

### ■ Properties

| Series  | $\phi$ 22/25 series  | $\phi$ 30 series  |
|---|--|---|
| Standard operating conditions                 | Operating temperature: -25 to +50°C<br>Operating humidity: 45 to 85% RH  | Operating temperature: -25 to +50°C<br>Operating humidity: 45 to 85% RH   |
| Contact resistance                            | Maximum value: 50 M $\Omega$ (initial value)   | Maximum value: 50 M $\Omega$ (initial value)  |
| Insulation resistance                         | Minimum value: 100 M $\Omega$ (initial value)  | Minimum value: 100 M $\Omega$ (initial value)   |
| Strength of insulation materials              | Between components with voltage and components without voltage: 2,500 V AC per minute (Direct illuminated button; 2,000 V AC per minute)   | Between components with voltage and components without voltage: 2,500 V AC per minute (Direct indicating lamp and resistance indicating lamp; 2,000 V AC per minute)  |
| Mechanical life (minimum actuating frequency) | Button/ illuminated button<br>Snap-acting type: ...5,000,000<br>Other types: .....500,000<br>Option switch: ...500,000<br>Illuminated option button: ...500,000<br>Option button: ...250,000<br>Single operating arm switch: ...500,000  | Button: .....5,000,000<br>Illuminated button: ...2,500,000<br>Option switch: ...500,000<br>Option button: ...250,000<br>Single operating arm switch: .....500,000<br>(Chain style): ...250,000<br>Push-pull: with two contact blocks....500,000<br>Push-pull: with four contact blocks....200,000               |
| Electric life (minimum actuating frequency)   | Button/ illuminated button: ...500,000 (Description 1)<br>Option switch: ...500,000 (Description 2)<br>Option button: ...250,000 (Description 3)<br>Single operating arm switch: ...200,000 (Description 4)<br>Description 1: 1,800 times/hour; 40% load rate<br>Description 2: 1,200 times/hour; 40% load rate<br>Description 3: 900 times/ hour; 40% load rate | Button/ illuminated button: ...500,000 (Description 1)<br>Option switch: ...500,000 (Description 2)<br>Option button: ...250,000 (Description 3)<br>Single operating arm switch: ...200,000 (Description 4)<br>Description 1: 1,800 times/hour; 40% load rate<br>Description 2: 1,200 times/hour; 40% load rate |

## ■ Descriptions

|                                  |  |
|----------------------------------|--|
| Operating temperature            | -25-+50°C (no freezing)  |
| Storage temperature              | -40-+80°C (no freezing)  |
| Operating humidity               | 40-85% RH (no condensation)  |
| Contact resistance               | Maximum: 50 MΩ (initial value)   |
| Insulation resistance            | Minimum: 100 MΩ  |
| Strength of insulation materials | Between components with voltage and components without voltage: 2,500 V AC, one minute<br>Direct illuminated push button 2,000 V AC, one minute  |
| Mechanical life                  | Button switch and illuminated button switch<br>Snap-acting type: 5,000,000 times<br>Other types: 500,000 times<br>Option switch: 500,000 times   |
| Electric life                    | Button and illuminated button: 500,000 times (1,800 times/hour, 40% load rate)<br>Option switch: 500,000 times (1,200 times/hour, 40% load rate) |
| Protection degree                | IP 65 (IEC 529)<br>Lock style switch and illuminated option switch: IP54   |

## ■ Contact capacity

|                   |                   |     |     |     |      |      |    |
|-------------------|-------------------|-----|-----|-----|------|------|----|
| Maximum voltage   | 600 V AC/DC       |     |     |     |      |      |    |
| Maximum current   | 10 A AC/DC        |     |     |     |      |      |    |
| Operating voltage | 24V               | 48A | 50V | 11A | 220V | 440V |    |
| AC                | Resistive (AC 12) | 10A | —   | 10A | 10A  | 6A   | 2A |
|                   | Inductive (AC 15) | 10A | —   | 7A  | 5A   | 3A   | 1A |
| DC                | Resistive (DC 12) | 8A  | 4A  | —   | 2.2A | 1.1A | —  |
|                   | Inductive (DC 13) | 4A  | 2A  | —   | 1.1A | 0.6A | —  |

## ■ Dimensions (mm)

|                               |   |             |    |
|-------------------------------|---|-------------|----|
| Series                        | φ 22 series   | φ 25 series |    |
| D (Perforate dimension)       | φ 22.2  | φ 25.5      |    |
| A (Standard vertical spacing) | 50 (45mm)   | 50 (45mm)   |    |
| B                             | Round   | 30          | 34 |
|                               | Square  | 30          | 45 |
|                               | φ 25 mushroom headed component                        | —           | 35 |
|                               | φ 40 mushroom headed component                        | 40          | —  |
|                               | Mushroom headed component with full protective sleeve | —           | 42 |
|                               | Option bar component 2 or 3 positions                 | 39          | 42 |
|                               | 4 or 5 positions                                      | 50          | 50 |

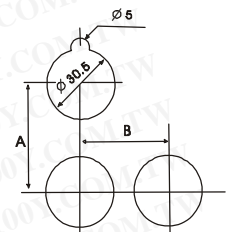
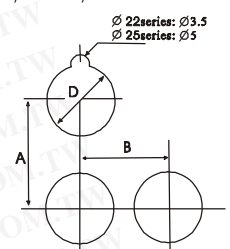
### Notes:

The above minimum installation centre to centre spacing is only applicable to switches with one combination block (two contact blocks). When conducting two combination blocks (four contact blocks) installation, the minimum centre to centre spacing shall be determined by wirings.

## ■ Dimensions (mm)

|        |   |    |
|--------|---|----|
| Series | φ 30 series   |    |
| A      | Round (Standard spacing)                              | 42 |
|        | Square  | 55 |
| B      | Round   | 50 |
|        | Square  | 50 |
| A&B    | Mushroom headed component with full protective sleeve | 50 |
|        | Big mushroom headed component                         | 67 |
|        | Big mushroom headed component with protective sleeve  | 76 |
|        | Square double buttons                                 | 55 |
|        | Option single operating arm type                      | 50 |

## φ 22/ φ 25 series





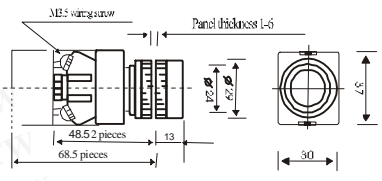






If aluminum board and anti-rolling ring are not applied, φ 3.5/ φ 5 groove may not be used.

**Notes:** The above minimum installation centre to centre spacing is only applicable to switches with one combination block (two contact blocks). When conducting two combination blocks (four contact blocks) installation, the minimum centre to centre spacing shall be determined by wirings.


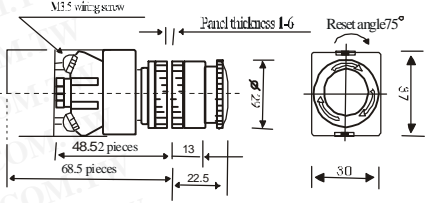

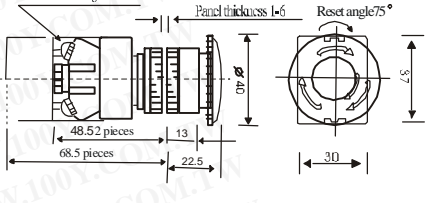

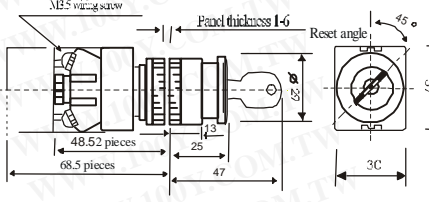

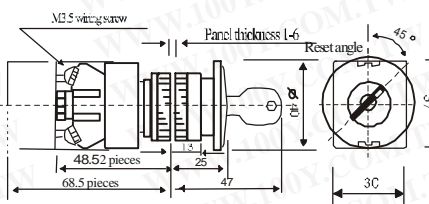
If aluminum board and anti-rolling ring are not applied, φ 5 groove may not be used.

