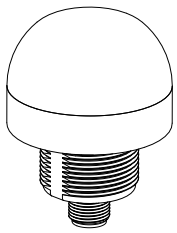
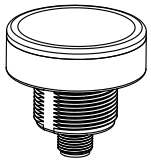
# Datasheet

*50 mm Programmable Multicolor RGB Indicator with Audible Models and an Optional Flashing Input Control*



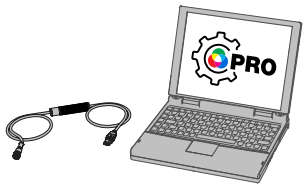
**Standard model**



**Compact model**

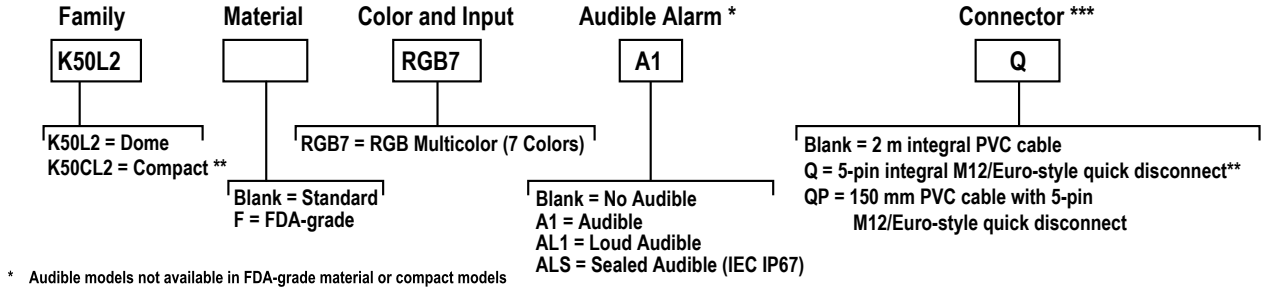
- Bright, uniform indicator light
- Seven default colors in one device (Green, Red, Yellow, Blue, White, Cyan, Magenta)
- Programmable using Banner's Pro Editor software and Pro Converter Cable
- 30 mm threaded polycarbonate base
- Translucent polycarbonate dome
- Compact models available for lower profile applications
- Rugged IP66, IP67, IP69K per DIN 40050-9 and UL Type 4X and UL Type 13 design
- Bimodal inputs (PNP/NPN), depending on source wiring
- Models with integrated audible alarm available
- Variety of connector options
- Models constructed from FDA-grade materials available

## Pro Editor




Use Banner's Pro Editor software and Pro Converter Cable to create custom configurations by selecting different colors, flash patterns, and animations.
For more information visit www.bannerengineering.com/proeditor.

## Models




* Audible models not available in FDA-grade material or compact models
** Compact models and Integral quick disconnect models not available in FDA-grade material
*** Models with a quick disconnect require a mating cordset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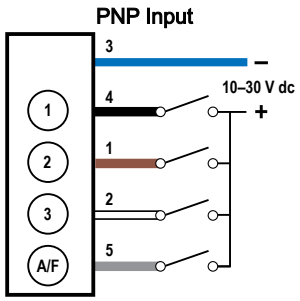
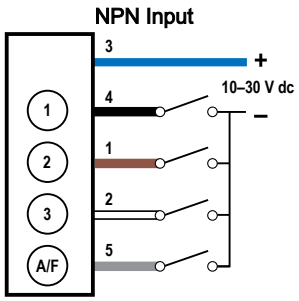
p/n: 197815 Rev. I

# Wiring Diagrams




**Key**
1 = Brown
2 = White
3 = Blue
4 = Black
5 = Gray*
*Gray wire audible or flash input, depending on model

*Default Color Definition*

| | Red | Yellow | Green | Cyan | Blue | Magenta | White |
|---|---|---|---|---|---|---|---|
| **Input 1** | X | X | | | | X | X |
| **Input 2** | | X | X | X | | | X |
| **Input 3** | | | | X | X | X | X |

An "X" denotes an active input, for example when Input 1 and Input 3 are active, the indicator will show Magenta.

