

Applicable Cylinder Series

Cylinder series		CHDQB		CHDKD		CHDKG		CHN		CHDM		CHDSD		CHDSG		CHD2E		CHD2F		CHD2H		CHDA	
Bore size		ø20 to ø100	ø20, ø25	ø32 to ø100	ø20, ø25	ø32 to ø100	ø20 to ø40	ø20 to ø40	ø40, ø50	ø63 to ø100	ø32	ø40 to ø80	ø100	ø32	ø40 to ø100	ø32	ø40 to ø100	ø32	ø40 to ø100	ø32	ø40 to ø100	ø40, ø50, ø80, ø100	ø63
Solid state auto switches	D-H7																						
	D-H7C																						
	D-H7BAL																						
	D-H7NF																						
	D-H7□W																						
	D-G5/K5																						
	D-G5BAL																						
	D-G59F																						
	D-G5NTL																						
	D-G5□W/K59W																						
	D-G39/K39																						
	D-F7/J7																						
	D-J79C																						
	D-F79F																						
	D-F7BAL																						
	D-F7BAVL																						
	D-F7□V																						
	D-F7NTL																						
	D-F7□W(V)																						
	D-F5/J5																						
	D-F5BAL																						
	D-F5□W/J59W																						
	D-F59F																						
	D-F5NTL																						
	D-M9																						
	D-M9□V																						
	D-M9□W																						
	D-M9□WV																						
	D-M9□AL/M9□AVL																						
	D-Y5/Y6/Y7□/Y7□V																						
	D-Y7BAL																						
	D-Y7□W/Y7□WV																						
	D-F9G/H																						
	D-Y7G/H																						
Reed auto switches	D-C7/C8																						
	D-C73C/C80C																						
	D-B5/B6																						
	D-B59W																						
	D-A3/A4																						
	D-A7/A8																						
	D-A7□H/A80H																						
	D-A73C/A80C																						
	D-A79W																						
	D-A5/A6																						
	D-A59W																						
	D-A9																						
	D-A9□V																						
	D-Z7/Z8																						
Actuator page reference		P.164	P.184	P.198	P.215	P.234	P.251	P.261	P.274, 300	P.312													

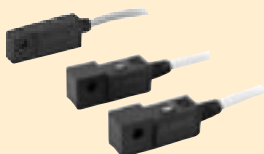
Auto Switch Variations 1

Function	Type	Auto switch mounting style	Electrical entry	Auto switch model	Page
General purpose auto switches	Solid state	Band	Grommet	D-H7A1/H7A2/H7B	356
			Connector	D-G59/G5P/K59	357
			Terminal conduit	D-H7C	358
		Rail	Grommet	D-G39/K39	359
			Connector	D-F79/F7P/J79	360
			Grommet	D-F7NV/F7PV/F7BV	361
		Tie-rod	Connector	D-J79C	362
			Grommet	D-F59/F5P/J59/J51	363
		Direct	Grommet	D-M9N/M9P/M9B*	364
				D-M9NV/M9PV/M9BV*	364
				D-F9G/F9H*	365
				D-Y59A/Y59B/Y7P**	366
				D-Y69A/Y69B/Y7PV**	366
				D-Y7G/Y7H**	367
	Reed	Band	Grommet	D-C73/C76/C80	394
			Connector	D-B53/B54/B64	395
			Terminal conduit	D-C73C/C80C	396
			DIN terminal	D-A33/A34	397
		Rail	Grommet	D-A44	397
			Connector	D-A72/A73/A80	398
			Grommet	D-A72H/A73H/A76H/A80H	399
		Tie-rod	Connector	D-A73C/A80C	400
			Grommet	D-A53/A54/A56/A64/A67	401
		Direct	Grommet	D-A90/A93/A96*	402
				D-A90V/A93V/A96V*	402
				D-Z73/Z76/Z80**	403

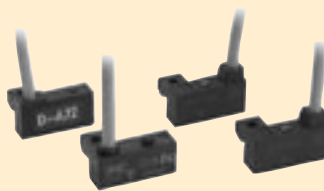
* These auto switches can be mounted with a band (except D-A9□□ and M9□□), a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to the section "How to Mount and Move the Auto Switch" of each series for details.

** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to the section "How to Mount and Move the Auto Switch" of each series for details.

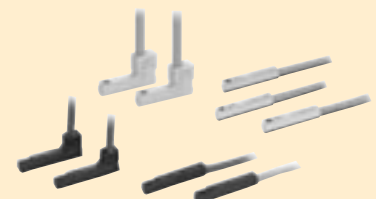
Band mounting



Rail mounting



Direct mounting



Auto Switch Variations 2

Function	Type	Auto switch mounting style	Electrical entry	Auto switch model	Page
2-color indication	Solid state	Band	Grommet	D-H7NW/H7PW/H7BW	368
				D-G59W/G5PW/K59W	369
		Rail	Grommet	D-F79W/F7PW/J79W	370
				D-F7NWV/F7BWV	371
		Tie-rod	Grommet	D-F59W/F5PW/J59W	372
				D-M9NW/M9PW/M9BW*	373
		Direct	Grommet	D-M9NWV/M9PWV/M9BWV*	
				D-Y7NW/Y7PW/Y7BW**	374
				D-Y7NWV/Y7PWV/Y7BWV**	
	Reed	Band	Grommet	D-B59W	404
		Rail	Grommet	D-A79W	405
		Tie-rod	Grommet	D-A59W	406

* These auto switches can be mounted with a band (except D-M9□WV and M9□AVL), a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to the section "How to Mount and Move the Auto Switch" of each series for details.

** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to the section "How to Mount and Move the Auto Switch" of each series for details.

2-color indication

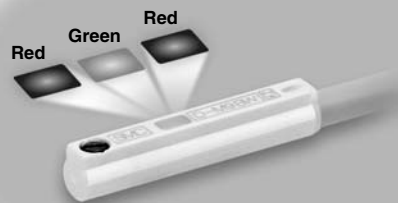
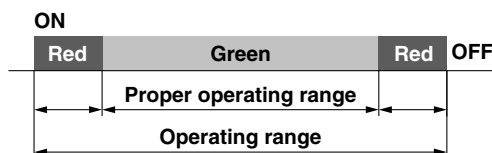
Easily identifiable, proper operating range

● Mounting positions can be set easily.

Proper operating range can be set while watching the lights.

● Displacement of the detecting position can be visually checked.

Trouble caused by incorrect detection can be prevented beforehand.

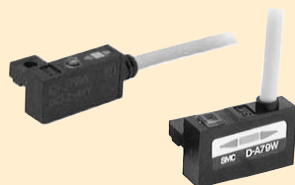


Even if 2-color indication solid state auto switches are fixed at a proper operating range (the green light lights up), the operation may become unstable depending on the installation environment or magnetic field disturbance.
(Magnetic body, external magnetic field, proximal installation of cylinders with built-in magnet and actuators, temperature change, other factors for magnetic force fluctuation during operation, etc.)

Band mounting



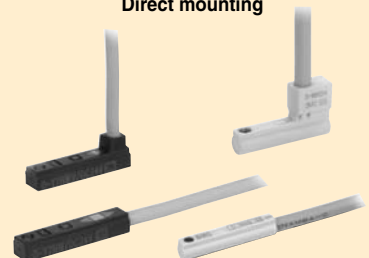
Rail mounting



Tie-rod mounting



Direct mounting



Auto Switch Variations 2

Function	Type	Auto switch mounting style	Electrical entry	Auto switch model	Page
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The diagnostic output signal can be detected in an unsteady detecting area.

2-color indication auto switch with diagnostic output	Solid state	Band	Grommet	D-H7NF	375
		Rail	Grommet	D-G59F	376
		Tie-rod	Grommet	D-F79F	377
			Grommet	D-F59F	378

Water resistant (coolant) type

Water resistant 2-color indication auto switch	Solid state	Band	Grommet	D-H7BAL	379
		Rail	Grommet	D-G5BAL	380
		Tie-rod	Grommet	D-F7BAL	381
				D-F7BAVL	
		Direct	Grommet	D-F5BAL	382
				D-M9□AL*	383
				D-M9□AVL*	
				D-Y7BAL**	384

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

Auto switch with timer	Solid state	Band	Grommet	D-G5NTL	385
		Rail	Grommet	D-F7NTL	386
		Tie-rod	Grommet	D-F5NTL	387

* These auto switches can be mounted with a band (except D-M9□WV and M9□AVL), a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to the section "How to Mount and Move the Auto Switch" of each series for details.

** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to the section "How to Mount and Move the Auto Switch" of each series for details.

CHQ

CHK□

CHN

CHM

CHS□

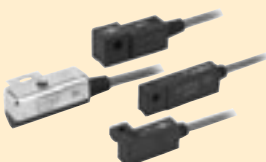
CH2□

CHA

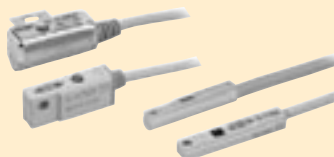
Related Equipment

D-□

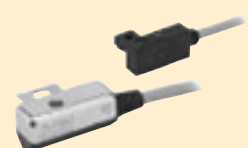
2-color indication type with diagnostic output



Water resistant 2-color indication type



With timer



Prior to Use

Auto Switches Common Specifications 1

⚠ Specific Product Precautions

Refer to the Auto Switch Precautions on pages 137 to 142 before using auto switches.

Auto Switches Common Specifications

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

- * 1) Electrical entry: Connector type (A73C/A80C/C73C/C80C): 1000 VAC/min. (Between lead wire and the case)
- * 2) The terminal conduit type (D-A3/G39/K39), DIN terminal type (D-A44) and conform to IEC60529 Standard IP63.
- * 3) Excluding the solid state auto switches with a timer (G5NTL/F7NTL/F5NTL types) for D-J51 is 2 ms or less.

Lead Wire

Lead wire length indication
(Example)

D-M9BW L

● Lead wire length

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

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

Note 1) Lead wire length Z: 5 m

Applicable auto switches

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

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

Note 2) The standard lead wire length for solid state auto switches with a timer, switches is 3 m. (0.5 m is not available.)

Note 3) 1 m (M): D-M9□(W)(V) only

Note 4) Lead wire length tolerance

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

Solid state auto switch oil resistant flexible cabtire cord indication

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

(Example)

D-F7PL- 61

● Flexible specification

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

Lead wires with a connector indication

Part No. of Lead Wires with Connectors

(Applicable only for connector type)

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

Prior to Use

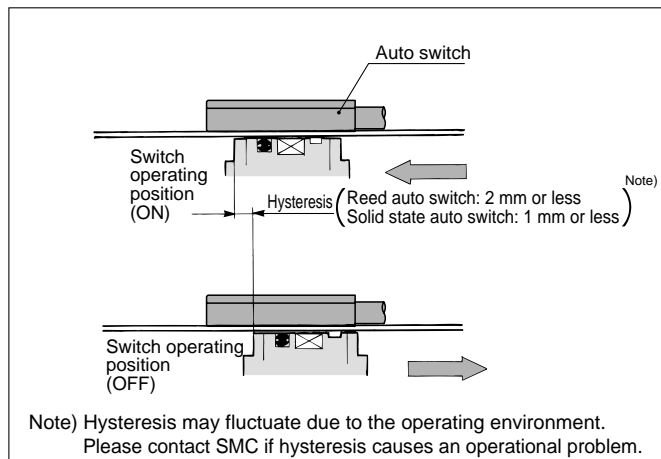
Auto Switches Common Specifications 2

⚠ Specific Product Precautions

Refer to the Auto Switch Precautions on pages 137 to 142 before using auto switches.

Auto Switch Hysteresis

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



Contact Protection Box: CD-P11, CD-P12

<Applicable switch models>

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
The auto switches above do not have a built-in contact protection circuit. A contact protection box is not required for solid state auto switches due to their construction.

- ① Where the operation load is an inductive load.
- ② Where the wiring length to load is greater than 5 m.
- ③ Where the load voltage is 100/200 VAC.

Therefore, use a contact protection box with the switch for any of the above cases:

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 types and lead wire length since it is greatly affected by loads.

(Where the load voltage is 110 VAC)

When the load voltage is increased by more than 10% to the rating of applicable auto switches (except D-A73C/A80C/C73C/C80C/90/97/A79W) above, use a contact protection box (CD-P11) to reduce the upper limit of the load current by 10% so that it can be set within the range of the load current range, 110 VAC.

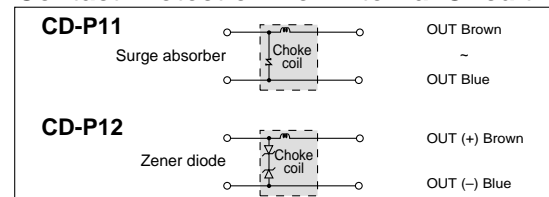
Even for the built-in contact protection circuit type (D-A34[A][C], D-A44[A][C], D-A54/A64, D-A59W, D-B59W), use the contact protection box when the wiring length to load is very long (over 30 m) and PLC (Programmable Logic Controller) with a large inrush current is used.

Contact Protection Box Specifications

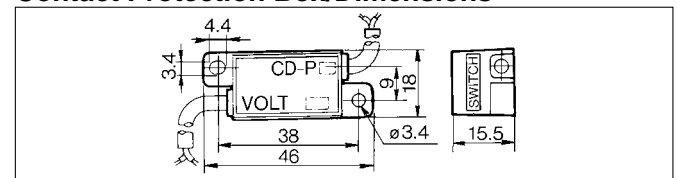
Part no.	CD-P11	CD-P12
Load voltage	100 VAC or less	200 VAC
Max. load current	25 mA	12.5 mA

* Lead wire length — Auto switch connection side 0.5 m
Load connection side 0.5 m

Contact Protection Box Internal Circuit



Contact Protection Box/Dimensions



Contact Protection Box/Connection

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

CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

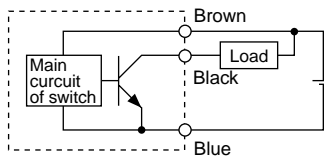
D-

Prior to Use

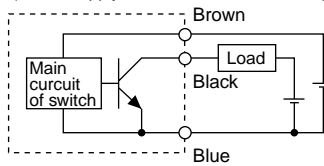
Auto Switches Connection and Example

Basic Wiring

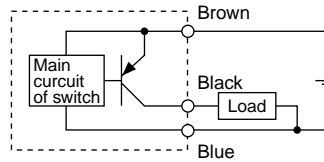
Solid state 3-wire, NPN



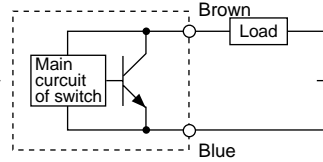
(Power supply for switch and load are separate)



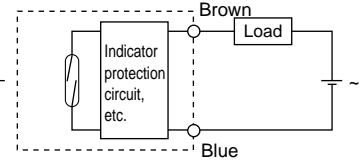
Solid state 3-wire, PNP



2-wire (Solid state)

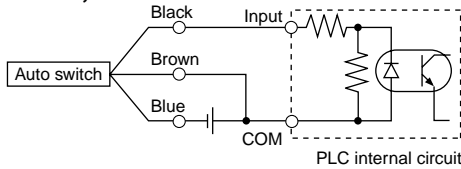


2-wire (Reed switch)

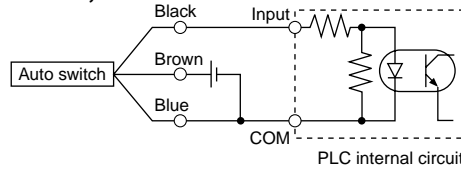


Example of Connection with PLC (Programmable Logic Controller)

• Sink input specifications 3-wire, NPN

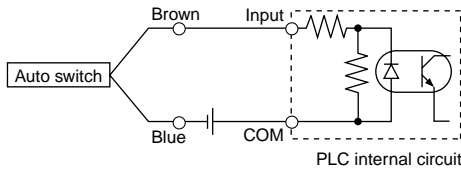


• Source input specifications 3-wire, PNP

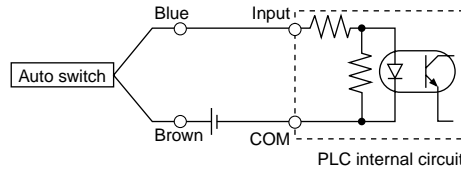


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

2-wire



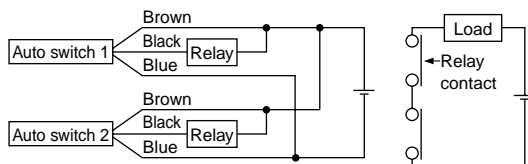
2-wire



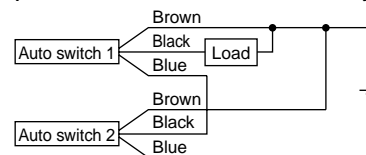
Example of AND (Series) and OR (Parallel) Connection

• 3-wire

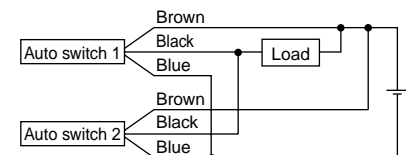
AND connection for NPN output (Using relays)



AND connection for NPN output (Performed with auto switches only)



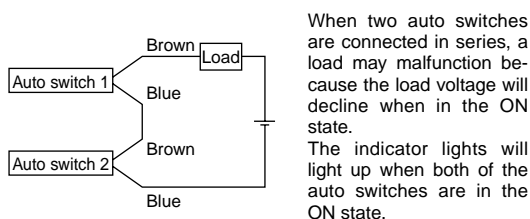
OR connection for NPN output



The indicator lights will light up when both auto switches are turned ON.

• 2-wire

2-wire with 2-switch AND connection

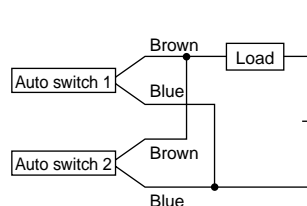


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the auto switches are in the ON state.

Load voltage at ON = Power supply voltage – Residual voltage x 2 pcs.
= 24 V – 4 V x 2 pcs.
= 16 V

Example: Power supply is 24 VDC
Internal voltage drop in auto switch is 4 V.

