ø30 Switches and Pilot Lights

# TWN
# TWND Series











Heavy duty switches & pilot lights offer both variety and reliability.

- Pilot light is not approved by EN standards.
- DC-DC convertor unit is not approved by standards.
- See website for details on approvals and standards.

| | Model | Features | Page |
|---|---|---|---|
|  | Plastic TWN Series | The all-time bestseller since first developed. Suitable for versatile applications. | B-304 |
|  | Diecast Zinc TWND Series | Heavy-duty switches for tough industrial usage. | B-326 |

# ø30 TWN/TWND Selection Guide

| Function | Pushbutton | | | | | |
|---|---|---|---|---|---|---|
| Category | Flush | | Extended | | Extended with Half Shroud | |
| | Momentary/Maintained | | Momentary/Maintained | | Momentary/Maintained | |
| Shape |  |  |  | Diecast Zinc  |  | Diecast Zinc  |
| Model | ABN1<br>AON1 | ABD1<br>AOD1 | ABN2<br>AON2 | ABD2<br>AOD2 | ABN2G<br>AON2G | ABGD2<br>AOGD2 |
| Page | B-310 | B-326 | B-310 | B-326 | B-310 | B-326 |

| Function | Pushbutton | | | | | |
|---|---|---|---|---|---|---|
| Category | Extended with Full Shroud | | Mushroom | | Mushroom with Full Shroud | |
| | Momentary/Maintained | | Momentary/Maintained | | Momentary/Maintained | |
| Shape |  | Diecast Zinc  |  | Diecast Zinc  |  | Diecast Zinc  |
| Model | ABN2F<br>AON2F | ABFD2<br>AOFD2 | ABN3<br>AON3 | ABD3<br>AOD3 | ABN3G<br>— | ABGD3<br>AOGD3 |
| Page | B-310 | B-326 | B-311 | B-327 | B-311 | B-327 |

| Function | Pushbutton | | | | | |
|---|---|---|---|---|---|---|
| Category | Jumbo Mushroom | | Jumbo Mushroom with Shallow Shroud | | Jumbo Mushroom with Deep Shroud | |
| | Momentary | | Momentary | | Momentary | |
| Shape |  | Diecast Zinc  |  | Diecast Zinc  |  | Diecast Zinc  |
| Model | ABN4 | ABD4 | ABN4G | ABGD4 | ABN4F | ABFD4 |
| Page | B-311 | B-327 | B-311 | B-327 | B-311 | B-327 |

| Function | Pushbutton | | | | | |
|---|---|---|---|---|---|---|
| Category | Mushroom Pushlock Turn Reset (*1) | | Mushroom Push Turn Lock | | Mushroom Pull | |
| Shape |  | Diecast Zinc  |  | Diecast Zinc  |  | Diecast Zinc  |
| Model | AVN3 | AVD3 | AJN3 | AJD3 | AZN3 | AZD3 |
| Page | B-312 | B-328 | B-312 | B-328 | B-312 | B-328 |

| Function | Pushbutton | | | |
|---|---|---|---|---|
| Category | Mushroom Push-Pull | | Pin Lock | |
| Shape | — | Diecast Zinc  | — | Diecast Zinc  |
| Model | — | AYD3 | — | ABD8P |
| Page | — | B-328 | — | B-327 |

*1) Cannot be used as emergency stop switch based on ISO 13850 and IEC 60947-5-5.

# ø30 TWN/TWND Selection Guide

| Function | LED Illuminated Pushbutton | | | | | |
|---|---|---|---|---|---|---|
| Category | Extended | | Extended with Half Shroud | | Extended with Full Shroud | |
| | Momentary/Maintained | | Momentary/Maintained | | Momentary/Maintained | |
| Shape |  | Diecast Zinc  |  | Diecast Zinc — |  | Diecast Zinc  |
| Model | ALN2<br>AOLN2 | ALD2<br>AOLD2 | ALGN2<br>AOLGN2 | — | ALFN2<br>AOLFN2 | ALFD2<br>AOLFD2 |
| Page | B-313 | B-329 | B-313 | | B-313 | B-329 |

| Function | LED Illuminated Pushbutton | | | | | |
|---|---|---|---|---|---|---|
| Category | Mushroom | | Mushroom Pushlock Turn Reset (*1) | | Mushroom Push Turn Lock | |
| | Momentary/Maintained | | | | | |
| Shape |  | Diecast Zinc  |  | Diecast Zinc  |  | Diecast Zinc — |
| Model | ALN3<br>AOLN3 | ALD3<br>AOLD3 | AVLN3 | AVLD3 | AJLN3 | — |
| Page | B-313 | B-330 | B-314 | B-330 | B-313 | |

| Function | Selector Switches | | | | | |
|---|---|---|---|---|---|---|
| Category | Knob | | Lever | | Key | |
| Shape |  | Diecast Zinc  |  | Diecast Zinc  |  | Diecast Zinc  |
| Model | ASN | ASD | ASN□L | ASD□L | ASN□K | ASD□K |
| Page | B-316 | B-331 | B-317 | B-332 | B-318 | B-333 |

| Function | Selector Switch | | | Selector Pushbutton | |
|---|---|---|---|---|---|
| Category | Key | LED Illuminated Knob | | Ring Operator | |
| Shape |  |  | Diecast Zinc  |  | Diecast Zinc  |
| Model | ASN□K-NO24401 | ASLN | ASLD | ASBN2 | ASBD2 |
| Page | B-319 | B-320 | B-334 | B-323 | B-335 |

| Function | LED Illuminated Pilot Light | | | |
|---|---|---|---|---|
| Category | Dome | | Square Extended (IP40) | Rectangular (Marking) (IP40) |
| Shape |  | Diecast Zinc  |  |  |
| Model | APN1 | APD1 | UPQN3B | UPQN4 |
| Page | B-324 | B-336 | B-324 | B-324 |

*1) Cannot be used as emergency stop switch based on ISO 13850 and IEC 60947-5-5.

# ø30 TWN/TWND Ratings/Specifications

## Heavy duty switches & pilot lights offer both variety and reliability. Endures harsh environments.

Equipped with HW-U contact blocks featuring finger-safe (IP20) structure and spring-up terminals.

### ø30 TWN Series (plastic)



### ø30 TWND Series (Diecast Zinc)



## Ratings and Specifications

### Contact ratings

| | | |
|---|---|---|
| Pushbuttons<br>Illuminated Pushbuttons<br>Selector Switches<br>Illuminated Selector Switches<br>Selector Pushbuttons | Rated insulation voltage | 600V |
| | Rated continuous current | 10A |
| | Contact ratings by utilization category<br>JIS C8201-5-1<br>IEC60947-5-1 | AC-15 (A600)<br>DC-13 |

### Contact ratings by utilization category

#### HW-U10 (NO contact), HW-U01 (NC contact)

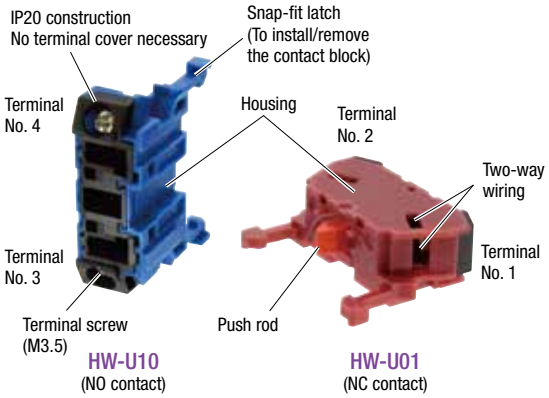
| Operating Voltage | | | 24V | 48V | 50V | 110V | 220V | 440V |
|---|---|---|---|---|---|---|---|---|
| Operating Current | AC 50/60 Hz | AC-12 Control of resistive loads and solid state loads | 10A | – | 10A | 10A | 6A | 2A |
| | | AC-15 Control of electromagnetic loads (> 72 VA) | 10A | – | 7A | 5A | 3A | 1A |
| | DC | DC-12 Control of resistive loads and solid state loads | 10A | 5A | – | 2.2A | 1.1A | – |
| | | DC-13 Control of electromagnets | 5A | 2A | – | 1.1A | 0.6A | – |

#### HW-U10R (EM contact/NO contact), HW-U01R (LB contact/NC contact)

| Operating Voltage | | | 24V | 48V | 50V | 110V | 220V | 440V |
|---|---|---|---|---|---|---|---|---|
| Operating Current | AC 50/60 Hz | AC-12 Control of resistive loads and solid state loads | 5A | – | 5A | 5A | 3A | 1A |
| | | AC-15 Control of electromagnetic loads (> 72 VA) | 5A | – | 3.5A | 2.5A | 1.5A | 0.5A |
| | DC | DC-12 Control of resistive loads and solid state loads | 5A | 2.5A | – | 1.1A | 0.55A | – |
| | | DC-13 Control of electromagnets | 2.5A | 1A | – | 0.55A | 0.3A | – |

- The operating current represents the classification by making and breaking currents (IEC 60947-5-1).
- Silver contacts
- Minimum applicable load: 3V AC/DC, 5 mA (applicable range may vary with operating conditions and load types)
- For mono-lever switches and cam switches, see the brochures of each product.

### HW-U Contact Block




| Part No. | HW-U10 | HW-U01 | HW-U10R | HW-U01R |
|---|---|---|---|---|
| Contact | 1NO | 1NC | EM (NO)<br>(early make) | LB (NC)<br>(late break) |
| Terminal No. | 3-4 | 1-2 | 3-4 | 1-2 |
| Housing color | Blue | Reddish purple | Blue | Reddish purple |
| Push Rod color | Green | Red | Black | White |
| Weight | Approx. 11g | | | |

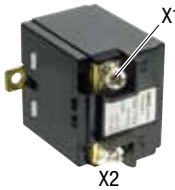
- Up to 4 contacts in two decks can be mounted onto each operator. (AZN, AZD, AYD: Up to 2 contact blocks in one deck)
- Cannot be used on operators in dark gray or light gray color.
- Gold contact available (gold-plated silver)

## LED Illuminated Part Specifications

| Unit | Rated Voltage | | Operating Voltage | | LED lamp | |
|---|---|---|---|---|---|---|
| | | | | | Lamp Base | Part No. |
| Illuminated pushbutton<br>Illuminated selector switch<br>Pilot light | 6V AC/DC | | 6V AC/DC | ±10% | BA9S/13 | LSRD-6 |
| | 12V AC/DC | | 12V AC/DC | | | LSRD-1 |
| | 24V AC/DC | | 24V AC/DC | | | LSRD-2 |
| | 100/110V AC | 50/60 Hz | 100/110V AC | | | LSRD-6 |
| | 115/120V AC (*1) | | 115/120V AC (*1) | | | |
| | 120V AC (*2) | | 120V AC (*2) | | | |
| | 200/220V AC | | 200/220V AC | | | |
| | 230/240V AC (*1) | | 230/240V AC (*1) | | | |
| | 240V AC (*2) | | 240V AC (*2) | | | |
| | 380V AC | | 380V AC | | | |
| | 400/440V AC | | 400/440V AC | | | |
| | 480V AC | | 480V AC | | | |
| | 110V DC | | 90 to 140V DC | | | |

• See LED lamps, see LED Lamp Ratings below.
*1) Illuminated pushbutton, illuminated selector switch
*2) Pilot light

## Illuminated Part Type and Shape

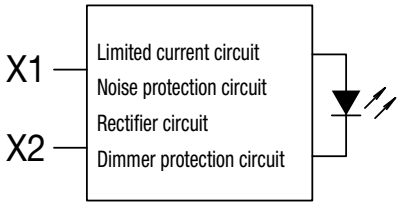
| | Illuminated Unit | | | | | Pilot Light | |
|---|---|---|---|---|---|---|---|
| Power Unit | Full voltage adapter | Transformer | | DC-DC converter | Full voltage adapter (unibody) | Transformer | DC-DC converter |
| Rated Voltage | 6V, 12V, 24V AC/DC | 100 to 240V AC | 380V AC min. | 110V DC | 6V, 12V, 24V AC/DC | 100 to 480V AC | 110V DC |
| Polarity | None | None | None | X1 (+)<br>X2 (–) | None | None | X1 (+)<br>X2 (–) |
| Shape/Terminal |  |  |  | | <br>(APN1) |  | |

• Note the polarity for wiring when connecting to DC-DC converter unit.

X1

X2

## LED Lamp Ratings (LSRD)

| Part No. | | LSRD-6 | LSRD-1 | LSRD-2 |
|---|---|---|---|---|
| Lamp Base | | BA9S/13 | | |
| Rated Voltage | | 6V AC/DC | 12V AC/DC | 24V AC/DC |
| Voltage Range | | 6V AC/DC ±10% | 12V AC/DC ±10% | 24V AC/DC ±10% |
| Current Draw | DC | 10mA | 7mA | 7mA |
| | AC | 14mA | 8mA | 8mA |
| Voltage Marking | | Die stamped on the base | | |
| Life (reference value) | | Approx. 50,000 hours<br>(The luminance is reduced to 50% the initial intensity when used on complete DC at 25°C.) | | |
| Internal Circuit | |  | | Example: LSRD-2<br> |
| Weight | | Approx. 2g | | |

• Only one color is available for LSRD so there are no codes to specify the color in the part no.

## Specifications

| | | | | |
|---|---|---|---|---|
| Operating Temperature | | | Non-illuminated: –25 to +70°C (no freezing)<br>Illuminated: –25 to +50°C (no freezing) | |
| Storage Temperature | | | –40 to +80°C (no freezing) | |
| Operating Humidity | | | 45 to 85% RH (no condensation) | |
| Contact Resistance | | | 50 mΩ maximum (initial value) | |
| Insulation Resistance | | | 100 MΩ minimum (500V DC megger) | |
| Dielectric Strength | | | Between live and dead metal parts: 2,500V AC, 1 minute<br>(Full voltage and pilot lights: 2,000V AC, 1 minute)<br>2000V AC, (pilot lights: 6V AC/DC, 12V, 24V) | |
| Vibration Resistance | Damage limits | | 30 Hz, amplitude 1.5 mm | |
| | Operation extremes | | 5 to 55 Hz, amplitude 0.5 mm | |
| Shock Resistance | Damage limits | | 1000 m/s² | |
| | Operation extremes | | 100 m/s² | |
| Mechanical Life (minimum operations) | Pushbutton | Momentary | 5,000,000 | |
| | | Maintained | 500,000 (over 3 contacts: 250,000) | |
| | | Push lock turn reset | 500,000 | |
| | | Pull | 500,000 | |
| | Illuminated pushbutton | Momentary | 2,500,000 | |
| | | Maintained | 500,000 (over 3 contacts: 250,000) | |
| | Selector switch | | 500,000 | |
| | Key selector switch | | 500,000 | |
| | Illuminated selector switch | | 500,000 | |
| | Selector pushbutton | | 250,000 | |
| Electrical Life (minimum operations) (*1) | Pushbutton | Momentary | 500,000 Switching frequency 1800 operations/h, duty ratio 40% | |
| | | Maintained | 500,000 (over 3 contacts: 250,000)<br>Switching frequency 900 operations/h, duty ratio 40% | |
| | | Push lock turn reset | 500,000 Switching frequency 900 operations/h, duty ratio 40% | |
| | Illuminated pushbutton | Momentary | 500,000 Switching frequency 1800 operations/h, duty ratio 40% | |
| | | Maintained | 500,000 (over 3 contacts: 250,000)<br>Switching frequency 900 operations/h, duty ratio 40% | |
| | Selector switch | | 500,000 Switching frequency 1200 operations/h, duty ratio 40% | |
| | Key selector switch | | 500,000 Switching frequency 1200 operations/h, duty ratio 40% | |
| | Illuminated selector switch | | 500,000 Switching frequency 1200 operations/h, duty ratio 40% | |
| | Selector pushbutton | | 250,000 Switching frequency 900 operations/h, duty ratio 40% | |
| Weight (approx.) | TWN series | Pushbutton | ABN122: 82g | ABN322: 87g |
| | | Illuminated pushbutton | ALN22222DN: 106g | ALN21622DN: 163g |
| | | Selector switch | ASN222N: 83g | ASN2K22N: 120g |
| | | Illuminated selector switch | ASLN22222DN: 106g | ASLN21622DN: 163g |
| | | Pilot light | APN122DN: 46g | APN116DN: 125g |
| | TWND series | Pushbutton | ABD122: 108g | ABD322: 113g |
| | | Illuminated pushbutton | ALD22222DN: 132g | ALD21622DN: 189g |
| | | Selector switch | ASD222N: 110g | ASD2K22N: 147g |
| | | Illuminated selector switch | ASLD22222DN: 133g | ASLD21622DN: 190g |
| | | Pilot light | APD122DN: 75g | APD116DN: 152g |

*1) Load condition 220V AC 3A (AC-15)

## Degree of Protection

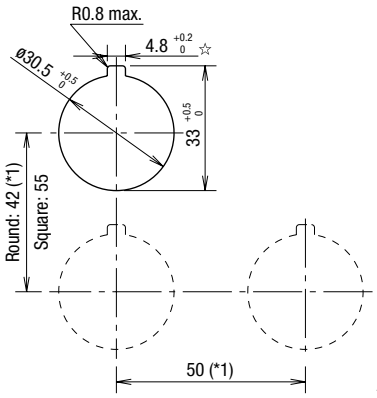
| Series | Unit | Model | IEC 60529 | JIS C 0920 |
|---|---|---|---|---|
| TWN series | Pushbutton | ABN, AON, AVN | IP65 | Dust-proof/jet-proof |
| | Illuminated pushbutton | ALN, AOLN, AVLN | | |
| | Selector switch | ASN, ASN□L | | |
| | Key selector switch | ASN□K | | |
| | Illuminated selector switch | ASLN | | |
| | Selector pushbutton | ASBN | | |
| | Round pilot light | APN | | |
| | Square pilot light | UPQN | IP40 | — |
| TWND series Diecast zinc | Pushbutton | ABD, AOD, AVD | IP65 | Dustproof/jet-proof |
| | Illuminated pushbutton | ALD, AOLD, AVLD | | |
| | Selector switch | ASD, ASD□L | | |
| | Key selector switch | ASD□K | | |
| | Illuminated selector switch | ASLD | | |
| | Selector pushbutton | ASBD | | |
| | Round pilot light | APD | | |

- Switches/pilot lights have been tested in a test room in accordance with the degree of protection standards, by installing on an enclosure to valuate the effect on the enclosure or inside the switch or pilot light.

### For harsh environment such as torrid/frigid area

TWN/TWND series for harsh environment such as tropical/frigid area is also available (not approved by standards). Contact IDEC for details.

## Mounting Hole Layout/Mounting Centers




All dimensions in mm.

- The minimum mounting centers are applicable to pilot lights with one layer of contact blocks (one to two contact blocks). When two layers of contact blocks (four contact blocks) are mounted, determine the minimum mounting centers in consideration of convenience for wiring.
  *1) Mushroom with shroud: 50 mm minimum
  *1) Jumbo mushroom: 67 mm minimum
  *1) Jumbo mushroom with shroud: 77 mm minimum
  When high temperature is expected, take necessary measures such as securing sufficient mounting centers or using a cooling fan.
- The 4.8 $^{+0.2}_{-0}$ mm recess is for preventing rotation and is not necessary when the nameplate or anti-rotation ring is not used.

Note: For mounting hole layout of mono-lever switches and cam switches, see IDEC's website.

## Notes for Ordering

### Standard models

- Specify Ordering No. when ordering.
- Specify a color code in place of ∗
- Pilot lights, illuminated pushbuttons, and illuminated selector switches have an LED lamp installed.
- Pilot lights are equipped with a terminal cover.
- Color codes for units without LED lamps:
  R (red), G (green), A (amber), Y (yellow), S (blue)
  When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape.
  Make sure of correct operation before installation. The operation of TWN/TWND series cannot be guaranteed when a commercially available lamp is used.
- Terminal covers, nameplates, and accessories for mono-lever swictch and cam switch are ordered separately.
- For terminal cover, nameplate and other accessories of mono-lever switches and cam switches, see IDEC's website.

## Ordering Information

### Pushbutton

When specifying gold-plated silver contact and contact configuration:

TWN series (B-310 to B-312)

ABN 2 11 R - MAU
- ① Optional contact
- ② Contact configuration

TWND series (B-326 to B-328)

ABD 2 11 NR - MAU
- ① Optional contact
- ② Contact configuration

<Codes>

① Optional contact
MAU: Gold-plated silver

② Contact configuration

| | |
|---|---|
| 10: | 1NO |
| 01: | 1NC |
| 11: | 1NO1NC |
| 20: | 2NO |
| 02: | 2NC |
| 22: | 2NO2NC |
| 40: | 4NO |
| 04: | 4NC |
| 13: | 1NO3NC |
| 31: | 3NO1NC |
| 30: | 3NO |
| 03: | 3NC |
| 12: | 1NO2NC |
| 21: | 2NO1NC |

Note:
- Pushbutton with one or three contact blocks contains a dummy block.
- Mushroom pull pushbuttons AZN, AZD and mushroom push-pull AYD have up to two contacts in one layer.

## Ordering Information

### Illuminated Pushbutton

When specifying gold-plated silver contact, contact configuration, and LED operating voltage:

TWN series (B-313 to B-315)

ALFN 2 126 13 DN R - MAU
- ① Optional contact
- ② Contact configuration
- ③ Operating voltage

TWND series (B-329 to B-330)

ALFD 2 126 13 DN R - MAU
- ① Optional contact
- ② Contact configuration
- ③ Operating voltage

<Codes>

① Optional contact
MAU: Gold-plated silver

② Contact configuration
10: 1NO
01: 1NC
11: 1NO1NC
20: 2NO
02: 2NC
31: 3NO1NC
22: 2NO2NC
13: 1NO3NC
40: 4NO
04: 4NC

③ Operating voltage
99: Without LED lamp
66: 6V AC/DC
11: 12V AC/DC
22: 24V AC/DC
16: 100/110V AC
126: 115/120V AC
26: 200/220V AC
246: 230/240V AC
386: 380V AC
46: 400/440V AC
486: 480V AC

Note:
- Odd number of contact blocks, such as 1NO, 1NC, 3NO, 2NO-1NC, 1NO-2NC, and 3NC, are not available for models of 100V AC or over.
- Illuminated pushbuttons of 24V AC/DC and below with two or four contact blocks contain a dummy block.
- See B-309 for how to specify 110V DC model (DC-DC converter).
- Color codes for units without LED lamps:
  R (red), G (green), A (amber), Y (yellow), S (blue)
  When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape.

### Selector Switch

When specifying gold-plated silver contact and contact configuration:

TWN series (B-316 to B-319)

ASN 2 11 N - MAU
- ① Optional contact
- ② Contact configuration

TWND series (B-331 to B-333)

ASD 2 11 N - MAU
- ① Optional contact
- ② Contact configuration

<Codes>

① Optional contact
MAU: Gold-plated silver

#### Key removable position code (example)

| Position | | Key removable position | Key removable position code | Part No. Example | | |
|---|---|---|---|---|---|---|
| | | | | TWN series | | TWND series |
| 2-position | Maintained | Removable in all positions | (blank) | ASN2K20N | ASN2K20N-NO24401 | ASD2K20N |
| | | Removal in left only | B | ASN2K20NB | ASN2K20NB-NO24401 | ASD2K20NB |
| | | Removable in right only | C | ASN2K20NC | ASN2K20NC-NO24401 | ASD2K20NC |
| | Spring return from right | Removal in left only | (blank) | ASN21K20N | ASN21K20N-NO24401 | ASD21K20N |
| | Spring return from left | Removable in right only | (blank) | ASN22K20N | ASN22K20N-NO24401 | ASD22K20N |
| 3-position | Maintained | Removable in all positions | (blank) | ASN3K20N | ASN3K20N-NO24401 | ASD3K20N |
| | | Removable in left and center | B | ASN3K20NB | ASN3K20NB-NO24401 | ASD3K20NB |
| | | Removable in right and center | C | ASN3K20NC | ASN3K20NC-NO24401 | ASD3K20NC |
| | | Removable in center only | D | ASN3K20ND | ASN3K20ND-NO24401 | ASD3K20ND |
| | | Removable in right and left | E | ASN3K20NE | ASN3K20NE-NO24401 | ASD3K20NE |
| | | Removal in left only | G | ASN3K20NG | ASN3K20NG-NO24401 | ASD3K20NG |
| | | Removable in right only | H | ASN3K20NH | ASN3K20NH-NO24401 | ASD3K20NH |
| | Spring return from right | Removable in left and center | (blank) | ASN31K20N | ASN31K20N-NO24401 | ASD31K20N |
| | | Removable in center only | D | ASN31K20ND | ASN31K20ND-NO24401 | ASD31K20ND |
| | | Removal in left only | G | ASN31K20NG | ASN31K20NG-NO24401 | ASD31K20NG |
| | Spring return from left | Removable in right and center | (blank) | ASN32K20N | ASN32K20N-NO24401 | ASD32K20N |
| | | Removable in center only | D | ASN32K20ND | ASN32K20ND-NO24401 | ASD32K20ND |
| | | Removable in right only | H | ASN32K20NH | ASN32K20NH-NO24401 | ASD32K20NH |
| | Spring return two-way | Removable in center only | (blank) | ASN33K20N | ASN33K20N-NO24401 | ASD33K20N |

- The key cannot be removed in spring return positions.

## Ordering Information

### Illuminated Selector Switch

When specifying gold-plated silver contact, contact configuration, and LED operating voltage:

TWN series (B-320)

ASLN 2 16 22 DN - MAU
- ① Optional contact
- ② Contact configuration (see B-321 to B-322)
- ③ Operating voltage

TWND series (B-334)

ASLD 2 16 22 DN - MAU
- ① Optional contact
- ② Contact configuration
- ③ Operating voltage

<Codes>
① Optional contact
MAU: Gold-plated silver

③ Operating voltage
99: Without LED lamp
66: 6V AC/DC
11: 12V AC/DC
22: 24V AC/DC
16: 100/110V AC
136: 115/120V AC
26: 200/220V AC
256: 230/240V AC
386: 380V AC
46: 400/440V AC
486: 480V AC

Note:
- Odd number of contact blocks, such as 1NO, 1NC, 3NO, 2NO-1NC, 1NO-2NC, and 3NC, is not available for models of 100V AC or over.
- Illuminated selector switches of 24V AC/DC and below with two or four contact blocks contain a dummy block.
- See below for how to specify 110V DC model (DC-DC converter).
- Color codes for units without LED lamps: R (red), G (green), A (amber), Y (yellow), S (blue)
  When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape.

### Pilot Light (LED)

When specifying LED operating voltage:

TWN series (B-324 to B-325)

APN1 26 DN R
- ① Operating voltage

UPQN3B 22 D R
- ① Operating voltage

TWND series (B-336)

APD1 26 DN R
- ① Operating voltage

<Codes>
① Operating voltage
99: Without LED lamp
66: 6V AC/DC
11: 12V AC/DC
22: 24V AC/DC
16: 100/110V AC
126: 115/120V AC
26: 200/220V AC
246: 230/240V AC
386: 380V AC
46: 400/440V AC
486: 480V AC

- See below for how to specify 110V DC model (DC-DC converter).
- Color codes for units without LED lamps: R (red), G (green), A (amber), Y (yellow), S (blue)
  When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape.

