

SE Series Lower Power Solenoid Valve

10.5 to 15.8 gpm
1450 to 2320 psi

Features

Low current, low power

The SE series magnetic switching valve's solenoid has significantly lower power consumption.

Directly drivable by a programmable controller

Low-current operation means not only allows direct drive by a programmable controller (PC) output circuit, it also enables the use of a compact and simple control circuit.

Little coil temperature rise

Low power operation means there is little heat generated from the coil, which minimizes the effects of heat on mechanisms. Even with the AC solenoid, there is little chance of coil burnout.

With M12-4 pin connector (option)

Makes it easier to interface with open networks like Device Net. This connector streamlines wiring work. The diode for

preventing current back surge is built in to the terminal box to protect the slave unit connection. (With M12-4 pin connector)

Global compliance (G01 size)

Meets overseas safety standards TÜV (CE marking). Can be used safely around the world.

Specifications

Operation Symbol	JIS Symbol	SE-G01-**-*(G)R-**-40		SE-G03-**-GR-**-*(J) 30	
		Rated Flow Rate - Maximum Flow Rate gpm	Maximum Working Pressure psi	Rated Flow Rate - Maximum Flow Rate gpm	Maximum Working Pressure psi
A2X		7.9	2320	10.5	1450
A3X		10.5		13.2	
H3X				—	
E3X				13.2	
C4				7.9	
C5		10.5		15.8	
C6					

Note: The maximum flow rate of each valve depends on the pressure. For details, see page D-32.

• Handling

- In order to realize the full benefits of the solenoid valve, configure piping so oil is constantly supplied to the T(DR) port.
- Ensure that surge pressure in excess of the maximum allowable back pressure can be accidentally at the T port.
- Note that the maximum flow rate is limited when used as a four-way valve, or by blocking ports for use as a two-way valve or one-way valve.
- Always keep the operating fluid clean. Allowable contamination is class NAS12 or less.

- When using petroleum type operating fluid, use ISO VG 32, 46.
- Be sure to note the allowable pressure range of the coil being used.
- Maintaining a switching position under high pressure for a long period can cause abnormal operation due to hydraulic lockup. Contact your agent when you need to maintain a switching position for a long period.
- When using a detent type (E3X), provide constant energization when secure maintenance of the switching position is required.
- Note that manual pin operating pressure changes in accordance with tank line back pressure.
- If you do not select the option with the M12-4 pin connector, current back surge may occur because there is no solenoid in the central terminal box. Therefore, install solenoid valves to protect against current back surge on both ends of the coil in the output circuit of the programmable controller (PC) if directly operating the solenoid valves.

Solenoid Assembly Specifications

Solenoid Type	Power Supply Type	Voltage (V)	Frequency (Hz)	For SE-G01				For SE-G03			
				Solenoid Coil Type	Holding Current (A)	Holding Power (W)	Allowable Voltage Range (V)	Solenoid Coil Type	Holding Current (A)	Holding Power (W)	Allowable Voltage Range (V)
Built-in rectifier type AC	E1	AC100	50	EED64-E1	0.08	7.0	80 to 120	SLH1-03BR1-01	0.06	5.8	80 to 120
			60								
DC	D2	DC24	—	EED64-D2	0.2	4.8	21.6 to 26.4	SLH1-03BD2-01	0.2	4.8	21.6 to 26.4

Solenoid Type			SE-G01		SE-G03		
			DC Solenoid	Internal DC solenoid for rectifier	DC Solenoid	Internal DC solenoid for rectifier	
			D2	E1	D2	E1	
Maximum Working Pressure	P, A, B Ports		2320 psi		1450 psi		
Maximum Allowable Backpressure	T port		2320 psi		1450 psi (In the case of 290 psi operation symbol E3X)		
Changeover Frequency (per minute)			120		120		
Standard	Indicator light Surgeless		GR	R	GR		
Weight lbs	Double Solenoid		4.8		7.7		
	Single Solenoid		3.7		7.2		
Operating Environment	Dust Resistance/Water Resistance Rank		IP64 (Dust-tight, Splash proof)		IP65 (Dust-tight, Waterjet-proof)		
	Ambient Temperature		-4 to 122° F		14 to 122° F		
	Operating Fluid	Temperature Range	-4 to 158° F		32 to 149° F		
		Viscosity Range		15 to 300 centistokes			
		Filtration		10 microns or less			
Bundled Accessories	Mounting bolt		(4) 10-24 x 1 3/4 LG (not included)		1/4-20 UNC x 2 3/4		
	Tightening Torque		3.6 to 5 ft lbs		7.2 to 9.4 ft lbs		

Note: For mounting bolts, use grade 8 or equivalent.

