

Body Ported Valves

Series **SY3/5/7/9000**

Features

- Wide range of sizes
- Choice of electrical entries
- Body ported valves can be manifold mounted
- One touch fittings for direct connection
- Very low power consumption



How to Order

SY **5** **1** 20 — **5** LO — — **01F** — 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

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

AC (50/60Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

Rated voltage

Electrical entry

24, 12, 6, 5, 3 VDC			24, 12 VDC/ 100, 110, 200, 220 VAC
Grommet	L plug connector	M plug connector	DIN terminal
G: Lead wire length 300 mm	LO: Without connector	MO: Without connector	Y: DIN plug * D: DIN plug *

24, 12, 6, 5, 3 VDC

M8 connector

WO: Without connector cable



Note: For connector cables see Cable appendix.

* "D" denotes a DIN plug DIN43650 class with industry standard pin spacing.
The "Y" plug is externally identical but has DIN 43650C pin spacing of 8 mm.

A, B port size

Symbol	Description	SY3000	SY5000	SY7000	SY9000
M5	M5 thread	○			
01F	1/8 thread		○		
02F	1/4 thread			○	○
03F	3/8 thread				○
C4	4mm tube	○	○		
C6	6mm tube	○	○		
C8	8mm tube		○	○	○
C10	10mm tube			○	○
C12	12mm tube				○

Symbols

1	2 position single (A)(B) (EA)(P)(EB)
2	2 position double (A)(B) (EA)(P)(EB)
3	3 position closed centre (A)(B) (EA)(P)(EB)
4	3 position exhaust centre (A)(B) (EA)(P)(EB)
5	3 position pressure centre (A)(B) (EA)(P)(EB)

Note: AC voltages can only be specified in conjunction with a DIN plug (Y entry).

Manual override

Nil: Non-locking push type 	D: Push-turn locking slotted type 	E: Push-turn locking lever type
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Light/Surge voltage suppressor

Electrical entry for G, L, M, W

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

Electrical entry for Y

Nil	Without light/surge voltage suppressor
Z	With light/surge voltage suppressor

Valve 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)		-10 to 50 (No freezing)			
Max. operating frequency (Hz)	2 position single, double	10	5	5	5
	3 position	3	3	3	3
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			
Enclosure		Dustproof (DIN terminal, M8 connector conform to IP65)			

Solenoid Specifications

Electrical entry			Grommet (G) L plug connector (L) M plug connector (M)	DIN terminal (Y) M8 connector (W)
Coil rated voltage (V)	DC		24, 12, 6, 5, 3	
	AC 50/60 Hz		100, 110, 200, 220*	
Allowable voltage fluctuation (%)			±10% of rated voltage	
Power consumption (W)	DC	Standard	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)	
	AC	100 V	1.4 (With indicator light: 1.5)	
110 V		1.6 (With indicator light: 1.7)		
200 V		2.3 (With indicator light: 2.4)		
220 V		2.5 (With indicator light: 2.6)		
[230 V]		[2.7 (With indicator light: 2.8)]		
Surge voltage suppressor			Diode (DIN terminal is ZNR. G, L or M (Non-polar) is zener diode.)	
Indicator light			LED	

* DIN plug only.

Response Time

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type Z	Type U
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

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type Z	Type U
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

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type Z	Type U
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

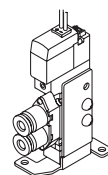
SY9000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type Z	Type U
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

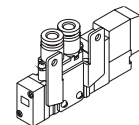
SY Valve Accessories

Mounting Bracket Assemblies for Body Ported Valve

Description	part no.
Bracket (Type F1)	SX3000-16-2A (with mounting screw) for single solenoid valves only
Bracket (Type F2)	SX3000-16-1A (with mounting screw)



Type F1



Type F2

Flow Characteristics/Weight

Series SY3000	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 P, EA, EB	4, 2 A, B	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	Response times (m/s)	W M8 connector	
			C (l/dm ³ /s-bar)	b	Cv	C (l/dm ³ /s-bar)	b	Cv						
2 position	Single	M5	C4 One-touch fitting for ø4	0.61	0.44	0.16	0.64	0.45	0.18	51	15	57		
	Double			0.48	0.46	0.13	0.47	0.43	0.13	68	13	82		
3 position	Closed centre			0.47	0.42	0.13	0.47	0.41	0.13	71	20	84		
	Exhaust centre			0.50	0.48	0.15	0.47	0.43	0.13					
2 position	Single		M5	C4 One-touch fitting for ø4	0.72	0.29	0.18	0.64	0.34	0.17	60	15	67	
	Double				0.59	0.28	0.15	0.59	0.30	0.15	78	13	101	
3 position	Closed centre				0.63	0.35	0.16	0.42	0.34	0.11	81	20	94	
	Exhaust centre				0.76	0.42	0.21	0.59	0.29	0.15				
2 position	Single			M5	C6 One-touch fitting for ø6	0.76	0.30	0.19	0.65	0.39	0.17	56	15	63
	Double					0.76	0.55	0.24	0.60	0.33	0.16	74	13	87
3 position	Closed centre					0.65	0.32	0.16	0.64	0.31	0.17	77	20	90
	Exhaust centre					0.77	0.34	0.21	0.61	0.34	0.16			
	Pressure centre													

Series SY7000	Type of actuation		Port size		Flow characteristics						Weight (g)				
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→EA/EB)		Grom- met	Response times (m/s)	DIN terminal	W M8 connector			
			C (dm ³ / s-bar)	b	Cv	C (dm ³ / s-bar)	b	Cv							
	2 position	Single	1/4	C8 (One- touch fitting for ø8)	4.1	0.23	0.93	3.3	0.33	0.81	101	38	125	129	
		Double			2.9	0.31	0.70	2.4	0.38	0.63	120	30	167	175	
	3 position	Closed centre			2.5	0.39	0.65	3.4	0.35	0.82	128	56	175	183	
		Exhaust centre													
	3 position	Pressure centre			4.3	0.23	0.97	2.2	0.39	0.58					
		Pressure centre													
	2 position	Single			5, 3 (EA, EB) port 1/8	C10 (One- touch fitting for ø10)	3.2	0.26	0.77	3.2	0.37	0.82	107	38	131
Double		2.6					0.24	0.63	2.4	0.31	0.62	126	30	174	182
3 position	Closed centre	2.4	0.25	0.57			2.6	0.42	0.70	134	56	182	190		
	Exhaust centre														
3 position	Pressure centre	3.3	0.28	0.78			2.2	0.34	0.60						
	Pressure centre														
2 position	Single			3.8			0.26	0.86	3.2	0.34	0.82	103	38	126	130
	Double			2.8			0.27	0.67	2.4	0.21	0.59	122	30	169	177
3 position	Closed centre			2.5	0.25	0.59	2.7	0.38	0.70	130	56	177	185		
	Exhaust centre														
3 position	Pressure centre			3.8	0.25	0.89	2.3	0.38	0.61						
	Pressure centre														

Series SY5000	Type of actuation		Port size		Flow characteristics						Weight (g)							
			1, 5, 3 P, EA, EB	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	Response times (m/s)	DIN terminal	W M8 connector				
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv										
2 position	Single	1/8	1/8	1→4/2 (P→A/B)	1.9	0.35	0.49	2.4	0.39	0.61	70	26	93	97				
	Double				Closed centre				1.7	0.43	0.45	1.8	0.35	0.46	88	22	135	143
3 position	Exhaust centre			1→4/2 (P→A/B)	1.5	0.44	0.41	2.5 (1.5)	0.32 (0.43)	0.59 (0.40)	93	38	140	148				
	Pressure centre				2.2 (0.91)	0.46 (0.58)	0.61 (0.28)	1.8	0.38	0.46								
2 position	Single			1/8	C4 (One-touch fitting for ø4)	1→4/2 (P→A/B)	0.75	0.43	0.20	0.85	0.64	0.30	94 111	26 22	117 159	121 167		
	Double						Closed centre				0.74	0.40	0.19	0.84	0.57	0.28		
3 position	Exhaust centre					1→4/2 (P→A/B)	0.75	0.36	0.19	0.84 (0.84)	0.64 (0.53)	0.30 (0.27)	117	38	164	172		
	Pressure centre						0.78 (0.71)	0.44 (0.37)	0.21 (0.18)	0.84	0.57	0.27						
2 position	Single					1/8	C6 (One-touch fitting for ø6)	1→4/2 (P→A/B)	1.5	0.33	0.33	2.0	0.37	0.52	88 106	26 22	112 153	116 161
	Double								Closed centre				1.3	0.31	0.33	1.6	0.32	0.39
3 position	Exhaust centre							1→4/2 (P→A/B)	1.3	0.33	0.33	1.8 (1.4)	0.35 (0.37)	0.44 (0.35)	111	38	158	166
	Pressure centre								1.7 (0.80)	0.31 (0.47)	0.42 (0.23)	1.7	0.33	0.44				
2 position	Single	1/8	C8 (One-touch fitting for ø8)					1→4/2 (P→A/B)	1.9	0.21	0.45	2.3	0.29	0.57	80 98	26 22	103 145	107 153
	Double								Closed centre				1.6	0.29	0.39	1.7	0.38	0.46
3 position	Exhaust centre							1→4/2 (P→A/B)	1.4	0.38	0.39	2.0 (1.5)	0.37 (0.41)	0.52 (0.43)	103	38	150	158
	Pressure centre								2.2 (1.6)	0.32 (0.44)	0.56 (0.44)	1.8	0.41	0.50				

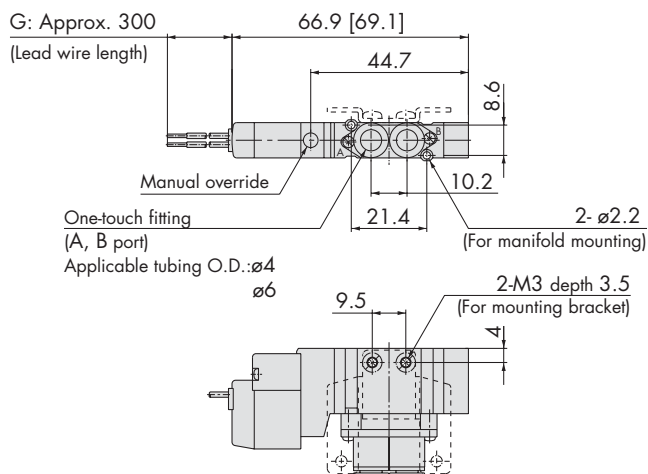
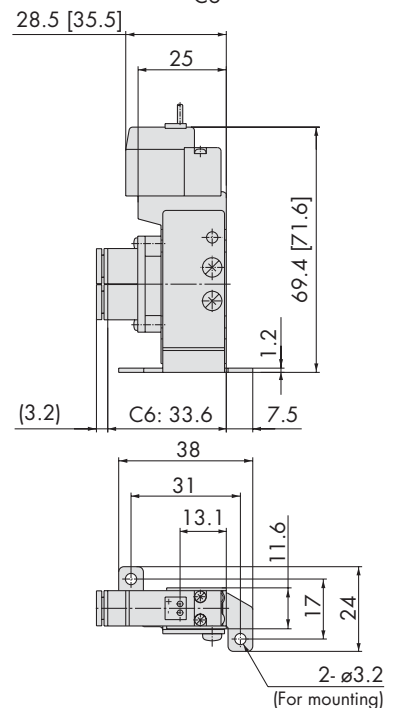
Series SY9000	Type of actuation		Port size		Flow characteristics						Weight (g)						
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grommet	Response times (m/s)	DIN terminal	W M8 connector			
					C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv							
	2 position	Single	1/4		7.0	0.33	1.7	7.6	0.35	2.0	241	41	265	269			
		Double			260	41	308	316									
	3 position	Closed centre			6.7	0.37	1.7	6.4	0.34	1.6							
		Exhaust centre			6.4	0.36	1.6	8.3 (4.1)	0.41 (0.27)	2.2 (0.91)	284	64	332	340			
		Pressure centre			8.0 (3.2)	0.27 (0.34)	1.8 (0.76)	6.5	0.22	1.4							
	2 position	Single			3/8		8.0	0.29	1.9	8.0	0.33	2.0	236	41	260	264	
		Double					255	41	303	311							
	3 position	Closed centre					7.9	0.33	1.9	6.6	0.27	1.6					
		Exhaust centre					8.0	0.33	1.9	8.7 (8.3)	0.34 (0.40)	2.2 (2.3)	279	64	327	335	
Pressure centre		8.9 (3.3)					0.34 (0.40)	2.2 (0.82)	6.5	0.25	1.5						
2 position	Single	C8 (One-touch fitting for ø8)					1/4	4.3	0.28	0.96	7.1	0.32	1.7	293	41	317	321
	Double							312	41	360	368						
3 position	Closed centre		4.3	0.31				0.99	6.1	0.28	1.4						
	Exhaust centre		4.3	0.3				0.99	7.4 (3.8)	0.36 (0.29)	1.9 (0.86)	336	64	384	392		
	Pressure centre		4.4 (3.2)	0.35 (0.26)				1.0 (0.71)	2.1	0.41	0.53						
2 position	Single		C10 (One-touch fitting for ø10)					6.1	0.28	1.4	7.9	0.33	1.9	279	41	303	307
	Double							298	41	346	354						
3 position	Closed centre				5.9	0.30		1.4	6.5	0.26	1.5						
	Exhaust centre				5.8	0.25		1.3	8.4 (4.1)	0.33 (0.27)	2.0 (0.93)	322	64	370	378		
	Pressure centre				6.3 (3.2)	0.29 (0.29)		1.5 (0.72)	6.4	0.25	1.5						
2 position	Single				C12 (One-touch fitting for ø12)			7.0	0.25	1.6	8.6	0.41	2.2	265	41	289	293
	Double							284	41	332	340						
3 position	Closed centre	6.9					0.24	1.6	7.0	0.33	1.7						
	Exhaust centre	6.6					0.23	1.4	9.4 (4.5)	0.48 (0.32)	2.6 (1.0)	308	64	356	364		
	Pressure centre	7.4 (3.7)					0.25 (0.34)	1.7 (0.74)	6.6	0.23	1.5						

Note 1: The weights given are for grommet entry and M8 plug. L/M connector and DIN plug weights fall between these options.

Note 2: Response time is 0.5MPa with Z type surge suppression.

