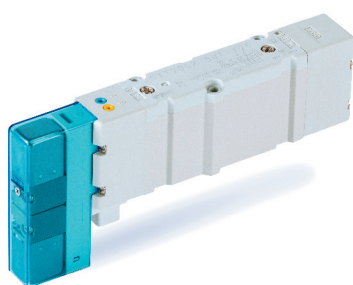
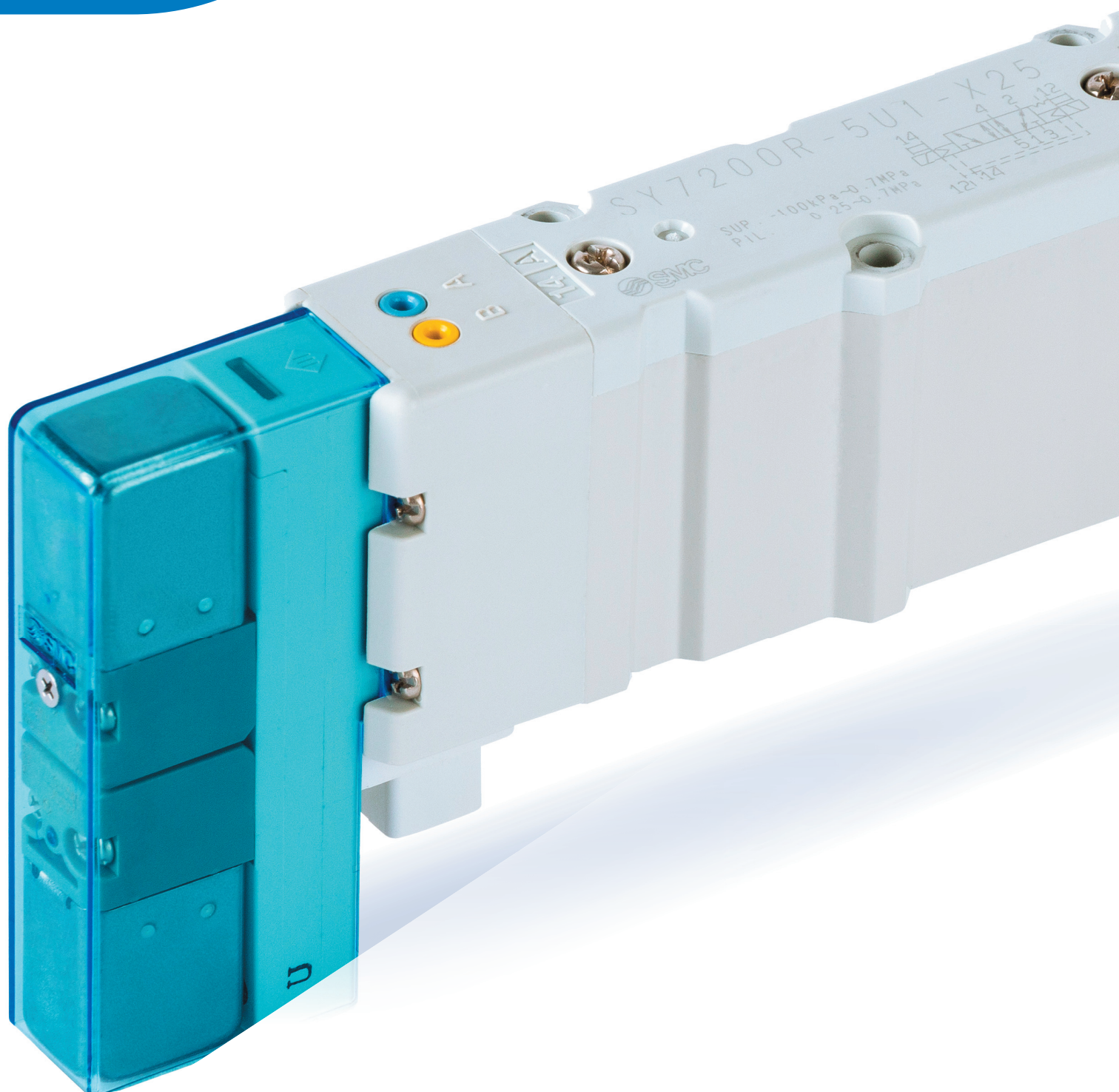




Expertise – Passion – Automation



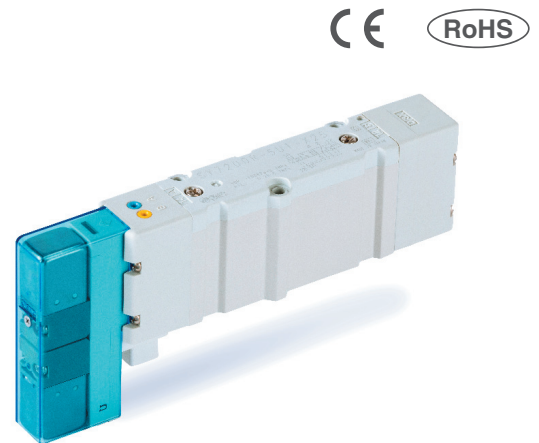
Your safety in our focus

Safety-related products
5 port solenoid valve with detent
SY-X25 Series

5 port solenoid valve with detent

SY-X25 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

► A valve with detent - the concept

The SY-X25 versions have a mechanical detent for the valve spool in each position. This means the valve spool retains its last position when the valve is electrically and pneumatically de-energised, as long as it is not exposed to shock and vibration exceeding the specified limits.

