

SY5000/7000 Series

4-Position Dual 3-Port Valve

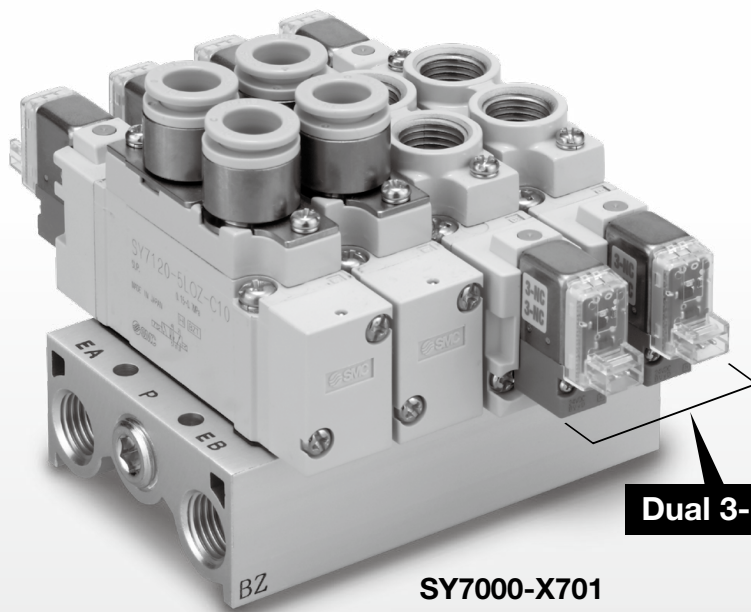
Body Ported/Base Mounted

■ 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

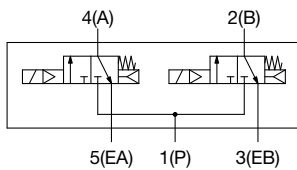
Piping type	Series	A side	B side
Body ported	SY□A20	N.C. valve	N.C. valve
	SY□B20	N.O. valve	N.O. valve
	SY□C20	N.C. valve	N.O. valve
Base mounted	SY□A40	N.C. valve	N.C. valve
	SY□B40	N.O. valve	N.O. valve
	SY□C40	N.C. valve	N.O. valve



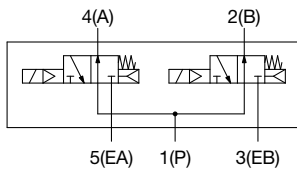
SY7000-X701

Symbol

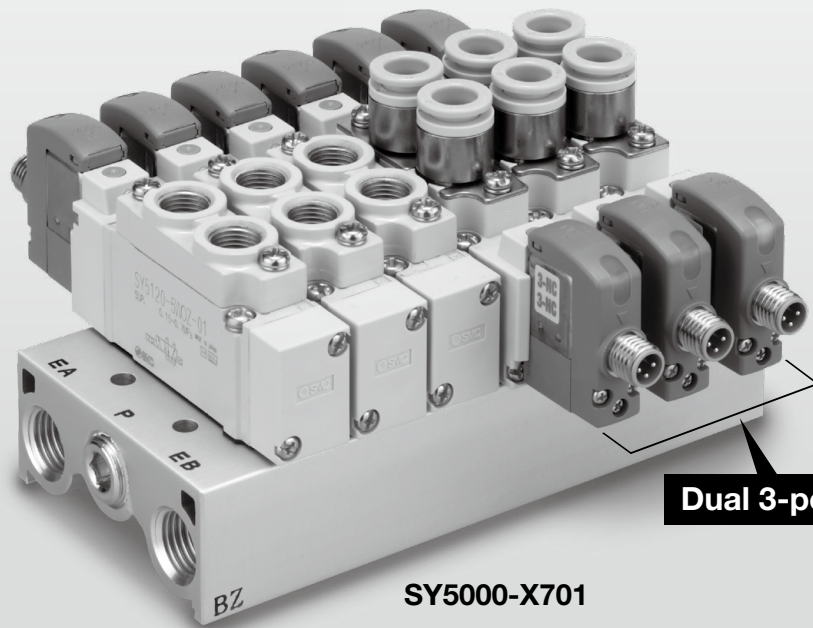
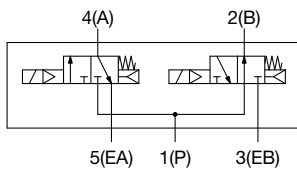
N.C. valve x 2 pcs.



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



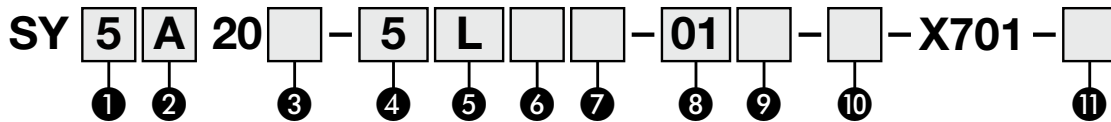
Body Ported

[Option]

* AC-type models that are CE/UKCA-compliant have DIN terminals only.

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	N.O./N.O.
C	valve	N.C./N.O.

3 Coil specifications

Nil	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

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

For AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* 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.

* AC-type models that are CE/UKCA-compliant have DIN terminals only.

