

TWTD Series – Full Size NEMA Pushbuttons



TWTD Series: Heavy duty switches built to last

Key features:

- Variety of button sizes up to 2 9/16" (65mm)
- Rugged construction includes chrome plated zinc locking ring die cast zinc mounting threads, screw mounted contact blocks
- LED or incandescent illumination
- Transformer or full voltage
- Transparent contact windows
- Slow make, double break self-cleaning contacts
- Modular construction for maximum flexibility
- Double nickel plated terminal screws
- Available assembled or as sub-components
- Type 4x and IP65 watertight/oiltight panel
- Large M3.5 screw terminals with captive sems plate

The rugged series of TWTD switches offers both variety and durability in an attractive design.

With button sizes up to 2 9/16" (65mm), chrome plated zinc locking rings, die cast zinc mounting threads, steel anti-rotation rings, and self cleaning contacts, the TWTDs are here to stay.

The TWTD series also offers either LED or incandescent illumination in full voltage and transformer models.

Transparent contact windows allow the viewing of IDEC's self cleaning slow-make/slow-break contacts.

Regardless of your switching needs, the TWTD series provides the kind of long lasting, industrial strength quality you've come to expect from IDEC.



Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Specifications

| | |
|---|--|
| Conforming to Standards | EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14 |
| Approvals | CSA: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V) UL: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V) TÜV: pushbuttons and selector switches: A600–P600 (NO, NC)/Q600 (NO-EM, NC-LB) pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V) |
| Operating Temperature | Operation: –25 to +50°C (without freezing) Storage: –40 to +70°C (without freezing) |
| Vibration Resistance | 10 to 55Hz, 98m/sec ² (10g) conforming to IEC6068-2-6 |
| Shock Resistance | 980m/sec ² (100g) conforming to IEC6068-2-7 |
| Electric Shock Protection | Class 0 conforming to IEC60536 |
| Degree of Protection | IP65 (from front of the panel) (conforming to IEC60529) IP54 (key switches) Type 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 13 (conforming to NEMA ICS6-110) |
| Mechanical Life | Momentary pushbuttons: 5,000,000 (900 operations per hour) All other switches: 500,000 |
| Pollution Degree (conforming to IEC60947-1) | 3 for switches not using a transformer 2 for switches using a transformer |