Valves

Grommet (G): SY3120-□ G□□- $\frac{C4}{C6}$ - Q

SY3120-□ G □ □ - $\frac{C_4}{C_6}$ - Q

Technical drawing of the front view of the 1000 Series 1/2. The drawing shows a cylindrical component with a central bore. Key dimensions and features include:

- Overall length: 28.5 [35.5]
- Distance from front face to the start of the main bore: 25
- Main bore diameter: 22.5
- Distance from the start of the main bore to the center of the M5 port: 16.9
- Distance from the start of the main bore to the end of the component: 18.5
- Distance from the end of the component to the center of the M5 port: 23.5
- Thread specification: M5
- Port type: A, B port

Technical drawing of the C6 connector showing dimensions in mm and inches:

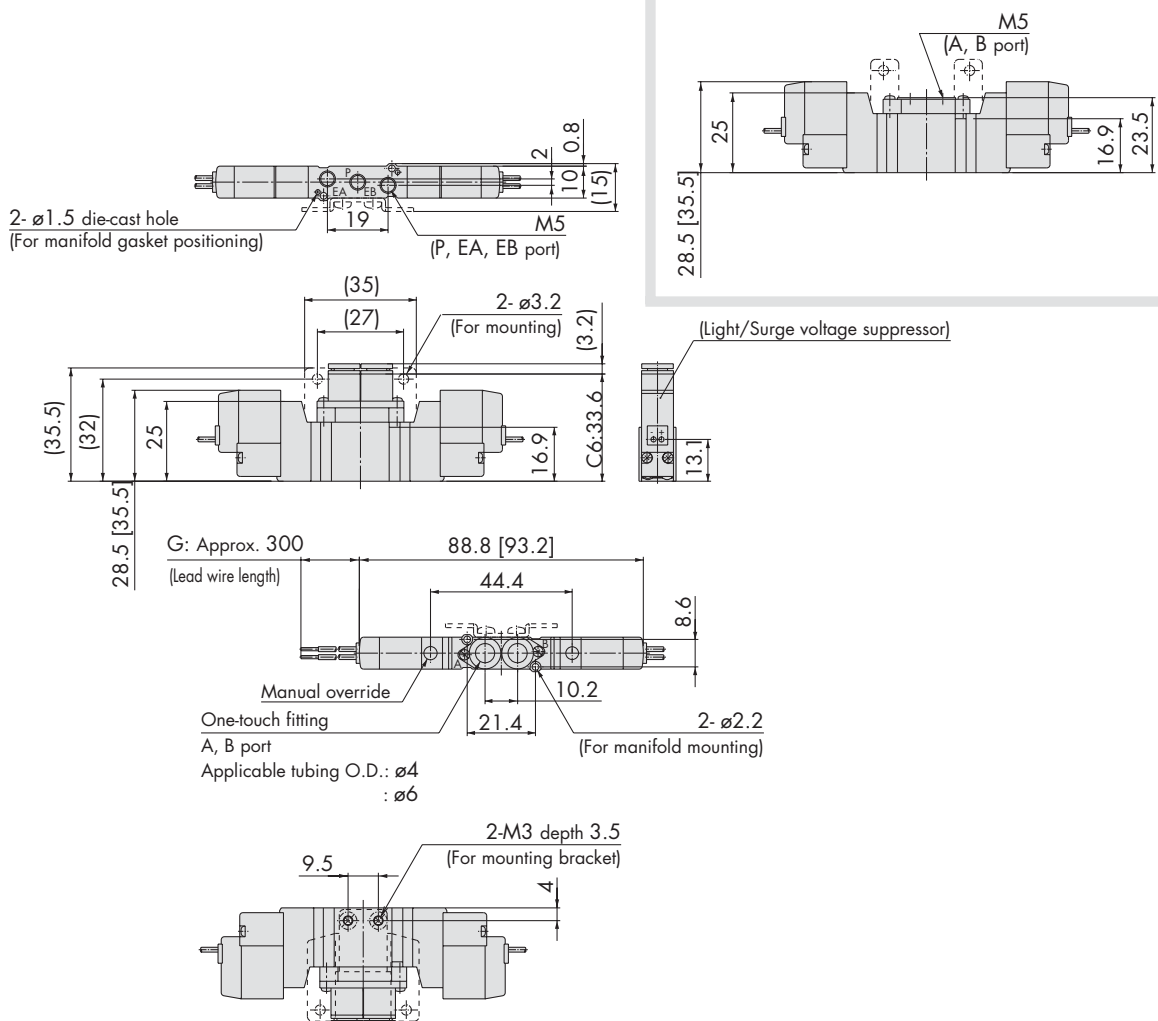
- Overall length: 28.5 [35.5]
- Lead wire length: Approx. 300 (Lead wire length)
- Distance from lead wire to main body: 13.1
- Distance from main body to base: 22.5
- Distance from base to bottom of connector: 16.9
- Distance from base to bottom of connector: 18.5
- Distance from base to bottom of connector: 76.8 [79]
- Distance from base to bottom of connector: C6: 33.6
- Distance from base to bottom of connector: (3.2)

Technical drawing of the front view of a shaft. The shaft has a total length of 100 mm. Key dimensions and features include:

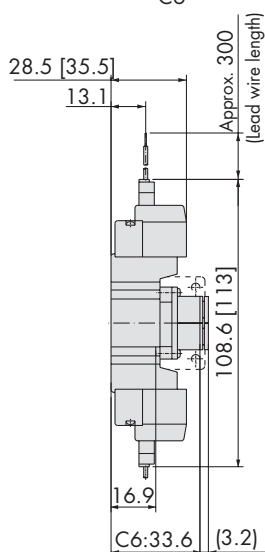
- Overall length: 100 mm
- Top diameter: 33 mm
- Distance from top to first step: 15.5 mm
- First step diameter: 22.5 mm
- Distance from first step to second step: 22.5 mm
- Second step diameter: 16.9 mm
- Distance from second step to third step: 18.5 mm
- Third step diameter: 16.9 mm
- Distance from third step to fourth step: 18.5 mm
- Fourth step diameter: 16.9 mm
- Distance from fourth step to fifth step: 18.5 mm
- Fifth step diameter: 16.9 mm
- Distance from fifth step to sixth step: 18.5 mm
- Sixth step diameter: 16.9 mm
- Distance from sixth step to seventh step: 18.5 mm
- Seventh step diameter: 16.9 mm
- Distance from seventh step to eighth step: 18.5 mm
- Eighth step diameter: 16.9 mm
- Distance from eighth step to ninth step: 18.5 mm
- Ninth step diameter: 16.9 mm
- Distance from ninth step to tenth step: 18.5 mm
- Tenth step diameter: 16.9 mm
- Distance from tenth step to eleventh step: 18.5 mm
- Eleventh step diameter: 16.9 mm
- Distance from eleventh step to twelfth step: 18.5 mm
- Twelfth step diameter: 16.9 mm
- Distance from twelfth step to thirteenth step: 18.5 mm
- Thirteenth step diameter: 16.9 mm
- Distance from thirteenth step to fourteenth step: 18.5 mm
- Fourteenth step diameter: 16.9 mm
- Distance from fourteenth step to fifteenth step: 18.5 mm
- Fifteenth step diameter: 16.9 mm
- Distance from fifteenth step to sixteenth step: 18.5 mm
- Sixteenth step diameter: 16.9 mm
- Distance from sixteenth step to seventeenth step: 18.5 mm
- Seventeenth step diameter: 16.9 mm
- Distance from seventeenth step to eighteenth step: 18.5 mm
- Eighteenth step diameter: 16.9 mm
- Distance from eighteenth step to nineteenth step: 18.5 mm
- Nineteenth step diameter: 16.9 mm
- Distance from nineteenth step to twentieth step: 18.5 mm
- Twentieth step diameter: 16.9 mm
- Distance from twentieth step to twenty-first step: 18.5 mm
- Twenty-first step diameter: 16.9 mm
- Distance from twenty-first step to twenty-second step: 18.5 mm
- Twenty-second step diameter: 16.9 mm
- Distance from twenty-second step to twenty-third step: 18.5 mm
- Twenty-third step diameter: 16.9 mm
- Distance from twenty-third step to twenty-fourth step: 18.5 mm
- Twenty-fourth step diameter: 16.9 mm
- Distance from twenty-fourth step to twenty-fifth step: 18.5 mm
- Twenty-fifth step diameter: 16.9 mm
- Distance from twenty-fifth step to twenty-sixth step: 18.5 mm
- Twenty-sixth step diameter: 16.9 mm
- Distance from twenty-sixth step to twenty-seventh step: 18.5 mm
- Twenty-seventh step diameter: 16.9 mm
- Distance from twenty-seventh step to twenty-eighth step: 18.5 mm
- Twenty-eighth step diameter: 16.9 mm
- Distance from twenty-eighth step to twenty-ninth step: 18.5 mm
- Twenty-ninth step diameter: 16.9 mm
- Distance from twenty-ninth step to thirtieth step: 18.5 mm
- Thirtieth step diameter: 16.9 mm
- Distance from thirtieth step to thirty-first step: 18.5 mm
- Thirty-first step diameter: 16.9 mm
- Distance from thirty-first step to thirty-second step: 18.5 mm
- Thirty-second step diameter: 16.9 mm
- Distance from thirty-second step to thirty-third step: 18.5 mm
- Thirty-third step diameter: 16.9 mm
- Distance from thirty-third step to thirty-fourth step: 18.5 mm
- Thirty-fourth step diameter: 16.9 mm
- Distance from thirty-fourth step to thirty-fifth step: 18.5 mm
- Thirty-fifth step diameter: 16.9 mm
- Distance from thirty-fifth step to thirty-sixth step: 18.5 mm
- Thirty-sixth step diameter: 16.9 mm
- Distance from thirty-sixth step to thirty-seventh step: 18.5 mm
- Thirty-seventh step diameter: 16.9 mm
- Distance from thirty-seventh step to thirty-eighth step: 18.5 mm
- Thirty-eighth step diameter: 16.9 mm
- Distance from thirty-eighth step to thirty-ninth step: 18.5 mm
- Thirty-ninth step diameter: 16.9 mm
- Distance from thirty-ninth step to fortieth step: 18.5 mm
- Fortieth step diameter: 16.9 mm
- Distance from fortieth step to forty-first step: 18.5 mm
- Forty-first step diameter: 16.9 mm
- Distance from forty-first step to forty-second step: 18.5 mm
- Forty-second step diameter: 16.9 mm
- Distance from forty-second step to forty-third step: 18.5 mm
- Forty-third step diameter: 16.9 mm
- Distance from forty-third step to forty-fourth step: 18.5 mm
- Forty-fourth step diameter: 16.9 mm
- Distance from forty-fourth step to forty-fifth step: 18.5 mm
- Forty-fifth step diameter: 16.9 mm
- Distance from forty-fifth step to forty-sixth step: 18.5 mm
- Forty-sixth step diameter: 16.9 mm
- Distance from forty-sixth step to forty-seventh step: 18.5 mm
- Forty-seventh step diameter: 16.9 mm
- Distance from forty-seventh step to forty-eighth step: 18.5 mm
- Forty-eighth step diameter: 16.9 mm
- Distance from forty-eighth step to forty-ninth step: 18.5 mm
- Forty-ninth step diameter: 16.9 mm
- Distance from forty-ninth step to fiftieth step: 18.5 mm
- Fiftieth step diameter: 16.9 mm
- Distance from fiftieth step to fifty-first step: 18.5 mm
- Fifty-first step diameter: 16.9 mm
- Distance from fifty-first step to fifty-second step: 18.5 mm
- Fifty-second step diameter: 16.9 mm
- Distance from fifty-second step to fifty-third step: 18.5 mm
- Fifty-third step diameter: 16.9 mm
- Distance from fifty-third step to fifty-fourth step: 18.5 mm
- Fifty-fourth step diameter: 16.9 mm
- Distance from fifty-fourth step to fifty-fifth step: 18.5 mm
- Fifty-fifth step diameter: 16.9 mm
- Distance from fifty-fifth step to fifty-sixth step: 18.5 mm
- Fifty-sixth step diameter: 16.9 mm
- Distance from fifty-sixth step to fifty-seventh step: 18.5 mm
- Fifty-seventh step diameter: 16.9 mm
- Distance from fifty-seventh step to fifty-eighth step: 18.5 mm
- Fifty-eighth step diameter: 16.9 mm
- Distance from fifty-eighth step to fifty-ninth step: 18.5 mm
- Fifty-ninth step diameter: 16.9 mm
- Distance from fifty-ninth step to sixtieth step: 18.5 mm
- Sixtieth step diameter: 16.9 mm
- Distance from sixtieth step to sixty-first step: 18.5 mm
- Sixty-first step diameter: 16.9 mm
- Distance from sixty-first step to sixty-second step: 18.5 mm
- Sixty-second step diameter: 16.9 mm
- Distance from sixty-second step to sixty-third step: 18.5 mm
- Sixty-third step diameter: 16.9 mm
- Distance from sixty-third step to sixty-fourth step: 18.5 mm
- Sixty-fourth step diameter: 16.9 mm
- Distance from sixty-fourth step to sixty-fifth step: 18.5 mm
- Sixty-fifth step diameter: 16.9 mm
- Distance from sixty-fifth step to sixty-sixth step: 18.5 mm
- Sixty-sixth step diameter: 16.9 mm
- Distance from sixty-sixth step to sixty-seventh step: 18.5 mm
- Sixty-seventh step diameter: 16.9 mm
- Distance from sixty-seventh step to sixty-eighth step: 18.5 mm
- Sixty-eighth step diameter: 16.9 mm
- Distance from sixty-eighth step to sixty-ninth step: 18.5 mm
- Sixty-ninth step diameter: 16.9 mm
- Distance from sixty-ninth step to seventieth step: 18.5 mm
- Seventieth step diameter: 16.9 mm
- Distance from seventieth step to seventy-first step: 18.5 mm
- Seventy-first step diameter: 16.9 mm
- Distance from seventy-first step to seventy-second step: 18.5 mm
- Seventy-second step diameter: 16.9 mm
- Distance from seventy-second step to seventy-third step: 18.5 mm
- Seventy-third step diameter: 16.9 mm
- Distance from seventy-third step to seventy-fourth step: 18.5 mm
- Seventy-fourth step diameter: 16.9 mm
- Distance from seventy-fourth step to seventy-fifth step: 18.5 mm
- Seventy-fifth step diameter: 16.9 mm
- Distance from seventy-fifth step to seventy-sixth step: 18.5 mm
- Seventy-sixth step diameter: 16.9 mm
- Distance from seventy-sixth step to seventy-seventh step: 18.5 mm
- Seventy-seventh step diameter: 16.9 mm
- Distance from seventy-seventh step to seventy-eighth step: 18.5 mm
- Seventy-eighth step diameter: 16.9 mm
- Distance from seventy-eighth step to seventy-ninth step: 18.5 mm
- Seventy-ninth step diameter: 16.9 mm
- Distance from seventy-ninth step to eightieth step: 18.5 mm
- Eightieth step diameter: 16.9 mm
- Distance from eightieth step to eighty-first step: 18.5 mm
- Eighty-first step diameter: 16.9 mm
- Distance from eighty-first step to eighty-second step: 18.5 mm
- Eighty-second step diameter: 16.9 mm
- Distance from eighty-second step to eighty-third step: 18.5 mm
- Eighty-third step diameter: 16.9 mm
- Distance from eighty-third step to eighty-fourth step: 18.5 mm
- Eighty-fourth step diameter: 16.9 mm
- Distance from eighty-fourth step to eighty-fifth step: 18.5 mm
- Eighty-fifth step diameter: 16.9 mm
- Distance from eighty-fifth step to eighty-sixth step: 18.5 mm
- Eighty-sixth step diameter: 16.9 mm
- Distance from eighty-sixth step to eighty-seventh step: 18.5 mm
- Eighty-seventh step diameter: 16.9 mm
- Distance from eighty-seventh step to eighty-eighth step: 18.5 mm
- Eighty-eighth step diameter: 16.9 mm
- Distance from eighty-eighth step to eighty-ninth step: 18.5 mm
- Eighty-ninth step diameter: 16.9 mm
- Distance from eighty-ninth step to ninetieth step: 18.5 mm
- Ninetieth step diameter: 16.9 mm
- Distance from ninetieth step to one hundredth step: 18.5 mm
- One hundredth step diameter: 16.9 mm
- Distance from one hundredth step to one hundred and first step: 18.5 mm
- One hundred and first step diameter: 16.9 mm
- Distance from one hundred and first step to one hundred and second step: 18.5 mm
- One hundred and second step diameter: 16.9 mm
- Distance from one hundred and second step to one hundred and third step: 18.5 mm
- One hundred and third step diameter: 16.9 mm
- Distance from one hundred and third step to one hundred and fourth step: 18.5 mm
- One hundred and fourth step diameter: 16.9 mm
- Distance from one hundred and fourth step to one hundred and fifth step: 18.5 mm
- One hundred and fifth step diameter: 16.9 mm
- Distance from one hundred and fifth step to one hundred and sixth step: 18.5 mm
- One hundred and sixth step diameter: 16.9 mm
- Distance from one hundred and sixth step to one hundred and seventh step: 18.5 mm

Dimensions: Series SY3000

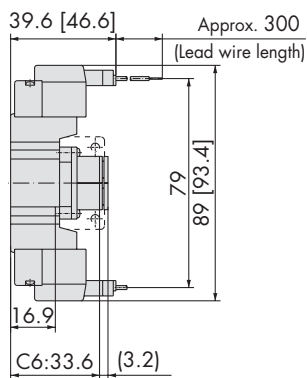
2 position double
Grommet (G): SY3220-□G□□-C₆⁴-Q



