

30.5 mm Square Multifunction Watertight/Oiltight—E30



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### Product Description

The E30 industrial pushbutton and indicating light line from Eaton's Electrical Sector features a wide selection of square, multifunction operators which conveniently mount in a standard 30.5 mm (1-13/64 in) diameter panel hole. Up to six input and indicating functions can be grouped into a single operating head, saving valuable panel space. Attractive square operator styling, coupled with custom legending of colored buttons and lenses and many special function accessories, makes E30 components ideally suited for use on control consoles and for a variety of industrial OEM applications.

### Features

Type E30 control units consist of a basic operator with one or more buttons and lenses and contact block selection dependent on the specific operator configuration.

- **Pushbutton operators** will accommodate up to four single depth stackable contact blocks behind each operating button, up to eight circuits maximum.
- **Indicating lights** are supplied complete with either a transformer light unit up to 600 Vac supply line voltage or full voltage light unit up to 120 Vac/Vdc supply line voltage.
- **Combination pushbutton with indicating light** operators are supplied complete with a transformer or full voltage unit. Contact blocks must be ordered separately, up to four circuits maximum.

### Die Cast Construction

Each operator has high pressure type seals to prevent the passage of oil and other contaminants through the operator into the contact structure or panel interior. Each operator uses a Buna N cork gasket between the mounting flange on the operator and the panel to maintain oiltightness.

### Standards and Certifications

- UL Listed—File No. E131568
- CSA Certified—File No. LR68551



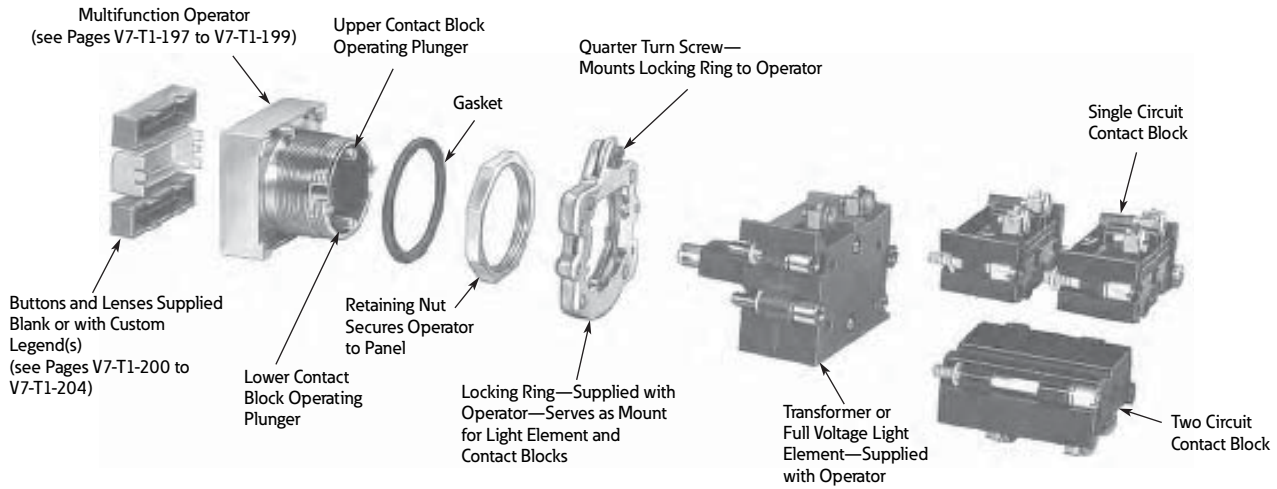
### Ingress Protection

- Single and dual indicating lights
  - UL (NEMA) Type 1, 2, 3, 3R, 3S, 4, 4X, 12, 13
- All other operators
  - UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

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#### Product Identification

#### 30.5 mm Square Multifunction Watertight/Oiltight



### Product Selection

#### Operators

#### When Ordering a Complete E30 Control Unit Specify

Catalog Number of ...	Ordering Example (E30AB)	
Operator	E30KB130	“START”
Button(s)	E30KB231	“STOP”
Contact block(s)	E30KLA1	1NO
Accessories (if required)	E30KLA2	1NC

#### Square Multifunction Operators

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

#### Single Button Operator

#### Single Button Operator/without Button (Order Button Separately)



Shown with Extended Button

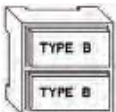
Button Type Required ①	Operation	Special Features	Catalog Number
	Momentary	—	<b>E30AA</b>

