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.













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)/0600 (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/sec² (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

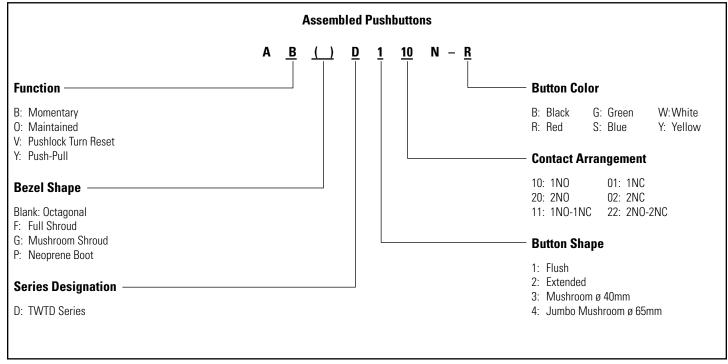
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Rated Operational Characteristics	AC-15: A600 or Ue = 250V, Ie = 3A (NO, NC, NO-EM, NC-LB) DC-13: P600 or Ue = 125V, Ie = 1.1A (NO, NC) DC-13: Q600 or Ue = 125V, Ie = 0.9A (NO-EM, NC-LB)
Rated Insulation Voltage	600V
Rated Switching Overvoltage	Less 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 $50m\Omega$ 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		
	AC 50/60 Hz	AC-12 Control of resistive loads & solid s	tate loads	10A	_	10A	10A	6A	2A
Operation Current	AC-15 Contro	AC-15 Control of electromagnetic loads (:	> 72VA)	10A	_	7A	5A	3A	1A
Operation Guitein	DC	DC-12 Control of resistive loads & solid s	tate 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)

Switches & Pilot Devices

Non-Illuminated Pushbuttons

	Style	Contacts	Momentary	Maintained
Flush		1NO 1NC 1NO-1NC 2NO 2NC	ABD110N-① ABD101N-① ABD111N-① ABD120N-① ABD102N-①	AOD110N-① AOD101N-① AOD111N-① AOD120N-① AOD102N-①
Extended	- = (1NO 1NC 1NO-1NC 2NO 2NC	ABD210N-① ABD201N-① ABD211N-① ABD220N-① ABD220N-①	AOD210N-① AOD201N-① AOD211N-① AOD220N-① AOD202N-①
Extended with Neoprene Boot [†]		1NO 1NC 1NO-1NC 2NO 2NC	ABPD210N-① ABPD201N-① ABPD211N-① ABPD220N-① ABPD202N-①	AOPD210N-① AOPD201N-① AOPD211N-① AOPD220N-① AOPD202N-①
Recessed	== (40	1NO 1NC 1NO-1NC 2NO 2NC	ABFD110N-① ABFD101N-① ABFD111N-① ABFD120N-① ABFD102N-①	AOFD110N-① AOFD101N-① AOFD111N-① AOFD120N-① AOFD102N-①
Extended with Full Shroud		1NO 1NC 1NO-1NC 2NO 2NC	ABFD210N-① ABFD201N-① ABFD211N-① ABFD220N-① ABFD202N-①	A0FD210N-① A0FD201N-① A0FD211N-① A0FD220N-① A0FD202N-①
ø 40mm Mushroom Head		1NO 1NC 1NO-1NC 2NO 2NC	ABD310N-① ABD301N-① ABD311N-① ABD320N-① ABD302N-①	AOD310N-① AOD301N-① AOD311N-① AOD320N-① AOD302N-①
ø 40mm Mushroom Head with Full Shroud	7 7	1NO 1NC 1NO-1NC 2NO 2NC	ABGD310N-① ABGD301N-① ABGD311N-① ABGD320N-① ABGD302N-①	AOGD310N-① AOGD301N-① AOGD311N-① AOGD320N-① AOGD302N-①
ø 65mm Jumbo Mushroom Head		1NO 1NC 1NO-1NC 2NO 2NC	ABD410N-① ABD401N-① ABD411N-① ABD420N-① ABD402N-①	AOD410N-① AOD401N-① AOD411N-① AOD420N-① AOD402N-①
ø 65mm Jumbo Mushroom Head with Shallow Shroud		1NO 1NC 1NO-1NC 2NO 2NC	ABGD410N-① ABGD401N-① ABGD411N-① ABGD420N-① ABGD402N-① ABGD402N-①	AOGD410N-① AOGD401N-① AOGD411N-① AOGD420N-① AOGD402N-①
ø 65mm Jumbo Mushroom Head With Deep Shroud		1NO 1NC 1NO-1NC 2NO 2NC	ABFD410N-① ABFD401N-① ABFD411N-① ABFD420N-① ABFD402N-①	A0FD410N-① A0FD401N-① A0FD411N-① A0FD420N-① A0FD402N-①

① Button Color Codes

Color	Code
Black	В
Green	G
Red	R
Blue	S
Yellow	Υ
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.

- For sub-assembly part numbers, see next page.
 For accessories, see page 682.
- 4. *Neoprene boot available only in Black (B), Green (G), Red (R) and Yellow (Y).



Relays & Sockets

Circuit Breakers

Non-Illuminated Pushbuttons (Sub-Assembled)



Operators					
	Style	Part Number			
Otylo		Momentary	Maintained		
Flush/Extended		ABD-100	AOD-100		
Extended with Full Shroud		ABFD-200	A0FD-200		
ø 40mm Mushroom/ø 65mm Jumbo Mushroom	3/0	ABD-300	AOD-300		
ø 40mm Mushroom with Full Shroud		ABGD-300	A0GD-300		
ø 65mm Jumbo Mushroom with Shallow Shroud		ABGD-400	A0GD-400		
ø 65mm Jumbo Mushroom with Deep Shroud		ABFD-400	AOFD-400		

Buttons and Lenses

	Style	Part Number
Flush		ABD1BN-®
Extended		ABD2BN-①
ø 40mm Mushroom		ABD3BN-①
ø 65mm Jumbo Mushroom		ABD4BN-①



In place of ①, specify the Button Color Code. (See table previous page)

Contact Blocks

Contact Brooks				
Style		Part Number		
		1N0	1NC	
All Control Units	DO NOT HE	BST-010 BST-010S (early make)	BST-001 BST-001S (late break)	
Dummy Block		BS	T-D	



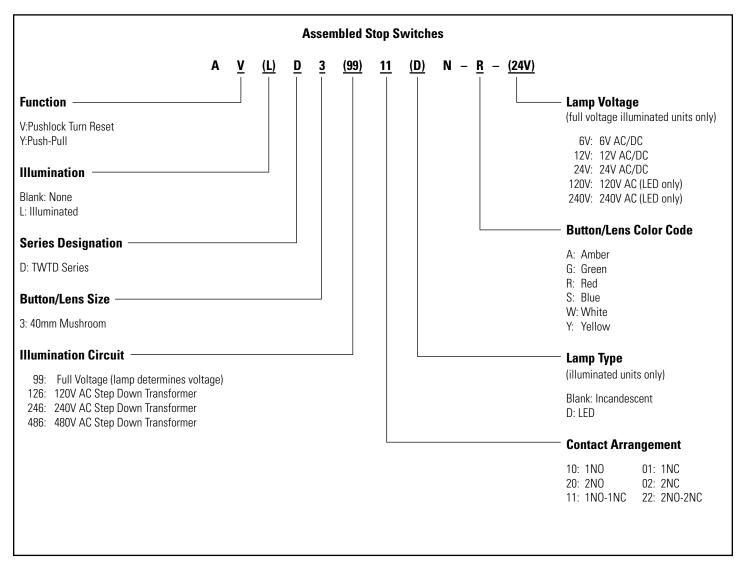
^{1.} Dummy blocks (no contacts) are used with an odd number of contact blocks.



Combining BST-010S and BST-001S result in overlapping contacts (remain on, or closed, when switch is moved between two positions).

Stop Switches (Assembled)







- $1. \ \ \, \text{Use only when interpreting part numbers. Do not use for developing part numbers.}$
- 2. Custom contact configurations available, contact IDEC for details.

