### Applicable Cylinder Series

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**Solid state auto switches**

| D-C7/C8         |       |       |       |     |      |      |       |       |      |       |      |
| D-C73/C80C      |       |       |       |     |      |      |       |       |      |       |      |
| D-B5/B6         |       |       |       |     |      |      |       |       |      |       |      |
| D-B59W          |       |       |       |     |      |      |       |       |      |       |      |
| D-A3/A4         |       |       |       |     |      |      |       |       |      |       |      |
| D-A7/A8         |       |       |       |     |      |      |       |       |      |       |      |
| D-A7:W/A80H     |       |       |       |     |      |      |       |       |      |       |      |
| D-A7:W/A80C     |       |       |       |     |      |      |       |       |      |       |      |
| D-A79W          |       |       |       |     |      |      |       |       |      |       |      |
| D-A5/A6         |       |       |       |     |      |      |       |       |      |       |      |
| D-A50W          |       |       |       |     |      |      |       |       |      |       |      |
| D-A9            |       |       |       |     |      |      |       |       |      |       |      |
| D-A9:W          |       |       |       |     |      |      |       |       |      |       |      |
| D-27/28         |       |       |       |     |      |      |       |       |      |       |      |

**Reed auto switches**

| P.242 | P.254 | P.279 | P.297 | P.316 | P.333 | P.344 | P.358 | P.384 | P.396 |

**Actuator page reference**

# Auto Switch Variations

## Auto Switch Variations 1

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<th>Function</th>
<th>Type</th>
<th>Auto switch mounting type</th>
<th>Electrical entry</th>
<th>Auto switch model</th>
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* These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. For details, refer to “How to Mount and Move the Auto Switch” of each series.

** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. For details, refer to “How to Mount and Move the Auto Switch” of each series.
Auto Switch Guide

Auto Switch Variations

Auto Switch Variations 2

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<th>Function</th>
<th>Type</th>
<th>Auto switch mounting type</th>
<th>Electrical entry</th>
<th>Auto switch model</th>
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* These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. For details, refer to “How to Mount and Move the Auto Switch” of each series.

** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. For details, refer to “How to Mount and Move the Auto Switch” of each series.

2-color indicator

Easily identifiable, proper operating range

● Mounting positions can be set easily.
Proper operating ranges can be set while watching the lights.

● Displacement of the detecting position can be visually checked.
Trouble caused by incorrect detection can be prevented beforehand.

Even if 2-color indicator solid state auto switches are fixed at the proper operating range (the green light lights up), the operation may become unstable depending on the installation environment or magnetic field disturbance. (Magnetic body, external magnetic field, proximal installation of cylinders with built-in magnet and actuators, temperature change, other factors for magnetic force fluctuation during operation, etc.)
### The diagnostic output signal can be detected in an unsteady detecting area.

<table>
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<tr>
<th>Function</th>
<th>Type</th>
<th>Auto switch mounting type</th>
<th>Electrical entry</th>
<th>Auto switch model</th>
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<td>D-F59F</td>
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</table>

### Water resistant (coolant) type

| Water resistant 2-color indicator auto switch | Solid state | Direct | Grommet | D-M9A | 465 |
| | | Band | Grommet | D-M9AV | |
| | | Rail | Grommet | D-Y7BA | 466 |
| | | Tie-rod | Grommet | D-H7BA | 467 |
| | | | | D-G5BA | 468 |
| | | | | D-F7BA | 469 |
| | | | | D-F7BAV | |
| | | | | D-F5BA | 470 |

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

| Auto switch with timer | Solid state | Band | Grommet | D-G5NT | 471 |
| | | Rail | Grommet | D-F7NT | 472 |
| | | Tie-rod | Grommet | D-F5NT | 473 |

* These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. For details, refer to "How to Mount and Move the Auto Switch" of each series.

** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. For details, refer to "How to Mount and Move the Auto Switch" of each series.
## Auto Switches Common Specifications

### Type
- **Reed auto switch**
  - Leakage current: None
  - Operating time: 1.2 ms
  - Impact resistance: 300 m/s²
  - Insulation resistance: 50 MΩ or more (500 VDC measured via megohmmeter) (Between lead wire and case)
  - Withstand voltage: 1500 VAC for 1 minute (Between lead wire and case)
  - Ambient temperature: −10 to 60°C
  - Enclosure: IEC60529 Standard IP67

- **Solid state auto switch**
  - Leakage current: 3-wire: 100 µA or less, 2-wire: 0.8 mA or less
  - Operating time: 1 ms or less
  - Impact resistance: 1000 m/s²
  - Insulation resistance: 500 VDC measured via megohmmeter) (Between lead wire and case)
  - Withstand voltage: 1000 VAC for 1 minute (Between lead wire and case)

### Lead Wire

#### Lead wire length indication

**D-M9BW**

<table>
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<th>Symbol</th>
<th>Lead wire length</th>
<th>Tolerance</th>
<th>Connector specifications</th>
<th>Solid state</th>
<th>Reed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>0.5 m</td>
<td>±15 mm</td>
<td>M8-3 pin</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>M</td>
<td>1 m</td>
<td>±30 mm</td>
<td>M8-4 pin</td>
<td>● (●)</td>
<td>● (●)</td>
</tr>
<tr>
<td>L</td>
<td>3 m</td>
<td>±90 mm</td>
<td>Plug connector</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Z</td>
<td>5 m</td>
<td>±150 mm</td>
<td>Plug connector</td>
<td>● (●)</td>
<td>● (●)</td>
</tr>
<tr>
<td>N (1)</td>
<td>None</td>
<td>–</td>
<td></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>SAPC</td>
<td>0.5 m</td>
<td>±15 mm</td>
<td>M12-4 pin A code (Normal key)</td>
<td>○</td>
<td>–</td>
</tr>
<tr>
<td>MAPC</td>
<td>1 m</td>
<td>±30 mm</td>
<td>Plug connector</td>
<td>○</td>
<td>–</td>
</tr>
<tr>
<td>SBPC</td>
<td>0.5 m</td>
<td>±30 mm</td>
<td>Plug connector</td>
<td>○</td>
<td>–</td>
</tr>
<tr>
<td>MBPC</td>
<td>1 m</td>
<td>±30 mm</td>
<td>Plug connector</td>
<td>○</td>
<td>–</td>
</tr>
<tr>
<td>SDPC</td>
<td>0.5 m</td>
<td>±15 mm</td>
<td>Plug connector</td>
<td>○</td>
<td>–</td>
</tr>
<tr>
<td>MDPC</td>
<td>1 m</td>
<td>±30 mm</td>
<td>Plug connector</td>
<td>○</td>
<td>–</td>
</tr>
<tr>
<td>LDPC</td>
<td>3 m</td>
<td>±90 mm</td>
<td></td>
<td>○</td>
<td>–</td>
</tr>
</tbody>
</table>

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

(1) Applicable to the connector type (D-M9BW) only.
(2) Applicable to the D-M9BW (V), D-M9BW (V), D-M9BW (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-P9D and D-M9BW (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.)

**Part No. of Lead Wires with Connectors (Applicable only for connector type)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Lead wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-LC05</td>
<td>0.5 m</td>
</tr>
<tr>
<td>D-LC30</td>
<td>3 m</td>
</tr>
<tr>
<td>D-LC50</td>
<td>5 m</td>
</tr>
</tbody>
</table>

**Refer to the Auto Switch Precautions on pages 217 to 221 before using auto switches.**
### Prior to Use

**Auto Switches Common Specifications 2**

---

Refer to the Auto Switch Precautions on pages 217 to 221 before using auto switches.

---

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysteresis</td>
<td><img src="image" alt="Hysteresis Diagram" /></td>
</tr>
<tr>
<td></td>
<td>A deviation amount between the ON position and OFF position caused by auto switch characteristics (difference in sensitivity between ON and OFF). When the switch is turned ON once and the switch (or piston) is moved in the opposite direction, a symptom occurs that the position where the switch turns OFF deviates to a position where it is further returned from the ON position. This deviation amount is called “hysteresis”. Note) Hysteresis may fluctuate due to the operating environment. Please contact SMC if hysteresis causes an operational problem.</td>
</tr>
<tr>
<td>Most sensitive position</td>
<td>A position (sensor layout position) where the sensitivity is highest on the detection surface of the auto switch enclosure. When the center of the magnet is aligned with this position, this becomes almost the center of the operating range and stable operation can be obtained.</td>
</tr>
<tr>
<td>Programmable Logic Controller (PLC)</td>
<td>One of the elements making up the sequence control. The PLC is so designed that it receives signals, such as auto switch output and outputs them to other devices so as to perform the electrical control according to the preset program.</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>A temperature range, in which the auto switch can be used. If significant temperature change or freezing occurs even in this temperature range, this may cause the auto switch to malfunction.</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>A voltage, at which the auto switch can be used. The operating voltage is indicated using generally used voltage (24 VDC or 100 VAC, etc.). For 2-wire type, the operating voltage has the same meaning as the power supply voltage or load voltage.</td>
</tr>
<tr>
<td>Operating current range</td>
<td>A range of the current value that can be flowed to the output of the auto switch. If the operating current is lower than this range, the auto switch does not operate correctly. Conversely, if the operating current is higher than this range, this may cause the auto switch to break.</td>
</tr>
<tr>
<td>Current consumption</td>
<td>This current value is necessary for the 3-wire type auto switch to operate the circuit through the power cable. For 2-wire type, as the current consumption is a part of the load current, it is not defined.</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>A resistance between the electric circuit and enclosure. Unless otherwise described particularly, 50 MΩ (Min) is used for auto switch.</td>
</tr>
<tr>
<td>Magnetic field resistant auto switch</td>
<td>An auto switch, for which measures against effects arising from external (welding) magnetic field generated in the spot welding process, etc. are taken. The solid state auto switch functions as it detects the frequency of the applied magnetic field. If the external magnetic field (AC) is applied, the last signal is retained not to be affected by the external magnetic field. This system can be used by the cylinder with normal magnetic force. The reed auto switch built-in a magnetic field shielded sensor with a low sensitivity to make the effect of the external magnetic field (DC or AC magnetic field) insusceptible. Therefore, a dedicated cylinder built-in the strong magnet needs to be selected and there is also an operable range (conditions).</td>
</tr>
<tr>
<td>Impact resistance value</td>
<td>A minimum acceleration that may cause the auto switch to malfunction or break when the standard impact is applied.</td>
</tr>
<tr>
<td>Water-resistant type auto switch</td>
<td>A model, long-term water resistance of which is improved by taking structural measures for the general (general purpose) product.</td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>A tolerance dose when the voltage is applied to the portion between the electrical circuit and enclosure. The withstand voltage shows a strength level of the product against the voltage. If a voltage exceeding the withstand voltage is applied, this may cause the product to break. (The voltage described here is different from the power supply voltage necessary to operate the product.)</td>
</tr>
<tr>
<td>Proper mounting position</td>
<td>A dimension that shows the mounting position when the position is detected at the stroke end of the cylinder. As this position is set, the maximum sensitivity position is aligned with the center of the magnet. However, make the adjustment with the actual machine by considering the characteristic difference during actual setting. When an adjustment allowance is needed for the detection before the stroke, set a value with an adjustment allowance added to the proper mounting position.</td>
</tr>
<tr>
<td>Applicable load</td>
<td>A device that is assumed as a target load of the auto switch.</td>
</tr>
<tr>
<td>Operating time</td>
<td>A period of time until the auto switch output becomes stable after the magnetic force to operate the auto switch has been received.</td>
</tr>
<tr>
<td>Operating range</td>
<td>An auto switch operating range in response to the cylinder piston movement (ON length in response to the stroke). The operating range is determined by the magnetic force of the magnet (range, in which the magnetic force acts) and switch sensitivity. So, the operating range may vary as these conditions are changed by the ambient environment, etc. The operating range in the standard status (normal temperature, single cylinder, magnetic force, and sensitivity, etc.) is described in the catalog.</td>
</tr>
</tbody>
</table>
Prior to Use
Auto Switches Common Specifications 3

Refer to the Auto Switch Precautions on pages 217 to 221 before using auto switches.

