

Series 10-SY100

Rubber Seal
3 Port/Direct Operated



Specifications

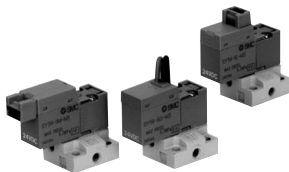
Fluid	Air
Ambient and fluid temperature (°C)	-10 to 50 (With no freezing. Refer to page 680.)
Response time (ms) ^{Note 1)}	10 or less
Max. operating frequency (Hz)	20
Manual override	Non-locking push type, Locking slotted type Push-turn locking slotted type Push-turn locking lever type {SY1:4 and SY1:4A only}
Lubrication	Not required
Mounting orientation	Unrestricted
Impact/Vibration resistance (m/s ²) ^{Note 2)}	150/30
Enclosure	Dust tight

Note 1) Based on dynamic performance test, JIS B 8374-1981 (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)

Note 2) Impact resistance: No malfunction occurred when it was tested in the axial direction and at right angles to the armature in both energized and de-energized states once for each condition. (Default settings)
Vibration resistance: No malfunction occurred in a one-sweep between 45 and 2000 Hz. Test was performed in the axial direction and at right angles to the armature in both energized and de-energized states. (Default settings)



Body ported

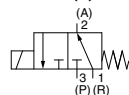
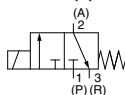


Base mounted

Symbol

10-SY11³(A)

10-SY12³(A)



Solenoid Specifications

Series	10-SY1 ¹³ ₂₄		10-SY1 ¹³ ₂₄ A		
Electrical entry	Grommet (G)/(H), L plug connector (L) M plug connector (M)				
Coil rated voltage (V)	DC	24, 12, 6, 5, 3			
	AC ^{50/60} Hz	100, 110, 200, 220	-		
Allowable voltage fluctuation	-10 to +10%				
Power consumption (W)	DC	0.5 (With indicator light: 0.55)	0.75 (With indicator light: 0.8)		
	AC	100 V 110 V [115 V]	0.9 (With indicator light: 1.0) 1.0 (With indicator light: 1.1) [1.1 (with indicator light: 1.2)]	-	
Apparent power (VA)	AC	200 V	1.8 (With indicator light: 1.9)	-	
		220 V	1.9 (With indicator light: 2.0)	-	
		[230 V]	[2.2 (with indicator light: 2.3)]	-	
Surge voltage suppressor	Diode				
Indicator light	LED				

* Common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

* [Energy saving type (0.22 W) is also available. Consult SMC for details.]

* [Low wattage (0.45 W) is also available. Consult SMC for details.]

Model

Actualion type	Valve model	Type	Operating pressure range (MPa)	Vacuum specifications (MPa)		Port size		Effective area (mm ²)	Weight (g) ^{Note 2)}	
				1(P) port	3(R) port	1(P), 3(R) port	2(A) port		Grommet	L/M plug connector
N.C.	10-SY11 ³	Standard	0 to 0.7	-100 kPa to 0.6	-100 kPa to 0	M3 x 0.5	M3 x 0.5	0.14	10-SY1□3(A): 13 10-SY1□4(A): 24 (12)	10-SY1□3(A): 15 10-SY1□4(A): 26 (14)
N.C.	10-SY11 ³ A	Large flow	0 to 0.7	-100 kPa to 0.6	-100 kPa to 0	M3 x 0.5	M3 x 0.5	0.22		
N.O.	10-SY12 ³	Standard	0 to 0.7	-100 kPa to 0	-100 kPa to 0.6	M3 x 0.5	M3 x 0.5	0.14		
N.O.	10-SY12 ³ A	Large flow	0 to 0.7	-100 kPa to 0	-100 kPa to 0.6	M3 x 0.5	M3 x 0.5	0.22		

Note 1) For 10-SY12³ and 10-SY12³A, supply pressure to port 1 (R) and exhaust from port 3 (P).

