

# AH-4WE6...Type Solenoid-Operated Directional Valve



AH-WE6...60S...type

Size (NG) 6  
Max. Working Pressure: 315 bar  
Max. Flow: 80 L/min

## Contents

Function and configurations	02
Specifications	03
Symbols	04
Characteristic curves	04
Technical data	05
Electric data	05
Performance limits	06-07
Unit dimensions	08-09

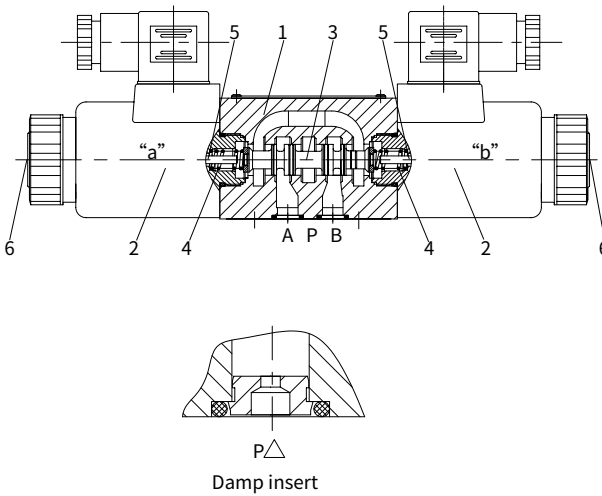
## Features

- Direct operated directional solenoid valve,
- Porting pattern according to DIN 24 340 form A, ISO 4401 and CETOP-RP 121 H
- Wet-pin AC or DC solenoids with detachable coil
- Pressure-tight chamber needs not to be opened for a coil change
- Electrical connection as individual or central connection

## Function and configurations

AH-WE6...60S...type valves are solenoid operated directional spool valves. They control the start, stop and direction of hydraulic oil flow. The directional control valves consist of valve body(1), one or two solenoids (2), the valve core (3), and one or two return springs (4). In the de-energized condition the valve core(3) is held in the neutral or initial position by means of return springs (4) (except for impulse spools). The control spool (3) is actuated via wet pin solenoids (2).

To ensure proper operation, the pressure chamber of the solenoid must be filled with oil. The valve core(3) is moved to the expected position by solenoids(2) and pushing rod(5). This gives free-flow from P to A and B to T or P to B and A to T. When solenoid (2) is de-energized, the valve core (3) is returned to its initial position by means of the return springs (4). The solenoids may also control the valve core (3) by an optional override button(6) under the de-energized condition.





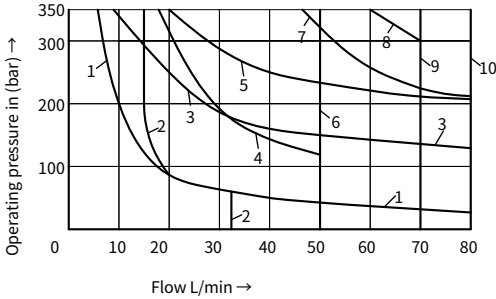




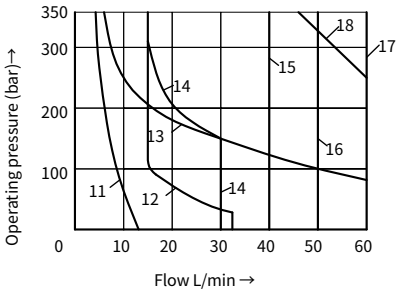
# Performance limits

The specified switching performance limits are valid with two directions of flow. Due to the flow forces acting within the valve, the permissible switching performance limit can be significantly lower with only one direction of flow! The switching performance limit was determined with the solenoid at operating temperature, at 15 % under-voltage and without tank pre-loading.

Solenoid DC		Solenoid AC-50Hz		Solenoid AC-60Hz	
Curve	Spool symbol	Curve	Spool symbol	Curve	Spool symbol
1	A, B <sub>1)</sub>	11	A, B <sub>1)</sub>	19	A, B <sub>1)</sub>
2	V	12	V	20	V
3	A, B	13	A, B	21	A, B
4	F, P	14	F, P	22	F, P
5	J	15	G, T	23	G, T
6	G, H, T	16	H	24	J, L, U
7	A/O, A/OF, L, U	17	A/O, A/OF, C/O,	25	A/O, A/OF, Q, W
8	C, D, Y		C/OF, D/O, D/OF	26	C, D, Y
9	M		E, J, L, M	27	H
10	E, R <sub>2)</sub> , C/O, C/OF	18	Q, R <sub>2)</sub> , U, W	28	C/O, C/OF, D/O
	D/O, D/OF, Q, W		C, D, Y		D/OF, M, R, E, R <sub>2)</sub>