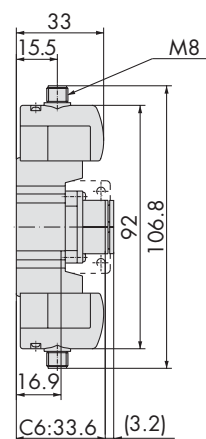
L plug connector (L):
SY3220-□L□□-C₆⁴-Q



M plug connector (M):
SY3220-□M□□-C₆⁴-Q



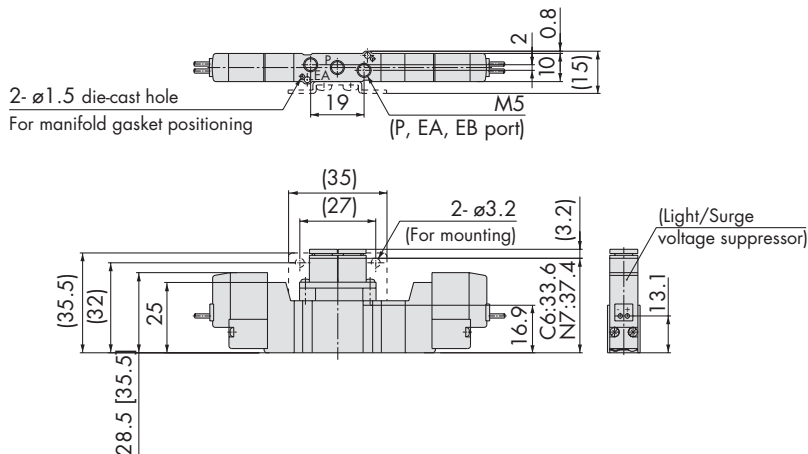
M8 connector (WO):
SY3220-WO□□-C₆⁴-Q



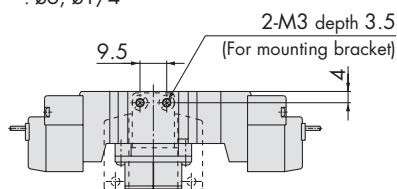
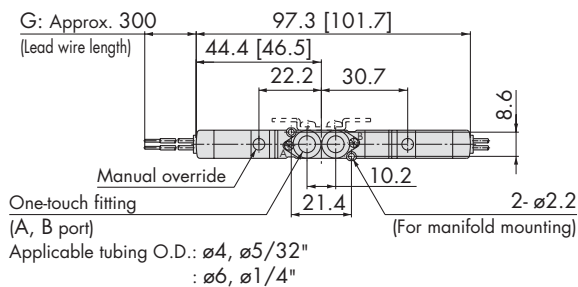
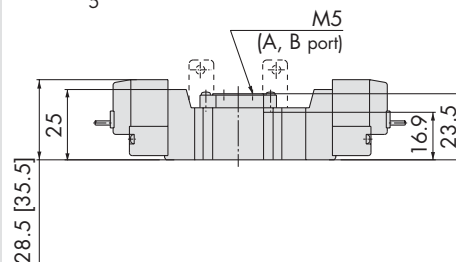
Dimensions: Series SY3000

3 position closed centre/exhaust centre/pressure centre

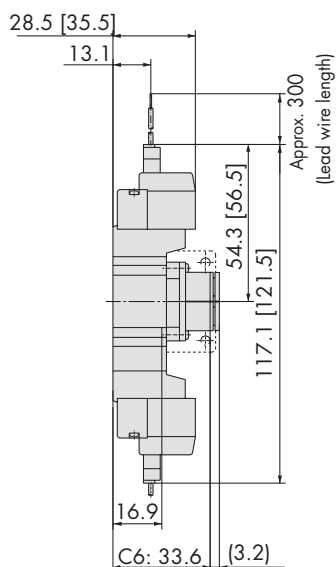
Grommet (G): SY3 $\frac{3}{5}$ 20-□G□□-C $\frac{4}{6}$ -Q



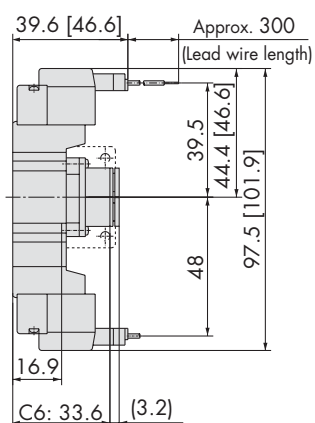
SY3 $\frac{3}{5}$ 20-□G□□-M5-Q



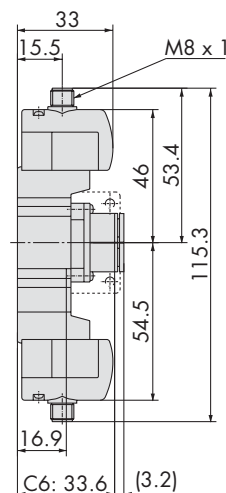
L plug connector (L):
SY3 $\frac{3}{5}$ 20-□L□□-C $\frac{4}{6}$ -Q



M plug connector (M):
SY3 $\frac{3}{5}$ 20-□M□□-C $\frac{4}{6}$ -Q



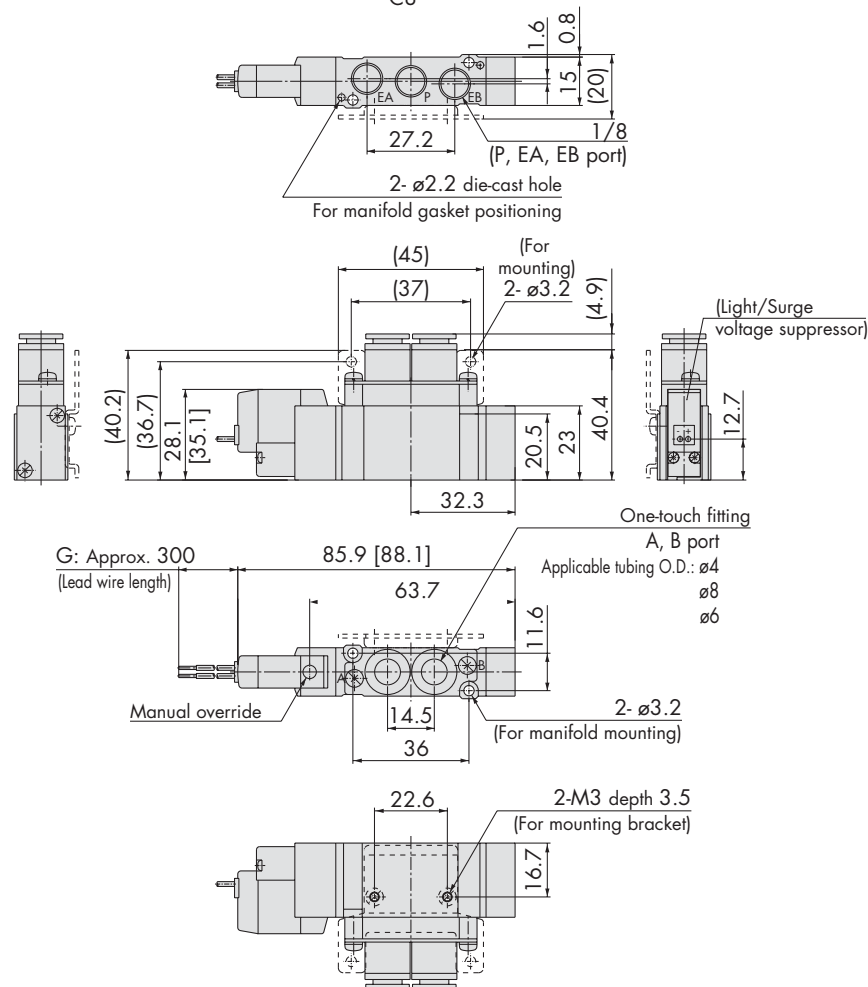
M8 connector (WO):
SY3 $\frac{3}{5}$ 20-□WO□□-C $\frac{4}{6}$ -Q



Dimensions: Series SY5000

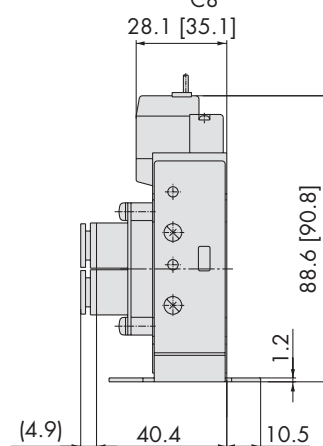
2 position single

Grommet (G): SY5120-□G□□-□
C4
C6
C8 -Q

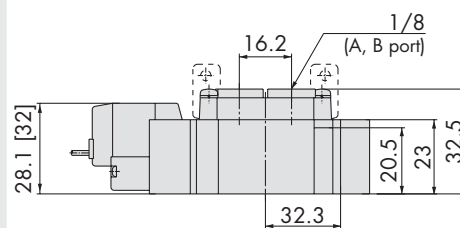


Foot bracket

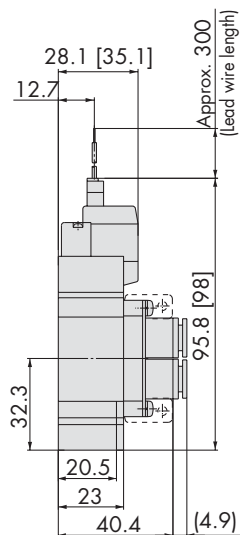
SY5120-□G□□-□
C4
C6
C8 -Q



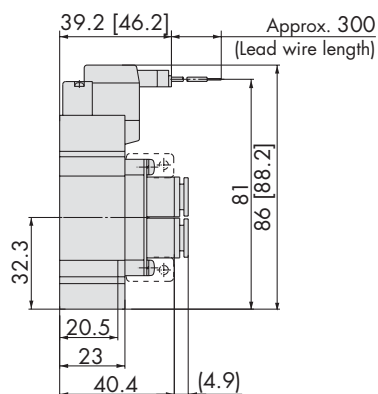
SY5120-□G□□-01□-Q



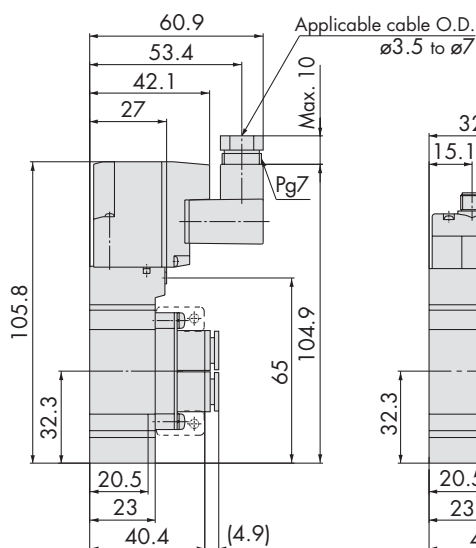
L plug connector: L
SY5120-□□□-□
C4
C6
C8 -Q



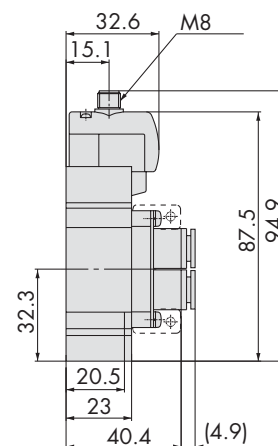
M plug connector: M
SY5120-□M□□-□
C4
C6
C8 -Q



DIN terminal (D):
SY5120-□□□-□
C4
C6
C8 -Q



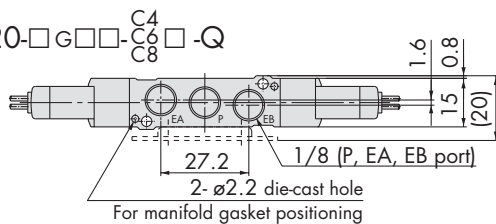
M8 connector (WO):
SY5120-□WO□□-□
C4
C6
C8 -Q



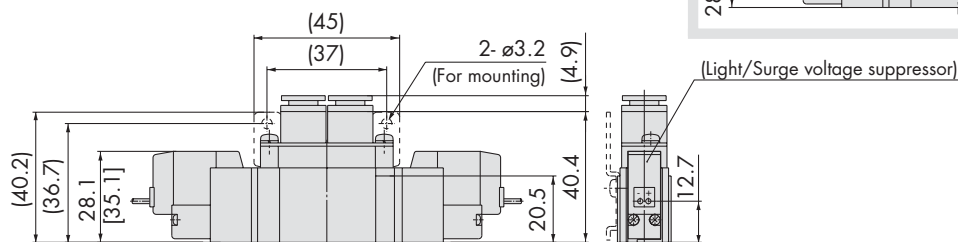
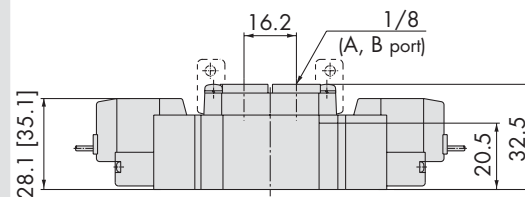
Dimensions: Series SY5000

2 position double

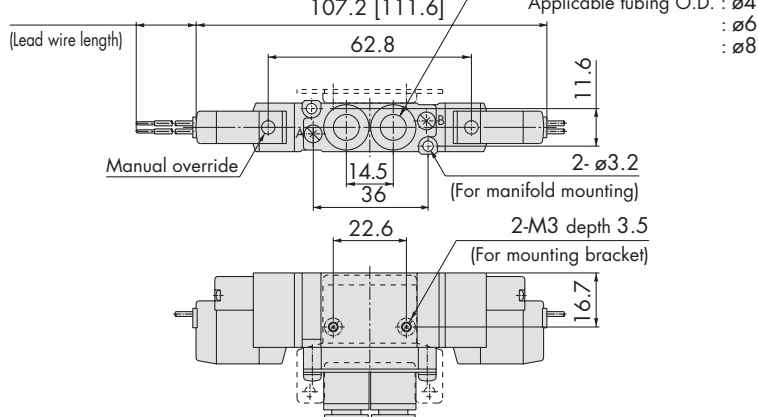
Grommet (G): SY5220-□G□□-C4-C6□-Q



SY5220-□G□□-01□-Q



G: Approx. 300

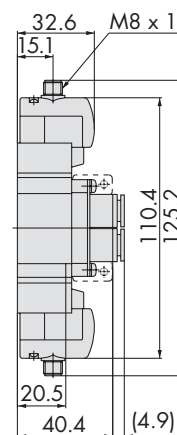
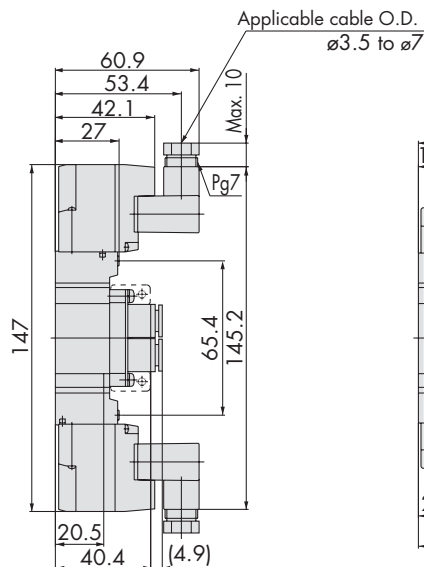
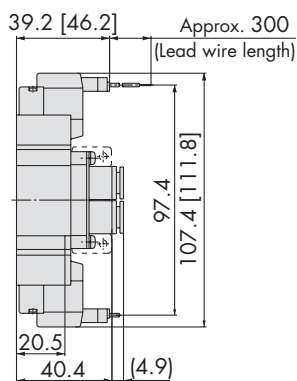
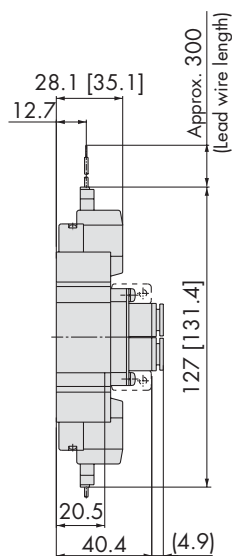


L plug connector: L
SY5220-□L□□-C4-C6□-Q

M plug connector: M
SY5220-□M□□-C4-C6□-Q

DIN terminal (D):
SY5220-□D□□-C4-C6□-Q

M8 connector (WO):
SY5220-□WO□□-C4-C6□-Q

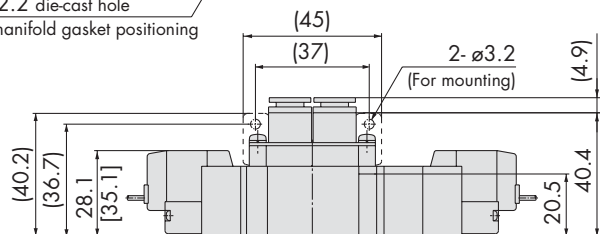
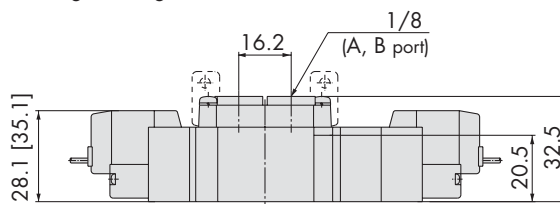
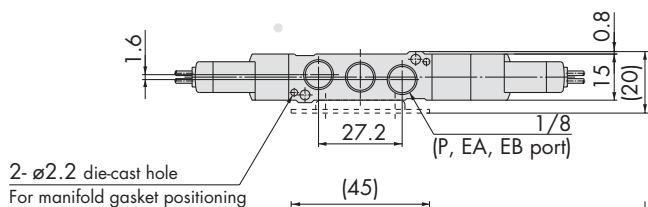


