



# WE10...Type Solenoid-Operated Directional Valve



## WE10...3XJ...type

Size 10  
Max. Working Pressure: 315 bar  
Max. Flow: 120L/min

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### Features

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

## Function and configuration

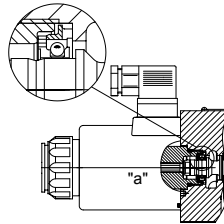
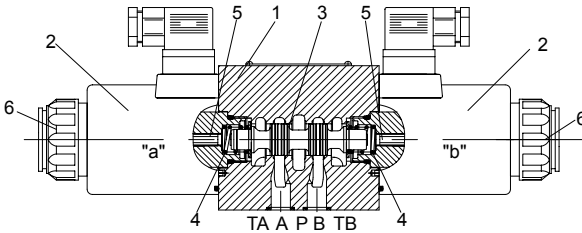
WE10...3XJ...valves are solenoid operated directional spool valves. They control the start, stop and direction of flow. The directional control valves consist of valve body(1), one or two solenoids (2), the control spool (3), and one or two return springs (4).

In the de-energized condition the control spool (3) is held in the neutral or initial position by means of return springs (4) (except for pulse spools). The control spool (3) is actuated via wet pin solenoids(2).

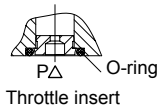
To ensure proper operation, the pressure chamber of the solenoid must be filled with oil.

The control spool(3) is moved to the expected position by solenoid(2) and pushing rod(5), and 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 control spool (3) is returned to its neutral position by means of the return springs (4). The solenoids may also control the control spool (3) by an optional override button(6) under the de-energized condition.



**Type 4WE10.. 3XJ/OF...**  
(Impulse spool)



# Specification

	WE	10	- 3XJ /				N	/		*
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3 ways = 3  
(For spool A and B)  
4 ways = 4

Solenoid directional valve

Nominal size 10 =10

Symbols e.g. C, E etc.

Series 30J to 39J =3XJ  
(30J to 39J: unchanged installation and connection dimensions)

With spring return = No code  
Without spring return =O  
Without spring return, and with detent = OF

Standard solenoid =C  
Large-range solenoid (Only for K4 24V DC) =N

24V DC =G24  
220V AC 50/60 Hz =W220  
Plug rectification 220V =W220R  
110V AC 50/60 Hz =W110  
Other voltage see next page