Understanding Model Numbers

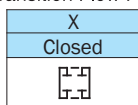
SE - G 03 - A 3 X - GR - C2 - J30

Design number
40: For 01 size
30: 03

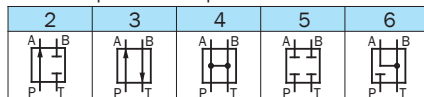
Power supply
D: DC
E: For AC (joint 50/60 Hz inside rectifier) E1=AC100V

Auxiliary symbol
GR: Surgeless type with indicator (applicable for power supply D2 only)
R: With indicator light (applicable for power supply E1 only)
V: With M12-4 pin connector, load side - common (applicable for power supply D2 only)
W: With M12-4 pin connector, load side + common (applicable for power supply D2 only)

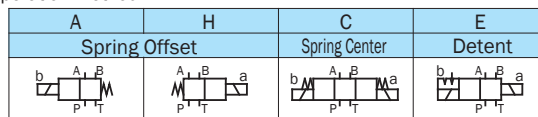
Transition Flow Path (Specify for A2X, A3X only.)



Center valve position flow path



Operation Method



Nominal pipe diameter
01 size (D03)
03 size (D05)

Mounting method
G: Gasket type

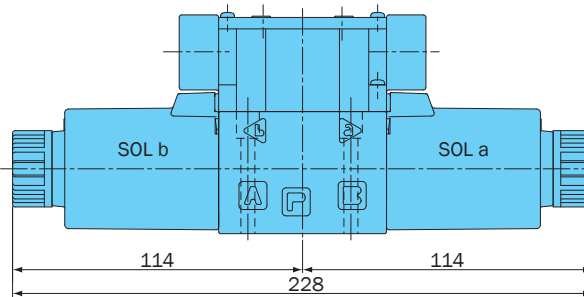
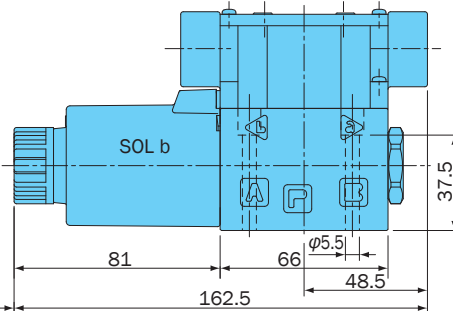
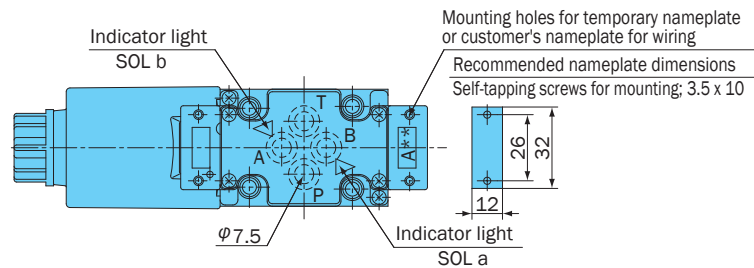
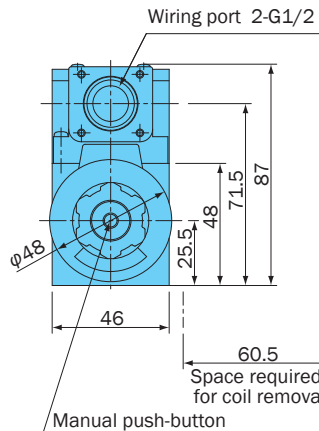
Low-power solenoid

Installation Dimension Drawings

SE-G01-A***-(G)R-**-40

SE-G01-H***-(G)R-**-40

Note: For SE-G01-H*** (G) R ** 40, the solenoid is on the opposite side as that shown in the diagram (SOL.a).

