

SY5000/7000 Series

4-Position Dual 3-Port Valve

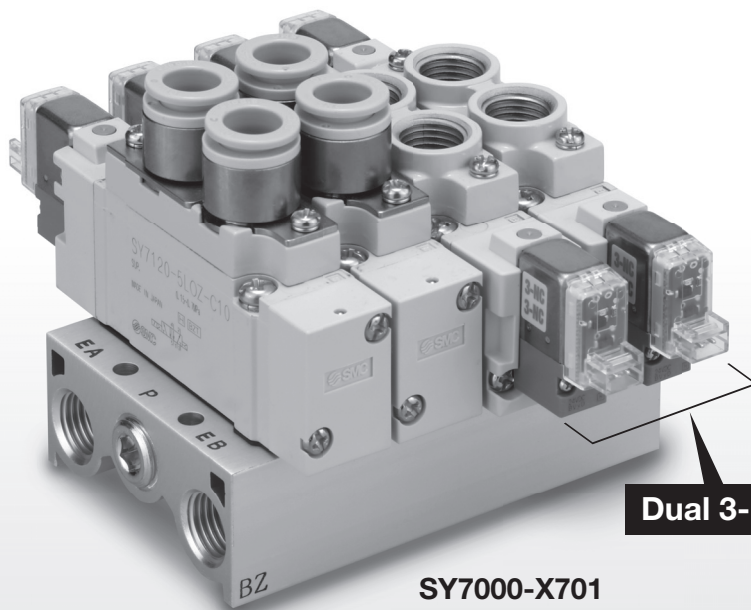
Body Ported/Base Mounted

■ Features two 3-port valves built into one body

- The dimensions are the same as those of the double solenoid.
- The 3-port valves on the A and B sides can be operated independently.
- When used as a 3-port valve, only half the number of stations are required.
- Mixed mounting on the standard SY5000/7000 series 5-port solenoid valve manifold base is possible.

• Combination examples

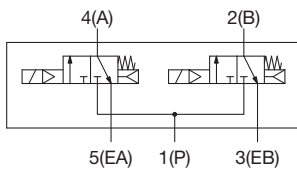
Piping type	Series	A side	B side
Body ported	SY□A20	N.C. valve	N.C. valve
	SY□B20	N.O. valve	N.O. valve
	SY□C20	N.C. valve	N.O. valve
Base mounted	SY□A40	N.C. valve	N.C. valve
	SY□B40	N.O. valve	N.O. valve
	SY□C40	N.C. valve	N.O. valve



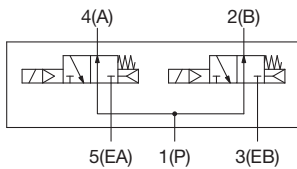
SY7000-X701

Symbol

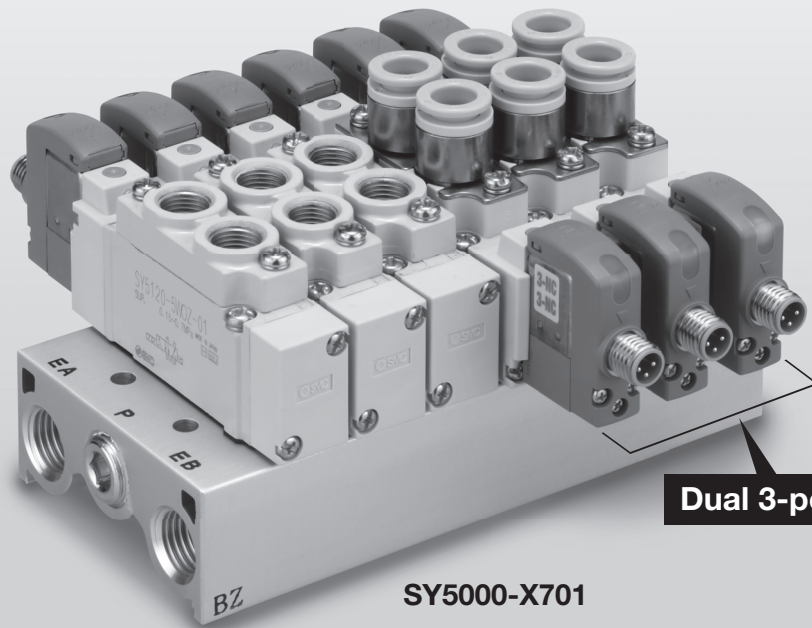
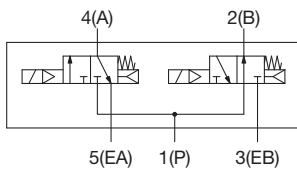
N.C. valve x 2 pcs.



N.O. valve x 2 pcs.



N.C. valve, N.O. valve x 1 pc. of each



SY5000-X701

SY5000/7000-X701

4-Position Dual 3-Port Valve

Body Ported

SY5000/7000-X701



How to Order

SY **5** **A** 20 **5** **L** **01** **X701** - Q

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

1 Series

5	SY5000
7	SY7000

2 Type of actuation

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

3 Coil specifications

-	Standard
T	With power saving circuit (24, 12 VDC only)

* Power saving circuit is not available in the case of D, DO, Y, YO or W□ type.