Stop Switches (Assembled)

Stop Switches

Style		Contacts	Part Number
ø 40mm Pushlock Turn Reset	Non-Illuminated	1N0 1NC 1NO-1NC 2NO 2NC	AVD310N-R* AVD301N-R* AVD311N-R* AVD320N-R* AVD302N-R*
ø 40mm Illuminated Pushlock Turn Reset	Full Voltage	1NO-1NC 2NO 2NC	AVLD39911@N-R-@* AVLD39920@N-R-@* AVLD39902@N-R-@*
E I FO	Transformer	1NO-1NC 2NO 2NC	AVLD3 ⊕ 11⑤N-R* AVLD3 ⊕ 20⑤N-R* AVLD3 ⊕ 02⑤N-R*
ø 40mm Push-Pull	Non-Illuminated	1NO 1NC 1NO-1NC 2NO 2NC	AYD310N-① AYD301N-① AYD311N-① AYD320N-① AYD302N-①
ø 40mm Push-Pull	Full Voltage	1NO-1NC 2NO 2NC	AYLD39911\(\mathbb{O}\)N-\(\@2\)-\(\@3\)** AYLD39920\(\mathbb{O}\)N-\(\@2\)-\(\@3\)** AYLD39902\(\mathbb{O}\)N-\(\@2\)-\(\@3\)**
	Transformer	1NO-1NC 2NO 2NC	AYLD3 ① 11⑤N-② ** AYLD3 ① 20⑤N-② ** AYLD3 ① 02⑤N-②**
ø 40mm Momentary Push-Pull (3-position)	Full Voltage	1NO-1NC 1NC-1LB†	AYLD229911®N-@-® -TK962 AYLD229902S®N-@-®-TK962
	Transformer	1NO-1NC 1NC-1LB†	AYLD22

Unibody E-Stops

ombou, E stope				
	Style	Contacts	Part Number	
ø 40mm Pushlock Turn Reset (available in Red only)		1NO-1NC 2NC	HN1E-BV4F11-R* HN1E-BV4F02-R*	
Illuminated ø 40mm Pushlock Turn Reset (available in Red only)		1NO-1NC 2NC	HN1E-LV4F11Q⑤-R-③ HN1E-LV4F02Q⑤-R-③	

- 1. In place of ①, specify the button color code
 - 2. In place of ②, specify the lens color code.
 - 3. In place of ③, specify the Full Voltage (lamp voltage) Code.
 - 4. In place of 4, specify the transformer voltage code.
 - 5. In place of ⑤, specify the Lamp Type code.
 - 6. With single unit construction, the positive action contacts are integrated in the body of the switch. This provides an extra degree of safety and reliability for critical emergency stop functions.
 - 7. HN1E series E-stops comply with the IEC "E-Stop Addendum to the Low Voltage Directive," this includes "tamper proof" operation whereby a change of contact state is not possible by "teasing" or "floating" the operator.
- 8. 3 position push-pull available in spring return to center only. *Available in red only.
- 10. **Not available in blue.
- 11. †The most common configuration for motor starting applica-
- 12. For sub-assembly part numbers, see next page.
- 13. For nameplates and accessories, see page 684 and page 682.
- 14. For dimensions, see page 687.

3 Position Push-Pull[†]

Contact	Push	Center	Pull
NC (BST-001)	0	0	X
NC-LB (BST-001S)	0	X	X
NO (BST-010)	X	0	0
NO-EM (BST-010S)	X	X	0

① Button Color Codes

Color	Code
Black	В
Green	G
Red	R
Blue	S
Yellow	Υ

② LED/Lens Color Codes

Color	Code
Amber	А
Green	G
Red	R
Blue	S
White	W

3 Full Voltage Codes

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

4 Transformer Voltage Codes

Voltage	Code
120VAC	126
240VAC	246
480VAC	486



Transformers step down to 6V.

S Lamp Type Codes

Lamp	Code
Incandescent	Blank
LED	D



Stop Switches (Sub-Assembled)



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

Operators

Style		Part Number	
ø40mm Pushlock Turn Reset	10		AVD-300
Illuminated ø40mm Pushlock Turn Reset	160		AVLD3-0600N
ø40mm Push-Pull	3/10		AYD-3100
Illuminated a 40 core Duck Dull	1160	2 pos	AYLD-0600
Illuminated ø 40mm Push-Pull	160	3 pos	AYLD22TK962-0B01

Ruttone and Lancas

Buttons and Lenses			
Style		Part Number	
Button for Pushlock Turn Reset Stop Switches (ø40mm, red only)			AVN3B-R
Lens for Illuminated Pushlock Turn Reset Stop Switches (ø40mm, red only)			AVLN3LU-R
Button for Push-Pull Stop Switches (ø40mm)			AYD3BN-⊕
Lens for Illuminated Push-Pull Stop Switches		2 pos*	AYLD3L-@
(ø40mm)		3 pos	AYLD2L-@



- 1. In place of 1, specify the Button Color Code. (See table below)
- 2. In place of ②, specify the LED Color Code.
- 3. *Not available in blue.

Lamps

Style	Voltage	Part Number
	6V AC/DC	LSTD-6@
LED	12V AC/DC	LSTD-1@
A A	24V AC/DC	LSTD-2@
	120V AC	LSTD-H2@
	240V AC	LSTD-M4@
Incandescent	6V AC/DC	IS-6
The and see the	12V AC/DC	IS-12
	24V AC/DC	IS-24
	120V AC	L-120L

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

① Button Color Codes

Color	Code
Black	В
Green	G
Red	R
Blue	S
Yellow	Y

2 LED Color Codes

Color	Code
Amber	А
Green	G
Red	R
Blue	S
White	W

Contact Blocks

Style		Part Number		
		1N0	1NC	
	576	BST-010	BST-001	
All Control Units		BST-010S (early make)	BST-001S (late break)	
Dummy Block		BS	T-D	



- 1. Dummy blocks (no contacts) are used with an odd number of contact blocks.
- $2. \ \ \ Combining \ BST-010S \ and \ BST-001S \ result \ in \ overlapping \ contacts.$

Full Voltage Clips

Primary Voltage (50/60Hz)		Part Number
Full Voltage Clips (2 required for each un	t)	APD-F

Transformers

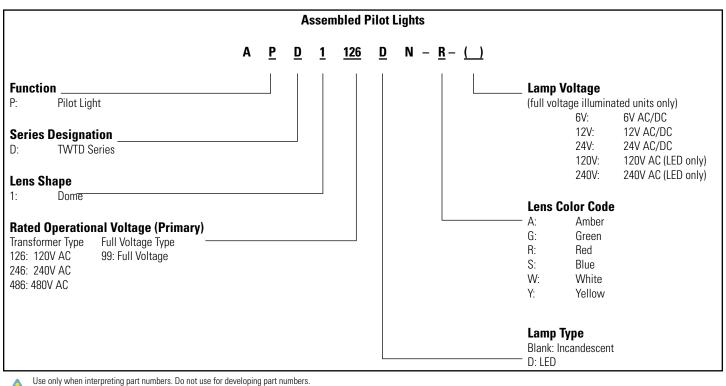
Style	Primary Voltage (50/60Hz)	Part Number
1	120V AC	TWD-0126
D BEA	240V AC	TWD-0246
173	480V AC	TWD-0486



6V secondary voltage (uses 6V lamp).

Pilot Lights (Assembled)





LED and Incandescent Pilot Lights

ED and incandescent ritot Lights				
Chulo	Operating	Part Number		
Style	Voltage	LED	Incandescent	
Transformer Dome				
	120V AC 240V AC 480V AC	APD1126DN-@ APD1246DN-@ APD1486DN-@	APD1126N-@ APD1246N-@ APD1486N-@	
Full Voltage Dome	_	APD199DN-@-③	APD199N-②-③	

1. In place of ②, specify the Lens/LED Color Code.

2. In place of ③, specify the Full Voltage Code (lamp voltage).

3. Yellow pilot light comes with white LED.

2 Lens Color Codes

Color	Code
Amber	А
Green	G
Red	R
Blue	S
White	W
Yellow	Υ

3 Full Voltage Codes

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



Pilot Lights (Sub-Assembled)



|--|

Operators

Style		Part Number
Transformer	3 (60)	APD-006
Full Voltage	3 (60)	APD-199

Full voltage operator comes with full voltage clips.

Lenses

Style		Part Number
Dome Lens		APN106LN-②



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

Lamps

Style		Voltage	Part Number
		6V AC/DC	LSTD-6@
	Page 1	12V AC/DC	LSTD-1@
LED	. 0	24V AC/DC	LSTD-2@
		120V AC	LSTD-H2@
		240V AC	LSTD-M4@
		6V AC/DC	IS-6
Incandescent	1	12V AC/DC IS-12 24V AC/DC IS-24	IS-12
			IS-24
		120V AC	L-120L

- A
- 1. In place of $\ensuremath{\mathfrak{D}}$, specify the LED color code.
 - 2. The LED contains a current-limiting resistor and a protection diode.

Full Voltage Clips

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



Required for all full voltage models. Two pieces each.

Transformers

	Style	Primary Voltage (50/60Hz)	Part N	umber
	LED	120V AC	TWD-0126	
L		240V AC	TWD-0246	
		480V AC	TWD-0486	



6V secondary voltage (use 6V lamp).

② LED/Lens Color Codes

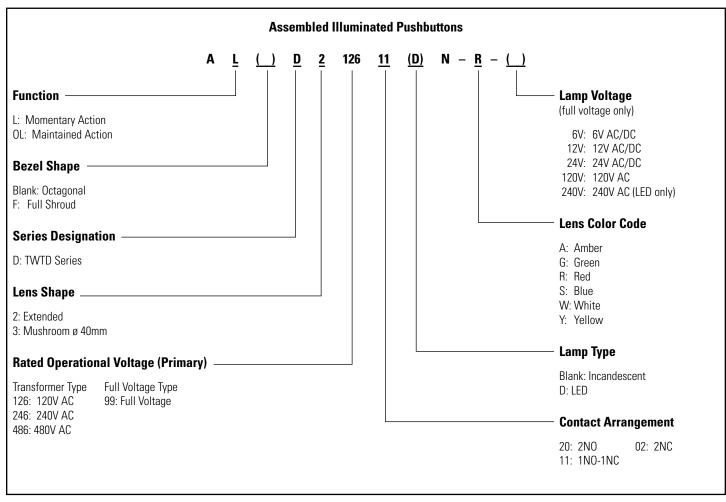
Color	Code
Amber	А
Green	G
Red	R
Blue	S
White	W
Yellow	Υ



Yellow lens only. Yellow LED not available, use white LED.

