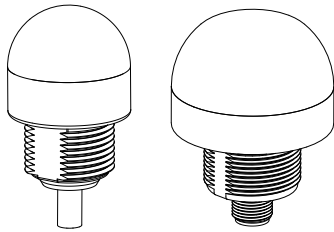


K30L and K50L Intrinsically Safe Indicators



Datasheet



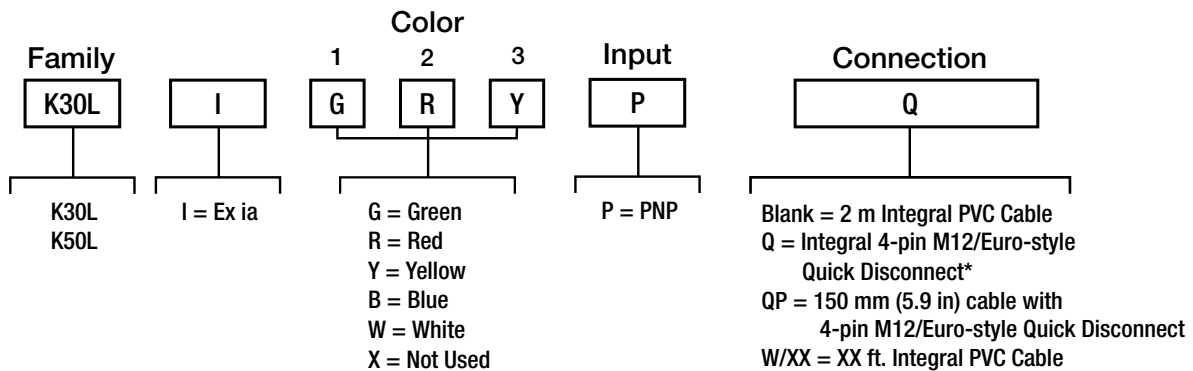
For use in hazardous areas with suitable zener barriers or galvanic isolators
 ATEX, CSA c/us, and IECEx
 Fully sealed and rated to IEC IP67/IP69K per DIN 40050-9
 1-, 2-, or 3-color models available with 5 available colors



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



*Models with a quick disconnect require a mating cordset

K30L Models

Model	LED Function
K30LIGXXPQP	1 Color: Green
K30LIYXXPQP	1 Color: Yellow
K30LIRXXPQP	1 Color: Red
K30LIBXXPQP	1 Color: Blue
K30LIWXXPQP	1 Color: White
K30LIGRXPQP	2 Color: Green, Red
K30LIGYXPQP	2 Color: Green, Yellow
K30LIGYXPQP	2 Color: Red, Yellow
K30LIGRYPQP	3 Color: Green, Red, Yellow

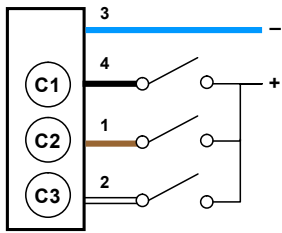
K50L Models

Model ¹	LED Function
K50LIGXXPQ	1 Color: Green
K50LIYXXPQ	1 Color: Yellow
K50LIRXXPQ	1 Color: Red
K50LIBXXPQ	1 Color: Blue
K50LIWXXPQ	1 Color: White
K50LIGRXPQ	2 Color: Green, Red
K50LIGYXPQ	2 Color: Green, Yellow
K50LIGYXPQ	2 Color: Red, Yellow
K50LIGRYPQ	3 Color: Green, Red, Yellow

¹ To order the 150 mm (6 in) PVC cable model with a 4-pin M12/Euro-style quick disconnect, replace the suffix "Q" with "QP" in the model number. For example, K50LIGXXPQP. Models with a quick disconnect require a mating cordset.



