

Reed Switch Band Mounting Style D-A72/D-A73/D-A80

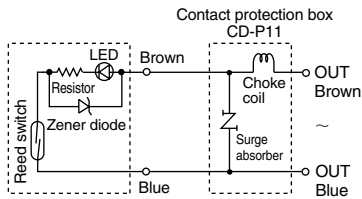
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**Grommet
Electrical entry: Perpendicular**

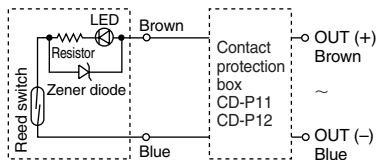


Auto Switch Internal Circuit

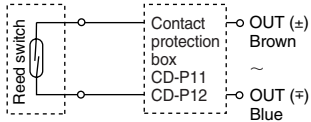
D-A72



D-A73



D-A80



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 6-16-7 for contact protection box.)

Auto Switch Specifications

PLC: Abbreviation of Programmable Logic Controller

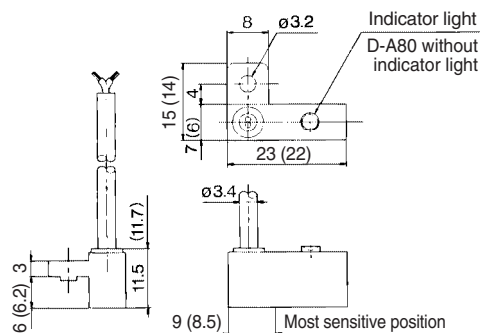
D-A7 (With indicator light)			
Auto switch model	D-A72	D-A73	
Applicable load	Relay, PLC	Relay, PLC	
Load voltage	200 VAC	24 VDC	100 VAC
Load current range ⁽³⁾	5 to 10 mA	5 to 40 mA	5 to 20 mA
Contact protection circuit	None		
Internal voltage drop	2.4 V or less		
Indicator light	Red LED lights when ON.		
D-A8 (Without indicator light)			
Auto switch model	D-A80		
Applicable load	Relay, IC circuit, PLC		
Load voltage	24 V ^{AC} DC or less	48 V ^{AC} DC	100 V ^{AC} DC
Maximum load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		

- Lead wire — Oil resistant vinyl heavy-duty cord, $\phi 3.4$, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
- Note 1) Regarding the common specifications of the reed switches, refer to page 6-16-7.
- Note 2) Regarding the lead wire length, refer to page 6-16-7.
- Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Weight

Auto switch model	D-A72	D-A73	D-A80
Lead wire length (m)	0.5	10	10
	3	47	47
	5	—	77