Note 2) Value for DC. Add 1g for AC. (): Without sub-plate.

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

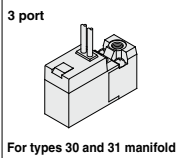
Fittings & Tubing

Flow Control Equipment

Pressure Switches/Pressure Sensors

How to Order

Standard type
(Cv0.008)



Actuation type

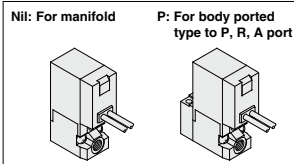
1	Normally closed
2	Normally open

Light/Surge voltage suppressor

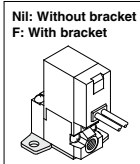
Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves, there is no "S" option. It is already built into the rectifier circuit.
* For "R" and "U", only DC voltage is available.

Porting specifications



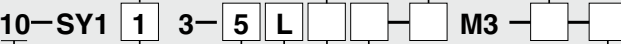
Bracket



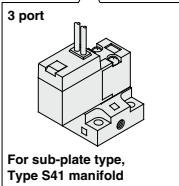
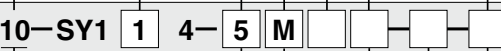
*P" piping specification only.



Standard: Body ported
(Cv: 0.008)



Standard: Base mounted
(Cv: 0.008)



Clean series

Rated voltage

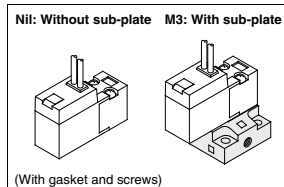
For DC		CE-compliant
5	24 VDC	●
6	12 VDC	●
V	6 VDC	●
S	5 VDC	●
R	3 VDC	●
For AC (50/60Hz)		CE-compliant
1	100 VAC	—
2	200 VAC	—
3	110 VAC (115 VAC)	—
4	220 VAC (230 VAC)	—

CE-compliant

Nil	—
Q	CE-compliant

* When selecting "Q", select the CE-compliant rated voltage.

Port size

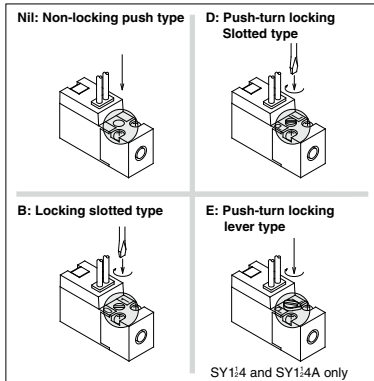


Electrical entry

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

* "LN", "MN" type: With 2 sockets.

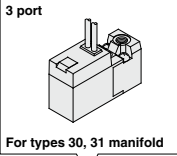
Manual override



How to Order



Large flow type
(Cv0.012)

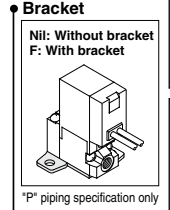
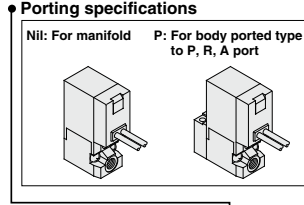


Actuation type

1	Normally closed
2	Normally open

Light/surge voltage suppressor

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



Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

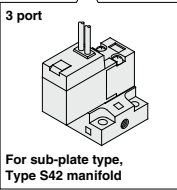
Pressure Switches/ Pressure Sensors

Large flow type (Cv: 0.012) : Body ported

10-SY1 1 3 A 5 L M3

Large flow type (Cv: 0.012) : Base mounted

10-SY1 1 4 A 5 M



Clean series
Large flow type

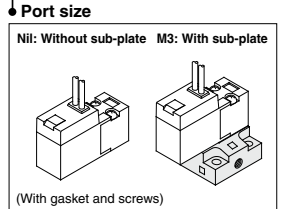
Rated voltage

		CE-compliant
5	24 VDC	●
6	12 VDC	●
V	6 VDC	●
S	5 VDC	●
R	3 VDC	●

CE-compliant

Nil	-
Q	CE-compliant

* When selecting "Q", select the CE-compliant rated voltage.