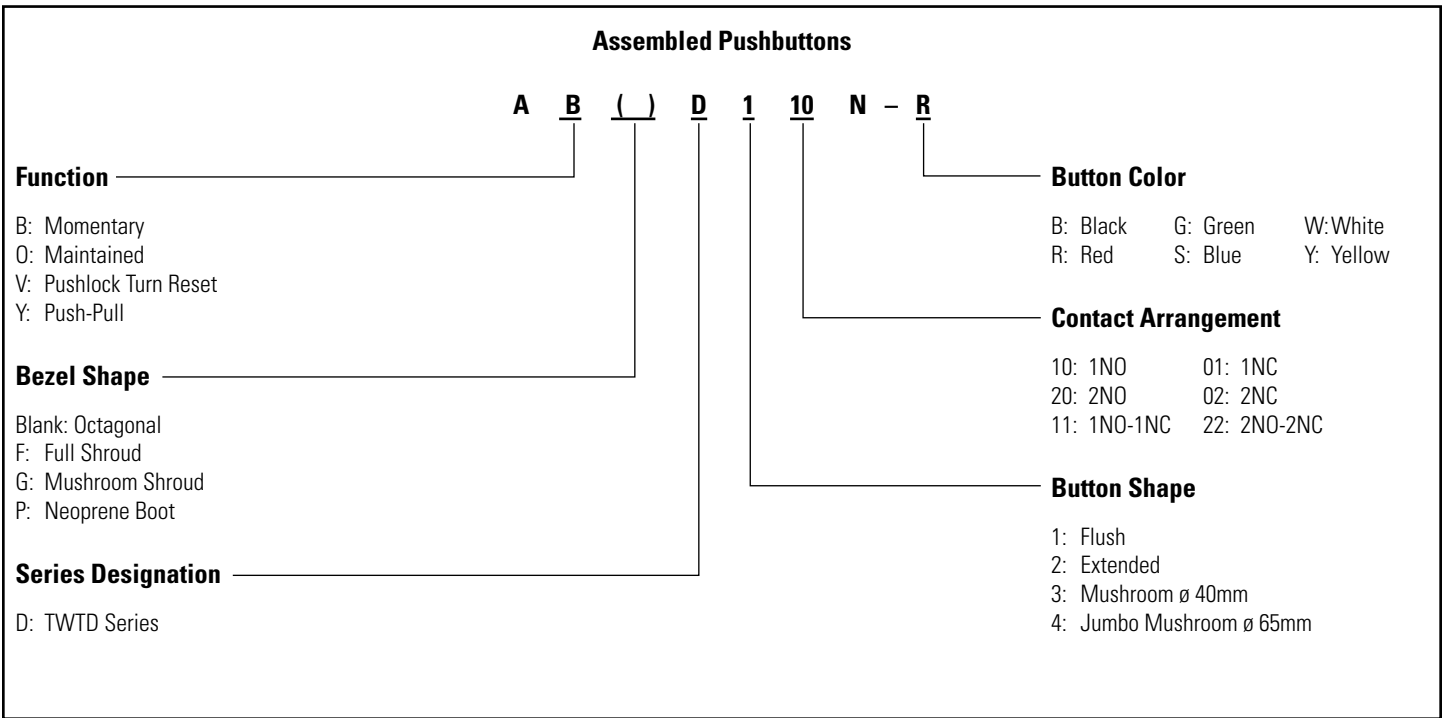
Mechanical-Electrical Specifications

| | |
|------------------------------------|---|
| Rated Operational Characteristics | AC-15: A600 or Ue = 250V, Ie = 3A (NO, NC, NO-EM, NC-LB) DC-13: P600 or Ue = 125V, Ie = 1.1A (NO, NC) DC-13: Q600 or Ue = 125V, Ie = 0.9A (NO-EM, NC-LB) |
| Rated Insulation Voltage | 600V |
| Rated Switching Overvoltage | Less than 4kV, conforming to IEC60947-1 |
| Rated Impulse Withstanding Voltage | 4kV for contact circuit 2.5kV for lamp circuit |
| Rated Thermal Current | 10 Amp |
| Minimum Switching Capacity | 5 mA at 3V AC/DC |
| Contact Operation | Slow break NC or NO, self-cleaning |
| Operating Force | Flush and extended pushbuttons—with 1NO or 1NC contact: 6.2±2N (momentary), 7.0±2N (maintained) Additional contacts—1NO or 1NC: +3.2N (momentary), + 3.3N (maintained) |
| Terminal Referencing | Conforming to CENELEC EN50005 |
| Recommended Terminal Torque | 0.8 N m (7.1 in lb.) |
| External Short-Circuit Protection | 10A 250V fuse conforming to IEC60269-1 |
| Applicable Wire Size | Minimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWG |
| Contact Resistance | Initial contact resistance of 50mΩ or less |
| Contact Gap | 4mm (NO and NC) 2mm (NO-EM and NC-LB) |
| Lamp Ratings | Incandescent: 1 W LEDs: 6V: 17mA, 12V: 11mA, 24V: 11mA, / 120, 240V: 10mA |
| Maximum Inrush Current | 40 A (40 msec) |
| Contact Material | Silver |

Contact Ratings

| Contact Ratings by Utilization Category IEC 60947-5-1 | | AC-15 (A600) | | | | | | |
|---|-------------|--|-----|-----|-----|------|------|------|
| | | DC-13 (P600) | | | | | | |
| Contact Ratings by Utilization Category | | | | | | | | |
| Operational Voltage | | | 24V | 48V | 50V | 110V | 220V | 440V |
| Operation Current | AC 50/60 Hz | AC-12 Control of resistive loads & solid state loads | 10A | — | 10A | 10A | 6A | 2A |
| | | AC-15 Control of electromagnetic loads (> 72VA) | 10A | — | 7A | 5A | 3A | 1A |
| | DC | DC-12 Control of resistive loads & solid state loads | 8A | 5A | — | 2.2A | 1.1A | — |
| | | DC-13 Control of electromagnets | 5A | 2A | — | 1.1A | 0.6A | — |

Non-Illuminated Pushbuttons (Assembled)



1. Use only when interpreting part numbers. Do not use for developing part numbers.
2. Custom contact configurations available, contact IDEC for details.

