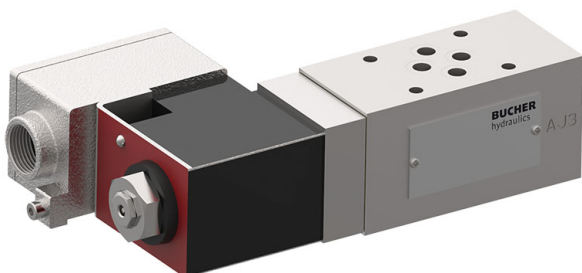


2/2 Solenoid Operated Seat Valve, ISO Size 03

$Q_{\max} = 20 \text{ l/min (5.3 gpm)}$, $p_{\max} = 315 \text{ bar (4500 psi)}$

Sandwich design, bidirectional leak-proof shutoff, direct acting, with EX-safety sol. coil
 Series EEX-SWESD...




Valve:

- With cartridge valve, type EEX-W1C.B...
- Interface to ISO 4401-03-02
- De-energized closed
- Guided valve spool and poppet
- Bidirectional leak-proof shutoff or flow

Solenoid coil:

- To IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60 079-18
- For equipment in Category 2 (Zones 1 and 2)
- Certificate of conformity: BASEEFA 02 ATEX 0199 X

 II 2 G Ex e mb IIC T4 Gb

1 Description

Series EEX-SWESD... sandwich valves are high performance, 2/2 solenoid operated seat valves with a size 03 interface to ISO 4401-03-02. An EX-protected solenoid for explosive gas atmospheres (II 2 G) is used to provide electrical operation of the cartridge. The main components of the valves are a sandwich body (stack-mounting body) and the push-in 2/2 directional seat valve cartridge (type EEX-W1C.B...). The 2/2 solenoid operated cartridge seat valve is designed on the poppet/seat principle, and is therefore virtually leak-free in both directions of flow (bidirectional seat-valve shut-off). These sandwich valves can be supplied as de-energized-closed (see symbols). These 2/2 solenoid operated cartridge seat valve are predominantly used in certain mobile and industrial applications where leak-tight shut-off functions are crucially important. Examples are where loads, tensions, or clamping forces must be

held without leakage. All external parts of the valves are plated and are thus suitable for use operating environments. The sandwich body is sealed at its manifold side (the connections side) by means of O-rings fitted in counterbores.

Ex: Solenoid conforms to the European standards IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-18
e: Increased safety

mb: Encapsulation

Group IIC: For use in explosive gas atmospheres
T4: Max. surface temperature 135 °C

Gb: For use in Zone 1 (Zone 2) with foreseeable faults

Certificate of conformity:

BASEEFA 02 ATEX 0199 X

IECEx BAS13.0093 X (on request)

2 Technical data

General characteristics	Description, value, unit
Designation	2/2 solenoid operated seat valve
Design	sandwich design, bidirectional leak-proof shutoff, direct acting with EX-protected solenoid
Mounting method	4 x \varnothing 5.4 holes for M5 cap screws
Size	size 03 interface to ISO 4401-03-02 / DIN 24 340 A6
Weight	2.8 kg (1 solenoid) 4.00 kg (2 solenoid)
Mounting attitude	unrestricted
Ambient temperature range	see hydraulic and electrical characteristics
Surface corrosion protection	without

Reference: 400-P-116210-EN-04

Hydraulic characteristics	Description, value, unit
Maximum operating pressure	315 bar (4500 psi)
Maximum flow rate	20 l/min (5.3 gpm)
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 (-13 °F ... +122 °F)
Hydraulic fluid temperature range ¹⁾	-25 °C ... +80 °C ²⁾ (-13 °F ... +176 °F) 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 230 V AC <small>In AC solenoids, rectifier is integrated.</small>
Supply voltage tolerance	± 10 %
Ambient temperature range ¹⁾	-40 °C ... +40 °C (-40 °F ... +104 °F) (Operation as T4)
Temperature class	T1 ... T4
EX-protection marking	II 2 G, Ex e mb IIC T4 Gb
Nominal power consumption	31,9 W at 20 °C (31.9 W at 68 °F)
Relative duty cycle	100 %
Protection class to ISO 20 653 / EN 60 529	IP 54 <small>(with properly fitted cable gland and properly made cable connection)</small>
Electrical connection	Shipped without cable gland (M20 x 1.5) and without cable <small>Cable-entry temperature may exceed 70 °C</small>



