

Printed Circuit Mount TP-200 Illuminated Pushbuttons

MATERIAL SPECIFICATIONS:

Contacts.....Silver plated
 Case MaterialPolyester
 Actuator Material.....Polyamide
 TerminalsSilver plated
 Terminal Seal.....Epoxy
 Button MaterialPolycarbonate

TYPICAL PERFORMANCE CHARACTERISTICS:

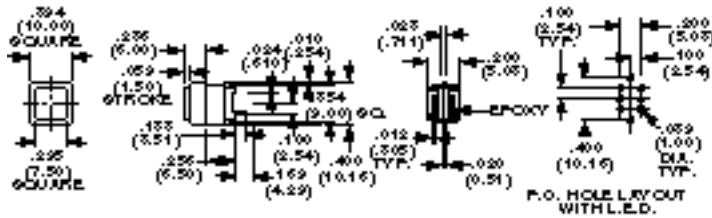
Contact Rating0.4 VA Max. @ 20 VDC
 Initial Contact Resistance.....500 Milliohms max.
 Contact TimingBreak-Before-Make
 Insulation Resistance1,000 Megohms @ 500 VDC
 Dielectric Strength500 VAC
 Actuation Force.....200 Grams average
 Plunger/Actuator Travel059" (1.50)
 Life Expectancy10,000 Cycles

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature.....-10°C to +70°C (+14°F to +158°F)
 Storage Temperature.....-25°C to +85°C (-13°F to +185°F)
 Solder Heat Resistance270°C 3 seconds, per MIL-STD-202, Method 210

Momentary

Non-Illuminated (No LED)	Type	Button Color
TP1M2A2FA8	DPDT	Red
Illuminated (with LED)	Type	Button Color
TP2M2AL2FA8	DPDT	Red
TP2M4AL4FA8	DPDT	Yellow
TP2M5AL5FA8	DPDT	Green



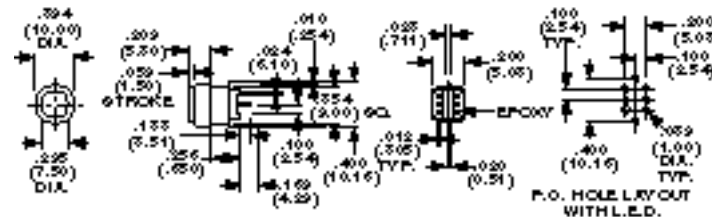
DPDT
Momentary



TP2M2AL2FA8

Momentary

Non-Illuminated (No LED)	Type	Button Color
TP1M2C2FC8	DPDT	Red
TP1M4C4FC8	DPDT	Yellow
TP1M5C45FC8	DPDT	Green
Illuminated (with LED)	Type	Button Color
TP2M2CL2FC8	DPDT	Red
TP2M4CL4FC8	DPDT	Yellow
TP2M5CL5FC8	DPDT	Green



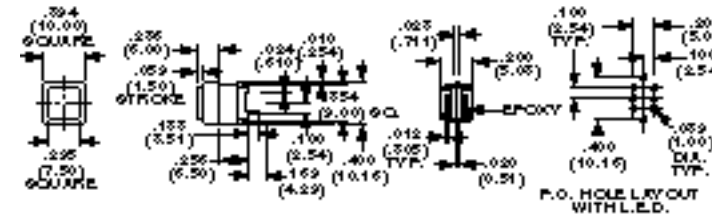
DPDT
Momentary



TP2M2CL2FC8

Maintained

Non-Illuminated (No LED)	Type	Button Color
TP1L2A2FA8	DPDT	Red
TP1L4A2FA8	DPDT	Yellow
TP1L5A5FA8	DPDT	Green
Illuminated (with LED)	Type	Button Color
TP2L2AL2FA8	DPDT	Red
TP2L4AL4FA8	DPDT	Yellow
TP2L5AL5FA8	DPDT	Green



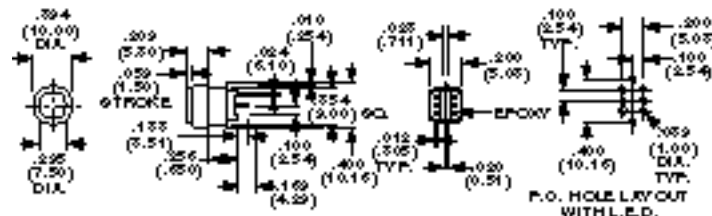
DPDT
Latching



TP2L2AL2FA8

Maintained

Non-Illuminated (No LED)	Type	Button Color
TP1L2C2FC8	DPDT	Red
Illuminated (with LED)	Type	Button Color
TP2L2CL2FC8	DPDT	Red
TP2L4AL4FA8	DPDT	Yellow
TP2L5CL5FC8	DPDT	Green



DPDT
Latching



TP2L2CL2FC8

Need more technical information?

