

**A4**

**Switches & Pilot Devices**



## TWTD Series: Heavy duty switches built to last

### Key features include:

- 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
- NEMA 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 TWTD's 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.



UL Listed  
File No. E70646







SA File No. LR48366



D Ref. No. 117617MC

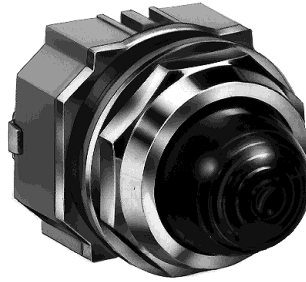


Certificate No.  
2005010305145658

Specifications	Conforming to Standards	EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14
	Approvals	  UL Listed File No. E70646      File No. LR48366   Ref. No. 117617MC
	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) NEMA 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
Rated Insulation Voltage		600V
Rated Switching Over-Voltage		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: 6, 12, 24V: 20mA / 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)						
	<b>Contact Ratings by Utilization Category</b>								
	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	—	

## Pilot Lights (Assembled)



A4

Switches & Pilot Devices

### Assembled Pilot Lights

A P D 1 126 D N - R - ( )

<p><b>Function</b> P: Pilot Light</p> <p><b>Series Designation</b> D: TWTD Series</p> <p><b>Lens Shape</b> 1: Dome</p> <p><b>Rated Operational Voltage (Primary)</b> Transformer Type      Full Voltage Type 126:120V AC              99:Full Voltage 246:240V AC 486:480V AC</p>	<p><b>Lamp Voltage (Full Voltage Only)</b> 6V: 6V AC/DC 12V:12V AC/DC 24V:24V AC/DC 120V:120V AC 240V: 240V AC (LED only)</p> <p><b>Lens Color Code</b> A: Amber G: Green R: Red S: Blue W: White Y: Yellow</p> <p><b>Lamp Type</b> Blank: Incandescent Lamp D: LED Lamp</p>
---	--

Use only when interpreting part numbers. Do not use for developing part numbers.

### Part Numbers: LED and Incandescent Pilot Lights

Style	Operating Voltage	Part Number	
		LED	Incandescent
 Transformer Dome	120V AC 240V AC 480V AC	APD1126DN-② APD1246DN-② APD1486DN-②	APD1126N-② APD1246N-② APD1486N-②
 Full Voltage Dome	—	APD199DN-②-③	APD199N-②-③

### ② Lens Color Code

Color	Code
Amber	A
Green	G
Red	R
Blue	S
White	W
Yellow	Y

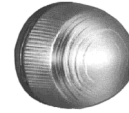
### ③ Full Voltage Code

Voltage	Code
6V AC/DC	6V
12V AC/DC	12V
24V AC/DC	24V
120V AC	120V
240V AC (LED only)	240V

1. In place of ②, specify the Lens/LED Color Code.  
2. In place of ③, specify the Full Voltage Code (lamp voltage).



## Pilot Lights (Sub-Assembled)


Transformer\* + Operator + Lamp + Lens = Complete Part




Note: Not required for full voltage units (full voltage clips used instead).


### Part Numbers: Operators

Style	Part Number
Full Voltage 	APD-199
AC Adaptor/Transformer 	APD-006



 The lens, lamp, and transformer/adaptor or the full voltage clips must be ordered separately.


### Part Numbers: Lenses

Style	Part Number
Dome Lens 	APN106L-②


 1. In place of ②, specify the Lens Color Code.  
2. LED and incandescent lenses differ in shade only. Some colors have only one shade.


### Part Numbers: Lamps

Type	Voltage	Part Number
LED 	6V AC/DC	LSTD-6②
	12V AC/DC	LSTD-1②
	24V AC/DC	LSTD-2②
	120V AC	LSTD-H2②
	240V AC	LSTD-M4②
Incandescent 	6.3V AC/DC	IS-6
	12V AC/DC	IS-12
	24V AC/DC	IS-24
	120VAC, 1-8W	L-120L


 1. In place of ②, specify the LED color code.  
2. The LED contains a current-limiting resistor and a protection diode.


### Part Numbers: Full Voltage Clips

Primary Voltage (50/60Hz)	Part Number
	APD-F

 Required for all full voltage models. Two pieces each.

### Part Numbers: Transformers

Description	Primary Voltage (50/60Hz)	Part Number
Transformers 	120V AC	TWD-0126
	240V AC	TWD-0246
	480V AC	TWD-0486

 6V secondary voltage (use 6V lamp).