4 Rated voltage

For DC		For AC (50/60 Hz)	
5	24 VDC	1	100 VAC
6	12 VDC	2	200 VAC
V	6 VDC	3	110 VAC [115 VAC]
S	5 VDC	4	220 VAC [230 VAC]
R	3 VDC		

* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.

* For type W□, DC voltage is only available.

5 Electrical entry

24, 12, 6, 5, 3 VDC				24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet		L plug connector		M plug connector	
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	MN: Without lead wire	D, Y: With connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	MO: Without connector	DO, YO: Without connector	W□: With connector cable

* LN, MN type: with 2 sockets.

6 Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

-	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

* For "R" and "U", DC voltage is only available.

* Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

-	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* DOZ and YOZ are not available.

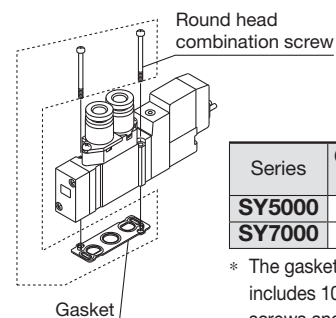
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

7 Manual override

-: Non-locking push type	D: Push-turn locking slotted type	E: Push-turn locking lever type

⚠ When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary.

■ Gasket assembly part no.



Series	Gasket assembly part no.
SY5000	SY5000-GS-1
SY7000	SY7000-GS-1

* The gasket assembly includes 10 sets of mounting screws and a gasket.

Mounting on the type 20 manifold base is possible.

8 A, B port size

Thread piping

Symbol	Port size	Applicable series
01	1/8	SY5000
02	1/4	SY7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for Ø 4	
C6	One-touch fitting for Ø 6	SY5000
C8	One-touch fitting for Ø 8	
C8	One-touch fitting for Ø 8	SY7000
C10	One-touch fitting for Ø 10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for Ø 5/32"	
N7	One-touch fitting for Ø 1/4"	SY5000
N9	One-touch fitting for Ø 5/16"	
N9	One-touch fitting for Ø 5/16"	SY7000
N11	One-touch fitting for Ø 3/8"	

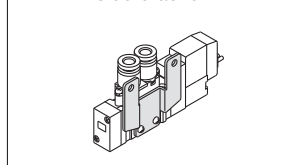
9 Thread type

-	Rc
F	G
N	NPT
T	NPTF

* Except for M5

10 Bracket

-	Without bracket
F2	With side bracket



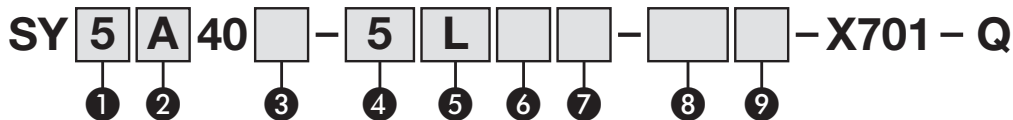
4-Position Dual 3-Port Valve



Base Mounted

SY5000/7000-X701

How to Order



1 Series

5	SY5000
7	SY7000

2 Type of actuation

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

3 Coil specifications

-	Standard
T	With power saving circuit (24, 12 VDC only)

* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

4 Rated voltage

For DC		For AC (50/60 Hz)	
5	24 VDC	1	100 VAC
6	12 VDC	2	200 VAC
V	6 VDC	3	110 VAC [115 VAC]
S	5 VDC	4	220 VAC [230 VAC]
R	3 VDC		

* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
* For type W□, DC voltage is only available.

5 Electrical entry

24, 12, 6, 5, 3 VDC				24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	MN: Without lead wire	D,Y: With connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	MO: Without connector	DO,YO: Without connector	W□: With connector cable

* LN, MN type: with 2 sockets.

6 Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

-	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

Electrical entry for D, Y

-	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* DOZ and YOZ are not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

7 Manual override

-: Non-locking push type	D: Push-turn locking slotted type	E: Push-turn locking lever type

8 Port size

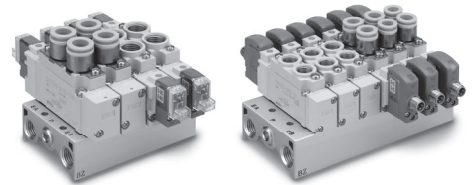
Symbol	Port size	Applicable series
-	Without sub-plate	
02	1/4 With sub-plate	SY5000 SY7000
03	3/8 With sub-plate	SY7000 SY9000

9 Thread type

-	Rc
F	G

Mounting on the type 41 manifold base is possible.

