

Contact Details

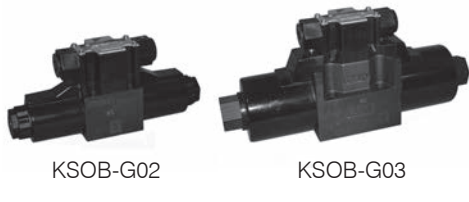
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Minute Signal Current Type Solenoid Valve



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 (Applicable only to G03)
 (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
 E: With earth terminal

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-16 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

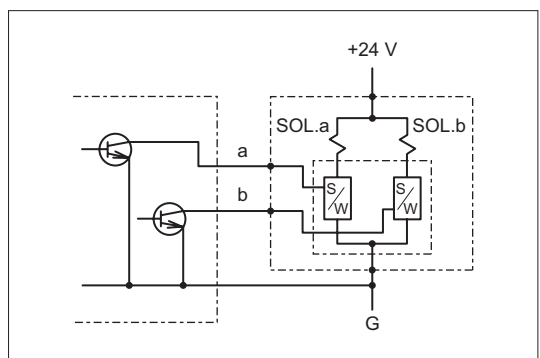
| Model No. | Power supply voltage | Holding current A | Holding power W | Permissible voltage fluctuation % |
|-----------|----------------------|----------------------|--------------------|-----------------------------------|
| KSOB-G02 | DC 24 V | 1.22 | 29.2 | 90 to 110 Ripples included |
| KSOB-G03 | | 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-9 for the dimensions of the sub-plate.

Solenoid model codes

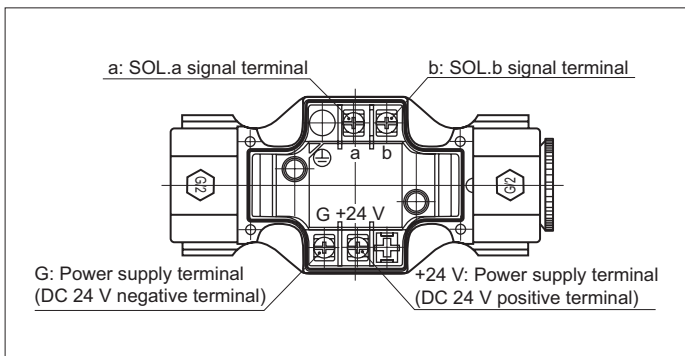
| Details | KSOB-G02 | | KSOB-G03 | |
|-------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|
| | Model code of solenoid set | Model code of solenoid coil | Model code of solenoid set | Model code of solenoid coil |
| 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}