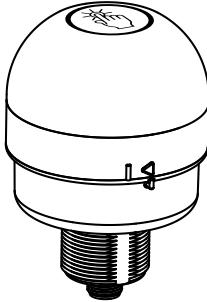


# EZ-LIGHT® Touch K70 Series Illuminated Multipurpose Buttons



## Datasheet

General Purpose Multicolor Indicator with Independent Momentary Touch Button Output



- Excellent immunity to false triggering by water spray, detergents, oils, and other foreign materials
- Rugged, cost-effective, and easy-to-install multicolor indicator with touch button
- Three independent colors in one unit—Color 3 overrides Colors 1 and 2, Color 2 overrides Color 1
- Available with PNP and NPN inputs/outputs, depending on model
- Ergonomically designed to eliminate hand, wrist, and arm stresses associated with repeated switch operation; require no physical force to operate
- Can be actuated with bare hands or in gloves
- 12 V to 30 V dc operation



WARNING: Not To Be Used for Personnel Protection

Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.

## Models

Model 1	I/O Type	Output State	Color 1	Color 2	Color 3	Connection
K70APT2GRYF2Q	PNP	N.O.	Green	Red	Yellow	Integral 8-pin M12/Euro-style male quick disconnect (QD)
K70RPT2GRYF2Q		N.C.				
K70ANT2GRYF2Q	NPN	N.O.				
K70RNT2GRYF2Q		N.C.				

## Indicator and Output Behavior

Table 1: PNP Models

Input Actions				Touch Button Actions		
Input #1: Pin 3 Green Wire	Input #2: Pin 8 Red Wire	Input #3: Pin 4 Yellow Wire	LED Color	Output Type	Touch	Output: Pin 1 White Wire
Open or -Vdc	Open or -Vdc	Open or -Vdc	Light Off	N.O.	Not touched	PNP Output Off
+V dc	Open or -Vdc	Open or -Vdc	Color #1 On		Touched	PNP Output On
+V dc	+V dc	Open or -Vdc	Color #2 On	N.C.	Not touched	PNP Output On
+V dc	+V dc	+V dc	Color #3 On		Touched	PNP Output Off
Open or -Vdc	+V dc	Open or -Vdc	Color #2 On			
Open or -Vdc	+V dc	+V dc	Color #3 On			

<sup>1</sup> Integral quick disconnect models are listed.

- To order the 150 mm (6 in) PVC cable model with an 8-pin Euro-style connector, replace the suffix "Q" with "QP" in the model number. For example, K70APT2GRYF2QP.
- To order the 2 m (6.5 ft) PVC cable model, omit the suffix "Q" in the model number. For example, K70APT2GRYF2.
- Models with a quick disconnect require a mating cordset.



Input Actions				Touch Button Actions		
Input #1: Pin 3 Green Wire	Input #2: Pin 8 Red Wire	Input #3: Pin 4 Yellow Wire	LED Color	Output Type	Touch	Output: Pin 1 White Wire
Open or -Vdc	Open or -Vdc	+V dc	Color #3 On			
+V dc	Open or -Vdc	+V dc	Color #3 On			

Table 2: NPN Models

Input Actions				Touch Button Actions		
Input #1: Pin 3 Green Wire	Input #2: Pin 8 Red Wire	Input #3: Pin 4 Yellow Wire	LED Color	Output Type	Touch	Output: Pin 1 White Wire
Open or +V dc	Open or +V dc	Open or +V dc	Light Off	N.O.	Not touched	NPN Output Off
-Vdc	Open or +V dc	Open or +V dc	Color #1 On		Touched	NPN Output On
-Vdc	-Vdc	Open or +V dc	Color #2 On	N.C.	Not touched	NPN Output On
-Vdc	-Vdc	-Vdc	Color #3 On		Touched	NPN Output Off
Open or +V dc	-Vdc	Open or +V dc	Color #2 On			
Open or +V dc	-Vdc	-Vdc	Color #3 On			
Open or +V dc	Open or +V dc	-Vdc	Color #3 On			
-Vdc	Open or +V dc	-Vdc	Color #3 On			