2-wire with 2-switch OR connection



(Solid state auto switch)
When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.

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

Example: Load impedance is 3 kΩ.
Leakage current from auto switch is 1 mA.

(Reed auto switch)
Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

Solid State Auto Switches

General Purpose Type, 2-Color Indication Type, 2-Color Indication Type with Diagnostic Output, Water Resistant 2-Color Indication Type, Timer Equipped Type, Wide Range Detection Type

Type	Function	Auto switch mounting style	Electrical entry	Auto switch model	Page
Solid State Auto Switch	General purpose	Band	Grommet	D-H7A1/H7A2/H7B	356
			Connector	D-G59/G5P/K59	357
			Terminal conduit	D-H7C	358
		Rail	Grommet	D-G39/K39	359
			Connector	D-F79/F7P/J79	360
			Grommet	D-F7NV/F7PV/F7BV	361
		Tie-rod	Connector	D-J79C	362
			Grommet	D-F59/F5P/J59/J51	363
		Direct	Grommet	D-M9N/M9P/M9B	364
				D-M9NV/M9PV/M9BV	364
				D-F9G/F9H	365
				D-Y59A/Y59B/Y7P	366
				D-Y69A/Y69B /Y7PV	366
				D-Y7G/Y7H	367
	2-color indication	Band	Grommet	D-H7NW/H7PW/H7BW	368
				D-G59W/G5PW/K59W	369
		Rail	Grommet	D-F79W/F7PW/J79W	370
				D-F7NWW/F7BWV	371
		Tie-rod	Grommet	D-F59W/F5PW/J59W	372
				D-M9NW/M9PW/M9BW	373
		Direct	Grommet	D-M9NWW/M9PWW/M9BWV	373
				D-Y7NW/Y7PW/Y7BW	374
				D-Y7NWW/Y7PWW/Y7BWV	374
	2-color indication with diagnostic output	Band	Grommet	D-H7NF	375
				D-G59F	376
		Rail	Grommet	D-F79F	377
				D-F59F	378
	Water resistant 2-color indication	Band	Grommet	D-H7BAL	379
				D-G5BAL	380
		Rail	Grommet	D-F7BAL	381
				D-F7BAVL	381
		Tie-rod	Grommet	D-F5BAL	382
				D-M9NAL/M9PAL/M9BAL	383
		Direct	Grommet	D-M9NAVL/M9PAVL/M9BAVL	383
				D-Y7BAL	384
	With timer	Band	Grommet	D-G5NTL	385
		Rail	Grommet	D-F7NTL	386
		Tie-rod	Grommet	D-F5NTL	387

CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-

Solid State Auto Switch Band Mounting Style D-H7A1/D-H7A2/D-H7B



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7□ (With indicator light)			
Auto switch model	D-H7A1	D-H7A2	D-H7B
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 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	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 μ A or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ϕ 3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

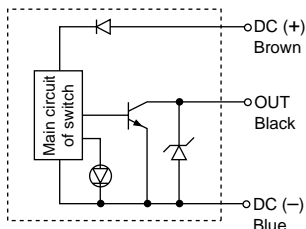
Note 2) Refer to page 352 for lead wire lengths.

Grommet

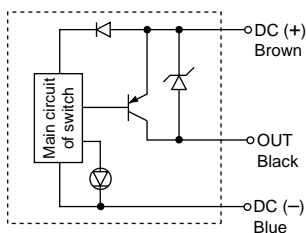


Auto Switch Internal Circuit

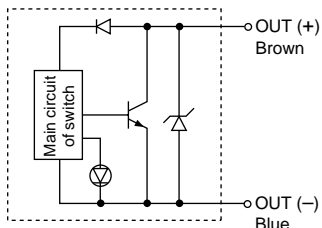
D-H7A1



D-H7A2



D-H7B



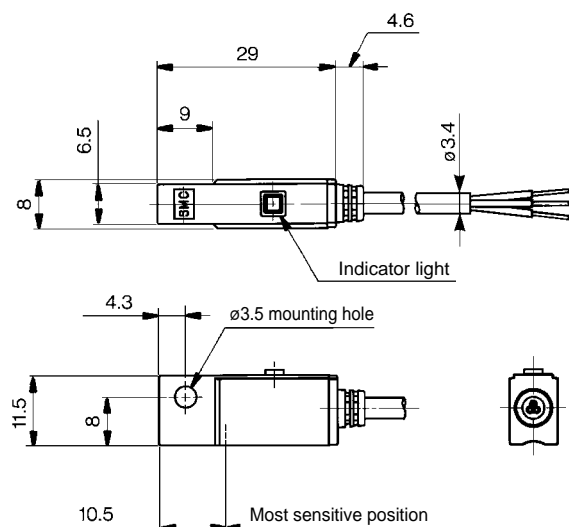
Mass

(g)

Auto switch model	D-H7A1	D-H7A2	D-H7B
Lead wire length (m)	0.5	13	11
	3	57	50
	5	92	81

Dimensions

(mm)



Solid State Auto Switch Band Mounting Style D-G59/D-G5P/D-K59



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5□, D-K59 (With indicator light)			
Auto switch model	D-G59	D-G5P	D-K59
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 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	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 μ A or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ϕ 4, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

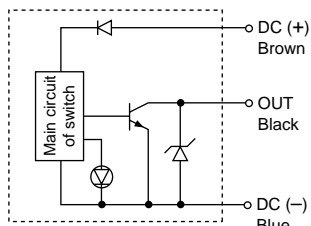
Note 2) Refer to page 352 for lead wire lengths.

Grommet

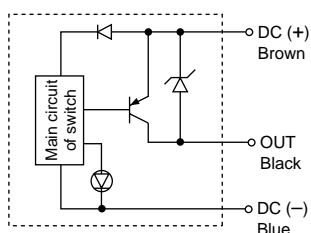


Auto Switch Internal Circuit

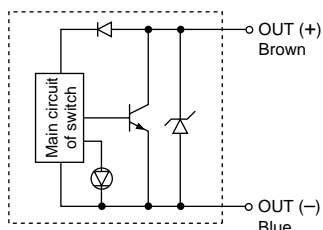
D-G59



D-G5P



D-K59



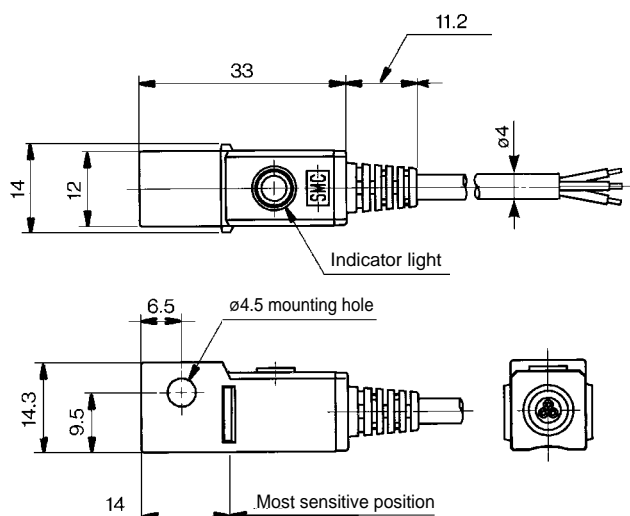
Mass

(g)

Auto switch model	D-G59	D-G5P	D-K59
Lead wire length (m)	0.5	20	18
	3	78	68
	5	124	108

Dimensions

(mm)



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-□

Solid State Auto Switch Band Mounting Style D-H7C



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7C (With indicator light)	
Auto switch model	D-H7C
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 3.4$, 0.2 mm², 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Lead wires with a connector may be shipped with switches.

Connector



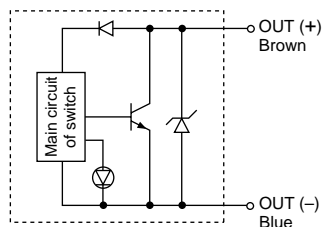
Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. Refer to Best Pneumatics No. 2 for the details.

Auto Switch Internal Circuit

D-H7C



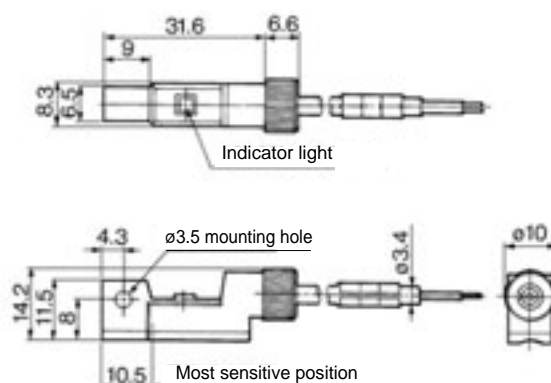
Mass

(g)

Auto switch model	D-H7C	
Lead wire length (m)	0.5	15
	3	54
	5	85

Dimensions

(mm)



Solid State Auto Switch Band Mounting Style D-G39/D-K39



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G39, D-K39 (With indicator light)		
Auto switch model	D-G39	D-K39
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, 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	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA of load current)	4 V or less
Leakage current	100 μ A or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking	

Note) Refer to page 352 for solid state auto switch common specifications.

Terminal conduit



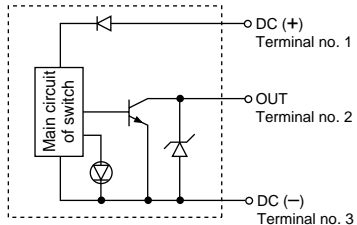
Caution

Precautions

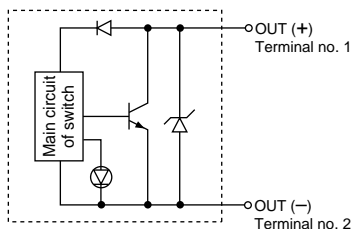
1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Internal Circuit

D-G39



D-K39



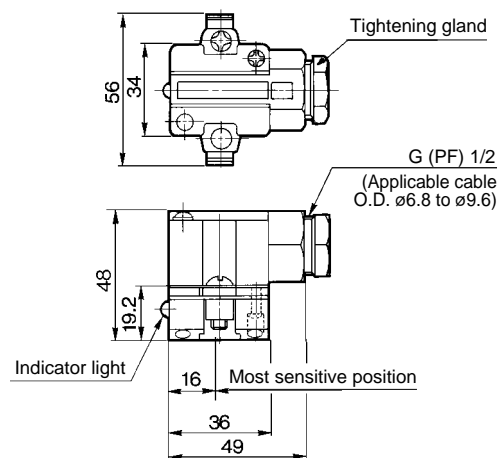
Mass

(g)

Auto switch model	D-G39	D-K39
Lead wire	None	116

Dimensions

(mm)



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-

Solid State Auto Switch Rail Mounting Style D-F79/D-F7P/D-J79



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7□, D-J79 (With indicator light)			
Auto switch model	D-F79	D-F7P	D-J79
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 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	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 μ A or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ϕ 3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

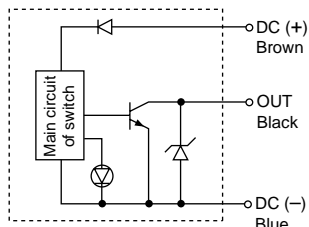
Note 2) Refer to page 352 for lead wire lengths.

Grommet

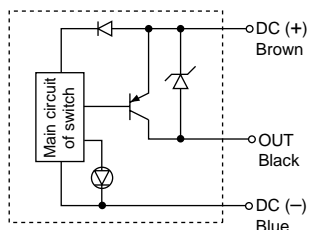


Auto Switch Internal Circuit

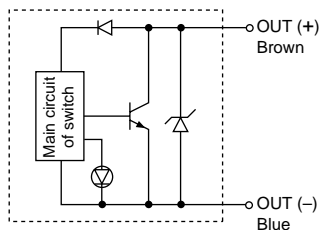
D-F79



D-F7P



D-J79



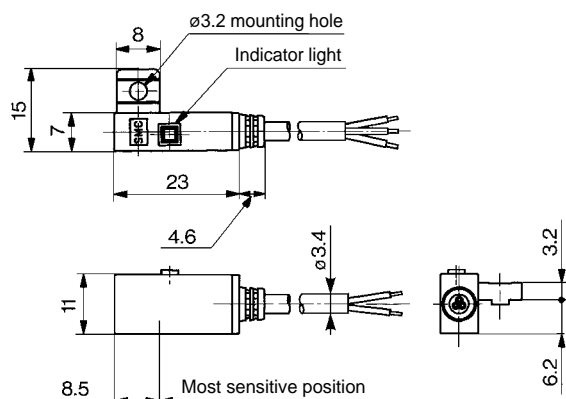
Mass

(g)

Auto switch model		D-F79	D-F7P	D-J79
Lead wire length (m)	0.5	13	13	11
	3	57	57	50
	5	92	92	81

Dimensions

(mm)



Solid State Auto Switch Rail Mounting Style D-F7NV/D-F7PV/D-F7BV



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7□V (With indicator light)			
Auto switch model	D-F7NV	D-F7PV	D-F7BV
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 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	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 μ A or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ϕ 3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

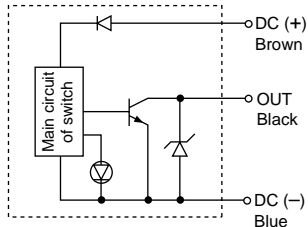
Note 2) Refer to page 352 for lead wire lengths.

Grommet Electrical entry: Perpendicular

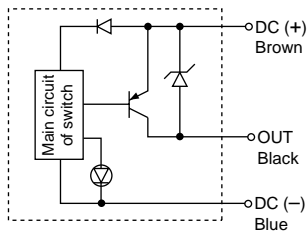


Auto Switch Internal Circuit

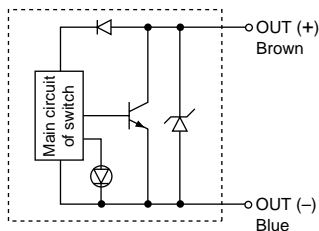
D-F7NV



D-F7PV



D-F7BV



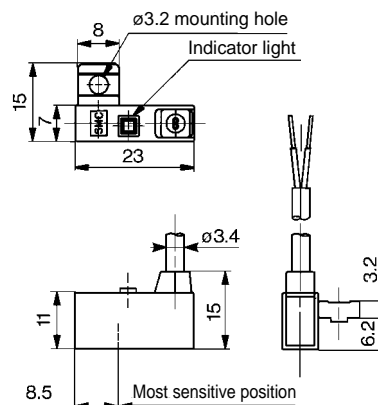
Mass

(g)

Auto switch model	D-F7NV	D-F7PV	D-F7BV
Lead wire length (m)	0.5	13	11
	3	57	50
	5	92	81

Dimensions

(mm)



CHQ

CHK□

CHN

CHM

CHS□

CH2□

CHA

Related Equipment

D-□

Solid State Auto Switch Rail Mounting Style D-J79C



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-J79C (With indicator light)	
Auto switch model	D-J79C
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 3.4$, 0.2 mm², 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Lead wires with a connector may be shipped with auto switches.

Connector



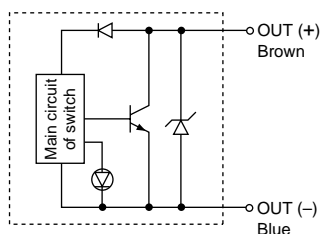
Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. Refer to Best Pneumatics No. 2 for the details.