With manual override button = N9

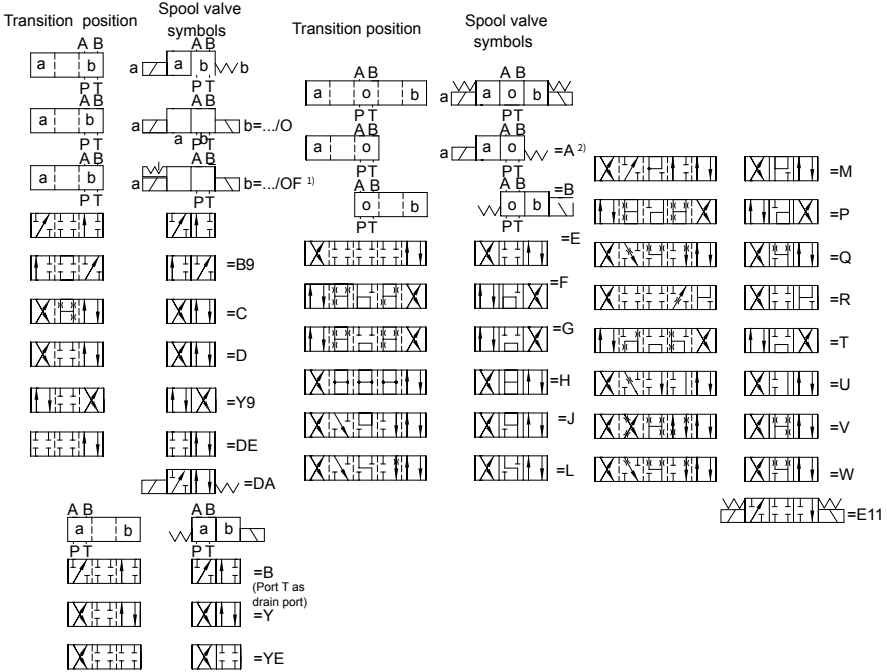
Further details in clear text

No code = NBR seals  
V = FKM seals

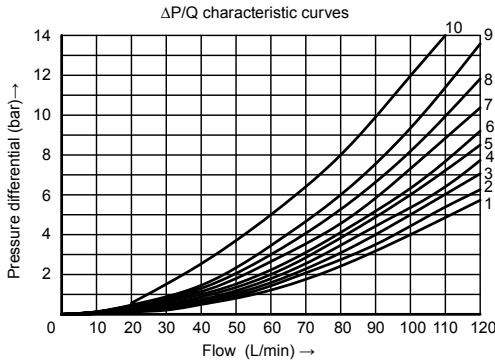
No code = Without throttle insert  
B08 = Throttle Ø0.8 mm  
B10 = Throttle Ø1.0 mm  
B12 = Throttle Ø1.2 mm  
B15 = Throttle Ø1.5 mm  
B20 = Throttle Ø2.0 mm  
B25 = Throttle Ø2.5 mm  
B30 = Throttle Ø3.0 mm

Z4 = square plugs (not applicable for the integer)  
Z5L = square plugs with lamps  
K4 = DIN4365sockets without plugs  
DL = Connecting box

# Symbols



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



Open position		P to A	B to A	A to T	P to T
R		-	9	-	-
Open position	P to A	P to B	B to T	A to T	P to T
F	4	-	-	9	9
P	-	5	8	-	10
G,T	-	-	-	-	9
H	-	-	-	-	3

Spool symbol	Flow direction			
	P to A	P to B	A to T	B to T
A,B	3	3	-	-
C	3	3	4	5
D,Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	-
T	3	3	6	7
U,V	2	2	3	3
W	2	2	4	5

## Technical data

Fixing position			Optional	
Environment temperature range		°C	-30 to +50 (NBR seal)	
			-20 to +50 (FKM seal)	
Weight			Independently wiring	central monitoring station
	Single solenoid	kg	4.3(DC), 3.5(AC)	4.4(DC), 3.6(AC)
	Double solenoids	kg	5.9(DC), 4.3(AC)	6.0 (DC), 4.4(AC)
Max.operating pressure	Port A,B,P	bar	315	
	Port T	bar	210 (DC),160 (AC), when the operating pressure exceeds the permission value, spool symbol A and B must make the port T for draining.	
Max. flow-rate		L/min	120	
Flow cross section (switching neutral position)	Version V	mm <sup>2</sup>	11(A/B to T), 10.3(PtoA/B)	
	Version W	mm <sup>2</sup>	2.5(A/B to T)	
	Version Q	mm <sup>2</sup>	5.5(A/B to T)	
Fluid			Mineral oil suitable for NBR and FKM seal	
			Phosphate ester for FKM seal	
Fluid temperature range		°C	-30 to +80 (NBR seal)	
			-20 to +80 (FKM seal)	
Viscosity range		mm <sup>2</sup> /s	2.8 to 500	
Degree of contamination			Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406	

## Electric data

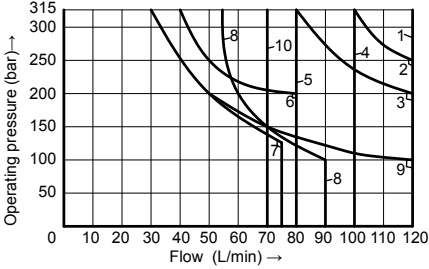
Type of voltage			DC	AC 50Hz
Available voltage		V	12,24,28 <sup>1)</sup> ,48,96,110,205,220	110,127,220
Voltage tolerance (nominal voltage)		%	Standard solenoid:+10~-15, large-scope solenoid:+20~-30	
Power consumption		W	Standard solenoid: 35, large-scope solenoid: 42	
Holding power		VA	-	50
Making capacity		VA	-	550
Duty			Continuous working	
Switching time to ISO 6403	ON	ms	45 to 60	15 to 25
	OFF	ms	20 to 30	20 to 30
Switched frequency		times/h	to 15000	to 7200
Type of protection to DIN 40050			IP65(Z4,Z5L plug), IP67 (K7 Deutsch)	
Max. coils temperature		°C	+150	+180

