

22MM NEMA PILOT DEVICES



c3controls' durable line of 22mm NEMA devices are for all those tight fitting places. Our non-illuminated momentary and maintained push buttons, toggle switches, pilot lights and selector switches are compact and ready for field wiring in almost any environment. This is the most rugged 22mm pilot device product line in the world!



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PROVEN



Conformity to Standards:

UL 508
CSA C22.2 No. 14
IEC 60947-1, 60947-5-1

Certifications:





UL File #: E68568 (Guide NKCR, NKCR7)
CSA File #: LR47446-1
CE Marked (per EU Low Voltage Directive 2006/95/EC and
RoHS Directive 2011/65/EU)

Visit www.c3controls.com to download product certifications.

22MM NEMA PILOT DEVICES

Every c3controls product is designed and manufactured to meet the needs of the machine builder, including our comprehensive line of 22mm NEMA Pilot Devices. Check out all the features of our Series 22 NEMA below!

DELIVERING THE MOST RUGGED 22MM NEMA DEVICES IN THE INDUSTRY.

✓ Proven	Our 22mm NEMA operators are UL Listed, CSA Certified and CE marked meeting global standards requirements.    
✓ Simple Customization	Our light modules come with various lens color options for appropriate operator interface and are available in incandescent, neon, or our LED lamps with leakage protection.
✓ Rugged Design	Optional polyester or aluminum clamps rings with coarse 16 pitch threads for quick and easy utilization that won't cross thread or strip.
✓ Visible Certifications	Our product certifications and electrical ratings are clearly marked on the outside of the contact blocks for easy reference during installation.
✓ Heavy Duty	Polyester construction provides superior durability, corrosion resistance, moisture rejection and electrical insulation.
✓ Flexible	Our "Add-On" Contact Blocks can be added to the basic operator to increase the number and type of contacts. Up to 3 blocks with 2 circuits each may be added, giving a total of 8 contacts per operator.
✓ Convenient	Reduce inventory with our interchangeable modular design, providing endless options for appropriate operator interface.
✓ Environmentally Secure	With 4/4X and IP65 ratings, our 22mm line of Pilot Devices are built to last and withstand dust, corrosion, ice, and rain.
✓ Lifetime Warranty*	Every product is backed by our lifetime warranty—unmatched in the industry—bringing you quality components that perform in the most demanding applications.
✓ Guaranteed Same-Day Shipping*	Product availability reduces inventory, and improves cash-flow—saving you money. With c3controls any order for standard catalog items received by 6:00pm ET is guaranteed to ship same-day.
✓ Advantage Pricing	Our approach to product development, manufacturing, and focus on servicing the OEM and Electrical Equipment Builder reduces cost. The result—the best value in the industry.

*See c3controls Terms & Conditions

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Our circulation equipment is exposed to elements ranging from extreme heat and humidity, to rain, to freezing snow and ice. Therefore we chose c3controls to provide durable, reliable NEMA 4X switches for our machines.

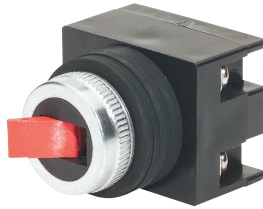
”

Jon Zent, Mechanical Engineer • **SolarBee, Inc.**

Momentary Push Button



Maintained Toggle Switch



Push-To-Test Pilot Light

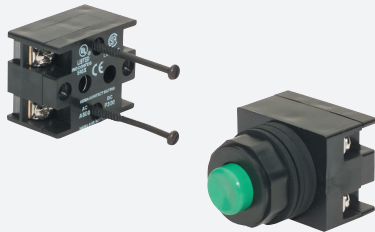


Selector Switch



UNIQUE PRODUCT LINE FEATURES

COMPACT DESIGN



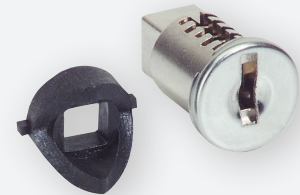
Our compact, thin pilot devices are designed with up to two integral circuits. Additional contact blocks are available.

METAL ON THE INSIDE



c3controls Maintained Push Buttons contain a solid brass detent mechanism ensuring reliable operation in emergency stop applications, and providing safe interruption of circuits and longer life.

ONE CAM DESIGN



Our single cam design eliminates the need for multiple cam and selector switch configurations, reducing inventory and saves you labor time and costs.

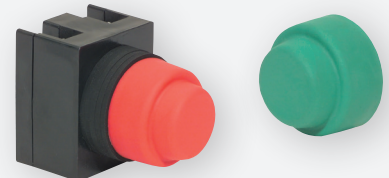
INTERNAL SELF-LUBRICANT & U-CUP SEAL



All frictional parts are molded with an internal self-lubricant to provide outstanding wear without troublesome greases used by others.

Our revolutionary U-Cup seal is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions and keeps water, oils, and dust away from the contact blocks.

RUBBER BOOTS



Our state-of-the-art rubber boots protect both the operators and the circuits behind them from harsh chemicals and climates. They feature a built-in clamp ring that is molded with Neoprene and has been modified to provide added pliability and protection against dust, freezing and thawing environments.

FIND IT FAST

22mm NEMA Pilot Devices



- Certifications
- Specifications
- Dimension Drawings
- Installation Instructions
- Easy to Buy

www.c3controls.com

IT'S EASY TO BUILD YOUR OWN PUSH BUTTON

Simply pick the code number from each of the sections below and combine them to build your part number.

Momentary Push Buttons (Non-Illuminated)

22PB I - II III IV V

Example: To build one of our most popular Push Buttons, the part number would be **22PB + II + III + IV + V** or **22PBNO-XXGN**



I. OPERATOR TYPE

CODE	DESCRIPTION	LIST
22PB	Push Button Operator	\$23.00

II. CONTACT BLOCK CONFIGURATION

CODE	DESCRIPTION	LIST
NO	1 Normally Open Contact Block	—
NC	1 Normally Closed Contact Block	—
NONC	Contact Block w/1 Normally Open and 1 Normally Closed	\$11.00
2NO	Contact Block w/2 Normally Open	\$11.00
2NC	Contact Block w/2 Normally Closed	\$11.00
NOEM	Contact Block w/1 Normally Open and 1 Early Make	\$15.00

III. CLAMP RING

CODE	DESCRIPTION	LIST
FOR USE WITH ALL CAP TYPES (EXCLUDES RUBBER BOOTS)		
X	Polyester (Type 4X)	—
M	Aluminum (Type 4)	\$ 3.90
FOR USE WITH RUBBER BOOTS		
(Blank)	Clamp Ring Included*	—

*NOTE: Rubber boots come standard with a built-in clamp ring and thrust washer. When installing operator we recommend that the thrust washer be placed behind the panel to prevent rotation.

IV. CAP TYPE

CODE	DESCRIPTION	LIST
(Blank)	Operator less Cap	—
F	Flush*	\$ 5.80
X	Extended*	\$ 5.80
1	Mushroom (1" Dia.)	\$ 7.80
M	Mushroom (1-5/32" Dia.)	\$16.00
J	Jumbo Mushroom (1-21/64" Dia.)	\$16.00
S1	Shrouded Mushroom (1" Dia.) Note: Only available with a Polyester Clamp Ring.	\$ 9.70
SM	Shrouded Mushroom (1-5/32" Dia.) Note: Only available with a Polyester Clamp Ring.	\$19.00
XRB	Neoprene Rubber Boot†	\$18.00

*NOTE: These caps can also be used with our Mechanical Interlock. See page 370.

†NOTE: Rubber boots come standard with a built-in clamp ring and thrust washer. When installing operator we recommend that the thrust washer be placed behind the panel to prevent rotation.

V. CAP COLOR

CODE	COLOR
ALL CAP TYPES (EXCLUDES RUBBER BOOTS)	
(Blank)	Operator less Cap
BK	Black
BE	Blue
GN	Green
GY	Grey
RD	Red
WE	White
YW	Yellow
RUBBER BOOTS	
BK	Black
GN	Green
RD	Red
YW	Yellow

CONTACT BLOCKS ARE AVAILABLE TO ADD TO BASIC OPERATORS TO INCREASE THE NUMBER AND TYPE OF CONTACTS. UP TO THREE BLOCKS WITH TWO CIRCUITS EACH MAY BE ADDED GIVING A TOTAL OF EIGHT CONTACTS PER OPERATOR. BLOCKS SIMPLY SCREW ON THE BACK OF THE OPERATOR. REFER TO PAGE 370 FOR DETAILS.

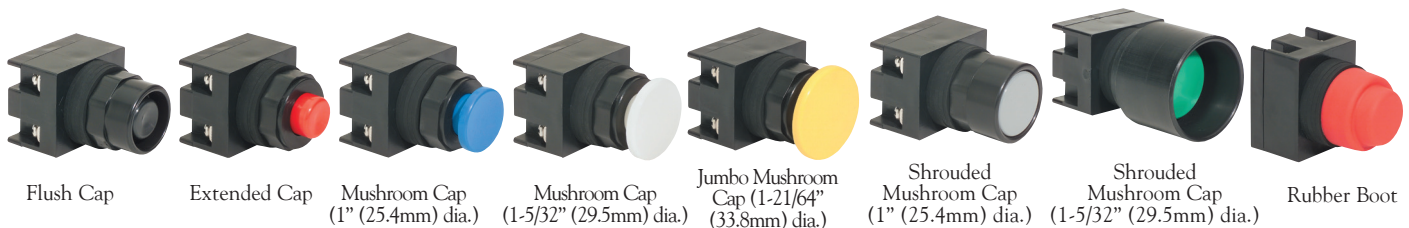
Our 22mm Momentary Push Buttons come with integral contacts ready for field wiring.

DISCOUNT
SCHEDULE **E**



LEGEND PLATES in almost any size & color are available for same day shipping. See pages 372-373 for complete selection.

MIX AND MATCH ANY COLOR AND MOMENTARY NON-ILLUMINATED PUSH BUTTON CAP



22MM NEMA MOMENTARY NON-ILLUMINATED PUSH BUTTONS

c3controls goes the extra step to make sure that our products outlast the competition. Our 22mm NEMA Momentary Non-Illuminated Push Buttons are durable and flexible for a variety of uses. All c3controls 22mm NEMA operators are UL Listed and are rated Type 4/4X as standard for watertight and corrosion resistance. In addition, operators are also listed for Type 1, 2, 3, 3R, 12 and 13, and meet global standards requirements.

Product features include:

- Polyester construction for superior corrosion resistance, moisture rejection and electrical insulation.
- Octagonal polyester or polished aluminum clamp rings.
- #6 terminal screws with self-lifting captive wire clamps accommodate #22 through two #12 AWG wires (0.5 - 4mm²) per terminal.
- Operators conveniently mount in a round 7/8" (22.5mm) hole that is directly interchangeable with competitors units and eliminates the labor required for notching.
- A600 (7,200 VA Make and 720 VA Break), 600V AC Maximum, Maximum Continuous Thermal Current, Ith: 10A
- P300 (138 VA Make and 138 VA Break), 250V DC Maximum, Maximum Continuous Thermal Current, Ith: 5A



UNIQUE PRODUCT FEATURES



1. Compact, thin design comes with integral circuits for field wiring.
2. Our push buttons modular design provides endless options for appropriate operator interface by alternating cap types and colors which ultimately will save you time and money by reducing your inventory.
3. Our revolutionary U-Cup seal is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions such as heat, dryness and sunlight. The U-Cup seal rides easily along the stroker and keeps water, oils, dust and other corrosive particles in the air away from the contact blocks. This U-cup seal also acts like a squeegee and forms a permanent watertight seal that meets Type 4/4X with or without a rubber boot.

SOME OF OUR POPULAR CONFIGURATIONS:

MOMENTARY NON-ILLUMINATED PUSH BUTTON OPERATORS WITH POLYESTER CLAMP RING (TYPE 4X)

	FLUSH CAP		EXTENDED CAP		MUSHROOM CAP	
	CAP COLOR	CATALOG NUMBER	CATALOG NUMBER	LIST	CATALOG NUMBER	LIST
1NO	Black	22PBNO-XFBK	22PBNO-XXBK	\$28.80	22PBNO-XMBK	\$39.00
	Green	22PBNO-XFGN	22PBNO-XXGN	\$28.80	22PBNO-XMGN	\$39.00
	Red	22PBNO-XFRD	22PBNO-XXRD	\$28.80	22PBNO-XMRD	\$39.00
1NC	Black	22PBNC-XFBK	22PBNC-XXBK	\$28.80	22PBNC-XMBK	\$39.00
	Green	22PBNC-XFGN	22PBNC-XXGN	\$28.80	22PBNC-XMGN	\$39.00
	Red	22PBNC-XFRD	22PBNC-XXRD	\$28.80	22PBNC-XMRD	\$39.00
1 NO	Green	22PBNONC-XFGN	22PBNONC-XXGN	\$39.80	22PBNONC-XMGN	\$50.00
& 1 NC	Red	22PBNONC-XFRD	22PBNONC-XXRD	\$39.80	22PBNONC-XMRD	\$50.00

IT'S EASY TO BUILD YOUR OWN PUSH BUTTON

Simply pick the code number from each of the sections below and combine them to build your part number.