The minimal load (reference value)=3V, AC/DC, 5mA  
(The applied range is subject to the operating conditions and load)

**■ Button**


| Style   | Contacts | Model            |                   | Color code   | Dimensions TW Series  |
|---|----------|------------------|-------------------|--|---|
|   |          | Momentary Action | Maintained Action |  |   |
| Flat type<br>                             | INO      | ABW110E*         | AOW110E*          |  |  |
|   | INC      | ABW101E*         | AOW101E*          |  |   |
|   | INO-INC  | ABW111E*         | AOW111E*          |  |   |
|   | 2NO      | ABW120E*         | AOW120E*          |  |   |
|   | 2NC      | ABW102E*         | AOW102E*          |  |   |
|   | 2NO-2NC  | ABW122E*         | AOW122E*          |  |   |
| Extended type<br>                         | INO      | ABW110E*         | AOW210E*          |  |   |
|   | INC      | ABW110E*         | AOW201E*          |  |   |
|   | INO-INC  | ABW110E*         | AOW211E*          |  |   |
|   | 2NO      | ABW110E*         | AOW220E*          |  |   |
|   | 2NC      | ABW110E*         | AOW202E*          |  |   |
|   | 2NO-2NC  | ABW110E*         | AOW222E*          |  |   |
| Extended with full Shroud<br>            | INO      | ABFW210E*        | AOW210E*          |  |   |
|   | INC      | ABFW201E*        | AOW201E*          |  |   |
|   | INO-INC  | ABFW211E*        | AOW211E*          |  |   |
|   | 2NO      | ABFW220E*        | AOW220E*          |  |   |
|   | 2NC      | ABFW202E*        | AOW202E*          |  |   |
|   | 2NO-2NC  | ABFW222E*        | AOW222E*          |  |   |
| 29mm Mushroom Head type<br>             | INO      | ABW310E*         | AOW310E*          |  |   |
|   | INC      | ABW301E*         | AOW301E*          |  |   |
|   | INO-INC  | ABW311E*         | AOW311E*          |  |   |
|   | 2NO      | ABW320E*         | AOW320E*          |  |   |
|   | 2NC      | ABW302E*         | AOW302E*          |  |   |
|   | 2NO-2NC  | ABW322E*         | AOW322E*          |  |   |
| 40mm Mushroom Head type<br>             | INO      | ABW410E*         | AOW410E*          |  |   |
|   | INC      | ABW401E*         | AOW401E*          |  |   |
|   | INO-INC  | ABW411E*         | AOW411E*          |  |   |
|   | 2NO      | ABW420E*         | AOW420E*          |  |   |
|   | 2NC      | ABW402E*         | AOW402E*          |  |   |
|   | 2NO-2NC  | ABW422E*         | AOW422E*          |  |   |
| 40mm Mushroom Head with full Shroud<br> | INO      | ABGW410E*        | -                 |  |   |
|   | INC      | ABGW401E*        | -                 |  |   |
|   | INO-INC  | ABGW411E*        | -                 |  |   |
|   | 2NO      | ABGW420E*        | -                 |  |   |
|   | 2NC      | ABGW402E*        | -                 |  |   |
|   | 2NO-2NC  | ABGW422E*        | -                 |  |   |
| Square flathead type<br>                | INO      | ABQW110E*        | -                 |  |   |
|   | INC      | ABQW101E*        | -                 |  |   |
|   | INO-INC  | ABQW111E*        | -                 |  |   |
|   | 2NO      | ABQW120E*        | -                 |  |   |
|   | 2NC      | ABQW102E*        | -                 |  |   |
|   | 2NO-2NC  | ABQW122E*        | -                 |  |   |

**■ Button**

| Appearance   | Contacts | Model    | Button color | Dimensions TW Series  |
|--|----------|----------|--------------|---|
|    | INO      | AVW310ER | R- ■         |    |
|  | INC      | AVW301ER |              |   |
|  | INO-INC  | AVW311ER |              |   |
|  | 2NO      | AVW320ER |              |   |
|  | 2NC      | AVW302ER |              |   |
|  | 2NO-2NC  | AVW322ER |              |   |
|    | INO      | AVW410ER |              |    |
|  | INC      | AVW401ER |              |   |
|  | INO-INC  | AVW411ER |              |   |
|  | 2NO      | AVW420ER |              |   |
|  | 2NC      | AVW402ER |              |   |
|  | 2NO-2NC  | AVW422ER |              |   |
|   | INO      | AXW310ER |              |   |
|  | INC      | AXW301ER |              |   |
|  | INO-INC  | AXW311ER |              |   |
|  | 2NO      | AXW320ER |              |   |
|  | 2NC      | AXW302ER |              |   |
|  | 2NO-2NC  | AXW322ER |              |   |
|  | INO      | AXW410ER |              |  |
|  | INC      | AXW401ER |              |   |
|  | INO-INC  | AXW411ER |              |   |
|  | 2NO      | AXW420ER |              |   |
|  | 2NC      | AXW402ER |              |   |
|  | 2NO-2NC  | AXW422ER |              |   |

- Standard color for round front ring: black plastic
- Button that locked when pressing and reset when turning: When press the button, it locks; when turn it clockwise, it resets. It is applicable to emergency stop of machinery equipments. Only red is available.

**■ Key option switch**

| Style  | Mounting Position | Contact Block Part Number |                    |                      | Model              |             | Dimensions TW Series |           |
|--|-------------------|---------------------------|--------------------|----------------------|--------------------|-------------|----------------------|-----------|
|  |                   | Contact construction      | Operating position |                      | Maintained         | Spring Ret. |                      |           |
|  | 90° -2 position   |                           | INO(10)            | L                    |                    |             | R                    | ASW2K10E  |
|  |                   | INO-INC(11)               |                    | •                    |                    | ASW2K11E    |                      |           |
|  |                   |                           | 2NO(20)            |                      | •                  |             |                      | ASW2K20E  |
|  |                   | 2NO-2NC                   |                    | •                    | •                  | ASW2K22E    |                      |           |
|  |                   |                           | 2NO(20)            | •                    |                    |             |                      | ASW33K20E |
|  |                   | 2NO(20)                   |                    |                      | •                  | ASW33K20E   | Hold type            |           |
|  |                   |                           | 45° -3 position    | Contact construction | Operating position |             |                      |           |
|  |                   | L                         |                    |                      | C                  | R           |                      |           |

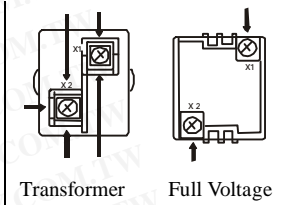
- Standard color for round front ring: black
- For key operating component, the key can be drawn out in any positions. As for other withdrawable key construction, please consult the manufacturer.

