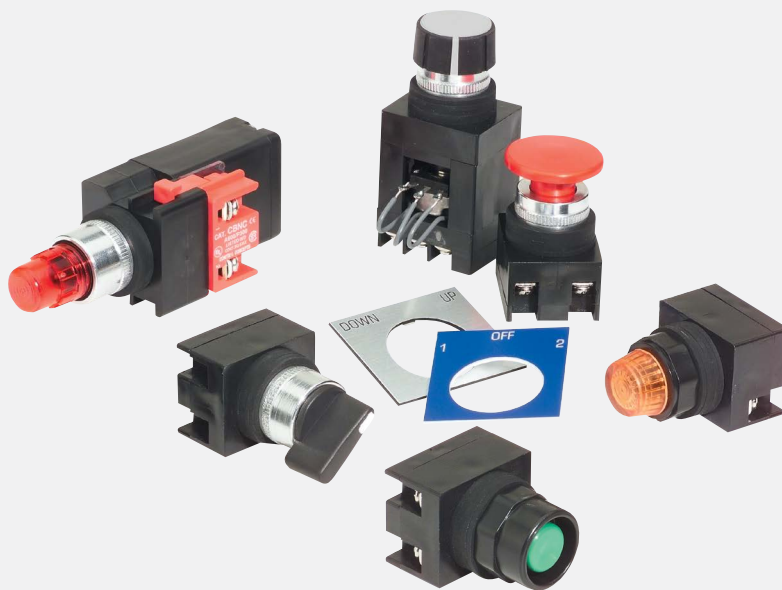


22MM NEMA PILOT DEVICES



c3controls' durable line of 22mm NEMA devices are for all those tight fitting places. Our non-illuminated momentary and maintained push buttons, 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!



Section 18

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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 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.
✓ 36-Month Warranty*	Every product is backed by our 36-Month Warranty—giving you confidence in the quality, reliability, and performance of components designed for 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

“ 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



Emergency Stop



Illuminated Push Button



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.

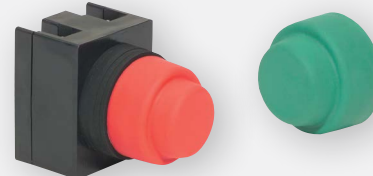
Our revolutionary U-Cup seal is infused with a Teflon coating to eliminate cracking when exposed to harsh conditions and keeps water, oils, and dust away from the contact blocks.

ASME A17.1 COMPLIANT



Our Emergency Stop Button meets ASME A17.1 standards for safety and functionality in elevator car and pit applications, and features a permanently marked STOP and indication of both STOP and RUN positions.

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

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
M	Mushroom (1-5/32" Dia.)	\$16.00
S1	Shrouded Mushroom (1" Dia.)‡	\$ 9.70
NOTE: Only available with a Polyester Clamp Ring.		
XRB	Neoprene Rubber Boot *	\$18.00

*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
RD	Red
WE	White‡
YW	Yellow‡
RUBBER BOOTS	
BK	Black
GN	Green
RD	Red

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

‡NOTE: Products marked with ‡ are not available for same-day shipping. Contact our Customer First Team for lead times and minimum order quantities.

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 15 FOR DETAILS.

DISCOUNT
SCHEDULE

E



LEGEND PLATES in almost any size & color are available for same day shipping. See pages 17 & 18 for complete selection.

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



Flush Cap



Extended Cap



Mushroom Cap
(1-5/32" (29.5mm) dia.)



Rubber Boot

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



22MM NEMA PILOT DEVICES

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	LIST		CATALOG NUMBER	LIST		CATALOG NUMBER	LIST
1NO	Black	22PBNO-XFBK	\$28.80		22PBNO-XXBK	\$28.80		22PBNO-XMBK	\$39.00
	Green	22PBNO-XFGN	\$28.80		22PBNO-XXGN	\$28.80		22PBNO-XMGN	\$39.00
	Red	22PBNO-XFRD	\$28.80		22PBNO-XXRD	\$28.80		22PBNO-XMRD	\$39.00
1NC	Black	22PBNC-XFBK	\$28.80		22PBNC-XXBK	\$28.80		22PBNC-XMBK	\$39.00
	Green	22PBNC-XFGN	\$28.80		22PBNC-XXGN	\$28.80		22PBNC-XMGN	\$39.00
	Red	22PBNC-XFRD	\$28.80		22PBNC-XXRD	\$28.80		22PBNC-XMRD	\$39.00
1 NO & 1 NC	Green	22PBNONC-XFGN	\$39.80		22PBNONC-XXGN	\$39.80		22PBNONC-XMGN	\$50.00
	Red	22PBNONC-XFRD	\$39.80		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 - **PM RD** -
I II III IV V VI

