Features

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



- Rugged, cost-effective, and easy-to-install multicolor indicator light with pushbutton
- Illuminated dome provides an easy-to-see green job light; some models also light red for alternate operation
- Waterproof IP65 construction for washdown environments
- Compact devices are self-contained — no controller needed
- Immune to EMI and RFI interference
- 12 V DC to 30 V DC operation
- Cabled and quick-disconnect connector models available

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	Function	Output	Connection[1]	Job Light
K30APPBGXDQ	• Job light is ON at all times while job input is active. • Pressing push button activates output.	PNP, NO	Integral 4-pin M12 male quick-disconnect connector	Green
K30ANPBGXDQ		NPN, NO		
K30APPBGRCQ	• Job light is green while job input is active, until push button is pushed. • Pressing push button activates output and overrides job light (it turns Red) for visual verification that action was sensed.	PNP, NO		Green (Red)
K30ANPBGRCQ		NPN, NO		
K30APPBGREQ	• Job light is ON at all times while job input is active. • Pressing push button activates output. • Pressing push button while job input is inactive causes unit to light Red, providing visual indication that sensor is functioning properly.	PNP, NO		Green (Red)
K30ANPBGREQ		NPN, NO		

Overview

The solid-state output interfaces to a system controller, which is pre-programmed for a specific sequence of tasks. Mounted in or near each bin in an assembler's work station, the sensor job light signals the assembler:

- Which bins contain items to be picked in a given operation; and
- In what order they should be picked.

As the assembler takes a part in sequence and pushes the button, the sensor senses that the part was removed and sends an output signal to the controller. The controller verifies if the correct part was taken and may respond by turning that job light OFF, activating the job light of the next bin in the sequence.

If multiple parts are to be removed from one bin, the job light may remain ON until the appropriate number of signals is returned to the controller. If an incorrect part is selected, the control system may be wired to signal an alarm for the assembler and/or a supervisor, or it may be programmed to interpret the action as a call for parts.

[1] Integral quick-disconnect connector models are listed.
- To order the 2 m (6.5 ft) PVC cable model, omit the suffix "Q" in the model number. For example, K30APPBGXD.
- Models with a quick-disconnect connector require a mating cordset.

Original Instructions
16-Oct-25

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p/n: 155796 Rev. D

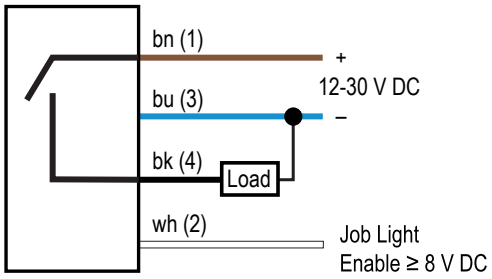
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Installation

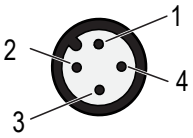
Install the K30 at a height and location that is easy for the user and/or supervisor to see the device, and comfortable for the user to press the push-button.

Wiring

Diagram



4-pin M12 Male Pinout



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

Specifications

Supply Voltage and Current
12 V DC to 30 V DC (10% max. ripple) at 50 mA maximum

Supply Protection Circuitry
Protected against reverse polarity and transient voltages

Output Rating
Max. load: 150 mA
ON-state saturation voltage: < 0.5 V at 10 mA DC; < 1.0 V at 150 mA DC
OFF-state leakage current: < 10 µA at 30 V DC

Output Protection
Protected against false pulse on power-up and continuous overload or short circuit of output

Output Response Time
1 millisecond On and Off

Indicators
Job (Pick) Indicator: Green
Pick Sensed Indicator: Red or OFF, depending on model

Connections
Integral 4-pin M12 male quick-disconnect connector, 2 m (6.5 ft) or 9 m (30 ft) PVC-jacketed cable, depending on model.

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)

Job Light Enable
Input Impedance: 10 KOhms
Input high > 8.0 V

Environmental Rating
IP65
Enclosure Type 13

Construction
Base: polycarbonate
Translucent dome: polycarbonate
Push button: thermoplastic

Certification

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

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.

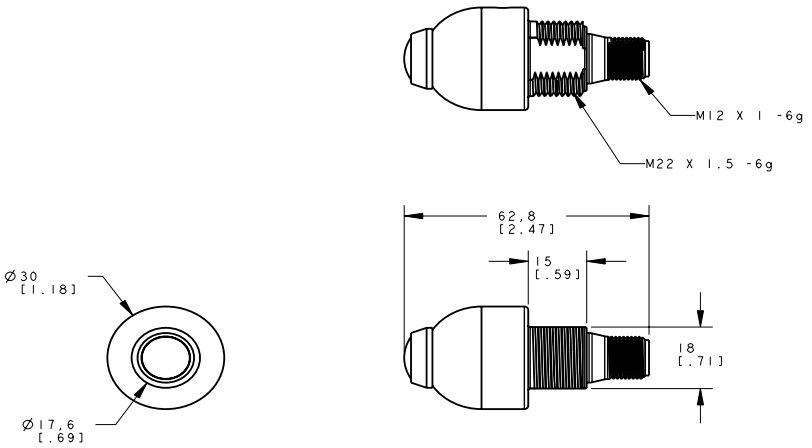
For additional product support, go to www.bannerengineering.com.

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	2.0	30	0.5

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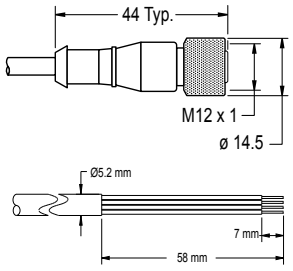
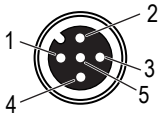
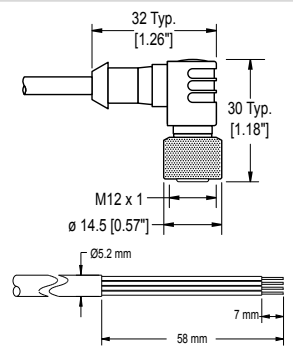
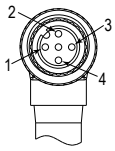
Dimensions

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



Accessories

Cordsets

4-Pin Single-Ended M12 Female Cordsets					
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**	
MQDC-406	2 m (6.56 ft)	Straight			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Not used
MQDC-415	5 m (16.4 ft)				
MQDC-430	9 m (29.5 ft)				
MQDC-450	15 m (49.2 ft)				
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)				

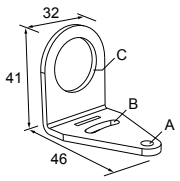
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Brackets

SMB22A

- Right-angle bracket with curved slot for versatile orientation
- 12-ga. stainless steel
- Mounting hole for 22 mm sensor

Hole center spacing: A to B = 26.0
Hole size: A = ø 4.6, B = 4.6 x 16.9, C = 22.2



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