Illuminated Pushbuttons (Assembled)







- 1. Use only when interpreting part numbers. Do not use for developing part numbers.
- 2. All transformers step down to 6V.

Illuminated Pushbuttons (Assembled)

Switches & Pilot Devices

Illuminated Pushbuttons

Style		Contacts	Part N	Part Number	
		Contacts	Momentary	Maintained	
Extended Lens	Full Voltage	1NO-1NC 2NO 2NC	ALD29911\$N-@-\$ ALD29920\$N-@-\$ ALD29902\$N-@-\$	AOLD29911 © N-@- ③ AOLD29920 © N-@- ③ AOLD29902 © N-@- ③	
	Transformer	1NO-1NC 2NO 2NC	ALD2 ⊕ 11⑤N-② ALD2 ⊕ 20⑥N-② ALD2 ⊕ 02⑥N-②	AOLD2 @ 11\$N-@ AOLD2 @ 20\$N-@ AOLD2 @ 02\$N-@	
Extended Lens with Full Shroud	Full Voltage	1NO-1NC 2NO 2NC	ALFD29911®N-@-3 ALFD29920®N-@-3 ALFD29902®N-@-3	AOLFD29911\$N-@-\$ AOLFD29920\$N-@ \$ AOLFD29902\$N-@-\$	
	Transformer	1NO-1NC 2NO 2NC	ALFD2 @ 11 \$\Omega N-2\\ ALFD2 @ 20 \$\Omega N-2\\ ALFD2 @ 02 \$\Omega N-2\\	AOLFD2 @ 11⑤N-② AOLFD2 @ 20⑤N-② AOLFD2 @ 02⑤N-②	
ø 40mm Mushroom Lens	Full Voltage	1NO-1NC 2NO 2NC	ALD39911 © N-@-③ ALD39920 © N-@-③ ALD39902 © N-@-③	AOLD39911 © N-@-③ AOLD39920 © N-@-③ AOLD39902 © N-@-③	
	Transformer	1NO-1NC 2NO 2NC	ALD3	AOLD3 @ 11\$N-@ AOLD3 @ 20\$N-@ AOLD3 @ 02\$N-@	

② Lens Color Codes

Color	Code
Amber	А
Green	G
Red	R
Blue	S
White	W
Yellow	Υ

3 Full Voltage Codes

4 Transformer Voltage Codes

Voltage	Code
120VAC	126
240VAC	246
480VAC	486



6V secondary voltage (uses 6V lamp).

S Lamp Type Codes

Lamp	Code
Incandescent	Blank
LED	D



- 2. In place of ③, specify the Full Voltage Code (lamp voltage).
- 3. In place of ④, specify the Transformer Voltage Code.
- 4. In place of ⑤, specify the Lamp Type Code.
- 5. Light is independent of switch position.
- 6. Yellow pushbutton comes with white LED only.

Relays & Sockets

Illuminated Pushbuttons (Sub-Assembled)

Transformer*	+	Contact Block	+	Operator	+	Lamp	+	Lens	=	Complete Part
		Man H		10		-				

*Not required for full voltage types (full voltage types use APD-F full voltage clips).

Operators

	Ctulo	Part Number			
	Style	Momentary	Maintained		
Extended	10	ALD-0600	AOLD-0600		
Extended with Full Shroud		ALFD-0600	AOLFD-0600		
40mm Mushroom	(10	ALD-0600	AOLD-0600		

Lenses

relises		
	Style	Part Number
Extended		ALN06LU-@
ø 40mm Mushroom		ALN3LU-@

In place of @, specify the Lens Color Code.

Full Voltage Clips

	Part Number	
Full Voltage Clips (2 required for each unit)	Per	APD-F

Required for all full voltage models.

Lamps

Style	Voltage	Part Number
	6V AC/DC	LSTD-6@
LED	12V AC/DC	LSTD-1@
0	24V AC/DC	LSTD-2@
	120V AC	LSTD-H2@
	240V AC	LSTD-M4@
Incandescent	6V AC/DC	IS-6
induraciócino de la contraction de la contractio	12V AC/DC	IS-12
	24V AC/DC	IS-24
	120V AC	L-120L

② LED/Lens Color Codes				
Color	Code			
Amber	А			
Green	G			
Red	R			
Blue	S			
White	W			
Yellow	Υ			



Yellow lens only. Yellow LED not available, use white LED.

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

Contact Blocks

	Style	Part Number		
	Style	1N0	1NC	
All Control Units	No.	BST-010 BST-010S (early make)	BST-001 BST-001S (late break)	
Dummy Block		BST-D		



- 1. Dummy blocks (no contacts) are used with an odd number of contact blocks.
- Combining BST-010S and BST-001S result in overlapping contacts (remain on, or closed, when switch is moved between two positions).

Transformers

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

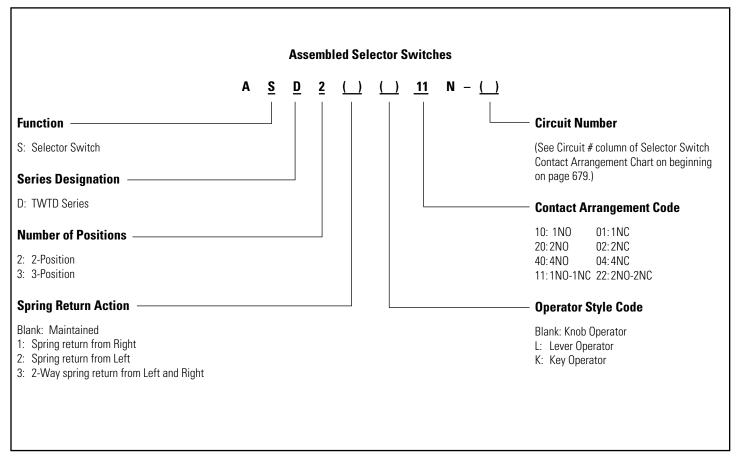


6V secondary voltage (use 6V lamp).



Non-Illuminated Selector Switches (Assembled)







- $1. \ \ Use \ only \ when \ interpreting \ part \ numbers. \ Do \ not \ use \ for \ developing \ part \ numbers.$
- 2. Custom key removal codes available. Please contact IDEC for details.

Non-Illuminated Selector Switches (Assembled)

Non-Illuminated 2-Position Selector Switches

	St	yle			Part Number			
Contact	Mounting		rator ition		Maintained	Spring Return from Right	Spring Return from Left	
Con	Mou	L	R		L R	L\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	L [*] R	
1N0	1 2	0 0	X 0	Knob Lever Key	ASD210N ASD2L10N ASD2K10N	ASD2110N ASD21L10N ASD21K10N	ASD2210N ASD22L10N ASD22K10N	
1NC	1 2	X 0	0 0	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	X 0	0 X	Knob Lever Key	ASD211N ASD2L11N ASD2K11N	ASD2111N ASD21L11N ASD21K11N	ASD2211N ASD22L11N ASD22K11N	
2N0	1 2	0 0	X X	Knob Lever Key	ASD220N ASD2L20N ASD2K20N	ASD2120N ASD21L20N ASD21K20N	ASD2220N ASD22L20N ASD22K20N	
2NC	1 2	X X	0 0	Knob Lever Key	ASD202N-104 ASD2L02N-104 ASD2K02N-104	ASD2102N-104 ASD21L02N-104 ASD21K02N-104	ASD2202N-104 ASD22L02N-104 ASD22K02N-104	
2N0 2NC	1 2 3 4	0 X 0 X	X 0 X 0	Knob Lever Key	ASD222N ASD2L22N ASD2K22N	ASD2122N ASD21L22N ASD21K22N	ASD2222N ASD22L22N ASD22K22N	
2NO 2NC	1 2 3 4	0 0 X X	X X 0 0	Knob Lever Key	ASD222N-111 ASD2L22N-111 ASD2K22N-111	ASD2122N-111 ASD21L22N-111 ASD21K22N-111	ASD2222N-111 ASD22L22N-111 ASD22K22N-111	



- 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
- 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 679.