### DC-DC Convertor Model (110V DC)

When specifying DC-DC convertor type on illuminated pushbuttons, illuminated selector switches, and pilot lights:

TWN series

ALN2 16 22D DN G
- ① Operating voltage

ASLN2 16 11D DN Y
- ① Operating voltage

APN1 16 D DN R
- ① Operating voltage

<Codes>
① Operating voltage
16 □ D: 110V DC

TWND series

ALD2 16 22D DN G
- ① Operating voltage

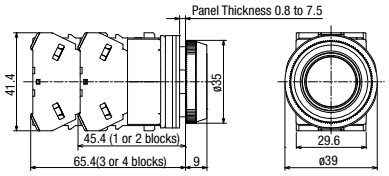
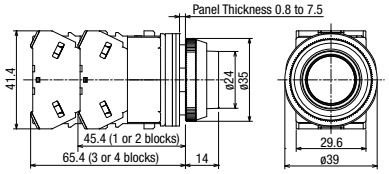
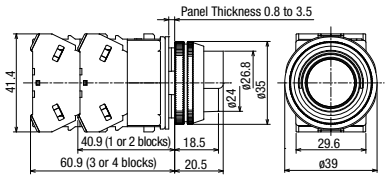
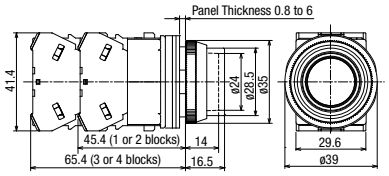
ASLD2 16 11D DN Y
- ① Operating voltage

APD1 16 D DN R
- ① Operating voltage

- See 110V DC model (DC-DC converter) is not approved by standards (operating voltage: 90 to 140V DC).
- Odd number of contact blocks, such as 1NO, 1NC, 3NO, 2NO-1NC, 1NO-2NC, and 3NC, is not available for 100V DC model (DC-DC converter).

## Flush/Extended/Extended w/Half Shroud/Extended with Full Shroud

Package Quantity: 1

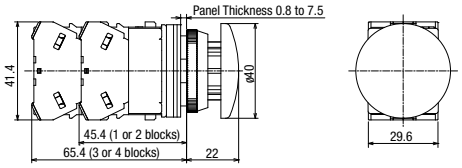
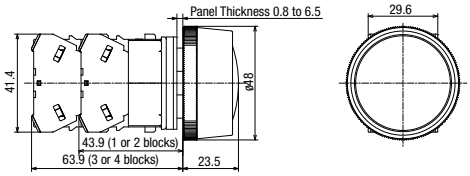
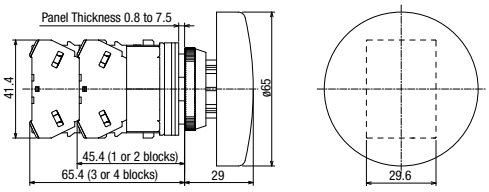
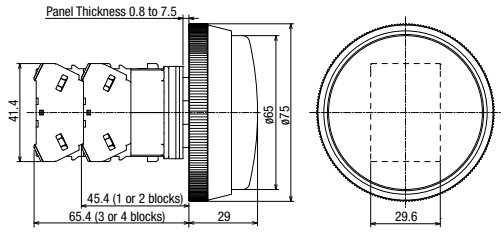
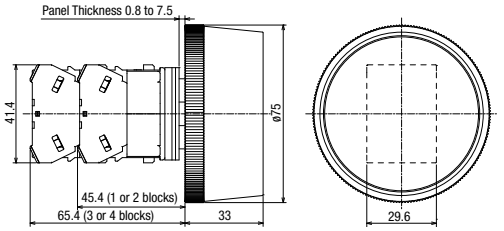
| Shape | Operation | Contact | Part No. (Ordering No.) | Button Color Code | Dimensions (All dimensions in mm.) |
|---|---|---|---|---|---|
| Flush<br>ABN1<br>AON1  | Momentary | 1NO | ABN110∗ | B G R Y S W Note |  |
| | | 1NC | ABN101∗ | | |
| | | 1NO-1NC | ABN111∗ | | |
| | | 2NO | ABN120∗ | | |
| | | 2NC | ABN102∗ | | |
| | | 2NO-2NC | ABN122∗ | | |
| | Maintained | 1NO | AON110∗ | B G R Y S W Note | |
| | | 1NC | AON101∗ | | |
| | | 1NO-1NC | AON111∗ | | |
| | | 2NO | AON120∗ | | |
| | | 2NC | AON102∗ | | |
| | | 2NO-2NC | AON122∗ | | |
| Extended<br>ABN2<br>AON2  | Momentary | 1NO | ABN210∗ | B G R Y S W |  |
| | | 1NC | ABN201∗ | | |
| | | 1NO-1NC | ABN211∗ | | |
| | | 2NO | ABN220∗ | | |
| | | 2NC | ABN202∗ | | |
| | | 2NO-2NC | ABN222∗ | | |
| | Maintained | 1NO | AON210∗ | B G R Y S W | |
| | | 1NC | AON201∗ | | |
| | | 1NO-1NC | AON211∗ | | |
| | | 2NO | AON220∗ | | |
| | | 2NC | AON202∗ | | |
| | | 2NO-2NC | AON222∗ | | |
| Extended with Half Shroud<br>ABN2G<br>AON2G  | Momentary | 1NO | ABN2G10∗ | B G R Y S W |  |
| | | 1NC | ABN2G01∗ | | |
| | | 1NO-1NC | ABN2G11∗ | | |
| | | 2NO | ABN2G20∗ | | |
| | | 2NC | ABN2G02∗ | | |
| | | 2NO-2NC | ABN2G22∗ | | |
| | Maintained | 1NO | AON2G10∗ | B G R Y S W | |
| | | 1NC | AON2G01∗ | | |
| | | 1NO-1NC | AON2G11∗ | | |
| | | 2NO | AON2G20∗ | | |
| | | 2NC | AON2G02∗ | | |
| | | 2NO-2NC | AON2G22∗ | | |
| Extended with Full Shroud<br>ABN2F<br>AON2F  | Momentary | 1NO | ABN2F10∗ | B G R Y S W |  |
| | | 1NC | ABN2F01∗ | | |
| | | 1NO-1NC | ABN2F11∗ | | |
| | | 2NO | ABN2F20∗ | | |
| | | 2NC | ABN2F02∗ | | |
| | | 2NO-2NC | ABN2F22∗ | | |
| | Maintained | 1NO | AON2F10∗ | B G R Y S W | |
| | | 1NC | AON2F01∗ | | |
| | | 1NO-1NC | AON2F11∗ | | |
| | | 2NO | AON2F20∗ | | |
| | | 2NC | AON2F02∗ | | |
| | | 2NO-2NC | AON2F22∗ | | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)
- Round bezel and shroud (metal): Chrome-plated
- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-307 for other contact configurations and gold-plated silver contacts.
- See B-312 for bottom view.
- Terminal screws: M3.5
- Integrated terminal cover

**Note ABN1, AON1 with button color of B (black), G (green), or (R) red**
Supply of color buttons B, G, R has been discontinued for ABN1/AON1 without color code. When ordering, make sure to specify the required button color code.

## Mushroom/Mushroom w/Full Shroud/Jumbo Mushroom/Jumbo Mushroom w/Shallow Shroud/Jumbo Mushroom w/Deep Shroud

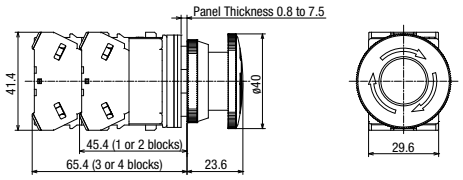
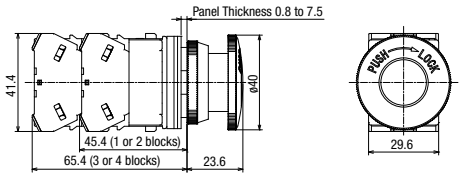
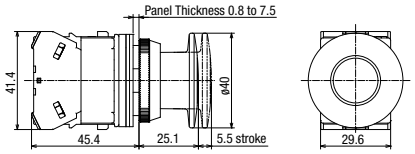
Package Quantity: 1

| Shape | Operation | Contact | Part No. (Ordering No.) | Button Color Code | Dimensions (All dimensions in mm.) |
|---|---|---|---|---|---|
| Mushroom<br>ABN3<br>AON3  | Momentary | 1NO | ABN310∗ | B G R Y S W |   |
| | | 1NC | ABN301∗ | | |
| | | 1NO-1NC | ABN311∗ | | |
| | | 2NO | ABN320∗ | | |
| | | 2NC | ABN302∗ | | |
| | | 2NO-2NC | ABN322∗ | | |
| | Maintained | 1NO | AON310∗ | B G R Y S W | |
| | | 1NC | AON301∗ | | |
| | | 1NO-1NC | AON311∗ | | |
| | | 2NO | AON320∗ | | |
| | | 2NC | AON302∗ | | |
| | | 2NO-2NC | AON322∗ | | |
| Mushroom with Full Shroud<br>ABN3G  | Momentary | 1NO | ABN3G10∗ | B G R Y S W |   |
| | | 1NC | ABN3G01∗ | | |
| | | 1NO-1NC | ABN3G11∗ | | |
| | | 2NO | ABN3G20∗ | | |
| | | 2NC | ABN3G02∗ | | |
| | | 2NO-2NC | ABN3G22∗ | | |
| Jumbo Mushroom<br>ABN4  | Momentary | 1NO | ABN410∗ | B G R Y |   |
| | | 1NC | ABN401∗ | | |
| | | 1NO-1NC | ABN411∗ | | |
| | | 2NO | ABN420∗ | | |
| | | 2NC | ABN402∗ | | |
| | | 2NO-2NC | ABN422∗ | | |
| Jumbo Mushroom with Shallow Shroud<br>ABN4G  | Momentary | 1NO | ABN4G10∗ | B G R Y |   |
| | | 1NC | ABN4G01∗ | | |
| | | 1NO-1NC | ABN4G11∗ | | |
| | | 2NO | ABN4G20∗ | | |
| | | 2NC | ABN4G02∗ | | |
| | | 2NO-2NC | ABN4G22∗ | | |
| Jumbo Mushroom with Deep Shroud<br>ABN4F  | Momentary | 1NO | ABN4F10∗ | B G R Y |   |
| | | 1NC | ABN4F01∗ | | |
| | | 1NO-1NC | ABN4F11∗ | | |
| | | 2NO | ABN4F20∗ | | |
| | | 2NC | ABN4F02∗ | | |
| | | 2NO-2NC | ABN4F22∗ | | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)
- Round bezel and shroud (metal): Chrome-plated
- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-307 for other contact configurations and gold-plated silver contacts.
- See B-312 for bottom view.
- Terminal screws: M3.5
- Integrated terminal cover

## Mushroom Pushlock Turn Reset/Mushroom Push Turn Lock/Mushroom Pull

Package Quantity: 1

| Shape | Contact | Part No. (Ordering No.) | Button Color Code | Dimensions (All dimensions in mm.) |
|---|---|---|---|---|
| Mushroom Pushlock Turn Reset (*1)<br>AVN3<br> | 1NO | AVN310N∗ | R<br>Y |  |
| | 1NC | AVN301N∗ | | |
| | 1NO-1NC | AVN311N∗ | | |
| | 2NO | AVN320N∗ | | |
| | 2NC | AVN302N∗ | | |
| | 2NO-2NC | AVN322N∗ | | |
| Mushroom Push Turn Lock<br>AJN3<br> | 1NO | AJN310N∗ | B<br>G<br>R<br>Y |  |
| | 1NC | AJN301N∗ | | |
| | 1NO-1NC | AJN311N∗ | | |
| | 2NO | AJN320N∗ | | |
| | 2NC | AJN302N∗ | | |
| | 2NO-2NC | AJN322N∗ | | |
| Mushroom Pull<br>AZN3<br> | 1NO | AZN310N∗ | B<br>G<br>R<br>Y |  |
| | 1NC | AZN301N∗ | | |
| | 1NO-1NC | AZN311N∗ | | |
| | 2NO | AZN320N∗ | | |
| | 2NC | AZN302N∗ | | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow)
- Round bezel (metal): Chrome-plated
- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-307 for other contact configurations and gold-plated silver contacts.
- Mushroom pull has up to 2 contact blocks.
- Terminal screws: M3.5
- Integrated terminal cover

*1) Pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use XN series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).

### Pushbutton operation

Pushlock Turn Reset
Button is maintained when pressed and is reset when turned clockwise.

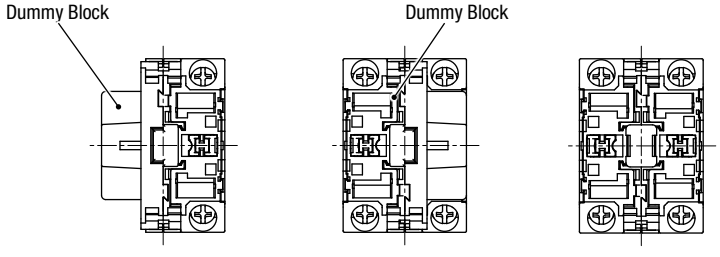
Push Turn Lock
Button is locked when turned clockwise in the depressed position and is reset when turned counterclockwise.

Pull
Pulling the button operates the contacts, and releasing the button return the contacts.

Pull contact operation

| Contact | AZN3 | |
|---|---|---|
| | Normal | Pull |
| 1NO |  |  |
| 2NO-2NC |  |  |
| 2NO |  |  |
| 2NC |  |  |

### Bottom View (for non-illuminated pushbuttons and selector switches)




1 contact block (NO)
(NC: opposite position)

3 contact blocks

2/4 contact blocks

- See B-348 for wiring.
- Integrated terminal cover

## LED Illuminated Extended/Extended with Half Shroud/Extended with Full Shroud

Package Quantity: 1

| Shape | Base | Operation | Operating Voltage | Contact | Part No. (Ordering No.) | Color Code | Dimensions Page |
|---|---|---|---|---|---|---|---|
| Extended<br>ALN2<br>AOLN2<br><br>(24VAC/DC)<br><br>With transformer<br>(100/110V AC) | BA9S | Momentary | 24V AC/DC | 1NO-1NC | ALN22211DN∗ | R<br>G<br>Y<br>A<br>S<br>PW | |
| | | | | 2NO | ALN22220DN∗ | | |
| | | | | 2NC | ALN22202DN∗ | | |
| | | | 100/110V AC | 1NO-1NC | ALN21611DN∗ | | |
| | | | | 2NO | ALN21620DN∗ | | |
| | | | | 2NC | ALN21602DN∗ | | |
| | | | 200/220V AC | 1NO-1NC | ALN22611DN∗ | | |
| | | | | 2NO | ALN22620DN∗ | | |
| | | | | 2NC | ALN22602DN∗ | | |
| | | Maintained | 24V AC/DC | 1NO-1NC | AOLN22211DN∗ | | |
| | | | | 2NO | AOLN22220DN∗ | | |
| | | | | 2NC | AOLN22202DN∗ | | |
| | | | 100/110V AC | 1NO-1NC | AOLN21611DN∗ | | |
| | | | | 2NO | AOLN21620DN∗ | | |
| | | | | 2NC | AOLN21602DN∗ | | |
| | | | 200/220V AC | 1NO-1NC | AOLN22611DN∗ | | |
| | | | | 2NO | AOLN22620DN∗ | | |
| | | | | 2NC | AOLN22602DN∗ | | |
| Extended with Half Shroud<br>ALGN2<br>AOLGN2<br><br>(24V AC/DC)<br><br>With transformer<br>(100/110V AC) | BA9S | Momentary | 24V AC/DC | 1NO-1NC | ALGN22211DN∗ | R<br>G<br>Y<br>A<br>S<br>PW | B-315 |
| | | | | 2NO | ALGN22220DN∗ | | |
| | | | | 2NC | ALGN22202DN∗ | | |
| | | | 100/110V AC | 1NO-1NC | ALGN21611DN∗ | | |
| | | | | 2NO | ALGN21620DN∗ | | |
| | | | | 2NC | ALGN21602DN∗ | | |
| | | | 200/220V AC | 1NO-1NC | ALGN22611DN∗ | | |
| | | | | 2NO | ALGN22620DN∗ | | |
| | | | | 2NC | ALGN22602DN∗ | | |
| | | Maintained | 24V AC/DC | 1NO-1NC | AOLGN22211DN∗ | | |
| | | | | 2NO | AOLGN22220DN∗ | | |
| | | | | 2NC | AOLGN22202DN∗ | | |
| | | | 100/110V AC | 1NO-1NC | AOLGN21611DN∗ | | |
| | | | | 2NO | AOLGN21620DN∗ | | |
| | | | | 2NC | AOLGN21602DN∗ | | |
| | | | 200/220V AC | 1NO-1NC | AOLGN22611DN∗ | | |
| | | | | 2NO | AOLGN22620DN∗ | | |
| | | | | 2NC | AOLGN22602DN∗ | | |
| Extended with Full Shroud<br>ALFN2<br>AOLFN2<br><br>(24V AC/DC)<br><br>With transformer<br>(100/110V AC) | BA9S | Momentary | 24V AC/DC | 1NO-1NC | ALFN22211DN∗ | R<br>G<br>Y<br>A<br>S<br>PW | |
| | | | | 2NO | ALFN22220DN∗ | | |
| | | | | 2NC | ALFN22202DN∗ | | |
| | | | 100/110V AC | 1NO-1NC | ALFN21611DN∗ | | |
| | | | | 2NO | ALFN21620DN∗ | | |
| | | | | 2NC | ALFN21602DN∗ | | |
| | | | 200/220V AC | 1NO-1NC | ALFN22611DN∗ | | |
| | | | | 2NO | ALFN22620DN∗ | | |
| | | | | 2NC | ALFN22602DN∗ | | |
| | | Maintained | 24V AC/DC | 1NO-1NC | AOLFN22211DN∗ | | |
| | | | | 2NO | AOLFN22220DN∗ | | |
| | | | | 2NC | AOLFN22202DN∗ | | |
| | | | 100/110V AC | 1NO-1NC | AOLFN21611DN∗ | | |
| | | | | 2NO | AOLFN21620DN∗ | | |
| | | | | 2NC | AOLFN21602DN∗ | | |
| | | | 200/220V AC | 1NO-1NC | AOLFN22611DN∗ | | |
| | | | | 2NO | AOLFN22620DN∗ | | |
| | | | | 2NC | AOLFN22602DN∗ | | |

- Specify a color code in place of ∗ in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- Illuminated pushbuttons have an LED lamp installed.
- Round bezel (metal): Chrome-plated
- See B-308 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.
- See B-308 for other contact configurations and gold-plated silver contacts.
- See B-314 for bottom view.
- Terminal screws: M3.5
- Integrated terminal cover

## LED Illuminated Mushroom (ø40)/Mushroom Pushlock Turn Reset/Mushroom Push Turn Lock

Package Quantity: 1

| Shape | Base | Operation | Operating Voltage | Contact | Part No. (Ordering No.) | Color Code | Dimensions Page |
|---|---|---|---|---|---|---|---|
| Mushroom (ø40)<br>ALN3<br>AOLN3<br><br>(24V AC/DC)<br><br>With tranformer<br>(100/110V AC) | BA9S | Momentary | 24V AC/DC | 1NO-1NC | ALN32211DN ✻ | R<br>G<br>Y<br>A<br>S<br>PW | B-315 |
| | | | | 2NO | ALN32220DN ✻ | | |
| | | | | 2NC | ALN32202DN ✻ | | |
| | | | 100/110V AC | 1NO-1NC | ALN31611DN ✻ | | |
| | | | | 2NO | ALN31620DN ✻ | | |
| | | | | 2NC | ALN31602DN ✻ | | |
| | | | 200/220V AC | 1NO-1NC | ALN32611DN ✻ | | |
| | | | | 2NO | ALN32620DN ✻ | | |
| | | | | 2NC | ALN32602DN ✻ | | |
| | | Maintained | 24V AC/DC | 1NO-1NC | AOLN32211DN ✻ | R<br>G<br>Y<br>A<br>S<br>PW | |
| | | | | 2NO | AOLN32220DN ✻ | | |
| | | | | 2NC | AOLN32202DN ✻ | | |
| | | | 100/110V AC | 1NO-1NC | AOLN31611DN ✻ | | |
| | | | | 2NO | AOLN31620DN ✻ | | |
| | | | | 2NC | AOLN31602DN ✻ | | |
| | | | 200/220V AC | 1NO-1NC | AOLN32611DN ✻ | | |
| | | | | 2NO | AOLN32620DN ✻ | | |
| | | | | 2NC | AOLN32602DN ✻ | | |
| Mushroom Pushlock Turn Reset<br>AVLN3 (*1)<br><br>(24V AC/DC) | BA9S | — | 24V AC/DC | 1NO-1NC | AVLN32211DN ✻ | R | |
| | | | | 2NO | AVLN32220DN ✻ | | |
| | | | | 2NC | AVLN32202DN ✻ | | |
| | | | 100/110V AC | 1NO-1NC | AVLN31611DN ✻ | | |
| | | | | 2NO | AVLN31620DN ✻ | | |
| | | | | 2NC | AVLN31602DN ✻ | | |
| | | | 200/220V AC | 1NO-1NC | AVLN32611DN ✻ | | |
| | | | | 2NO | AVLN32620DN ✻ | | |
| | | | | 2NC | AVLN32602DN ✻ | | |
| Mushroom Push Turn Lock<br>AJLN3<br><br>(24V AC/DC) | BA9S | — | 24V AC/DC | 1NO-1NC | AJLN32211DN ✻ | R<br>G<br>Y<br>A<br>PW | |
| | | | | 2NO | AJLN32220DN ✻ | | |
| | | | | 2NC | AJLN32202DN ✻ | | |
| | | | 100/110V AC | 1NO-1NC | AJLN31611DN ✻ | | |
| | | | | 2NO | AJLN31620DN ✻ | | |
| | | | | 2NC | AJLN31602DN ✻ | | |
| | | | 200/220V AC | 1NO-1NC | AJLN32611DN ✻ | | |
| | | | | 2NO | AJLN32620DN ✻ | | |
| | | | | 2NC | AJLN32602DN ✻ | | |

- Specify a color code in place of ✻ in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- Illuminated pushbuttons have an LED lamp installed.
- Round bezel (metal): Chrome-plated
- See B-308 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- See B-308 for other contact configurations and gold-plated silver contacts.
- Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

*1) Pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use XN or HN series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).
- Terminal screws: M3.5
- Integrated terminal cover

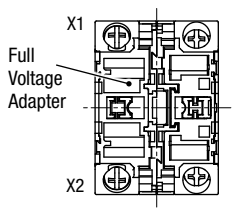
### Illuminated pushbutton operation

Pushlock Turn Reset
Button is maintained when pressed and is reset when turned clockwise.

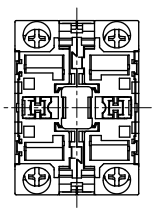
Push Turn Lock
Button is locked when turned clockwise in the depressed position and is reset when turned counterclockwise.

### Bottom View (for illuminated pushbuttons, selector switches, and pilot lights)

6V, 12V, 24V AC/DC

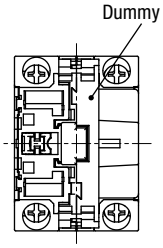



1 contact block



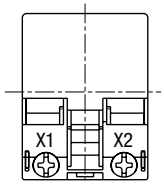
3 contact blocks

Dummy Block

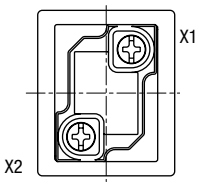


2/4 contact blocks

100/110V, 200/220V AC
240V AC or below




110V DC, 380V AC or over




**DC-DC converter unit**
Terminal No. X1: positive
Terminal No. X2: negative

- See B-348 for wiring.

APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID

Flush Silhouette
ø16
ø22
ø30
Miniature
Pilot Lights

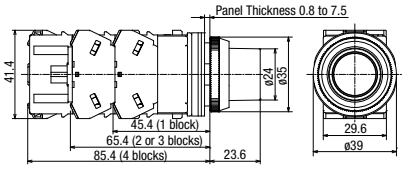
TWN
TWND
ARN
CS

## Dimensions (Illuminated Pushbuttons)

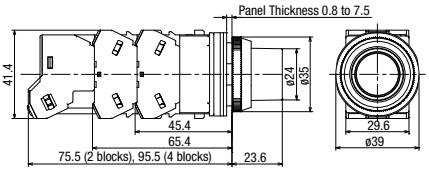
All dimensions in mm.