Auto Switch Internal Circuit

D-J79C



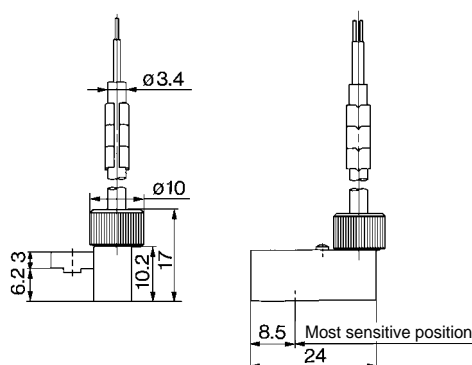
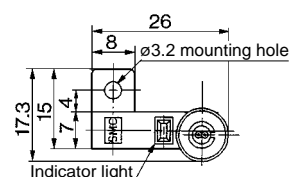
Mass

(g)

Auto switch model	D-J79C	
Lead wire length (m)	0.5	13
	3	52
	5	83

Dimensions

(mm)



Solid State Auto Switch Tie-rod Mounting Style D-F59/D-F5P/D-J59/D-J51



Refer to SMC website for the details of the products conforming to the international standards.
(Except D-J51)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5□, D-J5□ (With indicator light)				
Auto switch model	D-F59	D-F5P	D-J59	D-J51
Wiring type	3-wire		2-wire	
Output type	NPN	PNP	—	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC	AC 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)	80 to 260 VAC
Load current	40 mA or less	80 mA or less	5 to 40 mA	5 to 80 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	14 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC	1 mA or less at 100 VAC 1.5 mA or less at 200 VAC
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Mass

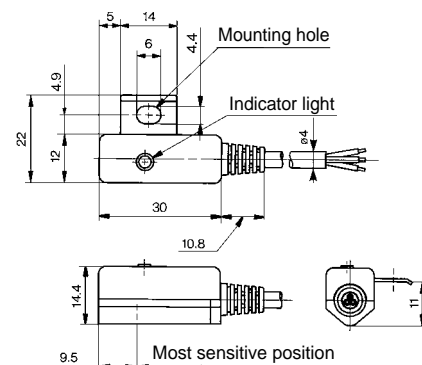
(g)

Auto switch model		D-F59	D-F5P	D-J59	D-J51
Lead wire length (m)	0.5	23	23	21	21
	3	81	81	71	71
	5	127	127	111	111

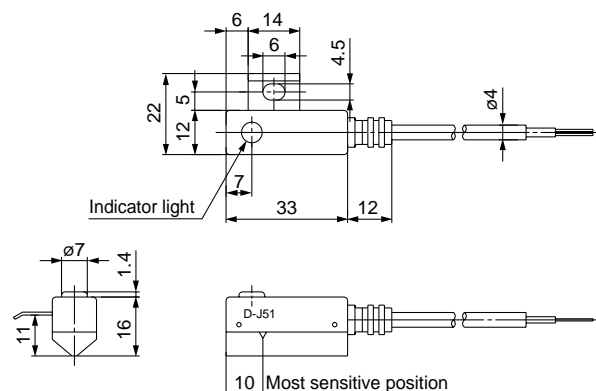
Dimensions

(mm)

D-F59/D-F5P/D-J59



D-J51

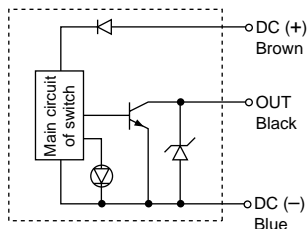


Grommet

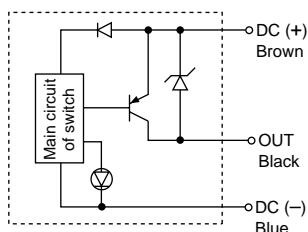


Auto Switch Internal Circuit

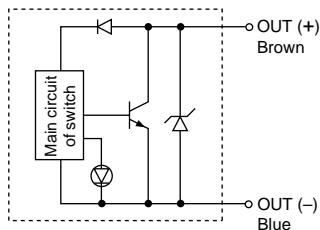
D-F59



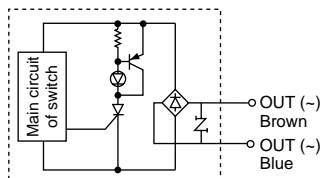
D-F5P



D-J59



D-J51



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related
Equipment

D-□

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

Grommet

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



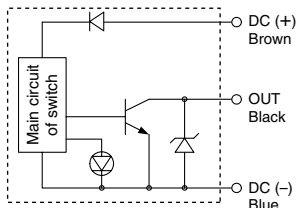
⚠ Caution

Precautions

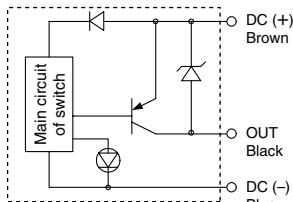
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

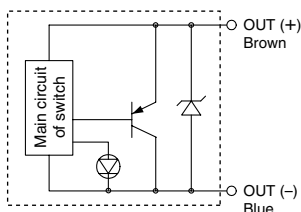
D-M9N, D-M9NV



D-M9P, D-M9PV



D-M9B, D-M9BV



Auto Switch Specifications



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

PLC: Programmable Logic Controller

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

- Lead wires — Oilproof flexible heavy-duty vinyl cord: $\phi 2.7 \times 3.2$ ellipse, 0.15 mm², 2 cores (D-M9B(V)), 3 cores (D-M9N(V), D-M9P(V))

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Mass

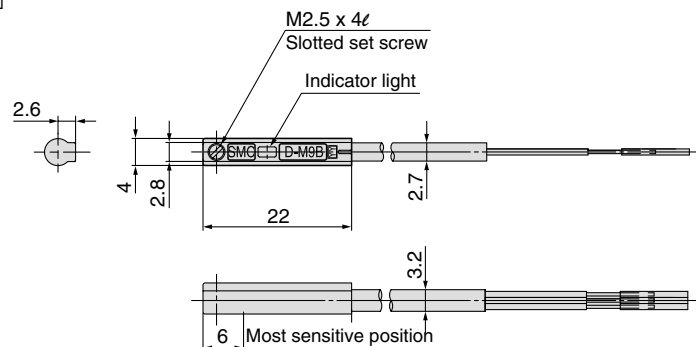
(g)

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

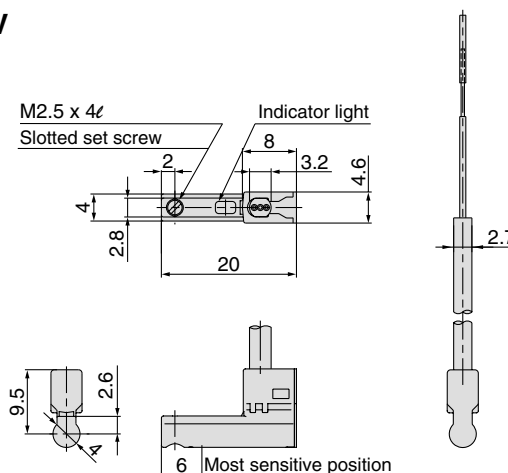
Dimensions

(mm)

D-M9□



D-M9□V



Normally Closed Solid State Auto Switch Direct Mounting Style D-F9G/D-F9H



Grommet

Output signal turns on when no magnetic force is detected.



Caution

Precautions

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

Auto Switch Specifications



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

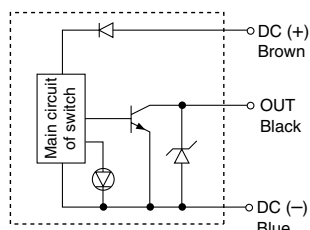
PLC: Programmable Logic Controller

D-F9G, D-F9H (With indicator light)		
Auto switch model	D-F9G	D-F9H
Wiring type	3-wire	
Output type	NPN	PNP
Applicable load	IC circuit, 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	—
Load current	40 mA or less	80 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less
Leakage current	100 μ A or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking	

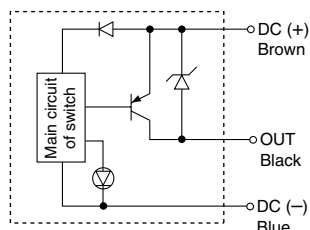
- Lead wires — Oilproof heavy-duty vinyl cord, $\phi 2.7$, 0.15 mm², 3 cores (Brown, Black, Blue) 0.5 m
- Note 1) Refer to page 352 for solid state auto switch common specifications.
- Note 2) Refer to page 352 for lead wire lengths.

Auto Switch Internal Circuit

D-F9G



D-F9H



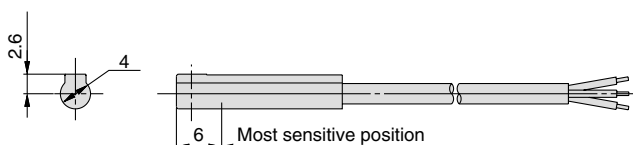
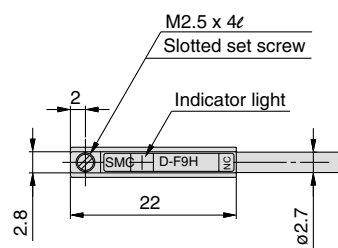
Mass

(g)

Auto switch model		D-F9G	D-F9H
Lead wire length (m)	0.5	7	7
	3	37	37
	5	61	61

Dimensions

(mm)



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-□

Solid State Auto Switch Direct Mounting Style D-Y59^A_B/D-Y69^A_B/D-Y7P(V)



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y5□, D-Y6□, D-Y7P, D-Y7PV (With indicator light)						
Auto switch model	D-Y59A	D-Y69A	D-Y7P	D-Y7PV	D-Y59B	D-Y69B
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 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 μA or less at 24 VDC				0.8 mA or less at 24 VDC	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE marking					

• Lead wires — Oilproof flexible heavy-duty vinyl cord, ø3.4, 0.15 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

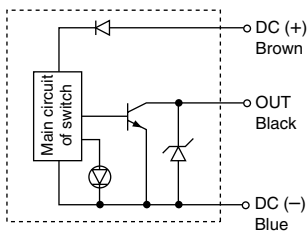
Grommet

Using flexible cable as standard spec.

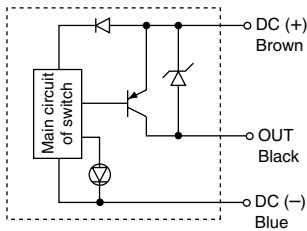


Auto Switch Internal Circuit

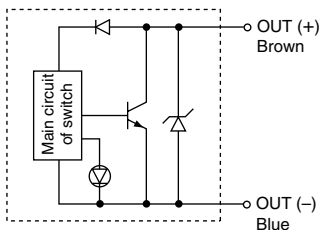
D-Y59A, D-Y69A



D-Y7P, D-Y7PV



D-Y59B, D-Y69B



Mass

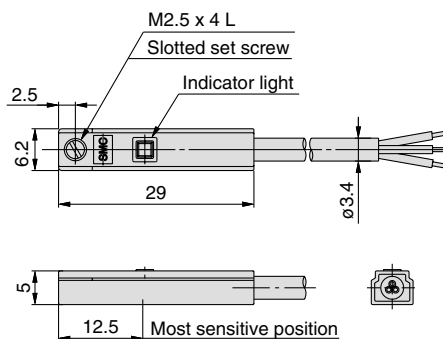
(g)

Auto switch model		D-Y59B	D-Y69B	D-Y59A	D-Y69A	D-Y7P(V)
Lead wire length (m)	0.5	9	9	10	10	10
	3	50	50	53	53	53
	5	83	83	87	87	87

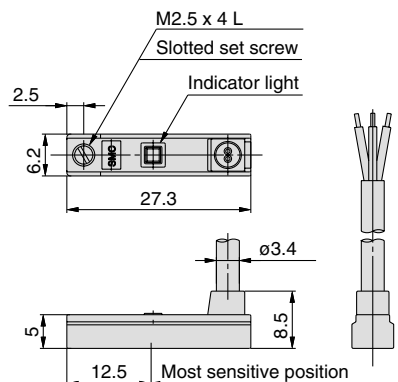
Dimensions

(mm)

D-Y59A/D-Y7P/D-Y59B



D-Y69A/D-Y7PV/D-Y69B



Normally Closed Solid State Auto Switch Direct Mounting Style D-Y7G/D-Y7H



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

Grommet

- Output signal turns on when no magnetic force is detected.
- Using flexible cable as standard spec.



Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y7G, D-Y7H (With indicator light)		
Auto switch model	D-Y7G	D-Y7H
Wiring type	3-wire	
Output type	NPN	PNP
Applicable load	IC circuit, 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	—
Load current	40 mA or less	80 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less
Leakage current	100 μ A or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking	

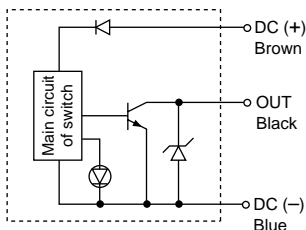
- Lead wires — Oilproof flexible heavy-duty vinyl cord, ϕ 3.4, 0.15 mm², 3 cores (Brown, Black, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

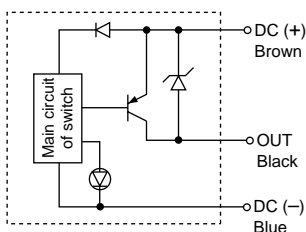
Note 2) Refer to page 352 for lead wire lengths.

Auto Switch Internal Circuit

D-Y7G



D-Y7H



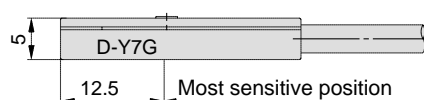
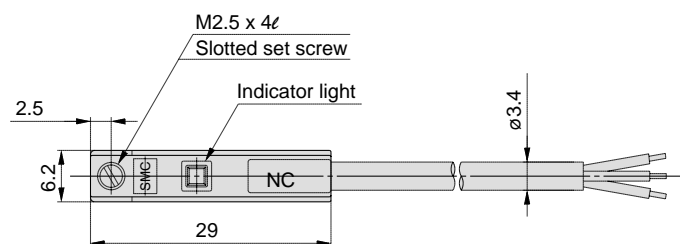
Mass

(g)

Auto switch model		D-Y7G	D-Y7H
Lead wire length (m)	0.5	10	10
	3	53	53
	5	87	87

Dimensions

(mm)



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-

2-Color Indication Type Solid State Auto Switch Band Mounting Style D-H7NW/D-H7PW/D-H7BW



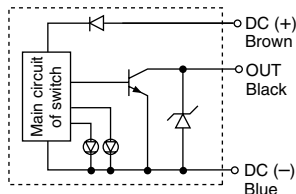
Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

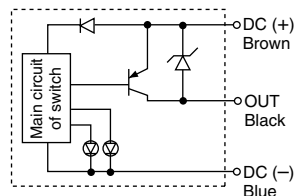


Auto Switch Internal Circuit

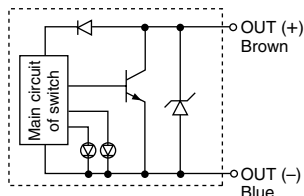
D-H7NW



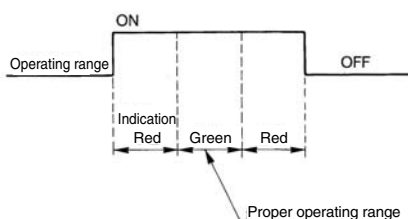
D-H7PW



D-H7BW



Indicator light/Display method



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-H7□W (With indicator light)			
Auto switch model	D-H7NW	D-H7PW	D-H7BW
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 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	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 μ A or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ϕ 3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

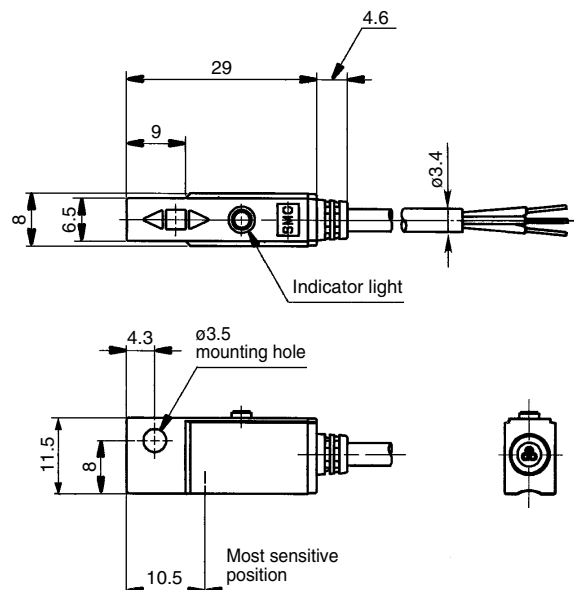
Mass

(g)

Auto switch model	D-H7NW	D-H7PW	D-H7BW
Lead wire length (m)	0.5	13	11
	3	57	50
	5	92	81

Dimensions

(mm)



2-Color Indication Type Solid State Auto Switch Band Mounting Style D-G59W/D-G5PW/D-K59W



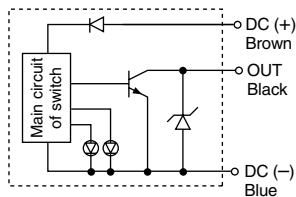
Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

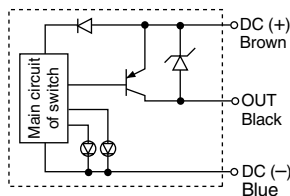


Auto Switch Internal Circuit

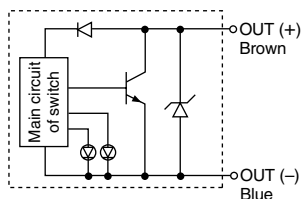
D-G59W



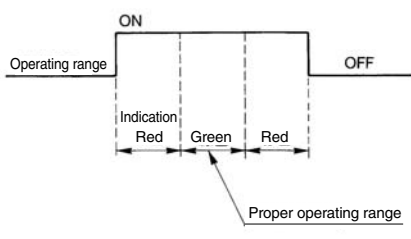
D-G5PW



D-K59W



Indicator light/Display method



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-G5□W, D-K59W (With indicator light)

Auto switch model	D-G59W	D-G5PW	D-K59W
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 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	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 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

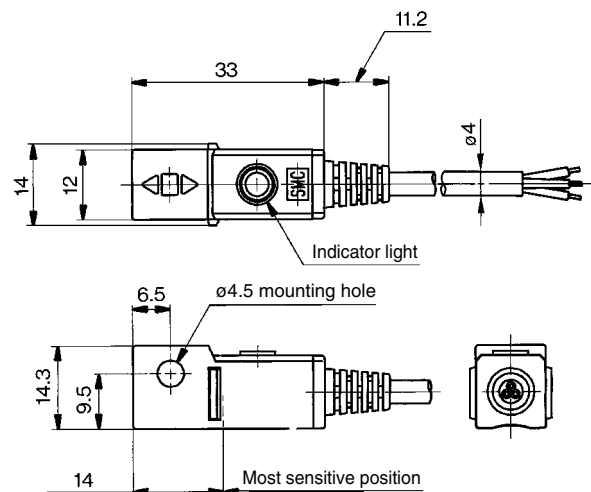
Mass

(g)

Auto switch model	D-G59W	D-G5PW	D-K59W
Lead wire length (m)	0.5	20	20
	3	78	78
	5	124	124

Dimensions

(mm)



2-Color Indication Type Solid State Auto Switch Rail Mounting Style D-F79W/D-F7PW/D-J79W



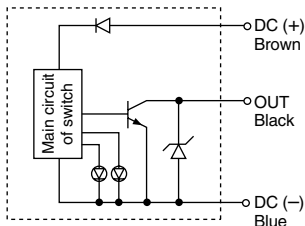
Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

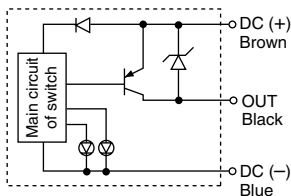


Auto Switch Internal Circuit

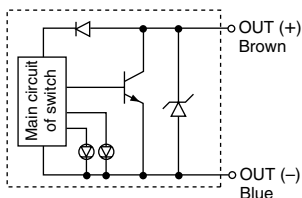
D-F79W



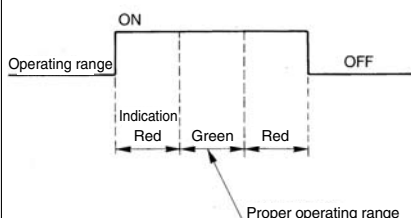
D-F7PW



D-J79W



Indicator light/Display method



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-F7□W, D-J79W (With indicator light)			
Auto switch model	D-F79W	D-F7PW	D-J79W
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 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	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 μ A or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.		
Standard	CE marking		

