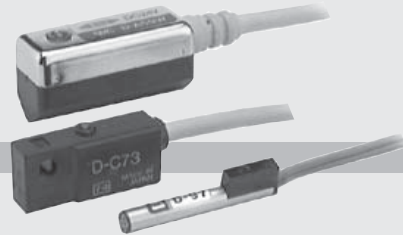


# Auto Switch Guide

## Reed Switch

## Solid State Switch

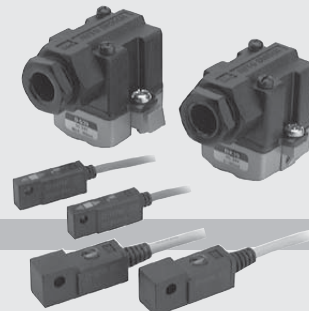
### Reed Switch



P 6-21

- **General Purpose Style** ..... P 6-22  
Band, Rail, Tie-rod, Direct mounting
- **2 Colour Indication Style** ..... P 6-40  
Band, Rail, Tie-rod Mounting

### Solid State Switch



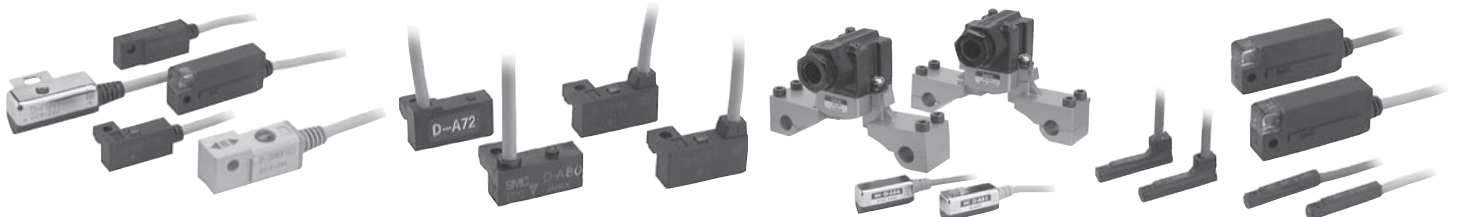
P 6-43

- **General Purpose Style** ..... P 6-44  
Band, Rail, Tie-rod, Direct mounting
- **2 Colour Indication Style** ..... P 6-60  
Band, Rail, Tie-rod, Direct mounting
- **2 Colour Indication Style with Diagnostic Output** ..... P 6-67  
Band, Rail, Tie-rod Mounting
- **Water Resistant 2 Colour Indication Style** ..... P 6-73  
Band, Rail, Tie-rod, Direct mounting
- **With Timer** ..... P 6-77  
Band, Rail, Tie-rod, Direct mounting
- **Strong Magnetic Field Resistant 2 Colour Indication Style** ..... P 6-82  
Rail Mounting
- **With Prewired Connector** ..... P 6-86

# SMC Auto Switch Variations

| Function                    | Style              | Mounting method  | Electrical entry | Auto switch model No.  | Page   |
|-----------------------------|--------------------|------------------|------------------|------------------------|--------|
| General purpose auto switch | Reed switch        | Band             | Grommet          | D-C73/C76/C80          | 6-22   |
|                             |                    |                  | Connector        | D-B53/B54/B64          | 6-23   |
|                             |                    |                  | Terminal conduit | D-C73C/C80C            | 6-24   |
|                             |                    |                  | DIN terminal     | D-A33/A34              | 6-25   |
|                             |                    |                  | DIN terminal     | D-A33A/A34A            | 6-26   |
|                             |                    | Rail             | Grommet          | D-A44                  | 6-25   |
|                             |                    |                  | Grommet          | D-A44A                 | 6-26   |
|                             |                    |                  | Grommet          | D-A72/A73/A80          | 6-27   |
|                             |                    | Tie-rod          | Grommet          | D-A72H/A73H/A76H/A80H  | 6-28   |
|                             |                    |                  | Connector        | D-A73C/A80C            | 6-29   |
|                             |                    |                  | Grommet          | D-A53/A54/A56/A64/A67  | 6-30   |
|                             |                    | Direct           | Terminal conduit | D-A33C/A34C            | 6-31   |
|                             |                    |                  |                  | DIN terminal           | D-A44C |
|                             |                    |                  | Grommet          | D-A90/A93/A96          | 6-32   |
|                             |                    |                  |                  | D-A90V/A93V/A96V       | 6-33   |
|                             |                    |                  |                  | D-90/97                | 6-34   |
|                             |                    |                  |                  | D-90A/93A              | 6-35   |
|                             |                    |                  |                  | D-Z73/Z76/Z80          | 6-36   |
|                             |                    |                  |                  | D-R73/R80              | 6-37   |
|                             | D-R73C/80C         |                  |                  | 6-38                   |        |
|                             | D-E73A/E76A/E80A   |                  |                  | 6-39                   |        |
|                             | Solid state switch | Band             | Grommet          | D-H7A1/H7A2/H7B        | 6-44   |
|                             |                    |                  | Connector        | D-G59/G5P/K59          | 6-45   |
|                             |                    |                  | Terminal conduit | D-H7C                  | 6-46   |
|                             |                    |                  | Terminal conduit | D-G39/K39              | 6-47   |
|                             |                    |                  | Terminal conduit | D-G39A/K39A            | 6-48   |
|                             |                    | Rail             | Grommet          | D-F79/F7P/J79          | 6-49   |
|                             |                    |                  | Connector        | D-F7NV/F7PV/F7BV       | 6-50   |
|                             |                    |                  | Connector        | D-J79C                 | 6-51   |
|                             |                    | Tie-rod          | Grommet          | D-F59/F5P/J59/J51      | 6-52   |
|                             |                    |                  | Terminal conduit | D-G39C/K39C            | 6-53   |
|                             |                    | Direct           | Grommet          | D-M9N/M9P/M9B          | 6-54   |
|                             |                    |                  |                  | D-M9NV/M9PV/M9BV       | 6-54   |
|                             |                    |                  |                  | D-F8N/F8P/F8B          | 6-55   |
|                             |                    |                  |                  | D-Y59A/Y7P/Y59B        | 6-56   |
|                             |                    |                  |                  | D-Y69A/Y7PV/Y69B       | 6-56   |
|                             |                    |                  |                  | D-S99(V)/S9P(V)/T99(V) | 6-57   |
|                             |                    | D-S79/S7P/T79(C) | 6-58             |                        |        |
|                             |                    | D-M5N/M5P/M5B    | 6-59             |                        |        |

General purpose auto switch



Band mounting

Rail mounting

Tie-rod mounting

Direct mounting

# SMC Auto Switch Variations

| Function | Style | Mounting method | Electrical entry | Auto switch model No. | Page |
|----------|-------|-----------------|------------------|-----------------------|------|
|----------|-------|-----------------|------------------|-----------------------|------|

The suitable operating point can be indicated with green light. (Red→Green←Red)

|                           |                    |         |                     |                     |      |
|---------------------------|--------------------|---------|---------------------|---------------------|------|
| 2 colour indication style | Reed switch        | Band    | Grommet             | D-B59W              | 6-40 |
|                           |                    | Rail    | Grommet             | D-A79W              | 6-41 |
|                           |                    | Tie-rod | Grommet             | D-A59W              | 6-42 |
|                           | Solid state switch | Band    | Grommet             | D-H7NW/H7PW/H7BW    | 6-60 |
|                           |                    |         |                     | D-G59W/G5PW/K59W    | 6-61 |
|                           |                    |         |                     | D-F79W/F7PW/J79W    | 6-62 |
|                           |                    | Rail    | Grommet             | D-F7NWW/F7BWV       | 6-63 |
|                           |                    |         |                     | D-F59W/F5PW/J59W    | 6-64 |
|                           |                    |         |                     | D-M5NW/M5PW/M5BW    | 6-65 |
|                           |                    | Tie-rod | Grommet             | D-Y7NW/Y7PW/Y7BW    | 6-66 |
|                           |                    |         |                     | D-Y7NWW/Y7PWW/Y7BWV | 6-66 |
|                           |                    |         |                     | D-M9NW/M9PW/M9BW    | 6-84 |
|                           | Direct             | Grommet | D-M9NWW/M9PWW/M9BWV | 6-84                |      |

The output signal can be detected in an unsteady detecting area.

|  |                    |         |         |                         |      |
|--|--------------------|---------|---------|-------------------------|------|
| 2 colour indication style with diagnostic output | Solid state switch | Band    | Grommet | D-H7LF (Latching style) | 6-67 |
|  |                    |         |         | D-H7NF                  | 6-68 |
|  |                    |         |         | D-G59F                  | 6-69 |
|  |                    | Rail    | Grommet | D-F7LF (Latching style) | 6-70 |
|  |                    |         |         | D-F79F                  | 6-71 |
|  |                    |         |         | D-F5LF (Latching style) | 6-83 |
|  |                    | Tie-rod | Grommet | D-F59F                  | 6-72 |

Water (coolant) resistant performance

|                                     |                    |         |         |         |      |
|-------------------------------------|--------------------|---------|---------|---------|------|
| Water resistant 2 colour indication | Solid state switch | Band    | Grommet | D-H7BAL | 6-73 |
|                                     |                    |         |         | D-G5BAL | 6-74 |
|                                     |                    | Rail    | Grommet | D-F7BAL | 6-75 |
|                                     |                    |         |         | D-F5BAL | 6-76 |
|                                     |                    | Tie-rod | Grommet | D-Y7BAL | 6-81 |
|                                     |                    |         |         | D-M9BAL | 6-85 |

With built-in OFF-delay timer (200ms)

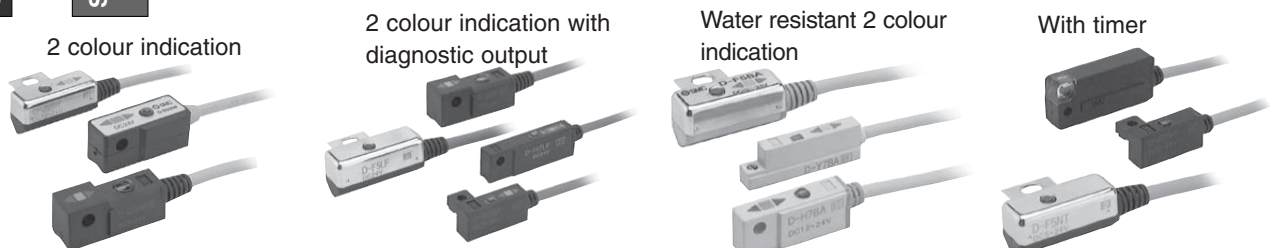
|            |                    |         |         |               |      |
|------------|--------------------|---------|---------|---------------|------|
| With timer | Solid state switch | Band    | Grommet | D-G5NTL       | 6-77 |
|            |                    | Rail    | Grommet | D-F7NTL       | 6-78 |
|            |                    | Tie-rod | Grommet | D-F5NTL       | 6-79 |
|            |                    | Direct  | Grommet | D-M5NTL/M5PTL | 6-80 |

Possible to use in an environment where disturbance magnetic fields are generated.

|                                 |                    |      |         |         |      |
|---------------------------------|--------------------|------|---------|---------|------|
| Strong magnetic field resistant | Solid state switch | Rail | Grommet | D-P5DWL | 6-82 |
|---------------------------------|--------------------|------|---------|---------|------|

With Prewired Connector M8, M12

|                         |                    |        |                |         |      |
|-------------------------|--------------------|--------|----------------|---------|------|
| With prewired connector | Solid state switch | Band   | With connector | D-□□□PC | 6-86 |
|                         |                    | Rail   |                |         |      |
|                         |                    | Direct |                |         |      |



# Prior to Use Auto Switch Specifications

## Precautions

### Auto Switch Common Specifications

| Auto switch style       | Reed switch  | Solid state switch                                |
|-------------------------|--|---|
| Current leakage         | None   | 3 wire: 100 $\mu$ A or less, 2 wire: 1mA or less  |
| Operating time          | 1.2ms  | 1ms or less <sup>(3)</sup>                        |
| Shock resistance        | 300m/s <sup>2</sup>  | 1000m/s <sup>2</sup>                              |
| Insulation resistance   | 50 M $\Omega$ or more at 500MV DC (between lead wire and the case)         |   |
| Withstand voltage       | 1500V AC/min.<br>(between lead wire and the case) <sup>(1)</sup>           | 1000V AC/min.<br>(between lead wire and the case) |
| Ambient temperature     | -10 to 60°C  |   |
| Protective construction | IEC529 Standard IP67,<br>Waterproof construction (JISC0920) <sup>(2)</sup> |   |

Note 1) Connector style (D-A73C/A80C/C73C/C80C) and D-9/9□A/A9/A9□V style: 1000V AC/min. (between lead wire and the case)

Note 2) IEC529 Standard IP63, Rainproof construction (JISC0920) for Terminal conduit style (D-A3/A3□A/A3□C/G39/G39A/G39C/K39/K39A/K39C) and DIN terminal style (D-A44/A44A/A44C).

Note 3) Except solid state switch with timer (D-M5□TL, G5NLT, F7NLT, F5NLT) and **Auto switch for strong magnetic field resistance (D-P5DWL)**.  
D-J51: 5ms or less

### Lead Wire Length

#### How to Order

Ex.)

D-A73 **L**

•Lead wire length

|           |      |
|-----------|------|
| —         | 0.5m |
| <b>L</b>  | 3m   |
| <b>Z</b>  | 5m   |
| <b>N*</b> | None |

\* Applicable for the connector style (D- \*\* C) only

Note 1) Applicable auto switch with 5 meter 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  
(Except D-M9/M9□V)

Note 2) The standard lead wire length of solid state switch with timer or with water resistant 2 colour indication is 3 meters. (Not available 0.5m)

Note 3) The standard lead wire length of strong magnetic field resistant solid state switch is 3 or 5 meters. (Not available 0.5m.)

#### Part No. of lead wire with connector

(Available for connector style only.)

| Part No. | Lead wire length |
|----------|------------------|
| D-LC05   | 0.5m             |
| D-LC30   | 3m               |
| D-LC50   | 5m               |

### Change of Lead Wire Colour

Lead wire colours of SMC auto switches have been changed in order to meet Nippon Electric Control Equipment Industries Association Standard No. 402.

#### 2 wire auto switch

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

#### Solid state auto switch with diagnostic output

|                   | Old    | New    |
|-------------------|--------|--------|
| Power supply      | Red    | Brown  |
| GND               | Black  | Blue   |
| Output            | White  | Black  |
| Diagnostic output | Yellow | Orange |

#### 3 wire auto switch

|              | Old   | New   |
|--------------|-------|-------|
| Power supply | Red   | Brown |
| GND          | Black | Blue  |
| Output       | White | Black |

#### Solid state auto switch with latching style diagnostic output

|                                  | Old    | New    |
|----------------------------------|--------|--------|
| Power supply                     | Red    | Brown  |
| GND                              | Black  | Blue   |
| Output                           | White  | Black  |
| Latching style diagnostic output | Yellow | Orange |

# Prior to Use

## Auto Switch Hysteresis/Contact Protection Box

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

①

The following auto switches are not incorporated with the contact protection box.

D-A7/A8, D-A7□H/A80H, D-A73C, A80C, D-C7/C8, D-C73C/C80C, D-E7□A, E80A, D-Z7/Z8, D-9/9□A, D-A9/A9□V, and D-A79W type

Use an auto switch with a contact protection box in any case listed below. 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.**

- ① Operating load is an inductive load.
- ② The wiring length to load is more than 5m.
- ③ The load voltage is 100 or 200 V AC.

②

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 30m.
- ② When using PLC with large flow current

### Contact Protection Box/Specifications

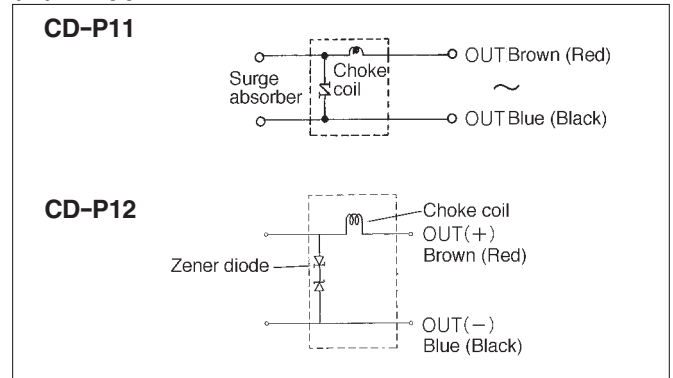
| Part No.          | CD-P11       |         | CD-P12 |
|-------------------|--------------|---------|--------|
| Load voltage      | 100V AC max. | 200V AC | 24V DC |
| Max. load current | 25mA         | 12.5mA  | 50mA   |

Lead wire length - Switch connecting side 0.5m  
Load connecting side 0.5m

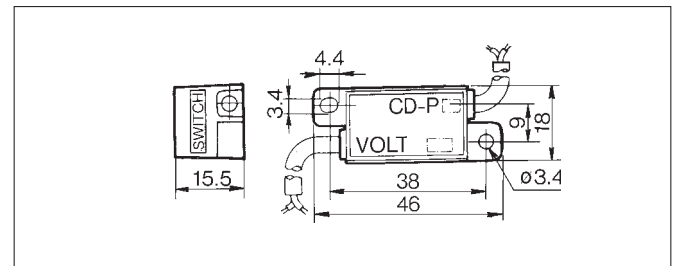


### Contact Protection Box/Internal Circuit

( ): If applicable for IEC Standard

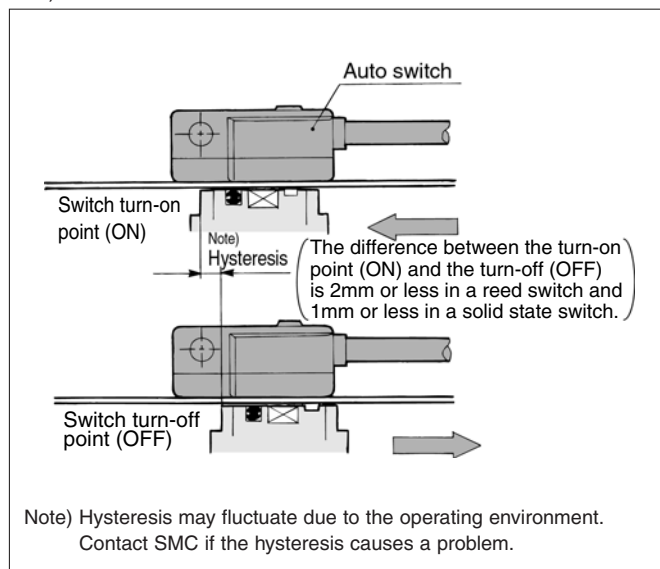


### Contact Protection Box/Dimensions



### Auto Switch Hysteresis

The distance between the turn-on point (ON) of the switch by moving of the piston to the turn-off point (OFF) is called "Hysteresis". This hysteresis is included as part of the operating range (one side).



### Contact Protection Box/Connection Method

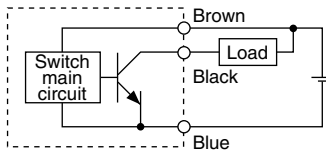
For connection of the switch body and the contact protection box, connect the lead wire in the side indicated as "SWITCH" on the contact protection box to the lead wire from the switch body. The length of lead wire between the switch body and the contact protection box should be within 1m and they should be set as close together as possible.

# Prior to Use

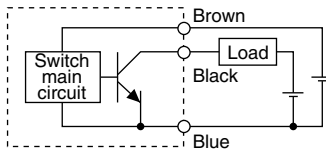
## Auto Switch Connection Method/Connection Example

### Basic Wiring

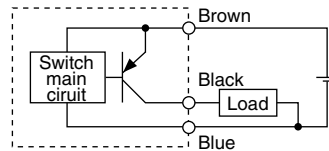
#### • Solid state switch 3 wire NPN



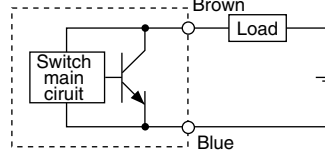
(When power source for switch and load is not common.)



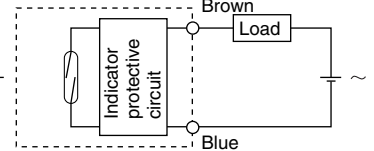
#### 3 wire PNP



#### 2 wire

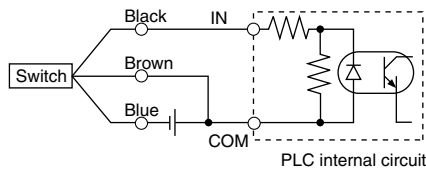


#### • Reed switch 2 wire

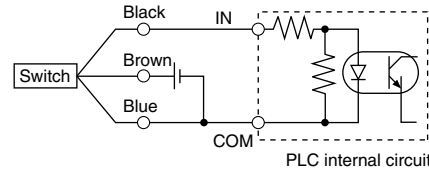


### Typical PLC (Programmable Logic Controller) Connection Circuits

#### • Sink input 3 wire NPN

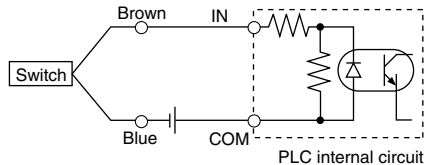


#### • Source input 3 wire PNP

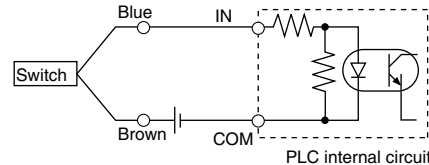


Connect according to the input specification of PLC because the connection method varies with the input specification of PLC.

#### 2 wire



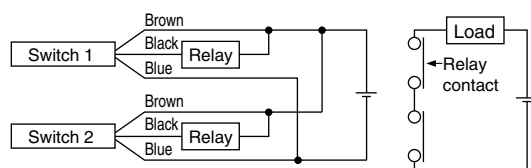
#### 2 wire



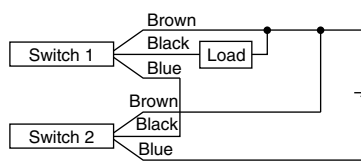
### AND (Serial), OR (Parallel) Connection Examples

#### • 3 wire

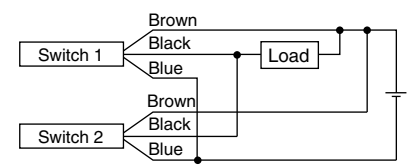
##### NPN/AND connection (with relay)



##### NPN/AND connection (with switch)



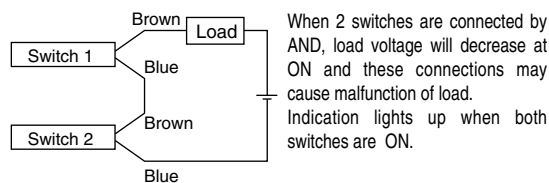
##### NPN/OR connection



Indication lights up when both switches are ON.

#### • 2 wire (2 pcs.)

##### AND connection

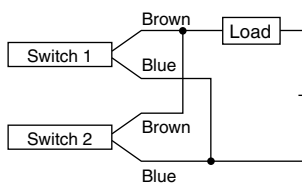


When 2 switches are connected by AND, load voltage will decrease at ON and these connections may cause malfunction of load. Indication lights up when both switches are ON.

Load voltage at ON=Supply voltage-Internal drop voltage X 2 pcs.  
=24V-4V X 2 pcs.  
=16V

Example) Supply voltage 24V DC, switch internal drop voltage 4V

##### OR connection



[Solid state switch]

When 2 switches are connected by OR, load voltage will increase at OFF and these connections may cause malfunction.

[Reed switch]

There is no current leakage so that load voltage does not increase at OFF.

The flowing current is broken up into the ON-state switches, so indicator light becomes dark or may not turn ON due to the lack of the current.

Load voltage at OFF=Leakage current X 2 pcs. X Load impedance  
=1mA X 2 pcs. X 3kΩ  
=6V

Example) Load impedance 3kΩ, switch leakage current 1mA

# Reed Switch

General Purpose Auto Switch  
2 colour Indication Style

# Reed Switch/Band Mounting

## D-C73/D-C76/D-C80

### Grommet



### Applicable Actuator Series

| Series                               | Bore size (mm)               |
|--------------------------------------|------------------------------|
| <b>CDJ2</b>                          | ø6, ø10, ø16                 |
| <b>CDVJ</b>                          | ø10, ø16                     |
| <b>CDLJ2</b>                         | ø16                          |
| <b>CDM2/CDBM2/CDVM3, 5<br/>CDLM2</b> | ø20, ø25, ø32, ø40           |
| <b>CDG1/MGG</b>                      | ø20, ø25, ø32, ø40, ø50, ø63 |
| <b>CDLG1</b>                         | ø20, ø25, ø32, ø40           |
| <b>RSDG</b>                          | ø40, ø50                     |
| <b>MGC</b>                           | ø20, ø25, ø32, ø40, ø50      |
| <b>MLGC/RHC/REC</b>                  | ø20, ø25, ø32, ø40           |

### Specifications

PLC: Programmable Logic Controller

#### D-C7 (With indicator light)

| Auto switch model number    | D-C73                             |           | D-C76      |
|-----------------------------|-----------------------------------|-----------|------------|
| Application                 | Relay/PLC                         |           | IC circuit |
| Load voltage                | 24V DC                            | 100V AC   | 4 to 8V DC |
| Max. load current and range | 5 to 40mA                         | 5 to 20mA | 20mA       |
| Contact protection circuit  | None                              |           |            |
| Internal voltage drop       | ≤ 2.4V                            |           | ≤ 0.8V     |
| Indicator light             | ON: When red light emitting diode |           |            |

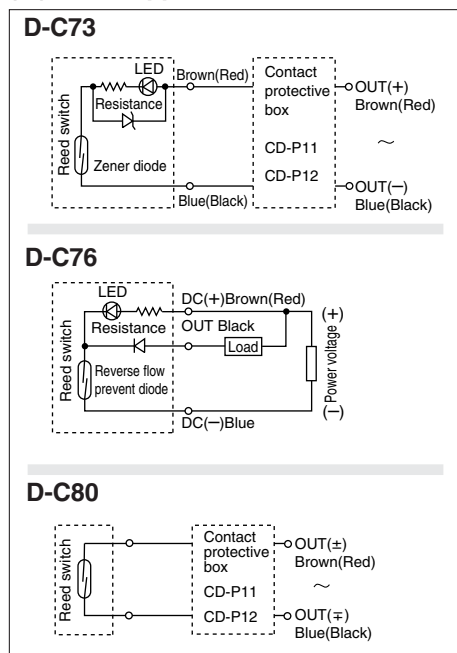
#### D-C8 (Without indicator light)

| Auto switch model number   | D-C80                               |                      |                       |
|----------------------------|-------------------------------------|----------------------|-----------------------|
| Application                | Relay/PLC/IC circuit                |                      |                       |
| Load voltage               | 24V <sup>AC</sup> DC or less        | 48V <sup>AC</sup> DC | 100V <sup>AC</sup> DC |
| Max. load current          | 50mA                                | 40mA                 | 20mA                  |
| Contact protection circuit | None                                |                      |                       |
| Internal resistance        | 1Ω or less (Including 3m lead wire) |                      |                       |

Lead wire - Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

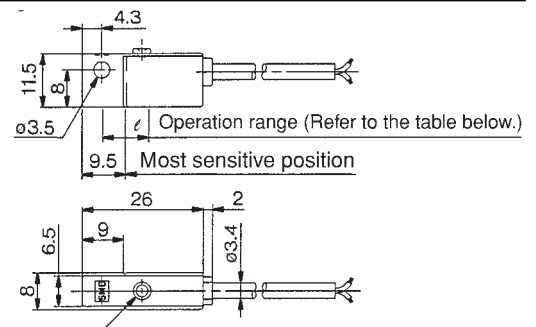
### Internal Circuit

( ): If not applicable for IEC Standard



Note) ① In the case operation load is an inductive load.  
 ② In the case the wiring length to load is more than 5m.  
 ③ In the case the load voltage is 100V AC.  
 Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series                  | Bore size |    |    |    |    |    |    |    |    |
|----------------------------------|-----------|----|----|----|----|----|----|----|----|
|                                  | 6         | 10 | 16 | 20 | 25 | 32 | 40 | 50 | 63 |
| <b>CDJ2</b>                      | 6         | 7  | 7  | —  | —  | —  | —  | —  | —  |
| <b>CDVJ</b>                      | —         | 7  | 7  | —  | —  | —  | —  | —  | —  |
| <b>CDLJ2</b>                     | —         | —  | 7  | —  | —  | —  | —  | —  | —  |
| <b>CDM2/CDBM2/CDVM3, 5/CDLM2</b> | —         | —  | —  | 7  | 8  | 8  | 8  | —  | —  |
| <b>CDG1/MGG</b>                  | —         | —  | —  | 8  | 10 | 9  | 10 | 10 | 11 |
| <b>CDLG1</b>                     | —         | —  | —  | 8  | 10 | 9  | 10 | —  | —  |
| <b>RSDG</b>                      | —         | —  | —  | —  | —  | —  | 10 | 10 | —  |
| <b>MGC</b>                       | —         | —  | —  | 8  | 10 | 9  | 10 | 10 | —  |
| <b>MLGC/RHC/REC</b>              | —         | —  | —  | 8  | 10 | 9  | 10 | —  | —  |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)



# Reed Switch/Band Mounting

## D-B53/D-B54/D-B64

### Grommet



### Applicable Actuator Series

| Series  | Bore size (mm)                          |
|---|---|
| CDM2, CDBM2, CDVM3/5, CDLM2                   | ø20, ø25, ø32, ø40                      |
| CDG1, MGG                                     | ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CDLG1   | ø20, ø25, ø32, ø40                      |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CE2, CNA | ø40, ø50, ø63, ø80, ø100                |
| MGC   | ø20, ø25, ø32, ø40, ø50                 |
| MLGC, RHC, REC                                | ø20, ø25, ø32, ø40                      |

### Specifications

PLC: Programmable Logic Controller

#### D-B5 (With indicator light)

| Auto switch model number   | D-B53                             | D-B54     |           |             |
|----------------------------|-----------------------------------|-----------|-----------|-------------|
| Application                | PLC                               | Relay/PLC |           |             |
| Load voltage               | 24V DC                            | 24V DC    | 100V AC   | 200V AC     |
| Load current range         | 5 to 50mA                         | 5 to 50mA | 5 to 25mA | 5 to 12.5mA |
| Contact protection circuit | None                              | Built-in  |           |             |
| Internal voltage drop      | ≤ 2.4V                            | ≤ 2.4V    |           |             |
| Indicator light            | ON: When red light emitting diode |           |           |             |

#### D-B6 (Without indicator light)

| Auto switch model number   | D-B64                                     |          |            |
|----------------------------|---|----------|------------|
| Application                | Relay/PLC                                 |          |            |
| Load voltage               | 24V <sup>AC</sup> / <sub>DC</sub> or less | 100V AC  | 200V AC    |
| Max. load current          | Max.50mA                                  | Max.25mA | Max.12.5mA |
| Contact protection circuit | Built-in                                  |          |            |
| Internal resistance        | 10Ω or less                               |          |            |

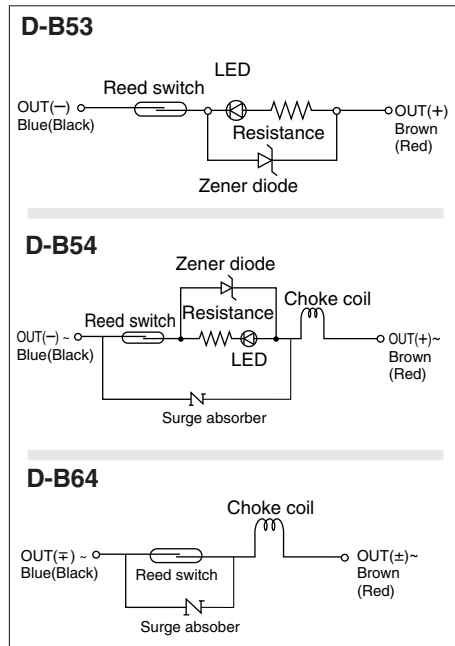
Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

Note 1) Refer to common specifications on p.6-18.

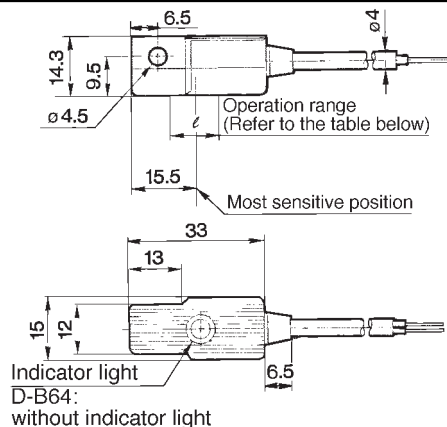
Note 2) Refer to p.6-18 for lead wire length.

### Internal Circuit

( ): If not applicable for IEC Standard



### Dimensions



### Operation Range ( l Dimension)

| Actuator series                               | Bore size |    |    |    |    |    |    |     |
|---|-----------|----|----|----|----|----|----|-----|
|   | 20        | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| CDM2, CDBM2, CDVM3, 5 CDLM2                   | 8         | 8  | 9  | 9  | —  | —  | —  | —   |
| CDG1, MGG                                     | 8         | 10 | 9  | 10 | 10 | 11 | 11 | 11  |
| CDLG1   | 8         | 10 | 9  | 10 | —  | —  | —  | —   |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CE2, CNA | —         | —  | —  | 9  | 10 | 11 | 11 | 11  |
| MGC   | 8         | 10 | 9  | 10 | 10 | —  | —  | —   |
| MLGC, RHC, REC                                | 8         | 10 | 9  | 10 | —  | —  | —  | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)

# Reed Switch/Band Mounting

## D-C73C/D-C80C

### Connector



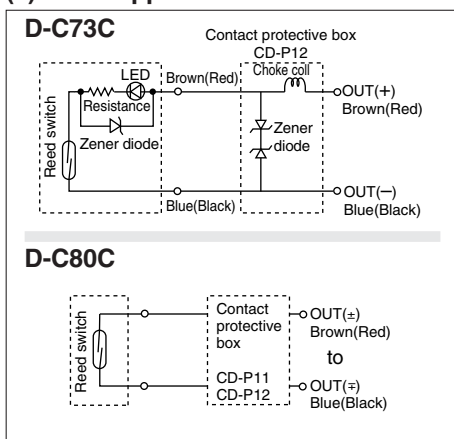
### ⚠ Caution

#### Precautions

- ① Confirm that the connector is appropriately tightened. If tightened insufficiently, the water resistant performance will deteriorate.
- ② Refer to p.6-88 for the details.

### Internal Circuit

( ) : If not applicable for IEC Standard



Note) ① In the case operation load is an inductive load.

② In the case the wiring length to load is > 5m.

Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### Applicable Actuator Series

| Series                           | Bore size (mm)               |
|----------------------------------|------------------------------|
| CDJ2                             | ø6, ø10, ø16                 |
| CDVJ                             | ø10, ø16                     |
| CDLJ2                            | ø16                          |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2 | ø20, ø25, ø32, ø40           |
| CDG1, MGG                        | ø20, ø25, ø32, ø40, ø50, ø63 |
| CDLG1                            | ø20, ø25, ø32, ø40           |
| RSDG                             | ø40, ø50                     |
| MGC                              | ø20, ø25, ø32, ø40, ø50      |
| MLGC, RHC, REC                   | ø20, ø25, ø32, ø40           |

### Specifications

PLC: Programmable Logic Controller

#### D-C73C (With indicator light)

|                            |                                   |
|----------------------------|-----------------------------------|
| Auto switch model number   | <b>D-C73C</b>                     |
| Application                | Relay/PLC                         |
| Load voltage               | 24V DC                            |
| Load current range         | 5 to 40mA                         |
| Contact protection circuit | None                              |
| Internal voltage drop      | ≤ 2.4V                            |
| Indicator light            | ON: When red light emitting diode |

#### D-C80C (Without indicator light)

|                            |                               |
|----------------------------|-------------------------------|
| Auto switch model number   | <b>D-C80C</b>                 |
| Application                | Relay/PLC                     |
| Load voltage               | ≤ 24V $\frac{AC}{DC}$         |
| Max. load current          | 50mA                          |
| Contact protection circuit | None                          |
| Internal resistance        | ≤ 1Ω (Including 3m lead wire) |

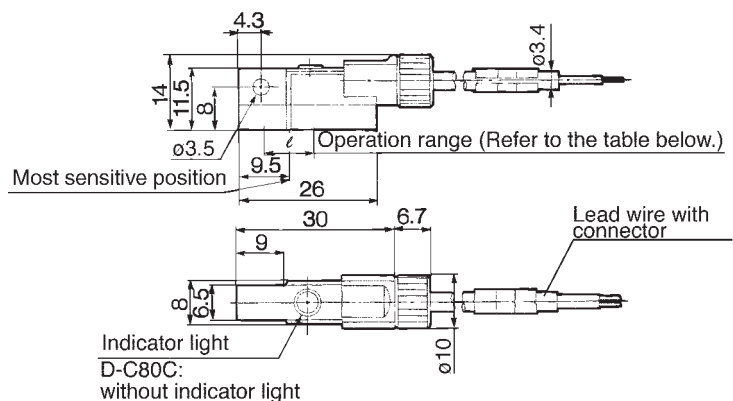
● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

Note 1) Refer to common specifications on p. 6-18

Note 2) Refer to p. 6-18 for lead wire length.

Note 3) Lead wire with connector may be shipped with switch.

### Dimensions



### Operation Range (ℓ Dimension)

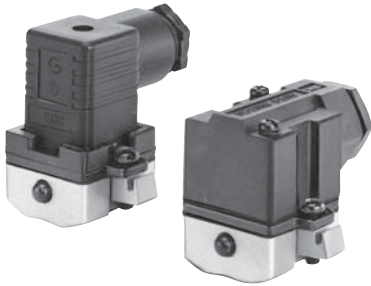
| Actuator series                  | Bore size (mm) |    |    |    |    |    |    |    |    |
|----------------------------------|----------------|----|----|----|----|----|----|----|----|
|                                  | 6              | 10 | 16 | 20 | 25 | 32 | 40 | 50 | 63 |
| CDJ2                             | 6              | 7  | 7  | —  | —  | —  | —  | —  | —  |
| CDVJ                             | —              | 7  | 7  | —  | —  | —  | —  | —  | —  |
| CDLJ2                            | —              | —  | 7  | —  | —  | —  | —  | —  | —  |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2 | —              | —  | —  | 7  | 8  | 8  | 8  | —  | —  |
| CDG1, MGG                        | —              | —  | —  | 8  | 10 | 9  | 10 | 10 | 11 |
| CDLG1                            | —              | —  | —  | 8  | 10 | 9  | 10 | —  | —  |
| RSDG                             | —              | —  | —  | —  | —  | —  | 10 | 10 | —  |
| MGC                              | —              | —  | —  | 8  | 10 | 9  | 10 | 10 | —  |
| MLGC, RHC, REC                   | —              | —  | —  | 8  | 10 | 9  | 10 | —  | —  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Reed Switch/Band Mounting

## D-A33/D-A34/D-A44

Terminal conduit: D-A3  
DIN terminal: D-A4

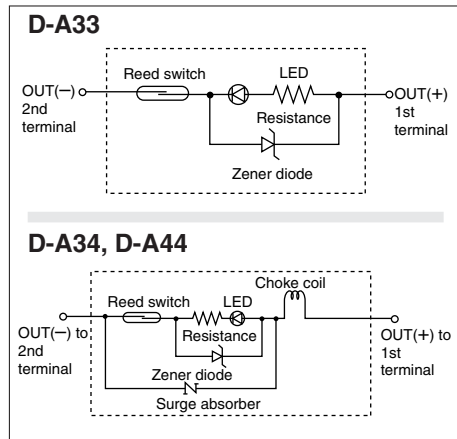


### ⚠ Caution

#### Precautions

- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

### Internal Circuit



### Applicable Actuator Series

| Series                                  | Bore size (mm)                             |
|---|--|
| CDA1, CDBA1, CDV3, CDVS, CDLA, CE2, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                    | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                    | ø125, ø140, ø160, ø180, ø200               |
| RHC                                     | ø20, ø25, ø32, ø40                         |

### Specifications

PLC: Programmable Logic Controller

#### D-A3 (With indicator light) Terminal conduit

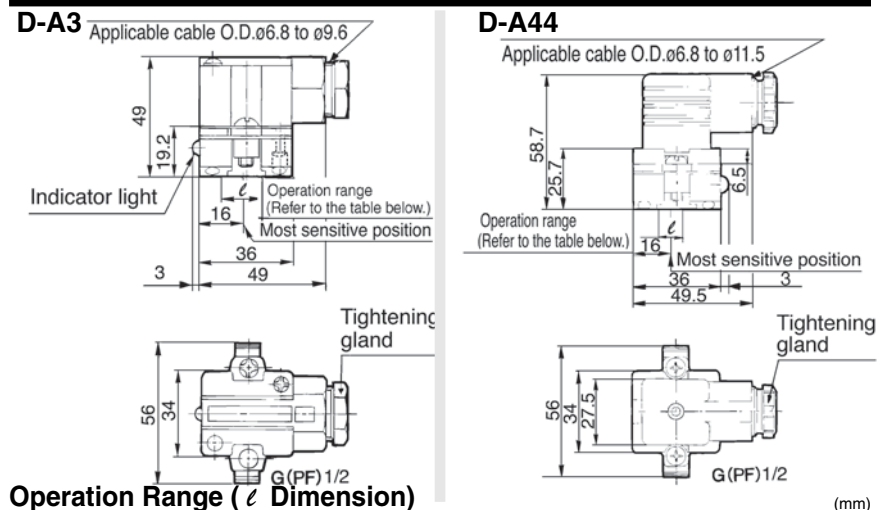
| Auto switch model number   | D-A33                             | D-A34     |           |             |
|----------------------------|-----------------------------------|-----------|-----------|-------------|
| Application                | PLC                               | Relay/PLC |           |             |
| Load voltage               | 24V DC                            | 24V DC    | 100V AC   | 200V AC     |
| Load current range         | 5 to 50mA                         | 5 to 50mA | 5 to 25mA | 5 to 12.5mA |
| Contact protection circuit | None                              | Built-in  |           |             |
| Internal voltage drop      | ≤ 2.4V                            |           |           |             |
| Indicator light            | ON: When red light emitting diode |           |           |             |

#### D-A44 (With indicator light) DIN terminal

| Auto switch model number   | D-A44                             |           |             |
|----------------------------|-----------------------------------|-----------|-------------|
| Application                | Relay/PLC                         |           |             |
| Load voltage               | 24V DC                            | 100V AC   | 200V AC     |
| Load current range         | 5 to 50mA                         | 5 to 25mA | 5 to 12.5mA |
| Contact protection circuit | Built-in                          |           |             |
| Internal voltage drop      | ≤ 2.4V                            |           |             |
| Indicator light            | ON: When red light emitting diode |           |             |

Note) Refer to common specifications on p.6-18.

### Dimensions



### Operation Range (ℓ Dimension)

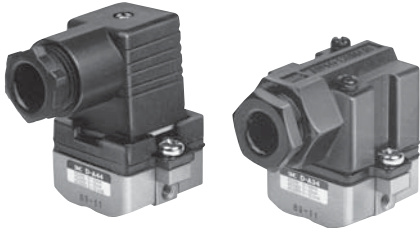
| Actuator series                         | Bore size |    |    |    |    |    |    |     |     |     |     |     |     |
|---|-----------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
|   | 20        | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CE2, CDV3, CDVS, CDLA, CNA | —         | —  | —  | 9  | 10 | 11 | 11 | 11  | —   | —   | —   | —   | —   |
| CDL1                                    | —         | —  | —  | 9  | 10 | 11 | 11 | 11  | 10  | 10  | 10  | —   | —   |
| CDS1                                    | —         | —  | —  | —  | —  | —  | —  | —   | 10  | 10  | 10  | 10  | 10  |
| RHC                                     | 9         | 10 | 9  | 10 | —  | —  | —  | —   | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)

# Reed Switch/Band Mounting

# D-A33A/D-A34A/D-A44A

Terminal conduit: D-A3□A  
DIN terminal: D-A44A



## Applicable Actuator Series

| Series             | Bore size (mm)     |
|--------------------|--------------------|
| CDM2, CDBM2, CDLM2 | ø20, ø25, ø32, ø40 |

## Specifications

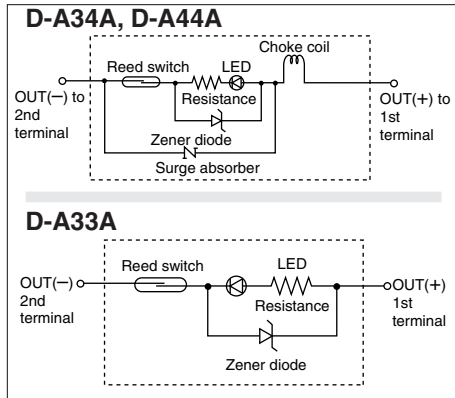
PLC: Programmable Logic Controller

| D-A3□A (With indicator light) Terminal conduit |                                   |           |             |           |
|--|-----------------------------------|-----------|-------------|-----------|
| Auto switch model number                       | D-A34A                            |           |             | D-A33A    |
| Application                                    | Relay/PLC                         |           |             | PLC       |
| Load voltage                                   | 24V DC                            | 100V AC   | 200V AC     | 24V DC    |
| Load current range                             | 5 to 50mA                         | 5 to 25mA | 5 to 12.5mA | 5 to 50mA |
| Contact protection circuit                     | Built-in                          |           |             | None      |
| Internal voltage drop                          | ≤ 2.4V                            |           |             |           |
| Indicator light                                | ON: When red light emitting diode |           |             |           |

| D-A44A (With indicator light) DIN terminal |                                   |           |             |  |
|--|-----------------------------------|-----------|-------------|--|
| Auto switch model number                   | D-A44A                            |           |             |  |
| Application                                | Relay/PLC                         |           |             |  |
| Load voltage                               | 24V DC                            | 100V AC   | 200V AC     |  |
| Load current range                         | 5 to 50mA                         | 5 to 25mA | 5 to 12.5mA |  |
| Contact protection circuit                 | Built-in                          |           |             |  |
| Internal voltage drop                      | ≤ 2.4V                            |           |             |  |
| Indicator light                            | ON: When red light emitting diode |           |             |  |

Note) Refer to common specifications on p.6-18.