Example: To build one of our most popular Push Buttons, the part number would be **22PP + II + III + PM + RD + VI** 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
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

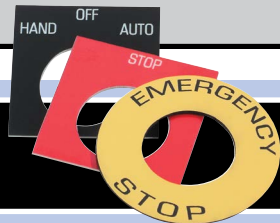
CODE	COLOR
RD	Red

VI. CAP MARKING

CODE	DESCRIPTION	LIST
Blank	no markings	—
67	PUSH TO STOP, PULL TO RUN	\$16.00

DISCOUNT
SCHEDULE **E**

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 17 & 18 for complete selection.

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

AVAILABLE CAP COLORS AND MARKINGS



22MM NEMA MAINTAINED NON-ILLUMINATED PUSH BUTTONS

Our 22mm NEMA line of Maintained Non-Illuminated Push Buttons 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 15 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.

Additionally, our permanently inscribed Push Buttons comply with ASME A17.1 standards, a critical requirement for the elevator industry, establishing the Emergency Stop Switch as a crucial safety device rather than merely an accessory. Adhering to ASME regulations, it features stamped Mushroom cap with "PUSH TO STOP PULL TO RUN" functionality to meet all safety protocols.



UNIQUE PRODUCT FEATURES



WE PUT THE METAL ON THE INSIDE — WHERE IT COUNTS!

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.

ASME COMPLIANT ELEVATOR EMERGENCY PUSH BUTTON

Designed to enhance safety and compliance, this advanced variation of our 22mm NEMA 2-Position Maintained Non-Illuminated Button features a permanently marked "PUSH TO STOP PULL TO RUN" red mushroom cap, adhering to ASME A17.1 - 2022 Section 3.10.4 (O). This section of the ASME Standard mandates a maintained open and close style emergency stop button with a red button or cap, clearly marked to indicate "STOP" and "RUN" positions.

Key features include:



- **Permanent Marking:** The red mushroom cap is clearly and permanently marked with "PUSH TO STOP PULL TO RUN".
- **Compliance:** Meets ASME A17.1 standards for safety and functionality in elevator car and pit applications with permanently marked "STOP" and indication of both "STOP" and "RUN" positions.
- **Audible Alarm Integration:** Easily connect / integrate to an audible alarm using convenient contact blocks, enhancing emergency alerts and ensuring immediate notification.

For those interested in customizing or permanently marking other devices, please contact your c3controls sales representative or our customer first team.

U-CUP SEAL

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.



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 **22IPBF120LR-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

III. VOLTAGE

CODE	DESCRIPTION
12	12V AC/DC
24	24V AC/DC
120	120V AC/DC

IV. LED LAMP COLOR

CODE	DESCRIPTION	LIST
LA	Amber	\$ 18.00
LB	Blue	\$ 18.00
LG	Green	\$ 18.00
LR	Red	\$ 18.00
LW	White	\$ 18.00
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

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
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 Section 13 Pages 4 & 5.

DISCOUNT
SCHEDULE **E**

SEE PAGE 19 FOR LAMP TECHNICAL DATA CHART.



LEGEND PLATES in almost any size & color are available for same day shipping. See pages 17 & 18 for complete selection.