► 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.

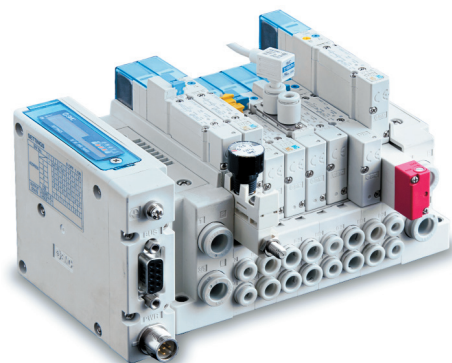
► SISTEMA library is available

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.

► SY series valves

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



Applications

Because of the detent, these valves can be used to implement safety related control systems in many machinery and process applications, where a bi-stable valve is used and retention of valve spool position is required when it is electrically and pneumatically de-energised.

How to order

Base mounted SY 200 - 5 1 - - X25

Top ported SY 230 - 5 1 - - - X25

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Valve series

3	SY3000
5	SY5000
7	SY7000

② Pilot type

—	Internal pilot
R	External pilot

③ Coil type

—	Standard
T	With power saving circuit (continuous duty type)

④ Light & surge suppressor

—	W/o indicator light & surge suppressor (non-polar)
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.

⑤ Manual override

—	Non-locking push type
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⑥ A, B port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8"	SY5000
02	1/4"	SY7000

One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

⑦ Thread type

—	Rc
F	G
N	NPT
T	NPTF

1) Only "—" is available for M5.

⑧ 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)

Note) Refer to the reliability data for the latest "How to order".

Best selling part numbers

Part number
SY3200-5U1-X25
SY3200R-5U1-X25
SY5200-5U1-X25
SY5200R-5U1-X25
SY7200-5U1-X25
SY7200R-5U1-X25

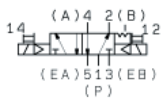
Valve specifications

Valve type			5 port 2-position double solenoid valve with detent
Fluid			Air
Internal pilot operating pressure range [MPa]	2-position double		0.1 to 0.7
External pilot operating pressure range [MPa]	Operating pressure range		-100 kPa to 0.7
	Pilot pressure range	2-position double	0.25 to 0.7
Ambient and fluid temperature [°C]			-10 to 50 (No freezing)
Max. operating frequency [Hz]	SY3000 SY5000 SY7000	2-position double	5
Min. operating frequency			1 cycle every 30 days
Manual override			Non-locking push type
Pilot exhaust type	Internal pilot		Main/Pilot valve common exhaust
	External pilot		Pilot valve individual exhaust
Lubrication			Not required
Mounting orientation			Unrestricted
Impact/Vibration resistance ¹⁾ [m/s²]			150/50 (0.35 mm)
Enclosure			IP67
Coil rated voltage [VDC]			24
Allowable voltage fluctuation [V] ²⁾			±10 % of rated voltage
Power consumption [W]	Standard		0.35 (With indicator light: 0.4)
	With power saving circuit		Standard: 0.1 ³⁾ (With indicator light only) [Inrush 0.4, Holding 0.1]
Surge voltage suppressor			Diode (Varistor for non-polar type)
Indicator light			LED
Required air quality			5 µm filtration or smaller

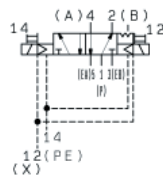
- 1) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every time in each condition. (Values at the initial period)
 Vibration resistance: No malfunction occurred in a one-sweep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

SY□200



SY□200R



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	Side ported	1/8	C6	1.1	0.19	262	1.1	0.15	256
	Bottom ported	1/8	C6	1.2	0.31	307	1.2	0.14	278
SY5000	Side ported	1/4	C8	2.6	0.28	653	2.6	0.14	603
	Bottom ported	1/4	C8	2.7	0.35	709	2.8	0.20	671
SY7000	Side ported	3/8	C10	3.8	0.27	948	4.0	0.20	958
	Bottom ported	3/8	C10	4.1	0.34	1070	4.8	0.20	1150

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	Side ported	C8	C6	1.4	0.30	356	1.6	0.19	381
	Bottom ported	C8	C6	1.2	0.29	303	1.3	0.19	310
SY5000	Side ported	C10	C8	3.3	0.30	839	3.6	0.17	848
	Bottom ported	C10	C8	3.3	0.29	834	4.2	0.26	1042
SY7000	Side ported	C12	C12	6.2	0.23	1511	5.9	0.20	1413
	Bottom ported	C12	C12	6.2	0.25	1529	6.6	0.21	1590

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

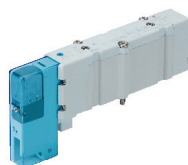
2) These values are applicable to rubber seal type valves.

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.

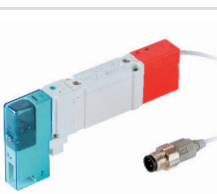
Other related SY products



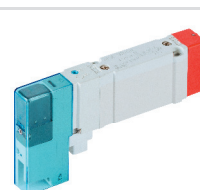
5 port solenoid valve with
spring return spool
SY-X350 Series



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



Pilot air control valve with
spool detection
SY-X31 Series



External pilot air control
valve
SY-X310 Series



Expertise – Passion – Automation

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