

SL Series (Wiring System: Central Terminal Box) Lower Power Solenoid Valve

30ℓ/min
7MPa

Features

- ① Very long life
The movable iron core of the wet type solenoid is immersed in oil, which keeps it lubricated and cushions it from impact and vibration, ensuring very long life.
- ② Low switching noise
The wet-type solenoid valve provides very low core switching noise, for quiet operation.
- ③ Low power consumption type.
The low power for the AC solenoid 9.6 W (60 Hz), DC solenoid 10 W contribute to energy conservation.
- ④ Easy connections
A special wiring box provides a COM port and indicator light as standard for simple wiring and maintenance.
- ⑤ Easy coil replacement
A plug-in type coil enables one-touch coil replacement.
- ⑥ Wide-ranging backward compatibility makes it simple to replace previous valve models with this one. Combining this valve with a modular valve contributes to the compact configuration of the overall device.
- ⑦ Global standard
Meets overseas safety standards (CE, UL, and CSA). It can be safely used anywhere in the world. Contact your agent for certified products.

Specifications

JIS Symbol	Operation symbol	Maximum flow rate (ℓ/min)
	-A5-	30
	-H5-	
	-A3X-	
	-H3X-	
	-E3X-	
	-C1-	
	-C2-	

JIS Symbol	Operation symbol	Maximum flow rate (ℓ/min)
	-C4-	30
	-C5-	
	-C6-	
	-C9-	
	-C6S-	
	-C7Y-	15

Solenoid Type		AC Solenoid		DC Solenoid	
		C1	C2	Built-in Rectifier	
				E1	D2
Maximum Working Pressure	P, A, B Ports	7MPa{71kgf/cm ² }			
Maximum Allowable Backpressure	T Port	7MPa{71kgf/cm ² }			
Changeover Frequency (per minute)		240		120	240
Standard	Indicator light	R			
Options	Surgeless	G		-	G
	With manual push-button	N			
	Quick Return	-		Q	-
Weight (kg)	Double Solenoid	1.5		2.0	
	Single Solenoid	1.2		1.5	
Operating Environment	Dust Resistance/Water Resistance Rank	JIS C 0920 IP64 (Dust-tight, Splash-proof)			
	Operating Fluid	Ambient Temperature	-20 to 50°C		
		Temperature Range	-20 to 70°C		
		Kinematic Viscosity Range	15 to 300mm ² /s		
	Filtration	25 μm or less			
Mounting bolt		Hex bolt with hole of 12.9 strength classification M5 × 45 4 each			
Tightening Torque		5 to 7N·m{51 to 71kgf·cm}			

Note) Mounting bolts are not included.

Options

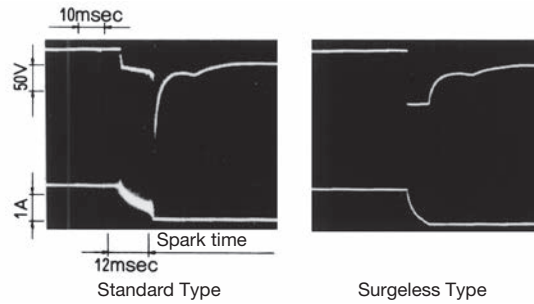
(Auxiliary Symbol)

Surgeless Type (Auxiliary Symbol: G)

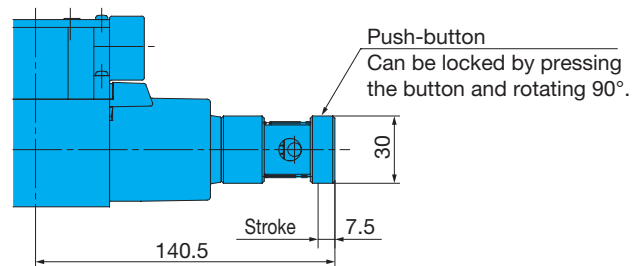
The surge pressure waveforms when the DC solenoid valve power supply is opened and closed by a relay are shown at the bottom of this block.

A built-in surge absorber element eliminates sparking and surge pressure.