MIX AND MATCH ANY COLOR AND MOMENTARY ILLUMINATED PUSH BUTTON LENS



Flush/Guarded Lens



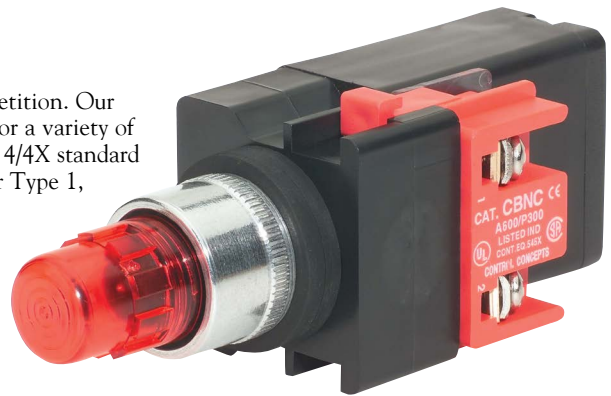
Extended Lens

22MM NEMA MOMENTARY ILLUMINATED PUSH BUTTONS

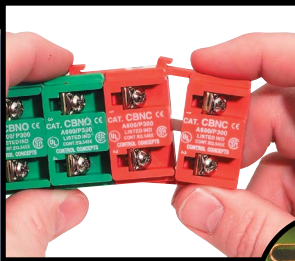
c3controls goes the extra step to make sure that our products outlast the competition. Our 22mm NEMA Momentary Illuminated Push Buttons are durable and flexible for a variety of uses. All c3controls 22mm NEMA operators are UL Listed and are rated Type 4/4X standard for watertight and corrosion resistance. 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.
- Our LED lamps with leakage protection last 100,000 hours that's — 11.4 years!
- #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



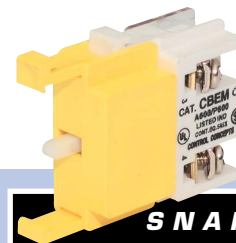
NOTE: Gold plated contacts are available on standard 30mm blocks for dry circuit applications. See Section 13 Pages 4 & 5 for details.

1. Vibration resistant snap-on assembly 30mm contact blocks simplify installation. See Section 13 Pages 4 & 5 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



**SNAP-ON
ALTERNATE
ACTION BLOCKS**
provide "push-on/push-off"
operation on our push
buttons. See Section 13
Page 17.

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 **22FVL120LG-XPLGN**



I. PILOT LIGHT OPERATOR

CODE	DESCRIPTION	LIST
22FVL	Full Voltage	\$50.00
22RL	Resistor†	\$50.00

II. VOLTAGE

CODE	DESCRIPTION	LIST
FULL VOLTAGE		
12	12V AC/DC	
24	24V AC/DC	
120	120V AC/DC	
RESISTOR†		
120	120V AC/DC†	

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
NL	No Lamp	— \$ 1.80
INCANDESCENT†		
I	Clear†	—
NEON†		
NR	Red†	—

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

IV. CLAMP RING

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

†NOTE: Products marked with † are not available for same-day shipping. Contact our Customer First Team for lead times and minimum order quantities.

SEE PAGE 19 FOR LAMP TECHNICAL DATA CHART.

DISCOUNT
SCHEDULE **E**

SOME OF OUR POPULAR CONFIGURATIONS:

PILOT LIGHTS WITH POLYESTER CLAMP RING (TYPE 4X)

CATALOG NUMBER	DESCRIPTION	LIST
22FVL120LR-XPLRD	Full Voltage 120V Red LED w/Red Lens	\$75.00
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 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

PTT **IFC**

I II III IV V VI VII

Example: To build one of our most popular Pilot Lights, the part number would be **I + PTT + III + IV + V + IFC + VII** or **22RPTT120LG-XIFCGN**

NOTE: Our Push-To-Test Pilot Lights featured on this page are not available for same-day shipping. Contact our Customer First Team for lead times and minimum order quantities.



I. PUSH-TO-TEST OPERATOR LIGHT UNIT BASE

CODE	DESCRIPTION	LIST
22F	Full Voltage	\$49.00
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
120	120V AC/DC
	RESISTOR
120	120V 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
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

VII. LENS COLOR

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

DISCOUNT
SCHEDULE **E**

SEE PAGE 19 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.

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
22RPTT120LR-XIFCRD	Resistor 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

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

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



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		
BC	O	X	O	22CBNCNO	\$23.00
	O	O	X		
CD	O	O	X	22CBNODB‡	\$25.00
	O	X	X		
DF	O	X	X	22CB2DB‡	\$25.00
	X	X	O		

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
GY	Grey	White
RD	Red	White

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

3-POSITION CONTACT BLOCK CIRCUIT DESIGNATION

HANDLE POSITION

CODE	LEFT	CENTER	RIGHT	CONTACT BLOCK TYPE	LIST
DF	O	X	X	22CB2DB‡	\$25.00
	X	X	O		

DISCOUNT
SCHEDULE **E****O = OPEN X = CLOSED**

‡NOTE: Products marked with ‡ are not available for same-day shipping. Contact our Customer First Team for lead times and minimum order quantities.

