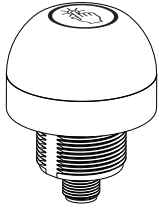
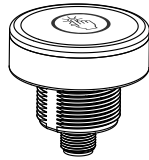


Datasheet

Compact, Single-Point Devices for Error-Proofing of Bin-Picking Operations



Standard Model



Compact Model

- Excellent immunity to false triggering by water spray, detergents, oils, and other foreign materials
- Rugged, cost-effective and easy-to-install solutions for error-proofing and parts-verification applications
- Compact devices are completely self contained—no controller needed
- Waterproof IEC IP69K construction for washdown environments
- Easy actuation—no force required
- 12 V dc to 30 V dc operation
- Can be actuated with bare hands or gloves
- Compact models available for lower profile applications



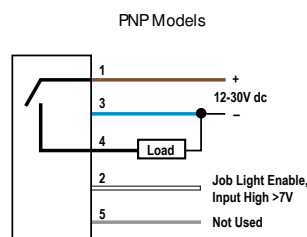
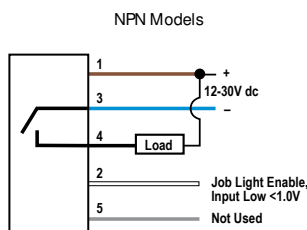
WARNING: Not To Be Used for Personnel Protection

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	Function	Output ²	Connection	Indicators		
				Job	Mispick	Sense
K50APT2GRYC3Q	<ul style="list-style-type: none"> • Job light always illuminated with job input until touched • Touch activates output and overrides job light with sense light • Touch with inactive job input activates mispick light and activates output 	PNP, N.O.	Integral 5-pin M12/ Euro-style male quick disconnect (QD)	Green	Red	Yellow
K50FPT2GRYC3Q		PNP, N.C.				
K50APT2GRYC4Q	<ul style="list-style-type: none"> • Job light always illuminated with job input until touched • Touch activates output and overrides job light with sense light until job input is removed • Touch with inactive job input activates mispick light for 5 seconds after touched and activates output 	PNP, N.O.		Green	Red	Yellow
K50FPT2GRYC4Q		PNP, N.C.				

Wiring Diagrams



Wiring Key

- 1 = Brown
- 2 = White
- 3 = Blue
- 4 = Black
- 5 = Gray



Note: Cabled wiring diagrams are shown. Quick disconnect (QD) wiring diagrams are functionally identical.

¹ Integral 5-pin M12/ Euro-style quick disconnect models are listed.


- To order the 2 m (6.5 ft) PVC cable model, omit the suffix "Q" in the model number. For example K50APT2GRYC3.
- To order the 150 mm (6 in) PUR cable model with a 5-Pin M12/ Euro-style quick disconnect, replace the suffix "Q" with "QPMA" in the model number. For example, K50APT2GRYC3QPMA.
- To order the 150 mm (6 in) PVC cable model with a 5-pin M12/ Euro-style quick disconnect, replace the suffix "Q" with "QP" in the model number. For example, K50APT2GRYC3QP.
- To order a compact model, add the suffix "C" after K50 in the model number. For example, K50CAPTLGRYC3Q.
- Models with a quick disconnect require a mating cordset.

² PNP models only are listed. For other output types, contact Banner Engineering.



Indicator and Output Behavior

Sensor Conditions		Indicator		Output Signal Status
		C3 Models	C4 Models	
Job input active	Hand/pick absent	On Green	On Green	Off
	Hand/pick present	On Yellow	On Yellow until job input is removed	On
No job input	Hand/pick absent	Off	Off	Off
	Hand/pick present	On Red	On Red for 5 seconds after hand/pick is removed	On

 Note: "C3" and "C4" models as referenced in the table pertain to a part of the product model number, immediately preceding the designation.

Specifications

Supply Voltage

12 V dc to 30 V dc

Supply Current

< 75 mA max current at 12 V dc (exclusive of load)
< 50 mA max 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 milliseconds On
500 milliseconds leading edge Off

Power-Up Delay

300 milliseconds

Operating Conditions

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

Storage Conditions

-40 °C to +70 °C (-40 °F to +158 °F)

Construction

Housing: polycarbonate
Translucent dome: polycarbonate
Mounting nut: PBT

Connections

5-pin integral M12/Euro-style QD, 2 m (6.5 ft) PVC integral cable, 5-pin 150 mm (6 in) M12/Euro-style PUR cable QD, or 5-pin 150 mm (6 in) M12/Euro-style PVC cable QD

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

Certifications



Indicator Lumens

Color	Typical Wavelength	Typical Intensity (lm)
Green	525 nm	29
Red	625 nm	13
Yellow	591 nm	24

Mounting

M30 × 1.5 threaded base max. torque 4.5 N·m (40 in-lbf)

Environmental Rating

IEC IP67, IP69K per DIN 40050-9.
Cabled models also meet IP69K if the cable and cable entrance are protected from high-pressure spray.

