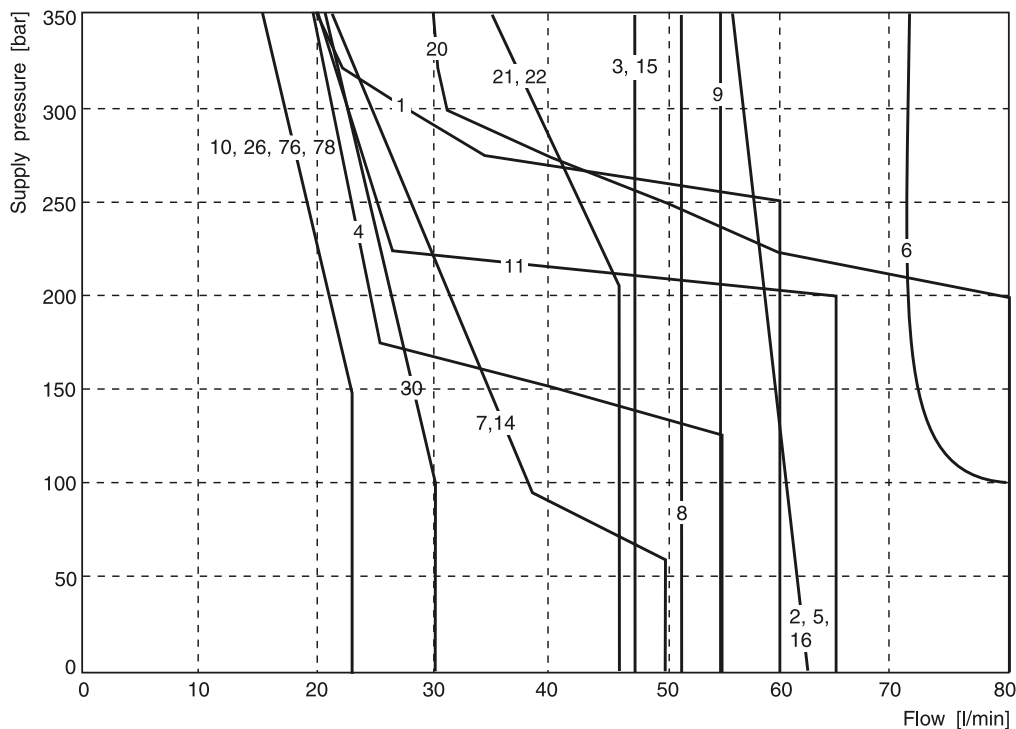
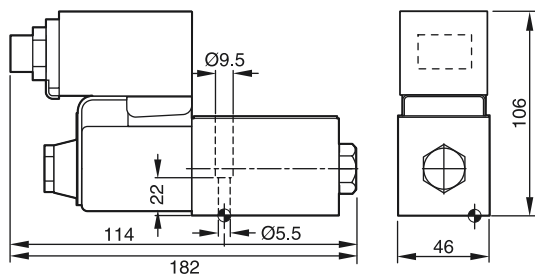
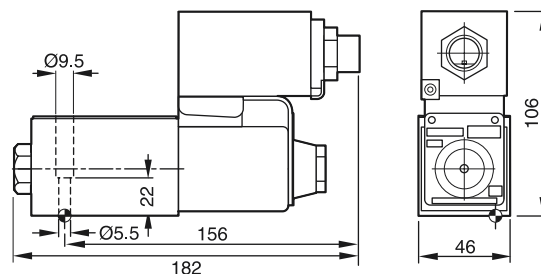
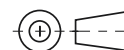
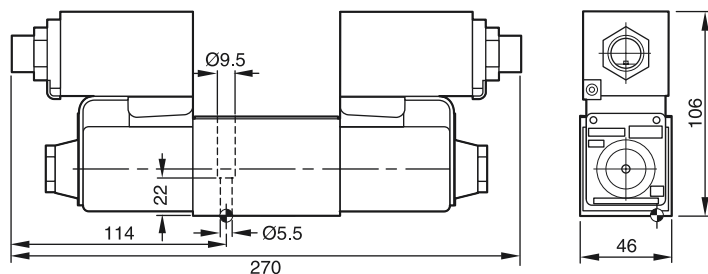
Spool	Position „b“		Position „a“		Position „0“					
	P->A	B->T	P->B	A->T	P->A	P->B	A->T	B->T	P->T	A->B
1	4	1	4	1	—	—	—	—	—	—
2	5	2	5	2	4	4	1	1	6	1
3	4	1	4	2	—	—	8	—	—	—
4	4	2	4	2	—	—	7	7	—	9
5	4	1	5	1	9	—	—	—	—	—
6	5	1	5	1	9	9	—	—	—	9
7	5	2	4	1	—	5	—	1	7	—
10	4	—	4	—	—	—	—	—	—	—
11	4	2	4	2	—	—	11	11	—	—
14	4	1	5	2	5	—	1	—	7	—
15	4	2	4	1	—	—	—	8	—	—
16	5	1	4	1	—	9	—	—	—	—
20	5	1	5	1	—	—	—	—	—	—
26	6	—	6	—	—	—	—	—	—	—
30	5	1	5	1	—	—	—	—	—	—
76	—	2	—	—	—	—	3	—	—	—
78	—	—	—	2	—	—	—	3	—	—
81	10	10	10	10	—	—	—	—	—	—
82	10	10	10	10	—	—	1) ¹⁾	1) ¹⁾	—	—
	P->B	A->T	P->A	B->T	P->A	P->B	A->T	B->T	P->T	A->B
8	2	2	2	2	—	—	—	—	8	—
9	3	3	3	3	—	—	—	—	9	—
	Position „b“		Position „a“							
	P->A	P->B	A->B	P->B	A->T		1) Only for pressure compensation, no high flow possible.			
21	3	3	3	6	1					
	P->A	B->T		P->A	P->B	A->B				
22	6	1		3	3	3				

Flow curve diagram



The diagram below specifies the shift limits for valves with DC solenoids. Valves with spool position “F” or “M” can only be operated up to 70% of the limits. The specifications apply to a viscosity 35mm²/s and balanced flow

conditions. The shift limits can be considerably lower at unbalanced flow conditions. To avoid flow rates beyond the shift limits, a plug-in orifice can be inserted in the P-port.

Shift limit diagram**Dimensions****B, E, F -style****H, K, M -style****C, D -style**

Surface finish	 Kit	 4x M5x30 DIN 912 12.9	 7.6 Nm ±15%	 Kit NBR
$\sqrt{R_{max} 6.3}$ 	BK375			NBR: SK-D1VW-70 FPM: SK-D1VW-V70