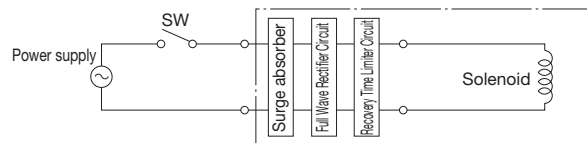
- Features
- Surge voltage is inhibited.
 - Sparking at relay contact points is eliminated.



Manual Push-button Type (Auxiliary symbol: N)



Quick Return Type (Auxiliary Symbol: Q)



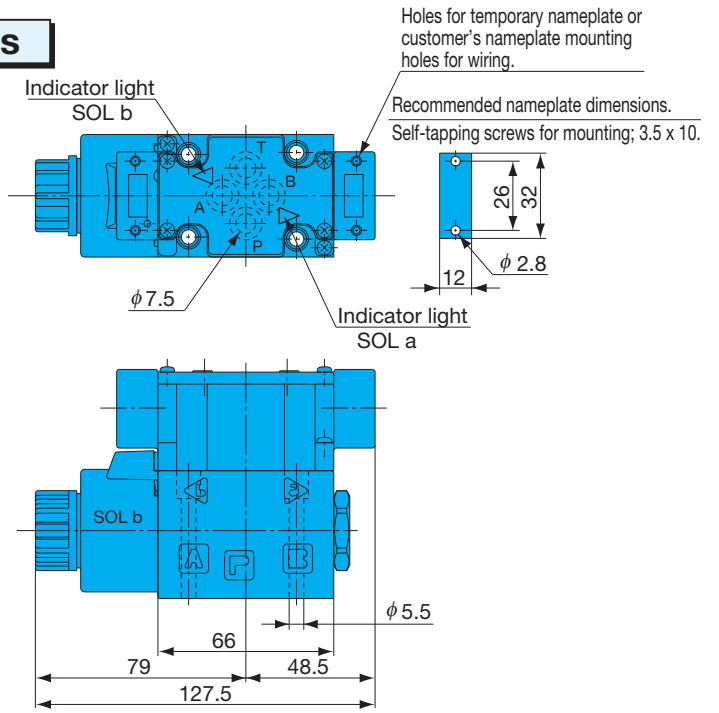
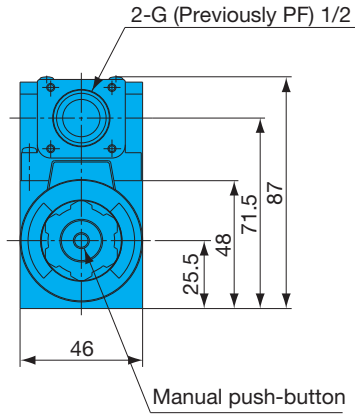
Handling

- 1 This type is used in the case of power supply type E1 (with built-in rectifier) to shorten the spring return time. This also applies to D2.
- 2 The quick return mechanism is built-in.

