# Features

*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 is needed
- 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
- Compact models available for lower profile applications

**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.

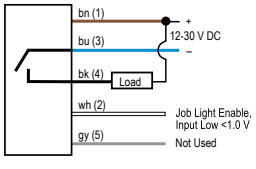
# Models

| Model[1] | Function | Output[2] | Connection | Indicators | | |
|---|---|---|---|---|---|---|
| | | | | Job | Mispick | Sense |
| K50APT2GRYC3Q | • Job light always illuminated with job input until touched<br>• Touch activates output and overrides job light with sense light<br>• 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 |
| K50RPT2GRYC3Q | | PNP, N.C. | | | | |
| K50APT2GRYC4Q | • Job light always illuminated with job input until touched<br>• Touch activates output and overrides job light with sense light until job input is removed<br>• Touch with inactive job input activates mispick light for 5 seconds after touched and activates output | PNP, N.O. | | Green | Red | Yellow |
| K50RPT2GRYC4Q | | PNP, N.C. | | | | |

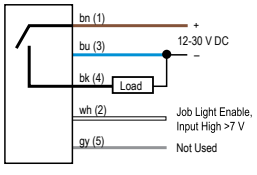
# Wiring Diagrams

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

**NPN Models**




**PNP Models**




[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 K50APT2GRYC3.
- 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, K50APT2GRYC3QPMA.
- 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, 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.

Original Instructions
30-Jun-25

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p/n: 189831 Rev. E

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

# 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**
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**
Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6
Shock: 30G 11 ms duration, half sine wave per IEC 60068-2-27

**Certifications**

Banner Engineering BV
Park Lane, Culliganlaan 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 × 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 www.bannerengineering.com.

| 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 |


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# FCC Part 15 Class B for Unintentional Radiators

(Part 15.105(b)) 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. 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 dealer or an experienced radio/TV technician for help.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

# Industry Canada ICES-003(B)

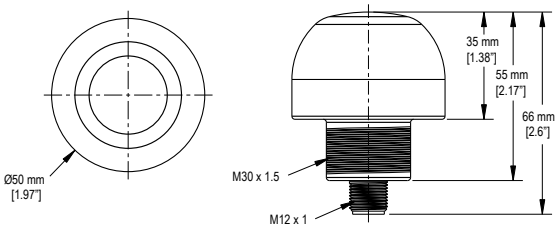
This device complies with CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme NMB-3(B). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.

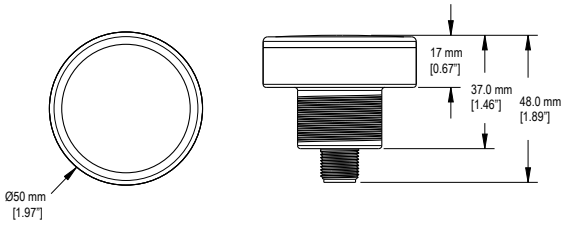
# Dimensions

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

**Standard Models**



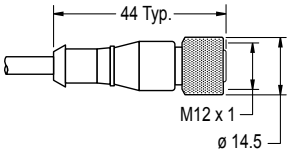
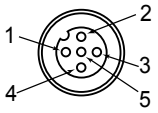
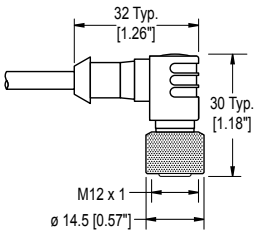

**Compact Models**




# Accessories

## Cordsets

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

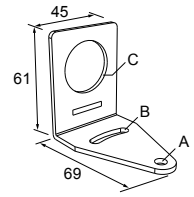
| 5-Pin Single-Ended M12 Female Cordsets | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout (Female)** |
| **MQDC1-501.5** | 0.5 m (1.5 ft) | Straight |   |   1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray |
| **MQDC1-503** | 0.9 m (2.9 ft) | | | |
| **MQDC1-506** | 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) | Right-Angle |   | |
| **MQDC1-515RA** | 5 m (16.4 ft) | | | |
| **MQDC1-530RA** | 9 m (29.5 ft) | | | |
| **MQDC1-560RA** | 19 m (62.3 ft) | | | |


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# Brackets

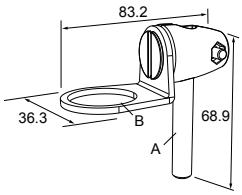
**SMB30A**
- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- 12-gauge stainless steel

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



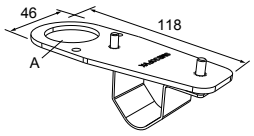

**SMB30FA**
- Swivel bracket with tilt and pan movement for precise adjustment
- Mounting hole for 30 mm sensor
- 12-gauge 304 stainless steel
- Easy sensor mounting to extrude rail T-slot
- Metric- and inch-size bolt available

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



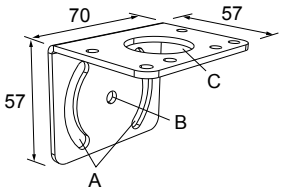

**SMB30FVK**
- V-clamp, flat bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors

**Hole size:** A= ø 31



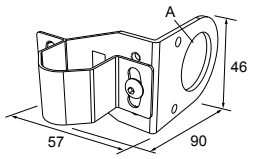

**SMB30MM**
- 12-gauge stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor

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



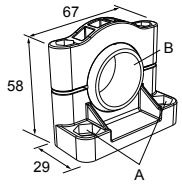

**SMB30RAVK**
- V-clamp, right-angle bracket and fasteners for mounting sensors to pipe or extrusion
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors

**Hole size:** A = ø 30.5



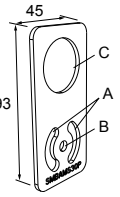

**SMB30SC**
- Swivel bracket with 30 mm mounting hole for sensor
- Black reinforced thermoplastic polyester
- Stainless steel mounting and swivel locking hardware included

**Hole center spacing:** A=ø 50.8
**Hole size:** A=ø 7.0, B=ø 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 × 7.0, B=ø 6.5, C=ø 31.0



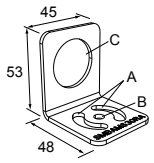


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**SMBAMS30RA**

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

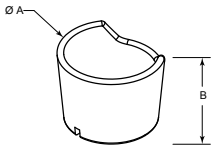
**Hole center spacing:** A=26.0, A to B=13.0
**Hole size:** A=26.8 × 7.0, B=ø 6.5, C=ø 31.0




**TC-K50-CL**

- Touch cover

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




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