HANDLE POSITIONS

2-POSITION



3-POSITION

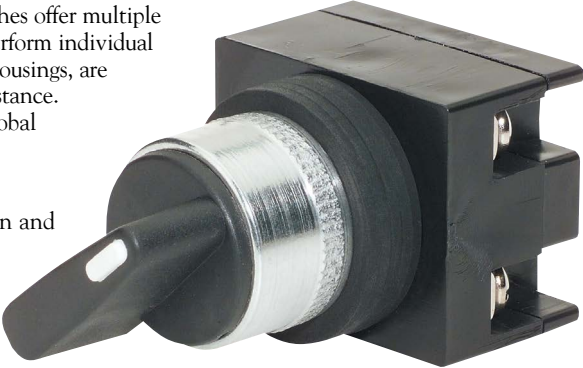


22MM NEMA Non-ILLUMINATED SELECTOR SWITCHES

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

Product features include:

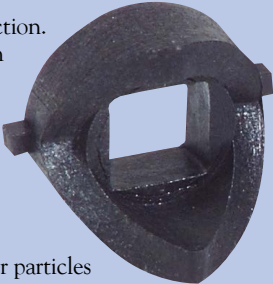
- Polyester construction for superior corrosion resistance, moisture rejection and electrical insulation.
- Octagonal polyester or polished aluminum clamp rings.
- #6 terminal screws with self-lifting captive wire clamps accommodate #22 through two #12 AWG wires(0.5 - 4mm²) per terminal.
- Operators 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

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

MIX AND MATCH ANY COLOR AND SELECTOR SWITCH HANDLE



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)	—

IV. TERMINAL BLOCK		
CODE	DESCRIPTION	LIST
(Blank)	Operator only	—
TBW	Terminal Block installed and wired*	\$16.00
NOTE: Available for 1K, 2.5K, 5K and 10K potentiometers.		

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 22 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.
- Three point terminal block and hardware.
- Single-turn 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 17 & 18 for complete selection.

ADD-ON CONTACT BLOCKS

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!

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
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
22CB2DB	Contact Block w/2 Delayed Break†	\$28.00
22CBDBEM	Contact Block w/1 Delayed Break & 1 Early Make	\$28.00

STANDARD RATING DESIGNATIONS**A600 (AC) RATING DESIGNATION**

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

A600 (AC) RATING DESIGNATION

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

DISCOUNT
SCHEDULE **E**

†NOTE: Products marked with † are not available for same-day shipping. Contact our Customer First Team for lead times and minimum order quantities.

LED REPLACEMENT LAMPS

c3controls miniature bayonet base lamps come in a variety of voltage and color options for direct interchangeability to help in choosing the best lamp for your installation. Refer to the chart below to determine the appropriate replacement lamp based on your operator voltage. For lamp technical data, see page 19.

LED Lamps

LED I II III



Our LED lamps feature built-in leakage protection.

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

I. LAMP TYPE

CODE	DESCRIPTION	LIST
LED	LED Lamp	\$28.00

DISCOUNT
SCHEDULE **E**

II. VOLTAGE

CODE	DESCRIPTION
12	12V
24	24V
130	130V

III. LAMP COLOR

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

22MM NEMA REPLACEMENT LAMP REFERENCE CHART

(FOR REFERENCE ONLY - USE CHARTS ABOVE TO ORDER)

OPERATOR CODE	OPERATOR VOLTAGE	LED (ALL COLORS)
22FVL12	Full Voltage 12V AC/DC	LED12
22FVL24	Full Voltage 24V AC/DC	LED24
22FVL120	Full Voltage 120V AC/DC	LED130

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

CLAMP RING WRENCHES



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

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

MECHANICAL INTERLOCK



Our Mechanical Interlock is designed for use between two adjacent operators mounted on 2" (50.8mm) centers. Features a built-in mechanical advantage and may be used to interlock momentary push buttons and/or selector switch combinations.

NOTE: Our Mechanical Interlock is not available for same-day shipping. Contact our Customer First Team for lead times and minimum order quantities.