**Indicator**

| Style | Appearance                | Illumination type | Input type       | Model      | Color Code  | Dimensions TW Series |
|-------|---------------------------|-------------------|------------------|------------|---|----------------------|
|       | <b>Ruud Flat</b><br>      | LED               | Transformer type | APW1□6DE*  | <b>R-</b><br><b>G-</b><br><b>Y-</b><br><b>S-</b><br><b>W-</b> |                      |
|       |                           |                   | Full Voltage     | APW199DE*  |   |                      |
|       | <b>Flat Mark type</b><br> | LED               | Transformer type | APW1B□6DE* |   |                      |
|       |                           |                   | Full Voltage     | APW1B99DE* |   |                      |
|       | <b>Dome</b><br>           | LED               | Transformer type | APW2□6DE*  |   |                      |
|       |                           |                   | Full Voltage     | APW299DE*  |   |                      |

- Specify operating voltage code of LED type transformer in □ of “Model” column.
- 1: 110 V AC, 2: 220 V AC, 23: 230 V AC, 24: 240 V AC
- Specify facing code in \* of “Model” column.
- R: Red; G: Green; Y: Yellow; W: White; S: Blue
- White mark type indicating lamp takes on white when combining with transparent cover and mark panel.
- Standard color for round front ring: black plastic

- Terminal connection
- 1. The arrow direction indicates the wiring direction.
- 2. When using direct component, connecting direct supply to the right terminal. X1 is positive terminal, X2 is negative terminal.



**LED type**



| Input type   | Code | Operating voltage | LED lamp                    |
|--------------|------|-------------------|-----------------------------|
| Transformer  | 16   | 100V AC           | DML-H9S-6 (include)         |
|              | 26   | 220V AC           |                             |
|              | 236  | 230V AC           |                             |
|              | 246  | 240V AC           |                             |
| Full Voltage | 99   | 6-240 V           | DML-H9S- (particular order) |

| Code | Color  |
|------|--------|
| R    | Red    |
| S    | Blue   |
| G    | Green  |
| Y    | Yellow |
| A    | Amber  |

**Order notice**

Specify operating voltage in □ of “Model” column, color in \* position. For transformer type, LED lamp is included; for direct type, LED lamp is needed to be ordered particularly.

**Illuminated button**

- Specify operating voltage code of LED type transformer in □ of “Model” column.
- 1: 110 V AC, 2: 220 V AC, 23: 230 V AC, 24: 240 V AC
- Specify facing code in \* of “Model” column.
- R: Red; G: Green; Y: Yellow; W: White; S: Blue
- White mark type indicating lamp takes on white when combining with transparent cover and mark panel.
- Standard color for round front ring: black plastic
- Button that locked when pressing and reset when turning: When press the button, it locks; when turn it clockwise, it resets. It is applicable to emergency stop of machinery equipments. Only red is available.

- Specify operating voltage in □ of “Model” column, color in \* position.
- For transformer type, LED lamp is included.
- For direct type, LED lamp is needed to be ordered particularly.

**LED type**

Transformer type ALW2 □ 11 D E \*  
 Direct type ALW299 11 D E \*  
 Model Contact Facing

Operating voltage

Facing



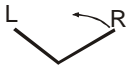
| Input type  | Code | Operating voltage | LED lamp                |
|-------------|------|-------------------|-------------------------|
| Transformer | 16   | 100V AC           | LSPD-6 (include)        |
|             | 26   | 220V AC           |                         |
|             | 236  | 230V AC           |                         |
|             | 246  | 240V AC           |                         |
| Direct type | 99   | 6-240 V           | LSPD (particular order) |

**■ Illuminated button**

| Appearance   | Function         | Input type   | Contact construction | Model   | Facing code  | Dimensions |
|--|------------------|--------------|----------------------|---------|--------------|------------|
| <p>Raised head type</p>  | LED illumination | Snap-action  | Transformer type     | INO-INC | ALW2□11DE*   |            |
|  |                  |              |                      | 2NO     | ALW2□20DE*   |            |
|  |                  |              | Direct type          | INO-INC | ALW29911DE*  |            |
|  |                  |              |                      | 2NO     | ALW29920DE*  |            |
|  |                  | Alternate    | Transformer type     | INO-INC | AOLW2□11DE   |            |
|  |                  |              |                      | 2NO     | AOLW2□20DE*  |            |
| Direct type  | INO-INC          | AOLW29911DE* |                      |         |              |            |
|  | 2NO              | AOLW29920DE* |                      |         |              |            |
| <p>Raised head type with full protective sleeve</p>            | LED illumination | Snap-action  | Transformer type     | INO-INC | ALFW2□11DE*  |            |
|  |                  |              |                      | 2NO     | ALFW2□20DE*  |            |
|  |                  |              | Direct type          | INO-INC | ALFW29911DE* |            |
|  |                  |              |                      | 2NO     | ALFW29920DE* |            |
| <p>Mushroom headed type</p>                                    | LED illumination | -            | Direct type          | INO-INC | ALW49911DE*  |            |
| <p>Button that locked when pressing and reset when turning</p> | LED illumination | -            | Direct type          | INO-INC | AVLW4991DER  |            |



■ Illuminated option switch

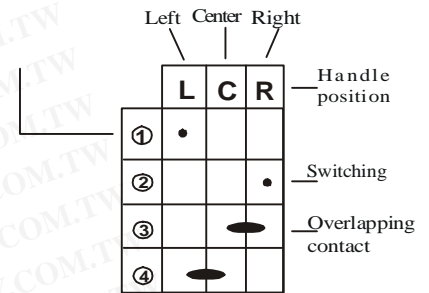
|                           |                               | Appearance      |   |                      |   |  |   |                 |  |
|---------------------------|-------------------------------|-----------------|---|----------------------|---|---|---|-----------------|--|
| Contact permutation table |                               |                 |   |                      |   |   |   |                 |  |
| Contact construction      | Contact installation position | Handle position |   | Input type           |  Hold type |   |  Automatic reset<br>(From right to left) |                 |  |
|                           |                               | L               | R |                      |   |   |   |                 |  |
| 11(NO-1NC)                | ①                             |                 | • | Transformer type     | ASLW2□611D-*  | ASLS2□611DN-*   | ASLW21□611D-*   | ASLS21□611DN-*  |  |
|                           | ②                             |                 | • | DC-DC converter type | ASLW21611DD-*   | ASLS21611DDN-*  | ASLW211611DD-*  | ASLS211611DDN-* |  |
|                           |                               |                 | • | Direct type          | ASLW2991D-*   | ASLS29911DN   | ASLW21991D-*  | ASLS219911DN-*  |  |
| 20(2NC)                   | ①                             |                 | • | Transformer type     | ASLW2□620□-*  | ASLS2□620DN-*   | ASLW21□620D-*   | ASLS21□620DN-*  |  |
|                           | ②                             |                 | • | DC-DC converter type | ASLW21620D-*  | ASLS21620DN-*   | ASLW211620D-*   | ASLS211620DN-*  |  |
|                           |                               |                 | • | Direct type          | ASLW29920D-*  | ASLS29920DN-*   | ASLW219920D-*   | ASLS219920DN-*  |  |
| 22(2NC)                   | ①                             |                 | • | Transformer type     | ASLW2□622D-*  | ASLS2□622DN-*   | ASLW21□622D-*   | ASLS21□622DN    |  |
|                           | ②                             |                 | • |                      |   |   |   |                 |  |
|                           | ③                             |                 | • | DC-DC converter type | ASLW21622DD-*   | ASLS21622DDN-*  | ASLW211622DD-*  | ASLS211622DDN-* |  |
|                           | ④                             |                 | • | Direct type          | ASLW29922D-*  | ASLS29922DN-*   | ASLW219922D-*   | ASLS219922DN-*  |  |
| 02(2NC)                   | ①                             |                 | • | Transformer type     | ASLW3□620DD-*   | ASLS3□620DN-*   | ASLW31□620DD-*  | ASLS31□620DN-*  |  |
|                           | ②                             |                 | • |                      |   |   |   |                 |  |
|                           | ③                             |                 | • | Direct type          | ASLW39920D-*  | ASLS3120DDN-*   | ASLW319920-*  | ASLS319920DN-*  |  |
|                           | ④                             |                 | • | Transformer type     | ASLW3□602D-*  | ASLS3□602DN-*   | ASLW31□602D-*   | ASLS31□602DN-*  |  |
|                           |                               |                 | • | DC-DC converter type | ASLW39902D  | ASLS31602DDN-*  | ASLW311602DD-*  | ASLS311602DDN-* |  |
| 22(4no)                   | ①                             |                 | • | Direct type          | ASLW3□622D-*  | ASLS3990DN-*  | ASLW319902D   | ASLS31990DN-*   |  |
|                           | ②                             |                 | • | Transformer type     | ASLW31622DD-*   | ASLS3□622DN-*   | ASLW31□622D-*   | ASLS31□622DN-*  |  |
|                           | ③                             |                 | • | DC-DC converter type | ASLW39922D-*  | ASLS31622DN-*   | ASLW311622DD-*  | ASLS311622DN-*  |  |
|                           | ④                             |                 | • | Direct type          | ASLW3□640D-*  | ASLS39922DN-*   | ASLW319922D   | ASLS319922DN-*  |  |
| 40(4no)                   | ①                             |                 | • | Transformer type     | ASLW31604DD-*   | ASLS3□640DN-*   | ASLW31□640D-*   | ASLS31□640DN-*  |  |
|                           | ②                             |                 | • |                      |   |   |   |                 |  |
|                           | ③                             |                 | • | DC-DC converter type | ASLW31604DD-*   | ASLS31640DDN-*  | ASLW311604DD-*  | ASLS311640DDN-* |  |
| 04(4no)                   | ①                             |                 | • | Transformer type     | ASLW3□604D-*  | ASLS3□604DN-*   | ASLW31□604D-*   | ASLS31□604DN-*  |  |
|                           | ②                             |                 | • |                      |   |   |   |                 |  |
|                           | ③                             |                 | • | DC-DC converter type | ASLW31604DD-*   | ASLS31604DN-*   | ASLW311604DD-*  | ASLS311604DN-*  |  |
|                           | ④                             |                 | • | Direct type          | ASLWD39904D-*   | ASLS399*04DN-*  | ASLWD319904D-*  | ASLS319904DN-*  |  |