Maintained Push Buttons (Non-Illuminated) 2-Position Push-Pull

22PP I II III IV V

Example: To build one of our most popular Push Buttons, the part number would be **22PP + II + III + PM + V** or **22PPNC-XPMRD**



I. OPERATOR TYPE

CODE	DESCRIPTION	LIST
22PP	Push-Pull Maintained	\$48.00

II. CONTACT BLOCK CONFIGURATION

CODE	DESCRIPTION	LIST
NO	1 Normally Open Contact Block	—
NC	1 Normally Closed Contact Block	—
NONC	Contact Block w/1 Normally Open and 1 Normally Closed	\$11.00
2NO	Contact Block w/2 Normally Open	\$11.00
2NC	Contact Block w/2 Normally Closed	\$11.00

III. CLAMP RING

CODE	DESCRIPTION	LIST
X	Polyester (Type 4X)	—
M	Aluminum (Type 4)	\$ 3.90

IV. CAP TYPE

CODE	DESCRIPTION	LIST
PM	Push-Pull Maintained Mushroom	\$16.00

V. CAP COLOR

CODE	COLOR
BK	Black
BE	Blue
GN	Green
GY	Grey
RD	Red
WE	White
YW	Yellow

Our 22mm Maintained operators come with integral contacts ready for field wiring and are maintained in both the push and pull positions. The primary application is “push” to “stop” and “pull” to “start”. Our push-pull operators are often used as maintained emergency stop buttons.



LEGEND PLATES in almost any size & color are available for same day shipping. See pages 372-373 for complete selection.

DISCOUNT
SCHEDULE **E**

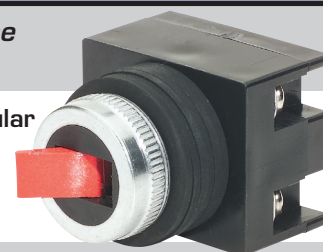
IT'S EASY TO BUILD YOUR OWN TOGGLE SWITCH

Simply pick the code number from each of the sections below and combine them to build your part number.

Maintained Toggle Switches

22T I II III IV V

Example: To build one of our most popular Toggle Switches, the part number would be **22T + II + III + IV + V** or **22THRDNC-MT**



I. OPERATOR TYPE

CODE	DESCRIPTION	LIST
22T	Toggle Switch	\$40.00

II. TOGGLE DIRECTION

CODE	DESCRIPTION
H	Horizontal
V	Vertical

III. TOGGLE COLOR

CODE	COLOR
BK	Black
BE	Blue
GN	Green
GY	Grey
RD	Red
WE	White
YW	Yellow

IV. CONTACT BLOCK CONFIGURATION

CODE	DESCRIPTION	LIST
NO	1 Normally Open Contact Block	—
NC	1 Normally Closed Contact Block	—
NONC	Contact Block w/1 Normally Open and 1 Normally Closed	\$11.00
2NO	Contact Block w/2 Normally Open	\$11.00
2NC	Contact Block w/2 Normally Closed	\$11.00

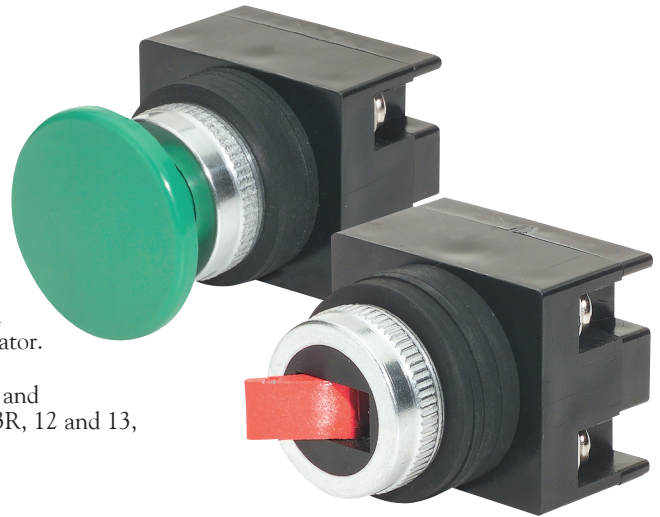
V. CLAMP RING

CODE	DESCRIPTION	LIST
(Blank)	Polyester (Type 4X)	—
MT	Aluminum (Type 4)	\$ 3.90

Toggle Switch Operators come with integral contacts ready for field wiring. They provide maintained operation and may be used in place of 2-Position Selector Switches to provide “On-Off” functions.

22MM NEMA MAINTAINED NON-ILLUMINATED PUSH BUTTONS & TOGGLE SWITCHES

Our 22mm NEMA line of Maintained Non-Illuminated Push Buttons and Toggle Switches feature a compact, thin design for tight fitting spaces and come with integral circuits for field wiring. Contact blocks are available to add to basic operators to increase the number and type of contacts. Up to three blocks deep with two circuits each may be added giving a total of eight contacts per operator. Blocks simply screw on the back of the operator. Refer to page 370 for add-on contact blocks. All c3controls 22mm NEMA operators are UL Listed and are rated Type 4/4X as standard for watertight and corrosion resistance. In addition, operators are also listed for Type 1, 2, 3, 3R, 12 and 13, and meet global standards requirements.



22MM NEMA PILOT DEVICES

UNIQUE PRODUCT FEATURES



We Put The Metal On The Inside — Where It Counts!

1. c3controls Maintained Push Buttons contain a solid brass detent mechanism and are the best-engineered, most reliable heavy-duty Emergency Stop in the world. This rugged design, which is available with either polyester or aluminum clamp rings, ensures reliable operation in emergency applications, providing safe interruption of circuits, and much longer life when compared to any competitor's product.

2. Our Maintained Push Buttons and Toggle Switches feature a revolutionary U-Cup seal that is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions such as heat, dryness and sunlight. The U-Cup seal rides easily along the stroker and keeps water, oils, dust and other corrosive particles in the air away from the contact blocks. This U-cup seal also acts like a squeegee and forms a permanent watertight seal that meets Type 4/4X.

SOME OF OUR POPULAR CONFIGURATIONS:

2-POSITION PUSH-PULL MAINTAINED NON-ILLUMINATED OPERATORS WITH POLYESTER CLAMP RING (TYPE 4X)

CATALOG NUMBER	DESCRIPTION	LIST
22PPNC-XPMRD	Push-Pull Maintained Red Mushroom Cap w/1 Normally Closed Contact Block	\$64.00
22PP2NC-XPMRD	Push-Pull Maintained Red Mushroom Cap with a 2 Normally Closed Contact Block	\$75.00

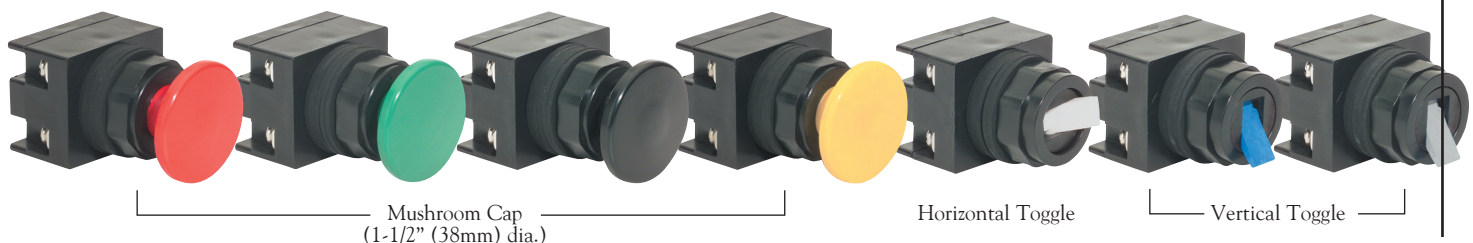
MAINTAINED TOGGLE SWITCH OPERATORS WITH POLYESTER CLAMP RING (TYPE 4X)

CATALOG NUMBER	DESCRIPTION	LIST
22TVBKNO	Black Vertical Toggle w/1 NO Contact Block	\$40.00
22TVRD2NC	Red Vertical Toggle with a 2 NC Contact Block	\$51.00

MECHANICAL INTERLOCKS
provide lockout operation to a second push button, selector switch or toggle operator. See page 370 for details.



AVAILABLE COLORS FOR MAINTAINED NON-ILLUMINATED PUSH BUTTONS AND TOGGLE SWITCHES



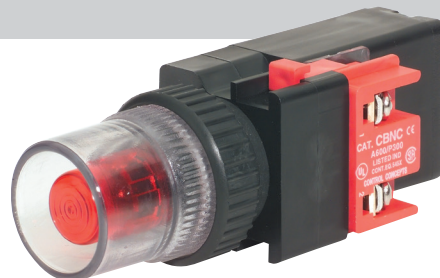
IT'S EASY TO BUILD YOUR OWN PUSH BUTTON

Simply pick the code number from each of the sections below and combine them to build your part number.

Momentary Push Buttons (Illuminated)

22IPB I II III IV - V VI VII - VIII

Example: To build one of our most popular Push Buttons, the part number would be **22IPB + II + III + IV + V + VI + VII + VIII** or **22IPBR120I-XIFCRD-NC**



I. OPERATOR TYPE

CODE	DESCRIPTION	LIST
22IPB	Illuminated Push Button	\$ 23.00

II. OPERATOR LIGHT UNIT BASE

CODE	DESCRIPTION	LIST
F	Full Voltage	\$ 49.00
T	Transformer (50/60 Hz)	\$ 66.00
R	Resistor	\$ 49.00

III. VOLTAGE BASED ON LIGHT UNIT BASE

CODE	DESCRIPTION
FULL VOLTAGE	
6	6V AC/DC
12	12V AC/DC
24	24V AC/DC
120	120V AC/DC
TRANSFORMER	
120	120V AC
240	240V AC
277	277V AC
480	480V AC
RESISTOR	
120	120V AC/DC
240	240V AC/DC
480	480V AC/DC

IV. LAMP TYPE/COLOR

CODE	DESCRIPTION	LIST
LED		
LA	Amber	\$ 18.00
LB	Blue	\$ 18.00
LG	Green	\$ 18.00
LR	Red	\$ 18.00
LW	White	\$ 18.00
INCANDESCENT		
I	Clear	—
F	Clear Flashing Bulb*	\$ 7.10
*NOTE: Incandescent flashing bulbs available for any 6V full voltage or transformer application.		
NEON†		
NG	Green	—
NR	Red	—
†NOTE: Only available in 22IPBR120, 22IPBR240 and 22IPBR480.		
NL	No Lamp	— \$ 1.80

V. CLAMP RING

CODE	DESCRIPTION	LIST
X	Polyester (Type 4X)	—
M	Aluminum (Type 4)	\$ 3.90

VI. LENS TYPE

CODE	DESCRIPTION	LIST
IFC	Flush/Guarded	\$ 10.00
IXC	Extended	\$ 10.00
IMC	Mushroom	\$ 23.00

VII. LENS COLOR

CODE	COLOR
AR	Amber
BE	Blue
CR	Clear
GN	Green
RD	Red
WE	White

VIII. CONTACT BLOCK CONFIGURATION

CODE	DESCRIPTION	LIST
NO	1 Normally Open Contact Block	\$ 13.00
NC	1 Normally Closed Contact Block	\$ 13.00
EM	1 Early Make Contact Block	\$ 17.00
DB	1 Delayed Break Contact Block	\$ 17.00
NO-NO	2 Normally Open Contact Blocks	\$ 26.00
NC-NC	2 Normally Closed Contact Blocks	\$ 26.00
NO-NC	1 Normally Open and 1 Normally Closed Contact Blocks	\$ 26.00

22mm Illuminated Push Buttons accept standard 30mm contact blocks. These standard contact blocks feature convenient snap-on assembly and are stackable up to four deep. They are also color coded for easy circuit identification to minimize wiring errors and speed the wiring process. Please refer to pages 199-200.

SEE PAGE 374 FOR LAMP
TECHNICAL DATA CHART.



LEGEND PLATES in almost any size & color are available for same day shipping. See pages 372-373 for complete selection.

DISCOUNT
SCHEDULE **E**

MIX AND MATCH ANY COLOR AND MOMENTARY ILLUMINATED PUSH BUTTON LENS

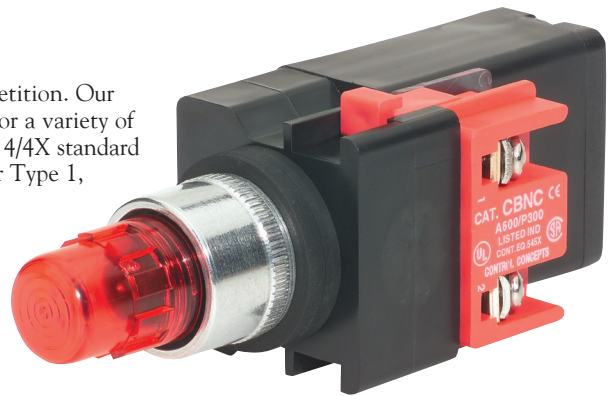


22MM NEMA MOMENTARY ILLUMINATED PUSH BUTTONS

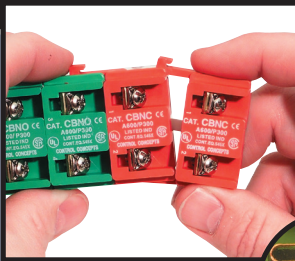
c3controls goes the extra step to make sure that our products outlast the competition. Our 22mm NEMA Momentary Illuminated Push Buttons are durable and flexible for a variety of uses. All c3controls 22mm NEMA operators are UL Listed and are rated Type 4/4X standard for watertight and corrosion resistance. In addition, operators are also listed for Type 1, 2, 3, 3R, 12 and 13, and meet global standards requirements.