IMPORTANT!:

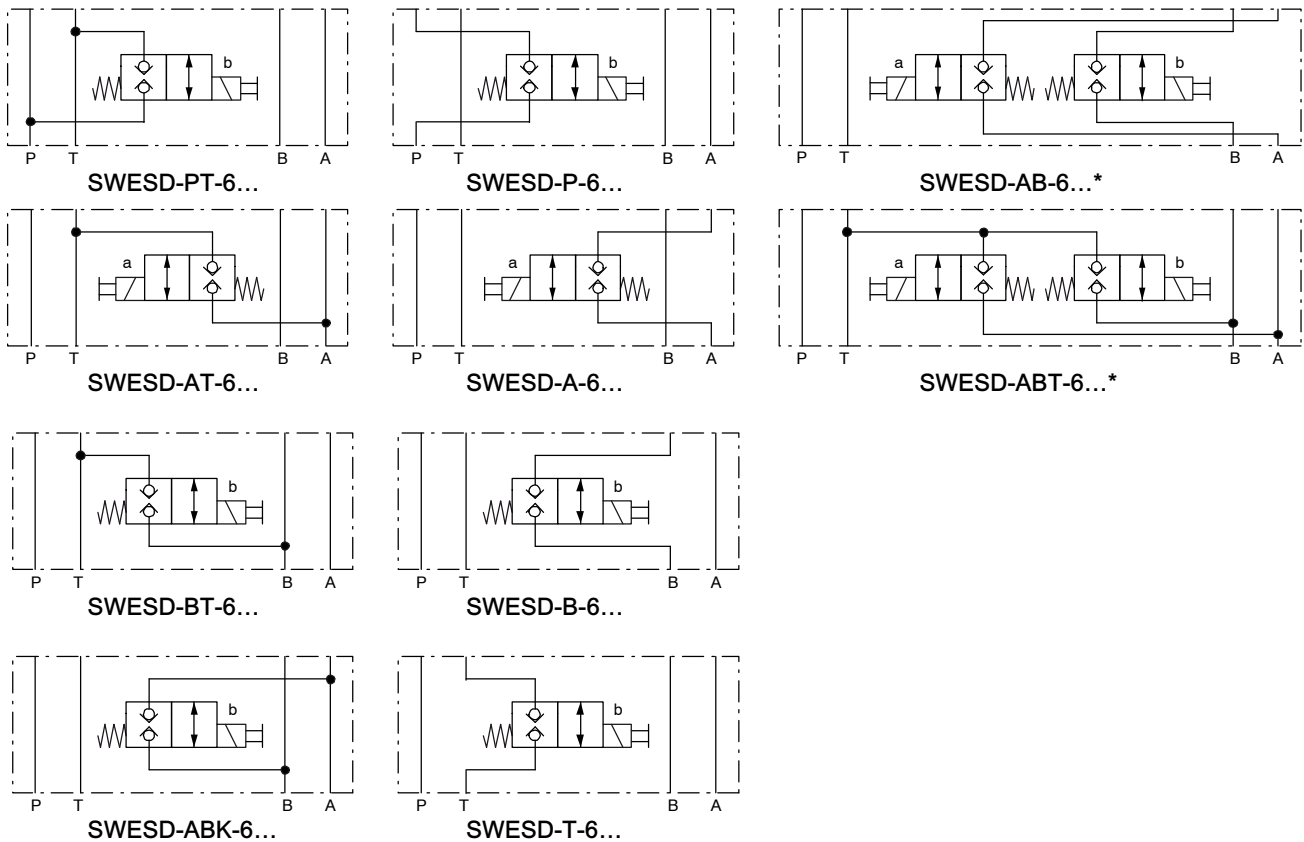
1) The less favourable values from the hydraulic and electrical characteristics determine the temperature range of the whole valve.



IMPORTANT!:

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

3 Symbol



* Unacceptable heating-up
Energizing solenoids a and b simultaneously is not permitted!

