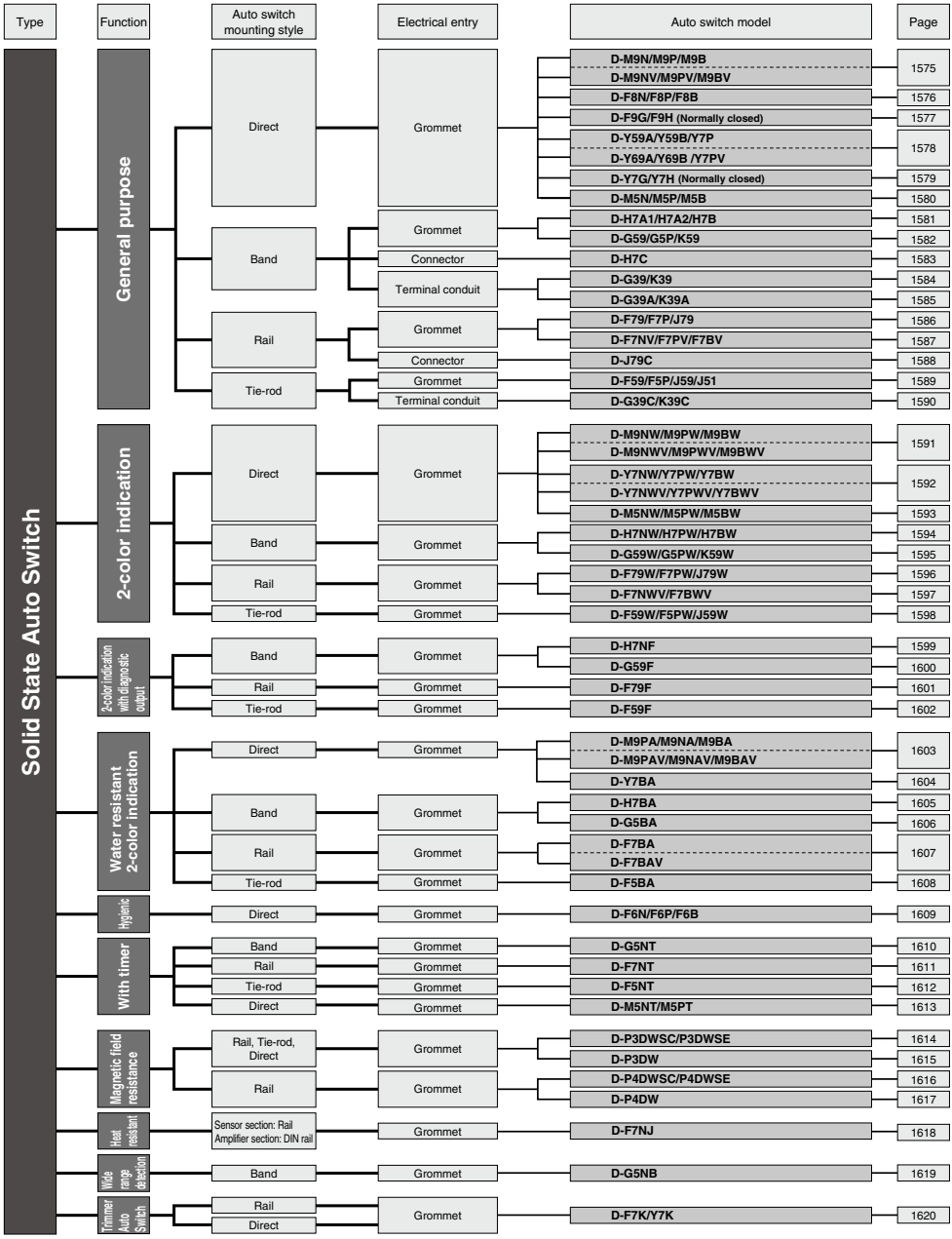
Solid State Auto Switches

General Purpose Type, 2-color Indication Type, 2-color Indication Type with Diagnostic Output, Water Resistant 2-color Indication Type, Hygienic Type, Timer Equipped Type, Magnetic Field Resistant Type, Heat Resistant Type, Wide Range Detection Type, Trimmer Auto Switch

Solid State Auto Switch Variations



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

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

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.**

Auto Switch Specifications

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, RoHS					

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9N□	D-M9P□	D-M9B□
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.9		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		20		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

⚠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.

Weight

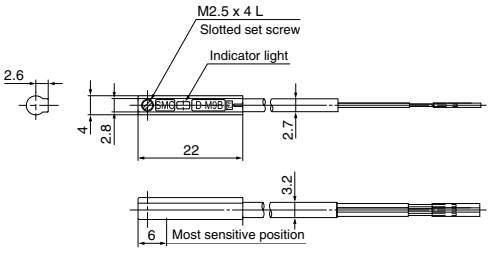
(g)

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

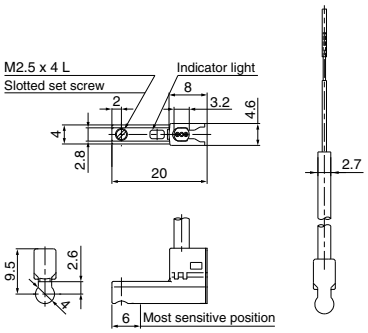
Dimensions

(mm)

D-M9□



D-M9□V



D-□

Solid State Auto Switch
Direct Mounting Style
D-F8N/D-F8P/D-F8B

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

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 Specifications

PLC: Programmable Logic Controller

D-F8□ (With indicator light)			
Auto switch model	D-F8N	D-F8P	D-F8B
Electrical entry direction	Perpendicular	Perpendicular	Perpendicular
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, 24 VDC Relay, PLC		24 VDC relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	2.5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F8N	D-F8P	D-F8B
Sheath	Outside diameter [mm]	ø2.7		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.91		ø0.96
Conductor	Effective area [mm²]	0.15		0.18
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		17		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

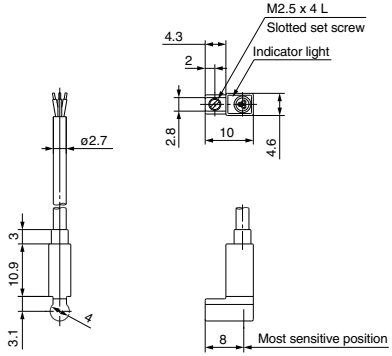
(g)

Auto switch model		D-F8N	D-F8P	D-F8B
Lead wire length	0.5 m (**Nil**)	7		
	3 m (**L**)	32		
	5 m (**Z**)	52		

Dimensions

(mm)

D-F8N/D-F8P/D-F8B



SMC

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

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.

⚠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

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 μA or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F9G**	**D-F9H**
Sheath	Outside diameter [mm]	ø2.7	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	
	Outside diameter [mm]	ø0.91	
Conductor	Effective area [mm²]	0.15	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		17	

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

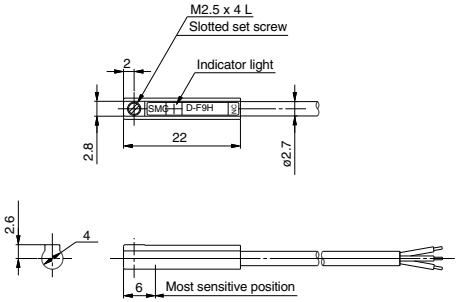
Weight

(g)

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

Dimensions

(mm)



D-□

Solid State Auto Switch
Direct Mounting Style
D-Y59$^{A}_{B}$/D-Y69$^{A}_{B}$/D-Y7P(V)

RoHS

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

Grommet

Using flexible cable as standard spec.

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, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-Y□9A	D-Y7P□	D-Y□9B
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.0		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

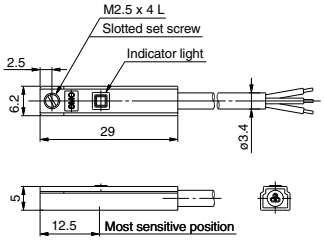
(g)

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

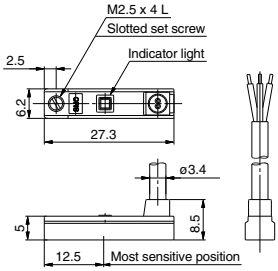
Dimensions

(mm)

D-Y59A/D-Y7P/D-Y59B



D-Y69A/D-Y7PV/D-Y69B



SMC

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 μA or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking, RoHS	

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7G	D-Y7H
Sheath	Outside diameter [mm]	ø3.4	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	
	Outside diameter [mm]	ø1.0	
Conductor	Effective area [mm²]	0.15	
	Strand diameter [mm]	ø0.05	
Minimum bending radius [mm] (Reference values)		21	

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

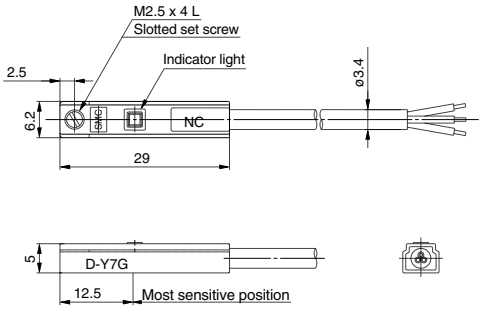
Weight

(g)

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

Dimensions

(mm)



D-□

Solid State Auto Switch
Direct Mounting Style
D-M5N/D-M5P/D-M5B

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

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M5□ (With indicator light)			
Auto switch model	D-M5N	D-M5P	D-M5B
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	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M5N	D-M5P	D-M5B
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

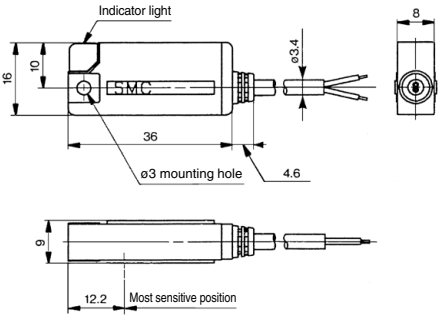
Weight

(g)

Auto switch model		D-M5N	D-M5P	D-M5B
Lead wire length	0.5 m (**Nil**)	16		14
	3 m (**L**)	60		53
	5 m (**Z**)	95		84

Dimensions

(mm)



SMC

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.

Grommet

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 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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-H7A1**	**D-H7A2**	**D-H7B**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

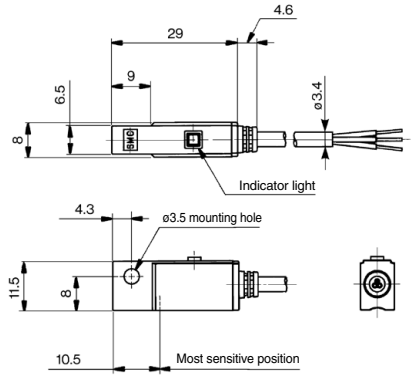
Weight

(g)

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

Dimensions

(mm)



D-□

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.

Grommet

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 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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-G59	D-G5P	D-K59
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

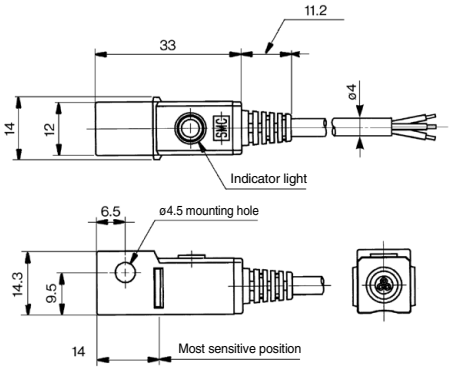
Weight

(g)

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

Dimensions

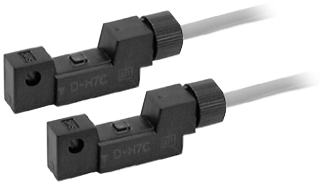
(mm)



Solid State Auto Switch
Band Mounting Style
D-H7C

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

Connector



⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. Refer to page 1653 for the details.

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

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, RoHS

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with switches.

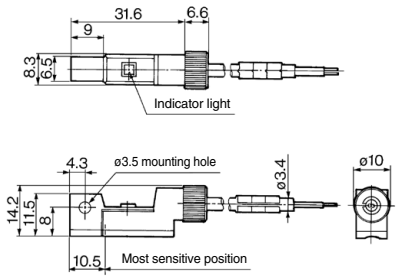
Weight

(g)

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

Dimensions

(mm)



D-□

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.

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 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 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, RoHS	

Note) Refer to page 1568 for solid state auto switch common specifications.

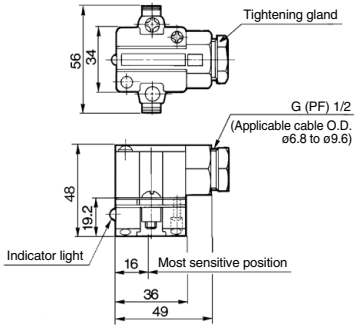
Weight

(g)

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

Dimensions

(mm)



Solid State Auto Switch
Band Mounting Style
D-G39A/D-K39A

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

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 Specifications

PLC: Programmable Logic Controller

D-G39A, D-K39A (With indicator light)		
Auto switch model	**D-G39A**	**D-K39A**
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 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, RoHS	

Note) Refer to page 1568 for solid state auto switch common specifications.

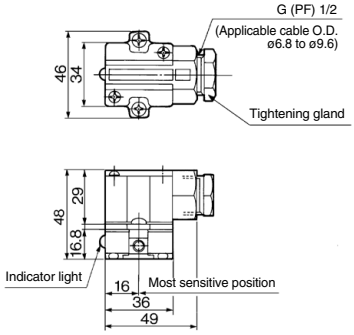
Weight

(g)

Auto switch model		D-G39A	D-K39A
Lead wire	None	110	

Dimensions

(mm)



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.

Grommet

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 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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F79**	**D-F7P**	**D-J79**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

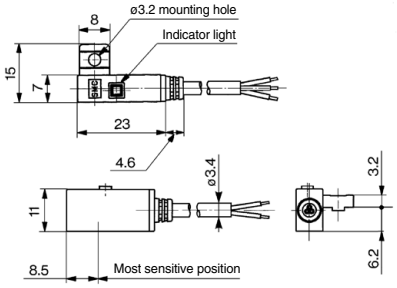
Weight

(g)

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

Dimensions

(mm)

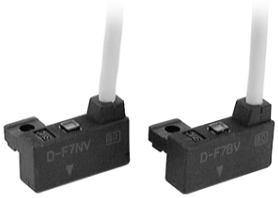


Solid State Auto Switch
Rail Mounting Style
D-F7NV/D-F7PV/D-F7BV

RoHS

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

Grommet
Electrical entry: Perpendicular



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 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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F7NV	D-F7PV	D-F7BV
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

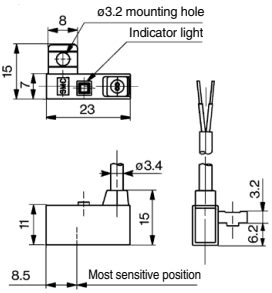
Weight

(g)

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

Dimensions

(mm)

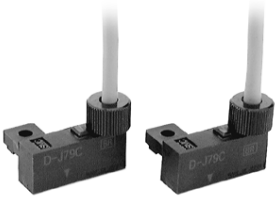


D-□

Solid State Auto Switch
Rail Mounting Style
D-J79C

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

Connector



⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.