Product features include:

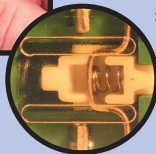
- Polyester construction for superior corrosion resistance, moisture rejection and electrical insulation.
- Polyester or polished aluminum clamp rings.
- Full voltage lights incorporate a unique insulated socket design to minimize accidental contact during lamp change.
- All lights use miniature bayonet base lamps to provide reliable lamp secureness.
- Available with Incandescent, Neon, or our LED lamps with leakage protection.
- #6 terminal screws with self-lifting captive wire clamps accommodate #22 through two #12 AWG wires (0.5 - 4mm²) per terminal.
- Operators conveniently mount in a round 7/8" (22.5mm) hole that is directly interchangeable with competitors units.



UNIQUE PRODUCT FEATURES



NOTE: Gold plated contacts are available on standard 30mm blocks for dry circuit applications. See pages 199-200 for details.

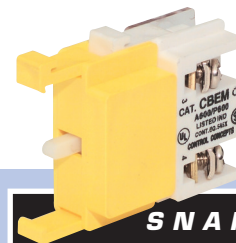


1. Vibration resistant snap-on assembly 30mm contact blocks simplify installation. See pages 199-200 for information on 30mm contact blocks.
2. Our revolutionary U-Cup seal is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions such as heat, dryness and sunlight. The U-Cup seal rides easily along the stroker and keeps water, oils, dust and other corrosive particles in the air away from the contact blocks. This U-cup seal also acts like a squeegee and forms a permanent watertight seal that meets Type 4/4X standards.

SOME OF OUR POPULAR CONFIGURATIONS:

MOMENTARY ILLUMINATED PUSH BUTTON OPERATORS WITH POLYESTER CLAMP RING (TYPE 4X)

	CAP COLOR	FLUSH/GUARDED LENS		EXTENDED LENS	
		CATALOG NUMBER	LIST	CATALOG NUMBER	LIST
Full Voltage	Amber	22IPBF120LA-XIFCAR-NO-NC	\$126.00	22IPBF120LA-XIXCAR-NO-NC	\$126.00
	Green	22IPBF120LG-XIFCGN-NO	\$113.00	22IPBF120LG-XIXCGN-NO	\$113.00
	Red	22IPBF120LR-XIFCRD-NC	\$113.00	22IPBF120LR-XIXCRD-NC	\$113.00
Resistor	Amber	22IPBR120I-XIFCAR-NO-NC	\$108.00	22IPBR120I-XIXCAR-NO-NC	\$108.00
	Green	22IPBR120I-XIFCGN-NO	\$ 95.00	22IPBR120I-XIXCGN-NO	\$ 95.00
	Red	22IPBR120I-XIFCRD-NC	\$ 95.00	22IPBR120I-XIXCRD-NC	\$ 95.00



**SNAP-ON
ALTERNATE
ACTION BLOCKS**
provide "push-on/push-off"
operation on our push
buttons. See page 212.

IT'S EASY TO BUILD YOUR OWN PILOT LIGHT

Simply pick the code number from each of the sections below and combine them to build your part number.

Pilot Lights

I
II
III
IV
PL
VI

Example: To build one of our most popular Pilot Lights, the part number would be **I + II + III + IV + PL + VI** or **22FVL120I-XPLGN**



I. PILOT LIGHT OPERATOR

CODE	DESCRIPTION	LIST
22FVL	Full Voltage	\$50.00
22TFL	Transformer (50/60 Hz)	\$64.00
22RL	Resistor	\$50.00
22RTL	Dual Input Remote Test	\$78.00

II. VOLTAGE BASED ON OPERATOR TYPE

CODE	DESCRIPTION
	FULL VOLTAGE
6	6V AC/DC
12	12V AC/DC
24	24V AC/DC
120	120V AC/DC
	TRANSFORMER
120	120V AC
240	240V AC
277	277V AC
480	480V AC
	RESISTOR
120	120V AC/DC
240	240V AC/DC
480	480V AC/DC
	DUAL INPUT REMOTE TEST
6	6V AC/DC
12	12V AC/DC
24	24V AC/DC
120	120V AC/DC (LED Only)

III. LAMP TYPE/COLOR

CODE	COLOR	LIST
	LED	
LA	Amber	\$18.00
LB	Blue	\$18.00
LG	Green	\$18.00
LR	Red	\$18.00
LW	White	\$18.00
	INCANDESCENT	
I	Clear	—
F	Clear Flashing Bulb*	\$ 7.10
	*NOTE: Incandescent flashing bulbs available for any 6V full voltage or transformer application.	
	NEON†	
NG	Green	—
NR	Red	—
	†NOTE: Only Available in 22FVL120, 22RL240 and 22RL480.	
NL	No Lamp	— \$ 1.80

IV. CLAMP RING

CODE	DESCRIPTION	LIST
X	Polyester (Type 4X)	—
M	Aluminum (Type 4)	\$ 3.90

V. LENS TYPE

CODE	DESCRIPTION	LIST
PL	Pilot Light Lens	\$ 7.00

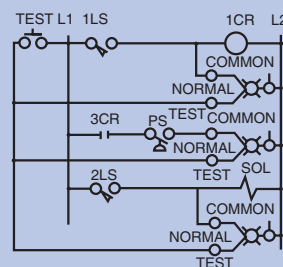
VI. LENS COLOR

CODE	COLOR
AR	Amber
BE	Blue
CR	Clear
GN	Green
RD	Red
WE	White

SEE PAGE 374 FOR LAMP TECHNICAL DATA CHART.

DUAL INPUT REMOTE TEST

Our unique Dual Input Remote light unit can be used as a pilot light while also permitting the testing of a number of lights from a single push button. A diode circuit isolates the test supply from the normal supply. The schematic shown represents a typical dual input application.



DISCOUNT
SCHEDULE **E**

SOME OF OUR POPULAR CONFIGURATIONS:

PILOT LIGHTS WITH POLYESTER CLAMP RING (TYPE 4X)

CATALOG NUMBER	DESCRIPTION	LIST
22FVL120I-XPLRD	Full Voltage 120V Incandescent w/Red Lens	\$57.00
22FVL120LG-XPLGN	Full Voltage 120V Green LED w/Green Lens	\$75.00
22FVL120LA-XPLAR	Full Voltage 120V Amber LED w/Amber Lens	\$75.00

AVAILABLE LENS COLORS FOR PILOT LIGHTS



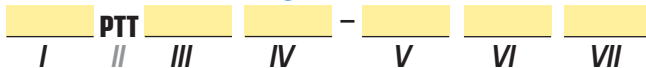
22MM NEMA PILOT LIGHTS

Our 22mm NEMA Pilot Lights and Illuminated Push-To-Test Pilot Lights, when utilized with our LED lamps, provide leakage protection, long-lasting life and high quality with tremendous resistance to shock and vibration. Our reflection technology and state-of-the-art LED lamps improve visibility from all angles. c3controls LED lamps last 100,000 hours — *that's 11.4 years!* Combine these LEDs with our full voltage, transformer or resistor packages for optimum durability. All c3controls 22mm NEMA operators are UL Listed and are rated Type 4/4X as standard for watertight and corrosion resistance. In addition, operators are also listed for Type 1, 2, 3, 3R, 12 and 13, and meet global standards requirements.

IT'S EASY TO BUILD YOUR OWN PILOT LIGHT

Simply pick the code number from each of the sections below and combine them to build your part number.

Push-To-Test Pilot Lights



Example: To build one of our most popular Pilot Lights, the part number would be **I + PTT + III + IV + V + VI + VII** or **22RPTT120I-XIFCGN**



I. PUSH-TO-TEST OPERATOR LIGHT UNIT BASE

CODE	DESCRIPTION	LIST
22F	Full Voltage	\$49.00
22T	Transformer (50/60 Hz)	\$66.00
22R	Resistor	\$49.00

II. OPERATOR TYPE

CODE	DESCRIPTION	LIST
PTT	Push-To-Test	\$19.00

III. VOLTAGE BASED ON OPERATOR LIGHT UNIT BASE

CODE	DESCRIPTION
FULL VOLTAGE	
6	6V AC/DC
12	12V AC/DC
24	24V AC/DC
120	120V AC/DC
TRANSFORMER	
120	120V AC
240	240V AC
480	480V AC
RESISTOR	
120	120V AC/DC
240	240V AC/DC
480	480V AC/DC

IV. LAMP TYPE/COLOR

CODE	COLOR	LIST
LED		
LA	Amber	\$18.00
LB	Blue	\$18.00
LG	Green	\$18.00
LR	Red	\$18.00
LW	White	\$18.00
INCANDESCENT		
I	Clear	—
F	Clear Flashing Bulb*	\$ 7.10
*NOTE: Incandescent flashing bulbs available for any 6V full voltage or transformer application.		
NEON†		
NG	Green	—
NR	Red	—
†NOTE: Only Available in 22FPTT120, 22RPTT240 and 22RPTT480.		
NL	No Lamp	— \$ 1.80

V. CLAMP RING

CODE	DESCRIPTION	LIST
X	Polyester (Type 4X)	—
M	Aluminum (Type 4)	\$ 3.90

VI. LENS TYPE

CODE	DESCRIPTION	LIST
IFC	Flush/Guarded Lens	\$10.00
IXC	Extended Lens	\$10.00

VII. LENS COLOR

CODE	COLOR
AR	Amber
BE	Blue
CR	Clear
GN	Green
RD	Red
WE	White

SEE PAGE 374 FOR LAMP TECHNICAL DATA CHART.

Our Push-To-Test Pilot Lights combine an illuminated push button with normally open and normally closed contact blocks factory wired for three-point wiring in standard push-to-test circuits.

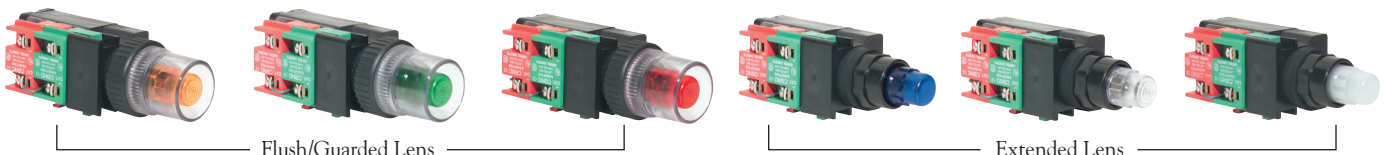
DISCOUNT
SCHEDULE **E**

SOME OF OUR POPULAR CONFIGURATIONS:

PUSH-TO-TEST PILOT LIGHTS W/POLYESTER CLAMP RING (TYPE 4X)

CATALOG NUMBER	DESCRIPTION	LIST
22FPTT120LG-XIFCGN	Full Voltage 120V w/LED Lamp & Green Flush/Guarded Lens	\$96.00
22TPTT120I-XIFCRD	Transformer 120V w/Incand. Lamp and Red Flush/Guarded Lens	\$96.00

MIX AND MATCH ANY COLOR AND PUSH-TO-TEST PILOT LIGHT LENS



Flush/Guarded Lens

Extended Lens

IT'S EASY TO BUILD YOUR OWN SELECTOR SWITCH

Simply pick the code number from each of the sections below and combine them to build your part number.

Selector Switches

I **II*** **III** **IV** **V** **VI**** **VII****

Example: To build one of our most popular Selector Switches, the part number would be **I + II + III + IV + V + VI + VII** or **22SS3AC-XHBK**

*NOTE: Our 22mm Non-Illuminated Selector Switches come with two integral contacts in the operator base and are ready for field wiring.