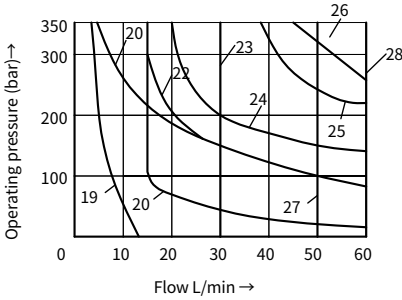
Solenoid DC	
Curve	Solenoid voltage(V)
1 to 10	12, 24, 48, 96, 205



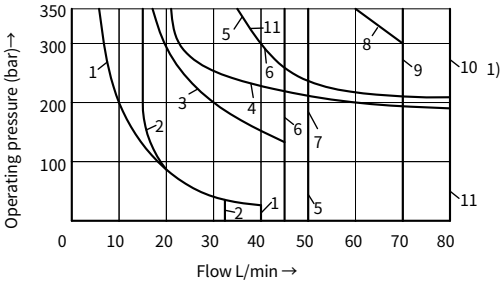
Solenoid AC		
Curve	Solenoid voltage	
11 to 18	W110	110V, 50Hz
	W127	127V, 50Hz
	W230	230V, 50Hz

# Performance limits

(Measured at  $t=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , using HLP46)

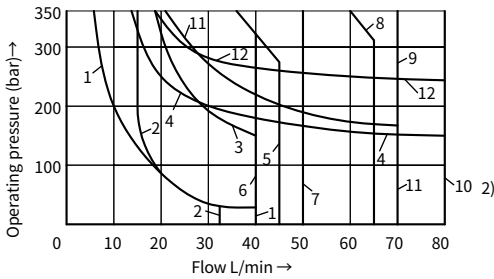


Solenoid AC		
Curve	Solenoid voltage	
19 to 28	W110	110V, 60Hz
	W230	230V, 60Hz



Solenoid DC	
Curve	Solenoid voltage
1 to 10 <sub>1)</sub>	110, 180

Curve	Spool symbol	Curve	Spool symbol	Curve	Spool symbol
1	A,B	6	T	10 <sub>1)</sub>	E, R, C/O, C/OF, D/O, D/OF, Q, W
2	V	7	H		
3	F, P	8	C,D	10 <sub>2)</sub>	R, C/O, C/OF, D/O, D/OF, Q, W
4	J, L, U	9	M	11	A/O, A/OF
5	G			12	E

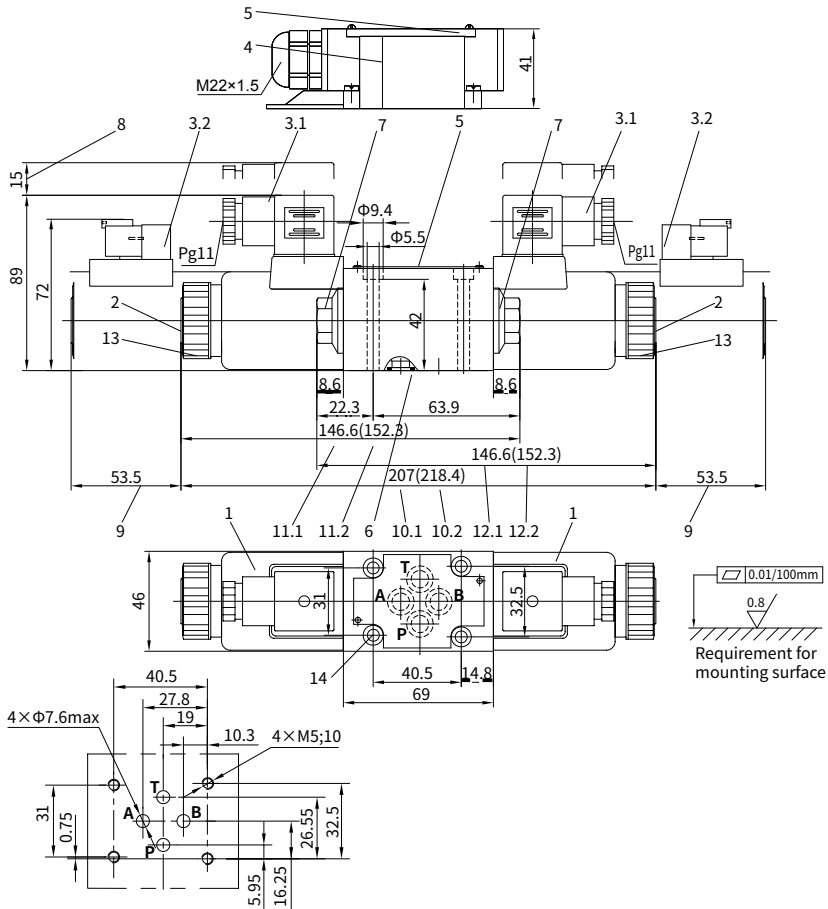


Solenoid AC	
Curve	Solenoid voltage
1 to 12, see 10 <sub>2)</sub>	220

## Unit dimensions

(Dimensions in mm)