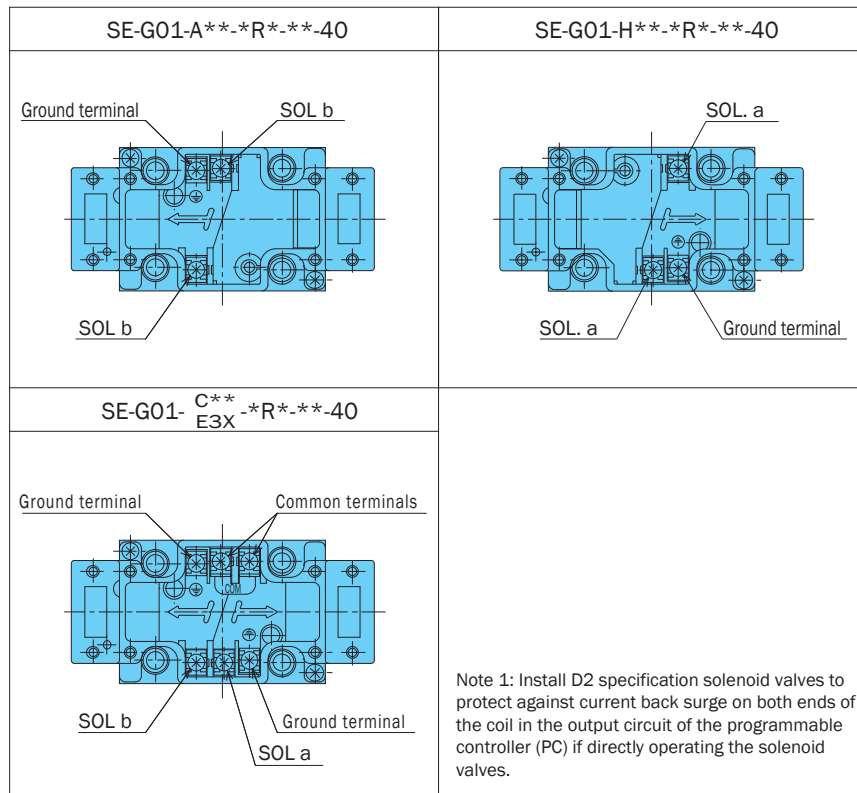


SE-G01-C**-(G)R-**-40

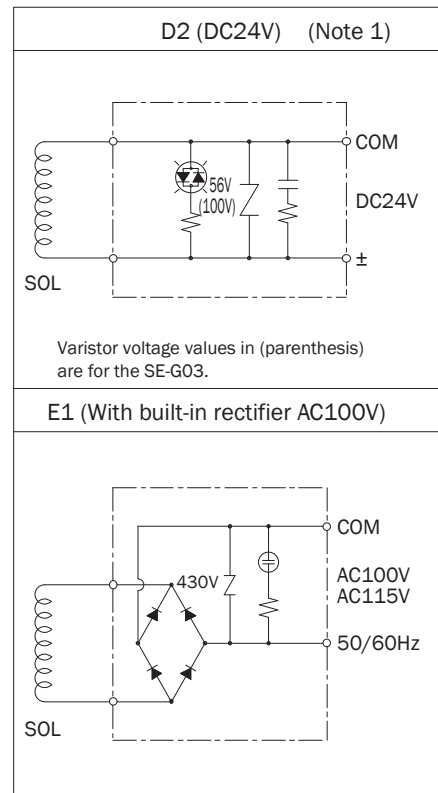
SE-G01-E3X-(G)R-**-40

Note: Gasket surface dimensions and sub plate are the same as those for SS-G01. See page D-8 for more information.

