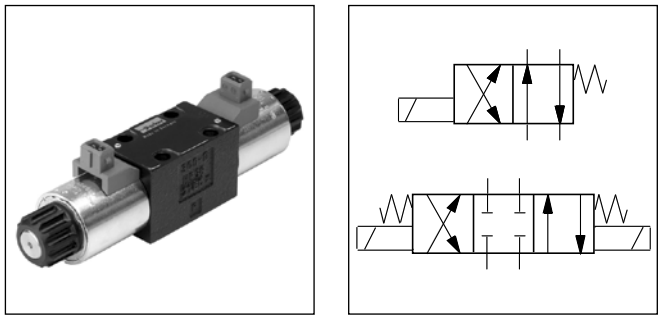
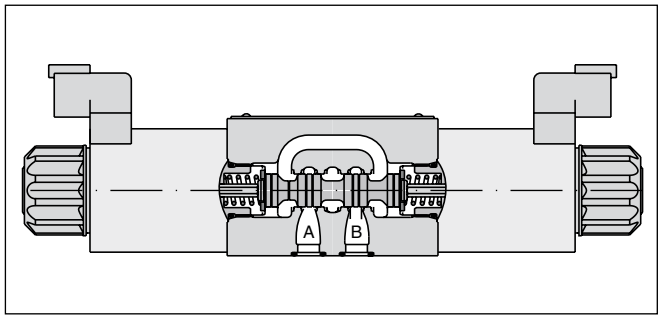
The D1MW is based on the D1VW series of directional control valves size NG06, but offers additional corrosion protection of the valve body, the solenoid coil and the anchor tube as well as the typical solenoid connections for the mobile market such as AMP Junior Timer and DT04-2P “Deutsch”.



With AMP Junior Timer



Connector DT04-2P “Deutsch”

Technical features

- High corrosion protection (optional)
- Solenoid connection:
  - Standard (as per EN175301-803)
  - AMP Junior Timer
  - DT04-2P “Deutsch”
- Robust design for rough applications
- Extended manual override with rubber cover (optional)

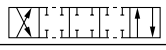
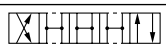
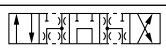
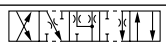
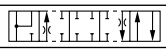
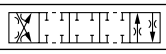
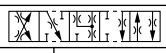
Technical data

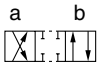
General			
Design		Directional spool valve	
Actuation		Solenoid	
Size		DIN NG06 / CETOP 03 / NFPA D03	
Mounting interface		DIN 24340 A6 / ISO 4401 / CETOP RP 121-H / NFPA D03	
Mounting position		Unrestricted, preferably horizontal	
Ambient temperature	[°C]	-25...+50	
$MTTF_D$ value	[years]	150	
Weight	[kg]	1.5 (1 solenoid), 2.1 (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 ... +70	
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 (see shift limits)	
Leakage at 50 bar	[ml/min]	Up to 10 per flow path, depending on spool	
Static / Dynamic			
Step response at 95%	[ms]	Energized: 32 De-energized: 40	
Electrical characteristics			
Duty ratio		100% ED; CAUTION: coil temperature up to 150 °C possible	
Max. switching frequency	[1/h]	15000	
Protection class		Standard (as per EN175301-803) IP65 in acc. with EN60529 (with correctly mounted plug-in connector) AMP Junior Timer IP67 in acc. with EN60529 (with correctly mounted plug-in connector) DT04-2P “Deutsch” IP69K (with correctly mounted plug-in connector)	
	Code	K	J
Supply voltage	[V]	12 V =	24 V =
Tolerance supply voltage	[%]	±10	±10
Current consumption hold	[A]	2.72	1.29
Power consumption hold	[W]	32.7	31
Solenoid connection		Connector as per EN 175301-803 (code W), AMP Junior Timer (code A), DT04-2P “Deutsch“ connector (code J). 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.