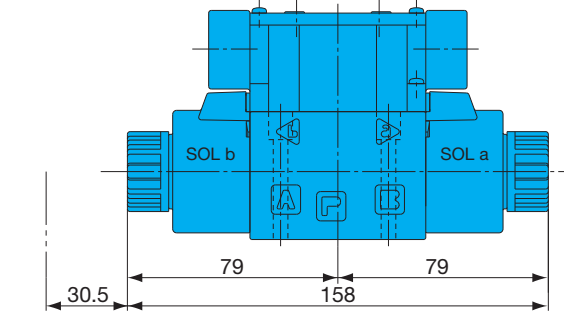
Installation Dimension Drawings

AC Solenoid
 SL-G01-A**-R-C*-31
 SL-G01-H**-R-C*-31

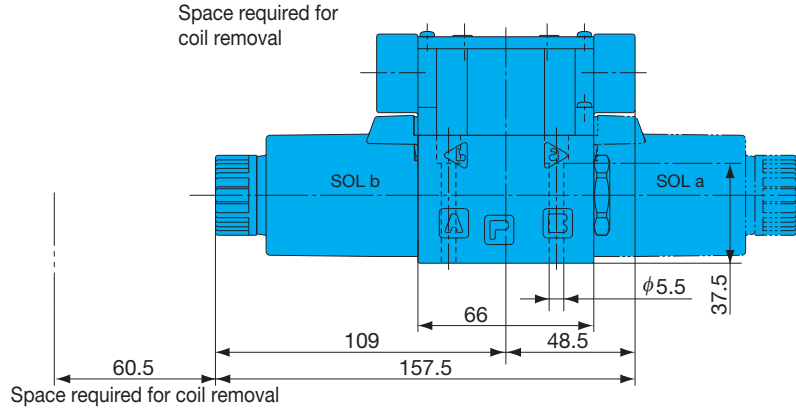
Note) The SL-G01-H**-R**-31 solenoid, is attached to the opposite side (SOL a) as shown in the diagram.



SL-G01-C**-R-C*-31
 SL-G01-E**-R-C*-31



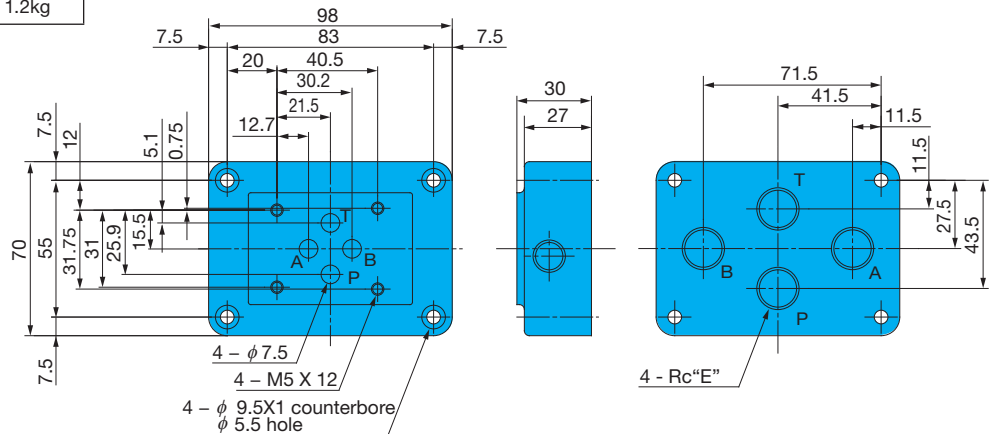
DC Solenoid and Rectifier
 SL-G01-A**-R-D/E*-31
 SL-G01-H**-R-D/E*-31
 SL-G01-C**-R-D/E*-31
 SL-G01-E**-R-D/E*-31



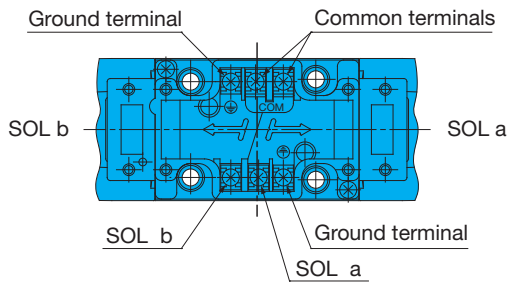
For sub plate SL-G01

Model No.	E	Weight
MSA-01X-10	1/4	1.2kg
MSA-01Y-10	3/8	1.2kg

Gasket Surface Dimensions
 (ISO 4401-03-02-0-05
 (JIS B 8355 D-03-02-0-05))



Wiring Diagram



- Note) 1. In the case of a double solenoid valve, a common terminal is provided to simplify wiring. When the common terminal is not used, remove the terminal screws.
 2. Use the ground terminal when grounding is required.
 3. Use an M3 type as a solderless terminal.
 4. Tighten terminal screws to a torque of 0.5 to 0.7N·m (5.1 to 7.1kgf·cm).

