

Proportional Pressure-Reducing Valve, ISO Size 07

$Q_{\max} = 250 \text{ l/min}$, $p_{\max} = 350 \text{ bar}$

Sandwich design, electrically operated, seated pilot stage

Series SDRPSA-5...



- With cartridge valve, type DRPSB-5...-16...
- Interface to ISO 4401-07-07
- Inline function in the P line
- External pilot-oil drain
- 4 pressure ranges available
- With pressure-gauge port
- Excellent stability over the whole pressure and flow range
- External cartridge parts are zinc plated and chromited (CrVI-free)
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Various plug-connector systems and voltages are available

1 Description

Series SDRPSA-5... sandwich valves are high performance, electrically operated proportional pressure-reducing valves with a size 07 interface to ISO 4401-07-07. The main components of the valves are a sandwich body (stack-mounting body) and the screw-in cartridge (type DRPSB-5...-16...). The pressure-reducing cartridges have a seated pilot stage, and the main stage is designed on the sliding-spool principle. Four pressure ranges are available for this inline function in P with external pilot-oil drain through port Y. These valves reduce the pressure in the secondary side of the P line to a level that is proportional to the solenoid current, which depends on the demand signal to the elec-

tronics. Thanks to the external pilot-oil drain, the reduced pressure is unaffected by any pressure fluctuations. A pressure-gauge port M (G1/4") is also provided in the secondary circuit. These sandwich valves are used to reduce the system pressure in mobile and industrial applications. All external parts of the cartridge are zinc-nickel plated according to DIN EN ISO 19 598 and are thus suitable for use in the harshest operating environments. The slip-on coils can be replaced without opening the hydraulic envelope and can be positioned at any angle through 360°. The sandwich body is sealed at its manifold side (the connections side) by means of O-rings fitted in counterbores.

2 Technical data

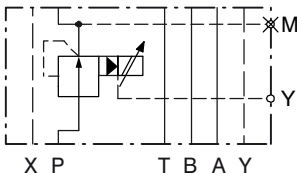
General characteristics	Description, value, unit
Designation	proportional pressure-reducing valve
Design	sandwich design, electrically operated, seated pilot stage
Mounting method	4 x $\varnothing 10.5$ holes for M10 cap screws 2 x $\varnothing 7$ holes for M6 cap screws
Size	size 07 interface to ISO 4401-07-07 / DIN 24 340 A16
Weight	8.75 kg
Mounting attitude	unrestricted
Ambient temperature range	-25 °C ... +50 °C
Surface corrosion protection	without

Hydraulic characteristics	Description, value, unit
Maximum operating pressure - in port P - in port Y	350 bar unpressurised
Flow range	...250 l/min
Nominal pressure ranges	...100 bar, ...160 bar, ...250 bar, ...350 bar
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range	-25 °C ... +70 °C
Viscosity range	15...380 mm ² /s (cSt), recommended 20...130 mm ² /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 18/16/13

Electrical characteristics	Description, value, unit
Supply voltage	12 V DC, 24 V DC
Control current	12 V = 0...1400 mA, 24 V = 0...750 mA
Coil resistance R - cold value at 20 °C - max. warm value	12 V = 5.8 Ω / 24 V = 21 Ω 12 V = 8.6 Ω / 24 V = 32 Ω
Recommended PWM frequency (dither)	200 Hz
Hysteresis with PWM	2...4 % I _N
Reversal error with PWM	2...5 % I _N
Sensitivity with PWM	≤ 1 % I _N
Reproducibility with PWM	< 1.5 % p _N
Relative duty cycle	100 %
Protection class to ISO 20 653 / EN 60 529	IP 65 / IP 67 / IP 69K, see "Ordering code" (with appropriate mating connector and proper fitting and sealing)
Electrical connection	DIN EN 175301-803, 3-pin 2 P+E (standard) for other connectors, see "Ordering code"

3 Symbol

Function in P (inline model), with external pilot-oil drain through Y



SDRPSA-5...-P-16...

4 Performance graphs



IMPORTANT!