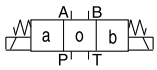
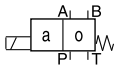
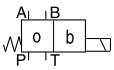
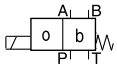
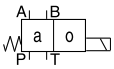
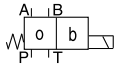
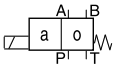
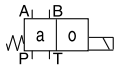
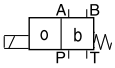
2

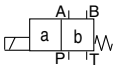
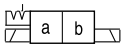
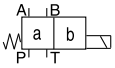
D	1	M	W		
Directional control valve	**Size DIN NG06 CETOP 03 NFPA D03**	**3-chamber valve for mobile and marine applications**	**Wet pin armature solenoid, threaded in tube**	**Spool type**	**Spool position**

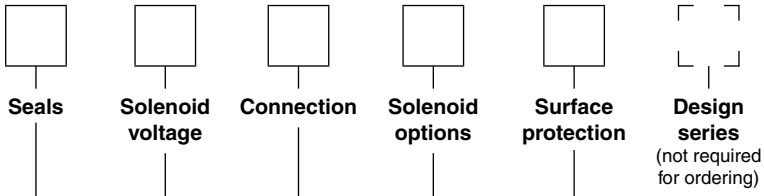
3 position spools	
Code	Spool type a 0 b
001	
002	
004	
006	
008 [1]	
011	
021	
022	
081	
082	

2 position spools	
Code	Spool type a b
020	
030	

[1] Consider specific spool position.

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 008	
E	 Operated in position “a“.	 Operated in position “b“.	2 positions. Spring offset in position “0“.
F	 Spring offset in position “b“.	 Spring offset in position “a“.	2 positions. Operated in position “0“.
K	 Operated in position “b“.	 Operated in position “a“.	2 positions. Spring offset in position “0“.
M	 Spring offset in position “a“.	 Spring offset in position “b“.	2 positions. Operated in position “0“.

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 center or offset position.
H		2 positions. Spring offset in position “a“. Operated in position “b“.



Code	Surface protection
omit	Standard, only for connection “J“ and “A“
1P [3]	Anti corrosion coating acc. to DIN 50021SS, 200h for extreme conditions. For all connection options

[3] Only in combination with connection “J” and “W”

Code	Solenoid option
omit	Standard solenoid
T	without manual override
W	extended manual override with rubber cover

Code	Connection
W [2]	Connector as per EN 175301-803
J [2]	Connector DT04-2P “Deutsch“
A [2]	2-pin AMP Junior Timer

[2] Please order plug separately.

Code	Solenoid voltage
K	12V =
J	24V =

Code	Seals
N	NBR
V	FPM

Other spool types on request.

The flow curve diagram shows the flow versus pressure drop curves for all spool types. The relevant curve number for each spool type, operating position and flow direction is given in the table below.