CODE	DESCRIPTION	LIST
22MI	Mechanical Interlock	\$23.00

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

LOCK OFF ATTACHMENT



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

NOTE: This product is not compatible with Jumbo Mushroom caps, Dual Push Buttons, and Selector Switches with lever handles.

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

LAMP REMOVAL TOOL



Used to facilitate the removal of lamps.

CODE	DESCRIPTION	LIST
LRT	Lamp Removal Tool	\$8.00

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

DISCOUNT
SCHEDULE **E**

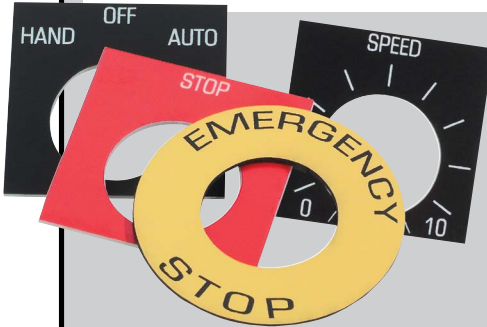
IT'S EASY TO BUILD YOUR OWN LEGEND PLATE

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

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

IV. ADHESIVE BACK

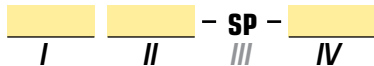
CODE	DESCRIPTION
(Blank)	No Adhesive Back
A	Adhesive Back

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.

Special Legend Plates



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

IV. ADHESIVE BACK

CODE	DESCRIPTION
(Blank)	No Adhesive Back
A	Adhesive Back

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:

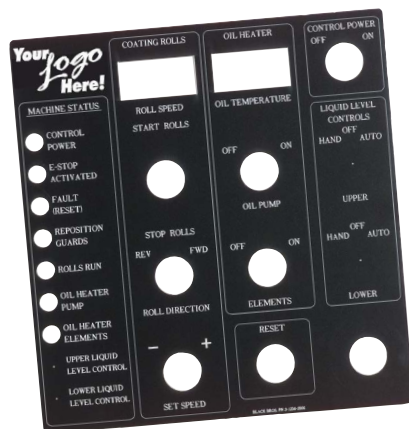
Mail: c3controls
Attn: Customer First
PO Box 496
Beaver, PA 15009

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 24.

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 22LPCP (no adhesive back) or 22LPCPA (adhesive back).
- 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
LED12	**	12V†	Varies w/ Color 2000 mcd Typical	100,000	<20	LED	Excellent	4 mA
LED24	**	24V†			<20			4 mA
LED130	**	130V†			<10			2 mA

** Designates a lamp design optimized for c3controls Illuminated Devices. See LED replacement lamps on page 15.

† LED voltage tolerance is +/- 10%

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			
	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]

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

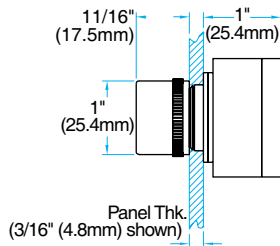
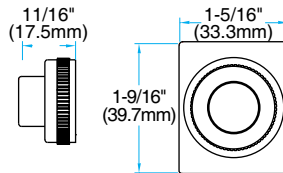
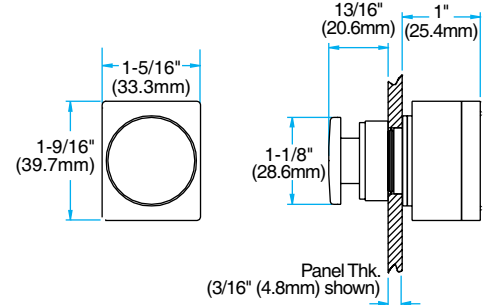
Momentary	Ops.	5,000,000
Maintained	Ops.	1,000,000
SELECTOR SWITCHES	Ops.	500,000
ALL OTHER DEVICES	Ops.	250,000
CONTACT BLOCKS	Ops.	5,000,000
INDICATING LIGHTS	Ops.	Refer to the appropriate Lamp Data