### Extended, LED illuminated (momentary/maintained)
**ALN2/AOLN2 (terminal screws M3.5)** **Integrated terminal cover**

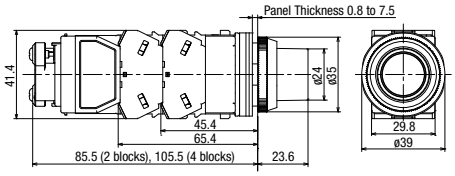
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC (240V AC or below)

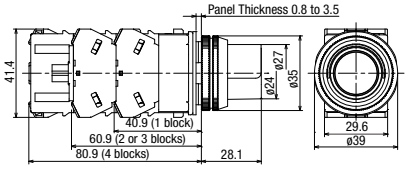



110V DC/380V AC or over

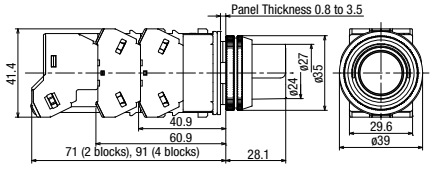



### Extended with Half Shroud, LED illuminated (momentary/maintained)
**ALGN2/AOLGN2** (terminal screws M3.5) **Integrated terminal cover**

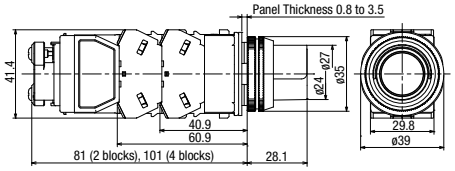
6, 12, 24V AC/DC· Without LED Lamp




100/110V AC, 200/220V AC (240V AC or below)

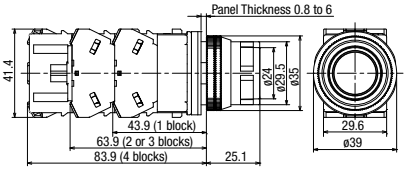



110V DC/380V AC or over

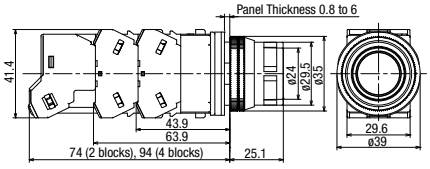



### Extended with Full Shroud, LED illuminated (momentary/maintained)
**ALFN2/AOLFN2 (terminal screws M3.5)** **Integrated terminal cover**

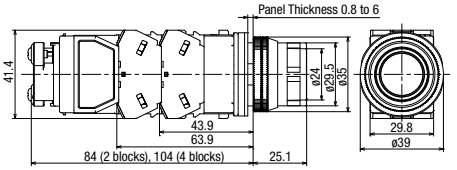
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC (240V AC or below)

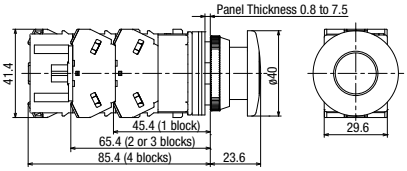



110V DC/380V AC or over

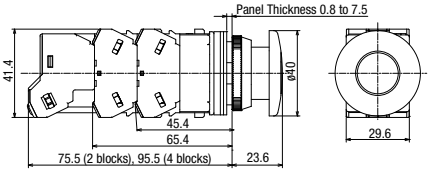



### Mushroom (ø40), LED illuminated (momentary/maintained)
**ALN3/AOLN3 (terminal screws M3.5)** **Integrated terminal cover**

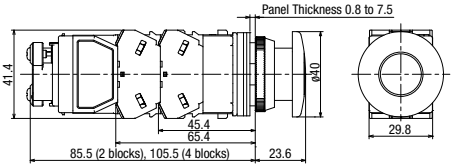
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC (240V AC or below)

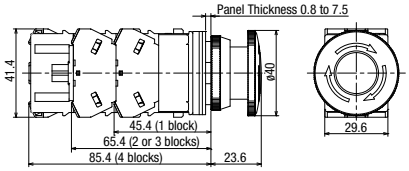



110V DC/380V AC or over

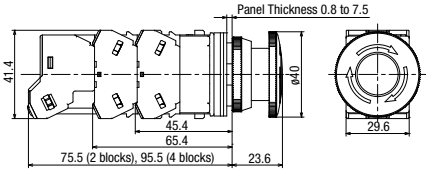



### Mushroom Pushlock Turn Reset, LED illuminated
**AVLN3 (terminal screws M3.5)** **Integrated terminal cover**

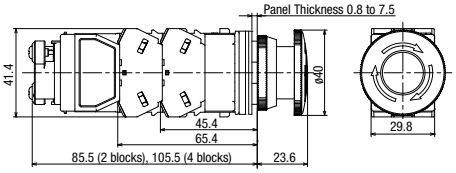
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC

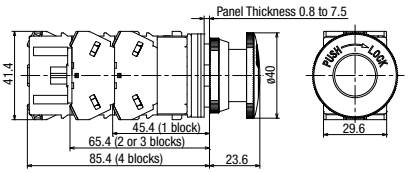



110V DC/380V AC or over

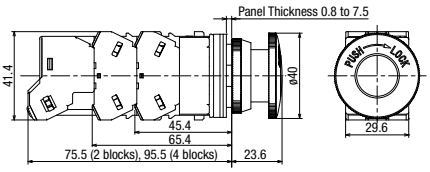



### Mushroom Push Turn Lock, LED illuminated
**AJLN3 (terminal screws M3.5)** **Integrated terminal cover**

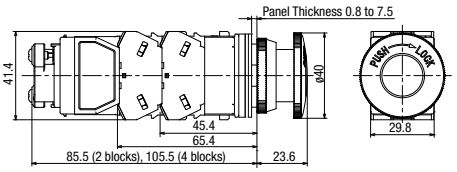
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC




110V DC/380V AC or over



## ASN Selector Switches (Knob Operator)

Package Quantity: 1

Shape: Knob Operator ASN



### 90° 2-position

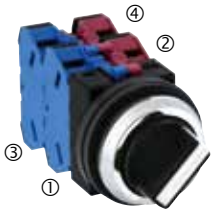
| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Maintained (1 2) | Spring Return from Right (1 2) | Spring Return from Left: Contact Block: Mounting Position | Spring Return from Left: Contact Block: Contact | Spring Return from Left: Operator Position: 1 | Spring Return from Left: Operator Position: 2 | Spring Return from Left (1 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO (10) | ① | NO | | ● | ASN210N | ASN2110N | ① | NO | ● | | ASN2210N |
| | ② | — | Dummy Block | | | | ② | — | — | | |
| 1NO-1NC (11) | ① | NO | | ● | ASN211N | ASN2111N | ① | NO | ● | | ASN2211N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| 2NO (20) | ① | NO | | ● | ASN220N | ASN2120N | ① | NO | ● | | ASN2220N |
| | ② | NO | | ● | | | ② | NO | ● | | |
| 2NO-2NC (22) | ① | NO | | ● | ASN222N | ASN2122N | ① | NO | ● | | ASN2222N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| | ③ | NO | | ● | | | ③ | NO | ● | | |
| | ④ | NC | ● | | | | ④ | NC | | ● | |

### 45° 3-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 0 | Operator Position: 2 | Maintained (1 0 2) | Spring Return from Right (1 0 2) | Spring Return from Left (1 0 2) | Spring Return Two-way (1 0 2) |
|---|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | | ASN320N | ASN3120N | ASN3220N | ASN3320N |
| | ② | NO | | | ● | | | | |
| 2NC (02) | ① | NC | | ▬ | | ASN302N | ASN3102N | ASN3202N | ASN3302N |
| | ② | NC | ▬ | | | | | | |
| 2NO-2NC (22) | ① | NO | ● | | | ASN322N | ASN3122N | ASN3222N | ASN3322N |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | ▬ | | | | | |
| | ④ | NC | ▬ | | | | | | |
| 4NO (40) | ① | NO | ● | | | ASN340N | ASN3140N | ASN3240N | ASN3340N |
| | ② | NO | | | ● | | | | |
| | ③ | NO | ● | | | | | | |
| | ④ | NO | | | ● | | | | |
| 4NC (04) | ① | NC | | ▬ | | ASN304N | ASN3104N | ASN3204N | ASN3304N |
| | ② | NC | ▬ | | | | | | |
| | ③ | NC | | ▬ | | | | | |
| | ④ | NC | ▬ | | | | | | |
| ☆ 3S | ① | NO | ● | | | ASN33SN-243 ☆ | — | — | — |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | ● | | | | | |
| | ④ | — | Dummy Block | | | | | | |

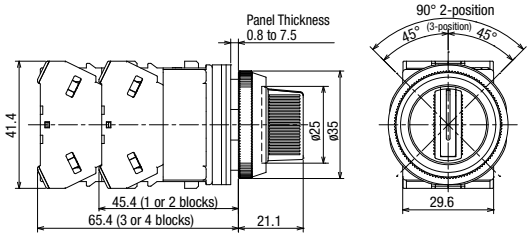
- Knob: Black
- Round bezel (metal): Chrome-plated
- Selector switches with 1 or 3 contact blocks have a dummy block.
- Knob operator can be installed at 45-degree intervals in addition to the positions shown in the above table.
- See B-321 to B-322 for other contact configurations. Turn the operator to each position accurately.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-308 for gold-plated silver contacts.
- See B-312 for bottom view.

## Contact Block Mounting Position




## Dimensions

All dimensions in mm.




Terminal Screws: M3.5 Terminal cover: integrated

## ASN-☐ Selector Switches (Lever Operator)

Package Quantity: 1

Shape: Lever Operator ASN☐L



### 90° 2-position

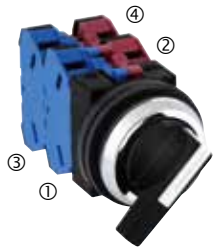
| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Maintained (1 2) | Spring Return from Right (1 2) | Spring Return from Left: Contact Block: Mounting Position | Spring Return from Left: Contact Block: Contact | Spring Return from Left: Operator Position: 1 | Spring Return from Left: Operator Position: 2 | Spring Return from Left (1 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO (10) | ① | NO | | ● | ASN2L10N | ASN21L10N | ① | NO | ● | | ASN22L10N |
| | ② | — | Dummy Block | | | | ② | — | — | | |
| 1NO-1NC (11) | ① | NO | | ● | ASN2L11N | ASN21L11N | ① | NO | ● | | ASN22L11N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| 2NO (20) | ① | NO | | ● | ASN2L20N | ASN21L20N | ① | NO | ● | | ASN22L20N |
| | ② | NO | | ● | | | ② | NO | ● | | |
| 2NO-2NC (22) | ① | NO | | ● | ASN2L22N | ASN21L22N | ① | NO | ● | | ASN22L22N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| | ③ | NO | | ● | | | ③ | NO | ● | | |
| | ④ | NC | ● | | | | ④ | NC | | ● | |

### 45° 3-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 0 | Operator Position: 2 | Maintained (1 0 2) | Spring Return from Right (1 0 2) | Spring Return from Left (1 0 2) | Spring Return Two-way (1 0 2) |
|---|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | | ASN3L20N | ASN31L20N | ASN32L20N | ASN33L20N |
| | ② | NO | | | ● | | | | |
| 2NC (02) | ① | NO | | ▬ | | ASN3L02N | ASN31L02N | ASN32L02N | ASN33L02N |
| | ② | NO | ▬ | | | | | | |
| 2NO-2NC (22) | ① | NO | ● | | | ASN3L22N | ASN31L22N | ASN32L22N | ASN33L22N |
| | ② | NO | | | ● | | | | |
| | ③ | NO | | ▬ | | | | | |
| | ④ | NO | ▬ | | | | | | |
| 4NO (40) | ① | NO | ● | | | ASN3L40N | ASN31L40N | ASN32L40N | ASN33L40N |
| | ② | NO | | | ● | | | | |
| | ③ | NO | ● | | | | | | |
| | ④ | NO | | | ● | | | | |
| 4NC (04) | ① | NO | | ▬ | | ASN3L04N | ASN31L04N | ASN32L04N | ASN33L04N |
| | ② | NO | ▬ | | | | | | |
| | ③ | NO | | ▬ | | | | | |
| | ④ | NO | ▬ | | | | | | |
| ☆ 3S | ① | NO | ● | | | ASN3L3SN-243☆ | — | — | — |
| | ② | NO | | | ● | | | | |
| | ③ | NO | | ● | | | | | |
| | ④ | — | Dummy Block | | | | | | |

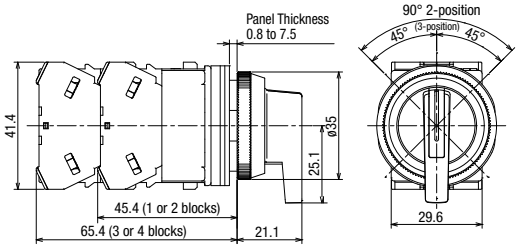
- Lever: Black
- Round bezel (metal): Chrome-plated
- Selector switches with 1 or 3 contact blocks have a dummy block.
- Knob operator can be installed at 45-degree intervals in addition to the positions shown in the above table.
- See B-321 to B-322 for other contact configurations. Turn the operator to each position accurately.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-308 for gold contact.
- See B-312 for bottom view.

### Contact Block Mounting Position




### Dimensions

All dimensions in mm.




Terminal Screws: M3.5 Terminal cover: integrated



IDEC

## ASN-☐K Key Selector Switches

Package Quantity: 1

Shape: Key Selector (Key No. 0)
ASN☐K



### 90° 2-position

| Contact | Mounting Position | Contact | 1 | 2 | Maintained | Spring Return from Right | Mounting Position | Contact | 1 | 2 | Spring Return from Left |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO (10) | ① | NO | | ● | ASN2K10N | ASN21K10N | ① | NO | ● | | ASN22K10N |
| | ② | — | Dummy Block | | | | ② | — | — | | |
| 1NO-1NC (11) | ① | NO | | ● | ASN2K11N | ASN21K11N | ① | NO | ● | | ASN22K11N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| 2NO (20) | ① | NO | | ● | ASN2K20N | ASN21K20N | ① | NO | ● | | ASN22K20N |
| | ② | NO | | ● | | | ② | NO | ● | | |
| 2NO-2NC (22) | ① | NO | | ● | ASN2K22N | ASN21K22N | ① | NO | ● | | ASN22K22N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| | ③ | NO | | ● | | | ③ | NO | ● | | |
| | ④ | NC | ● | | | | ③ | NC | | ● | |

### 45° 3-position

| Contact | Mounting Position | Contact | 1 | 0 | 2 | Maintained | Spring Return from Right | Spring Return from Left | Spring Return Two-way |
|---|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | | ASN3K20N | ASN31K20N | ASN32K20N | ASN33K20N |
| | ② | NO | | | ● | | | | |
| 2NC (02) | ① | NC | | | ▬ | ASN3K02N | ASN31K02N | ASN32K02N | ASN33K02N |
| | ② | NC | ▬ | | | | | | |
| 2NO-2NC (22) | ① | NO | ● | | | ASN3K22N | ASN31K22N | ASN32K22N | ASN33K22N |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | | ▬ | | | | |
| | ④ | NC | ▬ | | | | | | |
| 4NO (40) | ① | NO | ● | | | ASN3K40N | ASN31K40N | ASN32K40N | ASN33K40N |
| | ② | NO | | | ● | | | | |
| | ③ | NO | ● | | | | | | |
| | ④ | NO | | | ● | | | | |
| 4NC (04) | ① | NC | | | ▬ | ASN3K04N | ASN31K04N | ASN32K04N | ASN33K04N |
| | ② | NC | ▬ | | | | | | |
| | ③ | NC | | | ▬ | | | | |
| | ④ | NC | ▬ | | | | | | |
| ☆ 3S | ① | NO | ● | | | ☆ ASN3K3SN-243 | — | — | — |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | ● | | | | | |
| | ④ | — | Dummy Block | | | | | | |

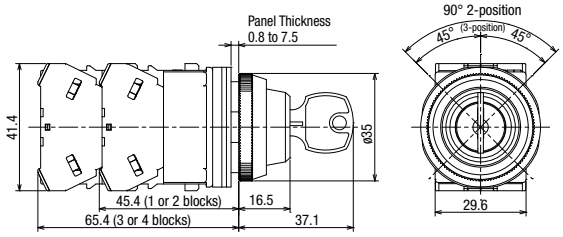
- Cylinder: Chrome-plated
- Round bezel (metal): Chrome-plated
- Key selector switches with 1 or 3 contact blocks have a dummy block.
- See B-321 to B-322 for other contact configurations.
- On spring-returned types, the key can be released only from the maintained position. On maintained types, the key can be released from every position. See B-308 for specifying key retained positions.
- Key selector switch is supplied with two standard keys.
  (1) Insert the key completely before turning the key, otherwise failure may result.
  (2) Turn the operator to each position accurately.
- Different key number is available upon request. Contact IDEC.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-308 for gold-plated silver contacts.
- See B-312 for bottom view.

## Contact Block Mounting Position




## Dimensions

All dimensions in mm.




Terminal Screws: M3.5 Terminal cover: integrated

## ASN-☐K Key Selector Switches

Package Quantity: 1

Shape: Key Selector (Key No. 24401) ASN☐K

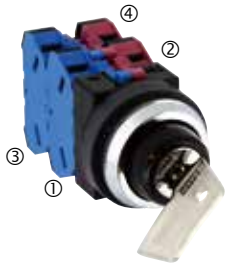


| Contact Configuration | | | | | | | Maintained | Spring Return from Right | Spring Return from Left | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contact | Contact Block | | Operator Position | | | | | | Contact Block | | Operator Position | | |
| | Mounting Position | Contact | 1 | 2 | | | 1 2 | 1 2 | Mounting Position | Contact | 1 | 2 | 1 2 |
| 90° 2-position | | | | | | | | | | | | | |
| 1NO (10) | ① | NO | | ● | | | ASN2K10N-N024401 | ASN21K10N-N024401 | ① | NO | ● | | ASN22K10N-N024401 |
| | ② | — | Dummy Block | | | | | | ② | — | — | | |
| 1NO-1NC (11) | ① | NO | | ● | | | ASN2K11N-N024401 | ASN21K11N-N024401 | ① | NO | ● | | ASN22K11N-N024401 |
| | ② | NC | ● | | | | | | ② | NC | | ● | |
| 2NO (20) | ① | NO | | ● | | | ASN2K20N-N024401 | ASN21K20N-N024401 | ① | NO | ● | | ASN22K20N-N024401 |
| | ② | NO | | ● | | | | | ② | NO | ● | | |
| 2NO-2NC (22) | ① | NO | | ● | | | ASN2K22N-N024401 | ASN21K22N-N024401 | ① | NO | ● | | ASN22K22N-N024401 |
| | ② | NC | ● | | | | | | ② | NC | | ● | |
| | ③ | NO | | ● | | | | | ③ | NO | ● | | |
| | ④ | NC | ● | | | | | | ④ | NC | | ● | |

| Contact Configuration | | | | | | | Maintained | Spring Return from Right | Spring Return from Left | Spring Return Two-way |
|---|---|---|---|---|---|---|---|---|---|---|
| Contact | Contact Block | | Operator Position | | | | | | | |
| | Mounting Position | Contact | 1 | 0 | 2 | | 1 0 2 | 1 0 2 | 1 0 2 | 1 0 2 |
| 45° 3-position | | | | | | | | | | |
| 2NO (20) | ① | NO | ● | | | | ASN3K20N-N024401 | ASN31K20N-N024401 | ASN32K20N-N024401 | ASN33K20N-N024401 |
| | ② | NO | | | ● | | | | | |
| 2NC (02) | ① | NC | | ▬ | | | ASN3K02N-N024401 | ASN31K02N-N024401 | ASN32K02N-N024401 | ASN33K02N-N024401 |
| | ② | NC | ▬ | | | | | | | |
| 2NO-2NC (22) | ① | NO | ● | | | | ASN3K22N-N024401 | ASN31K22N-N024401 | ASN32K22N-N024401 | ASN33K22N-N024401 |
| | ② | NO | | | ● | | | | | |
| | ③ | NC | | ▬ | | | | | | |
| | ④ | NC | ▬ | | | | | | | |
| 4NO (40) | ① | NO | ● | | | | ASN3K40N-N024401 | ASN31K40N-N024401 | ASN32K40N-N024401 | ASN33K40N-N024401 |
| | ② | NO | | | ● | | | | | |
| | ③ | NO | ● | | | | | | | |
| | ④ | NO | | | ● | | | | | |
| 4NC (04) | ① | NC | | ▬ | | | ASN3K04N-N024401 | ASN31K04N-N024401 | ASN32K04N-N024401 | ASN33K04N-N024401 |
| | ② | NC | ▬ | | | | | | | |
| | ③ | NC | | ▬ | | | | | | |
| | ④ | NC | ▬ | | | | | | | |
| ☆ 3S | ① | NO | ● | | | | ASN3K3SN-243-N024401 | — | — | — |
| | ② | NO | | | ● | | | | | |
| | ③ | NC | | ● | | | | | | |
| | ④ | — | Dummy Block | | | | | | | |

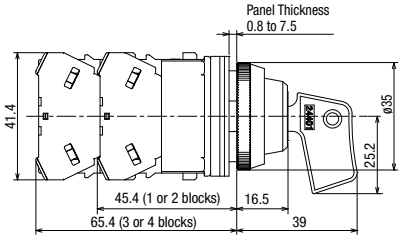
- Cylinder: Chrome-plated
- Round bezel (metal): Chrome-plated
- Key selector switches with 1 or 3 contact blocks have a dummy block.
- See B-321 to B-322 for other contact configurations.
- On spring-returned types, the key can be released only from the maintained position. On maintained types, the key can be released from every position. See B-308 for specifying key retained positions.
- Key selector switch is supplied with two standard keys.
  (1) Insert the key completely before turning the key, otherwise failure may result.
  (2) Turn the operator to each position accurately.
- Different key number is available upon request. Contact IDEC.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-308 for gold-plated silver contacts.
- See B-312 for bottom view.

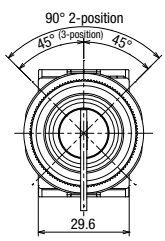
### Contact Block Mounting Position




### Dimensions

All dimensions in mm.




Terminal Screws: M3.5

Terminal cover: integrated



IDEC

## ASLN Illuminated Selector Switches (LED)

Package Quantity: 1

Shape: Illuminated Selector Switches (BA9S Base)
ASLN



(24V AC/DC)

### 90° 2-position

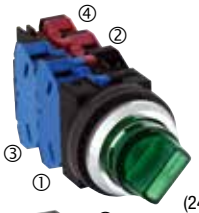
| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Rated Voltage | Maintained (1 2) | Spring Return from Right (1 2) | Spring Return from Left: Contact Block: Mounting Position | Spring Return from Left: Contact Block: Contact | Spring Return from Left: Operator Position: 1 | Spring Return from Left: Operator Position: 2 | Spring Return from Left (1 2) | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO-1NC (11) | ① | NO | | ● | 24V AC/DC | ASLN22211DN* | ASLN212211DN* | ① | NO | ● | | ASLN222211DN* | R G Y A S PW |
| | ② | NC | ● | | 100/110V AC | ASLN21611DN* | ASLN211611DN* | ② | NC | | ● | ASLN221611DN* | |
| | | | | | 200/220V AC | ASLN22611DN* | ASLN212611DN* | | | | | ASLN222611DN* | |
| 2NO (20) | ① | NO | | ● | 24V AC/DC | ASLN22220DN* | ASLN212220DN* | ① | NO | ● | | ASLN222220DN* | |
| | ② | NO | | ● | 100/110V AC | ASLN21620DN* | ASLN211620DN* | ② | NO | ● | | ASLN221620DN* | |
| | | | | | 200/220V AC | ASLN22620DN* | ASLN212620DN* | | | | | ASLN222620DN* | |
| 2NO-2NC (22) | ① | NO | | ● | 24V AC/DC | ASLN22222DN* | ASLN212222DN* | ① | NO | ● | | ASLN222222DN* | |
| | ② | NC | ● | | 100/110V AC | ASLN21622DN* | ASLN211622DN* | ② | NC | | ● | ASLN221622DN* | |
| | ③ | NO | | ● | 200/220V AC | ASLN22622DN* | ASLN212622DN* | ③ | NO | ● | | ASLN222622DN* | |
| | ④ | NC | ● | | — | — | — | ④ | NC | | ● | — | |

### 45° 3-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 0 | Operator Position: 2 | Rated Voltage | Maintained (1 0 2) | Spring Return from Right (1 0 2) | Spring Return from Left (1 0 2) | Spring Return Two-Way (1 0 2) | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | | 24V AC/DC | ASLN32220DN* | ASLN312220DN* | ASLN322220DN* | ASLN332220DN* | R G Y A S PW |
| | ② | NO | | | ● | 100/110V AC | ASLN31620DN* | ASLN311620DN* | ASLN321620DN* | ASLN331620DN* | |
| | | | | | | 200/220V AC | ASLN32620DN* | ASLN312620DN* | ASLN322620DN* | ASLN332620DN* | |
| 2NC (02) | ① | NC | | ● | | 24V AC/DC | ASLN32202DN* | ASLN312202DN* | ASLN322202DN* | ASLN332202DN* | |
| | ② | NC | ● | | | 100/110V AC | ASLN31602DN* | ASLN311602DN* | ASLN321602DN* | ASLN331602DN* | |
| | | | | | | 200/220V AC | ASLN32602DN* | ASLN312602DN* | ASLN322602DN* | ASLN332602DN* | |
| 2NO-2NC (22) | ① | NO | ● | | | 24V AC/DC | ASLN32222DN* | ASLN312222DN* | ASLN322222DN* | ASLN332222DN* | |
| | ② | NO | | | ● | 100/110V AC | ASLN31622DN* | ASLN311622DN* | ASLN321622DN* | ASLN331622DN* | |
| | ③ | NC | | ● | | 200/220V AC | ASLN32622DN* | ASLN312622DN* | ASLN322622DN* | ASLN332622DN* | |
| | ④ | NC | ● | | | — | — | — | — | — | |
| 4NO (40) | ① | NO | ● | | | 24V AC/DC | ASLN32240DN* | ASLN312240DN* | ASLN322240DN* | ASLN332240DN* | |
| | ② | NO | | | ● | 100/110V AC | ASLN31640DN* | ASLN311640DN* | ASLN321640DN* | ASLN331640DN* | |
| | ③ | NO | ● | | | 200/220V AC | ASLN32640DN* | ASLN312640DN* | ASLN322640DN* | ASLN332640DN* | |
| | ④ | NO | | | ● | — | — | — | — | — | |
| 4NC (04) | ① | NC | | ● | | 24V AC/DC | ASLN32204DN* | ASLN312204DN* | ASLN322204DN* | ASLN332204DN* | |
| | ② | NC | ● | | | 100/110V AC | ASLN31604DN* | ASLN311604DN* | ASLN321604DN* | ASLN331604DN* | |
| | ③ | NC | | ● | | 200/220V AC | ASLN32604DN* | ASLN312604DN* | ASLN322604DN* | ASLN332604DN* | |
| | ④ | NC | ● | | | — | — | — | — | — | |

- Specify a color code in place of ∗ in Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- Illuminated selector switches have an LED lamp installed.
- Round bezel (metal): chrome-plated
- See B-309 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- Illuminated selector switches of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.
- See B-321 to B-322 other contact configurations.
- Turn the operator to each position accurately.
- See B-309 for gold-plated silver contacts.
- See B-314 for bottom view.

## Contact Block Mounting Position




(24V AC/DC)

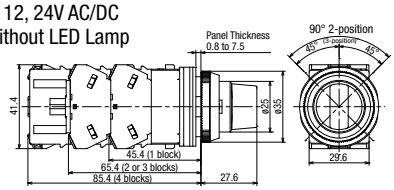



With transformer
(100/110V AC)

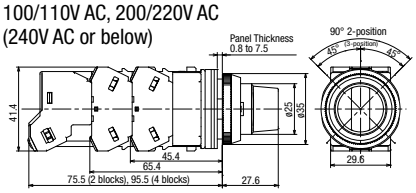
## Dimensions

All dimensions in mm.

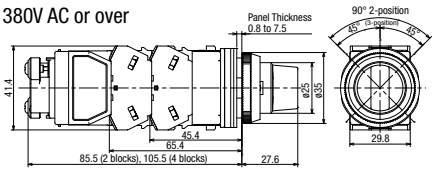
6, 12, 24V AC/DC
Without LED Lamp




100/110V AC, 200/220V AC
(240V AC or below)




110V DC
380V AC or over




Terminal Screws: M3.5 Terminal cover: integrated

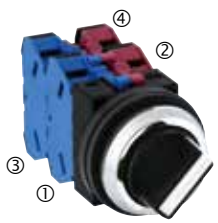
## Selector Switches Contact Configuration (90° 2-position)

| Contact Configuration | Circuit Code | Contact Block: Mounting Position | Contact Block: Contact | Operator Operation and Circuit: Maintained (1 2) — Knob Lever: Operator Position 1 | Maintained — Knob Lever: Operator Position 2 | Maintained — Key: Operator Position 1 | Maintained — Key: Operator Position 2 | Spring Return from Right (1 2) — Knob Lever: Operator Position 1 | Spring Return from Right — Knob Lever: Operator Position 2 | Spring Return from Right — Key: Operator Position 1 | Spring Return from Right — Key: Operator Position 2 | Spring Return from Left (1 2) — Knob Lever: Operator Position 1 | Spring Return from Left — Knob Lever: Operator Position 2 | Spring Return from Left — Key: Operator Position 1 | Spring Return from Left — Key: Operator Position 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Not required | ① | NO | | ● | | | | ● | | | ● | | | |
| | | ② | — | Dummy Block | | | | Dummy Block | | | | Dummy Block | | | |
| 01 | Not required | ① | NC | ● | | | | ● | | | | | | | ● |
| | | ② | — | Dummy Block | | | | Dummy Block | | | | Dummy Block | | | |
| 2R | ☆ 118 | ① | EM | | | | | | | | | | | | |
| | | ② | LB | | | | | | | | | | | | |
| | ☆ 168 | ① | EM | | | | | | | | | | | | |
| | | ② | LB | | | | | | | | | | | | |

| Contact Configuration | Circuit Code | Contact Block: Mounting Position | Contact Block: Contact | Operator Operation and Circuit: Maintained (1 2) — Knob Lever: Operator Position 1 | Maintained — Knob Lever: Operator Position 2 | Maintained — Key: Operator Position 1 | Maintained — Key: Operator Position 2 | Maintained — Illuminated: Operator Position 1 | Maintained — Illuminated: Operator Position 2 | Spring Return from Right (1 2) — Knob Lever: Operator Position 1 | Spring Return from Right — Knob Lever: Operator Position 2 | Spring Return from Right — Key: Operator Position 1 | Spring Return from Right — Key: Operator Position 2 | Spring Return from Right — Illuminated: Operator Position 1 | Spring Return from Right — Illuminated: Operator Position 2 | Spring Return from Left (1 2) — Knob Lever: Operator Position 1 | Spring Return from Left — Knob Lever: Operator Position 2 | Spring Return from Left — Key: Operator Position 1 | Spring Return from Left — Key: Operator Position 2 | Spring Return from Left — Illuminated: Operator Position 1 | Spring Return from Left — Illuminated: Operator Position 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Not required | ① | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ② | NC | ● | | | | | | ● | | | | | | | ● | | | | |
| 20 | Not required | ① | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ② | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| 02 | Not required | ① | NC | ● | | | | | | ● | | | | | | | ● | | | | |
| | | ② | NC | ● | | | | | | ● | | | | | | | ● | | | | |
| 22 | Not required | ① | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ② | NC | ● | | | | | | ● | | | | | | | ● | | | | |
| | | ③ | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ④ | NC | ● | | | | | | ● | | | | | | | ● | | | | |
| 31 | 107 | ① | NC | ● | | | | | | ● | | | | | | | ● | | | | |
| | | ② | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ③ | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ④ | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| 40 | Not required | ① | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ② | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ③ | NO | | ● | | | | | | ● | | | | | ● | | | | | |
| | | ④ | NO | | ● | | | | | | ● | | | | | ● | | | | | |

• Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.

