4/3, 4/2 and 3/2 explosion-proof solenoid directional valve

Type ...WE10...31B/

Size (NG) 10
Up to 315 bar
Up to 120 L/min

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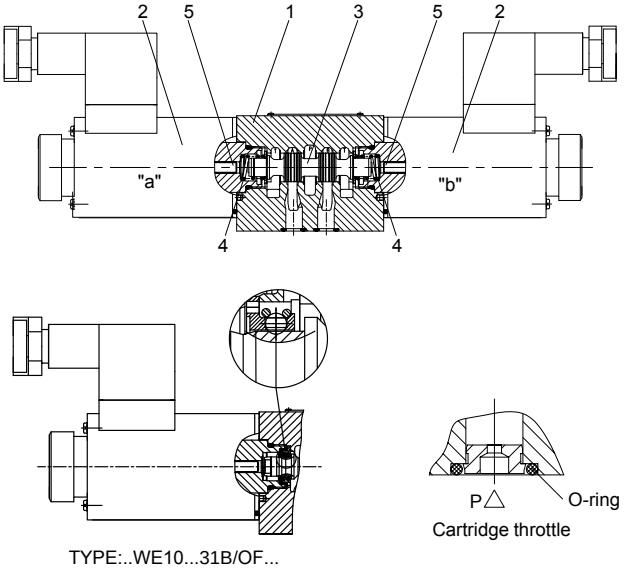
Features

- Directly operated type explosion-resistant solenoid operation direction slide valve is used as the standard
- DIN24 340 A type on the mounting surface ISO 4401
- Wet-type DC explosion protection solenoid
- 90° rotatable explosion protection solenoid
- Pressure-tight chamber needs not to be opened when coil is to be replaced

Function and configuration



TYPE:..WE10...31B/OF...

GWE type directional control valve is the directional valve of explosion protection solenoid used to control start, stop and flow direction of oil fluid.

The directional control valves consist of housing (1), one or two solenoids (2), the control spool (3), and one or two return springs (4).

In the de-energised 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 guarantee satisfactory operation care should be taken to ensure that the solenoid pressure chamber is 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 the explosion protection solenoid(2) is powered off, control valve element (3) is pushed to the initial position by reset spring (4).

Type WE 10 . 31B / O ...
(Limited to valve element A, C and D)

This type is dual explosion-resistant solenoid 2-position directional valve without a locating mechanism, one of explosion protection solenoids must be powered on in any position, it has not a specific switching position under power-off position.

Type WE 10 . 31B/ OF ...
(Limited to valve element A, C and D)

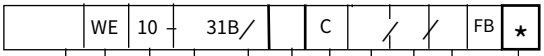
This type is dual explosion-resistant solenoid 2-position directional valve with a locator, the valve element can be held at any position and it is unnecessary to continuously electrify the solenoid.

Cartridge throttle

The cartridge throttle is necessary since actual flow may be larger than the performance limits of the valve during switching process.

This cartridge throttle is inserted in the P channel of the directional control valve.

Ordering code



Further details in clear text

No code = NBR seals
V = FKM seals

No code =Wthout cartridge throttle
B08 = Throttle - Φ0.8 mm
B10 = Throttle - Φ1.0 mm
B12 = Throttle - Φ1.2 mm
B15 = Throttle - Φ1.5 mm
B20 = Throttle - Φ2.0 mm
B25 = Throttle - Φ2.5 mm
B30 = Throttle - Φ3.0 mm

Voltage :
G12 = 12VDC
G24 = 24VDC
G36 = 36VDC
G110 = 110VDC

3 ways(For spool A , B) =3
4 ways =4

Directional valve with wet pin solenoids

Nominal size 10 =10

Symbols e.g. C, E etc.

