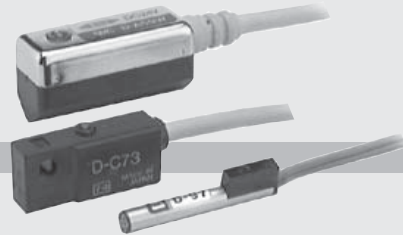


# Auto Switch Guide

## Reed Switch

## Solid State Switch

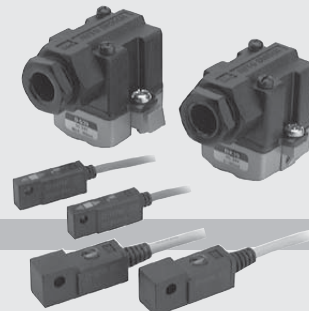
### Reed Switch



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



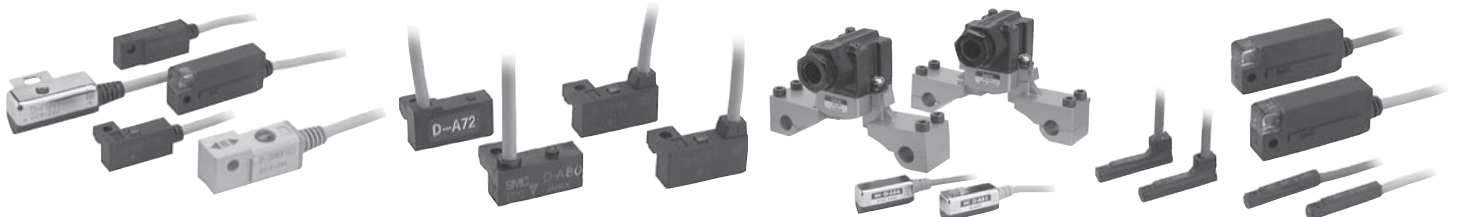
P 6-43

- **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
		Rail	Terminal conduit	D-G39A/K39A	6-48
			Grommet	D-F79/F7P/J79	6-49
			Connector	D-F7NV/F7PV/F7BV	6-50
		Tie-rod	Connector	D-J79C	6-51
			Grommet	D-F59/F5P/J59/J51	6-52
		Direct	Terminal conduit	D-G39C/K39C	6-53
				Grommet	D-M9N/M9P/M9B
			Grommet	D-M9NV/M9PV/M9BV	6-54
			Grommet	D-F8N/F8P/F8B	6-55
			Grommet	D-Y59A/Y7P/Y59B	6-56
			Grommet	D-Y69A/Y7PV/Y69B	6-56
			Grommet	D-S99(V)/S9P(V)/T99(V)	6-57
		Grommet	D-S79/S7P/T79(C)	6-58	
		Grommet	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
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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)

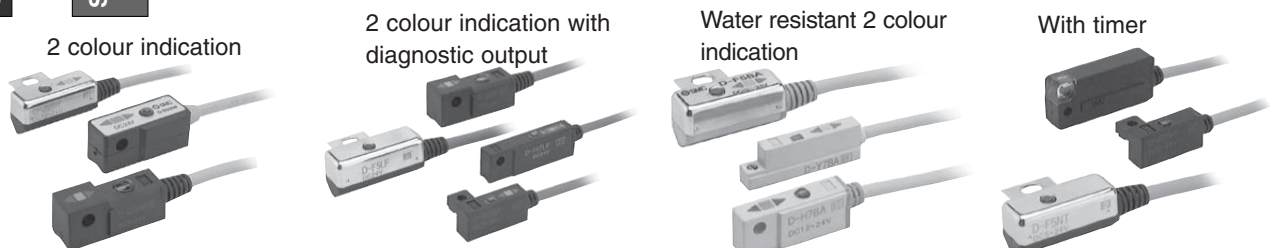
With timer	Solid state switch	Band	Grommet	D-G5NTL	6-77
		Rail	Grommet	D-F7NTL	6-78
		Tie-rod	Grommet	D-F5NTL	6-79
		Direct	Grommet	D-M5NTL/M5PTL	6-80

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
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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. (between lead wire and the case) <sup>(1)</sup>	1000V AC/min. (between lead wire and the case)
Ambient temperature	-10 to 60°C	
Protective construction	IEC529 Standard IP67, 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

#### 3 wire auto switch

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

#### Solid state auto switch with diagnostic output

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

#### 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

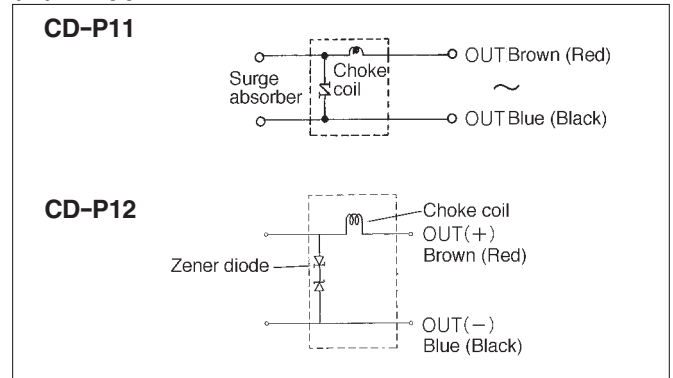
Part No.	CD-P11		CD-P12
Load voltage	100V AC max.	200V AC	24V DC
Max. load current	25mA	12.5mA	50mA

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

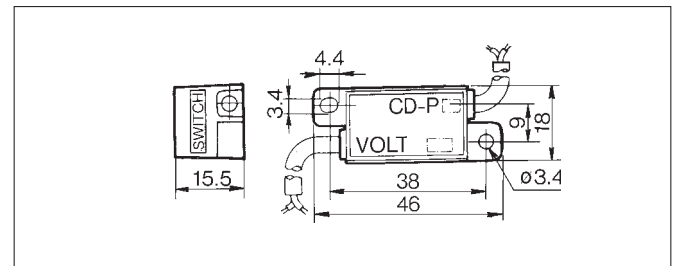


### Contact Protection Box/Internal Circuit

( ): If applicable for IEC Standard

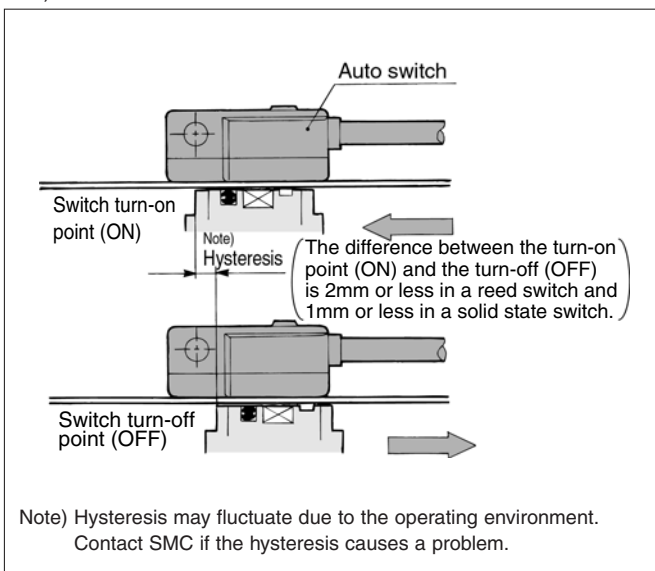


### Contact Protection Box/Dimensions



### 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

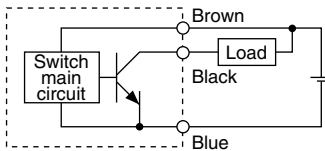
For connection of the switch body and the contact protection box, connect the lead wire in the side indicated as "SWITCH" on the contact protection box to the lead wire from the switch body. The length of lead wire between the switch body and the contact protection box should be within 1m and they should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

# Prior to Use

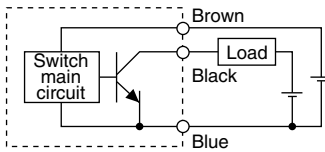
## Auto Switch Connection Method/Connection Example

### Basic Wiring

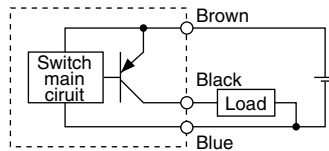
#### • Solid state switch 3 wire NPN



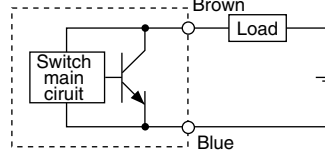
(When power source for switch and load is not common.)



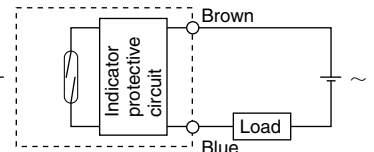
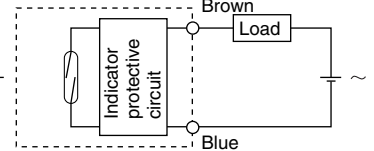
#### 3 wire PNP



#### 2 wire

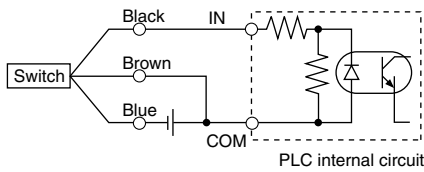


#### • Reed switch 2 wire

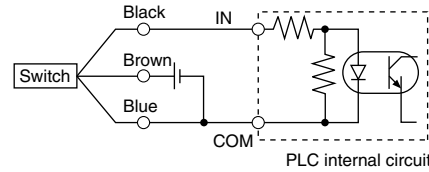


### Typical PLC (Programmable Logic Controller) Connection Circuits

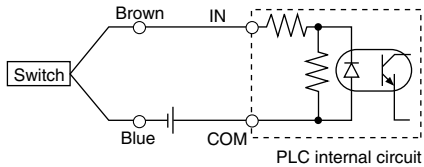
#### • Sink input 3 wire NPN



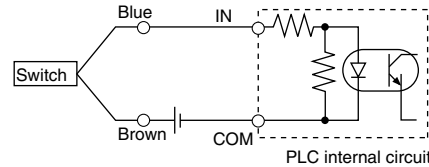
#### • Source input 3 wire PNP



#### 2 wire



#### 2 wire

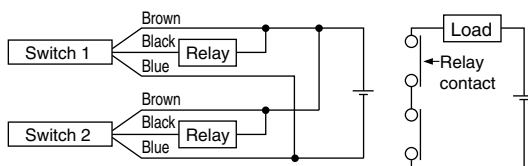


Connect according to the input specification of PLC because the connection method varies with the input specification of PLC.

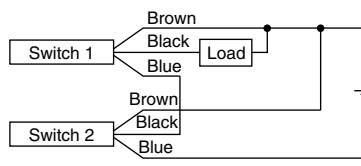
### AND (Serial), OR (Parallel) Connection Examples

#### • 3 wire

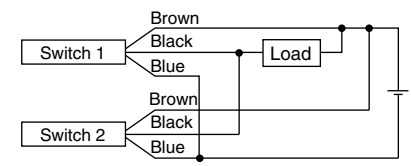
##### NPN/AND connection (with relay)



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



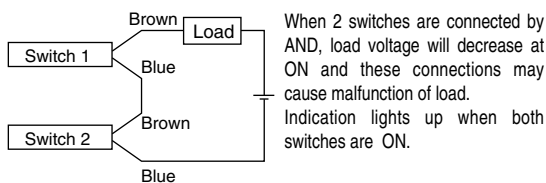
##### NPN/OR connection



Indication lights up when both switches are ON.

#### • 2 wire (2 pcs.)

##### AND connection

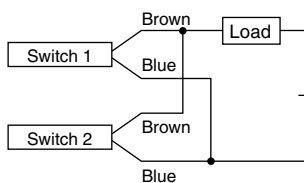


When 2 switches are connected by AND, load voltage will decrease at ON and these connections may cause malfunction of load. Indication lights up when both switches are ON.

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 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		

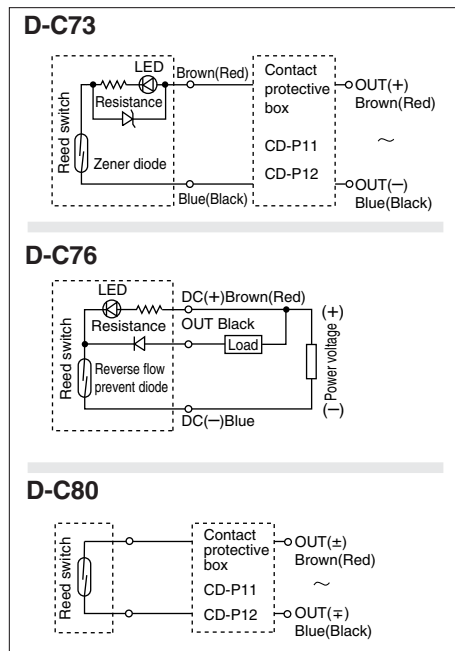
#### D-C8 (Without indicator light)

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.

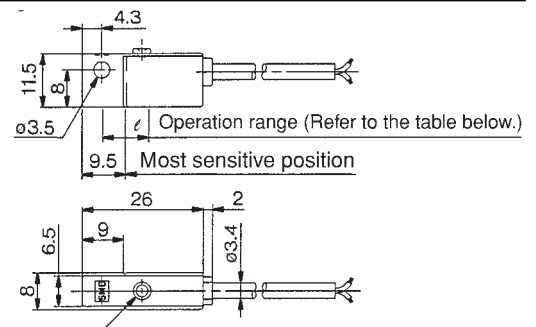
### Internal Circuit

( ): 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		

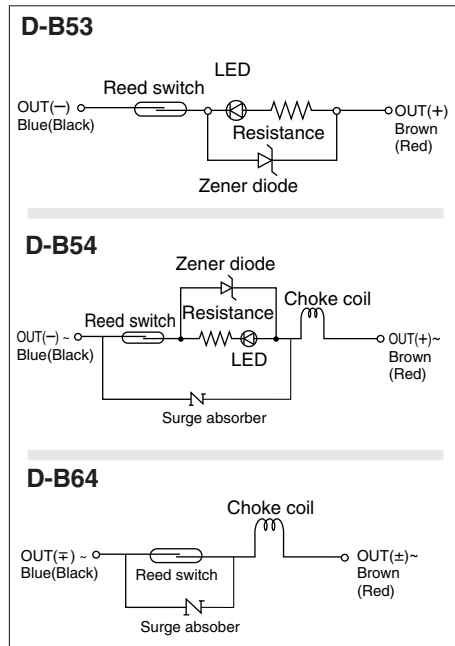
Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

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

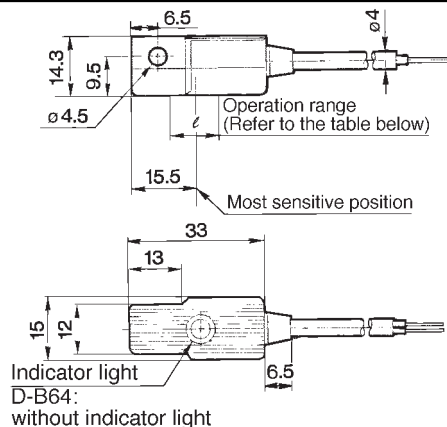
Note 2) Refer to p.6-18 for lead wire length.

### 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



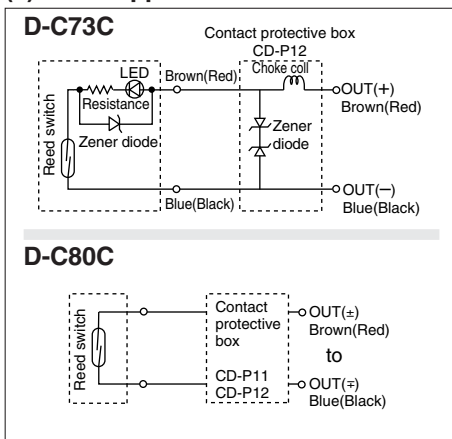
### ⚠ Caution

#### 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 <sup>AC</sup> / <sub>DC</sub>
Max. load current	50mA
Contact protection circuit	None
Internal resistance	≤ 1Ω (Including 3m lead wire)

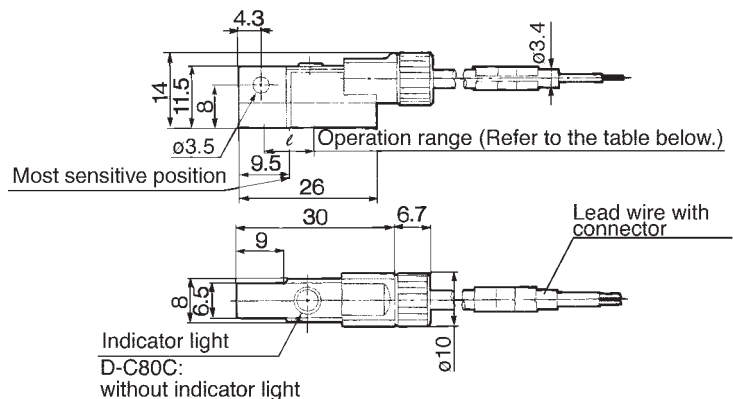
● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

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)

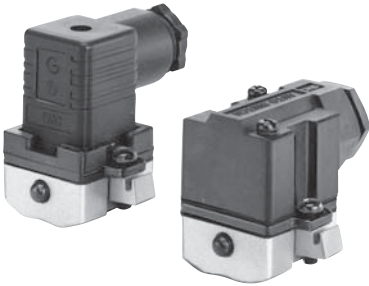
Actuator series	Bore size (mm)								
	6	10	16	20	25	32	40	50	63
CDJ2	6	7	7	—	—	—	—	—	—
CDVJ	—	7	7	—	—	—	—	—	—
CDLJ2	—	—	7	—	—	—	—	—	—
CDM2, CDBM2, CDVM3, CDVM5, CDLM2	—	—	—	7	8	8	8	—	—
CDG1, MGG	—	—	—	8	10	9	10	10	11
CDLG1	—	—	—	8	10	9	10	—	—
RSDG	—	—	—	—	—	—	10	10	—
MGC	—	—	—	8	10	9	10	10	—
MLGC,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

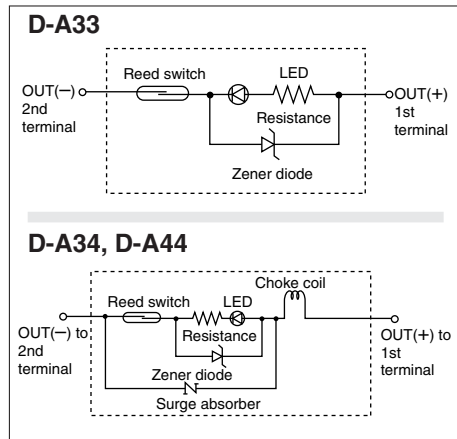


### ⚠ Caution

#### 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

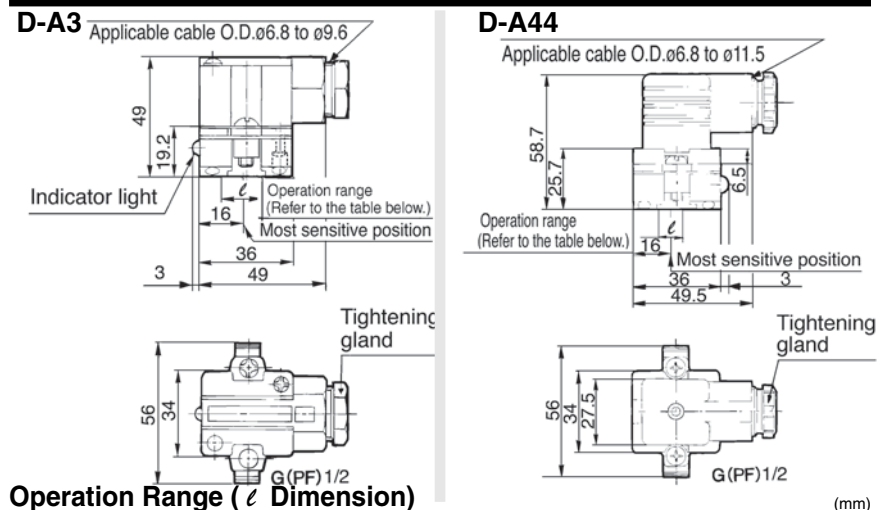
Auto switch model number	D-A33	D-A34		
Application	PLC	Relay/PLC		
Load voltage	24V DC	24V DC	100V AC	200V AC
Load current range	5 to 50mA	5 to 50mA	5 to 25mA	5 to 12.5mA
Contact protection circuit	None	Built-in		
Internal voltage drop	≤ 2.4V			
Indicator light	ON: When red light emitting diode			

#### 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)

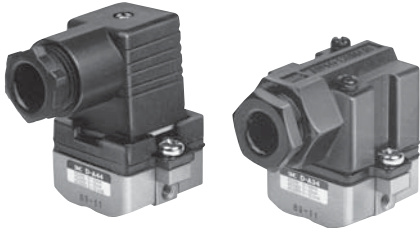
Actuator series	Bore size												
	20	25	32	40	50	63	80	100	125	140	160	180	200
CDA1, CDBA1, CE2, CDV3, CDVS, CDLA, CNA	—	—	—	9	10	11	11	11	—	—	—	—	—
CDL1	—	—	—	9	10	11	11	11	10	10	10	—	—
CDS1	—	—	—	—	—	—	—	—	10	10	10	10	10
RHC	9	10	9	10	—	—	—	—	—	—	—	—	—

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

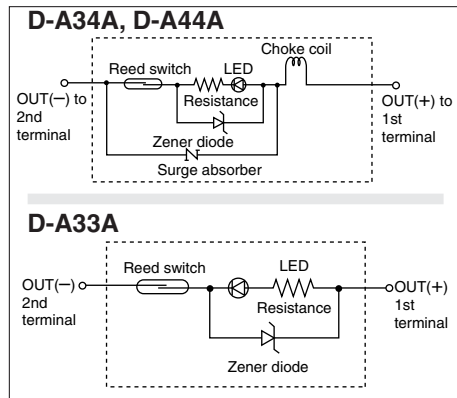
PLC: Programmable Logic Controller

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



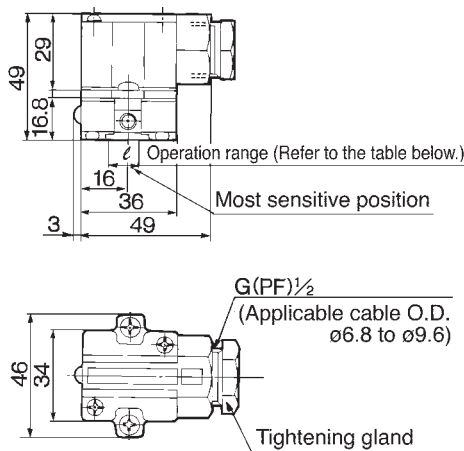
## Caution

### Precautions

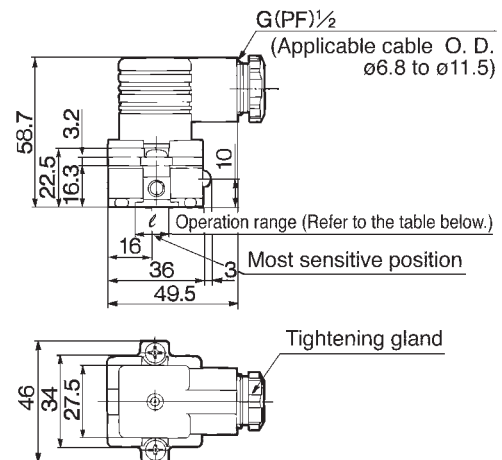
- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

## Dimensions

### D-A3□A



### D-A44A



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

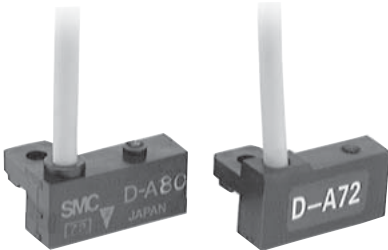
Actuator series	Bore size			
	20	25	32	40
CDM2, CDBM2, CDLM2	8	8	9	9

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		

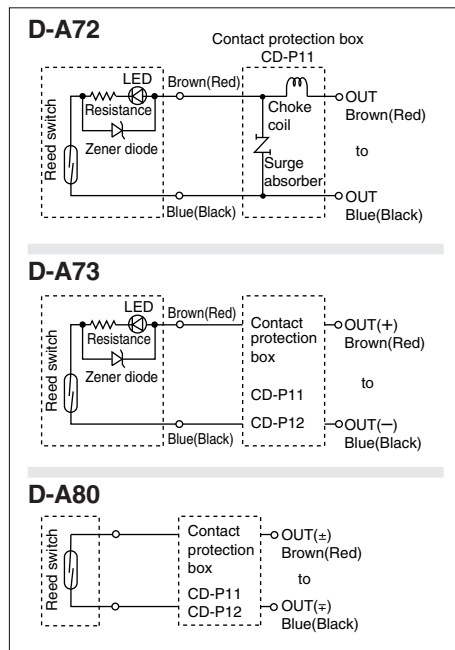
#### D-A8 (Without indicator light)

Auto switch model number	D-A80		
Application	Relay/IC circuit/PLC		
Load voltage	24V <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	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.