- Lead wires — Oilproof heavy-duty vinyl cord, ϕ 3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

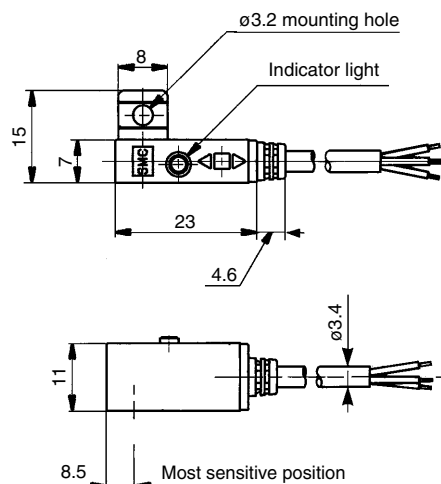
Mass

(g)

Auto switch model	D-F79W	D-F7PW	D-J79W
Lead wire length (m)	0.5	13	13
	3	57	57
	5	92	92

Dimensions

(mm)



2-Color Indication Type Solid State Auto Switch Rail Mounting Style D-F7NWV/D-F7BWV



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7□WV (With indicator light)		
Auto switch model	D-F7NWV	D-F7BWV
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, 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	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	4 V or less
Leakage current	100 μ A or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.	
Standard	CE marking	

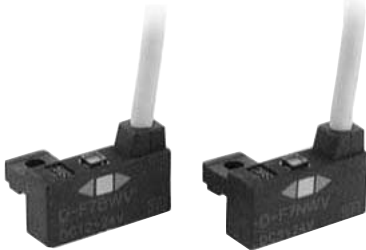
• Lead wires — Oilproof heavy-duty vinyl cord, ϕ 3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

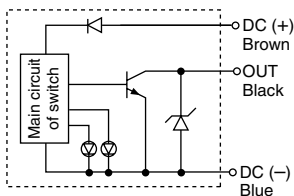
Grommet Electrical entry: Perpendicular

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

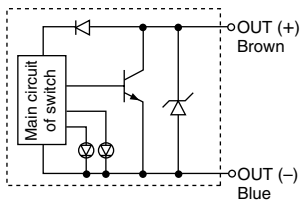


Auto Switch Internal Circuit

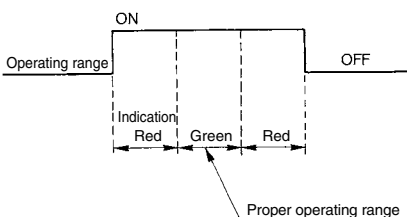
D-F7NWV



D-F7BWV



Indicator light/Display method



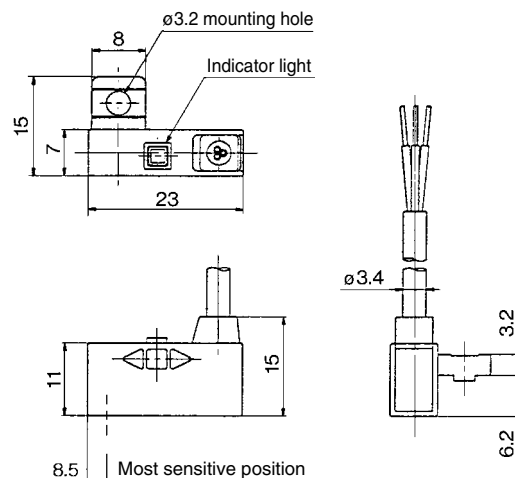
Mass

(g)

Auto switch model		D-F7NWV	D-F7BWV
Lead wire length (m)	0.5	13	11
	3	57	50
	5	92	81

Dimensions

(mm)



2-Color Indication Type Solid State Auto Switch Tie-rod Mounting Style D-F59W/D-F5PW/D-J59W



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5□W, D-J59W (With indicator light)

Auto switch model	D-F59W	D-F5PW	D-J59W
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 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	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 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Grommet

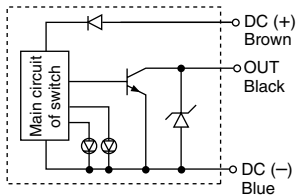
The proper operating range can be determined by the color of the light.

(Red → Green ← Red)

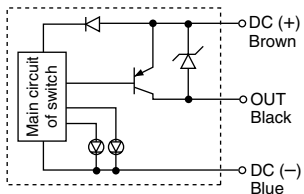


Auto Switch Internal Circuit

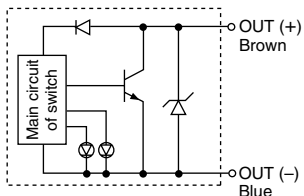
D-F59W



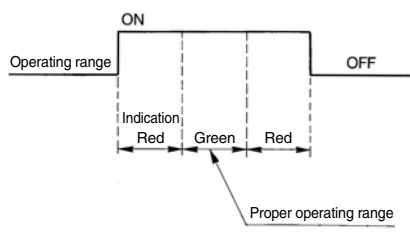
D-F5PW



D-J59W



Indicator light/Display method



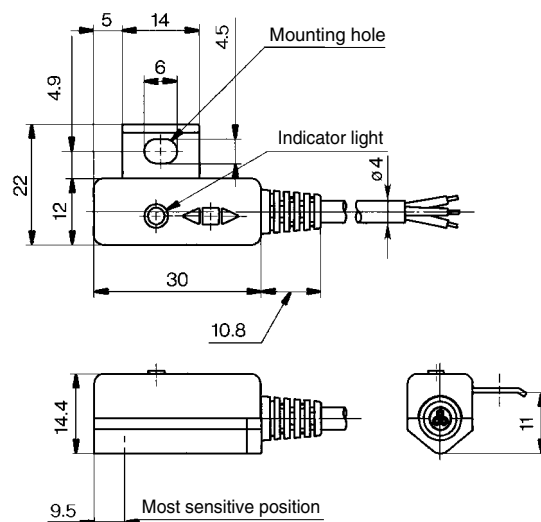
Mass

(g)

Auto switch model	D-F59W	D-F5PW	D-J59W
Lead wire length (m)	0.5	23	23
	3	81	81
	5	127	127

Dimensions

(mm)

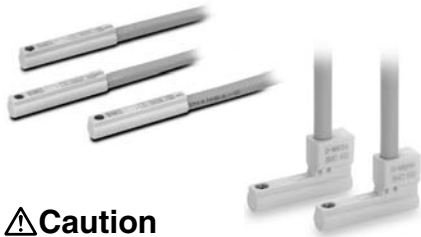


2-Color Indication Type Solid State Auto Switch Direct Mounting Style D-M9NW(V)/D-M9PW(V)/D-M9BW(V)



Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard spec.
- The proper operating range can be determined by the color of the light. (Red → Green ← Red)



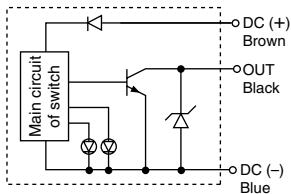
Caution

Precautions

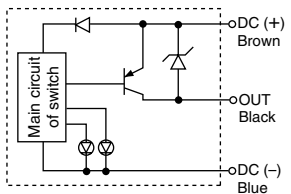
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

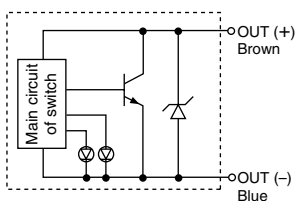
D-M9NW, D-M9NWV



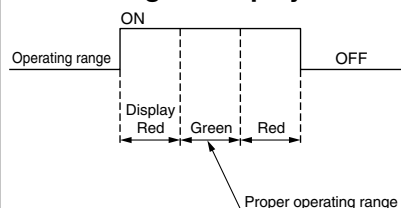
D-M9PW, D-M9PWV



D-M9BW, D-M9BWV



Indicator light / Display method



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-M9□W, D-M9□WV (With indicator light)						
Auto 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 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.					
Standard	CE marking					

- Lead wires — Oilproof flexible heavy-duty vinyl cord: $\phi 2.7 \times 3.2$ ellipse, 0.15 mm², 2 cores (D-M9BW(V)), 3 cores (D-M9NW(V), D-M9PW(V))

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Mass

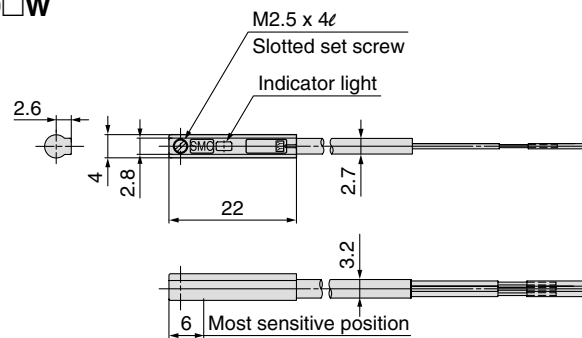
(g)

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

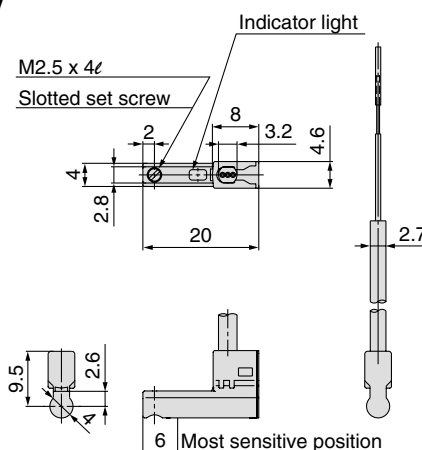
Dimensions

(mm)

D-M9□W



D-M9□WV



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

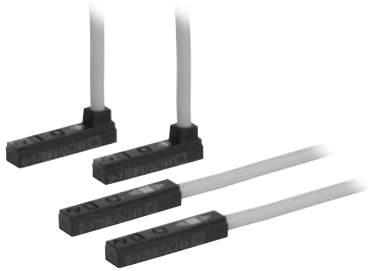
Related Equipment

D-□

2-Color Indication Type Solid State Auto Switch Direct Mounting Style D-Y7NW(V)/D-Y7PW(V)/D-Y7BW(V)

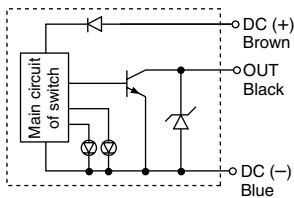
Grommet

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

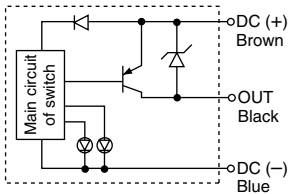


Auto Switch Internal Circuit

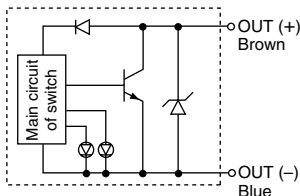
D-Y7NW, Y7NWV



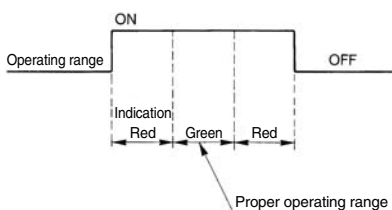
D-Y7PW, Y7PWV



D-Y7BW, Y7BWV



Indicator light/Display method



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-Y7□W, D-Y7□WV (With indicator light)						
Auto switch model	D-Y7NW	D-Y7NWV	D-Y7PW	D-Y7PWV	D-Y7BW	D-Y7BWV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 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 μA or less at 24 VDC				0.8 mA or less at 24 VDC	
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.					
Standard	CE marking					

- Lead wires — Oilproof flexible heavy-duty vinyl cord, $\phi 3.4$, 0.15 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Mass

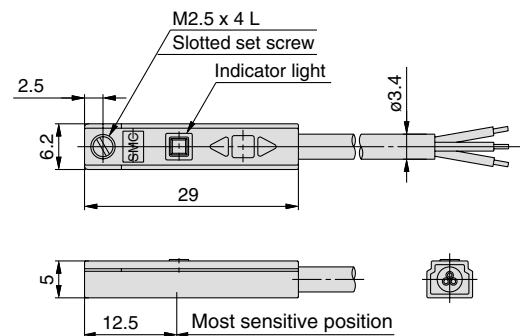
(g)

Auto switch model		D-Y7NW(V)	D-Y7PW(V)	D-Y7BW(V)
Lead wire length (m)	0.5	11	11	11
	3	54	54	54
	5	88	88	88

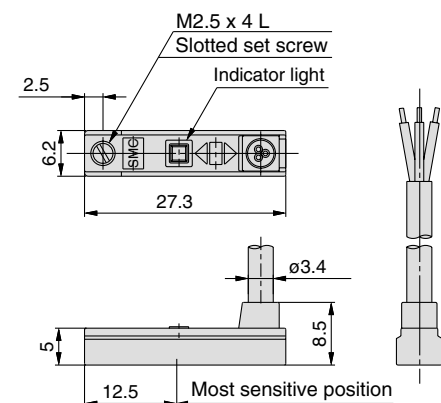
Dimensions

(mm)

D-Y7□W



D-Y7□WV



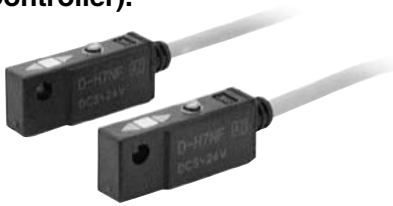
2-Color Indication Type with Diagnostic Output Solid State Auto Switch: Band Mounting Style D-H7NF



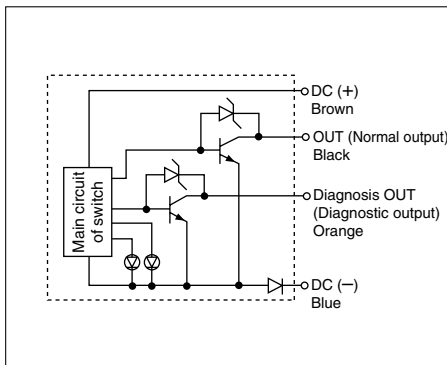
Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Since the diagnostic output signal can be detected in an unsteady detecting area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).



Auto Switch Internal Circuit



Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7NF (With indicator light)	
Auto switch model	D-H7NF
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, Relay, PLC
Power voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at each output 5 mA)
Current leakage	100 μ A or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

- Lead wires — Oilproof heavy-duty vinyl cord, ϕ 3.4, 0.2 mm², 4 cores (Brown, Black, Orange, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

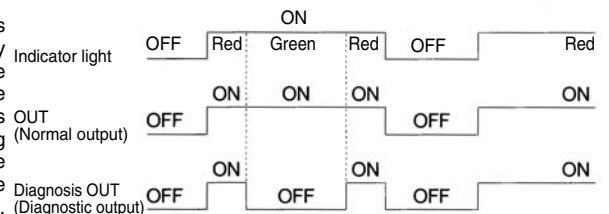
Mass

(g)

Auto switch model	D-H7NF	
Lead wire length (m)	0.5	13
	3	56
	5	90

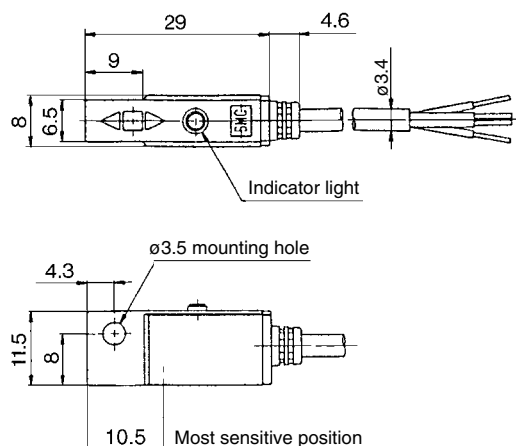
Diagnostic Output Operation

The diagnostic output signal is output within unsteady detecting area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output becomes ON.



Dimensions

(mm)



2-Color Indication Type with Diagnostic Output Solid State Auto Switch: Band Mounting Style D-G59F



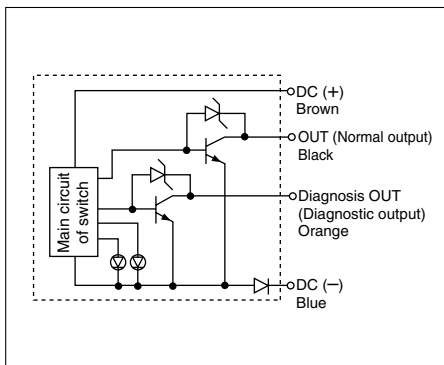
Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Since the diagnostic output signal can be detected in an unsteady detecting area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).



Auto Switch Internal Circuit



Auto Switch Specifications

PLC: Programmable Logic Controller

D-G59F (With indicator light)	
Auto switch model	D-G59F
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, Relay, PLC
Power voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Current leakage	100 μ A or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

- Lead wires — Oilproof heavy-duty vinyl cord, ϕ 4, 0.2 mm², 4 cores (Brown, Black, Orange, Blue), 0.5 m

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

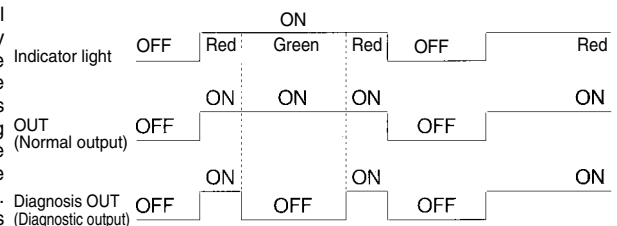
Mass

(g)

Auto switch model	D-G59F	
Lead wire length (m)	0.5	20
	3	74
	5	117

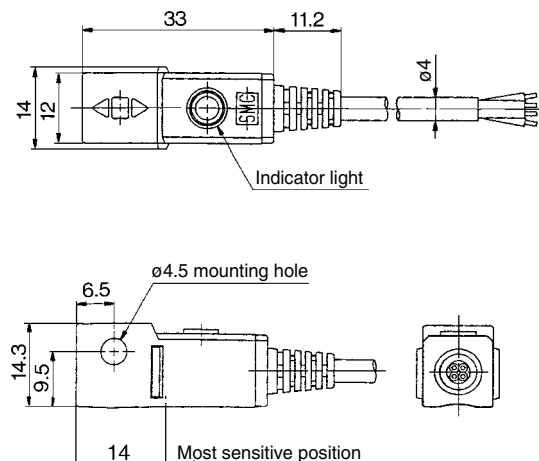
Diagnostic Output Operation

The diagnostic output signal is output within unsteady detecting area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output becomes ON.