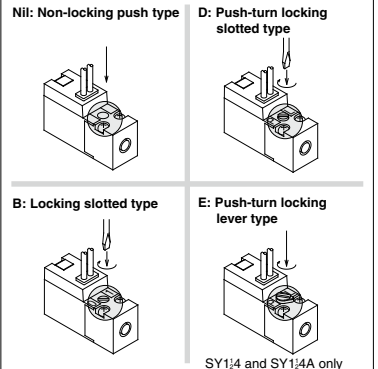
Electrical entry

24, 12, 6, 5, 3 VDC

Grommet	L plug connector	M plug connector
G: Lead wire Length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)
H: Lead wire Length 600 mm	LN: Without lead wire	LO: Without connector
	MN: Without lead wire	MO: Without connector

* "LN", "MN" types: With 2 sockets.

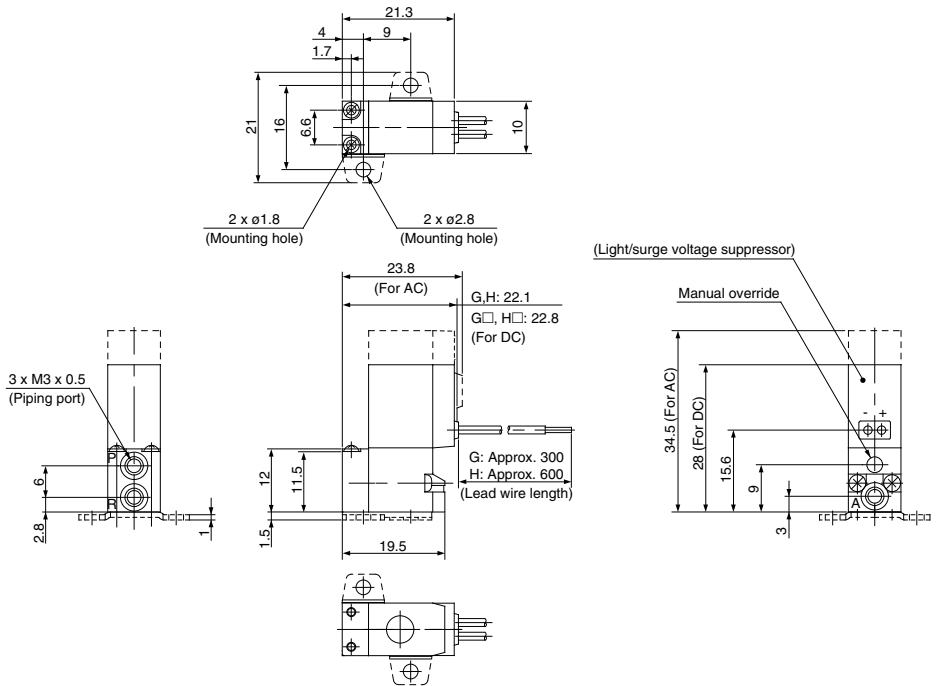
Manual override



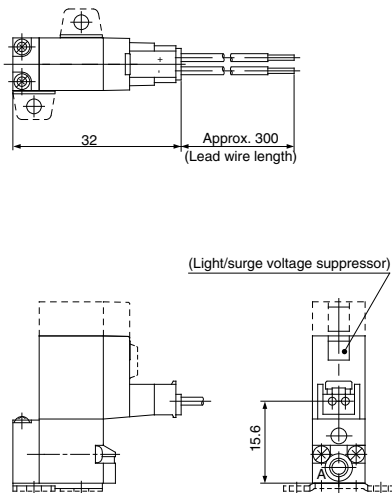
3 Port/Direct Operated **10-SY100**

Body ported

Grommet (G)/(H): 10-SY1₂3(A)-□^G□□-PM3(-F)