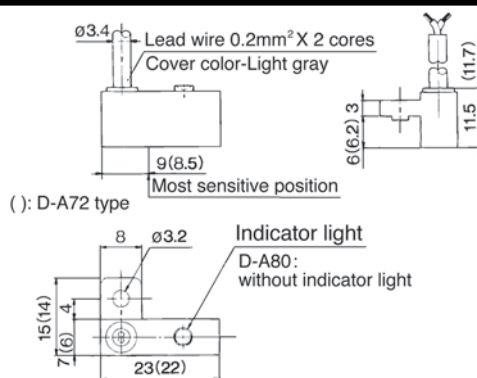
### Internal Circuit

( ): 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	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			

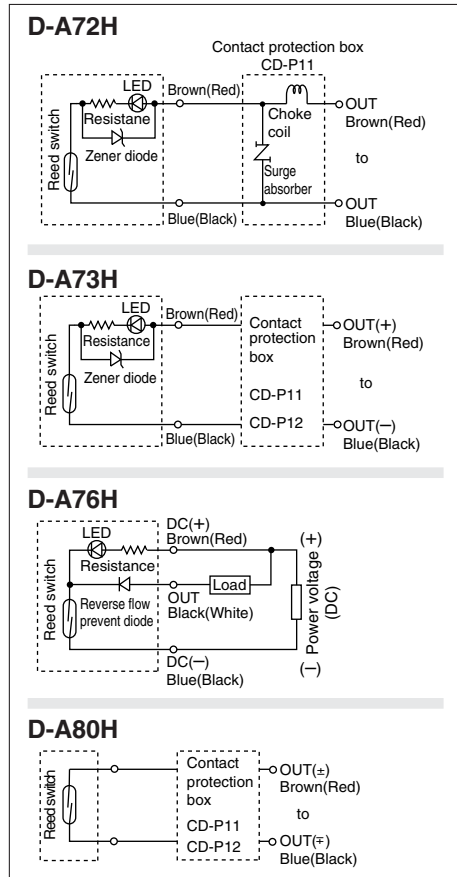
#### D-A80H (Without indicator light)

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.

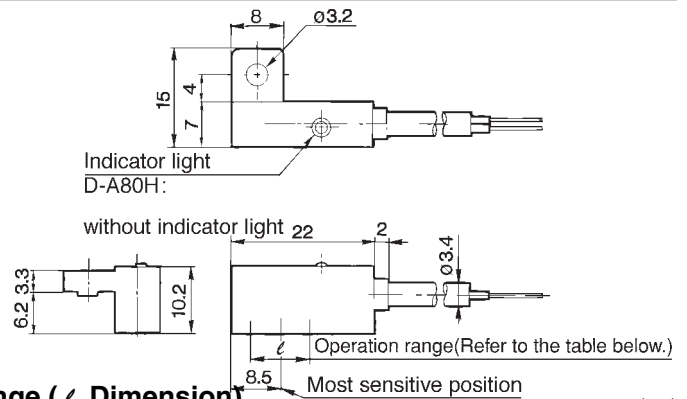
③ In the case the load voltage is 100 or 200V AC.

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 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)

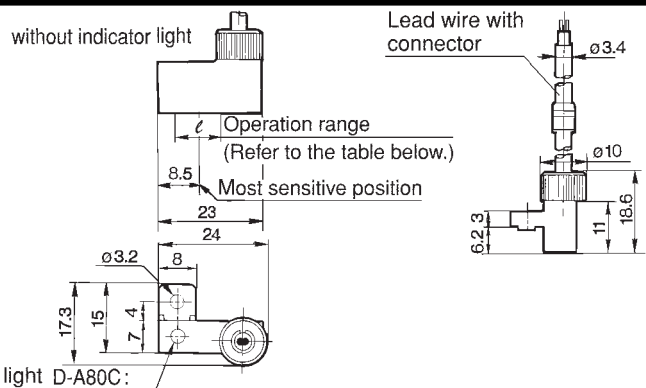
Auto switch model number	<b>D-A73C</b>
Application	Relay/PLC
Load voltage	24V DC
Load current range	5 to 40mA
Contact protection circuit	None
Internal voltage drop	≤ 2.4V
Indicator light	ON: When red light emitting diode

#### 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



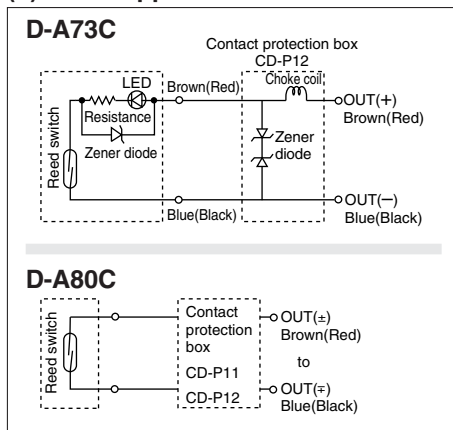
### Caution

#### 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)

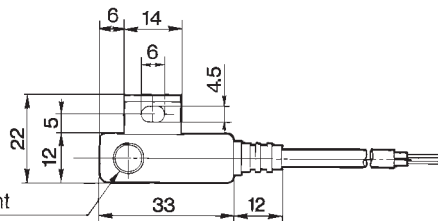
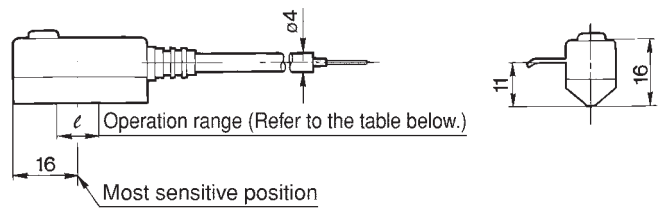
Auto switch model number	D-A53	D-A54		D-A56
Application	PLC	Relay/PLC		IC circuit
Load voltage	24V DC	24V DC	100V AC	200V AC
Max. load current and range	5 to 50mA	5 to 50mA	5 to 25mA	5 to 12.5mA
Contact protection circuit	None	Built-in		None
Internal voltage drop	2.4V			0.8V or less
Indicator light	ON: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

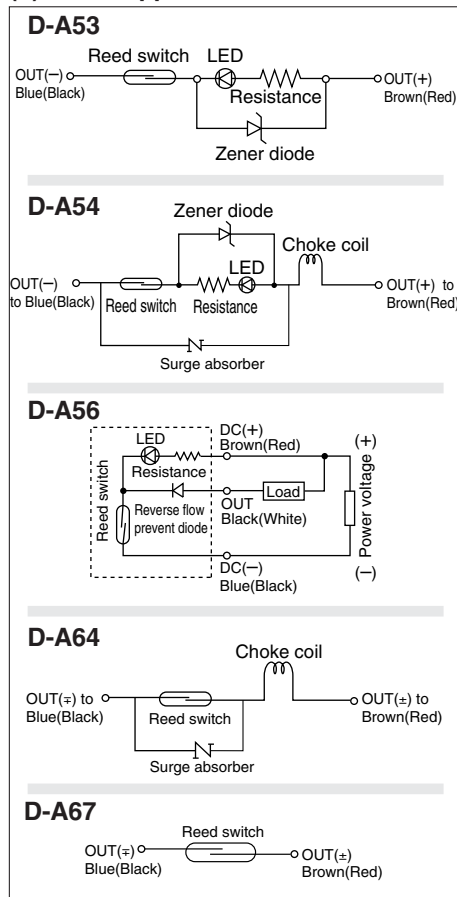
### Operation Range (ℓ Dimension)

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

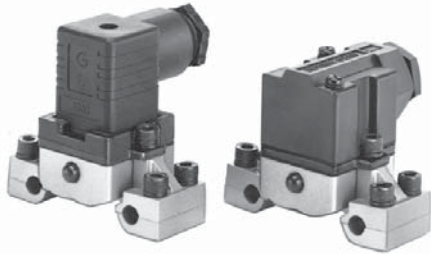




# Reed Switch/Tie-rod Mounting

## 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		

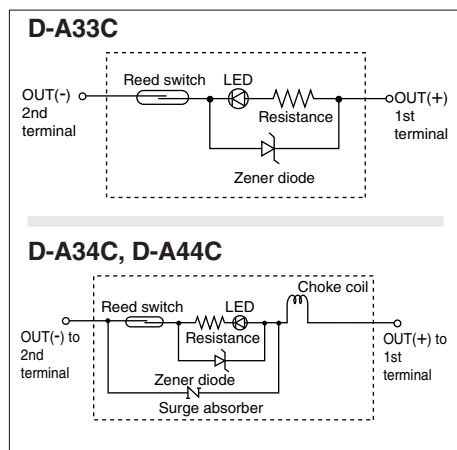
Note) Refer to common specifications on p.6-18.

### Caution

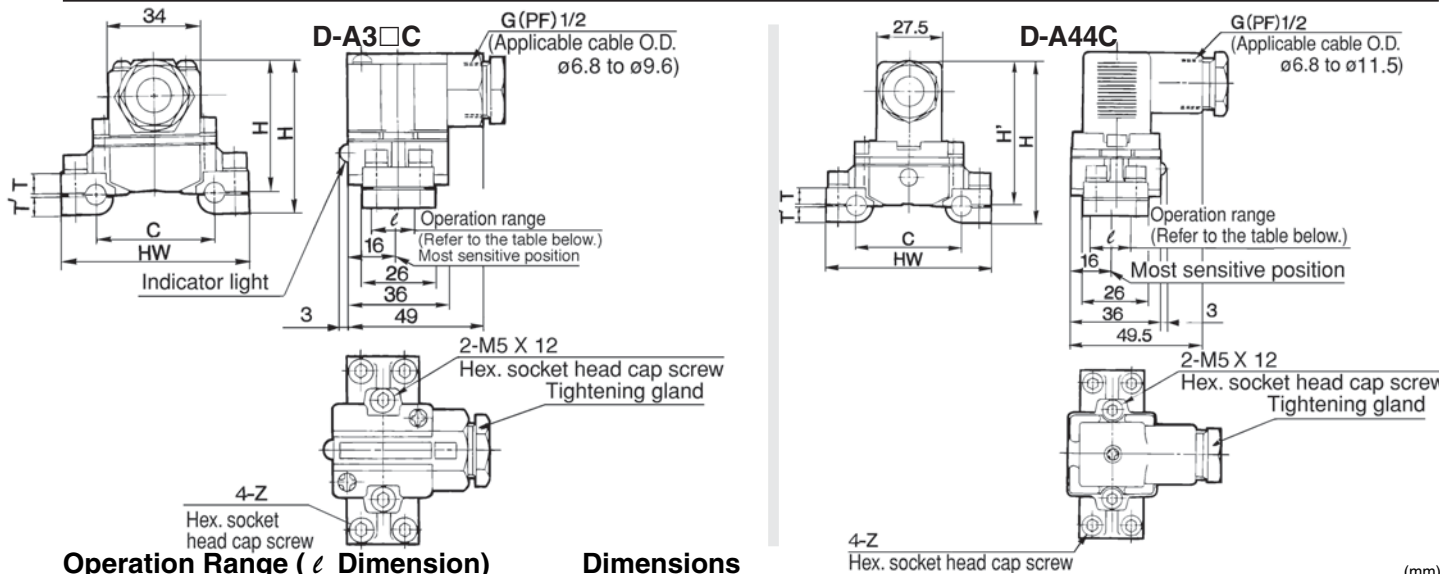
#### Precautions

- 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



### 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

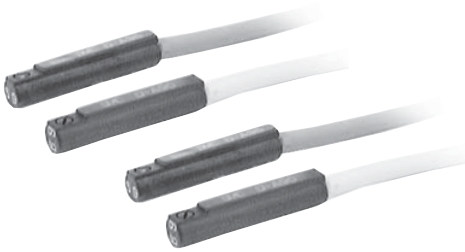
Switch part No.	Bore size (mm)	C	HW	H	H'	T	T'	Z
D-A3□C-4, D-A44C-4	40	44	69	58(67.5)	50.5(60)	7.5	6.5	M5 X 16
D-A3□C-5, D-A44C-5	50	52	77	59(68.5)	51.5(61)	8.5	6.5	
D-A3□C-6, D-A44C-6	63	64	91	61.5(71)	53(62.5)	10.5	7.5	M5 X 20
D-A3□C-8, D-A44C-8	80	78	107	65(74.5)	54.5(64)	12.5	9.5	
D-A3□C-10, D-A44C-10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

\* ( ) : Values for D-A44C

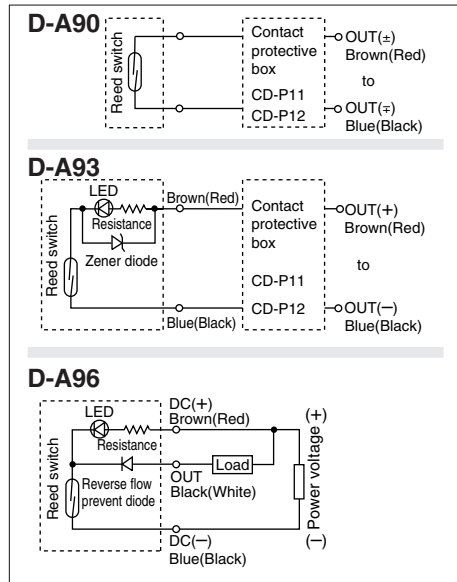
# Reed Switch/Direct Mounting

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

### Grommet Electrical entry: In-line



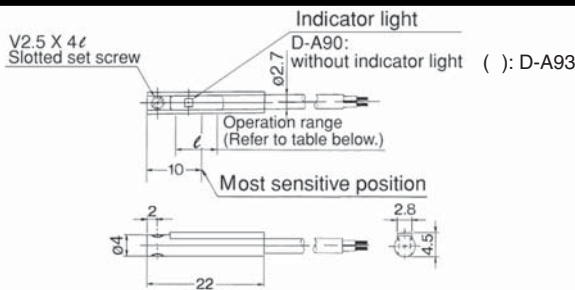
### Internal Circuit ( ): If not applicable for IEC Standard



- 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) (mm)

Actuator series	Bore size												
	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	ø6, ø10, ø16, ø20, ø25, ø32	MXP	ø10, ø12, ø16
CDQS	ø12, ø16, ø20, ø25	MTS	ø20, ø25, ø32, ø40
CDQ2*	ø32, ø40, ø50, ø63, ø80, ø100	CXT	ø12, ø16, ø20, ø25, ø32, ø40
MY1	ø16, ø20	MK	ø12, ø16
MXU	ø6, ø10, ø16	MK2	ø32, ø40, ø50, ø63
MXW	ø8, ø12, ø16, ø20, ø25	RSQ	ø12, ø32, ø40, ø50
MXF	ø8, ø12, ø16, ø20	CEP	ø12, ø20
MXS/MXQ	ø6, ø8, ø12, ø16, ø20, ø25	CY1R	ø6, ø10, ø15, ø20

\*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 <sup>AC</sup> / <sub>DC</sub> or less	48V <sup>AC</sup> / <sub>DC</sub> or less	100V <sup>AC</sup> / <sub>DC</sub> or less
Max. load current	50mA	40mA	20mA
Contact protection circuit	None		
Internal resistance	1Ω 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	≤ 2.4V (up to 20mA)/≤ 3V (up to 40mA)		≤ 0.8V
Indicator light	ON: When red light emitting diode		

#### Lead wire

D-A90/D-A93 — Oilproof vinyl heavy insulation cable, ø2.7, 0.18mm<sup>2</sup> X 2cores (Brown, Blue), 0.5m

D-A96 — Oilproof vinyl heavy insulation cable, ø2.7, 0.15mm<sup>2</sup> 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) (mm)

Actuator series	Bore size											
	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 ±30%)

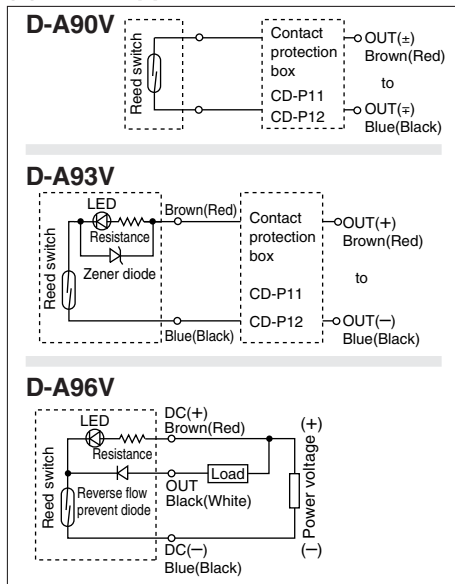
# Reed Switch/Direct Mounting

## D-A90V/D-A93V/D-A96V

**Grommet**  
Electrical entry: Perpendicular



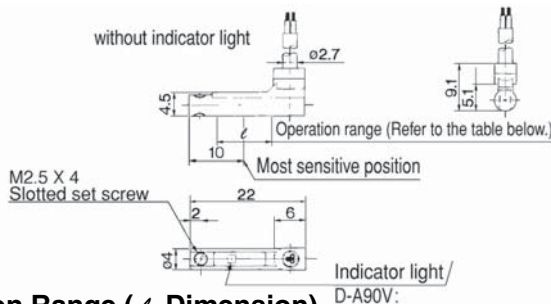
**Internal Circuit**  
( ): If not applicable for IEC Standard



- 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												
	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	ø6, ø10, ø16, ø20, ø25, ø32	MXP	ø10, ø12, ø16
CDQS	ø12, ø16, ø20, ø25	MTS	ø20, ø25, ø32, ø40
CDQ2 *	ø32, ø40, ø50, ø63, ø80, ø100	CXT	ø12, ø16, ø20, ø25, ø32, ø40
MY1	ø16, ø20	MK	ø12, ø16
MXU	ø6, ø10, ø16	MK2	ø32, ø40, ø50, ø63
MXW	ø8, ø12, ø16, ø20, ø25	RSQ	ø12, ø32, ø40, ø50
MXF	ø8, ø12, ø16, ø20	CEP	ø12, ø20
MXS/MXQ	ø6, ø8, ø12, ø16, ø20, ø25	CY1R	ø6, ø10, ø15, ø20

\*Not applicable for CDQP2

### Specifications

PLC: Programmable Logic Controller

#### D-A90V (Without indicator light)

Auto switch model number	D-A90V		
Application	IC circuit/Relay/PLC		
Load voltage	24V <sup>AC</sup> / <sub>DC</sub> or less	48V <sup>AC</sup> / <sub>DC</sub> or less	100V <sup>AC</sup> / <sub>DC</sub> or less
Max. load current	50mA	40mA	20mA
Contact protection circuit	None		
Internal resistance	1□ or less (Including 3m lead wire)		

#### D-A93V/D-A96V (With indicator light)

Auto switch model number	D-A93V	D-A96V	
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	2.7V or less	0.8V or less	
Indicator light	ON: When red light emitting diode		

● Lead wire

D-A90V/D-A93V — Oilproof vinyl heavy insulation cable, ø2.7, 0.18mm<sup>2</sup> X 2cores (Brown, Blue), 0.5m

D-A96V — Oilproof vinyl heavy insulation cable, ø2.7, 0.15mm<sup>2</sup> 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

#### Precautions

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

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

Actuator series	Bore size											
	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 ±30%)

# Reed Switch/Direct Mounting

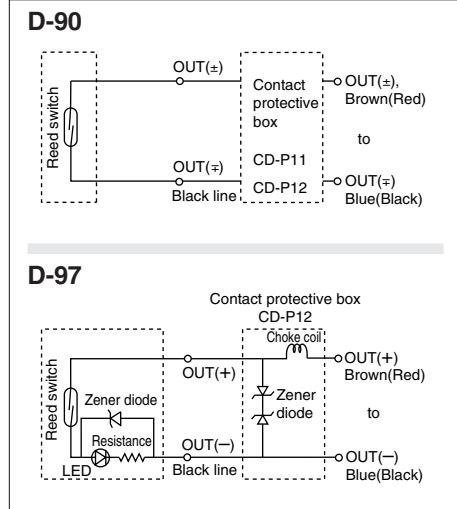
## D-90/D-97

**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

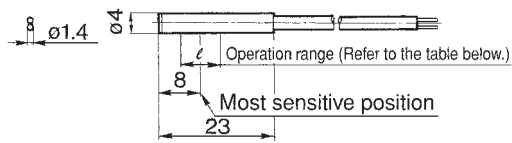
PLC: Programmable Logic Controller

D-90 (Without indicator light)			
Auto switch model number	D-90		
Application	Relay/IC circuit/PLC		
Load voltage	5V AC DC	12V AC DC	24V 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		

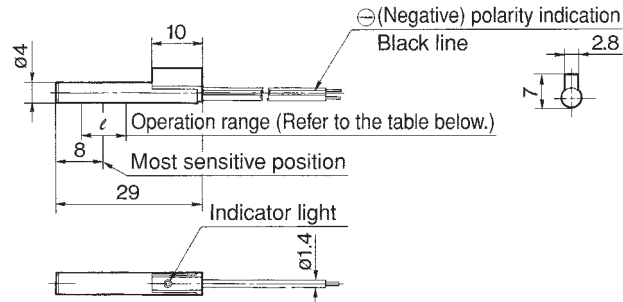
• Lead wire — Vinyl parallel cable, 0.2mm<sup>2</sup>, 2 cores, 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

### Dimensions

#### D-90



#### D-97



### Operation Range (ℓ Dimension)

(mm)

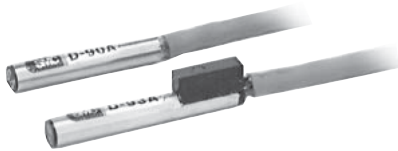
Actuator series	Bore size							
	6	10	15	16	20	25	32	
CDJP-□D	5.5	8	9	—	—	—	—	
CDU	Without shield plate	5.5	7	—	9	11	12	14
	With shield plate	—	—	—	7	8	8	9

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 DC	12V AC DC	24V AC DC	100V AC DC
Max. load current	50mA			20mA
Internal resistance	1Ω or less (Including 3m lead wire)			

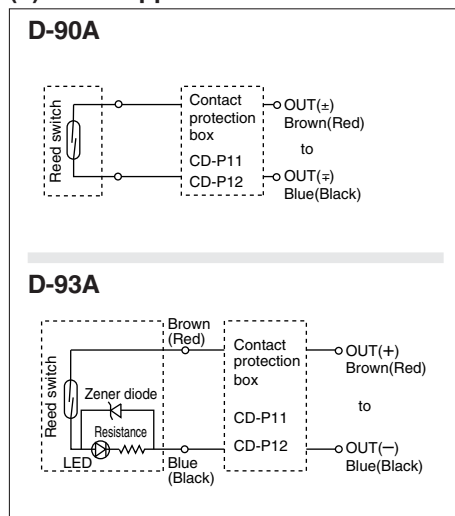
#### D-93A (With indicator light)

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

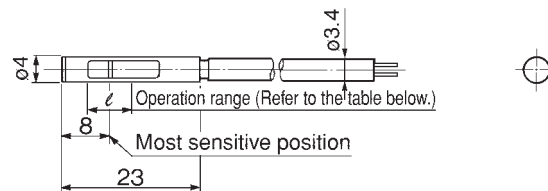


Note) ① In the case operation load is an inductive load.  
② In the case the wiring length to load is ">" 5m.  
③ In the case the load voltage is 100V AC.

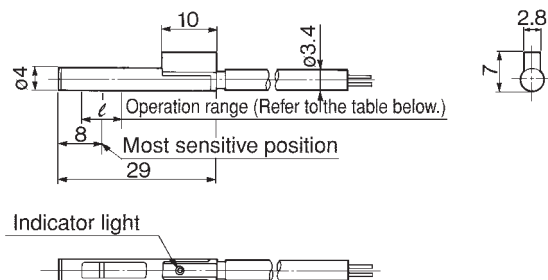
Be sure to use the auto switch with the contact protection box in any case mentioned above. Refer to p.6-19 for the details of contact protection box.

