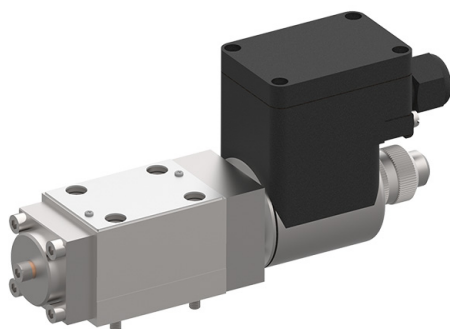


4/2 and 4/3 Solenoid Directional Valve, ISO Size 03

$Q_{max} = 18 \text{ l/min}$, $p_{max} = 160 \text{ bar}$
 Direct acting, with EX-safty solenoid coil
 Series EEX-WED...



Valve:

- Slip-on coil design, coils can be changed without opening hydraulic envelope
- With manual override
- Interface to ISO 4401-03-02

Solenoid coil:

- To IEC/EN 60079-0, IEC/EN 60079-7, EN 60079-18
To EN 60079-31
- For equipment in Category 2

gas: Ex II 2 G Ex eb mb IIC T4 Gb

dust: Ex II 2 D Ex tb IIIC T120°C Db

1 Description

Series EEX-WED...-6 spool valves are direct acting units. The main valve components are a steel body, a spring-centered spool and wet armature solenoids with pressure-tight core tube and a slip-on coil which is certified for use in explosion-hazard areas. The coil slips over the core tube and is retained by a knurled nut. The solenoid housing is made of steel with spray painted finish. The solenoid armature is of the oil-immersed type. The terminal box on the coil is provided with a cable gland for cable diameter of 6 ... 12 mm. Valves are supplied complete with cable entry gland but without cable. The spool is offset by the solenoid force and brought back to its deenergised position by return or centering springs. For the detented model EEX-WED-42-C-6, the maximum flow rate is limited to 10 l/min.

Ex: solenoid conforms to the European standards IEC/EN 60079-0, IEC/EN 60079-7, EN 60079-18 EN 60079-31

Gas:

e: increased security

m: encapsulation

Group II: for use in the potentially explosive area

T4: temperature class for gas

Dust:

t: protection by enclosure

Group IIIC: use in areas with combustible dust

T120 °C: temperature class for dust

Verification certificates:

Europe: BVS 16 ATEX E 036 X

others on request

2 Technical data

General characteristics	Description, value, unit
Designation	4/2 and 4/3 solenoid directional valve
Design	manifold-mounting, two-stage
Mounting method	4 x $\varnothing 5,5$ holes for M5x45 cap screws
Tightening torque	5.2 Nm \pm 10 %
Size	size 03 interface to ISO 4401-03-02 / DIN 24 340 A6
Weight	2.2 kg (1 solenoid) 3.0 kg (2 solenoid)
Mounting attitude	horizontal recommended (vertical mounting makes air bleeding difficult)
Ambient temperature range	see hydraulic and electrical characteristics