Dimensions: Series SY5000

3 position closed centre/exhaust centre/pressure centre

Grommet (G): SY5 $\frac{3}{5}$ 420-□□□-C $\frac{4}{8}$ □-Q

SY5 $\frac{3}{5}$ 420-□ $\frac{3}{5}$ □□-01□-Q

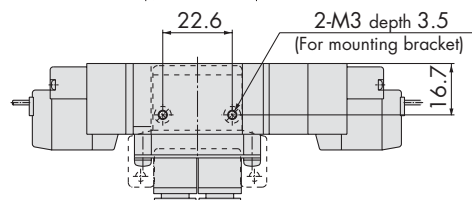


(Light/Surge voltage suppressor)



G: Approx. 300
(Lead wire length)

Manual override



L plug connector: L

SY5 $\frac{3}{5}$ 420-□□□-C $\frac{4}{8}$ □-Q

M plug connector: M

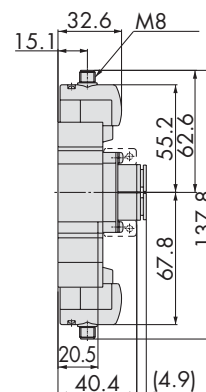
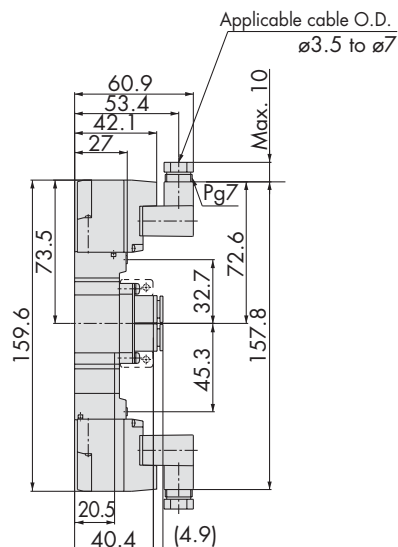
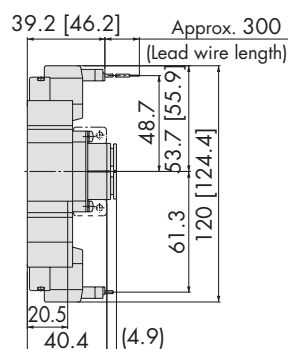
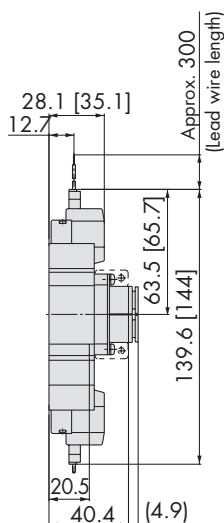
SY5 $\frac{3}{5}$ 420-□M□□-C $\frac{4}{8}$ □-Q

DIN terminal (D):

SY5 $\frac{3}{5}$ 420-□D□□-C $\frac{4}{8}$, N $\frac{3}{9}$ □(F2)

M8 connector (WO):

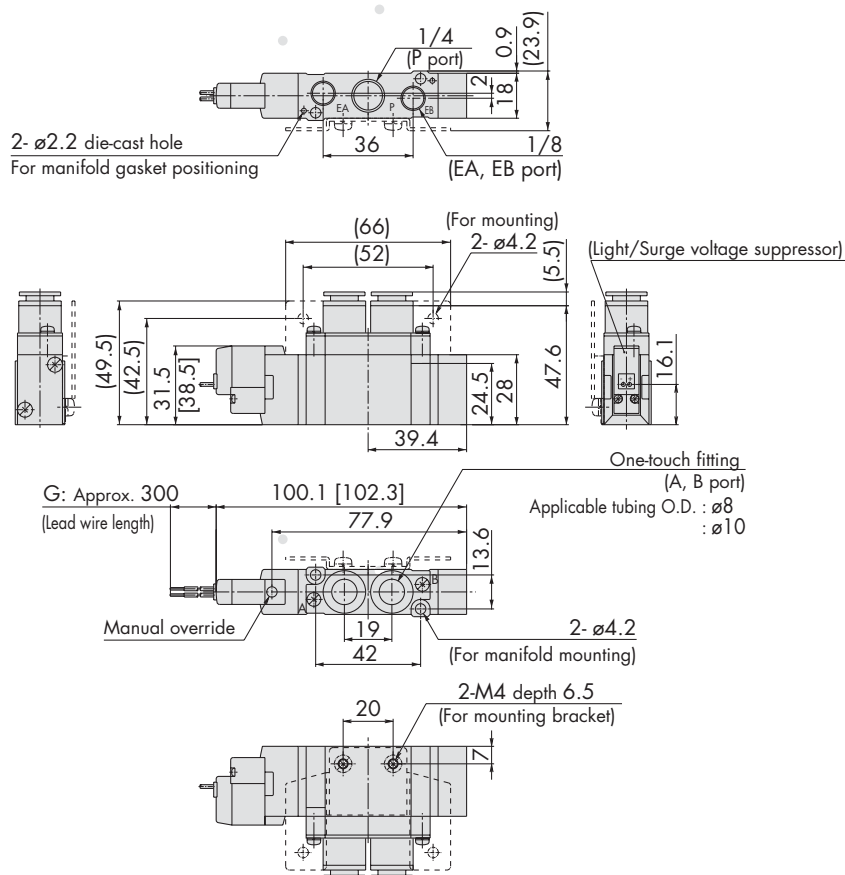
SY5 $\frac{3}{5}$ 420-□WO□□-C $\frac{4}{8}$ □-Q



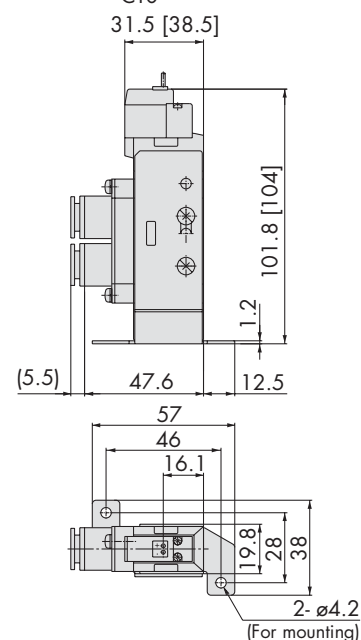
Dimensions: Series SY7000

2 position single

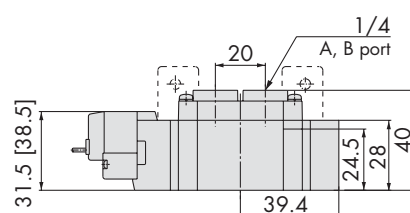
Grommet (G): SY7120-□G□□-C₈-Q



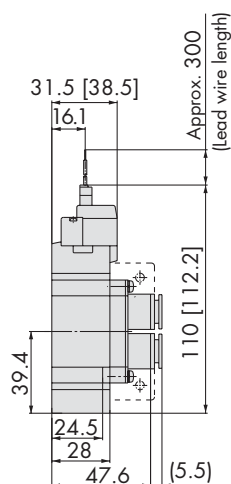
SY7120-□G□□-C₈-Q



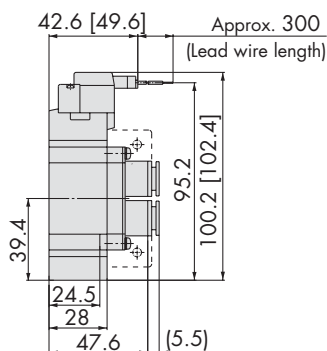
SY7120-□G□□-02□-Q



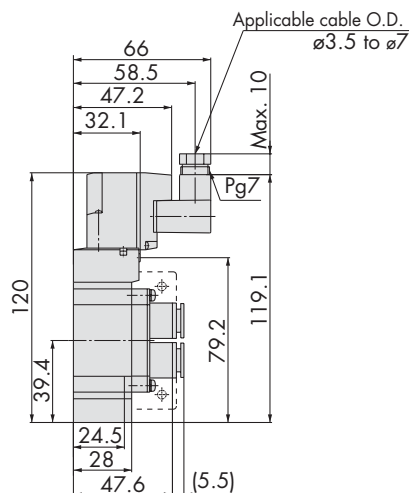
L plug connector (L) :
SY7120-□L□□-C₈-Q



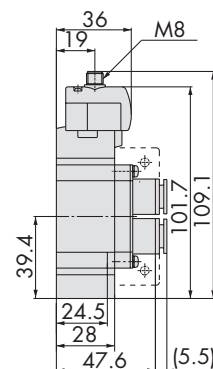
M plug connector (M):
SY7120-□M□□-C₈-Q



DIN terminal (D):
SY7120-□D□□-C₈-Q



M8 connector (WO):
SY7120-□WO□□-C₈-Q

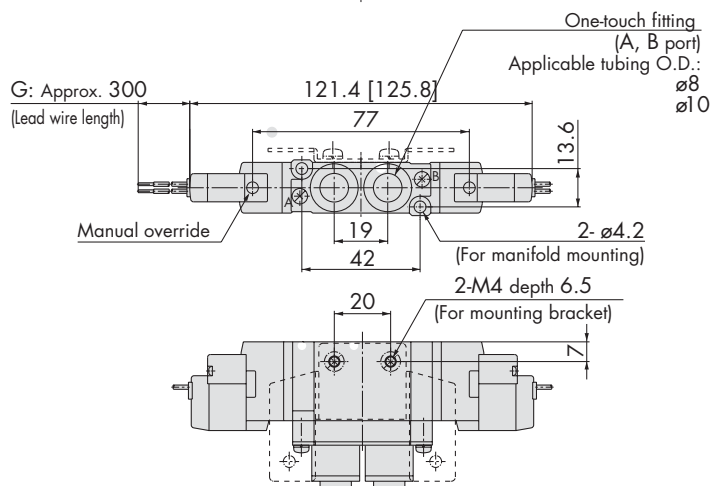
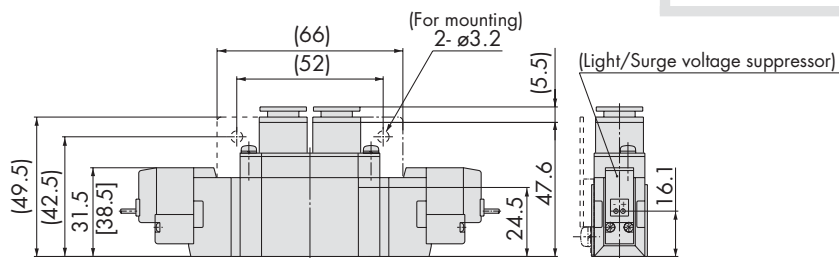
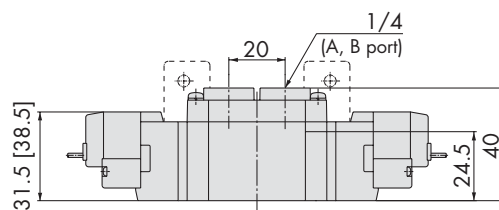
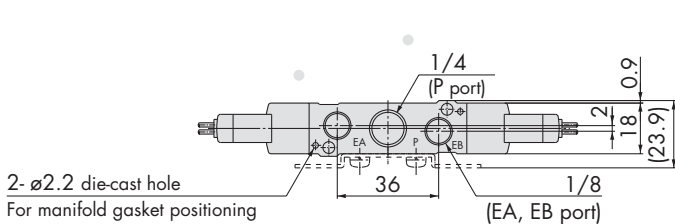


Dimensions: Series SY7000

2 position double

Grommet (G): SY7220-□G□□-C8-C10-Q

SY7220-□G□□-02□-Q

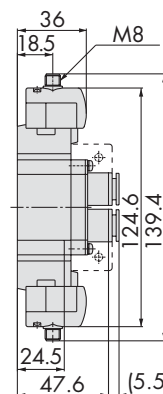
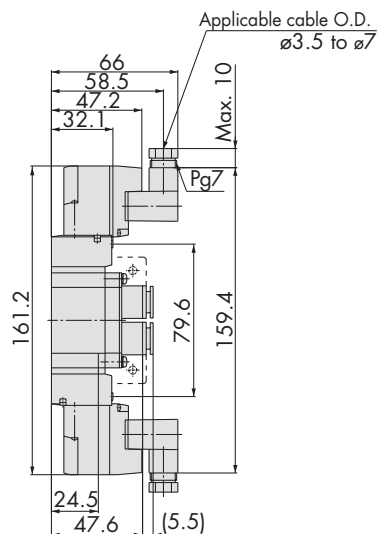
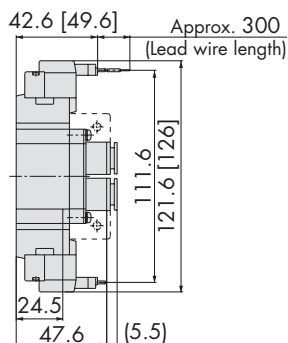
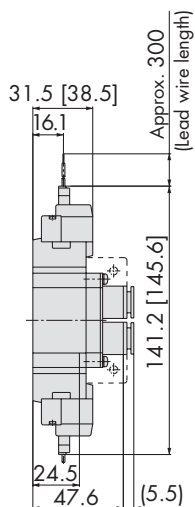


L plug connector (L):
SY7220-□L□□-C8-C10-Q

M plug connector (M):
SY7220-□M□□-C8-C10-Q

DIN terminal (D):
SY7220-□D□□-C8-C10-Q

M8 connector (WO):
SY7220-□WO□□-C8-C10-Q

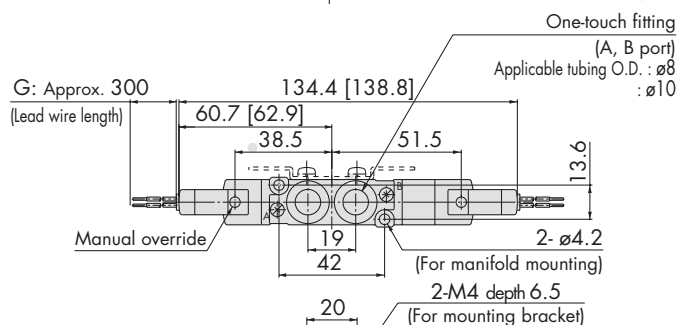
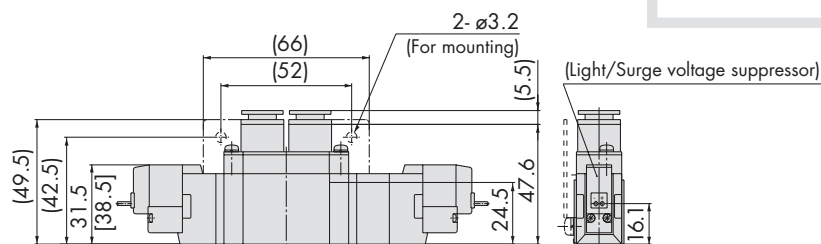
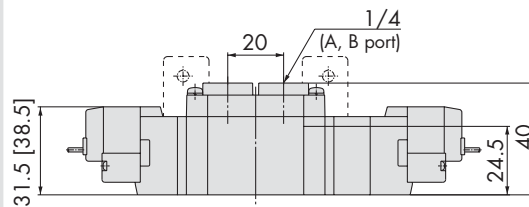
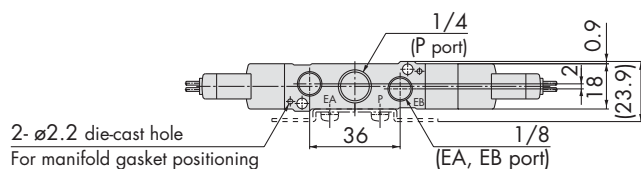


Dimensions: Series SY7000

3 position closed centre/exhaust centre/pressure centre

Grommet (G): SY7 $\frac{3}{5}$ 20-□G□□-C $\frac{8}{10}$ -Q

SY7 $\frac{3}{5}$ 20-□G□□-02□-Q

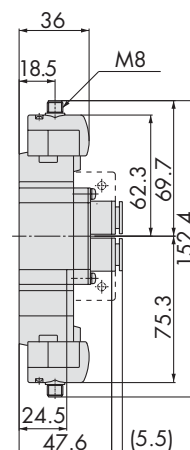
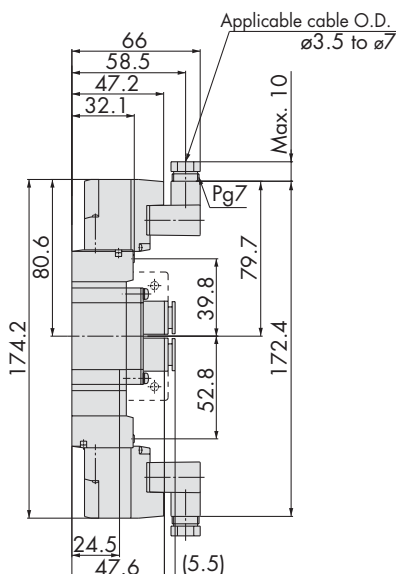
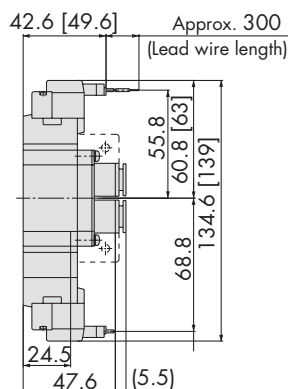
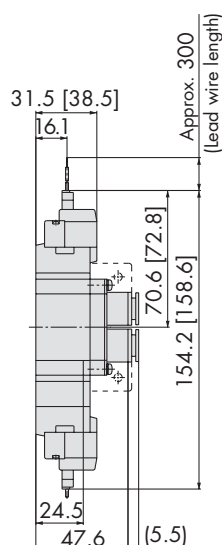


