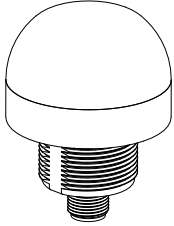


# K50 Pro Indicator with IO-Link



## Datasheet

50 mm IO-Link controlled multicolor RGB indicator with audible models



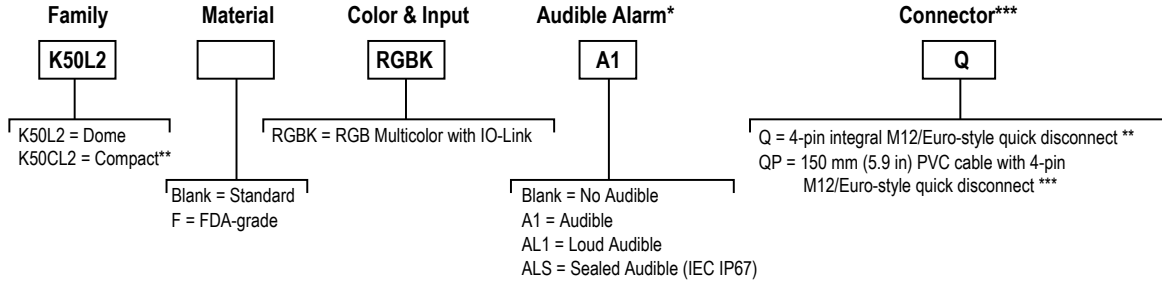
Standard model

- Bright, uniform indicator light
- IO-Link control allows access to full color, flashing and dimming controls as well as advanced animations
- Millions of color possibilities
- 30 mm threaded polycarbonate base
- Translucent polycarbonate dome (standard models)
- Compact models are available for lower profile applications
- Rugged IEC IP66, IEC IP67, IP69K per DIN 40050-9, and UL Type 4X, 13 design
- Models with integrated audible alarm available
- Models constructed from FDA-grade materials available



Compact model

## Models

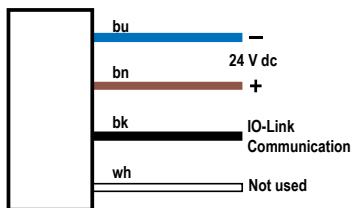


\* Audible models are not available in FDA-grade material or compact models

\*\* Compact models and integral quick disconnect models are not available in FDA-grade materials

\*\*\* Models with a quick disconnect require a mating cordset

## Wiring Diagram



## IO-Link® Process Out Data

IO-Link is a point-to-point communication link between a master device and a sensor and/or light. It can be used to automatically parameterize sensors or lights and to transmit and/or receive process data. For the latest IO-Link protocol and specifications, please visit [www.io-link.com](http://www.io-link.com). For the latest IODD files, please refer to the Banner Engineering Corp website at: [www.bannerengineering.com](http://www.bannerengineering.com).



Process Data is transmitted cyclically to the IO-Link device from the IO-Link master. These parameters are written to the K50 acyclically and are used to perform the following functions:

- Indicator light on and off
- Audible on and off (audible models only)
- Full color control of indicator light (defined colors and ability to create custom colors)
- Full flashing control of indicator light (defined flashing rates and ability to create custom rates)
- Full dimming control of indicator light (defined intensities and ability to create custom intensities)
- Various animation control and configurability
  - Flashing: flash light at defined flash rate (50/50 duty cycle)
  - Two-Color Flashing: flash two colors at defined flash rate, alternating (50/50 duty cycle)
  - Strobe: strobe light at defined flash rate (80/20 duty cycle)
  - Half/Half: show half one color and half another color
  - Half/Half Rotate: animation that shows half one color and half another color while rotating clockwise or counter-clockwise
  - Chase: animation that shows a single spot in one color against a background of another color while rotating clockwise or counter-clockwise
  - Demo Mode: cycles through defined colors and then through color spectrum



**Note:** Additional color shades can be made by adjusting intensity

IO-Link Process Data Out for the K50	
Name	Values
Color 1	Green, Red, Orange, Yellow, Lime Green, Spring Green, Cyan, Sky Blue, Blue, Violet, Magenta, Rose, White, 5 Custom Colors to define
Color 2	
Color Flash Rate (Hz)	0.5, 1.5, 3, 6, 9, 12, Custom Rate to define
Color 1 Intensity	High, Medium, Low, Custom Intensity to define
Color 2 Intensity	
Audible Mode	Off, On, Pulsed
Animation Mode	Steady, Flash, Two-Color Flash, Strobe, Half/Half, Half/Half Rotate, Chase, Demo Mode
Rotation Direction	Counter Clockwise, Clockwise

For more information see IO-Link Data Reference Guide: K50 Pro Indicator (p/n 200721).