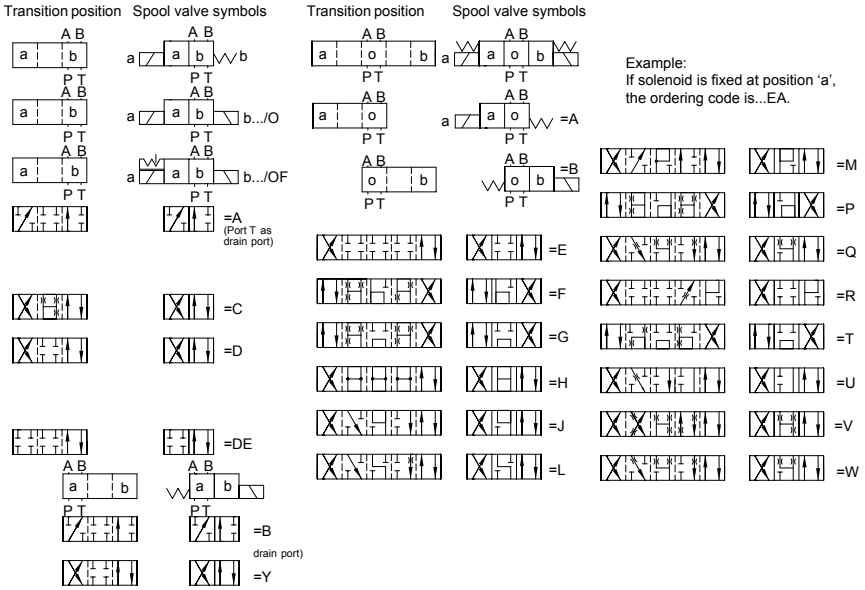
Serial number =31B
(L30-L39 have the same interior structures and mounting dimensions)

Return spr ing =No code
Without return spr ing = O
Without return spr ing , and with det ent = OF

Threaded explosion protection solenoid =C

Note: F B Explosion protection grade EX d I Mb; F B 1 Explosion protection grade EX d II C T4 Gb

Spool symbols



Technical data

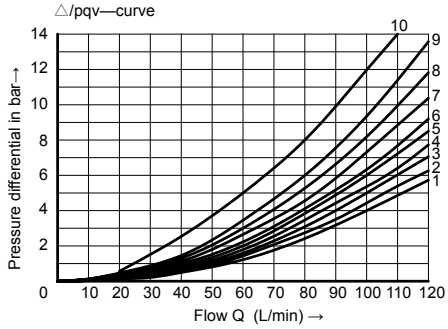
Fixing position			Optional
Environment temperature range		°C	-30 to +50 (NBR seal)
			-20 to +50 (FKM seal)
Weight	Single solenoid	kg	5.9
	Double solenoids	kg	8.9
Max.operating pressure	Port P, A, B	bar	315
	Port T	bar	210
			when the operating pressure exceeds the permission value, spool symbol A and B must make the port T for draining
Max. flow-rate		L/min	120
Flow cross section (switching neutral position)	Version V	mm^2	11(A/B → T); 10.3(P → A/B)
	Version W	mm^2	2.5(A/B → T)
	Version Q	mm^2	5.5(A/B → 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^2/s	2.8 to 500
Degree of contamination			Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406

Electrical data

Type of voltage			DC
Available voltages		V	12, 24, 36, 110
Voltage tolerance (nominal voltage)		%	-15to+10
Power consumption		W	35
Duty cycle			Continuous
Switching time to ISO 6403	ON	ms	45 to 60
	OFF	ms	20 to 30
Switched frequency		times/h	To 15000
Protection class according to DIN 40050			IP65
Max. coils tamperature		°C	+150

Caution: with electrical connections the protective conductor (PE ⏚) must be connected according to the relevant regulations.

Characteristic curves (Measured at ϑ_{oil}=40°C ±5°C , using HLP46)



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

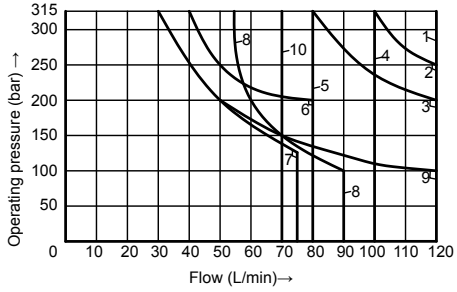
Spool symbol	Flow direction			
	P → A	P → B	A → T	B → T
A、B	3	3	-	-
C	3	3	4	5
D、Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	-
T	3	3	6	7
U、V	2	2	3	3
W	2	2	4	5

Performance limits (Measured at ϑ_{oil}=40°C ±5°C , using HLP46)

The specified switching performance limits are valid for use with two directions of flow (e.g. from P → A and simultaneous return flow from B → T).