### 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		

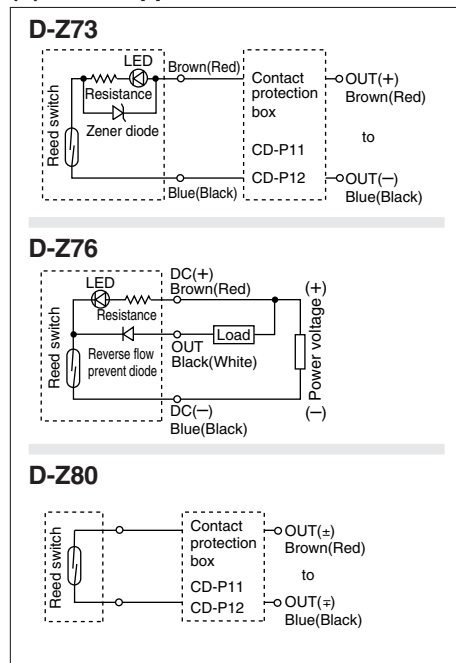
#### D-Z8 (Without indicator light)

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), 0.5m  
 Note 1) Refer to common specifications on p.6-18.  
 Note 2) Refer to p.6-18 for lead wire length.

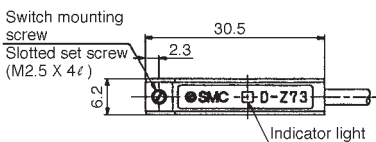
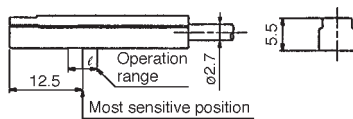
### Internal Circuit

( ): If not applicable for IEC Standard

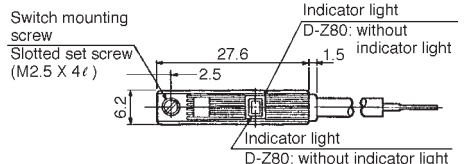
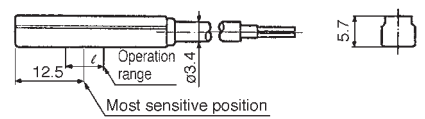


### Dimensions

#### D-Z73



#### D-Z76, Z80



### Operation Range (ℓ Dimension)

(mm)

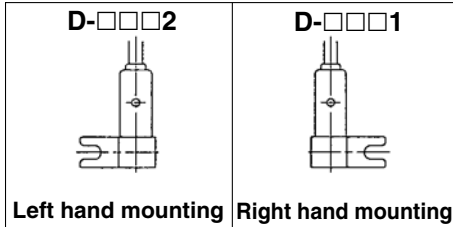
Actuator series	Bore size												
	6	10	12	15	16	20	25	32	40	50	63	80	100
MGQ, MVGQ	—	—	7.5	—	8.5	9.5	9.5	11	11	11	13	13	14
CXS	9	7	—	9	—	9	9	11	—	—	—	—	—
MGP	—	—	7.5	—	10	10	10	10.5	10.5	10.5	11.5	11.5	12
RSH	—	—	—	—	—	8.5	—	7	—	9.5	10.5	11.5	—
MY1B	—	—	—	—	—	—	12	12	12	12	12	12	12
MY1M, MY1C	—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

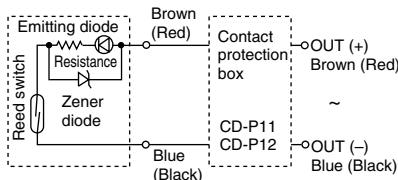
**Grommet  
Lead Wire: In-line**



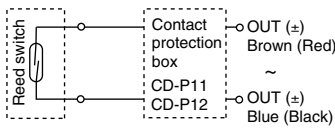
### Auto switch internal circuit

( ) : 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

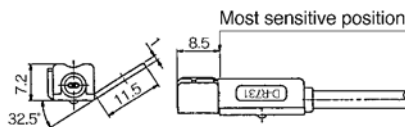
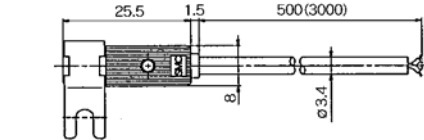
Auto switch model no.	D-R73□ (With indicator light)		D-R80□ (Without indicator light)		
	D-R731/D-R732		D-R801/D-R802		
Applicable load	Relay, PLC				
Load voltage	100V AC	24V DC	24V <sup>AC</sup> <sub>DC</sub> or less	48V <sup>AC</sup> <sub>DC</sub>	100V <sup>AC</sup> <sub>DC</sub>
Max. load current 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		



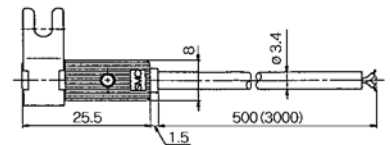
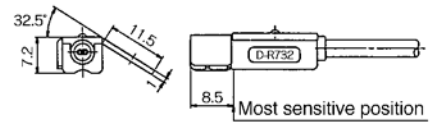
● Lead wire — Oil proof vinyl heavy insulation cable 0.2mm<sup>2</sup>, X2 wire (Brown, blue) 0.5m  
 Note 1) Refer to p.6-18 for common specifications of reed switch.  
 Note 2) Refer to p.6-18 for lead wire length.

### Dimensions

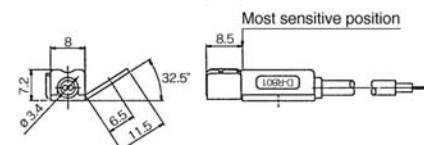
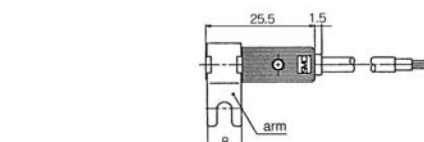
#### D-R731: Right hand mounting



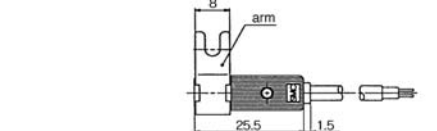
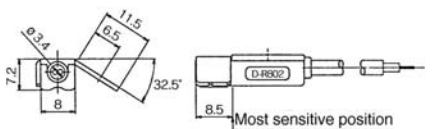
#### D-R732: Left hand mounting



#### D-R801: Right hand mounting



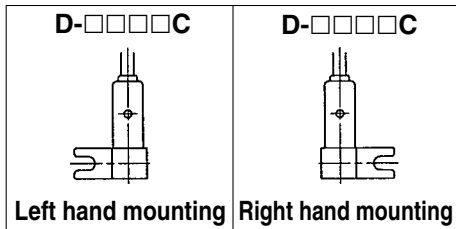
#### D-R802: Left hand mounting



# Reed Switch/Direct Mounting Type

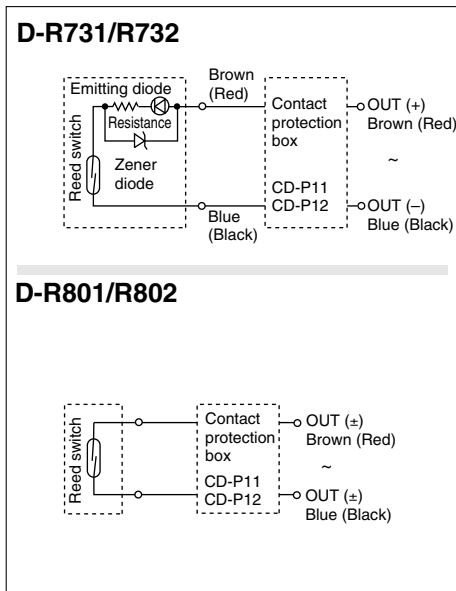
## D-R73□C/D-R80□C

**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

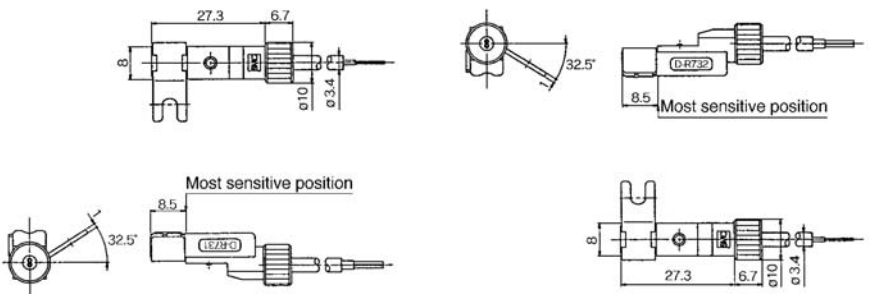


● Lead wire — Oil proof vinyl heavy insulation cable  $\phi 3.4$ , 0.2mm<sup>2</sup>  
Note 1) Refer to p.6-18 for common specifications of reed switch.  
Note 2) Refer to p.6-18 for lead wire length.

### Dimensions

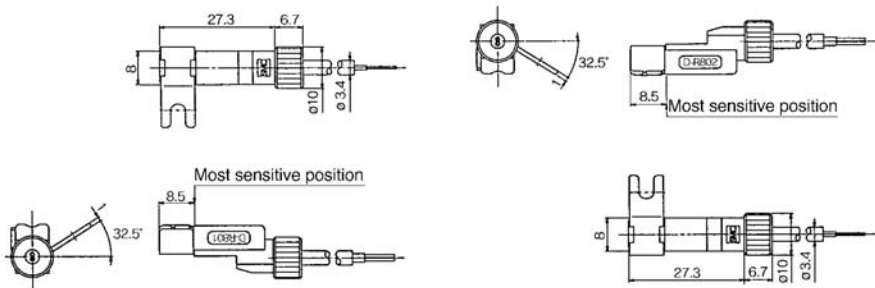
#### D-R731C: Right Hand Mounting

#### D-R732C: Left Hand Mounting



#### D-R801C: Right hand mounting

#### D-R802C: Left hand mounting

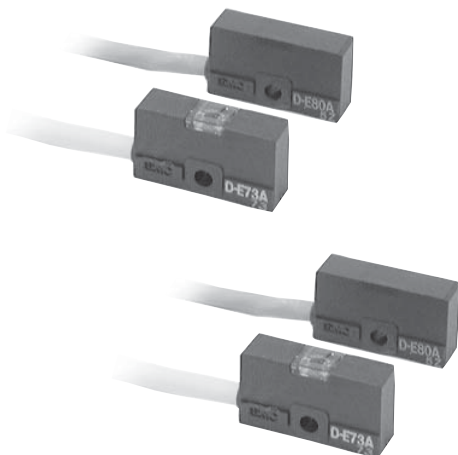




# Reed Switch/Direct Mounting

## 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
Max. load current and load current range	5 to 40mA	5 to 20mA
Contact protection circuit	None	
Internal voltage drop	≤ 2.4V	≤ 0.8V
Indicator light	ON: When red light emitting diode	

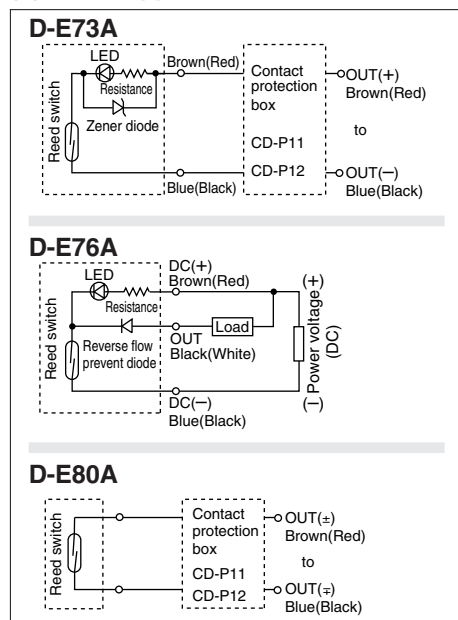
#### D-E80A (Without indicator light)

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

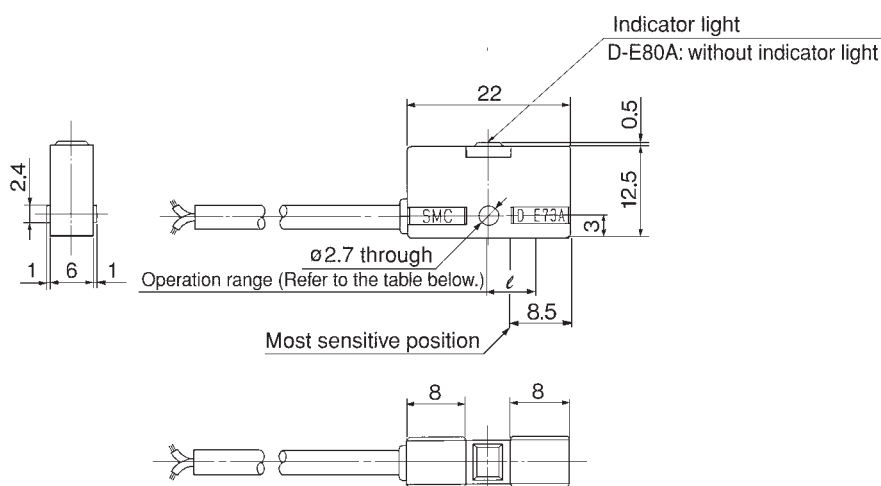
( ): If not applicable for IEC Standard



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)

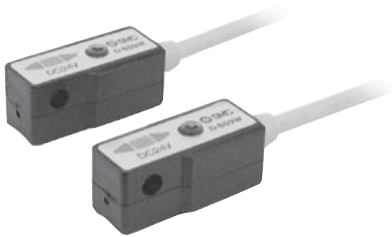
Actuator series	Bore size			
	10	25	32	40
CDBX	6	—	—	—
ML1	—	6	6	6

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

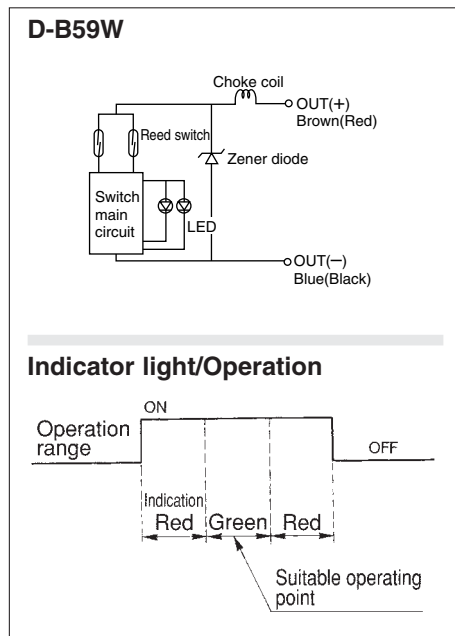
### D-B59W (With indicator light)

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 Suitable operating point: Green light emitting diode

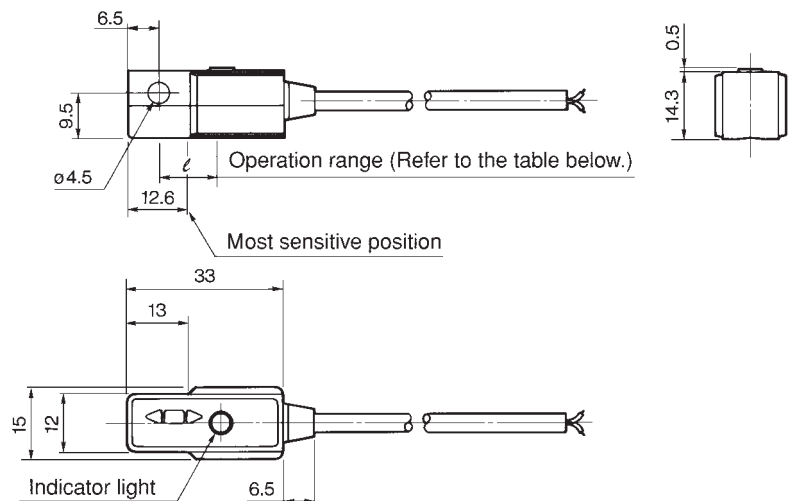
● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to the p.6-18 for lead wire length.

## 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 Suitable operating point: Green light emitting diode

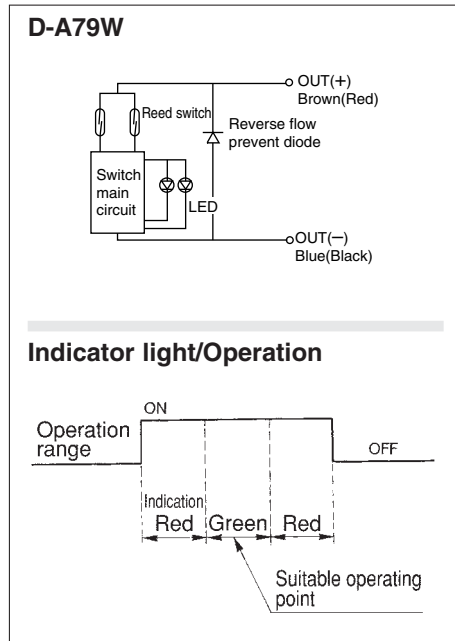
● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 2 cores (Brown, Blue), 0.5m

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

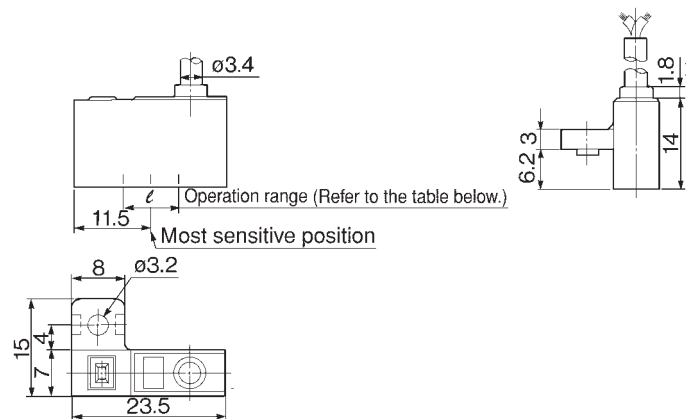
( ): If not applicable for IEC Standard



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 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

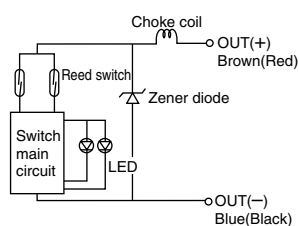
Note 1) Refer to common specifications on p.6-18.

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

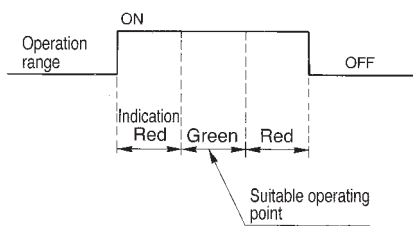
## Internal Circuit

( ): If not applicable for IEC Standard

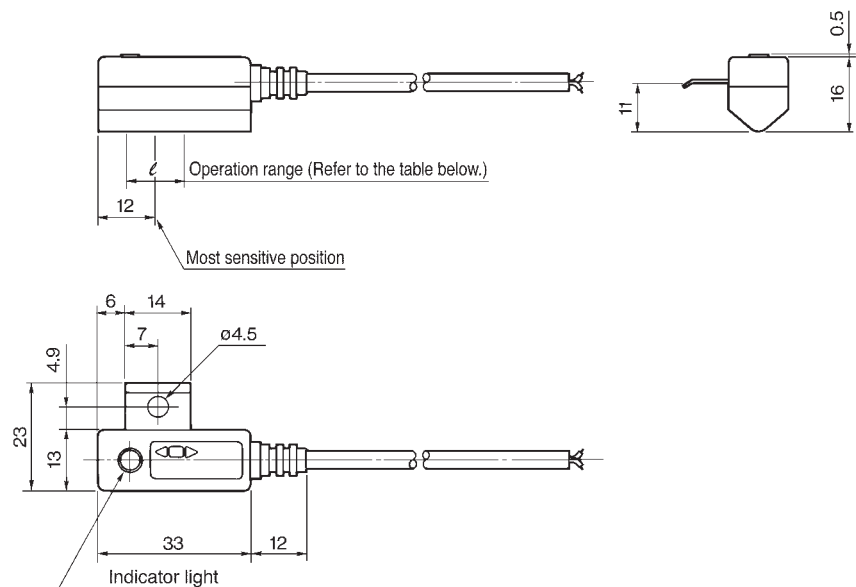
### D-A59W



### 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)

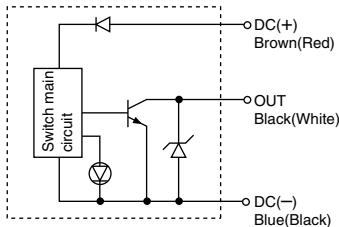
Auto switch model number	D-H7A1	D-H7A2	D-H7B
Wiring	3 wire		2 wire
Output	NPN	PNP	—
Application	IC circuit/Relay/PLC		24V DC Relay/PLC
Power voltage	5/12/24V DC (4.5 to 28V DC)		—
Current consumption	10mA or less		—
Load voltage	28V DC or less	—	24V DC (10 to 28V DC)
Load current	40mA or less	80mA or less	5 to 40mA
Internal voltage drop	≤ 1.5V (≤ 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.

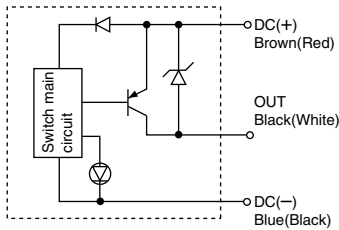
### Internal Circuit

( ): If not applicable for IEC Standard

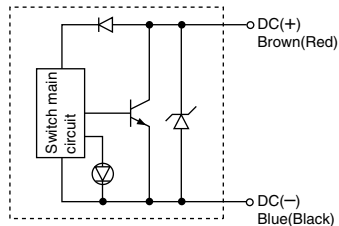
#### D-H7A1



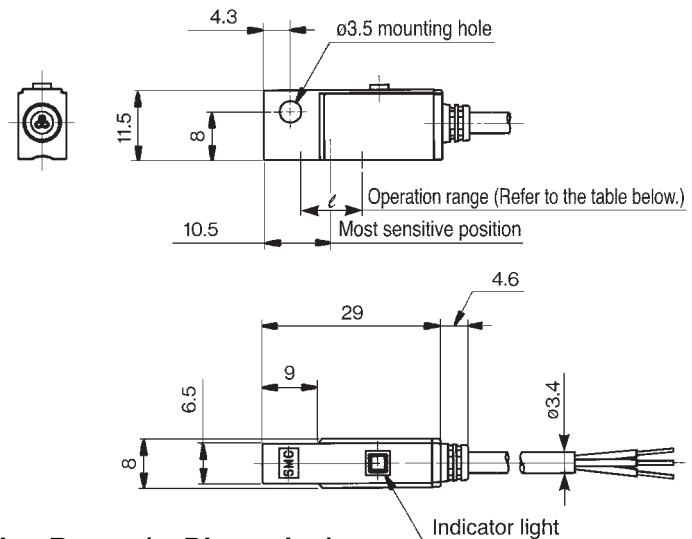
#### D-H7A2



#### D-H7B



### Dimensions



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

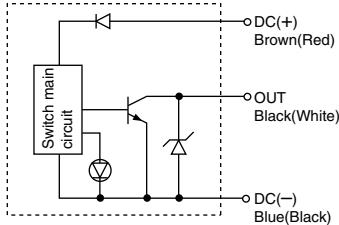
Auto switch model number	D-G59	D-G5P	D-K59
Wiring	3 wire		2 wire
Output	NPN	PNP	—
Application	IC circuit/Relay/PLC		24V DC Relay/PLC
Power voltage	5/12/24V DC (4.5 to 28V DC)		—
Current consumption	10mA or less		—
Load voltage	28V DC or less	—	24V DC (10 to 28V DC)
Load current	40mA or less	80mA or less	5 to 40mA
Internal voltage drop	1.5V or less (0.8V or less at 10mA) 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.