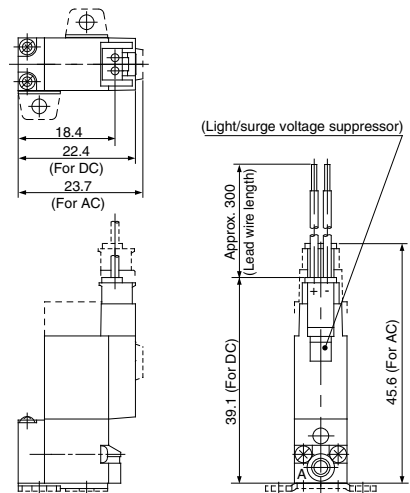


L plug connector (L): 10-SY1₂3(A)-□L□□-PM3(-F)



* Other dimensions are the same as the grommet type.

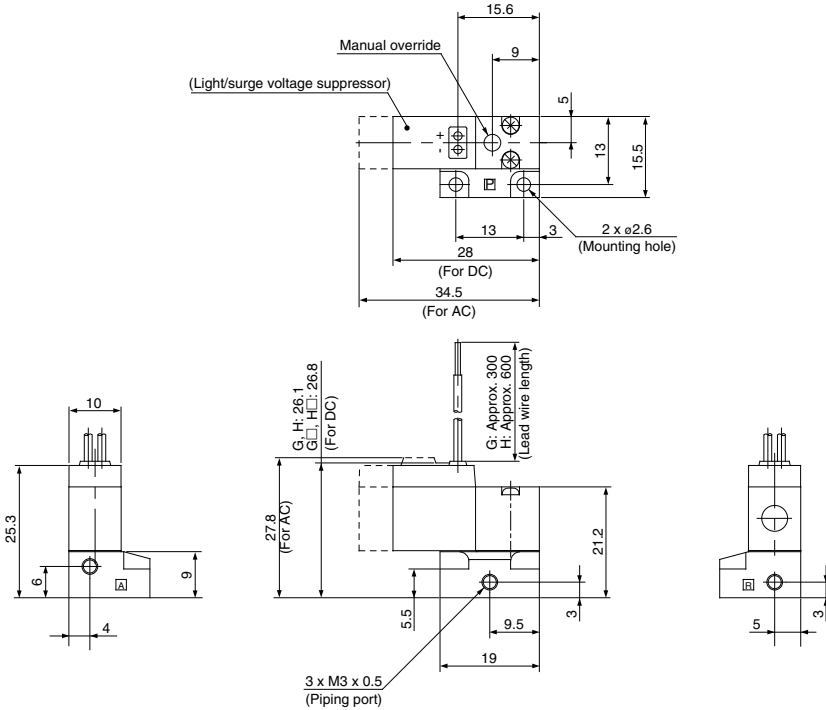
M plug connector (M): 10-SY1₂3(A)-□M□□-PM3(-F)



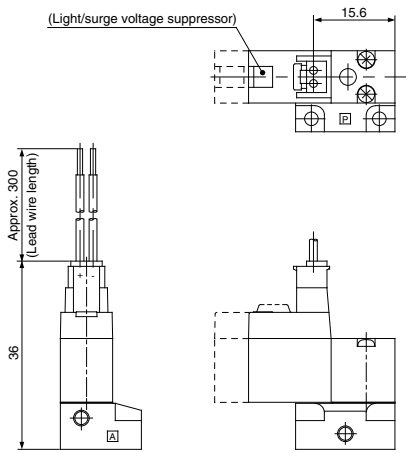
* Other dimensions are the same as the grommet type.