2. Refer to page 1653 for the details.

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

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, RoHS

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with auto switches.

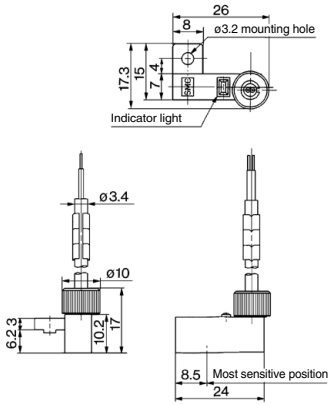
Weight

(g)

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

Dimensions

(mm)



SMC

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

RoHS

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

Grommet

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, RoHS			RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F59	D-F5P	D-J5
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

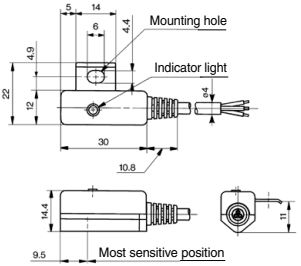
(g)

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

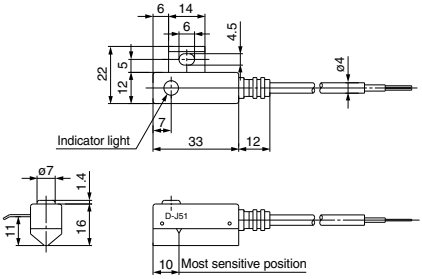
Dimensions

(mm)

D-F59/D-F5P/D-J59



D-J51



D-□

Solid State Auto Switch
Tie-rod Mounting Style
D-G39C/D-K39C

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

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 Specifications

PLC: Programmable Logic Controller

D-G39C, D-K39C (With indicator light)		
Auto switch model	**D-G39C**	**D-K39C**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, PLC	24 VDC 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	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
Current leakage	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, RoHS	

Note) Refer to page 1568 for solid state auto switch common specifications.

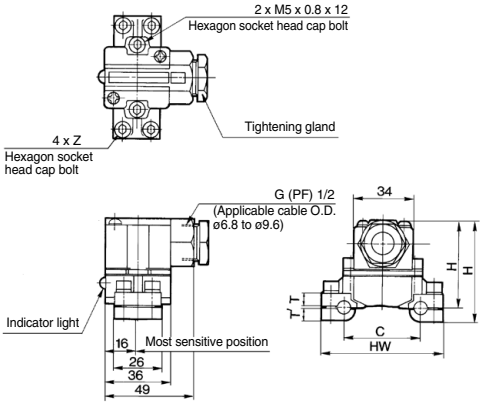
Weight

(g)

Auto switch model	Applicable bore size (mm)	Weight
D-G39C-4, K39C-4	**40**	162
D-G39C-5, K39C-5	**50**	166
D-G39C-6, K39C-6	**63**	184
D-G39C-8, K39C-8	**80**	210
D-G39C-10, K39C-10	**100**	232

Dimensions

(mm)



Dimensions

Auto switch model	Applicable bore size (mm)	C	HW	H	H´	T	T´	Z
D-G39C-4, D-K39C-4	**40**	44	69	57	49.5	7.5	6.5	M5 x 0.8 x 16
D-G39C-5, D-K39C-5	**50**	52	77	58	50.5	8.5	6.5	
D-G39C-6, D-K39C-6	**63**	64	91	60.5	52	10.5	7.5	M5 x 0.8 x 20
D-G39C-8, D-K39C-8	**80**	78	107	64	53.5	12.5	9.5	M5 x 0.8 x 25
D-G39C-10, D-K39C-10	**100**	92	121	67	56.5	15.5	9.5	

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

RoHS

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

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 Specifications

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, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW□	D-M9PW□	D-M9BW□
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.9		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		20		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

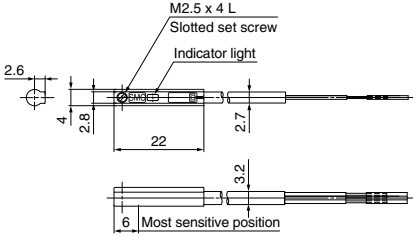
(g)

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

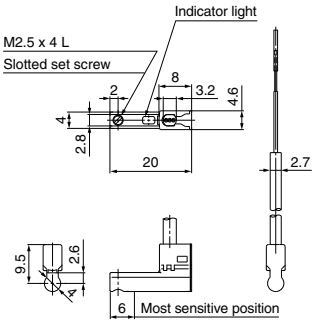
Dimensions

(mm)

D-M9□W



D-M9□WV



D-□

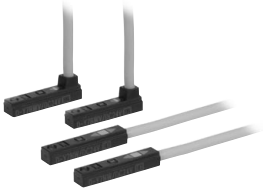
2-Color Indication Type Solid State Auto Switch Direct Mounting Style
D-Y7NW(V)/D-Y7PW(V)/D-Y7BW(V)

RoHS

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

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 Specifications

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, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7NW□	D-Y7PW□	D-Y7BW□
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.0		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

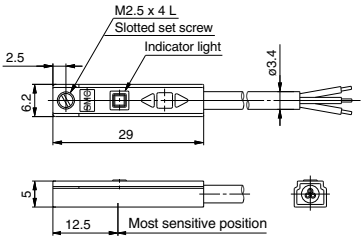
(g)

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

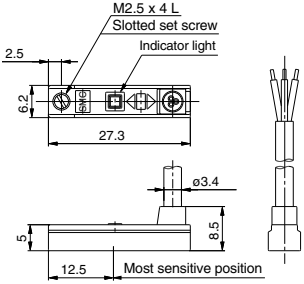
Dimensions

(mm)

D-Y7□W



D-Y7□WV



SMC

2-Color Indication Type Solid State Auto Switch Direct Mounting Style
D-M5NW/D-M5PW/D-M5BW

RoHS

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

Grommet

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M5□W (With indicator light)			
Auto switch model	D-M5NW	D-M5PW	D-M5BW
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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M5NW	D-M5PW	D-M5BW
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

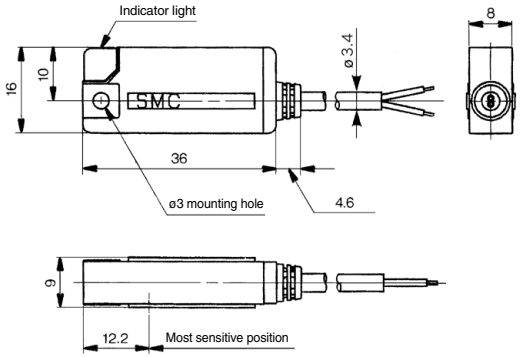
Weight

(g)

Auto switch model		D-M5NW	D-M5PW	D-M5BW
Lead wire length	0.5 m (**Nil**)	16		14
	3 m (**L**)	60		53
	5 m (**Z**)	95		84

Dimensions

(mm)



D-□

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

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

Grommet

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

Auto Switch Specifications

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 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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-H7NW	D-H7PW	D-H7BW
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

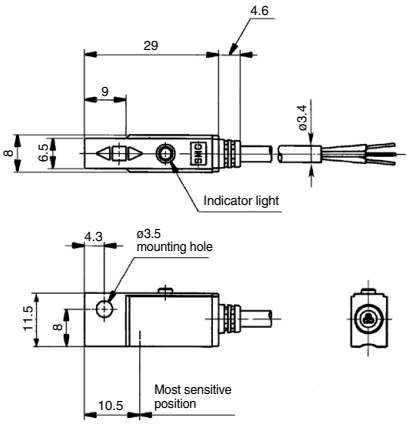
Weight

(g)

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

Dimensions

(mm)



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

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

Grommet

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

Auto Switch Specifications

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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-G59W	D-G5PW	D-K59W
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

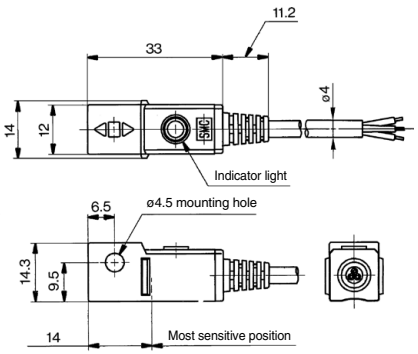
Weight

(g)

Auto switch model		D-G59W	D-G5PW	D-K59W
Lead wire length	0.5 m (**Nil**)	20		18
	3 m (**L**)	78		68
	5 m (**Z**)	124		108

Dimensions

(mm)



D-□

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

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

Grommet

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

Auto Switch Specifications

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 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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F79W	D-F7PW	D-J79W
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

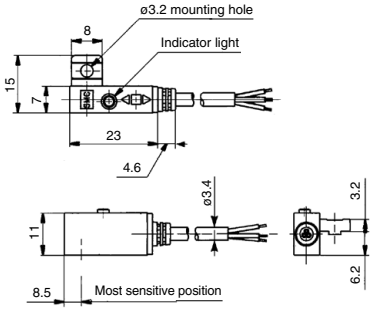
Weight

(g)

Auto switch model		D-F79W	D-F7PW	D-J79W
Lead wire length	0.5 m (**Nil**)	13		11
	3 m (**L**)	57		50
	5 m (**Z**)	92		81

Dimensions

(mm)

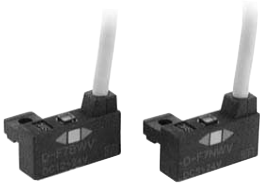


2-Color Indication Type Solid State Auto Switch Rail Mounting Style
D-F7NWV/D-F7BWV

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

Grommet
Electrical entry: Perpendicular

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



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 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, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F7NWV	D-F7BWV
Sheath	Outside diameter [mm]	ø3.4	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1	
Conductor	Effective area [mm²]	0.2	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		21	

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

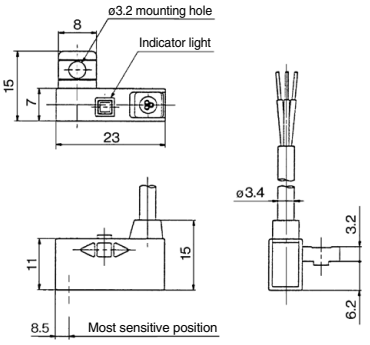
Weight

(g)

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

Dimensions

(mm)



D-□

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.

Grommet

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

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, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F59W	D-F5PW	D-J59W
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

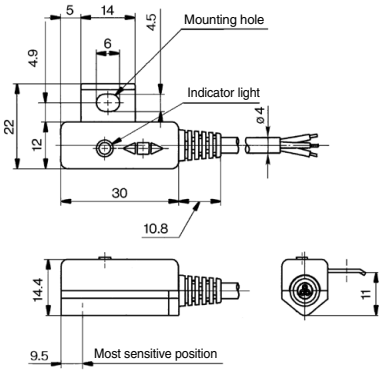
Weight

(g)

Auto switch model		D-F59W	D-F5PW	D-J59W
Lead wire length	0.5 m (**Nil**)	23		21
	3 m (**L**)	81		71
	5 m (**Z**)	127		111

Dimensions

(mm)



SMC

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 the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

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 μA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-H7NF**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø0.98
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

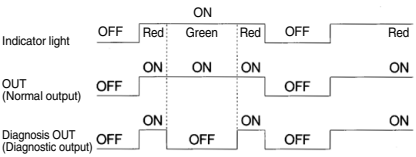
Weight

(g)

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

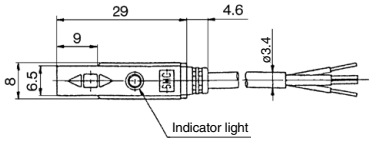
Diagnostic Output Operation

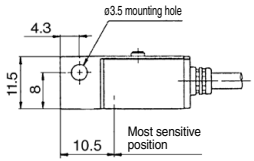
The diagnostic output signal is output within the red display area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output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



Dimensions

(mm)





D-□

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 the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

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 μA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-G59F**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø1.29
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

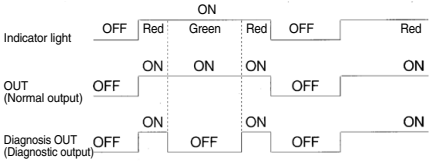
Weight

(g)

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

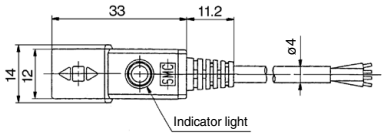
Diagnostic Output Operation

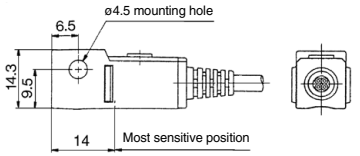
The diagnostic output signal is output within the red display area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output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



Dimensions

(mm)





SMC

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 the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

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 μA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F79F**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø0.98
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

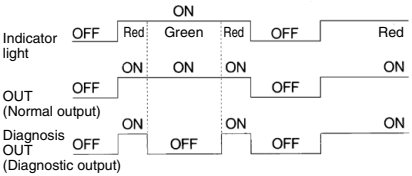
Weight

(g)

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

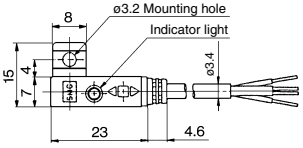
Diagnostic Output Operation

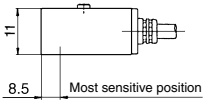
The diagnostic output signal is output within the red display area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.

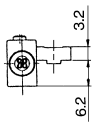


Dimensions

(mm)







D-□

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

D-F59F

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 the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

Auto Switch Specifications

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 μA or less at 28 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F59F**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø1.29
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

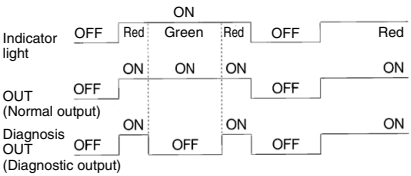
Weight

(g)

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

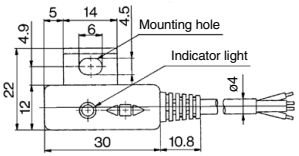
Diagnostic Output Operation

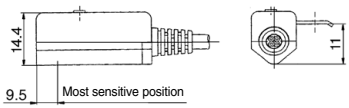
The diagnostic output signal is output within the red display area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.