## Internal Circuit



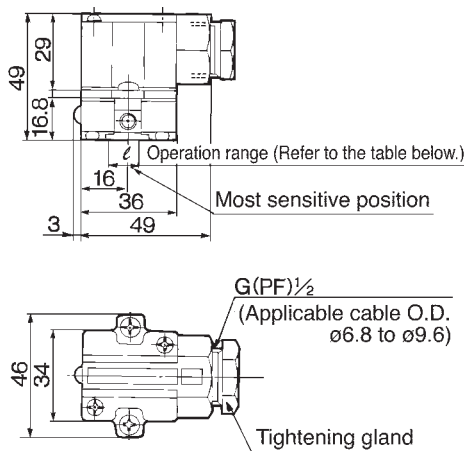
## Caution

### Precautions

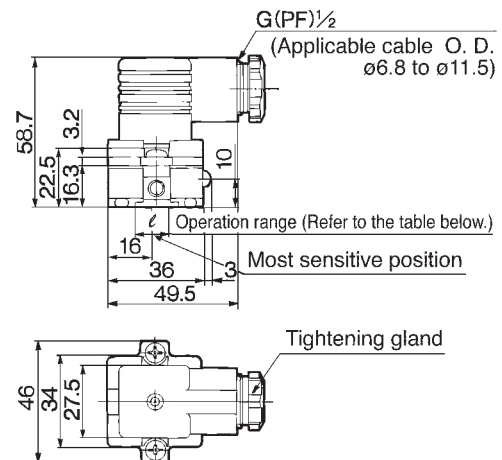
- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

## Dimensions

### D-A3□A



### D-A44A



### Operation Range (ℓ Dimension) (mm)

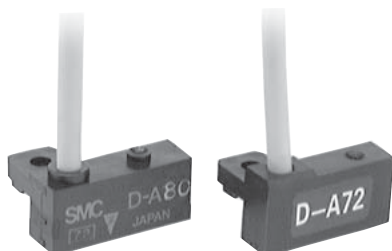
| Actuator series    | Bore size |    |    |    |
|--------------------|-----------|----|----|----|
|                    | 20        | 25 | 32 | 40 |
| CDM2, CDBM2, CDLM2 | 8         | 8  | 9  | 9  |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)

# Reed Switch/Rail Mounting

## D-A72/D-A73/D-A80

**Grommet**  
Electrical entry : Perpendicular



### Applicable Actuator Series

| Series      | Bore size (mm)  |
|-------------|---|
| CDJ2, CDVJ  | ø10, ø16  |
| CDQ2        | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160       |
| CDXW        | Plate mounted ø10, ø16, ø20, ø25, ø32, Housing mounted ø16, ø20, ø25, ø32 |
| CDY1S, CY1L | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ        | ø16, ø20, ø32, ø40, ø50   |
| MDU         | ø25, ø32, ø40, ø50, ø63   |
| CE1         | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2     | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT         | ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

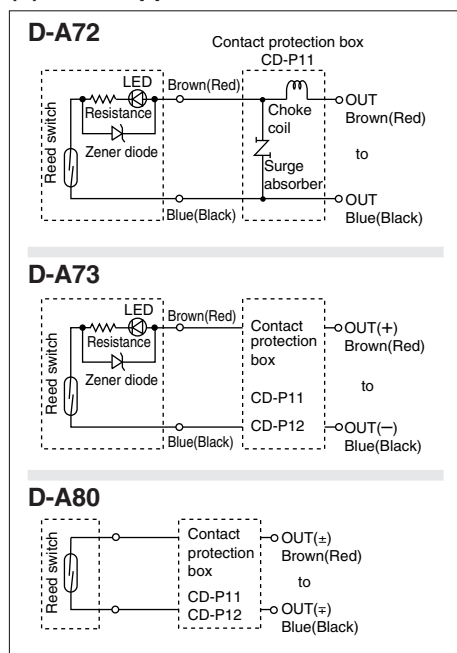
| D-A7 (With indicator light) |                                   |           |           |
|-----------------------------|-----------------------------------|-----------|-----------|
| Auto switch model number    | D-A72                             | D-A73     |           |
| Application                 | Relay/PLC                         | Relay/PLC |           |
| Load voltage                | 200V AC                           | 24V DC    | 100V AC   |
| Load current range          | 5 to 10mA                         | 5 to 40mA | 5 to 20mA |
| Contact protection circuit  | None                              |           |           |
| Internal voltage drop       | ≤ 2.4V                            |           |           |
| Indicator light             | ON: When red light emitting diode |           |           |

| D-A8 (Without indicator light) |                                     |           |            |
|--------------------------------|-------------------------------------|-----------|------------|
| Auto switch model number       | D-A80                               |           |            |
| Application                    | Relay/IC circuit/PLC                |           |            |
| Load voltage                   | 24V AC DC or less                   | 48V AC DC | 100V AC DC |
| Max. load current              | 50mA                                | 40mA      | 20mA       |
| Contact protection circuit     | None                                |           |            |
| Internal resistance            | 1Ω or less (Including 3m lead wire) |           |            |

• Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m  
 Note 1) Refer to common specifications on the p.6-18.  
 Note 2) Refer to the p.6-18 for lead wire length.

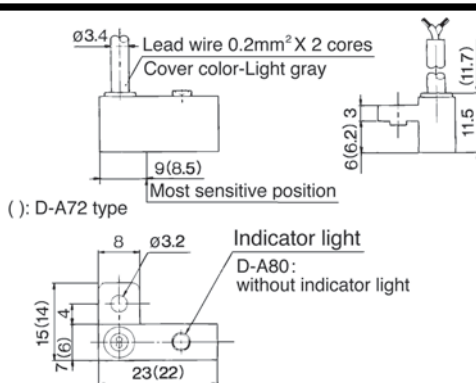
### Internal Circuit

( ): If not applicable for IEC Standard



Note) ① In the case operation load is an inductive load.  
 ② In the case the wiring length to load is “>” 5m.  
 ③ In the case the load voltage is 100 or 200V AC.  
 Be sure to use the auto switch with the contact protection box in any case mentioned above.  
 D-A72 must be used with contact protection box.  
 Refer to p.6-19 for the details of contact protection box.

### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series | Bore size (mm) |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |
|-----------------|----------------|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
|                 | 6              | 10 | 12 | 15 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ      | —              | 8  | —  | —  | 9  | —  | —  | —  | —  | —  | —  | —  | —   | —   | —   | —   |
| CDQ2            | —              | —  | 10 | —  | 12 | 12 | 12 | 12 | 11 | 10 | 12 | 12 | 13  | 13  | 13  | 13  |
| CDXW            | B              | —  | —  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —  | —   | —   | —   | —   |
|                 | P              | —  | 6  | —  | —  | 6  | 6  | 6  | —  | —  | —  | —  | —   | —   | —   | —   |
| CDY1S           | 6              | 6  | —  | 6  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —   | —   | —   | —   |
| CY1L            | 6              | 6  | —  | 6  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —   | —   | —   | —   |
| RSDQ            | —              | —  | —  | —  | —  | 12 | 12 | 12 | 11 | 10 | —  | —  | —   | —   | —   | —   |
| MDU             | —              | —  | —  | —  | —  | —  | 13 | 13 | 13 | 13 | 13 | —  | —   | —   | —   | —   |
| CE1             | —              | —  | 10 | —  | —  | 12 | —  | 12 | 11 | 10 | 12 | —  | —   | —   | —   | —   |
| MK, MK2         | —              | —  | —  | —  | —  | 12 | 12 | 12 | 11 | 10 | 12 | —  | —   | —   | —   | —   |
| CXT             | —              | —  | —  | —  | —  | —  | —  | 12 | 11 | —  | —  | —  | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)

# Reed Switch/Rail Mounting

## D-A7□H/D-A80H

**Grommet**  
Electrical entry : In-line



### Applicable Actuator Series

| Series      | Bore size (mm)  |
|-------------|---|
| CDJ2, CDVJ  | φ10, φ16  |
| CDQ2        | φ12, φ16, φ20, φ25, φ32, φ40, φ50, φ63, φ80, φ100, φ125, φ140, φ160       |
| CDXW        | Plate mounted φ10, φ16, φ20, φ25, φ32, Housing mounted φ16, φ20, φ25, φ32 |
| CDY1S, CY1L | φ6, φ10, φ15, φ20, φ25, φ32, φ40  |
| RSDQ        | φ16, φ20, φ32, φ40, φ50   |
| MDU         | φ25, φ32, φ40, φ50, φ63   |
| CE1         | φ12, φ20, φ32, φ40, φ50, φ63  |
| MK, MK2     | φ20, φ25, φ32, φ40, φ50, φ63  |
| CXT         | φ32, φ40  |

### Specifications

PLC: Programmable Logic Controller

#### D-A7□H (With indicator light)

| Auto switch model number    | D-A72H                            | D-A73H    | D-A76H       |            |
|-----------------------------|-----------------------------------|-----------|--------------|------------|
| Application                 | Relay/PLC                         | Relay/PLC | IC circuit   |            |
| Load voltage                | 200V AC                           | 24V DC    | 100V AC      | 4 to 8V DC |
| Max. load current and range | 5 to 10mA                         | 5 to 40mA | 5 to 20mA    | 20mA       |
| Contact protection circuit  | None                              |           |              |            |
| Internal voltage drop       | ≤ 2.4V                            |           | 0.8V or less |            |
| Indicator light             | ON: When red light emitting diode |           |              |            |

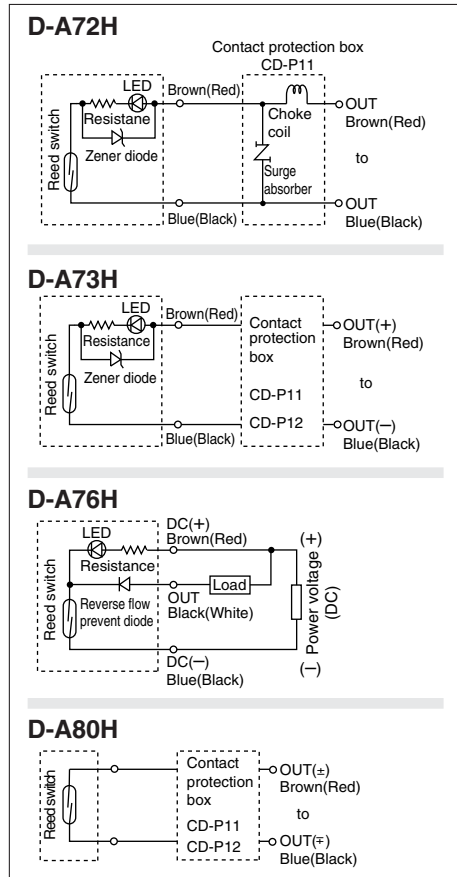
#### D-A80H (Without indicator light)

| Auto switch model number   | D-A80H                                    |                                   |                                    |
|----------------------------|---|-----------------------------------|------------------------------------|
| Applications               | Relay/IC circuit/PLC                      |                                   |                                    |
| Load voltage               | 24V <sup>AC</sup> / <sub>DC</sub> or less | 48V <sup>AC</sup> / <sub>DC</sub> | 100V <sup>AC</sup> / <sub>DC</sub> |
| Max. load current          | 50mA                                      | 40mA                              | 20mA                               |
| Contact protection circuit | None                                      |                                   |                                    |
| Internal resistance        | 1□ or less (Including 3m lead wire)       |                                   |                                    |

● Lead wire — Oilproof vinyl heavy insulation cable, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 3 cores (Brown, Black, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

### Internal Circuit

( ): If not applicable for IEC Standard



Note) ① In the case operation load is an inductive load.

② In the case the wiring length to load is ">" 5m.

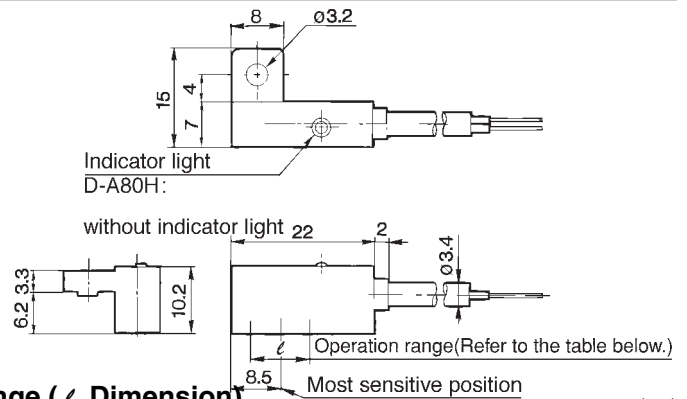
③ In the case the load voltage is 100 or 200V AC.

Be sure to use the auto switch with the contact protection box in any case mentioned above.

D-A72H must be used with contact protection box.

Refer to p.6-19 for the details of contact protection box.

### Dimensions



### Operation Range ( l Dimension)

| Actuator series | Bore size |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |
|-----------------|-----------|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
|                 | 6         | 10 | 12 | 15 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ      | —         | 8  | —  | —  | 9  | —  | —  | —  | —  | —  | —  | —  | —   | —   | —   | —   |
| CDQ2            | —         | —  | 10 | —  | 12 | 12 | 12 | 12 | 11 | 10 | 12 | 12 | 13  | 13  | 13  | 13  |
| CDXW            | B<br>P    | —  | —  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —  | —   | —   | —   | —   |
|                 |           | 6  | 6  | 6  | 6  | —  | —  | —  | —  | —  | —  | —  | —   | —   | —   |     |
| CDY1S           | 6         | 6  | —  | 6  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —   | —   | —   | —   |
| CY1L            | 6         | 6  | —  | 6  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —   | —   | —   | —   |
| RSDQ            | —         | —  | —  | —  | —  | 12 | 12 | 12 | 11 | 10 | —  | —  | —   | —   | —   | —   |
| MDU             | —         | —  | —  | —  | —  | —  | 13 | 13 | 13 | 13 | 13 | —  | —   | —   | —   | —   |
| CE1             | —         | —  | 10 | —  | —  | 12 | —  | 12 | 11 | 10 | 12 | —  | —   | —   | —   | —   |
| MK, MK2         | —         | —  | —  | —  | —  | 12 | 12 | 12 | 11 | 10 | 12 | —  | —   | —   | —   | —   |
| CXT             | —         | —  | —  | —  | —  | —  | —  | 12 | 11 | —  | —  | —  | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)



# Reed Switch/Rail Mounting

## D-A73C/D-A80C

### Connector



### Applicable Actuator Series

| Series      | Bore size (mm)  |
|-------------|---|
| CDJ2, CDVJ  | ø10, ø16  |
| CDQ2        | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160       |
| CDXW        | Plate mounted ø10, ø16, ø20, ø25, ø32, Housing mounted ø16, ø20, ø25, ø32 |
| CDY1S, CY1L | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ        | ø16, ø20, ø32, ø40, ø50   |
| MDU         | ø25, ø32, ø40, ø50, ø63   |
| CE1         | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2     | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT         | ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

#### D-A73C (With indicator light)

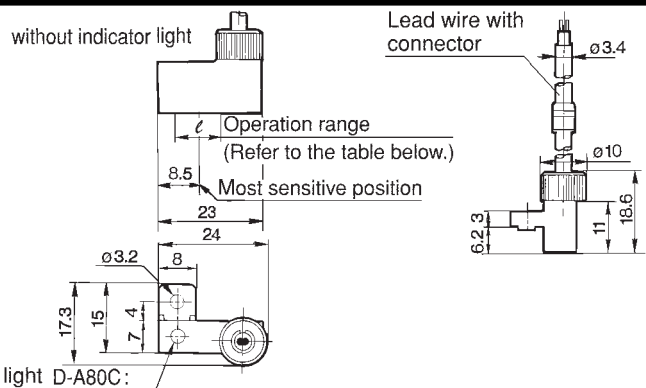
|                            |                                   |
|----------------------------|-----------------------------------|
| Auto switch model number   | <b>D-A73C</b>                     |
| Application                | Relay/PLC                         |
| Load voltage               | 24V DC                            |
| Load current range         | 5 to 40mA                         |
| Contact protection circuit | None                              |
| Internal voltage drop      | ≤ 2.4V                            |
| Indicator light            | ON: When red light emitting diode |

#### D-A80C (Without indicator light)

|                            |                                     |
|----------------------------|-------------------------------------|
| Auto switch model number   | <b>D-A80C</b>                       |
| Application                | Relay/IC circuit/PLC                |
| Load voltage               | 24V <sup>AC</sup> / <sub>DC</sub>   |
| Max. load current          | 50mA                                |
| Contact protection circuit | None                                |
| Internal resistance        | 1Ω or less (Including 3m lead wire) |

- Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m
- Note 1) Refer to common specifications on p.6-18.
- Note 2) Refer to p.6-18 for lead wire length.
- Note 3) Lead wire with connector may be shipped with switch.

### Dimensions



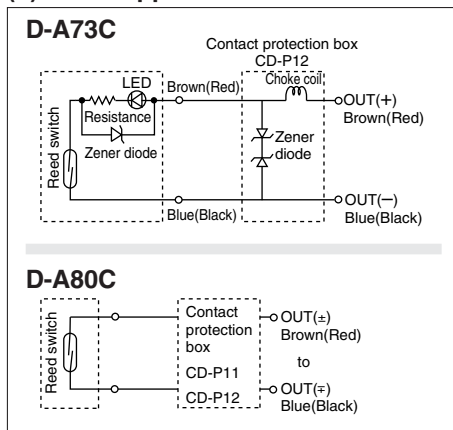
### Caution

#### Precautions

- ① Confirm that the connector is appropriately tightened. If tightened insufficiently, the water resistant performance will deteriorate.
- ② Refer to p.6-88 for the details.

### Internal Circuit

( ): If not applicable for IEC Standard



- Note) ① In the case operation load is an inductive load.  
 ② In the case the wiring length to load is ">" 5m.  
 Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### Operation Range ( ℓ Dimension)

| Actuator series | Bore size (mm) |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |
|-----------------|----------------|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
|                 | 6              | 10 | 12 | 15 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ      | —              | 8  | —  | —  | 9  | —  | —  | —  | —  | —  | —  | —  | —   | —   | —   | —   |
| CDQ2            | —              | —  | 10 | —  | 12 | 12 | 12 | 12 | 11 | 10 | 12 | 12 | 13  | 13  | 13  | 13  |
| CDXW            | B              | —  | —  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —  | —   | —   | —   | —   |
|                 |                | P  | 6  | —  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —   | —   | —   | —   |
| CDY1S           | 6              | 6  | —  | 6  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —   | —   | —   | —   |
| CY1L            | 6              | 6  | —  | 6  | —  | 6  | 6  | 6  | 6  | —  | —  | —  | —   | —   | —   | —   |
| RSDQ            | —              | —  | —  | —  | 12 | 12 | 12 | 11 | 10 | —  | —  | —  | —   | —   | —   | —   |
| MDU             | —              | —  | —  | —  | —  | 13 | 13 | 13 | 13 | 13 | —  | —  | —   | —   | —   | —   |
| CE1             | —              | —  | 10 | —  | —  | 12 | —  | 12 | 11 | 10 | 12 | —  | —   | —   | —   | —   |
| MK, MK2         | —              | —  | —  | —  | —  | 12 | 12 | 12 | 11 | 10 | 12 | —  | —   | —   | —   | —   |
| CXT             | —              | —  | —  | —  | —  | —  | —  | 12 | 11 | —  | —  | —  | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)

# Reed Switch/Tie-rod Mounting

## D-A5 □ / D-A6 □

### Grommet



### Applicable Actuator Series

| Series                                  | Bore size (mm)                             |
|---|--|
| CDA1, CDBA1, CDV3, CDVS, CDLA, CE2, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                    | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                    | ø125, ø140, ø160, ø180, ø200               |
| MDB, MDBB                               | ø32, ø40, ø50, ø63, ø80, ø100              |

### Specifications

PLC: Programmable Logic Controller

#### D-A5 (With indicator light)

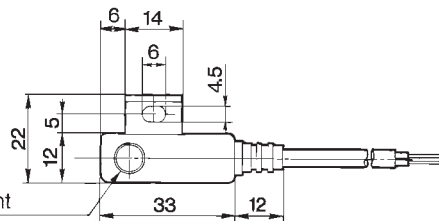
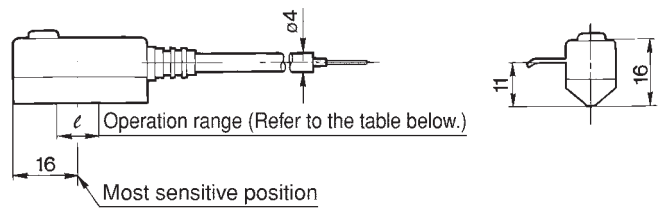
| Auto switch model number    | D-A53                             | D-A54     |           | D-A56        |
|-----------------------------|-----------------------------------|-----------|-----------|--------------|
| Application                 | PLC                               | Relay/PLC |           | IC circuit   |
| Load voltage                | 24V DC                            | 24V DC    | 100V AC   | 200V AC      |
| Max. load current and range | 5 to 50mA                         | 5 to 50mA | 5 to 25mA | 5 to 12.5mA  |
| Contact protection circuit  | None                              | Built-in  |           | None         |
| Internal voltage drop       | 2.4V                              |           |           | 0.8V or less |
| Indicator light             | ON: When red light emitting diode |           |           |              |

#### D-A6 (Without indicator light)

| Auto switch model number   | D-A64       |         | D-A67                         |
|----------------------------|-------------|---------|-------------------------------|
| Application                | Relay/PLC   |         | PLC/IC circuit                |
| Load voltage               | ≤ 24V AC DC | 100V AC | 200V AC                       |
| Max. load current          | 50mA        | 25mA    | 12.5mA                        |
| Contact protection circuit | Built-in    |         | None                          |
| Internal resistance        | ≤ 10Ω       |         | ≤ 1Ω (Including 3m lead wire) |

- Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m or ø4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 0.5m
- Note 1) Refer to common specifications on p.6-18.
- Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



Indicator light  
D-A64/A67:  
without indicator light

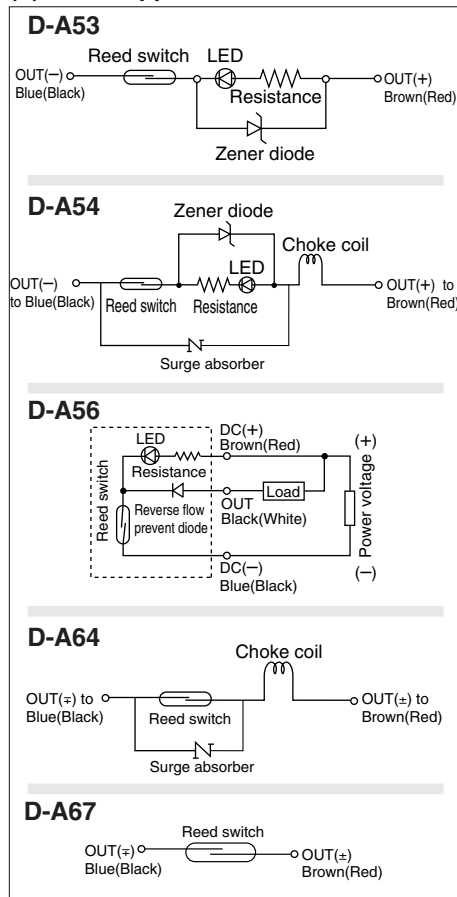
### Operation Range (l Dimension)

| Actuator series                         | Bore size (mm) |    |    |    |    |     |     |     |     |     |     |
|---|----------------|----|----|----|----|-----|-----|-----|-----|-----|-----|
|   | 32             | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CNA, CDVS, CDLA, CE2 | —              | 9  | 10 | 11 | 11 | 11  | —   | —   | —   | —   | —   |
| CDL1                                    | —              | 9  | 10 | 11 | 11 | 11  | 10  | 10  | 10  | —   | —   |
| CDS1                                    | —              | —  | —  | —  | —  | —   | 10  | 10  | 10  | 10  | 10  |
| MDB, MDBB                               | 9              | 9  | 10 | 11 | 11 | 11  | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)

### Internal Circuit

( ): If not applicable for IEC Standard

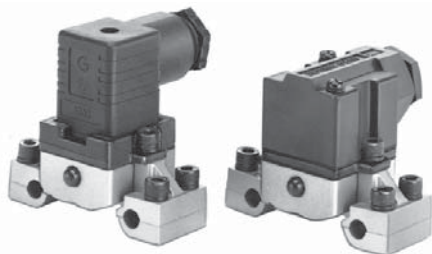




# Reed Switch/Tie-rod Mounting

## D-A33C/D-A34C/D-A44C

Terminal conduit: D-A3□C  
DIN terminal: D-A44C



### Applicable Actuator Series

| Series  | Bore size (mm)           |
|---|--------------------------|
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CE2, CNA | φ40, φ50, φ63, φ80, φ100 |

### Specifications

PLC: Programmable Logic Controller

#### D-A3□C (With indicator light) Terminal conduit

| Auto switch model number   | D-A33C                            | D-A34C    |           |             |
|----------------------------|-----------------------------------|-----------|-----------|-------------|
| Application                | PLC                               | Relay/PLC |           |             |
| Load voltage               | 24V AC                            | 24V DC    | 100V AC   | 200V AC     |
| Load current range         | 5 to 50mA                         | 5 to 50mA | 5 to 25mA | 5 to 12.5mA |
| Contact protection circuit | None                              | Built-in  |           |             |
| Internal voltage drop      | ≤ 2.4V                            |           |           |             |
| Indicator light            | ON: When red light emitting diode |           |           |             |

#### D-A44C (With indicator light) DIN terminal

| Auto switch model number   | D-A44C                            |           |             |
|----------------------------|-----------------------------------|-----------|-------------|
| Application                | Relay/PLC                         |           |             |
| Load voltage               | 24V DC                            | 100V AC   | 200V AC     |
| Load current range         | 5 to 50mA                         | 5 to 25mA | 5 to 12.5mA |
| Contact protection circuit | Built-in                          |           |             |
| Internal voltage drop      | ≤ 2.4V                            |           |             |
| Indicator light            | ON: When red light emitting diode |           |             |

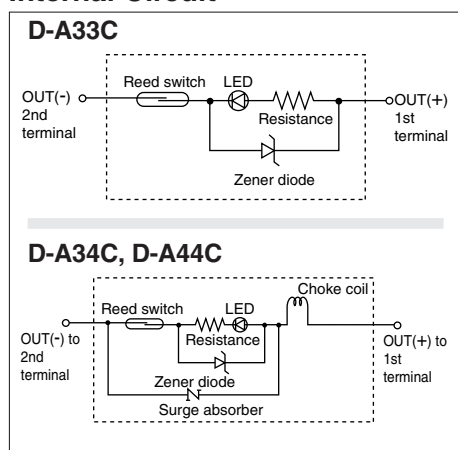
Note) Refer to common specifications on p.6-18.

### Caution

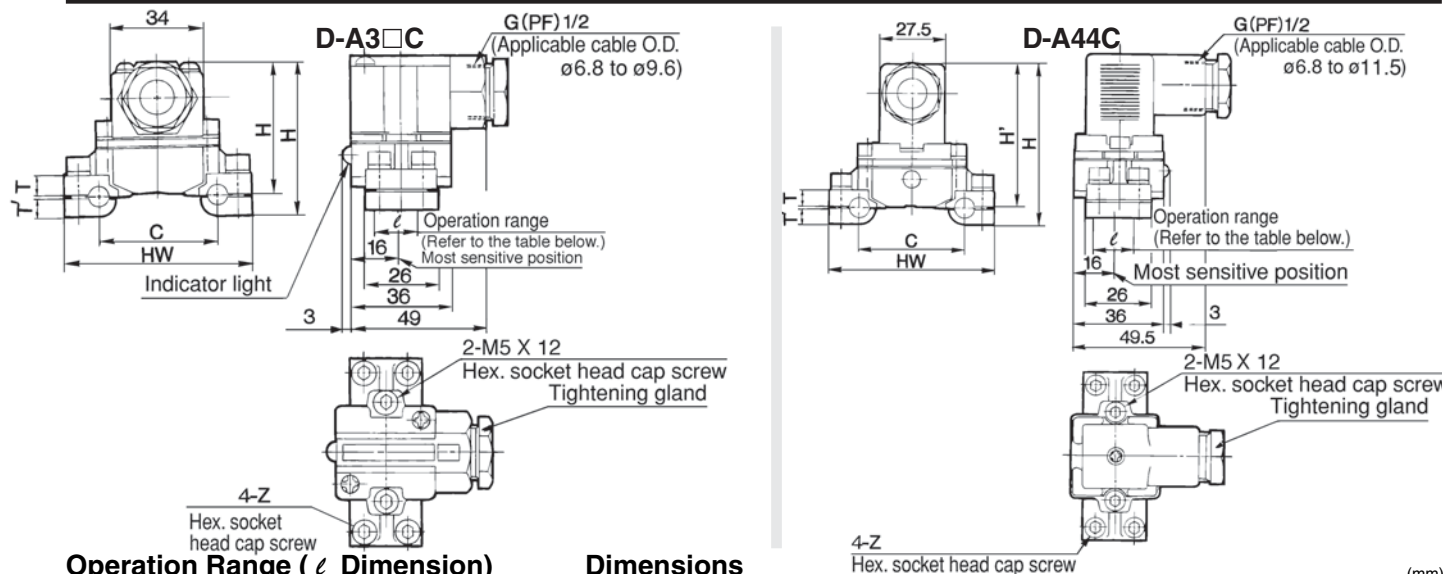
#### Precautions

- Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- After wiring, confirm that tightening gland and all screws are tightened.

### Internal Circuit



### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series                          | Bore size (mm) |    |    |    |     |
|--|----------------|----|----|----|-----|
|  | 40             | 50 | 63 | 80 | 100 |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA | 9              | 10 | 11 | 11 | 11  |

Note) Average value at normal temperature including hysteresis. (Tolerance ± 30%)

### Dimensions

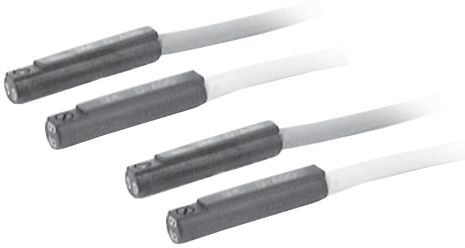
| Switch part No.      | Bore size (mm) | C  | HW  | H        | H'       | T    | T'  | Z       |
|----------------------|----------------|----|-----|----------|----------|------|-----|---------|
| D-A3□C-4, D-A44C-4   | 40             | 44 | 69  | 58(67.5) | 50.5(60) | 7.5  | 6.5 | M5 X 16 |
| D-A3□C-5, D-A44C-5   | 50             | 52 | 77  | 59(68.5) | 51.5(61) | 8.5  | 6.5 | M5 X 20 |
| D-A3□C-6, D-A44C-6   | 63             | 64 | 91  | 61.5(71) | 53(62.5) | 10.5 | 7.5 | M5 X 25 |
| D-A3□C-8, D-A44C-8   | 80             | 78 | 107 | 65(74.5) | 54.5(64) | 12.5 | 9.5 | M5 X 25 |
| D-A3□C-10, D-A44C-10 | 100            | 92 | 121 | 68(77.5) | 57.5(67) | 15.5 | 9.5 | M5 X 25 |

\* ( ) : Values for D-A44C

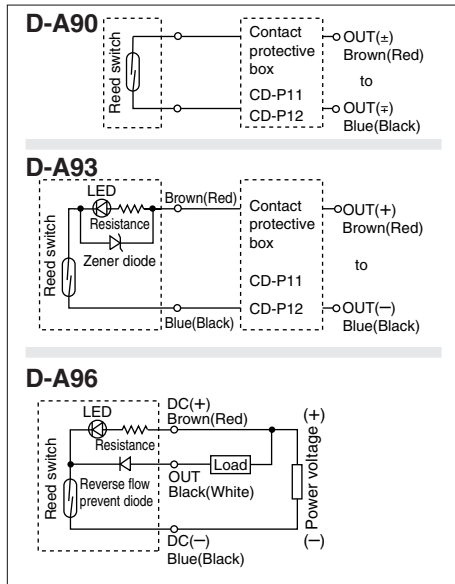
# Reed Switch/Direct Mounting

## D-A90/D-A93/D-A96

### Grommet Electrical entry: In-line



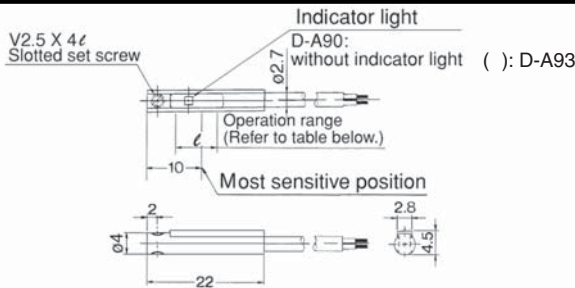
### Internal Circuit ( ): If not applicable for IEC Standard



- Note) ① In the case operation load is an inductive load.  
 ② In the case the wiring length to load is " $>$ " 5m.  
 ③ In the case the load voltage is 100V AC.

Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### Dimensions



### Operation Range ( $l$ Dimension)

| Actuator series | Bore size (mm) |     |    |    |     |    |      |     |     |     |      |    |      |
|-----------------|----------------|-----|----|----|-----|----|------|-----|-----|-----|------|----|------|
|                 | 6              | 8   | 10 | 12 | 16  | 20 | 25   | 32  | 40  | 50  | 63   | 80 | 100  |
| CDU             | 5              | —   | 6  | —  | 9   | 11 | 12.5 | 14  | —   | —   | —    | —  | —    |
| CDQS            | —              | —   | —  | 6  | 7.5 | 10 | 10   | —   | —   | —   | —    | —  | —    |
| CDQ2            | —              | —   | —  | —  | —   | —  | —    | 9.5 | 9.5 | 9.5 | 11.5 | 9  | 11.5 |
| MY1             | —              | —   | —  | —  | 5   | 5  | —    | —   | —   | —   | —    | —  | —    |
| MXU             | 5              | —   | 6  | —  | 9   | —  | —    | —   | —   | —   | —    | —  | —    |
| MXW             | —              | 6   | —  | 6  | 8.5 | 10 | 10   | —   | —   | —   | —    | —  | —    |
| MXF             | —              | 4.5 | —  | 5  | 6   | 7  | —    | —   | —   | —   | —    | —  | —    |
| MXS             | 4.5            | 5   | —  | 6  | 7   | 8  | 8    | —   | —   | —   | —    | —  | —    |

### Applicable Actuator Series

| Series  | Bore size (mm)  | Series | Bore size (mm)   |
|---------|---|--------|--|
| CDU     | $\phi 6, \phi 10, \phi 16, \phi 20, \phi 25, \phi 32$   | MXP    | $\phi 10, \phi 12, \phi 16$                            |
| CDQS    | $\phi 12, \phi 16, \phi 20, \phi 25$                    | MTS    | $\phi 20, \phi 25, \phi 32, \phi 40$                   |
| CDQ2*   | $\phi 32, \phi 40, \phi 50, \phi 63, \phi 80, \phi 100$ | CXT    | $\phi 12, \phi 16, \phi 20, \phi 25, \phi 32, \phi 40$ |
| MY1     | $\phi 16, \phi 20$                                      | MK     | $\phi 12, \phi 16$                                     |
| MXU     | $\phi 6, \phi 10, \phi 16$                              | MK2    | $\phi 32, \phi 40, \phi 50, \phi 63$                   |
| MXW     | $\phi 8, \phi 12, \phi 16, \phi 20, \phi 25$            | RSQ    | $\phi 12, \phi 32, \phi 40, \phi 50$                   |
| MXF     | $\phi 8, \phi 12, \phi 16, \phi 20$                     | CEP    | $\phi 12, \phi 20$                                     |
| MXS/MXQ | $\phi 6, \phi 8, \phi 12, \phi 16, \phi 20, \phi 25$    | CY1R   | $\phi 6, \phi 10, \phi 15, \phi 20$                    |

\*Not applicable for CDQP2

### Specifications

PLC: Programmable Logic Controller

#### D-A90 (Without indicator light)

| Auto switch model number   | D-A90  |                             |                              |
|----------------------------|--|-----------------------------|------------------------------|
| Application                | IC circuit/Relay/PLC                         |                             |                              |
| Load voltage               | 24V $\frac{AC}{DC}$ or less                  | 48V $\frac{AC}{DC}$ or less | 100V $\frac{AC}{DC}$ or less |
| Max. load current          | 50mA   | 40mA                        | 20mA                         |
| Contact protection circuit | None   |                             |                              |
| Internal resistance        | 1 $\square$ or less (Including 3m lead wire) |                             |                              |

#### D-A93/D-A96 (With indicator light)

| Auto switch model number                 | D-A93  | D-A96       |            |
|--|--|-------------|------------|
| Application                              | Relay/PLC  | IC circuit  |            |
| Load voltage                             | 24V DC   | 100V AC     | 4 to 8V DC |
| Max. load current and load current range | 5 to 40mA  | 5 to 20mA   | 20mA       |
| Contact protection circuit               | None   |             |            |
| Internal voltage drop                    | $\leq 2.4V$ (up to 20mA)/ $\leq 3V$ (up to 40mA) | $\leq 0.8V$ |            |
| Indicator light                          | ON: When red light emitting diode                |             |            |

#### Lead wire

D-A90/D-A93 — Oilproof vinyl heavy insulation cable,  $\phi 2.7, 0.18mm^2$  X 2cores (Brown, Blue), 0.5m

D-A96 — Oilproof vinyl heavy insulation cable,  $\phi 2.7, 0.15mm^2$  X 3cores (Brown, Black, Blue), 0.5m

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Caution

- ⚠ **Caution**
- ① Fix the switch with appropriate screw installed on the switch body. If using other screws, switch may be damaged.

### Precautions

### Operation Range ( $l$ Dimension)

| Actuator series | Bore size (mm) |   |    |    |    |     |     |    |     |     |     |      |
|-----------------|----------------|---|----|----|----|-----|-----|----|-----|-----|-----|------|
|                 | 6              | 8 | 10 | 12 | 15 | 16  | 20  | 25 | 32  | 40  | 50  | 63   |
| MXQ             | 4.5            | 5 | —  | 6  | —  | 7   | 8   | 9  | —   | —   | —   | —    |
| MXP             | —              | — | 5  | 5  | —  | 5   | —   | —  | —   | —   | —   | —    |
| MTS             | —              | — | —  | —  | —  | —   | 7.5 | 8  | 7   | 8   | —   | —    |
| CXT             | —              | — | —  | 6  | —  | 7.5 | 10  | 10 | 9.5 | 9.5 | —   | —    |
| MK              | —              | — | —  | 6  | —  | 7.5 | —   | —  | —   | —   | —   | —    |
| MK2             | —              | — | —  | —  | —  | —   | —   | —  | 9.5 | 9.5 | 9.5 | 11.5 |
| RSQ             | —              | — | —  | —  | —  | —   | —   | —  | 9.5 | 9.5 | 9.5 | —    |
| CEP             | —              | — | —  | 5  | —  | —   | 6.5 | —  | —   | —   | —   | —    |
| CY1R            | 9              | — | 13 | —  | 8  | —   | 6   | —  | —   | —   | —   | —    |

Note) Average value at normal temperature including hysteresis. (Tolerance  $\pm 30\%$ )



# Reed Switch/Direct Mounting

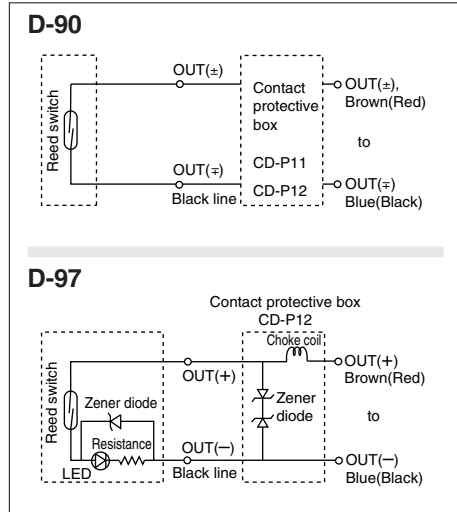
## D-90/D-97

**Grommet**  
Lead wire: Parallel cord



### Internal Circuit

( ): If not applicable for IEC Standard



Note) ① In the case operation load is an inductive load.  
② In the case the wiring length to load is ">" 5m.  
Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### Applicable Actuator Series

| Series  | Bore size (mm)              |
|---------|-----------------------------|
| CDJP-□D | ø6, ø10, ø15                |
| CDU     | ø6, ø10, ø16, ø20, ø25, ø32 |

### Specifications

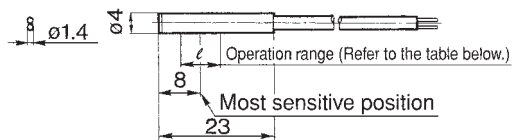
PLC: Programmable Logic Controller

| D-90 (Without indicator light) |                                     |                     |                     |
|--------------------------------|-------------------------------------|---------------------|---------------------|
| Auto switch model number       | D-90                                |                     |                     |
| Application                    | Relay/IC circuit/PLC                |                     |                     |
| Load voltage                   | 5V $\frac{AC}{DC}$                  | 12V $\frac{AC}{DC}$ | 24V $\frac{AC}{DC}$ |
| Max. load current              | 50mA                                |                     |                     |
| Internal resistance            | 1□ or less (Including 3m lead wire) |                     |                     |
| D-97 (With indicator light)    |                                     |                     |                     |
| Auto switch model number       | D-97                                |                     |                     |
| Application                    | Relay/PLC                           |                     |                     |
| Load voltage                   | 24V DC                              |                     |                     |
| Load current range             | 5 to 40mA                           |                     |                     |
| Internal voltage drop          | ≤ 2.4V                              |                     |                     |
| Indicator light                | ON: When red light emitting diode   |                     |                     |

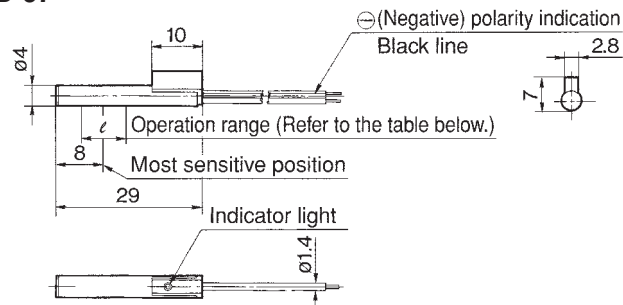
• Lead wire — Vinyl parallel cable, 0.2mm<sup>2</sup>, 2 cores, 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

### Dimensions

#### D-90



#### D-97



### Operation Range (ℓ Dimension)

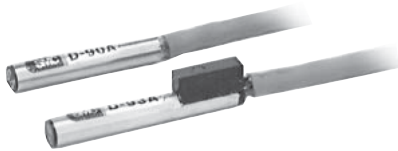
| Actuator series | Bore size            |     |    |    |    |    |    |    |
|-----------------|----------------------|-----|----|----|----|----|----|----|
|                 | 6                    | 10  | 15 | 16 | 20 | 25 | 32 |    |
| CDJP-□D         | 5.5                  | 8   | 9  | —  | —  | —  | —  |    |
| CDU             | Without shield plate | 5.5 | 7  | —  | 9  | 11 | 12 | 14 |
|                 | With shield plate    | —   | —  | —  | 7  | 8  | 8  | 9  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Reed Switch/Direct Mounting

## D-90A/D-93A

**Grommet**  
Lead wire: Heavy insulation cable



### Applicable Actuator Series

| Series  | Bore size (mm)              |
|---------|-----------------------------|
| CDJP-□D | ø6, ø10, ø15                |
| CDU     | ø6, ø10, ø16, ø20, ø25, ø32 |

### Specifications

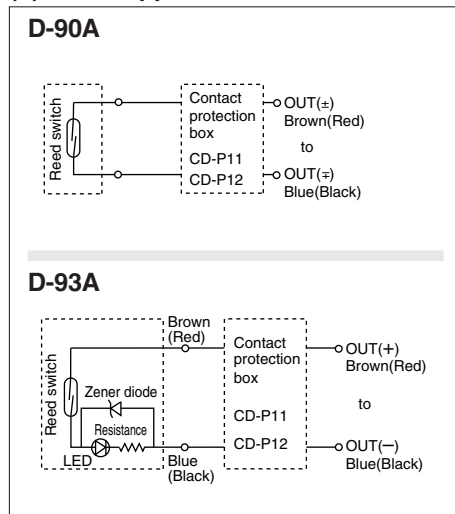
PLC: Programmable Logic Controller

| D-90A (Without indicator light) |                                     |              |              |               |
|---------------------------------|-------------------------------------|--------------|--------------|---------------|
| Auto switch model number        | D-90A                               |              |              |               |
| Application                     | Relay/IC circuit/PLC                |              |              |               |
| Load voltage                    | 5V AC<br>DC                         | 12V AC<br>DC | 24V AC<br>DC | 100V AC<br>DC |
| Max. load current               | 50mA                                |              |              | 20mA          |
| Internal resistance             | 1Ω or less (Including 3m lead wire) |              |              |               |
| D-93A (With indicator light)    |                                     |              |              |               |
| Auto switch model number        | D-93A                               |              |              |               |
| Application                     | Relay/PLC                           |              |              |               |
| Load voltage                    | 24V DC                              |              | 100V AC      |               |
| Load current range              | 5 to 40mA                           |              | 5 to 20mA    |               |
| Internal voltage drop           | ≤ 2.4V                              |              |              |               |
| Indicator light                 | ON: When red light emitting diode   |              |              |               |

- Lead wire — Oilproof vinyl heavy insulation cable, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m
- Note 1) Refer to common specifications on p.6-18.
- Note 2) Refer to p.6-18 for lead wire length.

### Internal Circuit

( ): If not applicable for IEC Standard

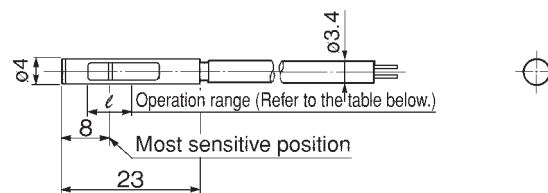


- Note) ① In the case operation load is an inductive load.  
 ② In the case the wiring length to load is ">" 5m.  
 ③ In the case the load voltage is 100V AC.

