

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 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) 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)						
	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 Selector Switches (Assembled)



**Knob Selector
(Non-illuminated)**



**Key Selector
(Non-illuminated)**



**Lever Selector
(Non-illuminated)**

A4

Switches & Pilot Devices

Assembled Selector Switches

A S D 2 () () 11 N - ()

<p>Function _____</p> <p>S: Selector Switch</p> <p>Series Designation _____</p> <p>D: TWTD Series</p> <p>Number of Positions _____</p> <p>2: 2-Position 3: 3-Position</p> <p>Spring Return Action _____</p> <p>Blank: Maintained 1: Spring return from Right 2: Spring return from Left 3: 2-Way spring return from Left and Right</p>	<p>Circuit Number _____</p> <p>(See Circuit # column of Selector Switch Contact Arrangement Chart on beginning on A4-185.)</p> <p>Contact Arrangement Code</p> <table border="0" style="width: 100%;"> <tr> <td>10: 1NO</td> <td>01: 1NC</td> </tr> <tr> <td>20: 2NO</td> <td>02: 2NC</td> </tr> <tr> <td>40: 4NO</td> <td>04: 4NC</td> </tr> <tr> <td>11: 1NO-1NC</td> <td>22: 2NO-2NC</td> </tr> </table> <p>Operator Style Code</p> <p>Blank: Knob Operator L: Lever Operator K: Key Operator</p>	10: 1NO	01: 1NC	20: 2NO	02: 2NC	40: 4NO	04: 4NC	11: 1NO-1NC	22: 2NO-2NC
10: 1NO	01: 1NC								
20: 2NO	02: 2NC								
40: 4NO	04: 4NC								
11: 1NO-1NC	22: 2NO-2NC								

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

Non-Illuminated Selector Switches (Assembled) con't

Part numbers: Non-Illuminated 2-Position Selector Switches

Style	Contact	Mounting	Operator Position			Part Number	Part Number	Part Number
			L	R		Maintained	Spring Return from Right	Spring Return from Left
1NO 2	1 2		O O	X O	Knob Lever Key	ASD210N ASD2L10N ASD2K10N	ASD2110N ASD21L10N ASD21K10N	ASD2210N ASD22L10N ASD22K10N
1NC 2	1 2		X O	O O	Knob Lever Key	ASD201N-116 ASD2L01N-116 ASD2K01N-116	ASD2101N-116 ASD21L01N-116 ASD21K01N-116	ASD2201N-116 ASD22L01N-116 ASD22K01N-116
1NO 1NC	1 2		O X	X O	Knob Lever Key	ASD211N ASD2L11N ASD2K11N	ASD2111N ASD21L11N ASD21K11N	ASD2211N ASD22L11N ASD22K11N
2NO 2	1 2		O O	X X	Knob Lever Key	ASD220N ASD2L20N ASD2K20N	ASD2120N ASD21L20N ASD21K20N	ASD2220N ASD22L20N ASD22K20N
2NC 2	1 2		X X	O O	Knob Lever Key	ASD202N-104 ASD2L02N-104 ASD2K02N-104	ASD2102N-104 ASD21L02N-104 ASD21K02N-104	ASD2202N-104 ASD22L02N-104 ASD22K02N-104
2NO 2NC	1 2 3 4		O X O X	X O X O	Knob Lever Key	ASD222N ASD2L22N ASD2K22N	ASD2122N ASD21L22N ASD21K22N	ASD2222N ASD22L22N ASD22K22N
2NO 2NC	1 2 3 4		O O X X	X X O O	Knob Lever Key	ASD222N-111 ASD2L22N-111 ASD2K22N-111	ASD2122N-111 ASD21L22N-111 ASD21K22N-111	ASD2222N-111 ASD22L22N-111 ASD22K22N-111

Part Numbers: Non-Illuminated 3-Position Selector Switches

Style	Contact	Mounting	Operator Position				Part Number	Part Number	Part Number	Part Number
			L	C	R		Maintained	Spring Return from Right	Spring Return From Left	Spring Return Two-Way
2NO 2	1 2		X O	O O	O X	Knob Lever Key	ASD320N ASD3L20N ASD3K20N	ASD3120N ASD31L20N ASD31K20N	ASD3220N ASD32L20N ASD32K20N	ASD3320N ASD33L20N ASD33K20N
2NC 2	1 2		O X	X X	X O	Knob Lever Key	ASD302N ASD3L02N ASD3K02N	ASD3102N ASD31L02N ASD31K02N	ASD3202N ASD32L02N ASD32K02N	ASD3302N ASD33L02N ASD33K02N
2NO 2NC	1 2 3 4		X O O X	O O X X	O X X O	Knob Lever Key	ASD322N ASD3L22N ASD3K22N	ASD3122N ASD31L22N ASD31K22N	ASD3222N ASD32L22N ASD32K22N	ASD3322N ASD33L22N ASD33K22N
2NO 2NC	1 2 3 4		X X O O	O X X O	X O O X	Knob Lever Key	ASD322N-309 ASD3L22N-309 ASD3K22N-309	ASD3122N-309 ASD31L22N-309 ASD31K22N-309	ASD3222N-309 ASD32L22N-309 ASD32K22N-309	ASD3322N-309 ASD33L22N-309 ASD33K22N-309
2NO 2NC	1 2 3 4		O O O O	X O X O	O X O X	Knob Lever Key	ASD322N-310 ASD3L22N-310 ASD3K22N-310	ASD3122N-310 ASD31L22N-310 ASD31K22N-310	ASD3222N-310 ASD32L22N-310 ASD32K22N-310	ASD3322N-310 ASD33L22N-310 ASD33K22N-310
4NO 4	1 2 3 4		X O X O	O O O O	O X O X	Knob Lever Key	ASD340N ASD3L40N ASD3K40N	ASD3140N ASD31L40N ASD31K40N	ASD3240N ASD32L40N ASD32K40N	ASD3340N ASD33L40N ASD33K40N
4NC 4	1 2 3 4		O X O X	X X X X	O O X O	Knob Lever Key	ASD304N ASD3L04N ASD3K04N	ASD3104N ASD31L04N ASD31K04N	ASD3204N ASD32L04N ASD32K04N	ASD3304N ASD33L04N ASD33K04N