22MM NEMA PILOT DEVICES

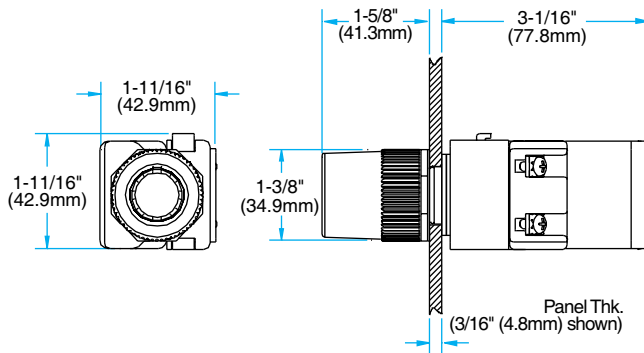
	UNITS	
MATERIALS		
Operator Housings		Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Operator Caps and Handles - Non-Illuminated (Glass Reinforced Grades)		Thermoplastic Polyester and Polyester Blends (UV Stabilized for outdoor use)
Mounting Rings and Nuts		Thermoplastic 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 Derivitives
		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

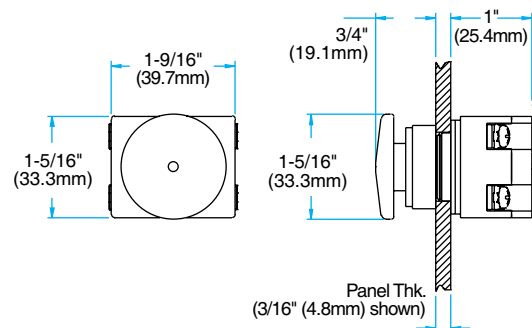
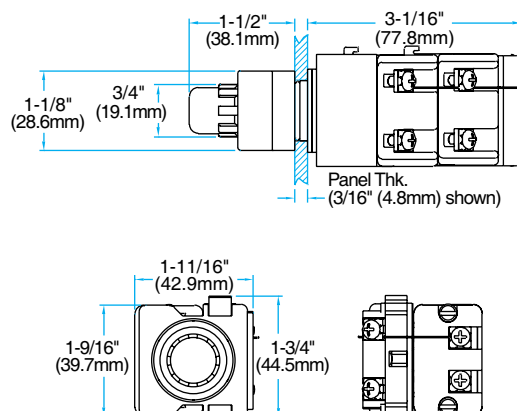
Fully-assembled operators come standard with five 1/16" (1.5mm) gaskets. See page 24 for mounting gasket specifications.

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

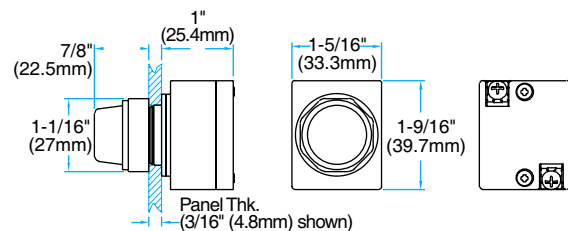
Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets. See page 24 for mounting gasket specifications.

ILLUMINATED FULL VOLTAGE OPERATOR (SHOWN WITH IFC)**MAINTAINED NON-ILLUMINATED PUSH BUTTONS**

Fully-assembled operators come standard with five 1/16" (1.5mm) gaskets. See page 24 for mounting gasket specifications.

2-POSITION PUSH-PULL MAINTAINED NON-ILLUMINATED OPERATOR (SHOWN WITH 1-1/2" (38mm) MUSHROOM CAP)**ILLUMINATED FULL VOLTAGE OPERATOR (SHOWN WITH IXC)****PILOT LIGHTS**

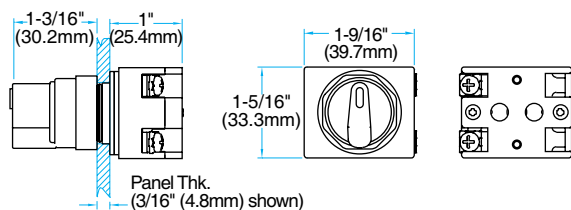
Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets. See page 24 for mounting gasket specifications.