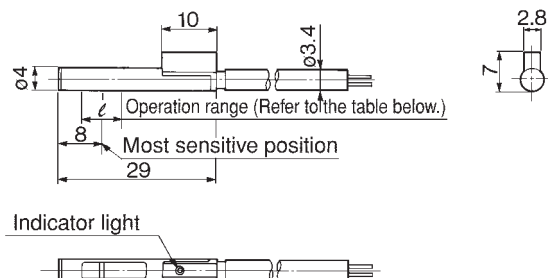
Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### Dimensions

#### D-90A



#### D-93A



### Operation Range (ℓ Dimension)

| Actuator series | Bore size (mm)       |     |    |    |    |    |    |
|-----------------|----------------------|-----|----|----|----|----|----|
|                 | 6                    | 10  | 15 | 16 | 20 | 25 | 32 |
| CDJP-□D         | 5.5                  | 8   | 9  | —  | —  | —  | —  |
| CDU             | Without shield plate | 5.5 | 7  | —  | 9  | 11 | 14 |
|                 | With shield plate    | —   | —  | —  | 7  | 8  | 9  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Reed Switch/Direct Mounting

## D-Z73/D-Z76/D-Z80

### Grommet



### Applicable Actuator Series

| Series           | Bore size (mm)                                    |
|------------------|---|
| MGQ, MVGQ, MGP   | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CXS              | ø6, ø10, ø15, ø20, ø25, ø32                       |
| RSH              | ø20, ø32, ø50, ø63, ø80                           |
| MY1B             | ø25, ø32, ø40, ø50, ø63, ø80, ø100                |
| MY1M, MY1C, CY1R | ø25, ø32, ø40, ø50, ø63                           |
| MY1H, ML2B       | ø25, ø32, ø40                                     |
| MGF              | ø40, ø63, ø100                                    |
| CY1H             | ø10, ø15, ø20, ø25, ø32                           |

### Specifications

PLC: Programmable Logic Controller

#### D-Z7 (With indicator light)

| Auto switch model number                 | D-Z73                                 |           | D-Z76      |
|--|---------------------------------------|-----------|------------|
| Application                              | Relay/PLC                             |           | IC circuit |
| Load voltage                             | 24V DC                                | 100V AC   | 4 to 8V DC |
| Max. load current and load current range | 5 to 40mA                             | 5 to 20mA | 20mA       |
| Contact protection circuit               | None                                  |           |            |
| Internal voltage drop                    | ≤ 2.4V (up to 20mA) ≤ 3V (up to 30mA) |           | ≤ 0.8V     |
| Indicator light                          | ON: When red light emitting diode     |           |            |

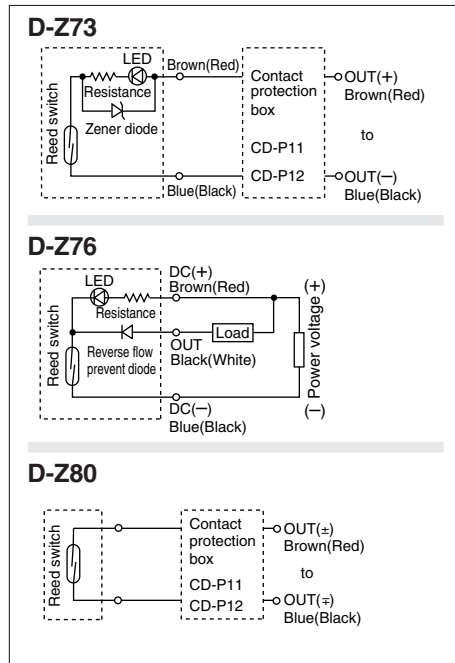
#### D-Z8 (Without indicator light)

| Auto switch model number   | D-Z80                               |                   |                    |
|----------------------------|-------------------------------------|-------------------|--------------------|
| Application                | Relay/PLC/IC circuit                |                   |                    |
| Load voltage               | 24V AC DC or less                   | 48V AC DC or less | 100V AC DC or less |
| Max. load current          | 50mA                                | 40mA              | 20mA               |
| Contact protection circuit | None                                |                   |                    |
| Internal resistance        | 1Ω or less (Including 3m lead wire) |                   |                    |

• Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5mm<sup>2</sup>  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

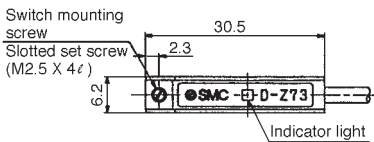
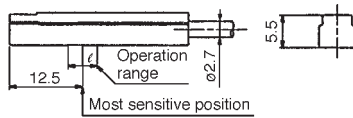
### Internal Circuit

( ): If not applicable for IEC Standard

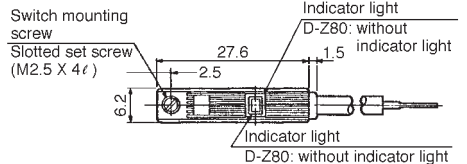
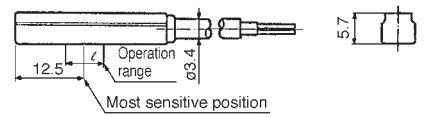


### Dimensions

#### D-Z73



#### D-Z76, Z80



### Operation Range (ℓ Dimension)

(mm)

| Actuator series | Bore size |    |     |    |     |     |     |      |      |      |      |      |     |
|-----------------|-----------|----|-----|----|-----|-----|-----|------|------|------|------|------|-----|
|                 | 6         | 10 | 12  | 15 | 16  | 20  | 25  | 32   | 40   | 50   | 63   | 80   | 100 |
| MGQ, MVGQ       | —         | —  | 7.5 | —  | 8.5 | 9.5 | 9.5 | 11   | 11   | 11   | 13   | 13   | 14  |
| CXS             | 9         | 7  | —   | 9  | —   | 9   | 9   | 11   | —    | —    | —    | —    | —   |
| MGP             | —         | —  | 7.5 | —  | 10  | 10  | 10  | 10.5 | 10.5 | 10.5 | 11.5 | 11.5 | 12  |
| RSH             | —         | —  | —   | —  | —   | 8.5 | —   | 7    | —    | 9.5  | 10.5 | 11.5 | —   |
| MY1B            | —         | —  | —   | —  | —   | —   | 12  | 12   | 12   | 12   | 12   | 12   | 12  |
| MY1M, MY1C      | —         | —  | —   | —  | —   | —   | 12  | 12   | 12   | 12   | 12   | —    | —   |
| MY1H, ML2B      | —         | —  | —   | —  | —   | —   | 12  | 12   | 12   | —    | —    | —    | —   |
| MGF             | —         | —  | —   | —  | —   | —   | —   | —    | 13.5 | —    | 12   | —    | 13  |
| CY1H            | —         | 8  | —   | 6  | —   | 6   | 6   | 9    | —    | —    | —    | —    | —   |
| CY1R            | —         | —  | —   | —  | —   | —   | 9   | 9    | 11   | 11   | 11   | —    | —   |

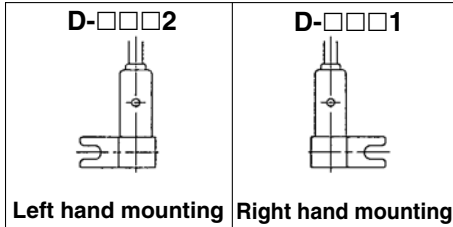
Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# Reed Switch/Direct Mounting Type

## D-R73/D-R80

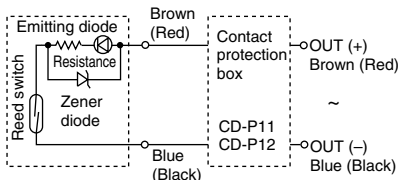
**Grommet  
Lead Wire: In-line**



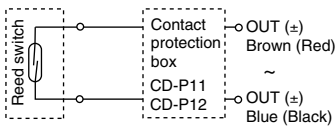
### Auto switch internal circuit

( ) : Before IEC standard

#### D-R731/R732



#### D-R801/R802



### Applicable rotary actuator series

| Series | Size                |
|--------|---------------------|
| CDRB1  | 20, 30, 50, 80, 100 |
| CDRBU  | 20, 30              |
| MDSUB  | 7, 20               |

### Auto switch specifications

PLC: Programmable Logic Controller

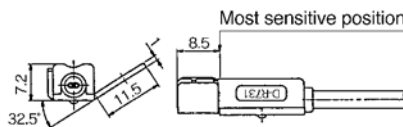
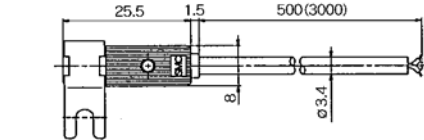
| Auto switch model no.                    | D-R73□ (With indicator light) |           | D-R80□ (Without indicator light) |                      |                       |
|--|-------------------------------|-----------|----------------------------------|----------------------|-----------------------|
|  | D-R731/D-R732                 |           | D-R801/D-R802                    |                      |                       |
| Applicable load                          | Relay, PLC                    |           |                                  |                      |                       |
| Load voltage                             | 100V AC                       | 24V DC    | 24V <sup>AC</sup> DC or less     | 48V <sup>AC</sup> DC | 100V <sup>AC</sup> DC |
| Max. load current and load current range | 5 to 20mA                     | 5 to 40mA | 50mA                             | 40mA                 | 20mA                  |
| Contact protection circuit               | None                          |           |                                  |                      |                       |
| Internal voltage drop                    | 2.4V or less                  |           | 0                                |                      |                       |
| Indicator light                          | ON: Red light emitting diode  |           | None                             |                      |                       |



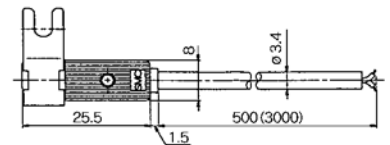
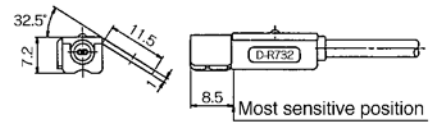
- Lead wire — Oil proof vinyl heavy insulation cable 0.2mm<sup>2</sup>, X2 wire (Brown, blue) 0.5m
- Note 1) Refer to p.6-18 for common specifications of reed switch.
- Note 2) Refer to p.6-18 for lead wire length.

### Dimensions

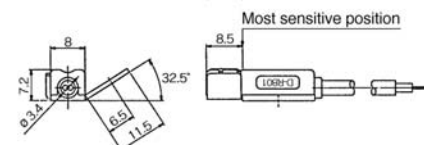
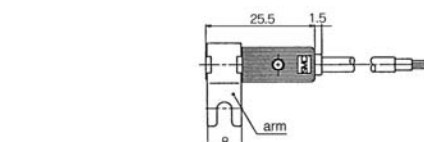
#### D-R731: Right hand mounting



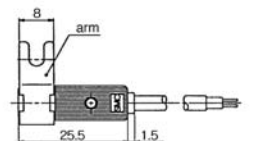
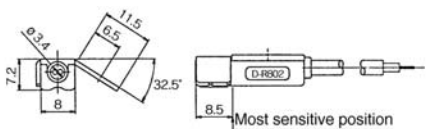
#### D-R732: Left hand mounting



#### D-R801: Right hand mounting



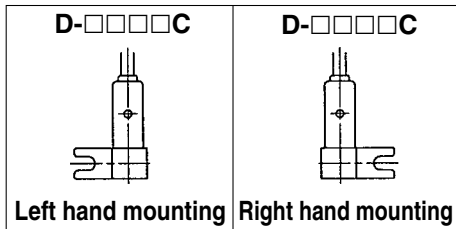
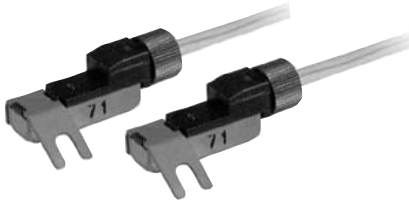
#### D-R802: Left hand mounting



# Reed Switch/Direct Mounting Type

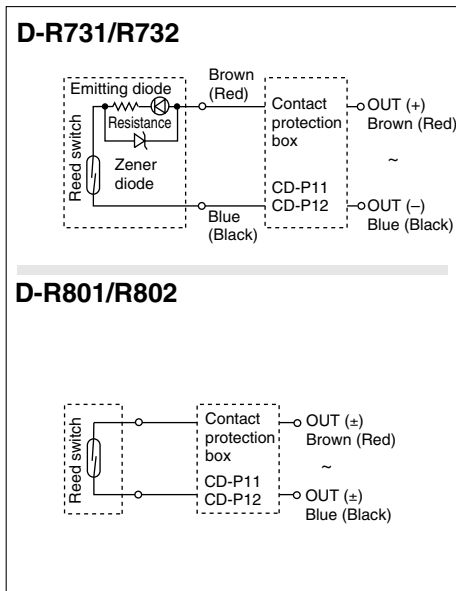
## D-R73□C/D-R80□C

**Connector**  
**Electrical Entry: In-line**



### Auto switch internal circuit

( ) : Before IEC standard



### ⚠ Specific product precautions

#### ⚠ Caution

Confirm that there is no looseness after wiring.  
The looseness will decrease water resistance.

### Applicable rotary actuator series

| Series | Size                |
|--------|---------------------|
| CDRB1  | 20, 30, 50, 80, 100 |
| CDRBU  | 20, 30              |
| MDSUB  | 7, 20               |

### Auto switch specifications

PLC: Programmable Logic Controller

|                            | D-R73□C ( With indicator light ) | D-R80□C ( Without indicator light ) |
|----------------------------|----------------------------------|-------------------------------------|
| Auto switch model no.      | D-R731C/D-R732C                  | D-R801C/D-R802C                     |
| Applicable load            | Relay, PLC                       | Relay, PLC                          |
| Load voltage               | 24V DC                           | 24V <sup>AC</sup> DC or less        |
| Load current range         | 5 to 40mA                        | 50mA                                |
| Contact protection circuit | None                             | None                                |
| Internal voltage drop      | 2.4V or less                     | 0                                   |
| Indicator light            | ON: Red light emitting diode     | None                                |

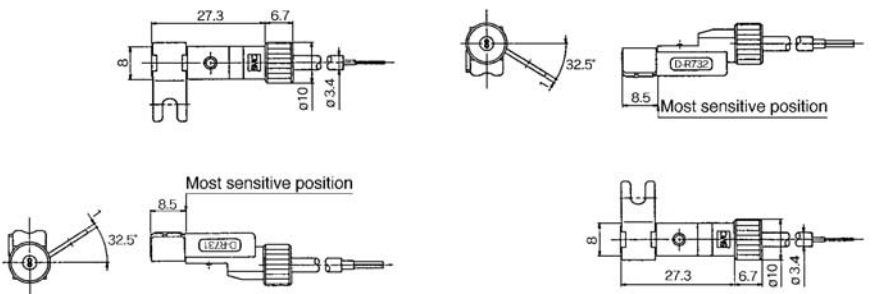


- Lead wire — Oil proof vinyl heavy insulation cable  $\phi 3.4$ , 0.2mm<sup>2</sup>
- Note 1) Refer to p.6-18 for common specifications of reed switch.
- Note 2) Refer to p.6-18 for lead wire length.

### Dimensions

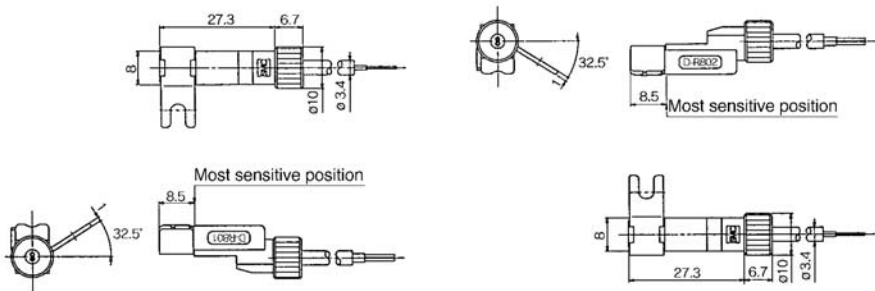
#### D-R731C: Right Hand Mounting

#### D-R732C: Left Hand Mounting



#### D-R801C: Right hand mounting

#### D-R802C: Left hand mounting

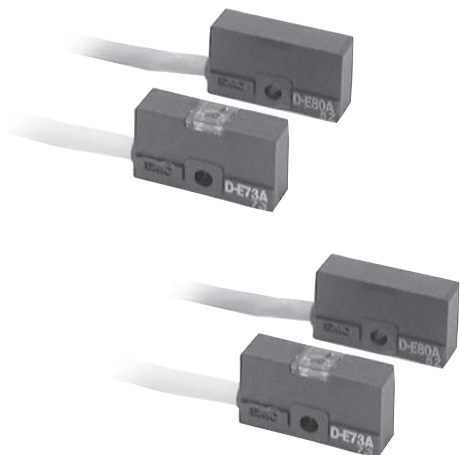




# Reed Switch/Direct Mounting

## D-E73A/D-E76A/D-E80A

### Grommet



### Applicable Actuator Series

| Series | Bore size (mm) |
|--------|----------------|
| CDBX   | ø10            |
| ML1    | ø25, ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

#### D-E7□A (With indicator light)

| Auto switch model number                 | D-E73A                            |           | D-E76A     |
|--|-----------------------------------|-----------|------------|
| Application                              | Relay/PLC                         |           | IC circuit |
| Load voltage                             | 24V DC                            | 100V AC   | 4 to 8V DC |
| Max. load current and load current range | 5 to 40mA                         | 5 to 20mA | 20mA       |
| Contact protection circuit               | None                              |           |            |
| Internal voltage drop                    | ≤ 2.4V                            |           | ≤ 0.8V     |
| Indicator light                          | ON: When red light emitting diode |           |            |

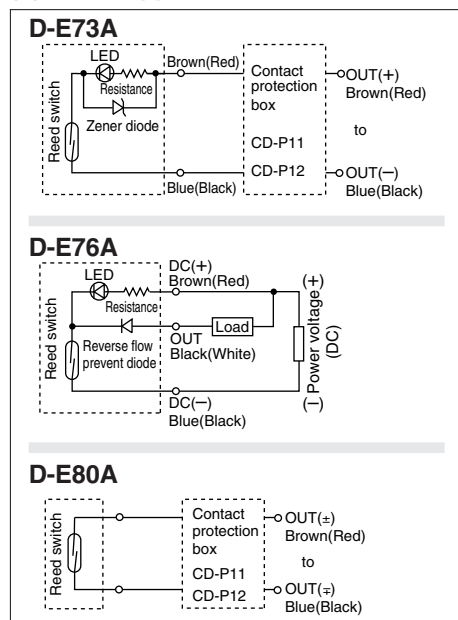
#### D-E80A (Without indicator light)

| Auto switch model number   | D-E80A                              |           |            |
|----------------------------|-------------------------------------|-----------|------------|
| Application                | Relay/PLC/IC circuit                |           |            |
| Load voltage               | 24V AC DC or less                   | 48V AC DC | 100V AC DC |
| Max. load current          | 50mA                                | 40mA      | 20mA       |
| Contact protection circuit | None                                |           |            |
| Internal resistance        | 1Ω or less (Including 3m lead wire) |           |            |

● Lead wire— Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

### Internal Circuit

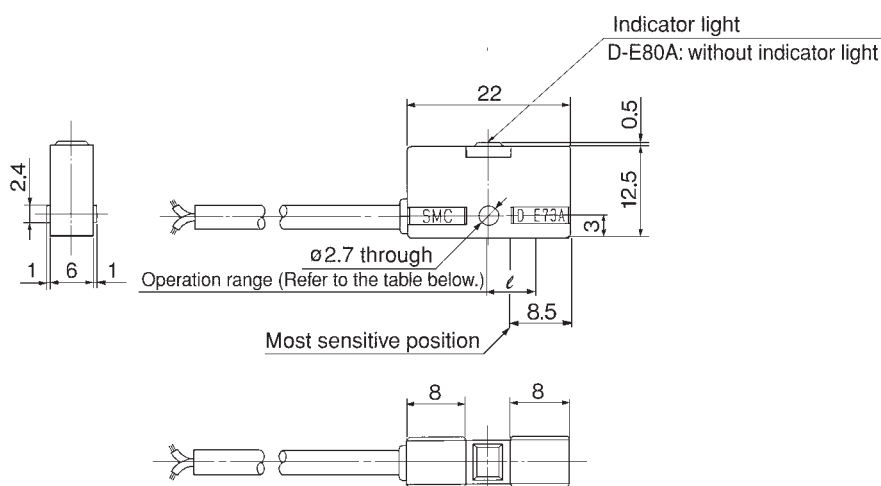
( ): If not applicable for IEC Standard



Note) ① In the case operation load is an inductive load.  
 ② In the case the wiring length to load is "≥" 5m.  
 ③ In the case the load voltage is 100V AC.

Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### Dimensions



### Operation Range ( l Dimension) (mm)

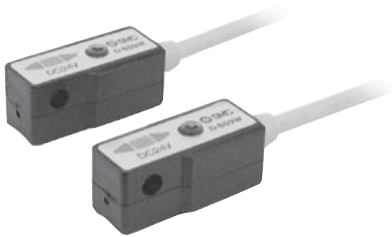
| Actuator series | Bore size |    |    |    |
|-----------------|-----------|----|----|----|
|                 | 10        | 25 | 32 | 40 |
| CDBX            | 6         | —  | —  | —  |
| ML1             | —         | 6  | 6  | 6  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Reed Switch/Band Mounting **D-B59W**

## Grommet

The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



## Applicable Actuator Series

| Series  | Bore size (mm)                          |
|---|---|
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2              | ø20, ø25, ø32, ø40                      |
| CDG1, MGG                                     | ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CDLG1   | ø20, ø25, ø32, ø40                      |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CE2, CNA | ø40, ø50, ø63, ø80, ø100                |
| MGC   | ø20, ø25, ø32, ø40, ø50                 |
| MLGC, RHC, REC                                | ø20, ø25, ø32, ø40                      |

## Specifications

PLC: Programmable Logic Controller

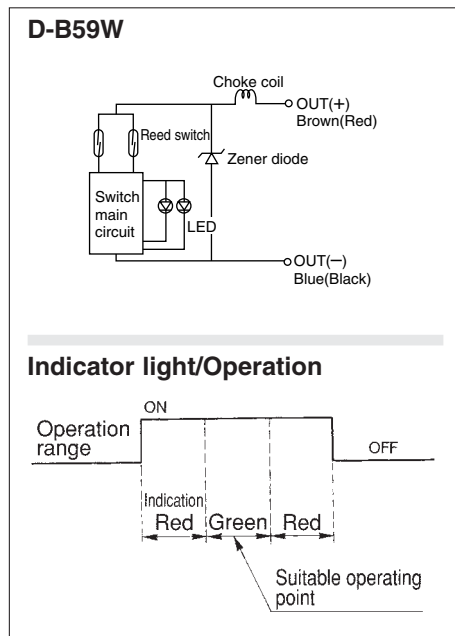
### D-B59W (With indicator light)

| Auto switch model number   | D-B59W  |
|----------------------------|---|
| Application                | Relay/PLC   |
| Load voltage               | 24V DC  |
| Load current range         | 5 to 40mA   |
| Contact protection circuit | Built-in  |
| Internal voltage drop      | ≤ 4V  |
| Indicator light            | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

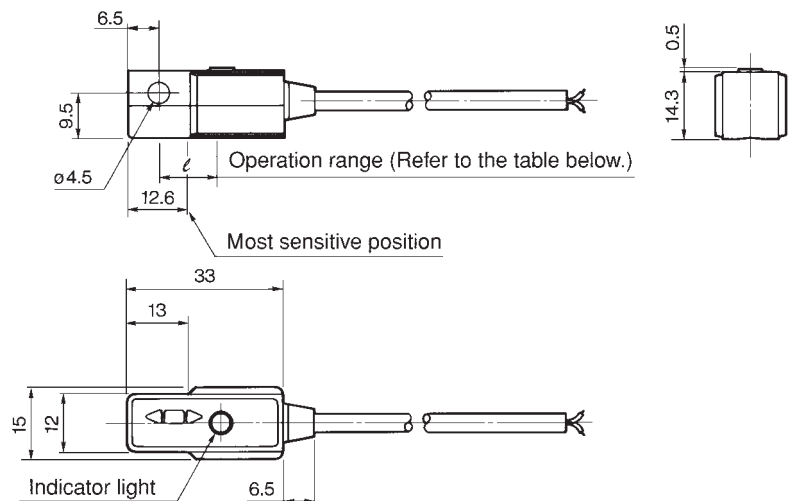
● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to the p.6-18 for lead wire length.

## Internal Circuit

( ): If not applicable for IEC Standard



## Dimensions



## Operation Range (ℓ Dimension)

| Actuator series                               | Bore size (mm) |    |    |    |    |    |    |     |
|---|----------------|----|----|----|----|----|----|-----|
|   | 20             | 25 | 32 | 40 | 50 | 63 | 80 | 100 |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2              | 12             | 12 | 13 | 13 | —  | —  | —  | —   |
| CDG1  | 13             | 13 | 14 | 14 | 14 | 17 | 16 | 18  |
| CDLG1   | 13             | 13 | 14 | 14 | —  | —  | —  | —   |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA, CE2 | —              | —  | —  | 14 | 14 | 17 | 16 | 18  |
| MGG, MGC                                      | 13             | 13 | 14 | 14 | 14 | —  | —  | —   |
| MLGC, RHC, REC                                | 13             | 13 | 14 | 14 | —  | —  | —  | —   |

(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Reed Switch/Rail Mounting D-A79W

## Grommet

The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



## Applicable Actuator Series

| Series     | Bore size (mm)  |
|------------|---|
| CDJ2, CDVJ | ø10, ø16  |
| CDLJ2      | ø16   |
| CDQ2       | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| RSDQ       | ø20, ø25, ø32, ø40, ø50   |
| MDU        | ø25, ø32, ø40, ø50, ø63   |
| CE1        | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2    | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT        | ø32, ø40  |

## Specifications

PLC: Programmable Logic Controller

### D-A79W (With indicator light)

| Auto switch model number   | D-A79W  |
|----------------------------|---|
| Application                | Relay/PLC   |
| Load voltage               | 24V DC  |
| Load current range         | 5 to 40mA   |
| Contact protection circuit | None  |
| Internal voltage drop      | ≤ 4V  |
| Indicator light            | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

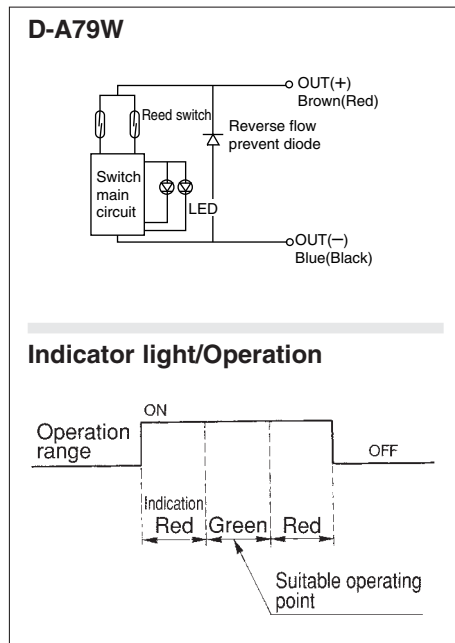
● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

Note 1) Refer to common specifications on the p.6-18.

Note 2) Refer to the p.6-18 for lead wire length.

## Internal Circuit

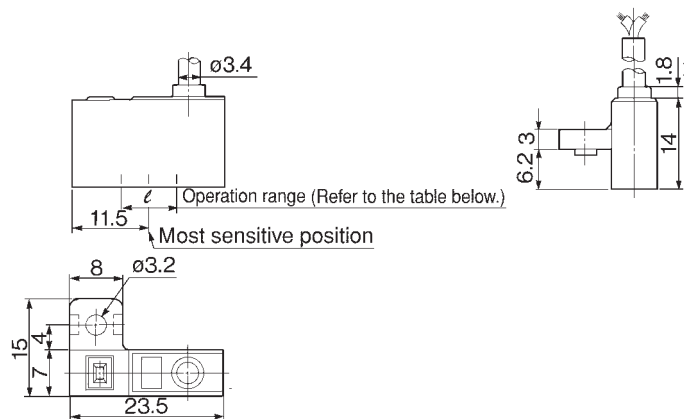
( ): If not applicable for IEC Standard



Note) ① In the case operation load is an inductive load.

② In the case the wiring length to load is more than 5m. Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to the p.6-19 for the details of contact protection box.

## Dimensions



## Operation Range ( $l$ Dimension)

(mm)

| Actuator series | Bore size |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |
|-----------------|-----------|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
|                 | 6         | 10 | 12 | 15 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ      | —         | 11 | —  | —  | 13 | —  | —  | —  | —  | —  | —  | —  | —   | —   | —   | —   |
| CDLJ2           | —         | —  | —  | —  | 13 | —  | —  | —  | —  | —  | —  | —  | —   | —   | —   | —   |
| CDQ2            | —         | —  | 13 | —  | 13 | 13 | 13 | 14 | 14 | 16 | 15 | 17 | 17  | 17  | 17  | —   |
| RSDQ            | —         | —  | —  | —  | —  | 13 | 13 | 13 | 14 | 14 | —  | —  | —   | —   | —   | —   |
| MDU             | —         | —  | —  | —  | —  | —  | 13 | 13 | 14 | 14 | 14 | —  | —   | —   | —   | —   |
| CE1             | —         | —  | 13 | —  | —  | 13 | —  | 13 | 14 | 14 | 16 | —  | —   | —   | —   | —   |
| MK, MK2         | —         | —  | —  | —  | —  | 13 | 13 | 13 | 14 | 14 | 16 | —  | —   | —   | —   | —   |
| CXT             | —         | —  | —  | —  | —  | —  | —  | 13 | 14 | —  | —  | —  | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Reed Switch/Tie-rod Mounting D-A59W

## Grommet

The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



## Applicable Actuator Series

| Series                                  | Bore size (mm)                             |
|---|--|
| CDA1, CDBA1, CDV3, CDVS, CDLA, CE2, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                    | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                    | ø125, ø140, ø160, ø180, ø200               |
| MDB, MDBB                               | ø32, ø40, ø50, ø63, ø80, ø100              |

## Specifications

PLC: Programmable Logic Controller

### D-A59W (With indicator light)

| Auto switch model number   | D-A59W  |
|----------------------------|---|
| Application                | Relay/PLC   |
| Load voltage               | 24V DC  |
| Load current range         | 5 to 40mA   |
| Contact protection circuit | Built-in  |
| Internal voltage drop      | ≤ 4V  |
| Indicator light            | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

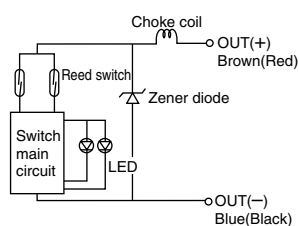
Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

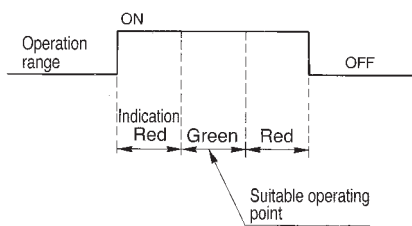
## Internal Circuit

( ): If not applicable for IEC Standard

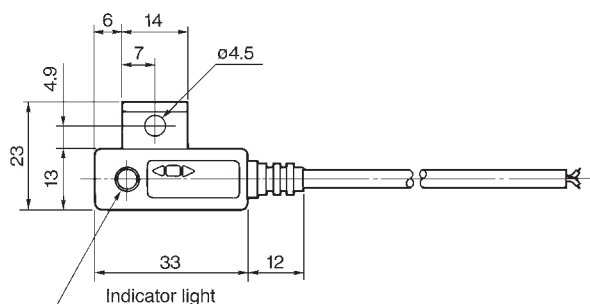
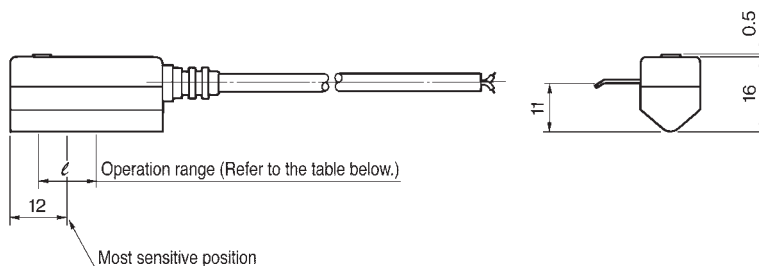
### D-A59W



### Indicator light/Operation



## Dimensions



## Operation Range ( $l$ Dimension)

| Actuator series                         | Bore size (mm) |    |    |    |    |     |     |     |     |     |     |
|---|----------------|----|----|----|----|-----|-----|-----|-----|-----|-----|
|   | 32             | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CE2, CNA | —              | 13 | 13 | 14 | 14 | 15  | —   | —   | —   | —   | —   |
| CDL1                                    | —              | 13 | 13 | 14 | 14 | 15  | 17  | 17  | 17  | —   | —   |
| CDS1                                    | —              | —  | —  | —  | —  | —   | 17  | 17  | 17  | 17  | 17  |
| MDB, MDBB                               | 13             | 13 | 13 | 14 | 14 | 15  | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# **Solid State Switch**

**General Purpose Auto Switch, 2 Colour Indication Style, 2 Colour Indication Style with Diagnostic Output, Water Resistant 2 Colour Indication Style, With Timer, Strong Magnetic Field Resistant Style**

# Solid State Switch/Band Mounting

## D-H7A1/D-H7A2/D-H7B

### Grommet



### Applicable Actuator Series

| Series                                       | Bore size (mm)               |
|--|------------------------------|
| CDJ2   | ø6, ø10, ø16                 |
| CDVJ3, CDVJ5                                 | ø10, ø16                     |
| CDLJ2  | ø16                          |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, REC | ø20, ø25, ø32, ø40           |
| CDG1, MGG                                    | ø20, ø25, ø32, ø40, ø50, ø63 |
| RSDG   | ø40, ø50                     |
| MGC  | ø20, ø25, ø32, ø40, ø50      |
| RHC, MLGC                                    | ø20, ø25, ø32, ø40           |

### Specifications

PLC: Programmable Logic Controller

#### D-H7 (With indicator light)

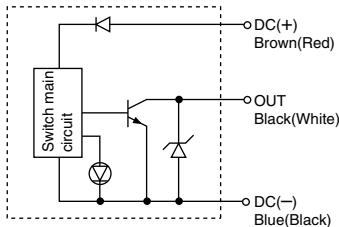
| Auto switch model number | D-H7A1                                     | D-H7A2       | D-H7B                 |
|--------------------------|--|--------------|-----------------------|
| Wiring                   | 3 wire                                     |              | 2 wire                |
| Output                   | NPN  | PNP          | —                     |
| Application              | IC circuit/Relay/PLC                       |              | 24V DC Relay/PLC      |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)                |              | —                     |
| Current consumption      | 10mA or less                               |              | —                     |
| Load voltage             | 28V DC or less                             | —            | 24V DC (10 to 28V DC) |
| Load current             | 40mA or less                               | 80mA or less | 5 to 40mA             |
| Internal voltage drop    | ≤ 1.5V<br>(≤ 0.8V at 10mA of load current) | 0.8V or less | 4V or less            |
| Current leakage          | ≤ 100 $\mu$ A at 24V DC                    |              | ≤ 0.8mA at 24V DC     |
| Indicator light          | ON: When red light emitting diode          |              |                       |

• Lead wire— Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

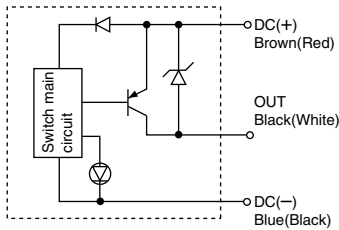
### Internal Circuit

( ): If not applicable for IEC Standard

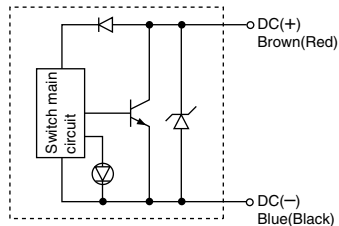
#### D-H7A1



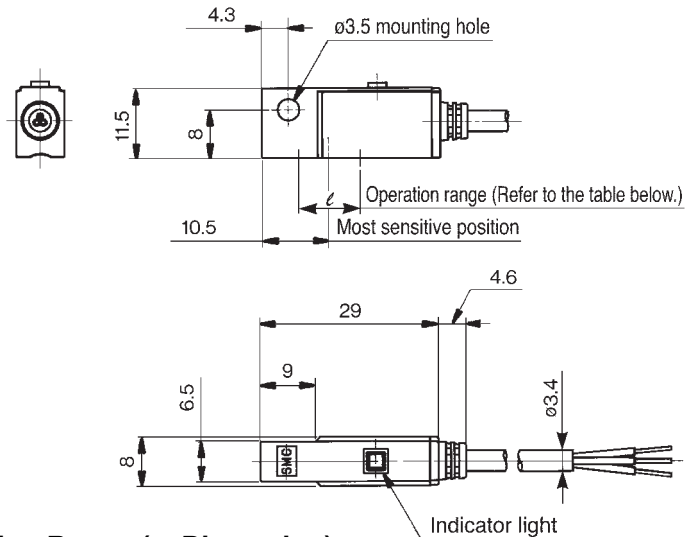
#### D-H7A2



#### D-H7B



### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series                              | Bore size (mm) |    |    |    |    |    |     |    |    |     |
|--|----------------|----|----|----|----|----|-----|----|----|-----|
|  | 6              | 10 | 15 | 16 | 20 | 25 | 32  | 40 | 50 | 63  |
| CDJ2   | 3              | 4  | —  | 4  | —  | —  | —   | —  | —  | —   |
| CDVJ3, CDVJ5                                 | —              | 4  | —  | 4  | —  | —  | —   | —  | —  | —   |
| CDLJ2  | —              | —  | —  | 4  | —  | —  | —   | —  | —  | —   |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, REC | —              | —  | —  | —  | 4  | 4  | 4.5 | 5  | —  | —   |
| CDG1, MGG                                    | —              | —  | —  | —  | 4  | 4  | 4.5 | 5  | 6  | 6.5 |
| RSDG   | —              | —  | —  | —  | —  | —  | —   | 5  | 6  | —   |
| MGG, MGC                                     | —              | —  | —  | —  | 4  | 4  | 4.5 | 5  | 6  | —   |
| RHC, MLGC                                    | —              | —  | —  | —  | 4  | 4  | 4.5 | 5  | —  | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch/Band Mounting

## D-G59/D-G5P/D-K59

### Grommet



### Applicable Actuator Series

| Series                                   | Bore size (mm)                          |
|--|---|
| CDG1, MGG                                | ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA | ø40, ø50, ø63, ø80, ø100                |
| MGC                                      | ø20, ø25, ø32, ø40, ø50                 |
| RHC, MLGC, REC                           | ø20, ø25, ø32, ø40                      |
| CE2                                      | ø40, ø50, ø63, ø80, ø100                |

### Specifications

PLC: Programmable Logic Controller

#### D-G5□/D-K59 (With indicator light)

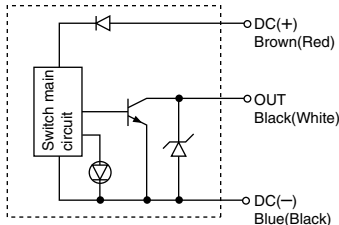
| Auto switch model number | D-G59   | D-G5P        | D-K59                 |
|--------------------------|---|--------------|-----------------------|
| Wiring                   | 3 wire  |              | 2 wire                |
| Output                   | NPN   | PNP          | —                     |
| Application              | IC circuit/Relay/PLC                                      |              | 24V DC Relay/PLC      |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)                               |              | —                     |
| Current consumption      | 10mA or less  |              | —                     |
| Load voltage             | 28V DC or less  | —            | 24V DC (10 to 28V DC) |
| Load current             | 40mA or less  | 80mA or less | 5 to 40mA             |
| Internal voltage drop    | 1.5V or less<br>(0.8V or less at 10mA)<br>of load current | 0.8V or less | 4V or less            |
| Current leakage          | ≤ 100μA at 24V DC   |              | ≤ 0.8mA at 24V DC     |
| Indicator light          | ON: When red light emitting diode                         |              |                       |

• Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5mm<sup>2</sup>  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

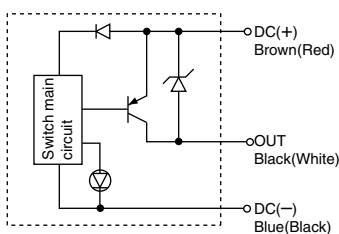
### Internal Circuit

( ) : If not applicable for IEC Standard

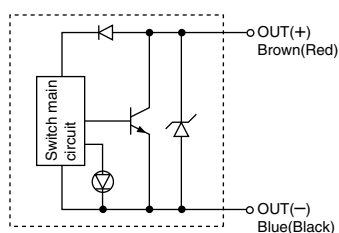
#### D-G59



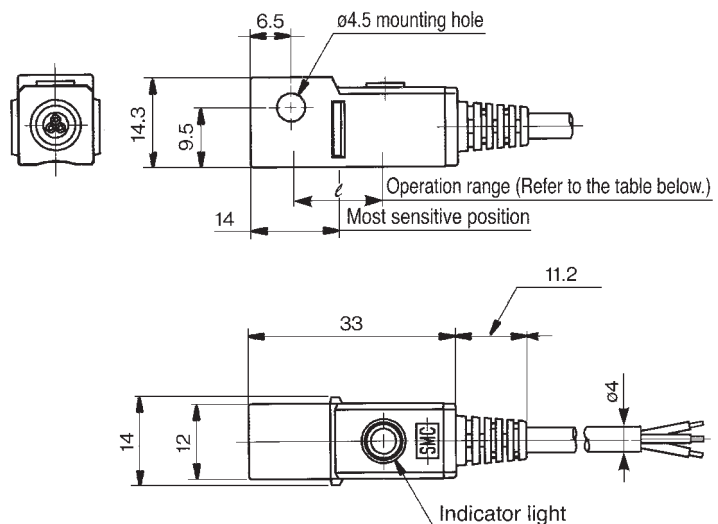
#### D-G5P



#### D-K59



### Dimensions



### Operation Range (ℓ Dimension)

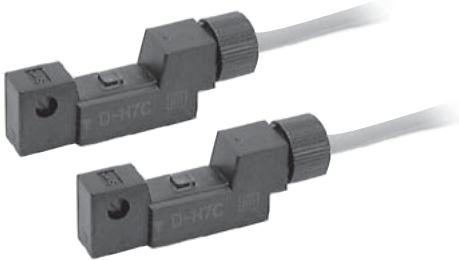
| Actuator series                          | Bore size (mm) |    |     |    |    |     |     |     |
|--|----------------|----|-----|----|----|-----|-----|-----|
|  | 20             | 25 | 32  | 40 | 50 | 63  | 80  | 100 |
| CDG1, MGG                                | 4              | 4  | 4.5 | 5  | 6  | 6.5 | 6.5 | 7   |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA | —              | —  | —   | 5  | 6  | 6.5 | 6.5 | 7   |
| MGC                                      | 4              | 4  | 4.5 | 5  | 6  | —   | —   | —   |
| RHC, MLGC, REC                           | 4              | 4  | 4.5 | 5  | —  | —   | —   | —   |
| CE2                                      | —              | —  | —   | 5  | 6  | 6.5 | 6.5 | 7   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch/Band Mounting

## D-H7C

### Connector



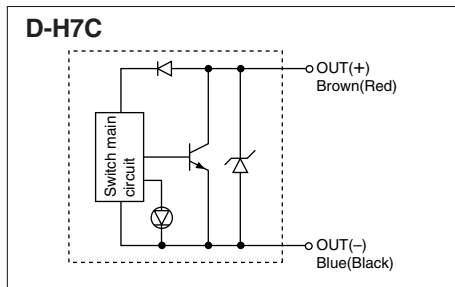
### ⚠ Caution

#### Precautions

- ① Confirm that the connector is appropriately tightened. If tightened insufficiently, the water resistant performance will deteriorate.
- ② Refer to p.6-88 for the details.