Hydraulic characteristics		Description, value, unit															
Maximum operating pressure	port A,B and P port T	160 bar 15 bar															
Maximum flow rate		18 l/min (see modification by supply voltage tolerance) 10 l/min for detented model															
Flow direction		see symbols															
Hydraulic fluid		HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER															
Ambient temperature range ¹⁾		-25 °C ... +80 °C															
Hydraulic fluid temperature range ¹⁾		-25 °C ... +80 °C ²⁾															
Viscosity range		10...500 mm ² /s (cSt), recommended 15...250 mm ² /s (cSt)															
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999		class 20/18/15															
Electrical characteristics		Description, value, unit															
Supply voltage		24 V DC/AC, 230 V DC/AC alternating voltage 50 ... 60 Hz ±2% direct or undulating voltage															
Supply voltage tolerance ¹⁾		<table border="0"> <tr> <td></td> <td>by max. ambient temperature ¹⁾</td> <td>max. flow</td> </tr> <tr> <td>- 5 % / +10 %</td> <td>40 °C</td> <td>18 l/min</td> </tr> <tr> <td>-15 % / +10 %</td> <td>40 °C</td> <td>14 l/min</td> </tr> <tr> <td></td> <td>dedented model „C“</td> <td></td> </tr> <tr> <td>- 15 % / +10 %</td> <td>40 °C</td> <td>10 l/min</td> </tr> </table>		by max. ambient temperature ¹⁾	max. flow	- 5 % / +10 %	40 °C	18 l/min	-15 % / +10 %	40 °C	14 l/min		dedented model „C“		- 15 % / +10 %	40 °C	10 l/min
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- 15 % / +10 %	40 °C	10 l/min															
Ambient temperature range ¹⁾ operation as T4 / T120 °C		-20 °C ... +40 °C															
Temperatue class to IEC/EN 60079-0		T1 ... T4															
EX-protection marking	gas: dust:	II 2 G, Ex eb mb IIC T4 Gb II 2 D, Ex tb IIIC T120°C Db															
Nominal power consumption		12 W at 20 °C															
Switching time		90 ms (energising) 40 ms (de-energising) Depending on pressure, flow rate and viscosity as well as dwell time under pressure, the switching times may vary from the the stated values.															
Relative duty cycle		100 %															
Protection class to EN 942017-2		IP 65 / 67 (with properly fitted cable gland and properly made cable connection)															
Electrical connection		shipped with cable inlet thread M20 x 1.5, without cable															
Fuse connected in series as per IEC 60127		24 V DC / AC 1250 mA 230 V DC / AC 125 mA															



IMPORTANT!:

¹⁾ The less favourable values from the hydraulic and electrical characteristics determine the temperature range of the whole valve.



IMPORTANT!:

²⁾ The maximum fluid temperature must not exceed the permissible ambient temperature for the whole valve.

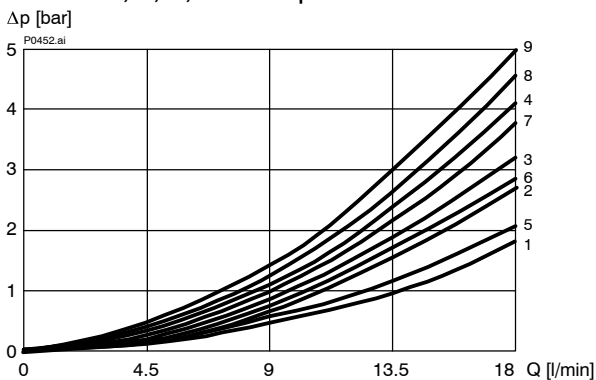
3 Symbols / Spool types

4/2 functions	4/2 functions with A-solenoid	4/2 functions with B-solenoid	4/3 functions
EEX-WED-42-A-6... 	EEX-WED-42-AD-6... 	EEX-WED-42-BD-6... 	EEX-WED-43-D-6...
EEX-WED-42-B-6... 	EEX-WED-42-AG-6... 	EEX-WED-42-BG-6... 	EEX-WED-43-G-6...
EEX-WED-42-C-6... 	EEX-WED-42-AH-6... 	EEX-WED-42-BH-6... 	EEX-WED-43-H-6...
Uebergangsstellung temporary position 	EEX-WED-42-AJ-6... 	EEX-WED-42-BJ-6... 	EEX-WED-43-J-6...

4 Performance graphs

measured with oil viscosity 33 mm²/s (cSt), coil at steady-state temperature and 5 % undervoltage

$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
A / B, D, G, H and J spool



IMPORTANT!

The quoted max. flow rates apply when symmetrical flows pass through the valve.
For non-symmetrical flows, the max. flows are substantially reduced, in worst cases to only 25 % of the above valves.

Spool type	Flow direction					
	P ⇒ A	B ⇒ T	P ⇒ B	A ⇒ T	P ⇒ T	P, A + B ⇒ T
A / B	1	2	3	4	--	--
D	2	7	3	8	--	--
G	3	1	2	5	--	--
H	4	4	4	8	--	2
J	8	9	8	9	6	--

5 Installation information

COMMISSIONING

- The solenoid coils must only be operated when they are fitted on the associated valve. For more information on installation and commissioning, please refer to the operating instructions supplied with the solenoid coil.



ATTENTION!

Ratings given in the operating instructions. Pay attention to the relevant operating instructions from the solenoid coil! If in doubt, the less favourable values apply.