FULL VOLTAGE PILOT LIGHT OPERATOR (SHOWN WITH PL)

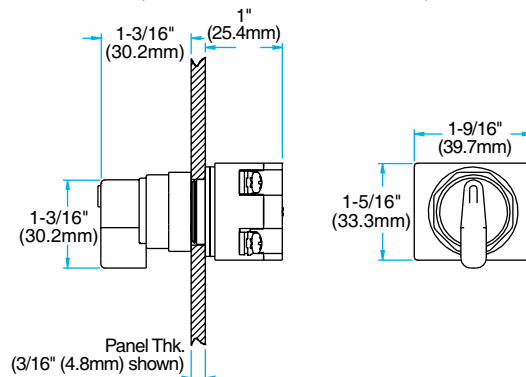
SELECTOR SWITCHES

Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets.
See page 24 for mounting gasket specifications.

SELECTOR SWITCH OPERATOR
(SHOWN WITH STANDARD HANDLE)



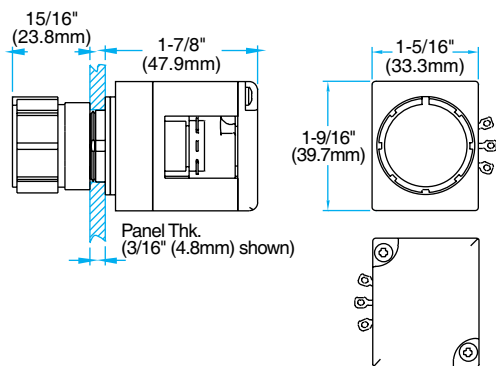
SELECTOR SWITCH OPERATOR
(SHOWN WITH LEVER HANDLE)



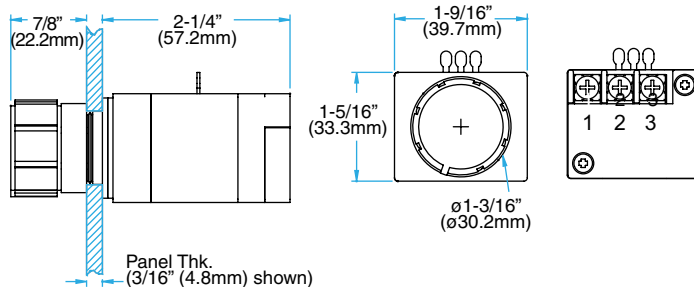
POTENTIOMETER WITH & WITHOUT TERMINAL BLOCK

Fully-assembled operators come standard with five 1/16" (1.6mm) gaskets.
See page 24 for mounting gasket specifications.

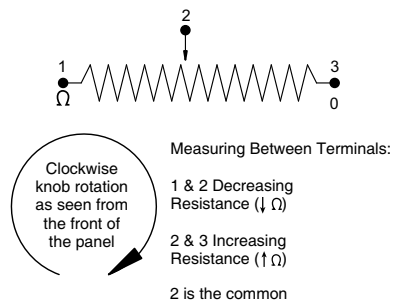
POTENTIOMETER OPERATOR
(SHOWN WITHOUT TERMINAL BLOCK)



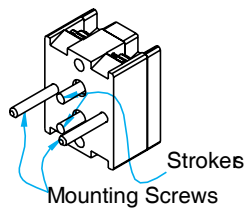
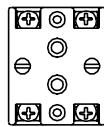
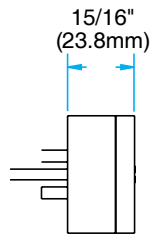
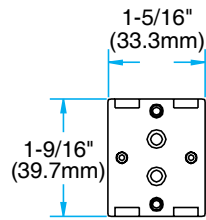
POTENTIOMETER OPERATOR
(SHOWN WITH TERMINAL BLOCK)



WIRING DIAGRAM

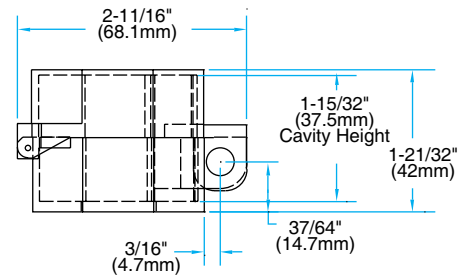
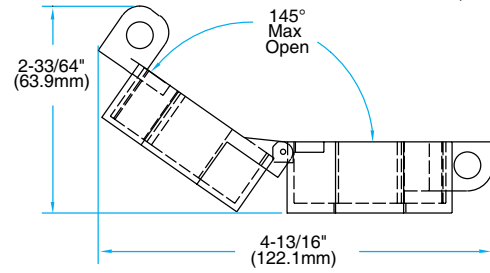
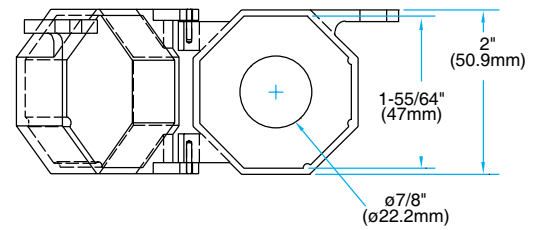


