

Features

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



Standard Model

- Rugged, cost-effective, and easy-to-install solutions for error-proofing and parts-verification applications
- Compact devices are completely self-contained, no controller is needed
- Illuminated dome provides a big, easy-to-see green, red, or yellow job light
- Waterproof 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

WARNING:



- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

Models

Model ⁽¹⁾	Function	Output ⁽²⁾	Connection	Indicators		
				Job	Mispick	Sense
K50APTGRYC3Q	<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 male quick-disconnect connector	Green	Red	Yellow
K50RPTGRYC3Q		PNP, N.C.				
K50APTGRYC4Q	<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.	Integral 5-pin M12 male quick-disconnect connector	Green	Red	Yellow
K50RPTGRYC4Q		PNP, N.C.				

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 Q designation.

Wiring

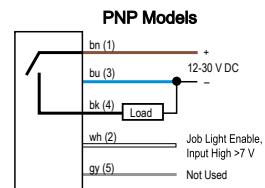
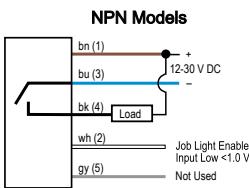
Cabled wiring diagrams are shown. Quick disconnect wiring diagrams are functionally identical.

⁽¹⁾ Integral 5-pin M12 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 K50APTGRYC3.
- To order the 150 mm (6 in) PUR cable model with a 5-Pin M12 quick disconnect, replace the suffix "Q" with "QPMA" in the model number. For example, K50APTGRYC3QPMA.
- To order the 150 mm (6 in) PVC cable model with a 5-pin M12 quick disconnect, replace the suffix "Q" with "QP" in the model number. For example, K50APTGRYC3QP.
- Models with a quick disconnect require a mating cordset.

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





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 μ A 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

Integral 5-pin M12 male quick-disconnect connector, 2 m (6.5 ft) integral PVC-jacketed cable, 150 mm (6 in) PUR-jacketed cable with 8-pin M12 male quick-disconnect connector, or 150 mm (6 in) PVC-jacketed cable with 5-pin M12 male quick-disconnect connector

Vibration and Mechanical Shock

All models meet Mil. Std. 202F requirements method 201A (vibration: 10 Hz to 60 Hz max., double amplitude 0.06 in. maximum acceleration 10G). Also meets IEC 947-5-2; 30G 11 ms duration, half sine wave.

Certifications



Banner Engineering BV
Park Lane, Culiganlaan 2F bus 3
1831 Diegem, BELGIUM



Indicator Lumens

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

Mounting

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

Environmental Rating

IP67, IP69K per ISO 20653
Cabled models also meet IP69K per ISO 20653 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.

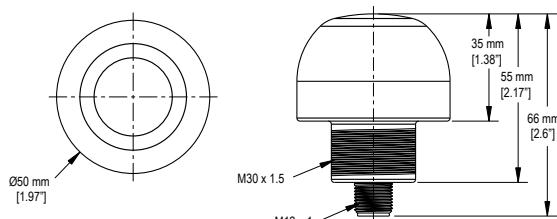
Supply wiring leads < 24 AWG shall not be spliced. For additional product support, go to Key definition for "URL" not found in the DITA map.

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

Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

Standard Models



Accessories

Cordsets

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

5-Pin Single-Ended M12 Female Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC1-501.5	0.5 m (1.5 ft)	Straight		
MQDC1-503	0.9 m (2.9 ft)			
MQDC1-506	2 m (6.5 ft)			
MQDC1-515	5 m (16.4 ft)			
MQDC1-530	9 m (29.5 ft)			
MQDC1-560	18 m (59 ft)			
MQDC1-5100	31 m (101.7 ft)			
MQDC1-506RA	2 m (6.5 ft)			
MQDC1-515RA	5 m (16.4 ft)			
MQDC1-530RA	9 m (29.5 ft)	Right-Angle		
MQDC1-560RA	19 m (62.3 ft)			

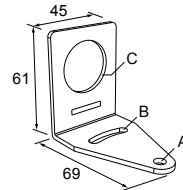
Brackets

SMB30A

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

Hole center spacing: A to B=40

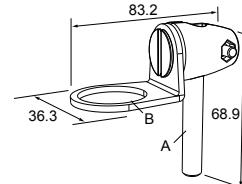
Hole size: A=Ø 6.3, B= 27.1 × 6.3, C=Ø 30.5



SMB30FA

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

Bolt thread: SMB30FA, A= 3/8 - 16 × 2 in; SMB30FAM10, A= M10 - 1.5 × 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

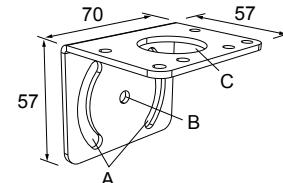


SMB30MM

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

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

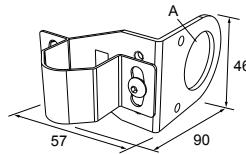
Hole size: A = 42.6 × 7, B = Ø 6.4, C = Ø 30.1



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

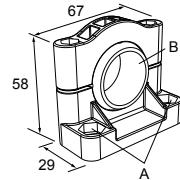


SMB30SC

- 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

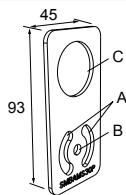


SMBAMS30P

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

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

Hole size: A=26.8 \times 7.0, B= \varnothing 6.5, C= \varnothing 31.0

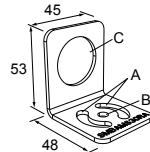


SMBAMS30RA

- Right-angle SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-gauge (2.6 mm) cold-rolled steel

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

Hole size: A=26.8 \times 7.0, B= \varnothing 6.5, C= \varnothing 31.0

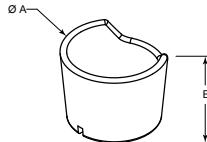


TC-K50-CL

- Touch cover

Diameter: A = 67 mm

Height: B = 42.5 mm



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