Contact your local ABE office--(800) 453-1692--or AboveBoardElectronics.com.

Above Board Electronics
 1918 Junction Avenue
 San Jose, CA 95131

Illuminated Pushbuttons Command Series

FEATURES:

Command Series Illuminated Pushbuttons are instrument-grade switches having snap-acting double break contacts, silver clad and gold plated to satisfy the requirements of logic level and power switching. **Contacts are electrically independent of one another and are isolated from the lamp circuit.** Tactile feel is excellent and maintained models have latching feature for visible indication of status. Uses T1-3/4 midget flanged base lamp, relampable from front of panel. Legends may be provided using printed transparent tape affixed to inner button. Oiltight models meet NEMA 1, 12 & 13 requirements. UL Recognized, File E-51302, CSA LR-20479

MATERIAL SPECIFICATIONS:

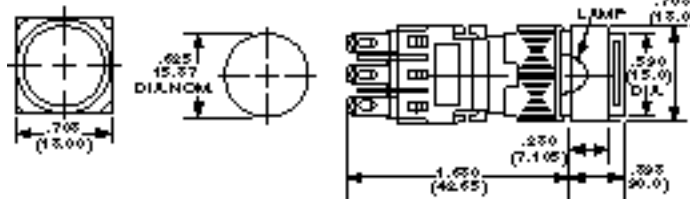
Contacts.....Gold plate over silver clad

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA @ 20 VDC or Peak AC
5 A @ 250 VAC or 24 VDC (Resistive)
Initial Contact Resistance.....20 Milliohms max.
Insulation Resistance100 Megohms min.
Dielectric Strength1,500 VAC
Life Expectancy100,000 Operations @ rated current

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-44°F to +122°F (-20°C to +50°C)



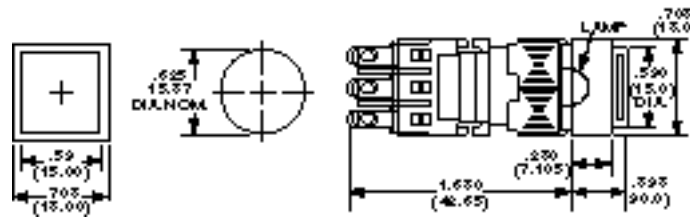
ROUND



164EL11

Non-Oiltight	Oiltight	Contact	Action
164EL11	165EL11	1 N.O. & N.C.	Momentary
164EL22	165EL22	2 N.O. & N.C.	Momentary
164EL33	165EL33	3 N.O. & N.C.	Momentary
164EL511	165EL511	1 N.O. & N.C.	Push on/Push off
164EL522	165EL522	2 N.O. & N.C.	Push on/Push off
164EL533	165EL533	3 N.O. & N.C.	Push on/Push off

Application Note: For lens sets and lamps, see page D51
LED's not supplied, order separately See page K10



SQUARE

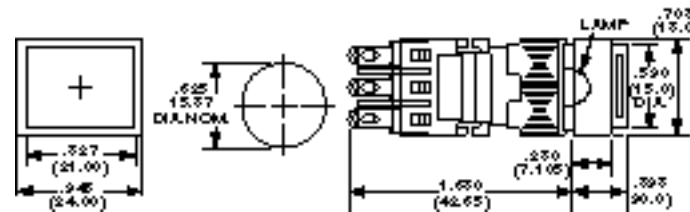
Lens set and lamps not supplied.



164SL11

Non-Oiltight	Oiltight	Contact	Action
164SL11	165SL11	1 N.O. & N.C.	Momentary
164SL22	165SL22	2 N.O. & N.C.	Momentary
164SL33	165SL33	3 N.O. & N.C.	Momentary
164SL511	165SL511	1 N.O. & N.C.	Push on/Push off
164SL522	165SL522	2 N.O. & N.C.	Push on/Push off
164SL533	165SL533	3 N.O. & N.C.	Push on/Push off

Application Note: For lens sets and lamps, see page D51



RECTANGULAR

Lens set and lamps not supplied.