■ Contact installation position

| <br>Automatic reset<br>(From left to right)      |          |                |  |                |
|--|----------|----------------|--|----------------|
| ASLW22□611D-*                                    | 22 611D  | ASLS22 611DN   | —  | —              |
| ASLW221611DD-*                                   | 221611DD | ASLS221611DN   | —  | —              |
| ASLW22991D-*                                     | 22991D   | ASLS229911DN   | —  | —              |
| ASLW22□620D-*                                    | 22 620D  | ASLS22□620DN   | —  | —              |
| ASLW221620D-*                                    | 221620D  | ASLS221620DN   | —  | —              |
| ASLW229920D-*                                    | 229920D  | ASLS229920DN   | —  | —              |
| ASLW22□622D-*                                    | 22 622D  | ASLS22 622DN   | —  | —              |
| ASLW221622DD-*                                   | 221622DD | ASLS221622DN   | —  | —              |
| ASLW229922D-*                                    | 229922D  | ASLS229922DN   | —  | —              |
| <br>Automatic reset<br>(From left to the center) |          |                | <br>Automatic reset<br>(From left and right to the center) |                |
| ASLW32□620DD-*                                   | 32 620DD | ASLS32 620DN   | ASLW<br>233620DD   | ASLS33 620 DN  |
| ASLW321620DD-*                                   | 32620DD  | ASLS 321620DDN | ASLW 31620<br>DD   | ASLS 331620 DN |
| ASLW329920D-*                                    | 329920D  | ASLS 329920DN  | ASLW 339920D   | ASLS 339920 DN |
| ASLW32□602D-*                                    | 32 602D  | ASLS 32 602DN  | ASLW 33 602D   | ASLS 33 602 DN |
| ASLW321602DD-*                                   | 32 620DD | ASLS 321602DDN | ASLW<br>331602DD   | ASLS 331602 DN |
| ASLW329902D-*                                    | 329902D  | ASLS 329902DN  | ASLW 339902D   | ASLS 33990 DN  |
| ASLW32□622D-*                                    | 32 622D  | ASLS 32 622DN  | ASLW 33 622D   | ASLS 33 622 DN |
| ASLW321622DD-*                                   | 321622DD | ASLS 321622DN  | ASLW<br>331622DD   | ASLS 331622 DN |
| ASLW329922D-*                                    | 32 9922D | ASLS 329922 DN | ASLW 339922D   | ASLS 339922 DN |
| ASLW32□640D-*                                    | 32 640D  | ASLS 32 640 DN | ASLW 33 604D   | ASLS 33 640 DN |
| ASLW321604DD-*                                   | 321604D  | ASLS 321640DDN | ASLW<br>331604DD   | ASLS 334640 DN |
| ASLWD329904D-*                                   | D329904D | ASLS 329940 DN | ASLW 339904D   | ASLS 339940 DN |
| ASLW32□604D-*                                    | 32 604D  | ASLS 32604 DN  | ASLW 33 604D   | ASLS 33 604 DN |
| ASLW321604DD-*                                   | 321604DD | ASLS 321604 DN | ASLW<br>331604DD   | ASLS 331604 DN |
| ASLWD329904D-*                                   | D329904D | ASLS 329904 DN | ASLW 339904d   | ASLS 339904DN  |



· Specify voltage code of transformer in □ of "Model" column.

1: 110 V AC, 15: 115 V AC, 12: 120V AC, 2: 220V AC, 23: 230 V AC, 24: 240 V AC

· Specify color code in \* of "Model" column.

R: Red; G: Green; Y: Yellow; A: Aurantiacus; W: White (Only applicable to knob type)

· Option switches of transformer type and DC-DC converter type are with a LED lamp respectively.

Except that key option switch is with a specific LED lamp, other direct option switches are with no lamps, thus LED lamp shall be otherwise ordered to match with direct option switch.