1. The truth table indicates the operating position of contact block when the operator is switched to that position.

X = On (closed contacts) O = Off (open contacts)

X-X = Overlapping Contacts: Remain on (closed contacts) when switch is moved between these two positions.

2. All knob and lever selector switches come in black. Other colors are available by ordering the knob or lever separately.

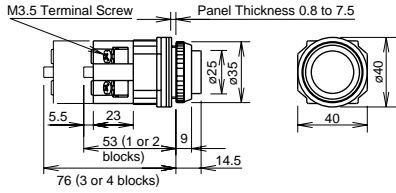
3. Custom contact arrangements available, see page A4-185 or call IDEC for details.

Dimensions — TWTD Series

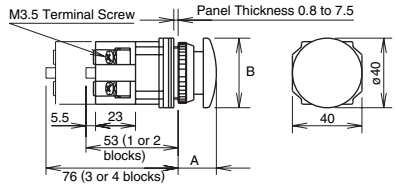
A4

Switches & Pilot Devices

Pushbutton



Mushroom Pushbutton w/Full Shroud

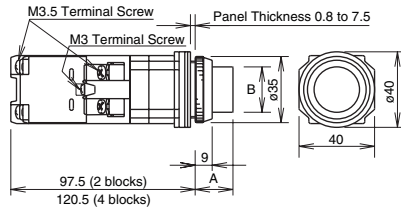


Pushbuttons	Dimension A	Dimension B
Flush	0.351" (9mm)	Ø 0.975" (25mm)
Extended	0.566" (14.5mm)	Ø 0.975" (25mm)
Extended w/Full Shroud	0.663" (17mm)	Ø 1.11" (28.5mm)
Mushroom	0.858" (22mm)	Ø 1.56" (40mm)
Mushroom w/Full Shroud	0.936" (24mm)	Ø 1.87" (48mm)
Jumbo Mushroom	1.13" (29mm)	Ø 2.54" (65mm)
Mushroom,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

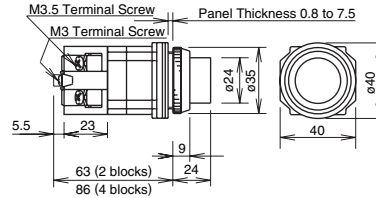
Note: *Dimension when operator is in reset position.
**Dimension when operator is in pull position.

Illuminated Pushbuttons

w/AC Adapter w/Transformer



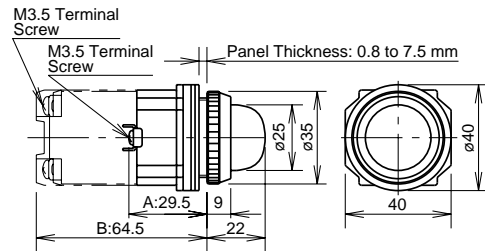
Full Voltage



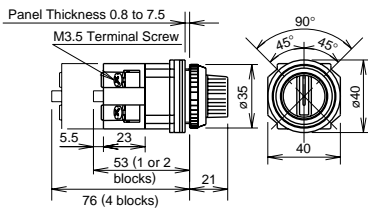
Illuminated Pushbuttons	Dimension A	Dimension B
Flush w/Full Shroud	0.975" (25mm) 0.995" (25.5mm)	Ø 0.936" (24mm) Ø 0.936" (24mm)
Extended w/Full Shroud	0.741" (19mm) 0.761" (19.5mm)	Ø 0.936" (24mm) Ø 0.936" (24mm)
Ø 1.56" (40mm) Mushroom Pushlock Turn Reset, Push-Pull	*0.975" (25mm) **0.975" (25mm)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

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

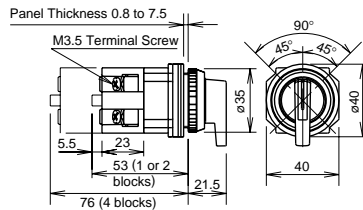
Pilot Lights



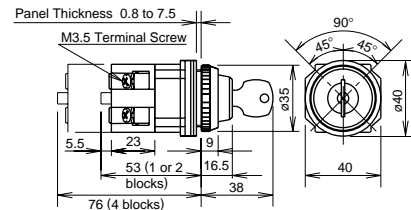
Selector Switches Knob



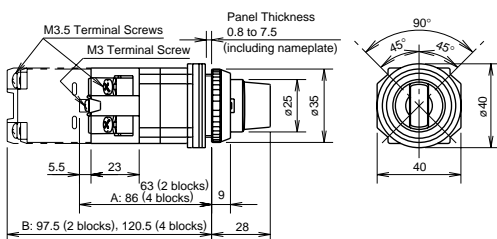
Lever



Key



Illuminated Knob



All measurements in mm.