Dimensions

(mm)

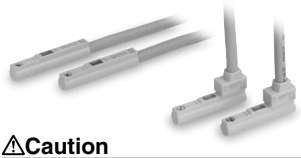




Water Resistant 2-Color Indication Type Solid State Auto Switch: Direct Mounting Style
D-M9NA(V)/D-M9PA(V)/D-M9BA(V)

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

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, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NA□	D-M9PA□	D-M9BA□
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.9		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		20		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

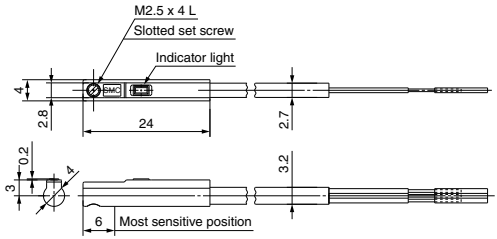
(g)

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

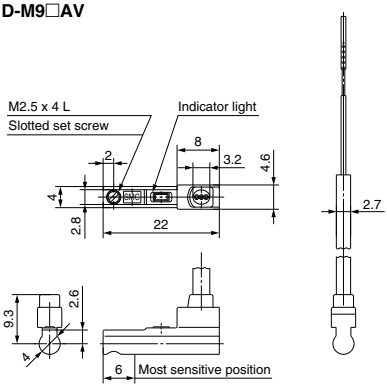
Dimensions

(mm)

D-M9□A



D-M9□AV



D-□

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

D-Y7BA

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

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.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y7BA (With indicator light)	
Auto switch model	**D-Y7BA**
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, RoHS

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		**D-Y7BA**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1
Conductor	Effective area [mm²]	0.15
	Strand diameter [mm]	ø0.05
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

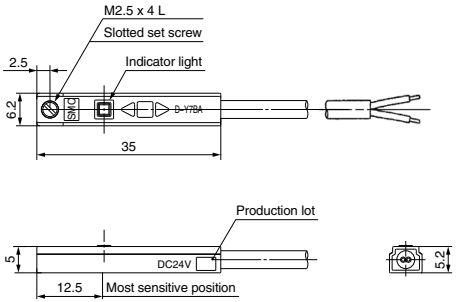
Weight

(g)

Auto switch model		**D-Y7BA**
Lead wire length	3 m (**L**)	54
	5 m (**Z**)	88

Dimensions

(mm)



SMC

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

D-H7BA

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

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 Specifications

PLC: Programmable Logic Controller

D-H7BA (With indicator light)	
Auto switch model	**D-H7BA**
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, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-H7BA**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

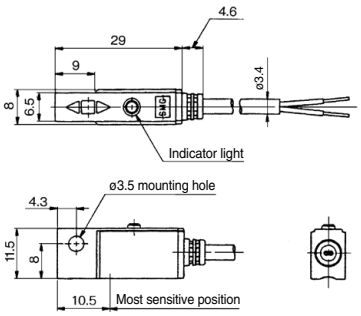
Weight

(g)

Auto switch model		**D-H7BA**
Lead wire length	3 m (**L**)	50
	5 m (**Z**)	81

Dimensions

(mm)



D-□

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

D-G5BA

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

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 Specifications

PLC: Programmable Logic Controller

D-G5BA (With indicator light)	
Auto switch model	**D-G5BA**
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, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-G5BA**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

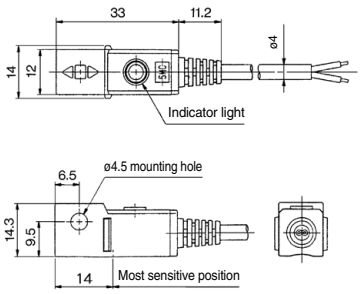
Weight

(g)

Auto switch model		**D-G5BA**
Lead wire length	3 m (**L**)	68
	5 m (**Z**)	108

Dimensions

(mm)



SMC

Water Resistant 2-Color Indication Type Solid State Auto Switch: Rail Mounting Style

D-F7BA(V)

CE RoHS

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

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 Specifications

PLC: Programmable Logic Controller

D-F7BA(V) (With indicator light)		
Auto switch model	**D-F7BA**	**D-F7BAV**
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, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F7BA**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

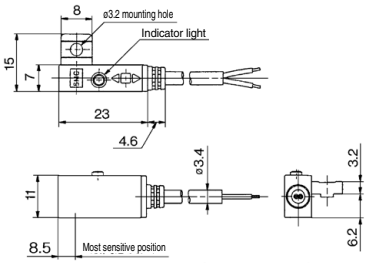
(g)

Auto switch model		**D-F7BA**	**D-F7BAV**
Lead wire length	3 m (**L**)	50	
	5 m (**Z**)	81	

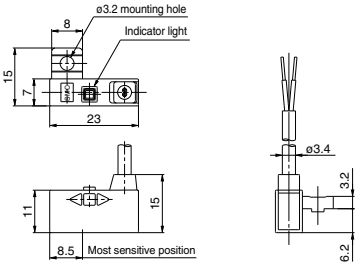
Dimensions

(mm)

D-F7BA



D-F7BAV



D-□

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

D-F5BA

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

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 Specifications

PLC: Programmable Logic Controller

D-F5BA (With indicator light)	
Auto switch model	**D-F5BA**
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, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F5BA**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

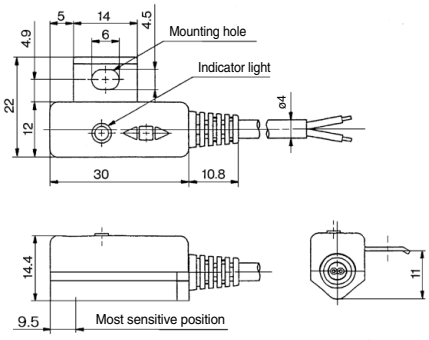
Weight

(g)

Auto switch model		**D-F5BA**
Lead wire length	3 m (**L**)	71
	5 m (**Z**)	111

Dimensions

(mm)



SMC

For Hygienic Design Cylinders
Solid State Auto Switch: Direct Mounting Style
D-F6N/D-F6P/D-F6B

Grommet

- **2-wire load current is reduced (2.5 to 40 mA)**
- **Using flexible cable as standard spec.**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F6□ (With indicator light)			
Auto switch part no.	D-F6N	D-F6P	D-F6B
Electrical entry direction	In-line		
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, relay, and 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 (2V or less at 40 mA)		4 V or less
Leakage current	100 μA or less at 24 V DC		0.8 mA or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-F6N□	D-F6P□	D-F6B□
Sheath	Outside diameter [mm]	2.7 x 3.2 (ellipse)		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.9		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		20		

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

⚠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.

Weight

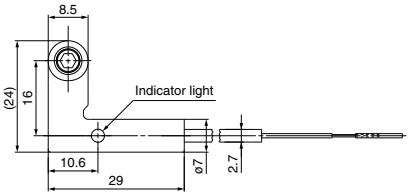
(g)

Auto switch model		D-F6N	D-F6P	D-F6B
Lead wire length	0.5 m (**Nil**)	20		19
	3 m (**L**)	53		50
	5 m (**Z**)	80		75

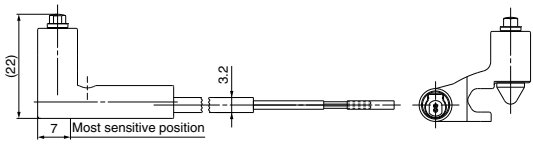
Dimensions

(mm)

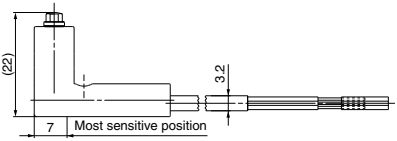
D-F6□



D-F6B



D-F6N/F6P



D-□

Solid State Auto Switch with Timer
Band Mounting Style
D-G5NT

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

Grommet

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5NT (With indicator light)	
Auto switch model	**D-G5NT**
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, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-G5NT**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

(g)

Auto switch model		**D-G5NT**
Lead wire length	3 m (**L**)	78
	5 m (**Z**)	124

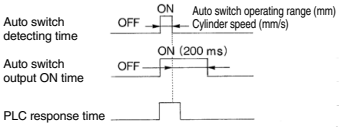
Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

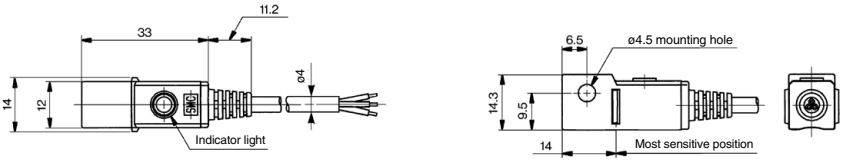
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

Take PLC response time into consideration when using.



Dimensions

(mm)



SMC

Solid State Auto Switch with Timer
Rail Mounting Style
D-F7NT

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

Grommet

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7NT (With indicator light)	
Auto switch model	**D-F7NT**
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, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F7NT**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Weight

(g)

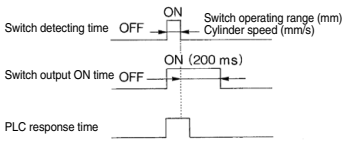
Auto switch model		**D-F7NT**
Lead wire length	3 m (**L**)	57
	5 m (**Z**)	92

Timer Operation

Detection of intermediate positioning for high-speed cylinder

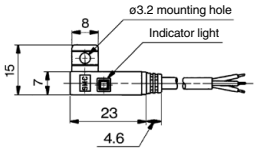
Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

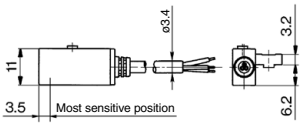
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)
Take PLC response time into consideration when using.



Dimensions

(mm)





D-□

Solid State Auto Switch with Timer
Tie-rod Mounting Style
D-F5NT

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

Grommet

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5NT (With indicator light)	
Auto switch model	**D-F5NT**
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, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F5NT**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

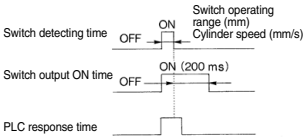
Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

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.



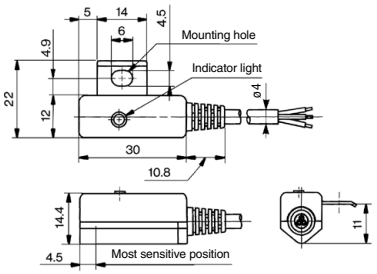
Weight

(g)

Auto switch model		**D-F5NT**
Lead wire length	3 m (**L**)	81
	5 m (**Z**)	127

Dimensions

(mm)



SMC

Solid State Auto Switch with Timer
Direct Mounting Style
D-M5NT/D-M5PT

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

Grommet

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M5□T (With indicator light)		
Auto switch model	**D-M5NT**	**D-M5PT**
Wiring type	3-wire	
Output type	NPN	PNP
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	12 mA or less
Load voltage	28 VDC or less	—
Load current	80 mA or less	
Internal voltage drop	2 V or less (0.8 V or less at 10 mA load current)	0.8 V or less
Leakage current	100 μA or less at 24 VDC	
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-M5NT**	**D-M5PT**
Sheath	Outside diameter [mm]	ø3.4	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	
	Outside diameter [mm]	ø1.1	
Conductor	Effective area [mm²]	0.2	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		21	

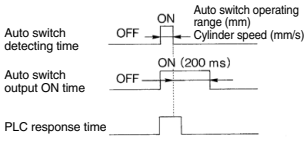
Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

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.



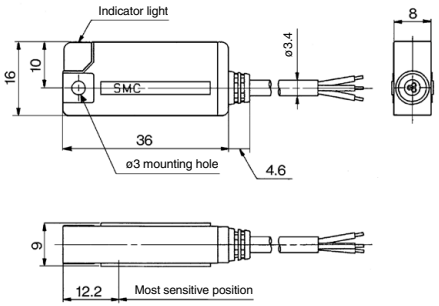
Weight

(g)

Auto switch model		**D-M5NT**	**D-M5PT**
Lead wire length	3 m (**L**)	60	
	5 m (**Z**)	95	

Dimensions

(mm)

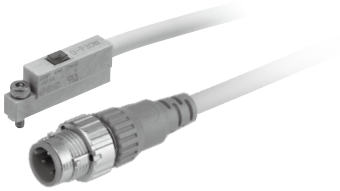


D-□

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch
D-P3DWSC/D-P3DWSE
(Electrical Entry: Pre-wired connector)

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

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



⚠Caution

Precautions

For single-phase AC welding machines
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DWSC/E (With indicator light)		
Auto switch model	D-P3DWSC	D-P3DWSE
Applicable load	24 VDC relay, PLC	
Load voltage	24 VDC	
Load current	6 to 40 mA or less	
Internal voltage drop	5 V or less	
Leakage current	1 mA or less at 24 VDC	
Operating time	40 ms or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking, UL (CSA), RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P3DWSC	D-P3DWSE
Sheath	Outside diameter [mm]	ø4.8	
Insulator	Number of cores	2 cores	
	Outside diameter [mm]	ø1.52	
Conductor	Effective area [mm²]	0.5	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		29	

- Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²
- Insulation resistance — 50 MΩ or more (500 VDC measured via megohmmeter) (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

Weight

(g)

Auto switch model		D-P3DWSC	D-P3DWSE
Lead wire length (m)	0.3	23	

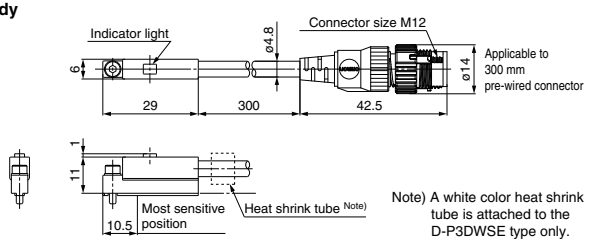
Connector pin

Model	Connector pin/Wiring			
	1	2	3	4
D-P3DWSC	—	—	OUT(∓)	OUT(±)
D-P3DWSE	OUT(±)	—	—	OUT(∓)

Dimensions

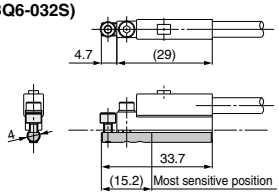
(mm)

Body

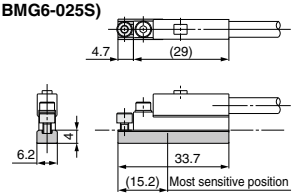


Note) A white color heat shrink tube is attached to the D-P3DWSE type only.

Auto switch mounting bracket (For round groove mounting: BQ6-032S)



Auto switch mounting bracket (For square groove mounting: BMG6-025S)



∗ When the auto switch is ordered on its own, the auto switch mounting bracket is not enclosed. In that case, please order it separately.