Non-Illuminated 3-Position Selector Switches

	Style					Part Number				
	βι	Oper	ator Pos	sition		Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-Way	
Contact	Mounting	L	C ↑	R		L C R	L C R	L C	L C	
2N0	1 2	X 0	0 0	0 X	Knob Lever Key	ASD320N ASD3L20N ASD3K20N	ASD3120N ASD31L20N ASD31K20N	ASD3220N ASD32L20N ASD32K20N	ASD3320N ASD33L20N ASD33K20N	
2NC	1 2	0 X	X— X	—X 0	Knob Lever Key	ASD302N ASD3L02N ASD3K02N	ASD3102N ASD31L02N ASD31K02N	ASD3202N ASD32L02N ASD32K02N	ASD3302N ASD33L02N ASD33K02N	
2N0 2NC	1 2 3 4	X 0 0 X	0 0 X— X	0 X —X 0	Knob Lever Key	ASD322N ASD3L22N ASD3K22N	ASD3122N ASD31L22N ASD31K22N	ASD3222N ASD32L22N ASD32K22N	ASD3322N ASD33L22N ASD33K22N	
2N0 2NC	1 2 3 4	X X 0 0	0 	X 0 0 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	
2N0 2NC	1 2 3 4	0 0 0 0	X 0 X 0	0 X 0 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	
4N0	1 2 3 4	X 0 X 0	0 0 0	0 X 0 X	Knob Lever Key	ASD340N ASD3L40N ASD3K40N	ASD3140N ASD31L40N ASD31K40N	ASD3240N ASD32L40N ASD32K40N	ASD3340N ASD33L40N ASD33K40N	
4NC	1 2 3 4	0 X 0 X	X——X X———X	—X 0 —X 0	Knob Lever Key	ASD304N ASD3L04N ASD3K04N	ASD3104N ASD31L04N ASD31K04N	ASD3204N ASD32L04N ASD32K04N	ASD3304N ASD33L04N ASD33K04N	

Non-Illuminated Selector Switches (Sub-Assembled)

Contact Blocks	+	Operator	+	Knob or Lever*	+	Color Insert*	=	Complete Part [†]
		a (M)				1		(5



- 1. *Not needed with key type switches.
- 2. *Knob type shown.

Operators

uperators					
Style	Position	Description	Part Number		
		Maintained	ASD200		
	2	Spring return from right	ASD2100		
		Spring return from left	ASD2200		
Knob/Lever		Maintained, Cam 1 Maintained, Cam 2	ASD300-1 ASD300-2		
3 (4)	3	Spring return from right, Cam 1 Spring return from right, Cam 2	ASD3100-1 ASD3100-2		
	3	Spring return from left, Cam 1 Spring return from left, Cam 2	ASD3200-1 ASD3200-2		
		Spring return from left/right, Cam 1 Spring return from left/right, Cam 2	ASD3300-1 ASD3300-2		
		Maintained	ASD300-1 ASD300-2 ASD3100-1 ASD3100-2 ASD3200-1 ASD3200-2 ASD3300-1 ASD3300-2 ASD2K00-RA ASD21K00-RL ASD22K00 ASD3K00-1 ASD3K00-2 ASD31K00-2-RLC ASD32K00-1-RRC		
	2	Spring return from right	ASD3100-2 ASD3200-1 ASD3200-2 ASD3300-1 ASD3300-2 ASD2K00-RA ASD21K00-RL ASD22K00 ASD3K00-1 ASD3K00-1 ASD31K00-1-RLC		
Key	Spring return from left	Spring return from left	ASD22K00		
III.		Maintained, Cam 1 Maintained, Cam 2	ASD3K00-1		
all the	0	Spring return from right, Cam 1 Spring return from right, Cam 2			
	3	Spring return from left, Cam 1 Spring return from left, Cam 2	ASD200 ASD2100 ASD2200 ASD2200 ASD300-1 ASD300-2 ASD3100-1 ASD3100-2 ASD3200-1 ASD3200-2 ASD3300-1 ASD3300-2 ASD2K00-RA ASD21K00-RL ASD3K00-1 ASD3K00-1 ASD3K00-2 ASD31K00-1-RLC ASD31K00-2-RLC		
		Spring return from left/right, Cam 1 Spring return from left/right, Cam 2			



- 1. Order knobs, levers, color inserts separately (see below).
- 2. For key switches, keys are removable in all maintained positions. Other options available, contact IDEC for details
- 3. See page 681 "Operator Truth Tables" for details of difference between cams.

① Color Codes

Knob/Lever Color	Code
Black	В
Blue	S
Green	G
Red	R
Yellow	Υ
White	W



- Knob/Lever not available in white.
 Color inserts not available in Black.
- 3. Lever not available in yellow.

Handles and Inserts

	Style	Part Number
Knob		ASDHHY-①
Lever	9	ASDHHL-①*
Color Insert	7	TW-HC1-①



In place of ①, specify the Color Code.
 *Not available in yellow.

Contact Blocks

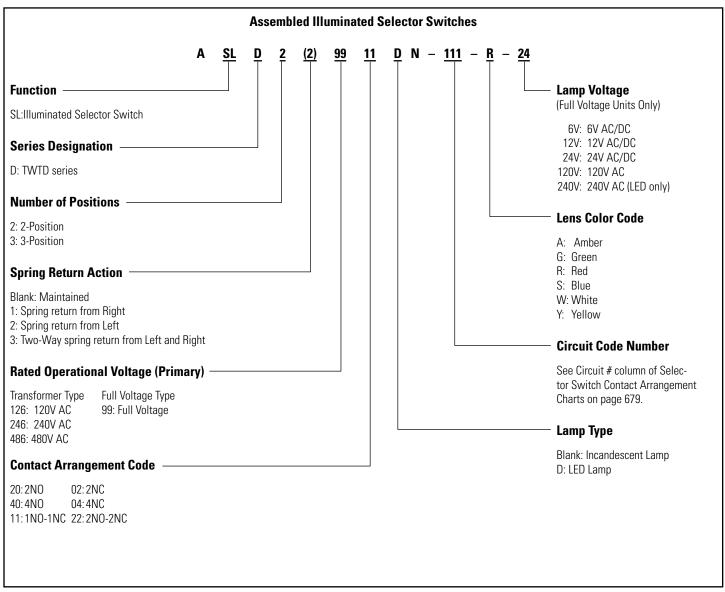
	Part Number		
	1NO	1NC	
All Control Units	E CONTRACTOR DE LA CONT	BST-010 BST-010S (early make)	BST-001 BST-001S (late break)
Dummy Block		BS	T-D



- 1. Dummy blocks (no contacts) are used with an odd number of contact blocks.
- Combining BST-010S and BST-001S result in overlapping contacts (remain on, or closed, when switch is moved between two positions).

Illuminated Selector Switches (Assembled)







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



Illuminated Selector Switches (Assembled)

Illuminated 2-Position Selector Switches

Style						Part Number	
act	ting	Operator Maintained Spring Return fro		Spring Return from Right	Spring Return from Left		
Contact	Mounting	L	R	Circuit Type	L R	L\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	L. R
1NO 1NC	1 2	0 X	X 0	Transformer Full Voltage	ASLD2 @11 \$\text{\$N}-\text{\$Q}\$ ASLD29911 \$\text{\$N}-\text{\$Q}-\text{\$\text{\$3}}	ASLD21 @11 \$\text{@} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	ASLD22 ⊕11⑤N-② ASLD229911⑤N-②-③
2N0	1 2	0 0	X X	Transformer Full Voltage	ASLD2 @20\$N-@ ASLD29920\$N-@-3	ASLD21	ASLD22 ⊕20⑤N-② ASLD229920⑤N-②-③
2NC	1 2	X	0 0	Transformer Full Voltage	ASLD2 @02 \$\text{\$N-104-}2\text{\$ASLD29902}\$\text{\$N-104-}2-3\text{\$}	ASLD21	ASLD22 ⊕02⑤N-104-② ASLD229902⑤N-104-②-③
2N0 2NC	1 2 3 4	0 X 0 X	X 0 X 0	Transformer Full Voltage	ASLD2 @22 \$\Omega N-@- \$\Omega\$	ASLD21 ⊕22⑤N-② ASLD219922⑤N-②-③	ASLD22 ⊕22⑤N-② ASLD229922⑤N-②-③
2NO 2NC	1 2 3 4	0 0 X X	X X 0 0	Transformer Full Voltage	ASLD2 @22 \$\ N-111-@ ASLD29922 \$\ N-111-@-\\$	ASLD21 @22\\$N-111-\@ ASLD219922\\$N-111-\@-\\$	ASLD22 ⊕22⑤N-111-② ASLD229922⑤N-111-②-③

② LED/Lens Color Codes

Color	Code
Amber	А
Green	G
Red	R
Blue	S
White	W
Yellow	Υ

3 Full Voltage Codes

Code
6V
12V
24V
120V
240V (LED only)