L plug connector (L):
SY7 $\frac{3}{5}$ 20-□L□□-C $\frac{8}{10}$ -Q

M plug connector (M):
SY7 $\frac{3}{5}$ 20-□M□□-C $\frac{8}{10}$ -Q

DIN terminal (D):
SY7 $\frac{3}{5}$ 20-□D□□-C $\frac{8}{10}$ -Q

M8 connector (WO):
SY7 $\frac{3}{5}$ 20-□WO□□-C $\frac{8}{10}$ -Q



Base Mounted Valve Single Unit

Series SY3/5/7/9000



Features

- Four available sizes
- Internal pilot designs
- Wide range of electrical connector options
- Locking manual overrides are possible
- Huge range of sub-bases and manifolds can be ordered



How to Order

SY **5** **2** 40 — **5** **L** — **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

Pilot type

Nil	Internal pilot
R	External pilot

Rated voltage

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

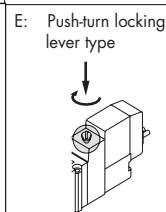
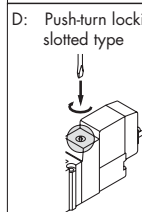
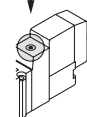
AC (50/60 Hz)

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

Note: AC voltages can only be specified in conjunction with a DIN plug (Y) entry

Manual override

Nil: Non-locking push type



Symbols

1	2 position single (A)(B) 4 2 (EA)(P)(EB)
2	2 position double (A)(B) 4 2 (EA)(P)(EB)
3	3 position closed centre (A)(B) 4 2 (EA)(P)(EB)
4	3 position exhaust centre (A)(B) 4 2 (EA)(P)(EB)
5	3 position pressure centre (A)(B) 4 2 (EA)(P)(EB)

(Light/Surge voltage suppressor)

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

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

Electrical entry for D

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

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	LO: Without connector	MO: Without connector	(Except SY3000) D: With connector	WO: Without connector cable		

Accessories for Base Mounted SY Valves

Valve type	Single Subbase part no.	Subbase part size
SY3*40 valves	SY3000-27-1F-Q	G 1/8
SY5*40 valves	SY5000-27-1F-Q	G 1/4
SY7*40 valves	SY7000-27-1F-Q	G 1/4
SY7*40 valves	SY7000-27-2F-Q	G 3/8
SY9*40 valves	SY9000-27-1F-Q	G 3/8
SY9*40 valves	SY9000-27-2F-Q	G 1/2

Electrical connectors are common to SY body ported valves.

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			
External pilot Operating pressure range (MPa)	Operating pressure range		-100 kPa to 0.7			
	Pilot pressure range	2 position single	0.25 to 0.7			
		2 position double	0.25 to 0.7			
		3 position	0.25 to 0.7			
Ambient and fluid temperature (°C)			-10 to 50 (No freezing)			
Max. operating frequency (Hz)	2 position single, double		10	5	5	5
	3 position		3	3	3	3
Manual override (Manual operation)			Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method	Internal pilot		Common exhaust type for main and pilot valve			
	External pilot		Pilot valve individual exhaust			
Lubrication			Not required			
Mounting orientation			Unrestricted			
Enclosure			Dustproof (* DIN terminal, M8 connector conforms to IP65)			

Response Time

SY3000

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

SY5000

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

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	Without light/surge voltage suppressor		With light/surge voltage suppressor	
	Type Z	Type U	Type Z	Type U
2 position single	31 or less	38 or less	33 or less	41 or less
2 position double	27 or less	30 or less	28 or less	35 or less
3 position	50 or less	56 or less	50 or less	62 or less

SY9000

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

Solenoid Specifications

Electrical entry			Grommet (G), (H) L plug connector: L M plug connector: M DIN terminal (D) (Y) M8 connector (W)
Coil rated voltage (V)	DC		24, 12, 6, 5, 3
	AC 50/60 Hz		100, 110, 200, 220 *
Allowable voltage fluctuation (%)			±10% of rated voltage
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)
Apparent power	AC	100 V	1.4 (With indicator light: 1.5)
		110 V	1.6 (With indicator light: 1.7)
		200 V	2.3 (With indicator light: 2.4)
		220 V	2.5 (With indicator light: 2.6)
		[230 V]	2.7 (With indicator light: 2.8)
Surge voltage suppressor			Diode (Varistor is for DIN terminal and Non-polar type.)
Indicator light			LED (AC of DIN terminal is neon bulb.)

Flow Characteristics/Weight

Series SY3000	Type of actuation		Port size	Flow characteristics						Weight (g)		
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	Response times (m/s)	W M8 connector
				C (dm ³ /s·bar)	b	Cv	C (dm ³ /s·bar)	b	Cv			
	2 position	Single										
		Double		1.0	0.30	0.24	1.1	0.30	0.26	84 (50)	15	89 (57)
		Closed centre		0.77	0.28	0.18	0.85	0.30	0.19	102 (68)	13	115 (81)
	3 position	Exhaust centre	1/8	0.73	0.31	0.18	1.1	0.26	0.24	104 (69)	20	117 (82)
		Pressure centre		1.2	0.24	0.29	0.89	0.47	0.24			

Series SY5000	Type of actuation		Port size	Flow characteristics						Weight (g)		
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	Response times (m/s)	W M8 connector
				C (dm ³ /s·bar)	b	Cv	C (dm ³ /s·bar)	b	Cv			
	2 position	Single										
		Double		2.4	0.41	0.64	2.8	0.29	0.66	121 (58)	26	127 (65)
		Closed centre		1.8	0.47	0.50	1.8	0.40	0.47	139 (76)	22	152 (89)
	3 position	Exhaust centre	1/4	1.4	0.55	0.44	3.0	0.33	0.72	144 (82)	38	158 (95)
		Pressure centre		3.3	0.36	0.85	1.8	0.40	0.48			

Series SY7000	Type of actuation		Port size	Flow characteristics						Weight (g)		
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	Response times (m/s)	W M8 connector
				C (dm ³ /s·bar)	b	Cv	C (dm ³ /s·bar)	b	Cv			
	2 position	Single										
		Double		4.1	0.41	1.1	4.1	0.29	1.0	218 (89)	38	225 (96)
		Closed centre		3.0	0.43	0.80	2.6	0.41	0.72	237 (108)	30	250 (121)
	3 position	Exhaust centre	1/4	2.6	0.42	0.71	4.7	0.35	1.1	239 (110)	56	253 (124)
		Pressure centre		5.3	0.39	1.3	2.2	0.49	0.63			
	2 position	Single		4.9	0.29	1.2	4.5	0.27	1.1	218 (89)	38	225 (96)
		Double		3.0	0.40	0.80	2.6	0.45	0.73	237 (108)	30	250 (121)
	3 position	Exhaust centre	3/8	2.6	0.42	0.71	4.8	0.35	1.1	239 (110)	56	253 (124)
		Pressure centre		5.3	0.31	1.3	2.3	0.45	0.66			

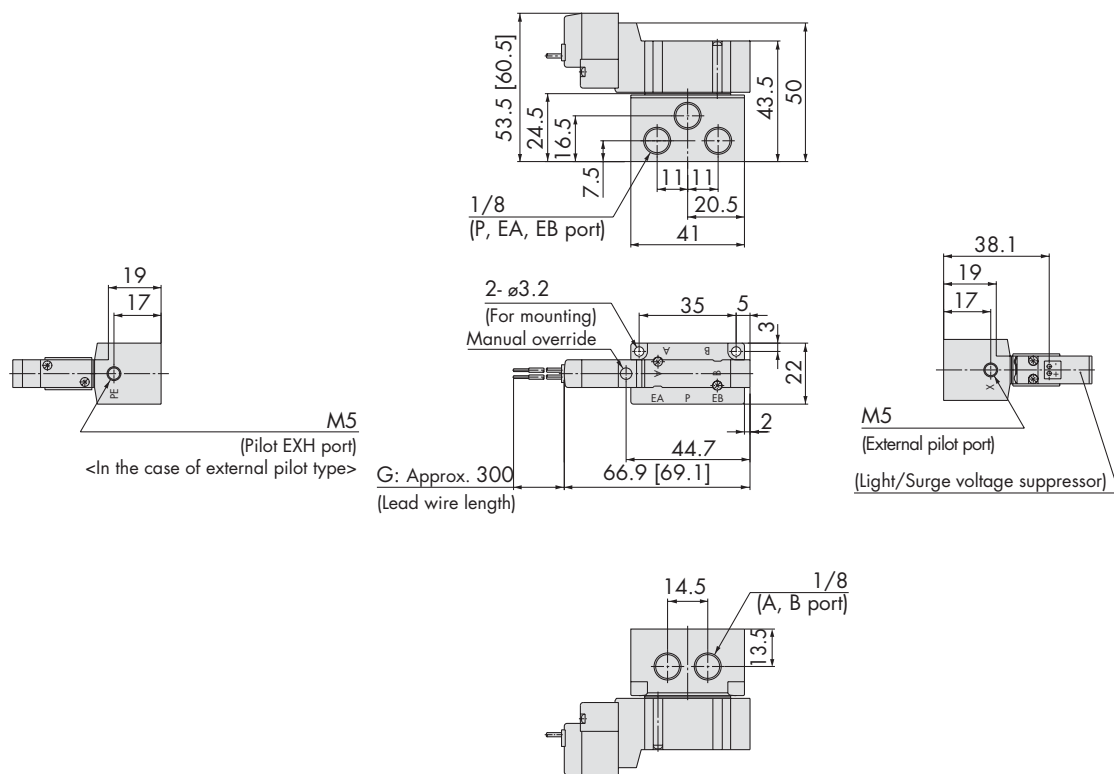
Series SY9000	Type of actuation		Port size	Flow characteristics						Weight (g)		
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	Response times (m/s)	W M8 connector
				C (dm ³ /s·bar)	b	Cv	C (dm ³ /s·bar)	b	Cv			
	2 position	Single										
		Double		7.9	0.34	2.0	9.6	0.43	2.6	469(172)	41	476(179)
		Closed centre		7.5	0.33	1.8	7.3	0.30	1.7	488(191)	41	502(205)
	3 position	Exhaust centre	3/8	7.2	0.34	1.7	13	0.23	2.8	512(215)	64	526(229)
		Pressure centre		12	0.26	2.8	6.7	0.40	1.9			
	2 position	Single		8.0	0.48	2.2	10	0.29	2.5	448 (151)	41	457(160)
		Double		7.6	0.32	1.8	7.3	0.32	1.8	467 (170)	41	481(184)
	3 position	Exhaust centre	1/2	7.3	0.42	2.0	13	0.32	3.6	491 (194)	64	505(208)
		Pressure centre		12	0.33	3.3	7.4	0.33	1.9			

Note: Weights given for grommet and M8 connector. L/M connector and DIN version weights fall between these values.
Response time is 0.5 MPa with Z lamp and surge option fitted.

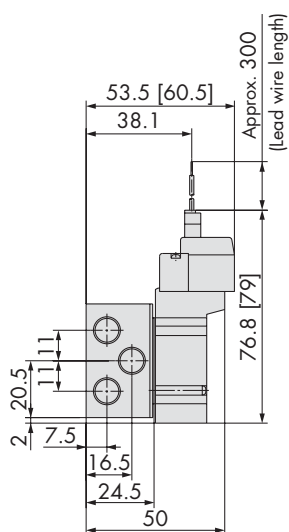
Dimensions: Series SY3000

2 position single

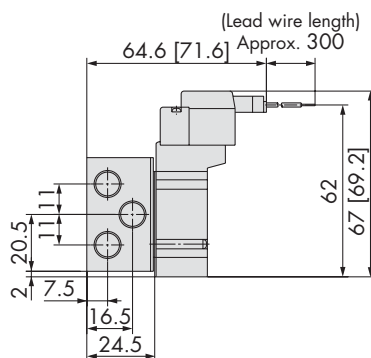
Grommet (G): SY3140(R)-□G□□-01□-Q



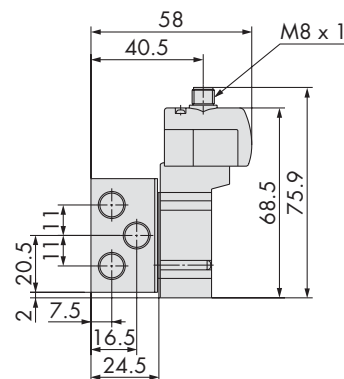
L plug connector (L):
SY3140(R)-□L□□-01□-Q



M plug connector (M):
SY3140(R)-□M□□-01□-Q



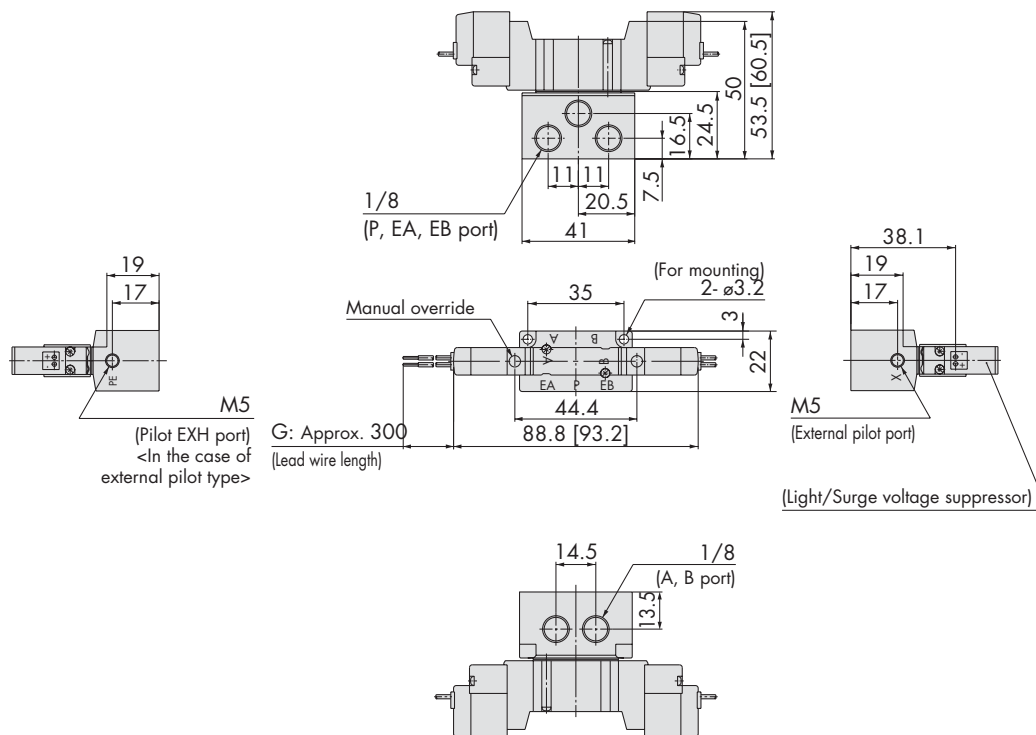
M8 connector (WO):
SY3140(R)-□WO□□-01□-Q



