

# AH-WE10...Type Solenoid-Operated Directional Valve

AH-WE10...50S...type

Size (NG) 10  
Max. Working Pressure: 315 bar  
Max. Flow: 150L/min



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## Features

- Solenoid direct operated directional spool valve
- Porting pattern according to DIN 24 340 Form A, ISO 4401, and CETOP-RP121H
- Wet-pin DC solenoids with detachable coil (AC voltages possible via a rectifier)
- Solenoid coil can be rotated through 90°
- The coil can be replaced without opening the pressure-tight chamber
- Adjustable spool switching time, optional

## Function and configuration

AH-WE10...50S...type valves are solenoid operated directional spool valves. They control the start, stop and direction of flow. The directional valves consist of valve body(1), one or two solenoids (2), the control spool (3), and one or two return springs (4).

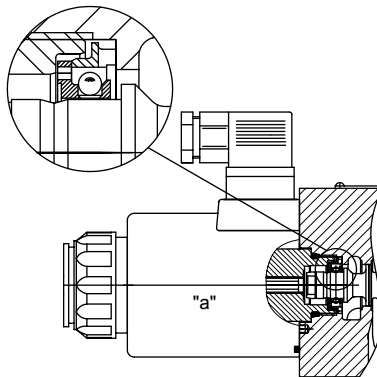
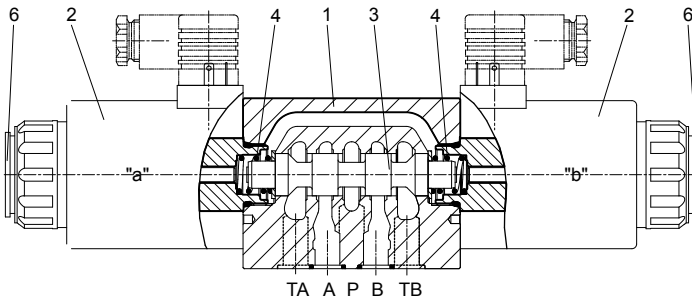
In de-energized condition, the control spool (3) is held in the central position or in the initial position by the return springs (4) (except for version "O").

The control spool (3) is actuated by wet-pin electronic solenoids (2). The force of electronic solenoid (2) acts via the plunger(5) on the control spool (3) will push the control spool(3) from its rest position to the required end position. This enables free-flow from P to A and B to T or P to B and A to T.

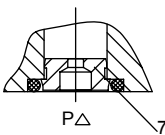
The return spring (4) will push the control spool (3) back to its rest position when the electronic solenoid is de-energized.

A manual override (6) allows for the manual switching of the valve without solenoid energization.

To ensure proper functioning, make sure that the pressure chamber of the solenoid is filled with oil.



**Type: AH-WE10...50S/OF ... (Impulse spool)**



Throttle insert

Throttle insert "B..."

Using a throttle insert (7) in channels P, A, B or T increases the flow resistance at the valve. This is required in prevailing operating conditions, flows occur during the switching processes, which exceed the performance limit of the valve.

# Specification

AH	WE	10	50S	/			N	/		*
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3 work ports  
(Symbol A, B) = 3  
4 work ports = 4

Solenoid directional valve

Nominal size 10 = 10

Symbols

Series 50S to 59S = 50S

(50S to 59S: unchanged installation and connection dimensions)

With spring return = No code

Without spring return = O

Without spring return with detent = OF

High-performance solenoid = E

24VDC = G24

With manual override = N9

Square plug = Z4

Square plug with indicator light = Z5L

Connecting box = DL

DIN4365 sockets without plugs = K4

Further details in clear text

No code= NBR seals

V = FKM seals

No code= Without throttle insert

B08= Throttle  $\phi$ 0.8 mm

B10= Throttle  $\phi$ 1.0 mm

B12= Throttle  $\phi$ 1.2 mm

B15= Throttle  $\phi$ 1.5 mm

B20= Throttle  $\phi$ 2.0 mm

B25= Throttle  $\phi$ 2.5 mm

B30= Throttle  $\phi$ 3.0 mm



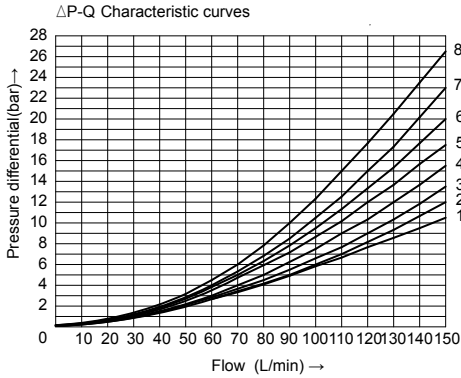
## Technical data

Fixing position		Optional
Ambient temperature range		°C
		- 30 to + 50 (with NBR seals)
		- 20 to + 50 (with FKM seals)
Weight	Valve with 1 solenoids	kg
	Valve with 2 solenoids	kg
		4.3 ( DC )
		5.9 ( DC )
Max.operating pressure	Port A,B,P	bar
	Port T	bar
		350
		210 (DC), With symbols A and B, port T must be used as a drain port, if the operating pressure is higher than the permissible tank pressure.
Maximum flow		L/min
		150
Pressure fluid		Mineral oil (HL, HLP) to DIN 51 524, suitable for NBR and FKM
		Phosphate ester, suitable for FKM
Pressure fluid temperature range		°C
		- 30 to + 80 (with NBR seals)
		- 20 to + 80 (with FKM seals)
Viscosity range		mm <sup>2</sup> /s
		2.8 to 500
ISO code cleanliness class		Maximum permissible degree of contamination of the pressure fluid is to ISO 4406 (C) class 20/18/15

