## Reliable Thumbwheel with

## Easy-to-Mount Assembly

- Dustproof construction ensures highly reliable performance at low voltage and very small current even under adverse environmental conditions
- Plus (+) and minus (-) pushbuttons for posi-
 tive forward and reverse rotation of each digital wheel


## Ordering Information

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## SWITCH UNITS

| Output Code | Part number |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Front mounting solder terminals |  |  |  |
|  | Stopper pin provided |  | Stopper pin not provided |  |
|  | Light gray case | Black case | Light gray case | Black case |
| 03 (decimal code) | - | - | A7BS-203 | A7BS-203-1 |
| 06 (binary code) | A7BS-206-S | A7BS-206-S-1 | A7BS-206 | A7BS-206-1 |
| (binary code w/+, - display) | - | - | A7BS-206-PM | A7BS-206-PM-1 |
| 07 (binary code w/diode provision) | A7BS-207-S | A7BS-207-S-1 | A7BS-207 | A7BS-207-1 |
| 19 (decimal code w/component adding provision) | - | - | A7BS-219 | A7BS-219-1 |
| 54 (binary code hexadecimal) | - | - | A7BS-254 | A7BS-254-1 |
| 55 (binary code hexadecimal, w/component adding provision) | - | - | A7BS-255 | A7BS-255-1 |

## ACCESSORIES

| Accessory | Part number |  |  |
| :--- | :--- | :--- | :--- |
|  | For front mounting type switch assembly terminals |  |  |
|  | Light gray | Black |  |
| End Cap | A7B-M | A7B-M-1 |  |
| Spacer | A7B-P |  |  |
| Connector | Solder terminal | A7B-C | A7B-P $-\mathbf{- 1}$ |
|  | PC terminal | A7B-CP | A7B-C |

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. Type with a suffix -S in their type number are provided with two stopper pins (Type A7BS-S: used in pairs) as standard accessories.
3. Switch case, end cap, and spacer are made of polyacetal resin; however, the window plate is polycarbonate resin.
4. One of the following alphabetic codes must be filled into the boxed part of the model number to specify a legend to be hot stamped on the required spacer.
5. End caps come as a set -- left and right.

| Code | Legend | Code | Legend | Code | Legend |
| :--- | :--- | :--- | :--- | :--- | :--- |
| A | Hot stamp <br> not required | E | g | F | kg |
| ${ }^{\circ} \mathrm{C}$ |  |  |  |  |  |
| B | SEC | G | mm | Q | PCS |
| C | MIN | H | cm | x 10 SEC |  |
| D | H | J | m |  | 0 |

## Specifications

## CHARACTERISTICS

| Switching capacity |  | 1 mA to 0.1 A, 50 VAC/28 VDC (resistive load) |
| :---: | :---: | :---: |
| Carry current |  | 1 A (max.) |
| Contact resistance |  | $200 \mathrm{~m} \Omega$ max. |
| Insulation resistance |  | $10 \mathrm{M} \Omega \mathrm{min}$. (at 500 VDC ) between nonconnected terminals $1,000 \mathrm{M} \Omega \mathrm{min}$. (at 500 VDC ) between each terminal and noncurrent-carrying part |
| Dielectric strength |  | 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 |  | 550 g max. |
| Vibration |  | 10 to $55 \mathrm{~Hz}, 1.5 \mathrm{~mm}$ double amplitude |
| Shock |  | $500 \mathrm{~m} / \mathrm{s}^{2}$ (approx. 50 G ) |
| Ambient temperature | Operating | $-10^{\circ}$ to $65^{\circ} \mathrm{C}$ |
|  | Storage | $-20^{\circ}$ to $80^{\circ} \mathrm{C}$ |
| Humidity |  | 45\% to 85\% RH max. |
| Service life | Mechanical | 100,000 operations (steps) min. |
|  | Electrical | 50,000 operations (steps) min. |
| Weight (per unit) |  | Approx. 4.1 g |

Note: Data shown are of initial value.

## Dimensions

Unit: mm (inch)

## ■ SWITCH UNITS

A7BS-206(-1)
A7BS-207(-1)

A7BS-20-S(-1)

Note: Dimension * is 32.5 (1.28) for the switch with output code "06" [i.e., A7BS-206(-1)], and 43.5 (1.71) for the switch with output code "07" [i.e., A7BS-207(-1)].

PANEL CUTOUT


| No. of <br> units $(\mathrm{n})$ | A <br> $(8 \mathrm{n}+8)$ | B <br> $(8 \mathrm{n}+6)$ | D |
| :--- | :--- | :--- | :--- |
| 1 | $16(0.63)$ | $14(0.55)$ | $14.4(0.57)$ |
| 2 | $24(0.94)$ | $22(0.87)$ | $22.4(0.88)$ |
| 3 | $32(1.26)$ | $30(1.18)$ | $30.4(1.20)$ |
| 4 | $40(1.57)$ | $38(1.50)$ | $38.4(1.51)$ |
| 5 | $48 \pm 0.8(1.89 \pm 0.03)$ | $46 \pm 0.8(1.81 \pm 0.03)$ | $46.8(1.84)$ |
| 6 | $56 \pm 0.8(2.20 \pm 0.03)$ | $54 \pm 0.8(2.13 \pm 0.03)$ | $54.8(2.16)$ |
| 7 | $64 \pm 0.8(2.52 \pm 0.03)$ | $62 \pm 0.8(2.44 \pm 0.03)$ | $62.8(2.47)$ |
| 8 | $72 \pm 0.8(2.83 \pm 0.03)$ | $70 \pm 0.8(2.76 \pm 0.03)$ | $70.8(2.79)$ |
| 9 | $80 \pm 0.8(3.15 \pm 0.03)$ | $78 \pm 0.8(3.07 \pm 0.03)$ | $78.8(3.10)$ |
| 10 | $88 \pm 0.8(3.46 \pm 0.03)$ | $86 \pm 0.8(3.39 \pm 0.03)$ | $86.8(3.42)$ |

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.

END CAPS
A7B-M(-1)


Note: End caps are attached to each end of the switch assembly and used to secure the switch assembly to a mounting panel.

## STOPPER PINS

 A7BS-S

Note: Types with Suffix -S in their type numbers are provided with two stopper pins as standard accessories.
■ SPACERS
$A 7 B-P \square(-1)$


## CONNECTORS



TERMINALS
A7BS-206(-1)
A7BS-207(-1)


## Hints on Correct Use

Refer to HINTS ON CORRECT USE under the General Information section.

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