**NOTE: Up to three blocks with two circuits each may be added giving a total of eight contacts per operator.



I. OPERATOR FUNCTION

CODE	POSITION/FUNCTION	LIST
22SS2	2/Maintained	\$19.00
22SRL	2/Spring Return, R to L	\$25.00
22SS3	3/Maintained	\$19.00
22SAC	3/Spring Return, L & R to C	\$25.00
22SLC	3/Spring Return, L to C	\$25.00
22SRC	3/Spring Return, R to C	\$25.00

II. CIRCUIT DESIGNATION BASED ON OPERATOR FUNCTION

2-POSITION CONTACT BLOCK CIRCUIT DESIGNATION

HANDLE POSITION

CODE	LEFT	RIGHT	CONTACT BLOCK TYPE	LIST
G	X	O	22CBNC	\$13.00
H	O	X	22CBNO	\$13.00
GH	X	O	22CBNONC	\$23.00
	O	X		
GG	X	O	22CB2NC	\$23.00
	X	O		
HH	O	X	22CB2NO	\$23.00
	O	X		

3-POSITION CONTACT BLOCK CIRCUIT DESIGNATION

HANDLE POSITION

CODE	LEFT	CENTER	RIGHT	CONTACT BLOCK TYPE	LIST
AB	X	O	O	22CBNONC	\$23.00
	O	X	O		
AC	X	O	O	22CB2NO	\$23.00
	O	O	X		
AE	X	O	O	22CBNOEM	\$25.00
	X	O	X		
AF	X	O	O	22CBNODB	\$25.00
	X	X	O		
BC	O	X	O	22CBNCNO	\$23.00
	O	O	X		
BD	O	X	O	22CBDBNC	\$25.00
	O	X	X		
BF	O	X	O	22CBNCDB	\$25.00
	X	X	O		
CD	O	O	X	22CBNODB	\$25.00
	O	X	X		
CE	O	O	X	22CBNOEM	\$25.00
	X	O	X		
DE	O	X	X	22CBDBEM	\$25.00
	X	O	X		
DF	O	X	X	22CB2DB	\$25.00
	X	X	O		
EF	X	O	X	22CBDBEM	\$25.00
	X	X	O		

O = OPEN X = CLOSED

III. CLAMP RING

CODE	DESCRIPTION	LIST
X	Polyester (Type 4X)	—
M	Aluminum (Type 4)	\$ 3.90

IV. HANDLE TYPE

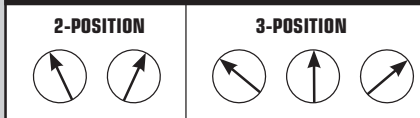
CODE	DESCRIPTION	LIST
H	Standard	\$ 9.50
L	Lever	\$ 9.50
G	Guarded*	\$15.00

*NOTE: Only available with a polyester clamp ring.

V. HANDLE/INSERT COLOR

CODE	HANDLE COLOR	INSERT COLOR
BK	Black	White
BE	Blue	White
GN	Green	White
GY	Grey	White
RD	Red	White
WE	White	Black
YW	Yellow	Black

HANDLE POSITIONS



DISCOUNT
SCHEDULE **E**

SOME OF OUR POPULAR CONFIGURATIONS:

2-POSITION SELECTOR SWITCH OPERATORS

CONTACT SYMBOL	HANDLE POSITION O=OPEN X=CLOSED		TYPE OF OPERATOR	MAINTAINED POSITION	
	LEFT	RIGHT		CATALOG #	LIST
1 NO 	O	X	STANDARD	22SS2H-XHBK	\$41.50
1 NC 	X	O	STANDARD	22SS2G-XHBK	\$41.50

3-POSITION SELECTOR SWITCH OPERATORS

CONTACT SYMBOL	HANDLE POSITION O=OPEN X=CLOSED			TYPE OF OPERATOR	MAINTAINED POSITION	
	LEFT	CENTER	RIGHT		CATALOG #	LIST
NO/NO 	X	O	O	STANDARD	22SS3AC-XHBK	\$51.50

VI. OPTIONS—ADD-ON CONTACT BLOCKS**2-POSITION CONTACT BLOCK CIRCUIT DESIGNATION****HANDLE POSITION**

CODE	LEFT	RIGHT	CONTACT BLOCK TYPE	LIST
G	X	O	22CBNC	\$13.00
H	O	X	22CBNO	\$13.00
GH	X	O	22CBNONC	\$23.00
	O	X		
GG	X	O	22CB2NC	\$23.00
	X	O		
HH	O	X	22CB2NO	\$23.00
	O	X		

3-POSITION CONTACT BLOCK CIRCUIT DESIGNATION**HANDLE POSITION**

CODE	LEFT	CENTER	RIGHT	CONTACT BLOCK TYPE	LIST
A	X	O	O	22CBNO	\$ 8.00
B	O	X	O	22CBNC	\$ 9.00
C	O	O	X	22CBNO	\$10.00
D	O	X	X	22CBDB	\$11.00
E	X	O	X	22CBEM	\$12.00
F	X	X	O	22CBDB	\$13.00
AB	X	O	O	22CBNONC	\$23.00
	O	X	O		
AC	X	O	O	22CB2NO	\$23.00
	O	O	X		
AE	X	O	O	22CBNOEM	\$25.00
	X	O	X		
AF	X	O	O	22CBNODB	\$25.00
	X	X	O		
BC	O	X	O	22CBNCNO	\$23.00
	O	O	X		
BD	O	X	O	22CBDBNC	\$25.00
	O	X	X		
BF	O	X	O	22CBNCDB	\$25.00
	X	X	O		
CD	O	O	X	22CBNODB	\$25.00
	O	X	X		
CE	O	O	X	22CBNOEM	\$25.00
	X	O	X		
DE	O	X	X	22CBDBEM	\$25.00
	X	O	X		
DF	O	X	X	22CB2DB	\$25.00
	X	X	O		
EF	X	O	X	22CBDBEM	\$25.00
	X	X	O		

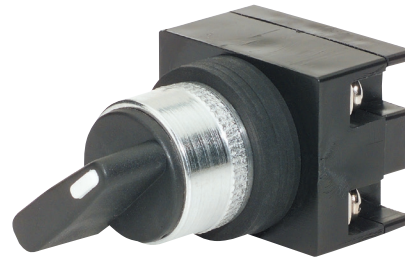
VII. OPTIONS—ADD-ON CONTACT BLOCKS

(USE CHART VI FROM ABOVE)

O = OPEN X = CLOSED

22MM NEMA Non-Illuminated Selector Switches

With our unique universal cam design, c3controls 22mm NEMA Selector Switches offer multiple functions in a single device eliminating the need to install separate devices to perform individual functions based on contact block configuration. All operators feature polyester housings, are UL Listed, and are rated Type 4/4X as standard for watertight and corrosion resistance. In addition, operators are also listed for Type 1, 2, 3, 3R, 12 and 13, and meet global standards requirements.



UNIQUE PRODUCT FEATURES

SAVE TIME & MONEY - WITH C3CONTROLS, ONE CAM DOES IT ALL!

1. One-Cam does it all vs. our competitors who need up to fifteen cams to perform the same function. This One-Cam design eliminates the need for multiple cam configurations and selector switch configuration nightmares, saving time, inventory, money, and ensuring 100% cam selection configuration accuracy.
2. Our revolutionary U-Cup seal is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions such as heat, dryness and sunlight.
3. All frictional parts are molded with an internal self-lubricant to provide outstanding wear and smooth cam operations without troublesome greases used by others that attracts dust and other particles in the area.



MIX AND MATCH ANY COLOR AND SELECTOR SWITCH HANDLE



IT'S EASY TO BUILD YOUR OWN SELECTOR SWITCH

Simply pick the code number from each of the sections below and combine them to build your part number.

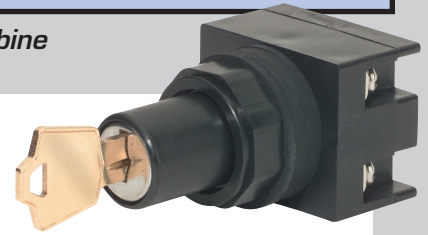
Keyed Selector Switches

I **II*** **III** **IV** - **V**** - **VI****

Example: To build one of our most popular Selector Switches, the part number would be **I + II + III + IV + V + VI** or **22K3ACKAX**

*NOTE: Our 22mm Keyed Selector Switches come with two integral contacts in the operator base and are ready for field wiring.

**NOTE: Up to three blocks with two circuits each may be added giving a total of eight contacts per operator.



I. OPERATOR FUNCTION

CODE	POSITION/FUNCTION	AVAILABLE KEY REMOVAL POSITION(S)	LIST
22K2	2/Maintained	KA, KL, KR	\$ 70.00
22KRL	2/Spring Return, R to L	KL	\$ 82.00
22K3	3/Maintained	KA, KL, KR, KC, KLR, KLC, KRC	\$ 70.00
22KAC	3/Spring Return, L & R to C	KC	\$ 81.00
22KLC	3/Spring Return, L to C	KR, KC	\$ 81.00
22KRC	3/Spring Return, R to C	KL, KC, KLC	\$ 81.00

II. CIRCUIT DESIGNATION BASED ON OPERATOR FUNCTION

2-POSITION CONTACT BLOCK CIRCUIT DESIGNATION

KEY POSITION

CODE	LEFT	RIGHT	CONTACT BLOCK TYPE	LIST
G	X	O	22CBNC	\$ 13.00
H	O	X	22CBNO	\$ 13.00
GH	X	O	22CBNONC	\$ 23.00
	O	X		
GG	X	O	22CB2NC	\$ 23.00
	X	O		
HH	O	X	22CB2NO	\$ 23.00
	O	X		

3-POSITION CONTACT BLOCK CIRCUIT DESIGNATION

KEY POSITION

CODE	LEFT	CENTER	RIGHT	CONTACT BLOCK TYPE	LIST
AB	X	O	O	22CBNONC	\$ 23.00
	O	X	O		
AC	X	O	O	22CB2NO	\$ 23.00
	O	O	X		
AE	X	O	O	22CBNOEM	\$ 25.00
	X	O	X		
AF	X	O	O	22CBNODB	\$ 25.00
	X	X	O		
BC	O	X	O	22CBNCNO	\$ 23.00
	O	O	X		
BD	O	X	O	22CBDBNC	\$ 25.00
	O	X	X		
BF	O	X	O	22CBNCDB	\$ 25.00
	X	X	O		
CD	O	O	X	22CBNODB	\$ 25.00
	O	X	X		
CE	O	O	X	22CBNOEM	\$ 25.00
	X	O	X		
DE	O	X	X	22CBDBEM	\$ 25.00
	X	O	X		
DF	O	X	X	22CB2DB	\$ 25.00
	X	X	O		
EF	X	O	X	22CBDBEM	\$ 25.00
	X	X	O		

O = OPEN X = CLOSED

III. KEY REMOVAL POSITION

CODE	REMOVAL POSITION
KA	All
KL	Left Only
KR	Right Only
KC	Center Only
KLR	Left & Right Only
KLC	Left & Center Only
KRC	Right & Center Only

IV. CLAMP RING

CODE	DESCRIPTION	LIST
X	Polyester (Type 4X)	—
M	Aluminum (Type 4)	\$ 3.90

KEY POSITIONS

2-POSITION



3-POSITION



DISCOUNT
SCHEDULE **E**

KEYED SWITCH FEATURES

Alternate Key Combinations: Up to 9 different key combinations (CC series) are available. To order locks keyed differently, consult factory or specify on order and increase the List price \$28.00 per operator.

Master Keys: A master key is available that works in all 9 CC series key combinations. To order, specify part number MS MK1250 (\$20.00 per set of two master keys).

Extra or Replacement Keys: Available for standard keyed selector switches only. To order, specify part number ES201 (\$4.00 per set of two keys). NOTE: Two keys come standard with each operator.

V. OPTIONS—ADD-ON CONTACT BLOCKS**2-POSITION CONTACT BLOCK CIRCUIT DESIGNATION****KEY POSITION**

CODE	LEFT	RIGHT	CONTACT BLOCK TYPE	LIST
G	X	O	22CBNC	\$ 13.00
H	O	X	22CBNO	\$ 13.00
GH	X	O	22CBNONC	\$ 23.00
	O	X		
GG	X	O	22CB2NC	\$ 23.00
	X	O		
HH	O	X	22CB2NO	\$ 23.00
	O	X		

3-POSITION CONTACT BLOCK CIRCUIT DESIGNATION**KEY POSITION**

CODE	LEFT	CENTER	RIGHT	CONTACT BLOCK TYPE	LIST
A	X	O	O	22CBNO	\$ 8.00
B	O	X	O	22CBNC	\$ 9.00
C	O	O	X	22CBNO	\$ 10.00
D	O	X	X	22CBDB	\$ 11.00
E	X	O	X	22CBEM	\$ 12.00
F	X	X	O	22CBDB	\$ 13.00
AB	X	O	O	22CBNONC	\$ 23.00
	O	X	O		
AC	X	O	O	22CB2NO	\$ 23.00
	O	O	X		
AE	X	O	O	22CBNOEM	\$ 25.00
	X	O	X		
AF	X	O	O	22CBNODB	\$ 25.00
	X	X	O		
BC	O	X	O	22CBNCNO	\$ 23.00
	O	O	X		
BD	O	X	O	22CBDBNC	\$ 25.00
	O	X	X		
BF	O	X	O	22CBNCDB	\$ 25.00
	X	X	O		
CD	O	O	X	22CBNODB	\$ 25.00
	O	X	X		
CE	O	O	X	22CBNOEM	\$ 25.00
	X	O	X		
DE	O	X	X	22CBDBEM	\$ 25.00
	X	O	X		
DF	O	X	X	22CB2DB	\$ 25.00
	X	X	O		
EF	X	O	X	22CBDBEM	\$ 25.00
	X	X	O		

VI. OPTIONS—ADD-ON CONTACT BLOCKS

(USE CHART V FROM ABOVE)

O = OPEN X = CLOSED**22MM NEMA KEYED SELECTOR SWITCHES**

With our unique universal cam design, c3controls 22mm NEMA Selector Switches offer multiple functions in a single device eliminating the need to install separate devices to perform individual functions based on contact block configuration. All operators feature polyester housings, are UL Listed, and are rated Type 4/4X as standard for watertight and corrosion resistance. In addition, operators are also listed for Type 1, 2, 3, 3R, 12 and 13, and meet global standards requirements. Keys are extra heavy brass for long life.

