

E22 Key Switches and Accessories

Two-position key switches

A



Three-position key switches

B



Key Switches			
Two-position Key Switch			Price
(A) Key	E22KB53A	Selector switch, black bezel, 2-position key, "OFF ON" with one N.O. contact block	<-->
(A) Key	E22KB62A	Selector switch, black bezel, 2-position key, spring from right "OFF ON" with one N.O. contact block	<-->
Three-position Key Switch			
(B) Key	E22KBG7RR	Selector switch, black bezel, 3-position key, "ON ON ON" with two contact blocks, each having one N.O. and one N.C. contact. (Contact part number E22B11)	<-->
(B) Key	E22KBG7D	Selector switch, black bezel, 3-position key, "HAND OFF AUTO" with two N.O. contact blocks	<-->

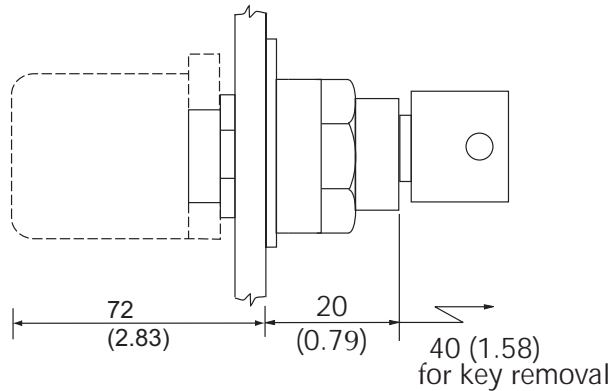
See specifications and mounting data at the beginning of this section.

Notes:

All E22 series key switches are keyed alike. The key is not compatible with the metal 22 mm key switches.

All E22 series key switches will hold only one single row of (2) contacts (non-stackable).

Key can be removed in all positions.



Spare keys available: part no. E22KS2

Approximate dimensions in mm (in). See dimensions for "back-of-panel extensions" at the beginning of this section.

Accessories — replacement contact blocks

Replacement Contact Blocks		
Contact Blocks	One block contains:	Price
E22B1*	One N.C. contact (Direct Opening Action)	<-->
E22B2	One N.O. contact	<-->
E22B11*	One N.O., One N.C. contact (N.C. Direct Opening Action)	<-->
E22B20	Two N.O. contacts	<-->
E22CB1M*	Self-monitoring contact block (N.C. Direct Opening Action)	<-->

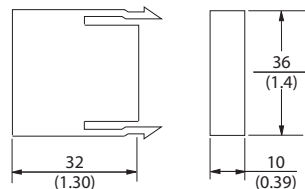
Note: See contact electrical ratings on page 22-26.

**All N.C. contact blocks are EN 418 compliant when used with compliant operators. See Page 22-29.*

E22B1



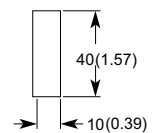
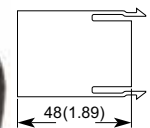
E22B2



E22CB1M

E22B11

E22B20



dimensions in mm (in).

Ingress Protection (IP) Rating	
(IP65, IP66 ratings to IEC 529) UL Listed (NEMA) Types 1, 2, 3, 3R, 4, 4X, 12, and 13 when mounted in an enclosure rated for those same applications. See pages 30-9 and 30-10 for descriptions.	
Electrical Specifications	
Electrical Rating	UL508; UL File E131568. CSA certified class 3211 03, LR 68551. NEMA ICS5-2000: A600, Q600 (refer to page 22-26). IEC 60947-5-1: AC15, DC13.
Maximum Frequency of Operation	
22 mm Pushbuttons	6,000 operations/hour IEC 60947-5-1: AC15, DC13.
Key and Lever Selector Switches	3,000 operations/hour
Twist-to-Release Devices	1,200 operations/hour
Push-Pull Operators	3,000 operations/hour
Mechanical Life	
Pushbutton	5 million operations
Selector Switches	500,000 operations
Push-Pull and Twist-to-Release	300,000 operations
Contact Block	3 million operations
Environmental Specifications	
Operating Temperature	Maximum 60° C at 95% RH, -20° to 60° C (-14° to 140° F), altitude 2000 meters
Storage Temperature	Maximum 60° C at 95% RH, -40° to 80° C (-40° to 176° F)
Vibration	
Vibration	5G/0.7mm peak-to-peak 10 sweeps, 10-500 Hz
Shock	18G, 18ms
Bump	25G, 6ms for 1,000 cycles
Construction	
Components	Materials
Housing, Bezel, Mounting Rings	Glass-filled nylon
Internal Seal	Nitrate rubber
Panel Gasket	Nitrate rubber
Illuminated Lenses	Polycarbonate
Buttons	Polyester or polycarbonate
Springs	Stainless steel
Contacts	Silver
Terminal Screws/Terminals	Brass
Panel Thickness - Inches (mm)	
Nominal	0.27 (6.8) ¹
Aluminum Legend Plates	0.05 (1.3)
Large Yellow Round Legend Plates	0.04 (1.0)
Minimum	0.04 (1.0)
¹ Installation of certain accessories will increase the total (overall) panel thickness by the amount shown. The total panel thickness with all accessories installed cannot exceed the maximum allowable nominal dimensions of 0.27 in. (6.8 mm).	
Wire Specifications	
Minimum/Maximum	18AWG (0.75mm ²) / 12AWG (2.5mm ²)
Tightening Torque	7lb./in.

