# Compact Direct Operated
# 2/3 Port Solenoid Valve for Chemicals
# Series LVM09/090

## How to Order

**Base Mounted** **LVM** [09R3] [ ] – [5] [A] – [ ] – [ ]

**Symbol**

| Symbol | Number of ports | Valve type | |
|---|---|---|---|
| **09R3** | 2 | N.C. | IN (Symbol 1) OUT (Symbol 2) |
| **09R4** | | N.O. | IN (Symbol 3) OUT (Symbol 2) |
| **095R** | 3 | Universal | 1 3 2 |

**Function**

| | |
|---|---|
| **Nil** | Standard |
| **Y1** | With power-saving circuit |

**Coil voltage**

| Symbol | Voltage |
|---|---|
| **5** | 24 VDC |
| **6** | 12 VDC |

**Wetted part material**

| Symbol | Plate | Diaphragm |
|---|---|---|
| **A** | PEEK | EPDM |
| **B** | PEEK | FKM |
| **C** | PEEK | Kalrez® |

**Lead wire length**

| | |
|---|---|
| **Nil** | 150 mm |
| **3** | 300 mm |
| **6** | 600 mm |

∗ Nil cannot be selected in the case of function Y1.

**CE compliant**

| | |
|---|---|
| **Nil** | None |
| **Q** | CE compliant |

## Specifications

| Model | | | Base mounted | | |
|---|---|---|---|---|---|
| | | | **LVM09R3** | **LVM09R4** | **LVM095R** |
| **Valve construction** | | | Diaphragm type direct operated poppet (Rocker type) | | |
| **Valve type** | | | N.C. | N.O. | Universal |
| **Number of ports** | | | 2 | | 3 |
| **Fluid** Note 1) | | | Air, Water, Pure water, Diluent, Cleaning solvent | | |
| **Operating pressure range** | | | –75 kPa to 0.2 MPa | | |
| **Orifice diameter** | | | 1.1 mm | | |
| **Response time** | | | 10 ms or less (at pneumatic pressure) | | |
| **Leakage** | | | Zero leakage, either external or internal (at water pressure) | | |
| **Proof pressure** Note 2) | | | 0.3 MPa | | |
| **Ambient temperature** | | | 0 to 50°C | | |
| **Fluid temperature** | | | 0 to 50°C (with no condensation) | | |
| **Volume of valve chamber** Note 3) | | | 18 μℓ | | |
| **Mounting orientation** Note 4) | | | Free | | |
| **Enclosure** | | | IP40 or equivalent | | |
| **Weight** | | | 20 g | | |
| **Rated voltage** | | | 12, 24 VDC | | |
| **Allowable voltage fluctuation** Note 5) | | | ±10% of rated voltage | | |
| **Type of coil insulation** | | | Class B | | |
| **Power consumption (When rated voltage is at 24 V)** | **Standard** | | 2 W (0.08 A) | | |
| | **With power-saving circuit** | **Inrush** | 3.3 W (0.14 A) | | |
| | | **Holding** | 0.9 W | | |
| **Coil switching noise** Note 6) | | | 50 dB | | |

## Flow Characteristics

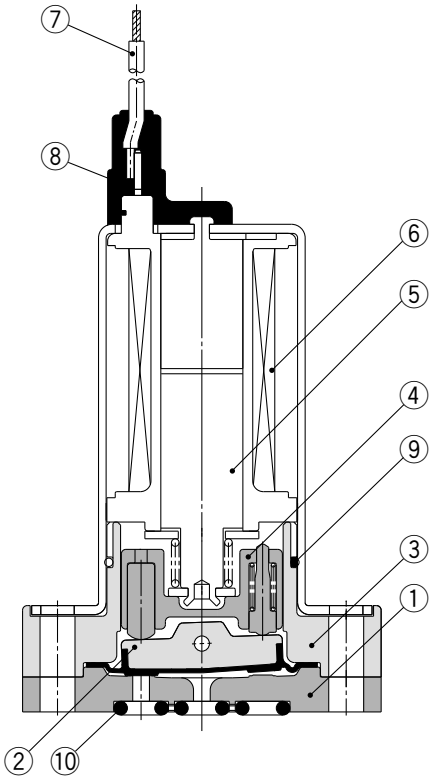
| Water | | Air | |
|---|---|---|---|
| Av | Cv | C | b |
| $0.43 \times 10^{-6}$ | 0.018 | 0.06 | 0.2 |

∗ The values of Av and Cv are based on JIS B 2005:1995, C and b are based on JIB B 8390:2000.