Illuminated 3-Position Selector Switches, Maintained and Spring Return

Illumi	Illuminated 3-Position Selector Switches, Maintained and Spring Return										
		Style				Part Number					
4	ĝ.	Operator Position				Maintained	Spring Return From Right	Spring Return from Left	Spring Return Two-Way		
Contact	Mounting	▼	C •	R	Lamp Circuit Type	C R	L C R	L C R	L C R		
2N0	1 2	X 0	0 0	0 X	Transformer Full Voltage	ASLD3	ASLD31	ASLD32	ASLD33		
2NC	1 2	0 X	X— —X	X 0	Transformer Full Voltage	ASLD3	ASLD31	ASLD32	ASLD33 ⊕ 02⑤N-② ASLD339902⑤N-②-③		
2NO 2NC	1 2 3 4	X 0 0 X	0 0 X— X	0 X —X 0	Transformer Full Voltage	ASLD3 ⊕ 22⑤N-② ASLD39922⑤N-②-③	ASLD31 @ 22\$N-@ ASLD319922\$N-@-3	ASLD32	ASLD33 ⊕ 22⑤N-② ASLD339922⑤N-②-③		
2N0 2NC	1 2 3 4	X X 0 0	0 —X X 0	X 0 0 X	Transformer Full Voltage	ASLD3 @ 22 \$\ N-309-@ ASLD39922 \$\ N-309-@-\\$	ASLD31 @ 22\@N-309-\@ ASLD319922\@N-309-\@-\@	ASLD32 @ 22 \$\text{0} N-309- \text{0} \\ ASLD329922 \text{0} N-309- \text{0}-\text{0}\\	ASLD33 @ 22®N-309-@ ASLD339922®N-309-@-®		
2NO 2NC	1 2 3 4	0 0 0 0	X 0 X 0	0 X 0 X	Transformer Full Voltage	ASLD3 ⊕ 22 ⑤ N-310-② ASLD39922 ⑤ N-310-②-③	ASLD31 @ 22\\$N-310-\@ ASLD319922\\$N-310-\@-\\$	ASLD32 @ 22\\$N-310-\@ ASLD329922\\$N-310-\@-\\$	ASLD33 @ 22\\$N-310-\@ ASLD339922\\$N-310-\@-\\$		
4N0	1 2 3 4	X 0 X 0	0 0 0	0 X 0 X	Transformer Full Voltage	ASLD3 ⊕ 40⑤N-② ASLD39940⑤N-②-③	ASLD31 @ 40\$N-@ ASLD319940\$N-@-\$	ASLD32	ASLD33 ⊕ 40⑤N-② ASLD339940⑤N-②-③		
4NC	1 2 3 4	0 X— 0 X—	X—X X—X—X	—X 0 —X 0	Transformer Full Voltage	ASLD3 ⊕ 04⑤N-② ASLD39904⑤N-②-③	ASLD31 @ 04\$N-@ ASLD319904\$N-@-\$	ASLD32	ASLD33 ⊕ 04⑤N-② ASLD339904⑤N-②-③		



- In place of ②, specify the Lens/LED Color Code, in place of ③, specify the Full Voltage (lamp voltage) Code, in place of ④, specify the Transformer Voltage Code and in place of ⑤ specify the Lamp Type Code.
- 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 positions
- 3. Yellow selector switch comes with white LED.

4 Transformer Voltage Codes

Voltage	Code
120VAC	126
240VAC	246
480VAC	486



Transformers step down to 6V (use 6V lamp).

S Lamp Type Codes

Lamp	Code
Incandescent	Blank
LED	D

Light is independent of switch position.



Illuminated Selector Switches (Sub-Assembled)





*Not required for full voltage units (use APD-F full voltage clips instead).

Operators

Style	Position	Description	Part Number
	2	Maintained	ASLD200
Operator	3	Maintained, Cam 1 Maintained, Cam 2	ASLD300-1 ASLD300-2
Operator	2	Spring return from right	ASLD2100
S. Sec.	2	Spring return from left	ASLD2200
1(4)		Spring return from right, Cam 1 Spring return from right, Cam 2	ASLD3100-1 ASLD3100-2
	3	Spring return from left, Cam 1 Spring return from left, Cam 2	ASLD3200-1 ASLD3200-2
		Spring return from left/right, Cam 1 Spring return from left/right, Cam 2	ASLD3300-1 ASLD3300-2

Lenses

	Style	Part Number
Knob		ASLNHU-①

Lamps

Style	Voltage	Part Number
	6V AC/DC	LSTD-6@
LED	12V AC/DC	LSTD-1@
	24V AC/DC	LSTD-2@
-	120V AC	LSTD-H2@
	240V AC	LSTD-M4@
Incandescent	6V AC/DC	IS-6
and an	12V AC/DC	IS-12
	24V AC/DC	IS-24
	120V AC	L-120L



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

Contact Blocks

	Part Number				
	1N0	1NC			
		BST-010	BST-001		
All Control Units		BST-010S (early make)	BST-001S (late break)		
Dummy Block		BST-D			



- 1. Dummy blocks (no contacts) are used with an odd number of contact blocks.
- Combining BST-010S and BST-001S result in overlapping contacts (remain on, or closed, when switch is moved between two positions).

Full Voltage Clips

. a.i. romago ompo		
	Part Number	
Full Voltage Clips (2 required for each unit)	The second	APD-F



Required for all full voltage models.

Transformers

	Style	Primary Voltage (50/60Hz)	Part Number
	No.	120V AC	TWD-0126
Transformers		240V AC	TWD-0246
	10	480V AC	TWD-0486



6V secondary voltage.

2 LED/Lens Color Codes

Color	Code	Color	Code
Amber	А	Blue	S
Green	G	White	W
Red	R	Yellow	Υ

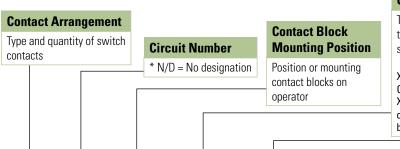


Yellow lens only. Yellow LED not available, use white LED.

Contact Arrangement Charts

How to Read Contact Arrangement Charts

To determine contact block mounting position, first make sure the selector switch is oriented as shown on the right



Operator Position

Truth table indicates the operating position of contact block when operator is switched to that position.

- X = On (Closed Contacts)
- 0 = Off (Open Contacts)
- X—X = Overlapping Contacts: Remain on (closed) when switch is moved between these two positions

Contact Block Part Number

Part number to use when ordering sub-assembly contact blocks, as required for use with corresponding mounting position

	yle	ent Ghart: 2-	Operator				Operator Part Number			
	Circuit	Mounting Position		rator ition	Contact Block Part Number	Description	Maintained	Spring Return from Right	Spring Return from Left	
Contact	Number	rosition	L	R	r art ivumber		L_/R	L R	L ^C R	
1N0	N/D	1	0	Χ	BST-010	Knob/Lever Key	ASD200 ASD2K00	ASD2100 ASD21K00	ASD2200 ASD22K00	
		2	0	0	BST-D	Illuminated Knob	ASLD200	ASLD2100	ASLD2200	
1NC	116 Key	,	ASD200 ASD2K00	ASD2100 ASD21K00	ASD2200 ASD22K00					
		2	U	U	R21-D	Illuminated Knob	ASLD200	ASLD2100	ASLD2200	
	N/D	1 2	0 X	X 0	BST-010 BST-001	Knob/Lever Key	ASD200 ASD2K00	ASD2100 ASD21K00	ASD2200 ASD22K00	
1NO 1NC		Z				Illuminated Knob	ASLD200	ASLD2100	ASLD2200	
TING	103	1 2	X 0	0 X	BST-001 BST-010	Knob/Lever Key Illuminated Knob	ASD200 ASD2K00 ASLD200	ASD2100 ASD21K00 ASLD2100	ASD2200 ASD22K00 ASLD2200	
1NO-EM	600	1 2	0 X	X 0	BST-010S BST-001S	Knob/Lever Key Illuminated Knob	ASD200 ASD2K00 ASLD200	ASD2100 ASD21K00 ASLD2100	ASD2200 ASD22K00 ASLD2200	
1NC-LB	601	1	Х	0	BST-001S	Knob/Lever Key	ASD200 ASD2K00	ASD2100 ASD21K00	ASD2200 ASD22K00	
		2	0	Χ	BST-010S	Illuminated Knob	ASLD200	ASLD2100	ASLD2200	
2N0	N/D	1	0	Х	BST-010	Knob/Lever Key	ASD200 ASD2K00	ASD2100 ASD21K00	ASD2200 ASD22K00	
		2	0	Χ	BST-010	Illuminated Knob	ASLD200	ASLD2100	ASLD2200	
2NC	104	1	X	0	BST-001	Knob/Lever Key	ASD200 ASD2K00	ASD2100 ASD21K00	ASD2200 ASD22K00	
		2	X	0	BST-001	Illuminated Knob	ASLD200	ASLD2100	ASLD2200	
	N/D	1 2 3 4	0 X 0 X	X 0 X 0	BST-010 BST-001 BST-010 BST-001	Knob/Lever Key Illuminated Knob	ASD200 ASD2K00 ASLD200	ASD2100 ASD21K00 ASLD2100	ASD2200 ASD22K00 ASLD2200	
2N0 2NC	110	1 2 3	X 0 X	0 X 0	BST-001 BST-010 BST-001	Knob/Lever Key Illuminated Knob	ASD200 ASD2K00 ASLD200	ASD2100 ASD21K00 ASLD2100	ASD2200 ASD22K00 ASLD2200	
	111	4 1 2 3 4	0 0 0 X X	X X X 0	BST-010 BST-010 BST-010 BST-001 BST-001	Knob/Lever Key Illuminated Knob	ASD200 ASD2K00 ASLD200	ASD2100 ASD21K00 ASLD2100	ASD2200 ASD22K00 ASLD2200	
4N0	N/D	1 2 3 4	0 0 0	X X X	BST-010 BST-010 BST-010 BST-010	Knob/Lever Key Illuminated Knob	ASD200 ASD2K00 ASLD200	ASD2100 ASD21K00 ASLD2100	ASD2200 ASD22K00 ASLD2200	