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Stroke for Auto Switch Mounting</td>
<td>A minimum stroke value of the auto switch that can be mounted on the cylinder. The minimum stroke is determined by the specification limit (auto switch operation or position setting ability, etc.) and physical limit (mechanical interference associated with the auto switch mounting). Note that the catalog shows the value assuming that the position detection is performed at the stroke end and this value does not consider the adjustment allowance. When an adjustment allowance is needed, such as detection before the stroke, a value is set that this adjustment allowance is added to the minimum stroke.</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>A voltage that is applied to the portion between the COM and signal line when the auto switch is ON. As only a value that the internal voltage drop is subtracted from the power supply voltage is applied to the input side of the PLC, the detection fault (incorrect input) may occur if this value is lower than the minimum operating voltage. So, take great care when selecting a device.</td>
</tr>
<tr>
<td>2-Color Indicator</td>
<td>As the end part of the auto switch operating range (boundary between ON and OFF) is an area where is susceptible to the external disturbance or stroke change during cylinder operation, this function is intended to quickly and properly make the setting at the center of the operating range where the stable operation can be obtained by changing the operation indication color of the auto switch.</td>
</tr>
<tr>
<td>Load</td>
<td>A device that is connected to the output of the auto switch so as to do any work is called “load”. For example, the load is a relay or PLC, etc. To check the operation of the auto switch, a device equivalent to the load (such as resistor, etc.) is connected.</td>
</tr>
<tr>
<td>Load current</td>
<td>A current that flows to the load when the ON-OFF output is ON.</td>
</tr>
<tr>
<td>Enclosure</td>
<td>A class of protection against solid or water entry of the electrical machinery and apparatus specified in IEC60529.</td>
</tr>
<tr>
<td>IP [ ]</td>
<td>First characteristic numeral [ Second characteristic numeral ]</td>
</tr>
<tr>
<td>●First Characteristics:</td>
<td>Degrees of protection against solid foreign objects</td>
</tr>
<tr>
<td>0</td>
<td>Non-protected</td>
</tr>
<tr>
<td>1</td>
<td>Protected against solid foreign objects of 50 mm ø and greater</td>
</tr>
<tr>
<td>2</td>
<td>Protected against solid foreign objects of 12 mm ø and greater</td>
</tr>
<tr>
<td>3</td>
<td>Protected against solid foreign objects of 2.5 mm ø and greater</td>
</tr>
<tr>
<td>4</td>
<td>Protected against solid foreign objects of 1.0 mm ø and greater</td>
</tr>
<tr>
<td>5</td>
<td>Dust-protected</td>
</tr>
<tr>
<td>6</td>
<td>Dusttight</td>
</tr>
<tr>
<td>●Second Characteristics:</td>
<td>Degrees of protection against water</td>
</tr>
<tr>
<td>0</td>
<td>Non-protected</td>
</tr>
<tr>
<td>1</td>
<td>Protected against vertically falling water drops</td>
</tr>
<tr>
<td>2</td>
<td>Protected against vertically falling water drops when enclosure tilted up to 15°</td>
</tr>
<tr>
<td>3</td>
<td>Protected against rainfall when enclosure tilted up to 60°</td>
</tr>
<tr>
<td>4</td>
<td>Protected against splashing water</td>
</tr>
<tr>
<td>5</td>
<td>Protected against water jets</td>
</tr>
<tr>
<td>6</td>
<td>Protected against powerful water jets</td>
</tr>
<tr>
<td>7</td>
<td>Protected against the effects of temporary immersion in water</td>
</tr>
<tr>
<td>8</td>
<td>Protected against the effects of continuous immersion in water</td>
</tr>
<tr>
<td>Solid state auto switch</td>
<td>A switch that detects the magnetic field by the MR element and incorporates the judgement circuit to turn ON or OFF the output regardless of the contact or non-contact of the mechanical contact like transistor (non-contact part).</td>
</tr>
<tr>
<td>Leak current</td>
<td>A current that flows to operate the internal circuit when the ON-OFF output is OFF. In particular, if this leak current exceeds the detection current in the 2-wire type auto switch or PLC, this may cause reset fault. So, take great care when selecting a device.</td>
</tr>
<tr>
<td>Reed auto switch</td>
<td>A switch that uses the reed switch to detect the magnetic field and turn ON or OFF the output by the contact or non-contact of the mechanical contact (contact part is provided like relay or limit switch).</td>
</tr>
<tr>
<td>Induction load</td>
<td>A load that has the coil. The connection target of the auto switch is a relay.</td>
</tr>
<tr>
<td>Recommended lead wire bending radius</td>
<td>A minimum bending radius (reference value) of the lead wire when the lead wire is secured and constructed (oscillation or rotation is not considered). (As the temperature or current value conforms to the auto switch specifications, this lead wire bending radius differs from the value disclosed by the electric wire manufacturer.)</td>
</tr>
</tbody>
</table>
| Electrical entry                               | A structure, in which the lead wire of the auto switch is taken out in the horizontal direction when the cylinder is laid out horizontally (cylinder rod is horizontal), is called “in-line entry”. A structure, in which the lead wire is taken out in a direction perpendicular to the cylinder axis center, is called “perpendicular entry”.

Example) In the case of stipulated as IP65, we can know the degrees of protection is dusttight and water jet-proof on the grounds that the first characteristic numeral is 6 and the second characteristic numeral is 5 respectively, that gives it will not be adversely affected by direct water jets from any direction.
Prior to Use
Auto Switches/Internal Circuit

Solid State Auto Switches

Solid state 3-wire, NPN

Solid state 3-wire, PNP

2-wire (Solid state)

(Power supply for switch and load are separate)

Reed Auto Switches

<table>
<thead>
<tr>
<th>No.</th>
<th>Circuit diagram</th>
<th>2-wire (Reed switch)</th>
<th>2-wire (Reed switch)</th>
<th>2-wire (Reed switch)</th>
<th>2-wire (Reed switch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indicator circuit Brown(+) Blue(-)</td>
<td>Indicator circuit Brown(+) Blue(-)</td>
<td>Indicator circuit Brown(+) Blue(-)</td>
<td>Indicator circuit Brown(+) Blue(-)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3-wire (Reed switch, NPN) Brown(+) Blue(-)</td>
<td>3-wire (Reed switch, NPN) Brown(+) Blue(-)</td>
<td>3-wire (Reed switch, NPN) Brown(+) Blue(-)</td>
<td>3-wire (Reed switch, NPN) Brown(+) Blue(-)</td>
<td></td>
</tr>
</tbody>
</table>

Contact Protection Box/CD-P11, CD-P12

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

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

Therefore, use a contact protection box with the switch for any of the above cases:
The contact life may be shortened (due to permanent energizing conditions.)
D-A72(H) must be used with the contact protection box regardless of load types and lead wire length since it is greatly affected by loads.
(Where the load voltage is 110 VAC)

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

Even for the built-in contact protection circuit type (D-A34/A][C], DA44(A][C], D-A54/A64, D-A59W, D-B59W), use the contact protection box when the wiring length to load is very long (over 30 m) and PLC (Programmable Logic Controller) with a large inrush current is used.

Contact Protection Box Connection

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

**Sink Input Specifications**

<table>
<thead>
<tr>
<th>Type</th>
<th>Connections</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-wire, NPN</td>
<td>OR connection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AND connection</td>
<td></td>
</tr>
<tr>
<td>2-wire</td>
<td>OR connection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AND connection</td>
<td></td>
</tr>
</tbody>
</table>

**Source Input Specifications**

<table>
<thead>
<tr>
<th>Type</th>
<th>Connections</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-wire, PNP</td>
<td>OR connection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AND connection</td>
<td></td>
</tr>
<tr>
<td>2-wire</td>
<td>OR connection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AND connection</td>
<td></td>
</tr>
</tbody>
</table>

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

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

- **3-wire AND connection for NPN output**
  - Using relays
  - When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the auto switches are in the ON state. Auto switches with load voltage less than 20V cannot be used.
- **2-wire AND connection**
  - When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the auto switches are in the ON state. Auto switches with load voltage less than 20V cannot be used.
  - Load voltage at ON = Power supply voltage - Residual voltage x 2 pcs.
  - Example: Power supply is 24 VDC
  - Internal voltage drop in auto switch is 4 V.

- **3-wire OR connection for NPN output**
  - (Performed with auto switches only)
  - Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.
  - Example: Load impedance is 3 kΩ.

- **3-wire OR connection for PNP output**
  - (Performed with auto switches only)
  - Example: Load impedance is 3 kΩ.

- **2-wire OR connection**
  - (Solid state)
  - When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.
  - Load voltage at OFF = Leakage current x 2 pcs. x Load impedance
  - Example: Leakage current from auto switch is 1 mA.
## Solid State Auto Switch Variations

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
<th>Auto switch mounting type</th>
<th>Electrical entry</th>
<th>Auto switch model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Direct</td>
<td>Grommet</td>
<td>D-M9N/M9P/M9B</td>
<td>442</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Band</td>
<td>Grommet</td>
<td>D-M9NV/M9PV/M9BV</td>
<td>443</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rail</td>
<td>Connector</td>
<td>D-F9G/F9H (Normally closed)</td>
<td>444</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tie-rod</td>
<td>Terminal conduit</td>
<td>D-Y59A/Y59B/Y7P</td>
<td>445</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-Y69A/Y69B/Y7PV</td>
<td>446</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-Y7G/Y7H (Normally closed)</td>
<td>447</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-H7A1/H7A2/H7B</td>
<td>448</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-G59/G5P/K59</td>
<td>449</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-G39/K39</td>
<td>450</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-F79/F7PJ79</td>
<td>451</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-F7NV/F7PV/F7BV</td>
<td>452</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-J79C</td>
<td>453</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-F59/F5P/J59</td>
<td>454</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-M9NW/M9PW/M9BW</td>
<td>455</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-M9NWV/M9PWV/M9BWV</td>
<td>456</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-Y7NW/Y7PW/Y7BW</td>
<td>457</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-Y7NWV/Y7PWV/Y7BWV</td>
<td>458</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>D-H7NW/H7PW/H7BW</td>
<td>459</td>
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<tr>
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<td></td>
<td></td>
<td>D-G59/G5P/K59</td>
<td>460</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-F79/F7PW/J79W</td>
<td>461</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-F7NV/F7PWV/F7BWV</td>
<td>462</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-F59W/F5PW/J59W</td>
<td>463</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-H7NA/M9PA/M9BA</td>
<td>464</td>
</tr>
<tr>
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<td>D-M9NAV/M9PAV/M9BAV</td>
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<td></td>
<td>D-Y7BA</td>
<td>466</td>
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<td>D-H7BA</td>
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<td>D-G5BA</td>
<td>468</td>
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<td>D-F7BA</td>
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<td>D-F7BAV</td>
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<td>D-F5BA</td>
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<td>D-GSNT</td>
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<td>D-F7NT</td>
<td>473</td>
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<td>D-F5NT</td>
<td>474</td>
</tr>
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</table>
Precautions

Caution

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.

