

Series SY3000/5000 Type 10, 11, 12

Plug-in Connector Connecting Base

Manifold Specifications

Model			D-sub connector	Flat ribbon cable			Terminal block box	Lead wire	Circular connector	Serial wiring			
			F type	P type	PG type J type	PH type	T type	L type	M type	S6□ type (EX600)	SA2 type (EX500) S4□ type (EX126)	S□ type (EX250) (EX260)	S3□ type (EX120)
Manifold type			Plug-in connector connecting base										
SUP/EXH port type			Common SUP/EXH (Common for 3/5 port)										
Valve stations			2 to 24 stations		2 to 18 stations (J type: 2 to 16 stations)	2 to 8 stations	2 to 20 stations	2 to 24 stations			2 to 16 stations	2 to 24 stations	2 to 16 stations
Applicable connector			D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503			—						
				Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type							
Internal wiring			Positive common, Negative common										
Port size	1(P), 3/5(E) port	SY3000	ø8 One-touch fitting ø5/16" One-touch fitting										
		SY5000	ø10 One-touch fitting ø3/8" One-touch fitting										
	4(A), 2(B) port	SY3000	ø2 One-touch fitting, ø3.2 One-touch fitting, ø4 One-touch fitting, ø6 One-touch fitting ø1/8" One-touch fitting, ø5/32" One-touch fitting, ø1/4" One-touch fitting										
		SY5000	ø4 One-touch fitting, ø6 One-touch fitting, ø8 One-touch fitting ø5/32" One-touch fitting, ø1/4" One-touch fitting, ø5/16" One-touch fitting										
Enclosure (Based on IEC60529)			IP40				IP67			IP67 I/O unit: partially IP40	IP67 EX500 gateway unit, input unit: IP65	IP67 (Partially IP40)	IP20

Manifold Flow-rate Characteristics^{Note 1)}/Manifold Weight

Valve Seal Type: Rubber Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] ^{Note 2)} (n: stations)
	1, 3/5 (P, E)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b	
SS5Y3-10 (Side ported)	C8	C6	1.4	0.30	1.6	0.19	28.9n + 293
SS5Y3-12 (Top ported)	C8	C6	1.2	0.29	1.3	0.19	25.1n + 314
SS5Y5-10 (Side ported)	C10	C8	3.3	0.30	3.6	0.17	74.7n + 398
SS5Y5-11 (Bottom ported)	C10	C8	3.3	0.29	4.2	0.26	76.8n + 445
SS5Y5-12 (Top ported)	C10	C8	2.8	0.27	3.8	0.23	66.3n + 417

Valve Seal Type: Metal Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] ^{Note 2)} (n: stations)
	1, 3/5 (P, E)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		
			C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b	
SS5Y3-10 (Side ported)	C8	C6	1.2	0.19	1.3	0.18	28.9n + 293
SS5Y3-12 (Top ported)	C8	C6	1.2	0.16	1.3	0.18	25.1n + 314
SS5Y5-10 (Side ported)	C10	C8	2.7	0.24	3.1	0.17	74.7n + 398
SS5Y5-11 (Bottom ported)	C10	C8	2.8	0.25	3.5	0.15	76.8n + 445
SS5Y5-12 (Top ported)	C10	C8	2.6	0.18	3.0	0.16	66.3n + 417

* Calculation of effective area S and sonic conductance C: $S = 5.0 \times C$

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

Note 2) Weight: W is the value of the internal pilot, and D-sub connector manifold with one-touch fitting straight piping type.

To obtain the weight with valves attached, add the valve weights given on page 9 for the appropriate number of stations.