Contact Arrangement Chart: 3-Position Selector Switches

St	yle									art Number		
	Circuit	Mounting			sition	Contact Block	Description	Maintained	Spring Return from Right	Spring Return from Left	Two-Way	
Contact	Number	Position	L	C ↑	R	Part Number		L C R	L C	L C	L ^C C → R	
	000	1	Χ	0	0	BST-010	Knob/Lever	ASD300-1	ASD3100-1	ASD3200-1	ASD3300-1	
	202	2	Х	X	0	BST-001	Key Illuminated Knob	ASD3K00-1 ASLD300-1	ASD31K00-1 ASLD3100-1	ASD32K00-1 ASLD3200-1	ASD33K00-1 ASLD3300-1	
	000	1	0	Х—	—X	BST-001	Knob/Lever	ASD300-1	ASD3100-1	ASD3200-1	ASD3300-1	
1N0	203	2	0	0	Χ	BST-010	Key Illuminated Knob	ASD3K00-1 ASLD300-1	ASD31K00-1 ASLD3100-1	ASD32K00-1 ASLD3200-1	ASD33K00-1 ASLD3300-1	
1NC		1	Х	0	Х	BST-010	Knob/Lever	ASD300-2	ASD3100-2	ASD3200-2	ASD3300-2	
	302	2	Х—	X	0	BST-001	Key Illuminated Knob	ASD3K00-2 ASLD300-2	ASD31K00-2 ASLD3100-2	ASD32K00-2 ASLD3200-2	ASD33K00-2 ASLD3300-2	
		1	0	Х	0	BST-001	Knob/Lever	ASD300-2	ASD3100-2	ASD3200-2	ASD3300-2	
	303	2	0	0	Χ	BST-010	Key Illuminated Knob	ASD3K00-2 ASLD300-2	ASD31K00-2 ASLD3100-2	ASD32K00-2 ASLD3200-2	ASD33K00-2 ASLD3300-2	
		1	Х	0	0	BST-010	Knob/Lever	ASD300-1	ASD3100-1	ASD3200-1	ASD3300-1	
	N/D	Key ASD3K00-1	ASD3K00-1 ASLD300-1	ASD31K00-1 ASLD3100-1	ASD32K00-1 ASLD3200-1	ASD33K00-1 ASLD3300-1						
2N0		1	Χ	0	Х	BST-010	Knob/Lever Key Illuminated Knob	ASD300-2	ASD3100-2	ASD3200-2	ASD3300-2	
	301	2	0	0	X	BST-010		ASD3K00-2 ASLD300-2	ASD31K00-2 ASLD3100-2	ASD32K00-2 ASLD3200-2	ASD33K00-2 ASLD3300-2	
		1	0	Х	0	BST-001	Knob/Lever	ASD300-2	ASD3100-2	ASD3200-2	ASD3300-2	
2NC N/D	304	2	X—	X	0	BST-001	Key Illuminated Knob	ASD3K00-2	ASD31K00-2	ASD32K00-2	ASD33K00-2	
		1	0	X—	—X	BST-001	Knob/Lever	ASLD300-2 ASD300-1	ASLD3100-2 ASD3100-1	ASLD3200-2 ASD3200-1	ASLD3300-2 ASD3300-1	
	N/D						Key	ASD3K00-1	ASD31K00-1	ASD32K00-1	ASD33K00-1	
		2	X—————————————————————————————————————	—X 0	0	BST-001 BST-010	Illuminated Knob	ASLD300-1	ASLD3100-1	ASLD3200-1	ASLD3300-1	
		2	0	0	Х	BST-010	Knob/Lever Key	Knob/Lever AS	ASD300-1	ASD3100-1	ASD3200-1	ASD3300-1
	N/D	3	0	X—	—X	BST-001		ASD3K00-1	ASD31K00-1	ASD32K00-1	ASD33K00-1 ASLD3300-1	
		4	X	X	0	BST-001	Illuminated Knob	ASLD300-1	ASLD3100-1	ASLD3200-1	A3LD3300-1	
		1	0	Х	X	BST-001						
		2	0	0	Χ	BST-010	Knob/Lever	ASD300-1	ASD3100-1	ASD3200-1	ASD3300-1	
	210	3	0	Х—	—X	BST-001	Key Illuminated Knob	ASD3K00-1 ASLD300-1	ASD31K00-1 ASLD3100-1	ASD32K00-1 ASLD3200-1	ASD33K00-1 ASLD3300-1	
		4	0	0	Χ	BST-010	mummatcu Knob	AGEDSOO I	AGEDS100 1	AOLDS200 1	AULDUUUU I	
		1	Χ	0	Х	BST-010						
2N0		2	X	—X	0	BST-001	Knob/Lever	ASD300-2	ASD3100-2	ASD3200-2	ASD3300-2	
2NC	308	3	Χ	0	Х	BST-010	Key Illuminated Knob	ASD3K00-2 ASLD300-2	ASD31K00-2 ASLD3100-2	ASD32K00-2 ASLD3200-2	ASD33K00-2 ASLD3300-2	
		4	X	X	0	BST-001	Illullillateu Kilob	ASLDS00-Z	A3LD3100-2	ASLUSZUU-Z	ASLUSSUU-Z	
		1	Х	0	Х	BST-010						
		2	X—	—X	0	BST-001	Knob/Lever	ASD300-2	ASD3100-2	ASD3200-2	ASD3300-2	
	309	3	0	X	0	BST-001	Key	ASD3K00-2	ASD31K00-2	ASD32K00-2	ASD33K00-2	
		4	0	0	X	BST-001	Illuminated Knob	ASLD300-2	ASLD3100-2	ASLD3200-2	ASLD3300-2	
		1	0	X	0	BST-010						
		2	0	0	Х	BST-001	Knob/Lever	ASD300-2	ASD3100-2	ASD3200-2	ASD3300-2	
	310	3	0	Х	0	BST-010	Key	ASD3K00-2	ASD31K00-2	ASD32K00-2	ASD33K00-2	
		4	0	0	X	BST-001	Illuminated Knob	ASLD300-2	D-2 ASLD3100-2	ASLD3200-2	ASLD3300-2	



^{1.} Each operator sub-assembly is available as a "-1" and a "-2" for 3-position selector switches. The internal cam of a "-1" is different from that of a "-2". This results in designated combinations of open and closed contacts in the various operator positions.

N/D = No circuit number designation required in assembled part number.

^{3.} X = On (closed contacts) O = Off (open contacts). X—X Overlapping contacts remain on (closed) when switch is moved between these two positions.



Contact Arrangement Chart: 3-Position Selector Switches

Style								Operator Part Number										
Contact Circuit Number	Circuit	Mounting Position	•	•	•	•	•	•	•	Oper	Operator Position		Contact Block	Description	Maintained	Spring Return from Right	Spring Return from Left	Two-Way
			L	C ≜	R	Part Number	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	C R	L C R	L C	L C R							
		1	Χ	0	0	BST-010												
	N/D	2	0	0	Χ	BST-010	Knob/Lever	ASD300-1 ASD3K00-1	ASD3100-1 ASD31K00-1	ASD3200-1 ASD32K00-1	ASD3300-1 ASD33K00-1							
4NO	וא/ט	3	Χ	0	0	BST-010	Key Illuminated Knob	ASLD300-1	ASLD3100-1	ASLD3200-1	ASLD3300-1							
		4	0	0	Х	BST-010												
4110		1	Χ	0	Х	BST-010	Knob/Lever Key Illuminated Knob	ASD300-2 ASD3K00-2 ASLD300-2	ASD3100-2 ASD31K00-2 ASLD3100-2	ASD3200-2 ASD32K00-2 ASLD3200-2	ASD3300-2 ASD33K00-2 ASLD3300-2							
	305	2	0	0	Χ	BST-010												
	303	3	Χ	0	Х	BST-010												
		4	0	0	X	BST-010												
		1	0	Х—	X	BST-001			ASD3100-1 ASD31K00-1 ASLD3100-1									
	N/D	2	X	—X	0	BST-001	Knob/Lever Key	ASD300-1 ASD3K00-1		ASD3200-1 ASD32K00-1	ASD3300-1 ASD33K00-1							
	IN/ D	3	0	X	X	BST-001	Illuminated Knob	ASLD300-1		ASLD3200-1	ASLD3300-1							
4NC		4	X	—X	0	BST-001												
4110		1	0	Χ	0	BST-001												
	314	2	X	—X	0	BST-001	Knob/Lever Key	ASD300-2 ASD3K00-2	ASD3100-2 ASD31K00-2	ASD3200-2 ASD32K00-2	ASD3300-2 ASD33K00-2							
	314	3	0	Χ	0	BST-001	Illuminated Knob	ASLD300-2	ASLD3100-2	ASLD3200-2	ASLD3300-2							
		4	X	X	0	BST-001		022000 2		ACEDOZOO Z								



- 1. Each operator sub-assembly is available as a "-1" and a "-2" for 3-position selector switches. The internal cam of a "-1" is different from that of a "-2". This results in designated combinations of open and closed contacts in the various operator positions.
- 2. N/D = No circuit number designation required in assembled part number.
- 3. X = On (closed contacts) O = Off (open contacts). X—X Overlapping contacts remain on (closed) when switch is moved between these two positions.

Operator Truth Tables

Use the following tables to build custom selector switches.