## Specifications

### Supply Voltage and Current

24 V dc  $\pm$  25%  
115 mA typical at 24 V dc  
150 mA maximum at 18 V dc

### Supply Protection Circuitry

Protected against reverse polarity and transient voltages

### Input Response Time

30 milliseconds maximum while active

### Audible Alarm

All models have a steady tone

**A1 Model:** 75 dB at 1 m (typical), 3 kHz  $\pm$  500 Hz

**AL1 Model:** 95 dB at 1 m (typical), 2.7 kHz  $\pm$  500 Hz

**ALS Model:** 94 dB at 1 m (typical), 2.9 kHz  $\pm$  250 Hz

### Connections

Integral 4-pin M12/Euro-style quick disconnect, or 150 mm (6 in) PVC cable with a M12/Euro-style quick disconnect, 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

### 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)

### Indicator Characteristics

Color	Dominant Wavelength (nm) or Color Temperature (CCT)	Color Coordinates <sup>1</sup>		Lumen Output (Typical at 25 °C) <sup>2</sup>
		x	y	
Green	530 nm	0.197	0.720	20.9
Red	625 nm	0.687	0.308	5.5
Yellow	–	0.493	0.471	14.6
Blue	470 nm	0.140	0.076	5.1
Orange	–	0.612	0.372	8.1
White	5700 K	0.328	0.337	20.0
Cyan	–	0.164	0.350	24.0
Magenta	–	0.382	0.179	7.3
Lime Green	–	0.387	0.561	25.9
Spring Green	–	0.180	0.529	22.0
Sky Blue	–	0.155	0.250	22.8
Violet	–	0.213	0.107	8.1
Rose	–	0.507	0.231	6.2

<sup>1</sup> Refer to CIE 1931 chromaticity diagram or color chart, to show equivalent color with indicated color coordinates.

<sup>2</sup> 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](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

**Operating Conditions**

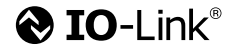
-40 °C to +50 °C (-40 °F to +122 °F)  
 90% at +50 °C maximum relative humidity (non-condensing)  
 Storage Temperature: -40 °C to +70 °C (-40 °F to +158 °F)

**Environmental Rating**

Model	Rating
<b>Non-Audible</b>	IEC IP66, IEC IP67, IP69K per DIN 40050-9 Cabled models meet IP69K per DIN 40050-9 if the cable and cable entrance are protected from high-pressure spray
<b>A1 and AL1</b>	IEC IP50
<b>ALS</b>	IEC IP66, IEC IP67
<b>FDA</b>	IEC IP66, IEC IP67, IP69K per DIN 40050-9