SY5000/7000-X701



Specifications

Series		SY5000	SY7000
Fluid		Air	
Internal pilot Operating pressure range [MPa]	4-position dual	0.15 to 0.7	
Ambient and fluid temperature [°C]		-10 to 50 (No freezing)	
Max. operating frequency [Hz]	4-position dual	5	5
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type	
Pilot exhaust method		Common exhaust type for main and pilot valve	
Lubrication		Not required	
Mounting orientation		Unrestricted	
Impact/Vibration resistance [m/s ²]*1		150/30	
Enclosure		Dust proof (* DIN terminal and M8 connector: IP65)	

*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 once for 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 the right angles to the main valve and armature. (Values at the initial period)

* Based on IEC60529

Solenoid Specifications

Electrical entry		Grommet (G), (H) DIN terminal (D), (Y)	
		L plug connector (L) M8 connector (W)	
Coil rated voltage [V]	DC	G, H, L, M, W D, Y	
	AC 50/60 Hz	24, 12, 6, 5, 3 24, 12	
Allowable voltage fluctuation		±10 % of rated voltage*2	
Power consumption [W]	DC	Standard	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)
		With power saving circuit	0.1 (With indicator light only)*3 [Starting 0.4, Holding 0.1]
Apparent power [VA]*1	AC	100 V	0.78 (With indicator light: 0.81) 0.78 (With indicator light: 0.87)
		110 V [115 V]	0.86 (With indicator light: 0.89) 0.86 (With indicator light: 0.97) [0.94 (With indicator light: 0.97)] [0.94 (With indicator light: 1.07)]
		200 V	1.18 (With indicator light: 1.22) 1.15 (With indicator light: 1.30)
		220 V [230 V]	1.30 (With indicator light: 1.34) 1.27 (With indicator light: 1.46) [1.42 (With indicator light: 1.46)] [1.39 (With indicator light: 1.60)]
Surge voltage suppressor		Diode (Varistor is for DIN terminal and Non-polar type.)	
Indicator light		LED (AC of DIN connector is neon light.)	

*1 In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

*2 For 115 VAC and 230 VAC, the allowable voltage is -15 % to +5 % of rated voltage.

*3 DIN terminal and M8 connector with power saving circuit are not available.

Flow Rate Characteristics

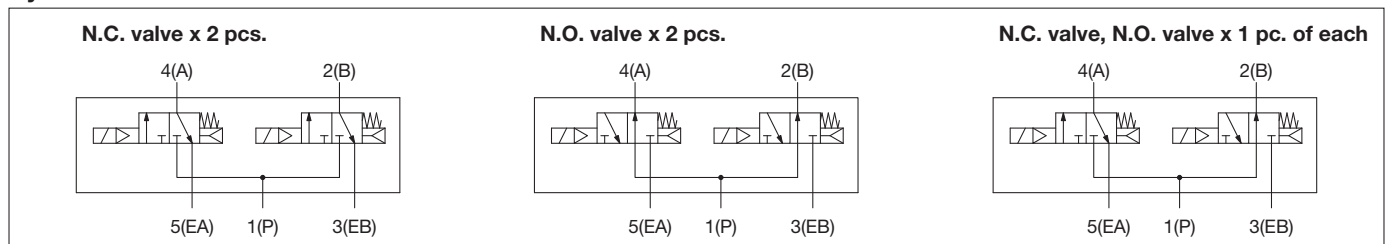
Series	Type of actuation	Port size		Flow rate characteristics					
		1, 5, 3(P, EA, EB)	4, 2(A, B)	1→4/2(P→A/B)			4/2→5/3(A/B→EA/EB)		
				C [dm ³ /(s·bar)]	b	Q [l/min(ANR)] ⁻¹	C [dm ³ /(s·bar)]	b	Q [l/min(ANR)] ⁻¹
Body ported SY5A/B/C20-X701	N.C./N.C.	1/8	C6	1.4	0.35	368	1.4	0.34	365
	N.O./N.O.			1.3	0.36	344	1.2	0.32	309
SY7A/B/C20-X701	N.C./N.C.	1(P) port: 1/4 5, 3(EA, EB) port: 1/8	C10	3.5	0.25	863	2.3	0.40	626
	N.O./N.O.			3.0	0.31	768	2.6	0.42	718
Base mounted SY5A/B/C40-X701	N.C./N.C.	1/4		1.4	0.36	370	1.6	0.40	435
	N.O./N.O.			1.6	0.37	426	1.6	0.41	438
SY7A/B/C40-X701	N.C./N.C.	3/8		3.8	0.30	966	3.6	0.27	898
	N.O./N.O.			3.9	0.26	967	3.9	0.32	1004

*1 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.

Response Time

Series	Response time [ms] (at the pressure of 0.5 MPa)		
	Without surge voltage suppressor	S, Z type	R, U type
SY5A/B/C□0-X701	26 or less	35 or less	26 or less
SY7A/B/C□0-X701	41 or less	51 or less	44 or less

Symbol



SMC Corporation

SMC CORPORATION
Akihabara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 FAX: 03-5298-5362
SMC CORPORATION All Rights Reserved

European Marketing Centre (EMC)

Zuazobidea 14, 01015 Vitoria
Tel: +34 945-184 100 Fax: +34 945-184 124
URL <http://www.smc.eu>