#### Two Button Operator

#### Two Button Operator/without Buttons (Order Buttons Separately)



Shown with Extended Buttons

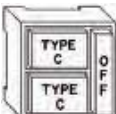
Button Types Required ①	Operation		Special Features	Catalog Number
	Top Button	Bottom Button		
	Momentary	Momentary	—	<b>E30AB</b>
	Momentary	Momentary	With mechanical interlock	<b>E30AC</b>
	Maintained (all contacts)	Release (all contacts)	—	<b>E30AD</b> ②
	Maintained (all contacts)	Release (all contacts)	With mechanical interlock	<b>E30AP</b> ②③

#### Two Button Operator

#### Two Button Operator with Long (OFF) Release Bar—Includes OFF Bar/Button (Order Other Buttons Separately)



Shown with Long Release Bar

Button Types Required ④⑤	Operation		Special Features	Catalog Number
	Top Button	Bottom Button		
	Maintained	Maintained	—	<b>E30AF</b>
	Maintained	Maintained	With mechanical interlock	<b>E30AG</b>
	Maintained	Momentary	With mechanical interlock	<b>E30AH</b>
	Maintained (all contacts)	Maintained (bottom contacts only)	Top button operates both top and bottom contacts	<b>E30AK</b> ⑥

#### Notes

- ① Order from table on **Page V7-T1-200**.
- ② Limited to two single circuit, one double circuit 600V or two 120V (E30KLA9) contact blocks behind each button.
- ③ Buttons are interlocked so that one of the two is maintained at all times. Depressing the other button releases the maintained button and maintains the depressed button.
- ④ Operators are supplied as standard with red extended bar(s) marked “OFF” as shown in sketch. For other colors or markings, contact your nearest Eaton Distributor or call our Customer Service Center 1-800-356-1243. For replacement of standard red release bar, order **E30KR100**.
- ⑤ Order from table on **Page V7-T1-201**.
- ⑥ Limited to two single circuit, one double circuit 600V or two 120V (E30KLA9) contact blocks behind each button.

### Contact Blocks

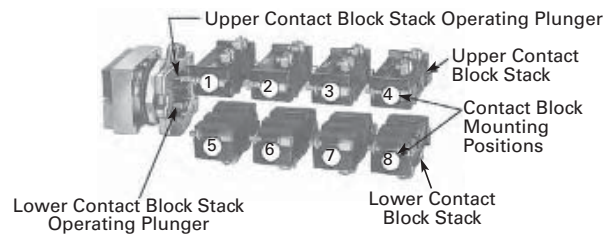
**Standard Contact Blocks**—Molded, phenolic construction. Enclosed silver contacts with reliability “nibs” that improve the reliability of switching performance under dry circuit, corrosive atmosphere and fine dust conditions. For more extreme conditions, the logic level contact blocks described below are recommended.

**Logic Level Contact Blocks**—Feature palladium contacts. Palladium, which is more inert than gold, is well suited for voltages and currents approaching zero. When mounted in an enclosure rated for highly corrosive environments, logic level contact blocks can be used where exposure to chemicals may cause failure to other types of materials.

### Mounting Limitations

See the contact block mounting limitations for Type E30 pushbutton and combination pushbutton and light operators on this page. Mounting positions 1 thru 8 indicate single depth contact blocks. Each of these positions can represent either a single circuit 600 volt block or a two-circuit 120 volt block. The two-circuit 600 volt block requires two of the numbered positions shown.

### Mounting Positions



Catalog Number of Operator	Contact Blocks Can Be Mounted in Positions Listed Below	
	Upper Stack	Lower Stack
E30AA thru E30AM <sup>①</sup>	1-2-3-4	5-6-7-8
E30BA thru E30CM	None	None
E30DA thru E30DM	None	5-6-7-8
E30EA thru E30GM	2-3-4	6-7-8
E30JA thru E30JM	3-4	7-8