### Internal Circuit

( ): If not applicable for IEC Standard



### Applicable Actuator Series

| Series                                       | Bore size (mm)               |
|--|------------------------------|
| CDJ2   | ø6, ø10, ø16                 |
| CDVJ3, CDVJ5                                 | ø10, ø16                     |
| CDLJ2  | ø16                          |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, REC | ø20, ø25, ø32, ø40           |
| CDG1, MGG                                    | ø20, ø25, ø32, ø40, ø50, ø63 |
| RSDG   | ø40, ø50                     |
| MGC  | ø20, ø25, ø32, ø40, ø50      |
| RHC, MLGC                                    | ø20, ø25, ø32, ø40           |

### Specifications

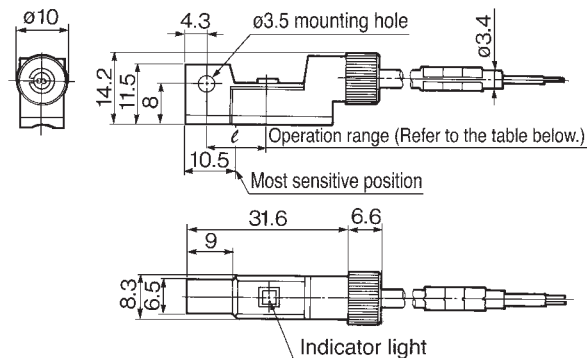
PLC: Programmable Logic Controller

#### D-H7C (With indicator light)

| Auto switch model number | D-H7C                             |
|--------------------------|-----------------------------------|
| Wiring                   | 2 wire                            |
| Output                   | —                                 |
| Application              | 24V DC Relay/PLC                  |
| Power voltage            | —                                 |
| Current consumption      | —                                 |
| Load voltage             | 24V DC (10 to 28V DC)             |
| Load current             | 5 to 40mA                         |
| Internal voltage drop    | ≤ 4V                              |
| Current leakage          | ≤ 0.8mA at 24V DC                 |
| Indicator light          | ON: When red light emitting diode |

● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



### Operation Range (ℓ Dimension)

(mm)

| Actuator series                             | Bore size |    |    |    |    |     |    |    |     |      |
|---|-----------|----|----|----|----|-----|----|----|-----|------|
|   | 6         | 10 | 15 | 16 | 20 | 25  | 32 | 40 | 50  | 63   |
| CJ2   | 5         | 8  | —  | 9  | —  | —   | —  | —  | —   | —    |
| CDVJ3, CDVJ5                                | —         | 8  | —  | 9  | —  | —   | —  | —  | —   | —    |
| CDLJ2                                       | —         | —  | —  | 9  | —  | —   | —  | —  | —   | —    |
| CDM2, CDBM2, CDVM3, CDVM5, CDM2, CDLG1, REC | —         | —  | —  | —  | 7  | 8.5 | 9  | 10 | —   | —    |
| CDG1, MGG                                   | —         | —  | —  | —  | 7  | 8.5 | 9  | 10 | 9.5 | 10.5 |
| RSDQ  | —         | —  | —  | —  | —  | —   | —  | 10 | 9.5 | —    |
| MGC   | —         | —  | —  | —  | 7  | 8.5 | 9  | 10 | 9.5 | —    |
| RHC, MLGC                                   | —         | —  | —  | —  | 7  | 8.5 | 9  | 10 | —   | —    |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# Solid State Switch/Band Mounting

## D-G39/D-K39

### Terminal conduit



### ⚠ Caution

#### Precautions

- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

### Applicable Actuator Series

| Series                              | Bore size (mm)                             |
|-------------------------------------|--|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                | ø125, ø140, ø160, ø180, ø200               |
| CE2                                 | ø40, ø50, ø63, ø80, ø100                   |
| RHC                                 | ø20, ø25, ø32, ø40                         |

### Specifications

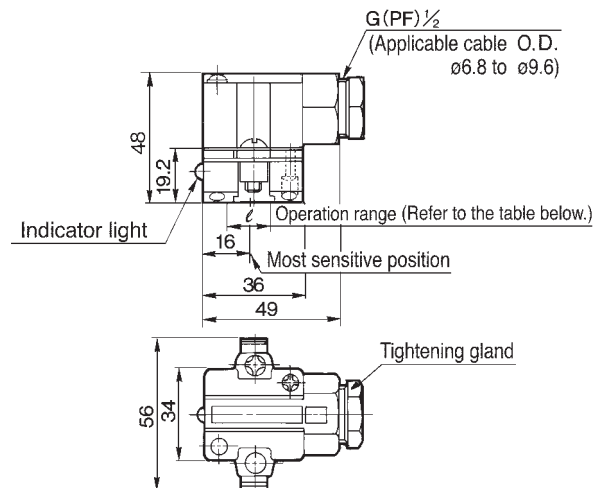
PLC: Programmable Logic Controller

#### D-G39/D-K39 (With indicator light)

| Auto switch model number | D-G39   | D-K39                   |
|--------------------------|---|-------------------------|
| Wiring                   | 3 wire  | 2 wire                  |
| Output                   | NPN   | —                       |
| Application              | IC circuit/Relay/PLC                                | 24V DC Relay/PLC        |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)                         | —                       |
| Current consumption      | ≤ 10mA  | —                       |
| Load voltage             | ≤ 28V DC  | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 40mA  | 5 to 40mA               |
| Internal voltage drop    | ≤ 1.5V<br>(0.8V or less at 10mA)<br>of load current | ≤ 4V                    |
| Current leakage          | 100 $\mu$ A or less at 24V DC                       | 0.8mA or less at 24V DC |
| Indicator light          | ON: When red light emitting diode                   |                         |

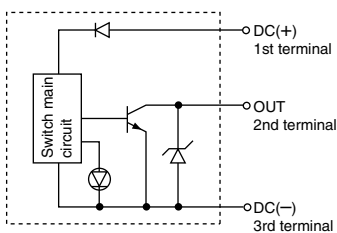
Note) Refer to common specifications on p.6-18

### Dimensions

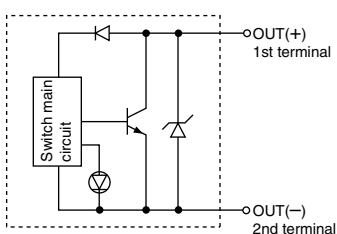


### Internal Circuit

#### D-G39



#### D-K39



### Operation Range (ℓ Dimension)

| Actuator series                     | Bore size (mm) |    |    |    |    |    |    |     |     |     |     |     |     |
|-------------------------------------|----------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
|                                     | 20             | 25 | 32 | 40 | 50 | 63 | 80 | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | —              | —  | —  | 9  | 9  | 10 | 10 | 11  | —   | —   | —   | —   | —   |
| CDL1                                | —              | —  | —  | 9  | 9  | 10 | 10 | 11  | 11  | 11  | 10  | —   | —   |
| CDS1                                | —              | —  | —  | —  | —  | —  | —  | —   | 11  | 11  | 10  | 10  | 10  |
| CE2                                 | —              | —  | —  | 9  | 9  | 10 | 10 | 11  | —   | —   | —   | —   | —   |
| RHC                                 | 8              | 9  | 9  | 9  | —  | —  | —  | —   | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch/Band Mounting

## D-G39A/D-K39A

### Terminal conduit



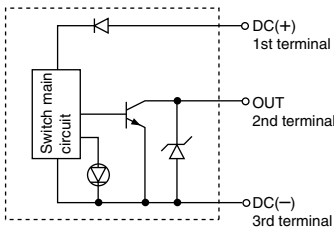
### ⚠ Caution

#### Precautions

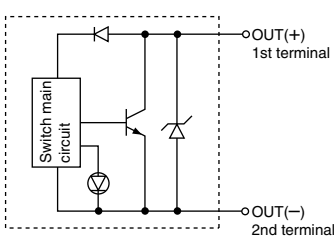
- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

### Internal Circuit

#### D-G39A



#### D-K39A



### Applicable Actuator Series

| Series             | Bore size (mm)     |
|--------------------|--------------------|
| CDM2, CDBM2, CDLM2 | ø20, ø25, ø32, ø40 |

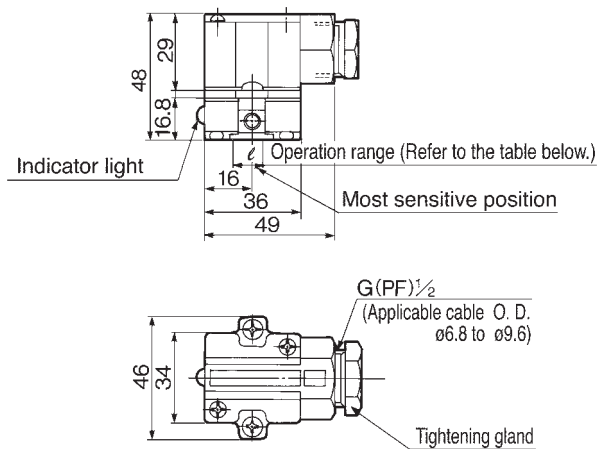
### Specifications

PLC: Programmable Logic Controller

| D-G39A/D-K39A            |   |                         |
|--------------------------|---|-------------------------|
| Auto switch model number | D-G39A  | D-K39A                  |
| Wiring                   | 3 wire  | 2 wire                  |
| Output                   | NPN   | —                       |
| Application              | IC circuit/Relay/PLC                                      | 24V DC Relay/PLC        |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)                               | —                       |
| Current consumption      | ≤ 10mA  | —                       |
| Load voltage             | ≤ 28V DC  | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 40mA  | 5 to 40mA               |
| Internal voltage drop    | 1.5V or less<br>(0.8V or less at 10mA)<br>of load current | 4V or less              |
| Current leakage          | 100 $\mu$ A or less at 24V DC                             | 0.8mA or less at 24V DC |
| Indicator light          | ON: When red light emitting diode                         |                         |

Note) Refer to common specifications on p.6-18.

### Dimensions



### Operation Range ( $\ell$ Dimension)

| Actuator series    | Bore size (mm) |    |    |    |
|--------------------|----------------|----|----|----|
|                    | 20             | 25 | 32 | 40 |
| CDM2, CDBM2, CDLM2 | 8              | 9  | 9  | 9  |

Note) Average value at normal temperature including hysteresis. (Tolerance  $\pm$ 30%)

# Solid State Switch/Rail Mounting

## D-F79/D-F7P/D-J79

### Grommet



### Applicable Actuator Series

| Series             | Bore size (mm)  |
|--------------------|---|
| CDJ2, CDVJ3, CDVJ5 | ø10, ø16  |
| CDQ2               | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160               |
| CD□XW              | Plate mounted(P), ø10, ø16, ø20, ø25, ø32, Housing mounted(B), ø16, ø20, ø25, ø32 |
| CDY1S, CY1L        | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ               | ø20, ø25, ø32, ø40, ø50   |
| MDU                | ø25, ø32, ø40, ø50, ø63   |
| CE1                | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2            | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT                | ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

#### D-F7□/ D-J79 (With indicator light)

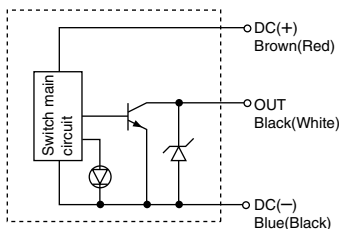
| Auto switch model number | D-F79   | D-F7P        | D-J79                 |
|--------------------------|---|--------------|-----------------------|
| Wiring                   | 3 wire  |              | 2 wire                |
| Output                   | NPN   | PNP          | —                     |
| Application              | IC circuit/Relay/PLC                                      |              | 24V DC Relay/PLC      |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)                               |              | —                     |
| Current consumption      | ≤ 10mA  |              | —                     |
| Load voltage             | ≤ 28V DC  | —            | 24V DC (10 to 28V DC) |
| Load current             | ≤ 40mA  | 80mA or less | 5 to 40mA             |
| Internal voltage drop    | 1.5V or less<br>(0.8V or less at 10mA)<br>of load current | 0.8V or less | 4V or less            |
| Current leakage          | ≤ 100 $\mu$ A at 24V DC                                   |              | ≤ 0.8mA at 24V DC     |
| Indicator light          | ON: When red light emitting diode                         |              |                       |

•Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

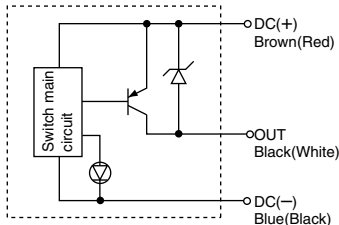
### Internal Circuit

( ): If not applicable for IEC Standard

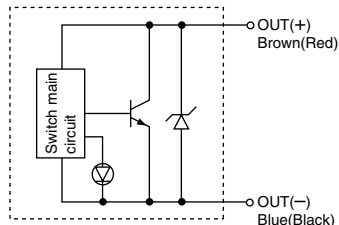
#### D-F79



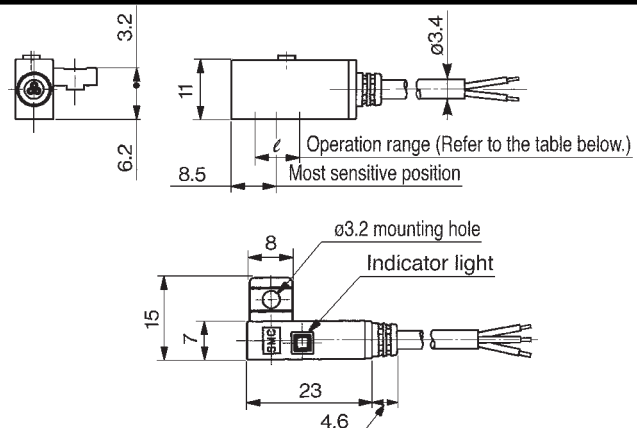
#### D-F7P



#### D-J79



### Dimensions



### Operation Range ( $\ell$ Dimension)

| Actuator series    | Bore size |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |
|--------------------|-----------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                    | 6         | 10 | 12  | 15 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ3, CDVJ5 | —         | 5  | —   | —  | 5  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   |
| CDQ2               | —         | —  | 5.5 | —  | 6  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | 6.5 | 7   | 9   | 9   | 8.5 |
| CD□XW              | B         | —  | —   | —  | 4  | 3.5 | 4   | —   | —   | —   | —   | —   | —   | —   | —   | —   |
|                    |           | P  | 3   | —  | —  | 2.5 | 3.5 | 2.5 | —   | —   | —   | —   | —   | —   | —   | —   |
| CDY1S, CY1L        | 3         | 3  | —   | 4  | —  | 3   | 3   | 3   | 3.5 | —   | —   | —   | —   | —   | —   | —   |
| RSDQ               | —         | —  | —   | —  | —  | 5.5 | —   | 6   | 6   | 6   | —   | —   | —   | —   | —   | —   |
| MDU                | —         | —  | —   | —  | —  | —   | 6.5 | 7   | 6.5 | 6.5 | 6.5 | —   | —   | —   | —   | —   |
| CE1                | —         | —  | 5.5 | —  | —  | 5.5 | —   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| MK, MK2            | —         | —  | —   | —  | —  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| CXT                | —         | —  | —   | —  | —  | —   | —   | 6   | 6   | —   | —   | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance  $\pm$ 30%)

# Solid State Switch/Rail Mounting

## D-F7NV/D-F7PV/D-F7BV

**Grommet**  
Electrical entry: Perpendicular



### Applicable Actuator Series

| Series             | Bore size (mm)  |
|--------------------|---|
| CDJ2, CDVJ3, CDVJ5 | ø10, ø16  |
| CDQ2               | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160               |
| CD□XW              | Plate mounted(P), ø10, ø16, ø20, ø25, ø32, Housing mounted(B), ø16, ø20, ø25, ø32 |
| CDY1S, CY1L        | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ               | ø20, ø32, ø40, ø50  |
| MDU                | ø25, ø32, ø40, ø50, ø63   |
| CE1                | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2            | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT                | ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

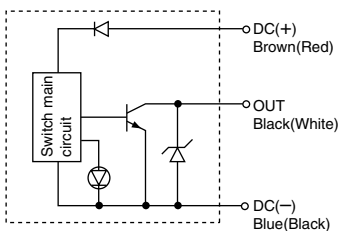
| D-F7□V (With indicator light) |   |              |                       |
|-------------------------------|---|--------------|-----------------------|
| Auto switch model number      | D-F7NV  | D-F7PV       | D-F7BV                |
| Wiring                        | 3 wire  |              | 2 wire                |
| Output                        | NPN   | PNP          | —                     |
| Application                   | IC circuit/Relay/PLC                                      |              | 24V DC Relay/PLC      |
| Power voltage                 | 5/12/24V DC (4.5 to 28V DC)                               |              | —                     |
| Current consumption           | ≤ 10mA  |              | —                     |
| Load voltage                  | ≤ 28V DC  | —            | 24V DC (10 to 28V DC) |
| Load current                  | ≤ 40mA  | ≤ 80mA       | 5 to 40mA             |
| Internal voltage drop         | 1.5V or less<br>(0.8V or less at 10mA<br>of load current) | 0.8V or less | 4V or less            |
| Current leakage               | ≤ 100 $\mu$ A at 24V DC                                   |              | ≤ 0.8mA at 24V DC     |
| Indicator light               | ON: When red light emitting diode                         |              |                       |

• Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5mm  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

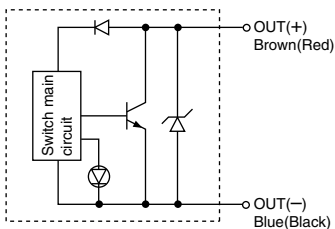
### Internal Circuit

( ): If not applicable for IEC Standard

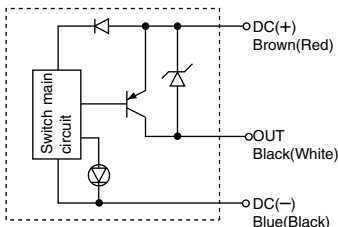
#### D-F7NV



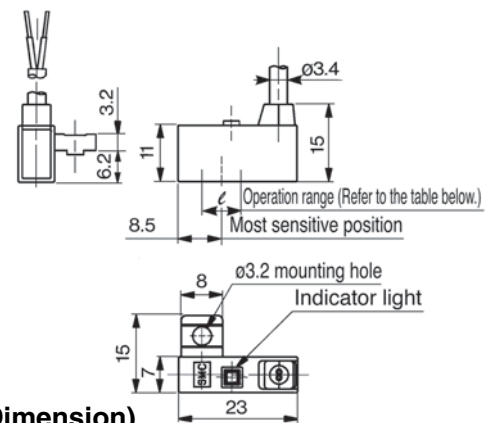
#### D-F7PV



#### D-F7BV



### Dimensions



### Operation Range ( $\ell$ Dimension)

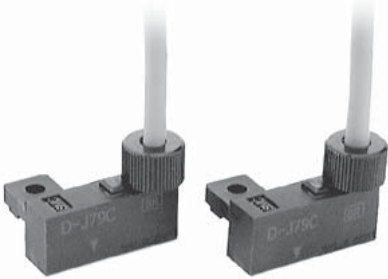
| Actuator series    | Bore size |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |
|--------------------|-----------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                    | 6         | 10 | 12  | 15 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ3, CDVJ5 | —         | 5  | —   | —  | 5  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   |
| CDQ2               | —         | —  | 5.5 | —  | 6  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | 6.5 | 7   | 9   | 9   | 8.5 |
| CD□XW              | B         | —  | —   | —  | 4  | 3.5 | 3.5 | 4   | —   | —   | —   | —   | —   | —   | —   | —   |
|                    |           | P  | —   | —  | —  | 2.5 | 3.5 | 2.5 | —   | —   | —   | —   | —   | —   | —   | —   |
| CDY1S, CY1L        | 3         | 3  | —   | 4  | —  | 3   | 3   | 3   | 3.5 | —   | —   | —   | —   | —   | —   | —   |
| RSDQ               | —         | —  | —   | —  | —  | 5.5 | —   | 6   | 6   | 6   | —   | —   | —   | —   | —   | —   |
| MDU                | —         | —  | —   | —  | —  | —   | 6.5 | 7   | 6.5 | 6.5 | 6.5 | —   | —   | —   | —   | —   |
| CE1                | —         | —  | 5.5 | —  | —  | 5.5 | —   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| MK, MK2            | —         | —  | —   | —  | —  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| CXT                | —         | —  | —   | —  | —  | —   | —   | 6   | 6   | —   | —   | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance  $\pm$ 30%)

# Solid State Switch/Rail Mounting

## D-J79C

### Connector



### ⚠ Caution

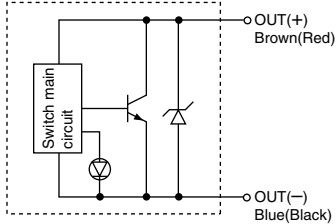
#### Precautions

- ① Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
- ② Refer to p.6-88 for the details.

### Internal Circuit

( ): If not applicable for IEC Standard

#### D-J79C



### Applicable Actuator Series

| Series             | Bore size (mm)   |
|--------------------|--|
| CDJ2, CDVJ3, CDVJ5 | ø10, ø16   |
| CDQ2               | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160      |
| CD□XW              | Plate mounted ø10, ø16, ø20, ø25, ø32 Housing mounted ø16, ø20, ø25, ø32 |
| CDY1S, CY1L        | ø6, ø10, ø15, ø20, ø25, ø32, ø40   |
| RSDQ               | ø20, ø32, ø40, ø50   |
| MDU                | ø25, ø32, ø40, ø50, ø63  |
| CE1                | ø12, ø20, ø32, ø40, ø50, ø63   |
| MK, MK2            | ø20, ø25, ø32, ø40, ø50, ø63   |
| CXT                | ø32, ø40   |

### Specifications

PLC: Programmable Logic Controller

#### D-J79C

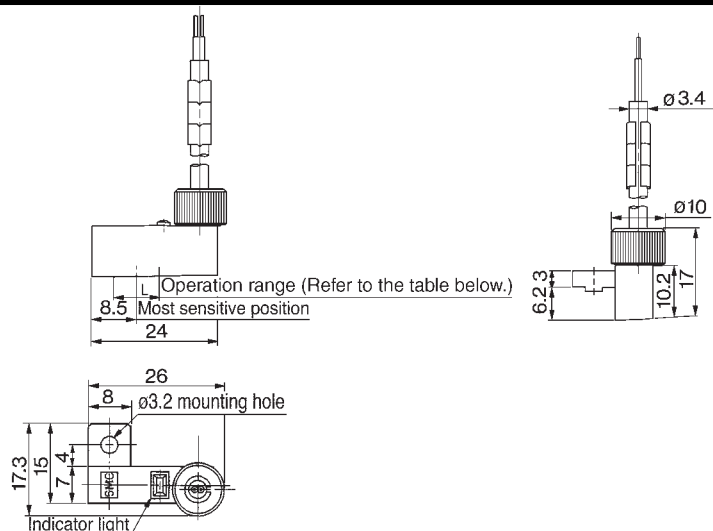
| Auto switch model number | D-J79C                            |
|--------------------------|-----------------------------------|
| Wiring                   | 2 wire                            |
| Output                   | —                                 |
| Application              | 24V DC Relay/PLC                  |
| Power voltage            | —                                 |
| Current consumption      | —                                 |
| Load voltage             | 24V DC (10 to 28V DC)             |
| Load current             | 5 to 40mA                         |
| Internal voltage drop    | ≤ 4V                              |
| Current leakage          | ≤ 0.8mA at 24V DC                 |
| Indicator light          | ON: When red light emitting diode |

● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series    | Bore size |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |
|--------------------|-----------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                    | 6         | 10 | 12  | 15 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ3, CDVJ5 | —         | 5  | —   | —  | 5  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   |
| CDQ2               | —         | —  | 5.5 | —  | 6  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | 6.5 | 7   | 9   | 9   | 8.5 |
| CD□XW              | B         | —  | —   | —  | 4  | —   | 3.5 | 4   | —   | —   | —   | —   | —   | —   | —   | —   |
|                    |           | P  | —   | 3  | —  | 2.5 | —   | 3.5 | 2.5 | —   | —   | —   | —   | —   | —   | —   |
| CDY1S, CY1L        | 3         | 3  | —   | 4  | —  | 3   | 3   | 3   | 3.5 | —   | —   | —   | —   | —   | —   | —   |
| RSDQ               | —         | —  | —   | —  | —  | 5.5 | —   | 6   | 6   | 6   | —   | —   | —   | —   | —   | —   |
| MDU                | —         | —  | —   | —  | —  | —   | 6.5 | 7   | 6.5 | 6.5 | 6.5 | —   | —   | —   | —   | —   |
| CE1                | —         | —  | 5.5 | —  | —  | 5.5 | —   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| MK, MK2            | —         | —  | —   | —  | —  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| CXT                | —         | —  | —   | —  | —  | —   | —   | 6   | 6   | —   | —   | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch/Tie-rod Mounting

## D-F5□/D-J5□

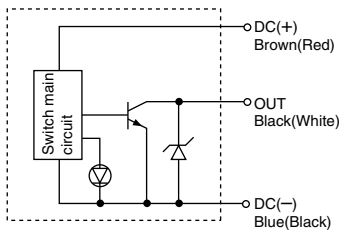
### Grommet



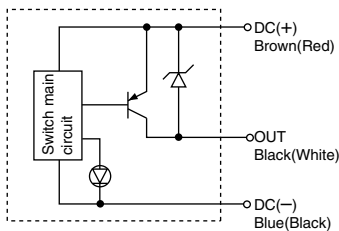
### Internal Circuit

( ): If not applicable for IEC Standard

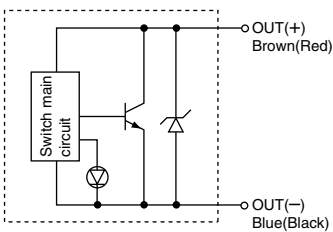
#### D-F59



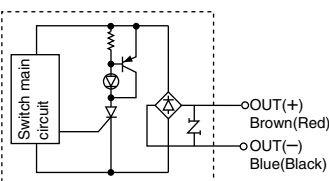
#### D-F5P



#### D-J59



#### D-J51



### Applicable Actuator Series

| Series                              | Bore size (mm)                             |
|-------------------------------------|--|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                | ø125, ø140, ø160, ø180, ø200               |
| CE2                                 | ø40, ø50, ø63, ø80, ø100                   |
| MDB                                 | ø32, ø40, ø63, ø80, ø100                   |

### Specifications

PLC: Programmable Logic Controller

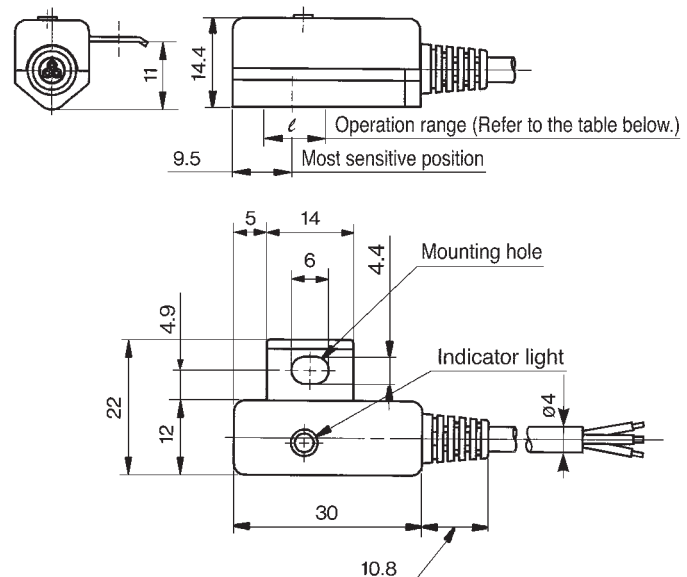
#### D-F5□/D-J5□

| Auto switch model number | D-F59  | D-F5P        | D-J59                 | D-J51                                   |
|--------------------------|--|--------------|-----------------------|---|
| Wiring                   | 3 wire   |              | 2 wire                |   |
| Output                   | NPN  | PNP          | —                     | —                                       |
| Application              | IC circuit/Relay/PLC                                   |              | 24V DC Relay/PLC      | AC Relay/PLC                            |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)                            |              | —                     | —                                       |
| Current consumption      | ≤ 10mA   |              |                       |   |
| Load voltage             | ≤ 28V DC   | —            | 24V DC (10 to 28V DC) | 80 to 260V AC                           |
| Load current             | ≤ 40mA   | ≤ 80mA       | 5 to 40mA             | 5 to 80mA                               |
| Internal voltage drop    | 1.5V or less<br>(0.8V or less at 10mA of load current) | 0.8V or less | 4V or less            | 14V or less                             |
| Current leakage          | ≤ 100μA at 24V DC                                      |              | ≤ 0.8mA at 24V DC     | ≤ 1mA at 100 V DC<br>≤ 1.5mA at 200V DC |
| Indicator light          | ON: When red light emitting diode                      |              |                       |   |

● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5mm<sup>2</sup>  
 Note 1) Refer to common specifications on the p.6-18.  
 Note 2) Refer to the p.6-18 for lead wire length.

### Dimensions

\*D-J51 differs in the shape, most sensitive position and operation range from other switches.  
 Contact SMC for the details.



### Operation Range (ℓ Dimension)

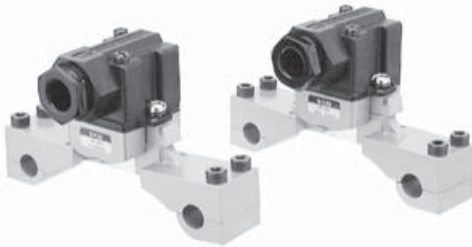
| Actuator series                     | Bore size (mm) |    |    |     |     |     |     |     |     |     |     |
|-------------------------------------|----------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     | 32             | 40 | 50 | 63  | 80  | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| CDL1                                | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | 5   | 5   | 5.5 | —   | —   |
| CDS1                                | —              | —  | —  | —   | —   | —   | 5   | 5   | 5.5 | 6   | 6   |
| CE2                                 | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| MDB                                 | 3.5            | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |

(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch/Tie-rod Mounting

## D-G39C/D-K39C

### Terminal conduit



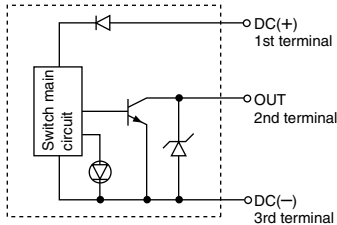
### ⚠ Caution

#### Precautions

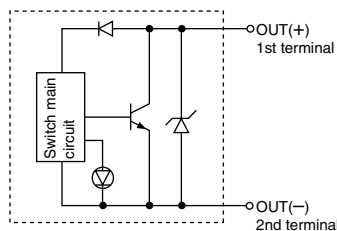
- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

### Internal Circuit

#### D-G39C



#### D-K39C



### Applicable Actuator Series

| Series                                    | Bore size (mm)           |
|---|--------------------------|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CDL1, CNA | ø40, ø50, ø63, ø80, ø100 |
| CE2                                       | ø40, ø50, ø63, ø80, ø100 |

### Specifications

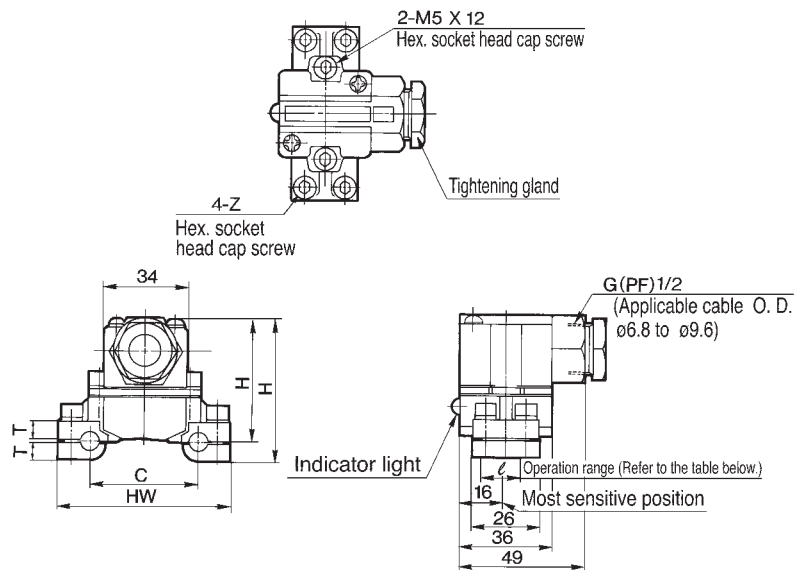
PLC: Programmable Logic Controller

#### D-G39C/D-K39C

| Auto switch model number | D-G39C                                  | D-K39C                  |
|--------------------------|---|-------------------------|
| Wiring                   | 3 wire                                  | 2 wire                  |
| Output                   | NPN                                     |                         |
| Application              | IC circuit/Relay/PLC                    | 24V DC Relay/PLC        |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)             |                         |
| Current consumption      | ≤ 10mA                                  |                         |
| Load voltage             | ≤ 28V DC                                | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 40mA                                  | 5 to 40mA               |
| Internal voltage drop    | ≤ 1.5V (≤ 0.8V at 10mA of load current) | ≤ 4V                    |
| Current leakage          | 100 $\mu$ A or less at 24V DC           | 0.8mA or less at 24V DC |
| Indicator light          | ON: When red light emitting diode       |                         |

Note 1) Refer to common specifications on p.6-18.

### Dimensions



### Operation Range ( $\ell$ Dimension)

(mm)

| Actuator series                          | Bore size |    |    |    |     |
|--|-----------|----|----|----|-----|
|  | 40        | 50 | 63 | 80 | 100 |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA | 9         | 10 | 11 | 11 | 11  |
| CE2                                      | 9         | 10 | 11 | 11 | 11  |

Note) Average value at normal temperature including hysteresis. (Tolerance  $\pm$ 30%)

### Dimensions

| Auto switch part number | Bore size (mm) | C  | HW  | H    | H'   | T    | T'  | Z       |
|-------------------------|----------------|----|-----|------|------|------|-----|---------|
| D-G39C-4, D-K39C-4      | 40             | 44 | 69  | 57   | 49.5 | 7.5  | 6.5 | M5 X 16 |
| D-G39C-5, D-K39C-5      | 50             | 52 | 77  | 58   | 50.5 | 8.5  | 6.5 |         |
| D-G39C-6, D-K39C-6      | 63             | 64 | 91  | 60.5 | 52   | 10.5 | 7.5 | M5 X 20 |
| D-G39C-8, D-K39C-8      | 80             | 78 | 107 | 64   | 53.5 | 12.5 | 9.5 | M5 X 25 |
| D-G39C-10, D-K39C-10    | 100            | 92 | 121 | 67   | 56.5 | 15.5 | 9.5 |         |



# Solid State Switches: Direct Mounting Type D-M9N(V), D-M9P(V), D-M9B(V)



Refer to [www.smcworld.com](http://www.smcworld.com) for details of products compatible with overseas standards.

## Auto Switch Specifications

PLC: Programmable Logic Controller

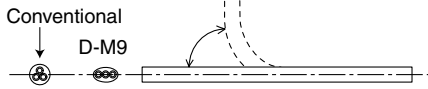
| D-M9□ (with indicator light) |                               |       |                       |
|------------------------------|-------------------------------|-------|-----------------------|
| Switch model                 | D-M9N                         | D-M9P | D-M9B                 |
| Wiring type                  | 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                 |       |                       |
| Leakage current              | 100 $\mu$ A or less at 24 VDC |       | 0.8 mA or less        |
| Indicator light              | Red LED lights when ON        |       |                       |

- Lead wire ..... Oil proof heavy duty vinyl cord: 2.7 × 3.2 ellipse  
 D-M9B 0.15 mm<sup>2</sup> × 2 cores  
 D-M9N, D-M9P 0.15 mm<sup>2</sup> × 3 cores

Note 1) Refer to page 6-18 for solid state auto switch common specifications and lead wire length.

## Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Lead-free
- Use of lead wire compliant with UL standards (style 2844)
- 1.5 times the flexibility compared with conventional products (comparison with other SMC products)



D-M9□

D-M9□V

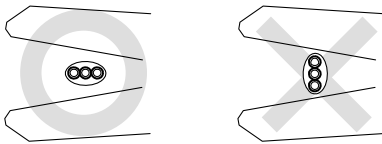


## ⚠ Caution

### Operating Precautions

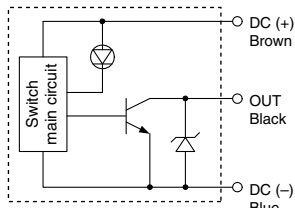
When the cable sheath is stripped, confirm the stripping direction.

The insulator may be split or damaged depending on the direction.

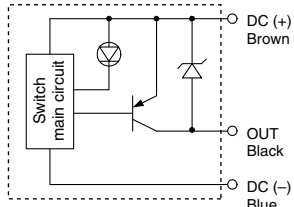


## Auto Switch Internal Circuit

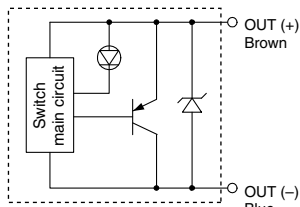
### D-M9N, D-M9NV



### D-M9P, D-M9PV



### D-M9B, D-M9BV



## Weight

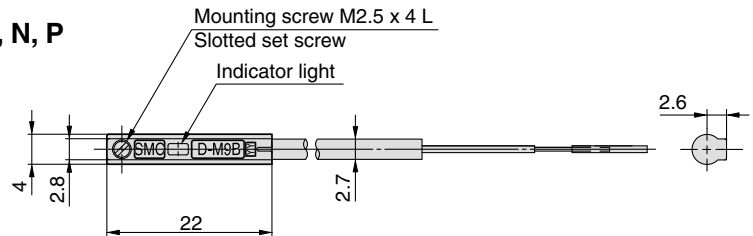
Unit: g

| Auto switch model  | D-M9N(V) | D-M9P(V) | D-M9B(V) |
|--------------------|----------|----------|----------|
| Lead wire length m | 0.5      | 8        | 8        |
|                    | 3        | 41       | 41       |

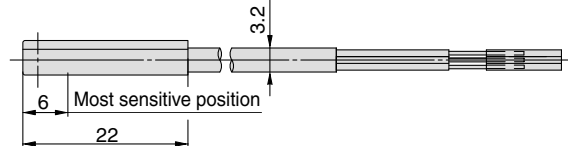
## Dimensions

### D-M9□

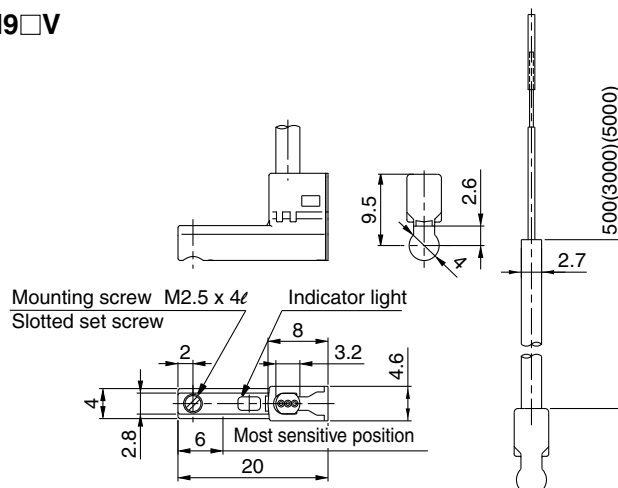
### D-M9B, N, P



### D-M9N, P (3-wire) - D-M9B (2-wire)



### D-M9□V





# Solid State Switches: Direct Mounting Type D-F8N/D-F8P/D-F8B



Refer to [www.smcworld.com](http://www.smcworld.com) for details of products compatible with overseas standards.

## Auto Switch Specifications

PLC: Programmable Logic Controller

| Auto switch part No.       | D-F8N  | D-F8P         | D-F8B                    |
|----------------------------|--|---------------|--------------------------|
| Electrical entry direction | Perpendicular  | Perpendicular | Perpendicular            |
| Wiring type                | 3-wire   |               | 2-wire                   |
| Output type                | NPN  | PNP           | —                        |
| Applicable load            | IC circuit, 24 VDC relay, PLC                          |               | 24 VDC relay, PLC        |
| Power supply voltage       | 5, 12, 24 VDC (4.5 to 28 VDC)                          |               |                          |
| Current consumption        | 10 mA or less  |               |                          |
| Load voltage               | 28 VDC or less   | —             | 24 VDC (10 to 28 VDC)    |
| Load current               | 40 mA or less  | 80 mA or less | 2.5 to 40 mA             |
| Internal voltage drop      | 1.5 V or less<br>(0.8 V or less at 10 mA load current) | 0.8 V or less | 4 V or less              |
| Leakage current            | 100 $\mu$ A or less at 24 VDC                          |               | 0.8 mA or less at 24 VDC |
| Indicator light            | Red LED lights when ON                                 |               |                          |

### ● Lead wires

Oilproof vinyl heavy insulation cable,  $\phi 2.7$

D-F8N, D-F8P 0.15 mm<sup>2</sup> x 3-cores (Brown, Black, Blue [Red, White, Black]), 0.5 m

D-F8B 0.18mm<sup>2</sup> x 2-cores (Brown, Blue [Red, Black]), 0.5 m

Note 1) Refer to page 6-18 for auto switch common specifications.

Note 2) Refer to page 6-18 for lead wire lengths.

## Grommet



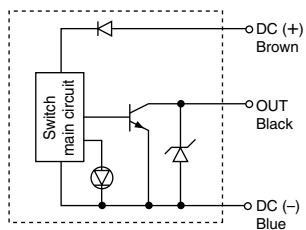
## ⚠ Caution

### Operating precautions

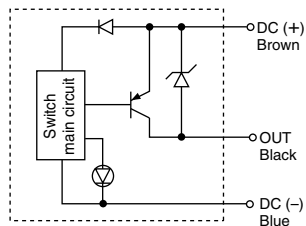
Fix the switch with appropriate screw installed on the switch body. If using other screws, switch may be damaged.

## Auto switch internal circuit

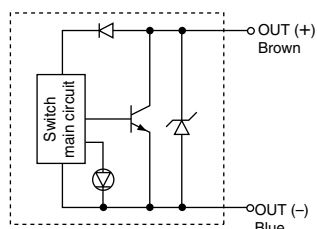
### D-F8N



### D-F8P



### D-F8B



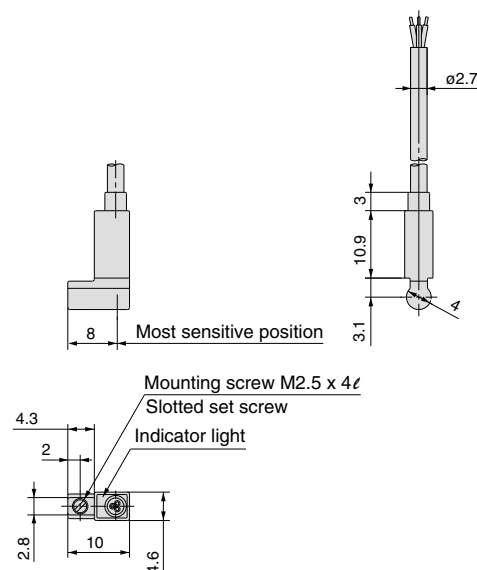
## Weight

Unit: (g)

| Auto switch part No. | D-F8N | D-F8P | D-F8B |
|----------------------|-------|-------|-------|
| Lead wire length (m) | 0.5   | 7     | 7     |
|                      | 3     | 32    | 32    |
|                      | 5     | 52    | 52    |

## Dimensions

### D-F8N, D-F8P, D-F8B



# Solid State Switch/Direct Mounting

# D-Y59<sup>A</sup>/<sub>B</sub> / D-Y69<sup>A</sup>/<sub>B</sub> / D-Y7P(V)

## Grommet



## Applicable Actuator Series

| Series           | Bore size (mm)                                    |
|------------------|---|
| MGQ, MVGQ, MGP   | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CXS              | ø6, ø10, ø15, ø20, ø25, ø32                       |
| MY1B             | ø25, ø32, ø40, ø50, ø63, ø80, ø100                |
| MY1C, MY1M, CY1R | ø25, ø32, ø40, ø50, ø63                           |
| MY1H, ML2B       | ø25, ø32, ø40                                     |
| MGF              | ø40, ø63, ø100                                    |
| CY1H             | ø10, ø15, ø20, ø25, ø32                           |
| RSH              | ø20, ø32, ø50, ø63, ø80                           |

## Specifications

PLC: Programmable Logic Controller

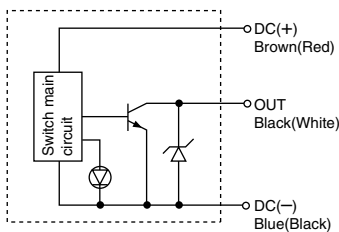
| D-Y5/D-Y6/D-Y7P/D-Y7PV (With indicator light) |   |               |              |               |                         |               |
|---|---|---------------|--------------|---------------|-------------------------|---------------|
| Auto switch model number                      | D-Y59A  | D-Y69A        | D-Y7P        | D-Y7PV        | D-Y59B                  | D-Y69B        |
| Electrical entry                              | In-line   | Perpendicular | In-line      | Perpendicular | In-line                 | Perpendicular |
| Wiring  | 3 wire  |               |              |               | 2 wire                  |               |
| Output  | NPN   |               | PNP          |               | —                       |               |
| Application                                   | IC circuit/Relay/PLC  |               |              |               | 24V DC Relay/PLC        |               |
| Power voltage                                 | 5/12/24V DC (4.5 to 28V DC)                                 |               |              |               | —                       |               |
| Current consumption                           | ≤ 10mA  |               |              |               | —                       |               |
| Load voltage                                  | ≤ 28V DC  |               | —            |               | 24V DC (10 to 28V DC)   |               |
| Load current                                  | ≤ 40mA  |               | 80mA or less |               | 5 to 40mA               |               |
| Internal voltage drop                         | 1.5V or less<br>(0.8V or less at 10mA)<br>(of load current) |               | 0.8V or less |               | 4V or less              |               |
| Current leakage                               | 100 $\mu$ A or less at 24V DC                               |               |              |               | 0.8mA or less at 24V DC |               |
| Indicator light                               | ON: When red light emitting diode                           |               |              |               |                         |               |

● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.15mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

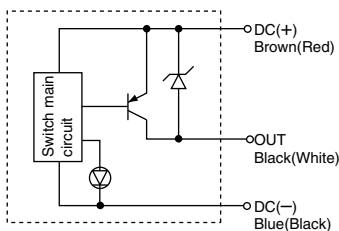
## Internal Circuit

( ): If not applicable for IEC Standard

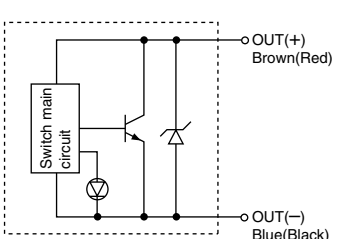
### D-Y59A, D-Y69A



### D-Y7P(V)

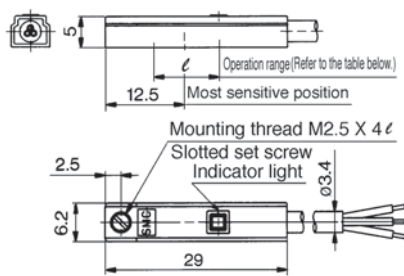


### D-Y59B, D-Y69B

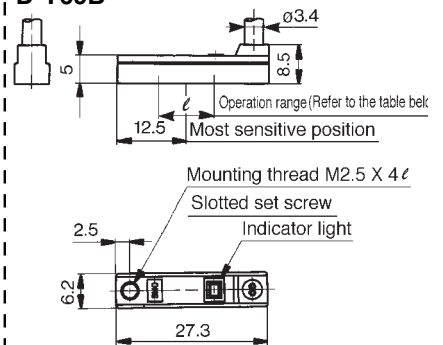


## Dimensions

### D-Y59A, D-Y7P, D-Y59B



### D-Y69A, D-Y7PV, D-Y69B



## Operation Range (ℓ Dimension)

| Actuator series | Bore size |    |     |     |     |     |     |     |     |     |     |     |      |
|-----------------|-----------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                 | 6         | 10 | 12  | 15  | 16  | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100  |
| MGQ, MVGQ       | —         | —  | 5   | —   | 6   | 6   | 6.5 | 8.5 | 8.5 | 9   | 10  | 10  | 11.5 |
| CXS             | 3         | 3  | —   | 3.5 | —   | 3.5 | 4   | 4.5 | —   | —   | —   | —   | —    |
| MGP             | —         | —  | 5.5 | —   | 7.5 | 7.5 | 7   | 6.5 | 6   | 7   | 8   | 9.5 | 10   |
| MY1B            | —         | —  | —   | —   | —   | —   | 6   | 9   | 10  | 3.5 | 3.5 | 3.5 | 3.5  |
| MY1C, MY1M      | —         | —  | —   | —   | —   | —   | 5   | 5   | 5   | 5.5 | 5.5 | —   | —    |
| MY1H            | —         | —  | —   | —   | —   | —   | 6   | 9   | 10  | —   | —   | —   | —    |
| RSH             | —         | —  | —   | —   | —   | 7.5 | —   | 5   | —   | 6.5 | 7.5 | 10  | —    |
| CY1R            | —         | —  | —   | —   | —   | —   | 7   | 6   | 6   | 7   | 6   | —   | —    |
| CY1H            | —         | 6  | —   | 5   | —   | 5   | 5   | 6   | —   | —   | —   | —   | —    |
| ML2B            | —         | —  | —   | —   | —   | —   | 6   | 6   | 6   | —   | —   | —   | —    |
| MGF             | —         | —  | —   | —   | —   | —   | —   | —   | 9   | —   | 5   | —   | 7.5  |

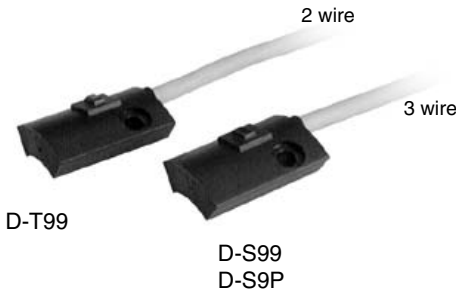
Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# Solid State Switch/Direct Mounting Switch

# D-S99(V)/D-S9P(V)/D-T99(V)

## Grommet



## Applicable rotary actuator series

| Series | Size   |
|--------|--------|
| CDRB1  | 10, 15 |
| CDRBU  | 10, 15 |
| MDSUB  | 1, 3   |

## Auto switch specifications

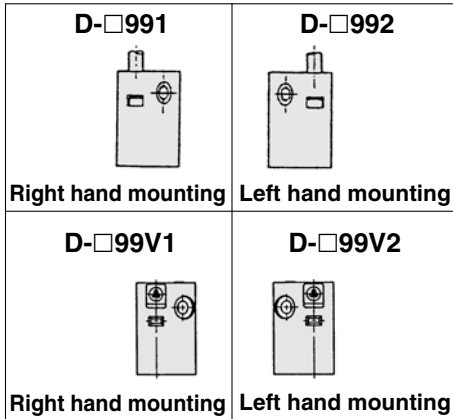
PLC: Programmable Logic Controller

| D-S99(V)/D-S9P(V)/D-T99(V) (With indicator light) |   |                    |                  |                    |                       |                         |
|---|---|--------------------|------------------|--------------------|-----------------------|-------------------------|
| Auto switch model no                              | D-S991<br>D-S992                                    | D-S99V1<br>D-S99V2 | D-S9P1<br>D-S9P2 | D-S9PV1<br>D-S9PV2 | D-T991<br>D-T992      | D-T99V1<br>D-T99V2      |
| Electrical entry                                  | In-line   | Perpendicular      | In-line          | Perpendicular      | In-line               | Perpendicular           |
| Wiring type                                       | 3 wire  |                    |                  |                    | 2 wire                |                         |
| Output  | NPN type  |                    | PNP type         |                    | —                     |                         |
| Applicable load                                   | IC circuit, Relay, PLC                              |                    |                  |                    | 24V DC Relay, PLC     |                         |
| Power voltage                                     | 5, 12, 24V DC (4.5 to 28V DC)                       |                    |                  |                    |                       | —                       |
| Current consumption                               | 10mA or less  |                    |                  |                    |                       | —                       |
| Load voltage                                      | 28V DC or less                                      |                    | —                |                    | 24V DC (10 to 28V DC) |                         |
| Load current                                      | 40mA or less  |                    | 80mA or less     |                    | 5 to 40mA             |                         |
| Internal voltage drop                             | 1.5V or less<br>(0.8V or less at load current 10mA) |                    | 0.8V or less     |                    | 4V or less            |                         |
| Leakage current                                   | 100 $\mu$ A or less at 24V DC                       |                    |                  |                    |                       | 0.8mA or less at 24V DC |
| Indicator light                                   | ON: Red light emitting diode                        |                    |                  |                    |                       |                         |



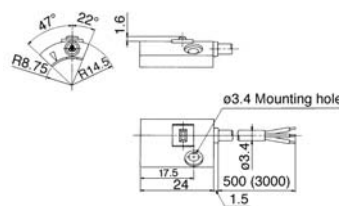
● Lead wire — Oil proof vinyl heavy insulation cable  $\phi$ 3.4, 0.2mm<sup>2</sup>, 3 wire (brown, black, blue)  
2 wire (brown, blue) 0.5m

Note 1) Refer to p.6-18 for common specifications of solid state switch.  
Note 2) Refer to p.6-18 for lead wire length.