CONTACT BLOCK



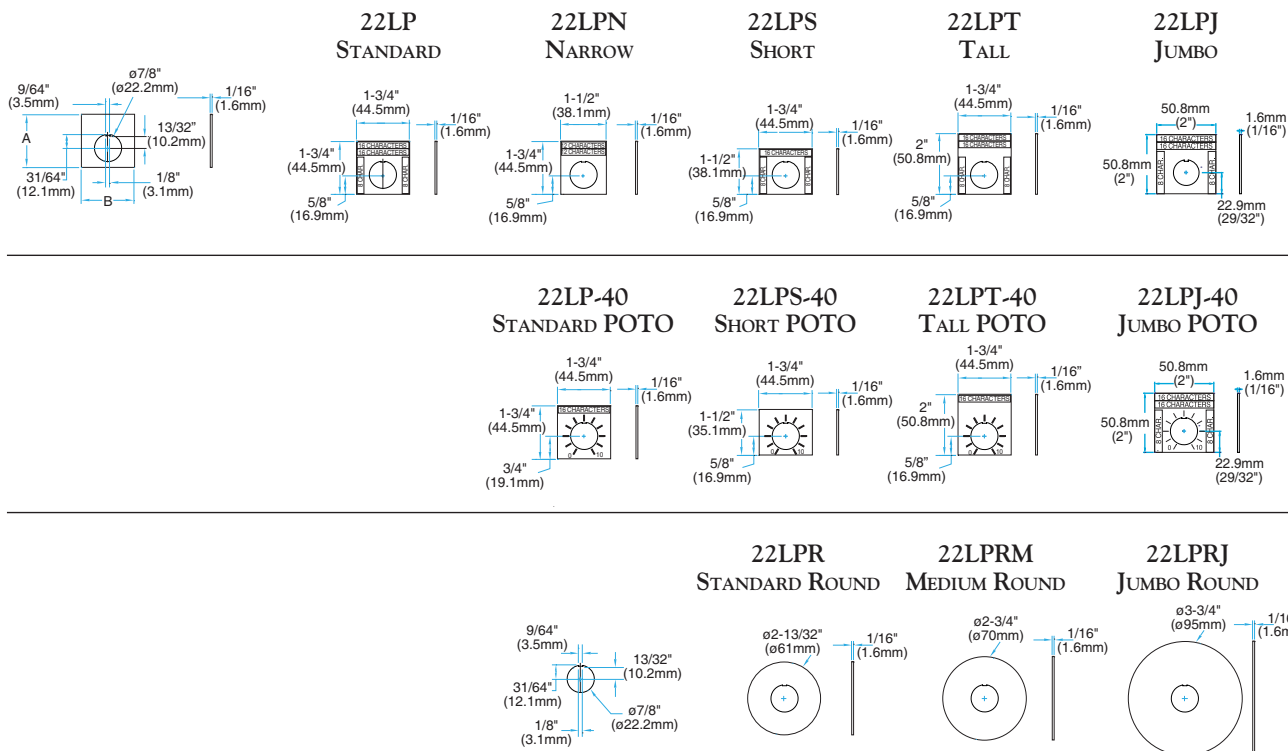
LOCK-OFF ATTACHMENT

22LOAFC



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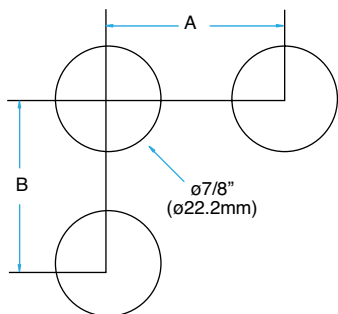
LEGEND PLATES



Note: Legend plates feature a tab for optional break-away positioning and can be used in conjunction with the Thrust & Trim Washer accessory.

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.