

# Before Operation

## Auto Switches Common Specifications

### ⚠ Precautions

Refer to "Auto Switches Precautions" on pages 6-16-4 to 6-16-6 before handling.

### Auto Switches Common Specifications

Type	Reed switch	Solid state switch
Leakage current	None	3-wire: 100 $\mu$ A or less, 2-wire: 0.8 mA or less <sup>(4)</sup>
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>
Insulation resistance	50 M $\Omega$ or more at 500 M VDC (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	IEC529 Standard IP67, Immersible construction (JIS C 0920) <sup>(2)</sup>	

Note 1) Electrical entry: Connector type (A73C/A80C/C73C/C80C) and D-9/9□A/A9/A9□V type: 1000 VAC/min. (Between lead wire and the case)

Note 2) The following switches, 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) meet the IEC529 standard.

Note 3) IP63, JIS C 0920 Rainproof construction  
Except solid state switch with timer (D-M5□TL, G5NTL/F7NTL/F5NTL) and magnetic resistant 2-color indication type solid state switch (D-P5DWL). D-J51: 5 ms or less

Note 4) Except D-J51 (1 mA or less at 100 VAC, 1.5 mA or less at 200 VAC), D-M5NW/M5PW/M5BW, D-F9BAL, D-P5DWL (1 mA or less at 24 VDC).

### Lead Wire Length

Lead wire length indication

(Example) **D-A73L**

Lead wire length

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

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

(Example) **D-F8PL-61**

Flexible lead wire specifications

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

### 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

Note 1) Applicable auto switch with 5 m lead wire ("Z")

Reed 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 switch: Manufactured upon receipt of order as standard.

Note 2) The standard lead wire length of solid state switches with timer, water resistant 2-color indication type, wide range detection type or heat resistant 2-color indication type is 3 meters in length. (0.5 m is not available.)

Note 3) Lead wire lengths of 3 m and 5 m are standard for magnetic field resistant 2-color indicator type solid state switches. (0.5 m is not available.)

Note 4) Add "-61" at the end of the part number for the flexible lead wire except D-Y59, D-Y69, D-Y7 and D-M9□/M9□V type auto switches.

### Contact Protection Box: CD-P11, CD-P12

1

<Applicable switch types>

D-A7/A8, D-A7□H/A80H, D-A73C/A80C, D-C7/C8, D-C73C/C080C, D-E7□A/E80A, D-Z7/Z8, D-9/9□A, D-A9/A9□V, and D-A79W type

The above auto switches do not have internal contact protection circuits.

1. Operating load is an inductive load.
2. The length of wiring to the load is 5 m or more.
3. The load voltage is 100 or 200 VAC.

A contact protection box should be used in any of the above conditions. Unless using a contact protection box, the contact life may be shortened. (Due to permanent energizing conditions.)

**D-A72(H) must be used with the contact protection box regardless of load styles and lead wire length.**

2

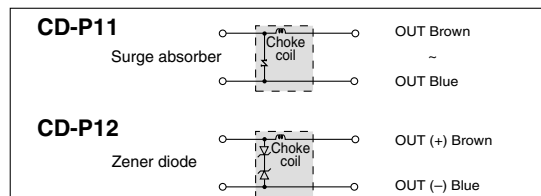
Please contact SMC when using built-in contact protection circuit style (D-A34[A][C], D-A44[A][C], D-A54/A64, D-B54/B64, D-A59W, D-B59W) in the following conditions: 1. The wiring length to load is more than 30 m; 2. When using PLC with large flow current.

### Contact Protection Box Specifications

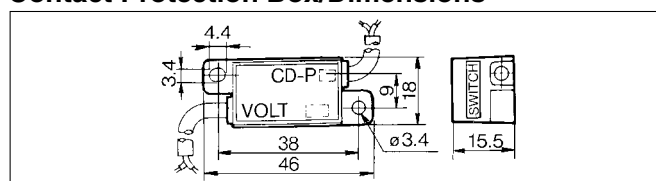
Part no.	CD-P11	CD-P12
Load voltage	100 VAC or less	200 VAC
Max. load current	25 mA	12.5 mA
	50 mA	

\* Lead wire length — Switch connection side 0.5 m  
Load connection side 0.5 m

### Contact Protection Box Internal Circuit



### Contact Protection Box/Dimensions

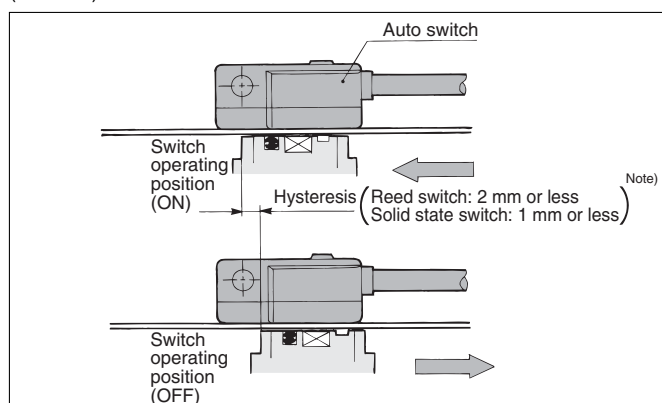


### Contact Protection Box Connection

To connect a switch unit to a contact protection box, connect the lead wire from the side of the contact protection box marked SWITCH to the lead wire coming out of the switch unit. Keep the switch as close as possible to the contact protection box, with a lead wire length of no more than 1 meter.

### Auto Switch Hysteresis

Hysteresis is the distance between the position at which piston movement operates an auto switch to the position at which reverse movement turns the switch off. This hysteresis is included in part of the operating range (one side).



Note) Hysteresis may fluctuate due to the operating environment. Please contact SMC if hysteresis causes an operational problem.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data