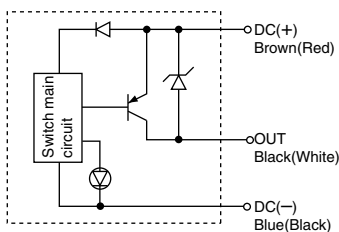
### Internal Circuit

( ) : If not applicable for IEC Standard

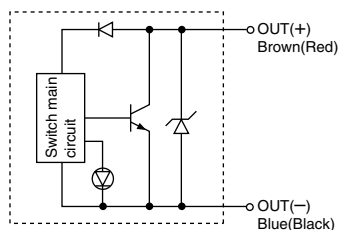
#### D-G59



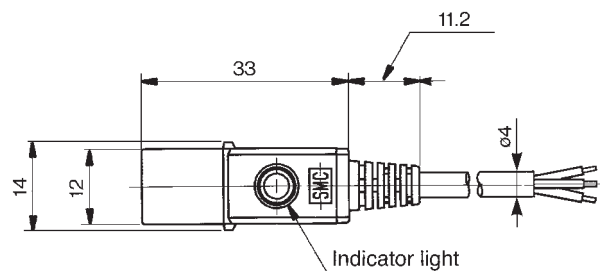
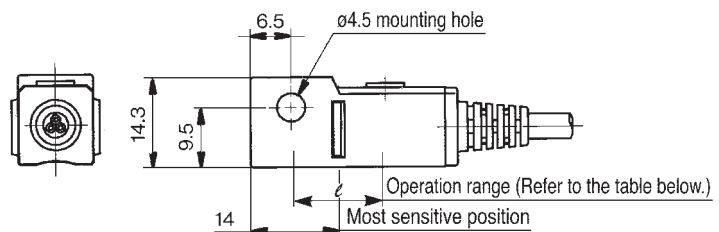
#### D-G5P



#### D-K59



### Dimensions



### Operation Range (ℓ Dimension)

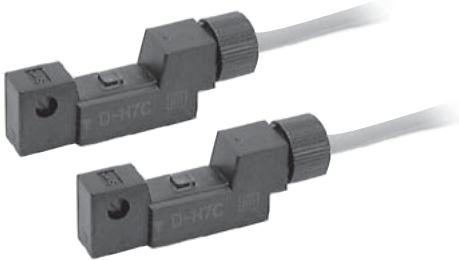
Actuator series	Bore size (mm)							
	20	25	32	40	50	63	80	100
CDG1, MGG	4	4	4.5	5	6	6.5	6.5	7
CDA1, CDBA1, CDV3, CDVS, CDLA, CDL1, CNA	—	—	—	5	6	6.5	6.5	7
MGC	4	4	4.5	5	6	—	—	—
RHC, MLGC, REC	4	4	4.5	5	—	—	—	—
CE2	—	—	—	5	6	6.5	6.5	7

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

# Solid State Switch/Band Mounting

## D-H7C

### Connector



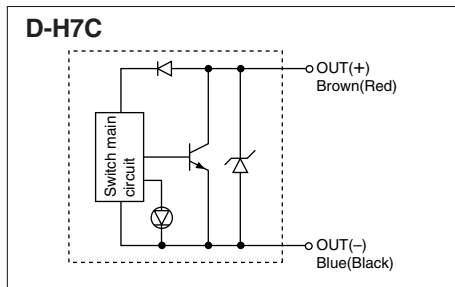
### ⚠ Caution

#### 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

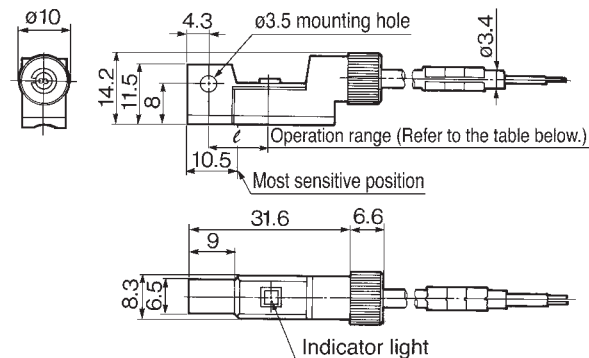
PLC: Programmable Logic Controller

#### 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

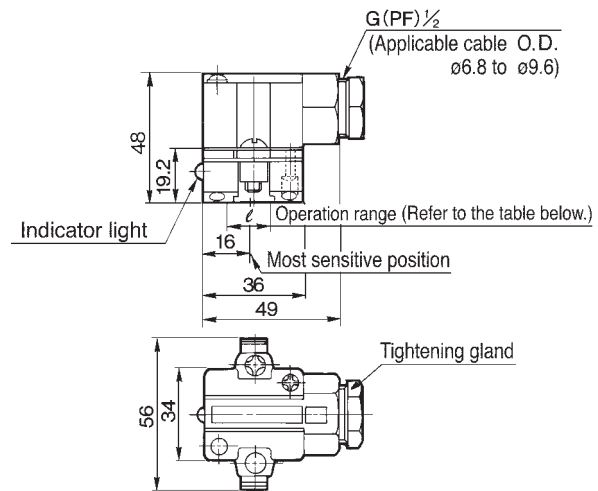
PLC: Programmable Logic Controller

#### 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 (0.8V or less 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	

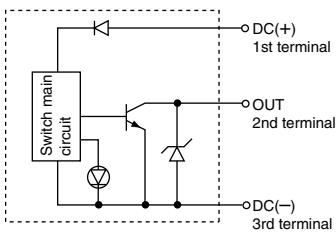
Note) Refer to common specifications on p.6-18

### Dimensions

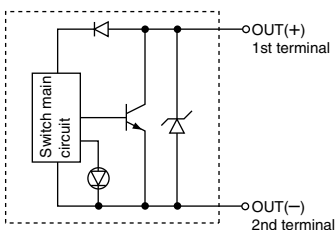


### Internal Circuit

#### D-G39



#### D-K39



### Operation Range (ℓ Dimension)

Actuator series	Bore size												
	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



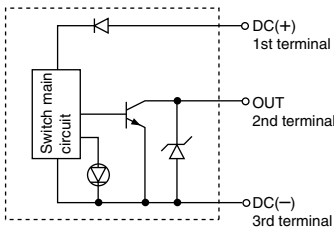
### ⚠ Caution

#### Precautions

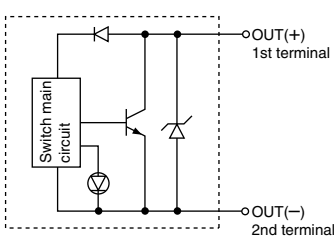
- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

### Internal Circuit

#### D-G39A



#### D-K39A



### Applicable Actuator Series

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

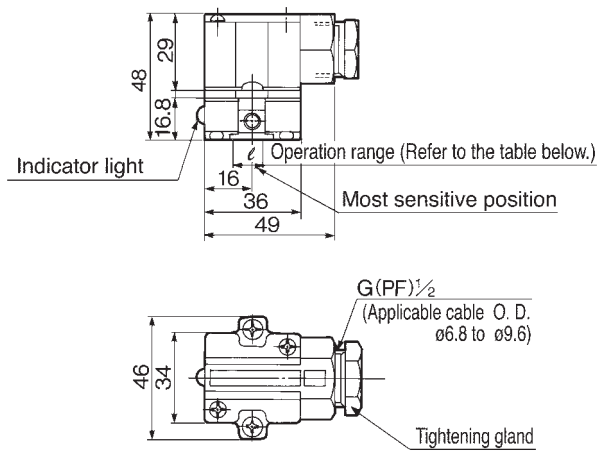
### Specifications

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 (0.8V or less at 10mA) 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)

(mm)

Actuator series	Bore size			
	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)

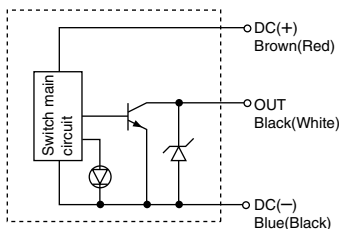
Auto switch model number	D-F79	D-F7P	D-J79
Wiring	3 wire		2 wire
Output	NPN	PNP	—
Application	IC circuit/Relay/PLC		24V DC Relay/PLC
Power voltage	5/12/24V DC (4.5 to 28V DC)		—
Current consumption	≤ 10mA		—
Load voltage	≤ 28V DC	—	24V DC (10 to 28V DC)
Load current	≤ 40mA	80mA or less	5 to 40mA
Internal voltage drop	1.5V or less (0.8V or less 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.

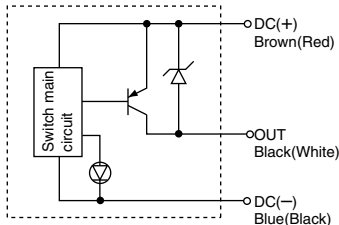
### Internal Circuit

( ): If not applicable for IEC Standard

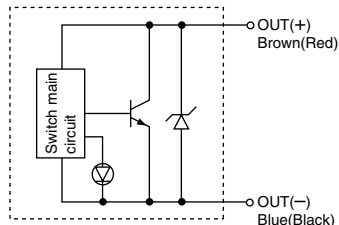
#### D-F79



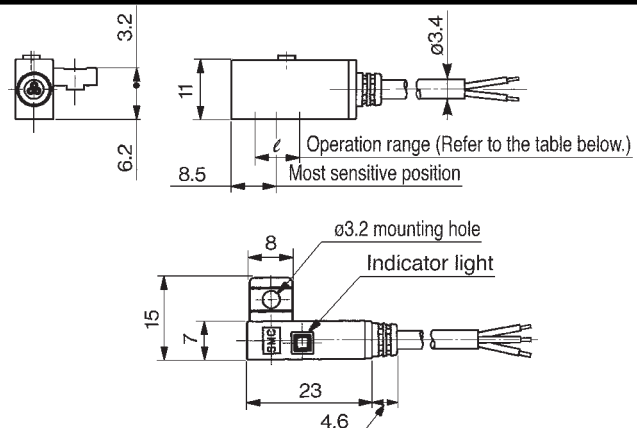
#### D-F7P



#### 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

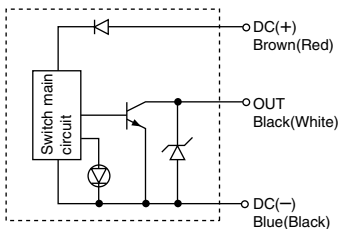
D-F7□V (With indicator light)			
Auto switch model number	D-F7NV	D-F7PV	D-F7BV
Wiring	3 wire		2 wire
Output	NPN	PNP	—
Application	IC circuit/Relay/PLC		24V DC Relay/PLC
Power voltage	5/12/24V DC (4.5 to 28V DC)		—
Current consumption	≤ 10mA		—
Load voltage	≤ 28V DC	—	24V DC (10 to 28V DC)
Load current	≤ 40mA	≤ 80mA	5 to 40mA
Internal voltage drop	1.5V or less (0.8V or less at 10mA 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, 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.

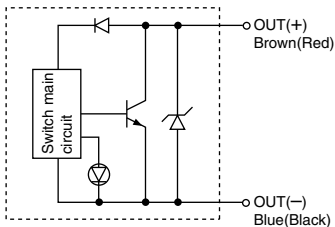
### Internal Circuit

( ): If not applicable for IEC Standard

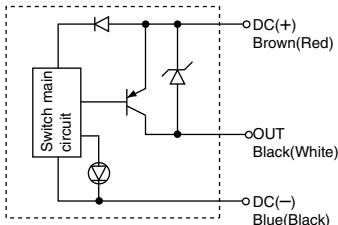
#### D-F7NV



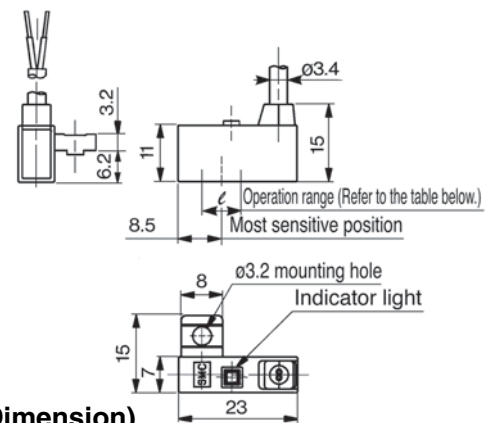
#### D-F7PV



#### D-F7BV



### Dimensions



### Operation Range (ℓ Dimension)

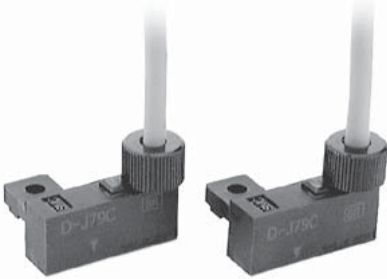
Actuator series	Bore size															
	6	10	12	15	16	20	25	32	40	50	63	80	100	125	140	160
CDJ2, CDVJ3, CDVJ5	—	5	—	—	5	—	—	—	—	—	—	—	—	—	—	—
CDQ2	—	—	5.5	—	6	5.5	5	6	6	6.5	6.5	7	9	9	8.5	—
CD□XW	B	—	—	—	4	3.5	3.5	4	—	—	—	—	—	—	—	—
		P	—	—	—	2.5	3.5	2.5	—	—	—	—	—	—	—	—
CDY1S, CY1L	3	3	—	4	—	3	3	3	3.5	—	—	—	—	—	—	—
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 ±30%)

# Solid State Switch/Rail Mounting

## D-J79C

### Connector



### ⚠ Caution

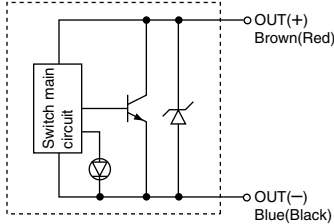
#### Precautions

- 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

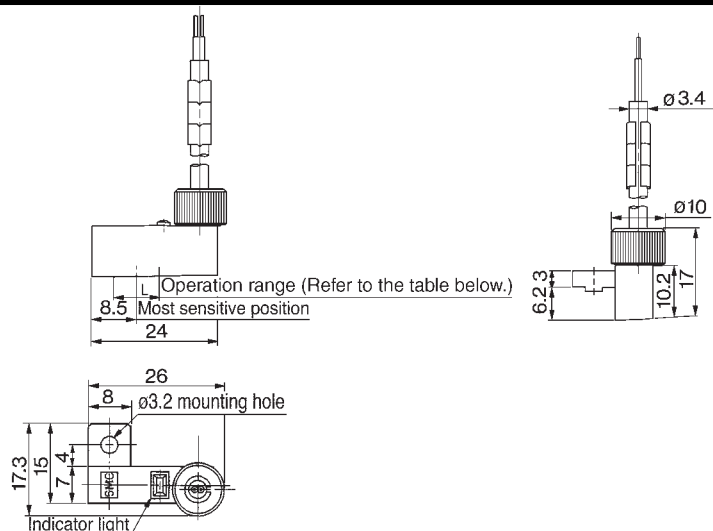
Auto switch model number	D-J79C
Wiring	2 wire
Output	—
Application	24V DC Relay/PLC
Power voltage	—
Current consumption	—
Load voltage	24V DC (10 to 28V DC)
Load current	5 to 40mA
Internal voltage drop	≤ 4V
Current leakage	≤ 0.8mA at 24V DC
Indicator light	ON: When red light emitting diode

● 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□

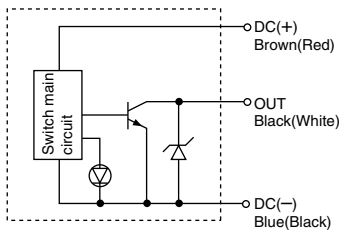
### Grommet



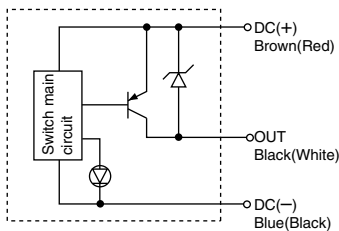
### Internal Circuit

( ): If not applicable for IEC Standard

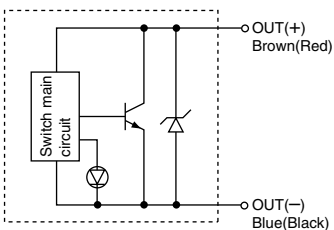
#### D-F59



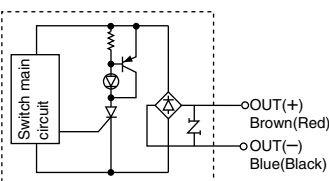
#### D-F5P



#### 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

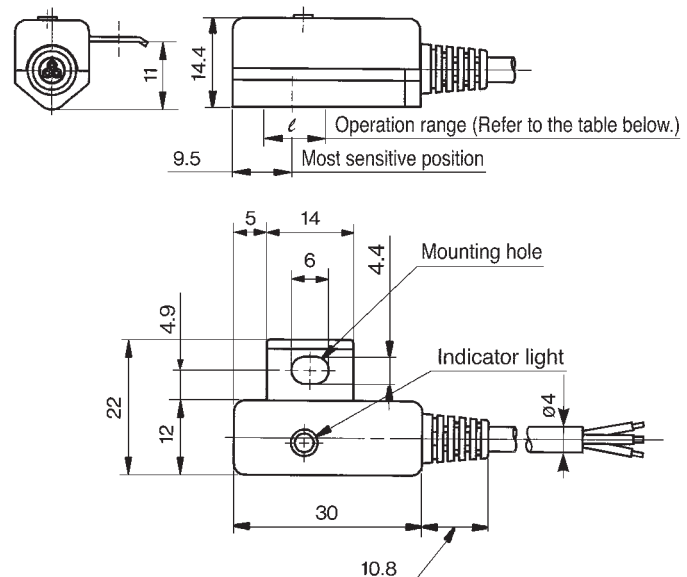
#### D-F5□/D-J5□

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 (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 ≤ 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)

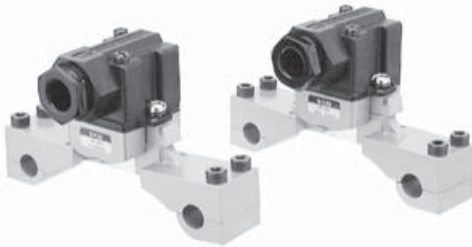
Actuator series	Bore size (mm)										
	32	40	50	63	80	100	125	140	160	180	200
CDA1, CDBA1, CDV3, CDVS1, CDLA, CNA	—	4	4	4.5	4.5	4.5	—	—	—	—	—
CDL1	—	4	4	4.5	4.5	4.5	5	5	5.5	—	—
CDS1	—	—	—	—	—	—	5	5	5.5	6	6
CE2	—	4	4	4.5	4.5	4.5	—	—	—	—	—
MDB	3.5	4	4	4.5	4.5	4.5	—	—	—	—	—

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

# Solid State Switch/Tie-rod Mounting

## D-G39C/D-K39C

### Terminal conduit



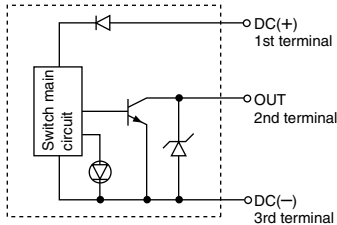
### ⚠ Caution

#### Precautions

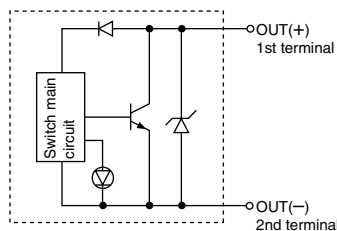
- ① Use cable whose O. D. is within the size in the figure to maintain water resistant performance.
- ② After wiring, confirm that tightening gland and all screws are tightened.

### 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

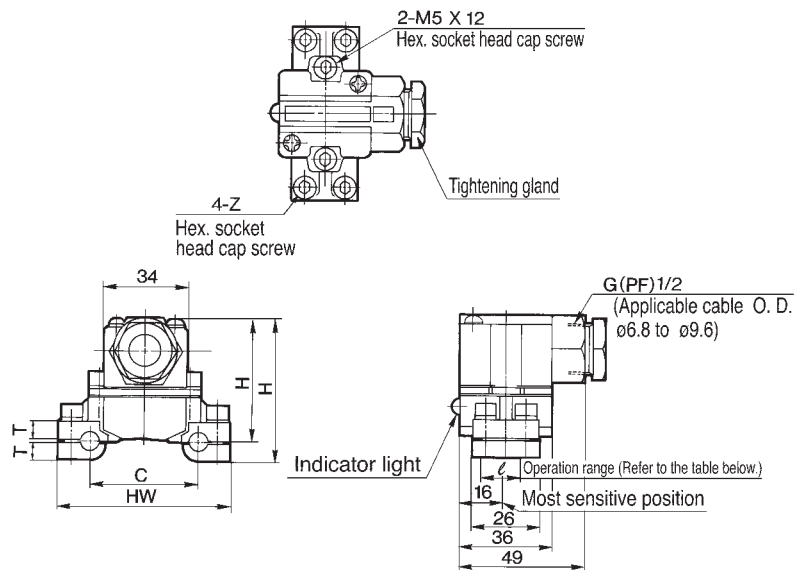
PLC: Programmable Logic Controller

#### 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

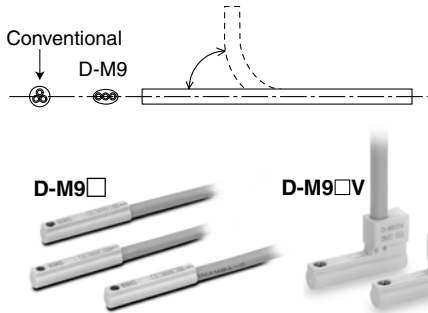
D-M9□ (with indicator light)			
Switch model	D-M9N	D-M9P	D-M9B
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)		
Current consumption	10 mA or less		
Load voltage	28 VDC or less	—	24 VDC (10 to 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)

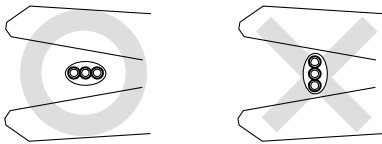


## ⚠ Caution

### Operating Precautions

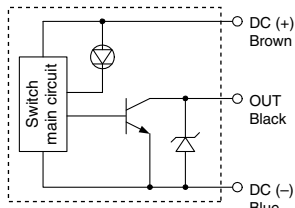
When the cable sheath is stripped, confirm the stripping direction.

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

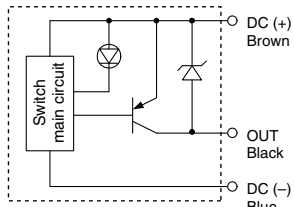


## Auto Switch Internal Circuit

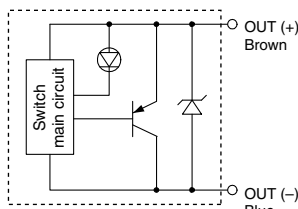
### D-M9N, D-M9NV



### D-M9P, D-M9PV



### D-M9B, D-M9BV



## Weight

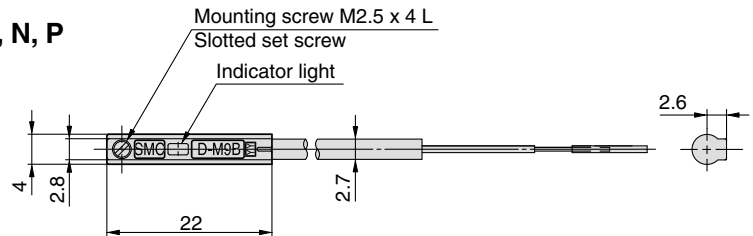
Unit: g

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

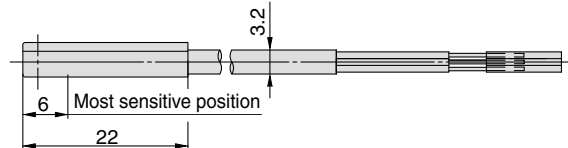
## Dimensions

### D-M9□

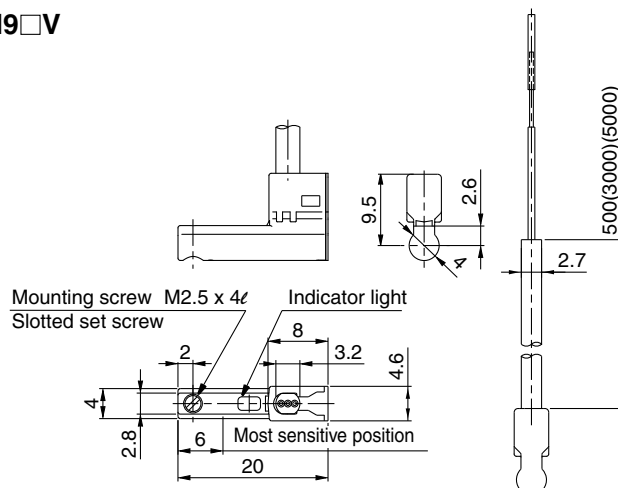
#### D-M9B, N, P



#### 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 (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



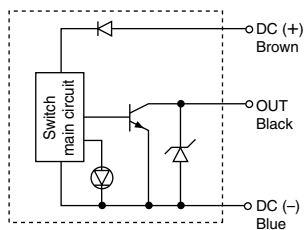
## Caution

### Operating precautions

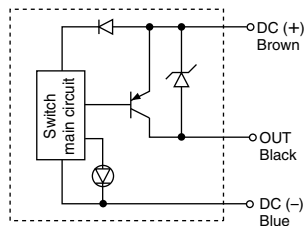
Fix the switch with appropriate screw installed on the switch body. If using other screws, switch may be damaged.