Non-Illuminated Pushbuttons (Assembled)

Non-Illuminated Pushbuttons

| Style | Contacts | Momentary | Maintained |
|--|----------|------------|------------|
| Flush | 1NO | ABD110N-① | AOD110N-① |
| | 1NC | ABD101N-① | AOD101N-① |
| | 1NO-1NC | ABD111N-① | AOD111N-① |
| | 2NO | ABD120N-① | AOD120N-① |
| | 2NC | ABD102N-① | AOD102N-① |
| Extended | 1NO | ABD210N-① | AOD210N-① |
| | 1NC | ABD201N-① | AOD201N-① |
| | 1NO-1NC | ABD211N-① | AOD211N-① |
| | 2NO | ABD220N-① | AOD220N-① |
| | 2NC | ABD202N-① | AOD202N-① |
| Extended with Neoprene Boot* | 1NO | ABPD210N-① | AOPD210N-① |
| | 1NC | ABPD201N-① | AOPD201N-① |
| | 1NO-1NC | ABPD211N-① | AOPD211N-① |
| | 2NO | ABPD220N-① | AOPD220N-① |
| | 2NC | ABPD202N-① | AOPD202N-① |
| Recessed | 1NO | ABFD110N-① | AOFD110N-① |
| | 1NC | ABFD101N-① | AOFD101N-① |
| | 1NO-1NC | ABFD111N-① | AOFD111N-① |
| | 2NO | ABFD120N-① | AOFD120N-① |
| | 2NC | ABFD102N-① | AOFD102N-① |
| Extended with Full Shroud | 1NO | ABFD210N-① | AOFD210N-① |
| | 1NC | ABFD201N-① | AOFD201N-① |
| | 1NO-1NC | ABFD211N-① | AOFD211N-① |
| | 2NO | ABFD220N-① | AOFD220N-① |
| | 2NC | ABFD202N-① | AOFD202N-① |
| ø 40mm Mushroom Head | 1NO | ABD310N-① | AOD310N-① |
| | 1NC | ABD301N-① | AOD301N-① |
| | 1NO-1NC | ABD311N-① | AOD311N-① |
| | 2NO | ABD320N-① | AOD320N-① |
| | 2NC | ABD302N-① | AOD302N-① |
| ø 40mm Mushroom Head with Full Shroud | 1NO | ABGD310N-① | AOGD310N-① |
| | 1NC | ABGD301N-① | AOGD301N-① |
| | 1NO-1NC | ABGD311N-① | AOGD311N-① |
| | 2NO | ABGD320N-① | AOGD320N-① |
| | 2NC | ABGD302N-① | AOGD302N-① |
| ø 65mm Jumbo Mushroom Head | 1NO | ABD410N-① | AOD410N-① |
| | 1NC | ABD401N-① | AOD401N-① |
| | 1NO-1NC | ABD411N-① | AOD411N-① |
| | 2NO | ABD420N-① | AOD420N-① |
| | 2NC | ABD402N-① | AOD402N-① |
| ø 65mm Jumbo Mushroom Head with Shallow Shroud | 1NO | ABGD410N-① | AOGD410N-① |
| | 1NC | ABGD401N-① | AOGD401N-① |
| | 1NO-1NC | ABGD411N-① | AOGD411N-① |
| | 2NO | ABGD420N-① | AOGD420N-① |
| | 2NC | ABGD402N-① | AOGD402N-① |
| ø 65mm Jumbo Mushroom Head With Deep Shroud | 1NO | ABFD410N-① | AOFD410N-① |
| | 1NC | ABFD401N-① | AOFD401N-① |
| | 1NO-1NC | ABFD411N-① | AOFD411N-① |
| | 2NO | ABFD420N-① | AOFD420N-① |
| | 2NC | ABFD402N-① | AOFD402N-① |

① Button Color Codes

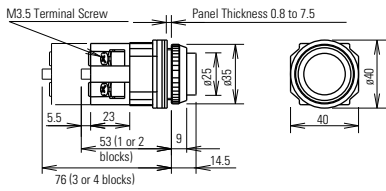
| Color | Code |
|--------|------|
| Black | B |
| Green | G |
| Red | R |
| Blue | S |
| Yellow | Y |
| White | W |

- 1. 65mm Jumbo mushroom not available in white.
- 2. Neoprene boot is not available in blue or white.