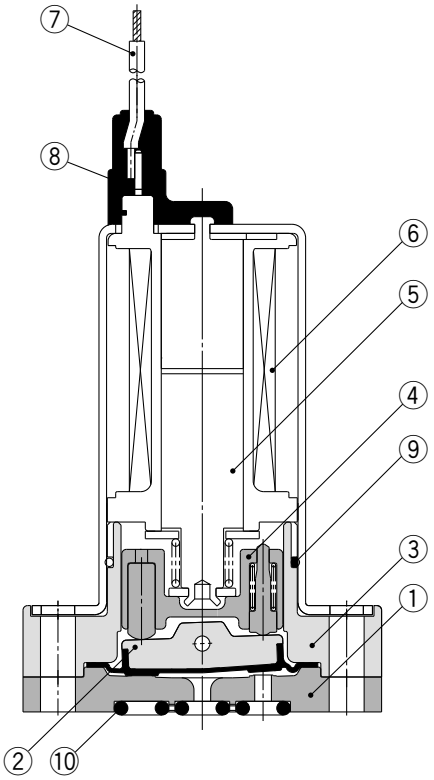
Note 1) Select an appropriate material for the wetted part when fluid such as a cleaning solvent is used. Also, be sure to confirm the fluid compatibility in advance.
Note 2) Indicates the pressure which does not generate breakage, cracks or external leakage after a one-minute airtight test.
Note 3) Indicates the volume of clearance inside the valve chamber after the volume of the diaphragm is subtracted.
Note 4) Since the body (orifice shape) is designed to eliminate residual liquid, mounting in a vertical direction with the coil at the top is recommended. When residual liquid is not considered, any mounting orientation is available.
Note 5) When the response speed is regarded as important, prevent negative fluctuation of the voltage by adequate regulation.
Note 6) The value is based on SMC's measurement conditions. The noise level will vary with conditions.
Note 7) Refer to 10 in "Design and Selection" on the back of page 2, if the valve is to be energized continuously for extended periods of time.