5 Electrical entry

	24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				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
CE/UKCA-compliant	DC ●	●	●	●	●	●
	AC —	—	—	—	●	—

* LN, MN type: with 2 sockets.

6 Light/Surge voltage suppressor

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

Nil	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

Nil	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

Nil: Non-locking push type	D: Push-turn locking slotted type	E: Push-turn locking lever type
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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 ø4	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	

9 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* Except for M5

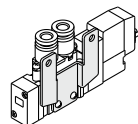
11 CE/UKCA-compliant

Nil	—
Q	CE/UKCA-compliant

* AC-type models that are CE/UKCA-compliant have DIN terminals only.

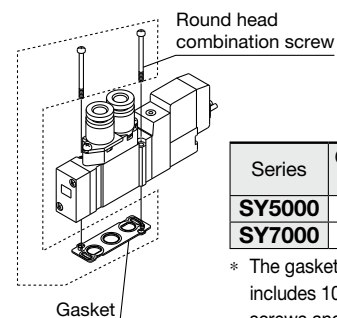
10 Bracket

Nil:	Without bracket
F2:	With side bracket



⚠ 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.

4-Position Dual 3-Port Valve



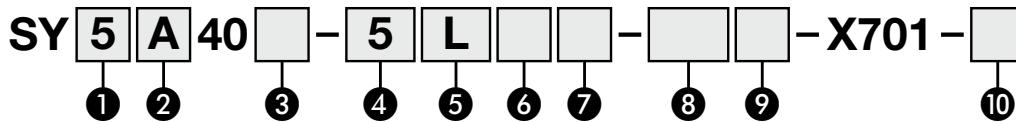
Base Mounted

SY5000/7000-X701

[Option]

* AC-type models that are CE/UKCA-compliant have DIN terminals only.

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		N.C./N.O.

3 Coil specifications

Nil	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.
 * AC-type models that are CE/UKCA-compliant have DIN terminals only.

5 Electrical entry

CE/UKCA-compliant	DC	24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				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		
	AC	●	●	●	●	●	●		

* LN, MN type: with 2 sockets.

6 Light/Surge voltage suppressor

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

Nil	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

Nil	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

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

8 Port size

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

9 Thread type

Nil	Rc
F	G

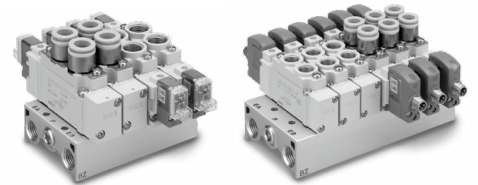
10 CE/UKCA-compliant

Nil	—
Q	CE/UKCA-compliant

* AC-type models that are CE/UKCA-compliant have DIN terminals only.

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 energized and de-energized 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 energized and de-energized 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		100, 110, 200, 220	
Power consumption [W]	DC	Standard	±10% of rated voltage*2
		With power saving circuit	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)
Apparent power [VA]*1	AC	100 V	0.1 (With indicator light only)*3 [Starting 0.4, Holding 0.1]
		110 V [115 V]	0.78 (With indicator light: 0.81) 0.78 (With indicator light: 0.87)
		200 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)]
		220 V [230 V]	1.18 (With indicator light: 1.22) 1.15 (With indicator light: 1.30) 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.

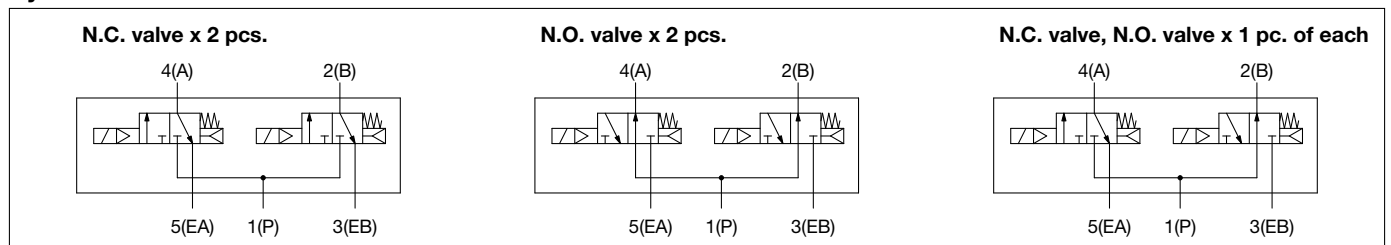
Flow Rate Characteristics

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	C [dm ³ /(s·bar)]	b		
Body ported SY5A/B/C20-X701	N.C./N.C.	1/8	C6	1.4	0.35	1.4	0.34
	N.O./N.O.			1.3	0.36	1.2	0.32
Body ported 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	2.3	0.40
	N.O./N.O.			3.0	0.31	2.6	0.42
Base mounted SY5A/B/C40-X701	N.C./N.C.	1/4		1.4	0.36	1.6	0.40
	N.O./N.O.			1.6	0.37	1.6	0.41
Base mounted SY7A/B/C40-X701	N.C./N.C.	3/8		3.8	0.30	3.6	0.27
	N.O./N.O.			3.9	0.26	3.9	0.32

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



⚠ Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

SMC Corporation

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