**UNIQUE PRODUCT FEATURES**

SAVE TIME & MONEY - WITH c3CONTROLS, ONE CAM DOES IT ALL!

1. One-Cam does it all vs. our competitors who need up to fifteen cams to perform the same function. This One-Cam design eliminates the need for multiple cam configurations and selector switch configuration nightmares, saving time, inventory, money, and ensuring 100% cam selection configuration accuracy.
2. Our revolutionary U-Cup seal is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions such as heat, dryness and sunlight.
3. All frictional parts are molded with an internal self-lubricant to provide outstanding wear and smooth cam operations without troublesome greases used by others that attracts dust and other particles in the area.



SOME OF OUR
POPULAR
CONFIGURATIONS:

2-POSITION KEYED SELECTOR SWITCHES W/POLYESTER CLAMP RING (TYPE 4X)

CONTACT SYMBOL 1 NO 	HANDLE POSITION O=OPEN X=CLOSED		KEY REMOVAL POSITION Left & Right	MAINTAINED POSITION		SPRING RETURN FROM RIGHT TO LEFT	
	LEFT	RIGHT		CATALOG #	LIST	CATALOG #	LIST
	O	X		22K2H-KAX	\$ 83.00	22KRLH-KAX	\$ 95.00

3-POSITION KEYED SELECTOR SWITCHES W/POLYESTER CLAMP RING (TYPE 4X)

CONTACT SYMBOL NO/NO 	HANDLE POSITION O=OPEN X=CLOSED			KEY REMOVAL POSITION Center	MAINTAINED POSITION		SPRING RETURN FROM ALL TO CENTER	
	LEFT	CENTER	RIGHT		CATALOG #	LIST	CATALOG #	LIST
	X	O	O		22K3AC-KCX	\$ 93.00	22KACAC-KCX	\$104.00
	O	O	X					

IT'S EASY TO BUILD YOUR OWN POTENTIOMETER

Simply pick the code number from each of the sections below and combine them to build your part number.

Potentiometer Operators

22POTO - -
I II III IV

Example: To build one of our most popular Potentiometer Operators, the part number would be **22POTO + II + III + IV** or **22POTO5K-TBW**



I. OPERATOR TYPE

CODE	DESCRIPTION	LIST
22POTO	Potentiometer	\$58.00

II. RESISTANCE

CODE	DESCRIPTION	LIST
(Blank)	Operator only	—
1k	1k Potentiometer	\$22.00
2.5k	2.5k Potentiometer	\$22.00
5k	5k Potentiometer	\$22.00
10k	10k Potentiometer	\$22.00

Special order values available—consult factory (not available for guaranteed same day shipping).

III. CLAMP RING

CODE	DESCRIPTION	LIST
(Blank)	Polyester (Type 4X)	—
PM	Aluminum (Type 4)	\$ 4.30

IV. TERMINAL BLOCK

CODE	DESCRIPTION	LIST
(Blank)	Operator only	—
TBW	Terminal Block installed and wired	\$16.00

Terminal block kit may be ordered separately (part number TBK, List price \$9.60) or installed and wired at the factory to the potentiometer operator.

DISCOUNT
SCHEDULE **E**

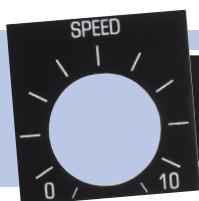
SEE PAGE 379 FOR WIRING DIAGRAM.

UNIQUE PRODUCT FEATURES

Our single-turn Potentiometer Operators utilize standard 2 watt potentiometers with 1/4" (6.4mm) bushing and 7/8" (22.5mm) long slotted shafts. 5/64" allen wrench is required for installation. All c3controls 22mm NEMA operators are UL Listed and are rated Type 4/4X standard for watertight and corrosion resistance. In addition, operators are also listed for Type 1, 2, 3, 3R, 12 and 13, and meet global standards requirements.

Product features include:

- Polyester construction for superior corrosion resistance, moisture rejection and electrical insulation.
- Polyester or polished aluminum clamp rings.
- Three point terminal block and hardware.
- Standard 2 watt potentiometer.
- All frictional parts are molded with an internal self-lubricant to provide outstanding wear without troublesome greases used by others that attracts dust and other particles in the area.
- Our revolutionary U-Cup seal is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions such as heat, dryness and sunlight.
- #6 terminal screws with self-lifting captive wire clamps accommodate #22 through two #12 AWG wires (0.5 - 4mm²) per terminal.
- Operators conveniently mount in a round 7/8" (22.5mm) hole that is directly interchangeable with competitors units.



LEGEND PLATES FOR POTENTIOMETER OPERATORS are available for same day shipping. See pages 372-373 for complete selection.

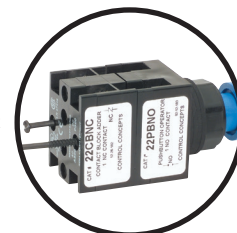
ADD-ON CONTACT BLOCKS

CODE	DESCRIPTION	LIST
22CBNO	1 Normally Open Contact Block	\$13.00
22CBNC	1 Normally Closed Contact Block	\$13.00
22CBDB	1 Delayed Break Contact Block	\$17.00
22CBEM	1 Early Make Contact Block	\$17.00
22CBNONC	Contact Block w/1 Normally Open & 1 Normally Closed	\$23.00
22CBNCNO	Contact Block w/1 Normally Closed & 1 Normally Open	\$23.00
22CB2NO	Contact Block w/2 Normally Open	\$23.00
22CB2NC	Contact Block w/2 Normally Closed	\$23.00
22CBDBNO	Contact Block w/1 Delayed Break & 1 Normally Open	\$25.00
22CBDBNC	Contact Block w/1 Delayed Break & 1 Normally Closed	\$25.00
22CBEMNO	Contact Block w/1 Early Make & 1 Normally Open	\$25.00
22CBEMNC	Contact Block w/1 Early Make & 1 Normally Closed	\$25.00
22CBDBEM	Contact Block w/1 Delayed Break & 1 Early Make	\$28.00
22CB2DB	Contact Block w/2 Delayed Break	\$28.00
22CB2EM	Contact Block w/2 Early Make	\$28.00



Our "Add-On" Contact Blocks can be added to basic operators to increase the number and type of contacts. Up to three blocks with two circuits each may be added giving a total of eight contacts per operator. Blocks simply screw on the back of the operator. NOTE: The first two contacts must be ordered in operator base.

With our "Add-On" Contact Blocks you can get up to 8 contacts per operator!



CONTACT BLOCK RATINGS:

A600 (7,200 VA Make and 720 VA Break), 600V AC Maximum
Maximum Continuous Thermal Current, Ith: 10A

P300 (138 VA Make and 138 VA Break), 250V DC Maximum
Maximum Continuous Thermal Current, Ith: 5A

MECHANICAL INTERLOCK



Our Mechanical Interlock is available in two styles and is designed for use between two adjacent operators mounted on 2" (50.8mm) centers. Use with Flush and Extended caps (see page 357) or with Push-Pull Maintained Caps or Toggle Switches (see page 359).

Mechanical Interlock Code "22MI" has a built-in mechanical advantage and may be used to interlock momentary push buttons and/or selector switch combinations.

Mechanical Interlock Code "22MIR" provides maximum leverage and is designed for use between maintained operators.



CODE	CONTACTS	FOR USE WITH	LIST
22MI	No Contact Blocks	Momentary Push Buttons or Selector Switches	\$23.00
22MIR	No Contact Blocks	Maintained Operators	\$23.00

EXTENDED CLAMP RINGS



We offer three types of 22mm extended clamp rings that guard against accidental operation. Use our Extended Clamp Ring (22XECR) with flush caps, our Aluminum Extended Clamp Ring (22MECR) with flush or extended caps for easier access to buttons, and our Clear Guarded Clamp Ring (22EECR) with illuminated push buttons.

CODE	DESCRIPTION	LIST
22XECR	Extended Clamp Ring	\$ 7.60
22MECR	Aluminum Extended Clamp Ring	\$16.00
22EECR	Clear Guarded Clamp Ring	\$12.00

CLAMP RING WRENCHES



22CRWM

22CRW

To simplify tightening and loosening of standard polyester octagonal clamp rings. Won't scratch your lens or panel. Our standard wrench (22CRW) fits all 22mm NEMA operators except mushroom sizes and lever selector switches. Our mushroom wrench (22CRWM) is for use with 22mm NEMA mushroom operators in tight spaces and should be purchased if mushroom caps and/or lever handles are commonly installed for 22X series octagonal polyester only.

CODE	DESCRIPTION	LIST
22CRW	Standard Clamp Ring Wrench	\$23.00
22CRWM	Mushroom Clamp Ring Wrench	\$25.00

THRUST & TRIM WASHERS



For mounting contact blocks in the horizontal position. NOTE: Trim washer is not necessary when using a legend plate.

CODE	DESCRIPTION	LIST
22TWH	Thrust Washer Horizontal	\$ 4.00

MOUNTING ADAPTER KITS



MAK-30/22

MAK-1/22

Our mounting adapter kits offer the ability to conveniently mount 22mm pilot devices in either a round 1-13/64" (30.5mm) hole or a 1" (25.4mm) hole.

CODE	DESCRIPTION	LIST
MAK-30/22	Converts 30mm Hole to a 22mm Hole Size. (Kit consists of a molded ring with a 1/16" (1.59mm) gasket).	\$15.00
MAK-1/22	Converts a 1" Hole to a 22mm Hole Size. (No gasket is required).	\$15.00

DISCOUNT
SCHEDULE

E

LED, INCANDESCENT & NEON REPLACEMENT LAMPS

c3controls offers a full range of lamp options in a miniature bayonet base for direct interchangeability which provides flexibility in choosing the best lamp for each installation application. Multiple voltage options in Incandescent, LED and Neon lamps are available. Please refer to the chart below to determine the appropriate replacement lamp based on your operator voltage. For lamp technical data, see page 374.

LED Lamps**LED**

To order LED Lamps, the part number would be **LED + II + III**



Our LED lamps feature built-in leakage protection.

I. LAMP TYPE

CODE	DESCRIPTION	LIST
LED	LED Lamp	\$28.00

II. VOLTAGE

CODE	DESCRIPTION
6	6V
12	12V
24	24V
130	130V

III. LAMP COLOR

CODE	COLOR
AR	Amber
BE	Blue
GN	Green
RD	Red
WE	White

PANEL GASKET

Our panel gaskets are constructed of Neoprene for long life and low compression set and provide a watertight seal. Panel gaskets are supplied to accommodate different panel thickness. In order to meet Type 4/4X requirements, at least one gasket must be used. NOTE: All 22mm NEMA c3controls products come standard with five panel gaskets.

CODE	DESCRIPTION	LIST
22PG2	1/16" (1.6mm) Gasket	\$ 0.20

LOCK OFF ATTACHMENT

Our lock off attachment permits padlocking most 22mm NEMA operators.

CODE	FITS	LIST
22LOAFC	Most 22mm Push Buttons and Selector Switches	\$50.00

LAMP REMOVAL TOOL

Used to facilitate the removal of lamps particularly in illuminated push buttons and push-to-test operators.

CODE	DESCRIPTION	LIST
LRT	Lamp Removal Tool	\$ 8.00

Incandescent Lamps

CODE	VOLTAGE	LIST
FVB6	6V	\$ 4.00
FVB12	12V	\$ 4.00
FVB24	24V	\$ 4.00
FVB55	55V	\$ 8.00
FVB120	120V	\$ 8.00
FVB6F	6V Flashing*	\$12.00

*NOTE: There may be a 5-15 second delay before flashing begins.

Neon Lamps

CODE	VOLTAGE	COLOR	LIST
FVB120NG	120V	Green	\$ 9.00
FVB120NR	120V	Red	\$ 9.00

HOLE PLUGS

Use to close and seal unused 7/8" (22.5mm) panel holes. Manufactured with integral "O" ring seal molded on both sides to provide Type 4X rating.