Wiring Diagram



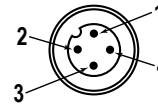
Wiring Key

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

Color Key

- C1 = Color 1
- C2 = Color 2
- C3 = Color 3

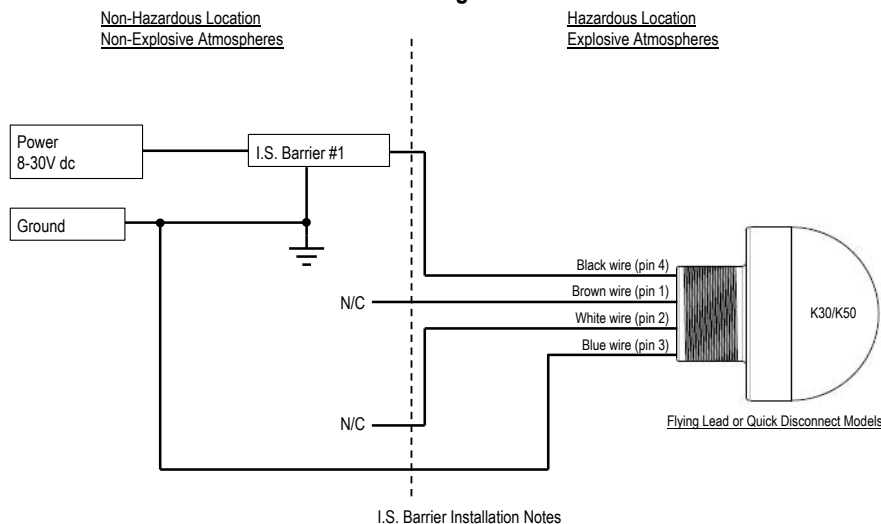
Pinout



See Configuration section for hazardous area wiring and installation notes.

Configuration

One Color Configuration



I.S. Barrier Installation Notes

1. Safety parameters are as follows:
 $U_i / V_{max} = 30V$
 $I_i / I_{max} = 1A$
 $P_i = 3.4W$ ($T_a = -40^\circ C$ to $+40^\circ C$)
 $P_i = 2.8W$ ($T_a = -40^\circ C$ to $+50^\circ C$)
 $C_i = 0$
 $L_i = 0$

2. Choose approved barriers such that the following conditions are met with all barriers combined
 $U_i / V_{max} \geq U_o / V_{oc}$
 $I_i / I_{max} \geq I_o / I_{sc}$
 $P_i / P_{max} \geq P_o$
 $C_o / C_a \geq C_i + C_{cable}$
 $L_o / L_a \geq L_i + L_{cable}$

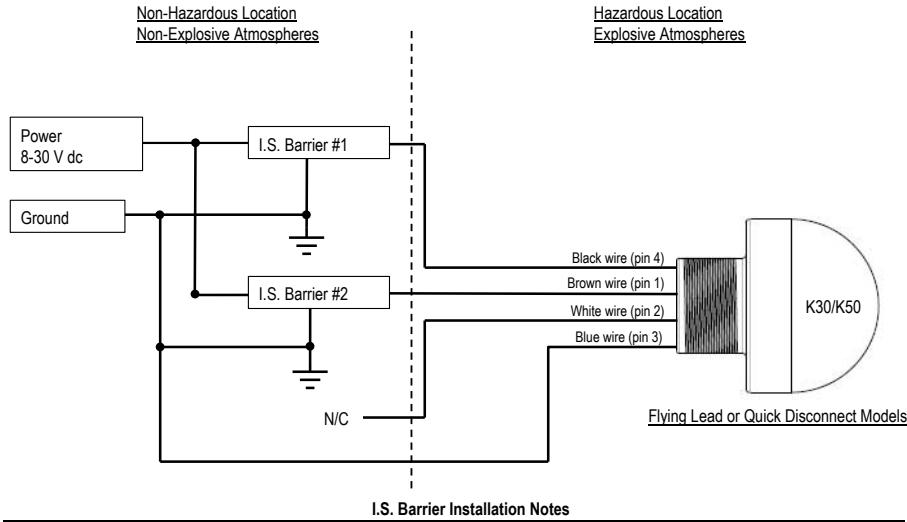
3. Install I.S. barriers in accordance with manufacturers instructions and local codes