· Standard color for round front ring

22 series: Black unpolished aluminum

25 series: Black unpolished aluminum

· Standard color for square front ring

22 series: Black plastic



DEMEX ISO9001:2000



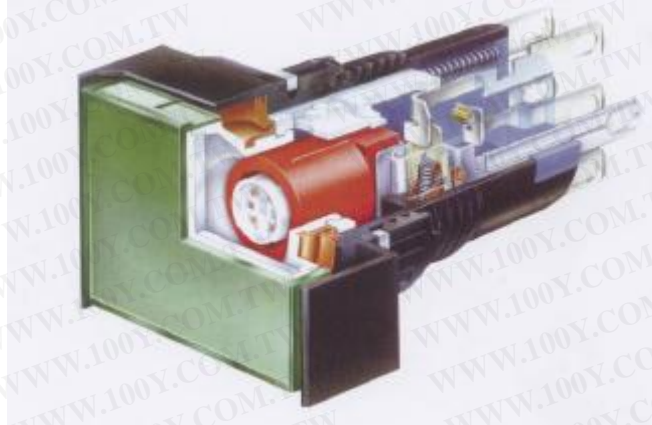
ø22 series

■ Attachments

| Appearance | Name                      | Color                             | Appearance | Name  | Color           |
|------------|---------------------------|-----------------------------------|------------|---|-----------------|
|            | Parallel color lid        | R-<br>G-<br>Y-<br>S-<br>W-<br>B-  |            | Plastic ring                                  |                 |
|            | Raised head color lid     |                                   |            | Aluminum ring                                 | Original color  |
|            | Mushroom headed           |                                   |            | Gold ring                                     | Y-              |
|            | Mushroom headed handwheel |                                   | R-         | Full protective aluminum ring                 | Original color  |
|            | Knob handle               | B-<br>R-<br>G-<br>Y-<br>S-<br>W-  |            | Mushroom headed full protective aluminum ring | Original color  |
|            | Indicating lamp color lid |                                   |            | ø 30 telescoping plastic ring                 | Nobelium plated |
|            | Contact NO-NC             | Normal open S-<br>Normal close R- |            | ø 30 telescoping aluminum ring                | Original color  |
|            | Touch-proof lid           | B-                                |            | ø 25 telescoping plastic ring                 | Grey color      |
|            |                           |                                   |            | LED lamp                                      | R-<br>G-<br>Y-  |

## Great variety of minitype control components

### Minitype control components for electronic and minitype control panels



#### ■ Three types of control components assembled in DIN panel

Each series of control components is divided into three types:

Round type, square type and rectangular type. The front lid dimensions of all types of control components are specially designed to be able to be assembled in one standard panel.



#### ■ Various types for various purposes

Besides from button, illuminated button and indicating lamp, ø16 series control components also include option switch, key switch and large-scale control components. The attachments include base, switch protective cover and dust cover etc.

#### ■ Limpidity illumination face characterized by new type super luminant LED lamp

HQA series control components are characterized by new type super luminant LED lamp originally created by IDEC, plug-in units and short body. An ideal reflector is fitted in lamp shade to eliminate light scattering. Mark board, acting as a filter, can effectively transmit light source and maintain limpidity of illumination face.












#### Super luminant LED lamp



#### ■ Back terminal with high reliability

The terminals of all series of control components are in one flat surface. The lamp and contact terminal (welding/foil terminal) are placed on the back of the manipulator. Since the external dimensions of all series of control components are 22 mm, and all their terminals are in one flat surface, it is very convenient for wiring when installing different series of control components.

■ A16 button and ZS 16 emergency stop

| Appearance   | Actuating type  | Contact construction | Model      | Button color (specified mark)   |
|--|---|----------------------|------------|---|
|  |   |                      | Sealed     |   |
| Round<br>                    | Snap-action   | 1C                   | A16-11SY/□ | R- <br>G- <br>Y- <br>S- <br>W- <br>B-  |
|  |   | 2C                   | A16-22SY/□ |   |
|  | Alternate   | 1C                   | A16-11ZY/□ |   |
|  |   | 2C                   | A16-1ZY/□  |   |
| Square<br>                   | Snap-action   | 1C                   | A16-11SF/□ |   |
|  |   | 2C                   | A16-22SY/□ |   |
|  | Alternate   | 1C                   | A16-22ZF/□ |   |
|  |   | 2C                   | A16-22ZY/□ |   |
| Rectangular<br>             | Snap-action   | 1C                   | A16-11SJ/□ |   |
|  |   | 2C                   | A16-22SJ/□ |   |
|  | Alternate   | 1C                   | A16-11ZJ/□ |   |
|  |   | 2C                   | A16-22ZJ/□ |   |
| Round ø 23.5 mm button<br> | Snap-action   | 1C                   | A16-11SM/□ |   |
|  |   | 2C                   | A16-22SM/□ |   |
|  | Alternate   | 1C                   | A16-11ZM/□ |   |
|  |   | 2C                   | A16-22ZM/□ |   |
| Round ø 23.5 mm button<br> | Snap-action   | 1C                   | A16-11SQ/□ |   |
|  |   | 2C                   | A16-22SQ/□ |   |
|  | Alternate   | 1C                   | A16-11ZQ/□ |   |
|  |   | 2C                   | A16-22ZQ/□ |   |
| Emergency stop type<br>   | Button that locked<br>when pressing and reset<br>when turning | 1C                   | ZS16-11R   | R-   |
|  |   | 2C                   | ZS16-22R   |   |

**22 mm depth of extended type minitype control components**

- HQA series minitype control components are characterized by exquisite operating mechanism originally created by IDEC. The switch operating is instant and soft. The short body operating switch adopting reliable gold-plated and silver-plated contact can be applied to offices and factories.
- With various modules
- With LED; the illumination face is limpid.
- One current limiting resistor and one protective diode are included in LED lamp



**Contact capacity**

|                   |           |                     |      |      |  |
|-------------------|-----------|---------------------|------|------|--|
| Maximum voltage   |           | 250V AC/DC          |      |      |  |
| Maximum current   |           | 3A                  |      |      |  |
| Operating voltage |           | 24V                 | 110V | 220  |  |
| Operating voltage | AC50/50HZ | Resistive           | 1.0A | 0.5A |  |
|                   |           | Inductive           | 0.7A | 0.5A |  |
|                   | DC        | Resistive           | 1.0A | 0.2A |  |
|                   |           | Inductive           | 0.7A | 0.1A |  |
| Contact materials |           | Gold-plated contact |      |      |  |

Notes: DC inductive load PF=0.6-0.7  
 DC inductive load L/R=7 msec  
 Minimum available load (reference value); 5 V, 1mA AC/DC  
 (Application scope depends on operating conditions and load)



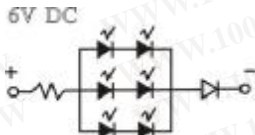
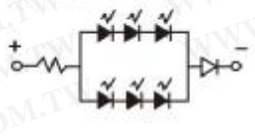
**LED illumination unit capacity**

|                    |               |  |                |                |         |
|--------------------|---------------|--|----------------|----------------|---------|
| Operating voltage  |               | 6V DC<br>±5%   | 12V DC<br>±10% | 24V DC<br>±10% |         |
| LED lamp           | Rated voltage | 6V DC  | 12V DC         | 24V DC         |         |
|                    | Rated current | 30mA   | 20mA           | 10Ma           |         |
|                    | Model         | Red  | LAPD-6R        | LAPD-1R        | LAPD-2R |
|                    |               | Green  | LAPD-6G        | LAPD-1G        | LAPD-2G |
|                    |               | Blue   | LAPD-6S        | LAPD-1S        | LAPD-2S |
|                    |               | White  | LAPD-6W        | LAPD-1W        | LAPD-2W |
| Yellow             | LAPD-6Y       | LAPD-1Y  | LAPD-2Y        |                |         |
| Base color         |               | Green  | Yellow         | Red            |         |
| LED lamp life      |               | 50,000 hours or so<br>(The luminance reduces to 50% of the initial luminance when applied to total direct current) |                |                |         |
| Equivalent circuit |               |  |                |                |         |