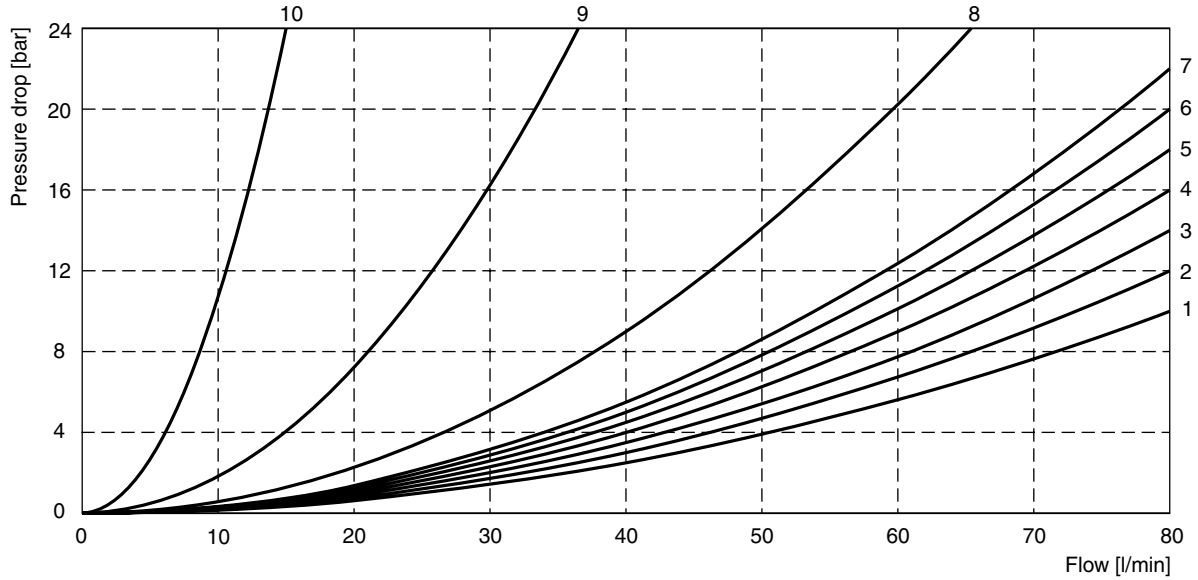
2

	Position „b“		Position „a“		Position „0“				
Spool	P ->A	B->T	P->B	A->T	P->A	P->B	A->T	B->T	P->T
001	2	2	2	2	–	–	–	–	–
002	1	4	1	4	1	1	5	5	2
004	2	3	2	3	–	–	7	7	–
006	1	4	1	4	7	7	–	–	–
011	2	2	2	2	–	–	10	10	–
020B	4	4	2	3	–	–	–	–	–
030B	2	3	1	2	–	–	–	–	–
081	9	9	9	9	–	–	–	–	–
082	9	9	9	9	–	–	[1]	[1]	–
	P->B	A->T	P->A	B->T	P->A	P->B	A->T	B->T	P->T
008	4	5	4	5	–	–			8

	Position „b“			Position „a“		
	P ->A	P->B	A->B	P->B	A->T	
021	2	4	–	4	2	–
	P ->A	B->T		P ->A	P->B	A->B
022	6	2		5	2	–

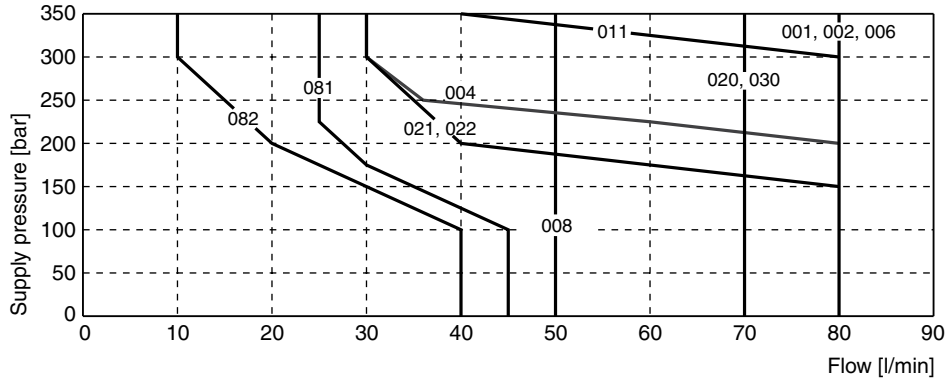
[1] Only for pressure compensation, no higher flow possible.

Flow curve diagram



All characteristic curves measured with HLP46 at 50°C.

The diagram below specifies the shift limits. Valves with spool position “F” or “M” can only be operated up to 70% of the limits. The specifications apply to 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.