2 Position Selector Switches

	Contact	Mounting	Operator Position			
	Contact	Position	Left	Right		
	BST-010 (NO)	L	0	Χ		
	D31-010 (NO)	R	0	Χ		
	DCT 001 (NC)	L	Χ	0		
A CD 200	BST-001 (NC)	R	Χ	0		
ASD200	BST-010S (NO-EM)	L	0	-X-		
	DST-UTUS (INU-EIVI)	R	0	-X-		
	BST-001S (NC-LB)	L	-X-	0		
	DST-0013 (ING-LD)	R	-X-	0		

3 Position Push/Pull Switches

	Contact	Operator Position					
	Contact	Pull	Normal	Push			
	BST-010 (NO)	0	0	Χ			
AYLD22	BST-001 (NC)	Χ	0	0			
	BST-010S (NO-EM)	0	Χ	Χ			
	BST-001S (NC-LB)	Χ	Χ	0			

3 Position Selector Switches

	Contact	Mounting	Operator Position			
	Contact	Position	Left	Center	Right	
	BST-010 (NO)	L	Χ	0	0	
	D31-010 (NO)	R	0	0	Χ	
	DCT 001 (NC)	L	0	X	X	
ASD300-1	BST-001 (NC)	R	Χ	—X	0	
ASLD300-1 ASD3K00-1	DOT 0400 (NIO 584)	L	Χ	. 0	0	
	BST-010S (NO-EM)	R	0	_0_	Χ	
	BST-001S (NC-LB)	L	0	— X	X	
	D31-0013 (NC-LB)	R	X	X	0	

	Contact	Mounting	Operator Position			
	Contact	Position	Left	Center	Right	
	BST-010 (NO)	L	Χ	0	Χ	
	D31-010 (NO)	R	0	0	Χ	
	BST-001 (NC)	L	0	Χ	0	
ASD300-2	DS1-001 (NC)	R	Χ—	X	0	
ASLD300-2 ASD3K00-2	BST-010S (NO-EM)	L	X	0	—X	
	DS 1-0 103 (INO-EIVI)	R	0	0_	Χ	
	DCT 001C (NIC LD)	L	0		0	
	BST-001S (NC-LB)	R	X	X	0	

Accessories — TWTD Series

TWTD Series Accessories

Item	Appearance		Description/Usage	Part Number		
Lamp Removal Tool		Rubber tool used to install or re	move LED's and incandescent lamps	OR-55		
			Standard octagonal units (chrome-pl.).	0G-81		
			Extended, non-illuminated (chrome-pl.).	OG-82		
Metal Bezel	1())	Replacement locking ring/ bezel	Extended, illuminated (chrome-pl.).	0G-83L		
		DOZOI	Jumbo Mushroom Shallow Shroud	ABN4G		
			Jumbo Mushroom Deep Shroud	ABN4F		
Plastic Bezel	0	Black plastic locking ring/bezel		OGP11B		
			In place of ①, specify Neoprene Rubber Boot color: B (black), G (green), R (red), Y (yellow)	0C-11 ①		
Boot/Cover		Used to cover and protect pushbuttons	Flush units (clear plastic -40° to +60°C).	OC-121		
			Extended units (clear plastic -40° to +60°C).	OC-122		
		Plastic washer For nameplates or panels that s	OGL-D1T			
Anti-Rotation Ring		Thrust washer/Anti-rotation ring	sher/Anti-rotation ring for use with notched panel cutout.			
	01		Plastic with locking nut attached.	OBP-11		
M .: 11 1 D		Plugs used to fill unused 30mm	Metal with locking nut attached	OB-11		
Mounting Hole Plug	Tarrier of the same of the sam	panel cutouts.	Grey rubber (-5° to +60°C)	OB-13		
Terminal Tab Adaptor		Tab #250 17/64" x 3/64" (6.35m	nm x 0.8mm): Single tab	TW-FA1		
Full Voltage Adaptor	Per	Used on all full voltage illumina Two required per unit. (M3.5 scr	Used on all full voltage illuminated units. Two required per unit. (M3.5 screw and saddle)			
Lock Out Adaptor		Used to provide lockout protecti ø 1-13/64" (30mm)	Used to provide lockout protection for TWTD pushbuttons and knob selectors. ø 1-13/64" (30mm)			
Replacement Keys	do-	Pair of keys (#0)	Pair of keys (#0)			



Fingersafe Covers for TWTD Series

ltem	Description	Used with	Part Number
4	Fingersafe terminal cover, for full voltage pilot lights, adds 3mm to overall depth	APD199 full voltage pilot lights	APD-PVL
	Fingersafe terminal cover, for contact blocks, adds 3mm to overall depth	Non-Illuminated pushbuttons ABD, and AOD	N-VL2
idao NAVIS	Fingersafe terminal cover, adds 1.5mm to overall depth	Transformer pilot lights and illuminated units	N-VL3
This o	Fingersafe terminal cover, adds 4 mm to depth	Full voltage illuminated pushbuttons	N-VL4



Dimensions on page 687.

Nameplates — TWTD Series

Faceplates

	NALD	NAKD	NAQD	HNAV	
Dimensions	1.56" (40mm) (40mm) (30.5mm)	2.03" (52mm) Ø1.19" (30.5mm)	1.95" (50mm) 0	WHERGENCY 30.5mm	
Description		Part N	umber		
Nameplate (blank)	NALD-B (black) NALD-R (red)	NAKD-B (black) NAKD-R (red)	NAQD-B (black) NAQD-R (red)	HNAV-0	
Nameplate (engraved)	NALD-®	NAKD-®	NAQD-®	HNAV-27 "Emergency Stop"	



- 1. Nameplates are made of 0.031" aluminum. Lettering is white letters engraved on black background.
- In place of ①, insert either the standard legend code from table below or custom engraving delimited by " ".
 HNAV available in yellow only.

Standard Legend Codes

Pushbuttons			Pushbuttons/Selector Switches			Selector Switches			
Legend	Code	Legend	Code	Legend	Code	Legend	Code	Legend	Code
AUTO CLOSE DOWN EMERG.STOP* FAST FORWARD HAND HIGH IN INCH JOG LOW LOWER OFF	101 102 103 104 105 106 107 108 109 110 111 112 113 114	OPEN OUT RAISE RESET REVERSE RUN SLOW START STOP* STOP TEST UP I (Int'l On) O (Int'l Off) EMO	116 117 118 119 120 121 122 123 124 125 126 127 150 151	AUTO-MAN CLOSE-OPEN DOWN-UP FAST-SLOW FOR-REV HAND-AUTO HIGH-LOW JOG-RUN LEFT-RIGHT LOWER-RAISE MAN-AUTO OFF-ON ON-OFF OPEN-CLOSE RAISE-LOWER	201 202 203 204 205 206 207 208 209 210 211 212 213 214 215	REV-FOR RUN-JOG RUN-SAFE SAFE-RUN SLOW-FAST START-STOP STOP-START UP-DOWN	216 217 218 219 220 221 222 223	AUTO-MAN-OFF AUTO-OFF-MAN CLOSE-OFF-OPEN DOWN-OFF-SLOW FAST-OFF-SLOW FOR-OFF-REV LEFT-OFF-RIGHT LOWER-OFF-RAISE OFF-MAN-AUTO OFF-SLOW-FAST OFF-1-2 OPEN-OFF-CLOSE SLOW-OFF-FAST SUMMER-OFF-WINTER UP-OFF-DOWN 1-OFF-2 HAND-OFF-AUTO	301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317



^{1. *}Available in Red as standard legend code 104 and 124. To order engraved nameplate and codes, add legend code to nameplate part number. Character height based on the number of characters, space and size of nameplate. Standard character size is 3/16".

To specify engraving instructions, use the Nameplate order form on next page.

HNAV available in yellow only.

^{2.} Nameplates with standard legends are the same list price as blank nameplates. Special engravings, additional cost.

11 characters max -

11 12 13 14 15 16 17

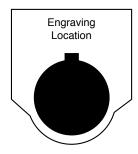
(for 7/64" size letters)

Custom engraved Nameplates Order Form — TWTD Series

Copy this order form and use it to specify Letter Height, Custom Engravings, Location of Engraving on Nameplate, and Quantity Desired. To ensure engraving accuracy, fax it to your IDEC representative. or Distributor.

Your Company Name:	IDEC Rep/Distributor Contact: _	
Your Name:	PO number (if known):	
Telephone:		
Fax & Email:	·	
	·	

NALD Nameplate



Step 1.

Choose Letter Size - 7/64" or 1/8".

Check the box for the letter size you want. Then write your letteries in both

want. Then write your lettering in box below checkboxes. Note: 1/8" size letters cannot exceed 13 characters.

Step 2.

Specify Quantity.

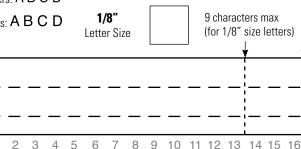
Enter the number of nameplates desired in the box on the right.



Sample Letter Sizes

7/64" Letters: A B C D
1/8" Letters: A B C D

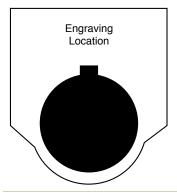
2 3



7/64"

Letter Size

NAKD Nameplate



Step 1.

Choose Letter Size - 7/64" or 1/8".