# Specifications

**Supply Voltage and Current**
10 V DC to 30 V DC
- 220 mA at 10 V DC
- 190 mA at 12 V DC
- 115 mA at 24 V DC
- 100 mA at 30 V Dc

**Supply Protection Circuitry**
Protected against reverse polarity and transient voltages

**Leakage Current Immunity**
400 µA

**Input Response Time**
250 milliseconds maximum

**Flash**
Default 1.5 Hz flash rate using flash input wire (not available on audible models)

**Vibration and Mechanical Shock**
Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 1.0 mm amplitude, 5 minutes sweep, 30 minutes dwell)
Meets IEC 60068-2-27 requirements (Shock: 30G 11 ms duration, half sine wave)

**Operating Conditions**
–40 °C to +50 °C (–40 °F to +122 °F)
90% at +50 °C maximum relative humidity (non-condensing)
Storage Temperature: –40 °C to +70 °C (–40 °F to +158 °F)

**Environmental Rating**
Standard and Compact Models:
Non-Audible Models: IP66, IP67, IP69K per DIN 40050-9
A1 and AL1 Models: IP50
ALS Models: IP67
All Models: Meets UL Type 4X and UL Type 13 when mounted in a UL Type 4X or Type 13 enclosure
All Cabled Models also meet IP69K per DIN 40050-9 if the cable and cable entrance are protected from high-pressure spray
FDA Models: IP66, IP67, IP69K per DIN 40050-9

**Audible Alarm**
All models have a steady tone
A1 Model: 75 dB at 1 meter (typical), 3 kHz ± 500 Hz
AL1 Model: 95 dB at 1 meter (typical), 2.7 kHz ± 500 Hz
ALS Model: 94 dB at 1 meter (typical), 2.9 kHz ± 250 Hz

**Connections**
Integral 5-pin M12 male quick-disconnect connector, 150 mm (6 in) PVC-jacketed cable with an M12 quick disconnect, or 2 m (6.5 ft) integral PVC-jacketed cable, depending on model
Models with a quick disconnect require a mating cordset

**Mounting**
M30 by 1.5 threaded base, maximum torque 4.5 N·m (40 inch-lbf)
Mounting nut included

**Construction**
Standard and Compact Model Base, Dome, and Nut: Polycarbonate
FDA Model Base, Dome, and Nut: FDA-grade polycarbonate

**Pro Editor Configuration**
Connection to Pro Editor software enables control of:
- Animation: On, Flash, Two Color Flash, 50/50, 50/50 Rotate, Chase, Intensity Sweep, Color Sweep, Sequence, Wave, Double Wave,
- Color: Green, Red, Yellow, Blue, White, Cyan, Magenta, Amber, Rose, Lime Green, Orange, Sky Blue, Violet, Spring Green
- Intensity: Low, Medium, High
- Speed: Slow, Standard, Fast

Pro Converter Cable required to interface between PC and indicator, see accessories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### Default Indicator Characteristics

| Color | Dominant Wavelength (nm) or Color Temperature (CCT) | Color Coordinates[1] | | Lumen Output (Typical at 25 °C) [2] |
|---|---|---|---|---|
| | | x | y | |
| Green | 530 nm | 0.170 | 0.711 | 21.4 |
| Red | 625 nm | 0.688 | 0.310 | 6.3 |
| Yellow | – | 0.457 | 0.485 | 17.2 |
| Blue | 470 nm | 0.133 | 0.072 | 4.7 |
| White | 5950 K | 0.323 | 0.336 | 21.3 |
| Cyan | – | 0.154 | 0.321 | 25.1 |
| Magenta | – | 0.365 | 0.176 | 8.5 |

[1] Refer to CIE 1931 chromaticity diagram or color chart, to show equivalent color with indicated color coordinates.
[2] Values shown apply to dome models only. Compact models are 20% lower.

### 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 |

### Certifications

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

Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN

## FCC Part 15 Class 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.

## Industry Canada

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.