4 Performance graphs



IMPORTANT!
Detailed performance data and other hydraulic characteristics can be found in the data sheet for the respective 2/2 solenoid operated cartridge seat valve (series EEX-W1C.B...) that is fitted. See "Related data sheets".



ATTENTION!
The performance figures in the data sheet for the cartridge valve refer just to the cartridge itself. Take into account the additional pressure drop in the body into which it is fitted.

5 Installation information

COMMISSIONING

- For short-circuit protection, each solenoid must be preceded by a fuse conforming to B588 or IEC269 with a maximum rating of 2 A (AC) or 6 A (DC).
- 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! If in doubt, the ratings in the operating instructions 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).



IMPORTANT!

When fitting the cartridges, use the specified tightening torque for the mounting bolts. The marking "Valve End" on the adapter sleeve must be mounted towards the valve flange! No adjustments are necessary, since the cartridges are set in the factory.



IMPORTANT!

Minimum dimensions of the mating body
101 x 46 x 43 mm
See also the user manual.

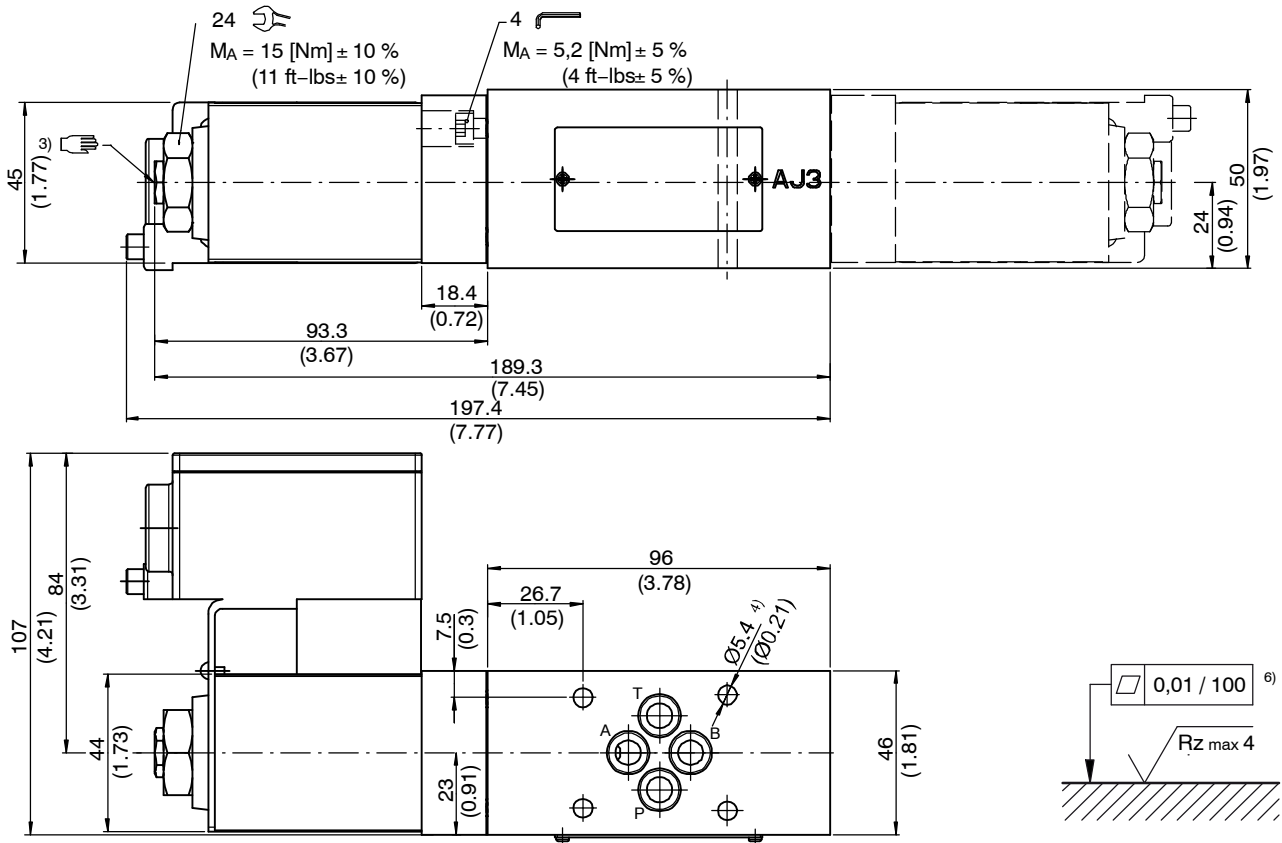


IMPORTANT!

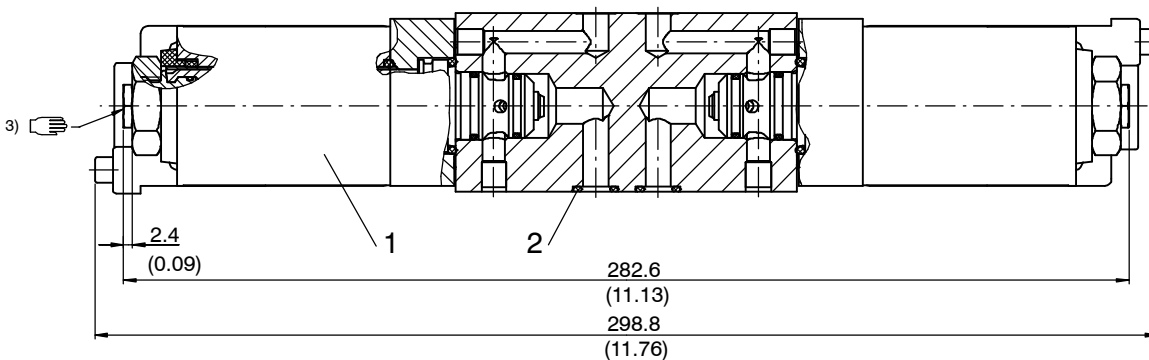
When installing the valve, make sure that the mating face (the manifold interface) aligns with the valve interface. Do not confuse the sandwich valve's manifold side and directional-valve side. No adjustments are necessary, since the cartridges are set in the factory.

6 Dimensions & sectional view

2/2 solenoid operated directional seat valve (single-solenoid model - solenoid A- or B-sided)



2/2 solenoid operated directional seat valve (double-solenoid model)



NBR seal kit no. DS-474-N ⁵⁾

Item	Qty.	Description
1	4	O-ring no. 012 Ø 9,25 x 1,78 N90
2	2	NBR seal kit no. DS-263-N for seat valve, type EEX-W1...



IMPORTANT!

- 3) Can be chosen with or without manual override. (see ordering code)
- 4) Valve mounting bolts M5 (not included in the delivery)
- 5) Seal kit with Viton seals, no. DS-474-V
- 6) Required surface finish on the mounting face (valve pad)

7 Ordering code

Ex. **EEX** - **S** **W** **E** **S** **D** - **P** - **6** - **-** **24** **D**

EEX = EX-protected sol. coil instead of standard sol. coil (for details, see electrical characteristics)

S = sandwich design

W = directional valve

E = solenoid operated

S = seat-valve design (bidirectional shutoff)

D ... Q = standard model - see relevant data sheets

Z ... R = special features - please consult BUCHER

P = function in P

A = function in A

B = function in B

T = function in T

AB = function in A and B

ABK = function in A to B and B to A (short circuit function)

PT = function in P to T

AT = function in A to T

BT = function in B to T

ABT = function in A and B to T

6 = ISO size 03 interface

(blank) = NBR (Nitrile) seals (standard)

V = FKM (Viton) seals (special seals - please contact BUCHER)

... = voltage e.g. **24** (24 V)

D = current DC

A = current AC

8 Related data sheets

Reference	(Old no.)	Description
400-P-030501		Size 03 interface to ISO 4401-03-02
400-P-110210		2/2 solenoid cartridge valve, type EEX-W1C.B... size 6
D14-2117D		Operating instructions for solenoid coil DC LISK
K14-2068D		Operating instructions for solenoid coil AC LISK
D14-2130D3		Operating instructions for solenoid coil DC LISK IEC (on request)
D14-2078D3		Operating instructions for solenoid coil AC LISK IEC (on request)

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Classification: 430.300. - .330.330.300