## Reliable Thumbwheel Switch with Dustproof Construction and Easy Front Mounting

■ Pen-push switches are designed especially for use in portable equipment

- Locking switches cut down operating errors in control panels
- Internal contacts boost reliability


## Ordering Information

Note: A7DP and A7BL switch units can be ordered with limited setting ranges. When ordering, include the range in the model number as shown in the following examples:

A7DP-206-S06 (Light gray A7DP with a range of 0 to 6) A7DP-206-S18-1 (Black A7DP with a range of 1 to 8)

1. Switch units
2. End caps
3. Spacer
4. Connectors

## SWITCH UNITS

| Output code | Type | Part Number |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | PCB terminal |  | Solder terminal |  |
|  |  | Light gray case | Black case | Light gray case | Black case |
| 06 (binary code) | Pen-push | A7DP-206 | A7DP-206-1 | - | - |
| 06 (binary code) | Locking | - | - | A7BL-206 | A7BL-206-1 |
| 07 (binary code w/diode provision) | Locking | - | - | A7BL-207 | A7BL-207-1 |

Note: Switch units, end caps, spacers, and connectors must be ordered separately and are not factory-assembled for shipment.

## ACCESSORIES

| Accessory |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | Part Number | For A7DP | For A7BL |  |  |
|  | Light gray | Black | Light gray | Black |  |
| End cap | A7D-2M | A7D-2M-1 | A7B-M | A7B-M-1 |  |
| Spacer | A7D-2PA | A7D-2PA-1 | A7B-PA | A7B-PA-1 |  |
| Connector | Solder terminal | - | - | A7B-C | A7B-C |
|  |  | PCB terminal | - | - | A7B-CP |

Note: 1. When placing your order, please specify the model numbers and quantities of required switch units, end caps, and spacers, respectively. (Note that switch units and accessories are not factory-assembled for shipment.)
2. End caps come as a set, left and right.

To order spacers marked with measurement units or symbols, select the unit or symbol from the table below and put its code letter in place of the final letter A in the model number.

Example: A7D-2PK (light gray spacer with ${ }^{\circ} \mathrm{C}$ mark for A7DP)

| Code letter | A | B | C | D | E | F | G | H | J | K | L | Q | T | U |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Marking | Blank | SEC | MIN | H | g | kg | mm | cm | m | ${ }^{\circ} \mathrm{C}$ | PCS | $\times 10 \mathrm{SEC}$ | 0 | $\bullet$ |

## Characteristics

|  |  | A7DP | A7BL |
| :---: | :---: | :---: | :---: |
| Switching capacity (resistive load) |  | 1 mA to $0.1 \mathrm{~A}, 5$ to 30 VDC | $50 \mathrm{VAC} / 28 \mathrm{VDC}, 1 \mathrm{~mA}$ to 0.1 A |
| Carry current |  | 100 mA | 1 A max. |
| Contact resistance |  | $200 \mathrm{~m} \Omega$ max. |  |
| Insulation resistance |  | $10 \mathrm{M} \Omega$ min. (at 250 VDC ) between nonconnected terminals | $10 \mathrm{M} \Omega \mathrm{min}$. (at 500 VDC ) between nonconnected terminals |
|  |  | $100 \mathrm{M} \Omega \mathrm{min}$. (at 500 VDC) between each terminal and noncurrent carrying part | $1,000 \mathrm{M} \Omega \mathrm{min}$. (at 500 VDC ) between each terminal and noncurrent carrying part |
| Dielectric strength |  | 250 VAC, $50 / 60 \mathrm{~Hz}$ for 1 minute between nonconnected terminals | 600 VAC, $50 / 60 \mathrm{~Hz}$ for 1 minute between nonconnected terminals |
|  |  | $1,000 \mathrm{VAC}, 50 / 60 \mathrm{~Hz}$ for 1 minute between each terminal and noncurrent carrying part |  |
| Operating force |  | 350 g max . | 550 g max . |
| Vibration resistance |  | 10 to $55 \mathrm{~Hz}, 1.5 \mathrm{~mm}$ double amplitude |  |
| Shock resistance |  | $500 \mathrm{~m} / \mathrm{s}^{2}$ (approx. 50 G ) min. |  |
| Ambient temperature |  | $-10^{\circ}$ to $70^{\circ} \mathrm{C}$ (no condensation) | $-10^{\circ}$ to $65^{\circ} \mathrm{C}$ (no condensation) |
| Storage temperature |  | $-20^{\circ}$ to $80^{\circ} \mathrm{C}$ |  |
| Humidity |  | 35\% to 85\% | 45\% to 85\% |
| Service life | Mechanical | 30,000 steps min. | 100,000 steps min. |
|  | Electrical | 20,000 steps min. | 50,000 steps min. |
| Weight (per unit) |  | Approx. 1.2 g | Approx. 4.1 g |