### Contact Block Mounting Position




### Part No. Development

ASN 2 L 31 N - 107

① Circuit code
② Contact configuration
③ Operator shape Blank: knob
L: lever
K: key
④ Position/Operator operation 2: 2-position, maintained
21: 2-position, spring return from right
22: 2-position, spring return from left



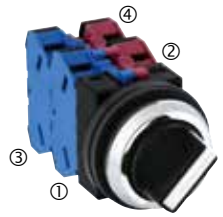
IDEC

## Selector Switches Contact Configuration (45° 3-position)

| Contact Configuration | Circuit Code | Contact Block | | Operator Position | | | Operator Operation and Circuit | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Maintained 1 0 2 | | | Spring Return from Right 1 0 2 | | | Spring Return from Left 1 0 2 | | | Spring Return Two-way 1 0 2 | | |
| | | Mounting Position | Contact | 1 | 0 | 2 | Knob/ Lever | Key | Illumi-nated | Knob/ Lever | Key | Illumi-nated | Knob/ Lever | Key | Illumi-nated | Knob/ Lever | Key | Illumi-nated |
| 11 | 202 | ① | NO | ● | | | | √ | | | √ | | | √ | | | √ | |
| | | ② | NC | ■ | ■ | | | | | | | | | | | | | |
| | 203 | ① | NC | | ■ | ■ | | √ | | | √ | | | √ | | | √ | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| | 303 | ① | NC | | ● | | | √ | | | √ | | | √ | | | √ | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| 20 | Not required | ① | NO | ● | | | | √ | | | √ | | | √ | | | √ | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| 02 | Not required | ① | NC | | ■ | ■ | | √ | | | √ | | | √ | | | √ | |
| | | ② | NC | ■ | ■ | | | | | | | | | | | | | |
| 22 | Not required | ① | NO | ● | | | | √ | | | √ | | | √ | | | √ | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| | | ③ | NC | | ■ | ■ | | | | | | | | | | | | |
| | | ④ | NC | ■ | ■ | | | | | | | | | | | | | |
| | 209 | ① | NO | ● | | | | √ | | | √ | | | — | | | — | |
| | | ② | NC | ■ | ■ | | | | | | | | | | | | | |
| | | ③ | NC | | ■ | ■ | | | | | | | | | | | | |
| | | ④ | NO | | | ● | | | | | | | | | | | | |
| | 210 | ① | NC | | ■ | ■ | | √ | | | √ | | | √ | | | √ | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| | | ③ | NC | | ■ | ■ | | | | | | | | | | | | |
| | | ④ | NO | | | ● | | | | | | | | | | | | |
| | 310 | ① | NC | | ● | | | √ | | | — | | | — | | | — | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| | | ③ | NC | | ● | | | | | | | | | | | | | |
| | | ④ | NO | | | ● | | | | | | | | | | | | |
| | 311 | ① | NO | ● | | ● | | √ | | | √ | | | √ | | | √ | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| | | ③ | NC | | ● | | | | | | | | | | | | | |
| | | ④ | NC | ■ | ■ | | | | | | | | | | | | | |
| 40 | Not required | ① | NO | ● | | | | √ | | | √ | | | √ | | | √ | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| | | ③ | NO | ● | | | | | | | | | | | | | | |
| | | ④ | NO | | | ● | | | | | | | | | | | | |
| 04 | Not required | ① | NC | | ■ | ■ | | √ | | | √ | | | √ | | | √ | |
| | | ② | NC | ■ | ■ | | | | | | | | | | | | | |
| | | ③ | NC | | ■ | ■ | | | | | | | | | | | | |
| | | ④ | NC | ■ | ■ | | | | | | | | | | | | | |
| 3S | ☆ 243 | ① | NO | ● | | | √ | | — | | — | | | — | | | — | |
| | | ② | NO | | | ● | | | | | | | | | | | | |
| | | ③ | NC | | ● | | | | | | | | | | | | | |
| | | ④ | | Dummy Block | | | | | | | | | | | | | | |

- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- On selector switches with ☆, the contact blocks may overlap each other while turning the ring or lever operator.

### Contact Block Mounting Position




### Part No. Development

ASN 3 L 22 N - 209

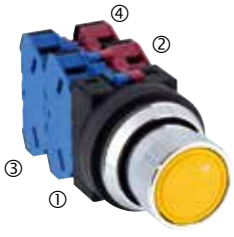
- ① Circuit code
- ② Contact configuration
- ③ Operator shape Blank: knob, L: lever, K: key
- ④ Position/Operator operation 3: 3-position, maintained; 31: 3-position, spring return from right; 32: 3-position, spring return from left; 33: 3-position, spring return two-way

## ASBN2 Selector Pushbuttons

| Shape | Contact Configuration | Circuit Code | Contact Block: Mounting Position | Contact Block: Contact | Ring Position: Left – Pushbutton: Normal | Ring Position: Left – Pushbutton: Push | Ring Position: Right – Pushbutton: Normal | Ring Position: Right – Pushbutton: Push | Button Color Code | Ring Operator: Part No. (Ordering No.) |
|---|---|---|---|---|---|---|---|---|---|---|
| Ring Operator (90°2-position) ASBN2  | 11 (1NO-1NC) | A03 | ① | NO | | ● | | ● | B G R Y | ASBN211N-A03∗ |
| | | | ② | NC | ● | | | | | |
| | | ☆ K04 | ① | NC | ● | | | | | ☆ ASBN211N-K04∗ |
| | | | ② | EM | | ● | ▬ | | | |
| | | G03 | ① | NO | | ● | | Blocked | | ASBN211N-G03∗ |
| | | | ② | NC | ● | | ● | | | |
| | 20 (2NO) | D01 | ① | NO | | ● | | | | ASBN220N-D01∗ |
| | | | ② | NO | | | | ● | | |
| | 22 (2NO-2NC) | A08 | ① | NO | | ● | | ● | | ASBN222N-A08∗ |
| | | | ② | NC | ● | | | | | |
| | | | ③ | NO | | ● | | ● | | |
| | | | ④ | NC | ● | | | | | |
| | | ☆ C10 | ① | NO | | ● | | ● | | ☆ ASBN222N-C10∗ |
| | | | ② | NO | | | | ● | | |
| | | | ③ | NC | ● | | | | | |
| | | | ④ | NC | ▬ | | | | | |
| | | D10 | ① | NO | | ● | | | | ASBN222N-D10∗ |
| | | | ② | NO | | | | ● | | |
| | | | ③ | NC | ● | | ▬ | | | |
| | | | ④ | NC | ▬ | | ● | | | |
| | | ☆ E10 | ① | NO | | ● | | | | ☆ ASBN222N-E10∗ |
| | | | ② | NO | | | | ● | | |
| | | | ③ | NC | | | ▬ | | | |
| | | | ④ | NC | ▬ | | | | | |
| | | ☆ F10 | ① | NO | | | | ● | | ☆ ASBN222N-F10∗ |
| | | | ② | NO | | ● | | | | |
| | | | ③ | NC | | | ● | | | |
| | | | ④ | NC | ● | | | | | |
| | | G10 | ① | NO | | ● | | Blocked | | ASBN222N-G10∗ |
| | | | ② | NO | | ● | | | | |
| | | | ③ | NC | ● | | ● | | | |
| | | | ④ | NC | ● | | ● | | | |
| | | ☆ K15 | ① | NC | ● | | | | | ☆ ASBN222N-K15∗ |
| | | | ② | NC | ● | | | | | |
| | | | ③ | EM | | ● | ▬ | | | |
| | | | ④ | EM | | ● | ▬ | | | |

- Specify a color code in place of ∗ in Part No.
  B (black), G (green), R (red), Y (yellow)
- Bezel (metal): Chrome-plated
- Circuit code G: The pushbutton does not operate when the ring operator is turned to the right position.
- Circuit codes E and F: The right and left NC contact blocks on circuit code E or F may overlap each other while turning the ring operator. The NO and NC contact blocks on circuit code F may overlap each other while pressing the button.
- When using the selector pushbutton, do not turn the ring operator with the pushbutton depressed. Otherwise, damage or failure may be caused.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-312 for bottom view.

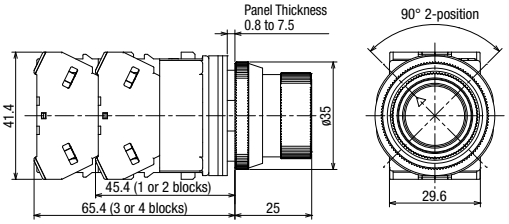
## Contact Block Mounting Position




## Dimensions

### Ring operator (90° 2-position)

(All dimensions in mm.)




Terminal Screws: M3.5 Terminal cover: integrated



IDEC

## Pilot Lights Round, Square Extended, Rectangular (Marking)

Package Quantity: 1

| Shape | Illumination | Base | Rated Voltage | Part No. (Ordering No.) | Color Code | LED Lamp Part No. | Dimensions Page |
|---|---|---|---|---|---|---|---|
| Round APN1  (24V AC/DC) | LED | BA9S | 24V AC/DC | APN122DN∗ | R, G, Y, A, S, PW | LSRD-2 | B-325 |
| | | | 100/110V AC | APN116DN∗ | R, G, Y, A, S, PW | LSRD-6 | |
| | | | 200/220V AC | APN126DN∗ | R, G, Y, A, S, PW | | |
| Square Extended UPQN3B  (24V AC/DC) | LED | BA9S | 24V AC/DC | UPQN3B22D∗ | R, G, Y, A, S, PW | LSRD-2 | |
| | | | 100/110V AC | UPQN3B16D∗ | R, G, Y, A, S, PW | LSRD-6 | |
| | | | 200/220V AC | UPQN3B26D∗ | R, G, Y, A, S, PW | | |
| Rectangular (Marking) UPQN4  (24V AC/DC) | LED | BA9S | 24V AC/DC | UPQN422D∗ | R, G, Y, A, S, PW | LSRD-2 | |
| | | | 100/110V AC | UPQN416D∗ | R, G, Y, A, S, PW | LSRD-6 | |
| | | | 200/220V AC | UPQN426D∗ | R, G, Y, A, S, PW | | |

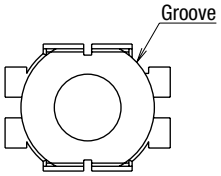
- Specify a color code in place of ∗ in Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- Round bezel (metal): chrome-plated
- Square bezel (metal): chrome-plated
- Pilot lights have an LED lamp installed.
- See B-346 for the marking plate size of rectangular pilot lights.
- See B-309 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- Terminal cover is installed on pilot lights for electric shock prevention.

| Type | Terminal Cover | Quantity |
|---|---|---|
| 6V, 12V, 24V AC/DC | APN-PVL | 1 |
| 100V/110V AC, 200/220V AC | N-VL3 | 1 |
| 110V DC | N-VL3 | 1 |

Note: DC-DC converter types are not approved by UL and CSA, and not CE compliant.
- See B-314 for bottom view.

### Reflector

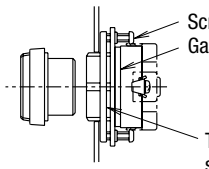
1. The lamp housing of the square LED illuminated pilot lights has a built-in reflector.
2. Make sure that the reflector does not fall off when removing the lens or making plate.
3. When replacing the LED lamp of UPQN4 (rectangular), use a lamp holder tool (OR-55).
4. To remove the reflector, insert a flat screwdriver inside the groove of the reflector and lightly push out.



Reflector

### Panel Mounting of Square Pilot Lights

1. Tighten the square bezel to the operator and position the bezel correctly.
2. Lightly tighten the screw to secure the pilot light on the panel.
3. After tightening, do not turn the square bezel, otherwise it may fall off.



Tighten the screw lightly
so that the panel does not bend.
Recommended tightening torque: 0.15 Nm

APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID
Flush Silhouette
ø16
ø22
ø30
Miniature
Pilot Lights
TWN
TWND
ARN
CS

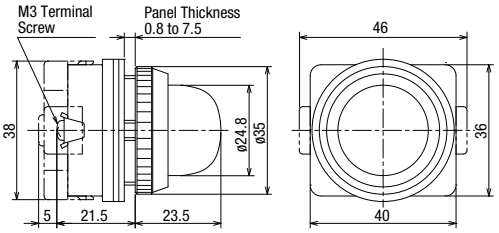
## Dimensions (Pilot Light)

All dimensions in mm

### Round

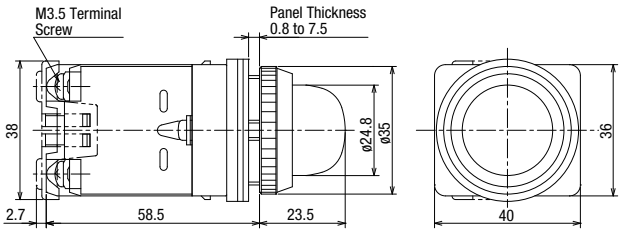
#### APN1

6V, 12V, 24V AC/DC (Terminal Cover: APN-PVL)
Without LED Lamp




Terminal screws: M3

100 to 480V AC, 110V DC (Terminal Cover: N-VL3)

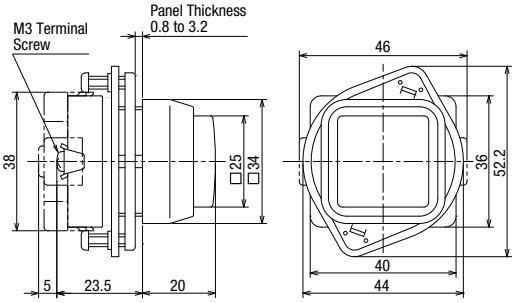



Terminal screws: M3.5

### Square Extended

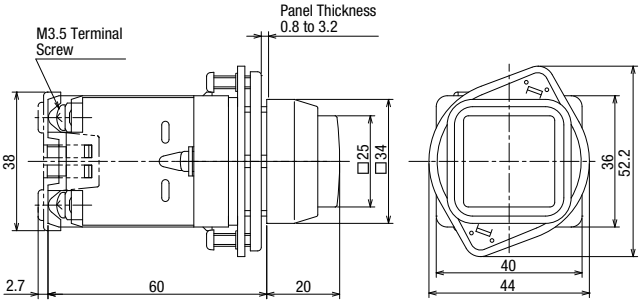
#### UPQN3B

6V, 12V, 24V AC/DC (Terminal Cover: APN-PVL)
Without LED Lamp




Terminal screws: M3

100 to 480V AC, 110V DC (Terminal Cover: N-VL3)

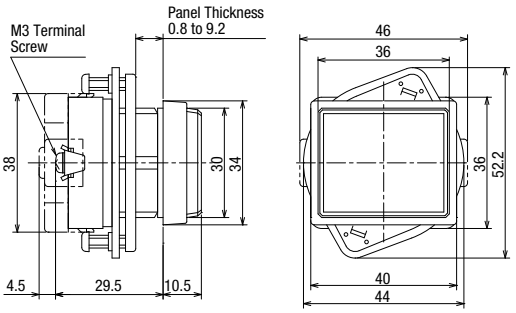



Terminal screws: M3.5

### Rectangular (Marking)

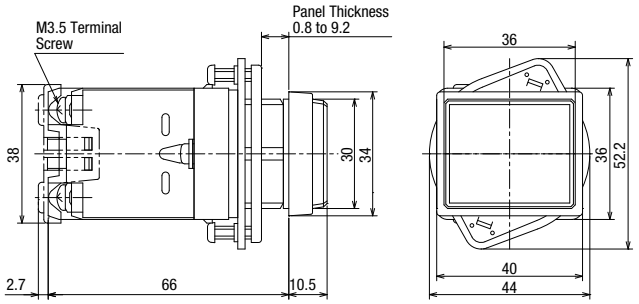
#### UPQN4

6V, 12V, 24V AC/DC (Terminal Cover: APN-PVL)
Without LED Lamp




Terminal screws: M3

100 to 480V AC, 110V DC (Terminal Cover: N-VL3)

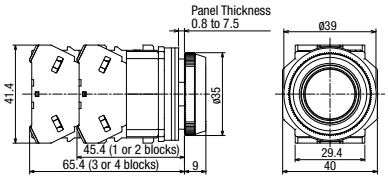
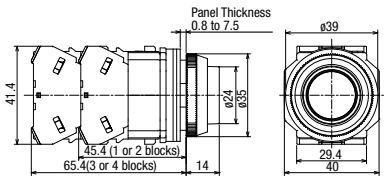
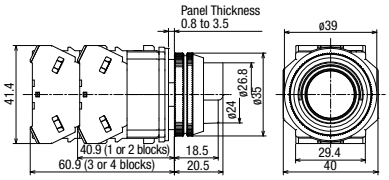
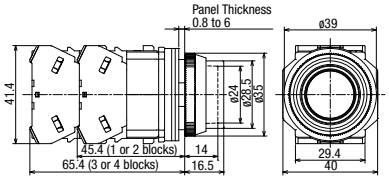



Terminal screws: M3.5

• See B-349 for wiring.

## Flush/Extended/Extended with Half Shroud/Extended with Full Shroud

Package Quantity: 1

| Shape | Operation | Contact | Part No. (Ordering No.) | Button Color Code | Dimensions (All dimensions in mm.) |
|---|---|---|---|---|---|
| Flush<br>ABD1<br>AOD1  | Momentary | 1NO | ABD110N∗ | B G R Y S W Note |  |
| | | 1NC | ABD101N∗ | | |
| | | 1NO-1NC | ABD111N∗ | | |
| | | 2NO | ABD120N∗ | | |
| | | 2NC | ABD102N∗ | | |
| | | 2NO-2NC | ABD122N∗ | | |
| | Maintained | 1NO | AOD110N∗ | B G R Y S W Note | |
| | | 1NC | AOD101N∗ | | |
| | | 1NO-1NC | AOD111N∗ | | |
| | | 2NO | AOD120N∗ | | |
| | | 2NC | AOD102N∗ | | |
| | | 2NO-2NC | AOD122N∗ | | |
| Extended<br>ABD2<br>AOD2  | Momentary | 1NO | ABD210N∗ | B G R Y S W |  |
| | | 1NC | ABD201N∗ | | |
| | | 1NO-1NC | ABD211N∗ | | |
| | | 2NO | ABD220N∗ | | |
| | | 2NC | ABD202N∗ | | |
| | | 2NO-2NC | ABD222N∗ | | |
| | Maintained | 1NO | AOD210N∗ | B G R Y S W | |
| | | 1NC | AOD201N∗ | | |
| | | 1NO-1NC | AOD211N∗ | | |
| | | 2NO | AOD220N∗ | | |
| | | 2NC | AOD202N∗ | | |
| | | 2NO-2NC | AOD222N∗ | | |
| Extended with Half Shroud<br>ABGD2<br>AOGD2  | Momentary | 1NO | ABGD210N∗ | B G R Y S W |  |
| | | 1NC | ABGD201N∗ | | |
| | | 1NO-1NC | ABGD211N∗ | | |
| | | 2NO | ABGD220N∗ | | |
| | | 2NC | ABGD202N∗ | | |
| | | 2NO-2NC | ABGD222N∗ | | |
| | Maintained | 1NO | AOGD210N∗ | B G R Y S W | |
| | | 1NC | AOGD201N∗ | | |
| | | 1NO-1NC | AOGD211N∗ | | |
| | | 2NO | AOGD220N∗ | | |
| | | 2NC | AOGD202N∗ | | |
| | | 2NO-2NC | AOGD222N∗ | | |
| Extended with Full Shroud<br>ABFD2<br>AOFD2  | Momentary | 1NO | ABFD210N∗ | B G R Y S W |  |
| | | 1NC | ABFD201N∗ | | |
| | | 1NO-1NC | ABFD211N∗ | | |
| | | 2NO | ABFD220N∗ | | |
| | | 2NC | ABFD202N∗ | | |
| | | 2NO-2NC | ABFD222N∗ | | |
| | Maintained | 1NO | AOFD210N∗ | B G R Y S W | |
| | | 1NC | AOFD201N∗ | | |
| | | 1NO-1NC | AOFD211N∗ | | |
| | | 2NO | AOFD220N∗ | | |
| | | 2NC | AOFD202N∗ | | |
| | | 2NO-2NC | AOFD222N∗ | | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)
- Round bezel (metal): Chrome-plated
- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-307 for other contact configurations and gold-plated silver contacts.
- See B-312 for bottom view.
- Terminal screws: M3.5
- Integrated terminal cover

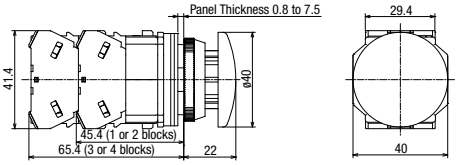
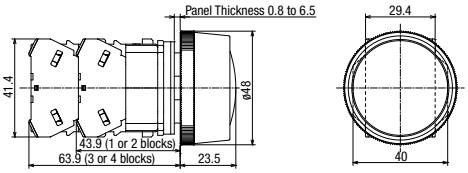
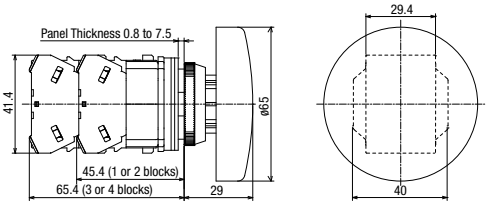
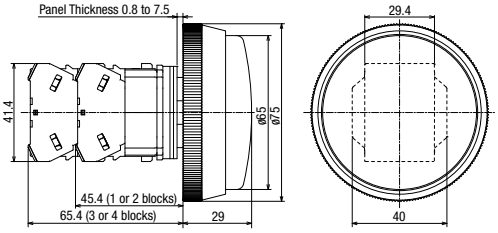
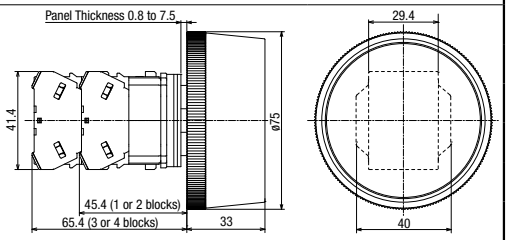
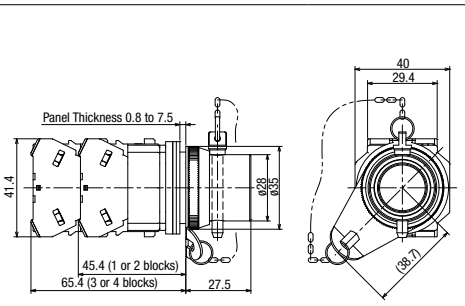
**Note ABD1, AOD1 with button color of B (black), G (green), or (R) red**

Supply of color buttons B, G, R has been discontinued for ABD1/AOD1 without color code. When ordering, make sure to specify the required button color code.

# ø30 TWND Series

## Mushroom/Mushroom with Full Shroud/Jumbo Mushroom/Jumbo Mushrooms with Shallow/Deep Shroud/Pin Lock

Package Quantity: 1

| Shape | Operation | Contact | Part No. (Ordering No.) | Button Color Code | Dimensions (All dimensions in mm.) |
|---|---|---|---|---|---|
| Mushroom<br>ABD3<br>AOD3  | Momentary | 1NO | ABD310N∗ | B G R Y S W |  |
| | | 1NC | ABD301N∗ | | |
| | | 1NO-1NC | ABD311N∗ | | |
| | | 2NO | ABD320N∗ | | |
| | | 2NC | ABD302N∗ | | |
| | | 2NO-2NC | ABD322N∗ | | |
| | Maintained | 1NO | AOD310N∗ | B G R Y S W | |
| | | 1NC | AOD301N∗ | | |
| | | 1NO-1NC | AOD311N∗ | | |
| | | 2NO | AOD320N∗ | | |
| | | 2NC | AOD302N∗ | | |
| | | 2NO-2NC | AOD322N∗ | | |
| Mushroom with Full Shroud<br>ABGD3<br>AOGD3  | Momentary | 1NO | ABGD310N∗ | B G R Y S W |  |
| | | 1NC | ABGD301N∗ | | |
| | | 1NO-1NC | ABGD311N∗ | | |
| | | 2NO | ABGD320N∗ | | |
| | | 2NC | ABGD302N∗ | | |
| | | 2NO-2NC | ABGD322N∗ | | |
| | Maintained | 1NO | AOGD310N∗ | B G R Y S W | |
| | | 1NC | AOGD301N∗ | | |
| | | 1NO-1NC | AOGD311N∗ | | |
| | | 2NO | AOGD320N∗ | | |
| | | 2NC | AOGD302N∗ | | |
| | | 2NO-2NC | AOGD322N∗ | | |
| Jumbo Mushroom<br>ABD4  | Momentary | 1NO | ABD410N∗ | B G R Y |  |
| | | 1NC | ABD401N∗ | | |
| | | 1NO-1NC | ABD411N∗ | | |
| | | 2NO | ABD420N∗ | | |
| | | 2NC | ABD402N∗ | | |
| | | 2NO-2NC | ABD422N∗ | | |
| Jumbo Mushroom with Shallow Shroud<br>ABGD4  | Momentary | 1NO | ABGD410N∗ | B G R Y |  |
| | | 1NC | ABGD401N∗ | | |
| | | 1NO-1NC | ABGD411N∗ | | |
| | | 2NO | ABGD420N∗ | | |
| | | 2NC | ABGD402N∗ | | |
| | | 2NO-2NC | ABGD422N∗ | | |
| Jumbo Mushroom with Deep Shroud<br>ABFD4  | Momentary | 1NO | ABFD410N∗ | B G R Y |  |
| | | 1NC | ABFD401N∗ | | |
| | | 1NO-1NC | ABFD411N∗ | | |
| | | 2NO | ABFD420N∗ | | |
| | | 2NC | ABFD402N∗ | | |
| | | 2NO-2NC | ABFD422N∗ | | |
| Pin Lock (On-off Lock Type) (*1)<br>ABD8P  | | 1NO | ABD8P10N∗ | B G R Y |  |
| | | 1NC | ABD8P01N∗ | | |
| | | 1NO-1NC | ABD8P11N∗ | | |
| | | 2NO | ABD8P20N∗ | | |
| | | 2NC | ABD8P02N∗ | | |
| | | 2NO-2NC | ABD8P22N∗ | | |
| Pin Lock (On-lock Type) (*1)<br>ABD8PN  | | 1NO | ABD8PN10N∗ | B G R Y | |
| | | 1NC | ABD8PN01N∗ | | |
| | | 1NO-1NC | ABD8PN11N∗ | | |
| | | 2NO | ABD8PN20N∗ | | |
| | | 2NC | ABD8PN02N∗ | | |
| | | 2NO-2NC | ABD8PN22N∗ | | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)
- Round bezel (metal): Chrome-plated
- Pin Lock (On-lock type): Button can be locked in depressed position by inserting the pin (the button cannot be locked in reset position).
- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-307 for other contact configurations and gold-plated silver contacts.
- See B-342 for maintenance parts.

*1) The pin for ABD8P is ø4.6 mm and is not compatible with ABN8P (old series).