Check the box for the letter size you want. Then write your lettering in box below checkboxes. Note: 1/8" size letters cannot exceed 9 characters.

Step 2.

Specify Quantity.

Enter the number of nameplates desired in the box on the right.

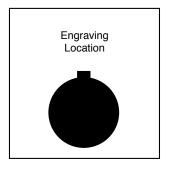


Sample Letter Sizes

9 10

1/8" Letters: ABCD

NAQD Nameplate



Step 2. Specify Quantity.

Enter the number of nameplates desired in the box on the right.



Step 1.

Choose Letter Size - 7/64" or 1/8".

Check the box for the letter size you want. Then write your lettering in box below checkboxes.

Note: 1/8" size letters cannot exceed 16 characters.

7/64"
Letter Size

20 characters max (for 7/64" size letters)

1/8"
Letter Size

16 characters max (for 1/8" size letters)

12

Sample Letter Sizes

10

3/32" Letters: A B C D
1/8" Letters: A B C D

13 14 15 16 17 18 19 20

Switch Engraving Order Form – TWTD Series

Copy this order form and use it to specify Letter Height, Maximum Number of Lines and Text to be engraved.

To insure engraving accuracy, fax it to your IDEC representative or Distributor.

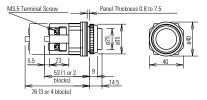
You	Company	:						Telephone	9 :			
	Name					_		Fax	·:			
	Address					_		Emai	l:			
	PO					_	Part Number to	be Engraved	d:			
Please	check one	of the box	xes below to indicate	your choic	e of engra	ving optio	ns:		Ø	29mm. ø40	Imm Mushroo	om Head
			iare itch			/ Jui	mm mbo nroom		-		Engraving Engraving Area 1 Area 2¹	
	# of Lines	Letter Height	Max. Characters Per Line		# of Lines	Letter Height	Max. Characters Per Line			# of Lines	Letter Height	Max. Characters Per Line
	1 -	5/32	7		1	3/4	4		Engraving	1	5/32	5
		1/8	8			5/16	5	Area 1			1/8	5
	2 -	5/32	7			5/16	5		Engraving Area 2	1	5/32	7
		1/8	8		2	1/4	6		Aicuz		1/8	7
	3	1/8	8			5/32	8					
	4		Custom*		3	5/32	8		buttons (round	and square).		r standard size push- m mushroom head
	aving is pos er than stan		naracter size will be		3	1/8	9		non-Illuminate . Engraving is do	d pushbutton one on the bu	only. Itton itself for no	n-Illuminated push but ush buttons and pilot
			und itch		4	1/8	9	4	lights.	ext exactly ho	ow you want it er	ngraved, take care to
	# of Lines	Letter Height	Max. Characters Per Line					ı				
	1 -	5/32	7	Ente	er text to b	ne engrave	ed:				Sample L	etter Sizes
		1/8	8	Lin	e 1:						1/8 Letters:	OPEN
	2 -	5/32	7		e 2:						5/32 Letters:	OPEN
	_	1/8	8	Lin	e 3:						All e	engraving is 5/8mm
	3	1/8	8	Lin	e 4:							
	4		Custom*									
	aving is pos er than stan		naracter size will be									
	DEC Intern rk Order #:	al Use Only	<i>y</i> :									



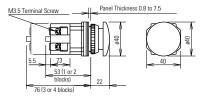
Dimensions (mm)

Switches & Pilot Devices

Pushbutton



Mushroom Pushbutton w/Full Shroud



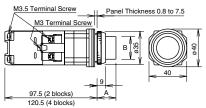
Pushbuttons Dimension A Dimension B Flush 0.351" (9mm) ø 0.975" (25mm) Extended 0.566" (14.5mm) ø 0.975"(25mm) Extended w/Full Shroud ø 1.11" (28.5mm) 0.663" (17mm) Mushroom 0.858" (22mm) ø 1.56" (40mm) Mushroom w/Full Shroud 0.936" (24mm) ø 1.87" (48mm) Jumbo Mushroom 1.13" (29mm) ø 2.54" (65mm) ø 1.56"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



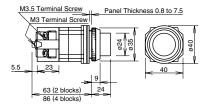


Illuminated Pushbuttons	Dimension A	Dimension B
Flush w/Full Shroud	0.975" (25mm) 0.995" (25.5mm)	ø 0.936" (24mm) ø 0.936" (24mm)
Extended w/Full Shroud	0.741" (19mm) 0.761" (19.5mm)	ø 0.936" (24mm) ø 0.936" (24mm)
ø 1.56" (40mm) Mushroom Pushlock Turn Reset, Push-Pull	*0.975" (25mm) **0.975" (25mm)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

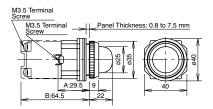


- *Dimension when operator is in reset position.
- **Dimension when operator is in pull position.

Full Voltage

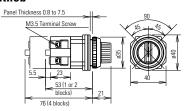


Pilot Lights

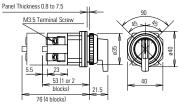


Selector Switches

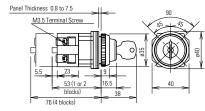
Knob



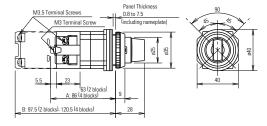
Lever



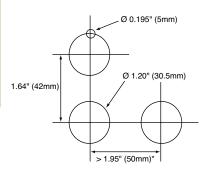
Key



Illuminated Knob



Selector Switches Panel Cut-Out





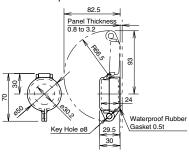
- 1. *Jumbo Mushroom < 2.61" (66mm)
- Minimum mounting centers are applicable to switches with one stack of contact blocks. When mounting two stacks of contact blocks, minimum centers should allow for access to wiring.
- blocks, minimum centers should allow for access to wiring.

 The ø 0.195" (ø 5mm) recess is necessary when either the nameplate or anti-rotation ring is used.

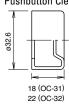
IlluminatedSelector Switches

OL-KL1

Lock-Out Adaptor

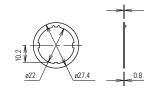


0C-31 Pushbutton Clear Boot



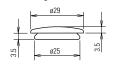
OGL-31

Anti-Rotation Ring



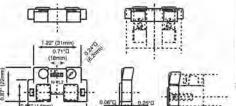
0B-31

Mounting Hole Rubber Plug

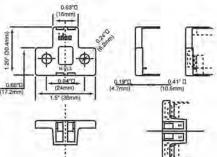


Finger-Safe Cover

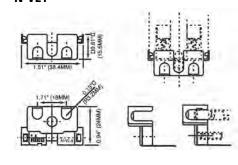
N-VL2



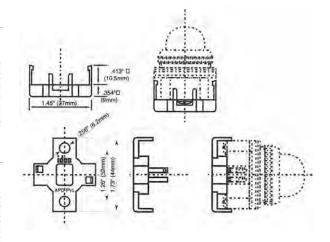
N-VL3



N-VL4



APD-PVL



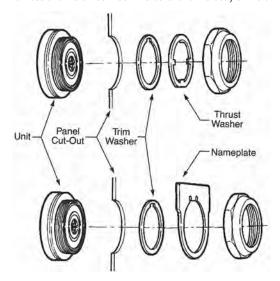


Operating Instructions

Switches & Pilot Devices

Adjustment for Panel Thickness

Each unit is shipped with several waterproof gaskets which are 0.06" (1.5mm) and 0.12" (3mm) thick. Combine the gaskets for a dimension approximately equal to panel thickness and install between the bezel and the body of the unit.



A trim washer must be used with a thrust washer or a nameplate to prevent the control unit from rotating in the mounting hole. When using anti-rotation rings (trim washer with thrust washer or nameplate), install as shown below.

Selector Switches

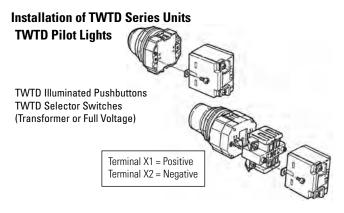
The operator shaft of each unit has a recess to identify in which direction to install the handle. Align the handle with the recess. Press color insert (TW-HC1) into the Standard Operating Positions.

Standard Operation Positions

2-Position, 90°	3-Position, 45°
1 2	1 2

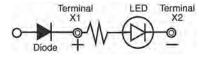
Non-Illuminated 3-Position Operators





Installation of LED Illuminated Units

Transformer units are recommended for use in areas subjected to inductive noise. When using full voltage types, install a protection diode as shown below. Use diode with DC power supply to protect against surges and noise.



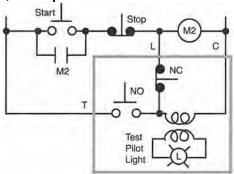


Make sure that LED illuminated units are installed with correct polarity, as indicated at the terminals

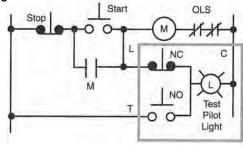
Application Example For Push-To-Test Pilot Light

A typical application of illuminated pushbuttons is a push-to-test pilot light which can be used to check the lamp/LED circuit.

Transformer/AC-Adapter Circuit



Full Voltage Circuit



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