CODE	COLOR	LIST
HP22BK	Black	\$11.00
HP22GY	Grey	\$11.00
HP22YW	Yellow	\$11.00

22MM NEMA REPLACEMENT LAMP REFERENCE CHART

(FOR REFERENCE ONLY - USE CHARTS ABOVE TO ORDER)

OPERATOR CODE	OPERATOR VOLTAGE	LED (ALL COLORS)	INCANDESCENT	NEON
22FVL6	Full Voltage 6V AC/DC	LED6	FVB6 or FVB6F	—
22FVL12	Full Voltage 12V AC/DC	LED12	FVB12	—
22FVL24	Full Voltage 24V AC/DC	LED24	FVB24	—
22FVL120	Full Voltage 120V AC/DC	LED130	FVB120	FVB120NG or FVB120NR
22TFL120	Transformer 120V AC	LED6	FVB6 or FVB6F	—
22TFL240	Transformer 240V AC	LED6	FVB6 or FVB6F	—
22TFL277	Transformer 277V AC	LED6	FVB6 or FVB6F	—
22TFL480	Transformer 480V AC	LED6	FVB6 or FVB6F	—
22RL120L	Resistor 120V AC/DC*	LED24	—	—
22RL120I	Resistor 120V AC/DC*	—	FVB55	—
22RL240I	Resistor 240V AC/DC*	LED24	—	—
22RL240I	Resistor 240V AC/DC*	—	FVB120	—
22RL240N	Resistor 240V AC/DC*	—	—	FVB120NG or FVB120NR
22RL480N	Resistor 480V AC/DC*	—	—	FVB120NG or FVB120NR
22RTL6	Dual Input 6V AC/DC	LED6	FVB6	—
22RTL12	Dual Input 12V AC/DC	LED12	FVB12	—
22RTL24	Dual Input 24V AC/DC	LED24	FVB24	—
22RTL120	Dual Input 120V AC/DC	LED130	—	—

*NOTE: Lamps are unique to Resistor Light Units. Refer to side of light unit for correct replacement lamp part number.

DISCOUNT
SCHEDULE**E**

IT'S EASY TO BUILD YOUR OWN LEGEND PLATE

Simply pick the code number from each of the sections below and combine them to build your part number.

Legend Plates



Legend plates feature 2 lines of text with approximately 16 characters per line. Uppercase is standard unless specified. The Potentiometer legend plate comes standard with a scale and one or two lines of text, see chart D below.

I. LEGEND PLATE TYPE

CODE	DESCRIPTION	LIST
22LP	Standard 1-3/4" h x 1-3/4" w	\$ 4.00
22LPN	Narrow 1-3/4" h x 1-1/2" w	\$ 4.00
22LPS	Short 1-1/2" h x 1-3/4" w*	\$ 4.00
22LPT	Tall 2" h x 1-3/4" w	\$ 5.00
22LPJ	Jumbo 2" h x 2" w	\$ 5.00
22LPR	Standard Round 2-13/32" Dia.	\$ 9.00
22LPRM	Medium Round 2-3/4" Dia.	\$11.00
22LPRJ	Jumbo Round 3-3/4" Dia.	\$12.00

*NOTE: The short legend plate (22LPS) features 1 line of text with approximately 16 characters.

II. FACE AND LETTER COLOR

CODE	FACE COLOR	LETTER COLOR
AL	Aluminum	Black
(Blank)	Black	White
BE	Blue	White
GN	Green	White
RD	Red	White
WE	White	Black
YW	Yellow	Black

III. LEGEND DESIGNATION

A. PUSH BUTTONS AND LIGHTS

CODE	DESCRIPTION
00	(Blank)
01	AUTO
02	CLOSE
31	CYCLE START
100	CYCLE STOP
03	DOWN
102	EMERGENCY
04	EMERGENCY STOP
06	FAST
101	FAULT
07	FORWARD
08	HAND
32	HIGH
33	IN
09	INCH
10	JOG
38	JOG FORWARD
39	JOG REVERSE
34	LOW
35	LOWER
11	MANUAL
26	MOTOR RUN
12	OFF
13	ON
14	OPEN
36	OUT
27	OVERLOAD
15	POWER OFF
16	POWER ON
30	PUSH TO RESET
17	PUSH TO TEST
37	RAISE
109	READY
18	RESET
19	REVERSE
20	RUN
21	SLOW
22	START
23	STOP
24	TEST
29	TRIP
25	UP

B. 2-POSITION SELECTOR

CODE	LEGEND LEFT	LEGEND RIGHT
00	(Blank)	(Blank)
50	AUTO	HAND
68	AUTO	MANUAL
51	DOWN	UP
63	FAST	SLOW
52	FWD	REV
53	HAND	AUTO
73	HIGH	LOW
54	INCH	RUN
75	LEFT	RIGHT
70	LOCAL	REMOTE
55	MANUAL	AUTO
56	OFF	ON
57	ON	OFF
58	OPEN	CLOSE
65	PULL START	PUSH STOP
66	PUSH OFF	PULL ON
64	PUSH ON	PUSH OFF
67	PUSH TO STOP	PULL TO START
71	RAISE	LOWER
59	REV	FWD
60	RUN	JOG
69	SLOW	FAST
61	START	STOP
62	STOP	START
74	SUMMER	WINTER
72	UP	DOWN

NOT FINDING WHAT YOU NEED IN A STANDARD PLATE?

We offer Special and Custom Engraving up to 12" x 24" (304.8mm x 609.6mm). Consult factory or see page 373 for details. While our standard legend plates are available for same day shipping, our special and custom legend plates are not.

DISCOUNT
SCHEDULE

E

C. 3-POSITION SELECTOR

CODE	LEGEND LEFT	LEGEND CENTER	LEGEND RIGHT
00	(Blank)	(Blank)	(Blank)
108	A	O	H
92	AUTO	OFF	HAND
93	AUTO	MAN	OFF
80	DOWN	OFF	UP
81	FWD	AUTO	REV
82	FWD	OFF	REV
107	H	O	A
83	HAND	OFF	AUTO
94	HIGH	OFF	LOW
99	JOG	OFF	AUTO
90	LOCAL	OFF	REMOTE
84	MANUAL	OFF	AUTO
89	OFF	RUN	START
85	OFF	START	RUN
86	OFF	1	2
95	OPEN	OFF	CLOSE
91	RAISE	OFF	LOWER
96	SLOW	OFF	FAST
97	SUMMER	OFF	WINTER
98	UP	OFF	DOWN
87	1	OFF	2
88	1	2	3

D. POTENTIOMETER

CODE	DESCRIPTION
40	Blank Legend 0 - 10
41	"SPEED" 0 - 10
43	Blank Legend 0 - 100
44	"SPEED" 0 - 100

POPULAR CONFIGURATIONS:

LEGEND PLATES

CATALOG NO.	DESIGNATION	LIST
22LPRYW-04	EMERGENCY STOP	\$ 9.00
22LPT-83	HAND OFF AUTO	\$ 5.00
22LP-41	SPEED 0 - 10	\$ 4.00

IT'S EASY TO BUILD YOUR OWN LEGEND PLATE

Simply pick the code number from each of the sections below and combine them to build your part number.

Special Legend Plates

I. **LEGEND PLATE TYPE**
/ // **SP**
|||

All legend plates are a 2-ply laminated plastic, laser engraved for a permanent and quality appearance. Uppercase is standard unless specified.



I. LEGEND PLATE TYPE		
CODE	DESCRIPTION	LIST
22LP	Standard 1-3/4" h x 1-3/4" w	\$ 4.00
22LPN	Narrow 1-3/4" h x 1-1/2" w	\$ 4.00
22LPS	Short 1-1/2" h x 1-3/4" w*	\$ 4.00
22LPT	Tall 2" h x 1-3/4" w	\$ 5.00
22LPJ	Jumbo 2" h x 2" w	\$ 5.00
22LPR	Standard Round 2-13/32" Dia.	\$ 9.00
22LPRM	Medium Round 2-3/4" Dia.	\$11.00
22LPRJ	Jumbo Round 3-3/4" Dia.	\$12.00

Legend plates feature 2 lines of text with approximately 16 characters per line.

*The short legend plate (22LPS) features 1 line of text with 16 characters.

DISCOUNT
SCHEDULE **E**

II. FACE AND LETTER COLOR		
CODE	FACE COLOR	LETTER COLOR
AL	Aluminum	Black
(Blank)	Black	White
BE	Blue	White
GN	Green	White
RD	Red	White
WE	White	Black
YW	Yellow	Black

III. LEGEND DESIGNATION		
CODE	DESCRIPTION	LIST
SP	Special Legend	\$14.00

NOTE: \$6.00 each when ordering 3 or more of the same exact legend plate.

Upon receipt of your order, legend plates will be set-up as specified and a proof will be sent to you prior to production to ensure accuracy.

To order, submit your drawing to:

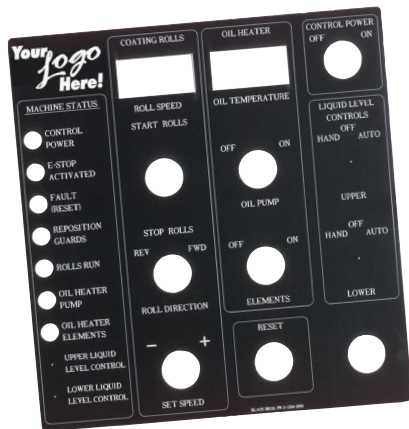
Mail: c3controls
Attn: Customer First
PO Box 496
Beaver, PA 15009

Fax: 724.775.5283

Email: legendplates@c3controls.com

To help simplify your order process, templates are available by calling our factory at 724.775.7926 or reference one of the drawings shown on page 381.

Special legend plates are not available for same day shipping.



(Sample custom plate)

CUSTOM LEGEND PLATES

- **Add your Corporate Logo!** Send us your corporate logo electronically to promote your company image in a clean professional legend plate.
- Available in 2-ply 12" x 24" (304.8mm x 609.6mm) sheets of laminated plastic for custom laser engraving.
- To order, specify part number 22LP-CP.
- Initial Set-Up Fee Per Legend Plate: \$50/hour (minimum fee \$50.00).
- \$2.00/Square Inch (minimum \$18.00).
- Design services available. Consult factory for details and hourly rate.
- Custom legend plates are not available for same-day shipping.

To order, submit your drawing to:

Mail: c3controls
Attn: Customer First
PO Box 496
Beaver, PA 15009

Fax: 724.775.5283

Email: legendplates@c3controls.com

22MM NEMA PILOT DEVICES

ELECTRICAL RATINGS

Lamp	Industry Number	Rated Volts	Lumens (MSCD)	Design Life (Hrs.)	Current Draw (mA)	Lamp Type	Shock & Vibration	Leakage Protection
FVB6	1866	6.3V	0.65	5,000	250	Incandescent	Very Good	N/A
FVB12	756	14V	0.31	15,000	80	Incandescent	Good	N/A
FVB24	757	28V	0.62	7,500	80	Incandescent	Good	N/A
FVB55	1835	55V	1.1	5,000	50	Incandescent	Good	N/A
FVB120	**	130V	0.36	10,000	20	Incandescent	Good	N/A
LED6	**	6V	Varies w/ Color 2000 mcd Typical	100,000	50	LED	Excellent	14 mA
LED12	**	12V		100,000	<20	LED	Excellent	4 mA
LED24	**	24V		100,000	<20	LED	Excellent	4 mA
LED130	**	130V		100,000	<10	LED	Excellent	2 mA
FVB120NG	—	95-135V	Typical (Glow)	25,000	<5	Neon/Green	Very Good	N/A
FVB120NR	—	95-135V	Typical (Glow)	25,000	<5	Neon/Red	Very Good	N/A

Transformer Lights (Burden) 2VA

** Designates a lamp design optimized for c3controls Illuminated Devices. See LED replacement lamps on page 371.

DIELECTRIC STRENGTH (MECHANICAL CONTACTS)

2200V for 1 Minute

STANDARD CONTACTS

	Utilization Category			Make Rating	Break Rating	Ith-Thermal Current
		IEC	UL			
	AC	AC-15	A600	7200VA	720VA	10A
	DC	DC-13	P300	138VA	138VA	5A

NOTE: For AC voltage below 72VAC the maximum allowed switching current is 10A = Ith

For DC voltages below 28VDC the maximum allowed switching current is 5A = Ith

	UNITS	
ENVIRONMENTAL RATINGS		
Operators		Rated and Certified for use in Type 1, 2, 3, 3R, 4/4X, 12, & 13 and IP65
Operating Temperature	°F / °C	-40 to +131 / -40 to +55
Storage Temperature	°F / °C	-40 to +185 / -40 to +85

NOTE: Operating environments below freezing temperatures are assumed to be absent of freezing liquids or pollutants.