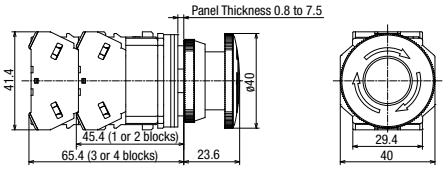
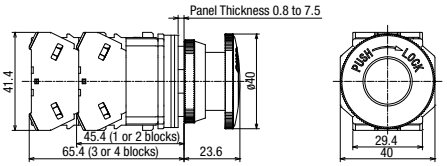
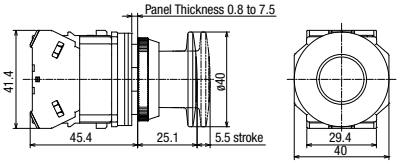
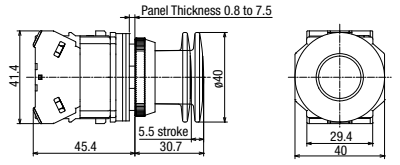
- See B-312 for bottom view.
- Terminal screws: M3.5
- Integrated terminal cover



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## Pushlock Turn Reset/Push Turn Lock/Pull/Push-Pull

Package Quantity: 1

| Shape | Contact | Part No. (Ordering No.) | Button Color Code | Dimensions (All dimensions in mm.) |
|---|---|---|---|---|
| Mushroom Pushlock Turn Reset (*1)<br>AVD3<br> | 1NO | AVD310N∗ | R<br>Y |  |
| | 1NC | AVD301N∗ | | |
| | 1NO-1NC | AVD311N∗ | | |
| | 2NO | AVD320N∗ | | |
| | 2NC | AVD302N∗ | | |
| | 2NO-2NC | AVD322N∗ | | |
| Mushroom Push Turn Lock<br>AJD3<br> | 1NO | AJD310N∗ | B<br>G<br>R<br>Y |  |
| | 1NC | AJD301N∗ | | |
| | 1NO-1NC | AJD311N∗ | | |
| | 2NO | AJD320N∗ | | |
| | 2NC | AJD302N∗ | | |
| | 2NO-2NC | AJD322N∗ | | |
| Mushroom Pull<br>AZD3<br> | 1NO | AZD310N∗ | B<br>G<br>R<br>Y |  |
| | 1NO-1NC | AZD311N∗ | | |
| | 2NO | AZD320N∗ | | |
| | 2NC | AZD302N∗ | | |
| Mushroom Push-Pull (*2)<br>AYD31<br> | 1NO-1NC | AYD3111N∗ | B<br>G<br>R<br>Y |  |
| | 2NO | AYD3120N∗ | | |
| | 2NC | AYD3102N∗ | | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow)
- Round bezel (metal): Chrome-plated
- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-307 for other contact configurations and gold-plated silver contacts.
- Mushroom pull has up to 2 contact blocks.

*1) Pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use XN series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).

*2) Push-Pull switches with red button cannot be used as emergency stop switches. When emergency stop switches are required, use XN series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).

- See B-312 for bottom view.
- Terminal screws: M3.5
- Integrated terminal cover

### Pushbutton operation

Pushlock Turn Reset
Button is maintained when pressed and is reset when turned clockwise.

Push Turn Lock
Button is locked when turned clockwise in the depressed position and is reset when turned counterclockwise.

Pull
Pulling the button operates the contacts, and releasing the button return the contacts.

Push-Pull
2-position switches with button maintained in both depressed and reset positions.

Pull contact operation

| Contact | AZD3 | |
|---|---|---|
| | Normal | Pull |
| 1NO |  |  |
| 2NO-2NC |  |  |
| 2NO |  |  |
| 2NC |  |  |

Push-Pull contact operation

| Contact | AYD31 | |
|---|---|---|
| | Push | Pull |
| 1NO |  |  |
| 2NO |  |  |
| 2NC |  |  |

## LED Illuminated Extended/Extended with Full Shroud

Package Quantity: 1

| Shape | Base | Operation | Operating Voltage | Contact | Part No. (Ordering No.) | Button Color Code |
|---|---|---|---|---|---|---|
| Extended<br>ALD2<br>A0LD2<br><br>(24V AC/DC)<br><br>With transformer (100/110V AC) | BA9S | Momentary | 24V AC/DC | 1NO-1NC | ALD22211DN∗ | R G Y A S PW |
| | | | | 2NO | ALD22220DN∗ | |
| | | | | 2NC | ALD22202DN∗ | |
| | | | 100/110V AC | 1NO-1NC | ALD21611DN∗ | |
| | | | | 2NO | ALD21620DN∗ | |
| | | | | 2NC | ALD21602DN∗ | |
| | | | 200/220V AC | 1NO-1NC | ALD22611DN∗ | |
| | | | | 2NO | ALD22620DN∗ | |
| | | | | 2NC | ALD22602DN∗ | |
| | | Maintained | 24V AC/DC | 1NO-1NC | A0LD22211DN∗ | R G Y A S PW |
| | | | | 2NO | A0LD22220DN∗ | |
| | | | | 2NC | A0LD22202DN∗ | |
| | | | 100/110V AC | 1NO-1NC | A0LD21611DN∗ | |
| | | | | 2NO | A0LD21620DN∗ | |
| | | | | 2NC | A0LD21602DN∗ | |
| | | | 200/220V AC | 1NO-1NC | A0LD22611DN∗ | |
| | | | | 2NO | A0LD22620DN∗ | |
| | | | | 2NC | A0LD22602DN∗ | |
| Extended with Full Shroud<br>ALFD2<br>A0LFD2<br><br>(24V AC/DC)<br><br>With transformer (100/110V AC) | BA9S | Momentary | 24V AC/DC | 1NO-1NC | ALFD22211DN∗ | R G Y A S PW |
| | | | | 2NO | ALFD22220DN∗ | |
| | | | | 2NC | ALFD22202DN∗ | |
| | | | 100/110V AC | 1NO-1NC | ALFD21611DN∗ | |
| | | | | 2NO | ALFD21620DN∗ | |
| | | | | 2NC | ALFD21602DN∗ | |
| | | | 200/220V AC | 1NO-1NC | ALFD22611DN∗ | |
| | | | | 2NO | ALFD22620DN∗ | |
| | | | | 2NC | ALFD22602DN∗ | |
| | | Maintained | 24V AC/DC | 1NO-1NC | A0LFD22211DN∗ | R G Y A S PW |
| | | | | 2NO | A0LFD22220DN∗ | |
| | | | | 2NC | A0LFD22202DN∗ | |
| | | | 100/110V AC | 1NO-1NC | A0LFD21611DN∗ | |
| | | | | 2NO | A0LFD21620DN∗ | |
| | | | | 2NC | A0LFD21602DN∗ | |
| | | | 200/220V AC | 1NO-1NC | A0LFD22611DN∗ | |
| | | | | 2NO | A0LFD22620DN∗ | |
| | | | | 2NC | A0LFD22602DN∗ | |

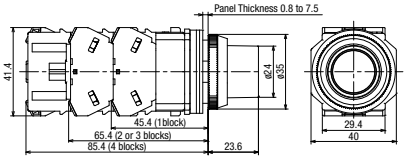
- Specify a color code in place of ∗ in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- Illuminated pushbuttons have an LED lamp installed.
- Round bezel (metal): Chrome-plated
- See B-308 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- See B-308 for other contact configurations and gold-plated silver contacts.
- Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.
- See B-314 for bottom view.

## Dimensions

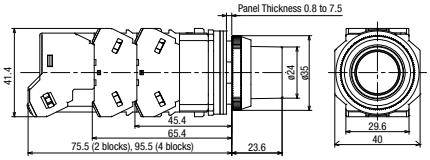
All dimensions in mm

### Extended, LED illuminated (momentary/maintained)
### ALD2/A0LD2 (terminal screws M3.5) Integrated terminal cover

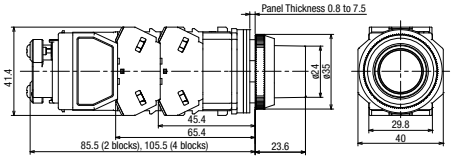
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC (240V AC or below)

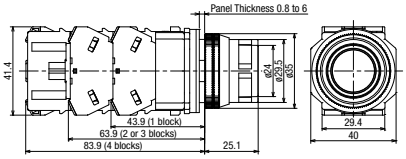



110V DC, 380V AC or over

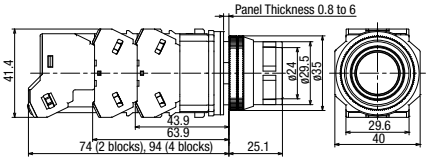



### Extended with Full Shroud, LED illuminated (momentary/maintained)
### ALFD2/A0LFD2 (terminal screws M3.5) Integrated terminal cover

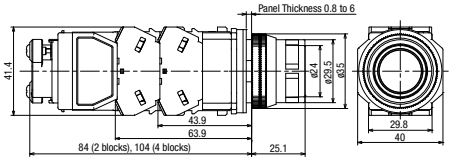
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC (240V AC or below)




110V DC, 380V AC or over






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## LED Illuminated Mushroom (ø40)/Mushroom Pushlock Turn Reset

Package Quantity: 1

| Shape | Base | Operation | Operating Voltage | Contact | Part No. (Ordering No.) | Color Code |
|---|---|---|---|---|---|---|
| Mushroom (ø40)<br>ALD3<br>AOLD3<br><br>(24V AC/DC)<br><br>With transformer<br>(100/110V AC) | BA9S | Momentary | 24V AC/DC | 1NO-1NC | ALD32211DN∗ | R<br>G<br>Y<br>A<br>S |
| | | | | 2NO | ALD32220DN∗ | |
| | | | | 2NC | ALD32202DN∗ | |
| | | | 100/110V AC | 1NO-1NC | ALD31611DN∗ | |
| | | | | 2NO | ALD31620DN∗ | |
| | | | | 2NC | ALD31602DN∗ | |
| | | | 200/220V AC | 1NO-1NC | ALD32611DN∗ | |
| | | | | 2NO | ALD32620DN∗ | |
| | | | | 2NC | ALD32602DN∗ | |
| | | Maintained | 24V AC/DC | 1NO-1NC | AOLD32211DN∗ | R<br>G<br>Y<br>A<br>W<br>S |
| | | | | 2NO | AOLD32220DN∗ | |
| | | | | 2NC | AOLD32202DN∗ | |
| | | | 100/110V AC | 1NO-1NC | AOLD31611DN∗ | |
| | | | | 2NO | AOLD31620DN∗ | |
| | | | | 2NC | AOLD31602DN∗ | |
| | | | 200/220V AC | 1NO-1NC | AOLD32611DN∗ | |
| | | | | 2NO | AOLD32620DN∗ | |
| | | | | 2NC | AOLD32602DN∗ | |
| Mushroom Pushlock Turn Reset (*1)<br>AVLD3<br><br>(24V AC/DC) | BA9S | — | 24V AC/DC | 1NO-1NC | AVLD32211DN∗ | R |
| | | | | 2NO | AVLD32220DN∗ | |
| | | | | 2NC | AVLD32202DN∗ | |
| | | | 100/110V AC | 1NO-1NC | AVLD31611DN∗ | |
| | | | | 2NO | AVLD31620DN∗ | |
| | | | | 2NC | AVLD31602DN∗ | |
| | | | 200/220V AC | 1NO-1NC | AVLD32611DN∗ | |
| | | | | 2NO | AVLD32620DN∗ | |
| | | | | 2NC | AVLD32602DN∗ | |

- Specify a color code in place of ∗ in Part No. R (red), G (green), Y (yellow), A (amber), S (blue)
- Illuminated pushbuttons have an LED lamp installed.
- Round bezel (metal): Chrome-plated
- See B-308 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- See B-308 for other contact configurations and gold-plated silver contacts.
- Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

*1) Pushlock turn reset switches cannot be used as emergency stop switches. When emergency stop switches are required, use XN series emergency stop switches (ISO 13850 and IEC 60947-5-5 compliant).

- See B-314 for bottom view.

### Illuminated pushbutton operation

Pushlock Turn Reset
Button is maintained when pressed and is reset when turned clockwise.

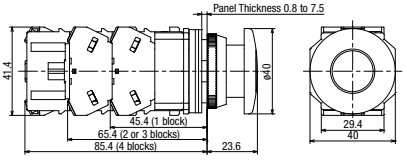
## Dimensions

All dimensions in mm

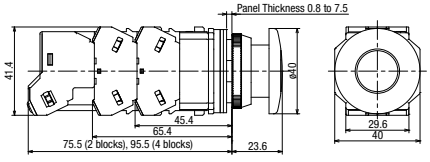
### Mushroom, LED illuminated (momentary/maintained)

**ALD3/AOLD3 (terminal screws M3.5)** **Integrated terminal cover**

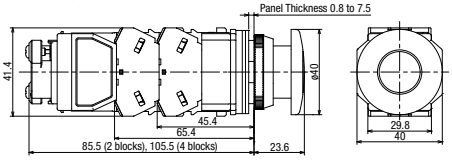
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC



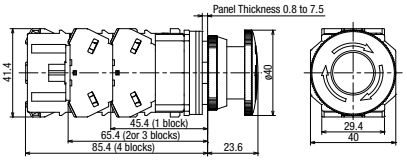

110V DC, 380V AC or over



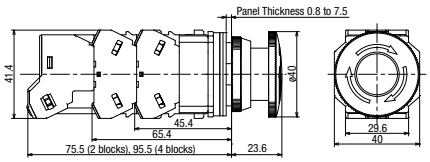

### Mushroom Pushlock Turn Reset, LED illuminated

**AVLD (terminal screws M3.5)** **Integrated terminal cover**

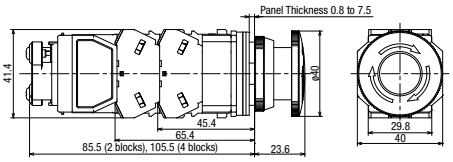
6, 12, 24V AC/DC · Without LED Lamp




100/110V AC, 200/220V AC




110V DC, 380V AC or over



## ASD Selector Switches (Knob Operator)

Package Quantity: 1

Shape: Knob Operator ASD



### 90° 2-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Maintained (1 2) | Spring Return from Right (1 2) | Spring Return from Left: Contact Block: Mounting Position | Spring Return from Left: Contact Block: Contact | Spring Return from Left: Operator Position: 1 | Spring Return from Left: Operator Position: 2 | Spring Return from Left (1 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO (10) | ① | NO | | ● | ASD210N | ASD2110N | ① | NO | ● | | ASD2210N |
| | ② | — | Dummy Block | | | | ② | — | — | | |
| 1NO-1NC (11) | ① | NO | | ● | ASD211N | ASD2111N | ① | NO | ● | | ASD2211N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| 2NO (20) | ① | NO | | ● | ASD220N | ASD2120N | ① | NO | ● | | ASD2220N |
| | ② | NO | | ● | | | ② | NO | ● | | |
| 2NO-2NC (22) | ① | NO | | ● | ASD222N | ASD2122N | ① | NO | ● | | ASD2222N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| | ③ | NO | | ● | | | ③ | NO | ● | | |
| | ④ | NC | ● | | | | ④ | NC | | ● | |

### 45° 3-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 0 | Operator Position: 2 | Maintained (1 0 2) | Spring Return from Right (1 0 2) | Spring Return from Left (1 0 2) | Spring Return Two-way (1 0 2) |
|---|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | | ASD320N | ASD3120N | ASD3220N | ASD3320N |
| | ② | NO | | | ● | | | | |
| 2NC (02) | ① | NC | | ▬ | | ASD302N | ASD3102N | ASD3202N | ASD3302N |
| | ② | NC | ▬ | | | | | | |
| 2NO-2NC (22) | ① | NO | ● | | | ASD322N | ASD3122N | ASD3222N | ASD3322N |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | ▬ | | | | | |
| | ④ | NC | ▬ | | | | | | |
| 4NO (40) | ① | NO | ● | | | ASD340N | ASD3140N | ASD3240N | ASD3340N |
| | ② | NO | | | ● | | | | |
| | ③ | NO | ● | | | | | | |
| | ④ | NO | | | ● | | | | |
| 4NC (04) | ① | NC | | ▬ | | ASD304N | ASD3104N | ASD3204N | ASD3304N |
| | ② | NC | ▬ | | | | | | |
| | ③ | NC | | ▬ | | | | | |
| | ④ | NC | ▬ | | | | | | |
| ☆ 3S | ① | NO | ● | | | ASD33SN-243 ☆ | — | — | — |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | ● | | | | | |
| | ④ | — | Dummy Block | | | | | | |

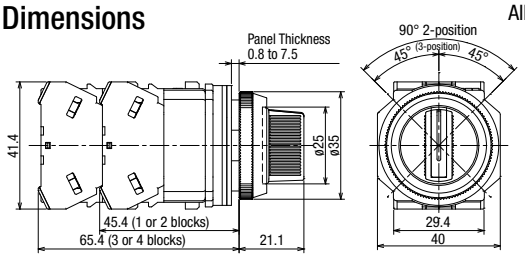
- Knob: Black
- Round bezel (metal): Chrome-plated
- Selector switches with 1 or 3 contact blocks have a dummy block.
- Knob operator can be installed at every 45 degrees intervals in addition to the positions shown in the above table.
- See B-321 to B-322 for other contact configurations.
- Turn the operator to each position accurately.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-308 for gold-plated silver contacts.
- See B-312 for bottom view.

## Contact Block Mounting Position




## Dimensions

All dimensions in mm.




Terminal Screws: M3.5 Terminal cover: integrated



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## ASD□L Selector Switches (Lever Operator)

Package Quantity: 1

Shape: Lever Operator ASD□L



### 90° 2-position

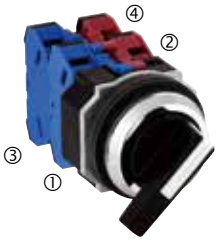
| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Maintained (1 2) | Spring Return from Right (1 2) | Spring Return from Left: Contact Block: Mounting Position | Spring Return from Left: Contact Block: Contact | Spring Return from Left: Operator Position: 1 | Spring Return from Left: Operator Position: 2 | Spring Return from Left (1 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO (10) | ① | NO | | ● | ASD2L10N | ASD21L10N | ① | NO | ● | | ASD22L10N |
| | ② | — | Dummy Block | | | | ② | — | — | | |
| 1NO-1NC (11) | ① | NO | | ● | ASD2L11N | ASD21L11N | ① | NO | ● | | ASD22L11N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| 2NO (20) | ① | NO | | ● | ASD2L20N | ASD21L20N | ① | NO | ● | | ASD22L20N |
| | ② | NO | | ● | | | ② | NO | ● | | |
| 2NO-2NC (22) | ① | NO | | ● | ASD2L22N | ASD21L22N | ① | NO | ● | | ASD22L22N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| | ③ | NO | | ● | | | ③ | NO | ● | | |
| | ④ | NC | ● | | | | ④ | NC | | ● | |

### 45° 3-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Operator Position: 3 | Maintained (1 0 2) | Spring Return from Right (1 0 2) | Spring Return from Left (1 0 2) | Spring Return Two-way (1 0 2) |
|---|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | | ASD3L20N | ASD31L20N | ASD32L20N | ASD33L20N |
| | ② | NO | | | ● | | | | |
| 2NC (02) | ① | NC | | ■ | | ASD3L02N | ASD31L02N | ASD32L02N | ASD33L02N |
| | ② | NC | ■ | | | | | | |
| 2NO-2NC (22) | ① | NO | ● | | | ASD3L22N | ASD31L22N | ASD32L22N | ASD33L22N |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | ■ | | | | | |
| | ④ | NC | ■ | | | | | | |
| 4NO (40) | ① | NO | ● | | | ASD3L40N | ASD31L40N | ASD32L40N | ASD33L40N |
| | ② | NO | | | ● | | | | |
| | ③ | NO | ● | | | | | | |
| | ④ | NO | | | ● | | | | |
| 4NC (04) | ① | NC | | ■ | | ASD3L04N | ASD31L04N | ASD32L04N | ASD33L04N |
| | ② | NC | ■ | | | | | | |
| | ③ | NC | | ■ | | | | | |
| | ④ | NC | ■ | | | | | | |
| ☆ 3S | ① | NO | ● | | | ASD3L3SN-243 ☆ | — | — | — |
| | ② | NO | | | ● | | | | |
| | ③ | NC | | ● | | | | | |
| | ④ | — | Dummy Block | | | | | | |

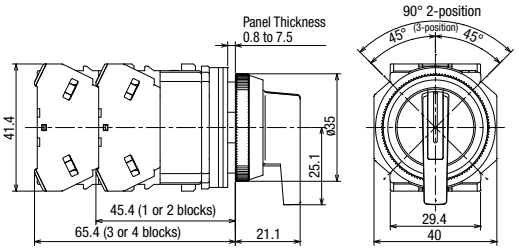
- Lever: Black
- Round bezel (metal): Chrome-plated
- Selector switches with 1 or 3 contact blocks have a dummy block.
- Knob operator can be installed at every 45 degrees intervals in addition to the positions shown in the above table.
- Turn the operator to each position accurately.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-308 for gold-plated silver contacts.
- See B-312 for bottom view.

## Contact Block Mounting Position




## Dimensions

All dimensions in mm.




Terminal Screws: M3.5 Terminal cover: integrated

## ASD☐K Key Selector Switches

Package Quantity: 1

Shape: Key Selector (Key No. 0)
ASD☐K



### 90° 2-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Maintained (1 2) | Spring Return from Right (1 2) | Spring Return from Left: Contact Block: Mounting Position | Spring Return from Left: Contact Block: Contact | Spring Return from Left: Operator Position: 1 | Spring Return from Left: Operator Position: 2 | Spring Return from Left (1 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO (10) | ① | NO | | ● | ASD2K10N | ASD21K10N | ① | NO | ● | | ASD22K10N |
| | ② | — | Dummy Block | | | | ② | — | — | | |
| 1NO-1NC (11) | ① | NO | | ● | ASD2K11N | ASD21K11N | ① | NO | ● | | ASD22K11N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| 2NO (20) | ① | NO | | ● | ASD2K20N | ASD21K20N | ① | NO | ● | | ASD22K20N |
| | ② | NO | | ● | | | ② | NO | ● | | |
| 2NO-2NC (22) | ① | NO | | ● | ASD2K22N | ASD21K22N | ① | NO | ● | | ASD22K22N |
| | ② | NC | ● | | | | ② | NC | | ● | |
| | ③ | NO | | ● | | | ③ | NO | ● | | |
| | ④ | NC | ● | | | | ④ | NC | | ● | |

### 45° 3-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Maintained (1 0 2) | Spring Return from Right (1 0 2) | Spring Return from Left (1 0 2) | Spring Return Two-way (1 0 2) |
|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | ASD3K20N | ASD31K20N | ASD32K20N | ASD33K20N |
| | ② | NO | | ● | | | | |
| 2NC (02) | ① | NC | | ■ | ASD3K02N | ASD31K02N | ASD32K02N | ASD33K02N |
| | ② | NC | ■ | | | | | |
| 2NO-2NC (22) | ① | NO | ● | | ASD3K22N | ASD31K22N | ASD32K22N | ASD33K22N |
| | ② | NO | | ● | | | | |
| | ③ | NC | | ■ | | | | |
| | ④ | NC | ■ | | | | | |
| 4NO (40) | ① | NO | ● | | ASD3K40N | ASD31K40N | ASD32K40N | ASD33K40N |
| | ② | NO | | ● | | | | |
| | ③ | NO | ● | | | | | |
| | ④ | NO | | ● | | | | |
| 4NC (04) | ① | NC | | ■ | ASD3K04N | ASD31K04N | ASD32K04N | ASD33K04N |
| | ② | NC | ■ | | | | | |
| | ③ | NC | | ■ | | | | |
| | ④ | NC | ■ | | | | | |
| ☆ 3S | ① | NO | ● | | ASD3K3SN-243☆ | — | — | — |
| | ② | NO | | ● | | | | |
| | ③ | NC | | ● | | | | |
| | ④ | — | Dummy Block | | | | | |

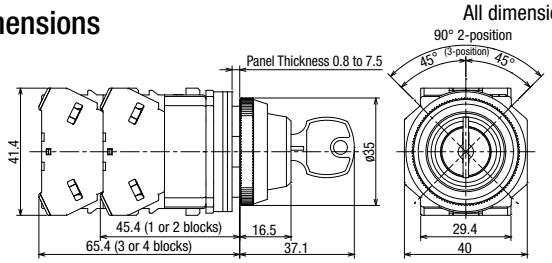
- Cylinder: Chrome-plated
- Round bezel (metal): Chrome-plated
- Key selector switches with 1 or 3 contact blocks have a dummy block.
- On spring-returned types, the key can be released only from the maintained position. On maintained types, the key can be released from every position. See B-308 for specifying key retained positions.
- Key selector switch is supplied with two standard keys.
  (1) Insert the key completely before turning the key, otherwise failure will result.
  (2) Turn the operator to each position accurately.
- Different key number is available upon request. Contact IDEC.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-308 for gold-plated silver contacts.
- See B-312 for bottom view.

## Contact Block Mounting Position




## Dimensions

All dimensions in mm.




Terminal Screws: M3.5 Terminal cover: integrated



IDEC

## ASLD Illuminated Selector Switches (LED)

Package Quantity: 1

Shape: Illuminated Selector Switches (BA9S Base)
ASLD



(24V AC/DC)

### 90° 2-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 2 | Operating Voltage | Maintained (1 2) | Spring Return from Right (1 2) | Spring Return from Left: Contact Block: Mounting Position | Spring Return from Left: Contact Block: Contact | Spring Return from Left: Operator Position: 1 | Spring Return from Left: Operator Position: 2 | Spring Return from Left (1 2) | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1NO-1NC (11) | ① | NO | | ● | 24V AC/DC | ASLD22211DN∗ | ASLD212211DN∗ | ① | NO | ● | | ASLD222211DN∗ | R G Y A S PW |
| | ② | NC | ● | | 100/110V AC | ASLD21611DN∗ | ASLD211611DN∗ | ② | NC | | ● | ASLD221611DN∗ | |
| | | | | | 200/220V AC | ASLD22611DN∗ | ASLD212611DN∗ | | | | | ASLD222611DN∗ | |
| 2NO (20) | ① | NO | | ● | 24V AC/DC | ASLD22220DN∗ | ASLD212220DN∗ | ① | NO | ● | | ASLD222220DN∗ | |
| | ② | NO | | ● | 100/110V AC | ASLD21620DN∗ | ASLD211620DN∗ | ② | NO | ● | | ASLD221620DN∗ | |
| | | | | | 200/220V AC | ASLD22620DN∗ | ASLD212620DN∗ | | | | | ASLD222620DN∗ | |
| 2NO-2NC (22) | ① | NO | | ● | 24V AC/DC | ASLD22222DN∗ | ASLD212222DN∗ | ① | NO | ● | | ASLD222222DN∗ | |
| | ② | NC | ● | | 100/110V AC | ASLD21622DN∗ | ASLD211622DN∗ | ② | NC | | ● | ASLD221622DN∗ | |
| | ③ | NO | | ● | 200/220V AC | ASLD22622DN∗ | ASLD212622DN∗ | ③ | NO | ● | | ASLD222622DN∗ | |
| | ④ | NC | ● | | — | — | — | ④ | NC | | ● | — | |

### 45° 3-position

| Contact | Contact Block: Mounting Position | Contact Block: Contact | Operator Position: 1 | Operator Position: 0 | Operator Position: 2 | Operating Voltage | Maintained (1 0 2) | Spring Return from Right (1 0 2) | Spring Return from Left (1 0 2) | Spring Return Two-way (1 0 2) | Color Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2NO (20) | ① | NO | ● | | | 24V AC/DC | ASLD32220DN∗ | ASLD312220DN∗ | ASLD322220DN∗ | ASLD332220DN∗ | R G Y A S PW |
| | ② | NO | | | ● | 100/110V AC | ASLD31620DN∗ | ASLD311620DN∗ | ASLD321620DN∗ | ASLD331620DN∗ | |
| | | | | | | 200/220V AC | ASLD32620DN∗ | ASLD312620DN∗ | ASLD322620DN∗ | ASLD332620DN∗ | |
| 2NC (02) | ① | NC | ▬ | | | 24V AC/DC | ASLD32202DN∗ | ASLD312202DN∗ | ASLD322202DN∗ | ASLD332202DN∗ | |
| | ② | NC | ▬ | | | 100/110V AC | ASLD31602DN∗ | ASLD311602DN∗ | ASLD321602DN∗ | ASLD331602DN∗ | |
| | | | | | | 200/220V AC | ASLD32602DN∗ | ASLD312602DN∗ | ASLD322602DN∗ | ASLD332602DN∗ | |
| 2NO-2NC (22) | ① | NO | ● | | | 24V AC/DC | ASLD32222DN∗ | ASLD312222DN∗ | ASLD322222DN∗ | ASLD332222DN∗ | |
| | ② | NO | | | ● | 100/110V AC | ASLD31622DN∗ | ASLD311622DN∗ | ASLD321622DN∗ | ASLD331622DN∗ | |
| | ③ | NC | | ▬ | | 200/220V AC | ASLD32622DN∗ | ASLD312622DN∗ | ASLD322622DN∗ | ASLD332622DN∗ | |
| | ④ | NC | ▬ | | | — | — | — | — | — | |
| 4NO (40) | ① | NO | ● | | | 24V AC/DC | ASLD32240DN∗ | ASLD312240DN∗ | ASLD322240DN∗ | ASLD332240DN∗ | |
| | ② | NO | | | ● | 100/110V AC | ASLD31640DN∗ | ASLD311640DN∗ | ASLD321640DN∗ | ASLD331640DN∗ | |
| | ③ | NO | ● | | | 200/220V AC | ASLD32640DN∗ | ASLD312640DN∗ | ASLD322640DN∗ | ASLD332640DN∗ | |
| | ④ | NO | | | ● | — | — | — | — | — | |
| 4NC (04) | ① | NC | | ▬ | | 24V AC/DC | ASLD32204DN∗ | ASLD312204DN∗ | ASLD322204DN∗ | ASLD332204DN∗ | |
| | ② | NC | ▬ | | | 100/110V AC | ASLD31604DN∗ | ASLD311604DN∗ | ASLD321604DN∗ | ASLD331604DN∗ | |
| | ③ | NC | | ▬ | | 200/220V AC | ASLD32604DN∗ | ASLD312604DN∗ | ASLD322604DN∗ | ASLD332604DN∗ | |
| | ④ | NC | ▬ | | | — | — | — | — | — | |

- Specify a color code in place of ∗ in Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue). PW (pure white)
- Round bezel (metal): Chrome-plated
- Illuminated selector switches have an LED lamp installed.
- Use a pure white (PW) LED for yellow (Y) illumination.
- See B-309 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- Illuminated selector switches of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.
- Turn the operator to each position accurately.
- See B-309 for gold-plated silver contacts.
- See B-314 for bottom view.