Dimensions

(mm)



2-Color Indication Type with Diagnostic Output Solid State Auto Switch: Rail Mounting Style D-F79F



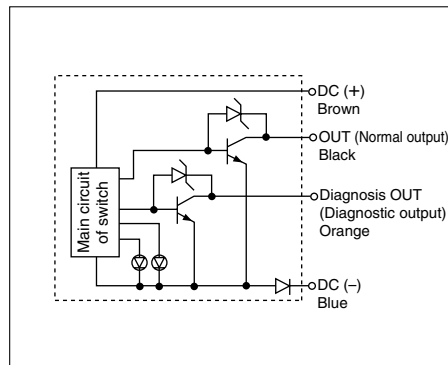
Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Since the diagnostic output signal can be detected in an unsteady detecting area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).



Auto Switch Internal Circuit



Auto Switch Specifications

PLC: Programmable Logic Controller

D-F79F (With indicator light)	
Auto switch model	D-F79F
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, 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
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Leakage current	100 μ A or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord: ϕ 3.4, 0.2 mm², 4 cores (Brown, Black, Orange, Blue), 0.5 m
Note 1) Refer to page 352 for solid state auto switch common specifications.
Note 2) Refer to page 352 for lead wire lengths.

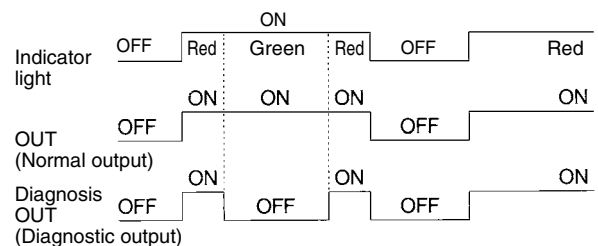
Mass

(g)

Auto switch model	D-F79F	
Lead wire length (m)	0.5	13
	3	56
	5	90

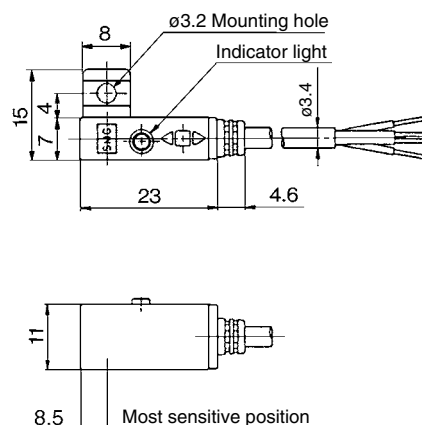
Diagnostic Output Operation

The diagnostic output signal is output within an unsteady detecting area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.



Dimensions

(mm)



2-Color Indication Type with Diagnostic Output Solid State Auto Switch: Tie-rod Mounting Style D-F59F

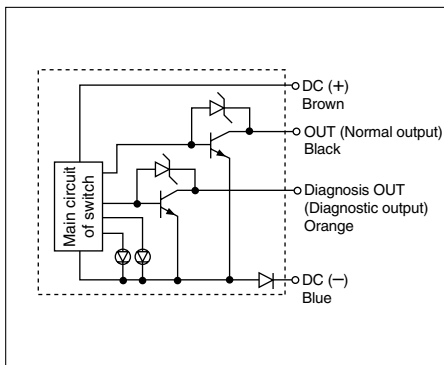


Grommet

Since the diagnostic output signal can be detected in an unsteady detecting area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).



Auto Switch Internal Circuit



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-F59F (With indicator light)	
Auto switch model	D-F59F
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, 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
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Leakage current	100 μ A or less at 28 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.2 mm², 4 cores (Brown, Black, Orange, Blue), 0.5 m
Note 1) Refer to page 352 for solid state auto switch common specifications.
Note 2) Refer to page 352 for lead wire lengths.

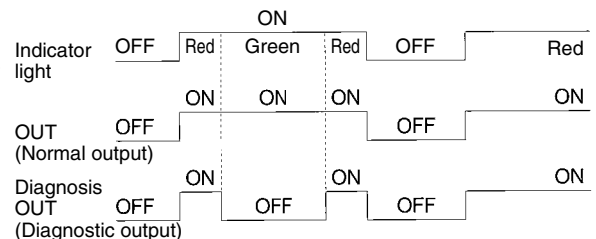
Mass

(g)

Auto switch model	D-F59F	
Lead wire length (m)	0.5	22
	3	77
	5	121

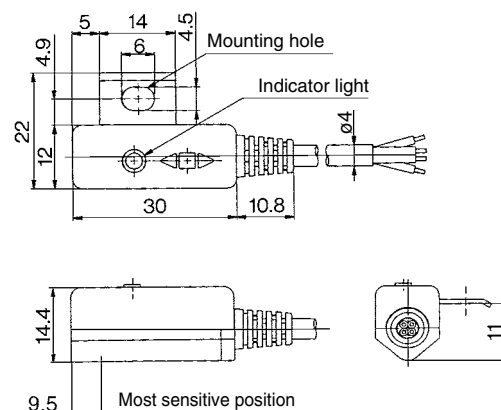
Diagnostic Output Operation

The diagnostic output signal is output within an unsteady detecting area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.



Dimensions

(mm)



Water Resistant 2-Color Indication Type Solid State Auto Switch: Band Mounting Style D-H7BAL



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7BAL (With indicator light)	
Auto switch model	D-H7BAL
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

- Lead wires — Oilproof heavy-duty vinyl cord, $\phi 3.4$, 0.2 mm², 2 cores (Brown, Blue), 3 m (Standard)
- Note 1) Refer to page 352 for solid state auto switch common specifications.
- Note 2) Refer to page 352 for lead wire lengths.

Grommet

- Water (coolant) resistant type
- The proper operating range can be determined by the color of the light.
(Red → Green ← Red)



Caution

Precautions

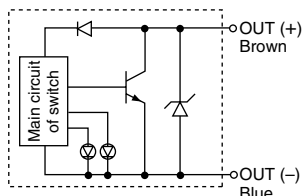
Please consult with SMC if using coolant liquid other than water based solution.

Mass

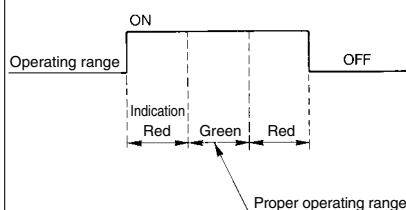
(g)

Auto switch model	D-H7BA	
Lead wire length (m)	0.5	—
	3	50
	5	81

Auto Switch Internal Circuit

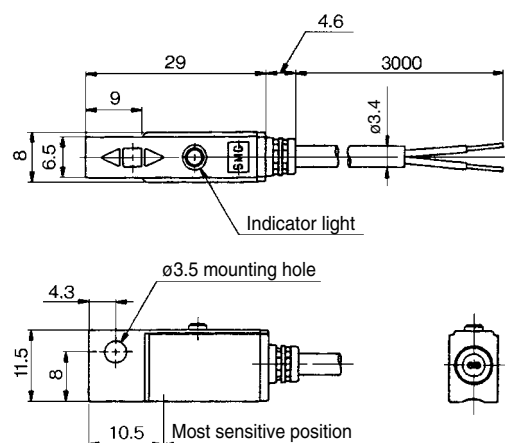


Indicator light/Display method



Dimensions

(mm)



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-□

Water Resistant 2-Color Indication Type Solid State Auto Switch: Band Mounting Style D-G5BAL



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5BAL (With indicator light)	
Auto switch model	D-G5BAL
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

- Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.2 mm², 2 cores (Brown, Blue), 3 m (Standard)
- Note 1) Refer to page 352 for solid state auto switch common specifications.
- Note 2) Refer to page 352 for lead wire lengths.

Grommet

- Water (coolant) resistant type
- The proper operating range can be determined by the color of the light.
(Red → Green ← Red)



Caution

Precautions

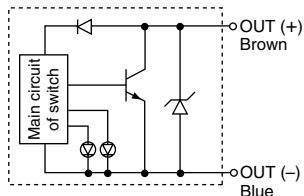
Please consult with SMC if using coolant liquid other than water based solution.

Mass

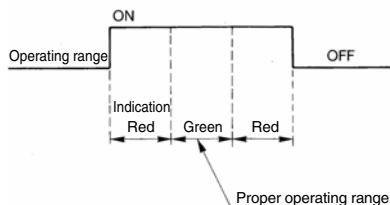
(g)

Auto switch model	D-G5BA	
Lead wire length (m)	0.5	—
	3	68
	5	108

Auto Switch Internal Circuit

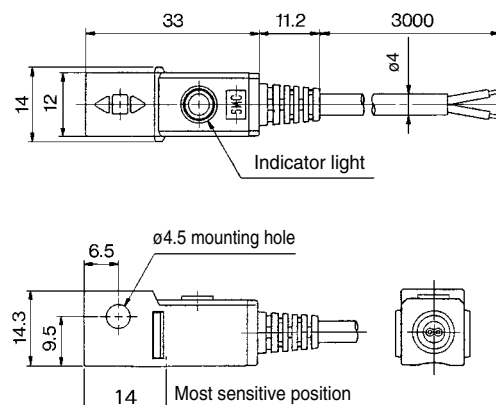


Indicator light/Display method



Dimensions

(mm)



Water Resistant 2-Color Indication Type Solid State Auto Switch: Rail Mounting Style D-F7BA(V)L



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7BA(V)L (With indicator light)

Auto switch model	D-F7BAL	D-F7BAVL
Electrical entry direction	In-line	Perpendicular
Wiring type	2-wire	
Output type	—	
Applicable load	24 VDC Relay, PLC	
Power supply voltage	—	
Current consumption	—	
Load voltage	24 VDC (10 to 28 VDC)	
Load current	5 to 40 mA	
Internal voltage drop	4 V or less	
Leakage current	0.8 mA or less at 24 VDC	
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.	
Standard	CE marking	

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 3.4$, 0.2 mm², 2 cores (Brown, Blue), 3 m (Standard)
Note 1) Refer to page 352 for solid state auto switch common specifications.
Note 2) Refer to page 352 for lead wire lengths.

Mass

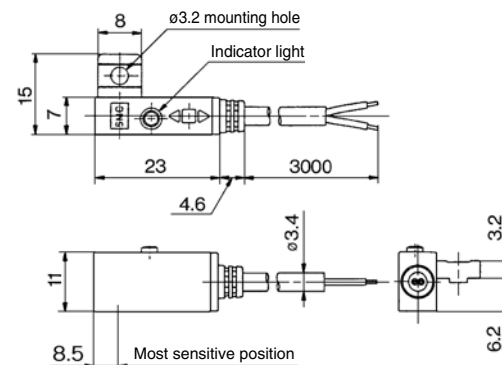
(g)

Auto switch model		D-F7BA	D-F7BAV
Lead wire length (m)	0.5	—	—
	3	50	50
	5	81	81

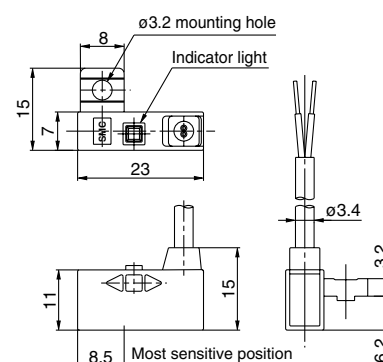
Dimensions

(mm)

D-F7BAL



D-F7BAVL



Grommet

- Water (coolant) resistant type
- The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

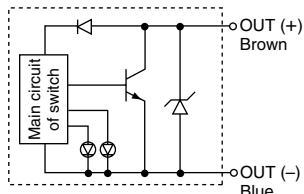


Caution

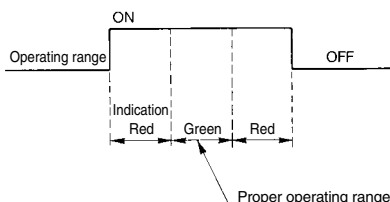
Precautions

Please consult with SMC if using coolant liquid other than water based solution.

Auto Switch Internal Circuit



Indicator light/Display method



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-□

Water Resistant 2-Color Indication Type Solid State Auto Switch: Tie-rod Mounting Style D-F5BAL



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5BAL (With indicator light)	
Auto switch model	D-F5BAL
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

- Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.3 mm², 2 cores (Brown, Blue), 3 m (Standard)
- Note 1) Refer to page 352 for solid state auto switch common specifications.
- Note 2) Refer to page 352 for lead wire lengths.

Grommet

- Water (coolant) resistant type
- The proper operating range can be determined by the color of the light.
(Red → Green ← Red)



Caution

Precautions

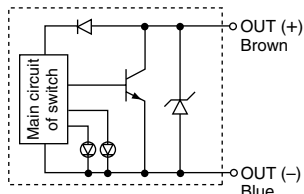
Please consult with SMC if using coolant liquid other than water based solution.

Mass

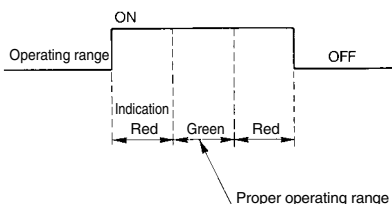
(g)

Auto switch model	D-F5BA	
Lead wire length (m)	0.5	—
	3	71
	5	111

Auto Switch Internal Circuit

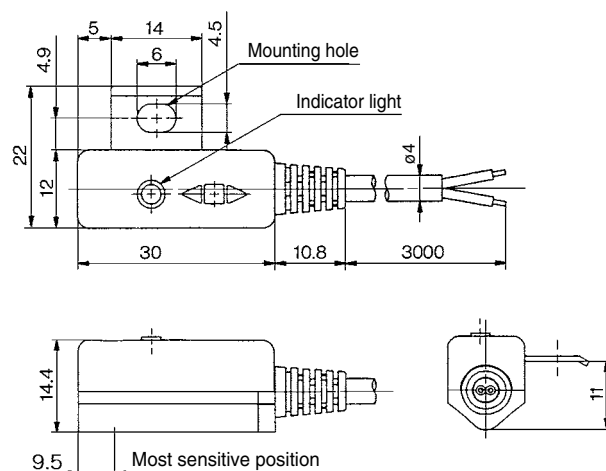


Indicator light/Display method



Dimensions

(mm)



Water Resistant 2-Color Indication Type Solid State Auto Switch: Direct Mounting Style D-M9NA(V)/D-M9PA(V)/D-M9BA(V)

Grommet

- Water (coolant) resistant type
- 2-wire load current is reduced (2.5 to 40 mA).
- The proper operating range can be determined by the color of the light. (Red → Green ← Red)
- Using flexible cable as standard spec.



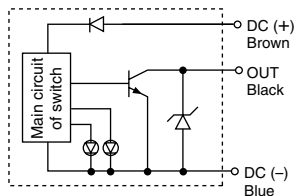
Caution

Precautions

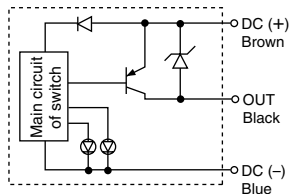
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

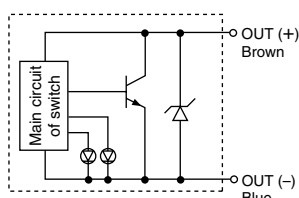
D-M9NA, D-M9NAV



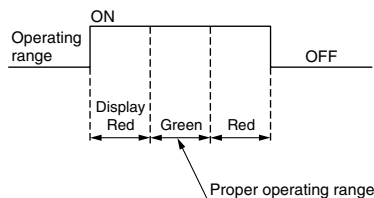
D-M9PA, D-M9PAV



D-M9BA, D-M9BAV



Indicator light/Display method



Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M9□AV (With indicator light)						
Auto switch model	D-M9NA	D-M9NAV	D-M9PA	D-M9PAV	D-M9BA	D-M9BAV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.					
Standard	CE marking					

- Lead wires — Oilproof flexible heavy-duty vinyl cord: $\phi 2.7 \times 3.2$ ellipse, 0.15 mm², 2 cores (D-M9BA(V)), 3 cores (D-M9NA(V), D-M9PA(V))

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Mass

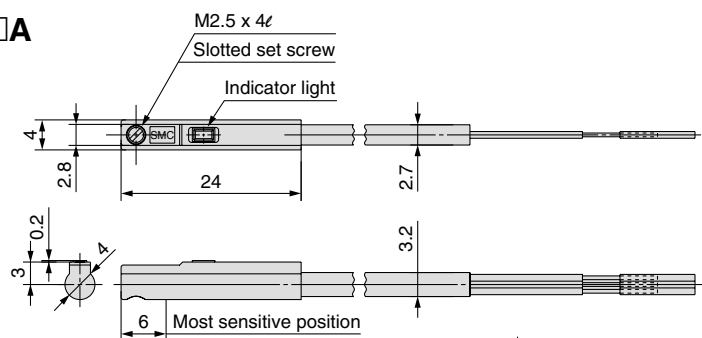
(g)

Auto switch model		D-M9NA(V)	D-M9PA(V)	D-M9BA(V)
Lead wire length (m)	0.5	8	8	7
	1	14	14	13
	3	41	41	38
	5	68	68	63

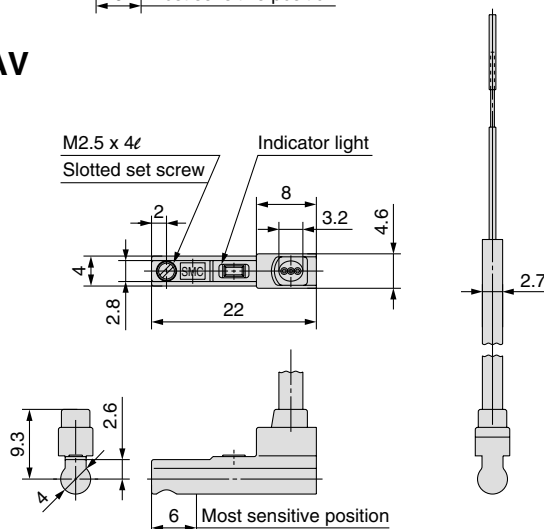
Dimensions

(mm)

D-M9□A



D-M9□AV



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-□

Water Resistant 2-Color Indication Type Solid State Auto Switch: Direct Mounting Style D-Y7BAL



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y7BAL (With indicator light)

Auto switch model	D-Y7BAL
Wiring type	2-wire
Applicable load	24 VDC Relay, PLC
Load voltage	24 VDC (10 to 28 VDC)
Load current	2.5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof flexible heavy-duty vinyl cord, $\phi 3.4$, 0.15 mm², 2 cores (Brown, Blue), 3 m (Standard)

Note 1) Refer to page 352 for solid state auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Grommet

- Water (coolant) resistant type
- Using flexible cable as standard spec.
- The proper operating range can be determined by the color of the light.
(Red → Green ← Red)



Caution

Precautions

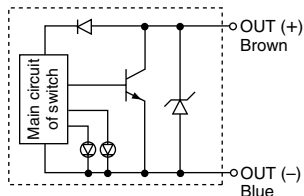
Please consult with SMC if using coolant liquid other than water based solution. Detection characteristics (operating range) are the same as D-Y5□ and D-Y7□W, but the detection area length is different.