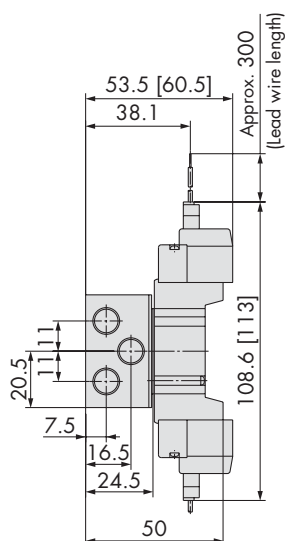
Dimensions: Series SY3000

2 position double

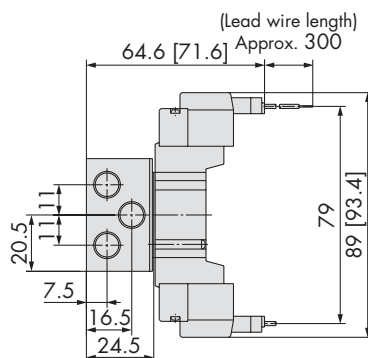
Grommet (G): SY3240(R)-□G□□-01□-Q



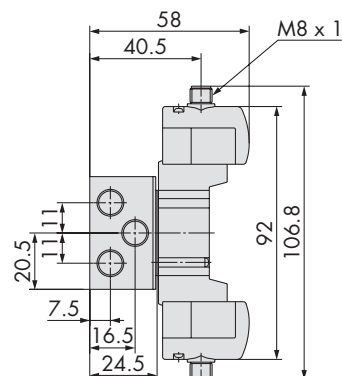
L plug connector (L):
SY3240(R)-□L□□-01□-Q



M plug connector (M):
SY3240(R)-□M□□-01□-Q



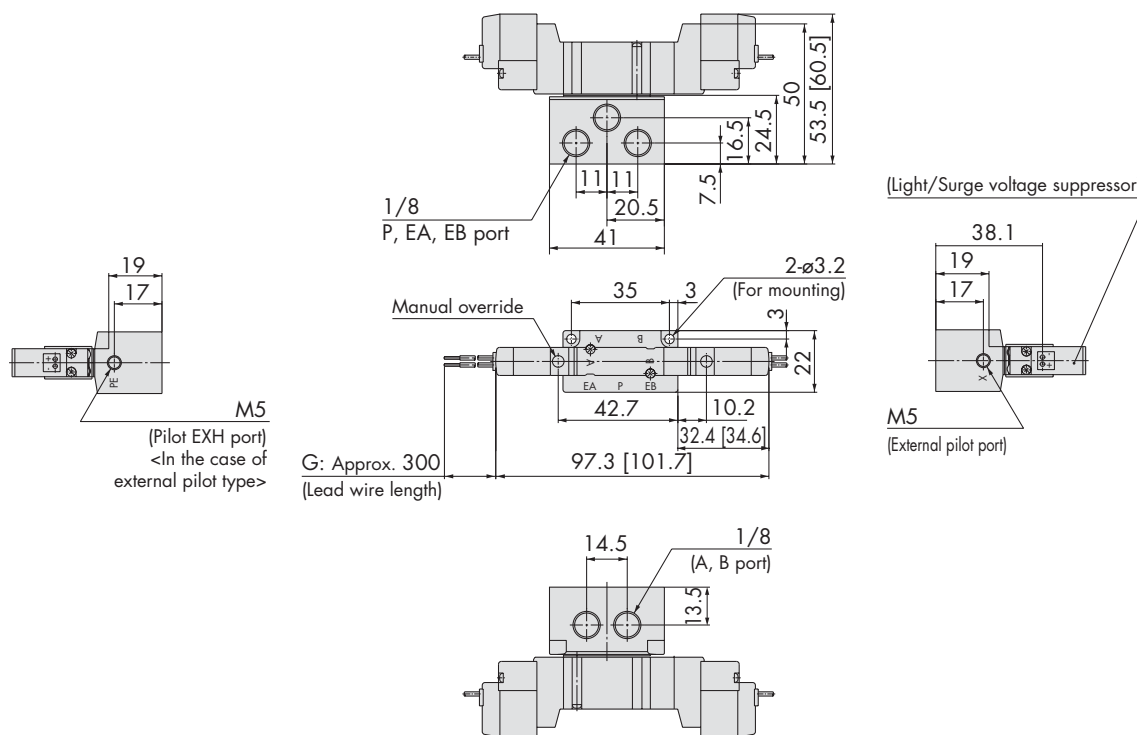
M8 connector (WO):
SY3240(R)-□WO□□-01□-Q



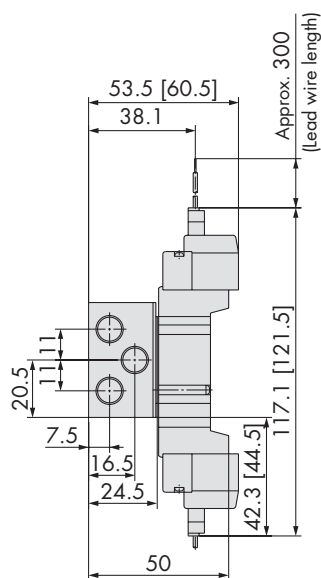
Dimensions: Series SY3000

3 position closed centre/exhaust centre/pressure centre

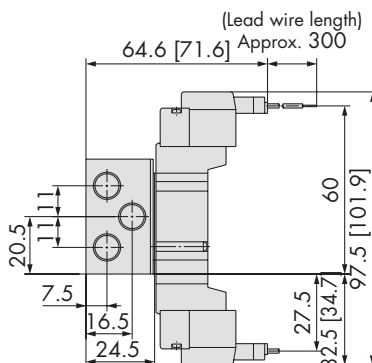
Grommet (G): SY3 $\frac{3}{4}$ 40(R)-□G□□-01□-Q



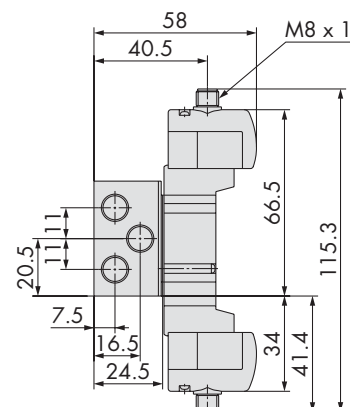
L plug connector (L):
SY3 $\frac{3}{4}$ 40(R)-□L□□-01□-Q



M plug connector (M):
SY3 $\frac{3}{4}$ 40(R)-□M□□-01□-Q



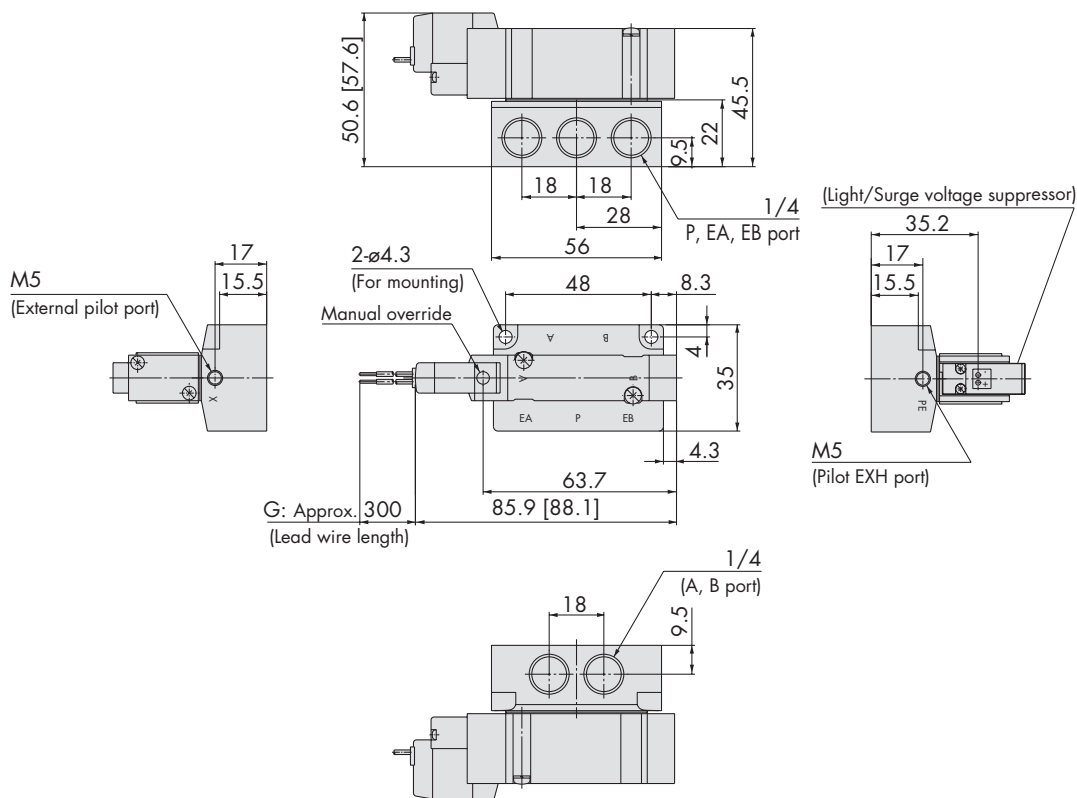
M8 connector (WO):
SY3 $\frac{3}{4}$ 40(R)-□WO□□-01□-Q



Dimensions: Series SY5000

2 position single

Grommet (G): SY5140(R)-□G□□-02□-Q

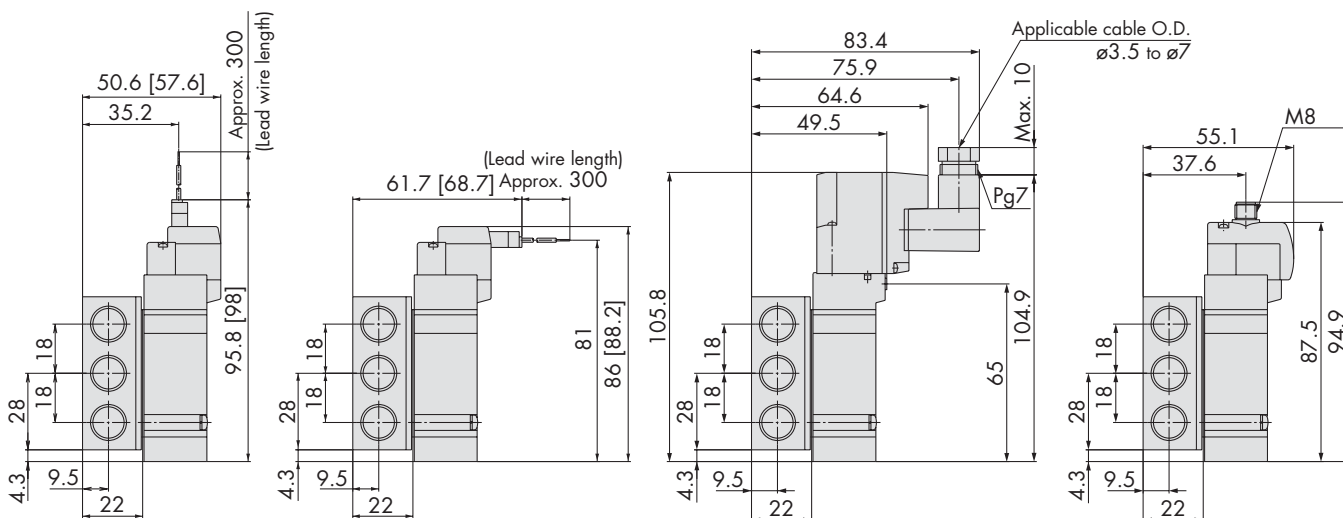


L plug connector (L):
SY5140(R)-□L□□-02□-Q

M plug connector (M):
SY5140(R)-□M□□-02□-Q

DIN terminal (D):
SY5140(R)-□D□□-02□-Q

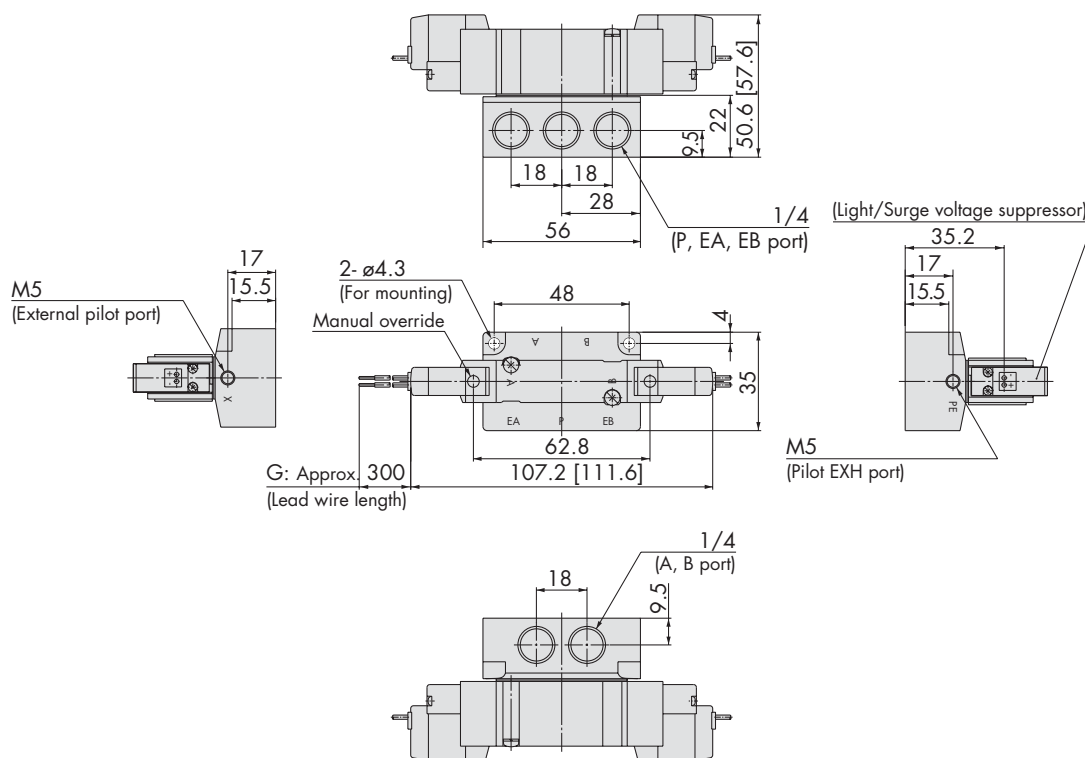
M8 connector (WO):
SY5140(R)-□WO□□-02□-Q



