

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 | 1 ms 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□A/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 (D-M5□T/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 |
|--------|--------|--------------|--|-------------|-------|
| Nil | 0.5 m | \pm 15 mm | | ● | ● |
| M | 1 m | \pm 30 mm | | ● *2) | ● *2) |
| L | 3 m | \pm 90 mm | | ● | ● |
| Z | 5 m | \pm 150 mm | | ● | ● *3) |
| N *1) | None | — | | ● | ● |
| SAPC | 0.5 m | \pm 15 mm | M8-3 pin Plug connector | ○ | — |
| MAPC | 1 m | \pm 30 mm | M8-4 pin Plug connector | ○ | — |
| SBPC | 0.5 m | \pm 15 mm | | ○ | — |
| MBPC | 1 m | \pm 30 mm | M12-4 pin A code (Normal key) Plug connector | ○ | — |
| SDPC | 0.5 m | \pm 15 mm | | ○ | — |
| MDPC | 1 m | \pm 30 mm | | ○ | — |
| LDPC | 3 m | \pm 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 |

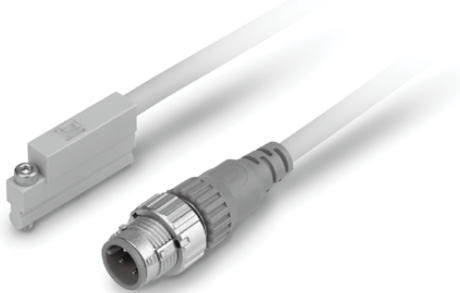
Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

D-P3DWASC/D-P3DWASE [®] US

(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.

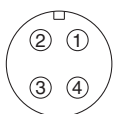
Magnetic Field Resistance

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 Lead Wire Specifications

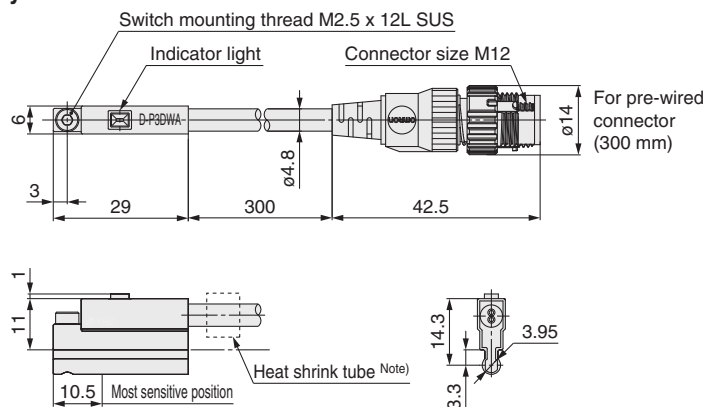
| Auto switch model | | D-P3DWASC | D-P3DWASE |
|-------------------|--|-----------|-----------|
| Sheath | Outside diameter [mm] | ø4.8 | |
| | Number of cores | 2 cores | |
| Insulator | Outside diameter [mm] | ø1.52 | |
| | Effective area [mm ²] | 0.5 | |
| Conductor | Strand diameter [mm] | ø0.08 | |
| | 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 Indicator Solid State Auto Switch

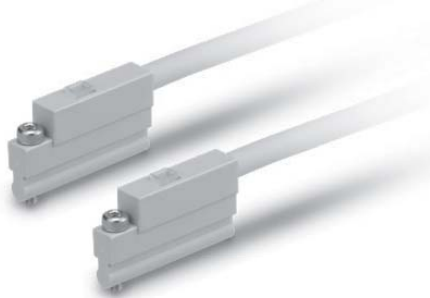
D-P3DWA

(Electrical Entry: Grommet)



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

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- 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 Lead Wire Specifications

| Auto switch model | | D-P3DWA |
|-------------------|--|----------------------|
| Sheath | Outside diameter [mm] | ø4.8 |
| | Number of cores | 2 cores (Brown/Blue) |
| Insulator | Outside diameter [mm] | ø1.52 |
| | Effective area [mm ²] | 0.5 |
| Conductor | 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)
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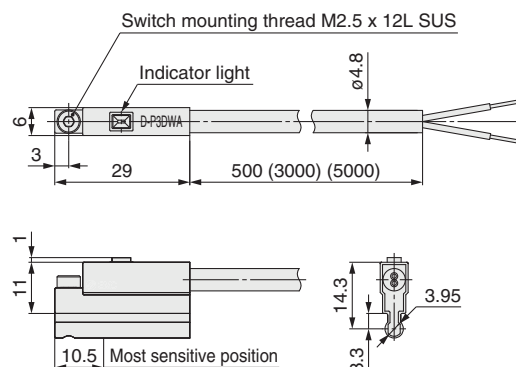
(g)

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

Dimensions

(mm)

Body



D-□