### Contact Block Selection

#### Single Circuit, Screw Terminals



#### Two Circuit, Screw Terminals



#### Two Circuit, Quick Connect Terminals



#### 120 Vac Only—Two Circuit



Circuit	Pressure Terminals Standard Catalog Number	Logic Level Catalog Number	Quick Connect Terminals <sup>③</sup> Standard Catalog Number
1NO	E30KLA1	E30KLAE1	E30KLB1
1NC	E30KLA2	E30KLAE2	E30KLB2
1NO-1NC	600 Vac, 250 Vdc—Two Circuit		
2NO	E30KLA3	E30KLAE3	E30KLB3
2NC	E30KLA4	E30KLAE4	E30KLB4
2NO-2NC	E30KLA5	E30KLAE5	E30KLB5
<b>Special Contact Operation</b>			
1NO-1NC Overlapping	E30KLA6 <sup>④</sup>	—	E30KLB6 <sup>④</sup>
2NO (One early closing)	E30KLA7 <sup>④</sup>	—	E30KLB7 <sup>④</sup>
2NC (One late opening)	E30KLA8	—	E30KLB8
1NO-1NC	120 Vac Only—Two Circuit		
1NO-1NC	E30KLA9 <sup>⑤</sup>	—	E30KLB9 <sup>⑤</sup>

#### Notes

- ① Except operator E30AD, AJ or AK which will accommodate contact blocks 1, 2, 5 and 6 only. (See Mounting Positions above.)
- ② Individually boxed contact blocks master packed 10 per carton.
- ③ Supplied with non-stacking screws. Limited to 2 contact blocks mounted in positions 1 and 5.
- ④ Do not use with maintained operators.
- ⑤ Contacts must be same polarity.

### Technical Data and Specifications

#### Operator Specifications

Description	Specification
<b>Climate Conditions</b>	
Operating	-20° to 150°F (-29° to 65°C)
<b>Terminals</b>	
Light units	Terminals are saddle clamp type for 2 stranded or solid wires up to 12 AWG (4.0 mm <sup>2</sup> ) Torque—7 lb-in (0.8 Nm)
Contact block	Terminals are saddle clamp type for 2 stranded or solid wires up to 12 AWG (4.0 mm <sup>2</sup> ) Torque—7 lb-in (0.8 Nm)
<b>Materials</b>	
Operator	Zinc base die casting with a copper-nickel-chrome plated finish Withstands the 200 hr. salt spray test in accordance with MIL Spec. QQ-M-151A and NEMA 4X testing.
Internal parts	Including shafts, washers and springs, are made of stainless steel
Buttons and lenses	Colorfast, wear resistant, molded acetal resin
Contact blocks	Made of molded, heat resistant, mineral filled phenolic Contact block plungers are molded of nylon filled phenolic Contacts are silver
Reliability nibs	These nibs combine a scrubbing action with high pressure density when the contacts are closed They push through particles and films found on contact surfaces in industrial environments Reliability nibs self-adjust to the application—dry circuit, normal or heavy-duty

#### Reliability Nibs



### Electrical Ratings

#### Contact Blocks

Meet or Exceed NEMA Contact Rating Designation A600 and P300

Description	Vac A600				Vdc P300		
	120V	240V	480V	600V	24/28V	125V	250V
Make and emergency interrupting capacity (Amps)	60	30	15	12	5.73	1.1	0.55
Normal load break (Amps)	6	3	1.5	1.2	5.73	1.1	0.55
Continuous current (Amps)	10	10	10	10	5	5	5

- UL A600/P300 nominal connect 10A
- 1NO, 1NC, 2NO, 2NC, 1NO-1NC, early make, late break and overlapping configurations
- Mechanical positive drive operation on NC contacts
- Palladium alloy contact for logic level or highly corrosive environments

#### Maximum Ratings for Logic Level and Hostile Atmosphere Application

Description	Specification
Maximum amperes	0.5A ①
Maximum volts	120 Vac/Vdc

#### Note

① Logic level contact blocks are UL A600/P500 rated per table above.

#### Light Unit

Description	Specification
<b>Bulbs—Average Life</b>	
Transformer type	20,000 hrs.
Resistor/direct voltage type	2,500 hrs. min. at rated voltage
LED	60,000 to 100,000 hrs.