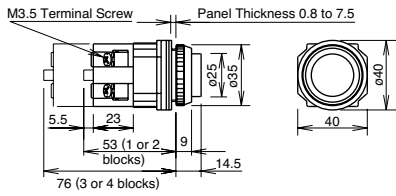
### ② Lens/LED Color Code

Color	Code
Amber	A
Green	G
Red	R
Blue	S
White	W
Yellow	Y

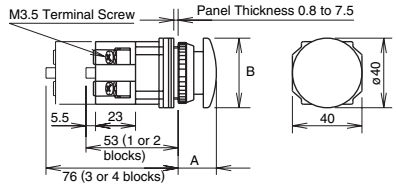
## Dimensions — TWTD Series

Switches & Pilot Devices

### Pushbutton



### Mushroom Pushbutton w/Full Shroud

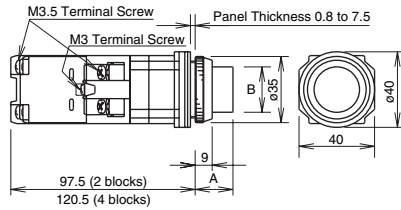


Pushbuttons	Dimension A	Dimension B
<b>Flush</b>	0.351" (9mm)	Ø 0.975" (25mm)
<b>Extended</b>	0.566" (14.5mm)	Ø 0.975" (25mm)
<b>Extended w/Full Shroud</b>	0.663" (17mm)	Ø 1.11" (28.5mm)
<b>Mushroom</b>	0.858" (22mm)	Ø 1.56" (40mm)
<b>Mushroom w/Full Shroud</b>	0.936" (24mm)	Ø 1.87" (48mm)
<b>Jumbo Mushroom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

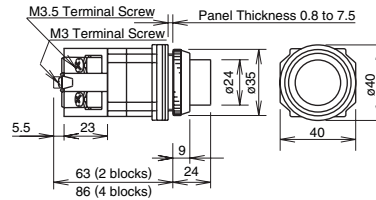
**Note:** \*Dimension when operator is in reset position.  
\*\*Dimension when operator is in pull position.

### Illuminated Pushbuttons

#### w/AC Adapter w/Transformer



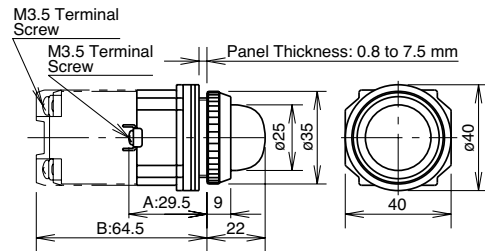
#### Full Voltage



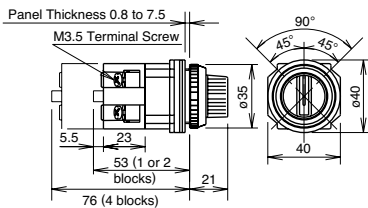
Illuminated Pushbuttons	Dimension A	Dimension B
<b>Flush w/Full Shroud</b>	0.975" (25mm) 0.995" (25.5mm)	Ø 0.936" (24mm) Ø 0.936" (24mm)
<b>Extended w/Full Shroud</b>	0.741" (19mm) 0.761" (19.5mm)	Ø 0.936" (24mm) Ø 0.936" (24mm)
<b>Ø 1.56" (40mm) Mushroom Pushlock Turn Reset, Push-Pull</b>	*0.975" (25mm)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

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

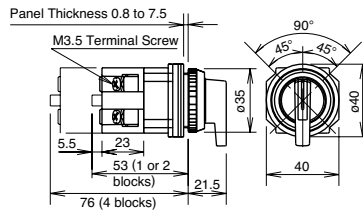
### Pilot Lights



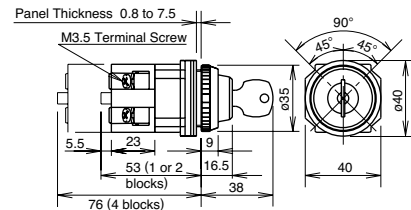
### Selector Switches Knob



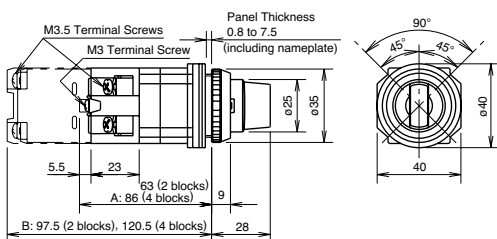
### Lever



### Key



### Illuminated Knob



All measurements in mm.