Dimensions



() values for D-A72

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data

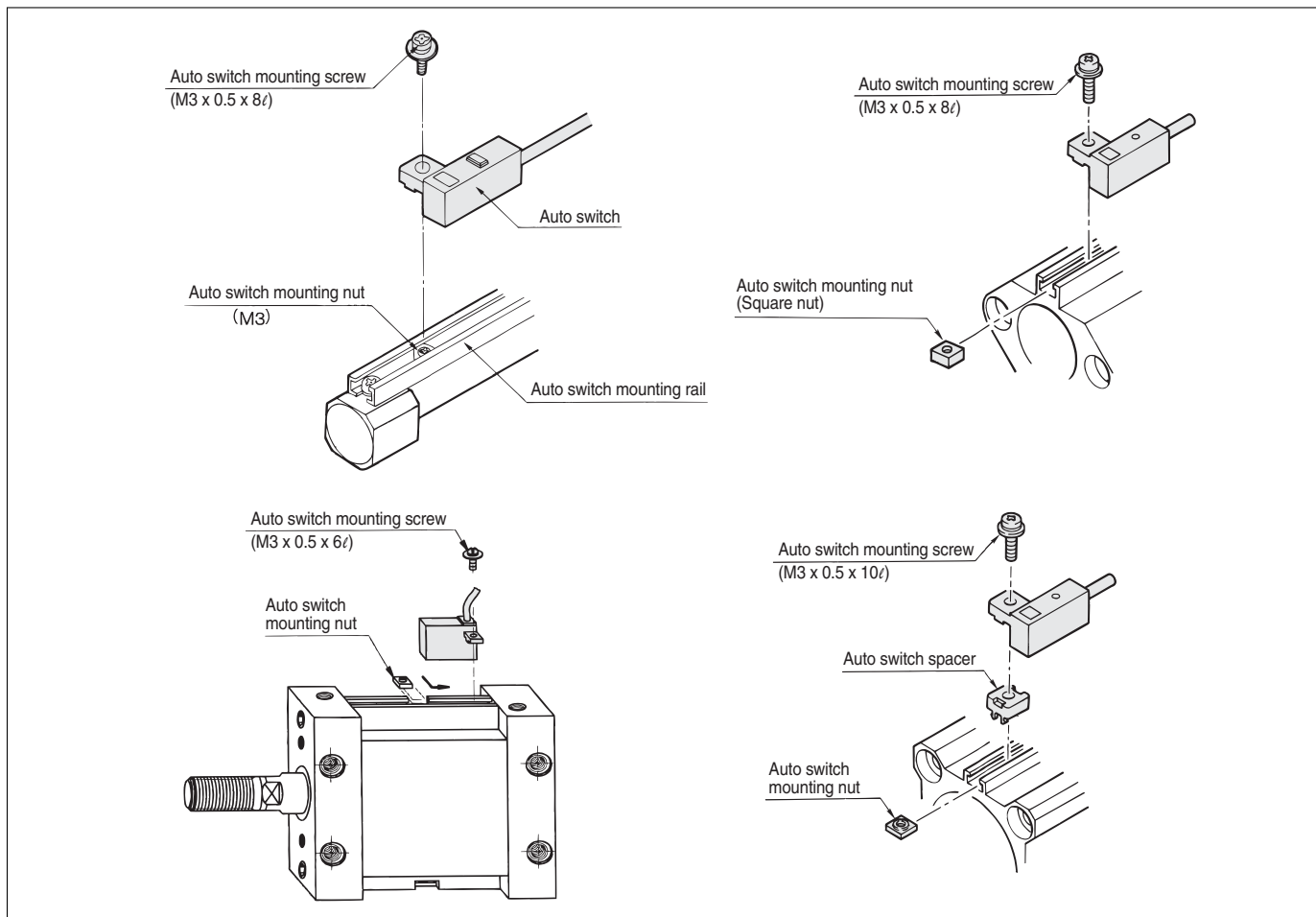
Technical Data 2: How to Mount and Move the Auto Switch

Mounting Bracket Rail Mounting Style

<Applicable auto switch>

Reed switchD-A72, D-A73, D-A80, D-A72H, D-A73H, D-A76H, D-A80H, D-A73C, D-A80C, D-A79W
 Solid state switch.....D-F79, D-F7P, D-J79, D-F7NV, D-F7PV, D-F7BV, D-J79C, D-F79W, D-F7PW, D-J79W,
 D-F7NWV, D-F7BWV, D-F79F, D-F7BAL, D-F7BAVL, D-F7NTL

How to Mount and Move the Auto Switch



- Slide the auto switch mounting nut inserted into the mounting rail and set it at the auto switch mounting position.
- Fit the convex part of auto switch mounting arm into the concave part of auto switch mounting rail. Then slide the switch over the nut. (Series CDQ2: Fit the convex part of auto switch mounting arm through the auto switch spacer into the concave part of auto switch mounting rail.)
- Push the auto switch mounting screw lightly into the mounting nut through the hole of auto switch mounting arm.
- After reconfirming the detecting position, tighten the mounting screw to secure the auto switch. (Tightening torque of M3 screw should be 0.5 to 0.7 N·m.)
- Modification of the detecting position should be made in the condition of 3.

Auto Switch Mounting Bracket Part No. (Including nut, screw, (spacer))

Cylinder series	Applicable bore size (mm)												
	12	16	20	25	32	40	50	63	80	100	125	140	160
CDQ2	BQ-1	BQ-1	BQ-1	BQ-1	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2
MDU	—	—	—	BMU1-025	BMU1-025	BMU1-025	BMU1-025	BMU1-025	—	—	—	—	—
RSDQ	—	—	BQ-1	BQ-1	BQ-2	BQ-2	BQ-2	BQ-2	—	—	—	—	—
MK, MK2	—	—							—	—	—	—	—
CE1	BQ-1	—	—	—	—	—	—	—	—	—	—	—	—
CXT	—	—	—	—	—	—	—	—	—	—	—	—	—

[Mounting screws set made of stainless steel]

The set of stainless steel mounting screws (with nuts) described below is available and can be used depending on the operating environment. (Please order the auto switch spacer, since it is not included.)

BBA2: For D-A7/A8/F7/J7

"D-F7BAL" switch is set on the cylinder with the stainless steel screws above when shipped.

When only a switch is shipped independently, "BBA2" screws are attached.



Auto Switches Precautions 2

Be sure to read before handling.
For detailed precautions on every series, refer to main text.