Base mounted (With sub-plate)

Grommet (G)/(H): 10-SY1₂4(A)-□_G□□-M3

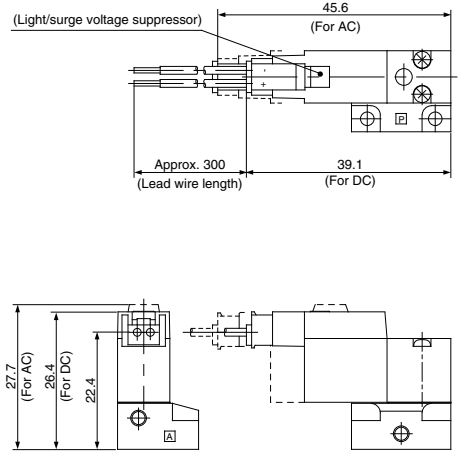


L plug connector (L): 10-SY1₂4(A)-□L□□-M3



* Other dimensions are the same as the grommet type.

M plug connector (M): 10-SY1₂4(A)-□M□□-M3



* Other dimensions are the same as the grommet type.

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

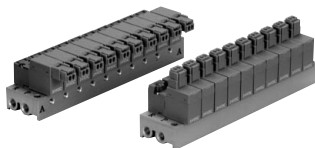
Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/ Pressure Sensors

Series 10-SY100 Manifold Specifications



Manifold Specifications

Model	Type 30 <small>Note 3)</small>	Type 31	Type S41
Manifold	Single base / B mount		
P(SUP) / R(EXH)	Common SUP / Common EXH		
Stations	2 to 10 stations	2 to 20 stations	
A port piping specifications	Location	Valve	Base
	Direction	Top	Side
Port size	P, R ports	M5 x 0.8	
	A port	M3 x 0.5	M3 x 0.5, M5 x 0.8

Note 1) 10-SY114 (A) and 10-SY124 (A) cannot be mounted on the same manifold.

Note 2) For 10-SY124 (A), supply pressure to R port and exhaust from P port.

Note 3) Type 30 is dedicated to SY113 and SY113A. Additionally, the piping cannot be connected to the exhaust port.

Note 4) CE-compliant: For DC only.

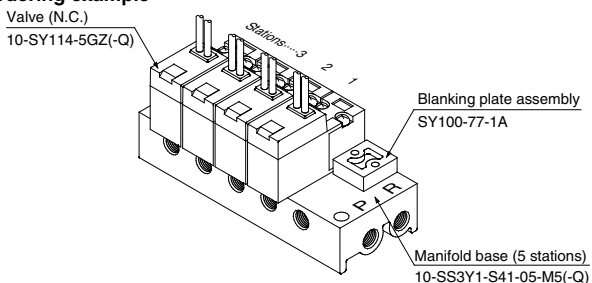
Flow Rate Characteristics

Manifold		Port size		Effective area (mm ²)
		1(P), 3(R) port	2(A) port	
Type 10-SS3Y1-30	10-SY1□3	M5 x 0.8	M3 x 0.5	0.14
	10-SY1□3A			0.21
Type 10-SS3Y1-31	10-SY1□3	M5 x 0.8	M3 x 0.5	0.14
	10-SY1□3A			0.21
Type 10-SS3Y1-S41	10-SY1□4	M5 x 0.8	M3 x 0.5	0.14
	10-SY1□4A			0.21
	10-SY1□4	M5 x 0.8	M5 x 0.8	0.14
	10-SY1□4A			0.21

Note) The values are for manifold bases.

How to Order Manifold Assembly (Example)

Ordering example



10-SS3Y1-S41-05-M5(-Q).....1 set (Type S41 5 station manifold part no.)

* SY100-77-1A.....1 set (Blanking plate assembly part no.)

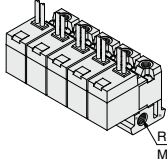
* 10-SY114-5GZ(-Q).....4 sets (Valve)

↳ The asterisk denotes the symbol for assembly. Prefix it to the part no. of the solenoid valve, etc.

Indicate the part numbers of the valve and option beneath the part number of manifold.