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

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-M9N</th>
<th>D-M9P(V)</th>
<th>D-M9B(V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Insulator Number of cores</td>
<td>3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
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</tr>
<tr>
<td>Outside diameter (mm)</td>
<td>0.88</td>
<td>0.88</td>
<td>0.88</td>
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<tr>
<td>Conductors Effective area (mm²)</td>
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<td>0.15</td>
<td>0.15</td>
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<tr>
<td>Strand diameter (mm)</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
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<tr>
<td>Minimum bending radius (mm) (Reference value)</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 438 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-M9N</th>
<th>D-M9P(V)</th>
<th>D-M9B(V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (N)</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1 m (M)</td>
<td>14</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>41</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>68</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

D-M9N

- Mounting screw M2.5 x 4L
- Slotted set screw (Flat point)
- Indicator light
- 2.6
- Most sensitive position

D-M9P(V)

- Mounting screw M2.5 x 4L
- Indicator light
- 2.6
- Most sensitive position
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

<table>
<thead>
<tr>
<th>D-F9G, D-F9H (With indicator light)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
</tr>
<tr>
<td>Wiring type</td>
</tr>
<tr>
<td>Output type</td>
</tr>
<tr>
<td>Applicable load</td>
</tr>
<tr>
<td>Power supply voltage</td>
</tr>
<tr>
<td>Current consumption</td>
</tr>
<tr>
<td>Load voltage</td>
</tr>
<tr>
<td>Load current</td>
</tr>
<tr>
<td>Internal voltage drop</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
</tr>
<tr>
<td>Indicator light</td>
</tr>
<tr>
<td>Standard</td>
</tr>
</tbody>
</table>

### Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F9G</th>
<th>D-F9H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø2.7</td>
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<tr>
<td>Insulator</td>
<td>ø0.91</td>
<td></td>
</tr>
<tr>
<td>conductor</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ø0.08</td>
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</tr>
<tr>
<td>Minimum bending radius (mm) (Reference value)</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

## Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F9G</th>
<th>D-F9H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>61</td>
<td></td>
</tr>
</tbody>
</table>

## Dimensions (mm)

- Most sensitive position
- Slotted set screw
- Indicator light

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Related Products

- CHQ
- CHK
- CHN
- CHM
- CHS
- CH2
- CHA

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- PLC: Programmable Logic Controller
- CE marking, RoHS

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Refer to SMC website for the details of the products conforming to the international standards.
Solid State Auto Switch
Direct Mounting Type

Auto Switch Specifications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Electrical entry direction</td>
<td>In-line</td>
<td>In-line</td>
<td>Perpendicular</td>
<td>In-line</td>
<td>Perpendicular</td>
<td>Perpendicular</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC relay, PLC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td>24 VDC (10 to 28 VDC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less</td>
<td>0.8 V or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less</td>
<td>0.8 mA or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
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</table>

Oilproof Flexible Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Y59A</th>
<th>D-Y7P</th>
<th>D-Y69B</th>
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</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø3.4</td>
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<tr>
<td>Insulator</td>
<td>Number of cores</td>
<td>3 cores (Brown/Blue/Black)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside diameter [mm]</td>
<td>ø1.0</td>
<td></td>
</tr>
<tr>
<td>Conductor</td>
<td>Effective area [mm²]</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strand diameter [mm]</td>
<td>ø0.05</td>
<td></td>
</tr>
<tr>
<td>Minimum bending radius [mm] (Reference values)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (Nil)</td>
<td>10</td>
<td>9</td>
<td>3 m (L)</td>
<td>53</td>
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</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>M2.5 x 4 L Slotted set screw</td>
<td>M2.5 x 4 L Slotted set screw</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Indicator light</td>
</tr>
<tr>
<td>Most sensitive position</td>
<td>Most sensitive position</td>
</tr>
</tbody>
</table>
Normally Closed Solid State Auto Switch
Direct Mounting Type
D-Y7G/D-Y7H

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Y7G</th>
<th>D-Y7H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
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</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>—</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less</td>
<td>0.8 V or less</td>
</tr>
<tr>
<td>(0.8 V or less at 10 mA load current)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when detecting nothing.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Flexible Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Y7G</th>
<th>D-Y7H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>87</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions (mm)

- M2.5 x 4 L Slot set screw
- Indicator light
- D-Y7G
- ø3.4
- 12.5
- Most sensitive position

Grommet

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

Refer to SMC website for the details of the products conforming to the international standards.
Solid State Auto Switch
Band Mounting Type

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-H7□ (With indicator light)</th>
<th>D-H7A1</th>
<th>D-H7A2</th>
<th>D-H7B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>—</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA load current)</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
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</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-H7A1</th>
<th>D-H7A2</th>
<th>D-H7B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (N)</td>
<td>13</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>57</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>92</td>
<td>81</td>
<td></td>
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</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>29</td>
</tr>
<tr>
<td>4.6</td>
</tr>
<tr>
<td>ø3.5</td>
</tr>
</tbody>
</table>

Indicator light

ø3.5 mounting hole

Most sensitive position
Solid State Auto Switch Band Mounting Type
D-G59/D-G5P/D-K59

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-G59, D-K59 (With indicator light)</th>
<th>D-G59</th>
<th>D-G5P</th>
<th>D-K59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td></td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td>(0.8 V or less at 10 mA load current)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G59</th>
<th>D-G5P</th>
<th>D-K59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (NII)</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>78</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>124</td>
<td>108</td>
</tr>
</tbody>
</table>

Dimensions

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

PLC: Programmable Logic Controller

RoHS

Related Products

CHA -

D-
## Solid State Auto Switch
### Band Mounting Type
#### D-H7C

## Auto Switch Specifications

### D-H7C (With indicator light)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-H7C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring type</td>
<td>2-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>24 VDC Relay, PLC</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>0.8 mA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking (EMC directive/RoHS directive)</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.  
Note 2) Refer to page 436 for lead wire lengths.  
Note 3) Lead wires with a connector may be shipped with switches.

### Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-H7C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>15</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>54</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>85</td>
</tr>
</tbody>
</table>

### Dimensions

![Diagram showing dimensions](image)

---

**Caution**

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

---

**Precautions**

- **Weight** (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-H7C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>15</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>54</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>85</td>
</tr>
</tbody>
</table>

**Dimensions** (mm)

![Diagram showing dimensions](image)
## Solid State Auto Switch Band Mounting Type
### D-G39/D-K39

**Auto Switch Specifications**

<table>
<thead>
<tr>
<th>D-G39, D-K39 (With indicator light)</th>
<th>PLC: Programmable Logic Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-G39, D-K39</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire, 2-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA of load current)</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 μA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Note) Refer to page 436 for solid state auto switch common specifications.

---

**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.

---

**Weight** (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G39</th>
<th>D-K39</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire</td>
<td>None</td>
<td>116</td>
</tr>
</tbody>
</table>

**Dimensions** (mm)

- **Manufacturer**
  - Terminal conduit

---

**Related Products**

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

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-F79, D-J79 (With indicator light)</th>
<th>D-F79</th>
<th>D-F7P</th>
<th>D-J79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
</tr>
<tr>
<td>Wiring type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td></td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA load current)</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F79</th>
<th>D-F7P</th>
<th>D-J79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø3.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of cores</td>
<td>3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
<td></td>
</tr>
<tr>
<td>Outside diameter</td>
<td>ø1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conductors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective area</td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strand diameter</td>
<td>ø0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum bending radius (mm) (Reference value)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F79</th>
<th>D-F7P</th>
<th>D-J79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>13</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>57</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>92</td>
<td>81</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator light</td>
<td>ø3.2 mounting hole</td>
</tr>
<tr>
<td>Most sensitive position</td>
<td>ø3.4</td>
</tr>
<tr>
<td>ø3.2</td>
<td>ø3.4</td>
</tr>
<tr>
<td>15</td>
<td>8.5</td>
</tr>
<tr>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>23</td>
<td>17</td>
</tr>
</tbody>
</table>
Auto Switch Specifications

D-F7□V (With indicator light)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7NV</th>
<th>D-F7PV</th>
<th>D-F7BV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td>24 VDC (10 to 28 VDC)</td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td></td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA load current)</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7NV</th>
<th>D-F7PV</th>
<th>D-F7BV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø3.4</td>
<td>ø1.1</td>
<td>ø0.08</td>
</tr>
<tr>
<td>Insulator</td>
<td>3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
<td></td>
</tr>
<tr>
<td>Outside diameter</td>
<td></td>
<td>ø1.1</td>
<td>ø0.08</td>
</tr>
<tr>
<td>Number of cores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside diameter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strand diameter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum bending radius (Reference values)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum bending radius (Reference values)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7NV</th>
<th>D-F7PV</th>
<th>D-F7BV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>13</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>57</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>92</td>
<td>81</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

Refer to SMC website for the details of the products conforming to the international standards.
Solid State Auto Switch Rail Mounting Type
D-J79C

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-J79C (With indicator light)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
</tr>
<tr>
<td>Wiring type</td>
</tr>
<tr>
<td>Output type</td>
</tr>
<tr>
<td>Applicable load</td>
</tr>
<tr>
<td>Power supply voltage</td>
</tr>
<tr>
<td>Current consumption</td>
</tr>
<tr>
<td>Load voltage</td>
</tr>
<tr>
<td>Load current</td>
</tr>
<tr>
<td>Internal voltage drop</td>
</tr>
<tr>
<td>Leakage current</td>
</tr>
<tr>
<td>Indicator light</td>
</tr>
<tr>
<td>Standard</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with auto switches.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-J79C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>13</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>52</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>83</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Lead wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-LC05</td>
<td>0.5 m</td>
</tr>
<tr>
<td>D-LC30</td>
<td>3 m</td>
</tr>
<tr>
<td>D-LC50</td>
<td>5 m</td>
</tr>
</tbody>
</table>

Caution

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

Precautions

Part No. of Lead Wires with Connectors (Applicable only for connector type)