# 1.8

## Pushbuttons and Indicating Lights

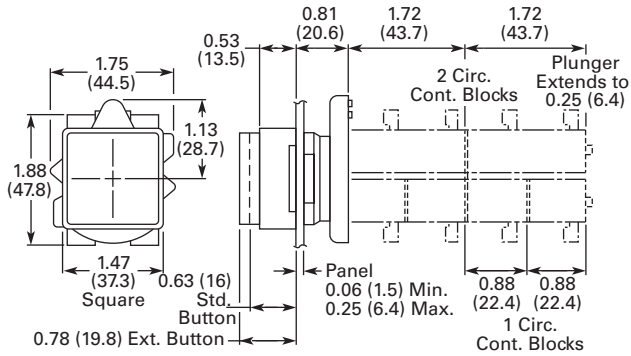
### 30.5 mm Square Multifunction Watertight/Oiltight—E30

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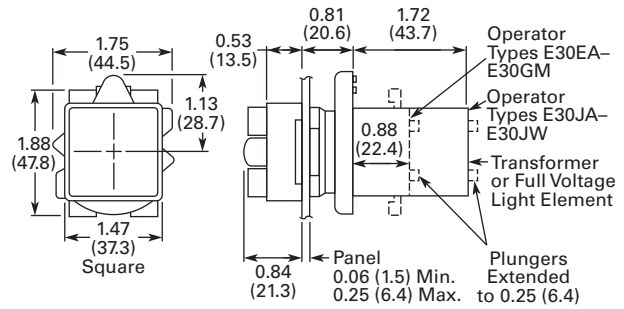
#### Dimensions

Approximate Dimensions in Inches (mm)

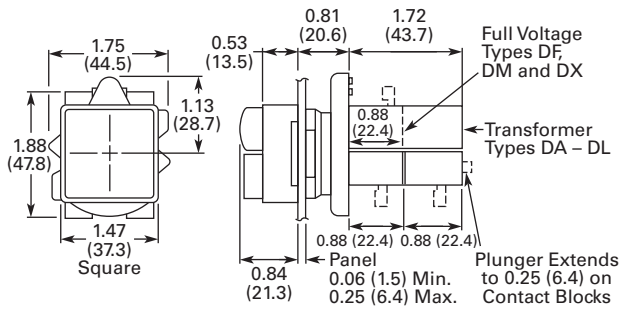
#### Pushbutton Operators



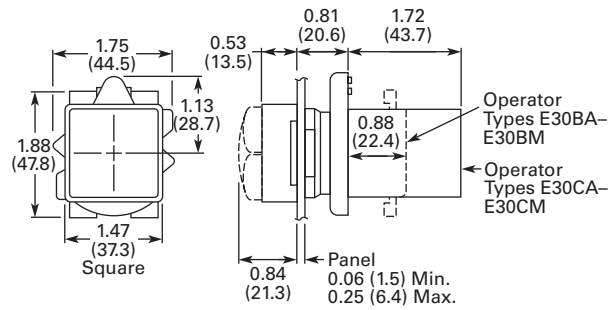
#### Combination Pushbutton and Indicating Light Operators



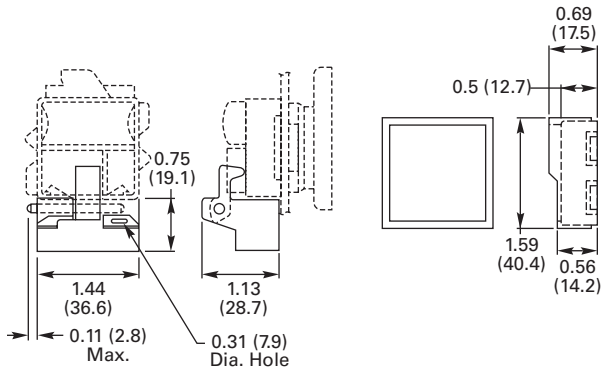
#### Combination Pushbutton and Indicating Light Operators



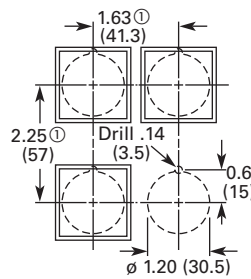
#### Indicating Light Operators



#### Padlocking Attachment and Half Shroud E30KT7



#### Drilling Dimensions—Minimum Spacing ①②



#### Notes

- ① Dimensions shown allow adequate space for the addition of one or two high legend plates and color coordinating collars.
- ② Locating nib hole or notch is 0.136 in (3.5 mm) drill. Alternate to drilling mounting holes use Greenlee Tool Co. punch (No. 730-S) to punch the hole and (No. 730-K) to punch the notch.

#### Legend Plates