Common SUP / Common EXH

Type 30



How to Order

10-SS3Y1-30-05-F- []

• Clean series

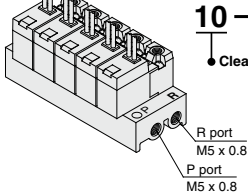
Stations	
02	2 stations
:	:
20	20 stations

CE-compliant	
Nil	—
Q	CE-compliant

Applicable solenoid valve
 10-SY113-□□□□-M3(-Q)
 10-SY113A-□□□□-M3(-Q)
 Applicable blanking plate assembly
 SY100-77-1A

Note) The piping cannot be connected to the exhaust port.

Type 31



How to Order

10-SS3Y1-31-05- []

• Clean series

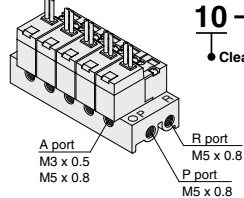
Stations	
02	2 stations
:	:
20	20 stations

CE-compliant	
Nil	—
Q	CE-compliant

Applicable solenoid valve ^{Note)}
 10-SY113-□□□□-M3(-Q)
 10-SY113A-□□□□-M3(-Q)
 10-SY123-□□□□-M3(-Q)
 10-SY123A-□□□□-M3(-Q)
 Applicable blanking plate assembly
 SY100-77-1A

Note) 10-SY113(A) and 10-SY123(A) cannot be mounted on the same manifold.

Type S41



How to Order

10-SS3Y1-S41-05-M3- []

• Clean series

Stations	
02	2 stations
:	:
20	20 stations

A port size	
M3	M3 x 0.5
M5	M5 x 0.8

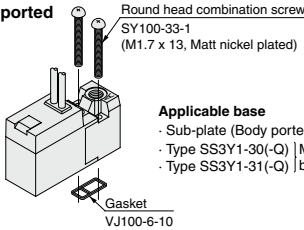
CE-compliant	
Nil	—
Q	CE-compliant

Applicable solenoid valve ^{Note)}
 10-SY114-□□□□(-Q)
 10-SY114A-□□□□(-Q)
 10-SY124-□□□□(-Q)
 10-SY124A-□□□□(-Q)
 Applicable blanking plate assembly
 SY100-77-1A

Note) 10-SY114(A) and 10-SY124(A) cannot be mounted on the same manifold.

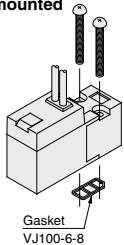
Combinations of Solenoid Valve, Gasket Manifold

Body ported



Applicable base
 • Sub-plate (Body ported)
 • Type SS3Y1-30(-Q) | Manifold
 • Type SS3Y1-31(-Q) | base

Base mounted



Applicable base
 • Sub-plate
 • Type SS3Y1-S41(-Q) | Manifold base
 Sub-plate part no.
 Standard: SY100-74-1
 CE-compliant: SY100-74-1-Q
 * The standard and CE-compliant sub-plate part numbers are different from each other.

(Manifold option)

How to Order Connector Assembly

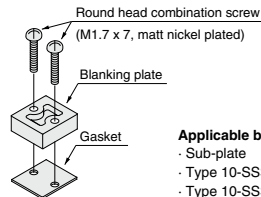
For DC: **SY100-30-4A-** []
 For 100 VAC: **SY100-30-1A-** []
 For 200 VAC: **SY100-30-2A-** []
 For other voltages of AC: **SY100-30-3A-** []

Without lead wire: **SY100-30-A** **Lead wire length**
 (with connector and 2 pcs. of sockets only)

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

Blanking plate assembly

Part no: **SY100-77-1A**



Applicable base
 • Sub-plate
 • Type 10-SS3Y1-31 | Manifold
 • Type 10-SS3Y1-S41 | base