## Auto switch internal circuit

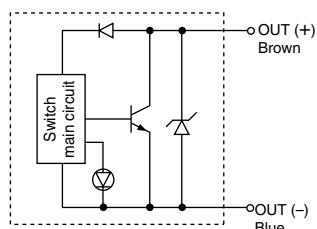
### D-F8N



### D-F8P



### D-F8B



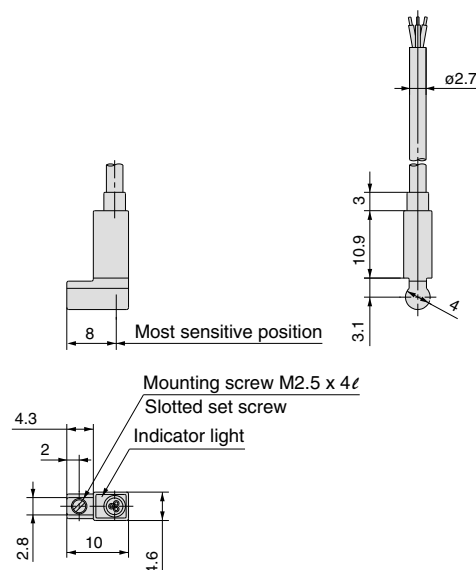
## Weight

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

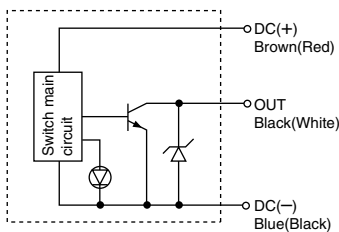
D-Y5/D-Y6/D-Y7P/D-Y7PV (With indicator light)						
Auto switch model number	D-Y59A	D-Y69A	D-Y7P	D-Y7PV	D-Y59B	D-Y69B
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring	3 wire				2 wire	
Output	NPN		PNP		—	
Application	IC circuit/Relay/PLC				24V DC Relay/PLC	
Power 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 (0.8V or less at 10mA) (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.

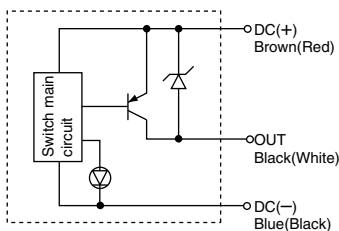
## Internal Circuit

( ): If not applicable for IEC Standard

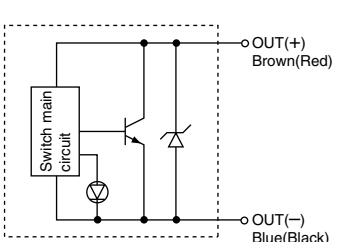
### D-Y59A, D-Y69A



### D-Y7P(V)

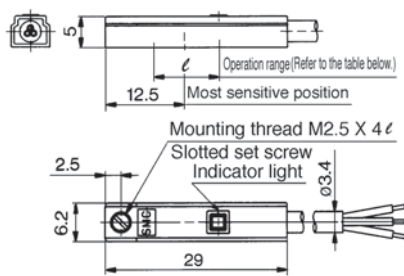


### D-Y59B, D-Y69B

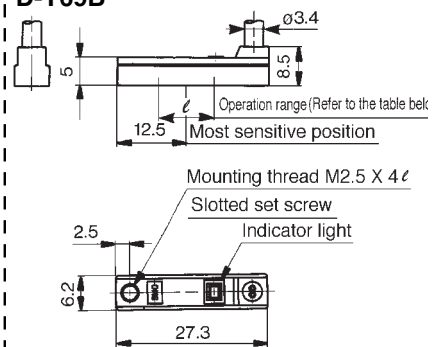


## Dimensions

### 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

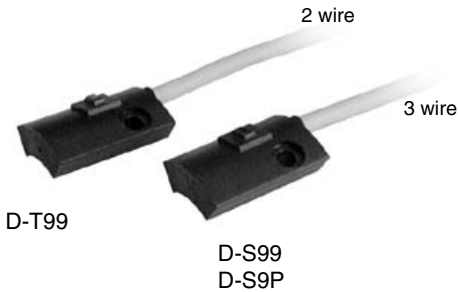
Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# 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

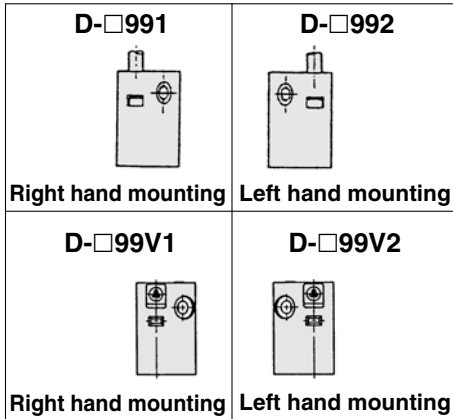
PLC: Programmable Logic Controller

D-S99(V)/D-S9P(V)/D-T99(V) (With indicator light)						
Auto switch model no	D-S991 D-S992	D-S99V1 D-S99V2	D-S9P1 D-S9P2	D-S9PV1 D-S9PV2	D-T991 D-T992	D-T99V1 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 (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					



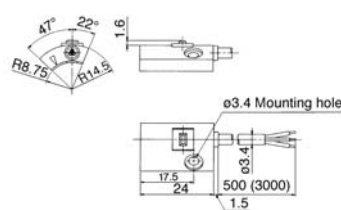
- Lead wire — Oil proof vinyl heavy insulation cable  $\phi$ 3.4, 0.2mm<sup>2</sup>, 3 wire (brown, black, blue)  
2 wire (brown, blue) 0.5m

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.

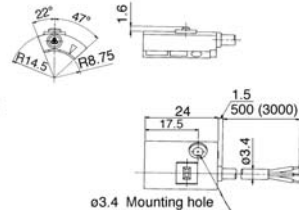


## Dimensions

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

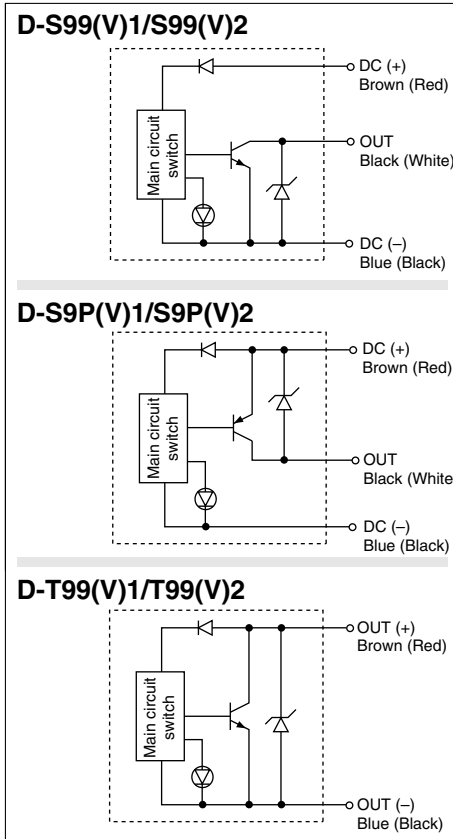


### D-S992: Left hand mounting D-S9P2:

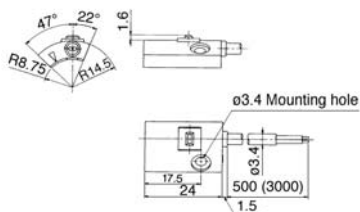


## Auto switch internal circuit

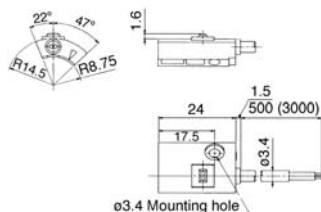
( ) : Before IEC standard



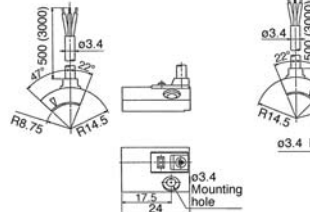
### D-T991: Right hand mounting



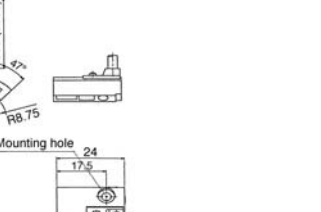
### D-T992: Left hand mounting



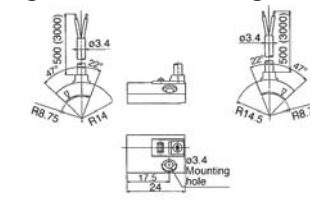
### D-S99V1: Right hand mounting D-S9PV1:



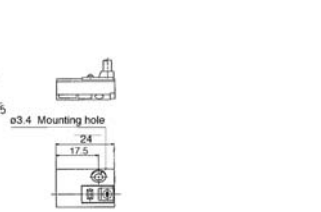
### D-S99V2: Left hand mounting D-S9PV2:



### D-T99V1: Right hand mounting



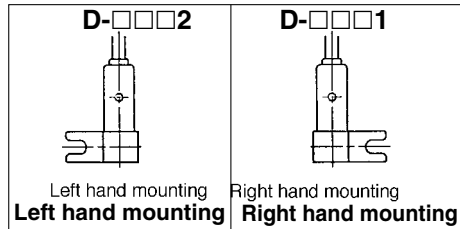
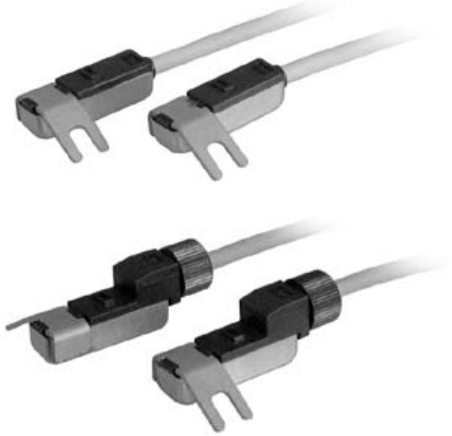
### D-T99V2: Left hand mounting



# Solid State Switch/Direct Mounting Type

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

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



### 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 (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

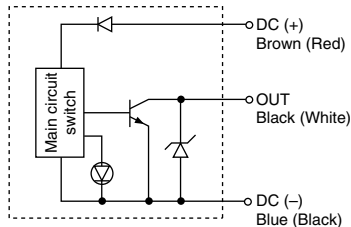
Note 1) Refer to p.6-18 for common specifications of solid state switch.

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

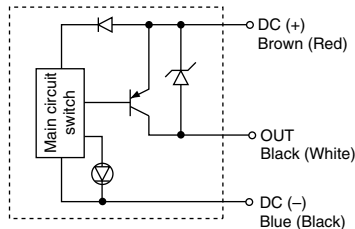
### Auto switch internal circuit

( ) : Before IEC standard

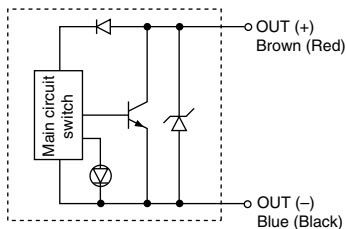
#### D-S791/S792



#### D-S7P1/S7P2

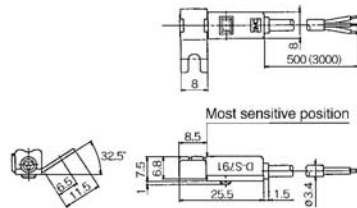


#### D-T791(C)/T792(C)

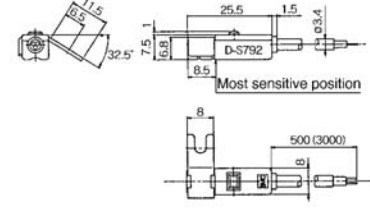


### Dimensions

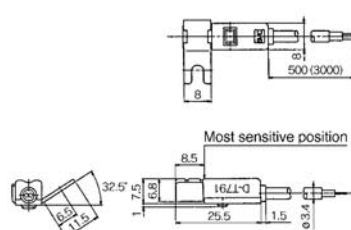
#### D-S791: Right hand mounting D-S7P1



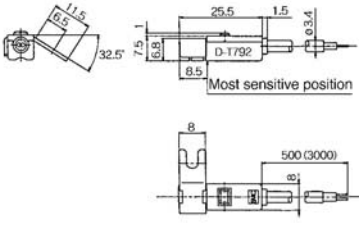
#### D-S792: Left hand mounting D-S7P2



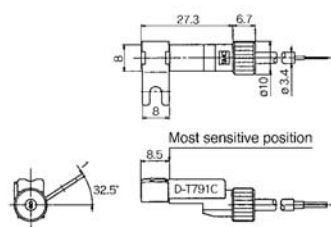
#### D-T791: Right hand mounting



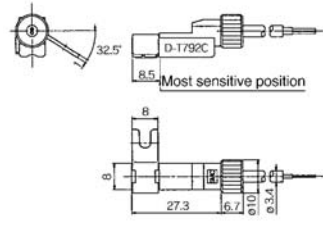
#### D-T792: Left hand mounting



#### D-T791C: Right hand mounting



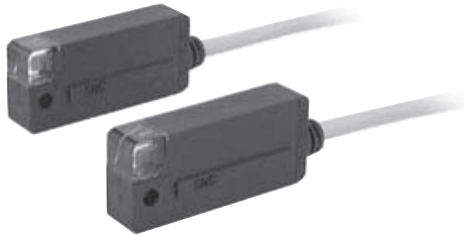
#### D-T792C: Left hand mounting



# 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

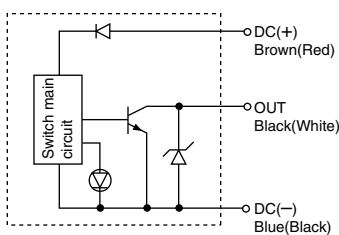
PLC: Programmable Logic Controller

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 (0.8V or less at 10mA) 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		

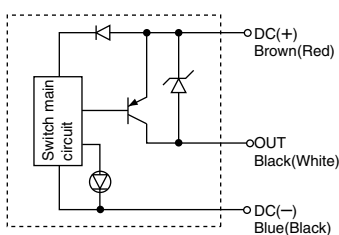
### Internal Circuit

( ): If not applicable for IEC Standard

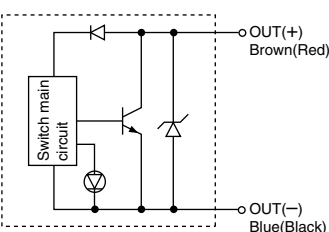
#### D-M5N



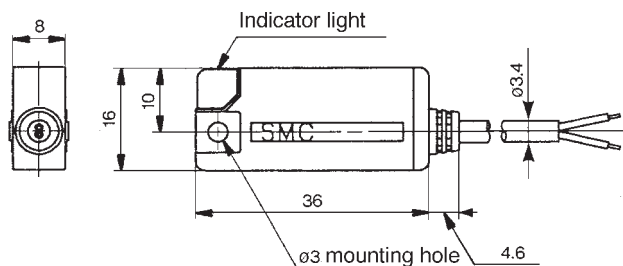
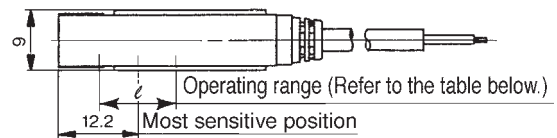
#### D-M5P



#### 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

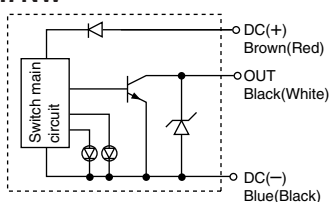
The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



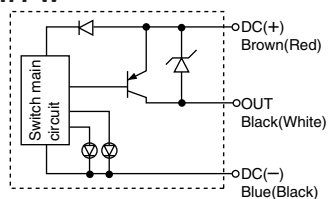
## Internal Circuit

( ): If not applicable for IEC Standard

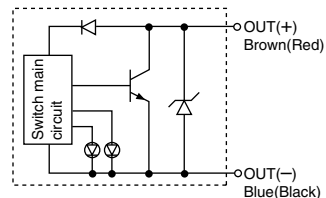
### D-H7NW



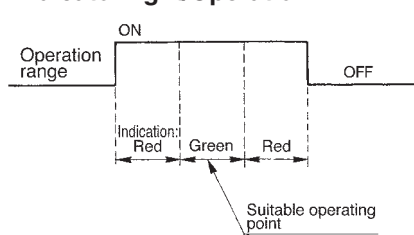
### D-H7PW



### 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

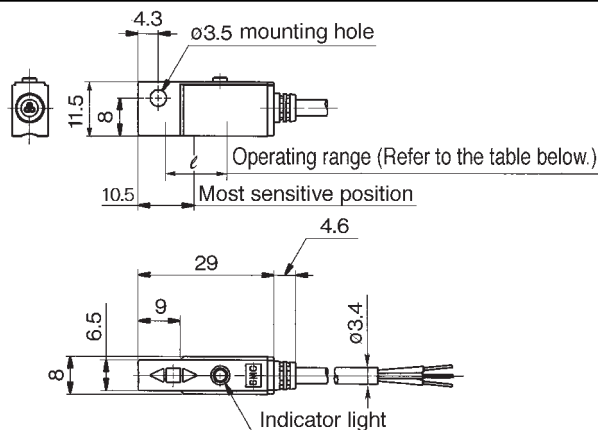
## Specifications

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 (0.8V or less at 10mA) 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, 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

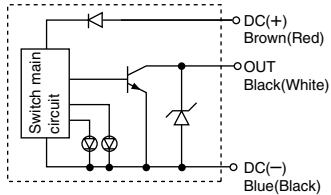
The suitable operating point can be indicated with a green light.  
(Red □ Green □ Red)



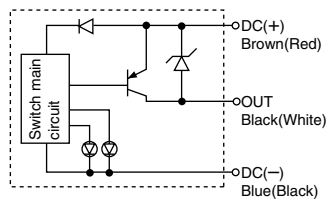
## Internal Circuit

( ): If not applicable for IEC Standard

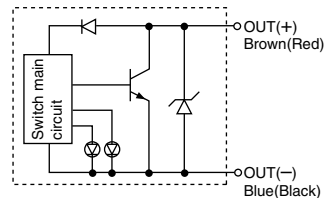
### D-G59W



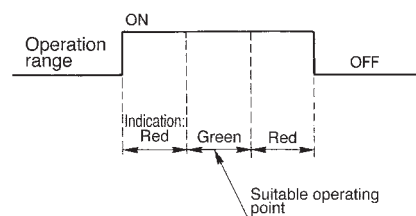
### D-G5PW



### 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

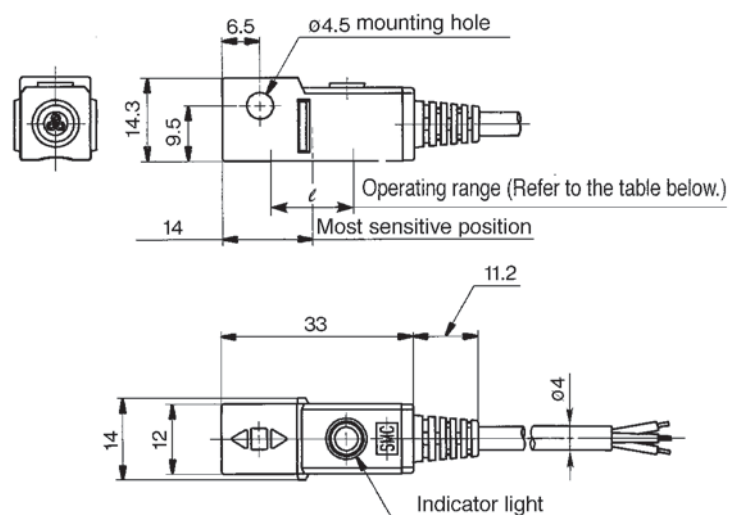
## Specifications

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 (0.8V or less at 10mA) 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

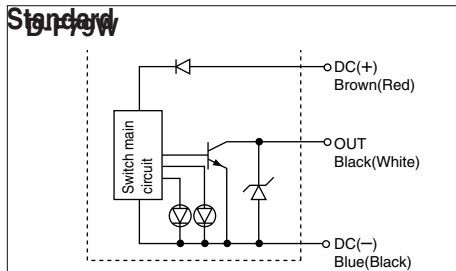
## Grommet

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

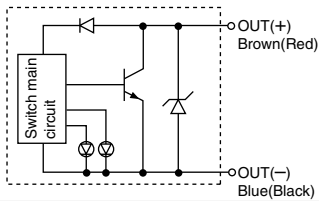


## Internal Circuit

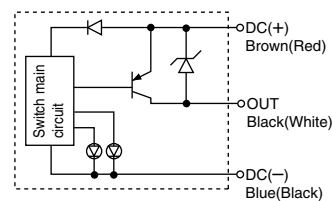
( ): If not applicable for IEC



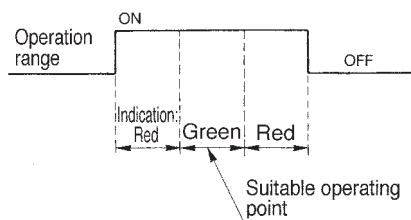
## D-F7PW



## D-J79W



## Indicator light/Operation



## Applicable Actuator Series

Series	Bore size (mm)
CDJ2, CDVJ3, 5	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

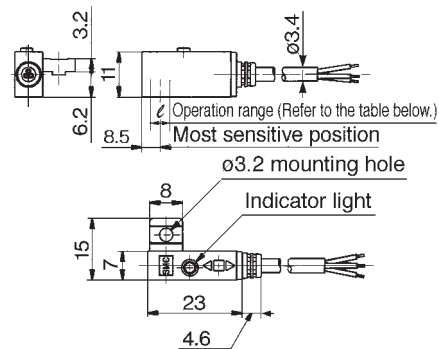
## Specifications

PLC: Programmable Logic Controller

D-F7□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 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.

## 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	—	—	—	—	—	—	—

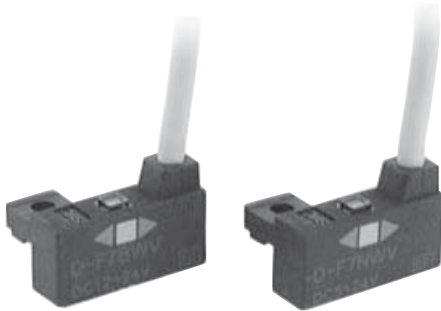
(Note) Average value at normal temperature including hysteresis. (Tolerance ±30%)



# 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

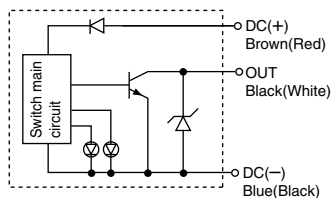
D-F7□WV (With indicator light)		
Auto switch model number	D-F7NWV	D-F7BWV
Wiring	3 wire	2 wire
Output	NPN	—
Application	IC circuit/Relay/PLC	24V DC Relay/PLC
Power voltage	5/12/24V DC (4.5 to 28V DC)	—
Current consumption	≤ 10mA	—
Load voltage	≤ 28V DC	24V DC (10 to 28V DC)
Load current	≤ 40mA	5 to 40mA
Internal voltage drop	≤ 1.5V (≤ 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 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.