<table>
<thead>
<tr>
<th>Model</th>
<th>Lead wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-LC05</td>
<td>0.5 m</td>
</tr>
<tr>
<td>D-LC30</td>
<td>3 m</td>
</tr>
<tr>
<td>D-LC50</td>
<td>5 m</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with auto switches.
Solid State Auto Switch
Tie-rod Mounting Type
D-F59/D-F5P/D-J59

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F59</th>
<th>D-F5P</th>
<th>D-J59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA load current)</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 μA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F59</th>
<th>D-F5P</th>
<th>D-J59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulator</td>
<td>Number of cores</td>
<td>3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
</tr>
<tr>
<td></td>
<td>Outside diameter [mm]</td>
<td>ø1.22</td>
<td></td>
</tr>
<tr>
<td>Conductor</td>
<td>Effective area [mm²]</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strand diameter [mm]</td>
<td>ø0.08</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minimum bending radius [mm] (Reference values)</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F59</th>
<th>D-F5P</th>
<th>D-J59</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>23</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>81</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>127</td>
<td>111</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions (mm)

D-F59/D-F5P/D-J59
2-Color Indicator Solid State Auto Switch Direct Mounting Type
D-M9NW(V)/D-M9PW(V)/D-M9BW(V)  
RoHS

**Auto Switch Specifications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical entry direction</td>
<td>In-line</td>
<td>Perpendicular</td>
<td>In-line</td>
<td>Perpendicular</td>
<td>In-line</td>
<td>Perpendicular</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td>2-wire</td>
<td>2-wire</td>
<td>2-wire</td>
<td>2-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>NPN</td>
<td>PNP</td>
<td>PNP</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>5, 12, 24 VDC, 24 VDC relay, PLC</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 V)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>—</td>
<td>24 VDC (10 to 28 VDC)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>—</td>
<td>2.5 to 40 mA</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>0.8 V or less at 10 mA (2 V or less at 40 mA)</td>
<td>—</td>
<td>4 V or less</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td>—</td>
<td>0.8 mA or less</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range .......... Red LED illuminates.</td>
<td>Proper operating range .......... Green LED illuminates.</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**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.

**Oilproof Flexible Heavy-duty Lead Wire Specifications**

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-M9NW(V)</th>
<th>D-M9PW(V)</th>
<th>D-M9BW(V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Insulator</td>
<td>Number of cores 3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Outside diameter [mm] 0.88</td>
<td>0.15</td>
<td>—</td>
</tr>
<tr>
<td>Conductor</td>
<td>Effective area [mm²] 0.05</td>
<td>0.05</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Strand diameter [mm] 0.05</td>
<td>0.05</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Minimum bending radius [mm (Reference values)] 17</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Weight**

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-M9NW(V)</th>
<th>D-M9PW(V)</th>
<th>D-M9BW(V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 m (NII)</td>
<td>8</td>
<td>7</td>
<td>—</td>
</tr>
<tr>
<td>1 m (M)</td>
<td>14</td>
<td>13</td>
<td>—</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>41</td>
<td>38</td>
<td>—</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>68</td>
<td>63</td>
<td>—</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>D-M9NW</th>
<th>D-M9NWV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 2-wire load current is reduced (2.5 to 40 mA).
- Using flexible cable as standard spec.
- The proper operating range can be determined by the color of the light. (Red → Green ← Red)
2-Color Indicator Solid State Auto Switch Direct Mounting Type
D-Y7NW(V)/D-Y7PW(V)/D-Y7BW(V)

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Y7NW</th>
<th>D-Y7NWV</th>
<th>D-Y7PW</th>
<th>D-Y7PWV</th>
<th>D-Y7BW</th>
<th>D-Y7BWV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical entry direction</td>
<td>In-line</td>
<td>Perpendicular</td>
<td>In-line</td>
<td>Perpendicular</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC relay, PLC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>24 VDC (10 to 28 VDC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>2.5 to 40 mA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 μA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range —— Red LED illuminates. Proper operating range —— Green LED illuminates.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Flexible Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Y7NW(V)</th>
<th>D-Y7PW(V)</th>
<th>D-Y7BW(V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (Nil)</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>88</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions (mm)

D-Y7□W

- M2.5 x 4 L Slotted set screw
- Indicator light
- 2.5
- ø3.4
- 29
- 2.5
- Most sensitive position

D-Y7□WV

- M2.5 x 4 L Slotted set screw
- Indicator light
- 2.5
- ø3.4
- 27.3
- 6.2
- 12.5
- Most sensitive position

Grommet

- The proper operating range can be determined by the color of the light. (Red → Green ← Red)
- Using flexible cable as standard spec.
2-Color Indicator Solid State Auto Switch Band Mounting Type
D-H7NW/D-H7PW/D-H7BW

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-H7□W (With indicator light)</th>
<th>D-H7NW</th>
<th>D-H7PW</th>
<th>D-H7BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-H7NW</td>
<td>D-H7PW</td>
<td>D-H7BW</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>NPN</td>
<td>PNP</td>
</tr>
<tr>
<td>Output type</td>
<td>2-wire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td></td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td>(0.8 V or less at 10 mA load current)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range .......... Red LED illuminates.</td>
<td>Proper operating range .......... Green LED illuminates.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>D-H7□W (With indicator light)</th>
<th>D-H7NW</th>
<th>D-H7PW</th>
<th>D-H7BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-H7NW</td>
<td>D-H7PW</td>
<td>D-H7BW</td>
</tr>
<tr>
<td>Sheath</td>
<td>ø3.4</td>
<td>ø1.1</td>
<td>ø0.08</td>
</tr>
<tr>
<td>Outside diameter [mm]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of cores</td>
<td>3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
<td></td>
</tr>
<tr>
<td>Insulator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside diameter [mm]</td>
<td>ø1.1</td>
<td>ø1.1</td>
<td>ø1.1</td>
</tr>
<tr>
<td>Conductor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective area [mm²]</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Strand diameter [mm]</td>
<td>ø0.08</td>
<td>ø0.08</td>
<td>ø0.08</td>
</tr>
<tr>
<td>Minimum bending radius [mm] (Reference Values)</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>D-H7□W (With indicator light)</th>
<th>D-H7NW</th>
<th>D-H7PW</th>
<th>D-H7BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-H7NW</td>
<td>D-H7PW</td>
<td>D-H7BW</td>
</tr>
<tr>
<td>0.5 m (N)</td>
<td>13</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>57</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>92</td>
<td>81</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>D-H7□W (With indicator light)</th>
<th>D-H7NW</th>
<th>D-H7PW</th>
<th>D-H7BW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-H7NW</td>
<td>D-H7PW</td>
<td>D-H7BW</td>
</tr>
<tr>
<td>0.5 m (N)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Grommet

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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto switch model</strong></td>
<td>D-G59W</td>
<td>D-G5PW</td>
<td>D-K59W</td>
</tr>
<tr>
<td><strong>Wiring type</strong></td>
<td>3-wire</td>
<td>2-wire</td>
<td>—</td>
</tr>
<tr>
<td><strong>Output type</strong></td>
<td>NPN</td>
<td>PNP</td>
<td>—</td>
</tr>
<tr>
<td><strong>Applicable load</strong></td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td>—</td>
</tr>
<tr>
<td><strong>Power supply voltage</strong></td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Current consumption</strong></td>
<td>10 mA or less</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Load voltage</strong></td>
<td>28 VDC or less</td>
<td>—</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td><strong>Load current</strong></td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td><strong>Internal voltage drop</strong></td>
<td>1.5 V or less (0.9 V or less at 10 mA load current)</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td><strong>Leakage current</strong></td>
<td>100 µA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td><strong>Indicator light</strong></td>
<td>Operating range ———— Red LED illuminates.</td>
<td>Proper operating range ———— Green LED illuminates.</td>
<td></td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G59W</th>
<th>D-G5PW</th>
<th>D-K59W</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sheath</strong></td>
<td>Ø4</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Insulator</strong></td>
<td>Number of cores: 3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
<td></td>
</tr>
<tr>
<td><strong>Conductor</strong></td>
<td>Outside diameter [mm]: Ø1.22</td>
<td>Effective area [mm²]: 0.3</td>
<td>Strand diameter [mm]: Ø0.08</td>
</tr>
<tr>
<td><strong>Minimum bending radius</strong> [mm] (Reference values)</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.

Note 2) Refer to page 436 for lead wire lengths.

### Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G59W</th>
<th>D-G5PW</th>
<th>D-K59W</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead wire length</strong></td>
<td>0.5 m (Nil)</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>78</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>124</td>
<td>108</td>
</tr>
</tbody>
</table>

### Dimensions

![Dimensions Diagram]
Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F79W</th>
<th>D-F7PW</th>
<th>D-J79W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 to 40 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.8 V or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.8 V or less at 10 mA load current)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range ——— Red LED illuminates.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proper operating range ——— Green LED illuminates.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F79W</th>
<th>D-F7PW</th>
<th>D-J79W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (Nil)</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>92</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

---

458
2-Color Indicator Solid State Auto Switch
Rail Mounting Type

D-F7NWV/D-F7BWV

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-F7NWV (With indicator light)</th>
<th>D-F7BWV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-F7NWV</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA load current)</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range —— Red LED illuminates. Proper operating range —— Green LED illuminates.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7NWV</th>
<th>D-F7BWV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (NII)</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>92</td>
</tr>
</tbody>
</table>

Dimensions (mm)

---

Grommet
Electrical entry: Perpendicular

The proper operating range can be determined by the color of the light. 
(Red → Green ← Red)
2-Color Indicator Solid State Auto Switch
Tie-rod Mounting Type
D-F59W/D-F5PW/D-J59W

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F59W</th>
<th>D-F5PW</th>
<th>D-J59W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>—</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>80 mA or less</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.3 V or less at 10 mA load current)</td>
<td>0.8 V or less</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 μA or less at 24 VDC</td>
<td>0.8 mA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range .......... Red LED illuminates.</td>
<td>Proper operating range .......... Green LED illuminates.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 438 for lead wire lengths.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F59W</th>
<th>D-F5PW</th>
<th>D-J59W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (N)</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>81</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>127</td>
<td>111</td>
</tr>
</tbody>
</table>

Dimensions (mm)

Grommet
The proper operating range can be determined by the color of the light.
(Red → Green ← Red)
2-Color Indicator with Diagnostic Output
Solid State Auto Switch: Band Mounting Type
D-H7NF

Auto Switch Specifications

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

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-H7NF</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 m (Nil)</td>
<td>13</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>56</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>90</td>
</tr>
</tbody>
</table>

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)

---

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).

