

**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	<b>CSA:</b> 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) <b>UL:</b> 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) <b>TÜV:</b> 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 <sup>2</sup> (10g) conforming to IEC6068-2-6
Shock Resistance	980m/sec <sup>2</sup> (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

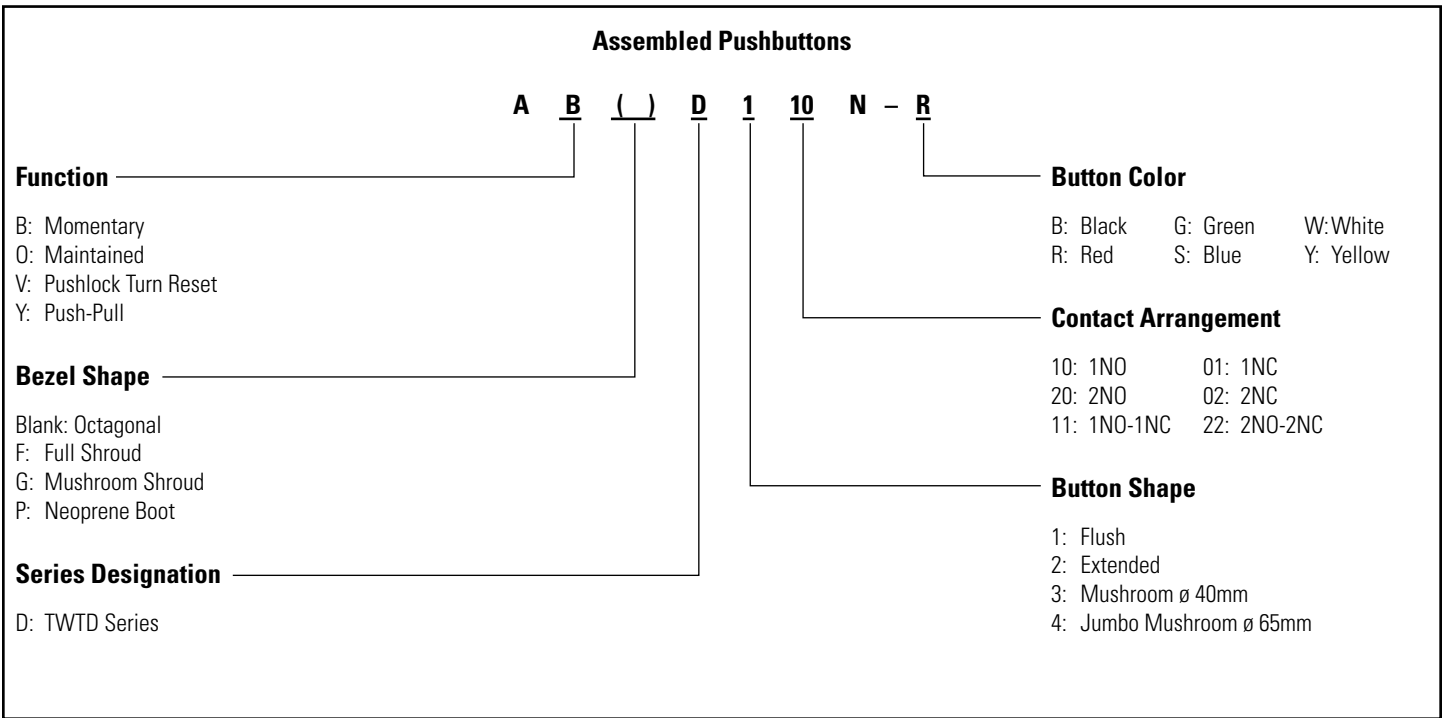
**Mechanical-Electrical Specifications**

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

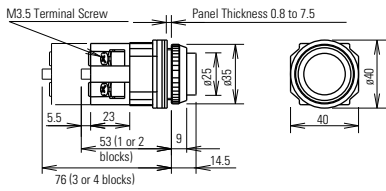
Color	Code
Black	B
Green	G
Red	R
Blue	S
Yellow	Y
White	W

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

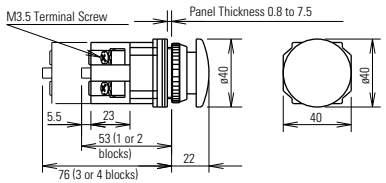
- 1. In place of ①, specify the Button Color Code.
- 2. For sub-assembly part numbers, see next page.
- 3. For accessories, see page 682.
- 4. \*Neoprene boot available only in Black (B), Green (G), Red (R) and Yellow (Y).

Dimensions (mm)

Pushbutton



Mushroom Pushbutton w/Full Shroud



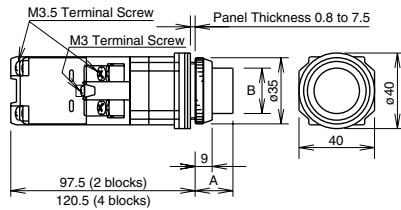
Pushbuttons	Dimension A	Dimension B
Flush	0.351" (9mm)	ø 0.975" (25mm)
Extended	0.566" (14.5mm)	ø 0.975" (25mm)
Extended w/Full Shroud	0.663" (17mm)	ø 1.11" (28.5mm)
Mushroom	0.858" (22mm)	ø 1.56" (40mm)
Mushroom w/Full Shroud	0.936" (24mm)	ø 1.87" (48mm)
Jumbo Mushroom	1.13" (29mm)	ø 2.54" (65mm)
Mushroom,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



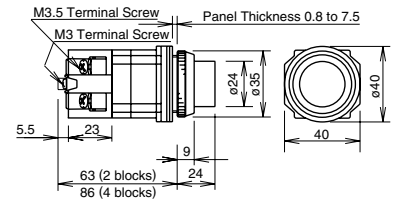
\*Dimension when operator is in reset position.  
\*\*Dimension when operator is in pull position.

Illuminated Pushbuttons

w/Transformer

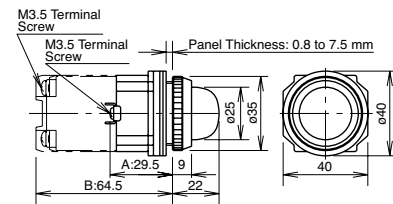


Full Voltage



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)

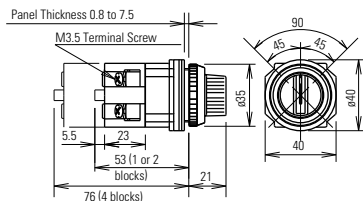
Pilot Lights



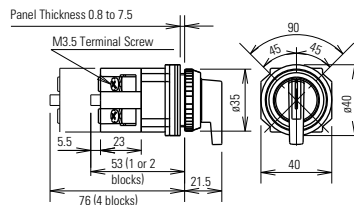
\*Dimension when operator is in reset position.  
\*\*Dimension when operator is in pull position.

Selector Switches

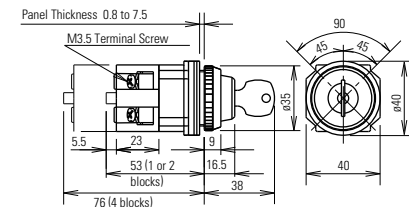
Knob



Lever



Key



Illuminated Knob