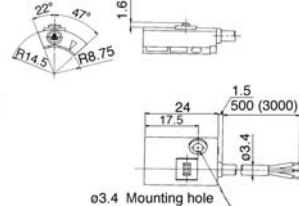


## Dimensions

### D-S991: Right hand mounting D-S9P1:

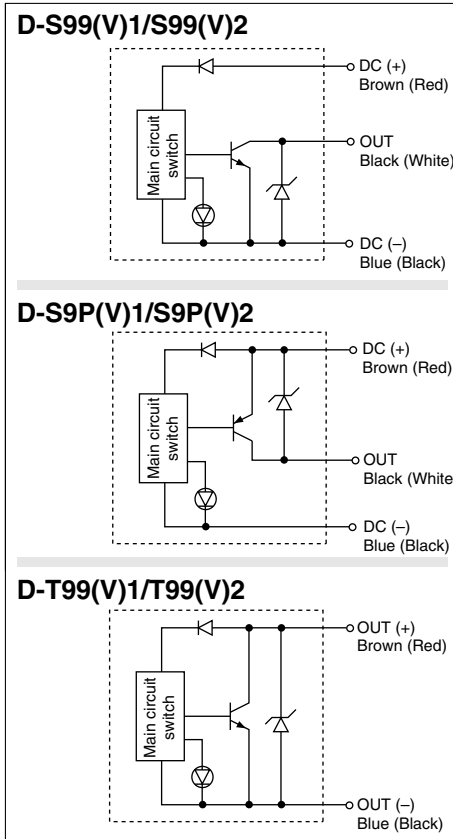


### D-S992: Left hand mounting D-S9P2:

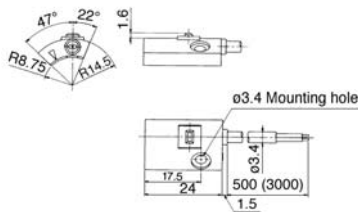


## Auto switch internal circuit

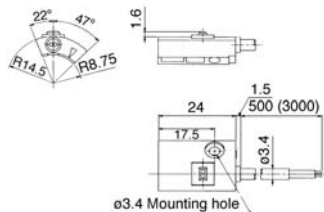
( ) : Before IEC standard



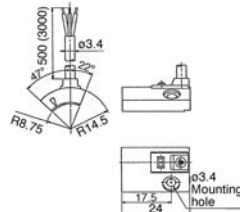
### D-T991: Right hand mounting



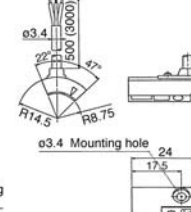
### D-T992: Left hand mounting



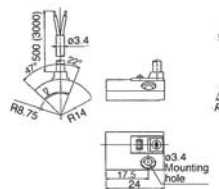
### D-S99V1: Right hand mounting D-S9PV1:



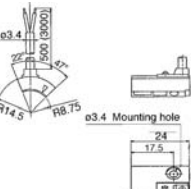
### D-S99V2: Left hand mounting D-S9PV2:



### D-T99V1: Right hand mounting



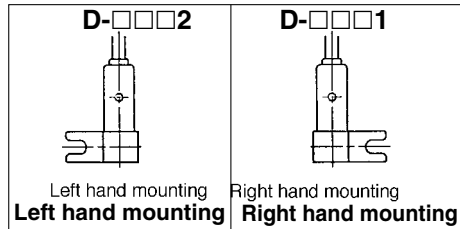
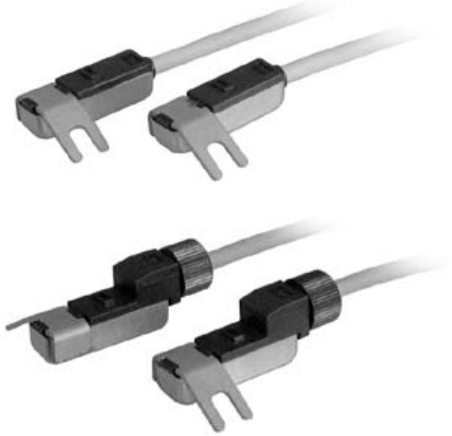
### D-T99V2: Left hand mounting



# Solid State Switch/Direct Mounting Type

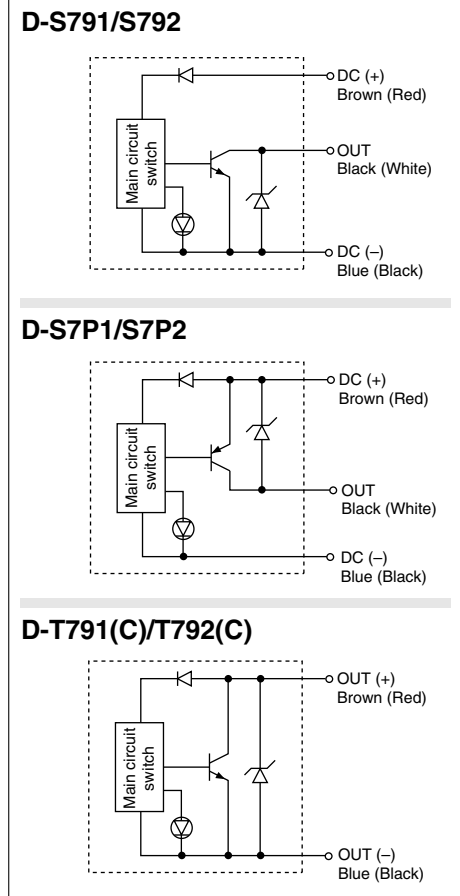
## D-S79/D-S7P/D-T79(C)

### Grommet, Connector Electrical Entry: In-line



### Auto switch internal circuit

( ) : Before IEC standard



### Applicable rotary actuator series

| Series | Size                |
|--------|---------------------|
| CDRB1  | 20, 30, 50, 80, 100 |
| CDRBU  | 20, 30              |
| MDSUB  | 7, 20               |

### Auto switch specifications

PLC: Programmable Logic Controller

| D-S79/D-T79 (With indicator light) |  |               |                               |
|------------------------------------|--|---------------|-------------------------------|
| Auto switch model no.              | D-S791/D-S792                          | D-S7P1/D-S7P2 | D-T791/D-T792/D-T791C/D-T792C |
| Wiring type                        | 3 wire                                 |               | 2 wire                        |
| Output                             | NPN type                               | PNP type      | —                             |
| Applicable load                    | IC circuit, Relay, PLC                 |               | 24V DC Relay, PLC             |
| Power voltage                      | 5, 12, 24V DC (4.5 to 28V DC)          |               | —                             |
| Current consumption                | 10mA or less                           |               | —                             |
| Load voltage                       | 28V DC or less                         | —             | 24V DC (10 to 28V DC)         |
| Load current                       | 40mA or less                           | 80mA or less  | 5 to 40mA                     |
| Internal voltage drop              | 1.5V or less<br>(0.8V or less at 10mA) | 0.8V or less  | 4V or less                    |
| Leakage current                    | 100 $\mu$ A or less at 24V DC          |               | 0.8mA or less at 24V DC       |
| Indicator light                    | ON: Red light emitting diode           |               |                               |



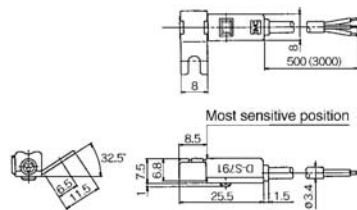
● Lead wire — Oil proof vinyl heavy insulation cable  $\phi$ 3.4, 0.2mm<sup>2</sup>, 3 wire (brown, black, blue) 2 wire (brown, blue) 0.5m

Note 1) Refer to p.6-18 for common specifications of solid state switch.

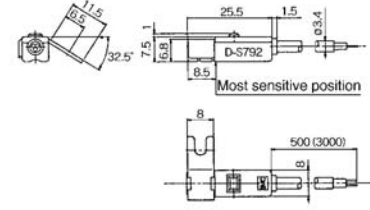
Note 2) Refer to p.6-18 for lead wire length.

### Dimensions

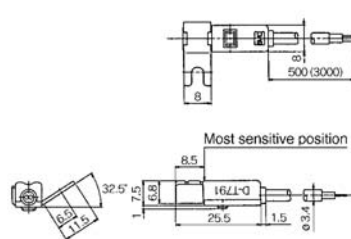
#### D-S791: Right hand mounting D-S7P1



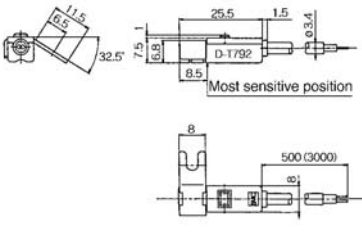
#### D-S792: Left hand mounting D-S7P2



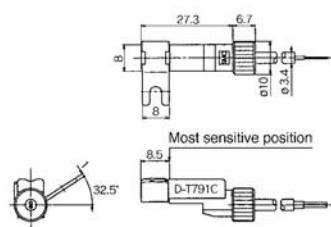
#### D-T791: Right hand mounting



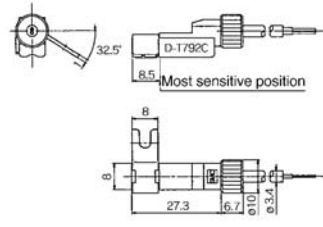
#### D-T792: Left hand mounting



#### D-T791C: Right hand mounting



#### D-T792C: Left hand mounting



# Solid State Switch/Direct Mounting

## D-M5N/D-M5P/D-M5B

### Grommet



### Applicable Actuator Series

| Series | Bore size (mm) |
|--------|----------------|
| MYC    | ø25, ø32, ø40  |
| MYH    | ø25, ø32, ø40  |
| ML1    | ø25, ø32, ø40  |

### Specifications

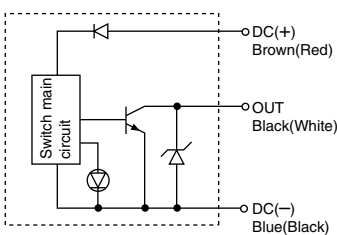
PLC: Programmable Logic Controller

| D-M5□(With indicator light) |   |              |                       |
|-----------------------------|---|--------------|-----------------------|
| Auto switch model number    | D-M5N   | D-M5P        | D-M5B                 |
| Wiring                      | 3 wire  |              | 2 wire                |
| Output                      | NPN   | PNP          | —                     |
| Application                 | IC circuit/Relay/PLC                                      |              | 24V DC Relay/PLC      |
| Power voltage               | 5/12/24V DC (4.5 to 28V DC)                               |              | —                     |
| Current consumption         | ≤ 10mA  |              | —                     |
| Load voltage                | ≤ 28V DC  | —            | 24V DC (10 to 28V DC) |
| Load current                | ≤ 40mA  | ≤ 80mA       | 5 to 40mA             |
| Internal voltage drop       | 1.5V or less<br>(0.8V or less at 10mA)<br>of load current | 0.8V or less | 4V or less            |
| Current leakage             | ≤ 100μA at 24V DC   |              | ≤ 0.8mA at 24V DC     |
| Indicator light             | ON: When red light emitting diode                         |              |                       |

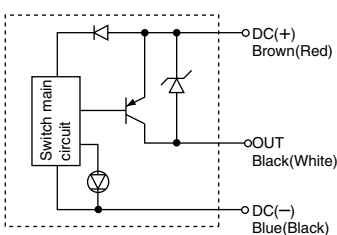
### Internal Circuit

( ): If not applicable for IEC Standard

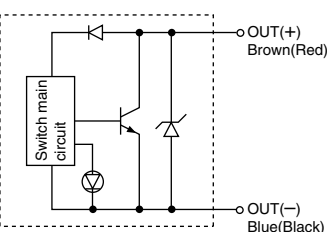
#### D-M5N



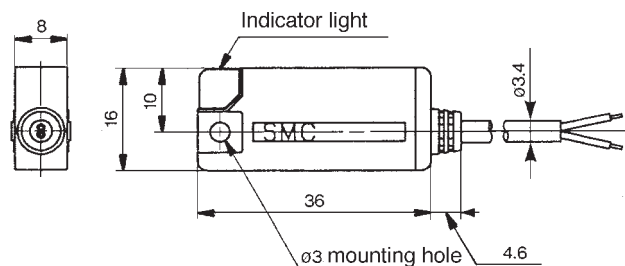
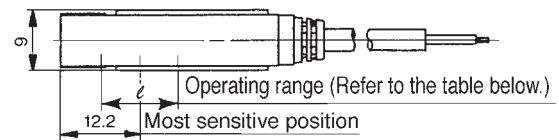
#### D-M5P



#### D-M5B



### Dimensions



### Operation Range ( l Dimension) (mm)

| Actuator series | Bore size |    |    |
|-----------------|-----------|----|----|
|                 | 25        | 32 | 40 |
| MYC             | 4         | 4  | 4  |
| MYH             | 4         | 4  | 4  |
| ML1             | 4         | 4  | 4  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Solid State Switch/Band Mounting D-H7NW/D-H7PW/D-H7BW

## Grommet

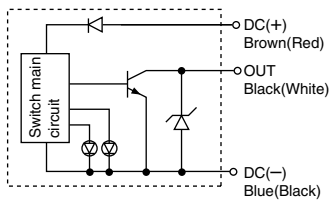
The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



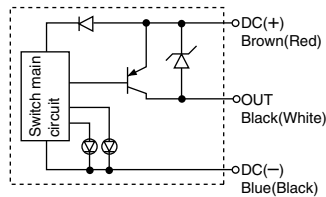
## Internal Circuit

( ): If not applicable for IEC Standard

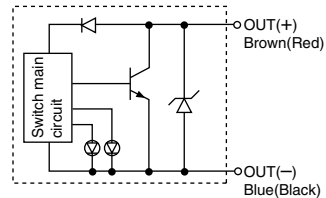
### D-H7NW



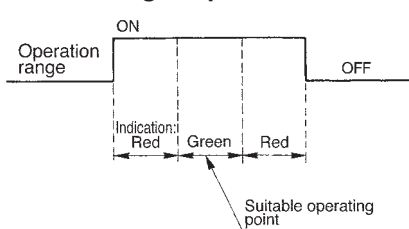
### D-H7PW



### D-H7BW



## Indicator light/Operation



## Applicable Actuator Series

| Series                                       | Bore size (mm)               |
|--|------------------------------|
| CDJ2   | ø6, ø10, ø16                 |
| CDVJ3, CDVJ5                                 | ø10, ø16                     |
| CDLJ2  | ø16                          |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, REC | ø20, ø25, ø32, ø40           |
| CDG1, MGG                                    | ø20, ø25, ø32, ø40, ø50, ø63 |
| RSDG   | ø40, ø50                     |
| MGC  | ø20, ø25, ø32, ø40, ø50      |
| RHC, MLGC                                    | ø20, ø25, ø32, ø40           |

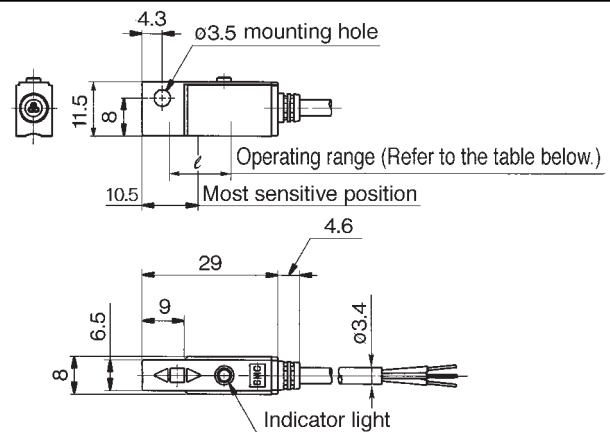
## Specifications

PLC: Programmable Logic Controller

| D-H7□W(With indicator light) |   |              |                         |
|------------------------------|---|--------------|-------------------------|
| Auto switch model number     | D-H7NW  | D-H7PW       | D-H7BW                  |
| Wiring                       | 3 wire  |              | 2 wire                  |
| Output                       | NPN   | PNP          | —                       |
| Application                  | IC circuit/Relay/PLC  |              | 24V DC Relay/PLC        |
| Power voltage                | 5/12/24V DC (4.5 to 28V DC)   |              | —                       |
| Current consumption          | ≤ 10mA  |              | —                       |
| Load voltage                 | ≤ 28V DC  | —            | 24V DC (10 to 28V DC)   |
| Load current                 | ≤ 40mA  | ≤ 80mA       | 5 to 40mA               |
| Internal voltage drop        | 1.5V or less<br>(0.8V or less at 10mA)<br>of load current   | 0.8V or less | 4V or less              |
| Current leakage              | 100μA or less at 24V DC   |              | 0.8mA or less at 24V DC |
| Indicator light              | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |              |                         |

• Lead wire— Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5mm<sup>2</sup>  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

## Dimensions



## Operation Range (ℓ Dimension)

| Actuator series                              | Bore size (mm) |    |    |    |    |     |    |    |     |    |
|--|----------------|----|----|----|----|-----|----|----|-----|----|
|  | 6              | 10 | 15 | 16 | 20 | 25  | 32 | 40 | 50  | 63 |
| CDJ2   | 3              | 4  | 4  | —  | —  | —   | —  | —  | —   | —  |
| CDVJ3, CDVJ5                                 | —              | 4  | 4  | —  | —  | —   | —  | —  | —   | —  |
| CDLJ2  | —              | —  | 4  | —  | —  | —   | —  | —  | —   | —  |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, REC | —              | —  | —  | 4  | 4  | 4.5 | 5  | —  | —   | —  |
| CDG1, MGG                                    | —              | —  | —  | 4  | 4  | 4.5 | 5  | 6  | 6.5 | —  |
| RSDG   | —              | —  | —  | —  | —  | —   | 5  | 6  | —   | —  |
| MGG, MGC                                     | —              | —  | —  | 4  | 4  | 4.5 | 5  | 6  | —   | —  |
| RHC, MLGC                                    | —              | —  | —  | 4  | 4  | 4.5 | 5  | —  | —   | —  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# 2 Colour Indication Style Solid State Switch/Band Mounting D-G59W/D-G5PW/D-K59W

## Grommet

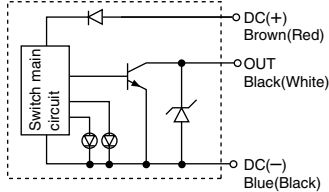
The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



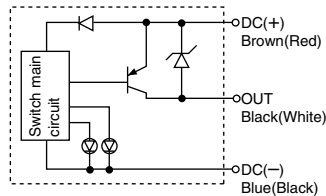
## Internal Circuit

( ): If not applicable for IEC Standard

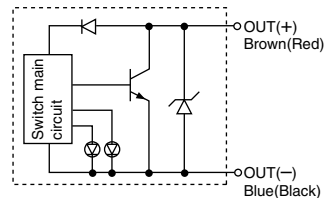
### D-G59W



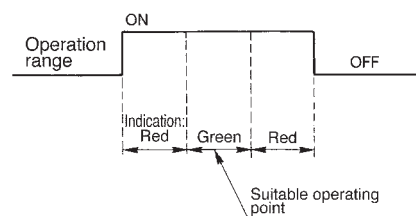
### D-G5PW



### D-K59W



## Indicator light/Operation



## Applicable Actuator Series

| Series                                   | Bore size (mm)                          |
|--|---|
| CDG1, MGG                                | ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA | ø40, ø50, ø63, ø80, ø100                |
| MGC                                      | ø20, ø25, ø32, ø40, ø50                 |
| RHC, MLGC, REC                           | ø20, ø25, ø32, ø40                      |
| CE2                                      | ø40, ø50, ø63, ø80, ø100                |

## Specifications

PLC: Programmable Logic Controller

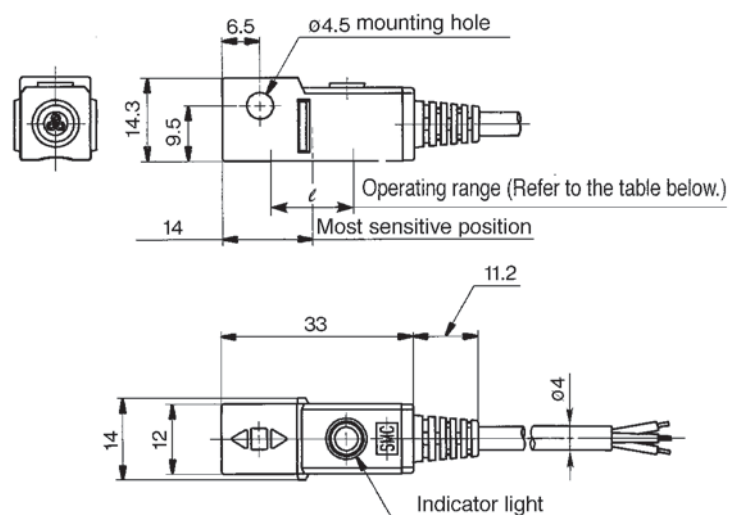
### D-G5□/D-K59 (With indicator light)

| Auto switch model number | D-G59W  | D-G5PW       | D-K59W                  |
|--------------------------|---|--------------|-------------------------|
| Wiring                   | 3 wire  |              | 2 wire                  |
| Output                   | NPN   | PNP          | —                       |
| Application              | IC circuit/Relay/PLC                                      |              | 24V DC Relay/PLC        |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)                               |              | —                       |
| Current consumption      | ≤ 10mA  |              | —                       |
| Load voltage             | ≤ 28V DC  | —            | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 40mA  | 80mA or less | 5 to 40mA               |
| Internal voltage drop    | 1.5V or less<br>(0.8V or less at 10mA)<br>of load current | 0.8V or less | 4V or less              |
| Current leakage          | 100μA or less at 24V DC                                   |              | 0.8mA or less at 24V DC |

Indicator light  
Operating point: Red light emitting diode  
Suitable operating point: Green light emitting diode

• Lead wire—Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

## Dimensions



## Operation Range ( l Dimension)

| Actuator series                          | Bore size (mm) |    |     |    |    |     |     |     |
|--|----------------|----|-----|----|----|-----|-----|-----|
|  | 20             | 25 | 32  | 40 | 50 | 63  | 80  | 100 |
| CDG1, MGG                                | 4              | 4  | 4.5 | 5  | 6  | 6.5 | 6.5 | 7   |
| CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA | —              | —  | —   | 5  | 6  | 6.5 | 6.5 | 7   |
| MGC                                      | 4              | 4  | 4.5 | 5  | 6  | —   | —   | —   |
| RHC, MLGC, REC                           | 4              | 4  | 4.5 | 5  | —  | —   | —   | —   |
| CE2                                      | —              | —  | —   | 5  | 6  | 6.5 | 6.5 | 7   |

(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# 2 Colour Indication Style Solid State Switch/Rail Mounting D-F79W/D-F7PW/D-J79W

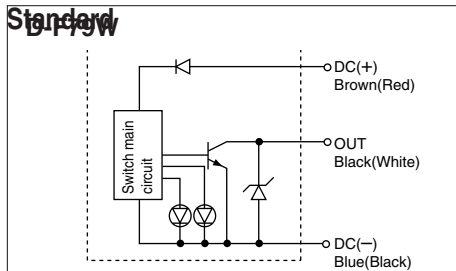
## Grommet

The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)

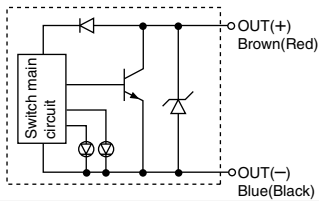


## Internal Circuit

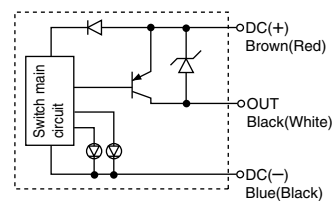
( ): If not applicable for IEC



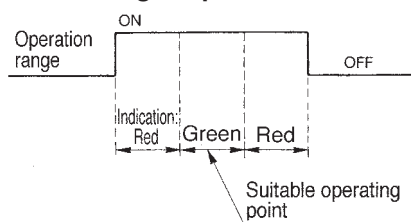
## D-F7PW



## D-J79W



## Indicator light/Operation



## Applicable Actuator Series

| Series         | Bore size (mm)  |
|----------------|---|
| CDJ2, CDVJ3, 5 | φ10, φ16  |
| CDQ2           | φ12, φ16, φ20, φ25, φ32, φ40, φ50, φ63, φ80, φ100, φ125, φ140, φ160               |
| CD□XW          | Plate mounted(P), φ10, φ16, φ20, φ25, φ32, Housing mounted(B), φ16, φ20, φ25, φ32 |
| CDY1S, CY1L    | φ6, φ10, φ15, φ20, φ25, φ32, φ40  |
| RSDQ           | φ20, φ25, φ32, φ40, φ50   |
| MDU            | φ25, φ32, φ40, φ50, φ63   |
| CE1            | φ12, φ20, φ32, φ40, φ50, φ63  |
| MK, MK2        | φ20, φ25, φ32, φ40, φ50, φ63  |
| CXT            | φ32, φ40  |

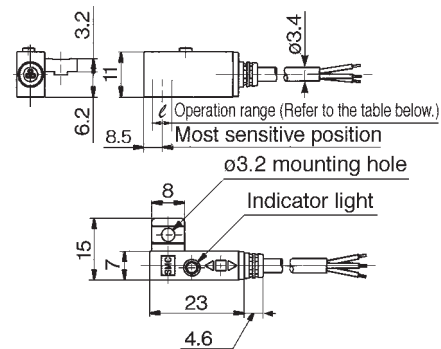
## Specifications

PLC: Programmable Logic Controller

| D-F7□W/D-J79W                                       |   |        |                       |
|---|---|--------|-----------------------|
| Auto switch model number                            | D-F79W  | D-F7PW | D-J79W                |
| Wiring  | 3 wire  |        | 2 wire                |
| Output  | NPN   | PNP    | —                     |
| Application   | IC circuit/Relay/PLC  |        | 24V DC Relay/PLC      |
| Power voltage                                       | 5/12/24V DC (4.5 to 28V DC)   |        | —                     |
| Current consumption                                 | ≤ 10mA  |        | —                     |
| Load voltage  | ≤ 28V DC  | —      | 24V DC (10 to 28V DC) |
| Load current  | ≤ 40mA  | ≤ 80mA | 5 to 40mA             |
| Internal voltage drop (≤ 0.8V at 10mA load current) | ≤ 1.5V  | ≤ 0.8V | ≤ 4V                  |
| Current leakage                                     | ≤ 100μA at 24V DC   |        | ≤ 0.8mA at 24V DC     |
| Indicator light                                     | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |        |                       |

●Lead wire — Oilproof vinyl heavy insulation cable, φ3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

## Dimensions



## Operation Range (ℓ Dimension)

| Actuator series | Bore size |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                 | 6         | 10 | 12  | 15 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ3, 5  | —         | 5  | —   | —  | 5  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   |
| CDQ2            | —         | —  | 5.5 | —  | 6  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | 6.5 | 7   | 9   | 9   | 8.5 |
| CD□XW           | B         | —  | —   | —  | —  | 4   | 3.5 | 4   | —   | —   | —   | —   | —   | —   | —   | —   |
|                 |           | P  | 3   | —  | —  | 2.5 | 3.5 | 2.5 | —   | —   | —   | —   | —   | —   | —   | —   |
| CDY1S, CY1L     | 3         | 3  | —   | 4  | —  | 3   | 3   | 3   | 3.5 | —   | —   | —   | —   | —   | —   | —   |
| RSDQ            | —         | —  | —   | —  | —  | 5.5 | —   | 6   | 6   | 6   | —   | —   | —   | —   | —   | —   |
| MDU             | —         | —  | —   | —  | —  | —   | 6.5 | 7   | 6.5 | 6.5 | 6.5 | —   | —   | —   | —   | —   |
| CE1             | —         | —  | 5.5 | —  | —  | 5.5 | —   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| MK, MK2         | —         | —  | —   | —  | —  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| CXT             | —         | —  | —   | —  | —  | —   | —   | 6   | 6   | —   | —   | —   | —   | —   | —   | —   |

(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Solid State Switch/Rail Mounting D-F7NWV/D-F7BWV

**Grommet**  
Electrical entry: Perpendicular

The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



## Applicable Actuator Series

| Series         | Bore size (mm)  |
|----------------|---|
| CDJ2, CDVJ3, 5 | ø10, ø16  |
| CDQ2           | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160               |
| CD□XW          | Plate mounted(P), ø10, ø16, ø20, ø25, ø32, Housing mounted(B), ø16, ø20, ø25, ø32 |
| CDY1S, CY1L    | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ           | ø20, ø25, ø32, ø40, ø50   |
| MDU            | ø25, ø32, ø40, ø50, ø63   |
| CE1            | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2        | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT            | ø32, ø40  |

## Specifications

PLC: Programmable Logic Controller

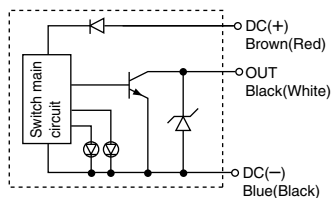
| D-F7□WV (With indicator light) |   |                         |
|--------------------------------|---|-------------------------|
| Auto switch model number       | D-F7NWV   | D-F7BWV                 |
| Wiring                         | 3 wire  | 2 wire                  |
| Output                         | NPN   | —                       |
| Application                    | IC circuit/Relay/PLC  | 24V DC Relay/PLC        |
| Power voltage                  | 5/12/24V DC (4.5 to 28V DC)   | —                       |
| Current consumption            | ≤ 10mA  | —                       |
| Load voltage                   | ≤ 28V DC  | 24V DC (10 to 28V DC)   |
| Load current                   | ≤ 40mA  | 5 to 40mA               |
| Internal voltage drop          | ≤ 1.5V<br>(≤ 0.8V at 10mA load current)   | ≤ 4V                    |
| Current leakage                | 100μA or less at 24V DC   | 0.8mA or less at 24V DC |
| Indicator light                | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |                         |

●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

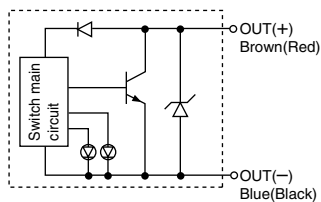
## Internal Circuit

( ): If not applicable for IEC Standard

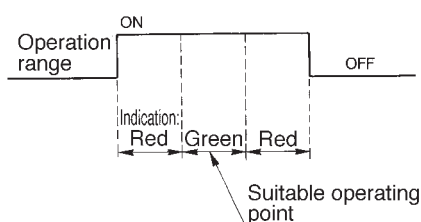
### D-F7NWV



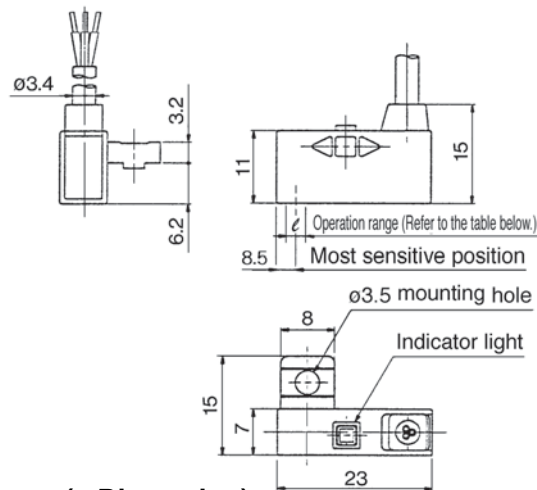
### D-F7BWV



## Indicator light/Operation



## Dimensions



## Operation Range (ℓ Dimension)

| Actuator series | Bore size |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |   |
|-----------------|-----------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
|                 | 6         | 10 | 12  | 15 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 |   |
| CDJ2, CDVJ3, 5  | —         | 5  | —   | —  | 5  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | — |
| CDQ2            | —         | —  | 5.5 | —  | 6  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | 6.5 | 7   | 9   | 9   | 8.5 | — |
| CD□XW           | B         | —  | —   | —  | —  | 4   | 3.5 | 4   | —   | —   | —   | —   | —   | —   | —   | —   | — |
|                 |           | P  | —   | 3  | —  | —   | 2.5 | 3.5 | 2.5 | —   | —   | —   | —   | —   | —   | —   | — |
| CDY1S, CY1L     | 3         | 3  | —   | 4  | —  | 3   | 3   | 3   | 3.5 | —   | —   | —   | —   | —   | —   | —   | — |
| RSDQ            | —         | —  | —   | —  | —  | 5.5 | —   | 6   | 6   | 6   | —   | —   | —   | —   | —   | —   | — |
| MDU             | —         | —  | —   | —  | —  | —   | 6.5 | 7   | 6.5 | 6.5 | 6.5 | —   | —   | —   | —   | —   | — |
| CE1             | —         | —  | 5.5 | —  | —  | 5.5 | —   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   | — |
| MK, MK2         | —         | —  | —   | —  | —  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   | — |
| CXT             | —         | —  | —   | —  | —  | —   | —   | 6   | 6   | —   | —   | —   | —   | —   | —   | —   | — |

(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Solid State Switch/Tie-rod Mounting D-F59W/D-F5PW/D-J59W

## Grommet

The suitable operating point can be indicated with a green light.

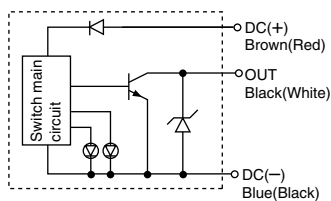
(Red □ Green □ Red)



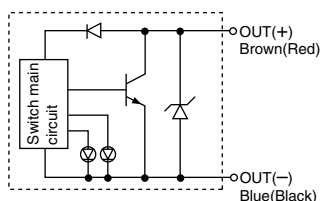
## Internal Circuit

( ): If not applicable for IEC

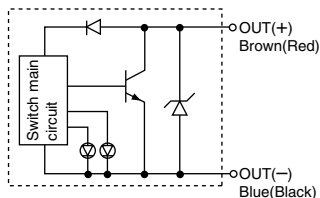
### Standard



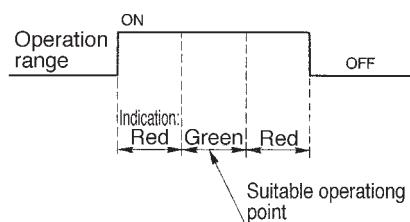
### D-F5PW



### D-J59W



## Indicator light/Operation



## Applicable Actuator Series

| Series                              | Bore size (mm)                             |
|-------------------------------------|--|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                | ø125, ø140, ø160, ø180, ø200               |
| CE2                                 | ø40, ø50, ø63, ø80, ø100                   |
| MDB                                 | ø32, ø40, ø63, ø80, ø100                   |

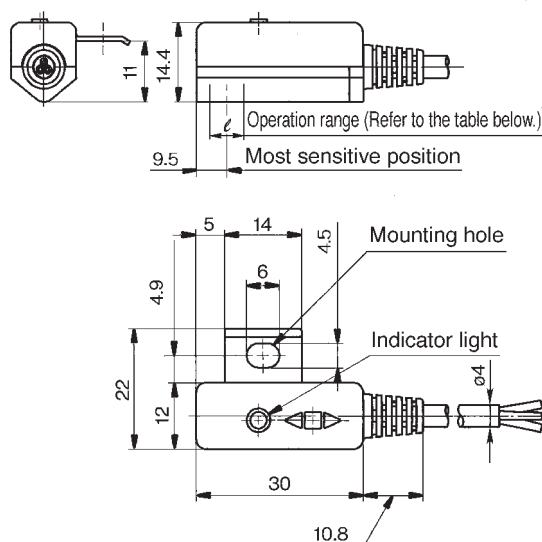
## Specifications

PLC: Programmable Logic Controller

| D-F5□W/D-J59W (With indicator light) |   |        |                       |
|--------------------------------------|---|--------|-----------------------|
| Auto switch model number             | D-F59W  | D-F5PW | D-J59W                |
| Wiring                               | 3 wire  |        | 2 wire                |
| Output                               | NPN   | PNP    | —                     |
| Application                          | IC circuit/Relay/PLC  |        | 24V DC Relay/PLC      |
| Power voltage                        | 5/12/24V DC (4.5 to 28V DC)   |        | —                     |
| Current consumption                  | 10mA  |        | —                     |
| Load voltage                         | ≤ 28V DC  | —      | 24V DC (10 to 28V DC) |
| Load current                         | ≤ 40mA  | ≤ 80mA | 5 to 40mA             |
| Internal voltage drop                | ≤ 1.5V<br>(≤ 0.8V at 10mA load current)   | ≤ 0.8V | ≤ 4V                  |
| Current leakage                      | ≤ 100μA at 24V DC   |        | ≤ 0.8mA at 24V DC     |
| Indicator light                      | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |        |                       |

● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

## Dimensions



## Operation Range ( ℓ Dimension)

| Actuator series                     | Bore size (mm) |    |    |     |     |     |     |     |     |     |     |
|-------------------------------------|----------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     | 32             | 40 | 50 | 63  | 80  | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| CDL1                                | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | 5   | 5   | 5.5 | —   | —   |
| CDS1                                | —              | —  | —  | —   | —   | —   | 5   | 5   | 5.5 | 6   | 6   |
| CE2                                 | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| MDB                                 | 3.5            | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

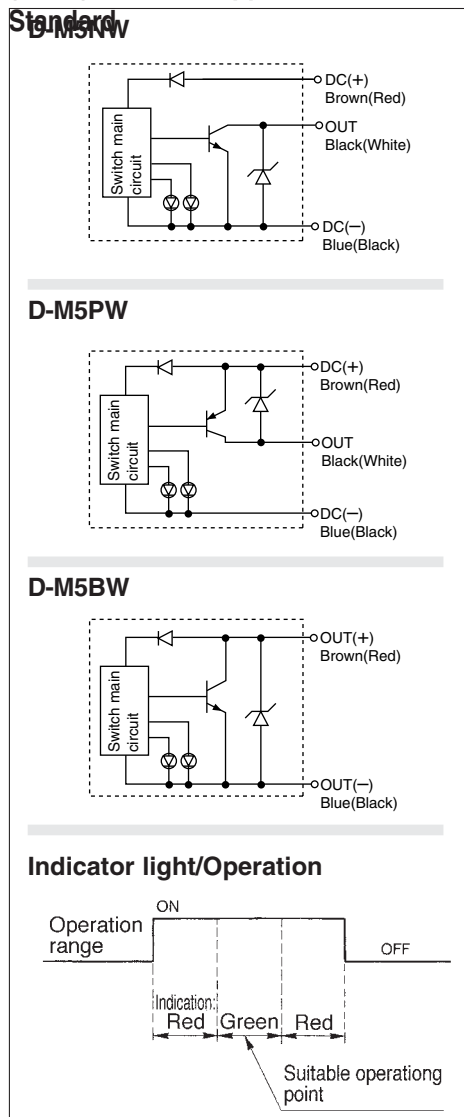
# 2 Colour Indication Style Solid State Switch/Direct Mounting D-M5NW/D-M5PW/D-M5BW

## Grommet

The suitable operating point can be indicated with a green light.



## Internal Circuit ( ) : If not applicable for IEC Standard



## Applicable Actuator Series

| Series | Bore size (mm) |
|--------|----------------|
| MYC    | ø25, ø32, ø40  |
| MYH    | ø25, ø32, ø40  |
| ML1    | ø25, ø32, ø40  |

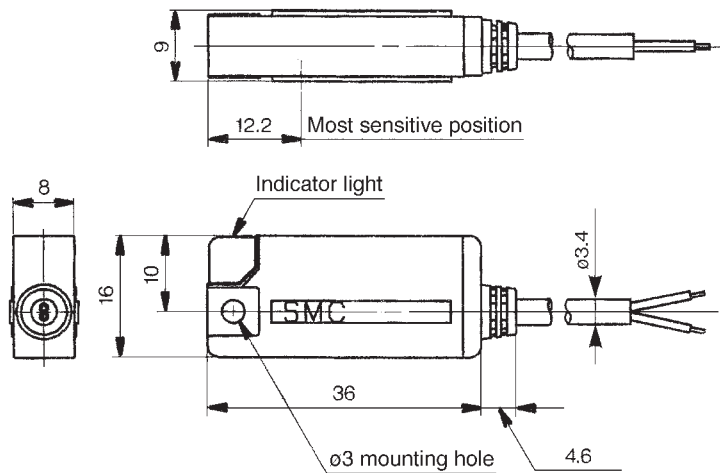
## Specifications

PLC: Programmable Logic Controller

| D-M5□W (With indicator light)                          |   |        |                       |
|--|---|--------|-----------------------|
| Auto switch model number                               | D-M5NW  | D-M5PW | D-M5BW                |
| Wiring   | 3 wire  |        | 2 wire                |
| Output   | NPN   | PNP    | —                     |
| Application  | IC circuit/Relay/PLC  |        | 24V DC Relay/PLC      |
| Power voltage  | 5/12/24V DC (4.5 to 28V DC)   |        | —                     |
| Current consumption                                    | ≤ 10mA  |        | —                     |
| Load voltage   | ≤ 28V DC  | —      | 24V DC (10 to 28V DC) |
| Load current   | ≤ 40mA  | ≤ 80mA | 5 to 40mA             |
| Internal voltage drop<br>(≤ 0.8V at 10mA load current) | ≤ 1.5V  | ≤ 0.8V | ≤ 4V                  |
| Current leakage  | ≤ 100µA at 24V DC   |        | ≤ 1mA at 24V DC       |
| Indicator light  | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |        |                       |

● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to the p.6-18 for lead wire length.