# Performance limits

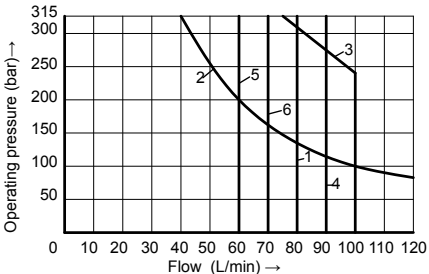
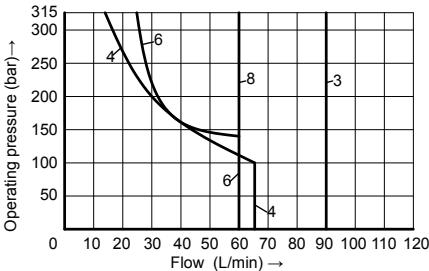
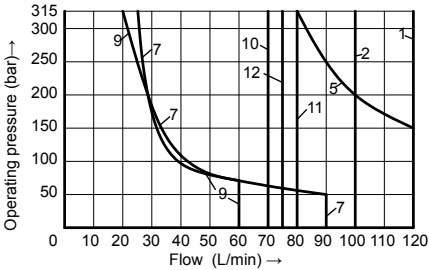
The performance limits shown are valid when the valve is used with two directions of flow.

Due to the flow forces occurring within the valves, the permissible switching performance limits can be significantly lower with only one direction of flow! (For these applications, please consult us.) The performance limit was determined with the solenoids at their operating temperature, 15% under voltage and with no pre-loading of the tank.

Valves with solenoid DC



Valves with solenoid AC



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

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

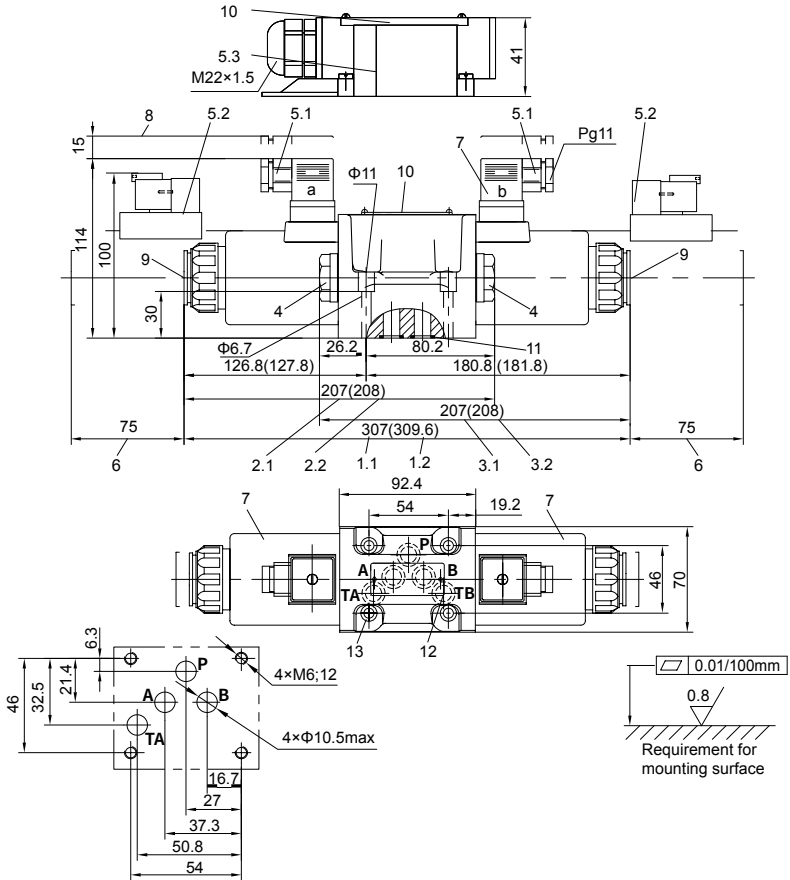
Curve	Spool symbol	Curve	Spool symbol
1	C, C/O, C/OF; D, D/O, D/OF; Y	3	E
		4	M
		5	V
2	A/O, A/OF	6	H

48V 60Hz, 110V 60Hz, 127V 60Hz, 220V 60Hz

# Unit dimensions

(Dimensions in mm)