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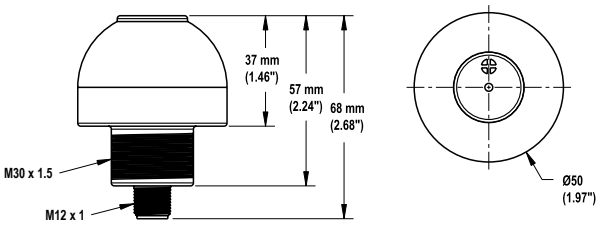
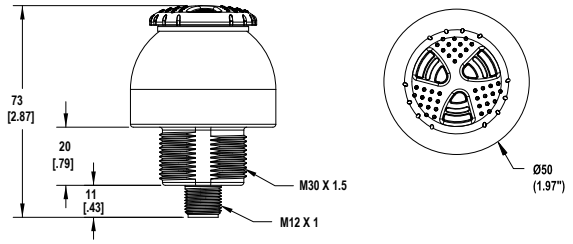
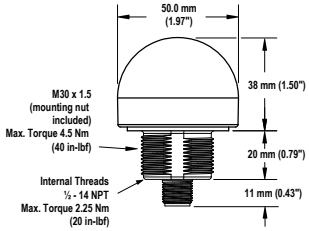
**A1 and AL1 Audible Models**



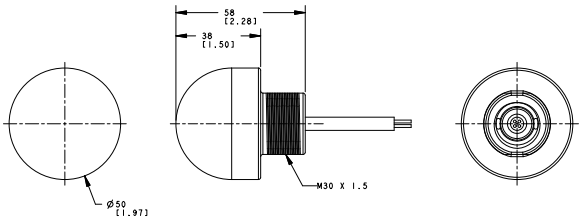

**ALS Audible Models**



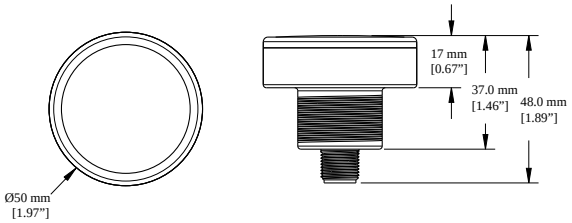

**Non-Audible Models**




**Cabled Models**




**Compact Models**

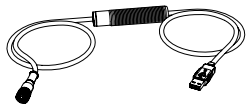



# Accessories

## Pro Editor Hardware

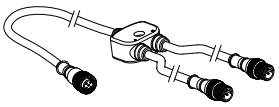
**MQDC-506-USB**

- Pro Converter Cable
- 1.83 m (6 ft) length 5-pin M12 quick disconnect to Device and USB to PC
- Required for connection to Pro Editor



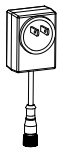
**CSB-M1251FM1251M**

- 5-pin parallel Y splitter (Male-Male-Female)
- For full Pro Editor preview capability
- Requires external power supply, sold separately



**PSW-24-1**

- 24 V DC, 1 A power supply
- 2 m (6.5 ft) PVC cable with M12 quick disconnect
- Provides external power with splitter cable, sold separately

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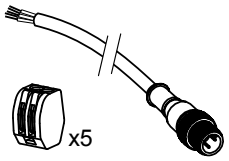
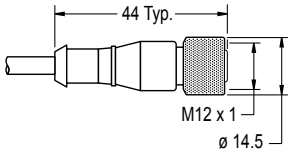
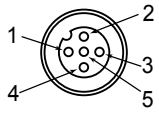
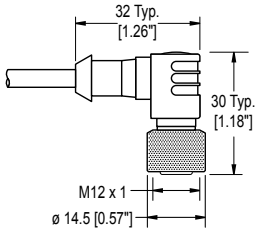
**ACC-PRO-CABLE5**

- Mating accessory for cabled and terminal models
- 150 mm (6 inch) PVC cable with M12 quick disconnect
- Lever wire nuts included (qty 5)
- Required to connect cabled models and screw terminal models to Pro Converter Cable, sold separately

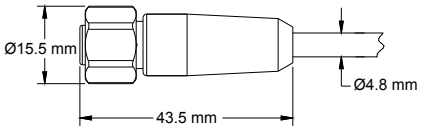
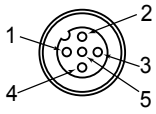