## Dimensions



## Operation Range (ℓ Dimension) (mm)

| Actuator series | Bore size |    |    |
|-----------------|-----------|----|----|
|                 | 25        | 32 | 40 |
| MYC             | 4         | 4  | 4  |
| MYH             | 4         | 4  | 4  |
| ML1             | 4         | 4  | 4  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Solid State Switch/Direct Mounting D-Y7NW(V)/D-Y7PW(V)/D-Y7BW(V)

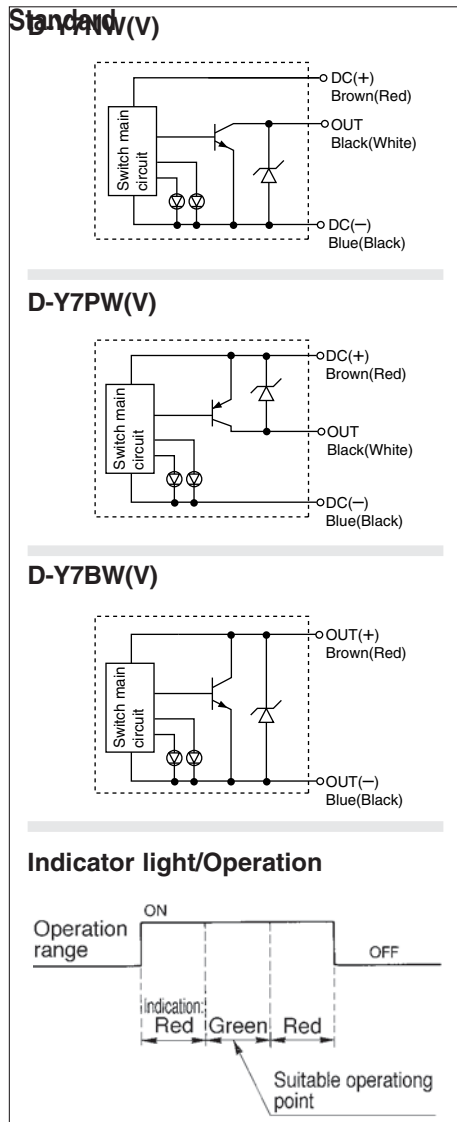
## Grommet

The suitable operating point can be indicated with a green light.

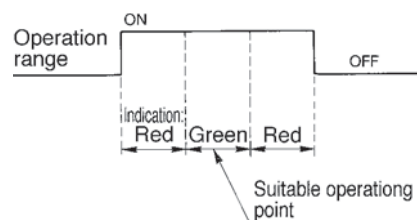


## Internal Circuit

( ): If not applicable for IEC Standard



## Indicator light/Operation



## Applicable Actuator Series

| Series    | Bore size (mm)                                    |
|-----------|---|
| CXS       | ø6, ø10, ø15, ø20, ø25, ø32                       |
| MGQ, MVGQ | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| MGP       | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| MY1B      | ø25, ø32, ø40, ø50, ø63, ø80, ø100                |
| MY1C      | ø25, ø32, ø40, ø50, ø63                           |
| MY1H      | ø25, ø32, ø40                                     |
| MY1M      | ø25, ø32, ø40, ø50, ø63                           |
| RSH       | ø20, ø32, ø50, ø63, ø80                           |

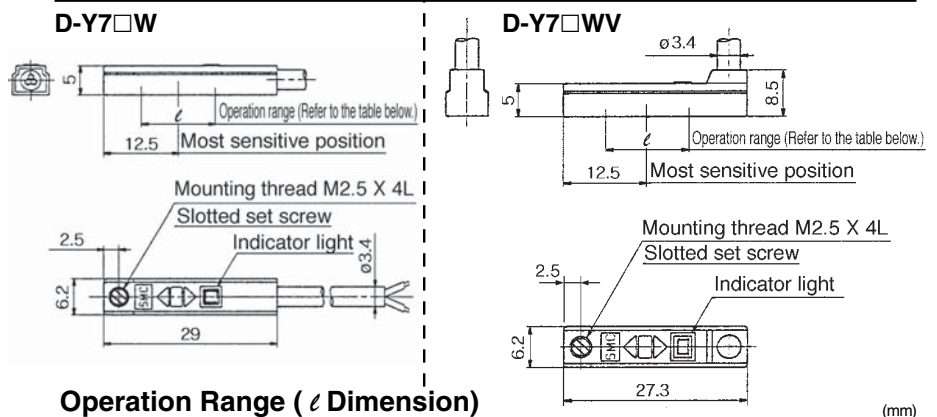
## Specifications

PLC: Programmable Logic Controller

| D-Y7□W/D-Y7□WV (With indicator light) |   |               |              |               |                         |               |
|---------------------------------------|---|---------------|--------------|---------------|-------------------------|---------------|
| Auto switch model number              | D-Y7NW  | D-Y7NWV       | D-Y7PW       | D-Y7PWV       | D-Y7BW                  | D-Y7BWV       |
| Electrical entry                      | In-line   | Perpendicular | In-line      | Perpendicular | In-line                 | Perpendicular |
| Wiring                                | 3 wire  |               |              | 2 wire        |                         |               |
| Output                                | NPN   |               | PNP          |               | —                       |               |
| Application                           | IC circuit/Relay/PLC  |               |              |               | 24V DC Relay/PLC        |               |
| Power voltage                         | 5/12/24V DC (4.5 to 28V DC)   |               |              |               | —                       |               |
| Current consumption                   | 10mA or less  |               |              |               | —                       |               |
| Load voltage                          | 28V DC or less  |               | —            |               | 24V DC (10 to 28V DC)   |               |
| Load current                          | 40mA or less  |               | 80mA or less |               | 5 to 40mA               |               |
| Internal voltage drop                 | ≤1.5V<br>(≤0.8V at 10mA load current)   |               | ≤0.8V        |               | ≤4V                     |               |
| Current leakage                       | 100µA or less at 24V DC   |               |              |               | 0.8mA or less at 24V DC |               |
| Indicator light                       | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |               |              |               |                         |               |

●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.15mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5mm  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

## Dimensions



## Operation Range (ℓ Dimension)

| Actuator series | Bore size |    |     |     |     |     |     |     |     |     |     |     |      |
|-----------------|-----------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                 | 6         | 10 | 12  | 15  | 16  | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100  |
| MGQ, MVGQ       | —         | —  | 5   | —   | 6   | 6   | 6.5 | 8.5 | 8.5 | 9   | 10  | 10  | 11.5 |
| CXS             | 3         | 3  | —   | 3.5 | —   | 3.5 | 4   | 4.5 | —   | —   | —   | —   | —    |
| MGP             | —         | —  | 5.5 | —   | 7.5 | 7.5 | 7   | 6.5 | 6   | 7   | 8   | 9.5 | 10   |
| MY1B            | —         | —  | —   | —   | —   | —   | 6   | 9   | 10  | 3.5 | 3.5 | 3.5 | 3.5  |
| MY1C, MY1M      | —         | —  | —   | —   | —   | —   | 5   | 5   | 5   | 5.5 | 5.5 | —   | —    |
| MY1H            | —         | —  | —   | —   | —   | —   | 6   | 9   | 10  | —   | —   | —   | —    |
| RSH             | —         | —  | —   | —   | —   | 7.5 | —   | 5   | —   | 6.5 | 7.5 | 10  | —    |
| CY1R            | —         | —  | —   | —   | —   | —   | 7   | 6   | 6   | 7   | 6   | —   | —    |
| CY1H            | —         | 6  | —   | 5   | —   | 5   | 5   | 6   | —   | —   | —   | —   | —    |
| ML2B            | —         | —  | —   | —   | —   | —   | 6   | 6   | 6   | —   | —   | —   | —    |
| MGF             | —         | —  | —   | —   | —   | —   | —   | 9   | —   | 5   | —   | 7.5 | —    |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style with Diagnostic Output Solid State Switch/Band Mounting

## D-H7LF (Latching Style)

### Grommet

The output signal can be detected in an unsteady detecting area.



### Applicable Actuator Series

| Series                                   | Bore size (mm)               |
|--|------------------------------|
| CDJ2                                     | ø6, ø10, ø16                 |
| CDVJ3, 5                                 | ø10, ø16                     |
| CDLJ2                                    | ø16                          |
| CDM2, CDBM2, CDVM3, 5, CDLM2, CDLG1, REC | ø20, ø25, ø32, ø40           |
| CDG1, MGG                                | ø20, ø25, ø32, ø40, ø50, ø63 |
| RSDG                                     | ø40, ø50                     |
| MGC                                      | ø20, ø25, ø32, ø40, ø50      |
| RHC, MLGC                                | ø20, ø25, ø32, ø40           |

### Specifications

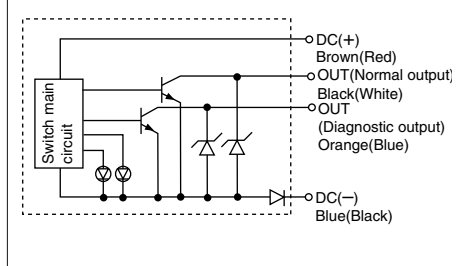
PLC: Programmable Logic Controller

| D-H7LF (With indicator light) |  |
|-------------------------------|--|
| Auto switch model number      | D-H7LF   |
| Wiring                        | 4 wire   |
| Output                        | NPN  |
| Diagnostic output             | Latching operation   |
| Application                   | 24V DC Relay/PLC   |
| Power voltage                 | 24V DC (20 to 26V DC)  |
| Current consumption           | ≤ 20mA   |
| Load voltage                  | ≤ 26V DC   |
| Load current                  | ≤ 40mA   |
| Internal voltage drop         | ≤ 0.8V   |
| Current leakage               | ≤ 100μA at 24V DC  |
| Indicator light               | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode<br>Orange colour indicator lights on when diagnostic output is ON. |

### Internal Circuit

( ): If not applicable for IEC

#### Standard



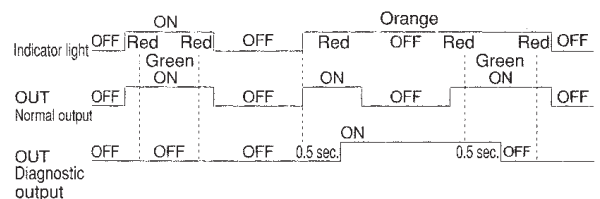
●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m

Note 1) Refer to common specifications on p.6-18.

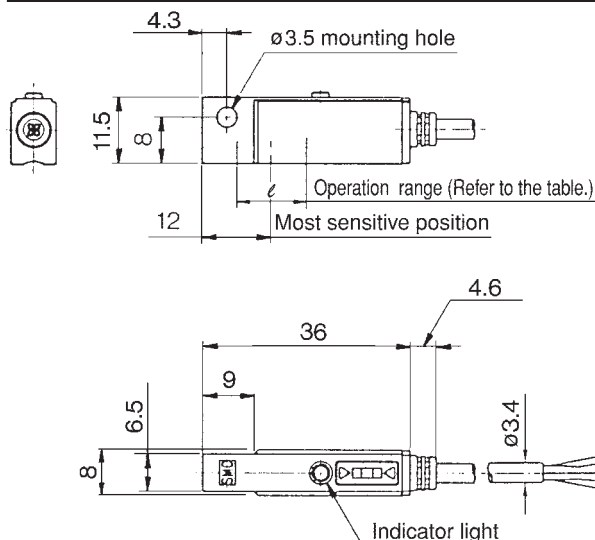
Note 2) Refer to p.6-18 for lead wire length.

### Diagnostic Output Operation

The diagnostic signal is output when detecting position remains within unsteady area (where indicator light is Red.) for more than 0.5 sec. This signal keeps outputting even after normal output goes OFF. The diagnostic output becomes OFF when detecting position remains within the most suitable operating range (where indicator light is Green.) for more than 0.5 sec.



### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series                              | Bore size (mm) |    |    |    |    |    |     |    |    |     |
|--|----------------|----|----|----|----|----|-----|----|----|-----|
|  | 6              | 10 | 15 | 16 | 20 | 25 | 32  | 40 | 50 | 63  |
| CDJ2   | 4              | 5  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDVJ3, 5                                     | —              | 5  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDLJ2  | —              | —  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, REC | —              | —  | —  | —  | 5  | 5  | 5.5 | 6  | —  | —   |
| CDG1, MGG                                    | —              | —  | —  | —  | 5  | 5  | 5.5 | 6  | 7  | 7.5 |
| RSDG   | —              | —  | —  | —  | —  | —  | —   | 6  | 7  | —   |
| MGC  | —              | —  | —  | —  | 5  | 5  | 5.5 | 6  | 7  | —   |
| RHC, MLGC                                    | —              | —  | —  | —  | 4  | 4  | 4.5 | 5  | —  | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# 2 Colour Indication Style with Diagnostic Output Solid State Switch/Band Mounting

## D-H7NF

### Grommet

The output signal can be detected in an unsteady detecting area.



### Applicable Actuator Series

| Series                                  | Bore size (mm)               |
|---|------------------------------|
| CDJ2                                    | ø6, ø10, ø16                 |
| CDVJ3, 5                                | ø10, ø16                     |
| CDLJ2                                   | ø16                          |
| CDM2, CDBM, CDVM3, 5, CDLM2, CDLG1, REC | ø20, ø25, ø32, ø40           |
| CDG1, MGG                               | ø20, ø25, ø32, ø40, ø50, ø63 |
| RSDG                                    | ø40, ø50                     |
| MGC                                     | ø20, ø25, ø32, ø40, ø50      |
| RHC, MLGC                               | ø20, ø25, ø32, ø40           |

### Specifications

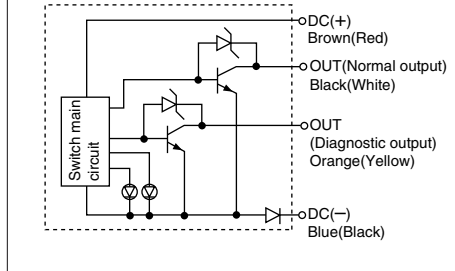
PLC: Programmable Logic Controller

| D-H7NF (With indicator light) |   |
|-------------------------------|---|
| Auto switch model number      | D-H7NF  |
| Wiring                        | 4 wire  |
| Output                        | NPN   |
| Diagnostic output             | Normal operation  |
| Application                   | IC circuit/Relay/PLC  |
| Power voltage                 | 5/12/24V DC (4.5 to 28V DC)   |
| Current consumption           | ≤ 10mA  |
| Load voltage                  | ≤ 28V DC  |
| Load current                  | ≤ 40mA  |
| Internal voltage drop         | ≤ 1.5V (≤ 0.8V at 10mA)   |
| Current leakage               | ≤ 100µA at 24V DC   |
| Indicator light               | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

### Internal Circuit

( ): If not applicable for IEC

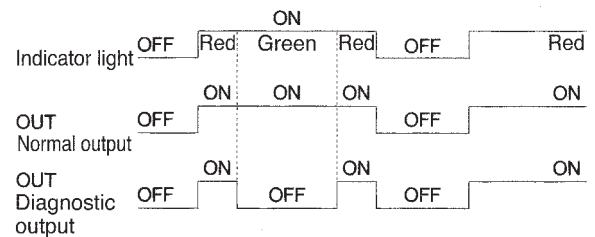
#### Standard



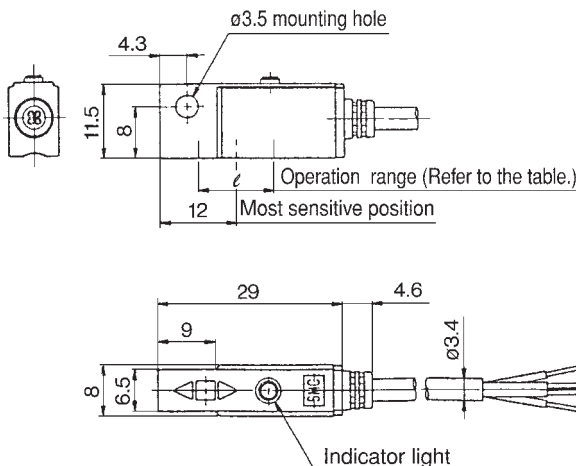
●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

### Diagnostic Output Operation

The diagnostic output is detected when detecting position remains at unsteady area only, not available at the most suitable operating area, thus diagnostic signal can be output only when the suitable position is far from the operating area.



### Dimensions



### Operation Range (∠ Dimension)

| Actuator series                              | Bore size (mm) |    |    |    |    |    |     |    |    |     |
|--|----------------|----|----|----|----|----|-----|----|----|-----|
|  | 6              | 10 | 15 | 16 | 20 | 25 | 32  | 40 | 50 | 63  |
| CDJ2   | 4              | 5  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDVJ3, 5                                     | —              | 5  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDLJ2  | —              | —  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, REC | —              | —  | —  | —  | 5  | 5  | 5.5 | 6  | —  | —   |
| CDG1, MGG                                    | —              | —  | —  | —  | 5  | 5  | 5.5 | 6  | 7  | 7.5 |
| RSDG   | —              | —  | —  | —  | —  | —  | —   | 6  | 7  | —   |
| MGC  | —              | —  | —  | —  | 5  | 5  | 5.5 | 6  | 7  | —   |
| RHC, MLGC                                    | —              | —  | —  | —  | 4  | 4  | 4.5 | 5  | —  | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# 2 Colour Indication Style with Diagnostic Output Solid State Switch/Band Mounting

## D-G59F

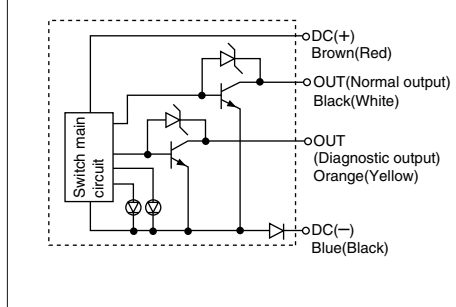
### Grommet

The output signal can be detected in an unsteady detecting area.



### Internal Circuit

( ): If not applicable for IEC Standard



### Applicable Actuator Series

| Series                                    | Bore size (mm)                          |
|---|---|
| CDG1, MGG                                 | ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CDL1, CNA | ø40*, ø50*, ø63, ø80, ø100              |
| MGC                                       | ø20, ø25, ø32, ø40, ø50                 |
| RHC, MLGC                                 | ø20, ø25, ø32, ø40                      |
| CE2                                       | ø40, ø50, ø63, ø80, ø100                |

\* Can not be used for lube type.

### Specifications

PLC: Programmable Logic Controller

| D-G59F (With indicator light) |   |
|-------------------------------|---|
| Auto switch model number      | <b>D-G59F</b>   |
| Wiring                        | 4 wire  |
| Output                        | NPN   |
| Application                   | IC circuit/Relay/PLC  |
| Diagnostic output             | Normal operation  |
| Current consumption           | ≤ 10mA  |
| Load voltage                  | ≤ 28V DC  |
| Load current                  | ≤ 40mA  |
| Internal voltage drop         | ≤ 1.5V (≤ 0.8V at 10mA)   |
| Current leakage               | ≤ 100μA at 24V DC   |
| Indicator light               | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

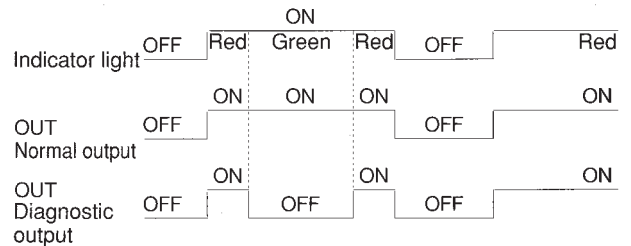
● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m

Note 1) Refer to common specifications on the p.6-18.

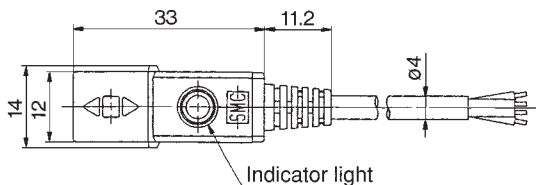
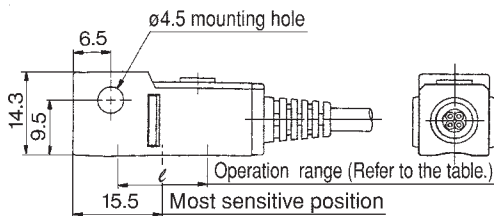
Note 2) Refer to the p.6-18 for lead wire length.

### Diagnostic Output Operation

The diagnostic output is detected when detecting position remains at unsteady area only, not available at the most suitable operating area, that is to say, diagnostic signal can be output only when the detecting position is far from the suitable position for normal operation.



### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series                           | Bore size (mm) |    |     |    |    |     |     |     |
|---|----------------|----|-----|----|----|-----|-----|-----|
|   | 20             | 25 | 32  | 40 | 50 | 63  | 80  | 100 |
| CDG1, MGG                                 | 5              | 5  | 5.5 | 6  | 7  | 7.5 | 7.5 | 8   |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CDL1, CNA | —              | —  | —   | 6  | 7  | 7.5 | 7.5 | 8   |
| MGC                                       | 5              | 5  | 5.5 | 6  | 7  | —   | —   | —   |
| RHC, MLGC                                 | 5              | 5  | 5.5 | 6  | —  | —   | —   | —   |
| CE2                                       | —              | —  | —   | 6  | 7  | 7.5 | 7.5 | 8   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# 2 Colour Indication Style with Diagnostic Output Solid State Switch/Rail Mounting

## D-F79F

### Grommet

The output signal can be detected in an unsteady detecting area.



### Applicable Actuator Series

| Series         | Bore size (mm)  |
|----------------|---|
| CDJ2, CDVJ3, 5 | ø10, ø16  |
| CDQ2           | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160           |
| CD□XW          | Plate mounted(P), ø10, ø16, ø20, ø25, ø32 Housing mounted, ø16, ø20, ø25, ø32 |
| CDY1S, CY1L    | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ           | ø20, ø32, ø40, ø50  |
| MDU            | ø25, ø32, ø40, ø50, ø63   |
| CXT            | ø32, ø40  |
| CE1            | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2        | ø20, ø25, ø32, ø40, ø50, ø63  |

### Specifications

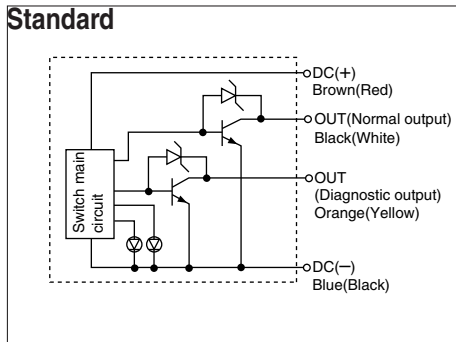
PLC: Programmable Logic Controller

| D-F79F (With indicator light) |   |
|-------------------------------|---|
| Auto switch model number      | D-F79F  |
| Wiring                        | 4 wire  |
| Output                        | NPN   |
| Diagnostic output             | Normal operation  |
| Application                   | IC circuit/Relay/PLC  |
| Power voltage                 | 5/12/24V DC (4.5 to 28V DC)   |
| Current consumption           | ≤ 10mA  |
| Load voltage                  | ≤ 28V DC  |
| Load current                  | ≤ 40mA  |
| Internal voltage drop         | ≤ 1.5V (0.8V at 10mA)   |
| Current leakage               | ≤ 100μA at 24V DC   |
| Indicator light               | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

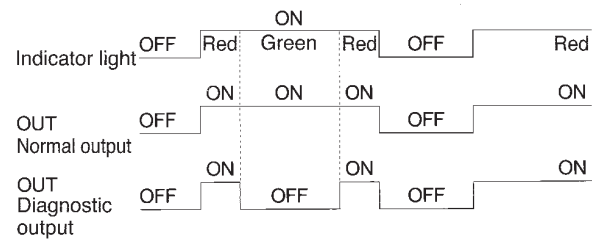
### Internal Circuit

( ): If not applicable for IEC

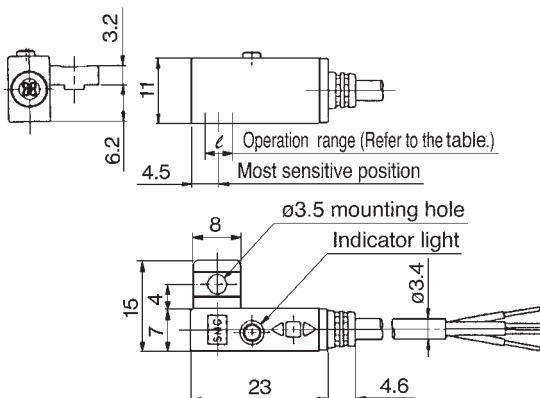


### Diagnostic Output Operation

The diagnostic output is detected when detecting position remains at unsteady area only, not available at the most suitable operating area, that is to say, diagnostic signal can be output only when the detecting position is far from the suitable position for normal operation.



### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series    | Bore size (mm) |     |    |     |     |     |     |     |     |     |     |    |      |     |      |     |
|--------------------|----------------|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|----|------|-----|------|-----|
|                    | 6              | 10  | 12 | 15  | 16  | 20  | 25  | 32  | 40  | 50  | 63  | 80 | 100  | 125 | 140  | 160 |
| CDJ2, CDVJ3, CDVJ5 | -              | 6.5 | -  | -   | 5.5 | -   | -   | -   | -   | -   | -   | -  | -    | -   | -    | -   |
| CDQ2               | -              | -   | 6  | -   | 7   | 7   | 8   | 7   | 8   | 8.5 | 8   | 9  | 10.5 | 11  | 10.5 | -   |
| CD□XW              | B<br>P         | -   | -  | -   | 4.5 | 4.5 | 5   | 4.5 | -   | -   | -   | -  | -    | -   | -    | -   |
|                    |                | 4.5 | -  | -   | 3.5 | 4.5 | 5   | 3.5 | -   | -   | -   | -  | -    | -   | -    | -   |
| CDY1S, CY1L        | 4.5            | 4.5 | -  | 4.5 | -   | 4.5 | 4.5 | 4.5 | 4.5 | -   | -   | -  | -    | -   | -    | -   |
| RSDQ               | -              | -   | -  | -   | -   | 7   | -   | 8   | 7   | 7   | -   | -  | -    | -   | -    | -   |
| MDU                | -              | -   | -  | -   | -   | 7   | 7.5 | 7   | 7   | 7   | -   | -  | -    | -   | -    | -   |
| CXT                | -              | -   | -  | -   | -   | -   | -   | 6   | 6   | -   | -   | -  | -    | -   | -    | -   |
| CE1                | -              | -   | 6  | -   | -   | 7   | -   | 8   | 7   | 8   | 8.5 | -  | -    | -   | -    | -   |
| MK, MK2            | -              | -   | -  | -   | -   | 7   | 7   | 8   | 7   | 8   | 8.5 | -  | -    | -   | -    | -   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style with Diagnostic Output Solid State Switch/Tie-rod Mounting

## D-F59F

### Grommet

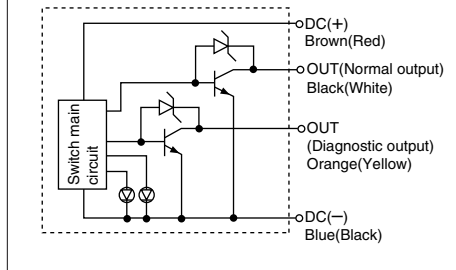
The output signal can be detected in an unsteady detecting area.



### Internal Circuit

( ): If not applicable for IEC

#### Standard



### Applicable Actuator Series

| Series                              | Bore size (mm)                             |
|-------------------------------------|--|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                | ø125, ø140, ø160, ø180, ø200               |
| CE2                                 | ø40, ø50, ø63, ø80, ø100                   |
| MDB                                 | ø32, ø40, ø50, ø63, ø80, ø100              |

### Specifications

PLC: Programmable Logic Controller

| D-F59F                   |   |
|--------------------------|---|
| Auto switch model number | <b>D-F59F</b>   |
| Wiring                   | 4 wire  |
| Output                   | NPN   |
| Diagnostic output        | Normal operation  |
| Application              | IC circuit/Relay/PLC  |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)   |
| Current consumption      | ≤ 10mA  |
| Load voltage             | ≤ 28V DC  |
| Load current             | ≤ 40mA  |
| Internal voltage drop    | ≤ 1.5V (≤ 0.8V at 10mA)   |
| Current leakage          | ≤ 100μA at 24V DC   |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

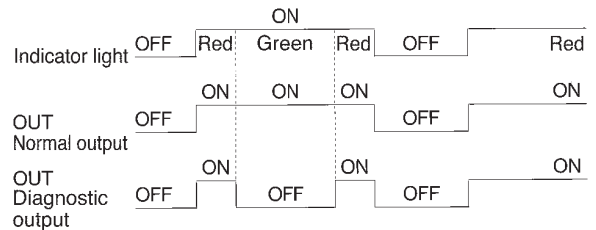
●Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m

Note 1) Refer to common specifications on p.6-18.

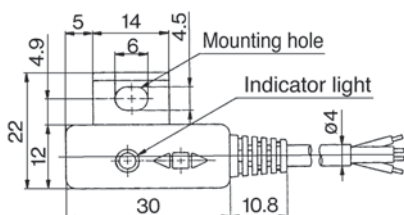
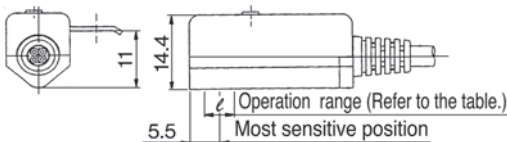
Note 2) Refer to p.6-18 for lead wire length.

### Diagnostic Output Operation

The diagnostic output is detected when detecting position remains at unsteady area only, not available at the most suitable operating area, that is to say, diagnostic signal can be output only when the detecting position is far from the suitable position for normal operation.



### Dimensions



### Operation Range ( l Dimension)

(mm)

| Actuator series                     | Bore size |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     | 32        | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | —         | 5.5 | 5   | 5.5 | 5.5 | 5.5 | —   | —   | —   | —   | —   |
| CDL1                                | —         | 5.5 | 5   | 5.5 | 5.5 | 5.5 | 5.5 | 6   | 6.5 | —   | —   |
| CDS1                                | —         | —   | —   | —   | —   | —   | 5.5 | 6   | 6.5 | 7   | 7   |
| CE2                                 | —         | 5.5 | 5   | 5.5 | 5.5 | 5.5 | —   | —   | —   | —   | —   |
| MDB                                 | 5         | 5.5 | 5.5 | 6   | 6   | 6   | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Water Resistant 2 Colour Indication Style Solid State Switch/Band Mounting

## D-H7BAL

### Grommet

Water (coolant) resistant performance



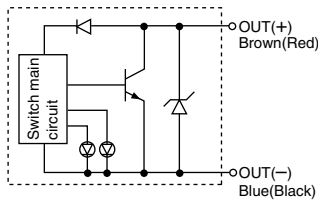
### Caution

#### Precautions

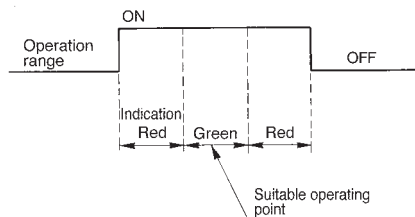
Consult SMC if using coolant liquid other than water based solution.

### Internal Circuit

( ): If not applicable for IEC Standard



### Indicator light/Operation



### Applicable Actuator Series

| Series                                   | Bore size (mm)               |
|--|------------------------------|
| CDJ2                                     | ø6, ø10, ø16                 |
| CDVJ3, 5                                 | ø10, ø16                     |
| CDLJ2                                    | ø16                          |
| CDM2, CDBM2, CDVM3, 5, CDLM2, CDLG1, REC | ø20, ø25, ø32, ø40           |
| CDG1, MGG                                | ø20, ø25, ø32, ø40, ø50, ø63 |
| RSDG                                     | ø40, ø50                     |
| MGC                                      | ø20, ø25, ø32, ø40, ø50      |
| MLGC                                     | ø20, ø25, ø32, ø40           |

### Specifications

PLC: Programmable Logic Controller

#### D-H7BAL (With indicator light)

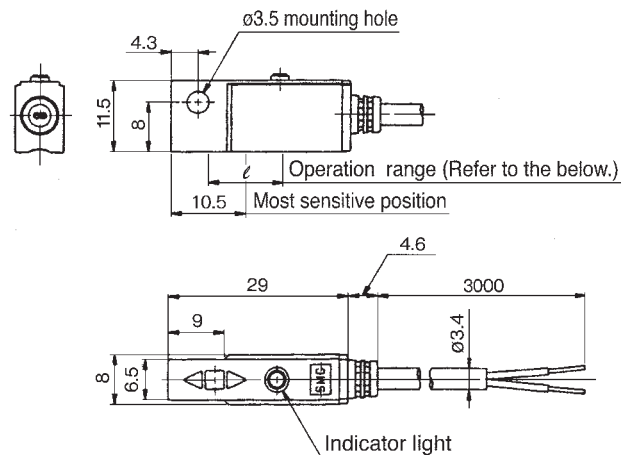
| Auto switch model number | D-H7BAL   |
|--------------------------|---|
| Wiring                   | 2 wire  |
| Output                   | —   |
| Application              | 24V DC Relay/PLC  |
| Power voltage            | —   |
| Current consumption      | —   |
| Load voltage             | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 5 to 40mA   |
| Internal voltage drop    | ≤ 4V  |
| Current leakage          | ≤ 0.8mA at 24V DC   |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 3m (Standard)

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



### Operation Range (ℓ Dimension)

(mm)

| Actuator series                            | Bore size |    |    |    |    |    |     |    |    |     |
|--|-----------|----|----|----|----|----|-----|----|----|-----|
|  | 6         | 10 | 15 | 16 | 20 | 25 | 32  | 40 | 50 | 63  |
| CDJ2                                       | 4         | 5  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDVJ3, 5                                   | —         | 5  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDLJ2                                      | —         | —  | —  | 5  | —  | —  | —   | —  | —  | —   |
| CDM2, CDBM2, CDVM3, 5<br>CDLM2, CDLG1, REC | —         | —  | —  | —  | 5  | 5  | 5.5 | 6  | —  | —   |
| CDG1, MGG                                  | —         | —  | —  | —  | 5  | 5  | 5.5 | 6  | 7  | 7.5 |
| RSDG                                       | —         | —  | —  | —  | —  | —  | —   | 6  | 7  | —   |
| MGC  | —         | —  | —  | —  | 5  | 5  | 5.5 | 6  | 7  | —   |
| RHC, MLGC                                  | —         | —  | —  | —  | 5  | 5  | 5.5 | 6  | —  | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Water Resistant 2 Colour Indication Style Solid State Switch/Band Mounting

## D-G5BAL

### Grommet

Water (coolant) resistant performance



### ⚠ Caution

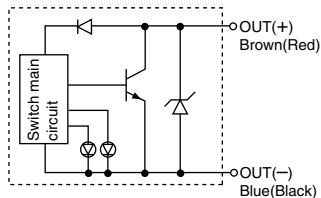
#### Precautions

Consult SMC if using coolant liquid other than water based solution.

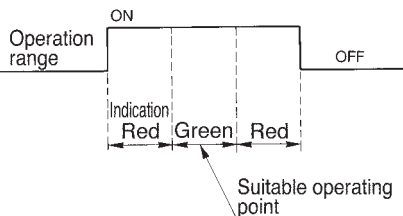
### Internal Circuit

( ): If not applicable for IEC

#### Standard



#### Indicator light/Operation



### Applicable Actuator Series

| Series                                    | Bore size (mm)                          |
|---|---|
| CDG1, MGG                                 | ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CDL1, CNA | ø40*, ø50*, ø63, ø80, ø100              |
| MGC                                       | ø20, ø25, ø32, ø40, ø50                 |
| RHC, MLGC, REC                            | ø20, ø25, ø32, ø40                      |
| CE2                                       | ø40, ø50, ø63, ø80, ø100                |

\* Can not be used for lube type.

### Specifications

PLC: Programmable Logic Controller

#### D-G5BAL (With indicator light)

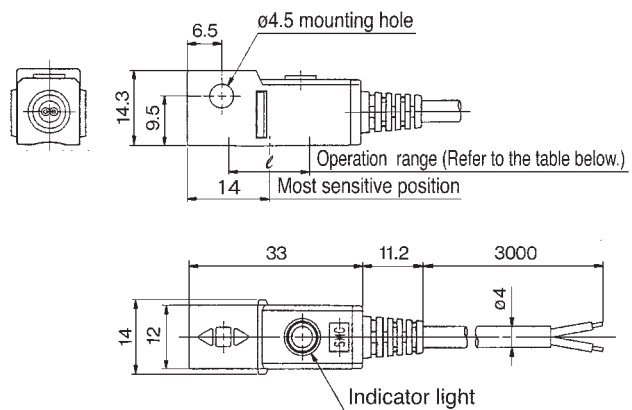
| Auto switch model number | D-G5BAL   |
|--------------------------|---|
| Wiring                   | 2 wire  |
| Output                   | —   |
| Application              | 24V DC Relay/PLC  |
| Power voltage            | —   |
| Current consumption      | —   |
| Load voltage             | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 5 to 40mA   |
| Internal voltage drop    | ≤ 4V  |
| Current leakage          | ≤ 0.8mA at 24V DC   |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 3m (Standard)

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series                           | Bore size (mm) |    |     |    |    |     |     |     |
|---|----------------|----|-----|----|----|-----|-----|-----|
|   | 20             | 25 | 32  | 40 | 50 | 63  | 80  | 100 |
| CDG1, MGG                                 | 5              | 5  | 5.5 | 6  | 7  | 7.5 | 7.5 | 8   |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CDL1, CNA | —              | —  | —   | 6  | 7  | 7.5 | 7.5 | 8   |
| MGC                                       | 5              | 5  | 5.5 | 6  | 7  | —   | —   | —   |
| RHC, MLGC, REC                            | 5              | 5  | 5.5 | 6  | —  | —   | —   | —   |
| CE2                                       | —              | —  | —   | 6  | 7  | 7.5 | 7.5 | 8   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Water Resistant 2 Colour Indication Style Solid State Switch/Rail Mounting

## D-F7BAL

### Grommet

Water (coolant) resistant performance



### ⚠ Caution

#### Precautions

Consult SMC if using coolant liquid other than water based solution.

### Applicable Actuator Series

| Series         | Bore size (mm)  |
|----------------|---|
| CDJ2, CDVJ3, 5 | ø10, ø16  |
| CDQ2           | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160               |
| CD□XW          | Plate mounted(P), ø10, ø16, ø20, ø25, ø32, Husuung mounted(B), ø16, ø20, ø25, ø32 |
| CDY1S, CY1L    | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ           | ø20, ø25, ø32, ø40, ø50   |
| MDU            | ø25, ø32, ø40, ø50, ø63   |
| CE1            | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2        | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT            | ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

#### D-F7BAL (With indicator light)

|                          |   |
|--------------------------|---|
| Auto switch model number | <b>D-F7BAL</b>  |
| Wiring                   | 2 wire  |
| Output                   | —   |
| Application              | 24V DC Relay/PLC  |
| Power voltage            | —   |
| Current consumption      | —   |
| Load voltage             | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 5 to 40mA   |
| Internal voltage drop    | ≤ 4V  |
| Current leakage          | ≤ 0.8mA at 24V DC   |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

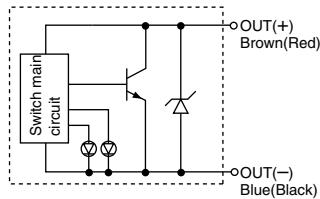
●Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 3m (Standard)

Note 1) Refer to common specifications on p.6-18.

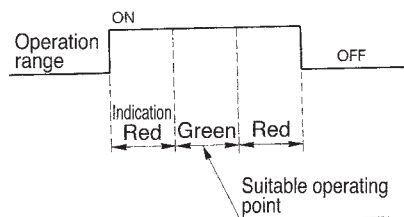
Note 2) Refer to p.6-18 for lead wire length.

### Internal Circuit

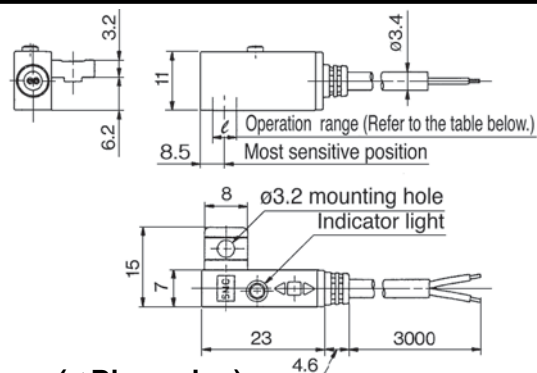
( ): If not applicable for IEC Standard



### Indicator light/Operation



### Dimensions



### Operation Range (ℓ Dimension)

(mm)

| Actuator series | Bore size |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|-----------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                 | 6         | 10 | 12  | 15 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ3, 5  | —         | 5  | —   | —  | 5  | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   | —   |
| CDQ2            | —         | —  | 5.5 | —  | 6  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | 6.5 | 7   | 9   | 9   | 8.5 |
| CD□XW           | B<br>P    | —  | —   | —  | —  | 4   | 3.5 | 3.5 | 4   | —   | —   | —   | —   | —   | —   | —   |
|                 |           | 3  | —   | —  | —  | 2.5 | 3.5 | 2.5 | —   | —   | —   | —   | —   | —   | —   | —   |
| CDY1S, CY1L     | 3         | 3  | —   | 4  | —  | 3   | 3   | 3   | 3.5 | —   | —   | —   | —   | —   | —   | —   |
| RSDQ            | —         | —  | —   | —  | —  | 5.5 | —   | 6   | 6   | 6   | —   | —   | —   | —   | —   | —   |
| MDU             | —         | —  | —   | —  | —  | —   | 6.5 | 7   | 6.5 | 6.5 | 6.5 | —   | —   | —   | —   | —   |
| CE1             | —         | —  | 5.5 | —  | —  | 5.5 | —   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| MK, MK2         | —         | —  | —   | —  | —  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | —   | —   | —   | —   | —   |
| CXT             | —         | —  | —   | —  | —  | —   | —   | 6   | 6   | —   | —   | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# Water Resistant 2 Colour Indication Style Solid State Switch/Tie-rod Mounting

## D-F5BAL

### Grommet

Water (coolant) resistant performance



### Caution

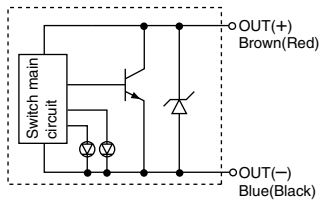
#### Precautions

Consult SMC if using coolant liquid other than water based solution.

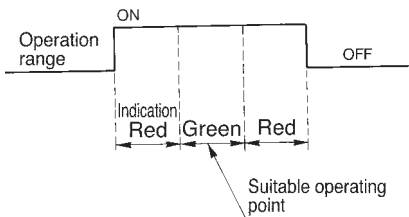
### Internal Circuit

( ): If not applicable for IEC

#### Standard



#### Indicator light/Operation



### Applicable Actuator Series

| Series                              | Bore size (mm)                             |
|-------------------------------------|--|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                | ø125, ø140, ø160, ø180, ø200               |
| CE2                                 | ø40, ø50, ø63, ø80, ø100                   |
| MDB                                 | ø32, ø40, ø63, ø80, ø100                   |

### Specifications

PLC: Programmable Logic Controller

#### D-F5BAL (With indicator light)

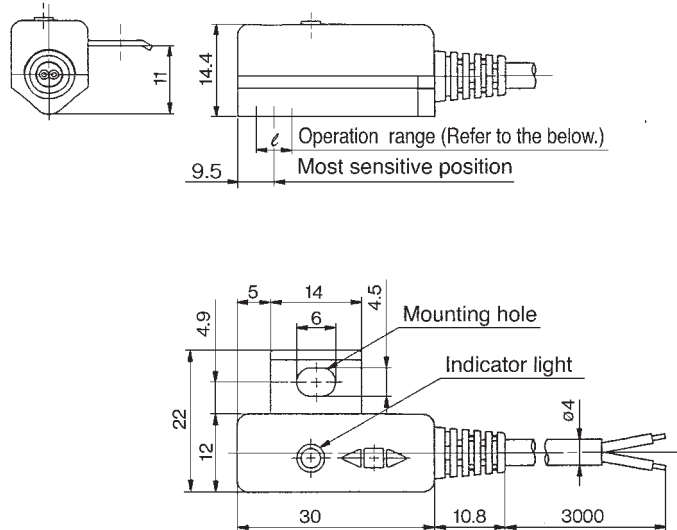
| Auto switch model number | D-F5BAL   |
|--------------------------|---|
| Wiring                   | 2 wire  |
| Output                   | —   |
| Application              | 24V DC Relay/PLC  |
| Power voltage            | —   |
| Current consumption      | —   |
| Load voltage             | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 5 to 40mA   |
| Internal voltage drop    | ≤ 4V  |
| Current leakage          | ≤ 0.8mA at 24V DC   |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

●Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 3m (Standard)

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



### Operation Range ( ℓ Dimension)

(mm)

| Actuator series                     | Bore size |    |    |     |     |     |     |     |     |     |     |
|-------------------------------------|-----------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     | 32        | 40 | 50 | 63  | 80  | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | —         | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| CDL1                                | —         | 4  | 4  | 4.5 | 4.5 | 4.5 | 5   | 5   | 5.5 | —   | —   |
| CDS1                                | —         | —  | —  | —   | —   | —   | 5   | 5   | 5.5 | 6   | 6   |
| CE2                                 | —         | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| MDB                                 | 3.5       | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch with Timer/Band Mounting

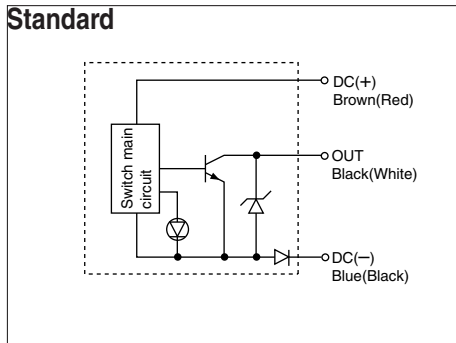
## D-G5NTL

### Grommet

With built-in OFF-delay timer (200ms)



**Internal Circuit**  
( ): If not applicable for IEC Standard



### Applicable Actuator Series

| Series                                    | Bore size (mm)                          |
|---|---|
| CDM2, CDBM2, CDVM3, 5, CDLM2, CDLG1       | ø20, ø25, ø32, ø40                      |
| CDG1, MGG                                 | ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CDL1, CNA | ø40, ø50, ø63, ø80, ø100                |
| MGC                                       | ø20, ø25, ø32, ø40, ø50                 |
| RHC, MLGC, REC                            | ø20, ø25, ø32, ø40                      |
| CE2                                       | ø40, ø50, ø63, ø80, ø100                |

### Specifications

PLC: Programmable Logic Controller

#### D-G5NTL (With indicator light)

| Auto switch model number | D-G5NTL                           |
|--------------------------|-----------------------------------|
| Wiring                   | 3 wire                            |
| Output                   | NPN                               |
| Output operation         | Off-delay                         |
| Operation time           | ≤ 1ms                             |
| Off-delay time           | 200±50ms                          |
| Application              | IC circuit/Relay/PLC              |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)       |
| Current consumption      | ≤ 10mA                            |
| Load voltage             | ≤ 28V DC                          |
| Load current             | ≤ 80mA                            |
| Internal voltage drop    | ≤ 2V (≤ 0.8V at 10mA)             |
| Current leakage          | ≤ 100μA at 24V DC                 |
| Indicator light          | ON: When red light emitting diode |

●Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 3m (Standard)  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

### Timer Operation

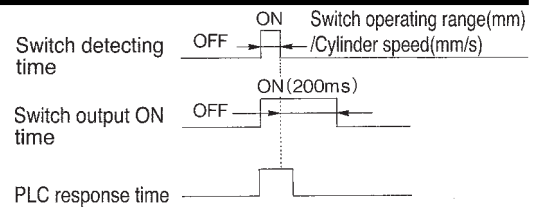
#### Detection of immediate positioning for high-speed cylinder

Detecting point dispersion occurs due to response time of PLC (sequencer); e. g. scanning.  
Ex.)Cylinder speed - 1000 mm/sec.

