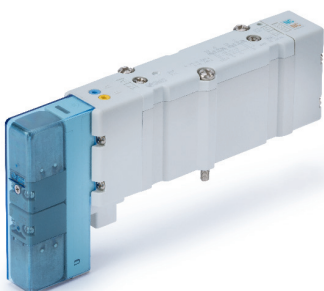




Expertise – Passion – Automation



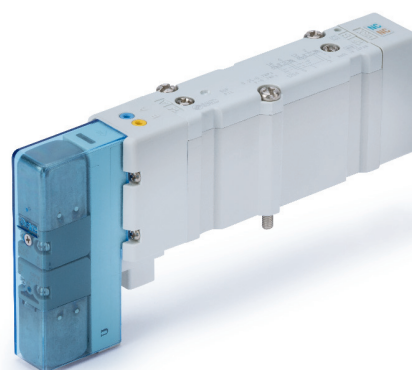
Your safety in our focus

Safety-related products
2x3/2-4 position dual 3 port solenoid valve
with spring return spool
SY-X323 Series

2x3/2-4 position dual 3 port solenoid valve with spring return spool

SY-X323 Series

- ▶ We focus on machinery safety as a key part of our product development strategy. This version will help satisfy your machine safety system requirements.



Main features

▶ Spring return spool - the concept

The SY-X323 version contains a spring to fulfil the well-tried safety principle “well-tried spring” according to ISO 13849-2. In case of a pressure loss or drop, the spool moves to its safe position. This valve is widely used for machinery safety applications, due to its enhanced stability.

▶ SY series valves

Benefit from the high versatility this series gives you and create your own configuration, tailored to your needs.

▶ SISTEMA library is available

SY safety-related valves data are additionally integrated into the SISTEMA software tool.

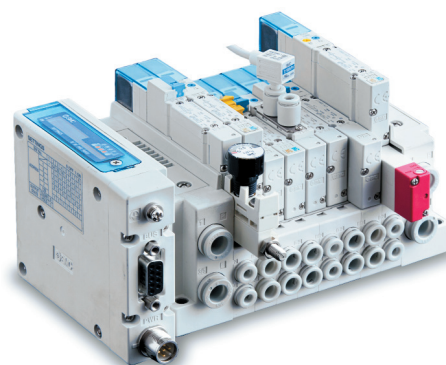
Download the library file from our website and be ready to build your safety function.

▶ Validated according to ISO 13849-2

This product is capable of meeting the relevant basic and well-tried safety principles.

Please download our reliability data for the details.

▶ External pilot type



Applications

In the case of a system and pilot pressure loss, the spool moves to its de-energised position irrespective of the applied electrical control signal.

How to order

Base mounted SY 00R - 1 - - X323

Top ported SY 30R - 1 - - - X323

① ②

③ ④ ⑤ ⑥ ⑦

⑧ ⑨ ⑩

① Valve series

3	SY3000
7	SY7000

② Type of actuation

A	4-position dual 3 port valve N.C./N.C.
B	4-position dual 3 port valve N.O./N.O.
C	4-position dual 3 port valve N.C./N.O.

③ Pilot type

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)

④ Coil type

—	Standard
T	With power saving circuit

⑤ Rated voltage

5	24 VDC
6	12 VDC

⑥ Light/surge voltage suppressor and common specification

—	W/o indicator light & surge suppressor
R	W/surge suppressor (non-polar)
U	W/indicator light & surge suppressor (non-polar)
S	W/surge suppressor (positive common)
Z	W/indicator light & surge suppressor (positive common)
NS	W/surge suppressor (negative common)
NZ	W/indicator light & surge suppressor (negative common)

1) Only "Z" and "NZ" type is available for the product with power saving circuit.