Dimensions: Series SY5000

2 position double

Grommet (G): SY5240(R)-□G□□-02□-Q

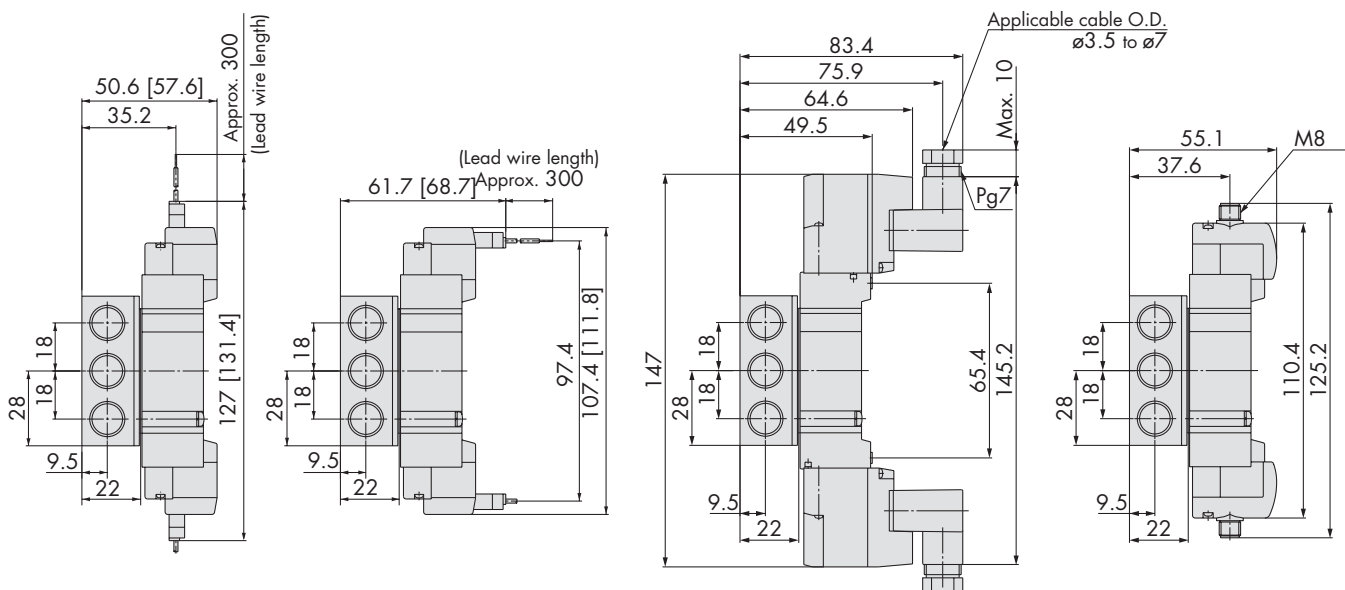


L plug connector (L):
SY5240(R)-□L□□-02□-Q

M plug connector (M):
SY5240(R)-□M□□-02□-Q

DIN terminal (D):
SY5240(R)-□D□□-02□-Q

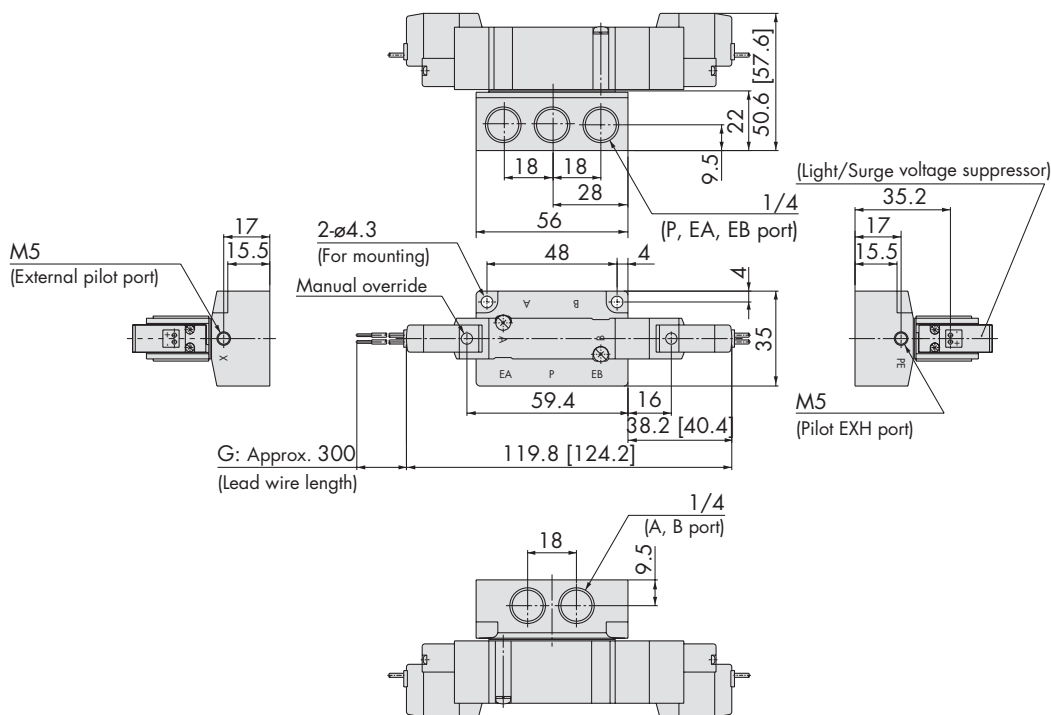
M8 connector (WO):
SY5240(R)-□WO□□-02□-Q



Dimensions: Series SY5000

3 position closed centre/exhaust centre/pressure centre

Grommet (G): SY5 $\frac{3}{5}$ 40(R)-□G□□-02□-Q

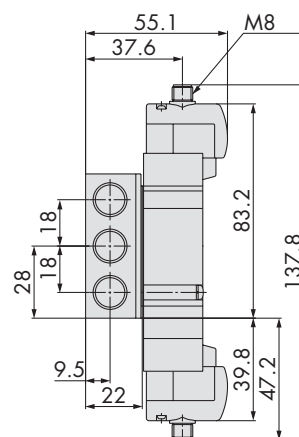
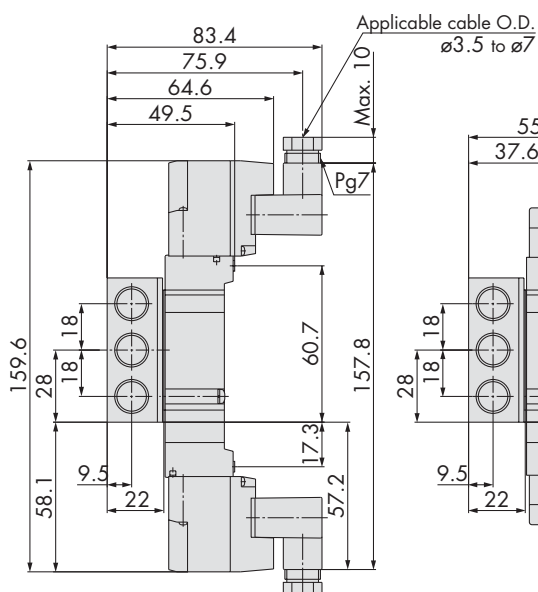
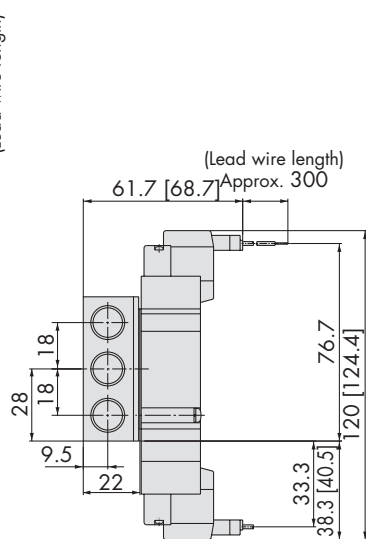
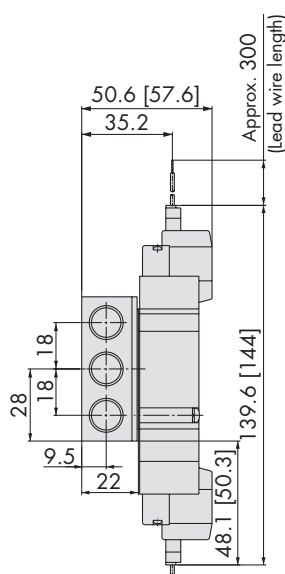


L plug connector (L):
SY5 $\frac{3}{5}$ 40(R)-□□□-02□-Q

M plug connector (M):
SY5 $\frac{3}{5}$ 40(R)-□M□□-02□-Q

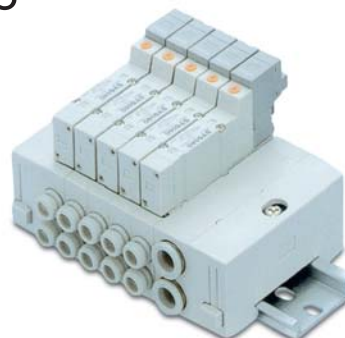
DIN terminal (D):
SY5 $\frac{3}{5}$ 40(R)-□D□□-02□-Q

M8 connector (WO):
SY5 $\frac{3}{5}$ 40(R)-□WO□□-02□-Q



Base Mounted Manifold Slice Type/DIN Rail Mounted Individual Wiring

Series **SY3/5000**



How to Order Manifold

SS5Y **3** - **45** - **05** **U** - **C6** - **Q**

Series	Valve stations
3 SY3000	02 2 stations
5 SY5000	20 20 stations

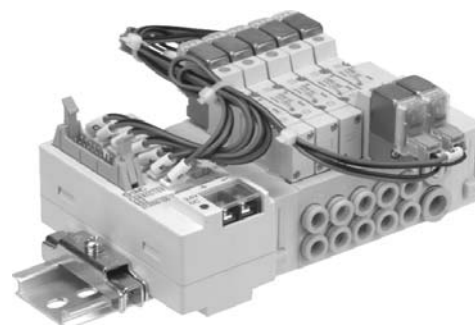
SUP/EXH block assembly
mounting position

Symbol	Mounting position	Applicable no. of stations
U	U side	2 to 10 stations
D	D side	
B	(Both sides)	2 to 20 stations

A, B port size
One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	

Also Available



Slice type manifold with individual wiring and connector box.

Manifold Specifications

Model	SS5Y3-45	SS5Y5-45
Applicable valve	SY3□40	SY5□40
Manifold type	Stacking type/DIN rail mounted	
P (SUP)/R (EXH)	Common SUP, Common EXH	
Valve stations	2 to 20 stations ^{Note 1)}	
A, B port Porting specifications	Location	Base
	Direction	Side
Port size	P, R port	C8 (One-touch fitting for ø8) C10 (One-touch fitting for ø10)
	A, B port	C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)

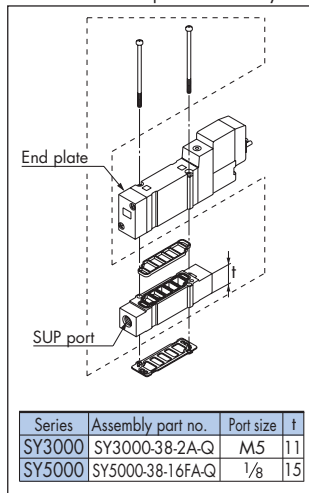
Flow Characteristics

Model	Port size		Flow 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	Cv	C (dm ³ /[s·bar])	b	Cv
SS5Y3-45	C8	C6	0.88	0.21	0.22	0.95	0.18	0.22
SS5Y5-45	C10	C8	2.2	0.24	0.53	2.5	0.18	0.58

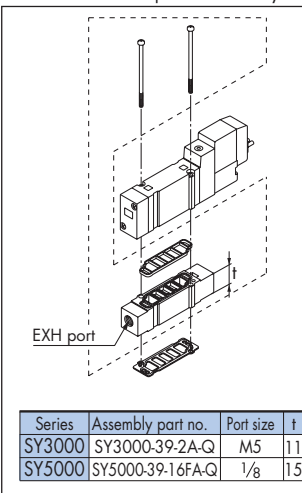


Type 45 Manifold Accessories (non-plug-in type)

Individual SUP spacer assembly

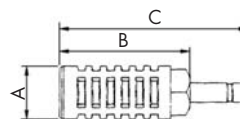


Individual EXH spacer assembly



Silencer with One-touch fitting

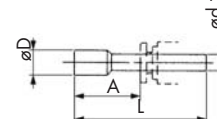
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm ²	ø16	26	51
For SY5000 (ø10)	AN200-KM10	26 mm ²	ø22	53.8	80.8
	AN300-KM10	30 mm ²	ø25	70	97

L Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.

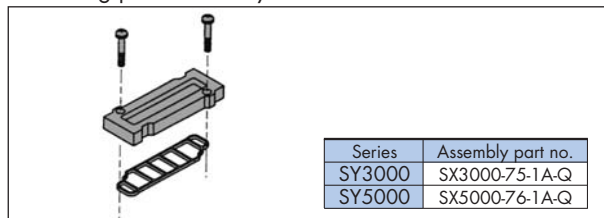


Dimensions

Applicable fittings size ød	Model	A	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12

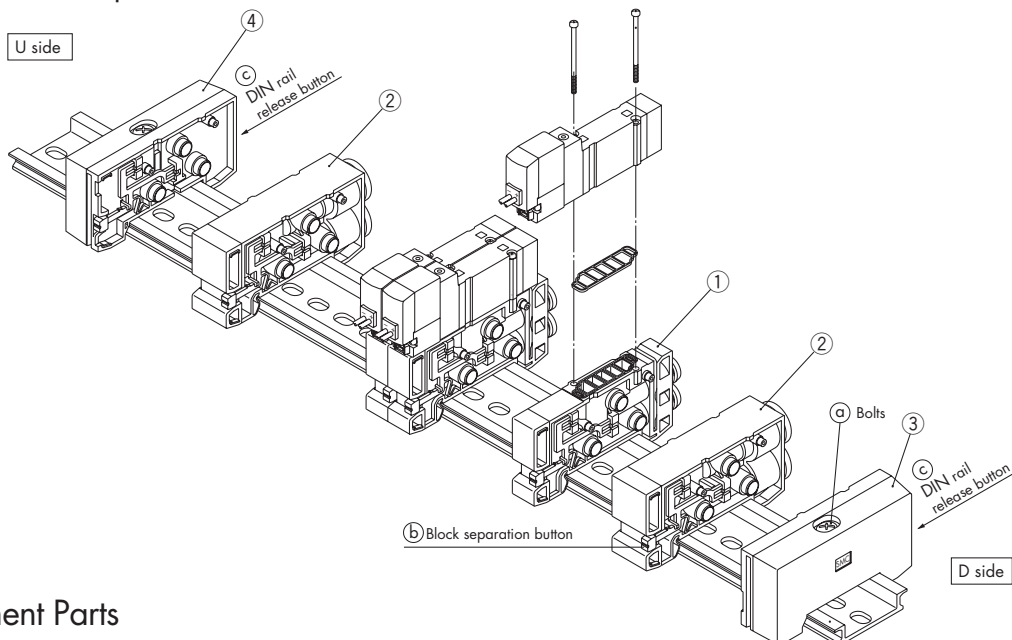
Note: Interface regulators are common to type 41 and 42 manifolds.

Blanking plate assembly



DIN Rail Manifold Exploded View

Type 45

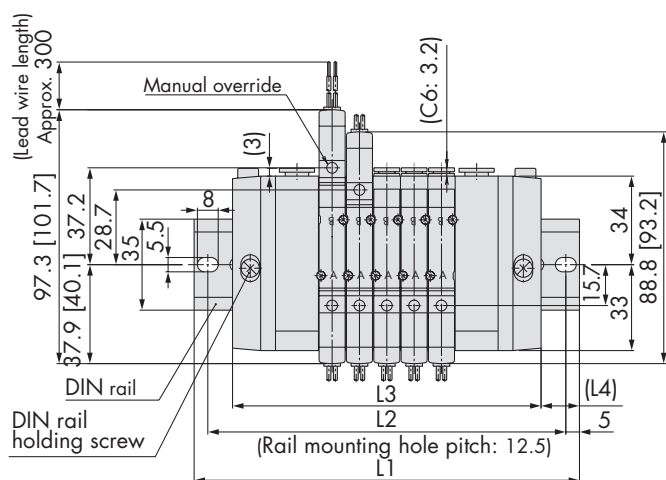
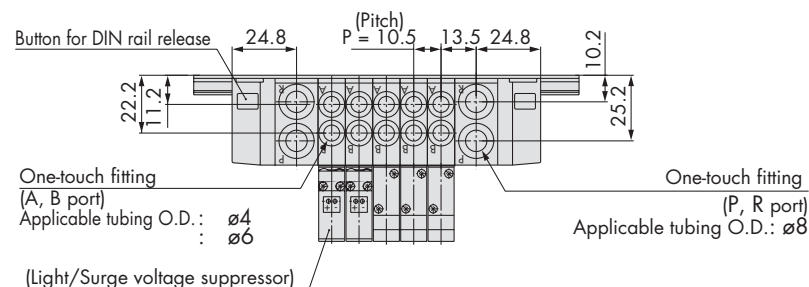


Replacement Parts

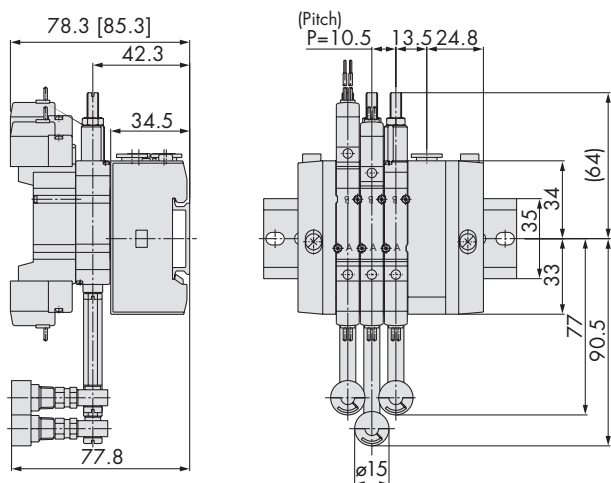
No.	Description	Part no.		Note
		SY3000	SY5000	
①	Manifold block assembly	SX3000-50-1A-□□-Q	SX5000-50-1A-□□-Q	SY3000 (Metric size) SY5000 (Metric size) C4: With One-touch fitting for ø4 C6: With One-touch fitting for ø6 C8: With One-touch fitting for ø8
②	SUP/EXH block assembly	SX3000-51-1A	SX3000-51-1A	P, R port SY3000 (Metric size) With One-touch fitting for ø8 P, R port SY5000 (Metric size) With One-touch fitting for ø10
③	End block assembly R	SX3000-52-1A-Q	SX5000-52-1A-Q	For D side
④	End block assembly L	SX3000-53-1A-Q	SX5000-53-1A-Q	For U side

Dimensions: Series SY3000

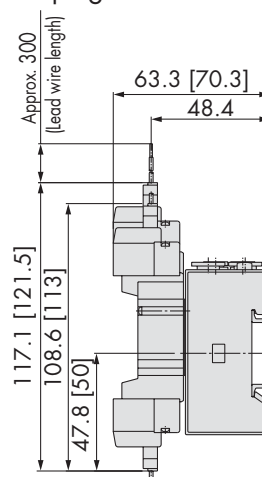
SS5Y3-45- Stations B-C₆-Q (Both end supplies)



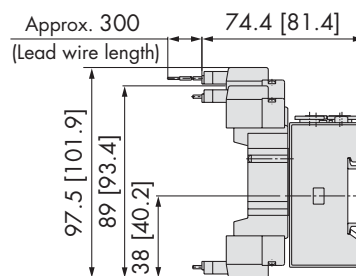
With interface regulator (with gauge)



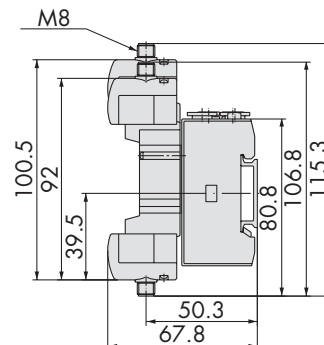
L plug connector



M plug connector



M8 connector (WO)



Stations n	2 stations	3	4	5	6	7	8	9	10 stations
L1	110.5	123	135.5	148	160.5	173	185.5	185.5	198
L2	100	112.5	125	137.5	150	162.5	175	175	187.5
L3	87	97.5	108	118.5	129	139.5	150	160.5	171
L4	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5

Stations n	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5
L2	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300
L3	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276
L4	14.5	15.5	16.5	17.5	12	13	14	15	16	17

L1	-12.5mm
L2	-12.5mm
L3	-16.5mm
L4	+2mm

Note: This page shows the double supply type manifold. The U and D supply type is shorter. Apply the following corrections to the L1 and L4 dimensions.