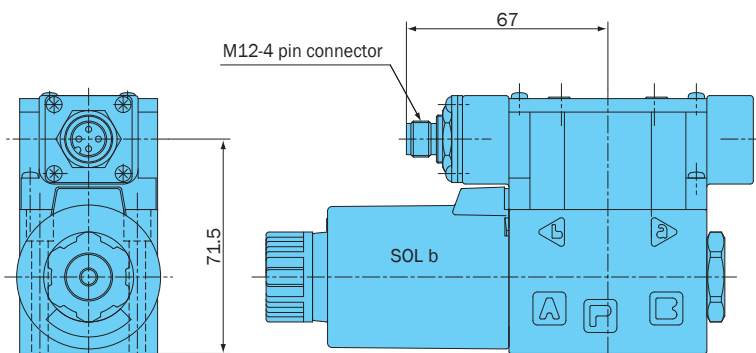
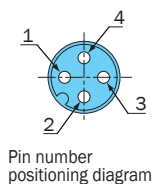
Wiring diagram for central terminal box kit



Electrical circuit diagram for central terminal box kit

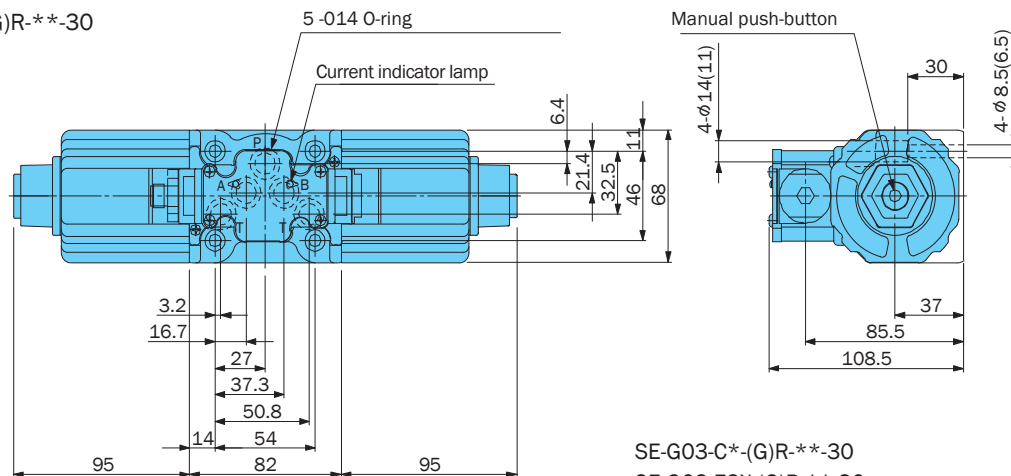


With M12-4 pin connector
SE-G01-**-GRV-D2-40
SE-G01-**-GRW-D2-40

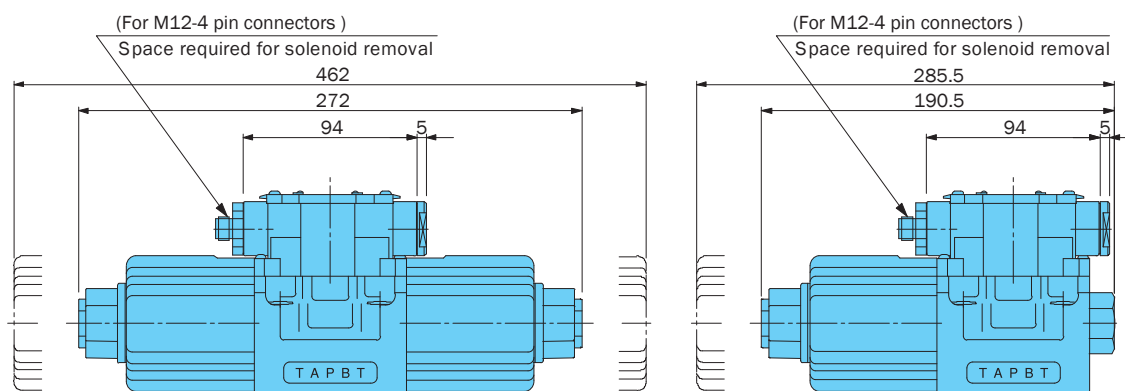


	M12-4 pin connector	Electrical Circuit Diagram
Type V	1: Not used 2: SOL a 3: COM (-) 4: SOL b	M12-4 pin connector Terminal box Short circuit equipment
Type W	1: COM (+) 2: SOL a 3: Not used 4: SOL b	M12-4 pin connector Terminal box Short circuit equipment

