

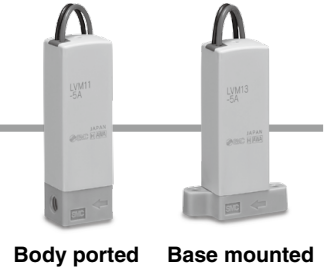
Direct Operated Poppet Type



Compact Direct Operated
2/3-Port Solenoid Valve for Chemical Liquids with Power Saving Circuit

LVM11/13 Series

How to Order



Body ported

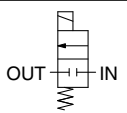
LVM 11 - 5 A - [] - [] - []

Base mounted

LVM 13 - 5 A P - [] - [] - []

1 Number of ports, Valve type

Symbol	Number of ports	Valve type
11	2	N.C.

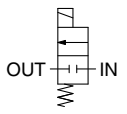


2 Option

Nil	None
1	Bracket

3 Number of ports, Valve type

Symbol	Number of ports	Valve type
13	2	N.C.



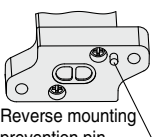
4 Coil voltage

Symbol	Voltage
5	24 VDC
6	12 VDC

5 Fluid contact material

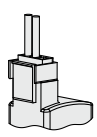
Symbol	Body	Diaphragm
A	PEEK	EPDM
B	PEEK	FKM
C	PEEK	Kalrez®

6 Reverse mounting prevention pin

Nil	None
	Yes
P	 Reverse mounting prevention pin

7 Electrical entry, Lead wire length, Light/surge voltage suppressor

Symbol	Electrical entry, Lead wire length	Light/surge voltage suppressor
Nil	Grommet, 300 mm	Cannot be selected
6	Grommet, 600 mm	
10	Grommet, 1000 mm	
KZ	Plug connector, 300 mm	Yes
KOZ	Plug connector, Without connector	



* The plug connector is included but does not come assembled.

* If a lead wire length of 600 mm or more is required, select "KOZ" (Without connector) and then add the connector part number shown below under the valve part number when ordering.

Plug connector part no.: AXT661 - 14A - []

Lead wire length

6	600 mm
10	1000 mm
20	2000 mm
30	3000 mm

8 CE/UKCA-compliant

Nil	No
Q	CE/UKCA-compliant

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Mounting screws are included with the base-mounted type. (2 pcs.)
M2 x 11/With spring washer (Material: Stainless steel)

For other spare parts, refer to page 44.

LVM11/13 Series

Specifications



Body ported



Base mounted

Model	Body ported		Base mounted	
	LVM11		LVM13	
Valve construction	Direct operated poppet type			
Valve type	N.C.			
Number of ports	2			
Fluid*1	Air, Water, DI water (Pure water), Diluent, or Cleaning fluid			
Operating pressure range	0 to 0.25 MPa			
Orifice diameter	1.5 mm			
Response time*7	10 ms or less (at pneumatic pressure)			
Leakage	Zero leakage, both internal or external (at water pressure)			
Proof pressure*2	0.38 MPa			
Ambient temperature*8	0 to 50°C			
Fluid temperature*8	0 to 50°C (No freezing)			
Volume of valve chamber*3	11 μL		13 μL	
Mounting orientation*4	Free			
Enclosure	IP40 or equivalent			
Weight	30 g			
Rated voltage	12, 24 VDC			
Allowable voltage fluctuation*5	±10% of rated voltage			
Type of coil insulation	Class B			
Power consumption (When rated voltage is at 24 V)	With power saving circuit	Inrush	2.5 W (0.1 A)	
		Holding	1 W	
Coil switching noise*6	50 dB			

*1 Select an appropriate fluid contact material according to the fluid to be used. Additionally, check the chemical resistance beforehand.

*2 Indicates the pressure which does not generate breakage or cracks after a one-minute airtight test

*3 Indicates the volume of clearance inside the valve chamber after the volume of the diaphragm is subtracted

*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 need not be taken into consideration, any mounting orientation is available.

*5 When response time is prioritized, control the voltage so that there is no fluctuation below the rated voltage.

*6 The value is based on SMC's measurement conditions. The noise level will vary according to the actual conditions.

*7 In compliance with JIS B 8419:2010

(Value at ambient and fluid temperatures of 25°C, rated voltage, max. operating pressure (air), and when the N.C. (IN) port is pressurized)

The response time will vary depending on the supply pressure, fluid, piping conditions, and ambient temperature.

*8 When the diaphragm material is Kalrez®, the valve changeover time will be significantly longer at ambient and fluid temperatures of 15°C or less when compared to the valve changeover time at room temperature (≈ 25°C).

* Refer to 10 in "Design / Selection" on page 41 if the valve is to be energized continuously for extended periods of time.

Flow Rate Characteristics

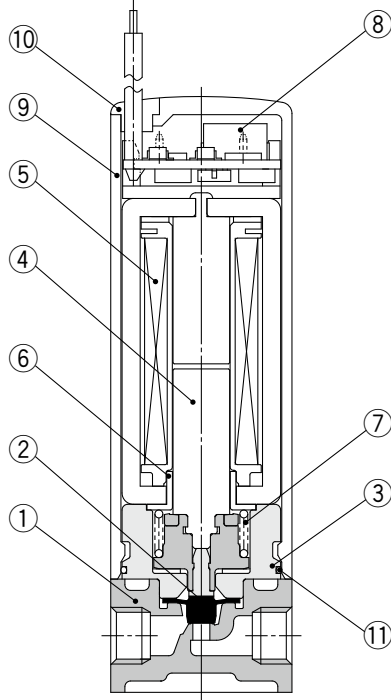
Water		Air	
Kv	Cv	C	b
0.034	0.04	0.13	0.22

* The values of Kv and Cv are based on JIS B 2005:1995; the values of C and b are based on JIS B 8390:2000.

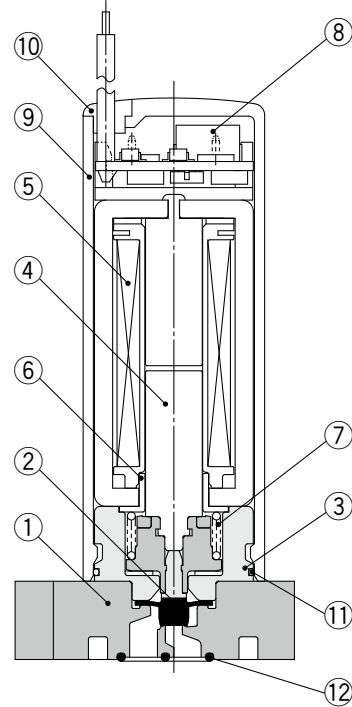
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Construction

Body ported LVM11



Base mounted LVM13



Component Parts: LVM11

No.	Description	Material
1	Body	PEEK
2	Diaphragm assembly	EPDM/FKM/Kalrez®
3	Spacer	PBT
4	Armature assembly	Stainless steel/POM
5	Coil assembly	—
6	Sleeve	SUY (Iron)
7	Return spring	Stainless steel
8	Board assembly	—
9	Casing	PBT
10	Plug	NBR
11	O-ring	NBR

Component Parts: LVM13

No.	Description	Material
1	Body	PEEK
2	Diaphragm assembly	EPDM/FKM/Kalrez®
3	Spacer	PBT
4	Armature assembly	Stainless steel/POM
5	Coil assembly	—
6	Sleeve	SUY (Iron)
7	Return spring	Stainless steel
8	Board assembly	—
9	Casing	PBT
10	Plug	NBR
11	O-ring	NBR
12	Gasket	EPDM/FKM/Kalrez®

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LVM07

LVM09/090

LVM10/100

LVM15/150

LVM20/200

LVM11/13

Specific Product
Precautions

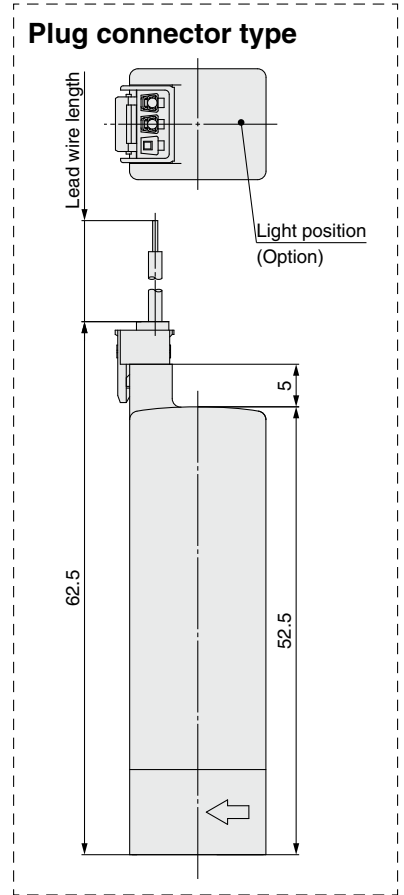
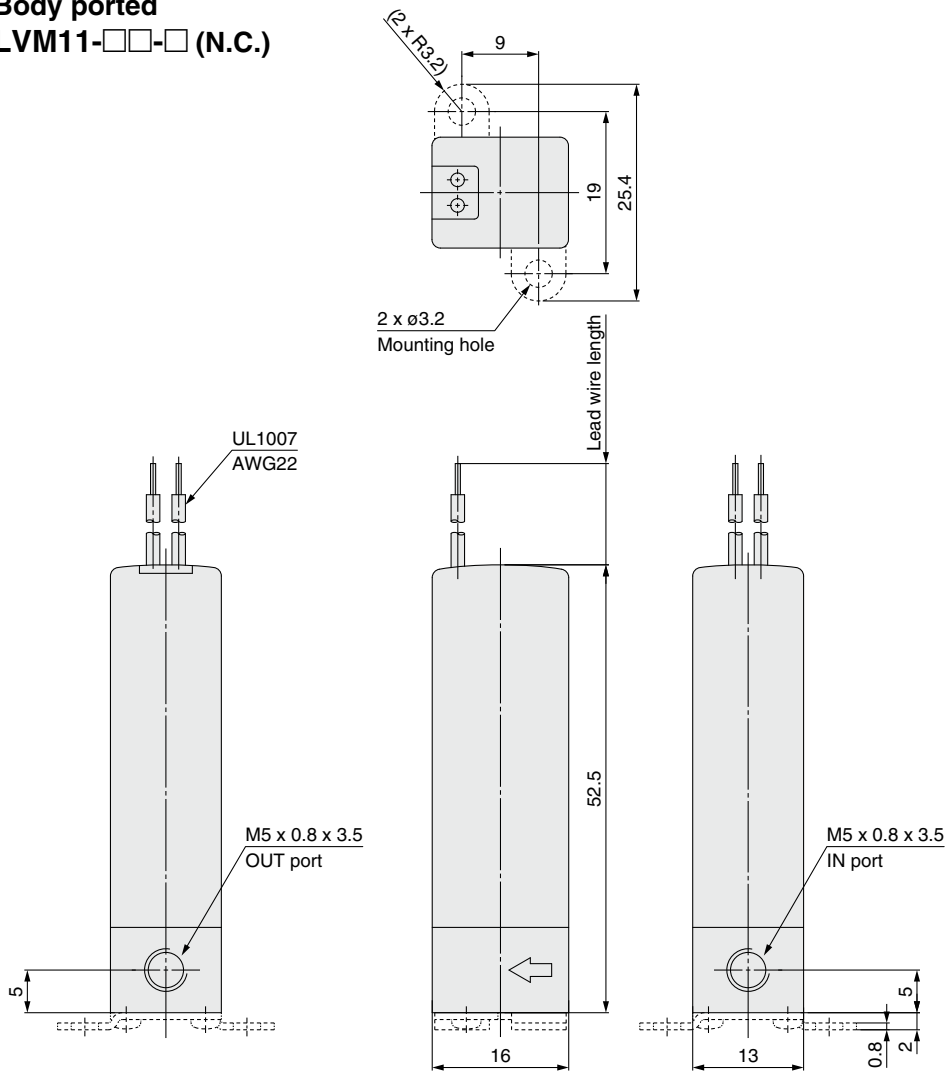
Spare Parts

LVM11/13 Series



Dimensions

Body ported
LVM11-□□-□ (N.C.)

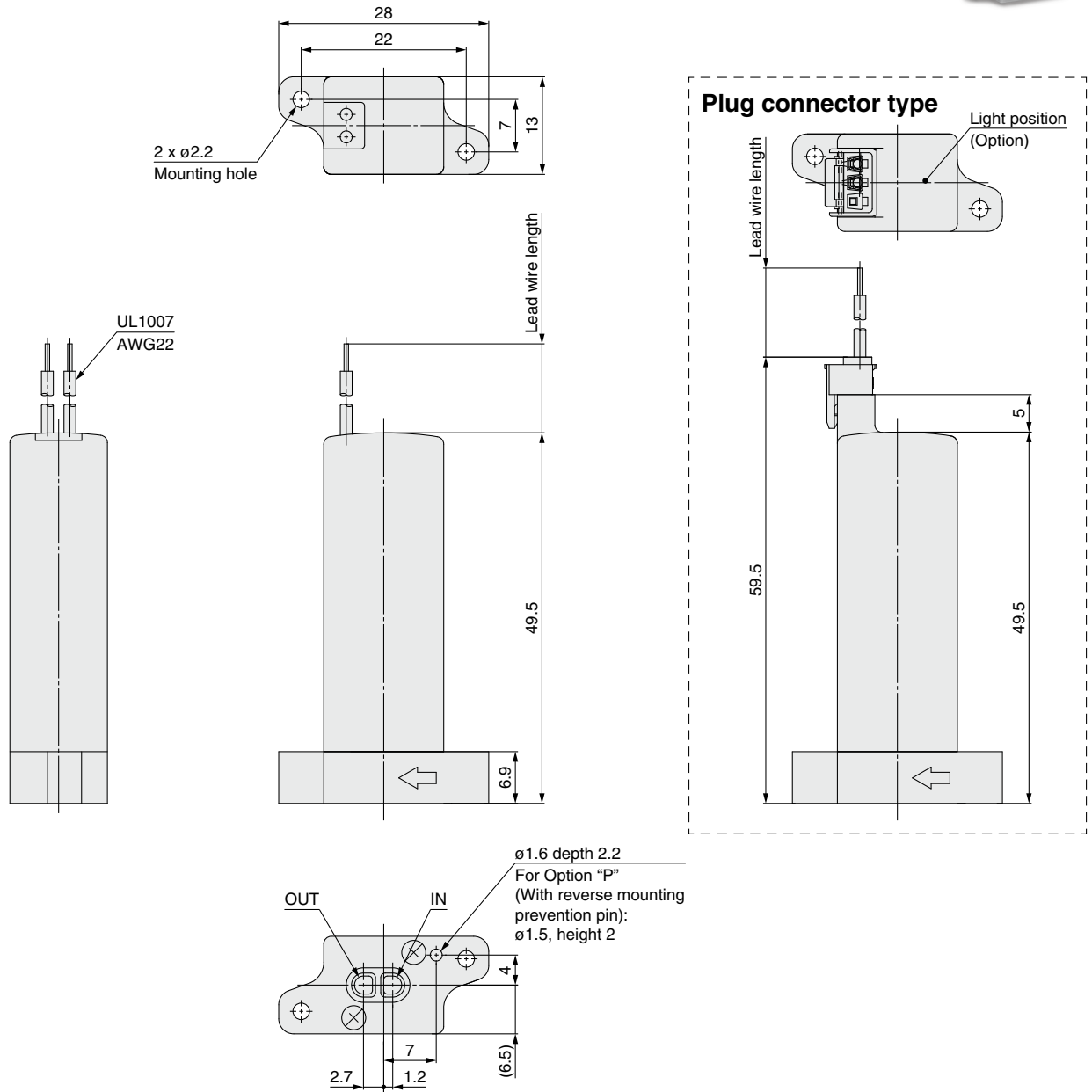




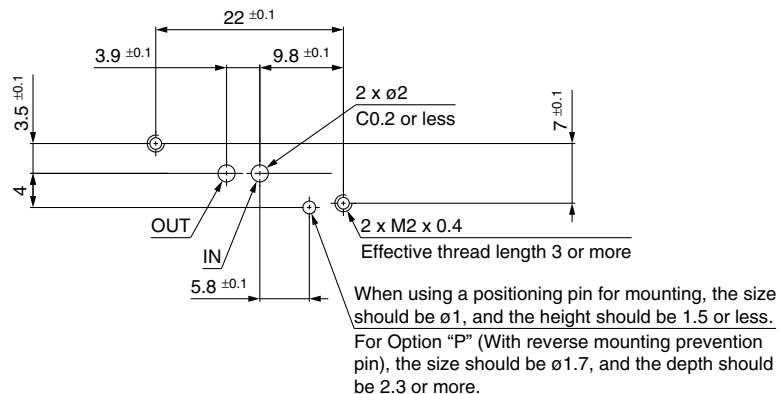
Dimensions

Base mounted

LVM13-□□□□ (N.C.)



Recommended interface dimensions * Surface roughness = Rz3.2 or less



LVM07

LVM09/090

LVM10/100

LVM15/150

LVM20/200

LVM11/13

Specific Product Precautions

Spare Parts

LVM Series Spare Parts

■ Mounting Screw (Base mounted, For Body mounting)

Applicable model	Part number	Qty.
LVM07R6	LVM070-SC	20
LVM09R3, 09R4, 09R6, 095R	LVM090-SC	20
LVM13	LVM100-SC	20
LVM10R3, 10R4, 10R6, 105R		
LVM15R3, 15R4, 15R6, 155R	LVM150-SC	20
LVM20R3, 20R4, 205R	LVM200-SC	20

■ Sub-plate (Base mounted, Option)

Applicable model	Part number	Qty.
LVM07R6 (Material: PEEK)	LVM070-S2-3-□	1
LVM09R3, 09R4, 09R6 (Material: PEEK)	LVM090-S2-3-□	1
LVM095R (Material: PEEK)	LVM090-S1-3-□	1
LVM10R3, 10R4, 10R6 (Material: PVDF)	LVM100-S2-1-□	1
LVM10R3, 10R4, 10R6 (Material: PFA)	LVM100-S2-2-□	1
LVM105R (Material: PVDF)	LVM100-S1-1-□	1
LVM105R (Material: PFA)	LVM100-S1-2-□	1
LVM15R3, 15R4	LVM150-S2-1-□	1
LVM15R6	LVM150-S6-1-□	1
LVM155R	LVM150-S1-1-□	1
LVM20R3, 20R4	LVM200-S2-1-□	1
LVM205R	LVM200-S1-1-□	1

□: Port size
M6: M6 x 1
28: 1/4-28UNF

□: Port size
M6: M6 x 1
28: 1/4-28UNF

□: Port size
O1: Rc1/8
F1: G1/8
N1: NPT1/8

■ Gasket, O-ring (Base mounted, For Interface mounting)

Applicable model	Part number	Qty.
LVM07R6	LVM070-GS-□	10
LVM09R3, 09R4, 09R6, 095R	LVM090-GS-□	10
LVM13	LVM13-GS-□	10
LVM10R3, 10R4, 10R6, 105R	LVM100-OR-□	30
LVM15R3, 15R4, 15R6, 155R	LVM150-GS-□	10
LVM20R3, 20R4, 205R	LVM200-OR-□	30

□: Material
A: EPDM
B: FKM
C: Kalrez®

■ Bracket (Option)

Applicable model	Part number	Qty.	Note
LVM11	LVM10-14A-1	1	With mounting screws
LVM10R1, 10R2, 102R	LVM100-10A-1	1	
LVM10R3, 10R4, 10R6, 105R	LVM100-18A-1	1	

■ Plug Connector

Applicable model	Part number	Qty.
LVM09/090	SY100-30-4A-□	1
LVM11/13/10/100/15/150/20/200	AXT661-14A-□	1

□: Lead wire length
Nil: 300 mm
6: 600 mm
10: 1000 mm
30: 3000 mm

□: Lead wire length
Nil: 300 mm
6: 600 mm
10: 1000 mm
20: 2000 mm
30: 3000 mm

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