ATTENTION!

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

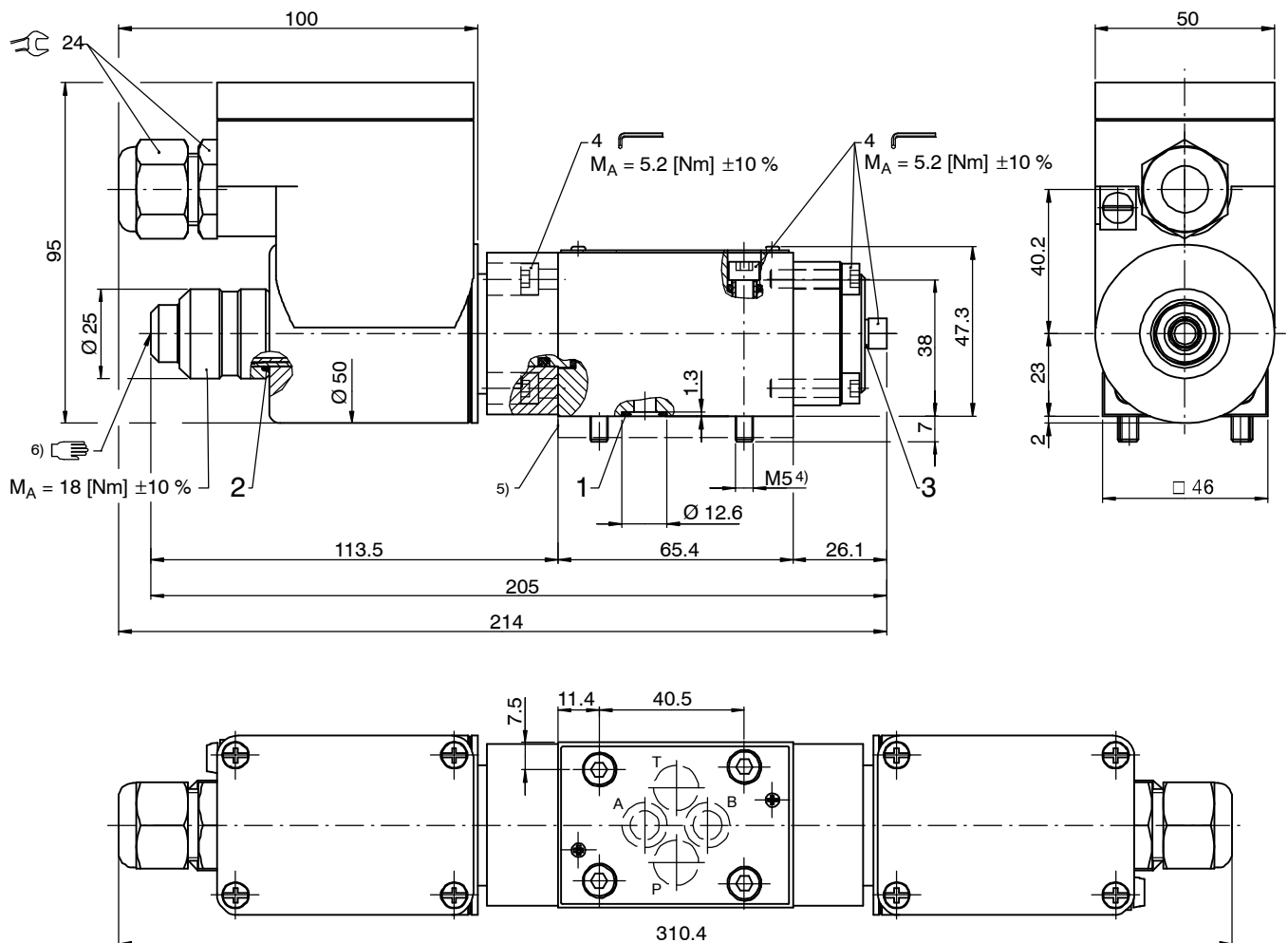


ATTENTION!

Authorised persons

The tasks described here may only be carried out by authorised personnel. Authorised personnel are those who have electro-technical training (EN 60204-1).