**Properties**



|                                     |                   |  |
|-------------------------------------|-------------------|--|
| Operating temperature               |                   | -25~+15°C (No freezing)<br>Incandescence type: -25~+40°C   |
| Operating humidity                  |                   | 45~85% RH (No condensation)  |
| Contact resistance                  |                   | Maximum: 50M (Initial value)   |
| Insulation resistance               |                   | Minimum: 100M (500V DC megohm table)   |
| Withstand voltage test              | Switch unit       | Between moving parts and stationary parts: 2000V AC, 1 min<br>Between contact and contact in different polar: 2000V AC, 1 min<br>Between contact and contact in the same polar: 1000V AC, 1 MIN<br>Between contact and lamp contact: 1500V AC, 1 MIN |
|                                     | Illumination unit | Between moving parts and the ground: 200V AC, 1 min  |
| Aseismic resistance                 |                   | 10-55 Hz, amplitude 1.5 mmP-P  |
| Impulse resistance                  |                   | Limiting danger line: 500 m/Sec <sup>2</sup> (About 50G)<br>Operating limit: 200m/Sec <sup>2</sup> (About 20G)   |
| Mechanical life (minimum frequency) |                   | Snap-action: 1,000,000 times<br>Alternate: 100,000<br>Button that locked when pressing and reset when turning: 100,000<br>Option switch: 250,000<br>Key switch: 250,000  |
| Electric life (Minimum frequency)   |                   | Alternate: 50,000<br>Others: 100,000 (When reaching 1200 times/hour)   |
| Protection grade (IEC Pub.529)      |                   | IP 40 (Sealed type)  |

**■ AD 16 illuminated button and DX 16 indicating lamp**

| Appearance  | Actuating type | Service voltage | Contact construction | Mode  | Color (Specified mark)  | Imbedding LED lamp model capacity  |
|---|----------------|-----------------|----------------------|---|---|--|
|   |                |                 |                      | Sealed type (IP40)  |   |  |
| <br>Round<br>Nameplate size<br>Carving area         | Snap-action    | 6V DC ± 5%      | 1C                   |   | R- <span style="color:red">■</span> 6V DC<br>G- <span style="color:green">■</span> LAPD-6*<br>Y- <span style="color:yellow">■</span> (6V DC/30mA)<br>W- □   | Operating voltage<br>6V DC<br>LAPD-6*<br>(6V DC/30mA)  |
|   |                | 12V DC ± 10%    | 2C                   |   |   |  |
|   |                | 24V DC ± 10%    | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   |                |                 | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   | Alternate      | 6V DC ± 5%      | 1C                   |   | Operating voltage<br>12V DC<br>LAPD-1*<br>(12V DC/20mA)   |  |
|   |                | 12V DC ± 10%    | 2C                   |   |   |  |
|   |                | 24V DC ± 10%    | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   |                |                 | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
| Indicating lamp   | 6V DC ± 5%     | -               |                      | Operating voltage<br>24V DC<br>LAPD-2*<br>(24V DC/10mA)   |   |  |
|   | 12V DC ± 10%   | -               |                      |   |   |  |
|   | 24V DC ± 10%   | -               |                      |   |   |  |
| <br>Square<br>Nameplate size<br>Carving area       | Snap-action    | 6V DC ± 5%      | 1C                   |   | Code color<br>R: Red<br>S: Blue<br>G: Green<br>Y: Yellow<br>W: White<br><br>Notes:<br>1. White lamp shade shall be used with a yellow LED lamp;<br>2. LED lamp includes a choke resistor and a protective diode with no need for external resistance. |  |
|   |                | 12V DC ± 10%    | 2C                   |   |   |  |
|   |                | 24V DC ± 10%    | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   |                |                 | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   | Alternate      | 6V DC ± 5%      | 1C                   |   |   | Equivalent circuit<br>6V DC<br> |
|   |                | 12V DC ± 10%    | 2C                   |   |   |  |
|   |                | 24V DC ± 10%    | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   |                |                 | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
| Indicating lamp   | 6V DC ± 5%     | -               |                      | 12V DC<br> |   |  |
|   | 6V DC ± 5%     | -               |                      |   |   |  |
|   | 6V DC ± 5%     | -               |                      |   |   |  |
|   |                | -               |                      |   |   |  |
|   |                | -               |                      |   |   |  |
|   |                | -               |                      |   |   |  |
| <br>Rectangular<br>Nameplate size<br>Carving area | Snap-action    | 6V DC ± 5%      | 1C                   |   | 24V DC<br>   |  |
|   |                | 12V DC ± 10%    | 2C                   |   |   |  |
|   |                | 24V DC ± 10%    | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   |                |                 | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   | Alternate      | 6V DC ± 5%      | 1C                   |   |   |  |
|   |                | 12V DC ± 10%    | 2C                   |   |   |  |
|   |                | 24V DC ± 10%    | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
|   |                |                 | 1C                   |   |   |  |
|   |                |                 | 2C                   |   |   |  |
| Indicating lamp   | 6V DC ± 5%     | -               |                      |   |   |  |
|   | 12V DC ± 10%   | -               |                      |   |   |  |
|   | 24V DC ± 10%   | -               |                      |   |   |  |

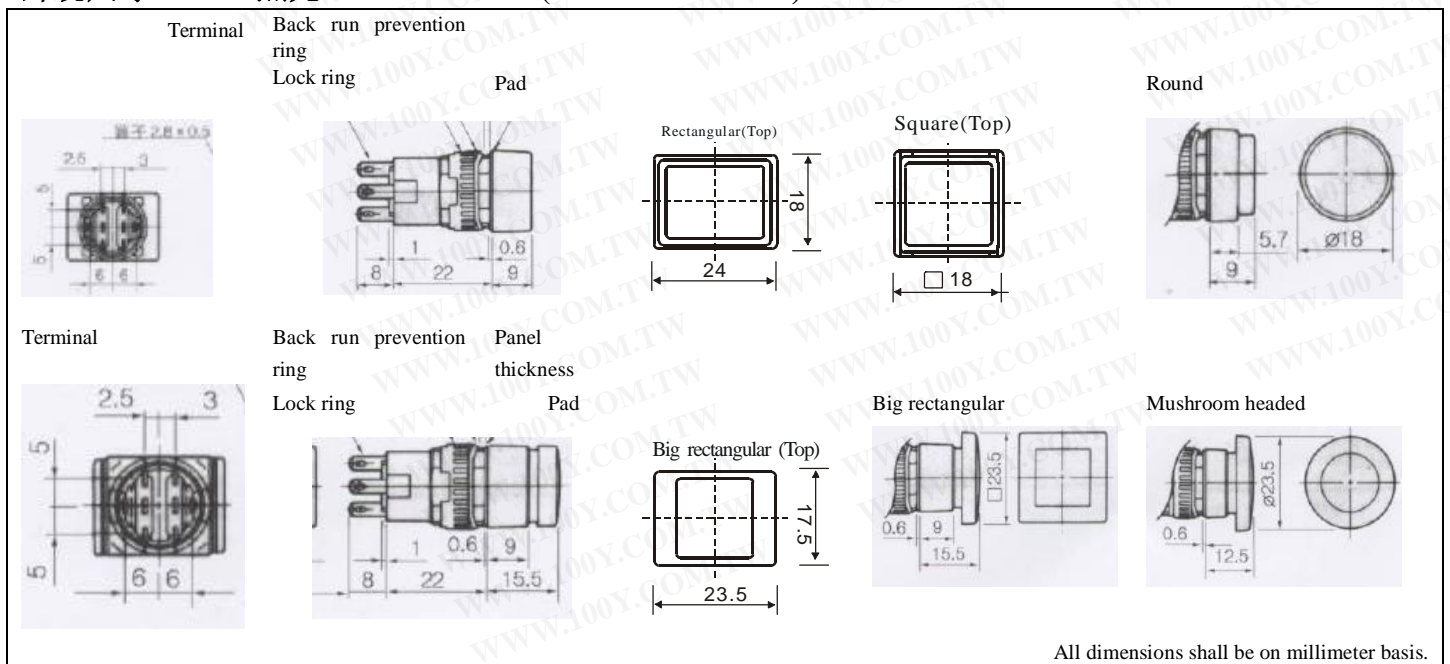
**Notes:** If LED lamp is required, please place “E” in front of lamp voltage.