TERMINAL & WIRING CONSIDERATION

AWG Conductor		22-12 CU (Copper only - Solid & Stranded) [.5 ~ 4mm ²] One or two wires permitted per termination
Recommended Torque	Lb-in. [Nm]	7 (+3.0/-0.0) [.8]

CONSTRUCTION

OPERATING FORCES

PUSH BUTTONS (1 CONTACT/2 CONTACT)		
Momentary	lbs. [N]	3.5/4.0 [15.5/17.8]
Illuminated	lbs. [N]	4.0/5.0 [17.8/22.0]
Maintained (1NC)	lbs. [N]	8.5 [37.8]
SELECTOR SWITCHES (2 CONTACTS)		
Maintained	in-lbs. [Nm]	3.5 [.4]
Momentary	in-lbs. [Nm]	4.5 [.51]
Key Operated Maintained	in-lbs. [Nm]	3.5 [.4]
Key Operated Momentary	in-lbs. [Nm]	4.5 [.51]
POTENTIOMETER		
2 Watt "J" Series	in-oz. [Nm]	3-12 [.11 Max.] (300° Rotation)
CONTACT ADD-A-BLOCK (SINGLE POLE)	lbs. [N]	.5/pole [2.2]
INDICATING LIGHTS		Refer to the appropriate Lamp Data
MECHANICAL ENDURANCE		
PUSH BUTTONS		
Momentary	Ops.	5,000,000
Maintained	Ops.	1,000,000
SELECTOR SWITCHES	Ops.	500,000
ALL OTHER DEVICES	Ops.	250,000
CONTACT BLOCKS	Ops.	5,000,000
INDICATING LIGHTS	Ops.	Refer to the appropriate Lamp Data

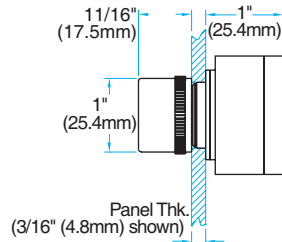
22MM NEMA PILOT DEVICES

	UNITS	
MATERIALS		
Operator Housings		Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Operator Caps and Handles - Non-Illuminated (Glass Reinforced Grades)		Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Mounting Rings and Nuts		Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Thrust Washer		Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Trim Washer		Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Pilot Light Lens		High Impact Polycarbonate (UV Stabilized for outdoor use)
Transparent Push Button and Mushroom Caps		High Impact Polycarbonate (UV Stabilized for outdoor use)
Certain CAM and Bearing Parts		Custom Polymers: Teflon, Silicon and Moly-Disulfide impregnated for improved wearability
Rubber Boots		Custom Polymers: Thermoplastic Neoprene
Seals		Neoprene Gaskets
		Thermoplastic - Molded Neoprene and Alloy Derivatives
		BUNA N - Rubber - Teflon Coated
		Thermoplastic - Elastomer Molded Seals
Push Pull Bushings		Brass (plated and un-plated)
Detents for Maintained Devices		Brass (plated and un-plated)
Springs		Stainless Steel throughout
Optional Mounting Nut		Aluminum
ROHS COMPLIANCE		For RoHS compliance documentation by product, refer to www.c3controls.com

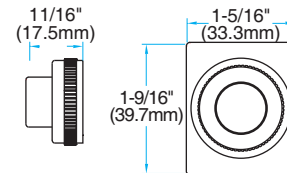
MOMENTARY NON-ILLUMINATED PUSH BUTTONS

Fully-assembled operators come standard with five 1/16" (1.5mm) gaskets.
See page 381 for mounting gasket specifications.

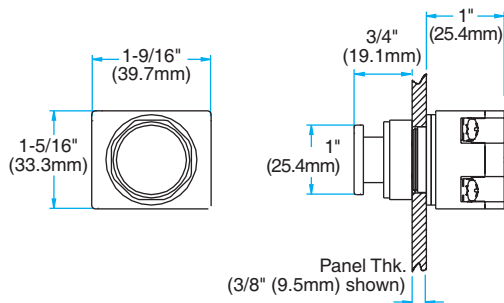
**MOMENTARY NON-ILLUMINATED OPERATOR
(SHOWN WITH FLUSH CAP)**



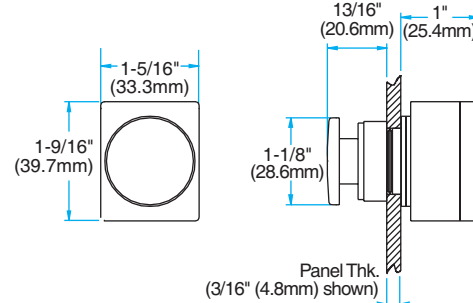
MOMENTARY EXTENDED CAP



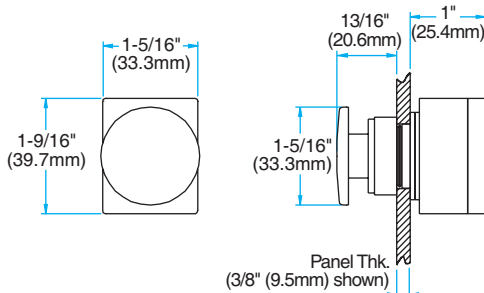
**MOMENTARY NON-ILLUMINATED OPERATOR
(SHOWN WITH 1" (25.4mm) MUSHROOM CAP)**



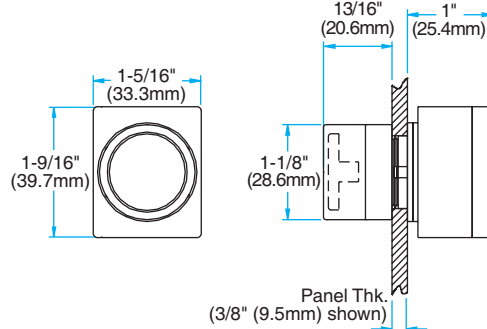
**MOMENTARY NON-ILLUMINATED OPERATOR
(SHOWN WITH 1-5/32" (27mm) MUSHROOM CAP)**



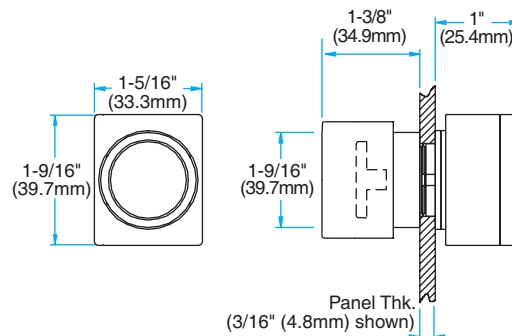
**MOMENTARY NON-ILLUMINATED OPERATOR
(SHOWN WITH 1-1/3" (33.8mm) JUMBO MUSHROOM CAP)**



**MOMENTARY NON-ILLUMINATED OPERATOR
(SHOWN WITH 1" (25.4mm) SHROUDED MUSHROOM CAP)**



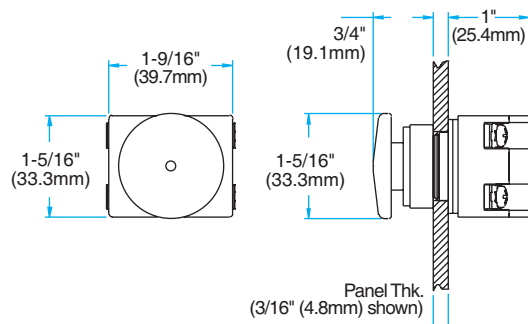
**MOMENTARY NON-ILLUMINATED OPERATOR
(SHOWN WITH 1-5/32" (27mm) SHROUDED MUSHROOM CAP)**



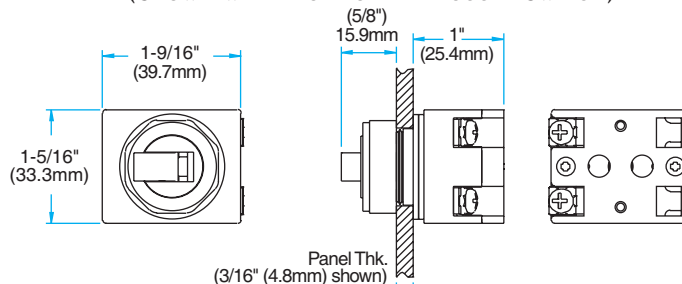
MAINTAINED NON-ILLUMINATED PUSH BUTTONS

Fully-assembled operators come standard with five 1/16" (1.5mm) gaskets.
See page 381 for mounting gasket specifications.

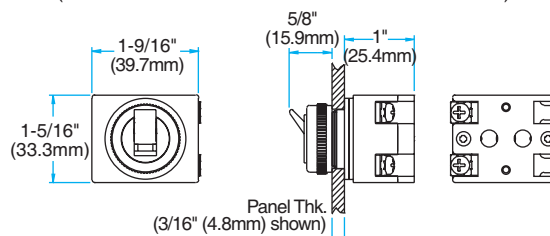
2-POSITION PUSH-PULL MAINTAINED NON-ILLUMINATED OPERATOR (SHOWN WITH 1-1/2" (38mm) MUSHROOM CAP)



MAINTAINED NON-ILLUMINATED OPERATOR (SHOWN WITH HORIZONTAL TOGGLE SWITCH)



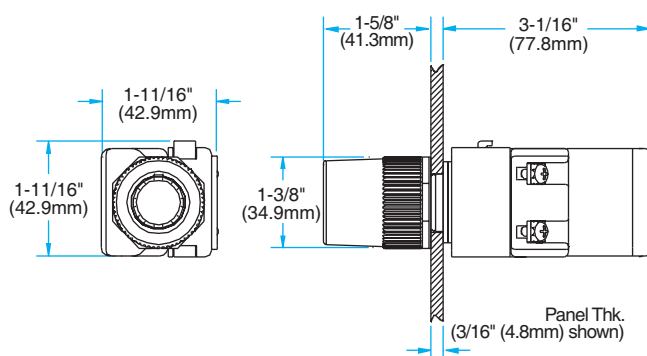
MAINTAINED NON-ILLUMINATED OPERATOR (SHOWN WITH VERTICAL TOGGLE SWITCH)



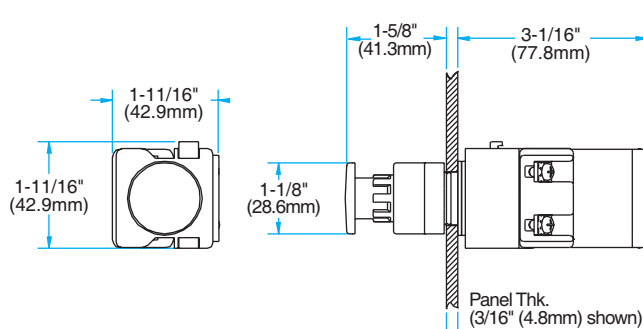
MOMENTARY ILLUMINATED PUSH BUTTONS

Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets.
See page 381 for mounting gasket specifications.

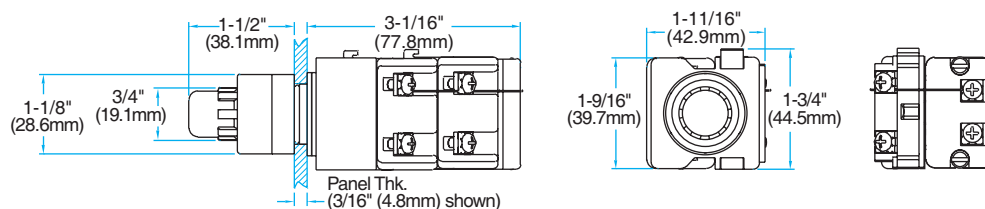
ILLUMINATED FULL VOLTAGE, TRANSFORMER AND RESISTOR OPERATORS (SHOWN WITH IFC)



ILLUMINATED FULL VOLTAGE, TRANSFORMER AND RESISTOR OPERATORS (SHOWN WITH IMC)



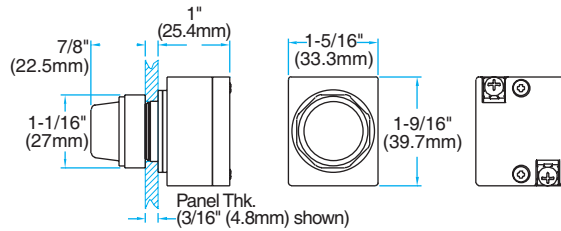
ILLUMINATED FULL VOLTAGE, TRANSFORMER AND RESISTOR OPERATORS (SHOWN WITH IXC)



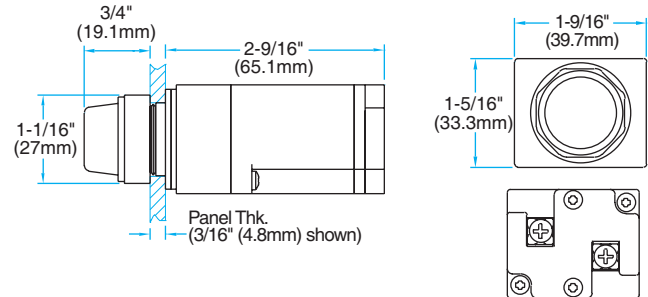
PILOT LIGHTS

Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets.
See page 381 for mounting gasket specifications.

FULL VOLTAGE AND DUAL INPUT PILOT LIGHT OPERATORS (SHOWN WITH PL)



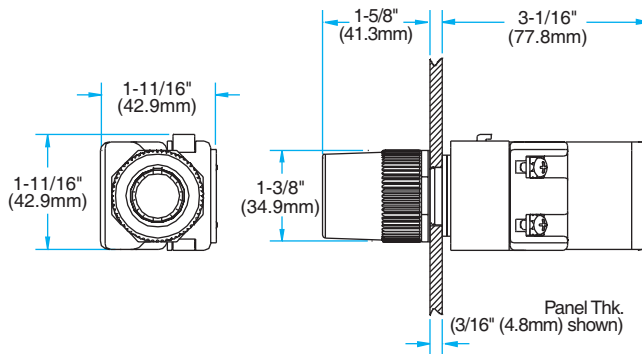
TRANSFORMER AND RESISTOR PILOT LIGHT OPERATORS (SHOWN WITH PL)



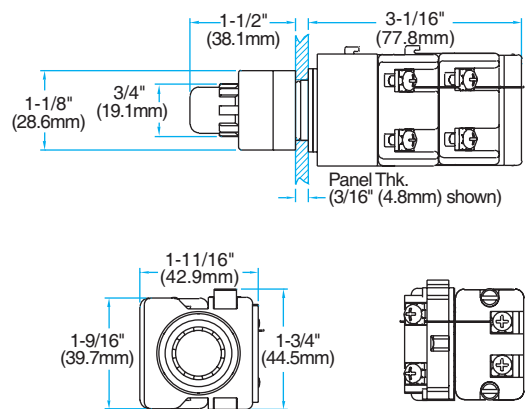
PUSH-TO-TEST PILOT LIGHTS

Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets.
See page 381 for mounting gasket specifications.