## Specifications

Supply Voltage  
12 V to 30 V dc

Supply Current  
< 220 mA maximum current at 12 V dc (exclusive of load)  
< 110 mA maximum current at 30 V dc (exclusive of load)

Supply Protection Circuitry  
Protected against reverse polarity and transient voltages

Output Rating  
Maximum load: 150 mA  
ON-State saturation voltage: < 2 V dc at 10 mA ; < 2.5 V dc at 150 mA  
OFF-State leakage current: < 10 µA at 30 V dc

Output Response Time:  
50 ms ON and OFF

Storage  
-40 °C to +70 °C (-40 °F to +158 °F)

Operating Conditions  
-40 °C to +50 °C (-40 °F to +122 °F)  
90% at +50 °C maximum relative humidity (non-condensing)

Vibration and Mechanical Shock  
Vibration 10 Hz to 55 Hz 1.0 mm p-p amplitude per IEC 60068-2-6  
Shock 30G 11 ms duration, half sine wave per IEC 60068-2-27

Power-Up Delay  
300 ms

Construction  
Housing and dome: Polycarbonate  
Mounting nut: PBT

Connections  
Integral 8-pin M12/Euro-style male quick disconnect (QD); 2 m (6.5 ft) unterminated PVC-jacketed cable; or 150 mm (6 in) PVC cable with a 8-pin M12/Euro-style male quick disconnect (QD)

Certifications



### Indicator Lumens

Color	Typical Wavelength	Typical Intensity (lm)
Green	525 nm	45
Red	625 nm	26
Yellow	590 nm	13

### Mounting

M30 x 1.5 threaded base; maximum torque 4.5 N·m (40 in-lbf)

### Environmental Rating

IEC IP65

### Required Overcurrent Protection



**WARNING:** Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

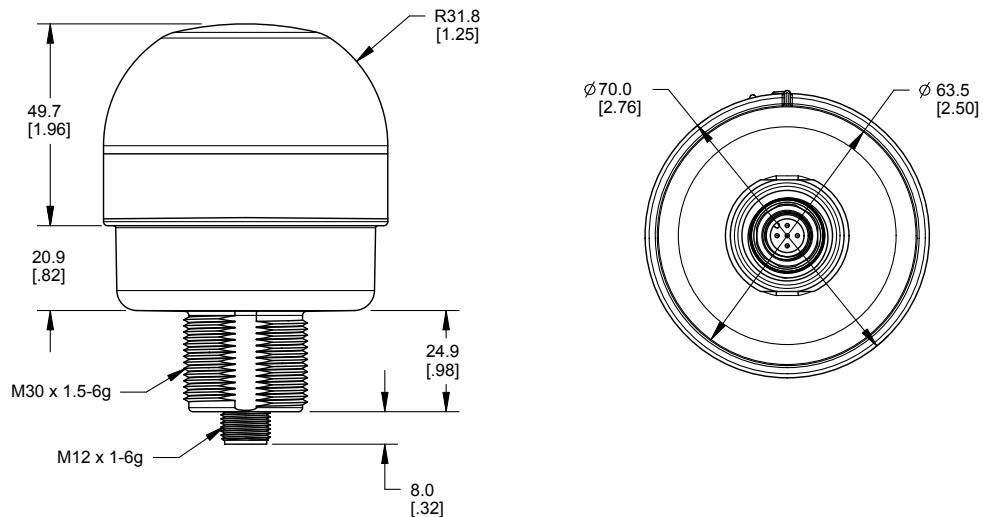
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to <http://www.bannerengineering.com>.

Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

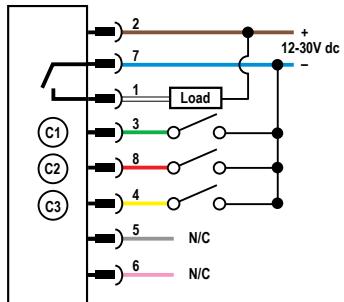
## Dimensions



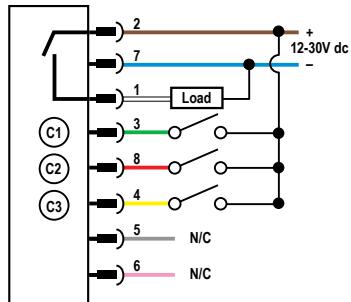
All measurements are listed in millimeters [inches], unless noted otherwise.