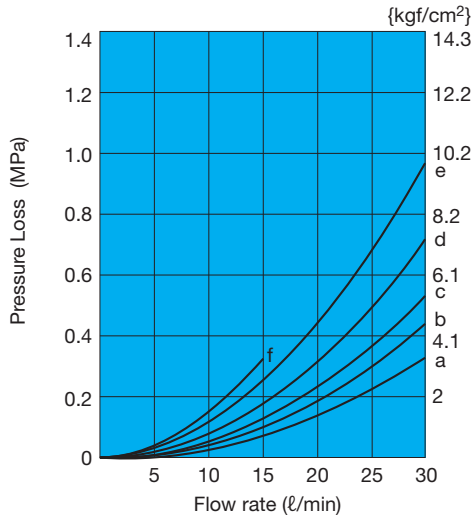
Electrical Circuit Diagram

Type	Model No.	Electrical Circuits
AC Solenoid	SL-G01-***-R-C*-31	
AC Solenoid Surgeless Type	SL-G01-***-GR-C*-31	
Built-in Rectifier	SL-G01-***-R-E*-31	
DC Solenoid	SL-G01-***-R-D*-31	
DC Solenoid Surgeless Type	SL-G01-***-GR-D*-31	
Built-in Rectifier Quick Return Type	SL-G01-***-QR-E*-31	See page E-4 for more information.

Performance Curves

Hydraulic Operating Fluid Kinematic Viscosity 20 mm²/s {cSt}

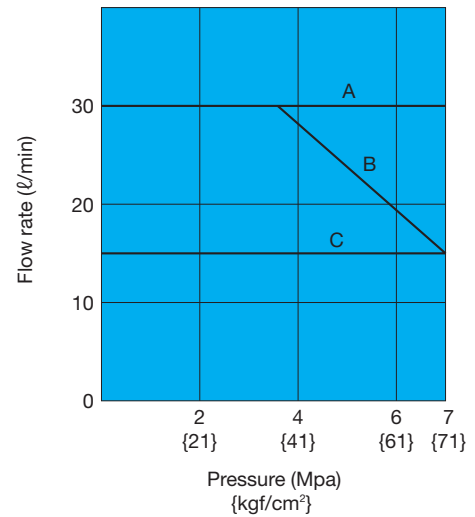
Pressure Loss Characteristics



Flow Path	P→A	P→B	A→T	B→T	P→T
A5	-	c	c	-	-
H5	c	-	-	c	-
A3X, H3X, E3X	b	b	e	e	-
C1	c	c	a	c	-
C2	a	c	e	c	-
C4	a	a	c	c	d
C5, C6S	c	c	c	c	-
C6	c	c	a	a	-
C7Y	f	f	e	e	d
C9	a	a	e	e	-

Pressure – Flow Volume Allowable Value

Operation Example	Operation Symbol	Operation Example	Operation Symbol	Operation Example	Operation Symbol
A5			-	B	
H5		A	B	-	
A3X, H3X, E3X C1, C2, C4, C5 C6, C9, C6S			B	B	
C7Y	C		C	C	



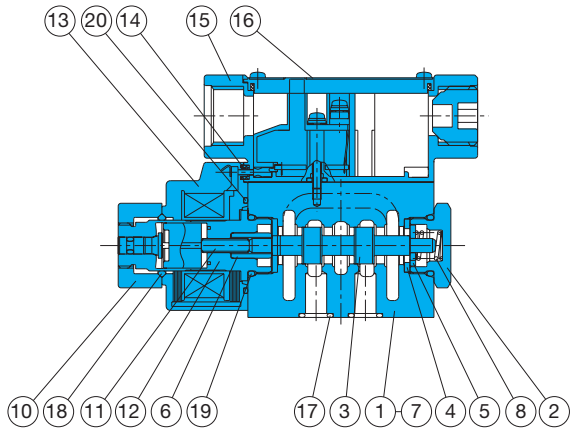
Switching Response Time

Model No.	Response Time (sec)		Measurement Conditions
	Solenoid ON	Spring Return	
SL-G01-**-R-C*-31	0.010 to 0.020	0.010 to 0.020	7MPa{71kgf/cm ² }
SL-G01-**-R-E1-31	0.055 to 0.080	0.150 to 0.185	20l/min
SL-G01-**-G)R-D2-31	0.055 to 0.080	0.025 to 0.035	40mm ² /s {cSt}