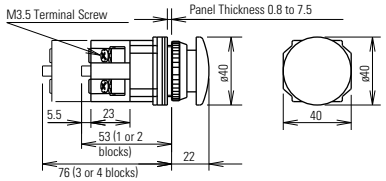
- 1. In place of ①, specify the Button Color Code.
- 2. For sub-assembly part numbers, see next page.
- 3. For accessories, see page 682.
- 4. *Neoprene boot available only in Black (B), Green (G), Red (R) and Yellow (Y).

Dimensions (mm)

Pushbutton



Mushroom Pushbutton w/Full Shroud



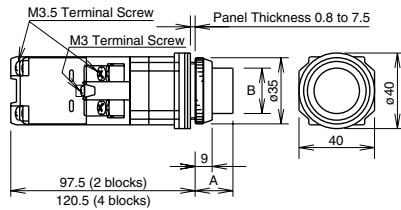
| Pushbuttons | Dimension A | Dimension B |
|---|-----------------------------------|----------------------------------|
| Flush | 0.351" (9mm) | ø 0.975" (25mm) |
| Extended | 0.566" (14.5mm) | ø 0.975" (25mm) |
| Extended w/Full Shroud | 0.663" (17mm) | ø 1.11" (28.5mm) |
| Mushroom | 0.858" (22mm) | ø 1.56" (40mm) |
| Mushroom w/Full Shroud | 0.936" (24mm) | ø 1.87" (48mm) |
| Jumbo Mushroom | 1.13" (29mm) | ø 2.54" (65mm) |
| Mushroom, Pushlock Turn Reset and Push-Pull | *0.975" (25mm) **0.975" (25mm) | ø 1.56" (40mm) ø 1.56" (40mm) |



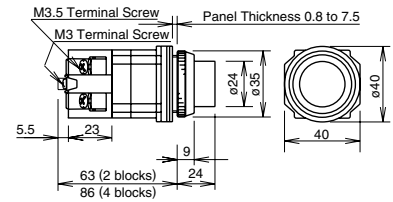
*Dimension when operator is in reset position.
**Dimension when operator is in pull position.

Illuminated Pushbuttons

w/Transformer



Full Voltage

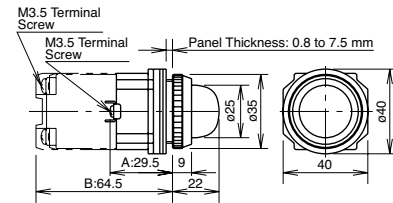


| Illuminated Pushbuttons | Dimension A | Dimension B |
|--|-----------------------------------|------------------------------------|
| Flush w/Full Shroud | 0.975" (25mm) 0.995" (25.5mm) | ø 0.936" (24mm) ø 0.936" (24mm) |
| Extended w/Full Shroud | 0.741" (19mm) 0.761" (19.5mm) | ø 0.936" (24mm) ø 0.936" (24mm) |
| ø 1.56" (40mm) Mushroom Pushlock Turn Reset, Push-Pull | *0.975" (25mm) **0.975" (25mm) | ø 1.56" (40mm) ø 1.56" (40mm) |



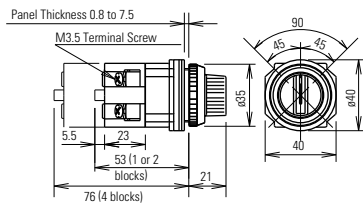
*Dimension when operator is in reset position.
**Dimension when operator is in pull position.

Pilot Lights

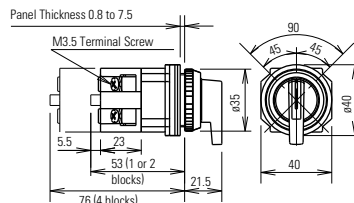


Selector Switches

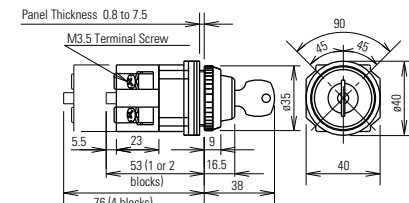
Knob



Lever



Key



Illuminated Knob