Mass

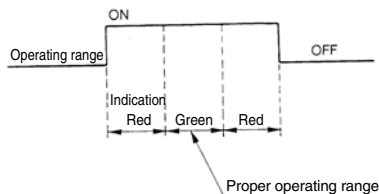
(g)

Auto switch model	D-Y7BA
Lead wire length (m)	0.5
	3
	5

Auto Switch Internal Circuit

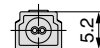
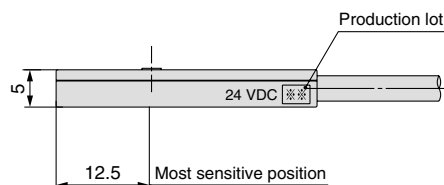
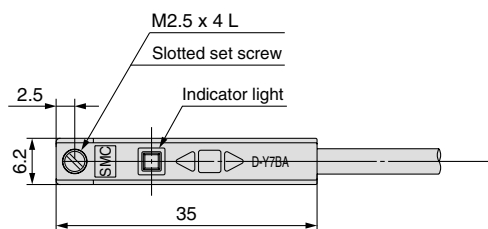


Indicator light/Display method



Dimensions

(mm)



Solid State Auto Switch with Timer Band Mounting Style D-G5NTL



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

Auto Switch Specifications

PLC: Programmable Logic Controller

Grommet

- With built-in OFF-delay timer (approx. 200 ms)
- Easy intermediate detection



D-G5NTL (With indicator light)	
Auto switch model	D-G5NTL
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, 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
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 µA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.3 mm², 3 cores (Brown, Black, Blue), 3 m (Standard)

Note 1) Refer to page 352 for solid state auto switch common specifications.

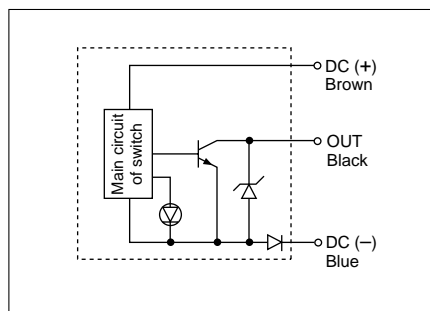
Note 2) Refer to page 352 for lead wire lengths.

Mass

(g)

Auto switch model	D-G5NT	
Lead wire length (m)	0.5	—
	3	78
	5	124

Auto Switch Internal Circuit

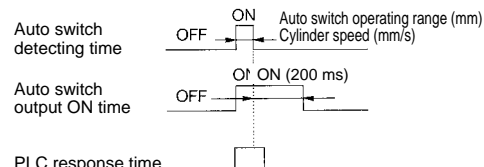


Timer Operation

Detection of intermediate positioning for high-speed cylinder

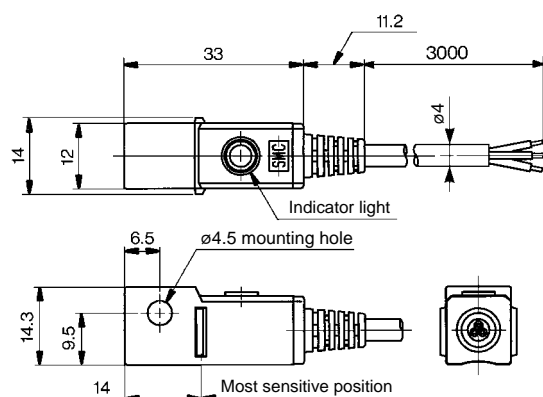
Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)
Take PLC response time into consideration when using.



Dimensions

(mm)



Solid State Auto Switch with Timer Rail Mounting Style D-F7NTL



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

Auto Switch Specifications

PLC: Programmable Logic Controller

Grommet

- With built-in OFF-delay timer (approx. 200 ms)
- Easy intermediate detection



D-F7NTL (With indicator light)	
Auto switch model	D-F7NTL
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, 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
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 µA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 3 m (Standard)

Note 1) Refer to page 352 for solid state auto switch common specifications.

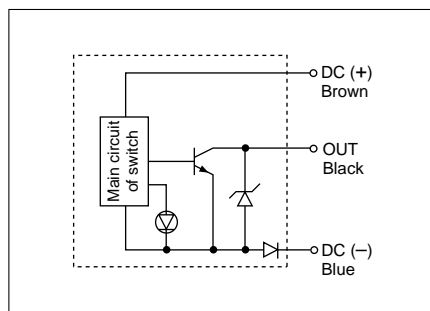
Note 2) Refer to page 352 for lead wire lengths.

Mass

(g)

Auto switch model	D-F7NT	
Lead wire length (m)	0.5	—
	3	57
	5	92

Auto Switch Internal Circuit



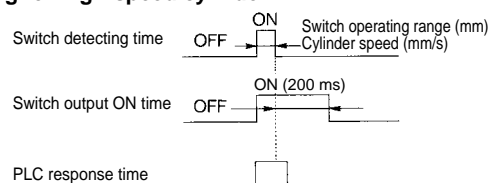
Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

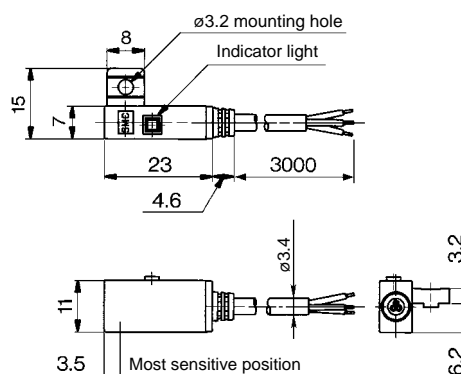
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

Take PLC response time into consideration when using.



Dimensions

(mm)



Solid State Auto Switch with Timer Tie-rod Mounting Style D-F5NTL



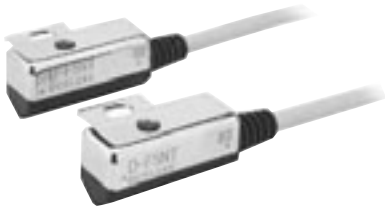
Refer to SMC website for the details of the products conforming to the international standards.

Auto Switch Specifications

PLC: Programmable Logic Controller

Grommet

- With built-in OFF-delay timer (approx. 200 ms)
- Easy intermediate detection



D-F5NTL (With indicator light)	
Auto switch model	D-F5NTL
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, 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
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 µA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

- Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 3 m (Standard)

Note 1) Refer to page 352 for solid state auto switch common specifications.

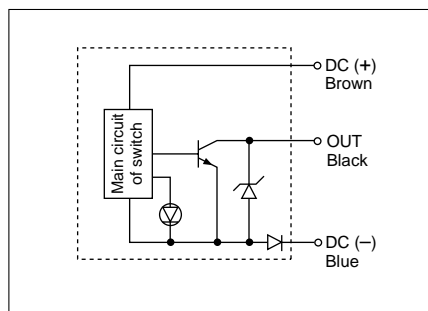
Note 2) Refer to page 352 for lead wire lengths.

Mass

(g)

Auto switch model	D-F5NT	
Lead wire length (m)	0.5	—
	3	81
	5	127

Auto Switch Internal Circuit

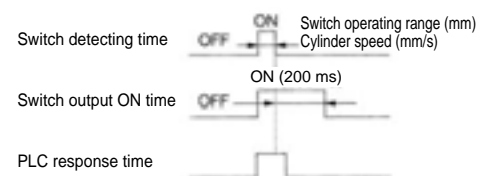


Timer Operation

Detection of intermediate positioning for high-speed cylinder

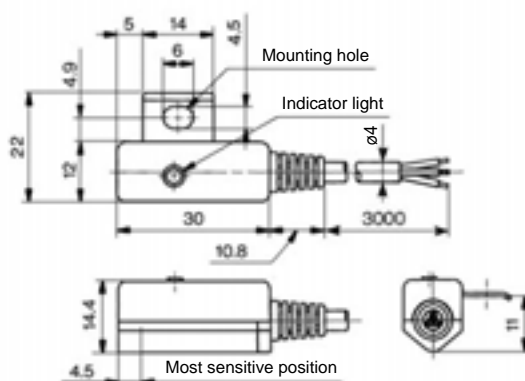
Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)
Take PLC response time into consideration when using.



Dimensions

(mm)



Made to Order Specifications: Solid State Auto Switch



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

1 With Pre-wired Connector

- Eliminates the harnessing work by cable with connector specifications
- Adopts global standardized connector (IEC947-5-2)
- IP67 construction



How to Order

D-M9N S A PC

Solid state auto switch
Standard part no.

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

Cable length

S	0.5 m
M	1.0 m
L	3.0 m

Note) L is available for the D-P4DW type only.

Connector model

A	M8-3 pin
B	M8-4 pin
D	M12-4 pin

Note) Type D is available for the D-P4DW type only.

Connector Specifications

Connector model	M8-3 pin	M8-4 pin	M12-4 pin
Pin arrangement			
Conformed standard	JIS C 4524, JIS C 4525, IEC 947-5-2, NECA 0402		
Impact resistance	300 m/s ²		
Enclosure	IP-67 (IEC60529 standard)		
Insulation resistance	100 MΩ or more at 500 VDC Mega		
Withstand voltage	1500 VAC 1 minute (between contacts), Leak current 1 mA or less		

Applicable Auto Switch

Mounting	Function	Electrical entry	Applicable model	Lead wire length (m)		
				0.5	1.0	3.0
Rail mounting style	—	Grommet (In-line)	F79, F7P, J79	●	●	—
		Grommet (Perpendicular)	F7NV, F7PV, F7BV	●	●	—
	2-color indication	Grommet (In-line)	F79W, F7PW, J79W	●	●	—
		Grommet (Perpendicular)	F7NWW, F7BWW	●	●	—
	With diagnostic output	Grommet (In-line)	F79F	●	●	—
			F7BA	●	●	—
	Water resistant		F7BAV	●	●	—
			With timer	F7NT	●	●
Magnetic field resistant	P4DW			●	●	●
	Band mounting style		—	H7A1, H7A2, H7B	●	●
G59, G5P, K59		●		●	—	
2-color indication		H7NW, H7PW, H7BW	●	●	—	
		G59W, G5PW, K59W	●	●	—	
Diagnostic output		H7NF, G59F	●	●	—	
Water resistant		H7BA, G5BA	●	●	—	
With timer		G5NT	●	●	—	
Wide detection		G5NB	●	●	—	
Tie-rod mounting style	—	F59, F5P, J59	●	●	—	
	2-color indication	F59W, F5PW, J59W	●	●	—	
	Diagnostic output	F59F	●	●	—	
	Water resistant	F5BA	●	●	—	
	With timer	F5NT	●	●	—	

Mounting	Function	Electrical entry	Applicable model	Lead wire length (m)		
				0.5	1.0	3.0
Direct mounting style	—	Grommet (In-line)	Y59A, Y7P, Y59B	●	●	—
		Grommet (Perpendicular)	Y69A, Y7PV, Y69B	●	●	—
		Grommet (In-line)	M9N, M9P, M9B	●	●	—
		Grommet (Perpendicular)	M9NV, M9PV, M9BV	●	●	—
		Grommet (In-line)	F8N, F8P, F8B	●	●	—
		Grommet (In-line)	F6N, F6P, F6B	●	●	—
	Normally closed	Grommet (In-line)	Y7G, Y7H	●	●	—
		Grommet (In-line)	F9G, F9H	●	●	—
	2-color indication	Grommet (In-line)	Y7NW, Y7PW, Y7BW	●	●	—
		Grommet (Perpendicular)	Y7NWW, Y7PWW, Y7BWW	●	●	—
		Grommet (In-line)	M9NW, M9PW, M9BW	●	●	—
		Grommet (Perpendicular)	M9NWW, M9PWW, M9BWW	●	●	—
	Water resistant	Grommet (In-line)	Y7BA	●	●	—
		Grommet (Perpendicular)	M9NA, M9PA, M9BA	●	●	—
Rotary actuator	—	Grommet (In-line)	M9NAV, M9PAV, M9BAV	●	●	—
		Grommet (In-line)	S791/2, S7P1/2, T791/2	●	●	—
		Grommet (Perpendicular)	S991/2, S9P1/2, T991/2	●	●	—
		Grommet (Perpendicular)	S99V1/2, T99V1/2	●	●	—

CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-

With Pre-wired Connector



M8-3 pin



M8-4 pin



M12-4 pin

Connector Pin Arrangement

Sensor type	Color distinction of lead wire				Meaning of contact number			
	1 pin	2 pin	3 pin	4 pin	1 pin	2 pin	3 pin	4 pin
DC 2-wire type	Brown	—	—	Blue	OUT (+)	—	—	OUT (−)
DC 2-wire, Non-polar type	—	—	Brown	Blue	—	—	OUT (±)	OUT (±)
DC 3-wire type	Brown	—	Blue	Black	DC (+)	—	DC (−)	OUT
DC 4-wire type	Brown	Orange	Blue	Black	DC (+)	Diagnostic output	DC (−)	OUT

Connector Specifications

Connector model	M8-3 pin	M8-4 pin	M12-4 pin
Pin arrangement			
Conformed standard	JIS C 4524, JIS C 4525, IEC 947-5-2, NECA 0402		
Impact resistance	300 m/s ²		
Enclosure	IP67 (IEC60529 standard)		
Insulation resistance	100 MΩ or more at 500 VDC Mega		
Withstand voltage	1500 VAC 1 minute (between contacts), Leak current 1 mA or less		

Dimensions

Connector model	
M8-3 pin 4 pin	
M12-4 pin	

Mass for Connector Type

Part no.	Connector type	Mass
D-□□□APC	M8-3	4 g
D-□□□BPC	M8-4	4 g
D-□□□DPC	M12-4	About 11 g

Connection (Female side) Connector Cable

As the parts are not supplied from SMC, refer to the application examples listed in the below.
(For detail such as catalog availability, etc., please contact each manufacturer.)

Connector size	Number of pins	Manufacturer	Applicable series example
M8	3	Phoenix Contact	SAC-3P
		Corrence Corporation	M8-3D
		OMRON Corporation	XS3
M12	4	Phoenix Contact	SAC-4P
		Corrence Corporation	VA-4D
		OMRON Corporation	XS2
		Yamatake Corporation	PA5-4I
		Hirose Electric Co., Ltd.	HR24
		DKK Ltd.	CM01-8DP4S

Made to Order Specifications: Solid State Auto Switch

-50: Without Indicator Light (Dark room) Specifications

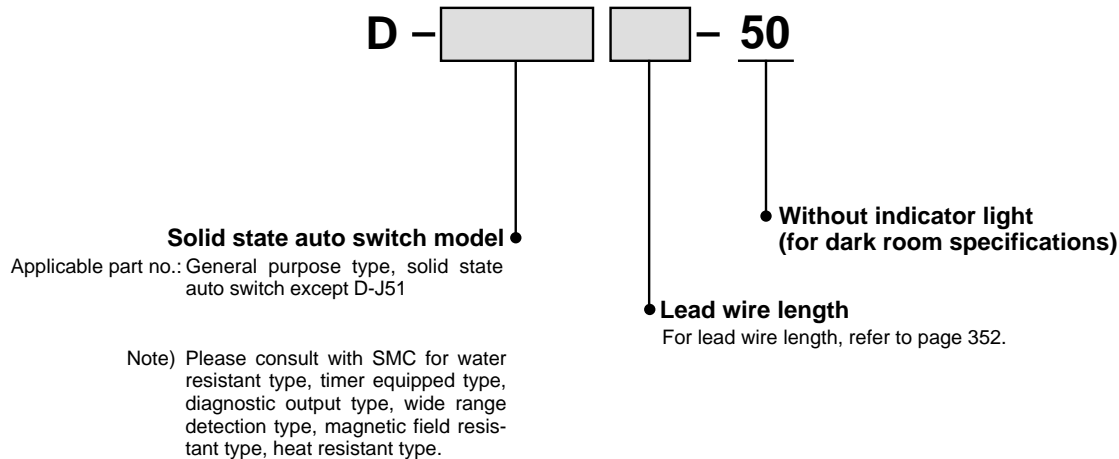
-61: Oilproof Flexible Cable Specifications

2 Without Indicator Light (for dark room specifications)

Symbol

-50

Possible to use under the environment which hates a light.