4. Suggested I.S. barriers are as follows
 MTL 7715+ (15V/100Ω)
 MTL 7715P+ (15V/50 Ω)
 Turck MZB15PX (15V/50 Ω)

	IIC	IIB	IIA
C _{cable}	66nF	0.56μF	1.82μF
L _{cable}	35μH	140μH	280μH

Figure 1. Control Drawing 1-Color Configuration

Two Color Configuration

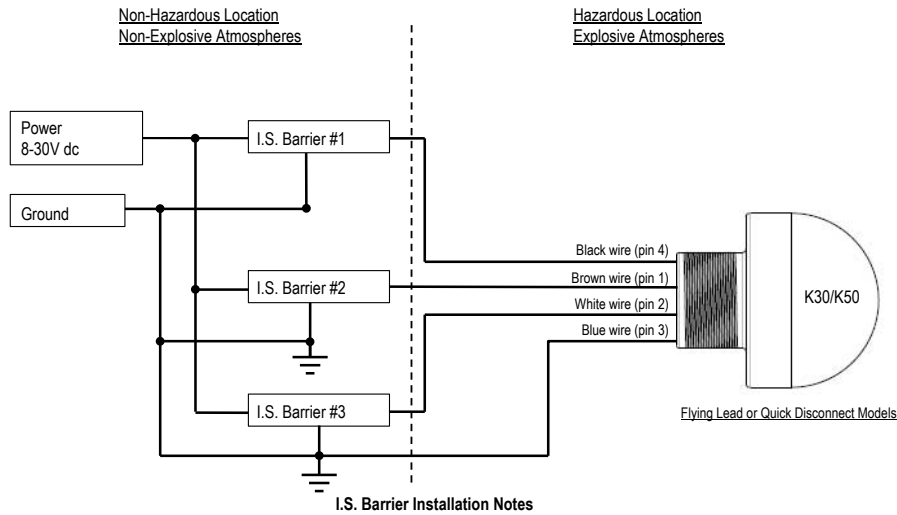


- I.S. Barrier Installation Notes**
- Safety Parameters are as follows:
 $U_i / V_{max} = 30V$
 $I_i / I_{max} = 1A$
 $P_i = 3.4W$ ($T_a = -40^\circ C$ to $+40^\circ C$)
 $P_i = 2.8W$ ($T_a = -40^\circ C$ to $+50^\circ C$)
 $C_i = 0$
 $L_i = 0$
 - Choose approved barriers such that the following conditions are met with all barriers combined
 $U_i / V_{max} \geq U_o / V_{oc}$
 $I_i / I_{max} \geq I_o / I_{sc}$
 $P_i / P_{max} \geq P_o$
 $C_o / C_a \geq C_i + C_{cable}$
 $L_o / L_a \geq L_i + L_{cable}$
 - Install I.S. barriers in accordance with manufacturers instructions and local codes
 - Suggested I.S. barriers are as follows
 MTL 7715+ (15V/100Ω)
 MTL 7715P+ (15V/50 Ω)
 Turck MZB15PX (15V/50 Ω)

	IIC	IIB	IIA
C _{cable}	66nF	0.56μF	1.82μF
L _{cable}	35μH	140μH	280μH

Figure 2. Control Drawing 2-Color Configuration

Three Color Configuration



- I.S. Barrier Installation Notes**
- Safety Parameters are as follows:
 $U_i / V_{max} = 30V$
 $I_i / I_{max} = 1A$
 $P_i = 3.4W$ ($T_a = -40^\circ C$ to $+40^\circ C$)
 $P_i = 2.8W$ ($T_a = -40^\circ C$ to $+50^\circ C$)
 $C_i = 0$
 $L_i = 0$
 - Choose approved barriers such that the following conditions are met with all barriers combined
 $U_i / V_{max} \geq U_o / V_{oc}$
 $I_i / I_{max} \geq I_o / I_{sc}$
 $P_i / P_{max} \geq P_o$
 $C_o / C_a \geq C_i + C_{cable}$
 $L_o / L_a \geq L_i + L_{cable}$
 - Install I.S. barriers in accordance with manufacturers instructions and local codes
 - Suggested I.S. barriers are as follows
 MTL 7715+ (15V/100Ω)
 MTL 7715P+ (15V/50 Ω)
 Turck MZB15PX (15V/50 Ω)

	IIC	IIB	IIA
C _{cable}	66nF	0.56μF	1.82μF
L _{cable}	35μH	140μH	280μH

Figure 3. Control Drawing 3-Color Configuration

General Notes and Conditions for Safe Use

- The dust rating of enclosures/panels may be invalidated by the installation of the EZ-LIGHT(s). The installation of the EZ-LIGHT(s) in a particular enclosure/panel is subject to the evaluation/acceptance of the applicable approval agency.

2. The user has the responsibility to ensure that all local, state, and national laws, rules, codes, or regulations relating to the installation and use of this Banner device in any particular application are satisfied. This Banner device must be installed by Qualified Persons², in accordance with this document and applicable regulations.
3. Do not attempt any repairs to this Banner device; it contains no field-replaceable parts or components.
4. The nonconducting materials of this device may be susceptible to ignition-capable level of electrostatic charging and precautions must be taken to avoid this. The user/installer shall ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which are conducive to creating a build-up of electrostatic charges.
5. If the equipment is likely to come into contact with aggressive substances³, then it is the responsibility of the user to take suitable precautions⁴ that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.
6. Clean with a damp cloth only.
7. For indicators with multiple colors, only one color is intended to be on at a time.
8. When more than one intrinsically safe supply (e.g. two or three barriers) is connected to an LED indicator (input) the combined electrical parameters of the supply must remain intrinsically safe.

Specifications

Supply Voltage and Current

See Configuration for safety parameters

Indicators

Entire translucent diffuser or dome provides indication. LEDs are independently selected: Green, Red, or Amber; 2 or 3 colors, depending on model. For other colors/combinations, contact Banner Engineering for availability.