# Cordsets

**5-Pin Threaded M12 Cordsets—Single Ended**

| 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) | | | |

**5-Pin Threaded M12 Stainless Steel Washdown Cordsets—Single Ended**

| Model | Length | Style | Dimensions | Pinout (Female) |
|---|---|---|---|---|
| MQDC-WDSS-0506 | 2 m (6.56 ft) | Straight |  |  1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray |
| MQDC-WDSS-0515 | 5 m (16.4 ft) | | | |
| MQDC-WDSS-0530 | 9 m (29.5 ft) | | | |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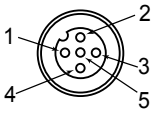
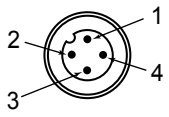
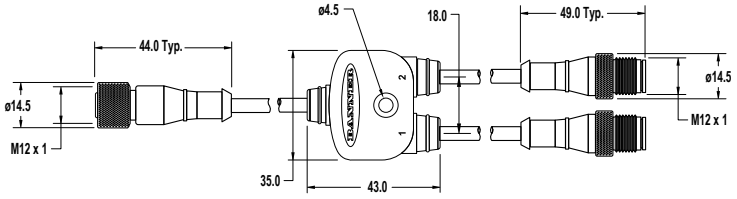
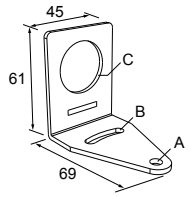
# Splitter Cables for Use with IO-Blocks

| 5-Pin Threaded M12 to 4-Pin Threaded M12 Combiner Cordset with Flat Junction | | | |
|---|---|---|---|
| **Model** | **Branches (Male)** | **Trunk (Female)** | **Pinout** |
| **CSF-M12F51M12M41** | 4-pin Quick Disconnect, 2 × 0.31 m (1.02 ft) | 5-pin Quick Disconnect, 0.31 m (1.02 ft) | Female   Male   1 = brown (trunk); no connection (branches 1 and 2)<br>2 = white (trunk); brown (branch 1); gray (branch 2)<br>3 = blue (trunk; branches 1 and 2)<br>4 = black (trunk); black (branch 1); white (branch 2)<br>5 = gray (trunk only) |



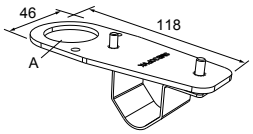

# Brackets

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



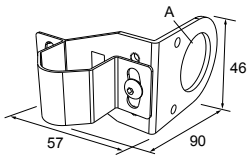

**Hole center spacing:** A to B=40
**Hole size:** A=ø 6.3, B= 27.1 x 6.3, C=ø 30.5

**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

**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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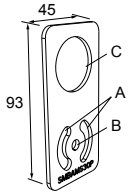
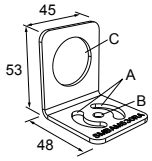
**SMBAMS30P**
- Flat SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. 300 series stainless steel



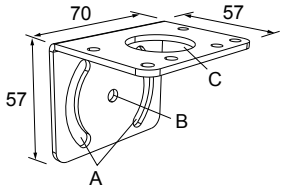

**Hole center spacing:** A=26.0, A to B=13.0
**Hole size:** A=26.8 x 7.0, B=ø 6.5, C=ø 31.0

**SMBAMS30RA**
- Right-angle SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. (2.6 mm) cold-rolled steel



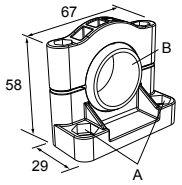

**Hole center spacing:** A=26.0, A to B=13.0
**Hole size:** A=26.8 x 7.0, B=ø 6.5, C=ø 31.0

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



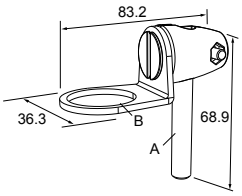

**Hole center spacing:** A = 51, A to B = 25.4
**Hole size:** A = 42.6 x 7, B = ø 6.4, C = ø 30.1

**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

**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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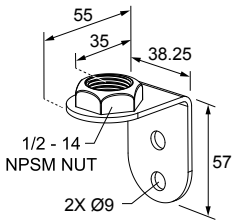
**LMBE12RA35**

- Direct mounting of stand-off pipe, with common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the center of the 1/2-14 NPSM nut is 35 mm

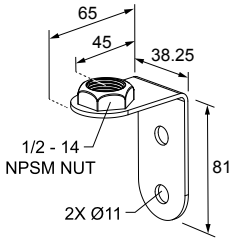
Hole center spacing: 20.0




**LMBE12RA45**

- Direct mounting of stand-off pipe, with common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the center of the 1/2-14 NPSM nut is 45 mm

Hole center spacing: 35.0




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

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Document title: K50 Pro Indicator
Part number: 197815
Revision: I
Original Instructions
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