---

CHQ
CHK
CHN
CHM
CHS
CH2
CHA
Related Products
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

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

### Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

### Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G59F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 m (Nil)</td>
<td>20</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>74</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>117</td>
</tr>
</tbody>
</table>

### 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

- Indicator light: 33 mm x 11.2 mm
- ø4.5 mounting hole: 14.3 mm x 6.5 mm
- Most sensitive position: 14 mm
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.
2-Color Indicator with Diagnostic Output
Solid State Auto Switch: Tie-rod Mounting Type
D-F59F

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Auto switch model</th>
<th>Wiring type</th>
<th>Output type</th>
<th>Diagnostic output</th>
<th>Applicable load</th>
<th>Power supply voltage</th>
<th>Current consumption</th>
<th>Load voltage</th>
<th>Load current</th>
<th>Internal voltage drop</th>
<th>Leakage current</th>
<th>Indicator light</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-F59F</td>
<td></td>
<td>4-wire</td>
<td>NPN</td>
<td>Normal operation</td>
<td>IC circuit, Relay, PLC</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td>10 mA or less</td>
<td>28 VDC or less</td>
<td>50 mA or less</td>
<td>1.5 V or less (0.8 V or less at 5 mA)</td>
<td>100 μA or less at 28 VDC</td>
<td>Operating range .......... Red LED illuminates. Proper operating range .......... Green LED illuminates.</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>Lead wire length</th>
<th>D-F59F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.5 m (NII)</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>121</td>
</tr>
</tbody>
</table>

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

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).

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Operating range .......... Red LED illuminates. Proper operating range .......... Green LED illuminates.
Water Resistant 2-Color Indicator
Solid State Auto Switch: Direct Mounting Type
D-M9NA(V)/D-M9PA(V)/D-M9BA(V)

Grommet
- Water (cooler) 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.

![Grommet Image]

**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.

**Weight**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m</td>
<td>1 m</td>
<td>3 m</td>
<td>5 m</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>(Nil)</td>
<td>(M)</td>
<td>(L)</td>
<td>(Z)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (g)</td>
<td>7</td>
<td>13</td>
<td>38</td>
<td>63</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions**

**D-M9NA**

- Mounting screw M2.5 x 4 L Stainless steel
- Slotted set screw (flat point)
- Indicator light

**D-M9NAV**

- Mounting screw M2.5 x 4 L Stainless steel
- Slotted set screw (flat point)
- Indicator light

---

**Auto Switch Specifications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical entry direction</td>
<td>In-line</td>
<td>Perpendicular</td>
<td>In-line</td>
<td>Perpendicular</td>
<td>In-line</td>
<td>Perpendicular</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
<td>2-wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
<td>PNP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>24 VDC relay, PLC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 V)</td>
<td>24 VDC (10 to 28 V)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td>40 mA or less</td>
<td>2.5 to 40 mA</td>
<td>4 V or less</td>
<td>4 V or less</td>
<td>0.8 mA or less</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td>2.5 to 40 mA</td>
<td>4 V or less</td>
<td>0.8 mA or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>0.8 V or less at 10 mA (2 V or less at 40 mA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
<td>0.8 mA or less</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Oilproof Flexible Heavy-duty Lead Wire Specifications**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>2.6</td>
<td>2.6</td>
<td>0.88</td>
<td>0.15</td>
<td>0.05</td>
<td>17</td>
</tr>
<tr>
<td>Insulator</td>
<td>3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of cores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulator diameter [mm]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of cores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulator diameter [mm]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective area [mm²]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conductor</td>
<td>0.15</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective area [mm²]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stand diameter [mm]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum bending radius [mm]</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.

**Lighting Precautions**

- Operating range: Red LED illuminates.
- Proper operating range: Green LED illuminates.

**Standard**

- CE marking (EMC directive/RoHS directive)

---

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.
Grommet

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

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-Y7BA (With indicator light)</th>
<th>D-Y7BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-Y7BA</td>
</tr>
<tr>
<td>Wiring type</td>
<td>2-wire</td>
</tr>
<tr>
<td>Applicable load</td>
<td>24 VDC Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>2.5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>0.8 mA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range .......... Red LED illuminates. Proper operating range .......... Green LED illuminates.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Flexible Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Y7BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø3.4</td>
</tr>
<tr>
<td>Insulator</td>
<td>2 cores (Brown/Blue)</td>
</tr>
<tr>
<td>Diameter [mm]</td>
<td>ø1</td>
</tr>
<tr>
<td>Effective area [mm²]</td>
<td>0.15</td>
</tr>
<tr>
<td>Strand diameter [mm]</td>
<td>ø0.05</td>
</tr>
<tr>
<td>Minimum bending radius [mm] (Reference values)</td>
<td>21</td>
</tr>
</tbody>
</table>

Caution

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.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Y7BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>54</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>88</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>M2.5 x 4 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slotted set screw</td>
</tr>
<tr>
<td>Indicator light</td>
</tr>
<tr>
<td>2.5</td>
</tr>
<tr>
<td>35</td>
</tr>
<tr>
<td>Production lot</td>
</tr>
<tr>
<td>12.5 Most sensitive position</td>
</tr>
</tbody>
</table>
Water Resistant 2-Color Indicator
Solid State Auto Switch: Band Mounting Type
D-H7BA

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-H7BA (With indicator light)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-H7BA</td>
</tr>
<tr>
<td>Wiring type</td>
<td>2-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>24 VDC Relay, PLC</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>0.8 mA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range .......... Red LED illuminates. Proper operating range .......... Green LED illuminates.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-H7BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>50</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>81</td>
</tr>
</tbody>
</table>

Dimensions

- Indicator light
- ø3.5 mounting hole
- Most sensitive position

Caution

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

Precautions

Please consult with SMC if using coolant liquid other than water based solution.
Water Resistant 2-Color Indicator
Solid State Auto Switch: Band Mounting Type
D-G5BA

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G5BA (With indicator light)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiring type</td>
<td>2-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Load current</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>0.8 mA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range .............. Red LED illuminates. Proper operating range ......... Green LED illuminates.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G5BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>3 m (L) 68</td>
</tr>
<tr>
<td></td>
<td>5 m (Z) 108</td>
</tr>
</tbody>
</table>

Dimensions

![Diagram of the auto switch model D-G5BA showing dimensions and indicators.]

Caution

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

Precautions

Please consult with SMC if using coolant liquid other than water based solution.
Water Resistant 2-Color Indicator
Solid State Auto Switch: Rail Mounting Type
D-F7BA(V)

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-F7BA(V) (With indicator light)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-F7BA</td>
<td>D-F7BAV</td>
</tr>
<tr>
<td>Electrical entry direction</td>
<td>In-line</td>
<td>Perpendicular</td>
</tr>
<tr>
<td>Wiring type</td>
<td>2-wire</td>
<td>—</td>
</tr>
<tr>
<td>Output type</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>24 VDC Relay, PLC</td>
<td>—</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (10 to 28 VDC)</td>
<td>—</td>
</tr>
<tr>
<td>Load current</td>
<td>5 to 40 mA</td>
<td>—</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
<td>—</td>
</tr>
<tr>
<td>Leakage current</td>
<td>0.8 mA or less at 24 VDC</td>
<td>—</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range — Red LED illuminates. Proper operating range — Green LED illuminates.</td>
<td>—</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td>—</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>Outside diameter [mm]</td>
</tr>
<tr>
<td>Insulator</td>
<td>Number of cores</td>
</tr>
<tr>
<td></td>
<td>Outside diameter [mm]</td>
</tr>
<tr>
<td>Conductor</td>
<td>Effective area [mm²]</td>
</tr>
<tr>
<td></td>
<td>Strand diameter [mm]</td>
</tr>
<tr>
<td>Minimum bending radius [mm] (Reference values)</td>
<td>21</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7BA</th>
<th>D-F7BAV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>3 m (L)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>81</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>D-F7BA</th>
<th>D-F7BAV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø3.2 mounting hole</td>
<td>ø3.2 mounting hole</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Indicator light</td>
</tr>
<tr>
<td>Most sensitive position</td>
<td>Most sensitive position</td>
</tr>
</tbody>
</table>

⚠️ Caution

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

Precautions

Please consult with SMC if using coolant liquid other than water based solution.
Water Resistant 2-Color Indicator
Solid State Auto Switch: Tie-rod Mounting Type
D-F5BA

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-F5BA (With indicator light)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-F5BA</td>
</tr>
<tr>
<td>Wiring type</td>
<td>2-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>—</td>
</tr>
<tr>
<td>Applicable load</td>
<td>24 VDC Relay, PLC</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>—</td>
</tr>
<tr>
<td>Current consumption</td>
<td>—</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (10 to 28 VDC)</td>
</tr>
<tr>
<td>Load current</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Leakage current</td>
<td>0.8 mA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range ———— Red LED illuminates. Proper operating range ———— Green LED illuminates.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F5BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>71</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>111</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F5BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting hole</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td></td>
</tr>
<tr>
<td>Most sensitive position</td>
<td></td>
</tr>
</tbody>
</table>

Caution

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

Precautions

Please consult with SMC if using coolant liquid other than water based solution.
Solid State Auto Switch with Timer
Band Mounting Type
D-G5NT

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

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-G5NT (With indicator light)</th>
<th>D-G5NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-G5NT</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
</tr>
<tr>
<td>Output operation</td>
<td>Off-delay</td>
</tr>
<tr>
<td>Operating time</td>
<td>1 ms or less</td>
</tr>
<tr>
<td>Off-delay time</td>
<td>200 ± 50 ms</td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA)</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 μA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G5NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø4</td>
</tr>
<tr>
<td>Outside diameter [mm]</td>
<td>ø1.22</td>
</tr>
<tr>
<td>Insulator</td>
<td>3 cores (Brown/Blue/Black)</td>
</tr>
<tr>
<td>Outside diameter [mm]</td>
<td>ø1.22</td>
</tr>
<tr>
<td>Conductor</td>
<td>Effective area [mm²]</td>
</tr>
<tr>
<td>Stand diameter [mm]</td>
<td>ø0.08</td>
</tr>
<tr>
<td>Minimum bending radius [mm] (Reference values)</td>
<td>24</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-G5NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>3 m (L)</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
</tr>
</tbody>
</table>

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.)

Auto switch detecting time
Auto switch output ON time
PLC response time

Dimensions

![Auto Switch Dimensions Diagram]
Solid State Auto Switch with Timer Rail Mounting Type
D-F7NT

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-F7NT (With indicator light)</th>
<th>D-F7NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-F7NT</td>
</tr>
<tr>
<td>Wiring type</td>
<td>3-wire</td>
</tr>
<tr>
<td>Output type</td>
<td>NPN</td>
</tr>
<tr>
<td>Output operation</td>
<td>Off-delay</td>
</tr>
<tr>
<td>Operating time</td>
<td>1 ms or less</td>
</tr>
<tr>
<td>Off-delay time</td>
<td>200 ± 50 ms</td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA)</td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 µA or less at 24 VDC</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>Ø3.4</td>
</tr>
<tr>
<td>Outside diameter [mm]</td>
<td></td>
</tr>
<tr>
<td>Insulator</td>
<td></td>
</tr>
<tr>
<td>Number of cores</td>
<td>3 cores (Brown/Blue/Black)</td>
</tr>
<tr>
<td>Outside diameter [mm]</td>
<td>Ø1.1</td>
</tr>
<tr>
<td>Conductor</td>
<td></td>
</tr>
<tr>
<td>Effective area [mm²]</td>
<td>0.2</td>
</tr>
<tr>
<td>Strand diameter [mm]</td>
<td>Ø0.08</td>
</tr>
<tr>
<td>Minimum bending radius [mm] (Reference values)</td>
<td>21</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F7NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>57</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>92</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Indicator light</th>
<th>Ø3.2 mounting hole</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td></td>
<td>4.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most sensitive position</th>
<th>Ø3.4</th>
<th>6.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td></td>
<td>6.2</td>
</tr>
</tbody>
</table>

472
Solid State Auto Switch with Timer
Tie-rod Mounting Type
D-F5NT

Grommet

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

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.