## Contact Block Mounting Position




(24V AC/DC)

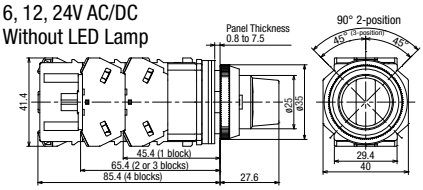



With transformer
(100/110V AC)

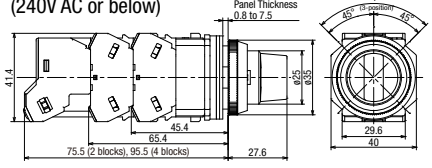
## Dimensions

All dimensions in mm.

6, 12, 24V AC/DC
Without LED Lamp

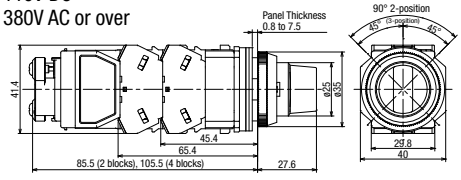



100/110V AC, 200/220V AC
(240V AC or below)




Terminal Screws: M3.5

110V DC
380V AC or over




Terminal Screws: M3.5 Terminal cover: integrated

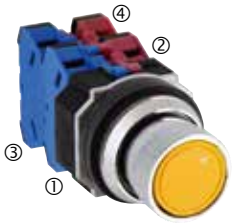
## ASBD2 Selector Pushbuttons

Package Quantity: 1

| Shape | Contact Configuration | Circuit Code | Contact Block: Mounting Position | Contact Block: Contact | Ring Position: Left / Pushbutton: Normal | Ring Position: Left / Pushbutton: Push | Ring Position: Right / Pushbutton: Normal | Ring Position: Right / Pushbutton: Push | Button Color Code | Ring Operator: Part No. (Ordering No.) |
|---|---|---|---|---|---|---|---|---|---|---|
| Ring Operator (90°2-position) ASBD2  | 11 (1NO-1NC) | A03 | ① | NO | | ● | | ● | B G R Y | ASBD211N-A03∗ |
| | | | ② | NC | ● | | | | | |
| | 22 (2NO-2NC) | A08 | ① | NO | | ● | | ● | | ASBD222N-A08∗ |
| | | | ② | NC | ● | | | | | |
| | | | ③ | NO | | ● | | ● | | |
| | | | ④ | NC | ● | | | | | |
| | | ☆ C10 | ① | NO | | ● | | ● | | ☆ ASBD222N-C10∗ |
| | | | ② | NO | | | | ● | | |
| | | | ③ | NC | ● | | | | | |
| | | | ④ | NC | ▬ | | | | | |
| | | D10 | ① | NO | | ● | | | | ASBD222N-D10∗ |
| | | | ② | NO | | | | ● | | |
| | | | ③ | NC | ● | | ▬ | | | |
| | | | ④ | NC | ▬ | | ● | | | |
| | | ☆ E10 | ① | NO | | ● | | | | ☆ ASBD222N-E10∗ |
| | | | ② | NO | | | | ● | | |
| | | | ③ | NC | | | ▬ | | | |
| | | | ④ | NC | ▬ | | | | | |
| | | ☆ F10 | ① | NO | | | | ● | | ☆ ASBD222N-F10∗ |
| | | | ② | NO | | ● | | | | |
| | | | ③ | NC | | | ● | | | |
| | | | ④ | NC | ● | | | | | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow)
- Bezel (metal): Chrome-plated
- Circuit codes E and F: The right and left NC contact blocks on circuit code E or F may overlap each other while turning the ring operator. The NO and NC contact blocks on circuit code F may overlap each other while pressing the button.
- When using the selector pushbutton, do not turn the ring operator with the pushbutton depressed. Otherwise, damage or failure may be caused.
- Selector switches with ☆ have a half contact operating current (load switching current value). Rated insulation voltage and rated current remain the same.
- See B-312 for bottom view.

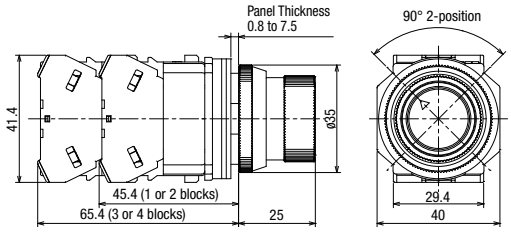
## Contact Block Mounting Position




## Dimensions

### Ring operator (90° 2-position)

All dimensions in mm.




Terminal Screws: M3.5 Terminal cover: integrated

## Pilot Lights (Round)

Package Quantity: 1

| Shape | Illumination | Base | Operating Voltage | Part No. (Ordering No.) | Color Code | LED Lamp Part No. |
|---|---|---|---|---|---|---|
| Round APD1  (24V AC/DC) | LED | BA9S | 24V AC/DC | APD122DN∗ | R, G, Y, A, S, PW | LSRD-2 |
| | | | 100/110V AC | APD116DN∗ | R, G, Y, A, S, PW | LSRD-6 |
| | | | 200/220V AC | APD126DN∗ | R, G, Y, A, S, PW | |

- Specify a color code in place of ∗ in Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- Round bezel (metal): Chrome-plated
- Pilot lights have an LED lamp installed.
- See B-309 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.
- See B-309 for how to specify units without LED lamps.
- Terminal cover is installed on pilot lights for electric shock prevention.

| Type | Terminal Cover | Quantity |
|---|---|---|
| 6V, 12V, 24V AC/DC | APN-PVL | 1 |
| 100V/110V AC, 200/220V AC | N-VL3 | 1 |
| 110V DC | N-VL3 | 1 |

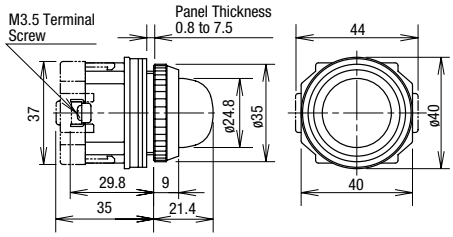
Note: DC-DC converter types are not approved by UL and CSA, and not CE compliant.
- See B-314 for bottom view.

## Dimensions

All dimensions in mm.

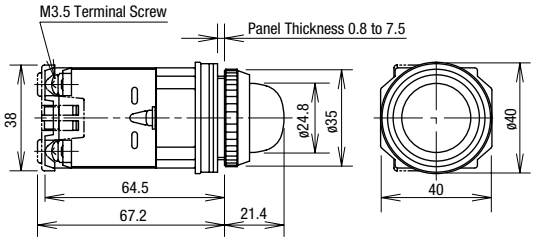
### Round, LED illuminated

6V, 12V, 24V AC/DC · Without LED Lamp (Terminal Cover: APD-PVL)




Terminal Screws: M3.5

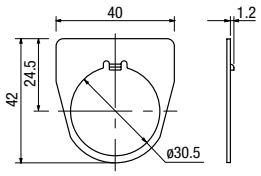
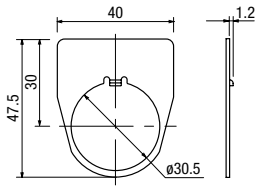
100 to 480V AC, 110V DC (Terminal Cover: N-VL3)




Terminal Screws: M3.5

- See B-349 for wiring.

## Nameplates

| Model | Legend | Material | Part No. | Ordering No. | Package Quantity | Dimensions (mm) |
|---|---|---|---|---|---|---|
| NA  For TWN/TWND | Blank | Aluminium 1.2 mm thick White letters on black background | NA-0 | NA-0 | 1 |  |
| | | | | NA-0PN10 | 10 | |
| | With Legend | | NA-☐ | NA-☐ | 1 | |
| | | | | NA-☐PN10 | 10 | |
| NALO  For TWN/TWND | Blank | Aluminium 1.2 mm thick Black | NALO | NALO | 1 |  |
| | | | | NALOPN10 | 10 | |



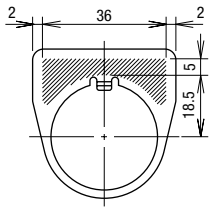


Specify a legend code in place of ☐ in the Ordering No.

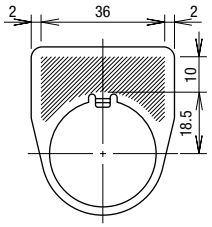
### Legends

| ☐: Code | Legend |
|---|---|
| 1 | ON |
| 2 | OFF |
| 3 | START |
| 4 | STOP |
| 31 | OFF ON |
| 35 | HAND AUTO |
| 53 | HAND OFF AUTO |

### Shape and Engraving Area




NA



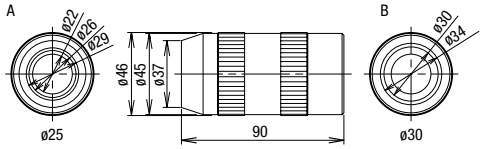
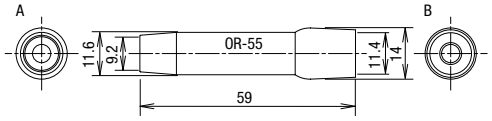
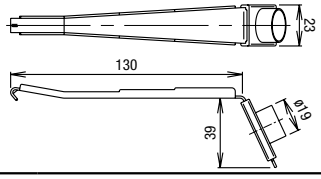
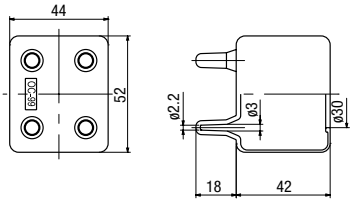
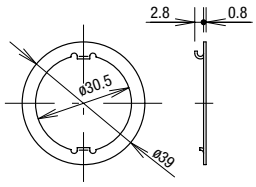
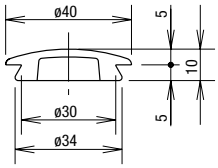
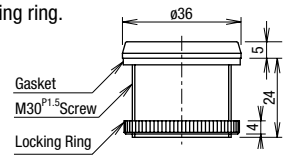
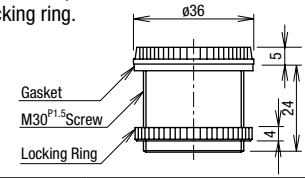

NALO

All dimensions in mm.

### Example (when the legend height is 4 mm)

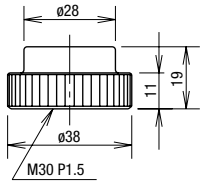
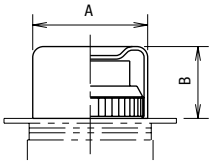
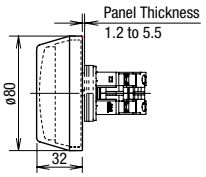
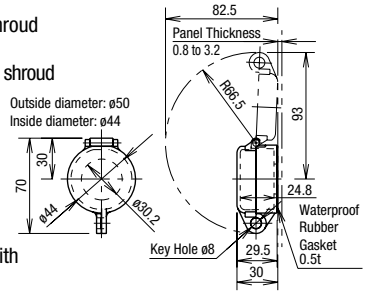
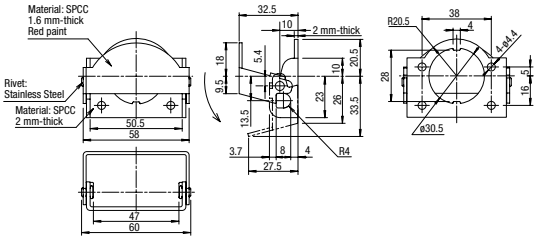
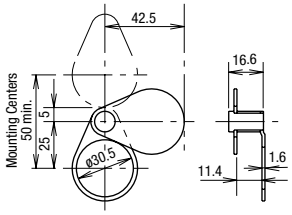
| Shape | Engraving Area (mm) | | Max. No. of Lines | No. of Letters on 1 Line |
|---|---|---|---|---|
| | Height | Width | | |
| NA | 5 | 36 | 1 | 14 |
| NALO | 10 | 36 | 2 | 14 |

## Accessories

| Shape | Material | Part No. | Ordering No. | Package Quantity | Remarks |
|---|---|---|---|---|---|
| Locking Ring Wrench<br><br>For TWN/TWND | Nitril rubber (black) | OR-12 | OR-12 | 1 | • Used to tighten the round bezel when installing the ø30 or ø25 switch onto a panel from the front.<br>A: TWS series (ø25) B: TWN/TWND series (ø30)<br> |
| Lamp Holder Tool<br><br>For TWN/TWND | Nitril rubber (black) | OR-55 | OR-55 | 1 | • Used to install and remove the LED/incandescent lamps. See B-345.<br>A: For BA9S base<br>B: For E12 base<br> |
| Contact Block Removal Tool<br><br>For TWN | Metal (zinc-plated)<br>Rubber (nitryl) | TW-KC1 | TW-KC1 | 1 | • Used to remove transformer units. See B-347 for how to use.<br> |
| Contact Rubber Boot<br>For momentary 1 layer of contact blocks (2 contact blocks)<br><br>For TWN | Nitril rubber (black) | OC-99 | OC-99 | 1 | • Rubber boot used to prevent oil and dirt from entering into the contact block.<br>• Temperature range: –5 to +60°C<br><br>• When inserting a cable, cut the projection on the cover to match the cable size. |
| Anti-rotation Ring<br><br>For TWN/TWND | Metal (diecast) (zinc-plated) | OGL-11 | OGL-11PN10 | 10 | • Used to prevent the operator from turning. Generally used when using no nameplates on selector switches and selector pushbuttons.<br>• See B-345 for installation.<br>• Cannot be used for pin lock.<br> |
| Rubber Mounting Hole Plug<br><br>For TWN/TWND | Nitril rubber (black) | OB-13B | OB-13BPN05 | 5 | • Used to plug unused ø30.5 mm mounting holes.<br>• Degree of protection: IP40<br> |
| | Nitril rubber (gray) | OB-13 | OB-13PN05 | | |
| Plastic Mounting Hole Plug<br><br>For TWN/TWND | Plug: ABS plastic (gray)<br>Gasket: Chloroprene rubber<br>Locking ring: diecast zinc | OBP-11 | OBP-11 | 1 | • Tightening torque: 1.2 N·m.<br>• Degree of protection: IP65 (when there is no anti-rotation ring hole)<br>• Supplied with a locking ring.<br> |
| Metallic Mounting Hole Plug<br><br>For TWN/TWND | Plug: ABS plastic (gray)<br>Gasket: Chloroprene rubber<br>Locking ring: diecast zinc | OB-11 | OB-11 | 1 | • Tightening torque: 1.2 N·m.<br>• Degree of protection: IP65 (when there is no anti-rotation ring hole)<br>• Supplied with a locking ring.<br> |

## Accessories

All dimensions in mm.

| Shape | Material | Part No. | | Ordering No. | Package Quantity | Remarks |
|---|---|---|---|---|---|---|
| Button Cover for Extended Pushbuttons  For TWN/TWND | Nitril rubber<br>Bezel: diecast zinc | Black | OC-11B | OC-11B | 1 | • Metallic bezels covered with a rubber boot to enhance waterproof characteristics.<br>• Button is not included. Applicable to extended pushbuttons only.<br>• Oil-proof<br>• Operating temperature: –5 to +60°C.<br> |
| | | Red | OC-11R | OC-11R | | |
| | | Green | OC-11G | OC-11G | | |
| | | Yellow | OC-11Y | OC-11Y | | |
|  For TWN/TWND | EPDM rubber | For flush pushbuttons | OC-121 | OC-121 | 1 | • Used to cover and protect push-buttons where units are subject to water splash. Not suitable for outdoor use or where the units are subject to oil splash.<br><br>Part No. / A / B<br>OC-121 / 37 / 16<br>OC-122 / 37 / 22 |
| | | For extended pushbuttons | OC-122 | OC-122 | 1 | |
| Dust-proof Rubber Cover for Jumbo Mushrooms  For TWN/TWND | Nitril rubber (black) | | OC-4GN | OC-4GN | 1 | • Used for ABN4G and ABGD4 pushbuttons.<br> |
| Padlock Cover  For TWN/TWND | Polyarylate (gasket: nitryl rubber) | | OL-KL1 | OL-KL1 | 1 | • Used to protect pushbuttons and illuminated pushbuttons (momentary/maintained) with 24 mm max. height from the panel, and selector switches (knob operator).<br>• Not used for the following models.<br>Pushbuttons<br>Mushroom with full shroud<br>Mushroom<br>Jumbo mushroom with shroud<br>Illuminated Pushbuttons<br>With half shroud<br>With full shroud<br>Selector Switches<br>Lever operator<br>Key selector switch with key installed<br> |
| Padlock Cover for Key Selector Switches  For TWN/TWND | Metal<br>Paint: red (zinc-plated brass) | | HS9Z-PC30 | HS9Z-PC30 | 1 | • Applicable model<br>Key selector switches ASN☐K/ASD☐K<br>See padlock cover catalog for operating instruction.<br> |
| For Flush Pushbuttons  For TWN/TWND | Metal (zinc-plated brass) | | OL-C | OL-C | 1 | • Used to protect flush pushbuttons from inadvertent operation.<br>• Can be easily attached using the locking ring.<br> |



IDEC

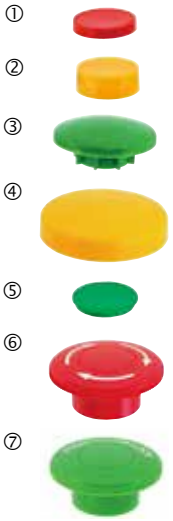
## Accessories

All dimensions in mm.

| Shape | | Material | Part No. | Ordering No. | Package Quantity | Remarks |
|---|---|---|---|---|---|---|
| Metallic Bezel<br><br>ø35/ø26, height 9 For TWN/TWND | | Metal (diecast zinc: chrome-plated) | OG-11 | OG-11PN02 | 2 | • Cannot be used with pin lock, selector pushbuttons, and monolever units. |
| Plastic Bezel<br><br>ø35/ø26, height 9 For TWN | | Polycarbonate | OGP-11∗ | OGP-11∗PN02 | 2 | • Specify a color code in place of ∗. B (black), G (green), R (red), W (white), Y (yellow)<br>• Cannot be used with pin lock, selector pushbuttons, and monolever units. |
| Octagonal Metal Bezel<br>① <br>② <br>For TWDN | ①<br>Flush<br>W35<br>(37.6)<br>H9 | Metal (diecast zinc: chrome-plated) | OG-81 | OG-81PN02 | 2 | • Use with TWDN series diecast zinc switches and pilot lights.<br>• Cannot be used with half-shrouds. |
| | ②<br>Extended<br>W35<br>(37.6)<br>H16 | | OG-82 | OG-82 | 1 | |
| Clear Plastic Shroud for Flush Pushbuttons<br><br>ø35, height 14 For TWN | | Acrylic (clear) | OGP-13 | OGP-13PN02 | 2 | • Clear plastic full shroud. |
| Clear Plastic Shroud for Extended Pushbuttons<br><br>ø35, height 20.6 For TWN | | Acrylic (clear) | OGP-14 | OGP-14PN02 | 2 | |
| Clear Plastic Shroud for Illuminated Pushbuttons<br><br>Shroud: ø35, height 20.6<br>Metal Nut Ring: height 4 For TWN | | Acrylic (clear) | OGP-1411 | OGP-1411 | 1 | • Buttons may protrude slightly depending on the panel thickness. |
| Metal Nut Ring for Illuminated Pushbuttons<br><br>ø35, height 4 For TWN | | Metal (diecast zinc) | OL-11 | OL-11PN05 | 5 | • Metal nut ring for OGP-1411 only. |

## Accessories

All dimensions in mm.

| Shape | | Material | Part No. | Ordering No. | Package Quantity | Color Code * |
|---|---|---|---|---|---|---|
| Button for Pushbuttons<br>① ② ③ ④ ⑤ ⑥ ⑦<br><br>For TWN/TWND | ① Flush<br>ø24.6, height 4 | Polyacetal | ABN1BN-* | ABN1BN-*PN05 | 5 | B (black), G (green), R (red), Y (yellow), S (blue), W (white) |
| | ② Extended<br>ø24.6, height 9 | | ABN2BN-* | ABN2BN-*PN05 | 5 | |
| | ③ Mushroom<br>ø40, height 16.2 | | ABN3BN-* | ABN3BN-*PN02 | 2 | |
| | ④ Jumbo Mushroom<br>ø65, height 23.2 | | ABN4BN-* | ABN4BN-* | 1 | B (black), G (green), R (red), Y (yellow), S (blue) |
| | ⑤ Button for Pin Lock (ABD8P)<br>ø23.6, height 3 | | ABW1B-* | ABW1B-*PN05 | 5 | B (black), G (green), R (red), Y (yellow), S (blue), W (white) |
| | ⑥ ø40<br>Pushlock Turn Reset (AVN3, AVD3)<br>ø40, height 18.5 | AS resin | AVN3B-* | AVN3B-* | 1 | R (red),Y (yellow) |
| | ⑦ ø40<br>Push Turn Lock (AJN3, AJD3)<br>ø40, height 18.5 | | AJN3B-* | AJN3B-* | 1 | B (black), G (green), R (red), Y (yellow) |
| Lens for Illuminated Pushbuttons<br>① ②<br><br>For TWN/TWND | ① Extended<br>(ALN2, ALD2)<br>ø24, height 18.5 | AS resin | ALN2LD-*-K | ALN2LD-*-KPN05 | 5 | R (red), G (green), S (blue), Y (yellow), A (amber), W (white)<br>Specify W for PW (pure white) illumination. |
| | ② ø40<br>Pushlock turn reset (AVLN3, AVLD3)<br>ø40, height 18.5 | | AVLN3L-R-K | AVLN3L-R-KPN02 | 2 | R (red) only |
| Selector Operator<br>① ② ③ ④<br><br>For TWN/TWND | ① Knob operator<br>ø25, height 20.5 | Polyacetal | ASNHT-* | ASNHT-*PN02 | 2 | B (black), G (green), R (red) |
| | ② Lever operator<br>ø25, height 20.5, length 37.5 | | ASNHL-* | ASNHL-*PN02 | | |
| | ③ Color insert<br>Width 21, depth 5, height 18 | | TW-HC1* | TW-HC1*PN05 | 5 | B (black), G (green), R (red), Y (yellow), S (blue), W (white) |
| | ④ Knob for illuminated selector switch (ASLN, ASLD)<br>ø25, height 28 | AS resin | ASLNHD-*-K | ASLNHD-*-K | 1 | G (green), R (red), S (blue), A (amber), W (white), Y (yellow)<br>Specify W for PW (pure white) illumination. |
| Lens for Pilot Lights<br>① ② ③<br> | ① Round (APN1, APD1)<br>ø24.8, height 28, M20<br>For TWN/TWND | AS resin | APN106LN-*-K | APN106LN-*-KPN05 | 5 | R (red), G (green), Y (yellow) A (amber), W (white), S (blue)<br>Specify W for PW (pure white) illumination. |
| | ② Rectangular (UPQN4)<br>Width 36, depth 30, height 8.5<br>For TWN | | UPQN406LD-*-K | UPQN406LD-*-KPN05 | 5 | R (red), G (green), Y (yellow), A (amber), C (clear), S (blue)<br>Specify C for PW (pure white) illumination. |
| | ③ Square extended (UPQN3B)<br>□25, height 26.5<br>For TWN | | UPQN06LD-*-K | UPQN06LD-*-KPN05 | 5 | R (red), G (green), S (blue), Y (yellow), A (amber), W (white)<br>Specify W for PW (pure white) illumination. |
| Marking Plate<br><br>For TWN | Rectangular pilot lights (UPQN4)<br>Width 29.8, depth 23.8, thickness 2 | Acrylic | UPQN406N-W | UPQN406N-WPN05 | 5 | W (white) only<br>See B-346 for engraving area. |

APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID
Flush Silhouette
ø16
ø22
ø30
Miniature
Pilot Lights
TWN
TWND
ARN
CS

## Maintenance Parts

All dimensions in mm.

| Shape | Material | Part No. | Ordering No. | Package Quantity | Remarks |
|---|---|---|---|---|---|
| Rubber Washer (1.5 mm-thick)<br><br>For TWN/TWND | Rubber<br>(synthetic soft vinyl)<br>ø39/ø29.5, height 1.5 | OW-11 | OW-11PN10 | 10 | • To tighten mounting panels |
| Rubber Washer (3.0 mm-thick)<br><br>For TWN/TWND | Rubber<br>(synthetic soft vinyl)<br>ø39/ø29.5, height 3 | OW-12 | OW-12PN10 | 10 | • To tighten mounting panels |
| Shroud for Pushbuttons<br>①<br>②<br>③<br>④<br>⑤<br><br>For TWN/TWND | ① Half shroud<br>ø35/ø27, height 20.5 | ABN2G | ABN2G | 1 | • With nut ring (ø35, height 4) |
| | ② Full shroud<br>ø35/ø28.5, height 16.5 | ABN2F | ABN2F | 1 | |
| | ③ Full shroud<br>(for mushroom pushbuttons)<br>ø48, height 20 | ABN3G | ABN3G | 1 | |
| | ④ Shallow shroud<br>(for jumbo mushroom)<br>ø75, height 18 | ABN4G | ABN4G | 1 | |
| | ⑤ Deep shroud<br>(for jumbo mushroom)<br>ø75/ø69, height 33 | ABN4F | ABN4F | 1 | |
| Shroud for Illuminated Pushbuttons<br>①<br>②<br><br>For TWN/TWND | ① Half shroud<br>(For BA9S base)<br>ø35/ø27, height 25 | ALN2GL | ALN2GL | 1 | • With nut ring (ø35, height 4) |
| | ② Full shroud<br>(For BA9S base)<br>ø35/ø29.5, height 22.5 | ALN2FL | ALN2FL | 1 | • With nut ring (ø35, height 4) |
| Spare Key<br>For Key Selector Switches<br><br>For TWN/TWND | Metal<br>Nickel plated brass<br>Length 3, width 19.7,<br>thickness 1.8 | TW-SK-0 | TW-SK-0PN02 | 2 | • ASN☐K☐N<br>ASD☐K☐N |
| Spare Key<br>For Key Selector Switches<br><br>For TWN | Metal<br>Nickel plated brass<br>Length 37.5,<br>thickness 2 | ASN-SK-24401 | ASN-SK-24401PN02 | 2 | • ASN☐K☐-N024401 |
| Pin/Chain Kit<br>For ABD8P<br><br>For TWND | Pin:<br>Nickel plated brass | ABD8P-PIN | ABD8P-PIN | 1 | • Pin, chain, and plate for ABN8P<br>• Pin (ø4.6) |
| Contact Block Plug<br><br>For TWN/TWND | Polyamide | HW9Z-CBPL | HW9Z-CBPLPN10 | 10 | • Used to plug the hole in the center of a contact block. |

## Maintenance Parts

All dimensions in mm.

| Shape | Description | Part No. | Ordering No. | Package Quantity | Remarks |
|---|---|---|---|---|---|
| Contact block HW-U  For TWN/TWND, 11g approx. | NO contact | HW-U10 | HW-U10 | 1 | Housing color: Blue<br>Push rod color: Green<br>MAU has gold contacts |
| | | HW-U10-MAU | HW-U10-MAU | | |
| | NC contact | HW-U01 | HW-U01 | 1 | Housing color: Reddish purple<br>Push rod color: Red<br>MAU has gold contacts |
| | | HW-U01-MAU | HW-U01-MAU | | |
| | EM contact (early make) | HW-U10R | HW-U10R | 1 | Housing color: Blue<br>Push rod color: Black<br>MAU has gold contacts |
| | | HW-U10R-MAU | HW-U10R-MAU | | |
| | LB contact (late break) | HW-U01R | HW-U01R | 1 | Housing color: Reddish purple<br>Push rod color: White<br>MAU has gold contacts |
| | | HW-U01R-MAU | HW-U01R-MAU | | |
| Dummy Block  For TWN/TWND 3.5g approx. | Polyamide | HW-DB | HW-DBPN10 | 10 | • For HW-U contact blocks<br>• Used when the number of contact blocks and full voltage adapters is 1 or 3. |
| Full Voltage Adapter For Illuminated Switches (*1)  For TWN/TWND 12g approx. | Polyamide | HW-GA1N | HW-GA1NPN02 | 2 | • Applicable model:<br>Illuminated pushbuttons<br>Illuminated selector switches<br>• Applicable load (LED lamp)<br>LSRD-6, LSTD-6 (6V AC/DC)<br>LSRD-1, LSTD-1 (12V AC/DC)<br>LSRD-2, LSTD-2 (24V AC/DC) |
| Transformer Unit For Illuminated Switches (*1)  For TWN/TWND 66g approx. | 100/110V AC | HW-T16 | HW-T16 | 1 | • Applicable model:<br>Illuminated pushbuttons<br>Illuminated selector switches<br>• Applicable load (LED lamp)<br>LSRD-6, LSTD-6 (6V AC/DC) |
| | 200/220V AC | HW-T26 | HW-T26 | 1 | |
| Transformer Unit For Pilot Lights (*1)  For TWN/TWND 69g approx. | 100/110V AC | TWR-016B | TWR-016B | 1 | • Mounting screws are not included.<br>• See B-347 for mounting screws.<br>• Applicable load (LED lamp)<br>LSRD-6, LSTD-6 (6V AC/DC) |
| | 200/220V AC | TWR-026B | TWR-026B | 1 | |

*1) For use as maintenance parts. Do not use for expansion or remodelling purposes.