⑦ Manual override

—	Non-locking push type
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⑧ A, B port size 3000

M5	M5 x 0.8
C2	One-touch fittings for Ø 2 tube
C3	One-touch fittings for Ø 3 tube
C4	One-touch fittings for Ø 4 tube
C6	One-touch fittings for Ø 6 tube
N1	One-touch fittings for Ø 1/8" tube
N3	One-touch fittings for Ø 5/32" tube
N7	One-touch fittings for Ø 1/4" tube

A, B port size 7000

02	1/4"
C6	One-touch fittings for Ø 6 tube
C8	One-touch fittings for Ø 8 tube
C10	One-touch fittings for Ø 10 tube
C12	One-touch fittings for Ø 12 tube
N7	One-touch fittings for Ø 1/4" tube
N9	One-touch fittings for Ø 5/16" tube
N11	One-touch fittings for Ø 3/8" tube

⑨ Thread type

—	Rc
F	G
N	NPT
T	NPTF

⑩ Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (falling-out -prevention type)
H	Hexagon socket head cap screw (falling-out -prevention type)

Valve specifications

Valve type		2x3/2-4 position dual 3 port solenoid valve with spring return spool
Fluid		Air
External pilot operating pressure range [MPa]	Operating pressure range	
	Pilot pressure range	4-position dual 3 port valve
Ambient and fluid temperature [°C]		-10 to 50 (No freezing)
Max. operating frequency [Hz]	SY3000	4-position dual 3 port valve
	SY7000	
Manual override		Non-locking push type
Lubrication		Not required
Pilot exhaust type	External pilot	Pilot valve individual exhaust
Mounting orientation		Unrestricted
Impact/Vibration resistance ¹⁾ [m/s ²] [EN 60068]		150/30
Enclosure		IP67
Coil rated voltage [VDC]		24
Allowable voltage fluctuation [V] ²⁾		±10 % of rated voltage
Power consumption [W]	Standard	0.35 (17 mA)
Surge voltage suppressor		Diode (Varistor for non-polar type)
Indicator light		LED
Required air quality		5 µm filtration or smaller

1) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every time in each condition. (Values at the initial period)

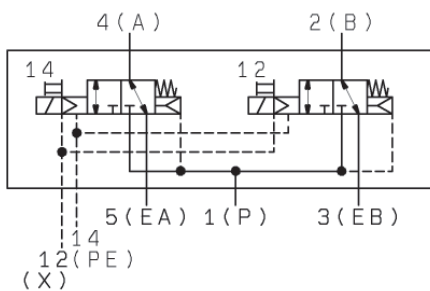
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energised and de-energised states in the axial direction and at right angles to the main valve and armature. (Values at the initial period)

2) Due to voltage drops by the internal circuit in S/Z type and T type (with power saving circuit), use within the allowable voltage fluctuation as follows: S/Z type 24 VDC: -7 % to +10 %; T type 24 VDC: -8 % to +10 %

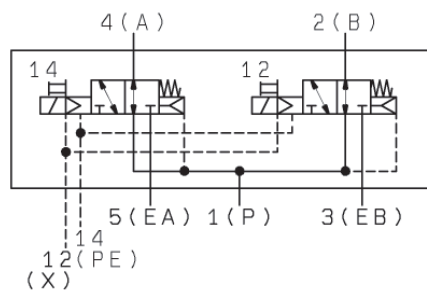
3) For technical data which are not shown in this document, please see the instruction manual or the standard catalogue at www.smc.eu.