■ AD 16 large-scale illuminated button

| Appearance   | Actuating type | Service voltage | Contact construction | Model              | Color<br>(Specified mark)   | Imbedding<br>LED lamp<br>model capacity |
|--|----------------|-----------------|----------------------|--------------------|---|---|
|  |                |                 |                      | Sealed type (IP40) |   |   |
| Round φ23.5 mm cover<br><br>Nameplate Carving area       | Snap-action    | 6V DC ± 5%      | 1C                   | AD16-11SM/6        | R- <span style="color:red">■</span><br>G- <span style="color:green">■</span><br>Y- <span style="color:yellow">■</span><br>S- <span style="color:blue">■</span><br>W- □<br>B- <span style="color:black">■</span><br>Operating voltage<br>6V DC LAPD-6*<br>(6V DC/30mA)<br>Operating voltage<br>12V DC LAPD-1*<br>(12V DC/20mA)<br>Operating voltage<br>24V DCLAPD-2*<br>(24V DC/10mA)<br>Notes:<br>1. White lamp shade shall be used with a yellow LED lamp;<br>2. LED lamp includes a choke resistor and a protective diode with no need for external resistance. |   |
|  |                |                 | 2C                   | AD16-22SM/6        |   |   |
|  |                | 12V DC ± 10%    | 1C                   | AD16-11SM/12       |   |   |
|  |                |                 | 2C                   | AD16-11SM/12       |   |   |
|  |                | 24V DC ± 5%     | 1C                   | AD16-22SM/24       |   |   |
|  |                |                 | 2C                   | AD16-22SM/24       |   |   |
| Alternate<br>6V DC ± 5%<br>12V DC ± 10%<br>24V DC ± 5%   | Snap-action    | 6V DC ± 5%      | 1C                   | AD16-11SM/6        |   |   |
|  |                |                 | 2C                   | AD16-22SM/6        |   |   |
|  |                | 12V DC ± 10%    | 1C                   | AD16-11SM/12       |   |   |
|  |                |                 | 2C                   | AD16-11SM/12       |   |   |
|  |                | 24V DC ± 5%     | 1C                   | AD16-22SM/24       |   |   |
|  |                |                 | 2C                   | AD16-22SM/24       |   |   |
| φ23.5 mm big square cover<br><br>Nameplate Carving area | Snap-action    | 24V DC ± 5%     | 1C                   | AD16-22SM/24       |   |   |
|  |                |                 | 2C                   | AD16-22SM/24       |   |   |
|  |                | 6V DC ± 5%      | 1C                   | AD16-11SM/6        |   |   |
|  |                |                 | 2C                   | AD16-22SM/6        |   |   |
|  |                | 12V DC ± 10%    | 1C                   | AD16-11SM/12       |   |   |
|  |                |                 | 2C                   | AD16-11SM/12       |   |   |
|  | Alternate      | Snap-action     | 24V DC ± 5%          | 1C                 | AD16-22SM/24  |   |
|  |                |                 |                      | 2C                 | AD16-22SM/24  |   |
|  |                |                 | 6V DC ± 5%           | 1Cz                | AD16-11SM/6   |   |
|  |                |                 |                      | 2C                 | AD16-22SM/6   |   |
|  |                |                 | 12V DC ± 10%         | 1C                 | AD16-11SM/12  |   |
|  |                |                 |                      | 2C                 | AD16-11SM/12  |   |
| 24V DC ± 5%  | 1C             | AD16-22SM/24    |                      |                    |   |   |
|  | 2C             | AD16-22SM/24    |                      |                    |   |   |

Notes: If LED lamp is required, please place "E" in front of lamp voltage.

外观尺寸 (LED 照光) : Overall size (LED illumination)

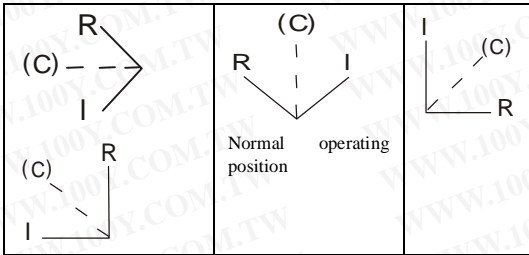


■ X16 Option switch

■ Manipulator position changeable

The manipulator position can be changed by virtue of front lid turning and lock-in mechanism originally created by IDEC. The front lid is able to be locked in every other 45° position to prevent it from automatic turning when installing.

■ Three segment type



■ Contact action graph

| Position                          | Contact construction | Operating position and contact state (TOPVIEW)      |   |   |
|-----------------------------------|----------------------|---|---|---|
|                                   |                      | ↙ (Left)  | ↑ (Center)  | ↘ (Right)   |
| Two segments lock-in<br>L R       | 1C                   | NO NC<br>C  | /   | NO NC<br>C  |
|                                   | 2C                   | Left contact NO NC<br>C<br>Right contact NO NC<br>C | /   | Left contact NO NC<br>C<br>Right contact NO NC<br>C |
| Three segments lock-in<br>L (C) R | 2C                   | Left contact NO NC<br>C<br>Right contact NO NC<br>C | Left contact NO NC<br>C<br>Right contact NO NC<br>C | Left contact NO NC<br>C<br>Right contact NO NC<br>C |

■ Model

| Appearance      | Position               | Contact construction | Model       | Notes                                      |
|-----------------|------------------------|----------------------|-------------|--|
|                 |                        |                      | Sealed type |  |
| Round<br>       | Two segments lock-in   | 1C                   | X16-11Y/B-2 | (Knob color: black)<br>(Body color: black) |
|                 |                        | 2C                   | X16-22Y/B-2 |  |
| Square<br>      | Two segments lock-in   | 1C                   | X16-11F/B-2 |  |
|                 |                        | 2C                   | X16-22F/B-2 |  |
| Rectangular<br> | Two segments lock-in   | 1C                   | X16-11J/B-2 |  |
|                 |                        | 2C                   | X16-22J/B-2 |  |
|                 | Three segments lock-in | 2C                   | X16-22J/B-3 |  |

■ External dimension graph

| Terminal | Anti-rolling ring | Panel thickness | All dimensions shall be on millimeter basis. |             |            |
|----------|-------------------|-----------------|--|-------------|------------|
|          |                   |                 | Rectangular(Top)                             | Square(Top) | Round(Top) |
|          | Lock ring<br>     | Pad<br>         |  |             |            |

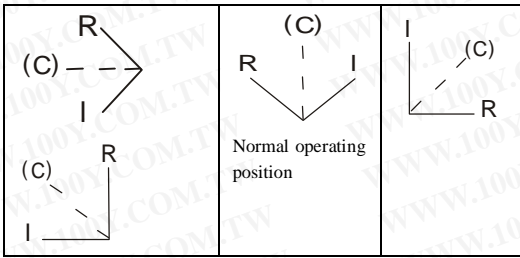


**X16 Wheel key lock switch**

**Manipulator position changeable**

The manipulator position can be changed by virtue of front lid whirl and lock-in mechanism originally created by IDEC. The front lid is able to be locked in every other 45° position to prevent it from automatic whirl when installing.

