

SY3000/5000/7000/9000 Body Ported Type Single Valve

How to Order

SY 5 1 20 — 5 L — — — 01 — — — Q

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Type of actuation

1	2 position single	
2	2 position double	
3	3 position closed centre	
4	3 position exhaust centre	
5	3 position pressure centre	

Rated voltage

DC specifications	
5	24VDC
6	12VDC
V	6VDC
S	5VDC
R	3VDC
9	Less than 50 VDC

AC specifications (50/60Hz)

1	100VAC
2	200VAC
3	110VAC [115VAC]
4	220VAC [230VAC]
9	Less than 250 VAC



Note 1) "D", "DO", "Y" and "YO" are only available in 24VDC and 12VDC in case of DC.

Note 2) "D", "DO", "Y" and "YO" are not available for SY3000.



Contact SMC for other voltages (9)



Protective class class I (Mark:)..... DIN terminal type



Protective class class III (Mark:)..... Grommet, L and M plug connector



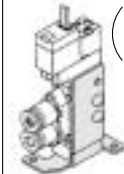
Note) When single body ported solenoid valves are ordered, manifold mounting bolts and gaskets are not included. Order them separately, if necessary. (Refer to page 1.2-65 for details.)

Thread

—	Rc (PT)
N	NPT
T	NPTF
F	G (PF)

Bracket

Nil: Without bracket
F1: With foot bracket
(2 position single type only)



F2: With side bracket



* SY9000 does not use brackets.

A/B port size

Symbol	Port size	Applicable series
M5	M5	SY3000
C4	ø4 One-touch fitting	
C6	ø6 One-touch fitting	
01	1/8	SY5000
C4	ø4 One-touch fitting	
C6	ø6 One-touch fitting	
C8	ø8 One-touch fitting	SY7000
02	1/4	
C8	ø8 One-touch fitting	
C10	ø10 One-touch fitting	SY9000
02	1/4	
03	3/8	
C8	ø8 One-touch fitting	
C10	ø10 One-touch fitting	
C12	ø12 One-touch fitting	

Manual override

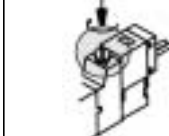
Nil: Non-locking push type



D: Push-turn locking slotted type



E: Push-turn locking lever



Indicator light/Surge voltage suppressor

For electrical entry G, H, L, M

Nil	Without indicator light/surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light/surge voltage suppressor
U	With indicator light/surge voltage suppressor (non-polar type)



Note 1) "U" is available for DC only.

For electrical entry D

Nil	Without indicator light/surge voltage suppressor
S	With surge voltage suppressor (non-polar type)
Z	With indicator light/surge voltage suppressor (non-polar type)

Note 1) "DOZ" is not available.
Note 2) For AC, there is no "S" specification, since it is integrated with the rectifier.

Electrical entry

24V, 12V, 6V, 5V, 3VDC				24V, 12VDC 100V, 110V, 200V, 220VAC
Grommet	L type plug connector	M type plug connector		DIN terminal
G: Lead wire length 300mm 	L: With lead wire (length 300mm) 	M: With lead wire (length 300mm) 	MN: Without lead wire 	(Except SY3000) D: With connector Y: With connector (DIN 43650C)
H: Lead wire length 600mm 	LN: Without lead wire 	LO: Without connector 	MO: Without connector 	DO: Without connector YO: Without connector (DIN 43650C)



Note 1) "LN" and "MN" include 2 sockets.

Note 2) "D" and "DO" are not available for SY3000.

Specifications

Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot operating pressure range MPa	2 position single	0.15 to 0.7			
	2 position double	0.1 to 0.7			
	3 position	0.2 to 0.7			
Ambient and fluid temperature °C		Maximum 50			
Maximum operating frequency Hz	2 position single, double	10	5	5	5
	3 position	3	3	3	3
Manual override		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method		Common exhaust for main and pilot valves			
Lubrication		Not required			
Mounting orientation		Unrestricted			
Impact resistance/Vibration resistance m/s ² (Note)		150/30			
Enclosure		Dust proof (IP65 for DIN terminal*)			



* In compliance with IEC529 standard.

(Note) **Impact resistance:** No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage)

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. Test was performed for both energized and de-energized states in the axial and right angle directions of the main valve and armature. (Value in the initial stage)

Solenoid specifications

Electrical entry		Grommet (G)/(H), L type plug connector (L), M type plug connector (M), DIN terminal (D) ^{Note 1)}	
Rated coil voltage V	DC	24, 12, 6, 5, 3	
	AC 50/60Hz	100, 110, 200, 220 ^{Note 2)}	
Allowable voltage fluctuation		±10% of rated voltage	
Current consumption W	DC	0.5 [With indicator light: 0.55 (0.6 for DIN terminal with indicator light)] ^{Note 3)}	
Apparent power VA	AC	100V	0.9 (With indicator light: 1.0)
		110V	1.0 (With indicator light: 1.1)
		[115V]	[1.1 (With indicator light: 1.2)]
		200V	1.8 (With indicator light: 1.9)
		220V	1.9 (With indicator light: 2.0)
		[230V]	[2.2 (With indicator light: 2.3)]
Surge voltage suppressor		Diodes (ZNR for DIN terminal, Zener diode for G, L or M non-polar type)	
Indicator light		LED (Neon bulb for AC type DIN terminal)	



Note 1) DIN terminal (D) is not available for SY3000.

Note 2) 110 and 115VAC are common, as are 220 and 230VAC.

Note 3) Energy saving [0.22W] type is also available. Refer to page 1.2-177 for details.

Note 4) AC specifications are only for the DIN terminal type.

Response time



(Note) Based on dynamic performance test JISB8375-1981 (at coil temperature of 20°C with rated voltage)

SY3000

Type of actuation	Response time ms (at 0.5MPa)		
	Without indicator light/surge voltage suppressor	With indicator light/surge voltage suppressor S, Z types	U types
2 position single	12 or less	15 or less	12 or less
2 position double	10 or less	13 or less	10 or less
3 position	15 or less	20 or less	16 or less

SY5000

Type of actuation	Response time ms (at 0.5MPa)		
	Without indicator light/surge voltage suppressor	With indicator light/surge voltage suppressor S, Z types	U types
2 position single	19 or less	26 or less	19 or less
2 position double	18 or less	22 or less	18 or less
3 position	32 or less	38 or less	32 or less

SY7000

Type of actuation	Response time ms (at 0.5MPa)		
	Without indicator light/surge voltage suppressor	With indicator light/surge voltage suppressor S, Z types	U types
2 position single	31 or less	38 or less	33 or less
2 position double	27 or less	30 or less	28 or less
3 position	50 or less	56 or less	50 or less

SY9000

Type of actuation	Response time ms (at 0.5MPa)		
	Without indicator light/surge voltage suppressor	With indicator light/surge voltage suppressor S, Z types	U types
2 position single	35 or less	41 or less	35 or less
2 position double	35 or less	41 or less	35 or less
3 position	62 or less	64 or less	62 or less



Pages 1.2-168 to 1.2-177

SV

SY

SYJ

SX

VK

VZ

VF

VFR

VP7

VQC

SQ

VQ

VQ4

VQ5

VQZ

VQD

VFS

VS

VS7

VQ7