Due to the flow forces acting within the valve, the permissible switching performance limits may be significantly lower with only one direction of flow (e.g. from P → A, while port B is blocked)!In such a case, please consult us!

The switching performance limits were determined while the solenoids were at operating temperature, 10% undervoltage and without tank pre-loading.



Curve	Spool symbol
1	C,C/O,C/OF D,D/O,D/OF Y,M
2	E
3	A/O,A/OF L,U,J,Q,W
4	H
5 1)	R,L2),U2)
6	G
7	T
8	F,P
9	A,B
10	V

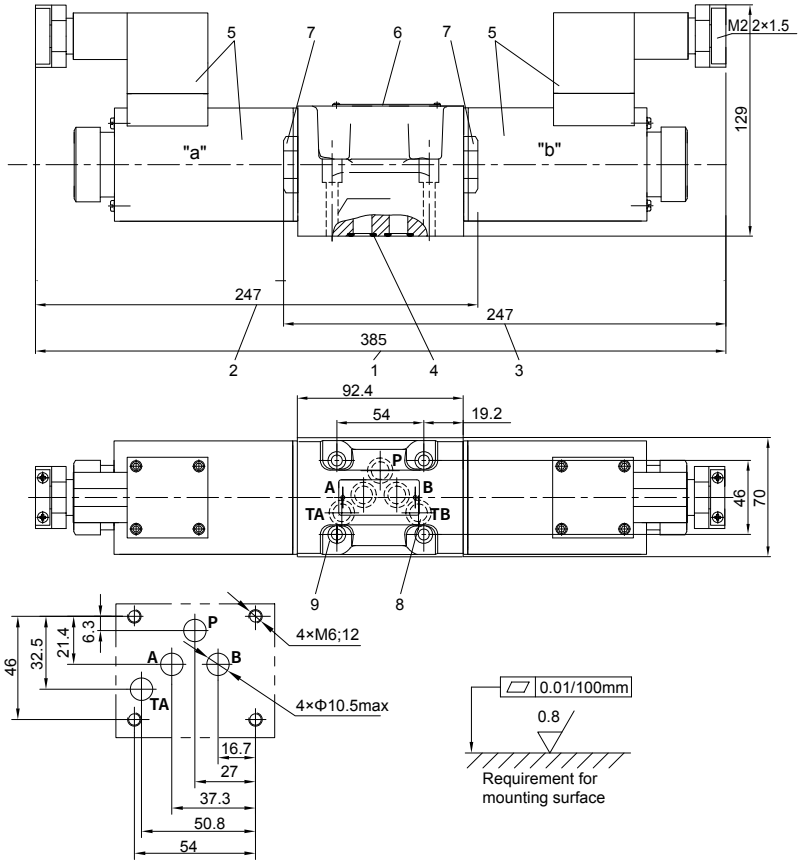
Notes:

1) Return flow (independent of area ratio)

2) Only suitable for neutral position

Unit dimensions

(Dimensions in mm)



1 Dimensions of 3-position valve
2 Dimensions of 2-position valve, solenoids at end A
3 Dimensions of 2-position valve, solenoids at end B
4 R-shaped ring 13×1.6×2 or O-ring 12×2
5 Explosion protection solenoid
6 Copper nameplate
7 End cap used for 1 electrosolenoid valve
8 Fix additional port TB on the manifold when necessary.
9 Valve fixing screws: M6×40 GB/T 70.1-10.9, Tightening torque, M_A=15.5Nm, must be ordered separately.

It must be ordered separately, if connection plate is needed
Type:
G66/01(G3/8); G66/02(M18×1.5)
G67/01(G1/2); G67/02(M22×1.5)
G534/01(G3/4); G534/02(M27×2)