

Prior to Use

Auto Switches Common Specifications 1

Refer to the Auto Switch Precautions on pages 8 to 12 before using auto switches.

Auto Switches Common Specifications

Type	Reed auto switch	Solid state auto switch
Leakage current	None	3-wire: 100 μ A or less, 2-wire: 0.8 mA or less
Operating time	1.2 ms	1ms or less *3)
Impact resistance	300 m/s ²	1000 m/s ² *4)
Insulation resistance	50 M Ω or more (500 VDC measured via megohmmeter) (Between lead wire and case)	
Withstand voltage	1500 VAC for 1 minute *1) (Between lead wire and case)	1000 VAC for 1 minute (Between lead wire and case)
Ambient temperature	-10 to 60°C	
Enclosure	IEC60529 Standard IP67 *2)	

- * 1) Electrical entry: Connector type (A73C/A80C/C73C/C80C): 1000 VAC/min.
(Between lead wire and the case)
- * 2) The terminal conduit type (D-A3/A3□/A3□C/G39/G39A/G39C/K39/K39A/K39C), DIN terminal type (D-A44/A44A/A44C) and heat resistant auto switch (D-F7NJ) conform to IEC60529 Standard IP63.
The trimmer type amplifier section (D-R□K) conforms to IP40.
- * 3) Excluding the solid state auto switches with a timer (G5NT/F7NT/F5NT types) and magnetic field resistant 2-color indicator solid state auto switch (D-P3DW□/P4DW).
The operating time for D-J51 is 2 ms or less and for D-P3DW□/P4DW are 40 ms or less.
- * 4) 980 m/s² for the trimmer type sensor section, 98 m/s² for the amplifier section.

Lead Wire

Lead wire length indication

(Example)

D-M9BW L

Auto switch
model

Lead wire length

Symbol	Length	Tolerance	Connector specifications	Solid state	Reed
Nll	0.5 m	±15 mm		●	●
M	1 m	±30 mm		● *2)	● *2)
L	3 m	±90 mm		●	●
Z	5 m	±150 mm		●	● *3)
N *1)	None	—		●	●
SAPC	0.5 m	±15 mm	M8-3 pin	○	—
MAPC	1 m	±30 mm	Plug connector	○	—
SBPC	0.5 m	±15 mm	M8-4 pin	○	—
MBPC	1 m	±30 mm	Plug connector	○	—
SDPC	0.5 m	±15 mm	M12-4 pin A code (Normal key) Plug connector	○	—
MDPC	1 m	±30 mm		○	—
LDPC	3 m	±90 mm		○	—

●: Standard ○: Produced upon receipt of order (Standard)

- * 1) Applicable to the connector type (D-□□C) only.
- * 2) Applicable to the D-M9□ (V), D-M9□W (V), D-M9□A (V), and D-A93 only.
- * 3) Applicable to the D-B53/B54, D-C73(C)/C80C, D-A93(V), D-A73(C)/A80C, D-A53/A54, D-Z73, and D-90/97/90A/93A only.
- * 4) For reed auto switches M8 and M12 type with connector, please contact SMC.
- * 5) The standard lead wire length of the trimmer auto switch is 3 m.
- * 6) The standard lead wire length of the solid state auto switch with the timer except for the D-P3DW and D-M9□A (V)□, water-resistant 2-color display solid state auto switch, wide range detection auto switch, heat resistant 2-color display solid state auto switch, and strong magnetic field resistant 2-color display solid state auto switch is 3 m or 5 m. (Product with a lead wire length of 0.5 m is not available.)

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

Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

D-P4DWSC/D-P4DWSE/D-P4DW□DPC

(Electrical Entry: Pre-wired connector)

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

PLC: Programmable Logic Controller

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(⊕)
D-P4DW□DPC	OUT(⊖)	—	—	OUT(⊕)

Auto Switch Specifications

D-P4DW□ (With indicator light)				
Auto switch model	D-P4DWSC	D-P4DWSE	D-P4DWSDPC	D-P4DWLDP
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 (EMC directive/RoHS directive)			

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P4DWSC	D-P4DWSE	D-P4DWSDPC	D-P4DWMDPC	D-P4DWLDP
Length [m]		0.3	0.3	0.5	1	3
Sheath	Outside diameter [mm]	ø6				
	Number of cores	2 cores				
Insulator	Outside diameter [mm]	ø2.3				
	Effective area [mm ²]	0.5				
Conductor	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 1584 for solid state auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

- 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 or switch is 0 mm. Please contact SMC when the AC welding current exceeds 16000 A.

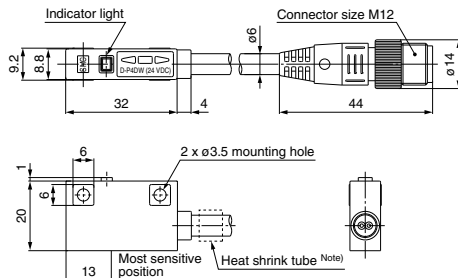
Weight

(g)

Auto switch model	D-P4DWSC	D-P4DWSE	D-P4DWSDPC	D-P4DWMDPC	D-P4DWLDP
	35	35	52	68	161

Dimensions

(mm)



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

