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Minute Signal Current Type Solenoid Valve



Features

- The capability to switch the valve with a minute signal current (approximately 10 mA) enables direct drive from a programmable sequence controller.

Nomenclature

※ - **KSOB** - **G** ※※ - ※※ ※ **P** - ※※ - ※ **N** - ※※※

1 2 3 4 5 6 7 8 9 10 11

1 Applicable fluid code

No designation: Petroleum-based hydraulic fluid
 H: Water-glycol hydraulic fluid (G02 accepts water-glycol hydraulic fluid with no designation.)
 F: Phosphate ester hydraulic fluid

2 Model No.

KSOB: K series minute signal current type solenoid valve

3 Connections

G: Gasket mount type

4 Nominal diameter

02: ¼
 03: ⅜

5 Spool type (See the model table)

6 Spool operating method (See the model table)

C: Spring center type
 A: Spring offset type (with SOL. a)
 B: Spring offset type (with SOL. b)
 N: No-spring type (without detent)
 D: No-spring type (with detent)

7 Voltage code

P: DC 24 V

8 Design No.

(The design No. is subject to change)

40: Nominal diameter 03 (⅜)
 50: Nominal diameter 02 (¼)

9 Option code I

8: Mounting bolt M8 *1

10 Option code II

N: With surge killer

11 Auxiliary spool type (See the model table)

Note: *1 Mounting bolts M8 are only applicable to nominal diameter 03 (⅜).

- Refer to KSO-G※※ on Page G-12 for the model table, performance curves and details on handling.
- The external dimensions and sectional structure are the same as those of the terminal box type of KSO-G※※.

Specifications

Model No.	Nominal diameter	Maximum operating pressure *2 MPa {kgf/cm ² }	Maximum flow rate L/min	Permissible back pressure MPa {kgf/cm ² }	Maximum switching frequency Times per minute	External coating protection	Signal current (At DC 24 V)
KSOB-G02	¼	35 {350} (25 {250})	100	17.5 {175}	240	IEC Pub529 IP65	10 mA ±10%
KSOB-G03	⅜		160	16 {160}			

Note: *2 The maximum operating pressure is 25 MPa {250 kgf/cm²} when 5C, 66C or 51C is designated for the spool type and spool operating method.

Solenoid specifications

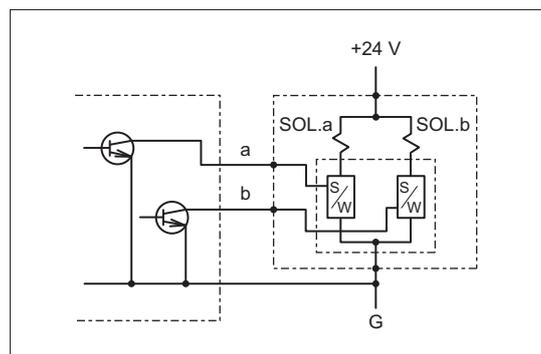
Model No.	Power supply voltage	Holding current A	Holding power W	Permissible voltage fluctuation %
KSOB-G02	DC 24 V	1.22	29.2	90 to 110 Ripples included
KSOB-G03		1.6	38	

Note: The electric current and power indicated are the values at 20°C.

Time rating	Insulation resistance	Withstand voltage	Insulation class	
			KSOB-G02	KSOB-G03
Continuous	50 MΩ	AC 1500 V, 1 minute	Class B (Coils: Class F)	

Electrical circuit diagram

- Signaling method: Internal signal



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Mass (kg)

Details		KSOB-G02	KSOB-G03
Terminal box type	Double solenoid	2.2	5.8
	Single solenoid	1.7	4.4

Operation time (Sec.)

Operating direction	KSOB-G02	KSOB-G03
Energize	0.025 to 0.045	0.03 to 0.09
Spring return	0.01 to 0.035	0.02 to 0.05

Note: The operation time may change slightly depending on the conditions of use (pressure, flow rate, hydraulic fluid viscosity, etc.).

Sub-plate model code

- The sub-plate is not provided with the valve. Order it separately if required by specifying the model code given in the table below.

Model code	Nominal diameter	Connection port diameter	Mass kg
JS-01M02	1/4	Rc1/4	0.64
JS-02M03		Rc3/8	2.3
JS-03M	3/8	Rc3/8	2.5
JS-03M04		Rc1/2	2.2

Refer to Page S-8 for the dimensions of the sub-plate.

Solenoid model codes

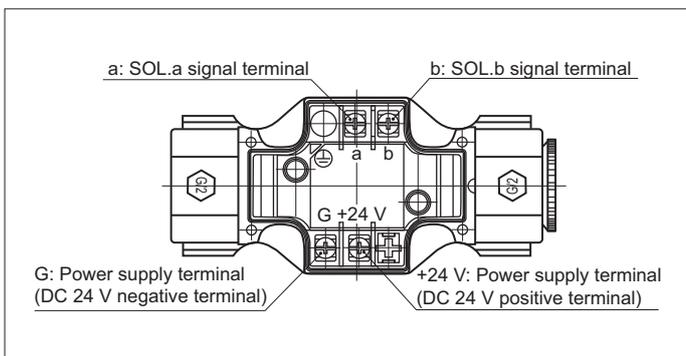
Details	KSOB-G02		KSOB-G03	
	Model code of solenoid set	Model code of solenoid coil	Model code of solenoid set	Model code of solenoid coil
Terminal box type	KD-2P-30	C-KD-2P-30	KD-3P-20-L	C-KD-3P-20-L

○ The solenoid set comprises a solenoid coil, a solenoid cartridge, a plastic nut, and a push pin.

Terminal box model code

Model No.	Spool operating method C, N, D type	Spool operating method A type	Spool operating method B type
KSOB-G02	TNW2-BP-N	TNSA2-BP-N	TNSB2-BP-N
KSOB-G03	TNW3-BP-N	TNSA3-BP-N	TNSB3-BP-N

Wiring guide



- The diagram shows the double solenoid type.
- The figure shows the status with the terminal box nameplate removed.
- The single solenoid type has three terminals.
- Always turn off the power supply before starting wiring work.
- Use crimp-style terminals for M3.
- Tighten the terminal screws (M3) at a tightening torque of 0.34 to 0.51 N·m {3.4 to 5.1 kgf·cm}