SMC

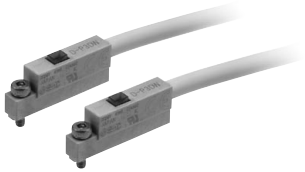
Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P3DW

(Electrical Entry: Grommet)

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

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



⚠Caution

Precautions

For single-phase AC welding machines
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DW (With indicator light)	
Auto switch model	**D-P3DW**
Applicable load	24 VDC relay, PLC
Load voltage	24 VDC
Load current	6 to 40 mA or less
Internal voltage drop	5 V or less
Leakage current	1 mA or less at 24 VDC
Operating time	40 ms or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, UL (CSA), RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P3DW
Sheath	Outside diameter [mm]	ø4.8
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.52
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		29

- Impact resistance — Switch: 1000 m/s²
- Insulation resistance — 50 MΩ or more (500 VDC measured via megohmmeter) (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

Weight

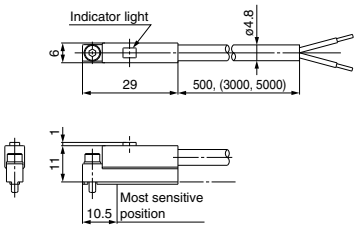
(g)

Auto switch model		D-P3DW
Lead wire length	0.5 m (**Nil**)	20
	3 m (**L**)	102
	5 m (**Z**)	168

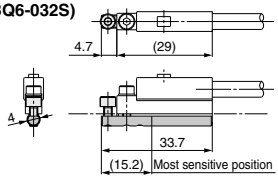
Dimensions

(mm)

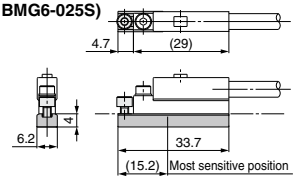
Body



Auto switch mounting bracket (For round groove mounting: BQ6-032S)



Auto switch mounting bracket (For square groove mounting: BMG6-025S)



∗ When the auto switch is ordered on its own, the auto switch mounting bracket is not enclosed. In that case, please order it separately.

D-□

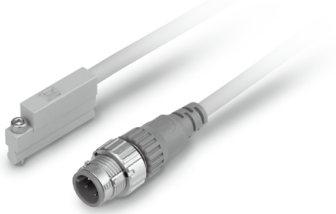
Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P3DWASC/D-P3DWASE

(Electrical Entry: Pre-wired connector)

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

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



⚠Caution

Precautions

For single-phase AC welding machines
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

Weight

(g)

Auto switch model		D-P3DWASC	D-P3DWASE
Lead wire length (m)	0.3	25	

Connector pin

Model	Connector pin and wiring			
	1	2	3	4
D-P3DWASC	—	—	OUT(∓)	OUT(±)
D-P3DWASE	OUT(±)	—	—	OUT(∓)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DWASC/E (With indicator light)		
Auto switch model	D-P3DWASC	D-P3DWASE
Applicable load	24 VDC relay, PLC	
Load voltage	24 VDC	
Load current	6 to 40 mA	
Internal voltage drop	5 V or less	
Leakage current	1 mA or less at 24 VDC	
Operating time	40 ms or less	
Indicator light	Operating range ..... Red LED illuminates. Proper operating range ..... Green LED illuminates.	
Standard	CE marking, UL (CSA), RoHS	

Oilproof Heavy-duty Cord Specifications

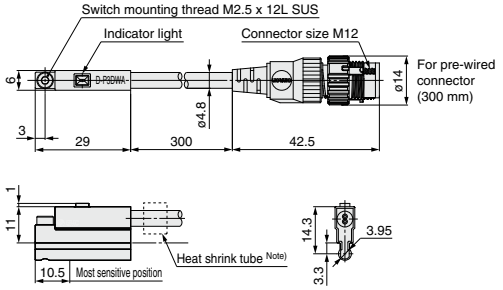
Auto switch models		D-P3DWASC	D-P3DWASE
Sheath	Outside diameter [mm]	ø4.8	
Insulator	Number of cores	2 cores	
	Outside diameter [mm]	ø1.52	
Conductor	Effective area [mm²]	0.5	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		29	

- Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²
- Insulation resistance — 50 MΩ or more at 500 VDC Mega (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Dimensions

(mm)

Body



Note) A white color heat shrink tube is attached to the D-P3DWASE type only.

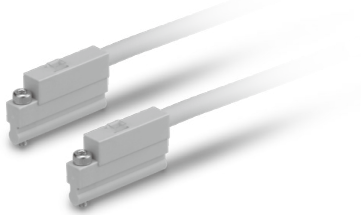
Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P3DWA

(Electrical Entry: Grommet)

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

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



⚠Caution

Precautions

For single-phase AC welding machines
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DWA (With indicator light)	
Auto switch model	**D-P3DWA**
Applicable load	24 VDC relay, PLC
Load voltage	24 VDC
Load current	6 to 40 mA
Internal voltage drop	5 V or less
Leakage current	1 mA or less at 24 VDC
Operating time	40 ms or less
Indicator light	Operating range ..... Red LED illuminates. Proper operating range ..... Green LED illuminates.
Standard	CE marking, UL (CSA), RoHS

Oilproof Heavy-duty Cord Specifications

Auto switch models		**D-P3DWA**
Sheath	Outside diameter [mm]	ø4.8
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.52
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		29

- Impact resistance — Switch: 1000 m/s²
- Insulation resistance — 50 MΩ or more at 500 VDC Mega (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm. Please contact SMC when the AC welding current exceeds 16000 A.

Weight

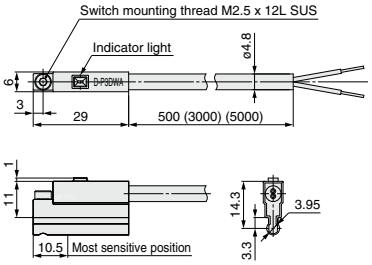
(g)

Auto switch model		**D-P3DWA**
Lead wire length	0.5 m (**Nil**)	22
	3 m (**L**)	104
	5 m (**Z**)	170

Dimensions

(mm)

Body



Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P4DWSC/D-P4DWSE

(Electrical Entry: Pre-wired connector)

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

Grommet

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

For single-phase AC welding machines.
Not applicable for DC inverter welding machines (including rectifying type) and or condenser type welding.

Connector pin

Model	Connector pin/Wiring			
	1	2	3	4
D-P4DWSC	—	—	OUT(∓)	OUT(±)
D-P4DWSE	OUT(±)	—	—	OUT(∓)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P4DWS□ (With indicator light)		
Auto switch model	D-P4DWSC	D-P4DWSE
Applicable load	24 VDC relay, PLC	
Load voltage	24 VDC (20 to 28 VDC)	
Load current	6 to 40 mA or less	
Internal voltage drop	5 V or less	
Leakage current	1 mA or less at 24 VDC	
Operating time	40 ms or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P4DWSC	D-P4DWSE
Sheath	Outside diameter [mm]	ø6	
Insulator	Number of cores	2 cores	
	Outside diameter [mm]	ø2.3	
Conductor	Effective area [mm²]	0.5	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		48	

● Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²

Note 1) Refer to page 1568 for solid state auto switch common specifications.

Note 2) Refer to page 1568 for lead wire lengths.

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder or switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

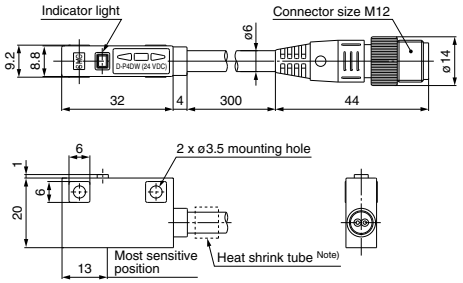
Weight

(g)

Auto switch model	D-P4DWSC	D-P4DWSE
	35	

Dimensions

(mm)



Note) Only for D-P4DWSE
Printed contents: SE 1-4

SMC

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch
D-P4DW

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

Grommet

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

For single-phase AC welding machines.
Not applicable for DC inverter welding machines (including rectifying type) and or condenser type welding.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P4DW (With indicator light)	
Auto switch model	**D-P4DW**
Applicable load	24 VDC relay, PLC
Load voltage	24 VDC (20 to 28 VDC)
Load current	6 to 40 mA or less
Internal voltage drop	5 V or less
Leakage current	1 mA or less at 24 VDC
Operating time	40 ms or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-P4DW**
Sheath	Outside diameter [mm]	ø6
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.92
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		36

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder or switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

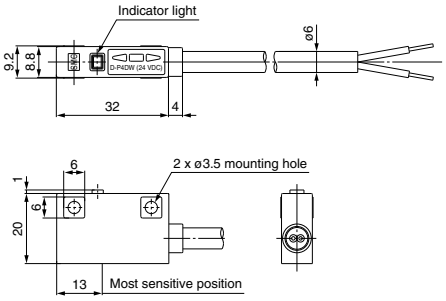
Weight

(g)

Auto switch model		**D-P4DW**
Lead wire length	3 m (**L**)	150
	5 m (**Z**)	244

Dimensions

(mm)



D-□

Heat Resistant 2-Color Indication Type Solid State Auto Switch: Rail Mounting Style

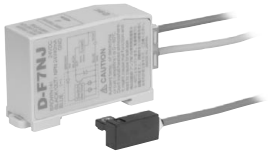
D-F7NJ

CE RoHS

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

Grommet

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



⚠Caution

Precautions

Auto switch which can be mounted on heat resistant, compact cylinder, CDQ2-XB14. For using for other cylinders, please confirm SMC.
D-F7NJ is not applicable for the heat resistant type (-XB6) since a magnet is not built in it.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7NJ (With indicator light)	
Auto switch model	**D-F7NJ**
Wiring type	3-wire
Output type	NPN
Applicable load	Relay, PLC
Power supply voltage	24 VDC (20 to 26 VDC)
Current consumption	25 mA or less
Load voltage	28 VDC or less
Load current	40 mA or less
Internal voltage drop	0.8 V or less
Leakage current	100 μA at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Ambient temperature	Sensor section: 0 to 150°C Amplifier section: 0 to 60°C
Impact resistance	Sensor section: 1000 m/s² Amplifier section: 300 m/s²
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications (Grommet)

Auto switch model		**D-F7NJ**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

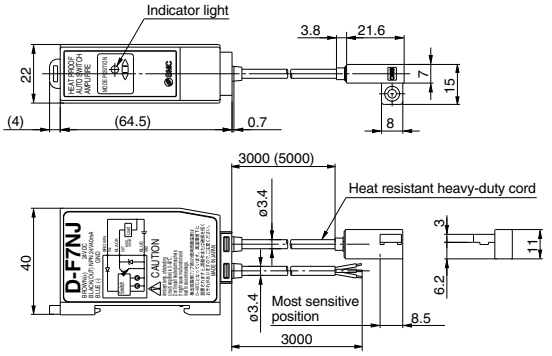
Weight

(g)

Auto switch model		**D-F7NJ**
Lead wire length	3 m (**L**)	170
	5 m (**Z**)	210

Dimensions

(mm)



SMC

Wide Range Detection Type
Solid State Auto Switch: Band Mounting Style
D-G5NB

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

Grommet

- **Wide range detection type**
- **Easy intermediate detection**

⚠Caution

Precautions

The operating range is common for all cylinder series, but it may vary depending on bore sizes.

Weight

(g)

Auto switch model		D-G5NB
Lead wire length	3 m (**L**)	79
	5 m (**Z**)	125

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5NB (With indicator light)	
Auto switch model	**D-G5NB**
Wiring type	3-wire
Output type	NPN
Applicable load	Relay, PLC
Power supply voltage	12, 24 VDC (10 to 28 VDC)
Current consumption	12 mA or less
Load voltage	10 to 28 VDC or less
Load current	40 mA or less
Internal voltage drop	0.4 V or less
Leakage current	100 μA at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-G5NB
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1568 for solid state auto switch common specifications.
Note 2) Refer to page 1568 for lead wire lengths.

Applicable Cylinders

Cylinder series	Bore size (mm)
CDM2-Z, CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, MLGC	20, 25, 32, 40
CDG1-Z, CDG1	20, 25, 32, 40, 50, 63, 80, 100
CDA2-Z, CDA2, CDBA2, CDV3, CDVS1, CDL1	40, 50, 63, 80, 100
MGC, MGG	20, 25, 32, 40, 50

Operating Range

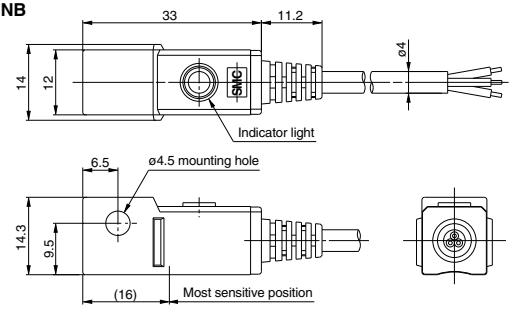
Cylinder series	Bore size (mm)							
	20	**25**	**32**	**40**	**50**	**63**	**80**	**100**
Mountable models	35	40	40	45	45	45	45	50

Note) The operating range above indicates average values at room temperature including hysteresis (assuming approximately ±30% dispersion).
∗ Refer to page 500 for CDA2-Z, page 557 for CDA2 and CDBA2.

Dimensions

(mm)

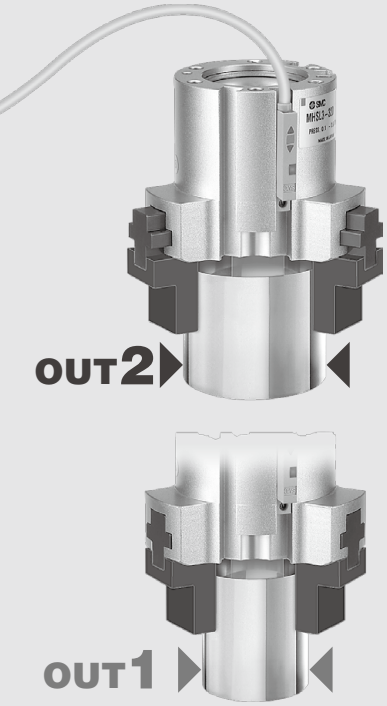
D-G5NB

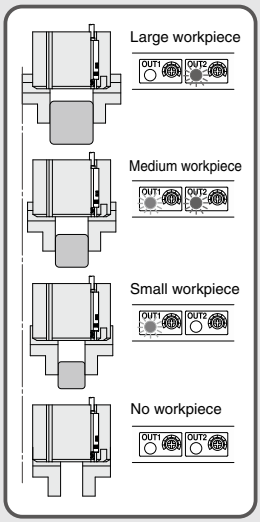


D-□

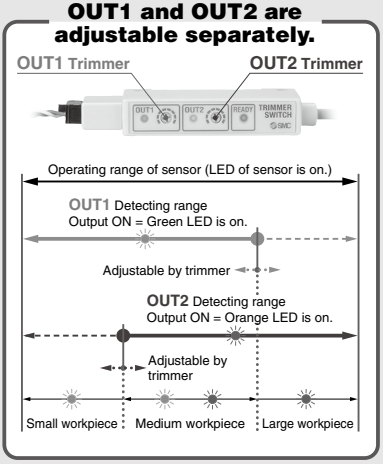
Trimmer Auto Switch

Series D-□7K/D-R□K





OUT1 and OUT2 are adjustable separately.