Symbols

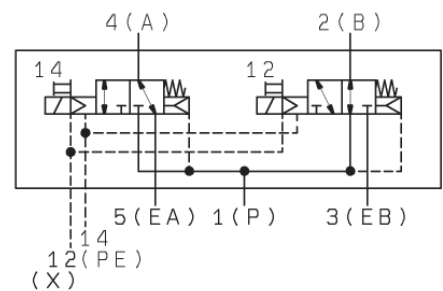
SY3A00R



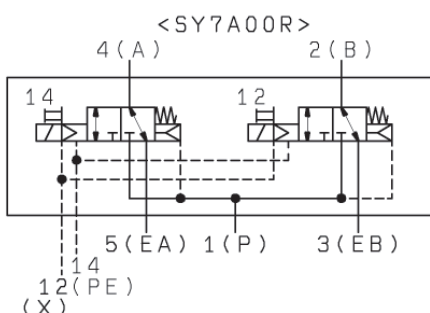
SY73B00R



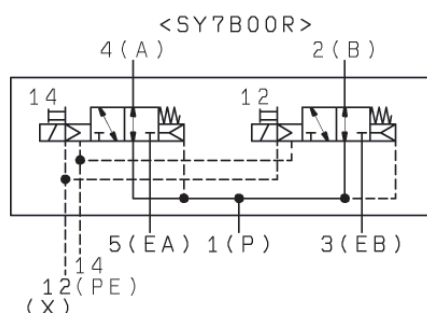
SY3C00R



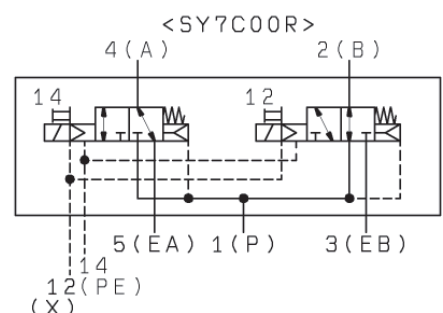
SY7A00R



SY7B00R



SY7C00R



Manifold flow characteristics ^{1) 2)}

Plug-in metal base

Series	Piping option	Port size		Valve flow-rate characteristics					
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→E)		
				C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾	C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾
SY3000	SS5Y3-50 (Side ported)	1/8	C6	1.1	0.19	262	1.1	0.15	256
	SS5Y3-51 (Bottom ported)	1/8	C6	1.2	0.31	307	1.2	0.14	278
	SS5Y3-52 (Top ported)	1/8	C6	1.1	0.29	278	1.2	0.20	287
SY7000	SS5Y7-50 (Side ported)	3/8	C10	3.8	0.27	948	4.0	0.20	958
	SS5Y7-51 (Bottom ported)	3/8	C10	4.1	0.34	1070	4.8	0.20	1150
	SS5Y7-52 (Top ported)	3/8	C10	4.5	0.27	1123	4.9	0.24	1201

Resin base

Series	Piping option	Port size		Valve flow-rate characteristics					
		1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→E)		
				C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾	C [dm ³ /(s·bar)]	b	Q [l/min] (ANR) ³⁾
SY3000	SS5Y3-10 (Side ported)	C8	C6	1.4	0.30	356	1.6	0.19	381
	SS5Y3-12 (Top ported)	C8	C6	1.2	0.29	303	1.3	0.19	310
SY7000	SS5Y7-10 (Side ported)	C12	C12	6.2	0.23	1511	5.9	0.20	1413
	SS5Y7-11 (Bottom ported)	C12	C12		0.25	1529	6.6	0.21	1590
	SS5Y7-12 (Top ported)	C12	C12	5.6	0.31	1433	5.7	0.24	1397

1) The value is for manifold base with 5 stations and individually operated 2-position type.

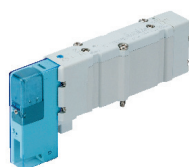
2) These values are applicable to rubber seal type valves.

3) These values have been calculated according to ISO 6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

Note

For confirmation of detailed specifications and dimensions, refer to product drawings, instruction manual, reliability data and catalogue at www.smc.eu.

Other related SY products



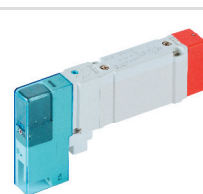
5 port solenoid valve with spring return spool
SY-X350 Series



5 port solenoid valve with spool position detection
SY-X30 Series



2x3/2-4 position dual 3 port valve with spring return spool
SY-X67 Series



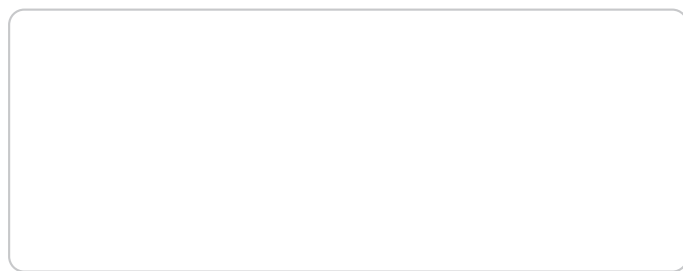
External pilot air control valve
SY-X310 Series



Expertise – Passion – Automation

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