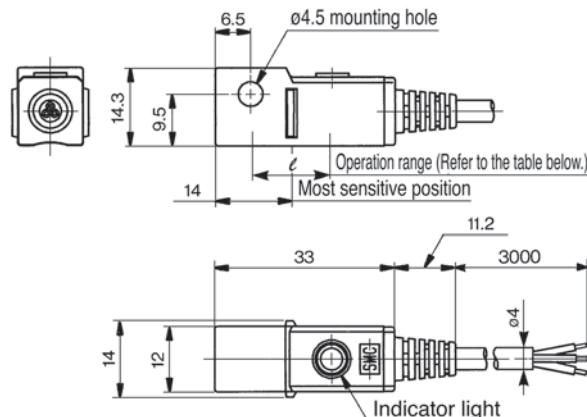
Sequencer response time - 0.1 sec.

Detecting point dispersion - Within 100mm (= 1000mm/sec. X 0.1 sec.)

Take PLC response time into consideration when using.



### Dimensions



### Operation Range ( ℓ Dimension)

| Actuator series                           | Bore size |    |     |    |    |     |     |     |
|---|-----------|----|-----|----|----|-----|-----|-----|
|   | 20        | 25 | 32  | 40 | 50 | 63  | 80  | 100 |
| CDM2, CDBM2, CDVM3, 5, CDLM2, CDLG1       | 4         | 4  | 4.5 | 5  | —  | —   | —   | —   |
| CDG1, MGG                                 | 4         | 4  | 4.5 | 5  | 6  | 6.5 | 6.5 | 7   |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CDL1, CNA | —         | —  | —   | 5  | 6  | 6.5 | 6.5 | 7   |
| MGC                                       | 4         | 4  | 4.5 | 5  | 6  | —   | —   | —   |
| RHC, MLGC, REC                            | 4         | 4  | 4.5 | 5  | —  | —   | —   | —   |
| CE2                                       | —         | —  | —   | 5  | 6  | 6.5 | 6.5 | 7   |

(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch with Timer/Rail Mounting

## D-F7NTL

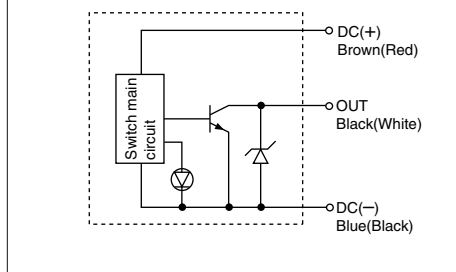
### Grommet

With built-in OFF-delay timer (200ms)



### Internal Circuit

( ): If not applicable for IEC Standard



### Applicable Actuator Series

| Series         | Bore size (mm)  |
|----------------|---|
| CDJ2, CDVJ3, 5 | ø10, ø16  |
| CDQ2           | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160               |
| CD□XW          | Plate mounted(P), ø10, ø16, ø20, ø25, ø32, Housing mounted(B), ø16, ø20, ø25, ø32 |
| CDY1S, CY1L    | ø6, ø10, ø15, ø20, ø25, ø32, ø40  |
| RSDQ           | ø20, ø25, ø32, ø40, ø50   |
| MDU            | ø25, ø32, ø40, ø50, ø63   |
| CE1            | ø12, ø20, ø32, ø40, ø50, ø63  |
| MK, MK2        | ø20, ø25, ø32, ø40, ø50, ø63  |
| CXT            | ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

#### D-F7NTL (With indicator light)

| Auto switch model number | D-F7NTL                           |
|--------------------------|-----------------------------------|
| Wiring                   | 3 wire                            |
| Output                   | NPN                               |
| Output operation         | Off-delay                         |
| Operation time           | ≤ 1ms                             |
| Off-delay time           | 200±50ms                          |
| Application              | IC circuit/Relay/PLC              |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)       |
| Current consumption      | ≤ 10mA                            |
| Load voltage             | ≤ 28V DC                          |
| Load current             | ≤ 80mA                            |
| Internal voltage drop    | ≤ 1.5V (≤0.8V at 10mA)            |
| Current leakage          | ≤ 100μ A at 24V DC                |
| Indicator light          | ON: When red light emitting diode |

●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 3m (Standard)

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Timer Operation

#### Detection of immediate positioning for high-speed cylinder

Detecting point dispersion occurs due to response time of PLC (sequencer); e. g. scanning.

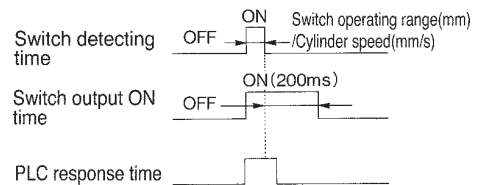
Ex.) Cylinder speed-1000 mm/sec.

Sequencer response time-0.1 sec.

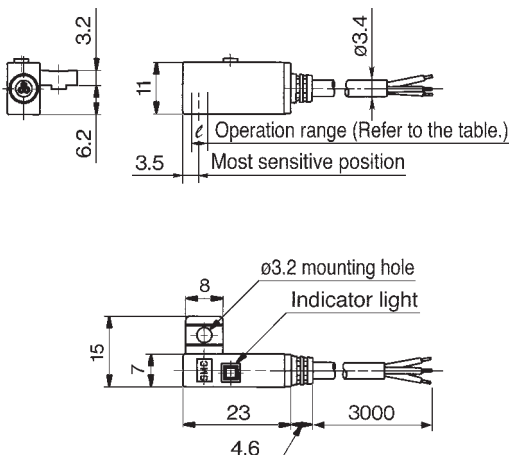
Detecting point dispersion-Within

100mm (=1000mm/sec. X 0.1sec.)

Take PLC response time into consideration when using.



### Dimensions



### Operation Range (∠ Dimension)

| Actuator series | Bore size (mm) |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|----------------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                 | 6              | 10 | 12  | 15 | 16 | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 |
| CDJ2, CDVJ3, 5  | -              | 5  | -   | -  | 5  | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |
| CDQ2            | -              | -  | 5.5 | -  | 6  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | 6.5 | 7   | 9   | 9   | 8.5 |
| CD□XW           | B              | -  | -   | -  | -  | 4   | 3.5 | 3.5 | 4   | -   | -   | -   | -   | -   | -   | -   |
|                 |                | P  | 3   | -  | -  | 2.5 | 3.5 | 2.5 | -   | -   | -   | -   | -   | -   | -   | -   |
| CDY1S, CY1L     | 3              | 3  | -   | 4  | -  | 3   | 3   | 3   | 3.5 | -   | -   | -   | -   | -   | -   | -   |
| RSDQ            | -              | -  | -   | -  | -  | 5.5 | -   | 6   | 6   | 6   | -   | -   | -   | -   | -   | -   |
| MDU             | -              | -  | -   | -  | -  | -   | 6.5 | 7   | 6.5 | 6.5 | 6.5 | -   | -   | -   | -   | -   |
| CE1             | -              | -  | 5.5 | -  | -  | 5.5 | -   | 6   | 6   | 6   | 6.5 | -   | -   | -   | -   | -   |
| MK, MK2         | -              | -  | -   | -  | -  | 5.5 | 5   | 6   | 6   | 6   | 6.5 | -   | -   | -   | -   | -   |
| CXT             | -              | -  | -   | -  | -  | -   | -   | 6   | 6   | -   | -   | -   | -   | -   | -   | -   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch with Timer/Tie-rod Mounting

## D-F5NTL

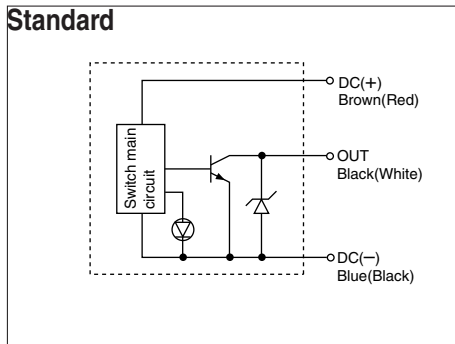
### Grommet

With built-in OFF-delay timer (200ms)



### Internal Circuit

( ): If not applicable for IEC Standard



### Applicable Actuator Series

| Series                              | Bore size (mm)                             |
|-------------------------------------|--|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                | ø125, ø140, ø160, ø180, ø200               |
| CE2                                 | ø40, ø50, ø63, ø80, ø100                   |
| MDB                                 | ø32, ø40, ø63, ø80, ø100                   |

### Specifications

PLC: Programmable Logic Controller

### D-F5NTL (With indicator light)

| Auto switch model number | D-F5NTL                           |
|--------------------------|-----------------------------------|
| Wiring                   | 3 wire                            |
| Output                   | NPN                               |
| Output operation         | Off-delay                         |
| Operation time           | ≤ 1ms                             |
| Off-delay time           | 200±50ms                          |
| Application              | IC circuit/Relay/PLC              |
| Power voltage            | 5/12/24V DC (4.5 to 28V DC)       |
| Current consumption      | ≤ 10mA                            |
| Load voltage             | ≤ 28V DC                          |
| Load current             | ≤ 80mA                            |
| Internal voltage drop    | ≤ 1.5V (≤ 0.8V at 10mA)           |
| Current leakage          | ≤ 100μA at 24V DC                 |
| Indicator light          | ON: When red light emitting diode |

● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 3m (Standard)  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

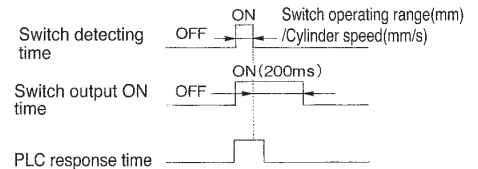
### Timer Operation

#### Detection of immediate positioning for high-speed cylinder

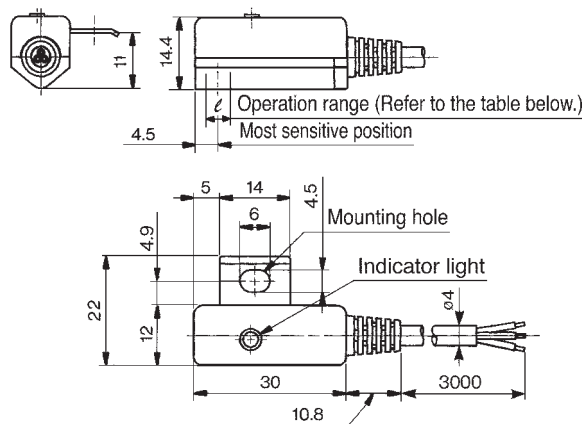
Detecting point dispersion occurs due to response time of PLC (sequencer); e. g. scanning.

Ex.) Cylinder speed-1000 mm/sec.  
 Sequencer response time-0.1 sec.  
 Detecting point dispersion-Within 100mm (=1000mm/sec. X 0.1sec.)

Take PLC response time into consideration when using.



### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series                     | Bore size (mm) |    |    |     |     |     |     |     |     |     |     |
|-------------------------------------|----------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     | 32             | 40 | 50 | 63  | 80  | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| CDL1                                | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | 5   | 5   | 5.5 | —   | —   |
| CDS1                                | —              | —  | —  | —   | —   | —   | 5   | 5   | 5.5 | 6   | 6   |
| CE2                                 | —              | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |
| MDB                                 | 3.5            | 4  | 4  | 4.5 | 4.5 | 4.5 | —   | —   | —   | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch with Timer/Direct Mounting

## D-M5NTL/D-M5PTL

### Grommet

With built-in OFF-delay timer  
(200ms)



### Applicable Actuator Series

| Series | Bore size (mm) |
|--------|----------------|
| MYC    | ø25, ø32, ø40  |
| MYH    | ø25, ø32, ø40  |
| ML1    | ø25, ø32, ø40  |

### Specifications

PLC: Programmable Logic Controller

| D-M5□TL (With indicator light) |                                       |         |
|--------------------------------|---------------------------------------|---------|
| Auto switch model number       | D-M5NTL                               | D-M5PTL |
| Wiring                         | 3 wire                                |         |
| Output                         | NPN                                   | PNP     |
| Output operation               | Off-delay                             |         |
| Operation time                 | ≤ 1ms                                 |         |
| Off-delay time                 | 200±50ms                              |         |
| Application                    | IC circuit/Relay/PLC                  |         |
| Power voltage                  | 5/12/24V DC (4.5 to 28V DC)           |         |
| Current consumption            | ≤ 10mA                                | ≤ 12mA  |
| Load voltage                   | ≤ 28V DC                              | —       |
| Load current                   | ≤ 80mA                                |         |
| Internal voltage drop          | ≤ 2V<br>(≤ 0.8V at 10mA load current) | ≤ 0.8V  |
| Current leakage                | 100μA or less at 24V DC               |         |
| Indicator light                | ON: When red light emitting diode     |         |

●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 3m (Standard)  
Note 1) Refer to common specifications on the p.6-18.  
Note 2) Refer to the p.6-18 for lead wire length.

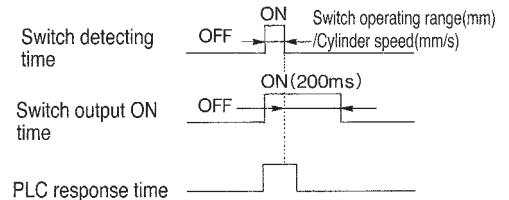
### Timer Operation

#### Detection of immediate positioning for high-speed cylinder

Detecting point dispersion occurs due to response time of PLC (sequencer); e. g. scanning.

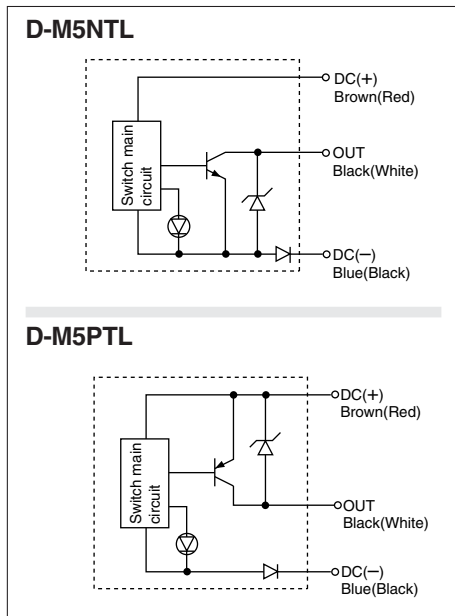
Ex.) Cylinder speed-1000 mm/sec.  
Sequencer response time-0.1 sec.  
Detecting point dispersion-Within  
100mm (=1000 mm/sec. X 0.1sec.)

Take PLC response time into consideration when using.

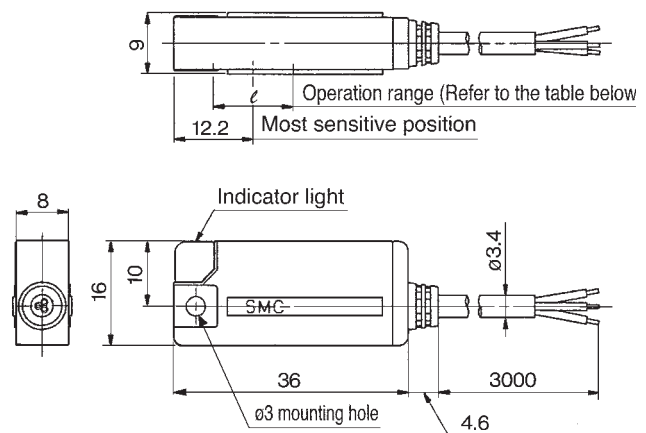


### Internal Circuit

( ): If not applicable for IEC Standard



### Dimensions



### Operation Range ( ℓ Dimension)

| Actuator series | Bore size (mm) |    |    |
|-----------------|----------------|----|----|
|                 | 25             | 32 | 40 |
| MYC             | 4              | 4  | 4  |
| MYH             | 4              | 4  | 4  |
| ML1             | 4              | 4  | 4  |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Water Resistant 2 Colour Indication Style Solid State Switch/Direct Mounting

## D-Y7BAL

### Grommet

Improved coolant-resistant performance



### Caution

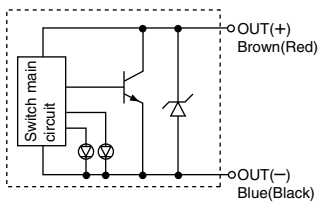
#### Precautions

Consult SMC if using coolant liquid other than water based solution.

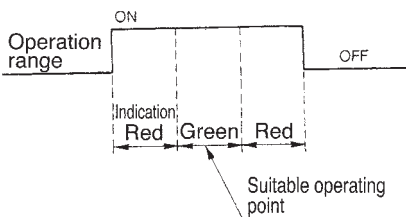
### Internal Circuit

( ): If not applicable for IEC

#### Standard



#### Indicator light/Operation



### Applicable Actuator Series

| Series    | Bore size (mm)                                    |
|-----------|---|
| CXS       | ø6, ø10, ø15, ø20, ø25, ø32                       |
| MGQ, MVGQ | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| MGP       | ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100 |
| RSH       | ø20, ø32, ø50, ø63, ø80                           |

### Specifications

PLC: Programmable Logic Controller

#### D-Y7BAL (With indicator light)

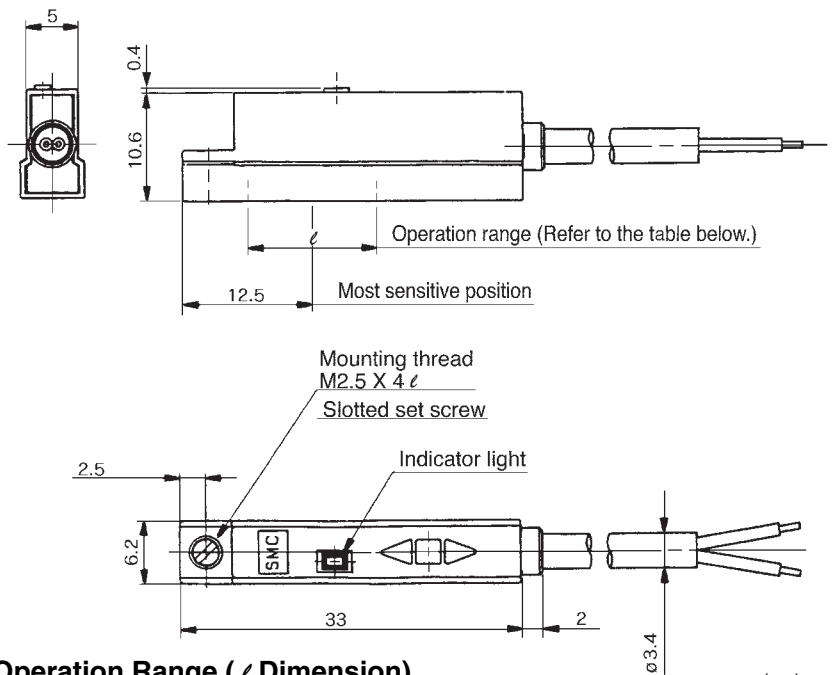
| Auto switch model number | D-Y7BAL   |
|--------------------------|---|
| Wiring                   | 2 wire  |
| Application              | 24V DC Relay/PLC  |
| Load voltage             | 24V DC (10 to 28V DC)   |
| Load current             | ≤ 5 to 40mA   |
| Internal voltage drop    | ≤ 4V  |
| Current leakage          | ≤ 0.8mA at 24V DC   |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.15mm<sup>2</sup>, 2 cores (Brown, Blue), 3m (Standard)

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



### Operation Range (ℓ Dimension)

| Actuator series | Bore size (mm) |    |     |     |    |     |    |     |    |     |     |    |     |
|-----------------|----------------|----|-----|-----|----|-----|----|-----|----|-----|-----|----|-----|
|                 | 6              | 10 | 12  | 15  | 16 | 20  | 25 | 32  | 40 | 50  | 63  | 80 | 100 |
| CXS             | 4              | 4  | —   | 5.5 | —  | 5.5 | 6  | 6   | —  | —   | —   | —  | —   |
| MGQ, MVGQ       | —              | —  | 4   | —   | 5  | 5   | 5  | —   | —  | —   | —   | —  | —   |
| MGP             | —              | —  | 3.5 | —   | 5  | 5   | 5  | 6   | 6  | 6   | 6   | 6  | 6.5 |
| RSH             | —              | —  | —   | —   | —  | 7.5 | —  | 5.5 | —  | 7.5 | 7.5 | 9  | —   |
| MGF             | —              | —  | —   | —   | —  | —   | —  | —   | 9  | —   | 5   | —  | 7.5 |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Strong Magnetic Field Resistant 2 Colours Indication Style Solid State Switch/Rail Mounting

## D-P5DWL

### Grommet

Possible to use in an environment where disturbance magnetic field is generated.



### Caution

#### Precautions

Monophase current welding. Not applicable for DC inverter welding, arc welding nor capacitor welding.

### Applicable Actuator Series

| Series              | Bore size(mm)            |
|---------------------|--------------------------|
| <b>CDQ2</b>         | ø40, ø50, ø63, ø80, ø100 |
| <b>CDA1</b>         | ø40, ø50, ø63, ø80, ø100 |
| <b>MK, MK2, MDU</b> | ø40, ø50, ø63            |

### Specifications

PLC: Programmable Logic Controller

| D-P5DW (With indicator light) |   |
|-------------------------------|---|
| Auto switch model number      | <b>D-P5DWL</b>  |
| Wiring                        | 2 wire (Non-polar)  |
| Application                   | 24V DC Relay/PLC  |
| Load voltage                  | 24V DC (20 to 28V DC)   |
| Load current                  | 6 to 40mA   |
| Internal voltage drop         | ≤ 5V  |
| Current leakage               | ≤ 1mA at 24V DC   |
| Operation time                | ≤ 40ms  |
| Indicator light               | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

● Lead wire — Oilproof vinyl heavy insulation cable, ø6, 0.5mm<sup>2</sup>, 2 cores (Brown, Blue), 3m

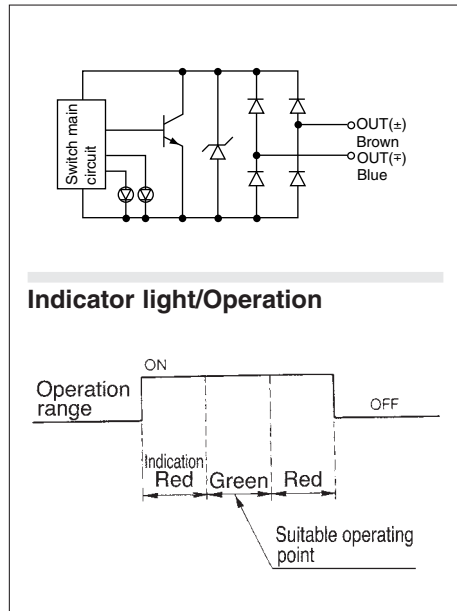
Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

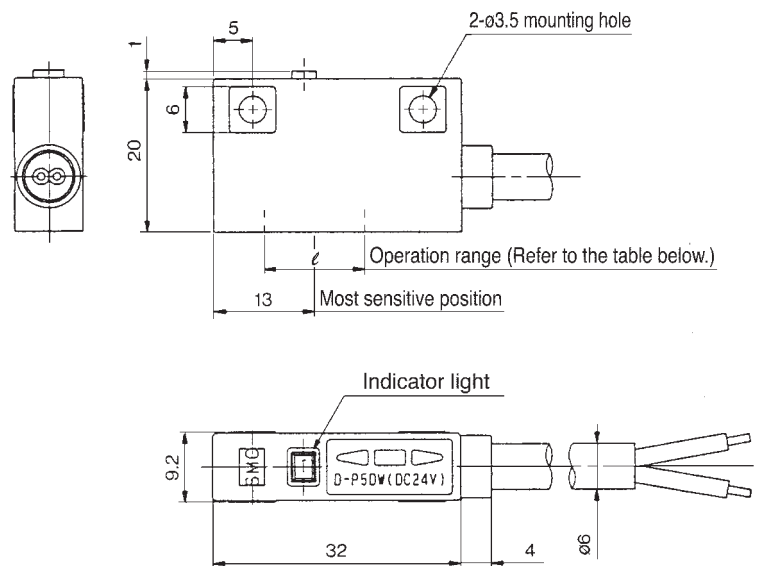
### Strong Magnetic Field Resistance

It is possible to use switches next to welding conductor (gun cable) in case that A. C. welding current is ≤ 16,000A. Consult SMC if exceeding 16,000A.

### Internal Circuit



### Dimensions



### Operation Range(ℓ Dimension)

(mm)

| Actuator series | Bore size |    |     |    |     |
|-----------------|-----------|----|-----|----|-----|
|                 | 40        | 50 | 63  | 80 | 100 |
| <b>CDQ2</b>     | 5         | 5  | 5   | 5  | 5.5 |
| <b>CDA1</b>     | 4         | 4  | 4.5 | 4  | 4.5 |
| <b>MDL</b>      | 5         | 5  | 5   | —  | —   |
| <b>MK, MK2</b>  | 5         | 5  | 5   | —  | —   |



# 2 Colour Indication Style with Diagnostic Output Solid State Switch/Tie-rod Mounting **D-F5LF (Latching Style)**

## Grommet

The output signal can be detected in an unsteady detecting area.



## Applicable Actuator Series

| Series                              | Bore size(mm)                              |
|-------------------------------------|--|
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | ø40, ø50, ø63, ø80, ø100                   |
| CDL1                                | ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160 |
| CDS1                                | ø125, ø140, ø160, ø180, ø200               |
| CE2                                 | ø40, ø50, ø63, ø80, ø100                   |
| MDB                                 | ø32, ø40, ø63, ø80, ø100                   |

## Specifications

PLC: Programmable Logic Controller

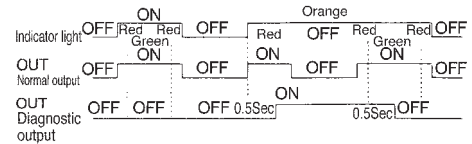
### D-F5LF (With indicator light)

| Auto switch model number | D-F5LF   |
|--------------------------|--|
| Wiring                   | 4 wire   |
| Output                   | NPN  |
| Diagnostic output        | Latching operation   |
| Application              | 24V DC Relay/PLC   |
| Power voltage            | 24V DC (10 to 26V DC)  |
| Current consumption      | 20mA   |
| Load voltage             | ≤ 26V DC   |
| Load current             | ≤ 40mA   |
| Internal voltage drop    | ≤ 0.8V   |
| Current leakage          | ≤ 100μA at 24V DC  |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode<br>Orange colour indicator lights on when diagnostic output is ON. |

●Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18. Note 2) Refer to p.6-18 for lead wire length.

## Diagnostic Output Operation (Latching Style)

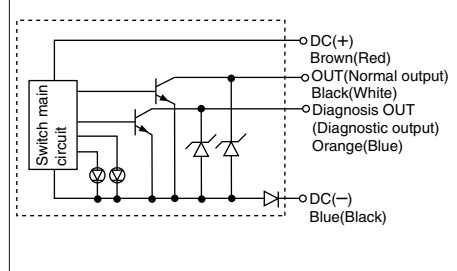
The diagnostic signal is output when detecting position remains within unsteady area (where indicator light is Red.) for more than 0.5 sec. This signal keeps outputting even after normal output goes to OFF. The diagnostic output becomes OFF when detecting position remains within the most suitable operating range (where indicator light is Green.) for more than 0.5 sec.



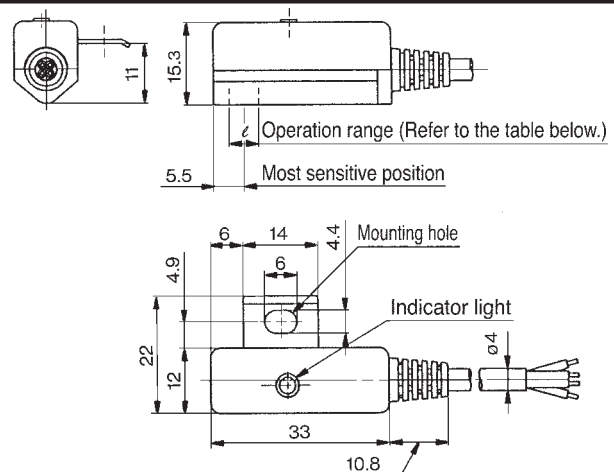
## Internal Circuit

( ): If not applicable for IEC

### Standard



## Dimensions



## Operation Range ( l Dimension)

| Actuator series                     | Bore size |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     | 32        | 40  | 50  | 63  | 80  | 100 | 125 | 140 | 160 | 180 | 200 |
| CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA | —         | 5.5 | 5   | 5.5 | 5.5 | 5.5 | —   | —   | —   | —   | —   |
| CDL1                                | —         | 5.5 | 5   | 5.5 | 5.5 | 5.5 | 5.5 | 6   | 6.5 | —   | —   |
| CDS1                                | —         | —   | —   | —   | —   | —   | 5.5 | 6   | 6.5 | 7   | 7   |
| CE2                                 | —         | 5.5 | 5   | 5.5 | 5.5 | 5.5 | —   | —   | —   | —   | —   |
| MDB                                 | 5         | 5.5 | 5.5 | 6   | 6   | 6   | —   | —   | —   | —   | —   |

(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# 2 Colour Indication Style Solid State Switch/Direct Mounting

## D-M9NW(V)/D-M9PW(V)/D-M9BW(V)

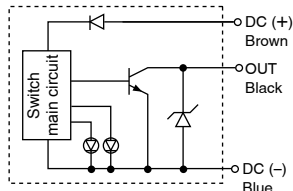
### Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Use of lead wire compliant with UL standards (style 2844)
- 1.5 times the flexibility compared with conventional products (comparison with other SMC products)
- Using fl exible cable as standard spec.
- The proper operating range can be determined by the colour of the light. (Red → Green → Red)

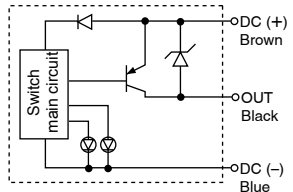


### Auto Switch Internal Circuit

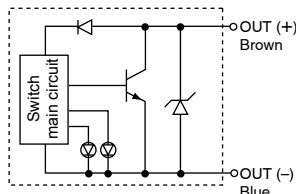
#### D-M9NW(V)



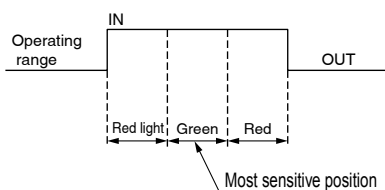
#### D-M9PW(V)



#### D-M9BW(V)



### Indicator light



### Auto Switch Specifications

PLC: Programmable Logic Controller

| D-M9□W/D-M9□WV (with indicator light) |  |               |         |               |                       |               |
|---------------------------------------|--|---------------|---------|---------------|-----------------------|---------------|
| Switch model                          | D-M9NW   | D-M9NWV       | D-M9PW  | D-M9PWV       | D-M9BW                | D-M9BWV       |
| 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 V DC (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 A or less at 24 VDC  |               |         |               | 0.8 mA or less        |               |
| Indicator light                       | Betriebsposition ..... rote LED leuchtet<br>optimale Schaltposition ..... grüne LED leuchtet |               |         |               |                       |               |
| Standard                              | CE marking   |               |         |               |                       |               |

- Lead wire ..... Oil proof heavy duty vinyl cord: 2.7 x 3.2 ellipse  
D-M9BW(V) 0.15 mm<sup>2</sup> x 2 cores  
D-M9NW(V), D-M9PW(V) 0.15 mm<sup>2</sup> x 3 cores

Note 1) Refer to page 4-48 for solid state auto switch common specifications and lead wire length.

### Weight

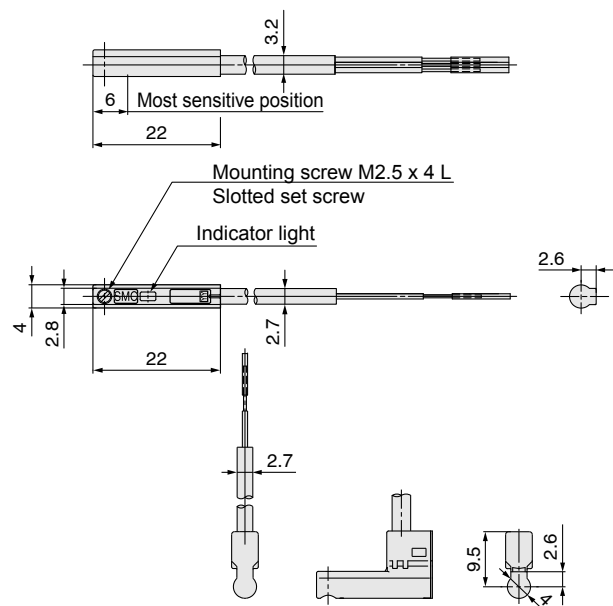
g

| Auto switch model  | D-M9NW(V) | D-M9PW(V) | D-M9BW(V) |    |
|--------------------|-----------|-----------|-----------|----|
| Lead wire length m | 0.5       | 8         | 8         | 7  |
|                    | 1         | 14        | 14        | 13 |
|                    | 3         | 41        | 41        | 38 |
|                    | 5         | 68        | 68        | 63 |

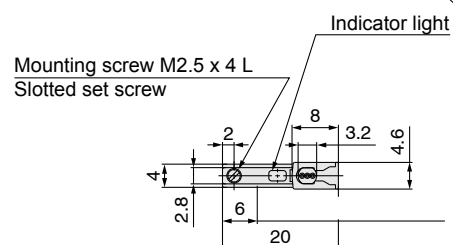
### Dimensions

mm

#### D-M9□W



#### D-M9□WV



# Water Resistant 2 Colour Indication Style Solid State Switch/Direct Mounting

## D-M9BAL

### Grommet

Water (coolant) resistant performance



### ⚠ Caution

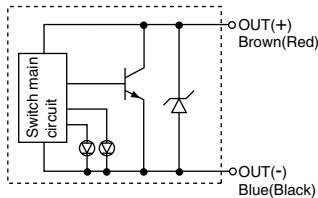
#### Precautions

Consult SMC if using coolant liquid other than water based solution.

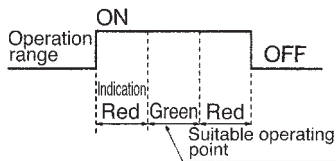
### Internal Circuit

( ): If not applicable for IEC

#### Standard



#### Indicator light/Operation



### Applicable Actuator Series

| Series | Bore size (mm)                |
|--------|-------------------------------|
| CDU    | ø6, ø10, ø16, ø20, ø25, ø32   |
| CDQ2*  | ø32, ø40, ø50, ø63, ø80, ø100 |
| CDQS   | ø12, ø16, ø20, ø25            |
| MK     | ø12, ø16                      |
| MK2    | ø32, ø40, ø50, ø63            |

\*Not available for series CDQP2

### Specifications

PLC: Programmable Logic Controller

#### D-M9BAL (With indicator light)

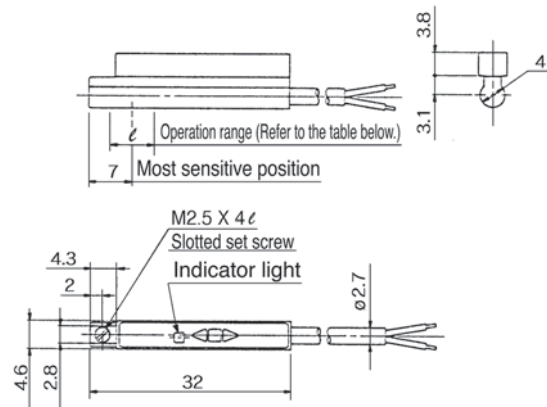
| Auto switch model number | D-M9BAL   |
|--------------------------|---|
| Wiring                   | 2 wire  |
| Output                   | —   |
| Application              | 24V DC Relay/PLC  |
| Power voltage            | —   |
| Current consumption      | —   |
| Load voltage             | 24V DC (20 to 28V DC)   |
| Load current             | 5 to 30mA   |
| Internal voltage drop    | ≤ 5V  |
| Current leakage          | ≤ 1mA at 24V DC   |
| Indicator light          | Operating point: Red light emitting diode<br>Suitable operating point: Green light emitting diode |

●Lead wire — Oilproof vinyl heavy insulation cable, ø2.7, 2 cores (Brown, Blue), 0.18mm<sup>2</sup>, 0.5m

Note 1) Refer to common specifications on p.6-18.

Note 2) Refer to p.6-18 for lead wire length.

### Dimensions



### Operation Range ( ℓ Dimension)

(mm)

| Actuator series           | Bore size |   |     |    |    |     |     |     |     |     |     |     |     |     |
|---------------------------|-----------|---|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                           | 6         | 8 | 10  | 12 | 15 | 16  | 20  | 25  | 32  | 40  | 50  | 63  | 80  | 100 |
| CDU(Without shield plate) | 3         | — | 3.5 | —  | —  | 5.5 | 6.5 | 7   | 7   | —   | —   | —   | —   | —   |
| CDQ2                      | —         | — | —   | —  | —  | —   | —   | —   | 5.5 | 5.5 | 5.5 | 6.5 | 5.5 | 6.5 |
| CDQS                      | —         | — | —   | 3  | —  | 4   | 5   | 5.5 | —   | —   | —   | —   | —   | —   |
| MK                        | —         | — | —   | 3  | —  | 4   | —   | —   | —   | —   | —   | —   | —   | —   |
| MK2                       | —         | — | —   | —  | —  | —   | —   | —   | 5.5 | 5.5 | 5.5 | 6.5 | —   | —   |

Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)

# Solid State Switch with Prewired Connector

## D-□□□PC

- Eliminates harnessing work by using a cable with a pre-wired connector specification.
- Adopts global standardised connector (IEC947-5-2).
- IP67 construction



### How to Order

## D-M9N S A PC

**Solid state switch standard model no.**

\* For applicable auto switch models, refer to the table below.

**Cable length**

|          |       |
|----------|-------|
| <b>S</b> | 0.5 m |
| <b>M</b> | 1.0 m |
| <b>L</b> | 3.0 m |

Note) L is available for the D-P4DW, D-M9N, D-M9P and D-M9B types

**Connector type**

|          |            |
|----------|------------|
| <b>A</b> | M8-3 pins  |
| <b>B</b> | M8-4 pins  |
| <b>D</b> | M12-4 pins |

Note 1) Only D is available with the D-P4DW type.

Note 2) D-M9NL, D-M9PL and D-M9BL types are only available with M8-3 pin connector

### Connector Specifications

| Connector type        | M8-3 pins  | M8-4 pins | M12-4 pins |
|-----------------------|--|-----------|------------|
| Pin arrangement       |  |           |            |
| Conformed standard    | JIS C 4524, JIS C 4525, IEC 947-5-2, NECA 0402                         |           |            |
| Impact resistance     | 300 m/s <sup>2</sup>   |           |            |
| Enclosure             | IP67 (IEC60529 standard)   |           |            |
| Insulation resistance | 100 MΩ or more (at 500 VDC measured via Megohmmeter)                   |           |            |
| Withstand voltage     | 1500 VAC for 1 minute (between contacts), Leakage current 1 mA or less |           |            |

### Applicable Auto Switches

| Mounting                 | Function               | Electrical entry        | Applicable model        | Lead wire length (m) |     |     |
|--------------------------|------------------------|-------------------------|-------------------------|----------------------|-----|-----|
|                          |                        |                         |                         | 0.5                  | 1.0 | 3.0 |
| Rail mounting style      | —                      | Grommet (In-line)       | <b>F79, F7P, J79</b>    | ●                    | ●   | —   |
|                          |                        | Grommet (Perpendicular) | <b>F7NV, F7PV, F7BV</b> | ●                    | ●   | —   |
|                          | 2-colour indication    | Grommet (In-line)       | <b>F79W, F7PW, J79W</b> | ●                    | ●   | —   |
|                          |                        | Grommet (Perpendicular) | <b>F7NWX, F7BWX</b>     | ●                    | ●   | —   |
|                          | With diagnostic output | Grommet (In-line)       | <b>F79F</b>             | ●                    | ●   | —   |
|                          | Water resistant        | Grommet (In-line)       | <b>F7BA</b>             | ●                    | ●   | —   |
|                          |                        | Grommet (Perpendicular) | <b>F7BAV</b>            | ●                    | ●   | —   |
|                          | With timer             | Grommet (In-line)       | <b>F7NT</b>             | ●                    | ●   | —   |
| Magnetic field resistant | Grommet (In-line)      | <b>P4DW</b>             | ●                       | ●                    | ●   |     |
| Band mounting style      | —                      | Grommet (In-line)       | <b>H7A1, H7A2, H7B</b>  | ●                    | ●   | —   |
|                          |                        | Grommet (Perpendicular) | <b>G59, G5P, K59</b>    | ●                    | ●   | —   |
|                          | 2-colour indication    | Grommet (In-line)       | <b>H7NW, H7PW, H7BW</b> | ●                    | ●   | —   |
|                          |                        | Grommet (Perpendicular) | <b>G59W, G5PW, K59W</b> | ●                    | ●   | —   |
|                          | Diagnostic output      | Grommet (In-line)       | <b>H7NF, G59F</b>       | ●                    | ●   | —   |
|                          | Water resistant        | Grommet (In-line)       | <b>H7BA, G5BA</b>       | ●                    | ●   | —   |
|                          | With timer             | Grommet (In-line)       | <b>G5NT</b>             | ●                    | ●   | —   |
|                          | Wide detection         | Grommet (In-line)       | <b>G5NB</b>             | ●                    | ●   | —   |
| Tie-rod mounting style   | —                      | Grommet (In-line)       | <b>F59, F5P, J59</b>    | ●                    | ●   | —   |
|                          |                        | Grommet (Perpendicular) | <b>F59W, F5PW, J59W</b> | ●                    | ●   | —   |
|                          | Diagnostic output      | Grommet (In-line)       | <b>F59F</b>             | ●                    | ●   | —   |
|                          | Water resistant        | Grommet (In-line)       | <b>F5BA</b>             | ●                    | ●   | —   |
|                          | With timer             | Grommet (In-line)       | <b>F5NT</b>             | ●                    | ●   | —   |

| Mounting              | Function                | Electrical entry           | Applicable model              | Lead wire length (m) |     |     |
|-----------------------|-------------------------|----------------------------|-------------------------------|----------------------|-----|-----|
|                       |                         |                            |                               | 0.5                  | 1.0 | 3.0 |
| Direct mounting style | —                       | Grommet (In-line)          | <b>Y59A, Y7P, Y59B</b>        | ●                    | ●   | —   |
|                       |                         | Grommet (Perpendicular)    | <b>Y69A, Y7PV, Y69B</b>       | ●                    | ●   | —   |
|                       |                         | Grommet (In-line)          | <b>M9N, M9P, M9B</b>          | ●                    | ●   | ●   |
|                       |                         | Grommet (Perpendicular)    | <b>M9NV, M9PV, M9BV</b>       | ●                    | ●   | —   |
|                       |                         | Grommet (In-line)          | <b>F8N, F8P, F8B</b>          | ●                    | ●   | —   |
|                       |                         | Grommet (In-line)          | <b>F6N, F6P, F6B</b>          | ●                    | ●   | —   |
|                       | Normally closed         | Grommet (In-line)          | <b>Y7G, Y7H</b>               | ●                    | ●   | —   |
|                       |                         | Grommet (In-line)          | <b>F9G, F9H</b>               | ●                    | ●   | —   |
|                       | 2-colour indication     | Grommet (In-line)          | <b>Y7NW, Y7PW, Y7BW</b>       | ●                    | ●   | —   |
|                       |                         | Grommet (Perpendicular)    | <b>Y7NWX, Y7PWV, Y7BWX</b>    | ●                    | ●   | —   |
|                       |                         | Grommet (In-line)          | <b>M9NW, M9PW, M9BW</b>       | ●                    | ●   | —   |
|                       |                         | Grommet (Perpendicular)    | <b>M9NWX, M9PWV, M9BWX</b>    | ●                    | ●   | —   |
| Water resistant       | Grommet (In-line)       | <b>Y7BA</b>                | ●                             | ●                    | —   |     |
|                       | Grommet (In-line)       | <b>M9NA, M9PA, M9BA</b>    | ●                             | ●                    | —   |     |
|                       | Grommet (Perpendicular) | <b>M9NAV, M9PAV, M9BAV</b> | ●                             | ●                    | —   |     |
| Rotary actuator       | —                       | Grommet (In-line)          | <b>S791/2, S7P1/2, T791/2</b> | ●                    | ●   | —   |
|                       |                         | Grommet (Perpendicular)    | <b>S991/2, S9P1/2, T991/2</b> | ●                    | ●   | —   |

## Connector Pin Layout



**M8-3 pinos**



**M8-4 pin**



**M12-4 pin**

| Sensor configuration | Lead wire colors |        |       |       | Connector number designations |                   |         |         |
|----------------------|------------------|--------|-------|-------|-------------------------------|-------------------|---------|---------|
|                      | 1 pin            | 2 pin  | 3 pin | 4 pin | 1 pin                         | 2 pin             | 3 pin   | 4 pin   |
| DC 2 wire            | Brown            | –      | –     | Blue  | OUT (+)                       | –                 | –       | OUT (–) |
| DC 2 wire non-polar  | –                | –      | Brown | Blue  | –                             | –                 | OUT ( ) | OUT ( ) |
| DC 3 wire            | Brown            | –      | Blue  | Black | DC (+)                        | –                 | DC (–)  | OUT     |
| DC 4 wire            | Brown            | Orange | Blue  | Black | DC (+)                        | Diagnostic output | DC (–)  | OUT     |

### Connector specifications

| Connector type        | M8-3 pin   | M8-4 pin | M12-4 pin |
|-----------------------|--|----------|-----------|
| Pin arrangement       |  |          |           |
| Applicable standards  | JIS C 4524, JIS C 4525, IEC 947-5-2, NECA 0402                       |          |           |
| Impact resistance     | 300m/s <sup>2</sup> (30, 6G)   |          |           |
| Enclosure             | IP67 (standard IEC529)   |          |           |
| Insulation resistance | 100 MΩ or more (at 500 VDC measured via Megohmmeter)                 |          |           |
| Withstand voltage     | 1500VAC for 1 min. (between connectors), leakage current 1mA or less |          |           |

## Dimensions

| Connector type    | Dimensions |
|-------------------|------------|
| M8-3 pin<br>4 pin |            |
| M12-4 pin         |            |

## Matching (Female) Connector Cables

Since these are not supplied by SMC, refer to the table below for applicable examples.  
(Contact the respective manufacturers for catalogs or other details.)