All models meet UL Type 4X, 13 when used in a suitable enclosure

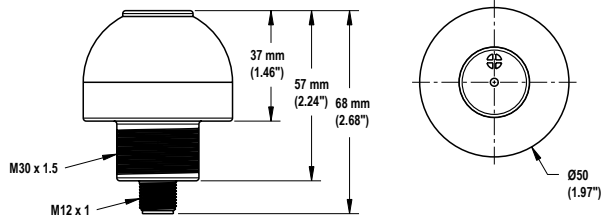
**Certifications**



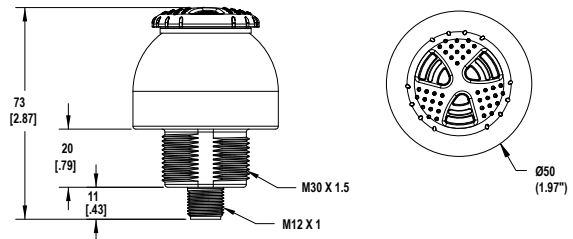
**Dimensions**

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

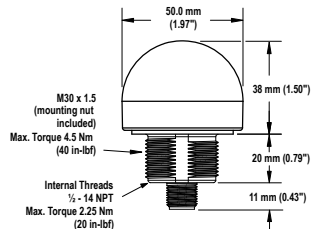
**A1 and AL1 Audible Models**



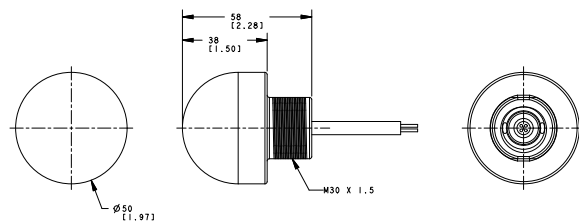
**ALS Audible Models**



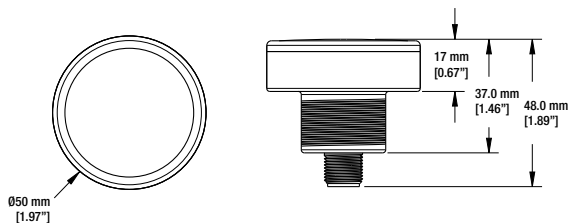
**Non-Audible Models**



**Cabled Models**



**Compact Models**



## Accessories

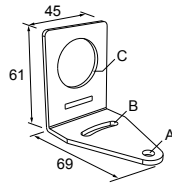
### Cordsets

4-Pin Threaded M12/Euro-Style Cordsets—Double Ended				
Model	Length	Style	Dimensions	Pinout
MQDEC-401SS	0.31 m (1 ft)	Male Straight/ Female Straight		Female
MQDEC-403SS	0.91 m (3 ft)			
MQDEC-406SS	1.83 m (6 ft)			Male
MQDEC-412SS	3.66 m (12 ft)			
MQDEC-420SS	6.10 m (20 ft)			
MQDEC-430SS	9.14 m (30 ft)			
MQDEC-450SS	15.2 m (50 ft)			1 = Brown 2 = White 3 = Blue 4 = Black

### 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-ga. stainless steel

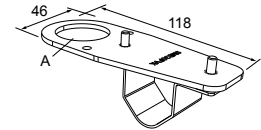


Hole center spacing: A to B=40

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

#### SMB30FVK

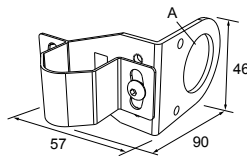
- V-clamp, flat bracket and fasteners for mounting to pipe or extrusions
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors



Hole size: A= ø 31

#### SMB30RAVK

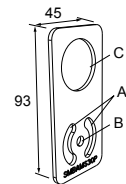
- V-clamp, right-angle bracket and fasteners for mounting sensors to pipe or extrusion
- Clamp accommodates 28 mm dia. tubing or 1 in. square extrusions
- 30 mm hole for mounting sensors



Hole size: A = ø 30.5

#### SMBAMS30P

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

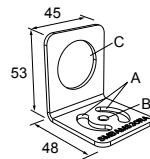


Hole center spacing: A=26.0, A to B=13.0

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

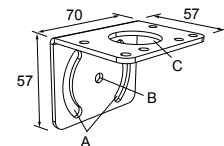


Hole center spacing: A=26.0, A to B=13.0

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 (1/4 in) hardware
- Mounting hole for 30 mm sensor

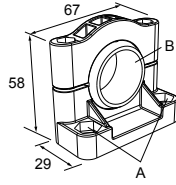


Hole center spacing: A = 51, A to B = 25.4

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

**SMB30SC**

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

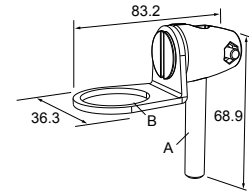


**Hole center spacing:** A=∅ 50.8

**Hole size:** A=∅ 7.0, B=∅ 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



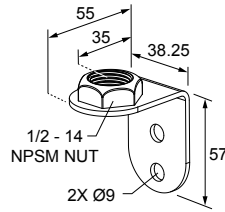
**Bolt thread:** SMB30FA, A= 3/8 - 16 x 2 in; SMB30FAM10, A= M10 - 1.5 x 50

**Hole size:** B= ∅ 30.1

**LMBE12RA35**

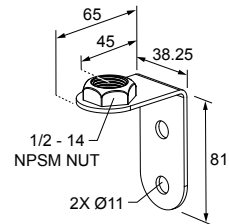
- Direct mounting of stand-off pipe, with common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the center of the 1/2-14 NPSM nut is 35 mm

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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For patent information, see [www.bannerengineering.com/patents](http://www.bannerengineering.com/patents).

## 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.