FULL VOLTAGE, TRANSFORMER AND RESISTOR PUSH-TO-TEST OPERATORS (SHOWN WITH IFC)



FULL VOLTAGE, TRANSFORMER AND RESISTOR PUSH-TO-TEST OPERATORS (SHOWN WITH IXC)

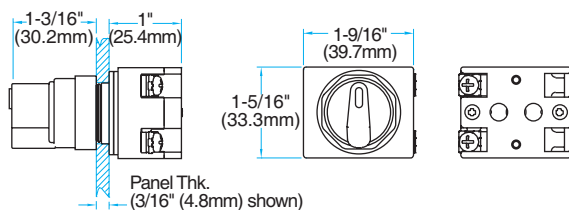


VISIT WWW.C3CONTROLS.COM
TO DOWNLOAD CAD DRAWINGS

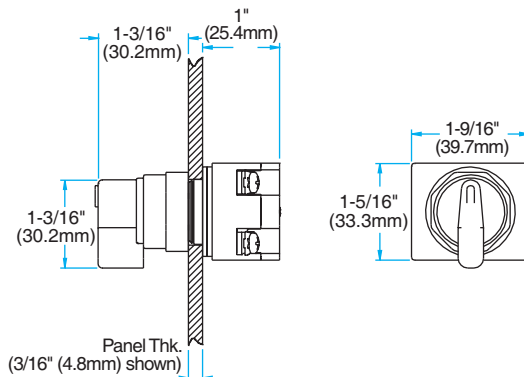
SELECTOR SWITCHES

Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets.
See page 381 for mounting gasket specifications.

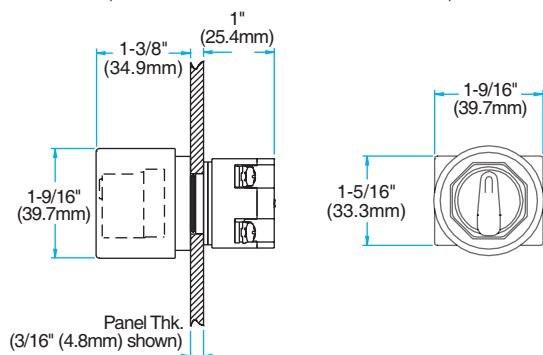
SELECTOR SWITCH OPERATOR
(SHOWN WITH STANDARD HANDLE)



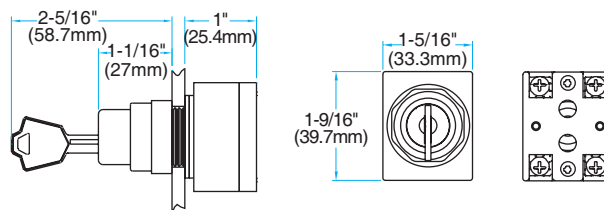
SELECTOR SWITCH OPERATOR
(SHOWN WITH LEVER HANDLE)



SELECTOR SWITCH OPERATOR
(SHOWN WITH GUARDED HANDLE)



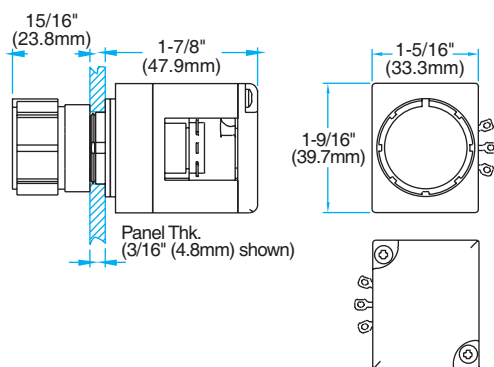
KEYED SELECTOR SWITCH OPERATOR



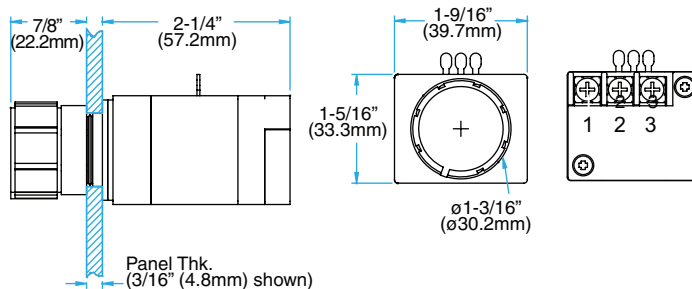
POTENTIOMETER WITH & WITHOUT TERMINAL BLOCK

Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets.
See page 381 for mounting gasket specifications.

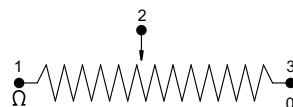
POTENTIOMETER OPERATOR
(SHOWN WITHOUT TERMINAL BLOCK)



POTENTIOMETER OPERATOR
(SHOWN WITH TERMINAL BLOCK)



WIRING DIAGRAM



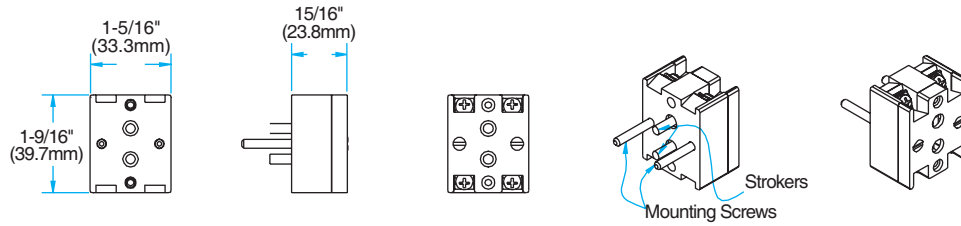
Measuring Between Terminals:

1 & 2 Decreasing
Resistance (↓ Ω)

2 & 3 Increasing
Resistance (↑ Ω)

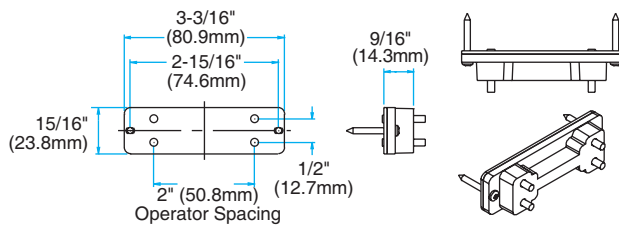
2 is the common

CONTACT BLOCK

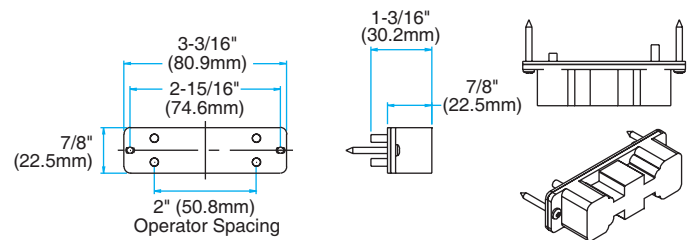


MECHANICAL INTERLOCK

22MI

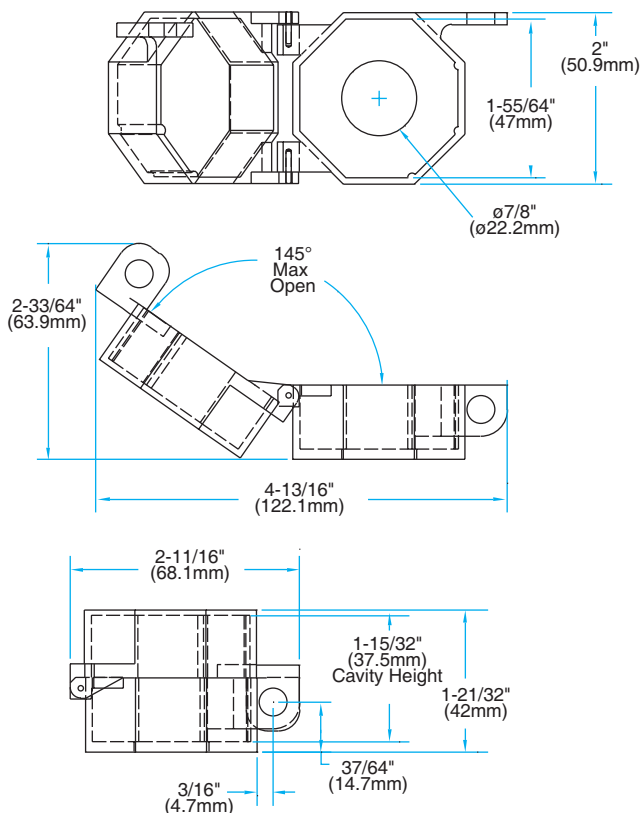


22MIR



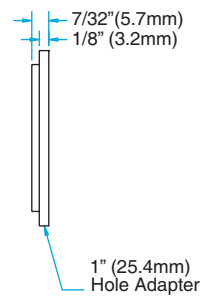
LOCK-OFF ATTACHMENT

22LOAFC



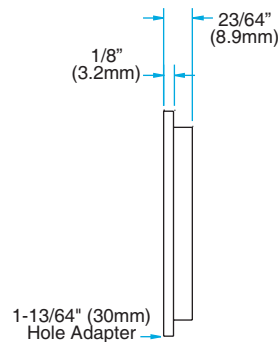
MOUNTING ADAPTERS

MAK-1/22



- Mounting Adapter for use with all 22mm operators.
- Maximum enclosure thickness 3/64" (1.3mm).
- No gasket is required.

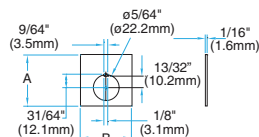
MAK-30/22



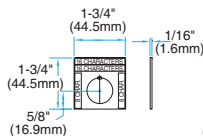
- Mounting Adapter for use with all 22mm operators.
- Maximum enclosure thickness 1/64" (3.8mm).
- Mounting Adapter must be used with one 1/16" (1.6mm) gasket to ensure a watertight seal.

LEGEND PLATES

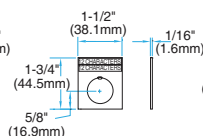
STANDARD LEGEND PLATE
WITH BREAK-AWAY POSITIONING
FOR OPTIONAL THRUST
WASHER ACCESSORY



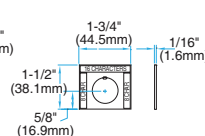
**22LP-SP
STANDARD**



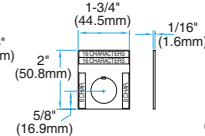
**22LPN-SP
NARROW**



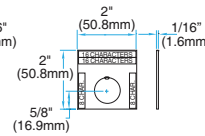
**22LPS-SP
SHORT**



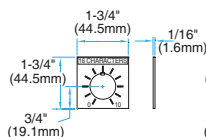
**22LPT-SP
TALL**



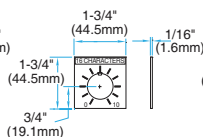
**22LPJ-SP
JUMBO**



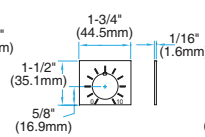
**22LP-40-SP
POT**



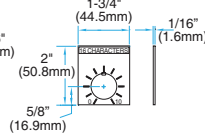
**22LP-43-SP
POT**



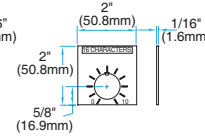
**22LPS-40-SP
SHORT**



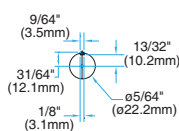
**22LPT-40-SP
TALL**



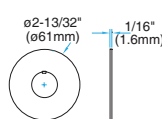
**22LPJ-40-SP
JUMBO**



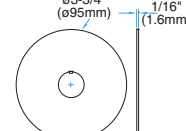
**22LPR-SP
STANDARD ROUND**



**22LPRM-SP
MEDIUM ROUND**

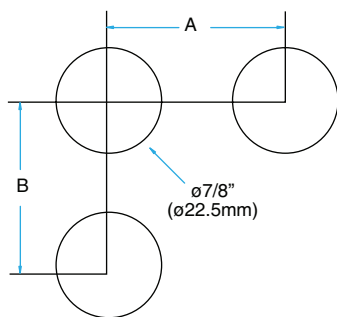


**22LPRJ-SP
JUMBO ROUND**



MOUNTING HOLE PATTERN

MOUNTING HOLE PATTERN		
SPACING	A	B
Minimum	1-3/4" (44.5mm)	1-3/4" (44.5mm)
Standard	2" (50.8mm)	2" (50.8mm)



MOUNTING GASKETS

MOUNTING GASKETS	
PANEL THICKNESS IN DECIMALS	# OF 1/16" (1.6mm) GASKETS NEEDED
.040 – .060	5
.061 – .115	4
.116 – .170	3
.171 – .220	2

NOTE: Remove one 1/16" (1.6mm) gasket when using a legend plate.