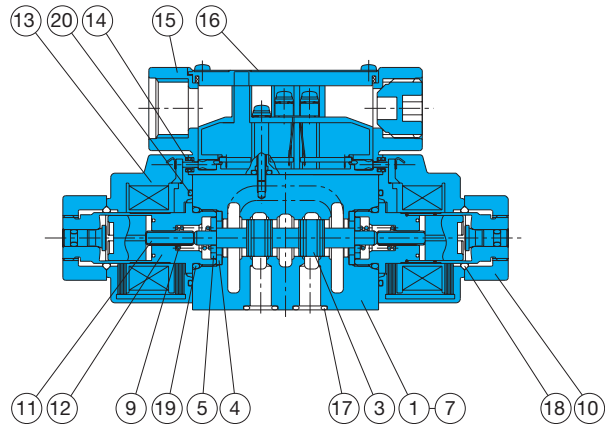
Note) 1. The switching response time changes slightly with operating conditions (pressure, flow rate, viscosity, etc.)
 2. In the case of power supply type E1 (with built-in rectifier), the spring return time using Quick Return (option symbol: Q) is the same as D2.

Cross-sectional Drawings

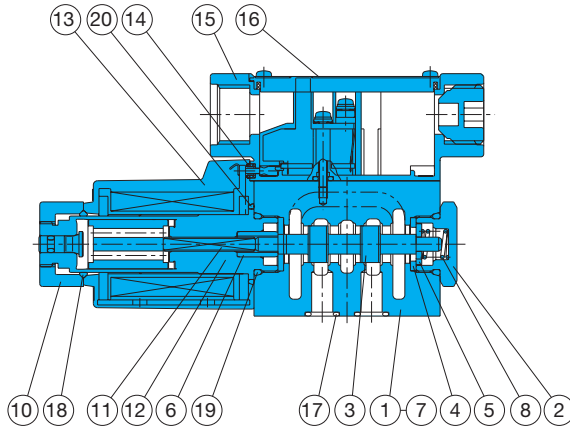
SL-G01-A**-R-C*-31



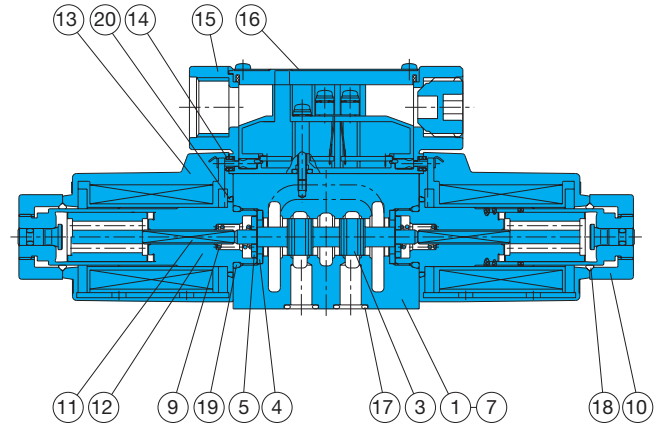
SL-G01-C**-R-C*-31



SL-G01-A**-R-D/E*-31



SL-G01-C**-R-D/E*-31



List of Sealing Parts

Part No.	Part Name	Type/ Part Number		Q'ty	
		DC SOL	AC SOL	Single Solenoid	Double Solenoid
17	O-ring	AS568-012(NBR-90)		4	4
18	O-ring	NBR-70-1 P20	NBR-70-1 P18	1	2
19	O-ring	NBR-90 P18		2	2
20	O-ring	S-25(NBR-70-1)	AS568-025(NBR-70-1)	1	2

Note) The materials and hardness of the O-ring conforms with JIS B2401. AS568 is SAE standard.

Part No.	Part Name	Part No.	Part Name
1	Body	11	Rod
2	Plug	12	Solenoid guide
3	Spool	13	Solenoid coil
4	Retainer A	14	Packing
5	Retainer B	15	Terminal box kit
6	Retainer C	16	Nameplate
7	Spacer	17	O-ring
8	Spring A	18	O-ring
9	Spring C	19	O-ring
10	Nut	20	O-ring

Seal Kit Number

AC SOL.		DC SOL.	
Single Solenoid	Double Solenoid	Single Solenoid	Double Solenoid
ELCS-AA	ELCS-CA	ELCS-AD	ELCS-CD