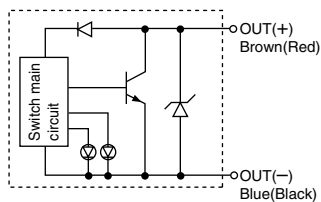
## Internal Circuit

( ): If not applicable for IEC Standard

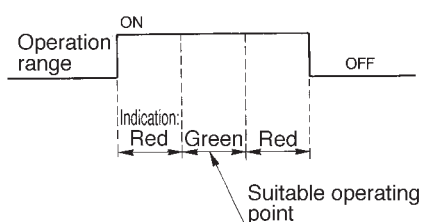
### D-F7NWV



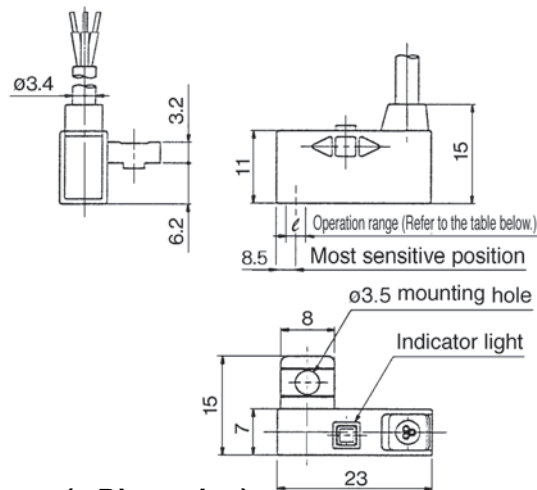
### D-F7BWV



## 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.

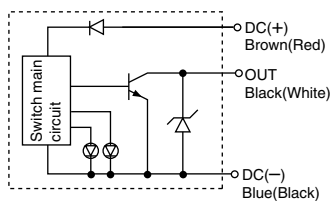
(Red □ Green □ Red)



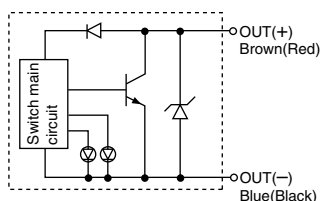
## Internal Circuit

( ): If not applicable for IEC

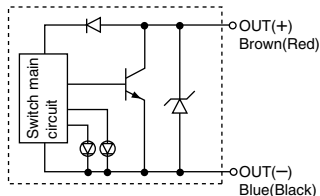
### Standard



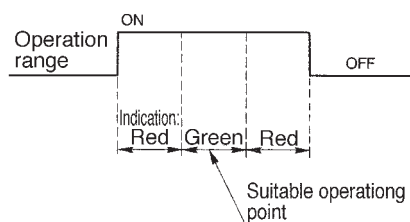
### D-F5PW



### 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

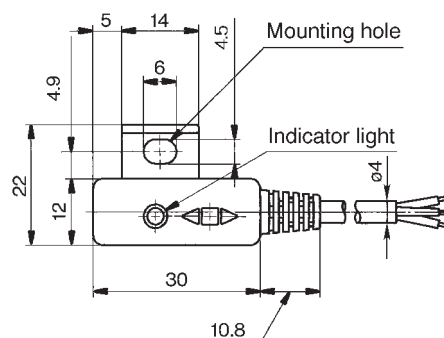
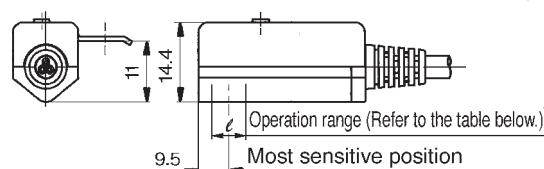
## Specifications

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 (≤ 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 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

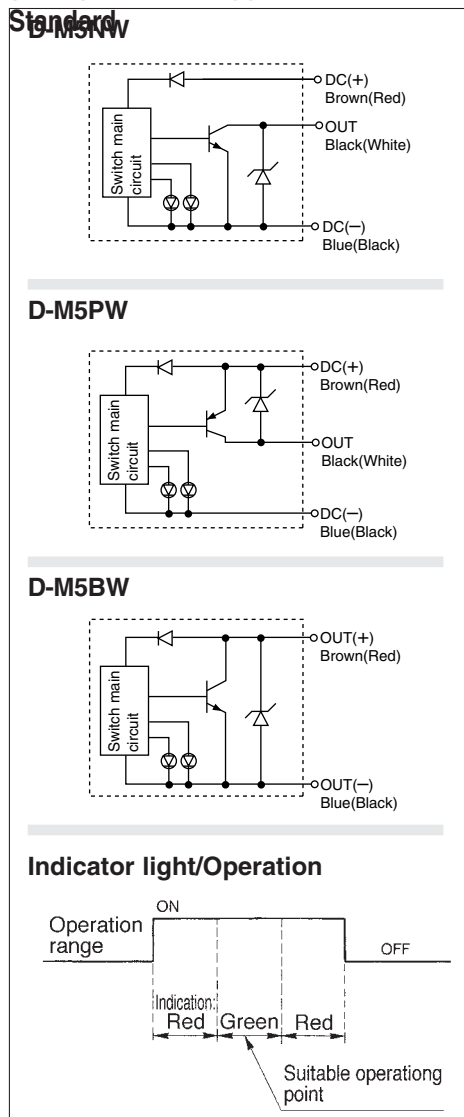
## D-M5NW/D-M5PW/D-M5BW

### 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

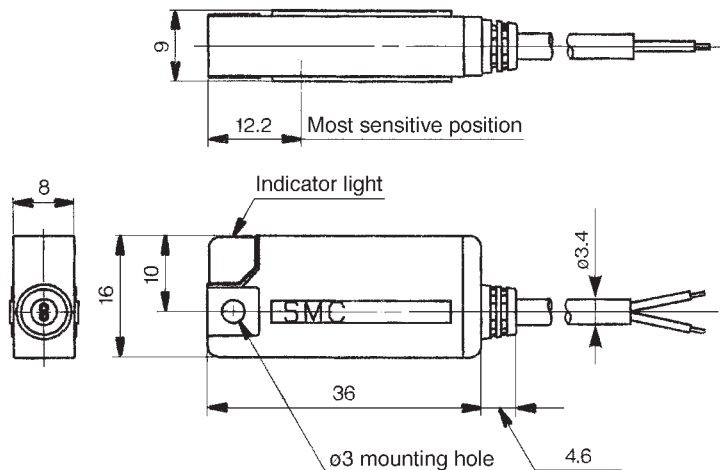
### Specifications

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	≤ 1.5V (≤ 0.8V at 10mA load current)	≤ 0.8V	≤ 4V
Current leakage	≤ 100µA at 24V DC		≤ 1mA 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, 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

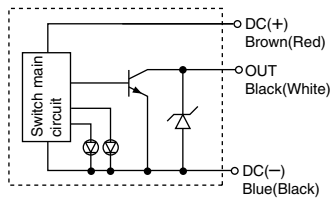
The suitable operating point can be indicated with a green light.



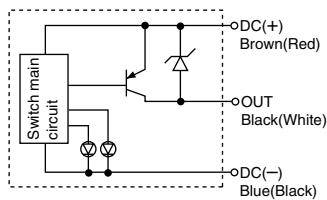
## Internal Circuit

( ): If not applicable for IEC Standard

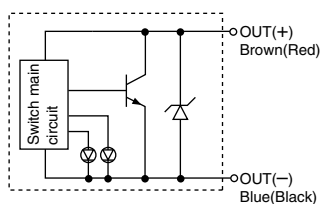
Standard (v)



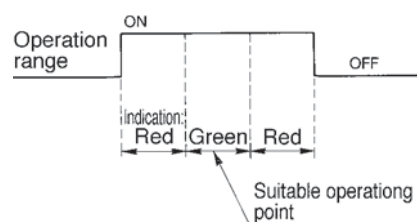
## D-Y7PW(V)



## D-Y7BW(V)



## 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 (≤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 Suitable operating point: Green light emitting diode					

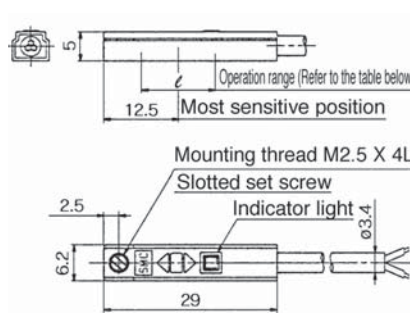
●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.15mm<sup>2</sup>, 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5mm

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

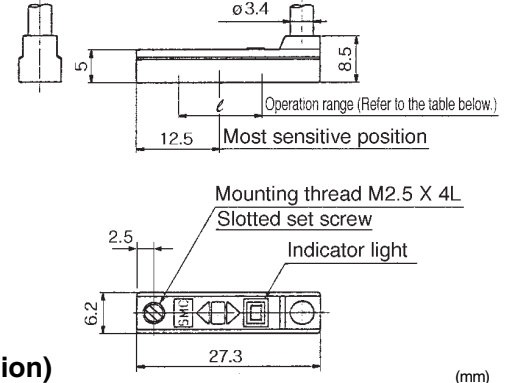
Note 2) Refer to p.6-18 for lead wire length.

## Dimensions

### D-Y7□W



### D-Y7□WV



## 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

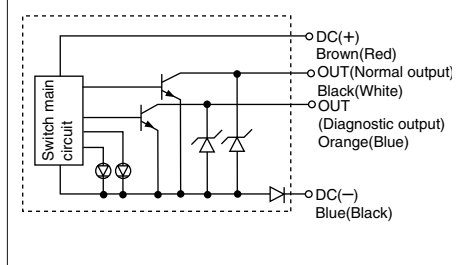
PLC: Programmable Logic Controller

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	≤ 100 $\mu$ A at 24V DC
Indicator light	Operating point: Red light emitting diode Suitable operating point: Green light emitting diode Orange colour indicator lights on when diagnostic output is ON.

### Internal Circuit

( ): If not applicable for IEC

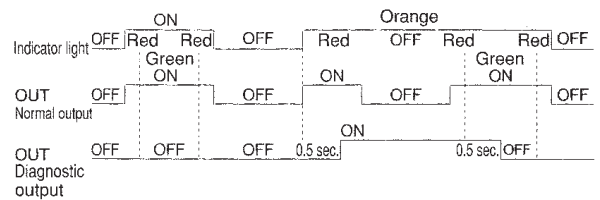
#### Standard



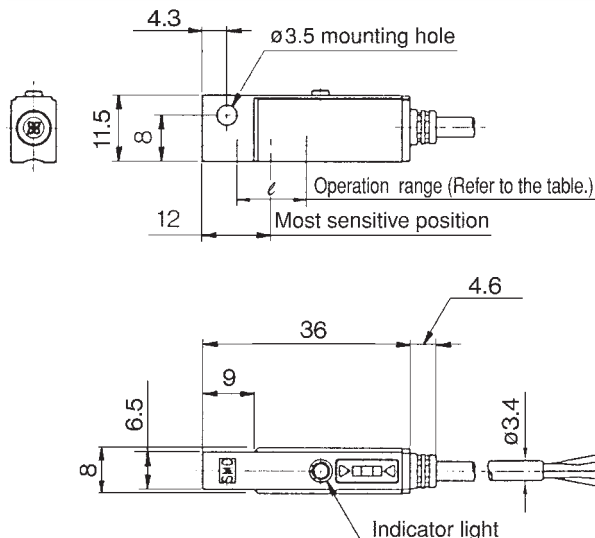
●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

### 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 ( $\ell$ 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  $\pm$ 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

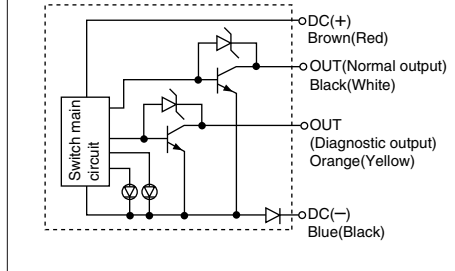
PLC: Programmable Logic Controller

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 Suitable operating point: Green light emitting diode

### Internal Circuit

( ): If not applicable for IEC

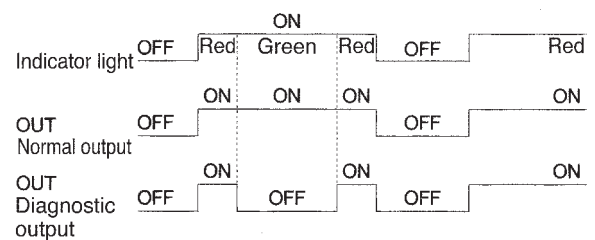
#### Standard



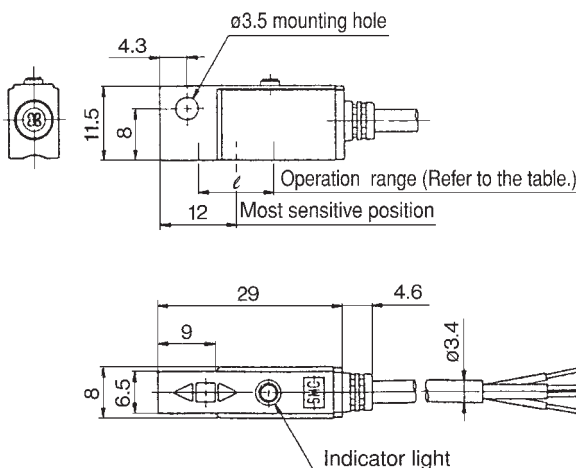
●Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

### 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

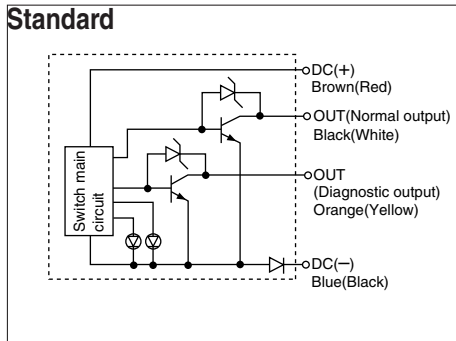
### Grommet

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 Suitable operating point: Green light emitting diode

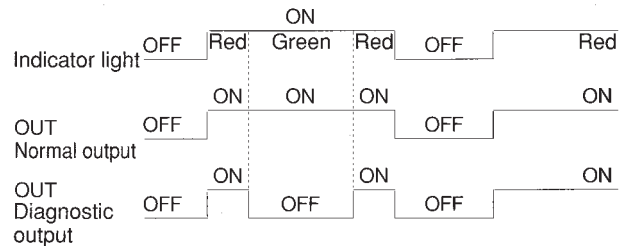
● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m

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

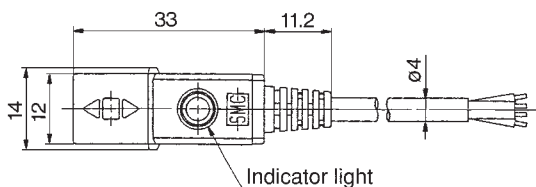
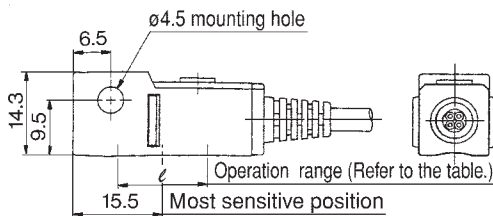
Note 2) Refer to the p.6-18 for lead wire length.

### 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-F7LF (Latching Style)

### 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	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

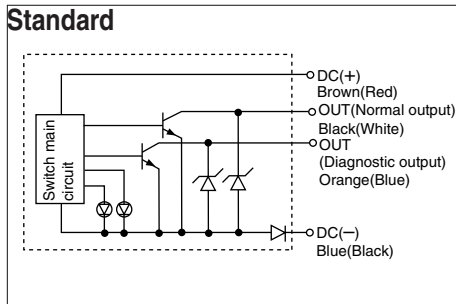
### Specifications

PLC: Programmable Logic Controller

D-F7LF (With indicator light)	
Auto switch model number	D-F7LF
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 Suitable operating point: Green light emitting diode Orange colour indicator lights on when diagnostic output is ON.

### Internal Circuit

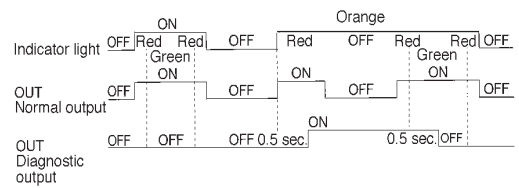
( ): If not applicable for IEC Standard



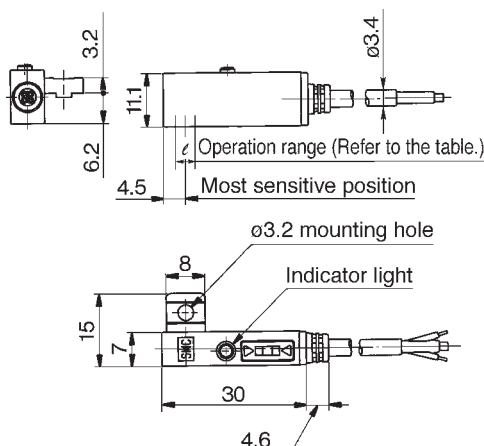
● Lead wire — Oilproof vinyl heavy insulation cable, ø3.4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m  
Note 1) Refer to common specifications on p.6-18.  
Note 2) Refer to p.6-18 for lead wire length.

### 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 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.



### 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	—	—	—	—	4.5	4.5	5	4.5	—	—	—	—	—	—	—	—
CDY1S, CY1L	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	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/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

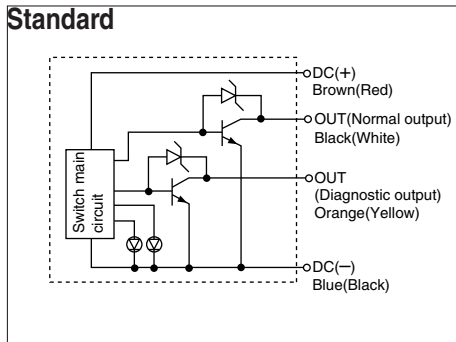
PLC: Programmable Logic Controller

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 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.

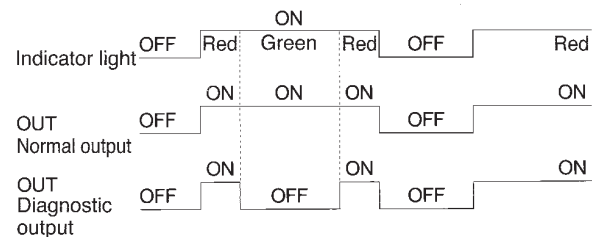
### Internal Circuit

( ): If not applicable for IEC

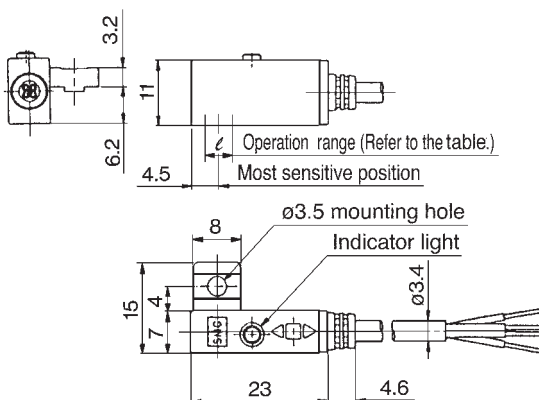


### Diagnostic Output Operation

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 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

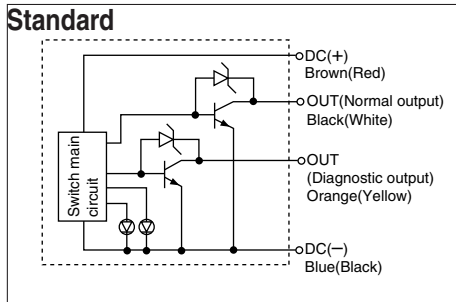
The output signal can be detected in an unsteady detecting area.



### 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 Suitable operating point: Green light emitting diode

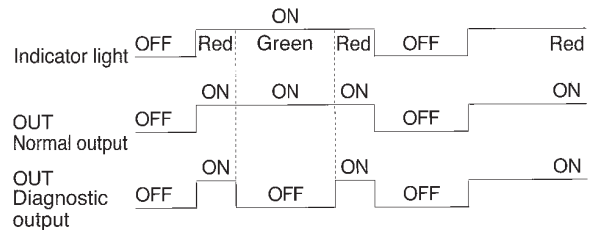
● Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.2mm<sup>2</sup>, 4 cores (Brown, Black, Orange, Blue), 0.5m

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

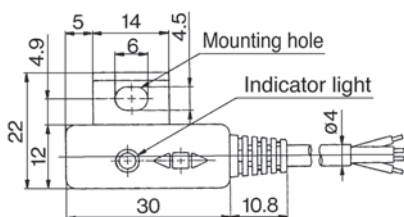
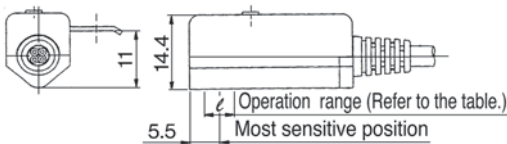
Note 2) Refer to p.6-18 for lead wire length.

### 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



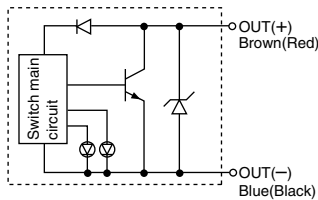
### Caution

#### Precautions

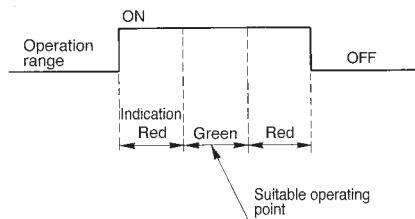
Consult SMC if using coolant liquid other than water based solution.

### 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)

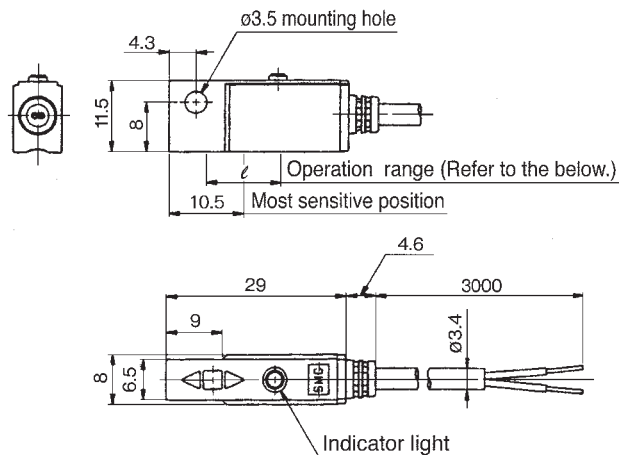
Auto switch model number	<b>D-H7BAL</b>
Wiring	2 wire
Output	—
Application	24V DC Relay/PLC
Power voltage	—
Current consumption	—
Load voltage	24V DC (10 to 28V DC)
Load current	≤ 5 to 40mA
Internal voltage drop	≤ 4V
Current leakage	≤ 0.8mA at 24V DC
Indicator light	Operating point: Red light emitting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

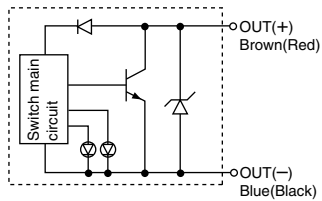
#### Precautions

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

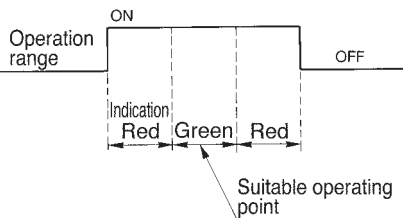
### Internal Circuit

( ): 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)

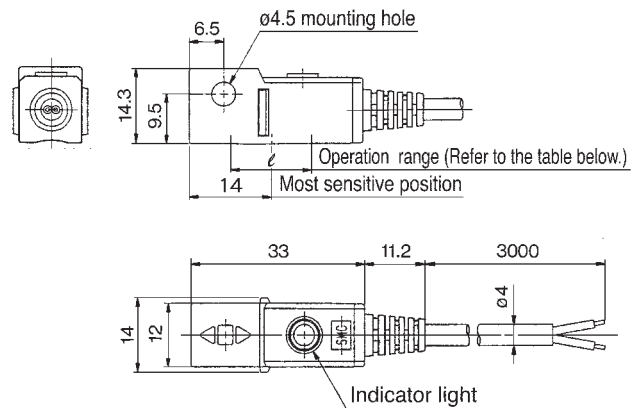
Auto switch model number	D-G5BAL
Wiring	2 wire
Output	—
Application	24V DC Relay/PLC
Power voltage	—
Current consumption	—
Load voltage	24V DC (10 to 28V DC)
Load current	≤ 5 to 40mA
Internal voltage drop	≤ 4V
Current leakage	≤ 0.8mA at 24V DC
Indicator light	Operating point: Red light emitting diode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

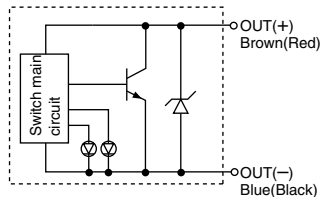
●Lead wire — Oilproof vinyl heavy insulation cable, ø4, 0.3mm<sup>2</sup>, 2 cores (Brown, Blue), 3m (Standard)

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

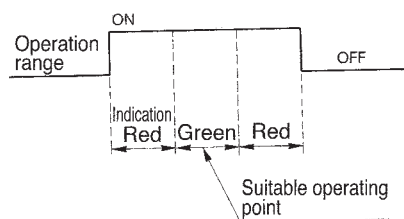
Note 2) Refer to p.6-18 for lead wire length.