### Weight for Connector Type

| Part no.        | Connector type | Weight     |
|-----------------|----------------|------------|
| <b>D-□□□APC</b> | M8-3 pins      | 4 g        |
| <b>D-□□□BPC</b> | M8-4 pins      | 4 g        |
| <b>D-□□□DPC</b> | M12-4 pins     | About 11 g |

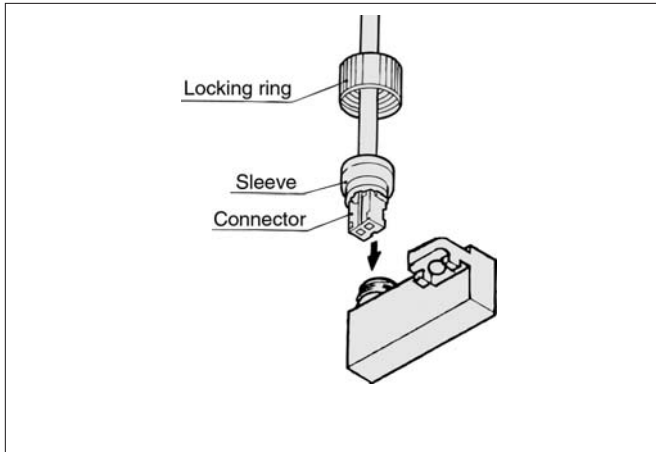
| Connector size | Number of pins | Manufacturer              | Applicable series example |
|----------------|----------------|---------------------------|---------------------------|
| <b>M8</b>      | 3              | Phoenix Contact           | SAC-3P                    |
|                |                | Corrence Corporation      | M8-3D                     |
|                |                | OMRON Corporation         | M8-4D                     |
| <b>M12</b>     | 4              | Phoenix Contact           | XS3                       |
|                |                | Phoenix Contact           | SAC-4P                    |
|                |                | Corrence Corporation      | VA-4D                     |
|                |                | OMRON Corporation         | XS2                       |
|                |                | Azbil Corp.               | PA5-4I                    |
|                |                | Hirose Electric Co., Ltd. | HR24                      |
| DDK Ltd.       | CM01-8DP4S     |                           |                           |

# Information 1

## Plug-in Connector Assembly/How to Use DIN Terminal

### Plug-in Connector Assembly

D-A73C, D-A80C, D-J79C  
D-C73C, D-C80C, D-H7C



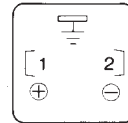
With the convex part of the connector, insert the connector into the auto switch into the sleeve. Screw the locking ring onto the switch. (Do not tighten with pliers.)

### How to Use DIN Terminal/D-A44/A44A/

#### A44C Connection

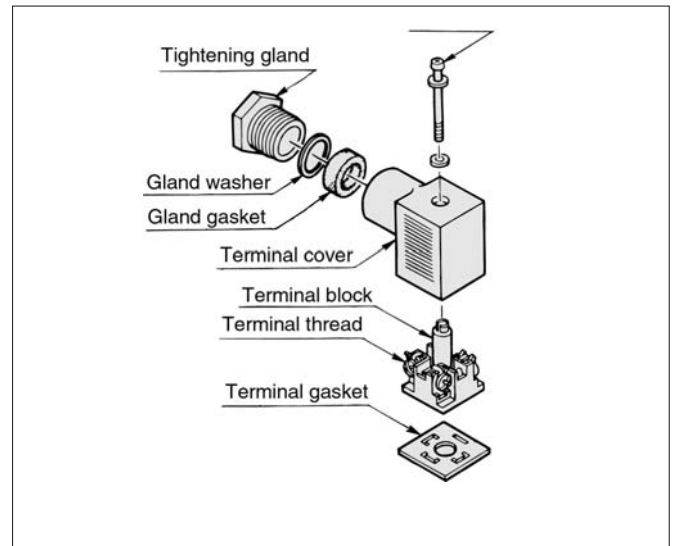
- ① Loosen the set screw and pull out the connector from the pin plug.
- ② Be sure to remove the set screw first and then insert a screw driver into a recessed groove under the terminal block to separate the terminal cover from the terminal block.
- ③ Follow the procedures and connect wires securely to specified terminals.
- ④ In standard cases, crimp-style terminals are used to connect wires. Please select proper crimp-style terminals so that the wire can be properly connected to terminal fittings.

#### Method of connection



AC: Connect to terminal No.1 and No.2

DC: Connect (+) to No.1 terminal and (-) to No.2 terminal.



#### How to change position of electrical entry

After separating the terminal block from the terminal cover, change the position of the terminal cover to any desired direction (4 directions at every 90°) to change the position of electrical entry.

#### Caution

When taking in or out the connector pin to or from the pin plug, hold the connector as perpendicular as possible.

#### Applicable cable (heavy insulation cable)

Applicable to cable O. D. of  $\phi 6.8$  to  $\phi 11.5$ .

#### Applicable crimp-style terminal

1.25Y-3L, 1.25-3.5S, 1.25-4M



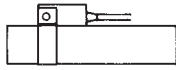
# Information 2

## How to Mount and Move the Auto Switch

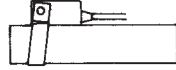
### Mounting Bracket Band mounting

#### ⚠ Caution

- ① Tighten the screw under the specified torque when mounting auto switch.
- ② Set the mounting band perpendicularly to cylinder tube.



Correct mounting



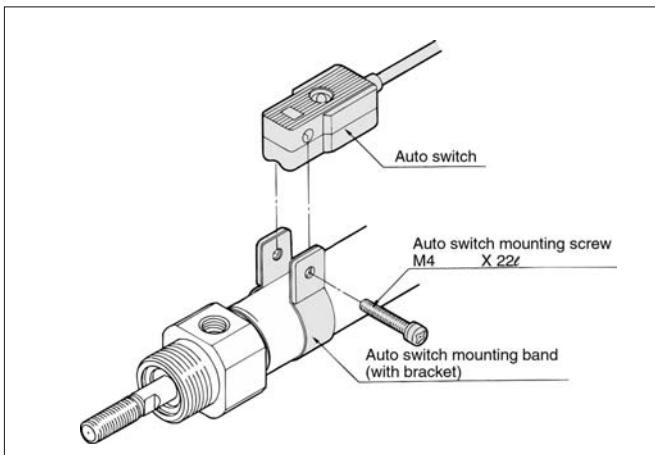
Wrong mounting

#### <Applicable auto switch>

Reed switch ..... D-B53, D-B54, D-B64  
D-B59W

Solid state switch ..... D-G59, D-G5P, D-K59, D-G5BAL  
D-G59W, D-G5PW, D-K59W  
D-G59F  
D-G5NTL

#### How to mount and move the auto switch



- ① Put a mounting band on the cylinder tube and set it at the auto switch mounting position.
- ② Put the mounting section of the auto switch between the band mounting holes, then adjust the position of mounting holes of switch to those of mounting band.
- ③ Lightly thread the auto switch mounting screw through the mounting hole into the thread part of band fitting.
- ④ After setting the whole body to the detecting position by sliding, tighten the mounting screw to secure the auto switch. (The tightening torque of M4 screw should be about 1 to 1.2Nm.)
- ⑤ Modification of the detection position should be made in the condition of ③.

#### Part No. of auto switch mounting bracket (including band and screw)

| Cylinder series        | Bore size (mm) |       |       |      |     |       |       |       |
|------------------------|----------------|-------|-------|------|-----|-------|-------|-------|
|                        | 20             | 25    | 32    | 40   | 50  | 63    | 80    | 100   |
| CDM2, CDBM2            | BA2            | BA2   | BA2   | BA2  | —   | —     | —     | —     |
| CDVM3, 5, CDLM2        | -020           | -025  | -032  | -040 | —   | —     | —     | —     |
| CDG1, MGG              | —              | —     | —     | —    | BA  | BA-06 | BA-08 | BA-10 |
| MGC                    | —              | —     | —     | —    | -05 | —     | —     | —     |
| CDLG1                  | -01            | -02   | -32   | —    | —   | —     | —     | —     |
| CDA1, CDBA1, CDV3, CNA | —              | —     | —     | —    | BA  | BA    | BA    | BA    |
| CDVS, CDLA, CDL1, CE2  | —              | —     | —     | —    | -05 | -06   | -08   | -10   |
| RHC, MLGC, REC         | BA-01          | BA-02 | BA-32 | —    | —   | —     | —     | —     |

#### Mounting screw set (Stainless steel specification)

Use the following mounting screw set (Set screw included.) according to the required operating conditions. (Mounting band is not included.)

**BBA3:** For D-B5/B6/G5/K5

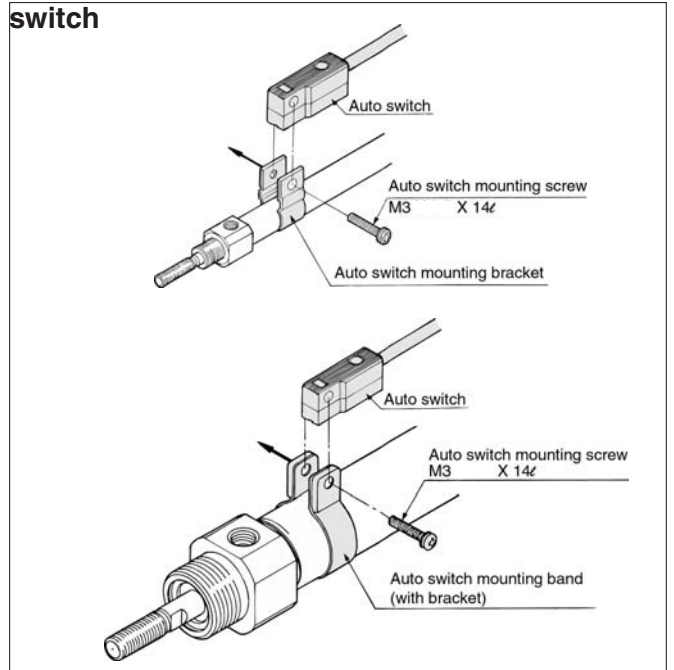
D-G5BAL is mounted on the cylinder with the above stainless steel screw BBA3 before shipment or BBA3 is enclosed with D-G5BAL when shipped without cylinder.

#### <Applicable auto switch>

Reed switch ..... D-C73, D-C76, D-C80  
D-C73C, D-C80C

Solid state switch ..... D-H7A1, D-H7A2, D-H7B, D-H7BAL  
D-H7C  
D-H7NF, D-H7LF  
D-H7NW, D-H7PW, D-H7BW

#### How to mount and move the auto switch



- ① For series CDJ2/ Put a mounting bracket on the cylinder tube. For series CDM2/ Put a mounting band on the cylinder tube and set it at the auto switch mounting position.
- ② Put the mounting part of auto switch in the interval of stationary fitting to fit the mounting hole to the hole of stationary fitting.
- ③ Screw lightly the auto switch mounting screw through the mounting hole into the thread part of band fitting.
- ④ After setting the whole body to the detecting position by sliding, tighten the mounting screw to secure the auto switch. (The tightening torque of M3 screw should be about 0.8 to 1Nm.)
- ⑤ Modification of the detection position should be made in the condition of ④.

#### Part No. of auto switch mounting bracket (including band and screw)

| Cylinder series | Bore size (mm) |      |    |         |          |          |          |          |          |          |
|-----------------|----------------|------|----|---------|----------|----------|----------|----------|----------|----------|
|                 | 6              | 10   | 15 | 16      | 20       | 25       | 32       | 40       | 50       | 63       |
| CDJ2            | BJ2-006        | BJ2  | —  | —       | —        | —        | —        | —        | —        | —        |
| CDVJ3, 5        | —              | -010 | —  | BJ2-016 | —        | —        | —        | —        | —        | —        |
| CDLJ2           | —              | —    | —  | —       | —        | —        | —        | —        | —        | —        |
| CDM2, CDBM2     | —              | —    | —  | —       | BM2      | BM2      | BM2      | BM2      | —        | —        |
| CDVM3, 5, CDLM2 | —              | —    | —  | —       | -020     | -025     | -032     | -040     | —        | —        |
| CDG1, MGG       | —              | —    | —  | —       | —        | —        | —        | —        | BMA2-050 | BMA2-063 |
| CDLG1           | —              | —    | —  | —       | BMA2-020 | BMA2-025 | BMA2-032 | BMA2-040 | —        | —        |
| MGC             | —              | —    | —  | —       | —        | —        | —        | —        | BMA2-050 | —        |
| RHC, MLGC, REC  | —              | —    | —  | —       | —        | —        | —        | —        | —        | —        |
| RSDG            | —              | —    | —  | —       | —        | —        | —        | —        | BMA2-050 | —        |

#### Mounting screw set (Stainless steel specification)

Use the following mounting screw set according to the required operating conditions. (Mounting band is not included.)

**BBA4:** For D-C7/C8/H7

D-H7BAL is mounted on the cylinder with the above stainless steel screw BBA4 before shipment or BBA4 is enclosed with D-H7BAL when shipped without cylinder.



# Information 2

## How to Mount and Move the Auto Switch

### Mounting Bracket Band mounting

#### <Applicable auto switch>

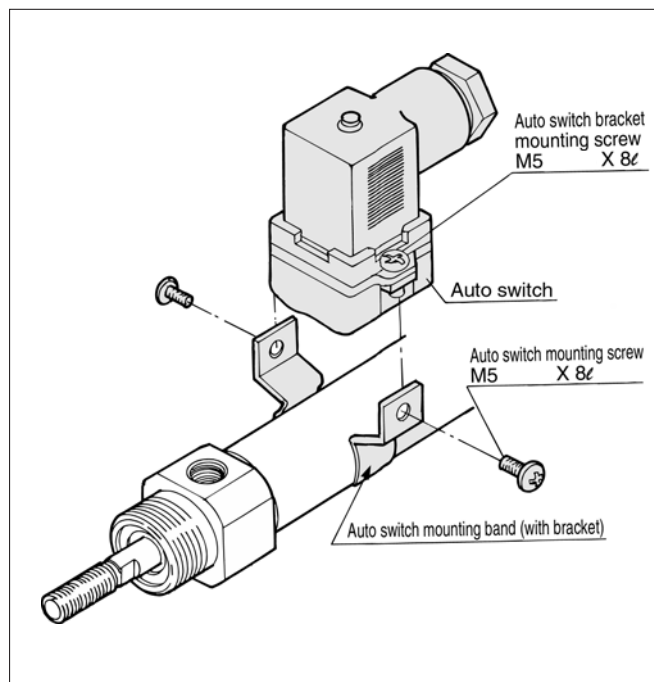
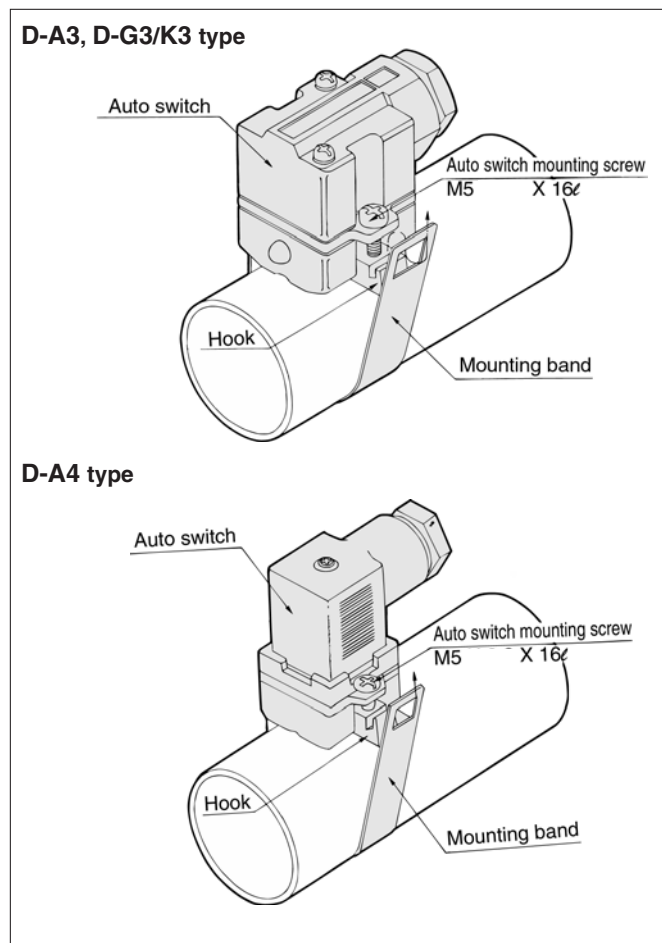
Reed switch ..... D-A33, D-A34, D-A44

Solid state switch ..... D-G39, D-K39

#### <Applicable auto switch>

Reed switch ..... D-A33A, D-A34A, D-A44A

Solid state switch ..... D-G39A, D-K39A



- ① Loosen the auto switch mounting screws at both sides to pull down the hook.
- ② Put a mounting band on the cylinder tube and set it at the auto switch mounting position, and then hook the band.
- ③ Screw lightly the auto switch mounting screw.
- ④ Set the whole body to the detecting position by sliding, tighten the mounting screw to secure the auto switch. (The tightening torque should be about 2 to 3Nm.)
- ⑤ Modification of the detecting position should be made in the condition of ③.

- ① Tighten completely the switch mounting screw on the switch body side.
- ② Put a mounting band on the cylinder tube and set it at the auto switch mounting position. Put the mounting section of auto switch between the interval of mounting band, then adjust the position of mounting holes of switch to those of mounting band.
- ③ Lightly thread the auto switch mounting screw through the mounting hole into the thread part of band fitting.
- ④ After reconfirming the detecting position, tighten the mounting screw to secure the auto switch. (The tightening torque of M5 screw should be about 2 to 3Nm.)
- ⑤ Modification of the detecting position should be made in the condition of ③.

#### Part No. of auto switch mounting band

| Cylinder series                           | Bore size (mm) |         |        |         |         |         |         |         |         |         |         |         |         |
|---|----------------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | 20             | 25      | 32     | 40      | 50      | 63      | 80      | 100     | 125     | 140     | 160     | 180     | 200     |
| CDA1, CDBA1, CDV3<br>CDVS, CDLA, CE2, CNA | -              | -       | -      | BD1-04M | BD1-05M | BD1-06M | BD1-08M | BD1-10M | -       | -       | -       | -       | -       |
| CDL1                                      | -              | -       | -      | -       | -       | -       | -       | -       | BS1-125 | BS1-140 | BS1-160 | BS1-180 | BS1-200 |
| CDS1                                      | -              | -       | -      | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| RHC                                       | BD1-01M        | BD1-02M | BD1-02 | BD1-04M | -       | -       | -       | -       | -       | -       | -       | -       | -       |

#### Part No. of auto switch mounting bracket (including band and screw)

| Cylinder series      | Bore size (mm) |         |         |         |
|----------------------|----------------|---------|---------|---------|
|                      | 20             | 25      | 32      | 40      |
| CDM2, CDBM2<br>CDLM2 | BM3-020        | BM3-025 | BM3-032 | BM3-040 |

# Information ②

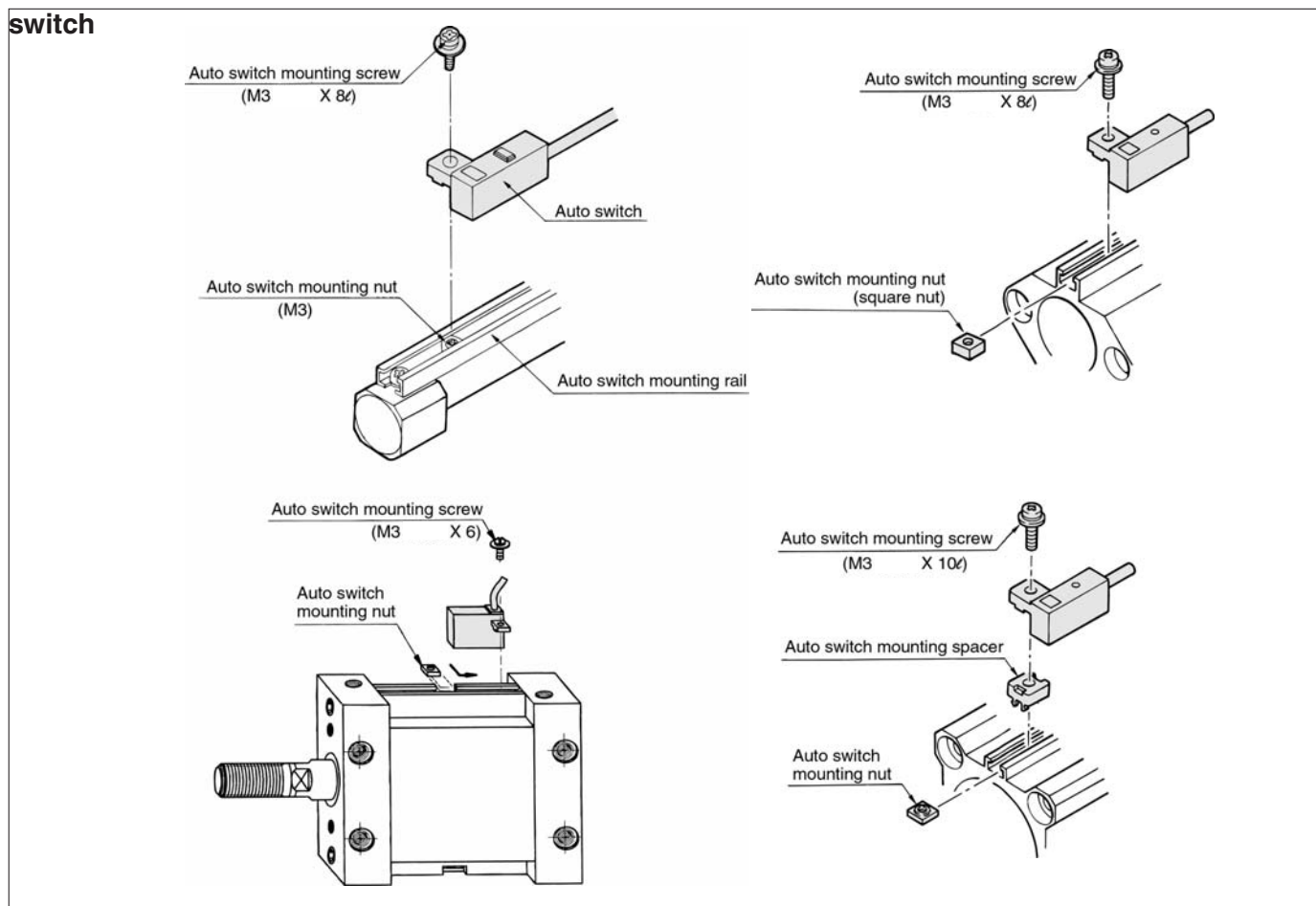
## How to Mount and Move the Auto Switch

### Mounting Bracket Rail mounting

#### <Applicable auto switch>

Reed switch ..... D-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-F7LF, D-F7BAL, D-F7NTL

#### How to mount and move the auto switch



- ① Slide the auto switch mounting nut inserted into the mounting rail and set it at the auto switch mounting position.
- ② 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.  
 (CDQ2 series: Fit the convex part of auto switch mounting arm through the auto switch spacer into the concave part of auto switch mounting rail.)

- ③ Push the auto switch mounting screw lightly into the mounting nut through the hole of auto switch mounting arm.
- ④ After reconfirming detection position, tighten the mounting screw to secure the auto switch. (Tightening torque of M3 screw should be 0.5 to 0.7Nm.)
- ⑤ Modification of the detecting position should be made in the condition of ③.

#### Part No. of auto switch mounting bracket (including nut, screw and spacer)

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

#### Mounting screw set (Stainless steel specification)

Use the following mounting screw set (Nut included.) according to the required operating conditions. (Auto switch spacer is not included.)

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

D-F7BAL is mounted on the cylinder with the above stainless steel screw BBA2 before shipment of BBA2 is enclosed with D-F7BAL when shipped without cylinder.

# Information 2

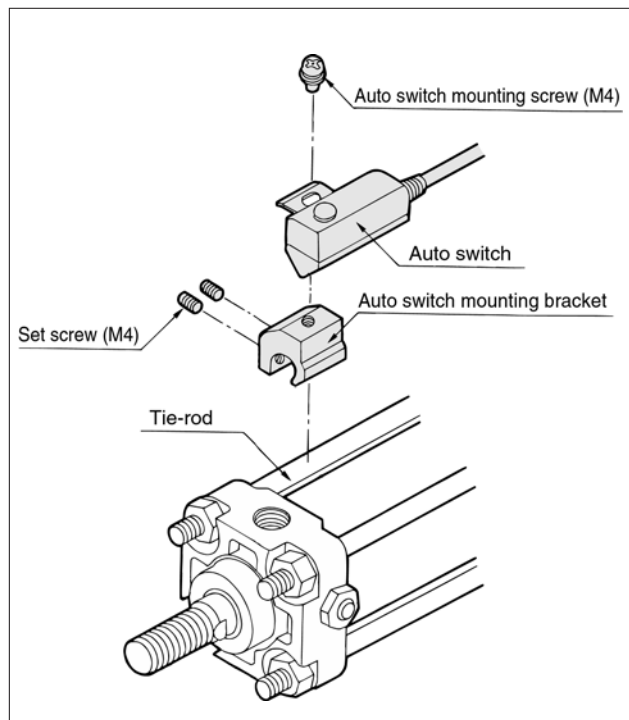
## How to Mount and Move the Auto Switch

### Mounting Bracket Tie-rod mounting

#### <Applicable auto switch>

Reed switch ..... D-A53, D-A54, D-A56, D-A64, D-A67  
D-A59W  
Solid state switch ..... D-F59, D-F5P  
D-J59, D-J51, D-F5BAL  
D-F59W, D-F5PW, D-J59W  
D-F59F, D-F5LF  
D-F5NTL

#### How to mount and move the auto switch



- ① Fix the auto switch on the auto switch mounting bracket with the mounting screw (M4) and install the set screw.
- ② Fit the mounting bracket into the cylinder tie-rod and then fix the auto switch at the detecting position with the hexagonal wrench. (Be sure to put the auto switch on the surface of cylinder tube.)
- ③ When changing the detecting position, loosen the set screw to move the auto switch and then re-fix the auto switch on the cylinder tube. (Tightening torque of M4 screw should be 1 to 1.2 Nm.)

#### Part No. of auto switch mounting bracket (including bracket, mounting screw and set screw)

| Cylinder series                           | Bore size (mm) |           |           |           |           |           |           |           |           |            |           |
|---|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|
|   | 32             | 40        | 50        | 63        | 80        | 100       | 125       | 140       | 160       | 180        | 200       |
| CDA1, CDBA1, CDV3<br>CDVS, CDLA, CE2, CNA | -              | BT<br>-04 | BT<br>-04 | BT<br>-06 | BT<br>-08 | BT<br>-08 | -         | -         | -         | -          | -         |
| CDL1                                      | -              | -         | -         | -         | -         | -         | BT<br>-12 | BT<br>-12 | BT<br>-16 | BT<br>-18A | BT<br>-20 |
| CDS1                                      | -              | -         | -         | -         | -         | -         | -         | -         | -         | -          | -         |
| MDB/MDBB                                  | BT-03          | BT-03     | BT-05     | BT-05     | BT-06     | BT-06     | -         | -         | -         | -          | -         |

#### Mounting screw set (Stainless steel specification)

Use the following mounting screw set (Set screw included.) according to the required operating conditions. (Mounting bracket is not included.)

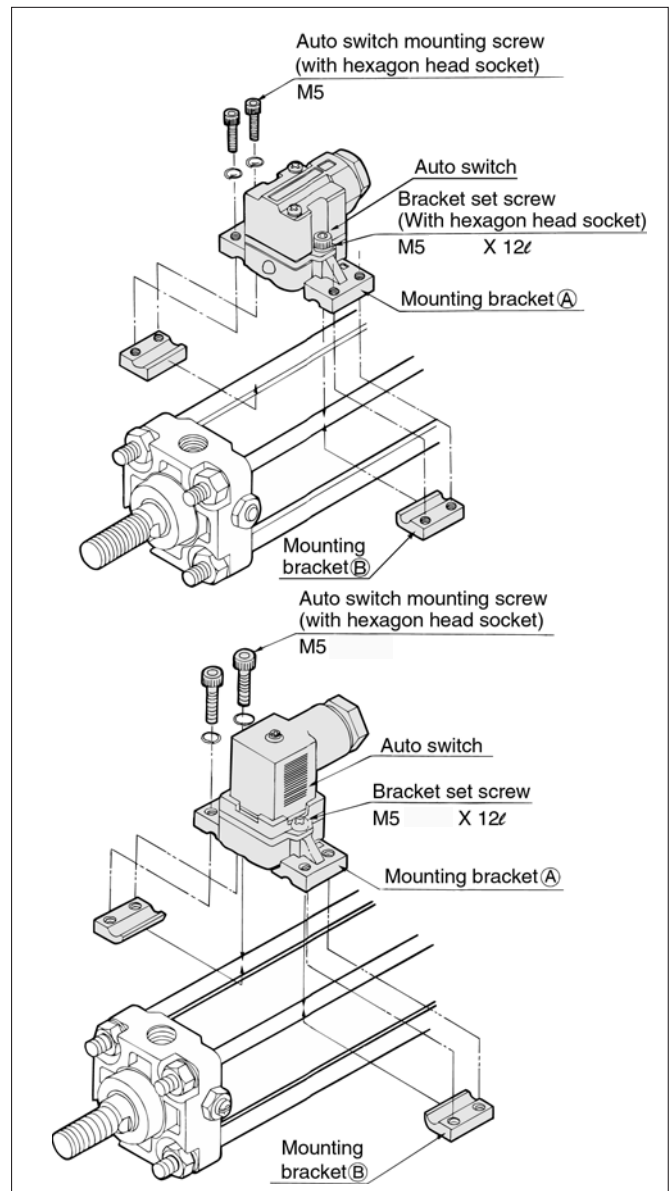
**BBA1:** For D-A5/A6/F5/J5

D-F5BAL is mounted on the cylinder with the above stainless steel screw BBA1 before shipment or BBA1 is enclosed with D-F5BAL when shipped without cylinder.

#### <Applicable auto switch>

Reed switch ..... D-A33C, D-A34C, D-A44C  
Solid state switch ..... D-G39C, D-K39C

#### How to mount and move the auto switch



- ① Fix the mounting bracket A on the auto switch with the set screw.
- ② Fit the convex part of mounting bracket into tie-rod and set the auto switch at the mounting position.
- ③ Insert the mounting bracket B from the underneath and put lightly in the tie-rod with the mounting screw.
- ④ Set the whole body to the detecting position by sliding, tighten the mounting screw to secure the auto switch. (Tightening torque of M5 screw should be 2 to 3Nm.)
- ⑤ Modification of the detecting position should be made in the condition of

#### Part No. of auto switch mounting bracket (including bracket and screw)

| Cylinder series                           | Bore size (mm) |             |             |             |             |
|---|----------------|-------------|-------------|-------------|-------------|
|   | 40             | 50          | 63          | 80          | 100         |
| CDA1, CDBA1<br>CDV3, CDVS, CDL1, CE2, CNA | BA3<br>-040    | BA3<br>-050 | BA3<br>-063 | BA3<br>-080 | BA3<br>-100 |

# Information 2

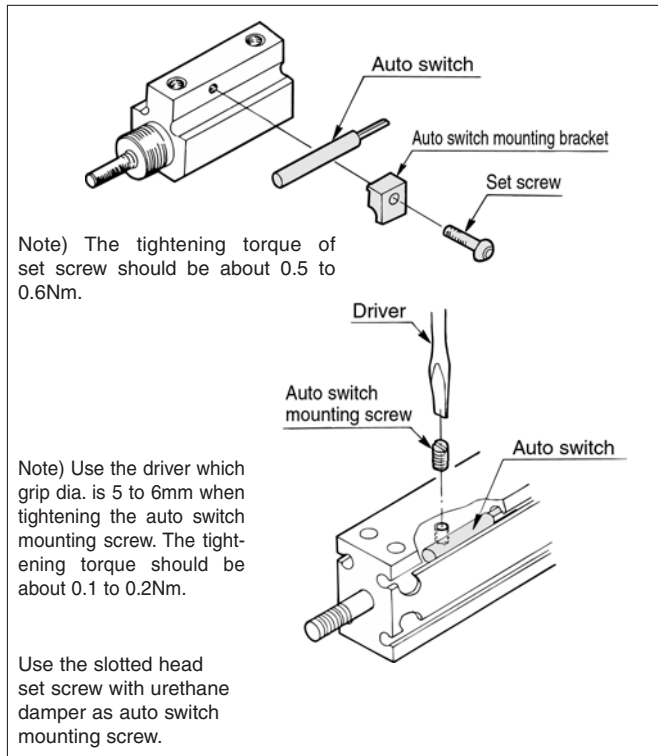
## How to Mount and Move the Auto Switch

### Mounting Bracket Direct mounting

#### <Applicable auto switch>

Reed switch ..... D-90/97, D-90A/93A

#### How to mount and move the auto switch



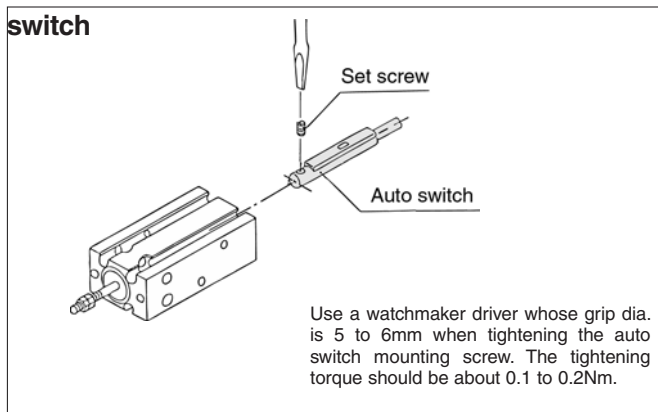
#### Part No. of auto switch mounting bracket (including bracket and screw)

| Cylinder series | Bore size (mm) |      |      |      |      |      |      |
|-----------------|----------------|------|------|------|------|------|------|
|                 | 6              | 10   | 15   | 16   | 20   | 25   | 32   |
| CDJP-□D         | BP-1           | BP-1 | BP-1 | —    | —    | —    | —    |
| CDU             | BU-1           | BU-1 | —    | BU-1 | BU-1 | BU-1 | BU-1 |

#### <Applicable auto switch>

Reed switch ..... D-A90(V)/A93(V)/A96(V)  
 Solid state switch ..... D-M9N(V)/M9P(V)/M9B(V)/M9NW(V)/  
 M9PW(V)/M9BW(V)/M9BAL

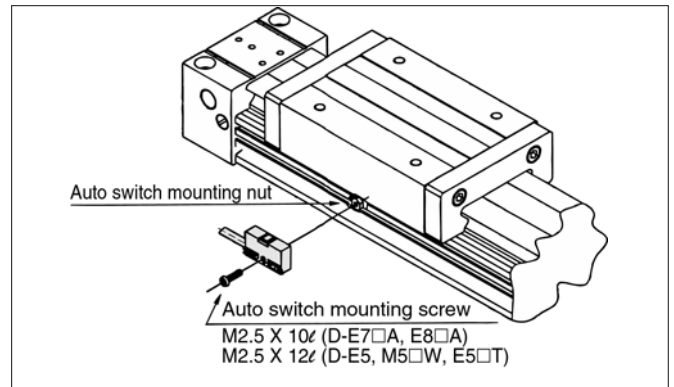
#### How to mount and move the auto switch



#### <Applicable auto switch>

Reed switch ..... D-E73A/E76A/E80A  
 Solid state switch ..... D-M5N/M5P/M5B  
 D-M5NW/M5PW/M5BW  
 D-M5NTL/M5PTL

#### How to mount and move the auto switch



- ① Insert the auto switch mounting nut into the auto switch mounting groove and then set the switch at the mounting position by sliding.
- ② Put the convex part of auto switch into the mounting groove and slide it over the nut.
- ③ Push the auto switch mounting screw lightly into the mounting nut through the mounting hole.
- ④ After reconfirming detecting position, tighten the mounting screw to secure the auto switch. (Tightening torque of M2.5 screw should be 0.1 to 0.2Nm.)

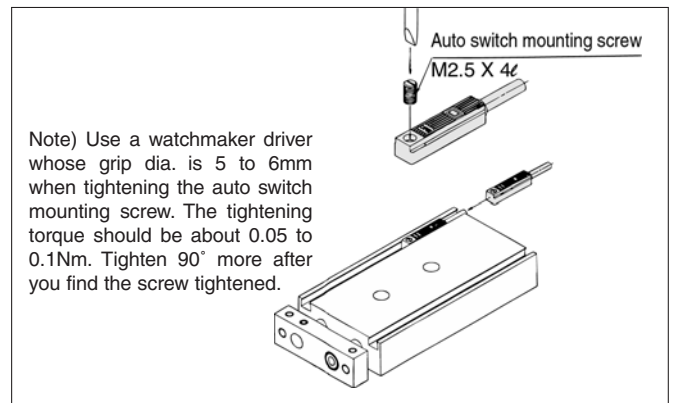
#### Part No. of auto switch mounting bracket (including nut and screw)

| Cylinder series | Bore size (mm)   | Bore size (mm) |          |          |
|-----------------|------------------|----------------|----------|----------|
|                 |                  | 25             | 32       | 40       |
| ML1             | M2.5 X 12 $\ell$ | BYM2-025       | BYM2-025 | BYM2-025 |

#### <Applicable auto switch>

Reed switch ..... D-Z73/Z76/Z80  
 Solid state switch ..... D-Y59 $\Delta$ /Y69 $\Delta$ /D-Y7P(V)  
 D-Y7NW(V)/Y7PW(V)/Y7BW(V)  
 D-Y7BAL

#### How to mount and move the auto switch



- ① Insert the auto switch into the mounting groove and set it at the auto switch mounting position.
- ② After confirming the detecting position, tighten the mounting screw to secure the auto switch.
- ③ Modification of the detecting position should be made in step ①.

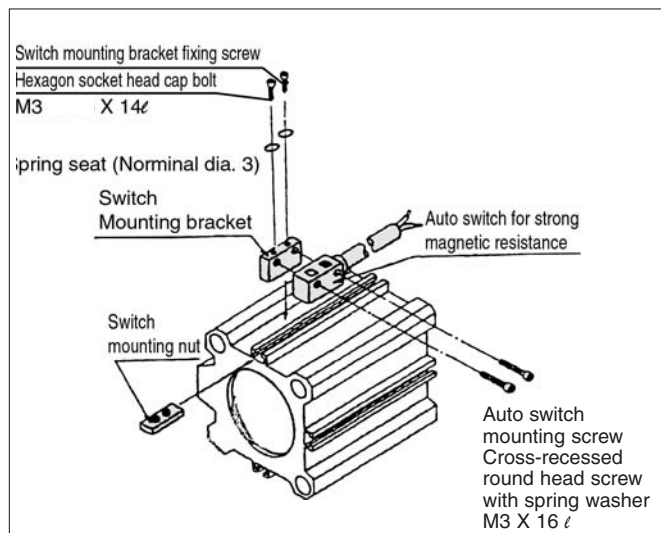
# Information ②

## How to Mount and Move the Auto Switch

### Mounting Bracket Direct mounting

<Applicable auto switch>  
Solid state switch ..... D-P5DWL

#### How to mount and move the auto switch



- ① Mount the mounting bracket onto the mounting nut by tightening bracket fixing screw lightly through the mounting hole on the top of bracket.
- ② Insert the mounting bracket assembly (bracket+nut) into the mounting groove and set it at the auto switch mounting position.
- ③ Push the auto switch mounting screw lightly into the auto switch through the mounting hole to secure.
- ④ After reconfirming detection position, tighten the mounting screw to secure the auto switch. (Tightening torque should be 0.5 to 0.7Nm.)

#### Part No. of auto switch mounting bracket (including bracket and screw)

| Cylinder series | Bore size (mm) |          |          |
|-----------------|----------------|----------|----------|
|                 | 40             | 50       | 63       |
| <b>MK, MK2</b>  | BQP1-050       | BQP1-050 | BQP1-050 |

# Auto Switch Weight (Single Unit)

## Band mounting

(g)

| Applicable auto switch | Model            |        | Lead wire length |    |      |
|------------------------|------------------|--------|------------------|----|------|
|                        |                  |        | 0.5m             | 3m | None |
| Reed switch            | D-C7<br>D-C8     | 2 wire | 9                | 46 | -    |
|                        |                  | 3 wire | 10               | 50 |      |
|                        | D-C73C<br>D-C80C |        | 14               | 53 | -    |
|                        | D-B5<br>D-B6     |        | 22               | 78 | -    |
|                        | D-B59W           |        | 20               | 76 | -    |
|                        | D-A3             |        | -                | -  | 116  |
|                        | D-A4             |        | -                | -  | 114  |
|                        | D-A3□A<br>D-A44A |        | -                | -  | 110  |
| Solid state switch     | D-H7             | 2 wire | 11               | 50 | -    |
|                        |                  | 3 wire | 13               | 57 | -    |
|                        |                  | 4 wire | 13               | 56 | -    |
|                        | D-K5             | 2 wire | 18               | 68 | -    |
|                        | D-G5             | 3 wire | 20               | 78 | -    |
|                        |                  | 4 wire | 20               | 74 | -    |
|                        | D-□39            |        | -                | -  | 116  |
|                        | D-□39A           |        | -                | -  | 110  |
| D-H7C                  |                  | 15     | 54               |    |      |

## Tie-rod mounting

(g)

| Applicable auto switch | Model        |        | Lead wire length |     |      |
|------------------------|--------------|--------|------------------|-----|------|
|                        |              |        | 0.5m             | 3m  | None |
| Reed switch            | D-A5<br>D-A6 | 2 wire | 24               | 80  | -    |
|                        |              | 3 wire |                  |     |      |
|                        | D-A59W       |        | 25               | 80  | -    |
|                        | D-A3□C       | ø40    | -                | -   | 162  |
|                        |              | ø50    | -                | -   | 166  |
|                        |              | ø63    | -                | -   | 184  |
|                        |              | ø80    | -                | -   | 210  |
|                        |              | ø100   | -                | -   | 232  |
|                        | D-A44C       | ø40    | -                | -   | 160  |
|                        |              | ø50    | -                | -   | 164  |
| ø63                    |              | -      | -                | 182 |      |
| ø80                    |              | -      | -                | 208 |      |
| Solid state switch     | D-J5         | 2 wire | 21               | 71  | -    |
|                        |              | 3 wire | 23               | 81  | -    |
|                        | D-F5         | 4 wire | 22               | 77  | -    |

## Rail mounting

(g)

| Applicable auto switch | Model                  |        | Lead wire length |    |
|------------------------|------------------------|--------|------------------|----|
|                        |                        |        | 0.5m             | 3m |
| Reed switch            | D-A7/A7□H<br>D-A8/A80H | 2 wire | 10               | 47 |
|                        |                        | 3 wire | 11               | 52 |
|                        | D-A73C<br>D-A80C       |        | 12               | 54 |
|                        | D-A79W                 |        | 11               | 53 |
| Solid state switch     | D-J7                   | 2 wire | 11               | 50 |
|                        |                        | 3 wire | 13               | 57 |
|                        | D-F7                   | 4 wire | 13               | 56 |
|                        |                        | D-J79C |                  | 13 |

## Direct mounting

(g)

| Applicable auto switch | Model            |          | Lead wire length |    |    |
|------------------------|------------------|----------|------------------|----|----|
|                        |                  |          | 0.5m             | 3m |    |
| Reed switch            | D-A9/A9□V        | 2 wire   | 7                | 35 |    |
|                        |                  | 3 wire   | 8                | 41 |    |
|                        | D-9              |          | 5                | 23 |    |
|                        | D-9□A            |          | 9                | 47 |    |
|                        | D-E7□A<br>D-E8□A | 2 wire   | 10               | 47 |    |
|                        |                  | 3 wire   | 11               | 55 |    |
|                        | D-Z7<br>D-Z8     | 2 wire   | 9                | 49 |    |
|                        |                  | 3 wire   | 10               | 55 |    |
| Solid state switch     | D-Y□             | 1 colour | 2 wire           | 9  | 50 |
|                        |                  |          | 3 wire           | 10 | 53 |
|                        |                  | 2 colour | 2 wire           | 11 | 54 |
|                        |                  |          | 3 wire           | 11 | 54 |
|                        | D-M5             | 2 wire   | 14               | 53 |    |
|                        |                  | 3 wire   | 16               | 60 |    |
|                        | D-Y7BA           |          | -                | 54 |    |
|                        | D-M9□            | 1 colour | 2 wire           | 6  | 31 |
|                        |                  |          | 3 wire           | 7  | 37 |
|                        |                  | 2 colour | 2 wire           | 7  | 32 |
| 3 wire                 |                  |          | 7                | 34 |    |
| D-M9BA                 |                  | -        | 37               |    |    |