Environmental Rating

IEC IP67/IEC IP69K

Approvals

CSA-c/us

Gas and Vapors: Class I Zone 0 AEx/Ex ia IIC T4 Ga / Class I Div 1 Groups ABCD
 Dust: Class II Zone 20 AEx/Ex ia IIIC T130°C Da / Class II Div 1 Groups EFG,
 Class III Div 1
 CSA 14.2679646

ATEX/IECEX

Gas and Vapors: II 1 G Ex ia IIC T4 Ga (Group IIC Zone 0)
 Dust: II 1 D Ex ia IIIC T130°C Da (Group IIIC Zone 20)
 Mines: I M1 Ex ia I Ma (Methane)
 Sira 13ATEX2058X
 IECEX Sir 13.0020X

Construction

Base: polycarbonate
 Translucent dome: polycarbonate

Connections

Maximum cable length 29 m per parameters list in [Figure 1](#) on p. 2, [Figure 2](#) on p. 3, and [Figure 3](#) on p. 3.

K30: 2 m (6.5 ft) PVC integral cable, or 150 mm (5.9 in) PVC cable with 4-pin M12/Euro quick disconnect

K50: 4-pin M12/Euro integral quick disconnect, 2 m (6.5 ft) PVC integral cable, or 150 mm (5.9 in) PVC cable with 4-pin M12/Euro quick disconnect

Operating Conditions

Pi = 2.8W: Ta = -40 °C to +50 °C (-40 °F to +122 °F)

Pi = 3.4W: Ta = -40 °C to +40 °C (-40 °F to +104 °F)

See figures 1, 2, and 3

Certifications



IEC IECEX SIR 13.0020X

ATEX Sira 13ATEX2058X

CSA CoC 2679646

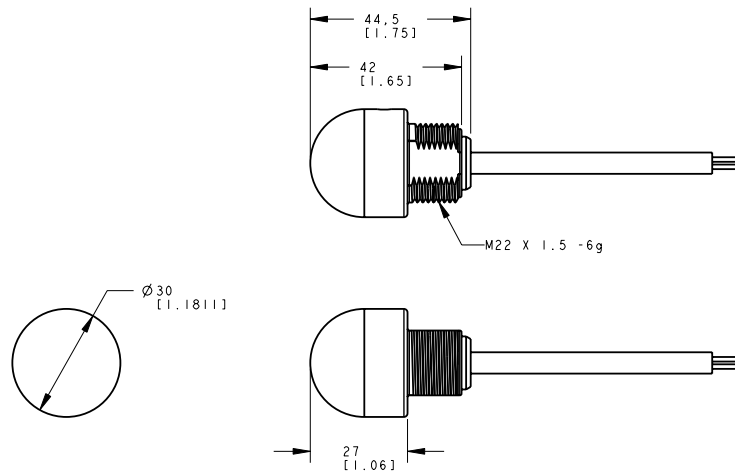
² A person who, by possession of a recognized degree or certification of professional training, or who, by extensive knowledge, training and experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work.

³ Aggressive substances—for example, acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.

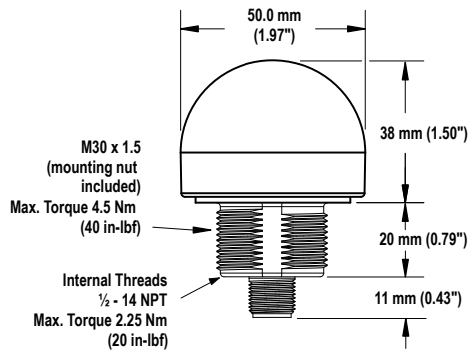
⁴ Suitable precaution—for example, regular checks as part of routine inspections or establishing from the materials data sheet that it is resistant to specific chemicals.

Dimensions

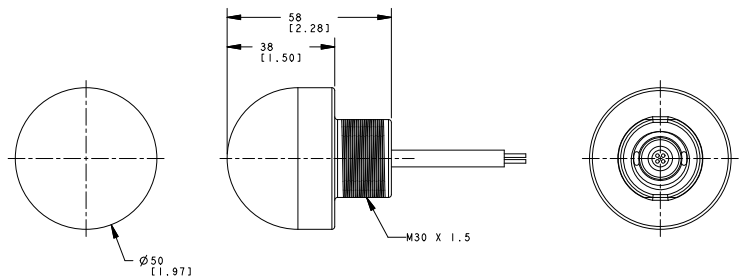
K30L Cabled Models



K50L Quick Disconnect Models



K50L Cabled Models



Accessories

Cordsets

4-Pin Threaded M12/Euro-Style Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	2 m (6.56 ft)	Straight		
MQDC-415	5 m (16.4 ft)			
MQDC-430	9 m (29.5 ft)			
MQDC-450	15 m (49.2 ft)			

1 = Brown
2 = White
3 = Blue
4 = Black

4-Pin Threaded M12/Euro-Style Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406RA	2 m (6.56 ft)	Right-Angle		
MQDC-415RA	5 m (16.4 ft)			
MQDC-430RA	9 m (29.5 ft)			
MQDC-450RA	15 m (49.2 ft)			

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.

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For patent information, see www.bannerengineering.com/patents.



more sensors, more solutions