### Internal Circuit

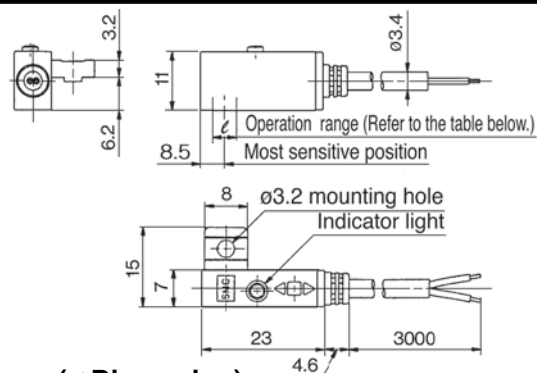
( ): If not applicable for IEC Standard



### Indicator light/Operation



### Dimensions



### Operation Range (ℓ Dimension)

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 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

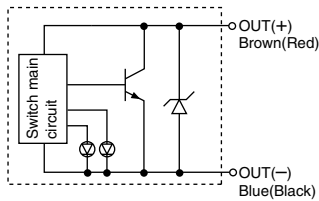
#### Precautions

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

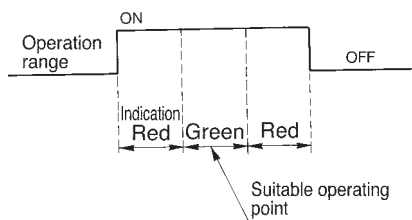
### Internal Circuit

( ): 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)

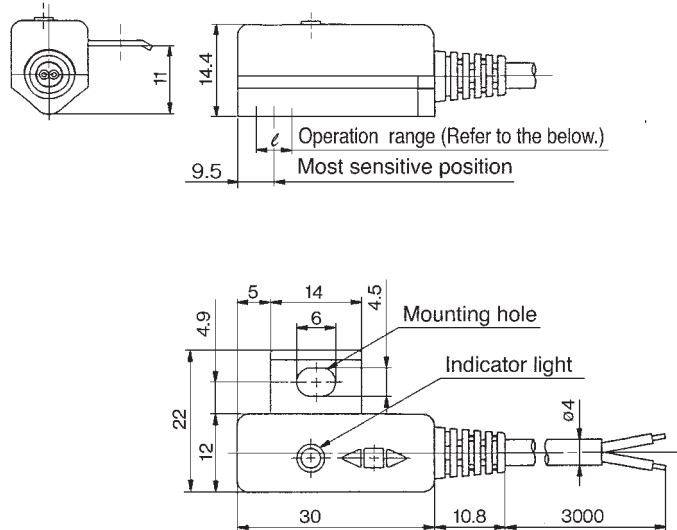
Auto switch model number	D-F5BAL
Wiring	2 wire
Output	—
Application	24V DC Relay/PLC
Power voltage	—
Current consumption	—
Load voltage	24V DC (10 to 28V DC)
Load current	≤ 5 to 40mA
Internal voltage drop	≤ 4V
Current leakage	≤ 0.8mA at 24V DC
Indicator light	Operating point: Red light emitting diode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

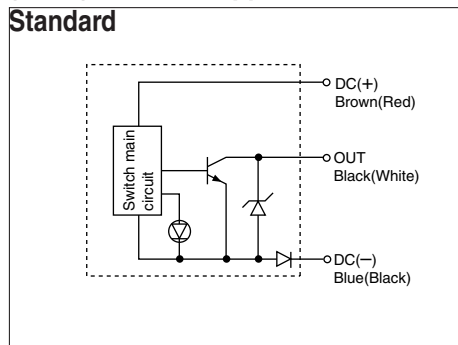
## D-G5NTL

### 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

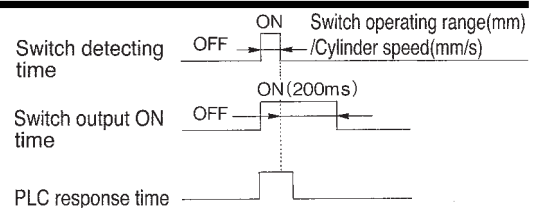
#### Detection of immediate positioning for high-speed cylinder

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

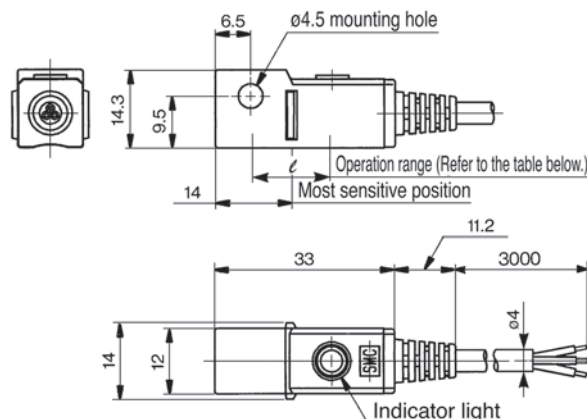
Sequencer response time - 0.1 sec.

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

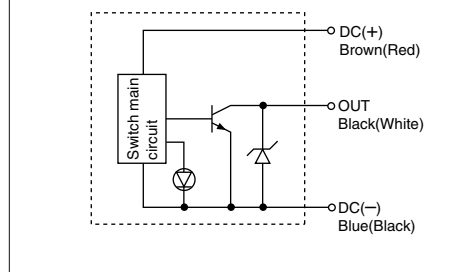
### Grommet

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.

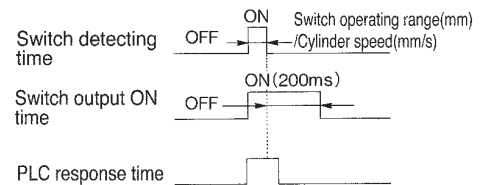
Ex.) Cylinder speed-1000 mm/sec.

Sequencer response time-0.1 sec.

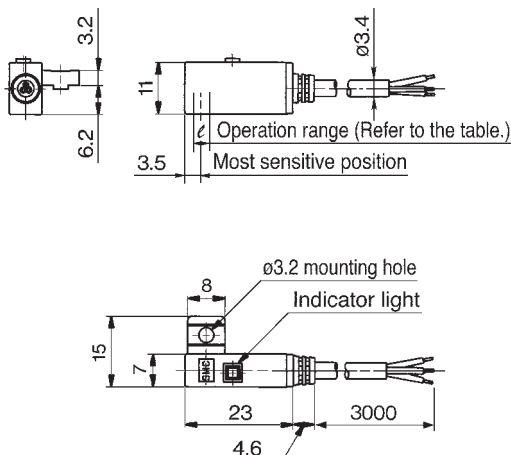
Detecting point dispersion-Within

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%)

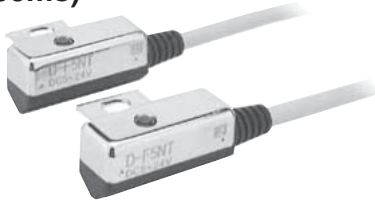


# Solid State Switch with Timer/Tie-rod Mounting

## D-F5NTL

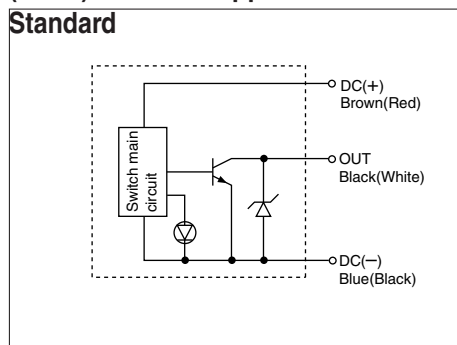
### Grommet

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.

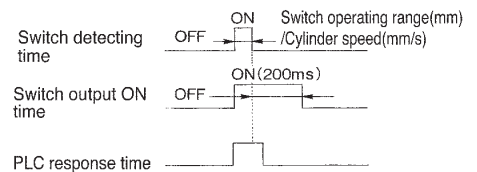
Ex.) Cylinder speed-1000 mm/sec.

Sequencer response time-0.1 sec.

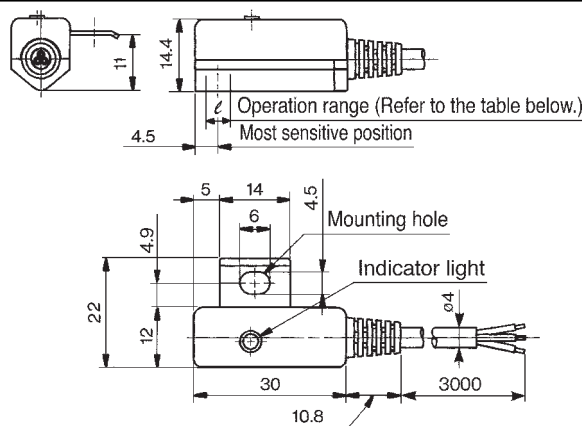
Detecting point dispersion-Within

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 (≤ 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.

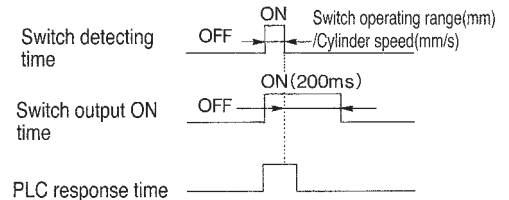
### Timer Operation

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

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

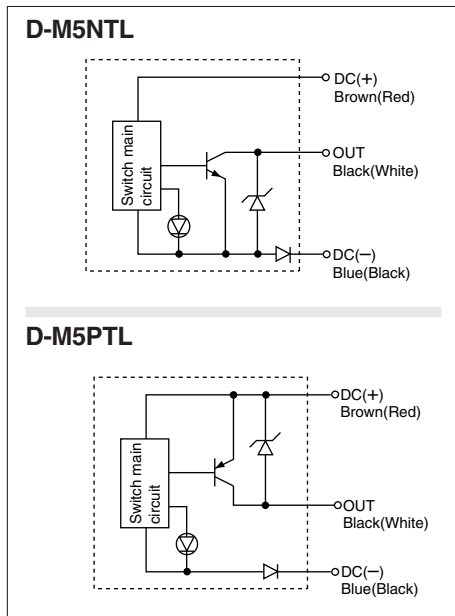
Ex.) Cylinder speed-1000 mm/sec.  
 Sequencer response time-0.1 sec.  
 Detecting point dispersion-Within  
 100mm (=1000 mm/sec. X 0.1sec.)

Take PLC response time into consideration when using.

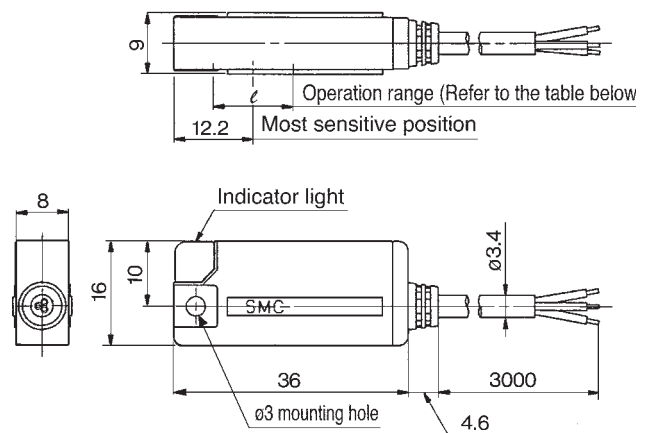


### Internal Circuit

( ): 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

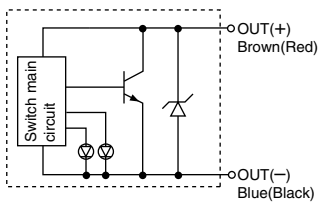
#### Precautions

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

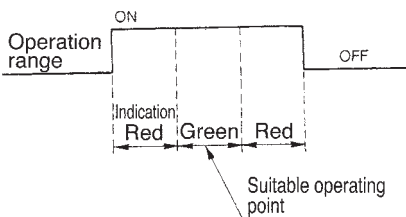
### Internal Circuit

( ): 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)

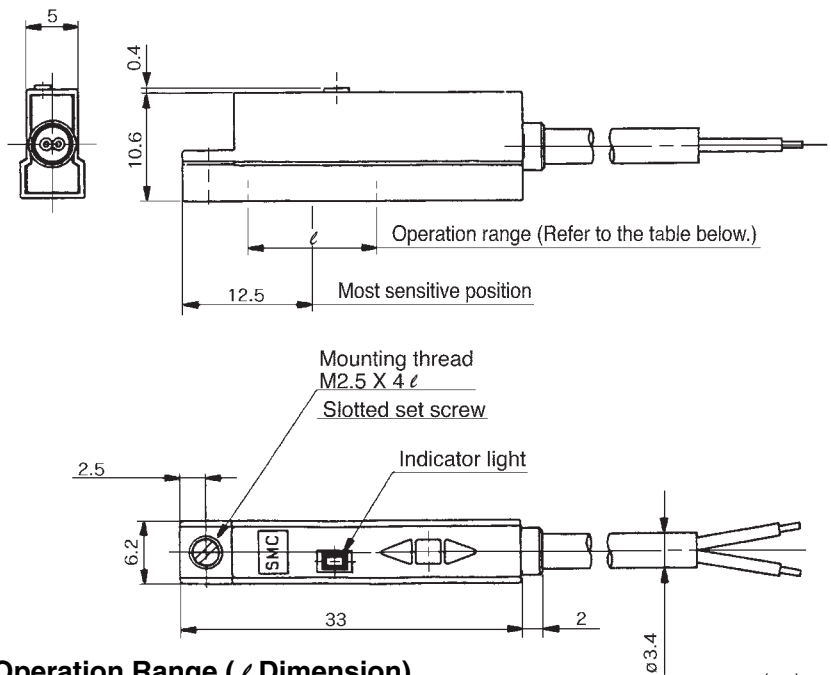
Auto switch model number	D-Y7BAL
Wiring	2 wire
Application	24V DC Relay/PLC
Load voltage	24V DC (10 to 28V DC)
Load current	≤ 5 to 40mA
Internal voltage drop	≤ 4V
Current leakage	≤ 0.8mA at 24V DC
Indicator light	Operating point: Red light emitting diode Suitable operating point: Green light emitting 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)
CDQ2	ø40, ø50, ø63, ø80, ø100
CDA1	ø40, ø50, ø63, ø80, ø100
MK, MK2, MDU	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 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

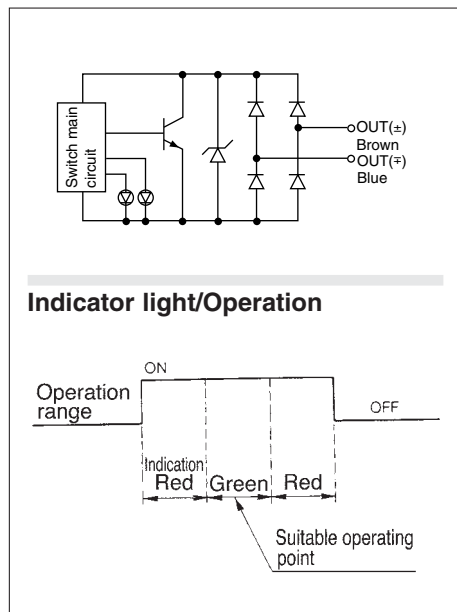
Note 1) Refer to common specifications on p.6-18.

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

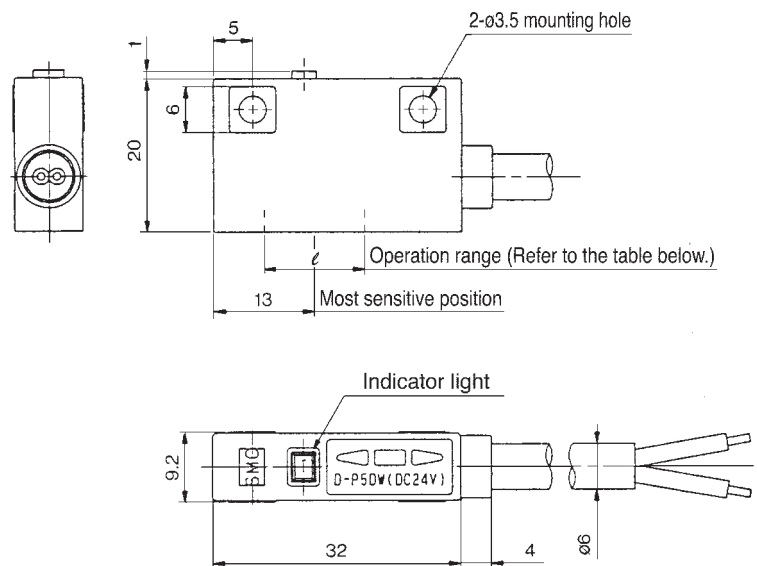
### Strong Magnetic Field Resistance

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
CDQ2	5	5	5	5	5.5
CDA1	4	4	4.5	4	4.5
MDL	5	5	5	—	—
MK, MK2	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

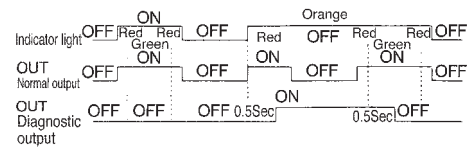
### D-F5LF (With indicator light)

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 Suitable operating point: Green light emitting diode 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)

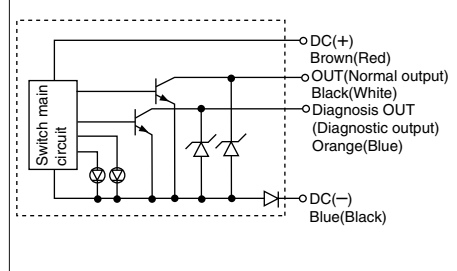
The diagnostic signal is output when detecting position remains within unsteady area (where indicator light is Red.) for more than 0.5 sec. This signal keeps outputting even after normal output goes to OFF. The diagnostic output becomes OFF when detecting position remains within the most suitable operating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



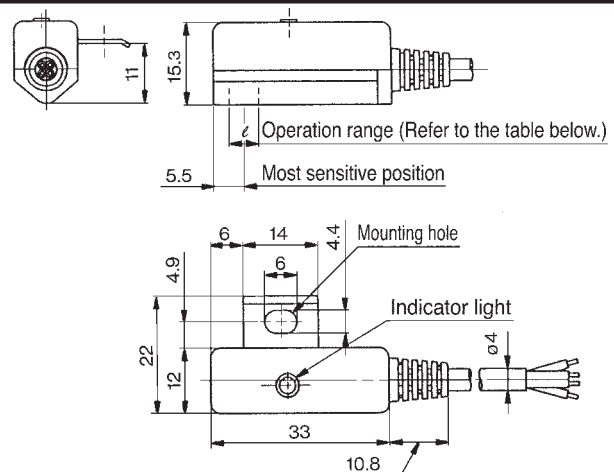
## Internal Circuit

( ): 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)

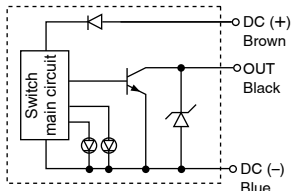
## Grommet

- 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 flexible cable as standard spec.
- The proper operating range can be determined by the colour of the light. (Red → Green → Red)

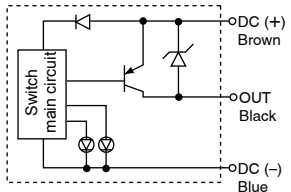


## Auto Switch Internal Circuit

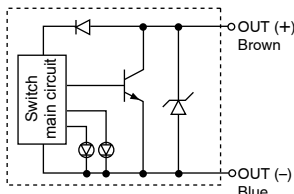
### D-M9NW(V)



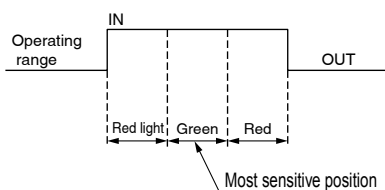
### D-M9PW(V)



### 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 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

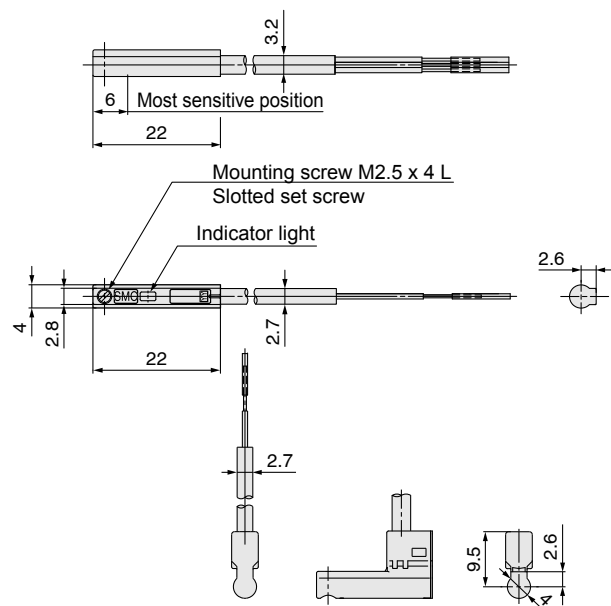
g

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

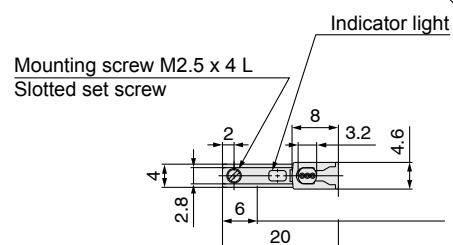
## Dimensions

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

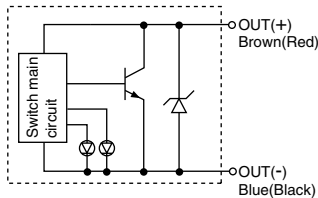
#### Precautions

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

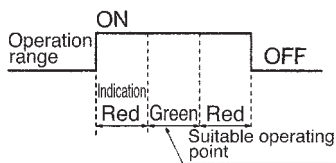
### Internal Circuit

( ): 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)

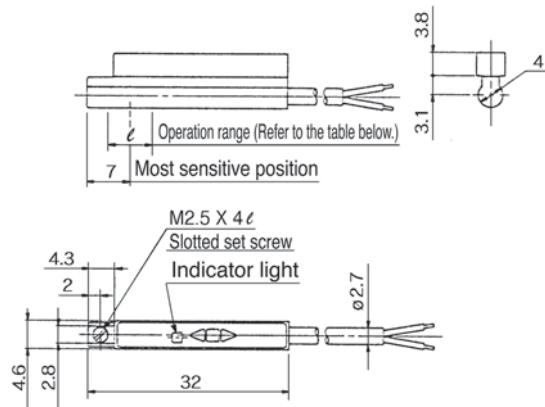
Auto switch model number	D-M9BAL
Wiring	2 wire
Output	—
Application	24V DC Relay/PLC
Power voltage	—
Current consumption	—
Load voltage	24V DC (20 to 28V DC)
Load current	5 to 30mA
Internal voltage drop	≤ 5V
Current leakage	≤ 1mA at 24V DC
Indicator light	Operating point: Red light emitting diode Suitable 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>F7NWV, F7BWW</b>	●	●	—
	With diagnostic output	Grommet (In-line)	<b>F79F</b>	●	●	—
	Water resistant	Grommet (Perpendicular)	<b>F7BA</b>	●	●	—
			<b>F7BAV</b>	●	●	—
	With timer	Grommet (Perpendicular)	<b>F7NT</b>	●	●	—
Magnetic field resistant	<b>P4DW</b>		●	●	●	
Band mounting style	—	Grommet (In-line)	<b>H7A1, H7A2, H7B</b>	●	●	—
			<b>G59, G5P, K59</b>	●	●	—
	2-colour indication	Grommet (In-line)	<b>H7NW, H7PW, H7BW</b>	●	●	—
			<b>G59W, G5PW, K59W</b>	●	●	—
	Diagnostic output	Grommet (In-line)	<b>H7NF, G59F</b>	●	●	—
	Water resistant		<b>H7BA, G5BA</b>	●	●	—
	With timer		<b>G5NT</b>	●	●	—
	Wide detection		<b>G5NB</b>	●	●	—
Tie-rod mounting style	—	Grommet (In-line)	<b>F59, F5P, J59</b>	●	●	—
			<b>F59W, F5PW, J59W</b>	●	●	—
	Diagnostic output	Grommet (In-line)	<b>F59F</b>	●	●	—
	Water resistant		<b>F5BA</b>	●	●	—
With timer	Grommet (In-line)	<b>F5NT</b>	●	●	—	
—		<b>F59W, F5PW, J59W</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>	●	●	—
			<b>F9G, F9H</b>	●	●	—
	2-colour indication	Grommet (In-line)	<b>Y7NW, Y7PW, Y7BW</b>	●	●	—
			Grommet (Perpendicular)	<b>Y7NWV, Y7PWV, Y7BWW</b>	●	●
Grommet (Perpendicular)		<b>M9NW, M9PW, M9BW</b>	●	●	—	
		<b>M9NWV, M9PWV, M9BWW</b>	●	●	—	
Water resistant	Grommet (In-line)	<b>Y7BA</b>	●	●	—	
		<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>	●	●	—
			<b>S991/2, S9P1/2, T991/2</b>	●	●	—
Rotary actuator	—	Grommet (Perpendicular)	<b>S99V1/2, T99V1/2</b>	●	●	—
			<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 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

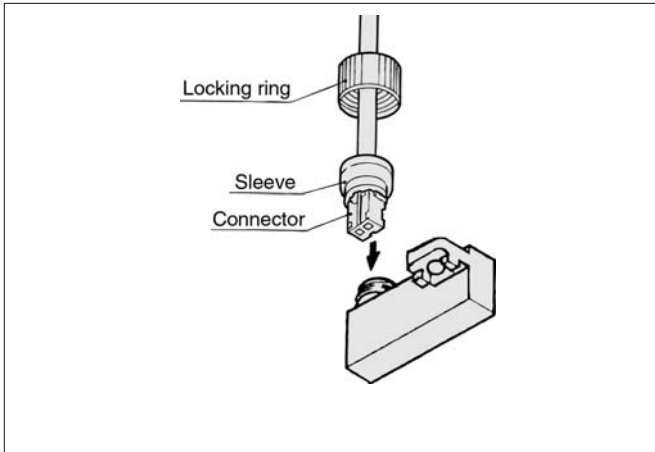
Connector size	Number of pins	Manufacturer	Applicable series example
<b>M8</b>	3	Phoenix Contact	SAC-3P
		Corrence Corporation	M8-3D
		OMRON Corporation	M8-4D
<b>M12</b>	4	Phoenix Contact	XS3
		Phoenix Contact	SAC-4P
		Corrence Corporation	VA-4D
		OMRON Corporation	XS2
		Azbil Corp.	PA5-4I
		Hirose Electric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



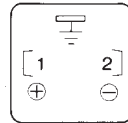
With the convex part of the connector, insert the connector into the auto switch into the sleeve. Screw the locking ring onto the switch. (Do not tighten with pliers.)