Electrical life

- AC15 durability: 120V, 6A 1 X 10⁶ operations
- DC13 durability: 24V, 8A 0.15 X 10⁶ operations
660V, .1A 0.5 X 10⁶

Logic-level operation

5 VDC, 1 mA (minimum recommended)

Contacts feature a pointed surface called "Reliability Nib." The projection penetrates through any oxidation providing unmatched low-level operation without using exotic metals or sealed contacts.

Standards and approvals

- UL listed – UL 508 electrical/environmental; UL 486E terminal secureness, File E131568
- CSA Certified – CSA 22.2 #14
- NEMA ICS-1, ICS-2
- IEC 144, 337, 529, 947
- IP65 when mounted in enclosure
- Lloyds No. 4 and 5
- M.T.T.A.
- CE

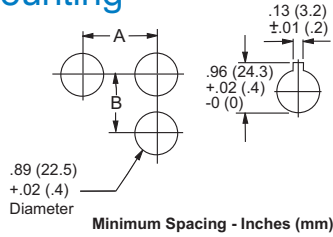
IEC utilization categories & ratings

- AC15**
(Control of AC electromagnetic loads)
- 24 volts AC at 10 amps
 - 130 volts AC at 6.5 amps
- DC13**
(Control of DC electromagnetic loads)
- 24 volts DC at 1.5 amps
 - 110 volts DC at .5 amps

- PLC Overview
- DL05/06 PLC
- DL105 PLC
- DL205 PLC
- DL305 PLC
- DL405 PLC
- Field I/O
- Software
- C-more HMIs
- Other HMI
- AC Drives
- Motors
- Steppers/Servos
- Motor Controls
- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
- Current Sensors
- Pushbuttons/Lights**
- Process
- Relays/Timers
- Comm.
- TB's & Wiring
- Power
- Circuit Protection
- Enclosures
- Appendix
- Part Index

E22 Mounting / NEMA Aux Contact Ratings

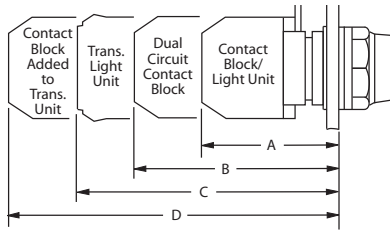
Mounting



Minimum Spacing — Inches (mm)		
Size/Type of Operator	Dimensions	
	A	B
All types up to 1.18 (30) dia. including knob and key operated selector switches — except those listed below	1.18 (30)	1.97 (50)
Three-way adapter		
1.97 (50) dia. operators	2.16 (55)	2.16 (55)
Large yellow round legend plate - 2.76 (70) Dia.	2.95 (75)	1.97 (50)

Back-of-panel extensions

Note: This view is to show dimensions only. Contact blocks are not stackable.



Approximate Dimensions — Inches (mm)			
A	B	C	D
Single circuit block — full voltage and resistor units	Dual circuit contact block	Transformer light unit	Transformer light unit and single circuit contact block
Pushbuttons (All Types and Push-Pull)			
2.0 (51)	2.6 (66)	2.91 (74)	3.7 (94)
Key and Knob Selector Switches			
2.2 (57)	2.83 (72)	3.15 (80)	3.9 (99)

Control Circuit Contact Electrical Ratings

Typical Wiring - See page 22-6
Note drawing

NEMA Mechanical Switching Ratings and Test Values for DC Control Circuit Contacts					
Contact Rating Designation	Thermal Continuous Test Current (A)	Maximum Make or Break DC Current (A)			Volt amperes
		125 Volts	250 Volts	301 to 600 Volts	
P300	5.0	1.1	0.55	---	138
P600	5.0	1.1	0.55	0.20	138
Q300	2.5	0.55	0.27	---	69
Q600	2.5	0.55	0.27	0.10	69
R300	1.0	0.22	0.11	---	28

This chart is provided as a guideline only, and the ratings and values are not guaranteed to be accurate. It is the users' responsibility to properly size their control circuit devices. The chart values are from NEMA Standard ICS 5-2000, Table 1-4-2.

NEMA Mechanical Switching Ratings and Test Values for AC Control Circuit Contacts											
Contact Rating Designation	Thermal Continuous Test Current (A)	Maximum AC Current, 50/60Hz (A)								Volt amperes	
		120 Volts		240 Volts		480 Volts		600 Volts			
		Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A300	10	60	6.00	30	3.00	---	---	---	---	7200	720
A600	10	60	6.00	30	3.00	15	1.50	12	1.20	7200	720
B300	5	30	3.00	15	1.50	---	---	---	---	3600	360
B600	5	30	3.00	15	1.50	7.5	0.75	6	0.60	3600	360
C600	2.5	15	1.5	7.5	0.75	3.75	0.375	3.00	0.30	1800	180

This chart is provided as a guideline only, and the ratings and values are not guaranteed to be accurate. It is the users' responsibility to properly size their control circuit devices. The chart values are from NEMA Standard ICS 5-2000, Table 1-4-1.