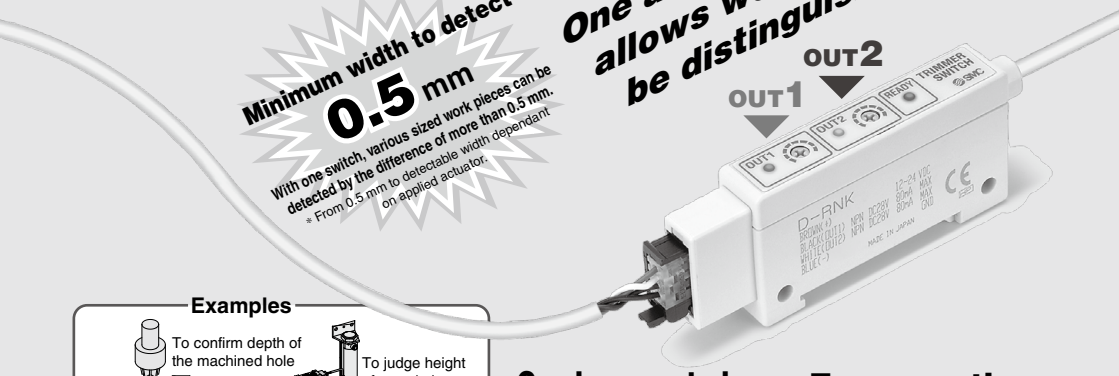
One auto switch allows work pieces to be distinguished easily.

Minimum width to detect

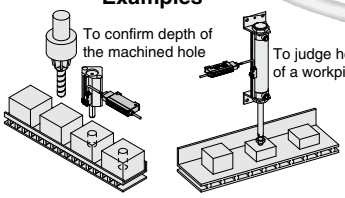
0.5 mm

With one switch, various sized work pieces can be detected by the difference of more than 0.5 mm.

* From 0.5 mm to detectable width dependant on applied actuator.



Examples



- **Can be mounted on a standard actuator.**
  Direct mounting / Rail mounting
- **Two mounting types** **(Amplifier unit)**
  DIN rail mounting / Direct mounting
- **Joining of connector**
  Sensor and amplifier can be connected without restriction.
- **IP67** **(Sensor unit)**
  IP40 for amplifier

Trimmer Auto Switch
D-□7K/D-R□K

Rail mounting type Direct mounting type

Specifications

Sensor Unit

Model	D-F7K	D-Y7K
Mounting	Rail mounting	Direct mounting
Applicable amplifier unit	D-RNK, D-RPK	
Indicator light	Operating position: Red light is ON. Proper operating range: Green light is ON.	
Electrical entry	Grommet	
Impact resistance	980 m/s^2	
Insulation resistance	50 MΩ or more (500 VDC measured via megohmmeter) between lead wire and case	
Withstand voltage	1000 VAC for 1 min. (between lead wire and case)	
Ambient temperature	–10 to 60°C	
Enclosure	IP67	
Weight	58 g (with connector)	
Standard	CE marking	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F7K	D-Y7K
Sheath	**Outside diameter [mm]**	ø3.5	
Insulator	**Number of cores**	4 cores (Brown/Blue/Black/White)	
	Outside diameter [mm]	1.0	
Conductor	**Effective area [mm^2]**	0.15 (AWG26)	
	Strand diameter [mm]	0.08	
Minimum bending radius [mm] (Reference values)		21	

Note) The e-con connector is not attached to the lead wire. It will be supplied loose in the same shipment (1 pc.).

Amplifier Unit (with Sensor Unit) PLC: Programmable Logic Controller

Model		D-RNK	D-RPK
Applicable sensor unit		D-F7K, D-Y7K	
Application		For relay and PLC	
Power supply voltage		12 to 24 VDC	
Current consumption		40 mA or less	
Output specification		NPN open collector 2 outputs	PNP open collector 2 outputs
Load voltage		28 VDC or less	—
Load current		80 mA or less/1 output	
Internal voltage drop		1.5 V or less	
Leakage current		100 μA or less/1 output	
Response time		1 ms or less	
Indicator light		READY: Red LED illuminates when the piston position detected. (When the sensor is connected). OUT 1: Green LED illuminates when turned ON. OUT 2: Orange LED illuminates when turned ON.	
Electrical entry	**Connection to sensor**	e-con connector	
	Power supply/ output cable	Grommet	
Impact resistance		98 m/s^2	
Insulation resistance		50 MΩ or more (500 VDC measured via megohmmeter) between lead wire and case	
Withstand voltage		1000 VAC for 1 min. (between lead wire and case)	
Ambient temperature		–10 to 60°C	
Enclosure		IP40	
Weight		70 g	
Standard		CE marking	

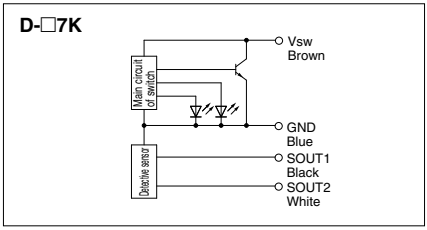
Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-RNK	D-RPK
Sheath	**Outside diameter [mm]**	ø3.5	
Insulator	**Number of cores**	4 cores (Brown/Blue/Black/White)	
	Outside diameter [mm]	ø1.0	
Conductor	**Effective area [mm^2]**	0.15 (AWG26)	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		21	

Internal Circuit

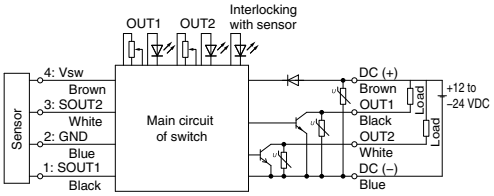
Sensor Unit

D-□7K

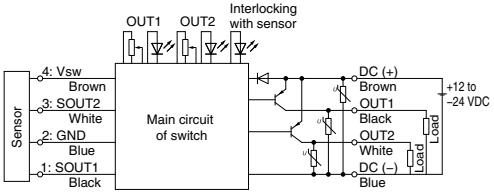


Amplifier Unit

D-RNK



D-RPK



Applicable Actuators and Operation Range (Angle)

The operating ranges are provided as guidelines including the hysteresis and are not guaranteed value. Please consult with SMC for alternative actuators other than those shown below.

Sensor Unit D-Y7K

Air Gripper

(mm or °)

Model		Bore size										
		10	12	16	20	25	32	40	50	63	80	100
Parallel gripper	MHZ2	4.0	—	5.0	7.0	7.0	8.0	8.5	—	—	—	—
Parallel gripper	MHZL2	6.0	—	7.0	10.0	11.0	—	—	—	—	—	—
Wide opening	MHL2	7.0	—	8.0	8.5	10.5	11.0	12.5	—	—	—	—
Parallel gripper	MHS2 (2 finger)	—	—	—	—	—	6.5	7.0	7.5	8.5	—	—
Parallel gripper	MHS3 (3 finger) MHS (L) 3	—	—	—	—	—	6.5	7.0	7.5	8.0	—	—
Parallel gripper	MHS4 (4 finger)	—	—	—	—	—	6.5	7.0	7.5	8.5	—	—
Angular gripper	MHC2	30° to –10°	—	30° to –10°	30° to –10°	22.5° to –10°	—	—	—	—	—	—
180° opening/closing	MHW2	—	—	—	88° to –5°	54° to –6°	58° to –5°	41° to –5°	30° to –4°	—	—	—

Note) The operating range for grippers is measured when both ends are open.

Air Cylinder

Compact guide cylinder	MGP	—	3.5	5.0	4.5	4.5	5.5	5.5	5.5	5.5	5.5	6.0
Double power non-rotating cylinder	MGZ	—	—	—	—	—	—	5.5	6.5	6.5	—	—
Air cylinder	CA2	—	—	—	—	—	—	4.0	4.0	6.0	6.0	6.0

Sensor Unit D-F7K

Air Cylinder

(mm)

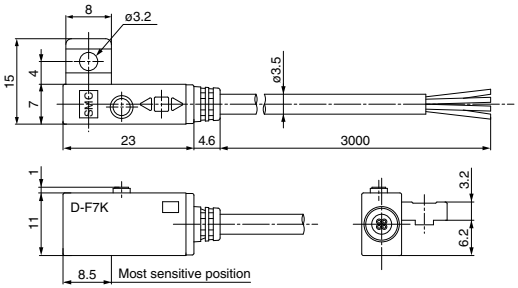
Model		Bore size													
		10	12	16	20	25	32	40	50	63	80	100	125	140	160
Air cylinder	CJ2	4.0	—	4.5	—	—	—	—	—	—	—	—	—	—	—
Air cylinder	CM2	—	—	—	3.5	3.5	3.5	3.5	—	—	—	—	—	—	—
Compact cylinder	CQ2	4.5	4.5	5.5	5.5	5.0	5.5	5.5	5.5	6.0	5.5	6.0	7.5	7.5	7.5
Compact cylinder guide rod type	CQM	—	—	—	—	—	5.5	5.5	5.5	—	—	—	—	—	—
Plate cylinder	MU	—	—	—	—	5.5	6.5	6.5	6.5	6.5	—	—	—	—	—
3 position cylinder	RZQ	—	—	—	—	—	6.0	6.5	7.0	7.5	—	—	—	—	—
Rotary clamp cylinder	MK/MK2	—	—	—	5.0	5.0	6.5	6.0	6.0	6.5	—	—	—	—	—

Dimensions

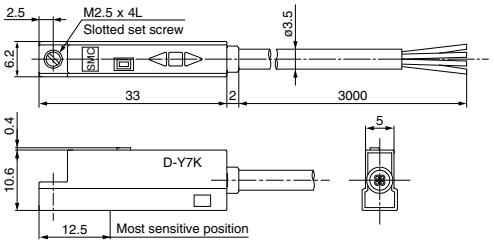
(mm)

Sensor unit

D-F7K

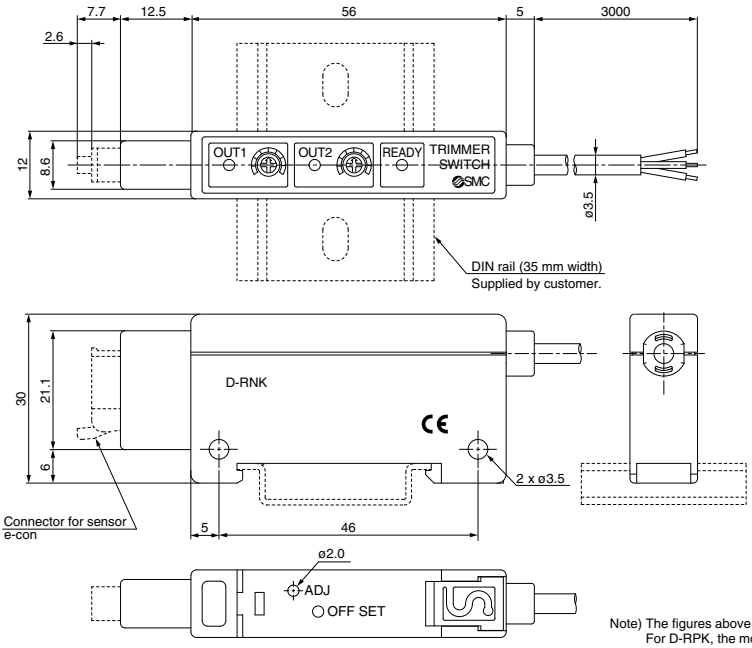


D-Y7K



Amplifier unit

D-R□K



Note) The figures above are for D-RNK. For D-RPK, the model name will be printed instead on the body.

D-□

Trimmer Auto Switch Specific Product Precautions 1

Be sure to read before handling.
Refer to front matter 57 for Safety Instructions and pages 8 to 12 for the Auto Switch Common Precautions.

Design and Selection

⚠ Warning

1. Confirm the specifications.

Read the specifications carefully and use this product appropriately. The product may be damaged or malfunction if it is used outside the range of specifications of current load, voltage, temperature or impact.

2. Cautions for use in an interlock circuit.

When an auto switch is used for an interlock signal requiring high reliability, devise a double interlock system to avoid trouble by providing a mechanical protection function, or by also using another switch (sensor) together with the trimmer auto switch. Also perform periodic maintenance and confirm proper operation.

⚠ Caution

1. Take precautions when multiple cylinders are used close together.

When more than 2 trimmer auto switch cylinders are used in close proximity, maintain a minimum actuator interval of 40 mm or more. (When the allowable interval is indicated for each cylinder series, use the specified values.) Magnetic field interference may cause the trimmer auto switches to malfunction.

2. Keep the wiring as short as possible.

Use a wire 3 m or shorter between the sensor and amplifier. Although wire length of power supply/output cable should not affect switch function, use a wire 100 m or shorter.

3. Take precautions for the internal voltage drop of the switch.

Auto switches may not operate properly depending on the connected equipment.

4. Take measures for rotational stoppage of the piston rod.

Take measures for rotational stoppage of the piston rod when designing by guide, etc. Or use non-rotating type SMC products. The operation may be unstable.

5. Do not exceed the trimmer switch sensor cable length 3 m.

If the sensor cable length exceeds 3 m, the CE marking does not apply to the auto switch.

Mounting and Adjustment

⚠ Caution

1. Do not drop or bump.

Do not drop, bump or apply excessive impacts (980 m/s^2 or more for sensor unit and 98 m/s^2 or more for amplifier unit) while handling.
Although the trimmer auto switch body may not be damaged, the inside of the trimmer auto switch could be damaged and cause a malfunction.

2. Refer to the operation manual for how to adjust/set.

Wiring

⚠ Caution

1. Avoid repeatedly bending or stretching lead wires.

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

2. Be sure to connect the connector for sensor to the amplifier before power is applied.

3. Do not allow short circuit of loads.

Output is automatically stopped when the protection circuit is working, as the output unit registers any excess current flow, if loads are short circuited. Should this occur, shut off the power supply, remove the cause of this excess current flow and switch on the power again. Take special care to avoid reverse wiring between the power supply line (brown) and the output line (black, white).

4. Avoid incorrect wiring.

If the connections are reversed (power supply line + and power supply line –), the trimmer auto switches will be protected by a protection circuit. However, if the power supply line (–) is connected to the black, white wire, the trimmer auto switches will be damaged.

Operating Environment

⚠ Warning

1. Never use in an atmosphere with explosive gases.

The structure of trimmer auto switches is not designed to prevent explosion. Never use in an atmosphere with an explosive gas since this may cause a serious explosion.