Caution

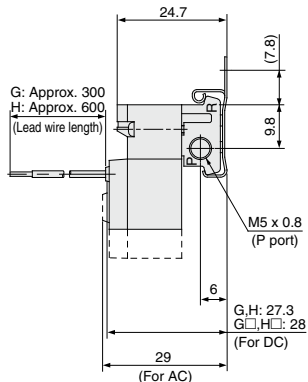
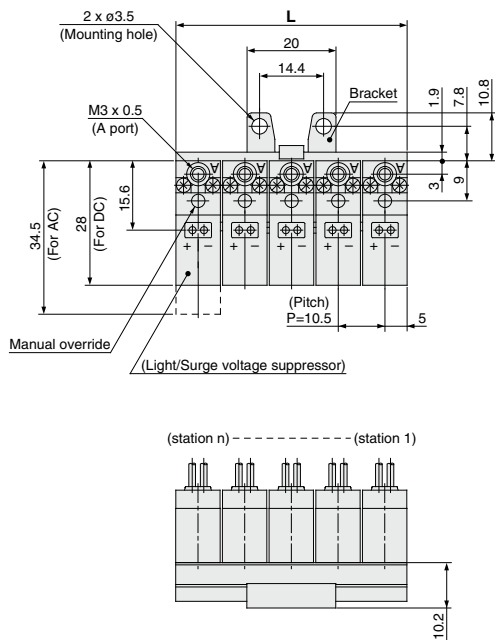
Mounting Screw Tightening Torque **M1.7: 0.12 N·m**

Directional Control Valves
 Air Cylinders
 Rotary Actuators
 Air Grippers
 Air Preparation Equipment
 Modular F. R.
 Pressure Control Equipment
 Fittings & Tubing
 Flow Control Equipment
 Pressure Switches/ Pressure Sensors

3 Port/Direct Operated 10-SY100

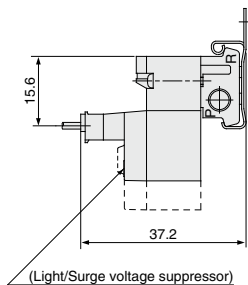
Type 30 Manifold: Top Ported/10-SS3Y1-30-Stations-F

Grommet (G), (H)



* The bracket is not attached to the product. Mount it at a desired position for use.
(Two brackets are supplied for 6 or more stations.)

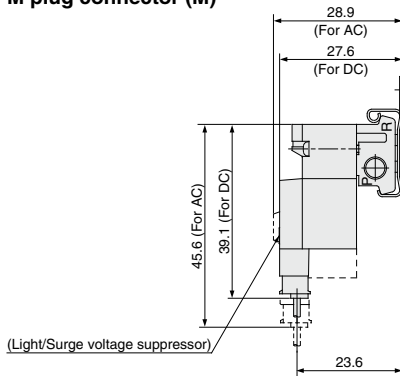
L plug connector (L)



* Other dimensions are same as the grommet type.

Station	2 stations	3	4	5	6	7	8	9	10 stations
L	20.5	31	41.5	52	62.5	73	83.5	94	104.5

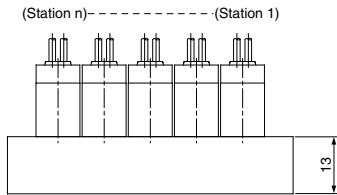
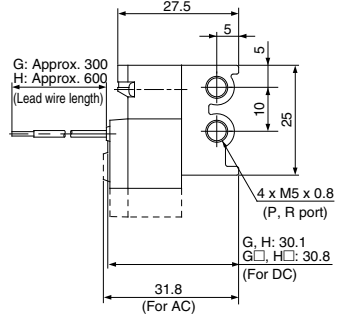
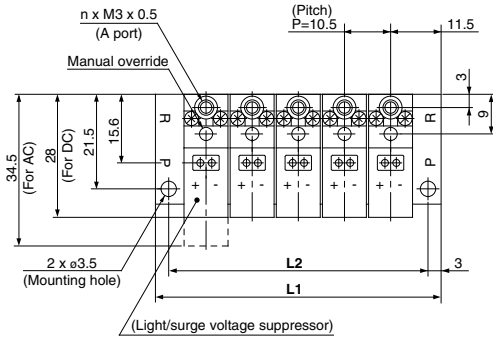
M plug connector (M)



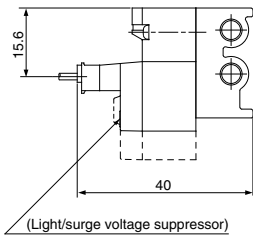
* Other dimensions are same as the grommet type.