SE-G03-A**-(G)R**-30



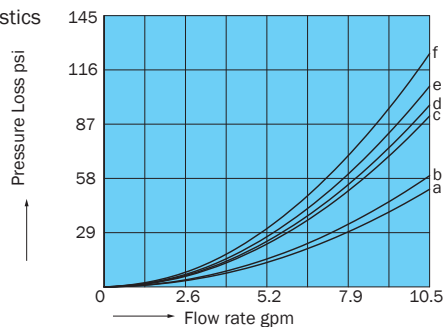
SE-G03-C*-(G)R**-30
SE-G03-E3X-(G)R**-30



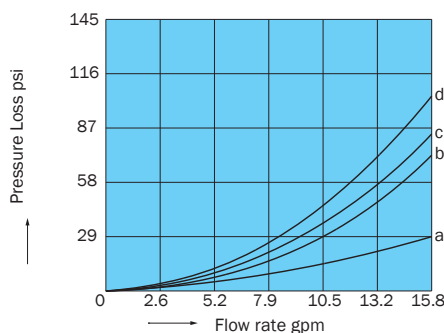
Performance Curves

Differential Hydraulic Fluid Viscosity 32 centistokes

Pressure Loss Characteristics

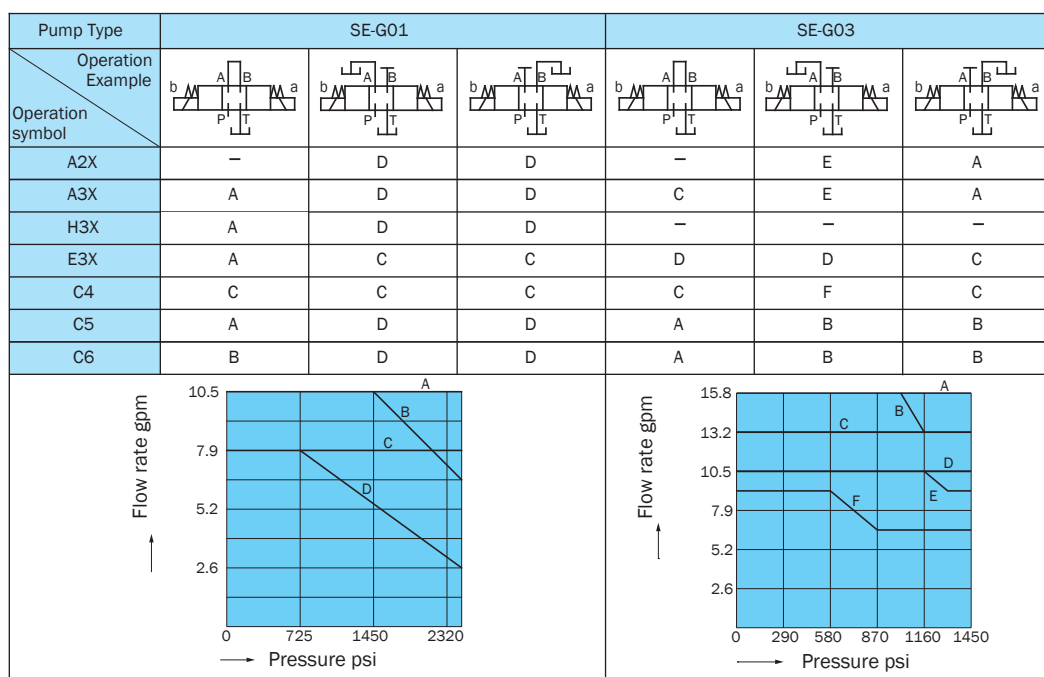


Pump Type	Flow Path	P/ A	P/ B	A/ T	B/ T	P/ T
SE-G01	A2X	d	f	—	—	—
	A3X	f	f	e	e	—
	H3X	f	f	e	e	—
	E3X	c	c	e	e	—
	C4	b	b	b	b	d
	C5	e	e	d	d	—
	C6	f	f	a	a	—