⚠ Caution

1. Do not use in an area where a magnetic field is generated.

Trimmer auto switches will malfunction or magnets inside actuators will become demagnetized.

2. Do not use in an environment where the trimmer auto switch will be continually exposed to water.

Although the sensor units of trimmer auto switches satisfy the IEC standard IP67 structure, do not use trimmer auto switches in applications where continually exposed to water splash or spray. Poor insulation or swelling of the potting resin inside trimmer auto switches may cause malfunction.
(Amplifier part D-RNK and RPK: IP40)

3. Do not use in an environment with oil or chemicals.

Please consult with SMC if trimmer auto switches will be used in an environment with coolant, cleaning solvent, various oils or chemicals. If trimmer auto switches are used under these conditions for even a short time, they may be adversely affected by improper insulation, malfunction due to swelling of the potting resin, or hardening of the lead wires.

4. Take measures against freezing when operating at 5°C or less.

Trimmer Auto Switch Specific Product Precautions 2

Be sure to read before handling.
Refer to front matter 57 for Safety Instructions and pages 8 to 12 for the Auto Switch Common Precautions.

Maintenance

⚠ Warning

1. Perform the following maintenance periodically in order to prevent possible danger due to unexpected trimmer auto switch malfunction.

1) Secure and tighten trimmer auto switch mounting screws.
If screws become loose or the mounting position is dislocated, retighten them after readjusting the mounting position.

2) Confirm that there is no damage to lead wires.
To prevent faulty insulation, replace trimmer auto switches or repair lead wires, etc., if damage is discovered.

Other

⚠ Caution

1. Please consult with SMC concerning water resistance, elasticity of lead wires, and usage at welding sites, etc.

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

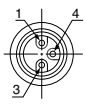
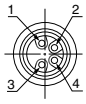
Note) L is available for the D-P4DW type only.

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			

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)	**F7NWV, F7BWV**	●	●	—
	With diagnostic output	Grommet (In-line)	**F79F**	●	●	—
	Water resistant		**F7BA**	●	●	—
		Grommet (Perpendicular)	**F7BAV**	●	●	—
	With timer	Grommet (In-line)	**F7NT**	●	●	—
	Magnetic field resistant		**P4DW**	●	●	●
Band mounting style	—	Grommet (In-line)	**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**	●	●	—
			F8N, F8P, F8B	●	●	—
		Grommet (In-line)	**F6N, F6P, F6B**	●	●	—
	Normally closed	Grommet (In-line)	**Y7G, Y7H**	●	●	—
	2-color indication	Grommet (In-line)	**Y7NW, Y7PW, Y7BW**	●	●	—
		Grommet (Perpendicular)	**Y7NWV, Y7PWV, Y7BWV**	●	●	—
		Grommet (In-line)	**M9NW, M9PW, M9BW**	●	●	—
		Grommet (Perpendicular)	**M9NWV, M9PWV, M9BWV**	●	●	—
	Water resistant	Grommet (In-line)	**Y7BA**	●	●	—
			M9NA, M9PA, M9BA	●	●	—
		Grommet (Perpendicular)	**M9NAV, M9PAV, M9BAV**	●	●	—
Rotary actuator	—	Grommet (In-line)	**S791/2, S7P1/2, T791/2**	●	●	—
			S991/2, S9P1/2, T991/2	●	●	—
		Grommet (Perpendicular)	**S99V1/2, T99V1/2**	●	●	—

M8-3 pin

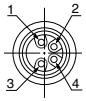
M8-4 pin

M12-4 pin

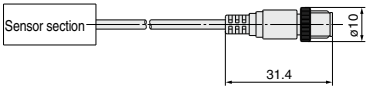
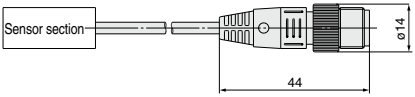
Connector Pin Arrangement

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/s²		
Enclosure	IP67 (IEC60529 standard)		
Insulation resistance	100 MΩ or more at 500 VDC measured via megohmmeter		
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	

Weight for Connector Type

Part no.	Connector type	Weight
D-□□□APC	M8-3 pin	4 g
D-□□□BPC	M8-4 pin	4 g
D-□□□DPC	M12-4 pin	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.)

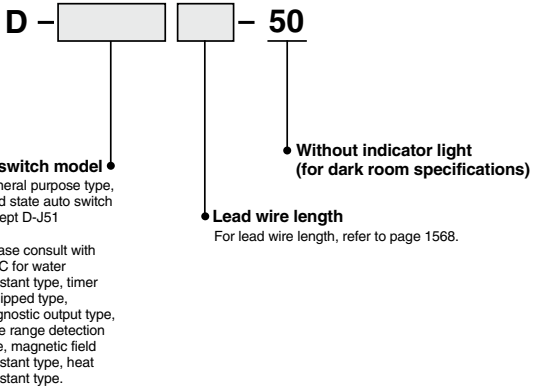
Connector size	Number of pins	Manufacturer	Applicable series example
M8	3	Phoenix Contact	SAC-3P
		Corrence Corporation	M8-3D
	4		M8-4D
		OMROM Corporation	XS3
M12		Phoenix Contact	SAC-4P
		Corrence Corporation	VA-4D
		OMROM Corporation	XS2
		Azbil Corp.	PA5-4I
		Hirose Electric Co., Ltd.	HR24
		DDK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

Made to Order Specifications: Solid State Auto Switch
-50: Without Indicator Light (Dark room) Specifications
-61: Oilproof Flexible Heavy-duty Cord Specifications

Symbol

2 Without Indicator Light (for dark room specifications) -50

Possible to use under the environment which hates a light.

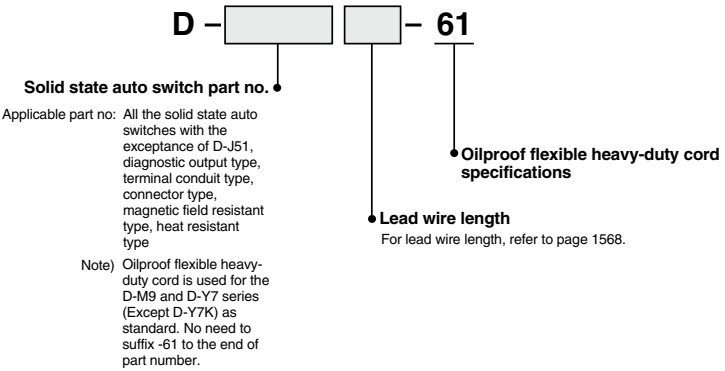


Dimensions and specifications are common as standard products with the exception of no indicator light.

Symbol

3 Oilproof Flexible Heavy-duty Cord Specifications -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.

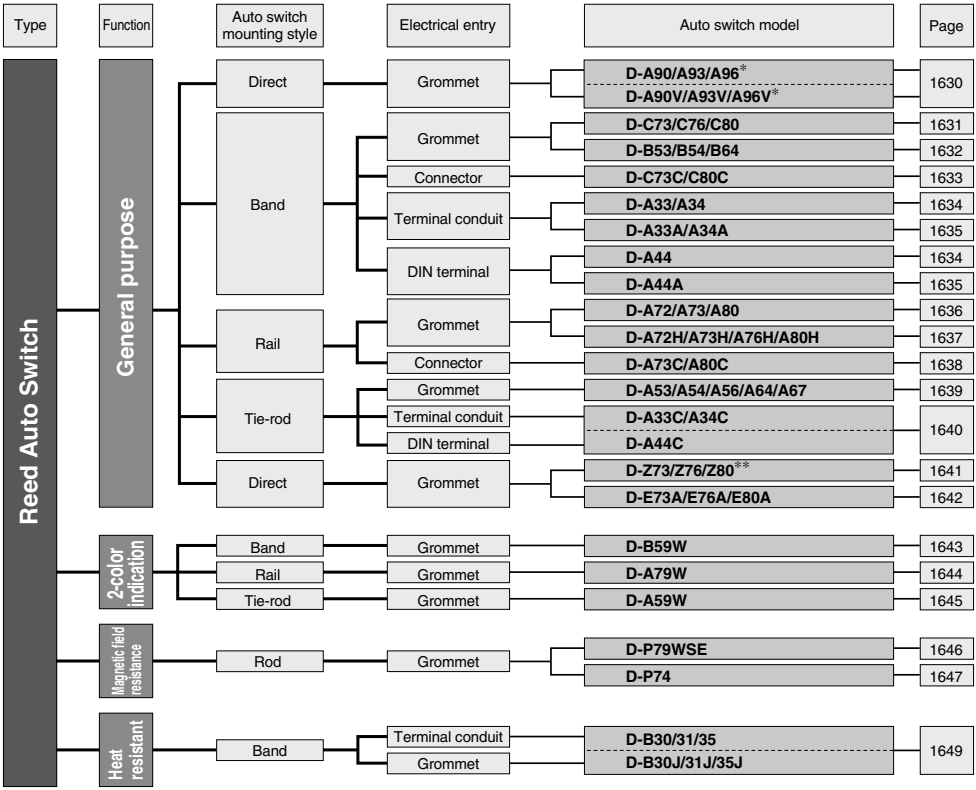


Specifications are the same as standard products with the exception of lead wire specifications.
Lead wire: For D-F8 type····· ø2.7, 0.15 mm^2, 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)
For other model nos.····· ø3.4, 0.15 mm^2, 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)

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.

Reed Auto Switches
General Purpose Type, 2-Color Indication Type

Reed Switch Variations



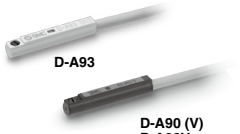
* Auto switches with an asterisk (*) can be mounted on a band (excluding D-A9□V), rail, tie-rod or square groove with an auto switch mounting bracket. Refer to pages 1654, 1658, 1662, 1668 and 1669 for details.

** This auto switch can be mounted by tie-rod with using auto switch mounting bracket. For details, refer to page 1665.

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

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

Grommet



D-A93

D-A90 (V)
D-A93V
D-A96 (V)

⚠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

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 AC/DC or less	48 V AC/DC or less	100 V AC/DC or less
Maximum load current	50 mA	40 mA	20 mA
Circuit diagram*	④		
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(4)	100 VAC	4 to 8 VDC
Load current range and Maximum load current(3)	5 to 40 mA	5 to 20 mA	20 mA
Circuit diagram*	③		⑤
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		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A90(V)**	**D-A93(V)**	**D-A96(V)**
Sheath	Outside diameter [mm]	ø2.7		
Insulator	Number of cores	2 cores (Brown/Blue)		3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø0.96		ø0.91
Conductor	Effective area [mm²]	0.18		0.15
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		17		

* Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 for reed auto switch common specifications.

Note 2) Refer to page 1568 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.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

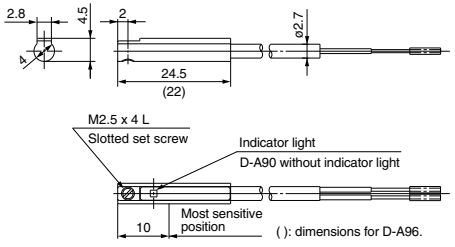
(g)

Model		**D-A90**	**D-A90V**	**D-A93**	**D-A93V**	**D-A96**	**D-A96V**
Lead wire length	0.5 m (**Nil**)	6	6	6	6	8	8
	1 m (**M**)	—	—	11	—	—	—
	3 m (**L**)	30	30	30	30	41	41
	5 m (**Z**)	—	—	47	47	—	—

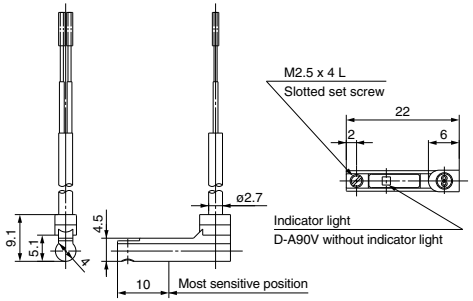
Dimensions

(mm)

D-A90/D-A93/D-A96



D-A90V/D-A93V/D-A96V



SMC

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.

Grommet

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(4)	100 VAC	4 to 8 VDC
Max. load current and range (3)	5 to 40 mA	5 to 20 mA	20 mA
Circuit diagram*	③		⑤
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
Circuit diagram*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-C73	D-C76	D-C80
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

* Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 for reed auto switch common specifications.

Note 2) Refer to page 1568 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.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

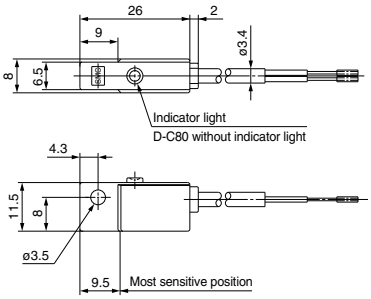
Weight

(g)

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

Dimensions

(mm)



D-□

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.

Grommet

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(4)	24 VDC(4)	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
Circuit diagram∗	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up 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
Circuit diagram∗	②		
Contact protection circuit	Built-in		
Internal resistance	25 Ω or less		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-B53/B54/B64**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		24

∗ Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 for reed auto switch common specifications.

Note 2) Refer to page 1568 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.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

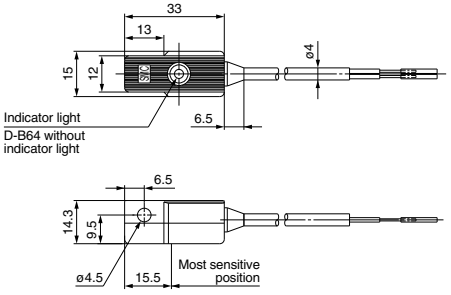
Weight

(g)

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

Dimensions

(mm)



SMC

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.

Connector

⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.

2. For details, refer to page 1653.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-C73C (With indicator light)	
Auto switch model	**D-C73C**
Applicable load	Relay, PLC
Load voltage	24 VDC (5)
Load current range (4)	5 to 40 mA
Circuit diagram*	③
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^{AC}_{DC} or less
Maximum load current	50 mA
Circuit diagram*	④
Contact protection circuit	None
Internal resistance	1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking

* Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 for reed auto switch common specifications.

Note 2) Refer to page 1568 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.

Note 5) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

(g)

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

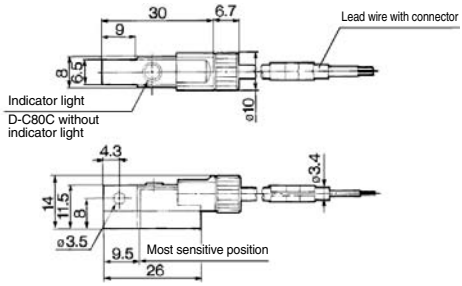
Lead wires with a connector indication

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

Dimensions

(mm)



D-□

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 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 (3)	24 VDC (3)	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
Circuit diagram*	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up 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 (3)	100 VAC	200 VAC
Load current range	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Circuit diagram*	①		
Contact protection circuit	Built-in		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

* Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 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.

Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

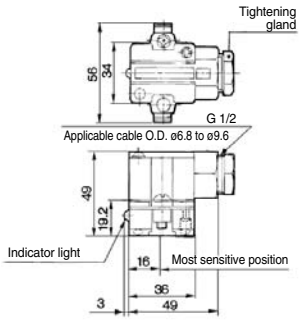
(g)

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

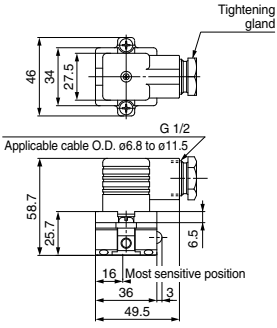
Dimensions

(mm)

D-A3



D-A44



SMC

Reed Auto Switch
Band Mounting Style
D-A33A/D-A34A/D-A44A

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

⚠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 Specifications

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

PLC: Programmable Logic Controller

D-A3□A (With indicator light) Terminal conduit				
Auto switch model	**D-A33A**	**D-A34A**		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC (3)	24 VDC (3)	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
Circuit diagram*	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

D-A44A (With indicator light) DIN terminal			
Auto switch part model	**D-A44A**		
Applicable load	Relay, PLC		
Load voltage	24 VDC (3)	100 VAC	200 VAC
Load current range	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Circuit diagram*	①		
Contact protection circuit	Built-in		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

* Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 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.
Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

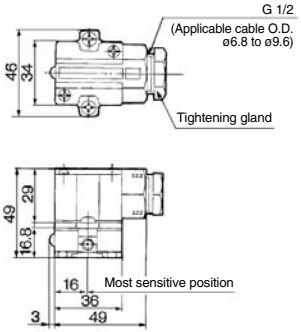
(g)

Auto switch model		D-A33A	D-A34A	D-A44A
Lead wire	None	112	112	110

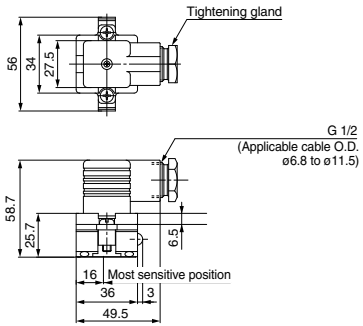
Dimensions

(mm)

D-A3□A



D-A44



D-□

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 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 (4)	100 VAC
Load current range (3)	5 to 10 mA	5 to 40 mA	5 to 20 mA
Circuit diagram*	③		
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
Circuit diagram*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A72**	**D-A73**	**D-A80**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)		
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

* Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.
Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

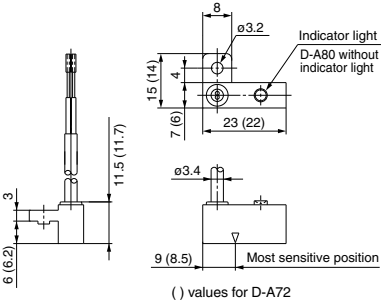
Weight

(g)

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

Dimensions

(mm)



( ) values for D-A72

SMC

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.

Grommet
Electrical entry: In-line

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 (4)	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
Circuit diagram∗	③			⑤
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	20mA
Circuit diagram∗	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A72H/A73H**	**D-A76H**	**D-A80H**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

∗ Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.
Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

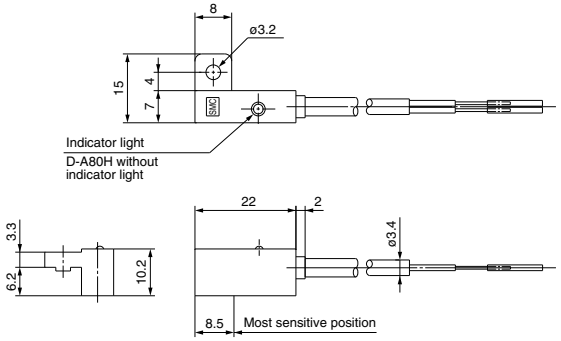
(g)

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

Dimensions

(mm)

D-A7□H, D-A80H



D-□

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.

Connector

⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. Refer to page 1653 for the details.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A73C (With indicator light)	
Auto switch model	**D-A73C**
Applicable load	Relay, PLC
Load voltage	24 VDC (5)
Load current range (4)	5 to 40 mA
Circuit diagram*	③
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 AC/DC
Maximum load current	50 mA
Circuit diagram*	④
Contact protection circuit	None
Internal resistance	1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking

* Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.
Note 5) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

(g)

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

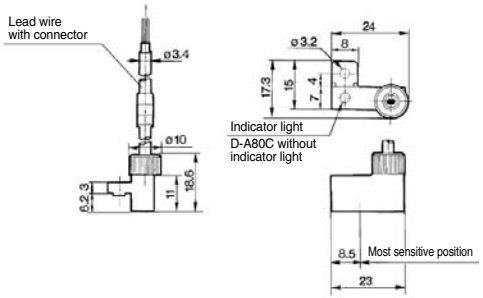
Lead wires with a connector indication

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

Dimensions

(mm)



SMC

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.

Grommet

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 (4)	24 VDC (4)	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
Circuit diagram*	③	①			⑤
Contact protection circuit	None	Built-in			None
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up 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
Circuit diagram*	②			④
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			

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A53/A54**	**D-A56**	**D-A64/A67**
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3	0.2	0.3
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		24		

* Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 for reed auto switch common specifications.

Note 2) Refer to page 1568 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.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

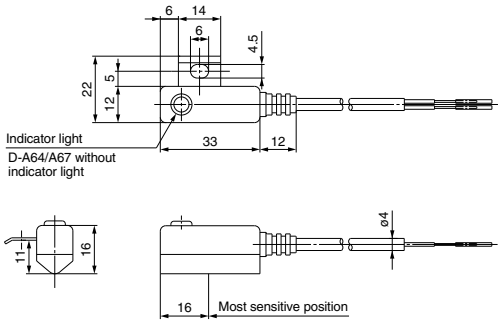
Weight

(g)

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

Dimensions

(mm)



D-□

Reed Auto Switch
Tie-rod Mounting Style
D-A33C/D-A34C/D-A44C

CE

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

⚠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 Specifications

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

PLC: Programmable Logic Controller

D-A3□C (With indicator light) Terminal conduit				
Auto switch model	D-A33C	D-A34C		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC (3)	24 VDC (3)	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
Circuit diagram*	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

D-A44C (With indicator light) DIN terminal			
Auto switch model	D-A44C		
Applicable load	Relay, PLC		
Load voltage	24 VDC (3)	100 VAC	200 VAC
Load current range (2)	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Circuit diagram*	①		
Contact protection circuit	Built-in		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

* Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 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.
Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

(g)

Auto switch model	Applicable bore size(mm)	Weight
D-A33C-4, A34C-4	40	162
D-A33C-5, A34C-5	50	166
D-A33C-6, A34C-6	63	184
D-A33C-8, A34C-8	80	210
D-A33C-10, A34C-10	100	232

Auto switch model	Applicable bore size(mm)	Weight
D-A44C-4	40	160
D-A44C-5	50	164
D-A44C-6	63	182
D-A44C-8	80	208
D-A44C-10	100	230

Dimensions

(mm)

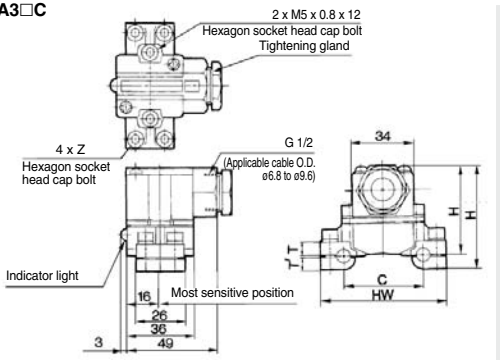
Auto switch model	Applicable bore size (mm)	C	HW	H	H'	T	T'	Z
D-A3□C-4, D-A44C-4	40	44	69	58 (67.5)	50.5 (60)	7.5	6.5	M5 x 0.8 x 16
D-A3□C-5, D-A44C-5	50	52	77	59 (68.5)	51.5 (61)	8.5	6.5	
D-A3□C-6, D-A44C-6	63	64	91	61.5 (71)	53 (62.5)	10.5	7.5	M5 x 0.8 x 20
D-A3□C-8, D-A44C-8	80	78	107	65 (74.5)	54.5 (64)	12.5	9.5	M5 x 0.8 x 25
D-A3□C-10, D-A44C-10	100	92	121	68 (77.5)	57.5 (67)	15.5	9.5	

* ( ): Denotes the values of D-A44C

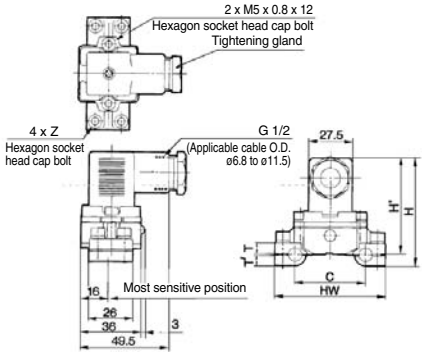
Dimensions

(mm)

D-A3□C



D-A44C



SMC

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

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

Grommet

Auto Switch Specifications

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 [4]	100 VAC	4 to 8 VDC
Max. load current and load current range [3]	5 to 40 mA	5 to 20 mA	20 mA
Circuit diagram *	③		⑤
Contact protection circuit	None		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3 V or less (Up 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^{AC}_{DC} or less	48 V^{AC}_{DC}	100 V^{AC}_{DC}
Maximum load current	50 mA	40 mA	20 mA
Circuit diagram *	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including 3 m lead wire)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-Z73**	**D-Z76**	**D-Z80**
Sheath	Outside diameter [mm]	ø2.7	ø3.4	ø2.7
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.18	0.2	0.18
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		17	21	17

* Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 for reed auto switch common specifications.

Note 2) Refer to page 1568 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.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

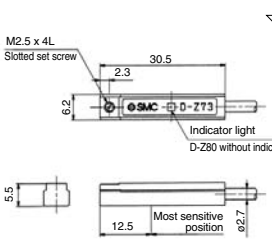
(g)

Auto switch model		**D-Z73**	**D-Z76**	**D-Z80**
Lead wire length	0.5 m (**Nil**)	7	10	7
	3 m (**L**)	31	55	31
	5 m (**Z**)	50	—	—

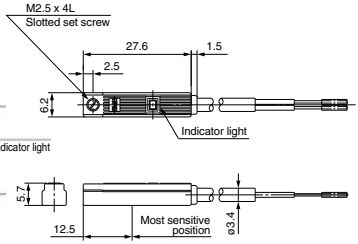
Dimensions

(mm)

D-Z73, Z80



D-Z76



D-□

Reed Auto Switch
Direct Mounting Style
D-E73A/D-E76A/D-E80A

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

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-E7□A (With indicator light)			
Auto switch model	D-E73A		D-E76A
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC (4)	100 VAC	4 to 8 VDC
Max. load current and load current range(3)	5 to 40 mA	5 to 20 mA	20 mA
Circuit diagram*	③		⑤
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-E80A (Without indicator light)			
Auto switch model	D-E80A		
Applicable load	Relay, PLC, IC circuit		
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
Circuit diagram*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-E73A	D-E76A	D-E80A
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

* Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.
Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

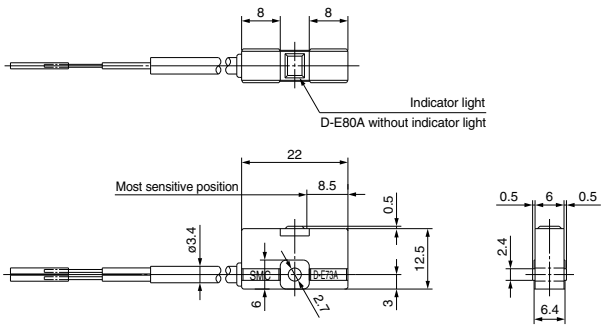
Weight

(g)

Auto switch model		D-E73A	D-E76A	D-E80A
Lead wire length	0.5 m (**Nil**)	10	11	10
	3 m (**L**)	47	55	47

Dimensions

(mm)



SMC

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.

Grommet

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

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
Circuit diagram∗	⑥
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

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-B59W**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		24

∗ Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.

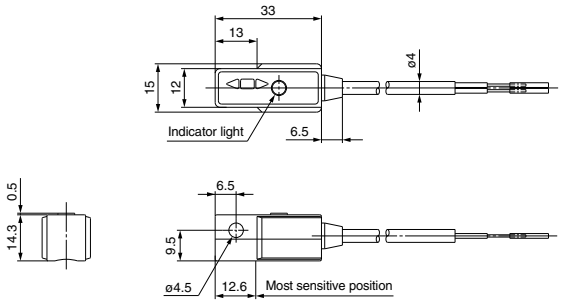
Weight

(g)

Auto switch model		**D-B59W**
Lead wire length	0.5 m (**Nil**)	20
	3 m (**L**)	76

Dimensions

(mm)



D-□

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.

Grommet

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

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
Circuit diagram∗	⑦
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

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A79W**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		21

∗ Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.

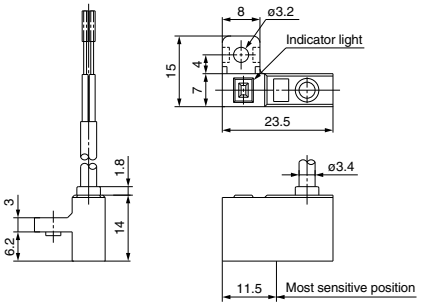
Weight

(g)

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

Dimensions

(mm)



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

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

Grommet

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

Auto Switch Specifications

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
Circuit diagram∗	⑥
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

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A59W**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		24

∗ Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.

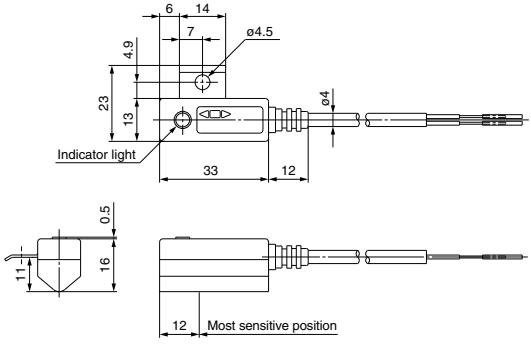
Weight

(g)

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

Dimensions

(mm)



D-□

Magnetic Field Resistant 2-Color Indication Type Reed Auto Switch

D-P79WSE

(Electrical Entry: Pre-wired connector)

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

Grommet

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

⚠Caution

Precautions

Cylinder with a strong integrated magnet must be used.