**Three segment type**








**Contact actuating graph**

| Position                   | Contact construction | Operating position and contact status (TOPVIEW)                     |   |   |
|----------------------------|----------------------|---|---|---|
|                            |                      | ↙ (Left)  | ↑ (Center)  | ↘ (Right)   |
| <br>Two segments lock-in   | 1C                   | <br>NO NC<br>○ ●<br>C ○   | /   | <br>NO NC<br>○ ●<br>C ○   |
|                            | 2C                   | Left contact Right contact<br><br>NO NC NO NC<br>○ ● ○ ●<br>C ○ C ○ | /   | Left contact Right contact<br><br>NO NC NO NC<br>○ ● ○ ●<br>C ○ C ○ |
| <br>Three segments lock-in | 2C                   | Left contact Right contact<br><br>NO NC NO NC<br>○ ● ○ ●<br>C ○ C ○ | Left contact Right contact<br><br>NO NC NO NC<br>○ ● ○ ●<br>C ○ C ○ | Left contact Right contact<br><br>NO NC NO NC<br>○ ● ○ ●<br>C ○ C ○ |

**Category**

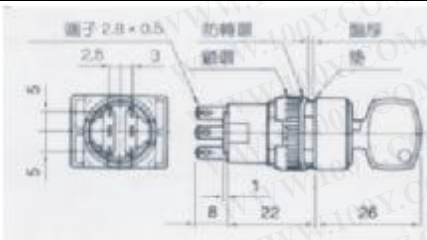
| Appearance | Position               | Key hold position | Contact construction | Model         |  | Notes |
|------------|------------------------|-------------------|----------------------|---------------|--|-------|
|            |                        |                   |                      |               | Sealed type  |       |
| Round<br>  | Two segments lock-in   |                   | 1C                   | Y16-11Y/B-2   | The key holds in ● position and releases in ○ position.<br><br>Two keys are available. |       |
|            |                        |                   | 2C                   | Y16-22Y/B-2   |  |       |
|            |                        |                   | 1C                   | Y16-11Y/B-2R  |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-2R  |  |       |
|            |                        |                   | 1C                   | Y16-11Y/B-2L  |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-2L  |  |       |
|            | Three segments lock-in |                   | 2C                   | Y16-22Y/B-3   |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-3R  |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-3L  |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-3LR |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-3C  |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-3CR |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-3CL |  |       |
|            |                        |                   | 2C                   | Y16-22Y/B-3L  |  |       |
| Square<br> | Two segments lock-in   |                   | 1C                   | Y16-11F/B-2   |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-2   |  |       |
|            |                        |                   | 1C                   | Y16-11F/B-2R  |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-2R  |  |       |
|            |                        |                   | 1C                   | Y16-11F/B-2L  |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-2L  |  |       |
|            | Three segments lock-in |                   | 2C                   | Y16-22F/B-3   |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-3R  |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-3L  |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-3LR |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-3C  |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-3CR |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-3L  |  |       |
|            |                        |                   | 2C                   | Y16-22F/B-3L  |  |       |

**Category**

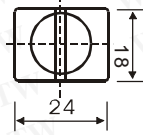
| Appearance   | Position               | Key hold position   | Contact construction ● | Model         | Notes  |
|--|------------------------|---|------------------------|---------------|--|
|  |                        |   |                        | Sealed type   |  |
|  | Two segments lock-in   |  | 1C                     | Y16-11J/B-2   | The key holds in ● position and releases in ○ position.<br><br>Two wheel keys are available. |
|  |                        |   | 2C                     | Y16-22J/B-2   |  |
|  |                        |  | 1C                     | Y16-11J/B-2R  |  |
|  |                        |   | 2C                     | Y16-22J/B-2R  |  |
|  |                        |  | 1C                     | Y16-11J/B-2L  |  |
|  |                        |   | 2C                     | Y16-22J/B-2L  |  |
|  | Three segments lock-in |  | 2C                     | Y16-22J/B-3   |  |
|  |                        |   | 2C                     | Y16-22J/B-3R  |  |
|  |                        |   | 2C                     | Y16-22J/B-3L  |  |
|  |                        |   | 2C                     | Y16-22J/B-3LR |  |
|  |                        |   | 2C                     | Y16-22J/B-3C  |  |
|  |                        |   | 2C                     | Y16-22J/B-3CR |  |
|  |                        |   | 2C                     | Y16-22J/B-3CL |  |
|  |                        |   | 2C                     | Y16-22J/B-3CL |  |

**External dimension graph**

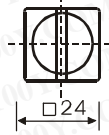
|          |                   |                 |
|----------|-------------------|-----------------|
| Terminal | Anti-rolling ring | Panel thickness |
|          | Lock ring         | Pad             |



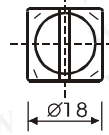
Rectangular(Top)



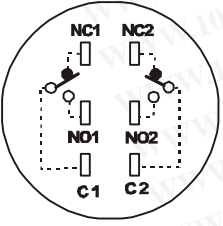
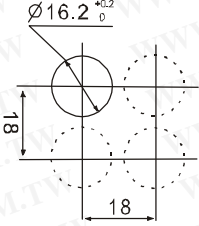
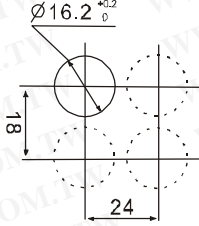
Square(Top)



Round(Top)



**Bottom view**

|  |  |  |
|--|--|--|
| <p>Top</p> <p>Perforate dimension graph</p>  <p>Notes: For 1C contact type, NC2, NO2 and C2 terminals will not be offered</p> | <p>Round/square</p>  <p>Notes: Specify installation center so as to be convenient for perforate operating</p> | <p>Rectangular</p>  <p>All dimensions shall be on millimeter basis.</p> |
|--|--|--|

**Descriptions**

How to change manipulator position?



Pull out front lid and push it in 45° spacing position, then the front lid is locked.

### ■ U16 buzzer


#### Mintype high performance electronic buzzer with a duplex vibration circuit in it

1. Make 3.5 Hz sound which can be still heard in the noisy area.
2. Its size and the terminal permutation are the same with those of the LDEC ø16 series indicating lamp.
3. The pulse device is optional for the buzzer, it can make the pulsation frequency reach 30~ 600 times/ minute.
4. Pulse device can be installed at the back of the buzzer with clasp assembly.

### ■ Properties

|                       |  |
|-----------------------|--|
| Insulation voltage    | 60V DC   |
| Insulation resistance | Between moving components and stationary components: 1000M       |
| Insulation impedance  | Between moving components and stationary components: 1000V, 1min |
| Ambient temperature   | -20~+5°C   |
| Relative humidity     | 45-85%RH   |
| Connecting wire       | Maximum ø 1 mm2 or 0.75 mm2                                      |
| Protective grade      | Sealed type  |
| Case color            | Black  |
| Weight                | About 6.5 grams  |

### ■ Model

| Appearance   | Operating voltage (Under complete DC) | Model                 |                            | Calling mode | Rated sound pressure and frequency                                  | Rated current | Notes |
|--|---------------------------------------|-----------------------|----------------------------|--------------|---|---------------|-------|
|  |                                       | Welding terminal type | Wire winding terminal type |              |   |               |       |
|  | 6V DC+10%                             | U16-16                | U16-16W                    | Consecutive  | 75 dB (When in IM position)(Under rated voltage)<br>3.5KHZ+/- 800HZ | 36mA          | -     |
|  | 12V DC+10%                            | U16-11                | U16-11W                    |              |   | 24MA          |       |
|  | 24V DC+10%                            | U16-12                | U16-12W                    |              |   | 24MA          |       |