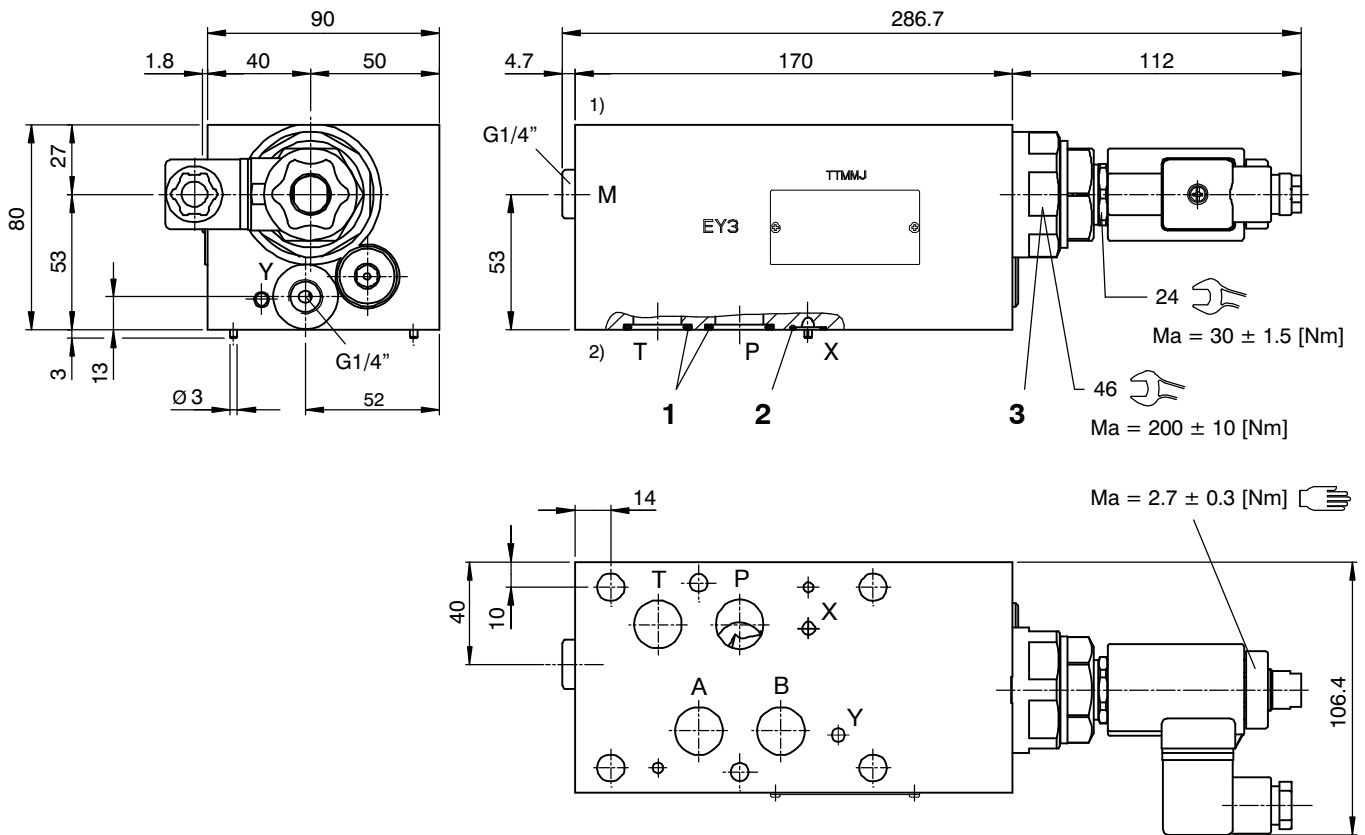
Detailed performance data and other hydraulic characteristics can be found in the data sheet for the proportional pressure-reducing cartridge that is fitted (data sheet ref. no. 400-P-581701-E).



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 Dimensions & sectional view



- 1) Valve side
2) Connections side (manifold side)

6 Installation information



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.



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!

To achieve the proportional pressure-reducing cartridge's maximum performance rating, fit the solenoid coil as shown (with the plug pins at the right). Use the specified tightening torque when fitting the cartridge.