How to Order Valve bodies

SY 3 1 60—5 LO — C6F—Q

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

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

Rated voltage

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

AC (50/60Hz)

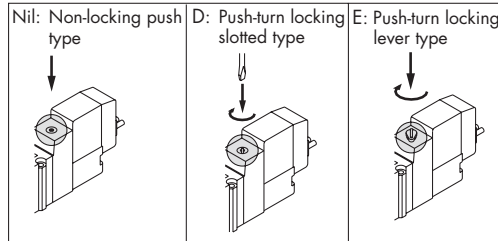
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

Note: AC voltages can only be ordered in conjunction with DIN plug (Y) electrical entry.

A, B port size
Thread piping

Symbol	Description	SY3000	SY5000	SY7000
M5	M5 thread	○	○	
O1F	1/8 thread		○	
O2F	1/4 thread			○
O3F	3/8 thread			
C4F	4mm tube	○	○	
C6F	6mm tube	○	○	
C8F	8mm tube		○	○
C10	10mm tube			○

Manual override



Light/Surge voltage suppressor

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

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

Electrical entry for D (SY5000/7000 only)

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

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	LO: Without connector	MO: Without connector	(SY5000, 7000) Y: With connector D: With connector	WO: Without connector cable

Note: A manifold assembly is required to use SY cassette valves. See separate how-to-order section.

Symbols

1	2 position single solenoid (A) (B) 5 1 3 (EA) (P) (EB)
2	2 position double solenoid (A) (B) 5 1 3 (EA) (P) (EB)
3	3 position closed centre (A) (B) 5 1 3 (EA) (P) (EB)
4	3 position exhaust centre (A) (B) 5 1 3 (EA) (P) (EB)
5	3 position pressure centre (A) (B) 5 1 3 (EA) (P) (EB)

Specifications

Series		SY3000	SY5000	SY7000
Fluid		Air		
Internal pilot	2 position single	0.15 to 0.7		
Operating pressure range (MPa)	2 position double	0.1 to 0.7		
	3 position	0.2 to 0.7		
Ambient and fluid temperature (°C)		Max. 50		
Max. operating frequency (Hz)	2 position double	10	5	5
	3 position	3	3	3
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 position		Unrestricted		
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)		

Solenoid Specifications

Electrical entry			Grommet (G) L plug connector (L) M plug connector (M) DIN terminal (D), (Y) M8 connector (W)
Coil rated voltage (V)	DC		24 , 12 , 6 , 5 , 3
	AC 50/60Hz		100 , 110 , 200 , 220*
Allowable voltage fluctuation (%)			±10% of rated voltage
Power consumption (W)	DC	Standard	0.35 [With indicator light: 0.4 (DIN terminal with indicator light: 0.45)]
Apparent power* VA	AC	100V	1.4 (With indicator light: 1.5)
		110V	1.6 (With indicator light: 1.7)
		200V	2.3 (With indicator light: 2.4)
		220V [230V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor			Diode (Varistor is for DIN terminal and non-polar)
Indicator light			LED (AC of DIN connector is neon bulb.)



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Response Time

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without surge voltage suppressor	With surge voltage suppressor	
		Z type	U type
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 the pressure of 0.5 MPa)		
	Without surge voltage suppressor	With surge voltage suppressor	
		Z type	U type
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

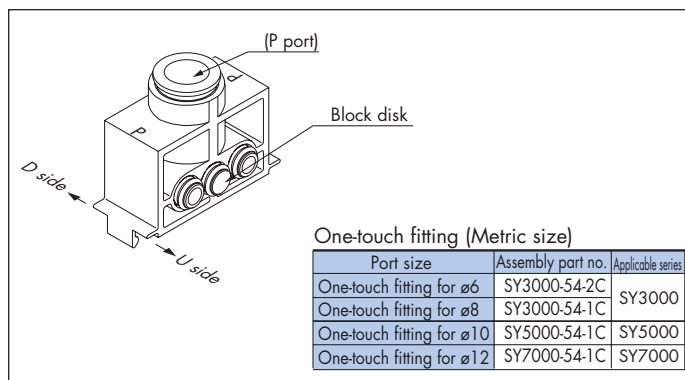
SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Z type	U type
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

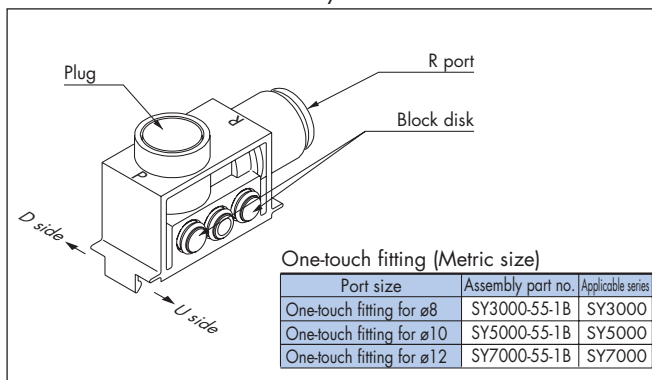
Note: response times as per SY base mounted valves.

SY Cassette Valve Accessories

Individual SUP block assembly

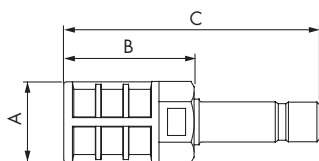


Individual EXH block assembly



Silencer with One-touch fitting

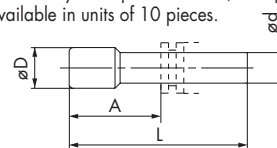
The silencer plugs directly into the One-touch fittings of the manifold.



Series	Model	Effective area	A	B	C
SY3000 (for ø8)	AN203-KM8	14 mm ²	ø16	26	51
SY5000 (for ø10)	AN200-KM10	26 mm ²	ø22	54	80.8
	AN300-KM10	30 mm ²	ø25	70	97
SY7000 (for ø12)	AN300-KM12	41 mm ²	ø25	70	98

Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



Dimensions

Applicable fittings size ød	Model	A	L	D
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12
12	KQ2P-12	24	45.5	14

EXH block disk

By inserting a block disk between adjacent valves, the pressure or exhaust gallery between the valves can be split into separate zones.



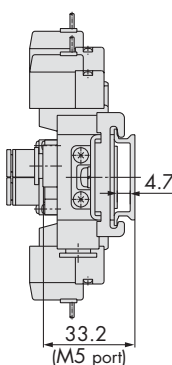
Series	Part no.
SY3000	SY3000-52-2A
SY5000	SY5000-52-4A
SY7000	SY7000-70-2A

Dimensions

SS5Y3-60- Stations B-Q (Both ends supplies)

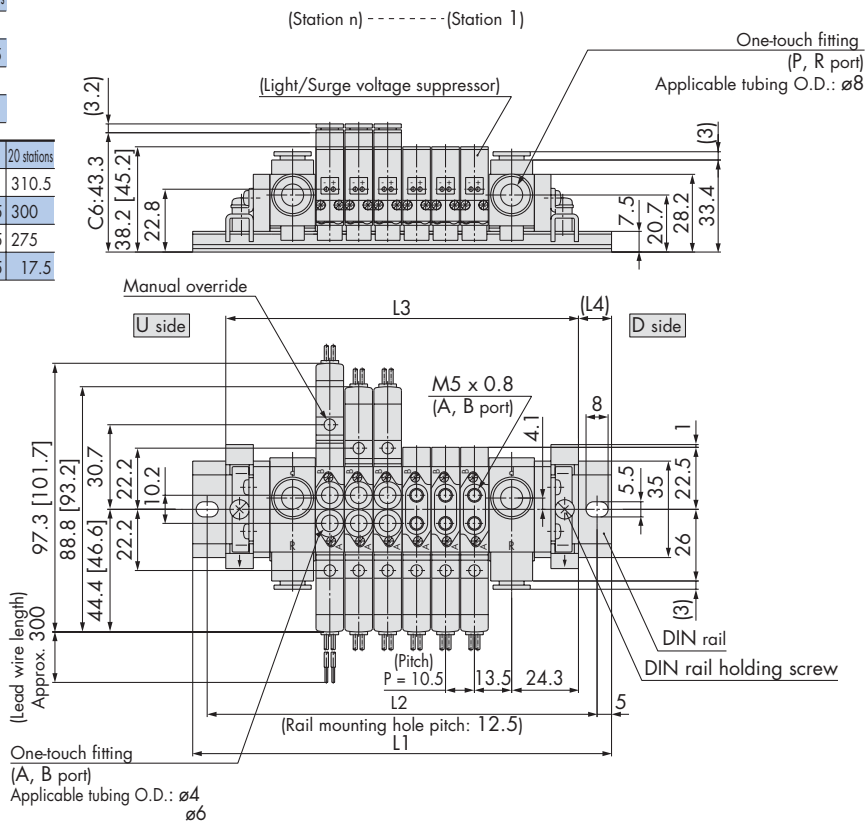
Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	110.5	123	135.5	148	160.5	173	173	185.5	198
L2	100	112.5	125	137.5	150	162.5	162.5	175	187.5
L3	86	96.5	107	117.5	128	138.5	149	159.5	170
L4	12	13	14	15	16	17	12	13	14

Stations	11 stations	12	13	14	15	16	17	18	19	20 stations
L1	210.5	223	235.5	235.5	248	260.5	273	285.5	298	310.5
L2	200	212.5	225	225	237.5	250	262.5	275	287.5	300
L3	180.5	191	201.5	212	222.5	233	243.5	254	264.5	275
L4	15	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5

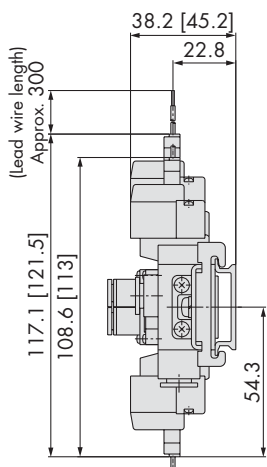


The above dimensions apply to the 'B' supply type (both ends).
If the U or D type (one end) is used, please use the table below.

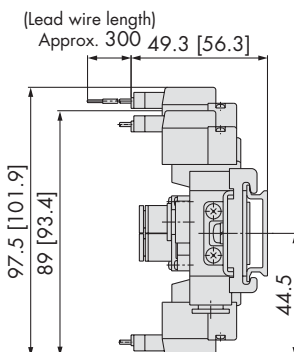
Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	98	110.5	123	135.5	135.5	148	160.5	173	185.5
L2	87.5	100	112.5	125	125	137.5	150	162.5	175
L3	69.5	80	90.5	101	111.5	122	132.5	143	153.5
L4	14	15	16	17	12	13	14	15	16



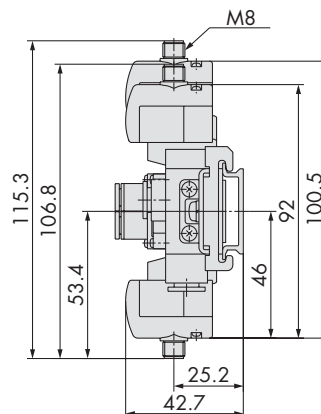
L plug connector (L)



M plug connector (M)



M8 connector (WO)



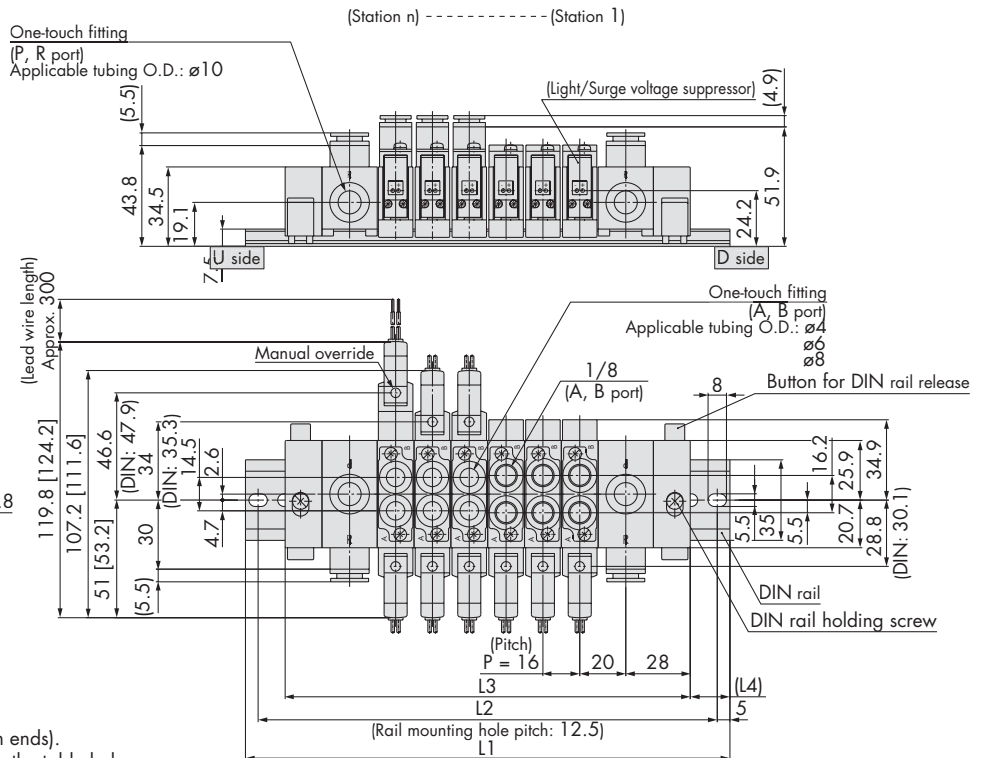
Dimensions

SS5Y5-60- Stations B-Q (Both ends supplies)

Stations	2 stations	3	4	5	6	7	8 stations
L1	135.5	160.5	173	185.5	210.5	223	235.5
L2	125	150	162.5	175	200	212.5	225
L3	112	128	144	160	176	192	208
L4	11.5	16	14.5	12.5	17.5	15.5	13.5

Stations	9 stations	10	11	12	13	14	15 stations
L1	248	273	285.5	298	323	335.5	348
L2	237.5	262.5	275	287.5	312.5	325	337.5
L3	224	240	256	272	288	304	320
L4	12	16.5	14.5	13	17.5	15.5	14

Stations	16 stations	17	18	19	20 stations
L1	360.5	385.5	398	410.5	435.5
L2	350	375	387.5	400	425
L3	336	352	368	384	400
L4	12	16.5	15	13	17.5



The above table is for the 'B' supply type (both ends).
If the U or D type (one end) is used, please use the table below.

Stations	2 stations	3	4	5	6	7	8	9	10 stations
L1	123	135.5	148	160.5	185.5	198	210.5	235.5	248
L2	112.5	125	137.5	150	175	187.5	200	225	237.5
L3	88	104	120	136	152	168	184	200	216
L4	17.5	15.5	14	12	16.5	15	13	17.5	16