## LED Lamps (Use LED lamps for replacing incandescent lamps)

| Model | Operating Voltage | Current Draw DC | Current Draw DC | Part No. | Ordering No. | Color Code | Package Quantity | Base |
|---|---|---|---|---|---|---|---|---|
| LSRD  | 6V AC/DC | 10mA | 14mA | LSRD-6 | LSRD-6 | — | 1 | BA9S /13 |
| | | | | | LSRD-6PN10 | | 10 | |
| | 12V AC/DC | 7mA | 8mA | LSRD-1 | LSRD-1 | | 1 | |
| | | | | | LSRD-1PN10 | | 10 | |
| | 24V AC/DC | 7mA | 8mA | LSRD-2 | LSRD-2 | | 1 | |
| | | | | | LSRD-2PN10 | | 10 | |
| LSTD  | 6V AC/DC | 7mA (R, A)<br>5.5mA (G, PW)<br>4.5mA (S) | 8mA (except S)<br>7mA (S) | LSTD-6* | LSTD-6* | R, G, A, S, PW | 1 | BA9S /13 |
| | | | | | LSTD-6*PN10 | | 10 | |
| | 12V AC/DC | 10mA (except S)<br>8mA (S) | 11mA (except S)<br>9mA (S) | LSTD-1* | LSTD-1* | | 1 | |
| | | | | | LSTD-1*PN10 | | 10 | |
| | 24V AC/DC | 10mA (except S)<br>8mA (S) | 11mA (except S)<br>9mA (S) | LSTD-2* | LSTD-2* | | 1 | |
| | | | | | LSTD-2*PN10 | | 10 | |
| LETD  | 6V AC/DC | 14mA (R, A)<br>5.5mA (G, S, PW) | 17mA (R, A)<br>8mA (G, S, PW) | LETD-6* | LETD-6* | R, G, A, S, PW | 1 | E12 /15 |
| | | | | | LETD-6*PN10 | | 10 | |
| | 12V AC/DC | 6.5mA<br>(10mA: at 15V) | 7mA<br>(11mA: at 15V) | LETD-8* | LETD-8* | | 1 | |
| | | | | | LETD-8*PN10 | | 10 | |
| | 24V AC/DC | 10mA | 11mA | LETD-2* | LETD-2* | | 1 | |
| | | | | | LETD-2*PN10 | | 10 | |

- Only one color is available for LSRD so there are no codes to specify the color in the part no.
- Specify a color code in place of * in Part No. R (red), G (green), A (amber), S (blue), PW (pure white)
- Use a PW (pure white) LED for Y (yellow) illumination.
- When replacing the LED with LSRD, the lens must also be replaced (see B-341).

## Maintenance Parts

All dimensions in mm.

### LED lamps for replacing incandescent lamps

| Incandescent Lamp | | | | | Replacement LED Lamp | | | |
|---|---|---|---|---|---|---|---|---|
| Model (mm) | | Part No. | Operating Voltage | Lamp Rating | Base | Part No. | Color Code | Operating Voltage | Base |
| LS |  Bulb: ø11 Length: 23 | LS-6 | 6V AC/DC | 1W (6V) | BA9S /13 | LSRD-6 | — | 6V AC/DC | BA9S /13 |
| | | LS-8 | 12V AC/DC | 1W (18V) | | LSRD-1 | | 12V AC/DC | |
| | | LS-2 | 18V AC/DC | 1W (24V) | | LSRD-2 | | 24V AC/DC | |
| | | LS-3 | 24V AC/DC | 1W (30V) | | LSRD-2 | | 24V AC/DC | |
| LE |  Bulb: ø13 Length: 34 | LE-6 | 6V AC/DC | 2W (6V) | E12 /15 | LETD-6∗ | R, G, A, S, PW | 6V AC/DC | E12 /15 |
| | | LE-8 | 12V AC/DC | 2W (18V) | | LETD-8∗ | | 12V AC/DC | |
| | | LE-2 | 18V AC/DC | 2W (24V) | | LETD-2∗ | | 24V AC/DC | |
| | | LE-3 | 24V AC/DC | 2W (30V) | | LETD-2∗ | | 24V AC/DC | |

- When using a commercially available incandescent lamp, choose a lamp with the same dimensions, operating voltage, and base.
- Specify a color code in place of ∗ in Part No.
  R (red), G (green), A (amber), S (blue), PW (pure white)
- Use a PW (pure white) LED lamp for Y (yellow) illumination.
- For O (orange) and C (clear) color code of incandescent lamp, use A (amber) LED lamp.

- Only one color is available for LSRD so there are no codes to specify the color in the part no.
- When replacing incandescent lamps to LSRD, the lens must also be replaced (see B-341).

## Transformer

| Shape | Operating Voltage | Voltage Range | Part No. (Ordering No.) | Applicable Load |
|---|---|---|---|---|
| For 6V  | 100/110V AC | ±10% | TWR516 | LSRD-6, LSTD-6∗ (6V AC/DC, LED lamp) |
| | 200/220V AC | ±10% | TWR526 | Specify a color code in place of ∗ in Part No. R (red), G (green), A (amber), S (blue), PW (pure white) |
| | 400/4440V AC | ±10% | TWR546 | |
| For 24V  | 100/110V AC | ±10% | TWR512 | LSRD-2, LSTD-2∗ (24V AC/DC, LED lamp) |
| | 200/220V AC | ±10% | TWR522 | Specify a color code in place of ∗ in Part No. R (red), G (green), A (amber), S (blue), PW (pure white) |
| | 400/4440V AC | ±10% | TWR542 | |

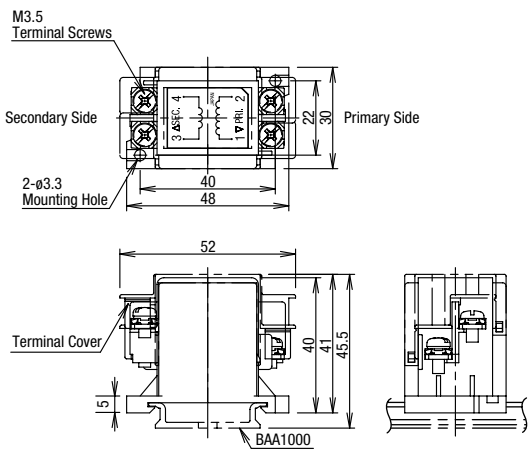
- Terminal cover (TWR-VL3) is installed on transformers as standard.

### Specifications

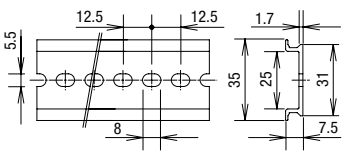
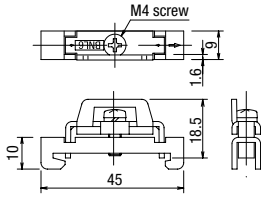
| Part No. | TWR5☐6 | TWR5☐2 |
|---|---|---|
| Rated Voltage | 100/110V AC, 200/220V AC, 400/440V AC (50/60 Hz) | |
| Current Draw | 2.4VA | |
| Rated Insulation Voltage | 600V | |
| Insulation Resistance | 100MΩ minimum (500V DC megger) | |
| Operating Temperature | –30 to 60°C (no freezing) | |
| Operating Humidity | 35 to 85% RH (no condensation) | |
| Storage Temperature | –40 to +80°C (no freezing) | |
| Vibration Resistance | Damage limits: 30 Hz, amplitude 1.5 mm | |
| | Operating extremes: 5 to 55 Hz, amplitude 0.5 mm | |
| Shock Resistance | 1000 m/s² | |
| | 100 m/s² | |
| Dielectric Strength | 2500V AC, 1 minute | |
| Terminal Screw | M3.5 | |
| Applicable Wire | 2 mm² maximum, 2 wires maximum | |
| Weight | 87g | |

### Dimensions

All dimensions in mm.




### Accessories

| Shape | Material | Part No. | Ordering No. | Package Quantity | Dimensions (mm) |
|---|---|---|---|---|---|
| DIN 35 mm Rail  Weight: 200g approx. | Aluminum Length: 1000 mm | BAA1000 | BAA1000PN10 | 10 |  |
| End Clip  Weight: 15g approx. | Metal (zinc-plated steel) Applicable rail: BAA1000 | BNL6 | BNL6PN10 | 10 |  |

- See H-071 for DIN rail products.

APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID
Flush Silhouette
ø16
ø22
ø30
Miniature
Pilot Lights
TWN
TWND
ARN
CS

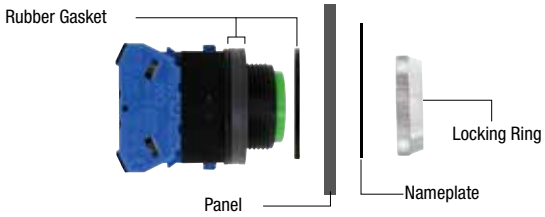
## ⚠ Safety Precautions

- Turn off the power to the TWN/TWND switches & pilot lights before starting installation, removal, wiring, maintenance, and starting installation, removing, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid a burn on your hand, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet the voltage and current requirements. Tighten the terminal screws to the recommended tightening torque (see B-349). Failure to tighten terminal screws may cause overheat and fire.
- When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

## Operating Instructions

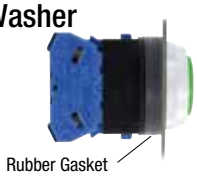
### Panel Mounting

1. Remove the locking ring from the operator and check that the rubber gasket is in place. For mushroom and jumbo mushroom switches, remove the button before removing the locking ring.
2. Adjust the thickness of the rubber washers according to the panel thickness.
3. Insert the switch into the panel from the back of the panel.
4. On the panel front, install the nameplate and locking ring. For mushroom and jumbo mushroom switches, install the button before installing the locking ring.




### Panel Thickness and Rubber Washer

Adjust the thickness of the rubber washers according to the panel thickness as shown in the tables below. Also, make sure to include the nameplate thickness when using a nameplate.




### Applicable Model

**TWN/TWND series**
Pushbutton
(flush/extended/mushroom/jumbo mushroom)
Illuminated pushbutton (extended/mushroom)
Pilot light (except for square type)

| Panel Thickness (mm) | Rubber Washer | |
|---|---|---|
| | 1.5 mm-thick | 3.0 mm-thick |
| Supplied | 2 pieces | 1 |
| 0.8 to 3.5 | 2 pieces | 1 |
| 3.5 to 5.0 | 1 | 1 |
| 5.0 to 6.5 | – | 1 |
| 6.5 to 7.5 | 1 | – |

**TWN/TWND series**
Illuminated pushbutton (extended w/full shroud)
Mushroom with full shroud

| Panel Thickness (mm) | Rubber Washer | |
|---|---|---|
| | 1.5 mm-thick | 3.0 mm-thick |
| Supplied | 2 pieces | 1 |
| 0.8 to 3.5 | 2 pieces | 1 |
| 2.0 to 3.5 | 1 | 1 |
| 3.5 to 5.0 | – | 1 |
| 5.0 to 6.0 (6.5)*1 | 1 | – |

*1: (6.5) is for mushroom pushbuttons with full shroud

**TWN/TWND series**
Pushbutton (extended with half shroud)
Illuminated pushbutton
(extended with half shroud)

| Panel Thickness (mm) | Rubber Washer | |
|---|---|---|
| | 1.5 mm-thick | 3.0 mm-thick |
| Supplied | 1 | 1 |
| 0.8 to 1.8 | – | 1 |
| 1.8 to 3.5 | 1 | – |

**TWND series**
Pin lock pushbutton

| Panel Thickness (mm) | Rubber Washer | |
|---|---|---|
| | 1.5 mm-thick | 3.0 mm-thick |
| Supplied | 2 pieces | 1 |
| 0.8 to 3.0 | 2 pieces | 1 |
| 3.0 to 4.5 | 1 | 1 |
| 4.5 to 6.0 | – | 1 |
| 6.0 to 7.5 | 1 | – |

**TWN/TWND series**
Pushbutton (extended with full shroud)

| Panel Thickness (mm) | Rubber Washer | |
|---|---|---|
| | 1.5 mm-thick | 3.0 mm-thick |
| Supplied | 2 pieces | 1 |
| 0.8 to 2.5 | 2 pieces | 1 |
| 2.5 to 4.0 | 1 | 1 |
| 4.0 to 5.5 | – | 1 |
| 5.5 to 6.0 | 1 | – |

**TWN/TWND series**
Other models (excluding square)

| Panel Thickness (mm) | Rubber Washer | |
|---|---|---|
| | 1.5 mm-thick | 3.0 mm-thick |
| Supplied | 2 pieces | 1 |
| 0.8 to 3.5 | 2 pieces | 1 |
| 3.5 to 5.0 | 1 | 1 |
| 5.0 to 6.5 | – | 1 |
| 6.5 to 7.5 | 1 | – |

- See B-324 for square pilot lights about installing on the panel and replacing LED lamps.
- The number of rubber washers shown in the dimensions of TWN/TWND series may differ from the number of rubber washers supplied.

### Notes for Panel Mounting

**Locking ring wrench recommended torque**

Tighten the bezel to a tightening torque of 3.0 to 3.5 N·m.

**Locking ring wrench**

Locking ring wrench (OR-12) can be used to tighten the bezel. Use side B to tighten.
Side B: For TWN/TWND series
Side A: TWS series

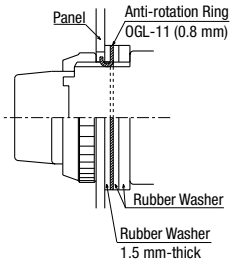
Locking ring wrench (OR-12)




### Installing the Anti-rotation Ring (OGL-11)

Anti-rotation rings are used on selector switches or pushbuttons which rotate and used when using no nameplates. Insert a 1.5 mm-thick rubber washer between the panel and the anti-rotation ring as shown on the right.

To install, adjust the panel thickness by taking the thickness of anti-rotation ring (OGL-11) into consideration.




### Replacement of LED Lamps

Lamps can be replaced by using the lamp holder tool (OR-55) from the front of the panel. (See B-338 for lamp holder tool.)

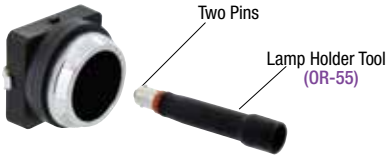
**How to Remove**

To remove, slip the lamp holder tool onto the lamp head lightly. Then push slightly, and turn the lamp holder tool counterclockwise.




**How to Install**

To install, insert the lamp head into the lamp holder tool. Place the two pins on the lamp base to the grooves in the lamp socket. Inset the lamp and turn it clockwise.



## Operating Instructions

### Installing/Removing the Buttons and Lenses

To install | To remove

#### Pushbutton button

**Flush/Extended**

Push in the button to install.



Insert a flat screwdriver between the button and the bezel to remove the button (see below for details).



<Notches>

**Notches on the operating shaft**

The operating shaft has four notches as shown at right. Insert a flat screwdriver (3 mm max.) into one of the notches, and tilt the screwdriver to remove the button.



⚠ Make sure to insert a flat screwdriver into one of the notches, otherwise the pushbutton may be damaged.

**Notes on button removal**

To avoid damaging the bezel or the button, remove the bezel from the pushbutton before inserting a flat screwdriver.

**Mushroom/ Jumbo Mushroom**

Button has threads. Turn clockwise to install the button.



Turn the button counterclockwise to remove.



#### Illuminated Pushbutton Lens

**Extended/Mushroom**

Lens has threads. Turn clockwise to install the lens.



Turn the lens counterclockwise to remove.



**Pilot Light Lens**

**Round**

Lens has threads. Turn clockwise to install the lens.



Turn the lens counterclockwise to remove.



⚠ A rubber gasket is installed between the lens and operator on pilot lights. Make sure that the rubber gasket is in place when installing the lens.

### Marking Plate on Pilot Lights

#### Rectangular Marking Plates (for UPQN4)

**Removing**

① Insert a flat screwdriver between the lens and bezel, and tilt the screwdriver to remove the lens.

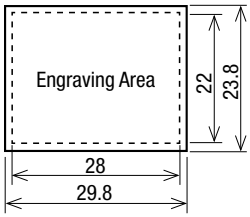


② A white marking plate is installed in the lens which can be removed easily.



**Engraving Area**

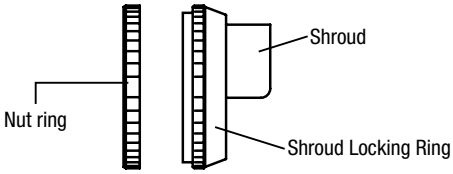
Material: Acrylic resin
Size:
29.8 W × 23.8 D, thickness 2.0 mm
Engraving area:
28 W × 22 D × 1.0 mm height max.




### Installing the Half Shroud on Extended Pushbuttons/ Illuminated Pushbuttons

#### Half Shroud Parts

A shroud is installed in the shroud locking ring. Tightening the shroud locking ring in the switch locks the shroud.



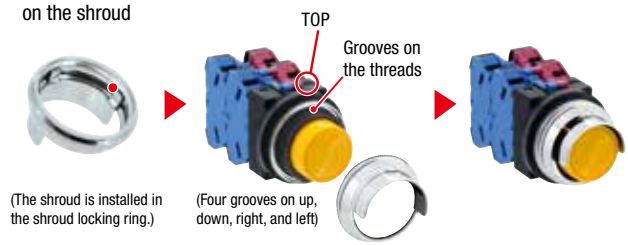

#### Installing the Half Shroud

① Adjust the thickness of the rubber washers according to the panel thickness (see B-345).
② Insert the switch into the panel from the back of the panel.
③ Install the nut ring from the panel front to tighten the switch.
④ Install the half shroud on the upper side of the switch, and tighten the shroud locking ring.
⑤ Make sure that the shroud is securely fastened inside the shroud locking ring.

#### Tightening the Half Shroud

Align the three projections on the shroud with the groove on the switch, and tighten the shroud on the upper side of the switch. Tighten the shroud locking ring.

(1) Three projections on the shroud | (2) Grooves on the threads | (3) Complete




(The shroud is installed in the shroud locking ring.)

(Four grooves on up, down, right, and left)

⚠
- Shrouds may rattle depending on the panel thickness.
- A gap may appear between the nut ring and the shroud locking ring depending on the panel thickness.

## Operating Instructions

### Selector Switches

Turn the operator such as knob, lever, and key to each position accurately. Releasing halfway may cause the operator to return to the former position, or to get stuck between. On spring return two-way types, the center of operators may be misaligned slightly.

### Key Selector Switches

Insert the key completely before turning. Failure to do so may cause failures.

### Installing the Operator on Selector Switches

① Install the switch with TOP marking facing upward, so that the operator can be installed on the switch in the correct direction.




② On non-illuminated models, install the color insert in the middle of operator. The color insert also serves to retain the operator.

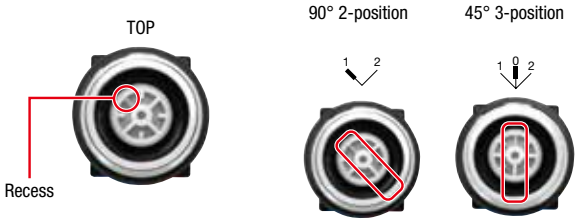



③ On illuminated models, align the operator with the switch by confirming the TOP marking on the switch and also the switch operation. Then press in the operator into the switch.

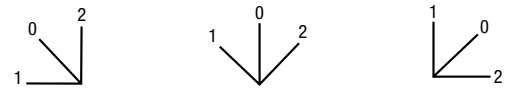



### Installation of Selector Operators

The shaft of each non-illuminated selector switch has a recess to identify in which direction to install the operator. Align the operator with the recess and press in the operator. Press a color insert (non-illuminated) into the operator (illuminated selector switches do not have a recess on the shaft).




The non-illuminated operators can be installed in positions other than the standard position shown above.




Standard positions

## Removal

### Removing the Operator from Selector Switches



① Insert a flat screwdriver into the recess under the color insert. Turn the screwdriver to push out the insert from the operator.



② Pull out the operator sideways as shown in the left photo to remove the operator.

### Removing the Operator from Illuminated Selector Switches

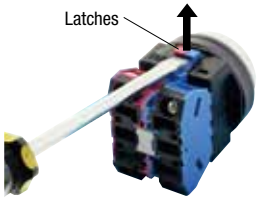


① Insert a flat screwdriver (4 to 5 mm) into the recess at right or left under the operator and tilt. The operator is displaced slightly.

② Insert the flat screwdriver into the other recess and tilt. The operator can be removed.

### Removing the Contact Blocks/Full Voltage Adapters

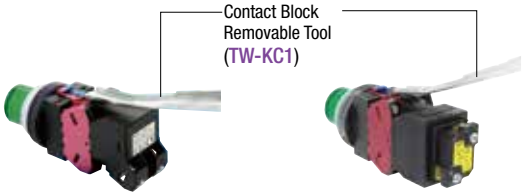
Insert a flat screwdriver (4 to 6 mm) into the snap-fit latches of the contact block or full voltage adapter and lift to remove.




- Make sure to lift both latches. Contact blocks cannot be removed by lifting one latch only.
- Do not apply excessive force to the latches, otherwise damage maybe caused.

### Transformer Units and DC-DC Converters

Insert the end of the contact block removal tool (TW-KC1) into the snap-fit latch of the transformer units or DC-DC converter and pull the tool forward.
The contact block removable tool cannot be used to remove the HW-U contact blocks or full voltage adapters.




⚠ When replacing parts (contact block, dummy block, full voltage adapter, transformer) for maintenance, make sure to install the parts to the original position. Otherwise proper operation cannot be guaranteed.

### Transformer Units and DC-DC Converters for Pilot Lights

Unfasten the two mounting screws on the back to remove the transformer unit/ DC-DC converter.




Mounting screws
APN: M3 × 6 (screw diameter ø5.5 or below)
APD: M3.5 × 6 (screw diameter ø5.5 or below)

## Operating Instructions

# Applicable Wiring

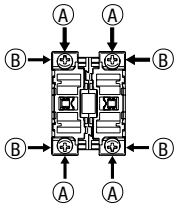
**(1) Contact Block** 0.3 to 3.5 mm² (solid wire 0.5 to 2.0 mm)

### Pushbutton/illuminated pushbutton/selector switch/ illuminated selector switch/selector pushbutton

Ⓐ and Ⓑ show the wiring direction to the terminals.

**<Contact Block>**

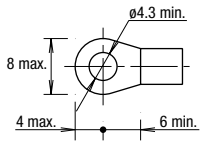
Terminal screws M3.5
(spring-up)

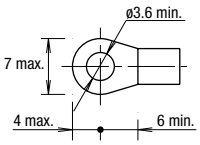



### Applicable Crimping Terminal

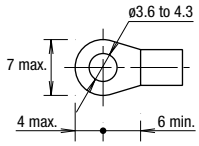
Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.

**Crimping terminal for Ⓐ**



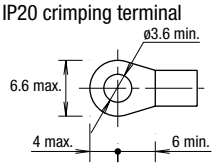




**IP20 crimping terminal**

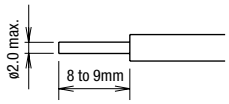



**Crimping terminal for Ⓑ**

IP20 crimping terminal




Solid wire




- Strip the wire insulation 8 to 9 mm from the end.
- Insert the wire until the insulation comes into contact with the terminal metal part.

### (1)-1 IP20 Degree of Protection

The terminal of HW-U contact block has IP20 degree of protection. When IP20 is required for wiring, observe the followings.

Make sure to insert the crimping terminal or wire to the terminal straight and fully.

**When using a crimping terminal**

Use IP20 crimping terminals.

**When using a solid wire**

Strip the wire insulation 8 to 9 mm from the end and insert the wire to the terminal fully.

**When using a stranded wire**

Strip the wire insulation 8 to 9 mm from the end and insert the wire to the terminal fully. Make sure that the wires are not loosened.

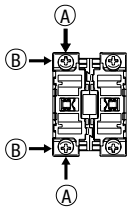
**(2) Power Unit** 0.3 to 2 mm² (solid wire 0.5 to 1.6 mm)

### Illuminated pushbutton/illuminated selector switch

Ⓐ and Ⓑ show the wiring direction to the terminals.