NBR seal kit no. DS-382-N ³⁾

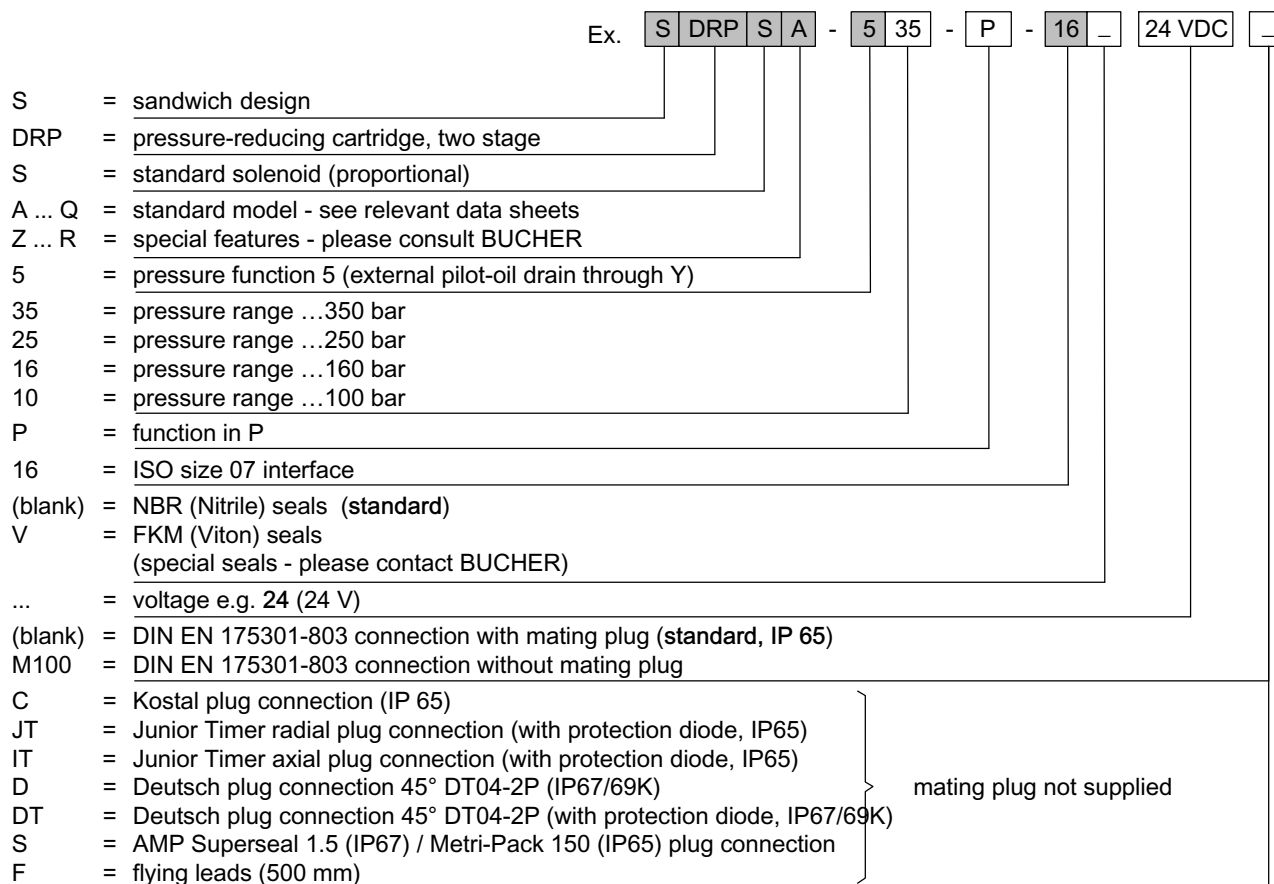
Item	Qty.	Description
1	4	O-ring no. 118 $\varnothing 21.89 \times 2.62$ N90
2	2	O-ring no. 110 $\varnothing 9.19 \times 2.62$ N90
3	1	NBR seal kit no. DS-358-N for pressure-reducing cartridge DRPSB-5B...



IMPORTANT!

³⁾ Seal kit with FKM (Viton) seals, no. DS-382-V

7 Ordering code



8 Related data sheets

Reference	(Old no.)	Description
400-P-070101	(i-51)	Size 07 interface to ISO 4401-07-07
400-P-120110	(W-2.141)	Coils for screw-in cartridge valves
400-P-581701	(P-51.5 A2)	Proportional pressure-reducing cartridge, size 16, series DRPSB-5...
400-P-580101		Pilot pressure-relief cartridge, size 1, series DVSA-1L...

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Classification: