

# Prior to Use

## Auto Switches Common Specifications 1

### ⚠ Specific Product Precautions

Refer to the Auto Switch Precautions on pages 8 to 11 before using auto switches.

### Auto Switches Common Specifications

Type	Reed auto switch	Solid state auto switch
Leakage current	None	3-wire: 100 $\mu$ A or less, 2-wire: 0.8 mA or less
Operating time	1.2 ms	1 ms or less <sup>(3)</sup>
Impact resistance	300 m/s <sup>2</sup>	1000 m/s <sup>2</sup> <sup>(4)</sup>
Insulation resistance	50 M $\Omega$ or more at 500 VDC Mega (Between lead wire and case)	
Withstand voltage	1500 VAC for 1 minute <sup>(1)</sup> (Between lead wire and case)	1000 VAC for 1 minute (Between lead wire and case)
Ambient temperature	-10 to 60°C	
Enclosure	IEC60529 Standard IP67 <sup>(2)</sup>	

- \* 1) Electrical entry: Connector type (A73C/A80C/C73C/C80C): 1000 VAC/min. (Between lead wire and the case)
- \* 2) The terminal conduit type (D-A3/A3□A/A3□C/G39/G39A/G39C/K39/K39A/K39C), DIN terminal type (D-A44/A44A/A44C) and heat resistant auto switch (D-F7NJL) conform to IEC60529 Standard IP63. The trimmer type amplifier section (D-R□K) conforms to IP40.
- \* 3) Excluding the solid state auto switches with a timer (D-M5□TL/G5NTL/F7NTL/F5NTL types) and **magnetic field resistant 2-color indication solid state auto switch (D-P3DW□/P4DWL)**. The operating time for D-J51 is 2 ms or less and for D-P3DW□/P4DWL is 40 ms or less.
- \* 4) 980 m/s<sup>2</sup> for the trimmer type sensor section, 98 m/s<sup>2</sup> for the amplifier section.

### Lead Wire

Lead wire length indication  
(Example)

**D-M9BW****L**

● Lead wire length

Nil	0.5 m
M	1 m
L	3 m
Z	5 m
N*	None

\* Applicable for the connector type (D-□□C) only.

Note 1) Lead wire length Z: 5 m

Applicable auto switches

Reed auto switch: D-B53/B54, D-C73(C)/C80C, D-A73(C)(H)/A80C,  
D-A53/A54, D-Z73, D-90/97/90A/93A

Solid state auto switch: Manufactured upon receipt of order as standard.

Note 2) The standard lead wire length for trimmer auto switches is 3 m.

Note 3) The standard lead wire length for solid state auto switches with a timer, water resistant 2-color indication solid state auto switches, wide range detection type solid state auto switches, heat resistant 2-color indication solid state auto switches and magnetic field resistant 2-color indication solid state switches is 3 m and 5 m (except D-P3DW, D-M9□A(V)□). (0.5 m is not available.)

Note 4) 1 m (M): D-M9□(W)(V) only

Note 5) Lead wire length tolerance

Lead wire length	Tolerance
0.5 m	±15 mm
1 m	±30 mm
3 m	±90 mm
5 m	±150 mm

Solid state auto switch oil resistant flexible cabtire cord indication

Add a -61 at the end of the part number for the solid state auto switch flexible cord except D-Y59□, D-Y69□, D-Y7□, D-M9□/M9□V, and D-M9□W/M9□WV.

(Example)

**D-F7PL-61**

● Flexible specification

(D-Y59, D-Y69, D-Y7 and D-M9 series use flexible lead wire as standard.)

Lead wires with a connector indication

Part No. of Lead Wires with Connectors

(Applicable only for connector type)

Model	Lead wire length
D-LC05	0.5 m
D-LC30	3 m
D-LC50	5 m

# Solid State Auto Switch Direct Mounting Style D-M9N(V)/D-M9P(V)/D-M9B(V)

## Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard spec.



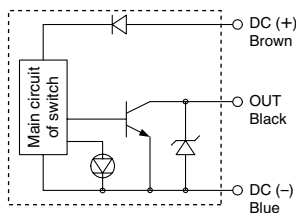
## ⚠ Caution

### Precautions

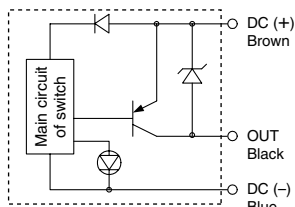
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

## Auto Switch Internal Circuit

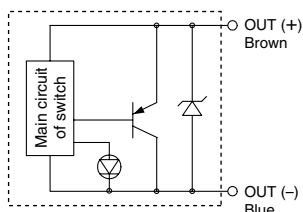
### D-M9N, D-M9NV



### D-M9P, D-M9PV



### D-M9B, D-M9BV



## Auto Switch Specifications



Refer to SMC website for the details of the products conforming to the international standards.

PLC: Programmable Logic Controller

D-M9□, D-M9□V (With indicator light)						
Auto switch model	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE marking					

- Lead wires — Oilproof flexible heavy-duty vinyl cord: ø2.7 x 3.2 ellipse, 0.15 mm<sup>2</sup>, 2 cores (D-M9B(V)), 3 cores (D-M9N(V), D-M9P(V))

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

## Mass

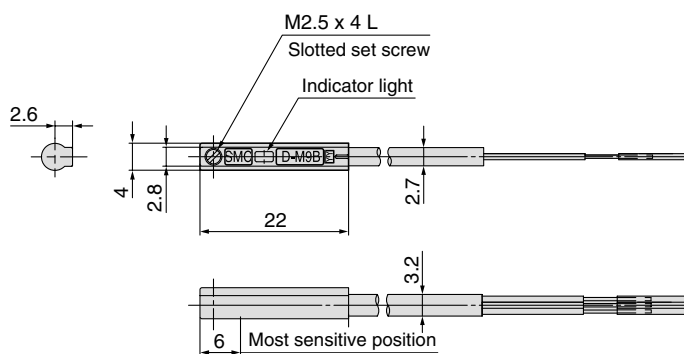
(g)

Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Lead wire length (m)	0.5	8	8	7
	1	14	14	13
	3	41	41	38
	5	68	68	63

## Dimensions

(mm)

### D-M9□



### D-M9□V