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

#### A44C Connection

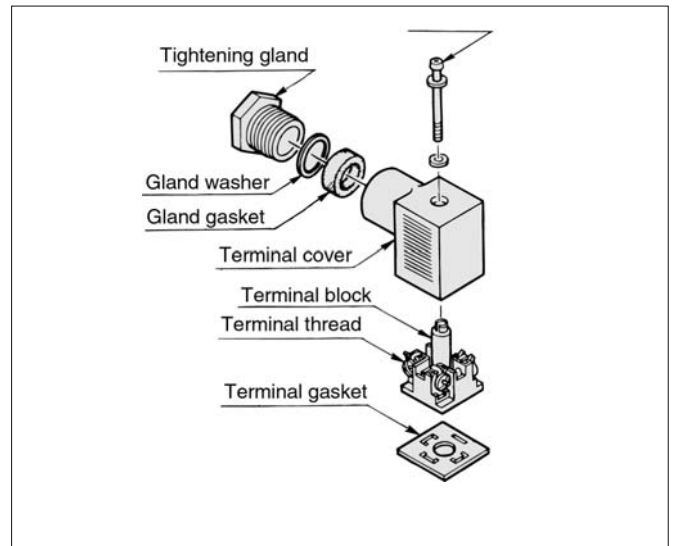
- ① Loosen the set screw and pull out the connector from the pin plug.
- ② Be sure to remove the set screw first and then insert a screw driver into a recessed groove under the terminal block to separate the terminal cover from the terminal block.
- ③ Follow the procedures and connect wires securely 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

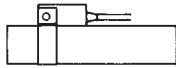
# Information 2

## How to Mount and Move the Auto Switch

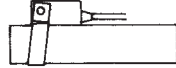
### Mounting Bracket Band mounting

#### ⚠ Caution

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



Correct mounting



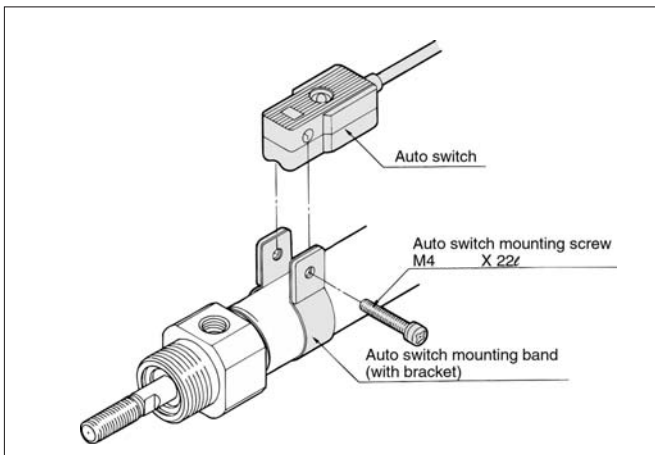
Wrong mounting

#### <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

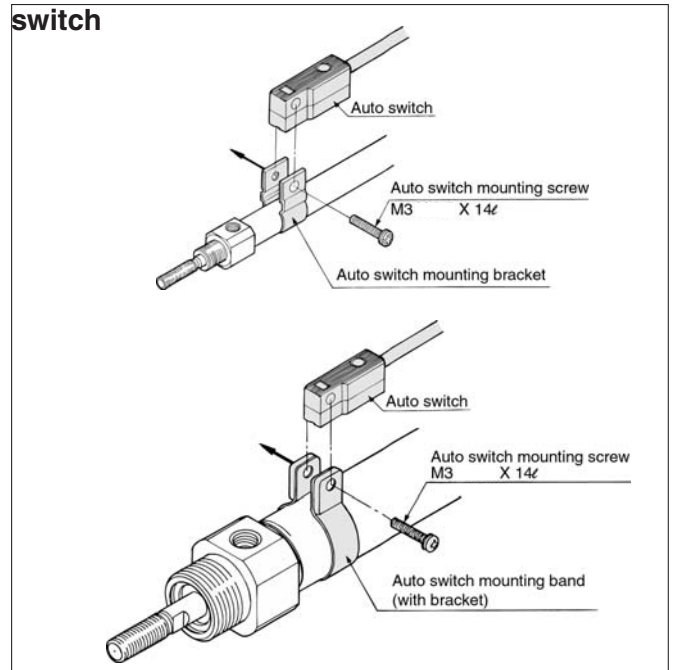
D-G5BAL is mounted on the cylinder with the above stainless steel screw BBA3 before shipment or BBA3 is enclosed with D-G5BAL when shipped without cylinder.

#### <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

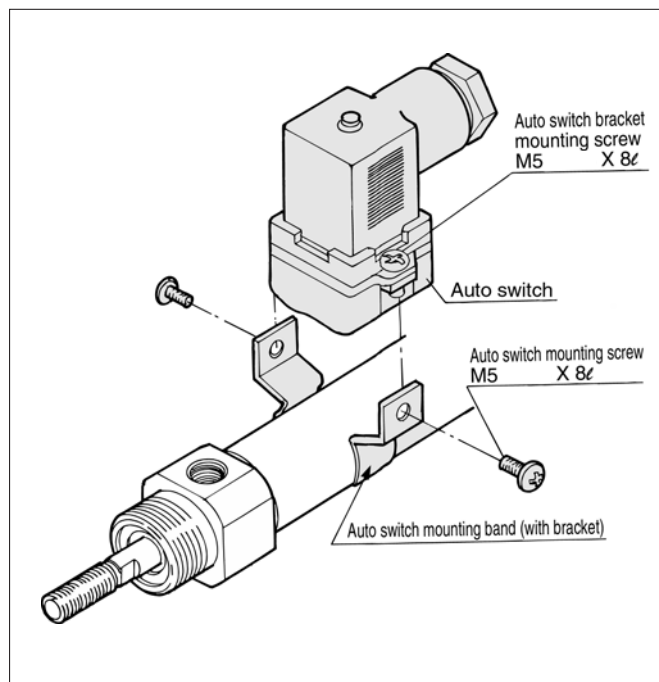
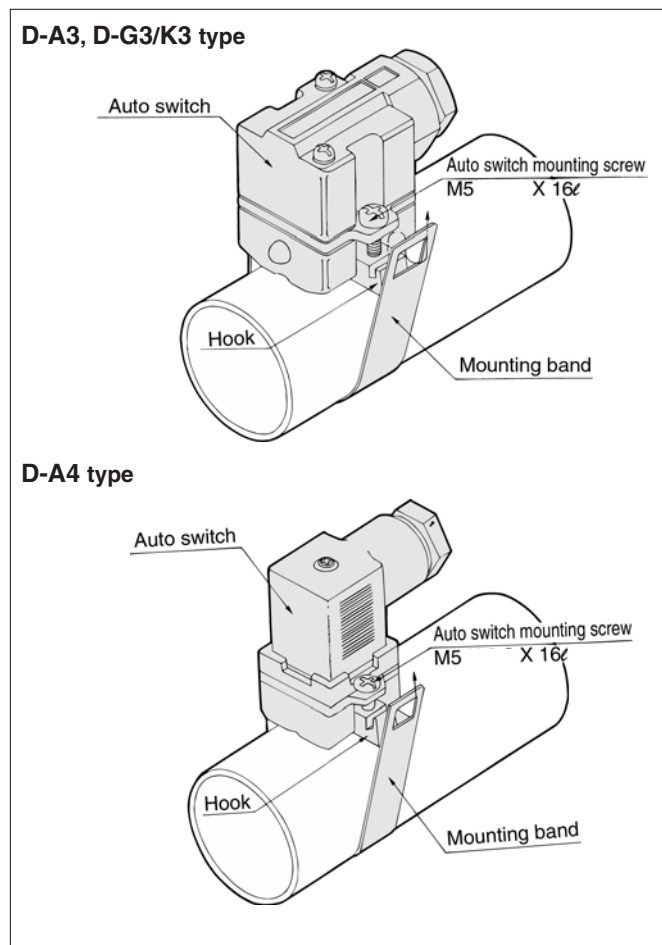
### Mounting Bracket Band mounting

#### <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 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 CDLM2	BM3-020	BM3-025	BM3-032	BM3-040

# Information ②

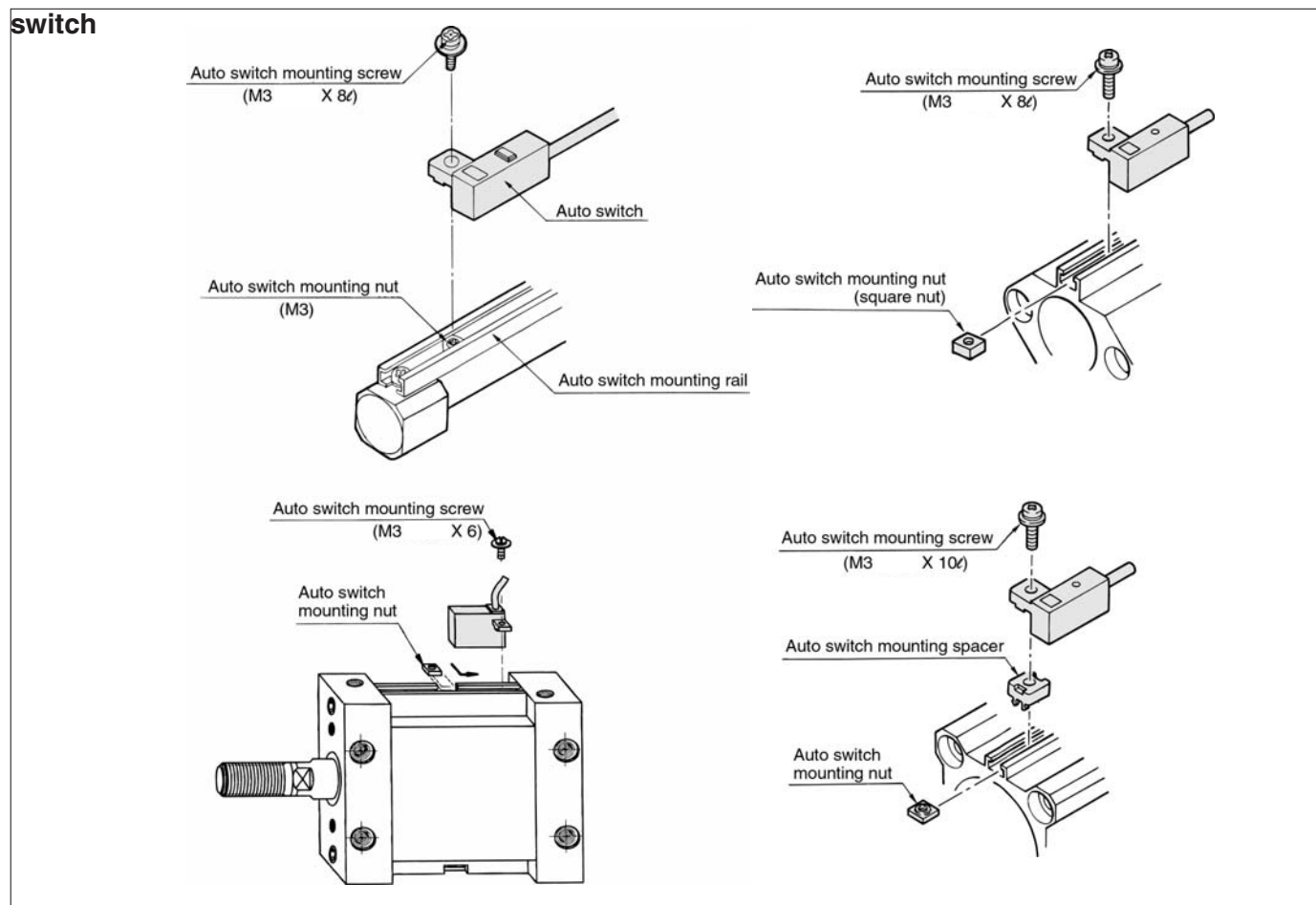
## How to Mount and Move the Auto Switch

### 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

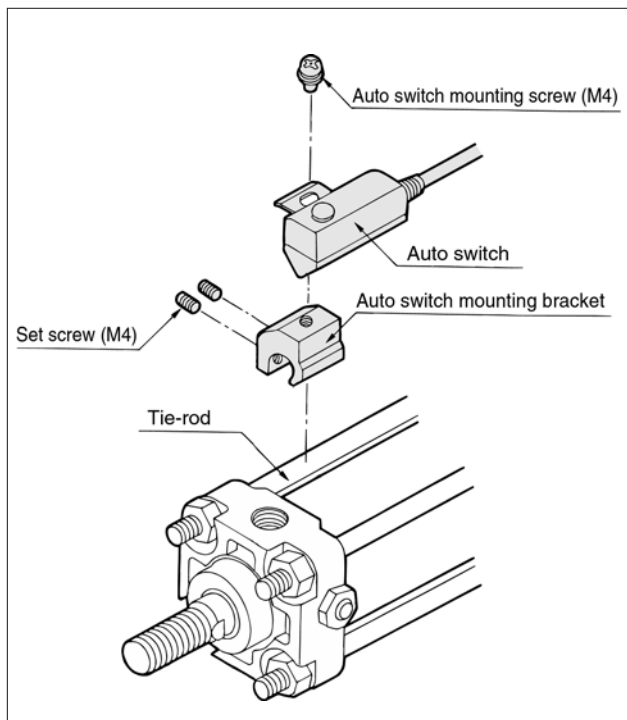
## How to Mount and Move the Auto Switch

### 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 CDVS, CDLA, CE2, CNA	-	BT -04	BT -04	BT -06	BT -08	BT -08	-	-	-	-	-
CDL1	-	-	-	-	-	-	BT -12	BT -12	BT -16	BT -18A	BT -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.)

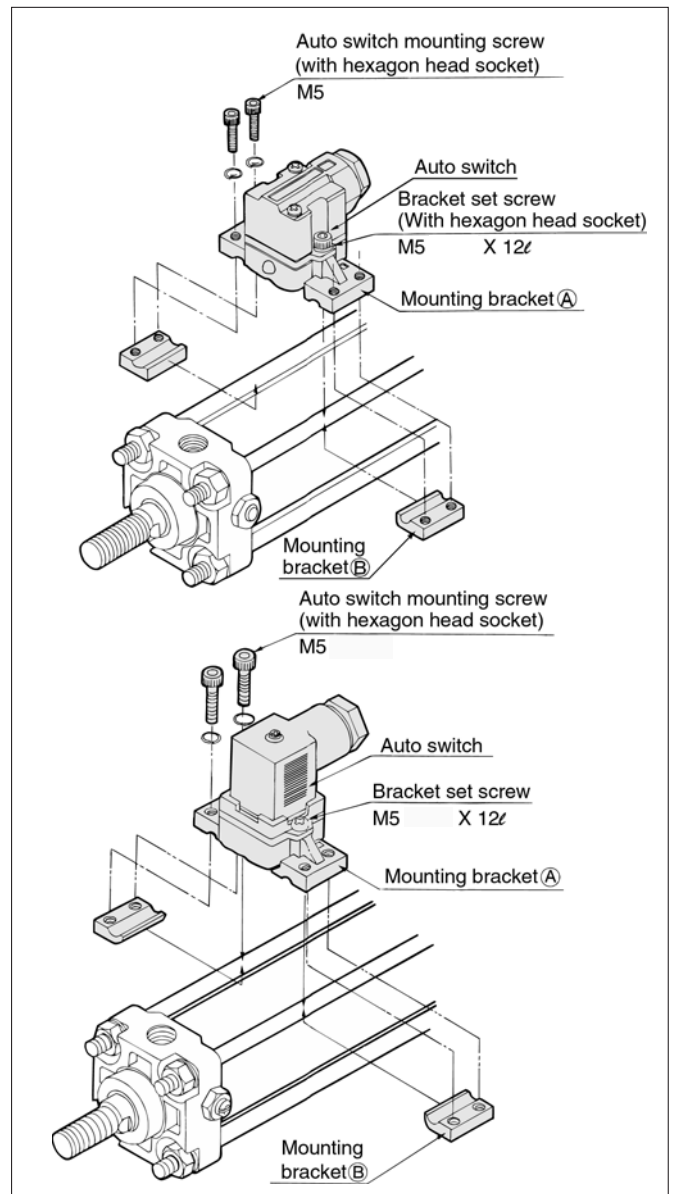
**BBA1:** For D-A5/A6/F5/J5

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 CDV3, CDVS, CDL1, CE2, CNA	BA3 -040	BA3 -050	BA3 -063	BA3 -080	BA3 -100

# Information 2

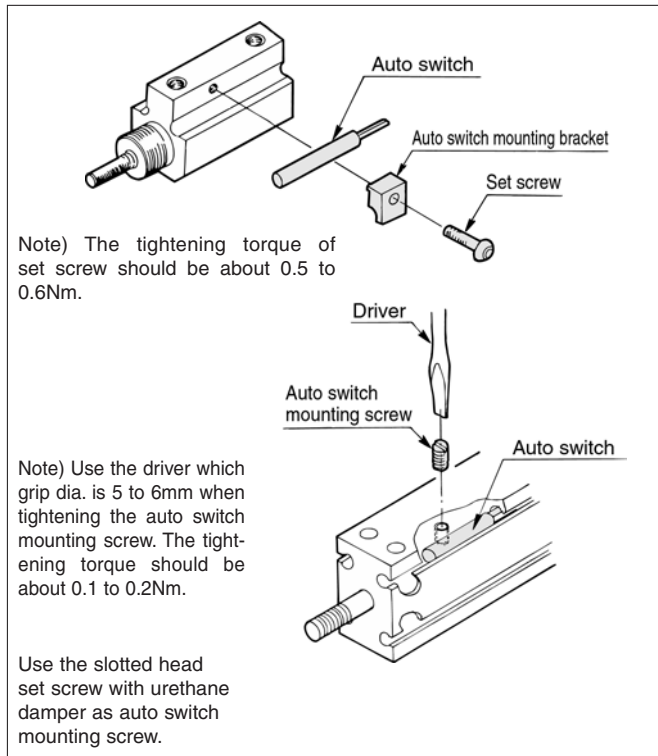
## How to Mount and Move the Auto Switch

### Mounting Bracket Direct mounting

#### <Applicable auto switch>

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

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



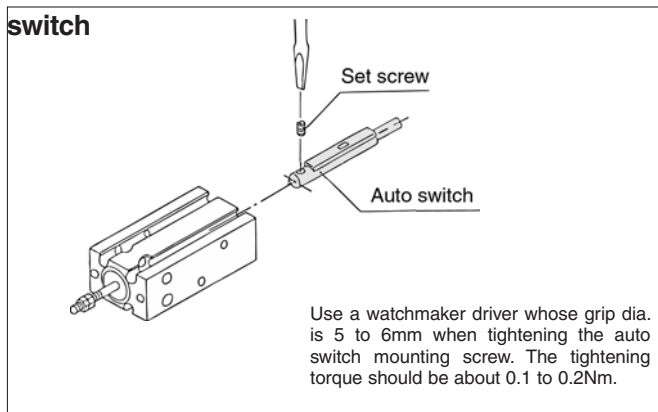
#### Part No. of auto switch mounting bracket (including bracket and screw)

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

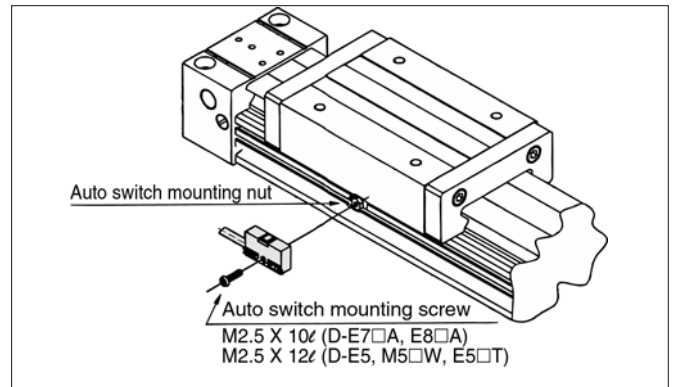
#### How to mount and move the auto switch



#### <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.)

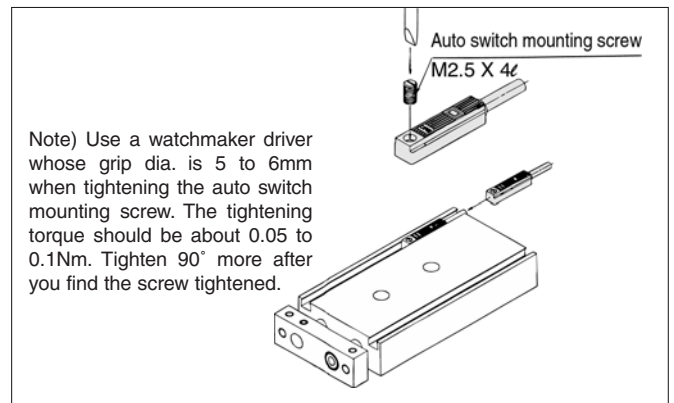
#### Part No. of auto switch mounting bracket (including nut and screw)

Cylinder series	M2.5 X 12 ℓ	Bore size (mm)		
		25	32	40
ML1	M2.5 X 12 ℓ	BM2-025	BM2-025	BM2-025

#### <Applicable auto switch>

Reed switch ..... D-Z73/Z76/Z80  
 Solid state switch ..... D-Y59<sup>A</sup>/Y69<sup>A</sup>/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.

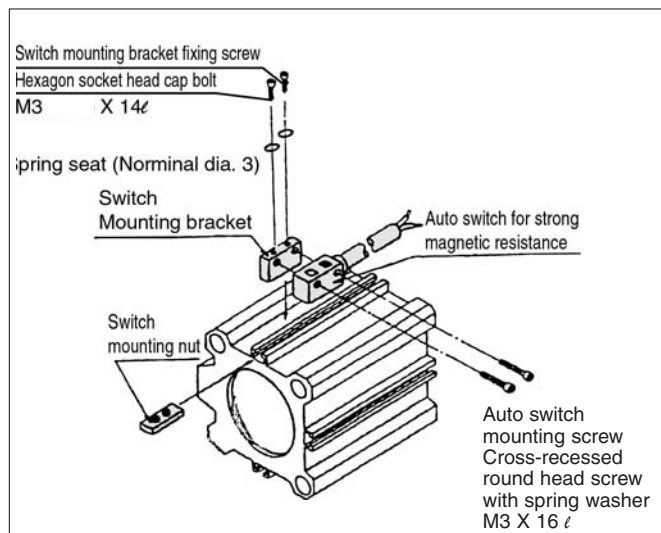
# Information ②

## 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 D-C8	2 wire	9	46	-
		3 wire	10	50	
	D-C73C D-C80C		14	53	-
	D-B5 D-B6		22	78	-
	D-B59W		20	76	-
	D-A3		-	-	116
	D-A4		-	-	114
	D-A3□A 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 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 D-A8/A80H	2 wire	10	47
		3 wire	11	52
	D-A73C 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 D-E8□A	2 wire	10	47	
		3 wire	11	55	
	D-Z7 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		