## Valve with DC or rectification AC solenoid



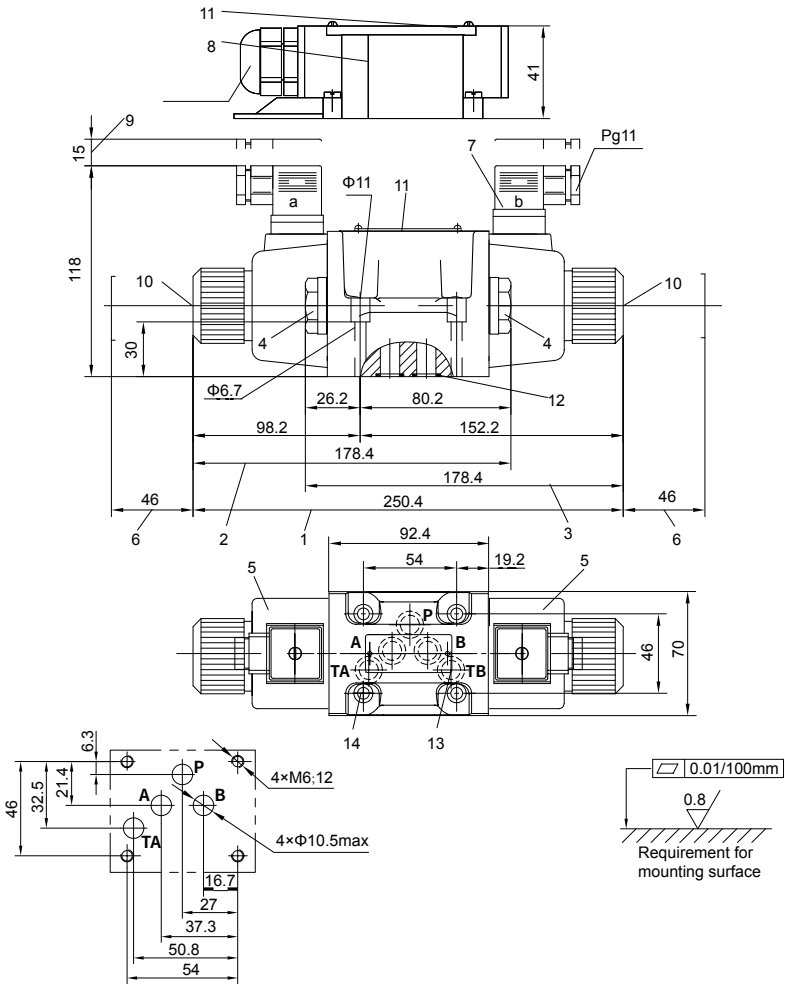
- 1.1 Dimension of 3-position, standard version
- 1.2 Dimension of 3-position, large-scope  
Type of voltage
- 2.1 Dimension of 2-position with solenoid at 'A', standard version
- 2.2 Dimension of 2-position with solenoid at 'A', large-scope Type of voltage
- 3.1 Dimension of 2-position with solenoid at 'B', standard version
- 3.2 Dimension of 2-position with solenoid at 'B', large-scope Type of voltage
- 4 Plug for valves with one solenoid
- 5.1 Plug-in connector to DIN 43 650 (rotatable 90 °)
- 5.2 Deutsch connector assembly
- 5.3 Junction box with lead and light, M22×1.5 interface

- 6 Space required to remove solenoid
- 7 Solenoid
- 8 Space required to remove Plug-in connector
- 9 Fault inspection override 'N' button
- 10 Nameplate
- 11 O-ring 12×2
- 12 Fix additional port TB on the manifold when necessary
- 13 Valve fixing screws:  
M6×40 GB/T 70.1-10.9, Tightening torque  $M_s=15.5\text{Nm}$ , must be ordered separately.

# Unit dimensions

(Dimensions in mm)

## Valve with AC solenoid



- 1 3-position valve
- 2 2-position valve with one solenoid(A,C,D,EA...)
- 3 2-position valve with one solenoid(B,Y,EB...)
- 4 Plug for valves with one solenoid
- 5 Solenoid
- 6 Space required to remove the solenoid
- 7 Plug-in connector to DIN 43 650 (Rotatable 90°)
- 8 Junction box with lead and light, M22×1.5 interface
- 9 Space required to remove Plug-in connector
- 10 Fault inspection override 'N' button

- 11 Nameplate
- 12 O-ring 12×2
- 13 Fix additional port TB on the manifold when necessary
- 14 Valve fixing screws:  
M6×40 GB/T 70.1-10.9, Tightening torque  $M_t = 15.5\text{Nm}$ , must be ordered separately.