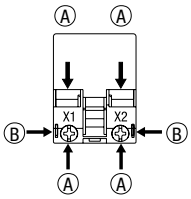
**<Full Voltage Adapter>**

Terminal screws M3.5
(spring-up)



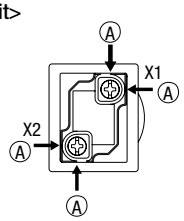

**<Transformer Unit>**

100/110V AC, 200/220V
(240V AC or below)
Terminal screws M3.5
(spring-up)




**<DC-DC Conver Unit/Transformer Unit>**

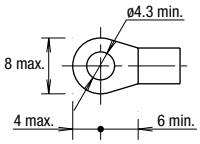
110V DC, 380V
Terminal screws M3.5
(spring-up)



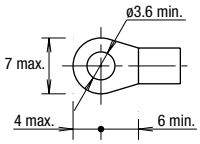

### Applicable Crimping Terminal

Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.

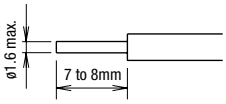
Crimping terminal for Ⓐ




Crimping terminal for Ⓑ




Solid wire




- Strip the wire insulation 7 to 8 mm from the end.
- Insert the wire until the insulation comes into contact with the terminal metal part.

- Terminal cover is integrated in the full voltage adapter and transformer unit. Note that the connection terminal is not IP20.

## Operating Instructions

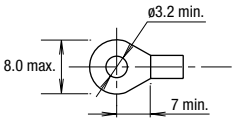
**(3) Pilot Light** 0.3 to 2 mm² (solid wire 0.5 to 1.6 mm)

### Applicable crimping terminal

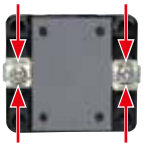
Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.

**APN1, UPQN3B, UPQN4 (6, 12, 24V AC/DC)**

Terminal screws M3 (self-lifting)

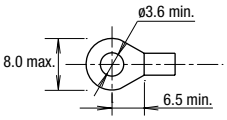



(Arrows show the wiring direction)



**APD1 (6, 12V, 24V AC/DC)**

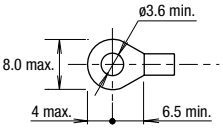
Terminal screws M3.5 (self-lifting)






**APN1, UPQN3B, UPQN4, APD1 (100 to 480V AC or below, 110V DC)**

Terminal screws M3.5 (self-lifting)






- Install the terminal cover supplied with the pilot light. The connection terminal is not IP20.
- When selecting mounting centers and crimping terminals, take sufficient insulation distance into consideration.

## Cautions for Wiring

### About using DC-DC Converter Unit

1. Note the polarity for wiring when connecting to the DC-DC converter.

| Terminal No. | Polarity |
|---|---|
| X1 | Positive |
| X2 | Negative |

2. Incandescent lamps cannot be used in DC-DC converter unit.
3. DC-DC converters are equipped with an electric circuit and noise may be heard inside the unit, which does not affect the performance of DC-DC converters.

## Recommended Tightening Torque Number of Wires

| Unit | Wire | | Number of Wires | Recommended Tightening Torque (Nm) | Terminal Screw |
|---|---|---|---|---|---|
| HW-U Contact Block | Crimping Terminal | | 2 | 1.0 to 1.3 | M3.5 |
| | Solid Wire | ø0.5 to 1.6 mm (AWG14 to 22) | 2 | 1.0 to 1.3 | |
| | | ø1.7 to 2.0 mm (AWG12) | 1 | 1.2 to 1.3 | |
| | Stranded Wire | 0.3 to 2.0 mm² (AWG14 to 22) | 2 | 1.0 to 1.3 | |
| | | 2.1 to 3.5 mm² (AWG12) | 1 | 1.2 to 1.3 | |
| Illuminated Unit (*1) | Crimping Terminal | | 2 | 1.0 to 1.3 | M3.5 |
| | Solid Wire | ø0.5 to 1.6 mm (AWG14 to 22) | | | |
| | Stranded Wire | 0.3 to 2.0 mm² (AWG14 to 22) | | | |
| Pilot Light | Crimping Terminal | | 2 | 0.6 to 1.0 (M3.0)<br>1.0 to 1.3 (M3.5) | |
| | Solid Wire | ø0.5 to 1.6 mm (AWG14 to 22) | | | |
| | Stranded Wire | 0.3 to 2.0 mm² (AWG14 to 22) | | | |

*1) Lamp terminal of illuminated pushbuttons and illuminated selector switches

## ø30 Selector Switches / Pushbuttons Part Number Replacement List

| Old Series | | | New Part No. (*3) | Remarks |
|---|---|---|---|---|
| Model | Operator | Old Part No. | | |
| ASN Knob Operator | 90° 2-position | ASN310 | ASN210N | |
| | | ASN311 | ASN211N | |
| | | ASN320 | ASN220N | |
| | | ASN322 | ASN222N | |
| | | ASN37S | ASN22RN-118 | |
| | | ASN410 | ASN2110N | |
| | | ASN411 | ASN2111N | |
| | | ASN420 | ASN2120N | |
| | | ASN422 | ASN2122N | |
| | | ASN47S | ASN212RN-118 | |
| | | ASN3010 | ASN201N | (*2) |
| | | ASN3011 | ASN211N | (*1) |
| | | ASN3020 | ASN202N | (*2) |
| | | ASN3022 | ASN222N | (*1) |
| | | ASN307S | ASN22RN-118 | (*1) |
| | | ASN4010 | ASN2210N | |
| | | ASN4011 | ASN2211N | |
| | | ASN4020 | ASN2220N | |
| | | ASN4022 | ASN2222N | |
| | | ASN407S | ASN222RN-168 | |
| | 45° 3-position | ASN111 | ASN320N | (*2) |
| | | ASN122 | ASN340N | (*2) |
| | | ASN15S | ASN322N | |
| | | ASN17S | ASN302N | (*1) |
| | | ASN18S | ASN304N | (*1) |
| | | ASN211 | ASN3220N | (*2) |
| | | ASN222 | ASN3240N | (*2) |
| | | ASN25S | ASN3222N | |
| | | ASN27S | ASN3202N | (*1) |
| | | ASN28S | ASN3204N | (*1) |
| | | ASN1011 | ASN320N | (*1) (*2) |
| | | ASN1022 | ASN340N | (*1) (*2) |
| | | ASN105S | ASN322N | (*1) |
| | | ASN107S | ASN302N | |
| | | ASN108S | ASN304N | |
| | | ASN2011 | ASN3120N | (*1) (*2) |
| | | ASN2022 | ASN3140N | (*1) (*2) |
| | | ASN205S | ASN3122N | (*1) |
| | | ASN207S | ASN3102N | |
| | | ASN208S | ASN3104N | |
| ASN-L Lever Operator | 90° 2-position | ASN3L10 | ASN2L10N | |
| | | ASN3L11 | ASN2L11N | |
| | | ASN3L20 | ASN2L20N | |
| | | ASN3L22 | ASN2L22N | |
| | | ASN3L7S | ASN2L2RN-118 | |
| | | ASN4L10 | ASN21L10N | |
| | | ASN4L11 | ASN21L11N | |
| | | ASN4L20 | ASN21L20N | |
| | | ASN4L22 | ASN21L22N | |
| | | ASN4L7S | ASN21L2RN-118 | |
| | | ASN30L10 | ASN2L01N | (*2) |
| | | ASN30L11 | ASN2L11N | (*1) |
| | | ASN30L20 | ASN2L02N | (*2) |
| | | ASN30L22 | ASN2L22N | (*1) |
| | | ASN30L7S | ASN2L2RN-118 | (*1) |
| | | ASN40L10 | ASN22L10N | |
| | | ASN40L11 | ASN22L11N | |
| | | ASN40L20 | ASN22L20N | |
| | | ASN40L22 | ASN22L22N | |
| | | ASN40L7S | ASN22L2RN-168 | |
| | 45° 3-position | ASN1L11 | ASN3L20N | (*2) |
| | | ASN1L22 | ASN3L40N | (*2) |
| | | ASN1L5S | ASN3L22N | |
| | | ASN1L7S | ASN3L02N | (*1) |
| | | ASN1L8S | ASN3L04N | (*1) |
| | | ASN2L11 | ASN32L20N | (*2) |
| | | ASN2L22 | ASN32L40N | (*2) |
| | | ASN2L5S | ASN32L22N | |

| Old Series | | | New Part No. (*3) | Remarks |
|---|---|---|---|---|
| Model | Operator | Old Part No. | | |
| ASN-L Lever Operator | 45° 3-position | ASN2L7S | ASN32L02N | (*1) |
| | | ASN2L8S | ASN32L04N | (*1) |
| | | ASN10L11 | ASN3L20N | (*1) (*2) |
| | | ASN10L22 | ASN3L40N | (*1) (*2) |
| | | ASN10L5S | ASN3L22N | (*1) |
| | | ASN10L7S | ASN3L02N | |
| | | ASN10L8S | ASN3L04N | |
| | | ASN20L11 | ASN31L20N | (*1) (*2) |
| | | ASN20L22 | ASN31L40N | (*1) (*2) |
| | | ASN20L5S | ASN31L22N | (*1) |
| | | ASN20L7S | ASN31L02N | |
| | | ASN20L8S | ASN31L04N | |
| ASN-K Key Selector | 90° 2-position | ASN3K10□ | ASN2K10N□-N024401 | |
| | | ASN3K11□ | ASN2K11N□-N024401 | |
| | | ASN3K20□ | ASN2K20N□-N024401 | |
| | | ASN3K22□ | ASN2K22N□-N024401 | |
| | | ASN3K7S□ | ASN2K2RN□-118-N024401 | |
| | | ASN4K10 | ASN21K10N-N024401 | |
| | | ASN4K11 | ASN21K11N-N024401 | |
| | | ASN4K20 | ASN21K20N-N024401 | |
| | | ASN4K22 | ASN21K22N-N024401 | |
| | | ASN4K7S | ASN21K2RN-118-N024401 | |
| | | ASN30K10□ | ASN2K01N□-N024401 | (*2) |
| | | ASN30K11□ | ASN2K11N□-N024401 | (*1) |
| | | ASN30K20□ | ASN2K02N□-N024401 | (*2) |
| | | ASN30K22□ | ASN2K22N□-N024401 | (*1) |
| | | ASN30K7S□ | ASN2K2RN□-118-N024401 | (*1) |
| | | ASN40K10 | ASN22K10N-N024401 | |
| | | ASN40K11 | ASN22K11N-N024401 | |
| | | ASN40K20 | ASN22K20N-N024401 | |
| | | ASN40K22 | ASN22K22N-N024401 | |
| | | ASN40K7S | ASN22K2RN-168-N024401 | |
| | 45° 3-position | ASN1K11□ | ASN3K20N□-N024401 | (*2) |
| | | ASN1K22□ | ASN3K40N□-N024401 | (*2) |
| | | ASN1K5S□ | ASN3K22N□-N024401 | (*1) (*2) |
| | | ASN1K7S□ | ASN3K02N□-N024401 | (*1) (*2) |
| | | ASN1K8S□ | ASN3K04N□-N024401 | (*1) (*2) |
| | | ASN2K11□ | ASN32K20N□-N024401 | (*2) |
| | | ASN2K22□ | ASN32K40N□-N024401 | (*2) |
| | | ASN2K5S□ | ASN32K22N□-N024401 | (*1) (*2) |
| | | ASN2K7S□ | ASN32K02N□-N024401 | (*1) (*2) |
| | | ASN2K8S□ | ASN32K04N□-N024401 | (*1) (*2) |
| | | ASN10K11□ | ASN3K20N□-N024401 | (*1) (*2) |
| | | ASN10K22□ | ASN3K40N□-N024401 | (*1) (*2) |
| | | ASN10K5S□ | ASN3K22N□-N024401 | (*1) (*2) |
| | | ASN10K7S□ | ASN3K02N□-N024401 | (*2) |
| | | ASN10K8S□ | ASN3K04N□-N024401 | (*2) |
| | | ASN20K11□ | ASN31K20N□-N024401 | (*1) (*2) |
| | | ASN20K22□ | ASN31K40N□-N024401 | (*1) (*2) |
| | | ASN20K5S□ | ASN31K22N□-N024401 | (*1) (*2) |
| | | ASN20K7S□ | ASN31K02N□-N024401 | (*2) |
| | | ASN20K8S□ | ASN31K04N□-N024401 | (*2) |
| ASTN Knob Operator | 90° 2-position | ASTN3211 | ASN211N | |
| | | ASTN3222 | ASN222N | (*1) |
| | | ASTN4211 | ASN2111N | |
| | | ASTN4222 | ASN2122N | (*1) |
| | 45° 3-position | ASTN1122 | ASN322N | |
| | | ASTN1222 | ASN322N-311 | |
| | | ASTN1340 | ASN340N | |
| | | ASTN1422 | ASN322N-209 | |
| | | ASTN1520 | ASN320N | |
| | | ASTN1540 | ASN340N | (*1) |
| | | ASTN1611 | ASN311N-303 | |
| | | ASTN1622 | ASN322N-310 | |
| | | ASTN2122 | ASN3222N | |
| | | ASTN2222 | ASN3222N-311 | |
| | | ASTN20122 | ASN3122N | |
| | | ASTN20222 | ASN3122N-311 | |

• □: Key removable position code. Specify the same code as the old series.
*1) The location of contacts is different. In application for maintenance purpose, make sure of contact operation before wiring.
*2) Contact operation is same as the old series, but contact type is different.
*3) The knob operator is diecast zinc and has new shape. The knob operator can be installed at 45 degrees intervals.

## ø30 Selector Switches / Pushbuttons Part Number Replacement List

| Old Series | | | New Part No. (*3) | Remarks |
|---|---|---|---|---|
| Model | Operator | Old Part No. | | |
| ASTN Knob Operator | 45° 3-position | ASTN20422 | ASN3122N-209 | |
| | | ASTN20520 | ASN3120N | (*1) |
| | | ASTN20540 | ASN3140N | (*1) |
| | | ASTN5120 | ASN3320N | |
| | | ASTN5122 | ASN3322N | |
| | | ASTN5222 | ASN3322N-311 | |
| | | ASTN5111 | ASN3311N-202 | |
| ASTN■L Lever Operator | 90° 2-position | ASTN32L11 | ASN2L11N | |
| | | ASTN32L22 | ASN2L22N | (*1) |
| | | ASTN42L11 | ASN21L11N | |
| | | ASTN42L22 | ASN21L22N | (*1) |
| | 45° 3-position | ASTN11L22 | ASN3L22N | |
| | | ASTN12L22 | ASN3L22N-311 | |
| | | ASTN13L40 | ASN3L40N | |
| | | ASTN14L22 | ASN3L22N-209 | |
| | | ASTN15L20 | ASN3L20N | (*1) |
| | | ASTN15L40 | ASN3L40N | (*1) |
| | | ASTN16L11 | ASN3L11N-303 | |
| | | ASTN16L22 | ASN3L22N-310 | |
| | | ASTN21L22 | ASN32L22N | |
| | | ASTN22L22 | ASN32L22N-311 | |
| | | ASTN201L22 | ASN31L22N | |
| | | ASTN202L22 | ASN31L22N-311 | |
| | | ASTN204L22 | ASN31L22N-209 | |
| | | ASTN205L20 | ASN31L20N | (*1) |
| | | ASTN205L40 | ASN31L40N | (*1) |
| | | ASTN51L20 | ASN33L20N | |
| | | ASTN51L22 | ASN33L22N | |
| | | ASTN52L22 | ASN33L22N-311 | |
| | | ASTN51L11 | ASN33L11N-202 | |
| ASTN■K Key Selector | 90° 2-position | ASTN32K11□ | ASN2K11N□ | |
| | | ASTN32K22□ | ASN2K22N□ | (*1) |
| | | ASTN42K11 | ASN21K11N | |
| | | ASTN42K22 | ASN21K22N | (*1) |
| | 45° 3-position | ASTN11K22□ | ASN3K22N□ | |
| | | ASTN12K22□ | ASN3K22N□-311 | |
| | | ASTN13K40□ | ASN3K40N□ | |
| | | ASTN14K22□ | ASN3K22N□-209 | |
| | | ASTN15K20□ | ASN3K20N□ | (*1) |
| | | ASTN15K40□ | ASN3K40N□ | (*1) |
| | | ASTN16K11□ | ASN3K11N□-303 | |
| | | ASTN16K22□ | ASN3K22N□-310 | |
| | | ASTN21K22□ | ASN32K22N□ | |
| | | ASTN22K22□ | ASN32K22N□-311 | |
| | | ASTN201K22□ | ASN31K22N□ | |
| | | ASTN202K22□ | ASN31K22N□-311 | |
| | | ASTN204K22□ | ASN31K22N□-209 | |
| | | ASTN205K20□ | ASN31K20N□ | (*1) |
| | | ASTN205K40□ | ASN31K40N□ | (*1) |
| | | ASTN51K20 | ASN33K20N | |
| | | ASTN51K22 | ASN33K22N | |
| | | ASTN52K22 | ASN33K22N-311 | |
| | | ASTN51K11 | ASN33K11N-202 | |
| ASN-T Knob Operator | 45° 3-position | ASN120-T | ASN320N | |
| | | ASN140-T | ASN340N | |
| | | ASN220-T | ASN3220N | |
| | | ASN240-T | ASN3240N | |
| | | ASN2020-T | ASN3120N | (*1) |
| | | ASN2040-T | ASN3140N | (*1) |
| ASN-T Lever Operator | 45° 3-position | ASN1L20-T | ASN3L20N | |
| | | ASN1L40-T | ASN3L40N | |
| | | ASN2L20-T | ASN32L20N | |
| | | ASN2L40-T | ASN32L40N | |
| | | ASN20L20-T | ASN31L20N | (*1) |
| | | ASN20L40-T | ASN31L40N | (*1) |

| Old Series | | | New Part No. (*3) | Remarks |
|---|---|---|---|---|
| Model | Operator | Old Part No. | | |
| ASN■K-T Key Selector | 90° 2-position | ASN3K10□-T | ASN2K10N□ | |
| | | ASN3K11□-T | ASN2K11N□ | |
| | | ASN3K20□-T | ASN2K20N□ | |
| | | ASN3K22□-T | ASN2K22N□ | |
| | | ASN3K7S□-T | ASN2K2RN□-118 | |
| | | ASN4K10-T | ASN21K10N | |
| | | ASN4K11-T | ASN21K11N | |
| | | ASN4K20-T | ASN21K20N | |
| | | ASN4K22-T | ASN21K22N | |
| | | ASN4K7S-T | ASN21K2RN-118 | |
| | | ASN40K10-T | ASN22K10N | |
| | | ASN40K11-T | ASN22K11N | |
| | | ASN40K20-T | ASN22K20N | |
| | | ASN40K22-T | ASN22K22N | |
| | | ASN40K7S-T | ASN22K2RN-168 | |
| | 45° 3-position | ASN1K20□-T | ASN3K20N□ | |
| | | ASN1K40□-T | ASN3K40N□ | |
| | | ASN1K5S□-T | ASN3K22N□ | |
| | | ASN1K7S□-T | ASN3K02N□ | (*1) |
| | | ASN1K8S□-T | ASN3K04N□ | (*1) |
| | | ASN2K20□-T | ASN32K20N□ | |
| | | ASN2K40□-T | ASN32K40N□ | |
| | | ASN2K5S□-T | ASN32K22N□ | |
| | | ASN2K7S□-T | ASN32K02N□ | (*1) |
| | | ASN2K8S□-T | ASN32K04N□ | (*1) |
| | | ASN20K20□-T | ASN31K20N□ | (*1) |
| | | ASN20K40□-T | ASN31K40N□ | (*1) |
| | | ASN20K5S□-T | ASN31K22N□ | (*1) |
| | | ASN20K7S□-T | ASN31K02N□ | |
| | | ASN20K8S□-T | ASN31K04N□ | |
| Selector Pushbuttons Ring Operator | 90° 2-position | ABN6111□ | ASBN211N-A03□ | |
| | | ABN6411□ | ASBN211N-K04□ | (*2) |
| | | ABN9111□ | N/A | |
| | | ABN7120□ | ASBN220N-D01□ | |
| | | ABN6122□ | ASBN222N-A08□ | (*1) |
| | | ABN6222□ | ASBN222N-C10□ | (*1) |
| | | ABN6422□ | ASBN222N-K15□ | (*2) |
| | | ABN7122□ | ASBN222N-D10□ | (*1) |
| | | ABN7222□ | ASBN222N-E10□ | (*1) |
| | | ABN7322□ | ASBN222N-F10□ | (*1) |
| | | ABN9122□ | N/A | |
| Selector Pushbuttons Lever Operator | | ABN6L111□ | ASBN211N-A03□ | (*4) |
| | | ABN6L411□ | ASBN211N-K04□ | (*2) (*4) |
| | | ABN9L111□ | N/A | |
| | | ABN6L122□ | ASBN222N-A08□ | (*1) (*4) |
| | | ABN6L222□ | ASBN222N-C10□ | (*1) (*4) |
| | | ABN6L422□ | ASBN222N-K15□ | (*2) (*4) |
| | | ABN7L122□ | ASBN222N-D10□ | (*1) (*4) |
| | | ABN7L222□ | ASBN222N-E10□ | (*1) (*4) |
| | | ABN7L322□ | ASBN222N-F10□ | (*1) (*4) |
| | | ABN9L122□ | N/A | |
| Pushbuttons | Pin Lock | ABN8P10 | ABD8P10N□ | (*5) |
| | | ABN8P01 | ABD8P01N□ | (*5) |
| | | ABN8P11 | ABD8P11N□ | (*5) |
| | | ABN8P20 | ABD8P20N□ | (*5) |
| | | ABN8P02 | ABD8P02N□ | (*5) |
| | | ABN8P22 | ABD8P22N□ | (*5) |
| | ON Lock Type Pin Lock | ABN8P10-TK231-1 | ABD8PN10N□ | (*5) |
| | | ABN8P01-TK231-1 | ABD8PN01N□ | (*5) |
| | | ABN8P11-TK231-1 | ABD8PN11N□ | (*5) |
| | | ABN8P20-TK231-1 | ABD8PN20N□ | (*5) |
| | | ABN8P02-TK231-1 | ABD8PN02N□ | (*5) |
| | | ABN8P22-TK231-1 | ABD8PN22N□ | (*5) |
| | Mushroom Pull | ATN2310□ | AZN310N□ | |
| | | ATN2311□ | AZN311N□ | |
| | | ATN2320□ | AZN320N□ | |
| | | ATN2302□ | AZN302N□ | |

- Specify a color code in place of ∗ in Part No. B (black), G (green), R (red), Y (yellow).
- □: Key removable position code. Specify the same code as the old series.

*1) The location of contacts is different. In application for maintenance purpose, make sure of contact operation before wiring.

*2) Contact operation is same as the old series, but contact type is different.

*3) The knob operator is diecast zinc and in new shape. The knob operator can be installed at 45 degrees intervals.

*4) The new knob operator of selector pushbuttons is ring operator. The old series is lever operator.

*5) Button material New series: plastic / Old series: metal

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By purchasing products listed in our catalogs, datasheets, and the like (hereinafter referred to as "Catalogs") you agree to be bound by these terms and conditions. Please read and agree to the terms and conditions before placing your order.

## 1. Notes on contents of Catalogs

(1) Rated values, performance values, and specification values of IDEC products listed in this Catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
Also, durability varies depending on the usage environment and usage conditions.

(2) Reference data and reference values listed in Catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.

(3) The specifications / appearance and accessories of IDEC products listed in Catalogs are subject to change or termination of sales without notice, for improvement or other reasons.

(4) The content of Catalogs is subject to change without notice.

## 2. Note on applications

(1) If using IDEC products in combination with other products, confirm the applicable laws / regulations and standards.
Also, confirm that IDEC products are compatible with your systems, machines, devices, and the like by using under the actual conditions. IDEC shall bear no liability whatsoever regarding the compatibility with IDEC products.

(2) The usage examples and application examples listed in Catalogs are for reference purposes only. Therefore, when introducing a product, confirm the performance and safety of the instruments, devices, and the like before use. Furthermore, regarding these examples, IDEC does not grant license to use IDEC products to you, and IDEC offers no warranties regarding the ownership of intellectual property rights or non-infringement upon the intellectual property rights of third parties.

(3) When using IDEC products, be cautious when implementing the following.

i. Use of IDEC products with sufficient allowance for rating and performance

ii. Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that an IDEC product fails

iii. Wiring and installation that ensures the IDEC product used in your system, machine, device, or the like can perform and function according to its specifications

(4) Continuing to use an IDEC product even after the performance has deteriorated can result in abnormal heat, smoke, fires, and the like due to insulation deterioration or the like. Perform periodic maintenance for IDEC products and the systems, machines, devices, and the like in which they are used.

(5) IDEC products are developed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use an IDEC product for these applications, unless otherwise agreed upon between you and IDEC, IDEC shall provide no guarantees whatsoever regarding IDEC products.

i. Use in applications that require a high degree of safety, including nuclear power control equipment, transportation equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.), equipment for use in outer space, elevating equipment, medical instruments, safety devices, or any other equipment, instruments, or the like that could endanger life or human health

ii. Use in applications that require a high degree of reliability, such as provision systems for gas / waterworks / electricity, etc., systems that operate continuously for 24 hours, and settlement systems

iii. Use in applications where the product may be handled or used deviating from the specifications or conditions / environment listed in the Catalogs, such as equipment used outdoors or applications in environments subject to chemical pollution or electromagnetic interference
If you would like to use IDEC products in the above applications, be sure to consult with an IDEC sales representative.

## 3. Inspections

We ask that you implement inspections for IDEC products you purchase without delay, as well as thoroughly keep in mind management/maintenance regarding handling of the product before and during the inspection.

## 4. Warranty

(1) Warranty period

The warranty period for IDEC products shall be one (1) year after purchase or delivery to the specified location. However, this shall not apply in cases where there is a different specification in the Catalogs or there is another agreement in place between you and IDEC.

(2) Warranty scope

Should a failure occur in an IDEC product during the above warranty period for reasons attributable to IDEC, then IDEC shall replace or repair that product, free of charge, at the purchase location / delivery location of the product, or an IDEC service base. However, failures caused by the following reasons shall be deemed outside the scope of this warranty.

i. The product was handled or used deviating from the conditions / environment listed in the Catalogs

ii. The failure was caused by reasons other than an IDEC product

iii. Modification or repair was performed by a party other than IDEC

iv. The failure was caused by a software program of a party other than IDEC

v. The product was used outside of its original purpose

vi. Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and Catalogs

vii. The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from IDEC

viii. The failure was due to other causes not attributable to IDEC (including cases of force majeure such as natural disasters and other disasters)

Furthermore, the warranty described here refers to a warranty on the IDEC product as a unit, and damages induced by the failure of an IDEC product are excluded from this warranty.

## 5. Limitation of liability

The warranty listed in this Agreement is the full and complete warranty for IDEC products, and IDEC shall bear no liability whatsoever regarding special damages, indirect damages, incidental damages, or passive damages that occurred due to an IDEC product.

## 6. Service scope

The prices of IDEC products do not include the cost of services, such as dispatching technicians. Therefore, separate fees are required in the following cases.

(1) Instructions for installation / adjustment and accompaniment at test operation (including creating application software and testing operation, etc.)

(2) Maintenance inspections, adjustments, and repairs

(3) Technical instructions and technical training

(4) Product tests or inspections specified by you

The above content assumes transactions and usage within your region. Please consult with an IDEC sales representative regarding transactions and usage outside of your region. Also, IDEC provides no guarantees whatsoever regarding IDEC products sold outside your region.


# IDEC CORPORATION

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| **USA** | IDEC Corporation | **Singapore** | IDEC Izumi Asia Pte. Ltd. | **China** | IDEC (Shanghai) Corporation | **Japan** | IDEC Corporation |
| **EMEA** | APEM SAS | **Thailand** | IDEC Asia (Thailand) Co., Ltd. | | IDEC Izumi (H.K.) Co., Ltd. | | |
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