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.

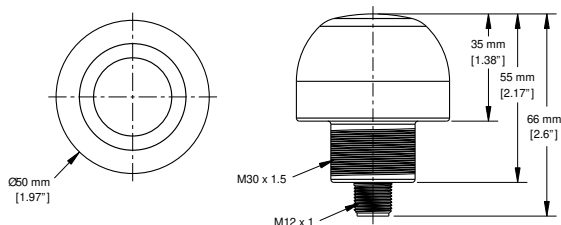
Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

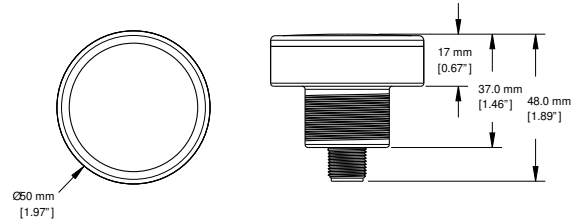
Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

Dimensions

Standard Models



Compact Models



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

Accessories

Cordsets

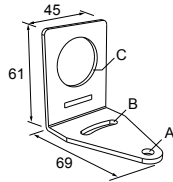
5-Pin Threaded M12/ Euro-Style Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDCI-501.5	0.50 m (1.5 ft)	Straight		
MQDCI-506	1.83 m (6 ft)			
MQDCI-515	4.57 m (15 ft)			
MQDCI-530	9.14 m (30 ft)			
MQDCI-506RA	1.83 m (6 ft)	Right-Angle		
MQDCI-515RA	4.57 m (15 ft)			
MQDCI-530RA	9.14 m (30 ft)			

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

Brackets

SMB30A

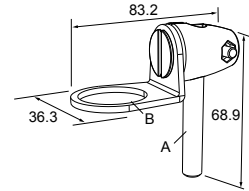
- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (1/4in) hardware
- Mounting hole for 30 mm sensor
- 12-ga. stainless steel



Hole center spacing: A to B=40
Hole size: A=ø 6.3, B= 27.1 x 6.3, C=ø 30.5

SMB30FA

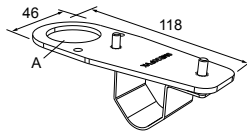
- Swivel bracket with tilt and pan movement for precise adjustment
- Mounting hole for 30 mm sensor
- 12-ga. 304 stainless steel
- Easy sensor mounting to extrude rail T-slot
- Metric and inch size bolt available



Bolt thread: SMB30FA, A= 3/8 - 16 x 2 in; SMB30FAM10, A= M10 - 1.5 x 50
Hole size: B= ø 30.1

SMB30FVK

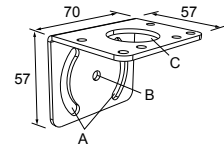
- V-clamp, flat bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors



Hole size: A= ø 31

SMB30MM

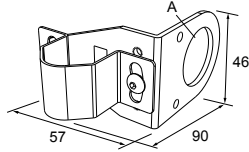
- 12-ga. stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (1/4in) hardware
- Mounting hole for 30 mm sensor



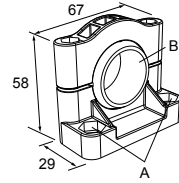
Hole center spacing: A = 51, A to B = 25.4
Hole size: A = 42.6 x 7, B = ø 6.4, C = ø 30.1

SMB30RAVK

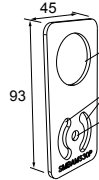
- V-clamp, right-angle bracket and fasteners for mounting sensors to pipe or extrusion
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors

Hole size: A = \varnothing 30.5**SMB30SC**

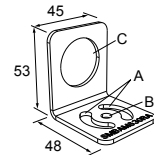
- Swivel bracket with 30 mm mounting hole for sensor
- Black reinforced thermoplastic polyester
- Stainless steel mounting and swivel locking hardware included

Hole center spacing: A= \varnothing 50.8
Hole size: A= \varnothing 7.0, B= \varnothing 30.0**SMBAMS30P**

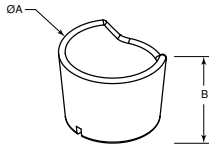
- Flat SMBAMSseries bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. 300 series stainless steel

Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 x 7.0, B= \varnothing 6.5, C= \varnothing 31.0**SMBAMS30RA**

- Right-angle SMBAMSseries bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. (2.6 mm) cold-rolled steel

Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 x 7.0, B= \varnothing 6.5, C= \varnothing 31.0**TC-K50-QL**

- Touch cover

Diameter: A = 67 mm
Height: B = 42.5 mm

Banner Engineering Corp. Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.

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FCC Part 15 and CAN ICES-3 (B)/NMB-3(B)

This device complies with part 15 of the FCC Rules and CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules and CAN ICES-3 (B)/NMB-3(B). These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the manufacturer.