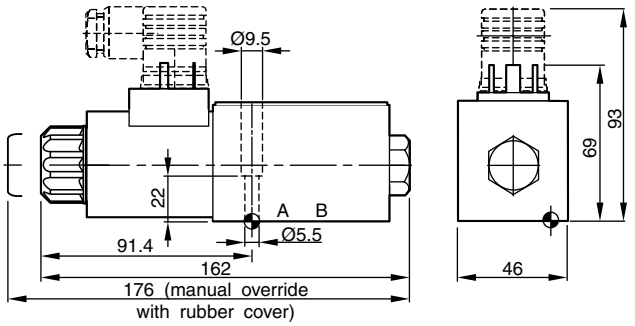


Measured with HLP46 at 50°C, 90% U_{nom} and warm solenoids

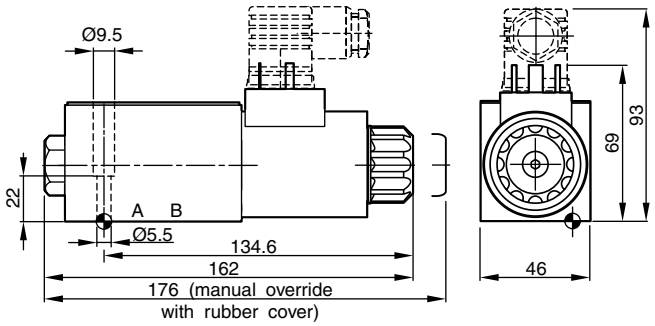
2

Dimensions with EN 175301-803 Connector

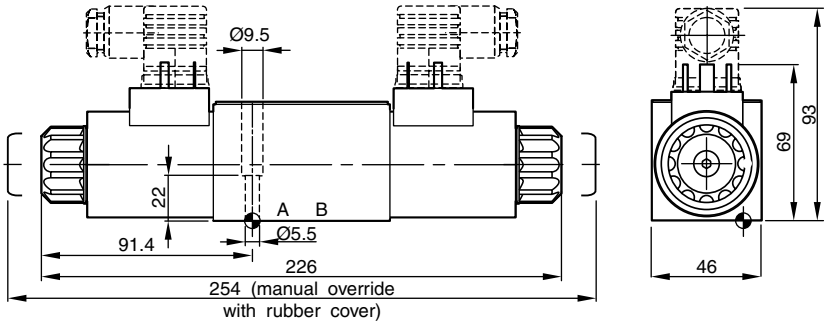
B, E, F -style



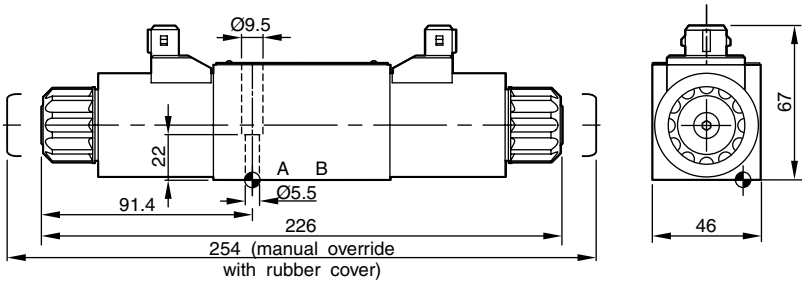
H, K, M -style



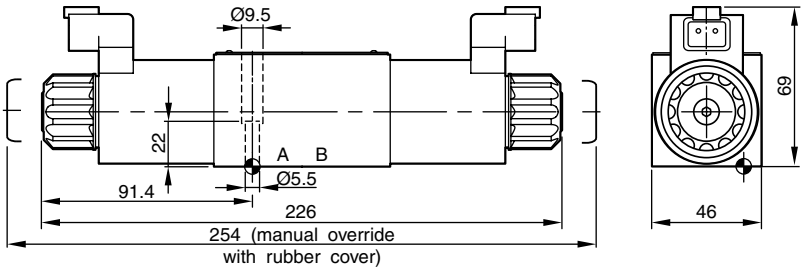
C and D -style



Dimensions with 2pin AMP Junior Timer Connector (only C and D -style shown)



Dimensions with "Deutsch" DT04-2P Connector (only C and D -style shown)



Surface finish	Kit			Kit
R_{max}6.3 ⏥ 0.01/100	BK375	4x M5x30 DIN 912 12.9	7.6 Nm ±15%	**NBR: SK-D1VW-N-91** FPM: SK-D1VW-V-91

The space necessary to remove the plug per EN 175301-803, design type AF is at least 15 mm.
The torque for the screw M3 of the plug has to be 0.5 to 0.6 Nm.