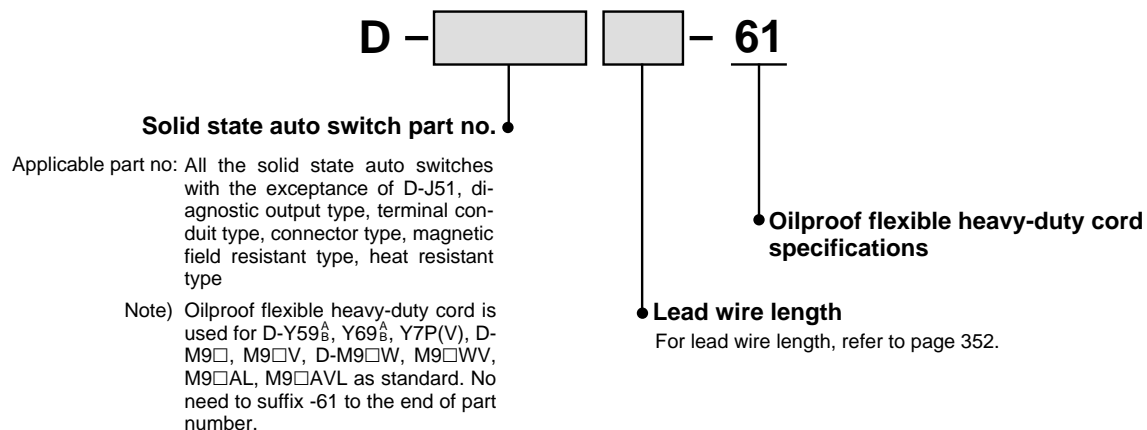
Dimensions and specifications are common as standard products with the exception of no indicator light.

3 Oilproof Flexible Heavy-duty Cord Specifications

Symbol

-61

This is the product which uses a heavy-duty cord having flexible characteristics 5 times (SMC comparison) as strong as oilproof heavy-duty cord used in the standard products.



Specifications are the same as standard products with the exception of lead wire specifications.
Lead wire: For D-F8 type..... ø2.7, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)
For other model nos..... ø3.4, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)

Dimensions are identical with D-F5 type, G5 type, J59 type, K59 type. Lead wire diameter is changed from ø4 to ø3.4. In other series products, it is common as standard product's specifications.

CHQ

CHK□

CHN

CHM

CHS□

CH2□

CHA

Related Equipment

D-□

Reed Auto Switches

General Purpose Type, 2-Color Indication Type

Reed Switch Variations

Type	Function	Auto switch mounting style	Electrical entry	Auto switch model	Page
Reed Auto Switch	General purpose	Band	Grommet	D-C73/C76/C80	394
			Connector	D-B53/B54/B64	395
			Terminal conduit	D-C73C/C80C	396
			DIN terminal	D-A33/A34	397
				D-A44	397
		Rail	Grommet	D-A72/A73/A80	398
			Connector	D-A72H/A73H/A76H/A80H	399
		Tie-rod	Grommet	D-A73C/A80C	400
		Direct	Grommet	D-A53/A54/A56/A64/A67	401
				D-A90/A93/A96*	402
				D-A90V/A93V/A96V*	402
				D-Z73/Z76/Z80**	403
	2-color indication	Band	Grommet	D-B59W	404
		Rail	Grommet	D-A79W	405
		Tie-rod	Grommet	D-A59W	406

* Auto switches with an asterisk (*) can be mounted on a band (excluding D-A9□V), rail, tie-rod or square groove with an auto switch mounting bracket. Refer to the section "How to Mount and Move the Auto Switch" of each series for details.

** This auto switch can be mounted by tie-rod with using auto switch mounting bracket. For details, refer to the section "How to Mount and Move the Auto Switch" of each series.

CHQ

CHK□

CHN

CHM

CHS□

CH2□

CHA

Related Equipment

D-□

Reed Auto Switch Band Mounting Style D-C73/D-C76/D-C80



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-C7 (With indicator light)			
Auto switch model	D-C73		D-C76
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC	100 VAC	4 to 8 VDC
Max. load current and range ⁽³⁾	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	2.4 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		
D-C8 (Without indicator light)			
Auto switch model	D-C80		
Applicable load	Relay, PLC, IC circuit		
Load voltage	24 V ^{AC} _{DC} or less	48 V ^{AC} _{DC}	100 V ^{AC} _{DC}
Max. load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

- Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 3 cores (Brown, Black, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

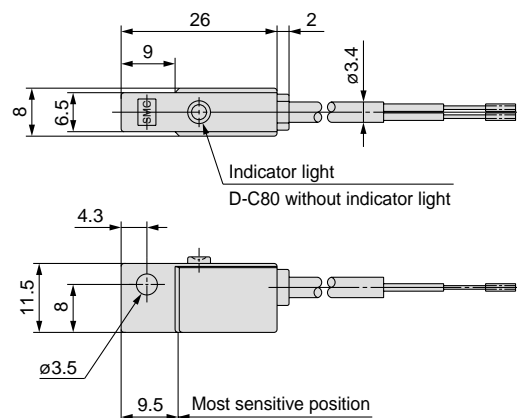
Mass

(g)

Auto switch model	D-C73	D-C76	D-C80
Lead wire length (m)	0.5	9	10
	3	46	50
	5	76	—

Dimensions

(mm)

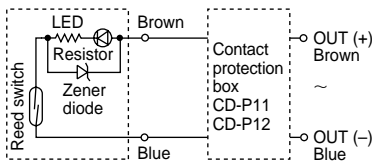


Grommet

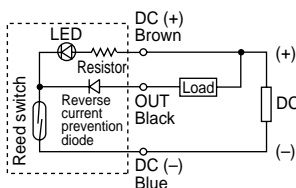


Auto Switch Internal Circuit

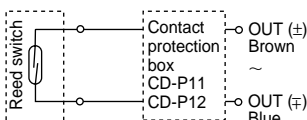
D-C73



D-C76



D-C80



Note 1) Operating load is an induction load.

Note 2) Wiring to the load is 5 m or longer.

Note 3) Load voltage is 100 VAC.

Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 353 for contact protection box.)

Reed Auto Switch Band Mounting Style D-B53/D-B54/D-B64



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-B5 (With indicator light)				
Auto switch model	D-B53	D-B54		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC	24 VDC	100 VAC	200 VAC
Load current range ⁽³⁾	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (to 20 mA)/3.5 V or less (to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			
D-B6 (Without indicator light)				
Auto switch model	D-B64			
Applicable load	Relay, PLC			
Load voltage	24 V ^{AC} _{DC} or less	100 VAC	200 VAC	
Max. load current	Max. 50 mA	Max. 25 mA	Max. 12.5 mA	
Contact protection circuit	Built-in			
Internal resistance	25 Ω or less			
Standard	CE marking			

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.3 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

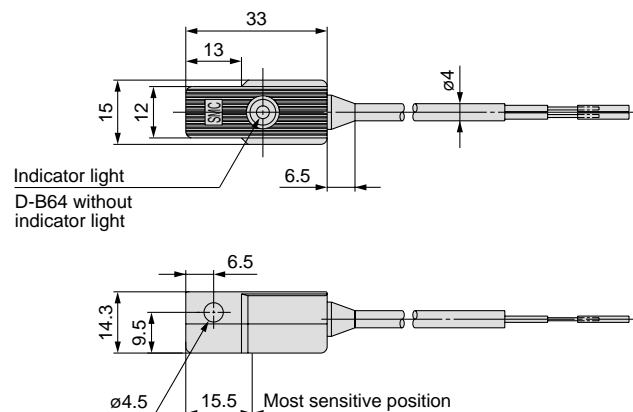
Mass

(g)

Auto switch model	D-B53	D-B54	D-B64
Lead wire length (m)			
0.5	22	22	22
3	78	78	78
5	126	126	—

Dimensions

(mm)

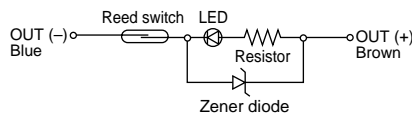


Grommet

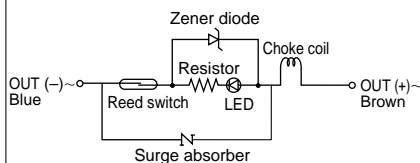


Auto Switch Internal Circuit

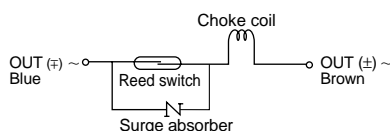
D-B53



D-B54



D-B64



Reed Auto Switch Band Mounting Style D-C73C/D-C80C



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

Auto Switch Specifications

PLC: Programmable Logic Controller

Connector



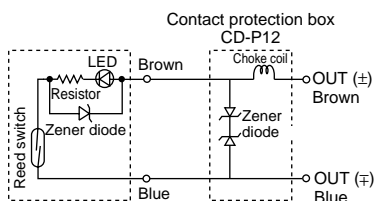
Caution

Precautions

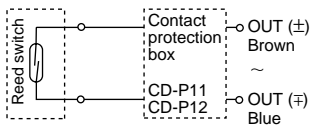
1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. For details, refer to Best Pneumatics No. 2.

Auto Switch Internal Circuit

D-C73C



D-C80C



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 353 for contact protection box.)

D-C73C (With indicator light)	
Auto switch model	D-C73C
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range ⁽⁴⁾	5 to 40 mA
Contact protection circuit	None
Internal voltage drop	2.4 V or less
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking
D-C80C (Without indicator light)	
Auto switch model	D-C80C
Applicable load	Relay, PLC
Load voltage	24 V _{DC} or less
Maximum load current	50 mA
Contact protection circuit	None
Internal resistance	1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

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

Note 4) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

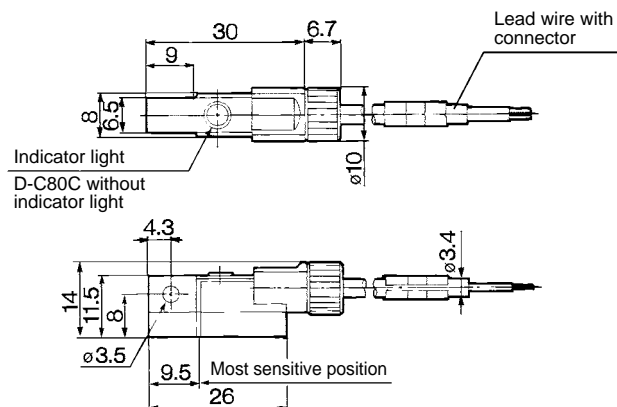
Mass

(g)

Auto switch model		D-C73C	D-C80C
Lead wire length (m)	0.5	14	14
	3	53	53
	5	83	83

Dimensions

(mm)



Reed Auto Switch Band Mounting Style D-A33/D-A34/D-A44



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



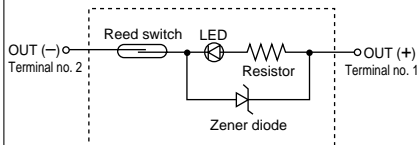
⚠ Caution

Precautions

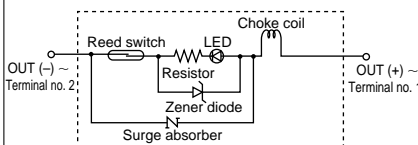
1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Internal Circuit

D-A33



D-A34, D-A44



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-A3 (With indicator light) Terminal conduit				
Auto switch model	D-A33	D-A34		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC	24 VDC	100 VAC	200 VAC
Load current range ⁽²⁾	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (to 20 mA)/3.5 V or less (to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			
D-A44 (With indicator light) DIN terminal				
Auto switch model	D-A44			
Applicable load	Relay, PLC			
Load voltage	24 VDC	100 VAC		200 VAC
Load current range	5 to 50 mA	5 to 25 mA		5 to 12.5 mA
Contact protection circuit	Built-in			
Internal voltage drop	2.4 V or less (to 20 mA)/3.5 V or less (to 50 mA)			
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Mass

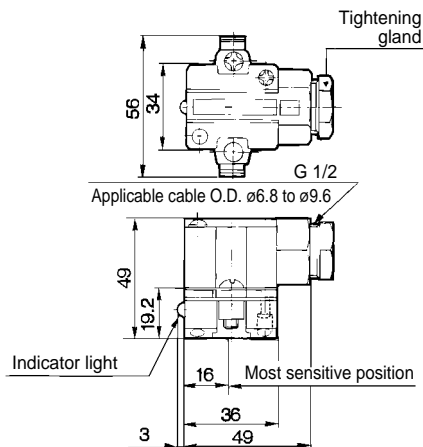
(g)

Auto switch model		D-A33	D-A34	D-A44
Lead wire	None	116	116	114

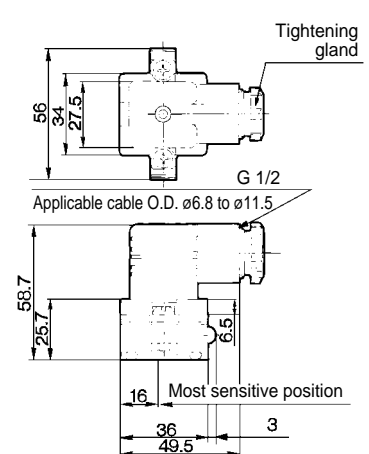
Dimensions

(mm)

D-A3



D-A44

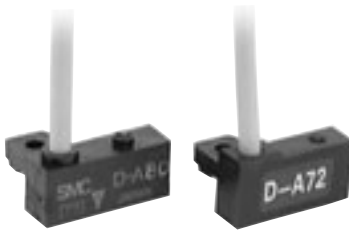


Reed Auto Switch Rail Mounting Style D-A72/D-A73/D-A80



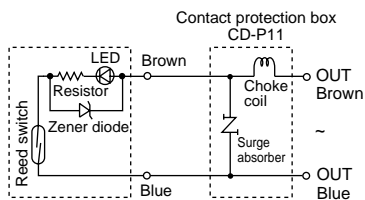
Refer to SMC website for the details of the products conforming to the international standards.

**Grommet
Electrical entry: Perpendicular**

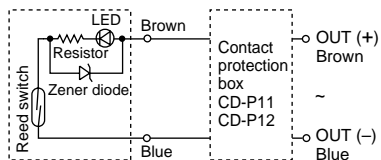


Auto Switch Internal Circuit

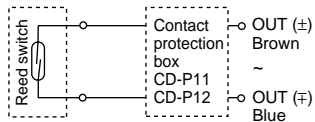
D-A72



D-A73



D-A80



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC or 200 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. **Especially in the case of D-A72, be sure to use the contact protection box.** (Refer to page 353 for contact protection box.)

Auto Switch Specifications

PLC: Programmable Logic Controller

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

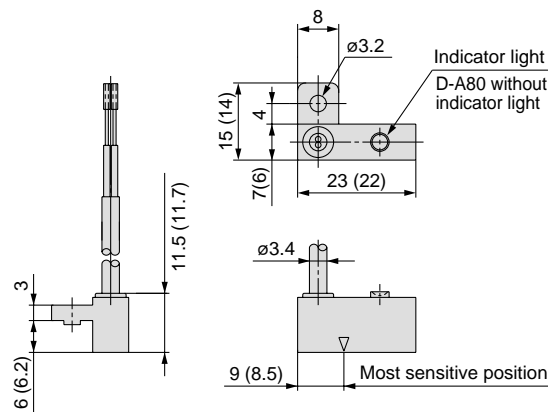
Mass

(g)

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

Dimensions

(mm)



() values for D-A72

Reed Auto Switch Rail Mounting Style D-A7□H/D-A80H



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A7□H (With indicator light)				
Auto switch model	D-A72H	D-A73H		D-A76H
Applicable load	Relay, PLC	Relay, PLC		IC circuit
Load voltage	200 VAC	24 VDC	100 VAC	4 to 8 VDC
Max. load current/Load current range ⁽³⁾	5 to 10 mA	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None			
Internal voltage drop	2.4 V or less			0.8 V or less
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			
D-A80H (Without indicator light)				
Auto switch model	D-A80H			
Applicable load	Relay, IC circuit, PLC			
Load voltage	24 V ^{AC} _{DC} or less	48 V ^{AC} _{DC}	100 V ^{AC} _{DC}	
Maximum load current	50 mA	40 mA	20 mA	
Contact protection circuit	None			
Internal resistance	1 Ω or less (Including lead wire length of 3 m)			
Standard	CE marking			

• Lead wires — Oilproof heavy-duty vinyl cord, 0.2 mm², 2 cores (Brown, Blue), 3 cores (Brown, Black, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Mass

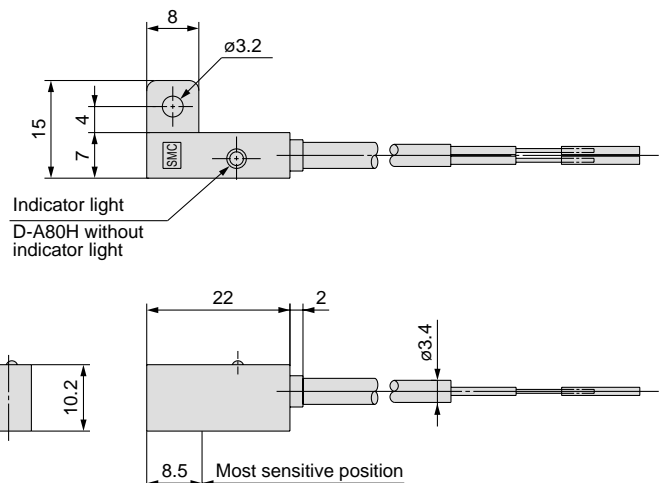
(g)

Auto switch model	D-A72H	D-A73H	D-A76H	D-A80H
Lead wire length (m)	0.5	10	10	11
	3	47	47	52
	5	—	77	—

Dimensions

(mm)

D-A7□H, D-A80H

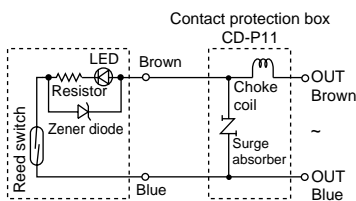


Grommet Electrical entry: In-line

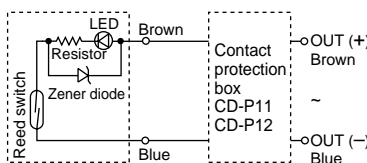


Auto Switch Internal Circuit

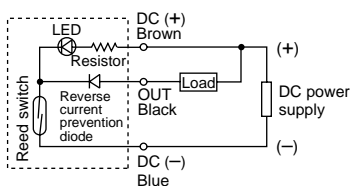
D-A72H



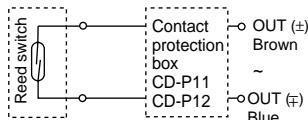
D-A73H



D-A76H



D-A80H



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is more than 5 m.
Note 3) Load voltage is 100 VAC or 200 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. **Especially in the case of D-A72H, be sure to use the contact protection box.** (Refer to page 353 for contact protection box.)