164TL11

Non-Oiltight	Oiltight	Contact	Action
164TL11	165TL11	1 N.O. & N.C.	Momentary
164TL22	165TL22	2 N.O. & N.C.	Momentary
164TL33	165TL33	3 N.O. & N.C.	Momentary
164TL511	165TL511	1 N.O. & N.C.	Push on/Push off
164TL522	165TL522	2 N.O. & N.C.	Push on/Push off
164TL533	165TL533	3 N.O. & N.C.	Push on/Push off

Application Note: For lens sets and lamps, see page D51

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Command Series *Selector and 2 & 3-Position Keylock*

FEATURES:

Command Series Selector & Keylock Switches are 2 & 3-position rotary types with snap-cutting double break contacts. All models have 90° throw. Contacts are silver-clad and gold-plated to provide reliable operation at logic levels as well as for power switching applications. Contacts are electrically isolated from one another. Keylock types are supplied with two keys. Oiltight models meet NEMA 1, 12 & 13 requirements. PC/Wirewrap terminations also available. Consult factory.

UL Recognized File E-51302

CSA LR-20479

MATERIAL SPECIFICATIONS:

Contacts.....Gold plate over silver clad

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating0.4 VA @ 20 VDC or Peak AC
5 A @ 250 VAC or 24 VDC (Resistive)

Initial Contact Resistance.....20 Milliohms max.

Insulation Resistance100 Megohms min.

Dielectric Strength1,500 VAC

Life Expectancy100,000 Operations at rated current

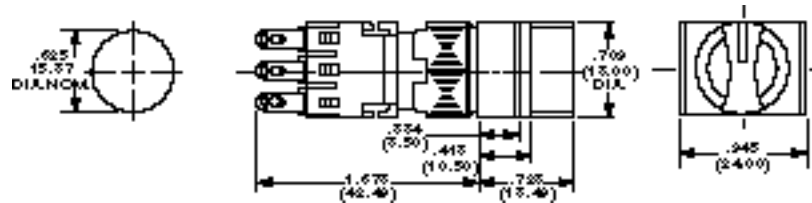
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-4°F to +158°F (-20°C to +70°C)

SELECTORS



164P2B11

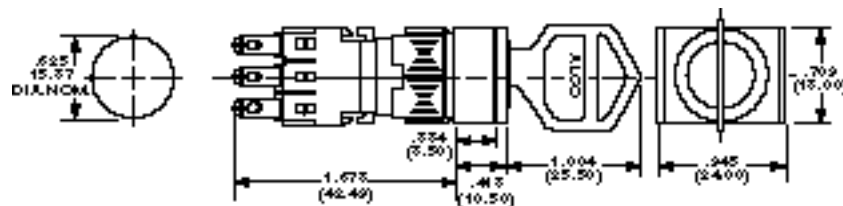


Non-Oiltight	Oiltight	Contact	Action
164P2B11	165P2B11	1N.O. & N.C.	2 Pos. Maintained
164P2B22	165P2B22	2N.O. & N.C.	2 Pos. Maintained
164P2B33	165P2B33	3N.O. & N.C.	2 Pos. Maintained
164P0B22		2N.O. & N.C.	2 Pos. Momentary Right
164P0B33		3N.O. & N.C.	2 Pos. Momentary Right
164P3B22	165P3B22	2N.O. & N.C.	3 Pos. Center Off/Maintained
164P3B33	165P3B33	3N.O. & N.C.	3 Pos. Center Off

KEYLOCKS



164J2A11



2 Position Keylocks				3 Position Keylocks			
Non-Oiltight	Oiltight	Contact	Action	Non-Oiltight	Oiltight	Contact	Action
164J2A11	165J2A11	1N.O. & N.C.	Maintained, key pull left	164J3A22	165J3A2	2N.O. & N.C.	Maintained, key pull left
164J2A22	165J2A2	2N.O. & N.C.	Maintained, key pull left	164J3A33	165J3A33	3N.O. & N.C.	Maintained, key pull left
164J2A33	165J2A33	3N.O. & N.C.	Maintained, key pull left	164J3E22	165J3E22	2N.O. & N.C.	Maintained, key pull center
164J2B11	165J2B11	1N.O. & N.C.	Maintained, key pull both	164J3E33	165J3E33	3N.O. & N.C.	Maintained, key pull center
164J2B22	165J2B22	2N.O. & N.C.	Maintained, key pull both	164J3C22	165J3C22	2N.O. & N.C.	Maintained, key pull all
164J2B33	165J2B33	3N.O. & N.C.	Maintained, key pull both	164J3C33	165J3C33	3N.O. & N.C.	Maintained, key pull all
164JOA11		1N.O. & N.C.	Momentary right, key pull left	164J7A22	165J7A22	2N.O. & N.C.	Momentary right, key pull left
164JOA22		2N.O. & N.C.	Momentary right, key pull left				
164JOA33		3N.O. & N.C.	Momentary right, key pull left				