Pump Type	Flow Path	P/ A	P/ B	A/ T	B/ T	P/ T
SE-G03	A2X	d	d	—	—	—
	A3X	d	d	d	d	—
	E3X	d	d	c	c	—
	C4	c	c	a	a	b
	C5	d	d	d	d	—
	C6	d	d	b	b	—

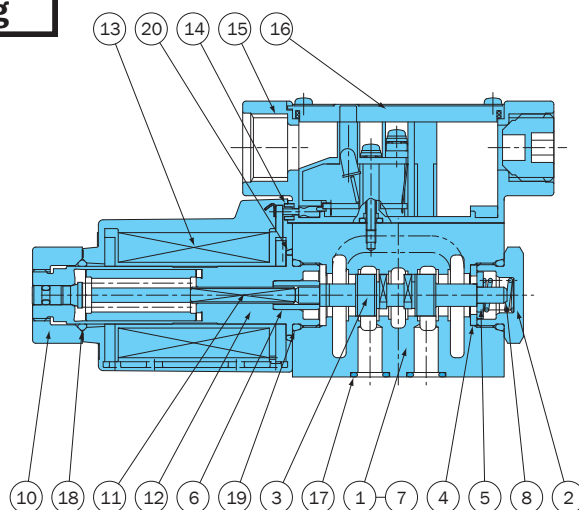
Pressure -
Flow Volume
Allowable Value



Note: 1.The maximum flow rate is the value when a rated 90%V is applied following solenoid temperature rise and saturation.
2.The maximum flow rate is the allowable value of each port.

Cross-sectional Drawing

SE-G01-A3X-(G)R-**-40



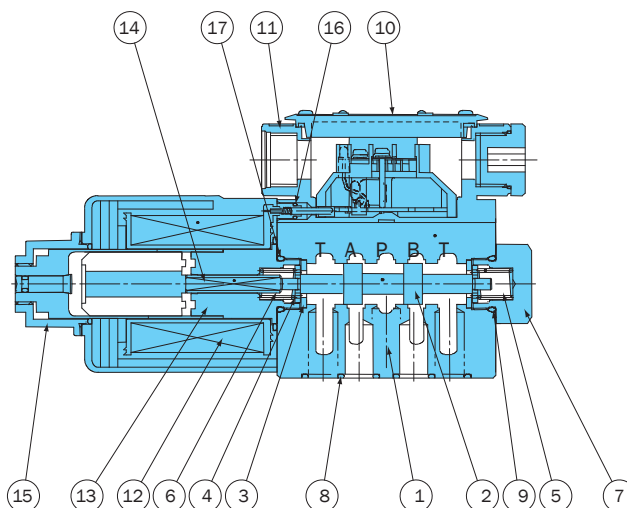
List of Sealing Parts

Part No.	Part Name	SE-G01		
		Part Number	Q'ty	
			Single Solenoid	Double Solenoid
17	O-ring	AS568-012(HS90)	4	4
18	O-ring	1A-P18	1	2
19	O-ring	1B-P18	2	2
20	O-ring	S-25	1	2

Note: O-ring 1A-** and 1B-** indicate JIS Standard B 2401-1A-** and 1B-**.

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

SE-G03-A3X-GR-**- (J)30



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

List of Sealing Parts

Part No.	Part Name	SE-G03		
		Part Number	Q'ty	
			Single Solenoid	Double Solenoid
8	O-ring	1B-P12	5	5
9, 17	O-ring	1B-P18	2	2
16	O-ring	1A-P3	2	4

Note: O-ring 1A-** and 1B-** indicate JIS Standard B 2401-1A-** and 1B-**.

Seal Kit Number

SE-G01		SE-G03	
Single Solenoid	Double Solenoid	Single Solenoid	Double Solenoid
EEDS-01A	EEDS-01C	EECS-03A	EECS-03C

D

Solenoid Valves