## Wiring Diagram

NPN (Sinking) Output Models



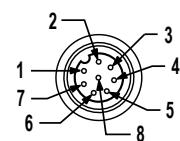
PNP (Sourcing) Output Models



Wiring Key

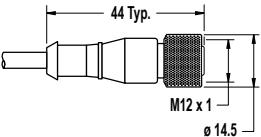
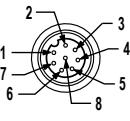
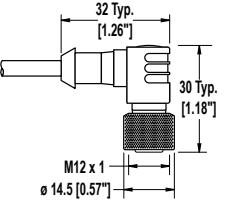
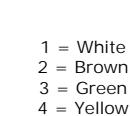
- 1 = White
- 2 = Brown
- 3 = Green
- 4 = Yellow
- 5 = Gray
- 6 = Pink
- 7 = Blue
- 8 = Red

Pinout



## Accessories

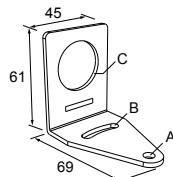
### Cordsets

8-Pin Threaded M12/Euro-Style Cordsets with Open-Shield				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC2S-806	1.83 m (6 ft)	Straight		 1 = White 2 = Brown 3 = Green 4 = Yellow 5 = Gray 6 = Pink 7 = Blue 8 = Red
MQDC2S-815	4.57 m (15 ft)			
MQDC2S-830	9.14 m (30 ft)			
MQDC2S-850	15.2 m (50 ft)			
MQDC2S-806RA	1.83 m (6 ft)	Right-Angle		 1 = White 2 = Brown 3 = Green 4 = Yellow 5 = Gray 6 = Pink 7 = Blue 8 = Red
MQDC2S-815RA	4.57 m (15 ft)			
MQDC2S-830RA	9.14 m (30 ft)			
MQDC2S-850RA	15.2 m (50 ft)			

### Brackets

#### SMB30A

- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 ( $\frac{1}{4}$  in) hardware
- Mounting hole for 30 mm sensor
- 12-ga. stainless steel

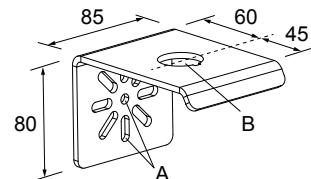


Hole center spacing: A to B=40

Hole size: A=Ø 6.3, B= 27.1 x 6.3, C=Ø 30.5

#### SSA-MBK-EEC1

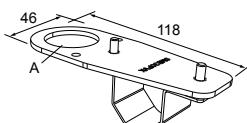
- Single 30 mm hole
- 8 gauge steel, black finish (powder coat)
- Front surface for customer applied labels



Hole size: A = Ø 7 , B = Ø 30

#### SMB30FVK

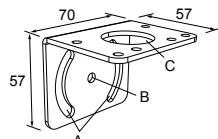
- V-clamp, flat bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors



Hole size: A= Ø 31

#### SMB30MM

- 12-ga. stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 ( $\frac{1}{4}$  in) hardware
- Mounting hole for 30 mm sensor



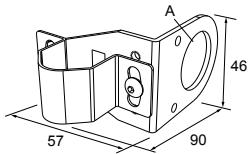
Hole center spacing: A = 51, A to B = 25.4

Hole size: A = 42.6 x 7, B = Ø 6.4, C = Ø 30.1

## SMB30RAVK

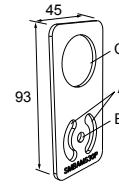
- V-clamp, right-angle bracket and fasteners for mounting sensors to pipe or extrusion
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors

Hole size: A = ø 30.5



## SMBAMS30P

- Flat SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90° + rotation
- 12-ga. 300 series stainless steel



Hole center spacing: A=26.0, A to B=13.0

Hole size: A=26.8 x 7.0, B=ø 6.5, C=ø 31.0

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