Reed Auto Switch Rail Mounting Style D-A73C/D-A80C



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

Auto Switch Specifications

PLC: Programmable Logic Controller

Connector



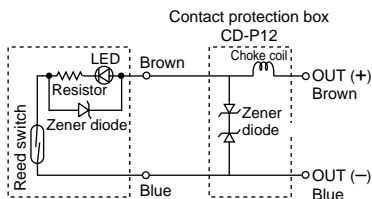
Caution

Precautions

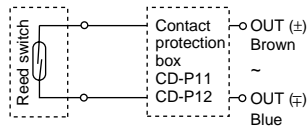
1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. Refer to Best Pneumatics No. 2 for the details.

Auto Switch Internal Circuit

D-A73C



D-A80C



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 353 for contact protection box.)

D-A73C (With indicator light)	
Auto switch model	D-A73C
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range ⁽⁴⁾	5 to 40 mA
Contact protection circuit	None
Internal voltage drop	2.4 V or less
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking
D-A80C (Without indicator light)	
Auto switch model	D-A80C
Applicable load	Relay, IC circuit, PLC
Load voltage	24 V _{DC} ^{AC}
Maximum load current	50 mA
Contact protection circuit	None
Internal resistance	1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

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

Note 4) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

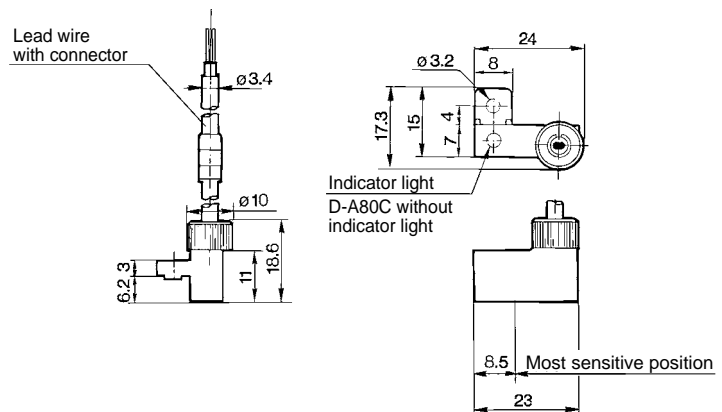
Mass

(g)

Auto switch model		D-A73C	D-A80C
Lead wire length (m)	0.5	12	12
	3	54	54
	5	84	84

Dimensions

(mm)



Reed Auto Switch Tie-rod Mounting Style D-A5□/D-A6□



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A5 (With indicator light)					
Auto switch model	D-A53	D-A54			D-A56
Applicable load	PLC	Relay, PLC			IC circuit
Load voltage	24 VDC	24 VDC	100 VAC	200 VAC	4 to 8 VDC
Maximum load ⁽³⁾ current and range	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA	20 mA
Contact protection circuit	None	Built-in			None
Internal voltage drop	2.4 V or less	2.4 V or less (to 20 mA)/3.5 V or less (to 50 mA)			0.8 V or less
Indicator light	Red LED illuminates when turned ON.				
Standard	CE marking				

D-A6 (Without indicator light)				
Auto switch model	D-A64			D-A67
Applicable load	Relay, PLC			PLC/IC circuit
Load voltage	24 V ^{AC} DC or less	100 VAC	200 VAC	Max. 24 VDC
Maximum load current	50 mA	25 mA	12.5 mA	30 mA
Contact protection circuit	Built-in			None
Internal resistance	25 Ω or less			1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking			

- Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 2 cores (Brown, Blue), or 0.2 mm², 3 cores (Brown, Black, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

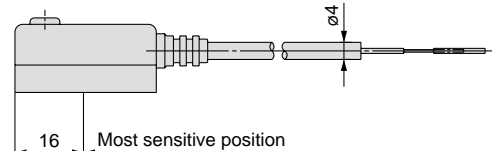
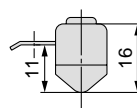
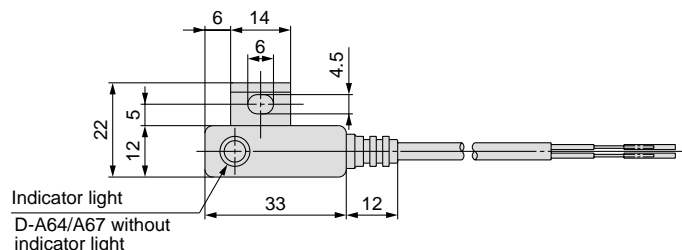
Mass

(g)

Auto switch model	D-A53	D-A54	D-A56	D-A64	D-A67
Lead wire length (m)	0.5	24	24	24	24
	3	48	48	48	48
	5	96	—	—	—

Dimensions

(mm)

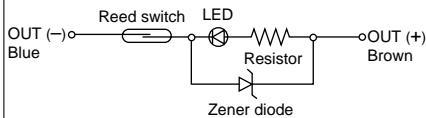


Grommet

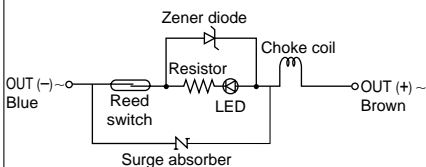


Auto Switch Internal Circuit

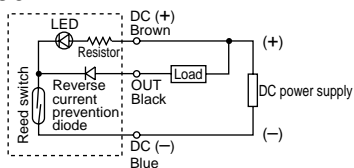
D-A53



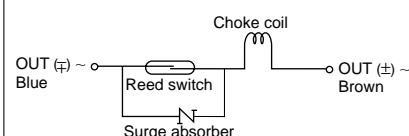
D-A54



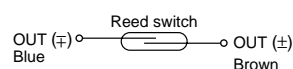
D-A56



D-A64



D-A67



Reed Auto Switch Direct Mounting Style D-A90(V)/D-A93(V)/D-A96(V)



Grommet



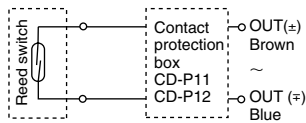
Caution

Precautions

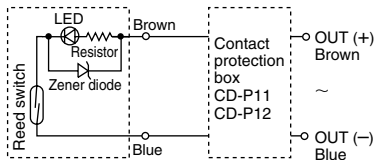
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

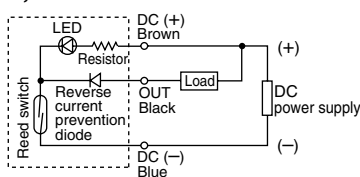
D-A90, A90V



D-A93, A93V



D-A96, A96V



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 353 for contact protection box.)

Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-A90, D-A90V (Without indicator light)			
Auto switch model	D-A90, D-A90V		
Applicable load	IC circuit, Relay, PLC		
Load voltage	24 V $\overset{\text{AC}}{\underset{\text{DC}}{\text{DC}}}$ or less	48 V $\overset{\text{AC}}{\underset{\text{DC}}{\text{DC}}}$ or less	100 V $\overset{\text{AC}}{\underset{\text{DC}}{\text{DC}}}$ or less
Maximum load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		
D-A93, D-A93V, D-A96, D-A96V (With indicator light)			
Auto switch model	D-A93, D-A93V		D-A96, D-A96V
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC	100 VAC	4 to 8 VDC
Load current range and Maximum load current ⁽³⁾	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	D-A93: 2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA) D-A93V: 2.7 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

Lead wires

D-A90(V)/D-A93(V)—Oilproof heavy-duty vinyl cord, $\phi 2.7$, 0.18 mm² x 2 cores (Brown, Blue), 0.5 m
D-A96(V)—Oilproof heavy-duty vinyl cord, $\phi 2.7$, 0.15 mm² x 3 cores (Brown, Black, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Mass

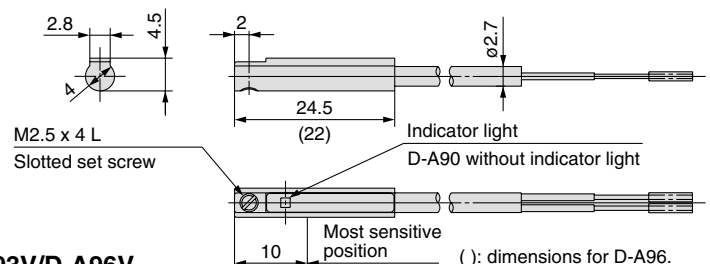
(g)

Model	D-A90	D-A90V	D-A93	D-A93V	D-A96	D-A96V
Lead wire length (m)	0.5	6	6	6	8	8
	3	30	30	30	41	41

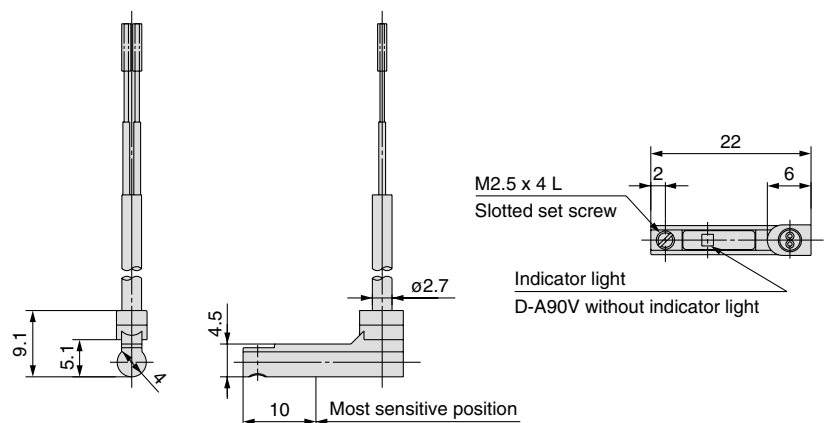
Dimensions

(mm)

D-A90/D-A93/D-A96



D-A90V/D-A93V/D-A96V



Reed Auto Switch Direct Mounting Style D-Z73/D-Z76/D-Z80



Grommet



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-Z7 (With indicator light)			
Auto switch model	D-Z73		D-Z76
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC	100 VAC	4 to 8 VDC
Max. load current and load current range ⁽³⁾	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	2.4 V or less (to 20 mA)/3 V or less (to 40 mA)		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		
D-Z8 (Without indicator light)			
Auto switch model	D-Z80		
Applicable load	Relay, PLC, IC circuit		
Load voltage	24 V $\overset{AC}{DC}$ or less	48 V $\overset{AC}{DC}$	100 V $\overset{AC}{DC}$
Maximum load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including 3 m lead wire)		
Standard	CE marking		

• Lead wires

D-Z73/D-Z80—Oilproof heavy-duty vinyl cord, ø2.7, 0.18 mm², 2 cores (Brown, Blue), 0.5 m

D-Z76—Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 0.5 m

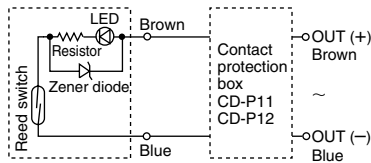
Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

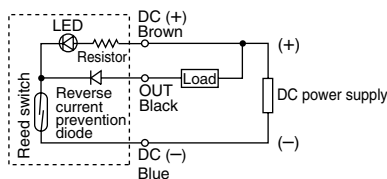
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Auto Switch Internal Circuit

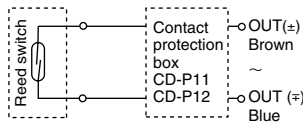
D-Z73



D-Z76



D-Z80



Note 1) Operating load is an induction load.

Note 2) Wiring to the load is 5 m or longer.

Note 3) Load voltage is 100 VAC.

Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 353 for contact protection box.)

Mass

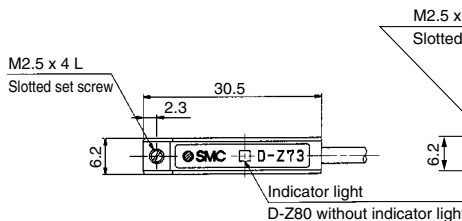
(g)

Auto switch model	D-Z73	D-Z76	D-Z80
Lead wire length (m)			
0.5	7	10	9
3	31	55	49
5	50	—	—

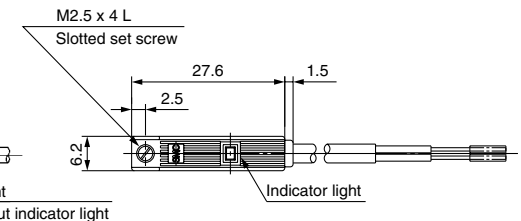
Dimensions

(mm)

D-Z73, Z80



D-Z76



2-Color Indication Type Reed Auto Switch Band Mounting Style D-B59W



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-B59W (With indicator light)	
Auto switch model	D-B59W
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range ⁽³⁾	5 to 40 mA
Contact protection circuit	Built-in
Internal voltage drop	4 V or less
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.3 mm², 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Grommet

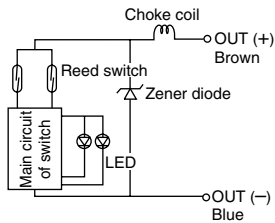
The proper operating range can be determined by the color of the light.

(Red → Green ← Red)

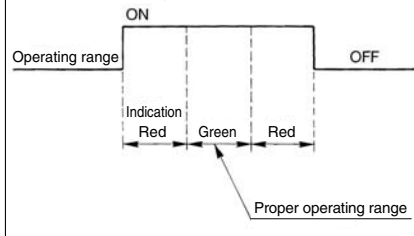


Auto Switch Internal Circuit

D-B59W



Indicator light/Display method



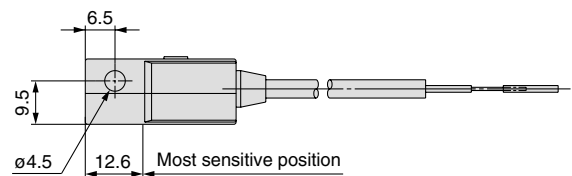
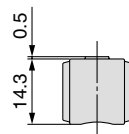
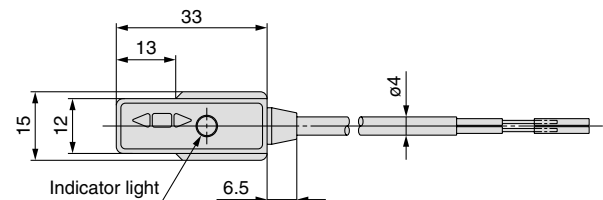
Mass

(g)

Auto switch model	D-B59W	
Lead wire length (m)	0.5	20
	3	76
	5	—

Dimensions

(mm)



2-Color Indication Type Reed Auto Switch Rail Mounting Style D-A79W



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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A79W (With indicator light)	
Auto switch model	D-A79W
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range ⁽³⁾	5 to 40 mA
Contact protection circuit	None
Internal voltage drop	4 V or less
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 3.4$, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

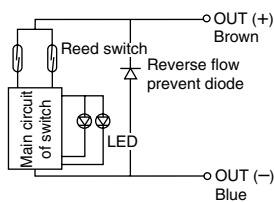
Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

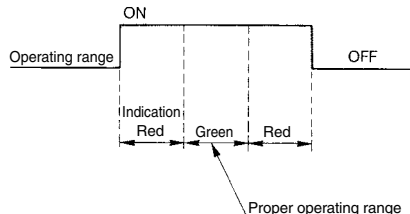


Auto Switch Internal Circuit

D-A79W



Indicator light/Display method



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 353 for contact protection box.)

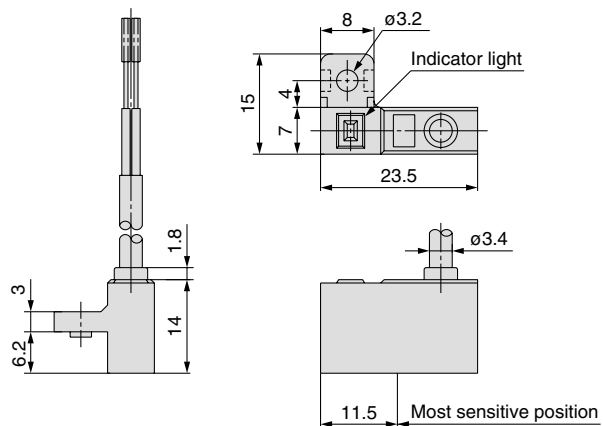
Mass

(g)

Auto switch model	D-A79W	
Lead wire length (m)	0.5	11
	3	53

Dimensions

(mm)



CHQ

CHK

CHN

CHM

CHS

CH2

CHA

Related Equipment

D-□

2-Color Indication Type Reed Auto Switch Tie-rod Mounting Style D-A59W



Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)



Auto Switch Specifications



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

PLC: Programmable Logic Controller

D-A59W (With indicator light)	
Auto switch model	D-A59W
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range ⁽³⁾	5 to 40 mA
Contact protection circuit	Built-in
Internal voltage drop	4 V or less
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, $\phi 4$, 0.3 mm², 2 cores (Brown, Blue), 0.5 m

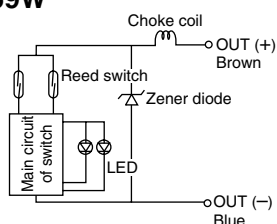
Note 1) Refer to page 352 for reed auto switch common specifications.

Note 2) Refer to page 352 for lead wire lengths.

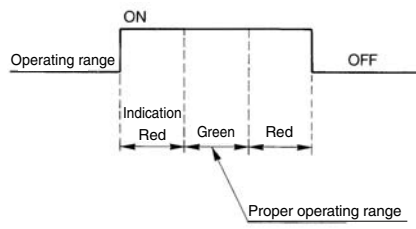
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Auto Switch Internal Circuit

D-A59W



Indicator light/Display method



Mass

(g)

Auto switch model	D-A59W	
Lead wire length (m)	0.5	25
	3	80

Dimensions

(mm)