Type 31 Manifold: Top Ported / 10-SS3Y1-31- Stations

Grommet (G), (H)

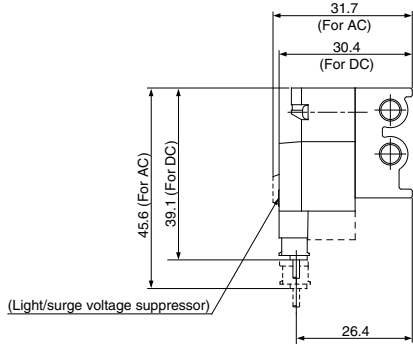


L plug connector (L)



* Other dimensions are the same as the grommet type.

M plug connector (M)



* Other dimensions are the same as the grommet type.

Stations	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5
L2	27.5	38	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

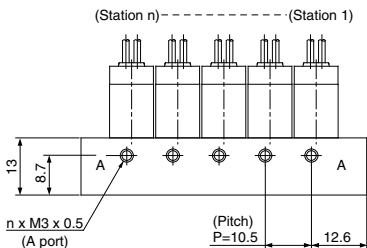
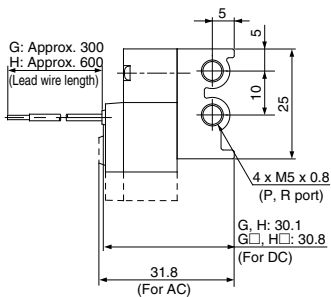
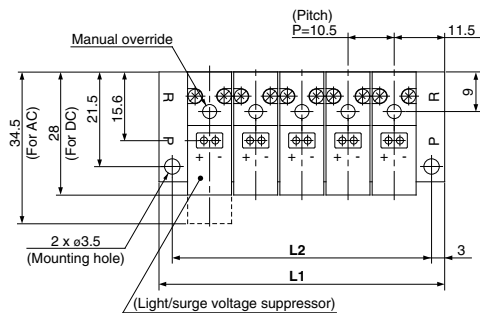
Fittings & Tubing

Flow Control Equipment

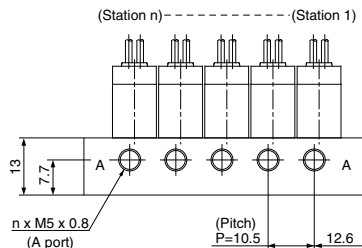
Pressure Switches/ Pressure Sensors

Type S41 Manifold: Side Ported / 10-SS3Y1-S41-Stations -M3/M5

Grommet (G), (H)

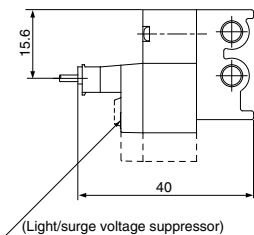


For M3



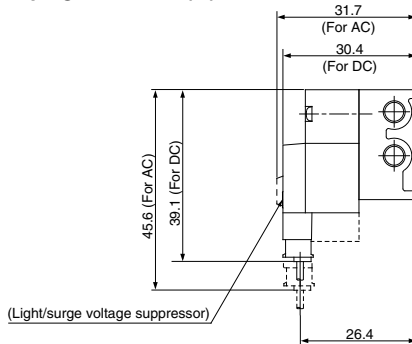
With M5

L plug connector (L)



* Other dimensions are the same as the grommet type.

M plug connector (M)



* Other dimensions are the same as the grommet type.

Stations	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5
L2	27.5	38	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5