Series SY3000/5000

Valve Specifications 1

Valve Specifications

Valve type			Rubber seal	Metal seal
Fluid			Air	
Internal pilot operating pressure range (MPa)	2-position single		0.15 to 0.7	0.1 to 0.7 (High pressure type: 0.1 to 1)
	2-position double		0.1 to 0.7	
	3-position		0.2 to 0.7	
	4-position dual 3-port valve		0.15 to 0.7	
External pilot operating pressure range (MPa)	Operating pressure range		–100 kPa to 0.7 (4-position: –100 kPa to 0.6)	–100 kPa to 0.7 (High pressure type: –100 kPa to 1)
	Pilot pressure range	2-position single	0.25 to 0.7	0.1 to 0.7 (High pressure type: 0.1 to 1)
		2-position double		
		3-position		
		4-position dual 3-port valve		Operating pressure + 0.1 or more (Min. 0.25) to 0.7
Ambient and fluid temperature (°C)			–10 to 50 (No freezing)	
Max. operating frequency (Hz)	2-position single/double		5	20 ^{Note 1)}
	4-position dual 3-port valve		3	10 ^{Note 1)}
	3-position			
Manual override			Non-locking push type	
			Push-turn locking slotted type	
			Slide locking type	
Pilot exhaust type	Internal pilot		Main/Pilot valve common exhaust	
	External pilot		Pilot valve individual exhaust	
Lubrication			Not required	
Mounting orientation			Unrestricted	Single: Unrestricted Double/3-position: Main valve is horizontal.
Impact/Vibration resistance ^{Note 2)} (m/s ²)			150/30	
Enclosure			IP67 (Based on IEC60529)	
Coil rated voltage (DC)			24, 12 V	
Allowable voltage fluctuation (V)			±10% of rated voltage ^{Note 3)}	
Power consumption (W)	Standard		0.35 (With indicator light: 0.4)	
	High pressure type, Quick response type		0.9 (With indicator light: 0.95)	
	With power saving circuit		Standard: 0.1 (With indicator light only), High pressure type: 0.4 (With indicator light only)	
Surge voltage suppressor			Diode (Varistor for non-polar type)	
Indicator light			LED	

Note 1) Use below 5 Hz for with power saving circuit.

Note 2) 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)

Note 3) 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.

$$\begin{aligned} \text{S/Z type} & \begin{cases} 24 \text{ VDC: } -7\% \text{ to } +10\% \\ 12 \text{ VDC: } -4\% \text{ to } +10\% \end{cases} & \text{T type} & \begin{cases} 24 \text{ VDC: } -8\% \text{ to } +10\% \\ 12 \text{ VDC: } -6\% \text{ to } +10\% \end{cases} \end{aligned}$$

Response Time

Series	Seal type	Model	Type of actuation	Response time (ms)					
				Standard			Quick response type		
				Without light/surge voltage suppressor	With light/surge voltage suppressor		Without light/surge voltage suppressor	With light/surge voltage suppressor	
					S/Z type	R/U type		S/Z type	R/U type
SY3000	Rubber seal	SY31□0	2-position single	15 or less	20 or less	15 or less	12 or less	15 or less	12 or less
	Metal seal	SY31□1		15 or less	20 or less	15 or less	12 or less	15 or less	12 or less
	Rubber seal	SY32□0	2-position double	12 or less	15 or less	12 or less	10 or less	13 or less	10 or less
	Metal seal	SY32□1		12 or less	15 or less	12 or less	10 or less	13 or less	10 or less
	Rubber seal	SY33/4/5□0	3-position	18 or less	22 or less	18 or less	14 or less	18 or less	14 or less
	Metal seal	SY33/4/5□1		18 or less	22 or less	18 or less	14 or less	18 or less	14 or less
	Rubber seal	SY3A/B/C□0	4-position dual 3-port valve	18 or less	22 or less	18 or less	15 or less	19 or less	15 or less
SY5000	Rubber seal	SY51□0	2-position single	24 or less	31 or less	24 or less	18 or less	25 or less	18 or less
	Metal seal	SY51□1		24 or less	31 or less	24 or less	18 or less	25 or less	18 or less
	Rubber seal	SY52□0	2-position double	12 or less	15 or less	12 or less	10 or less	13 or less	10 or less
	Metal seal	SY52□1		12 or less	15 or less	12 or less	10 or less	13 or less	10 or less
	Rubber seal	SY53/4/5□0	3-position	30 or less	34 or less	30 or less	24 or less	28 or less	24 or less
	Metal seal	SY53/4/5□1		28 or less	30 or less	28 or less	23 or less	25 or less	23 or less
	Rubber seal	SY5A/B/C□0	4-position dual 3-port valve	35 or less	42 or less	35 or less	28 or less	35 or less	28 or less