## Construction: Base Mounted

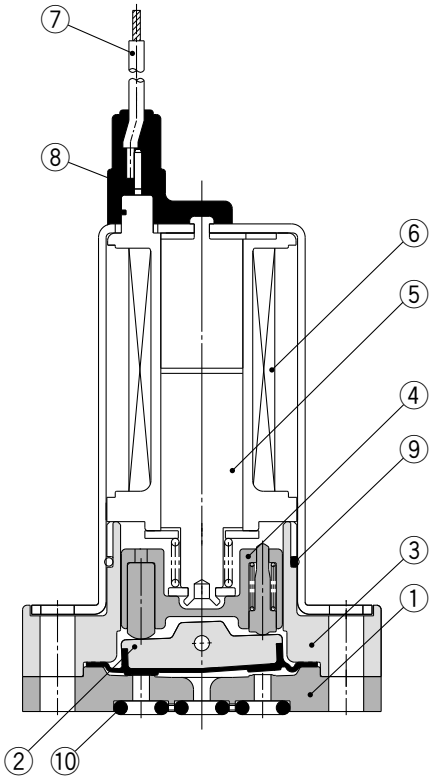
### LVM09R3




### LVM09R4




### LVM095R

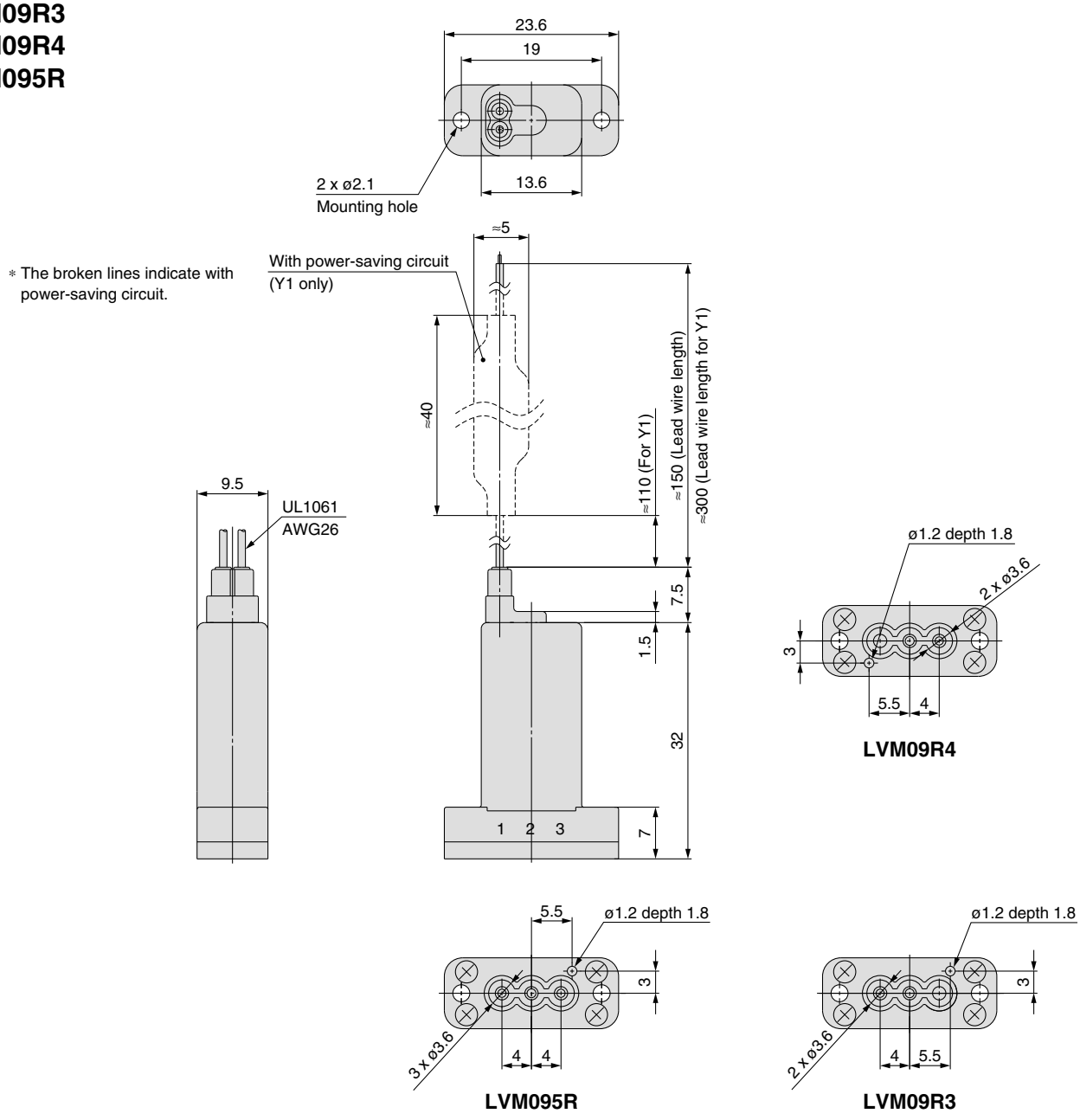



**Component Parts: LVM09R3, 09R4, 095R**

| No. | Description | Material |
|---|---|---|
| 1 | **Plate** | PEEK |
| 2 | **Diaphragm assembly** | EPDM/FKM/Kalrez® |
| 3 | **Body** | PBT |
| 4 | **Slide bushing assembly** | PPS/Stainless steel |
| 5 | **Armature assembly** | — |
| 6 | **Coil assembly** | — |
| 7 | **Lead wire** | — |
| 8 | **Mold** | PET |
| 9 | **O-ring** | NBR |
| 10 | **Interface gasket** | EPDM/FKM/Kalrez® |

## Dimensions: Base Mounted

**LVM09R3**
**LVM09R4**
**LVM095R**




### Recommended interface dimensions