Mounting and Adjustment

Warning

1. Do not drop or bump.

Do not drop, bump, or apply excessive impacts (300 m/s² or more for reed switches and 1000 m/s² or more for solid state switches) while handling. Although the body of the switch may not be damaged, the inside of the switch could be damaged and cause a malfunction.

2. Do not carry a cylinder by the auto switch lead wires.

Never carry a cylinder by its lead wires. This may not only cause broken lead wires, but it may cause internal elements of the switch to be damaged by the stress.

3. Mount switches using the proper tightening torque.

When a switch is tightened beyond the range of fastening torque, the mounting screws or switch may be damaged. On the other hand, tightening below the range of fastening torque may allow the switch to slip out of position. (Refer to switch mounting for each series regarding switch mounting, moving, and fastening torque, etc.)

4. Mount a switch at the center of the operating range.

Adjust the mounting position of an auto switch so that the piston stops at the center of the operating range (the range in which a switch is ON). (The mounting positions shown in the catalog indicate the optimum position at the stroke end.) If mounted at the end of the operating range (around the borderline of ON and OFF), the operation will be unstable.

Wiring

Warning

1. Avoid repeatedly bending or stretching lead wires.

Broken lead wires will result from repeatedly applying bending stress or stretching force to the lead wires.

2. Be sure to connect the load before power is applied.

<2-wire type>

If the power is turned on when an auto switch is not connected to a load, the switch will be instantly damaged because of excess current.

3. Confirm proper insulation of wiring.

Be certain that there is no faulty wiring insulation (contact with other circuits, ground fault, improper insulation between terminals, etc.). Damage may occur due to excess current flow into a switch.

4. Do not wire with power lines or high voltage lines.

Wire separately from power lines or high voltage lines, avoiding parallel wiring or wiring in the same conduit with these lines. Control circuits including auto switches may malfunction due to noise from these other lines.

5. Do not allow short circuiting of loads.

<Reed switches>

If the power is turned on with a load in a short circuited condition, the switch will be instantly damaged because of excess current flow into the switch.

<Solid state switches>

Model D-F9□(Y)/F9□W(V)/J51/G5NB and all models of PNP output switches do not have built-in short circuit prevention circuits. If loads are short circuited, the switches will be instantly damaged.

Use caution to avoid reverse wiring with the brown [red] power supply line and the black [white] output line on 3-wire type switches.

6. Avoid incorrect wiring.

<Reed switches>

A 24 VDC switch with indicator light has polarity. The brown lead wire or terminal no. 1 is (+), and the blue lead wire or terminal no. 2 is (-).

[In the case of model D-97, the side without indicator is (+), and the black line side is (-).]

1) If connections are reversed, a switch will operate, however, the light emitting diode will not light up.

Also note that a current greater than the maximum specified one will damage a light emitting diode and make it inoperable.

Applicable models:

D-A73/A73H/A73C/C73/C73C/E73A/Z73/R73

D-97/93A/A93/A93V

D-A33/A34/A33A/A34A/A44/A44A

D-A53/A54/B53/B54

2) However, when using a two color indication auto switch, the switch (D-A79W/A59W/B59W), be aware that the switch will constantly remain ON if the connections are reversed.

<Solid state switches>

1) If connections are reversed on a 2-wire type switch, the switch will not be damaged if protected by a protection circuit, but the switch will always stay in an ON state. However, it is still necessary to avoid reversed connections, since the switch could be damaged by a load short circuit in this condition.

2) If connections are reversed (power supply line (+) and power supply line (-) on a 3-wire type switch, the switch will be protected by a protection circuit. However, if the power supply line (+) is connected to the blue (black) wire and the power supply line (-) is connected to the black (white) wire, the switch will be damaged.

* Lead wire color changes

Lead wire colors of SMC auto switches have been changed in order to meet NECA Standard 0402 for production beginning September, 1996 and thereafter. Please refer to the tables provided.

2-wire

	Old	New
Output (+)	Red	Brown
Output (-)	Black	Blue

Solid State with Diagnostic Output

	Old	New
Power supply (+)	Red	Brown
Power supply GND	Black	Blue
Output	White	Black
Diagnostic output	Yellow	Orange

3-wire

	Old	New
Power supply (+)	Red	Brown
Power supply GND	Black	Blue
Output	White	Black

Solid State with Latch Type Diagnostic Output

	Old	New
Power supply (+)	Red	Brown
Power supply GND	Black	Blue
Output	White	Black
Latch type diagnostic output	Yellow	Orange

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data