Auto Switch Specifications

PLC: Programmable Logic Controller

Auto switch model	D-P79WSE
Applicable load	PLC
Load voltage	24 VDC
Load current range	8 to 20 mA
Circuit diagram*	⑥
Contact protection circuit	Built-in
Internal voltage drop	6 V or less
Indicator light	Operating range ..... Red LED illuminates. Proper operating range ..... Green LED illuminates.
Standard	CE marking

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P79WSE
Sheath	Outside diameter [mm]	ø6
Insulator	Number of cores	2 cores
	Outside diameter [mm]	ø2.3
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		48

* Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.

Weight

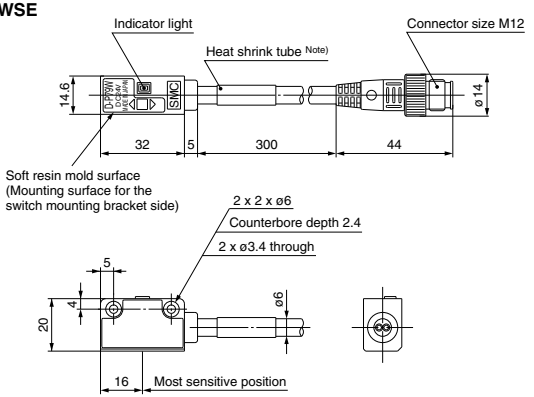
(g)

Auto switch model	D-P79WSE
	100

Dimensions

(mm)

D-P79WSE



Note) D-P79WSE = "SE 1 4-"

⚠Caution

Please be careful of the mounting direction.
The soft resin mold surface must be directed to the switch mounting bracket side.

SMC

Magnetic Field Resistant Reed Auto Switch
D-P74

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

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P74L/Z (With indicator light)		
Auto switch model	D-P74	
Electrical entry	Grommet	
Application	Relay, PLC	
Load voltage	24 VDC	100 VAC
Max. load voltage/Load current range	5 to 40 mA	5 to 20 mA
Circuit diagram∗	①	
Contact protection circuit	Built-in	
Internal voltage drop (internal resistance)	2.4 V or less	
Leakage current	0	
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P74
Sheath	Outside diameter [mm]	ø6.8
Insulator	Number of cores	2 cores (White/Black)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.75
	Strand diameter [mm]	ø0.18
Lead wire minimum bending radius [mm] (Reference values)		48

∗ Refer to the circuit diagram no. on page 1571.
Note 1) Refer to page 1568 for reed auto switch common specifications.
Note 2) Refer to page 1568 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.

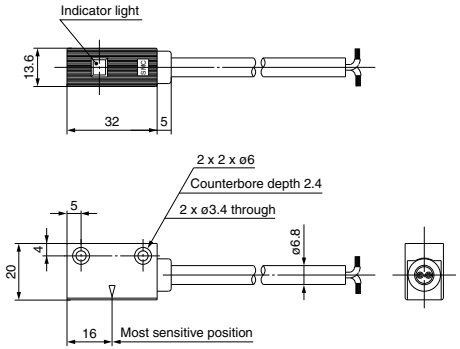
Weight

(g)

Auto switch model		D-P74
Lead wire length	3 m (**L**)	189
	5 m (**Z**)	320

Dimensions

(mm)



⚠Caution

Precautions

Cylinder with a strong integrated magnet must be used.

D-□

Magnetic Field Resistant Reed Auto Switch
D-P74-376

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

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P74-376 (With indicator light)	
Auto switch model	**D-P74-376**
Electrical entry	Grommet
Application	Relay, PLC
Load voltage	24 VDC
Max. load current/Load current range	5 to 20 mA
Circuit diagram∗	①
Contact protection circuit	Built-in
Internal voltage drop (internal resistance)	2 V or less
Leakage current	0
Operating time	1.2 ms
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-P74**
Sheath	Outside diameter [mm]	ø6
Insulator	Number of cores	2 cores
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.75
	Strand diameter [mm]	ø0.18
Lead wire minimum bending radius [mm] (Reference values)		48

∗ Refer to the circuit diagram no. on page 1571.

Note 1) Refer to page 1568 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.

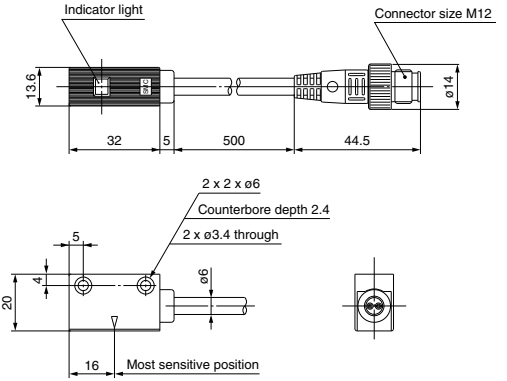
Weight

(g)

Auto switch model	**D-P74-376**
	60

Dimensions

(mm)



⚠Caution

Precautions

Cylinder with a strong integrated magnet must be used.

SMC

Heat Resistant Reed Auto Switch
D-B30(J)/31(J)/35(J)

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

Can be used outdoors or under high temperature (Max. 120°C). Wide operating range (double that of other SMC products) enables stable position detection.

High temperature environment such as places around ignited gas outlet or furnace

Outdoor plants and environment with high temperature and humidity

Environment for steam cleaning or high temperature sterilization

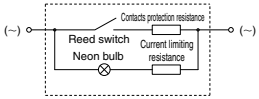
Applications requiring wide operating range such as clamping of elastic work pieces

Use of metal case and heat resistant materials.
The construction prevents influence of external environment by sealing the auto switch internal parts to improve heat resistance.
The wide operating range allows easy position setting and reduces influence of the work piece position changes.

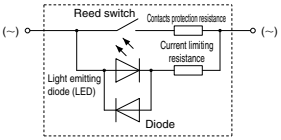
Auto Switch Internal Circuit

D-B30

D-B31



D-B35



Auto Switch Specifications

PLC: Programmable Logic Controller

Auto switch model	D-B30	D-B30J	D-B31	D-B31J	D-B35	D-B35J
Electrical entry	Terminal conduit	Grommet	Terminal conduit	Grommet	Terminal conduit	Grommet
Operating voltage	24 VDC / 100 VAC		100 VAC		24 VDC	
Operating current range	5 to 30 mADC / 5 to 20 mAAC		5 to 20 mAAC		5 to 30 mADC	
Internal voltage drop	2.5 V or less		2.5 V or less		2.0 V or less	
Indicator light	Without indicator light		Neon bulb lights up when OFF		Red LED lights up when OFF	
Applicable load	PLC (Programmable Logic Controller)					
Shock resistance	300 m/s^2					
Leakage current	0.1 mA or less		1 mA or less		1 mA or less	
Lead wire	—	0.5 m	—	0.5 m	—	0.5 m
Enclosure	Terminal conduit : IEC60529 IP64 Grommet : IEC60529 IP67					
Withstand voltage	1500 VAC for 1 minute (between case and terminals or lead wires)					
Insulation resistance	50 MΩ or larger between case (ground) and lead wires (terminals)					
Operating temperature range	–10°C to 120°C					
Standard	CE marking					

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-B30J	D-B31J	D-B35J
Sheath	Outside diameter [mm]	ø6		
Insulator	Number of cores	2 cores (Brown/Blue)		
	Outside diameter [mm]	ø2.3		
Conductor	Effective area [mm^2]	0.5		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		48 (Room temperature)		

Weight

(g)

Auto switch model		D-B30	D-B30J	D-B31	D-B31J	D-B35	D-B35J
Lead wire length	None	190	—	190	—	190	—
	0.5 m (**Nil**)	—	250	—	250	—	250
	3 m (**L**)	—	268	—	268	—	268
	5 m (**Z**)	—	462	—	462	—	462

Lead wire length

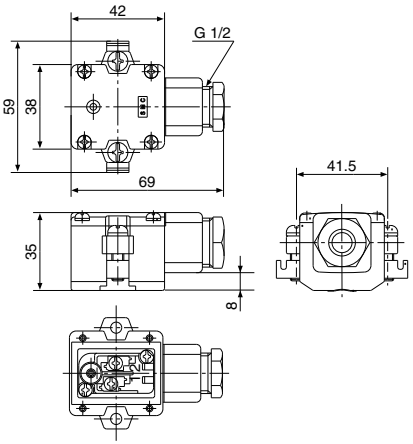
In case of the grommet type (J type), the lead wire length is 0.5 m.
(No lead wire is attached to the terminal conduit type.)
Manufacture of 3 m and 5 m types is also possible. Please consult SMC for these types.

D-□

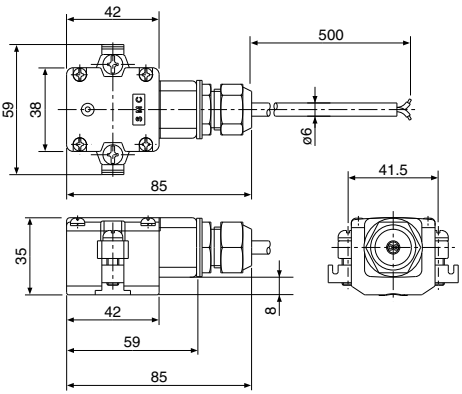
Dimensions

(mm)

Terminal conduit type D-B3□

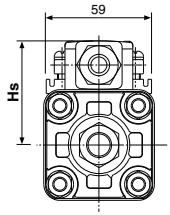


Terminal conduit type D-B3□J



∗ Recommended minimum bending radius for lead wire RT : 25 mm or more
120°C : 50 mm or more

Dimensions for Cylinder Mounting



Hs dimensions

(mm)

Bore size	Cylinder model	
	CDA2	**MDB**
40 mm	58.5	57.5
50 mm	64	63
63 mm	71	69.5
80 mm	79.5	78.5
100 mm	90	89

Mounting cylinder part no.

CDA2 B 50 – 200 – B31J S – X1184

- **CDA2** — Cylinder model

Symbol	Description
CDA2	Series CDA2 (Bore size 40 to 100)
MDB	Series MDB (Bore size 40 to 100)

- **B** — Mounting
- **50** — Cylinder bore size
- **200** — Cylinder stroke
- **B31J** — Auto switch type

Symbol	Description
Nil	Without auto switch
B30	D-B30
B30J	D-B30J
B31	D-B31
B31J	D-B31J
B35	D-B35
B35J	D-B35J

- **S** — Number of auto switches

Symbol	Description
Nil	2 pcs.
S	1 pc.

- **X1184** — With built-in special magnet

∗ Please consult SMC in case the switch is to be mounted on models other than applicable cylinders.

Series D-B3
Specific Product Precautions

Be sure to read before handling.
Refer to front matter 57 for Safety Instructions and pages 8 to 12 for Auto Switch Precautions.

⚠Caution

1. Use the reed switch within the operating range.

Take precautions about the ambient temperature because using the reed switch beyond the operating range may affect its internal electronic parts and sealing construction, causing abnormalities to the service life of the contact, as well as operation and waterproof performance of the switch.

Also, the maximum temperature of the environment where the switch is used must be fully understood before operation is started because the temperature of the environment where the auto switch is installed may experience some changes after operation is started due to factors other than air temperature such as influence of radiation heat from the heat source, air circulation or heat conduction.

2. Take precautions about the environment where the auto switch is installed.

If conditions (water splashes, time, temperature) beyond the normal ranges can be applied to the auto switch, use the auto switch in an environment where it will not be directly exposed to water splashes at a high temperature by installing a cover to protect the entire auto switch, as long as it is possible. The grommet type auto switch has a construction that will protect its internal parts against water splashes at the normal temperature. However, if the conditions (water splashes, time, temperature) exceed the normal ranges, they may adversely affect the auto switch internal insulation performance.

Also, confirm the applicability of the auto switch in the environment because extreme heat cycles or a long-term high humidity may cause functional deterioration of the auto switch protection construction.

In principle, the terminal conduit type must be used in an environment with no exposure to humidity or water because at high temperatures, it may become impossible to achieve sufficient waterproof effect due to deformation of lead wire sealant depending on the heat resistance of the lead wire and cable clamp.

3. Visibility of an indicator light

Because the auto switch uses light emitting diodes and neon bulbs for display, continuous operation at a high temperature may cause changes in characteristics of the entire display circuit. Also, the transparency of the display window on the body may change depending on the characteristics of the resin.

Because of the above factors, lighting under high temperature may become dark, causing decline of visibility.

However, there could be no problem in output of the signal itself and its safety owing to adoption of the OFF-state lighting system.

4. Take precautions about leakage current.

According to the heat resistant characteristics of its parts, the auto switch adopts the OFF-state lighting system (the indicator light lights up when the reed switch contact is open and goes off when the reed switch contact is closed).

Since the current for indication lighting is running when the auto switch is off, confirm the allowable leakage current of PLC etc. before selecting the model.

If the leakage current of the indicator light becomes a problem for the PLC operation, select a model without an indicator light.

5. Keep the lead wire length as short as possible.

If a long lead wire is used because of the conditions of the plant or equipment where the switch is installed, malfunction in the reed switch reset operation may occur due to premature damage to the contact surface caused by the inrush current resulting from the line flotation capacity and influence of the electric field created by the power line near the wiring.

Therefore, the maximum wiring length should be kept at 100 m or less.

Avoid wiring in proximity with the power line. Also, if the length of wiring in use is extremely long (30 m or longer), schedule replacement in periodical maintenance.

The basic guidelines for replacement are a total wiring length of 100 m between the load and the auto switch and 1 million cycles of operation (at 120°C , 100VAC PLC load).

6. Install the auto switch at the center of the operating range.

The operation range of the auto switch is set at approximately double that of the standard type in consideration of the mounting error when the detection position is set. However, this range is subject to change with the temperature. Although the variation in the operating range differs with the cylinder on which the auto switch is mounted, a temperature change of 100°C will roughly result in the maximum of 20% reduction in the overall operation range.

(Approximately 2 mm variation at the position where the auto switch usually turns on)

Therefore, install the auto switch at the center of the operating range (stable range), while understanding the possible change in the operating range and considering the stability of the auto switch operation.

(Avoid installation of the auto switch at the boundary where the auto switch turns on or off.)

7. Selection of applicable cylinders

The auto switch should be mounted on special cylinders (Series -X1184) because it is operated by magnets using heat resistant material.

Consult SMC in advance for special applications in which conventional cylinder cannot be used because, depending on the operating environment, it is possible that special measures should be taken or even the cylinder cannot be adapted.

8. Maintenance

After the auto switch is installed under high temperature, apply additonal tightening peiodically to the auto switch mounting band.

The rubber lining of the auto switch mounting band may need some time to adapt to the environment because of temperature chages in the installation environment. Perform additoinal tightening at a tightening torque of 2 to 3 N·m while carefully applying equal torque to both lifting screws.

9. Product upgrades

The product is subject to change without prior notice due to upgrades.