Note: Data shown are of initial value

## Dimensions

Unit: mm (inch)

## ■ PEN-PUSH SWITCHES

A7DP-206(206-1)


## Panel cutout




| Number of <br> units $(\mathrm{n})$ | A <br> $(\mathrm{n} \times 5.1+5)$ | B <br> $(\mathrm{n} \times 5.1+3)$ | C |
| :--- | :--- | :--- | :--- |
| 1 | $10.1(0.40)$ | $8.1(0.32)$ | $8.4(0.33)$ |
| 2 | $15.2(0.60)$ | $13.2(0.52)$ | $13.5(0.53)$ |
| 3 | $20.3(0.80)$ | $18.30(.72)$ | $18.6(0.73)$ |
| 4 | $25.4(1.00)$ | $23.4(0.92)$ | $23.7(0.93)$ |
| 5 | $30.5(1.20)$ | $28.5(1.12)$ | $28.8(1.13)$ |
| 6 | $35.5(1.40)$ | $33.5(1.32)$ | $33.9(1.33)$ |
| 7 | $40.6(1.60)$ | $38.6(1.52)$ | $39.0(1.53)$ |
| 8 | $45.7(1.80)$ | $43.7(1.72)$ | $44.1(1.74)$ |
| 9 | $50.8(2.00)$ | $48.8(1.92)$ | $49.2(1.94)$ |
| 10 | $55.9(2.20)$ | $53.9(2.12)$ | $54.3(2.14)$ |

Note: 1. Unless otherwise specified, a tolerance of $\pm 0.4 \mathrm{~mm}$ applies to all dimensions.
2. Each model number applies to a single switch unit and not to the switch assembly as shown in the drawings.
3. Common terminal "C" is at the bottom when the switch is viewed from the front.
4. The asterisk "*" indicates the distance to the terminal position.

## LOCKING SWITCHES



Note: 1. Unless otherwise specified, a tolerance of $\pm 0.4 \mathrm{~mm}$ applies to all dimensions.
2. Each model number applies to a single switch unit and not to the switch assembly as shown in the drawings.
3. Common terminal "C" is at the bottom when the switch is viewed from the front
4. Model A7BL: The dimension indicated by the asterisk "*" is 32.5 mm for a switch unit with an output code of 06 and 43.5 mm for one with an output of 07 .

END CAPS
A7D-2M(-2M-1)

A7B-M(-M-1)
(left side)

(right side)

(right side)


## SPACERS

A7D-2PA(-2PA-1)


A7B-PA(-PA-1)


## CONNECTORS

A7B-C (for solder terminals)


A7B-C (for PCB terminals)


Note: Unless otherwise specified, a tolerance of $\pm 0.4 \mathrm{~mm}$ applies to all dimensions

## TERMINALS

| Type | Pen-push <br> A7DP <br> PCB terminals |
| :---: | :---: |
| Output code 06 |  |
| Output code 06 |  |
|  |  |

Output code 07


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