## Electrical data

Voltage type		DC
Available voltages		V
		24
Voltage tolerance (nominal voltage)		%
		Super performance solenoid: +10 ~ -15
Power consumption		W
		39
Duty		Continuous
Switching time to ISO 6403 (without switching time adjustment)	ON	ms
	OFF	ms
		45 to 60
		20 to 30
Switched frequency		cycles/h
		Up to 15000
Protection to DIN 40 050		Z4, Z5L, K4:IP65; K7:IP67
Maximum coil temperature		°C
		+150

## Characteristic curves (Measured with HLP46, oil = 40 ± 5 °C [104 ± 9 ° F])

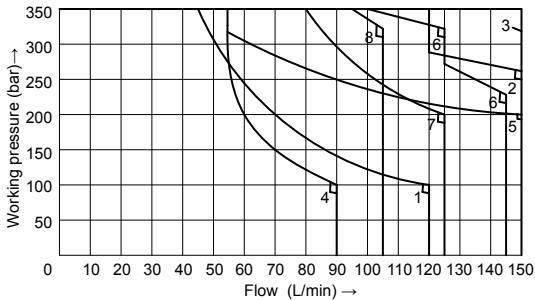


Spool symbol	Flow direction				
	P to A	P to B	A to T	B to T	P to T
A	4	4	-	-	-
B	4	5	-	-	-
C, J, Y, YH	2	3	5	7	-
D	2	2	5	7	-
E	3	3	6	7	-
F	1	3	3	8	4
G	4	5	6	8	7
H	1	1	6	8	7
L	3	3	5	7	-
P	3	1	5	6	5
R	3	4	5	6	-
U	2	2	5	7	-
DE	3	-	-	6	-
YE	-	3	6	-	-

## Performance limits (Measured with HLP46, oil = 40 ± 5 °C [104 ± 9 ° F])

Due to the flow forces acting within the valves, the admissible Performance limits may be considerably lower with only one direction of flow.

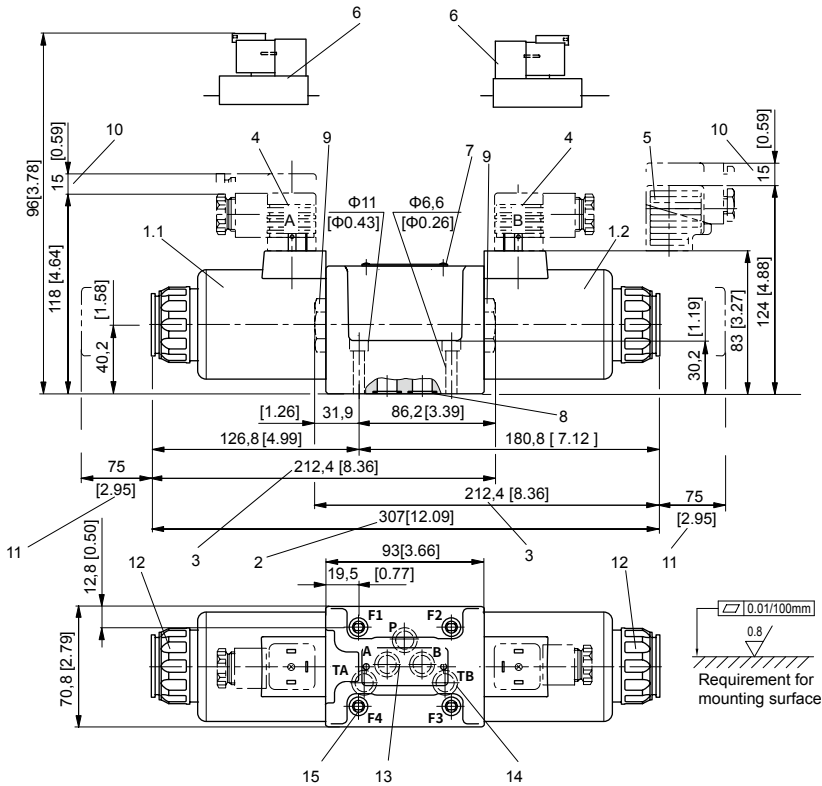
In such cases of application, please consult us! The switching Performance limit was established while the solenoids were at operating temperature, at 10% undervoltage and without tank preloading.



Curve	Symbol
1	A, B
2	C, D, Y, YH
3	E
4	F, P
5	G
6	H, L, U
7	J
8	R

# Unit dimensions

(Dimensions in mm)



- 1.1 Solenoid "a"
- 1.2 Solenoid "b"
- 2 Dimension of 3-position valves
- 3 Dimension of 2-position valves
- 4 Connector without indicator light according to DIN EN 175301-803
- 5 Connector with indicator light according to DIN EN 175301-803
- 6 DT04-2P Deutsch connector
- 7 Name plate
- 8 Identical seal rings for ports A, B, P, TA and TB
- 9 Plug screw for valves with one solenoid
- 10 Space required to remove connector
- 11 Space required to remove coil
- 12 Securing nut, tightening torque  $M_A = 6+2 \text{ Nm}$  [4.43 +1.48 ft-lbs]
- 13 Porting pattern according to ISO 4401-05-04-0-05 and DIN 24340 A10
- 14 TB can be used in connection with separately produced bore
- 15 Valve fixing screws:  
4 hexagon socket head cap screws, metric ISO 4762-M6×40-10.9  
Tightening torque  $M_A = 15.5 \text{ Nm}$  [11.4 ft-lbs]  $\pm 10 \%$   
With different friction coefficients, the tightening torques can be adjusted accordingly!