Switch detecting time

Switch operating range (mm) Cylinder speed (mm/s)

Switch output ON time

ON (200 ms)

PLC response time

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-F5NT (With indicator light)</th>
<th>Wiring type</th>
<th>3-wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output type</td>
<td>NPN</td>
<td></td>
</tr>
<tr>
<td>Output operation</td>
<td>Off-delay</td>
<td></td>
</tr>
<tr>
<td>Operating time</td>
<td>1 ms or less</td>
<td></td>
</tr>
<tr>
<td>Off-delay time</td>
<td>200 ± 50 ms</td>
<td></td>
</tr>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td></td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>5, 12, 24 VDC (4.5 to 28 VDC)</td>
<td></td>
</tr>
<tr>
<td>Current consumption</td>
<td>10 mA or less</td>
<td></td>
</tr>
<tr>
<td>Load voltage</td>
<td>28 VDC or less</td>
<td></td>
</tr>
<tr>
<td>Load current</td>
<td>40 mA or less</td>
<td></td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>1.5 V or less (0.8 V or less at 10 mA)</td>
<td></td>
</tr>
<tr>
<td>Leakage current</td>
<td>100 μA or less at 24 VDC</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking, RoHS</td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>Sheath [Outside diameter [mm]]</th>
<th>ø4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insulator Number of cores</td>
<td>3 cores (Brown/Blue/Black)</td>
</tr>
<tr>
<td></td>
<td>Outside diameter [mm]</td>
<td>ø1.22</td>
</tr>
<tr>
<td></td>
<td>Conductor Effective area [mm²]</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Strand diameter [mm]</td>
<td>ø0.08</td>
</tr>
<tr>
<td>Minimum bending radius [mm] (Reference values)</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for solid state auto switch common specifications.
Note 2) Refer to page 436 for lead wire lengths.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-F5NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>81</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>127</td>
</tr>
</tbody>
</table>

Dimensions

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

PLC: Programmable Logic Controller
Made to Order Specifications:
Solid State Auto Switch

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

<table>
<thead>
<tr>
<th>Cable length</th>
<th>S 0.5 m</th>
<th>M 1.0 m</th>
</tr>
</thead>
</table>

Connector Specifications

<table>
<thead>
<tr>
<th>Connector model</th>
<th>M8-3 pin</th>
<th>M8-4 pin</th>
<th>M12-4 pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin arrangement</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Applicable Auto Switch

For details on the D-P3DWA series magnetic field resistant auto switch, refer to the Best Pneumatics No. 2-1. And for details on the D-P4DW series, refer to the Best Pneumatics No. 2-1.

2-wire

<table>
<thead>
<tr>
<th>Mounting type</th>
<th>Function</th>
<th>Applicable model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail mounting type</td>
<td>2-color indicator</td>
<td>J79, F7BV</td>
</tr>
<tr>
<td>Rail mounting type</td>
<td>Water resistant</td>
<td>F7BA, F7BAV</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>2-color indicator</td>
<td>K59</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>Water resistant</td>
<td>H7BA</td>
</tr>
<tr>
<td>Tie-rod mounting type</td>
<td>2-color indicator</td>
<td>J59</td>
</tr>
<tr>
<td>Tie-rod mounting type</td>
<td>Water resistant</td>
<td>F5BA</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>Normally closed</td>
<td>M9BE, M9BEV</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>2-color indicator</td>
<td>Y76B</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>Water resistant</td>
<td>M9BA</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>Hygienic</td>
<td>F6B</td>
</tr>
<tr>
<td>Rotary actuator</td>
<td>—</td>
<td>T791/2</td>
</tr>
</tbody>
</table>

3-wire

<table>
<thead>
<tr>
<th>Mounting type</th>
<th>Function</th>
<th>Applicable model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail mounting type</td>
<td>2-color indicator</td>
<td>F79, F7P, F7NV, F7PV</td>
</tr>
<tr>
<td>Rail mounting type</td>
<td>With timer</td>
<td>F7NT</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>2-color indicator</td>
<td>H7A1, H7A2</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>With timer</td>
<td>G5NT</td>
</tr>
<tr>
<td>Tie-rod mounting type</td>
<td>2-color indicator</td>
<td>F59, F5P</td>
</tr>
<tr>
<td>Tie-rod mounting type</td>
<td>With timer</td>
<td>F5NT</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>Normally closed</td>
<td>Y79A, Y7P, Y69A, Y7PV</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>2-color indicator</td>
<td>M9N, M9P, M9NV, M9PV</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>Water resistant</td>
<td>M9A</td>
</tr>
<tr>
<td>Direct mounting type</td>
<td>Hygienic</td>
<td>F6N</td>
</tr>
<tr>
<td>Rotary actuator</td>
<td>—</td>
<td>S791/2, T991/2</td>
</tr>
</tbody>
</table>

4-wire

<table>
<thead>
<tr>
<th>Mounting type</th>
<th>Function</th>
<th>Applicable model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail mounting type</td>
<td>Normal, Diagnostic output</td>
<td>F9G, F9H</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>2-color indicator</td>
<td>Y79A, Y7P, Y69A, Y7PV</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>Water resistant</td>
<td>M9A, M9P, M9NV, M9PV</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>Hygienic</td>
<td>F6N</td>
</tr>
<tr>
<td>Band mounting type</td>
<td>—</td>
<td>S791/2, S7P1/2</td>
</tr>
</tbody>
</table>

Connector pin arrangement

<table>
<thead>
<tr>
<th>Sensor type</th>
<th>Meaning of contact number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 pin</td>
<td>2 pin</td>
</tr>
<tr>
<td>2-wire</td>
<td>OUT(+)</td>
</tr>
<tr>
<td>3-wire</td>
<td>DC(+)</td>
</tr>
<tr>
<td>4-wire</td>
<td>DC(+)</td>
</tr>
</tbody>
</table>

Note 1) For details on the D-P3DWS, refer to page 1630. And for details on the D-P4DWE, refer to page 1634.

Note 2) For details on the pin arrangement, refer to the pin arrangement in the connector specifications above.
With Pre-wired Connector

Dimensions

<table>
<thead>
<tr>
<th>Connector model</th>
<th>Sensor section</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8-3 pin 4 pin</td>
<td></td>
</tr>
<tr>
<td>M12-4 pin</td>
<td></td>
</tr>
</tbody>
</table>

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.)

<table>
<thead>
<tr>
<th>Connector size</th>
<th>Number of pins</th>
<th>Manufacturer</th>
<th>Applicable series example</th>
</tr>
</thead>
<tbody>
<tr>
<td>M8</td>
<td>3</td>
<td>Phoenix Contact</td>
<td>SAC-3P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrence Corporation</td>
<td>M8-3D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OMRON Corporation</td>
<td>XS3</td>
</tr>
<tr>
<td>M12</td>
<td>4</td>
<td>Phoenix Contact</td>
<td>SAC-4P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corrence Corporation</td>
<td>VA-4D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OMRON Corporation</td>
<td>XS2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Azbil Corp.</td>
<td>PA5-4I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIROSE ELECTRIC CO., LTD.</td>
<td>HR24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DDK Ltd.</td>
<td>CM01-80P4S</td>
</tr>
</tbody>
</table>

Weight for Connector Type

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Connector type</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-APC</td>
<td>M8-3 pin</td>
<td>4 g</td>
</tr>
<tr>
<td>D-BPC</td>
<td>M8-4 pin</td>
<td>4 g</td>
</tr>
<tr>
<td>D-DPC</td>
<td>M12-4 pin</td>
<td>About 11 g</td>
</tr>
</tbody>
</table>
Made to Order Specifications: Solid State Auto Switch

-50: Without Indicator Light (Dark room) Specifications

-61: Oilproof Flexible Heavy-duty Cord Specifications

Possible to use under the environment which hates a light.

### Solid state auto switch model

**Applicable part no.:**
- General purpose type, solid state auto switch except D-J51

**Note:** Please consult with SMC for water resistant type, timer equipped type, diagnostic output type, wide range detection type, magnetic field resistant type, heat resistant type.

### Lead wire length

For lead wire length, refer to page 436.

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

### Oilproof Flexible Heavy-duty Cord Specifications

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.

### Lead wire length

For lead wire length, refer to page 436.

Specifications are the same as standard products with the exception of lead wire specifications.

**Lead wire:**
- For D-F8 type: ø2.7, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)
- For other model nos.: ø3.4, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)

Dimensions are identical with D-F5 type, G5 type, J59 type, K59 type. Lead wire diameter is changed from ø4 to ø3.4. In other series products, it is common as standard product's specifications.
Reed Auto Switches
General Purpose Type, 2-Color Indication Type

Reed Switch Variations

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
<th>Auto switch mounting type</th>
<th>Electrical entry</th>
<th>Auto switch model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Direct</td>
<td>Grommet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Band</td>
<td>Grommet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rail</td>
<td>Connector</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Terminal conduit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DIN terminal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grommet</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Connector</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grommet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Auto switches with an asterisk (∗) can be mounted on a band (excluding D-A9V), rail, tie-rod or square groove with an auto switch mounting bracket. For details, refer to “How to Mount and Move the Auto Switch” of each series.

** This auto switch can be mounted by tie-rod with using auto switch mounting bracket. For details, refer to “How to Mount and Move the Auto Switch” of each series.
Reed Auto Switch Direct Mounting Type
D-A90(V)/D-A93(V)/D-A96(V)

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A90, D-A90V</th>
<th>D-A93, D-A93V</th>
<th>D-A96, D-A96V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>IC circuit, Relay, PLC</td>
<td>IC circuit, Relay, PLC</td>
<td>PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 V / 48 V / 100 V</td>
<td>24 V / 48 V / 100 V</td>
<td>24 V / 48 V / 100 V</td>
</tr>
<tr>
<td>Load current range</td>
<td>5 mA to 20 mA</td>
<td>5 mA to 20 mA</td>
<td>20 mA</td>
</tr>
<tr>
<td>Internal circuit</td>
<td>(3)</td>
<td>(3)</td>
<td>(3)</td>
</tr>
<tr>
<td>Contact protection</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Internal resistance</td>
<td>1 Ω or less</td>
<td>1 Ω or less</td>
<td>1 Ω or less</td>
</tr>
<tr>
<td>Most sensitive position</td>
<td>(22)</td>
<td>(22)</td>
<td>(22)</td>
</tr>
</tbody>
</table>

CAUTION

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Do not remove the protective cover attached to the product body until the product is ready to be mounted on the actuator.
3. 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.

Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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 221.

Oilloof Heavy-duty Lead Wire Specifications

- Refer to the applicable internal circuit diagram (numbers 1 to 7) on page 439.
- Refer to page 436 for reed auto switch common specifications.
- Refer to page 436 for lead wire lengths.
- 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.
- 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 221.

Weight

<table>
<thead>
<tr>
<th>Model</th>
<th>D-A90</th>
<th>D-A90V</th>
<th>D-A93</th>
<th>D-A93V</th>
<th>D-A96</th>
<th>D-A96V</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 m (N)</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>1 m (M)</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Dimensions

D-A90/D-A93/D-A96

<table>
<thead>
<tr>
<th>Model</th>
<th>D-A90V/D-A93V/D-A96V</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8</td>
<td>24.5</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>M2.5 x 4 L</td>
<td>Indicator light</td>
</tr>
<tr>
<td>Indicator light</td>
<td>D-A90V without indicator light</td>
</tr>
<tr>
<td>Most sensitive position</td>
<td>(22)</td>
</tr>
<tr>
<td>(22)</td>
<td>(22)</td>
</tr>
</tbody>
</table>

Note: Refer to SMC website for the details of the products conforming to the international standards.
Reed Auto Switch Band Mounting Type
D-C73/D-C76/D-C80

Auto Switch Specifications

<table>
<thead>
<tr>
<th></th>
<th>D-C7 (With indicator light)</th>
<th>D-C8 (Without indicator light)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto switch model</strong></td>
<td>D-C73</td>
<td>D-C76</td>
</tr>
<tr>
<td><strong>Applicable load</strong></td>
<td>Relay, PLC</td>
<td>IC circuit</td>
</tr>
<tr>
<td><strong>Load voltage</strong></td>
<td>24 VDC(3)</td>
<td>100 VAC</td>
</tr>
<tr>
<td><strong>Max. load current and range</strong></td>
<td>5 to 40 mA</td>
<td>5 to 20 mA</td>
</tr>
<tr>
<td><strong>Internal circuit</strong></td>
<td><em>(3)</em></td>
<td><em>(5)</em></td>
</tr>
<tr>
<td><strong>Contact protection circuit</strong></td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Internal voltage drop</strong></td>
<td>2.4 V or less</td>
<td>0.8 V or less</td>
</tr>
<tr>
<td><strong>Indicator light</strong></td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td>CE marking</td>
<td>CE marking</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th></th>
<th>D-C73</th>
<th>D-C76</th>
<th>D-C80</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto switch model</strong></td>
<td>D-C73</td>
<td>D-C76</td>
<td>D-C80</td>
</tr>
<tr>
<td><strong>Applicable load</strong></td>
<td>Relay, PLC, IC circuit</td>
<td>形容文字</td>
<td></td>
</tr>
<tr>
<td><strong>Load voltage</strong></td>
<td>24 V DC or less</td>
<td>48 V DC</td>
<td>100 V DC</td>
</tr>
<tr>
<td><strong>Max. load current</strong></td>
<td>50 mA</td>
<td>40 mA</td>
<td>20 mA</td>
</tr>
<tr>
<td><strong>Internal circuit</strong></td>
<td><em>(4)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contact protection circuit</strong></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internal resistance</strong></td>
<td>1 Ω or less (including lead wire length of 3 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td>CE marking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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 221.

Weight

<table>
<thead>
<tr>
<th></th>
<th>D-C73</th>
<th>D-C76</th>
<th>D-C80</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto switch model</strong></td>
<td>D-C73</td>
<td>D-C76</td>
<td>D-C80</td>
</tr>
<tr>
<td><strong>Lead wire length</strong></td>
<td>0.5 m (Nil)</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>46</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>76</td>
<td>—</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th></th>
<th>D-C73</th>
<th>D-C76</th>
<th>D-C80</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto switch model</strong></td>
<td>D-C73</td>
<td>D-C76</td>
<td>D-C80</td>
</tr>
<tr>
<td><strong>External dimensions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Effective area</strong></td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strand diameter</strong></td>
<td>ø0.08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Refer to the applicable internal circuit diagram (numbers 1 to 7) on page 439. Refer to the SMC website for the details of the products conforming to the international standards.

Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Related Products

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

Auto Switch Specifications

D-B5 (With indicator light)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-B53</th>
<th>D-B54</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>PLC</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC(3)</td>
<td>24 VDC(3)</td>
</tr>
<tr>
<td>Load current range</td>
<td>5 to 50 mA</td>
<td>5 to 50 mA</td>
</tr>
<tr>
<td>Internal circuit</td>
<td>③</td>
<td></td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
<td>Built-in</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>2.4 V or less</td>
<td>2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
</tr>
</tbody>
</table>

D-B6 (Without indicator light)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-B64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 V or less</td>
</tr>
<tr>
<td>Load current range</td>
<td>Max. 50 mA</td>
</tr>
<tr>
<td>Internal current</td>
<td>Max. 12.5 mA</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>Built-in</td>
</tr>
<tr>
<td>Internal resistance</td>
<td>25 Ω or less</td>
</tr>
</tbody>
</table>

Standard

CE marking

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-B53/D54/D64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø4</td>
</tr>
<tr>
<td>Insulator</td>
<td>2 cores (Brown/Blue)</td>
</tr>
<tr>
<td>Number of cores</td>
<td>0.3</td>
</tr>
<tr>
<td>Strand diameter</td>
<td>ø0.08</td>
</tr>
<tr>
<td>Outside diameter</td>
<td>ø1.22</td>
</tr>
<tr>
<td>Effective area</td>
<td>24</td>
</tr>
<tr>
<td>Outside diameter</td>
<td>ø1.22</td>
</tr>
</tbody>
</table>

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 439.
Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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 221.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-B53</th>
<th>D-B54</th>
<th>D-B64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>126</td>
<td>126</td>
<td>—</td>
</tr>
</tbody>
</table>

Dimensions

Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
**Reed Auto Switch Band Mounting Type D-C73C/D-C80C**

**Auto Switch Specifications**

<table>
<thead>
<tr>
<th><strong>Auto Switch Specifications</strong></th>
<th><strong>D-C73C (With indicator light)</strong></th>
<th><strong>D-C80C (Without indicator light)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auto switch model</strong></td>
<td>D-C73C</td>
<td>D-C80C</td>
</tr>
<tr>
<td><strong>Applicable load</strong></td>
<td>Relay, PLC</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td><strong>Load voltage</strong></td>
<td>24 VDC (i)</td>
<td>24 VAC or less</td>
</tr>
<tr>
<td><strong>Load current range (2)</strong></td>
<td>5 to 40 mA</td>
<td>50 mA</td>
</tr>
<tr>
<td><strong>Internal circuit</strong></td>
<td>2</td>
<td>(4)</td>
</tr>
<tr>
<td><strong>Contact protection circuit</strong></td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Internal voltage drop</strong></td>
<td>2.4 V or less</td>
<td>1 Ω or less</td>
</tr>
<tr>
<td><strong>Indicator light</strong></td>
<td>Red LED illuminates when turned ON.</td>
<td>CE marking (EMC directive/RoHS directive)</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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 221.

**Weight**

<table>
<thead>
<tr>
<th><strong>Auto switch model</strong></th>
<th><strong>D-C73C</strong></th>
<th><strong>D-C80C</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead wire length</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>83</td>
<td>83</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Model</th>
<th>Lead wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-LC05</td>
<td>0.5 m</td>
</tr>
<tr>
<td>D-LC30</td>
<td>3 m</td>
</tr>
<tr>
<td>D-LC50</td>
<td>5 m</td>
</tr>
</tbody>
</table>

---

**Caution**

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
3. For details, refer to Best Pneumatics No. 2-1.
Caution

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
3. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A33</th>
<th>D-A34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>PLC</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (3)</td>
<td>24 VDC (3)</td>
</tr>
<tr>
<td>Load current range</td>
<td>5 to 50 mA</td>
<td>5 to 50 mA</td>
</tr>
<tr>
<td>Internal circuit+</td>
<td>None</td>
<td>Built-in</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
<td>Built-in</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>2.4 V or less</td>
<td>2.4 V or less (Up to 20 mA)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
<td></td>
</tr>
</tbody>
</table>

D-A3 (With indicator light) Terminal conduit

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A33</th>
<th>D-A34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>PLC</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (3)</td>
<td>100 VAC</td>
</tr>
<tr>
<td>Load current range</td>
<td>5 to 25 mA</td>
<td>5 to 12.5 mA</td>
</tr>
<tr>
<td>Internal circuit+</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
<td>Built-in</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>2.4 V or less</td>
<td>2.4 V or less (Up to 20 mA)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
<td></td>
</tr>
</tbody>
</table>

D-A34 (With indicator light) DIN terminal

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (3)</td>
</tr>
<tr>
<td>Load current range</td>
<td>5 to 25 mA</td>
</tr>
<tr>
<td>Internal circuit+</td>
<td>1</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>Built-in</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>2.4 V or less (Up to 20 mA)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
</tr>
</tbody>
</table>

* Refer to the applicable internal circuit diagram (numbers 1 to 7) on page 439.
Note 1) Refer to page 436 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 221.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A33</th>
<th>D-A34</th>
<th>D-A44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire</td>
<td>None</td>
<td>116</td>
<td>116</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A3</th>
<th>D-A44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable cable O.D.</td>
<td>ø6.8 to ø9.6</td>
<td>ø6.8 to ø11.5</td>
</tr>
<tr>
<td>Indicator light</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Most sensitive position</td>
<td>96</td>
<td>96</td>
</tr>
</tbody>
</table>

(Reference page 221)

Refer to SMC website for the details of the products conforming to the international standards.
Reed Auto Switch
Rail Mounting Type
D-A72/D-A73/D-A80

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-A7 (With indicator light)</th>
<th>D-A72</th>
<th>D-A73</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-A72</td>
<td>D-A73</td>
</tr>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>200 VAC</td>
<td>24 VDC (^{(4)})</td>
</tr>
<tr>
<td>Load current range (^{(5)})</td>
<td>5 to 10 mA</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal circuit*</td>
<td>(^{(3)})</td>
<td></td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>2.4 V or less</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D-A8 (Without indicator light)</th>
<th>D-A80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-A80</td>
</tr>
<tr>
<td>Applicable load</td>
<td>Relay, IC circuit, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC (^{(6)}) or less</td>
</tr>
<tr>
<td>Maximum load current</td>
<td>50 mA</td>
</tr>
<tr>
<td>Internal circuit*</td>
<td>(^{(4)})</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
</tr>
<tr>
<td>Internal resistance</td>
<td>1 Ω or less (Including lead wire length of 3 m)</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>D-A72</th>
<th>D-A73</th>
<th>D-A80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>Outside diameter [mm]</td>
<td>(\varnothing 3.4)</td>
</tr>
<tr>
<td>Insulator</td>
<td>Number of cores</td>
<td>2 cores (Brown/Blue)</td>
</tr>
<tr>
<td>Conductor</td>
<td>Outside diameter [mm]</td>
<td>(\varnothing 1.1)</td>
</tr>
<tr>
<td>Conductor</td>
<td>Effective area [mm²]</td>
<td>0.2</td>
</tr>
<tr>
<td>Conductor</td>
<td>Strand diameter [mm]</td>
<td>(\varnothing 0.08)</td>
</tr>
<tr>
<td>Lead wire minimum bending radius [mm]</td>
<td>Reference values</td>
<td>21</td>
</tr>
</tbody>
</table>

- Refer to the applicable internal circuit diagram (numbers 1 to 7) on page 439.
- Note 1) Refer to page 436 for reed auto switch common specifications.
- Note 2) Refer to page 436 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 221.