### Valve with DC or rectification AC solenoid



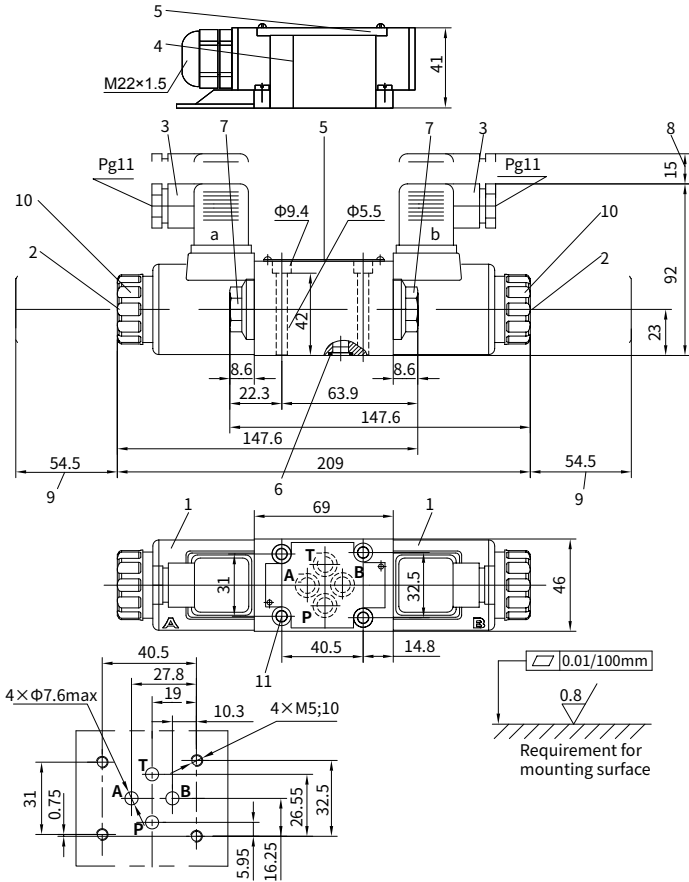
- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1 Solenoid</li> <li>2 Manual override button</li> <li>3.1 Plug-in connector to DIN 43 650</li> <li>3.2 Deutsch connector assembly</li> <li>4 Junction box with lead and light, M22×1.5 interface</li> <li>5 Nameplate</li> <li>6 O-ring: 9.25×1.78</li> <li>7 Plug screw for valves with one solenoid</li> <li>8 Space required to remove connector</li> <li>9 Space required to remove coil</li> <li>10.1 Dimension of 3-position valves, standard version</li> <li>10.2 Dimension of 3-position valves, large-scope Type of voltage</li> <li>11.1 Dimension of 2-position valves with solenoid at 'A', standard version</li> </ul> | <ul style="list-style-type: none"> <li>11.2 Dimension of 2-position valves with solenoid at 'A', large-scope Type of voltage</li> <li>12.1 Dimension of 2-position valves with solenoid at 'B', standard version</li> <li>12.2 Dimension of 2-position valves with solenoid at 'B', large-scope Type of voltage</li> <li>13 Securing nut, tightening torque <math>M_n=4\text{Nm}</math></li> <li>14 Valve fixing screws.<br/>Hexagon socket head cap screw<br/>M5×50 GB/T 70.1-10.9,<br/>Tightening torque <math>M_n=8.9\text{Nm}</math></li> </ul> |
|---|---|



# Unit dimensions

(Dimensions in mm)

## Valve with AC solenoid



- 1 Solenoid
- 2 Manual override button
- 3 Plug-in connector to DIN 43 650 (rotatable 90°)
- 4 Junction box with lead and light, M22×1.5 interface
- 5 Nameplate
- 6 Seal rings 9.25×1.78
- 7 Plug screw for valves with one solenoid
- 8 Space required to remove connector
- 9 Space required to remove coil
- 10 Securing nut, tightening torque,  $M_A = 4 \text{ Nm}$
- 11 Valve fixing screws. Hexagon socket head cap screw  
M5×50 GB/T 70.1-10.9,  
Tightening torque  $M_A = 8.9 \text{ Nm}$