Application Note: Spare key part number for 164J-165J Series is **164KA**

Pilot Light Indicators Command Series

FEATURES

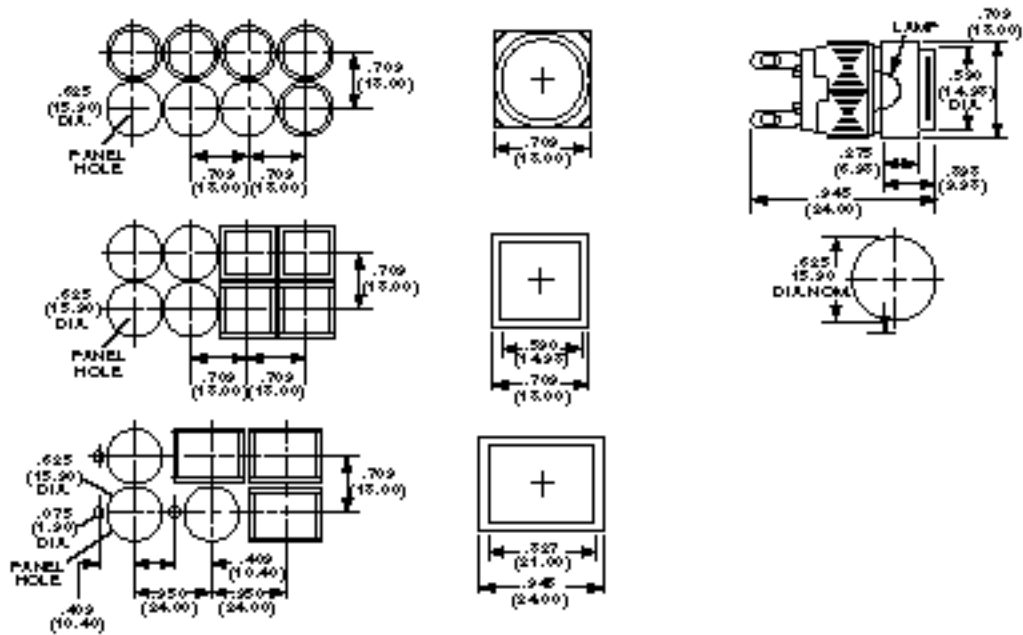
Command Series Pilot Light Indicators match the appearance of both lighted and unlighted Command Series pushbuttons. The same lens buttons are snapped into place and legends may be easily inserted. Illumination is from T - 1 3/4 midget flange based lamps, which are installed from the front panel. Lenses and lamps are ordered separately and be sure to specify color. Oiltight models meet NEMA 1, 12 & 13 requirements. UL File No. E-51302 CSA LR-20479

TYPICAL PERFORMANCE CHARACTERISTICS:

LAMP DISSIPATION 1.2W MAX.
 Insulation Resistance100 Megohms min.
 Dielectric Strength1,500 VAC

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature.....-44°F to +122°F (-20°C to +50°C)



PILOT LIGHT INDICATORS

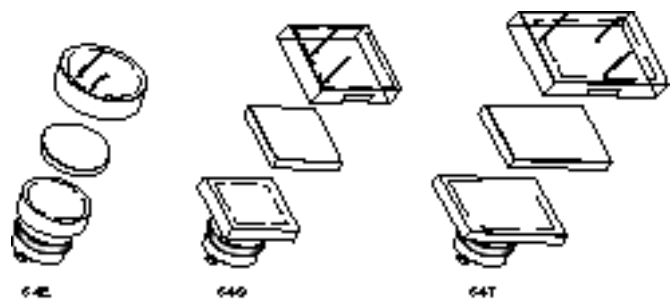


164EZ

Non-Oiltight	Oiltight	Description
164EZ	165EZ	Round
164SZ	165SZ	Square
164TZ	165TZ	Rectangular

Lens set and lamp not supplied, order separately, see below.
 U.L. Recognized E-51301

LENS SET



64E

Model	Description
64E(*)	Round lens set
64S(*)	Square lens set
64T(*)	Rectangular lens set

All fit oiltight and non-oiltight indicators.
 (*) Specify color by adding suffix number: (2) Red, (3) Orange, (4) Yellow, (5) Green, (6) Blue, (9) White/Clear.

Application Note:
 Lens sets include, button, diffuser and cap.

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 Contact your local ABE office--(800) 453-1692--or AboveBoardElectronics.com.

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