Weight

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A72</th>
<th>D-A73</th>
<th>D-A80</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 m (Nil)</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>47</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>—</td>
<td>77</td>
<td>—</td>
</tr>
</tbody>
</table>

Dimensions

- (values for D-A72)

Caution

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Related Products

- CHQ
- CHK
- CHN
- CHM
- CHS
- CH2
- CHA

Refer to SMC website for the details of the products conforming to the international standards.
Reed Auto Switch Rail Mounting Type
D-A7□H/D-A80H

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-A7□H (With indicator light)</th>
<th>D-A80H (Without indicator light)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-A72H</td>
</tr>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>200 VAC</td>
</tr>
<tr>
<td>Max. load current</td>
<td>5 to 10 mA</td>
</tr>
<tr>
<td>Internal circuit</td>
<td>Contact protection circuit</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
</tr>
<tr>
<td>Oilproof Heavy-duty Lead Wire Specifications</td>
<td></td>
</tr>
<tr>
<td>Auto switch model</td>
<td>D-A72H/A73H</td>
</tr>
<tr>
<td>Sheath</td>
<td></td>
</tr>
<tr>
<td>Insulator</td>
<td>Number of cores</td>
</tr>
<tr>
<td>Conductor</td>
<td>Effective area [mm²]</td>
</tr>
<tr>
<td>Lead wire minimum bending radius [mm] (Reference values)</td>
<td></td>
</tr>
</tbody>
</table>

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 439.
Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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 221.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A72H</th>
<th>D-A73H</th>
<th>D-A76H</th>
<th>D-A80H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (Nil)</td>
<td>10</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>3 m (L)</td>
<td>47</td>
<td>47</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>5 m (Z)</td>
<td>—</td>
<td>77</td>
<td>—</td>
</tr>
</tbody>
</table>

Dimensions (mm)

- Indicator light
- D-A80H without indicator light
- 8.5 Most sensitive position

Caution
Precautions
Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Note

- CE marking
- Refer to SMC website for the details of the products conforming to the international standards.
- PLC: Programmable Logic Controller
Reed Auto Switch
Rail Mounting Type
D-A73C/D-A80C

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Part No. of Lead Wires with Connectors (Applicable only for connector type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>D-LC05</td>
</tr>
<tr>
<td>D-LC30</td>
</tr>
<tr>
<td>D-LC50</td>
</tr>
</tbody>
</table>

Caution

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
3. Refer to Best Pneumatics No. 2-1 for the details.
Reed Auto Switch
Tie-rod Mounting Type
D-A5□/D-A6□

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-A5 (With indicator light)</th>
<th>D-A53</th>
<th>D-A54</th>
<th>D-A56</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>PLC</td>
<td>Relay, PLC</td>
<td>IC circuit</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC</td>
<td>24 VDC</td>
<td>100 VAC</td>
</tr>
<tr>
<td>Maximum load current and range</td>
<td>5 to 50 mA</td>
<td>5 to 50 mA</td>
<td>5 to 25 mA</td>
</tr>
<tr>
<td>Internal circuit*</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
<td>Built-in</td>
<td>None</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>2.4 V or less</td>
<td>2.4 V or less</td>
<td>(Up to 20 mA)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D-A6 (Without indicator light)</th>
<th>D-A64</th>
<th>D-A67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
<td>PLC/IC circuit</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 V DC or less</td>
<td>100 VAC</td>
</tr>
<tr>
<td>Maximum load current</td>
<td>50 mA</td>
<td>25 mA</td>
</tr>
<tr>
<td>Internal circuit*</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>Built-in</td>
<td>None</td>
</tr>
<tr>
<td>Internal resistance</td>
<td>25 Ω or less</td>
<td>1 Ω or less (Including lead wire length of 3 m)</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
<td></td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A53/A54</th>
<th>D-A56</th>
<th>D-A64/A67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheath</td>
<td>ø4</td>
<td>ø1.22</td>
<td>24</td>
</tr>
<tr>
<td>Insulator</td>
<td>2 cores (Brown/Blue)</td>
<td>3 cores (Brown/Blue/Black)</td>
<td>2 cores (Brown/Blue)</td>
</tr>
<tr>
<td>Conductor</td>
<td>0.2</td>
<td>0.3</td>
<td>0.08</td>
</tr>
<tr>
<td>Effective area [mm²]</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Strand diameter [mm]</td>
<td>ø0.08</td>
<td>24</td>
<td>24</td>
</tr>
</tbody>
</table>

* Refer to the applicable internal circuit diagram (numbers 1) to (7) on page 439.
Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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 221.

Weight (g)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A53</th>
<th>D-A54</th>
<th>D-A56</th>
<th>D-A64</th>
<th>D-A67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (Nil)</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>3 m (L)</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m (Z)</td>
<td>125</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions (mm)

[Diagram of dimensions]

Caution
Precautions
Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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 221.
Grommet

**Caution**

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Do not remove the protective cover attached to the product body until the product is ready to be mounted on the actuator.
3. 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.

---

**Reed Auto Switch Direct Mounting Type**

**D-Z73/D-Z76/D-Z80**

---

**Auto Switch Specifications**

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

### D-Z7 (With indicator light)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Z73</th>
<th>D-Z76</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
<td>IC circuit</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC</td>
<td>100 VAC</td>
</tr>
<tr>
<td>Max. load current and load current range</td>
<td>5 to 40 mA</td>
<td>5 to 20 mA</td>
</tr>
<tr>
<td>Internal circuit</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>2.4 V or less (Up to 20 mA)/3 V or less (Up to 40 mA)</td>
<td>0.8 V or less</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Red LED illuminates when turned ON.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
<td></td>
</tr>
</tbody>
</table>

### D-Z8 (Without indicator light)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Z80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>Relay, PLC, IC circuit</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC or less</td>
</tr>
<tr>
<td>Maximum load current</td>
<td>50 mA</td>
</tr>
<tr>
<td>Internal circuit</td>
<td>None</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
</tr>
<tr>
<td>Internal resistance</td>
<td>1 Ω or less (Including 3 m lead wire)</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
</tr>
</tbody>
</table>

### Oilproof Heavy-duty Lead Wire Specifications

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

* Refer to the applicable internal circuit diagram (numbers 1 to 7) on page 439.

**Note 1** Refer to page 438 for reed auto switch common specifications.

**Note 2** Refer to page 436 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 221.

---

**Weight**

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Z73</th>
<th>D-Z76</th>
<th>D-Z80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (Nil)</td>
<td>3 m (L)</td>
<td>5 m (Z)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>31</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>55</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>31</td>
<td>50</td>
</tr>
</tbody>
</table>

---

**Dimensions**

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-Z73, Z80</th>
<th>D-Z76</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2.5 x 4L Slotted set screw</td>
<td>Indicator light</td>
<td>M2.5 x 4L Slotted set screw</td>
</tr>
<tr>
<td>Indicator light</td>
<td>D-Z80 without indicator light</td>
<td>Indicator light</td>
</tr>
</tbody>
</table>

---

487®
2-Color Indicator Reed Auto Switch
Band Mounting Type
D-B59W

Auto Switch Specifications

<table>
<thead>
<tr>
<th>Applicable load</th>
<th>D-B59W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load voltage</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load current range</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal circuit*</td>
<td>6</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>Built-in</td>
</tr>
<tr>
<td>Internal voltage</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range</td>
</tr>
</tbody>
</table>

| Standard               | CE marking   |

Oilproof Heavy-duty Lead Wire Specifications

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

* Refer to the applicable internal circuit diagram (numbers 1 to 7) on page 439.
Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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)

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-B59W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td></td>
</tr>
<tr>
<td>0.5 m (Nil)</td>
<td>20</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>76</td>
</tr>
</tbody>
</table>

Dimensions (mm)

Grommet

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

Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2-Color Indicator Reed Auto Switch
Rail Mounting Type
D-A79W

Auto Switch Specifications

<table>
<thead>
<tr>
<th>D-A79W (With indicator light)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto switch model</td>
<td>D-A79W</td>
</tr>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Load current range (mA)</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal circuit*</td>
<td>7</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>None</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range ........ Red LED illuminates. Proper operating range ........ Green LED illuminates.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
</tr>
</tbody>
</table>

Oilproof Heavy-duty Lead Wire Specifications

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

* Refer to the applicable internal circuit diagram (numbers 1 to 7) on page 439.

Note 1) Refer to page 436 for reed auto switch common specifications.
Note 2) Refer to page 436 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

<table>
<thead>
<tr>
<th>Auto switch model</th>
<th>D-A79W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>0.5 m (NII) 11</td>
</tr>
<tr>
<td></td>
<td>3 m (L) 53</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Indicator light</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø3.2</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>15</td>
</tr>
<tr>
<td>23.5</td>
</tr>
<tr>
<td>ø3.4</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>1.8</td>
</tr>
<tr>
<td>11.5 Most sensitive position</td>
</tr>
</tbody>
</table>

Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)
2-Color Indicator Reed Auto Switch
Tie-rod Mounting Type
D-A59W

Auto Switch Specifications

<table>
<thead>
<tr>
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<th>D-A59W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable load</td>
<td>Relay, PLC</td>
</tr>
<tr>
<td>Load voltage</td>
<td>24 VDC</td>
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<tr>
<td>Load current range</td>
<td>5 to 40 mA</td>
</tr>
<tr>
<td>Internal circuit</td>
<td>6</td>
</tr>
<tr>
<td>Contact protection circuit</td>
<td>Built-in</td>
</tr>
<tr>
<td>Internal voltage drop</td>
<td>4 V or less</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Operating range ........ Red LED illuminates. Proper operating range ........ Green LED illuminates.</td>
</tr>
<tr>
<td>Standard</td>
<td>CE marking</td>
</tr>
</tbody>
</table>

Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Oilproof Heavy-duty Lead Wire Specifications

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</tr>
</thead>
<tbody>
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<td>ø4</td>
</tr>
<tr>
<td>Insulator</td>
<td>Number of cores</td>
</tr>
<tr>
<td></td>
<td>Outside diameter [mm]</td>
</tr>
<tr>
<td>Conductors</td>
<td>Effective area [mm²]</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td>25</td>
</tr>
<tr>
<td>3 m (L)</td>
<td>80</td>
</tr>
</tbody>
</table>

Dimensions

![Auto Switch Dimensions Diagram]

Note: All dimensions are in millimeters (mm).