6 Dimensions & sectional view



Seal kit no. DS-156-N ⁷⁾

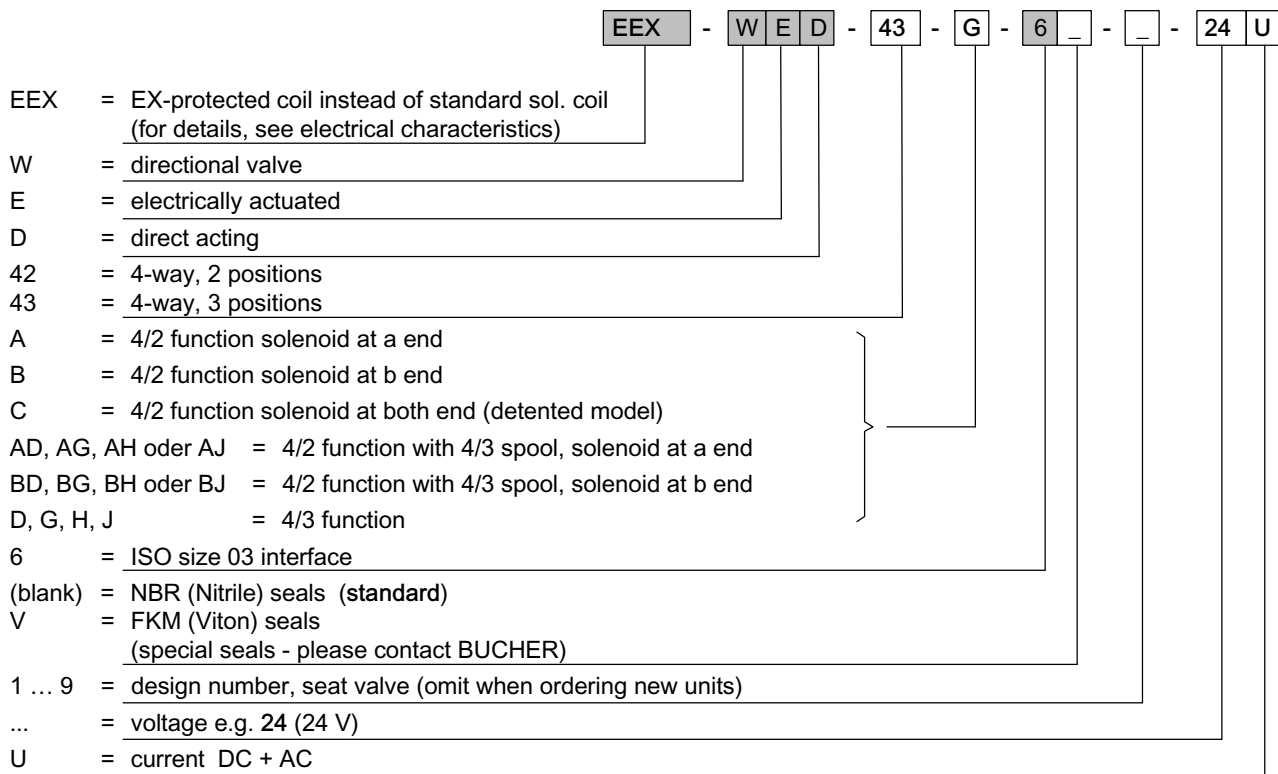
Item	Qty. ⁸⁾	Qty. ⁹⁾	Description
1	4	4	O-ring no. 012 Ø 9,25 x 1,78 N90
2	1	2	O-ring no. 017 Ø 17,17 x 1,78 N90
3	1	-	Copper ring DIN7603A 5 / 9 x 1



IMPORTANT!:

- 4) Valve mounting bolts M5X45 (included in the delivery)
- 5) stack mounting spacer plate SZ-6-1 and if required, longer fastening screws must be ordered separately
- 6) Manual overrid (on each solenoid)
- 7) Seal kit with Viton seals, no. DS-156-V
- 8) 4/2 valves (1 solenoid)
- 9) 4/3 valves (2 solenoids)

7 Ordering code



8 Related data sheets

Reference	(Old no.)	Description
400-P-030501	(i-31)	Size 03 interface to ISO 4401-03-02
...		Operating instructions for solenoid coil VACC-S18...EX4ME

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