



ON



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is the better indicator.

*Colors appear brilliant when lit
and neutral gray when off.*

- Quick and easy installation
- Robust, durable and aesthetic design
- IP67/IP69K-rated models
- Long-lasting LED technology
- Low-power consumption
- Up to 5 colors in one device
- Steady and flashing colors, and audible alerts
- A complete range of housings, connection options and mounting solutions

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- Rapid customization with most products shipping in 3 days or less
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www.bannerengineering.com/indicators



Sensing



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Wireless



Indication

BANNER®

more sensors, more solutions

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EZ-LIGHT™ Indicators

page 416

- Provides real-time operational status indication for workers and supervisors
- Installs directly on machine quickly and easily with prewired or quick-disconnect options; no assembly required
- Features a completely self-contained design—no controller needed
- Displays up to 5 colors, depending on model
- Available in thirteen styles/housings, including tower and column lights, segmented displays, daylight visible for outdoor applications, and dome, T-style and barrel housings
- Rated to IP67/IP69K for any manufacturing environment, depending on model
- Includes models with steady and flashing colors, and audible alerts
- Uses LED light source for low-power consumption (2W) and long life (100,000 hours typical)
- Eliminates false indication from ambient light; indicators appear gray when off



EZ-LIGHT™ Pick-to-Light Sensors

page 431

- K50 and K80 single-point, pick-to-light sensors and push buttons for bin-picking, order fulfillment and operator guidance operations
- PVD one-piece light array for part assembly, part pick and error proofing
- PVA two-component light array for part-pick verification
- VTB verification touch buttons with illuminated base for indicating bin-picking sequence

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Safety Two-Hand
Control Modules

Safety Interlock
Switches

Emergency Stop
Devices

EZ-LIGHT™
INDICATORS

EZ-LIGHT™
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Work Lights

page 715

- Provides bright, even illumination in areas where space is limited, including control cabinets and panels
- Rated IP69K (standard) or IP67 (push-button models) for use in wet and dirty environments
- Uses LED light source for low-power consumption (2W) and long life (>50,000 hours typical)
- Includes Velcro and magnets for quick mounting and convenient repositioning of light



Mounting Systems

page 696

- Cabinet mounts, standoff pipe, brackets and adapters for elevated mounting with a single drilled hole
- Right-angle, swivel and DIN-mount brackets for almost any mounting situation, including brackets for direct mounting to 28 mm pipe
- Hanging brackets with strain relief for hanging devices with a 30 mm mounting hub
- Brackets and legend plates for identification labels

EZ-LIGHT™ INDICATORS

**Tower Lights** page 417

- Preassembled and preconfigured multi-segment indicators
- Up to five colors in one tower light
- Models for 30 mm base or flat surface mounting
- Available in models with adjustable audible intensity

**Multi-Color, General-Purpose** page 420

- Smart indicators, with multiple colors in one light
- Up to 3 colors in one housing
- Audible models with two decibel levels
- Column lights, 30 or 50 mm dome, 18 mm barrel, and 8, 18 or 30 mm T-style housing
- Models with ac or dc supply voltage

**Multi-Color, Multi-Function** page 423

- Multiple colors and preconfigured glowing, flashing, or sequenced flashing cycles
- Up to five colors in one housing
- 50 mm dome, 18 mm barrel and 30 mm T-style housing

**Sensor Emulators** page 424

- Green and Yellow remote indication of sensor status
- 30 or 50 mm dome, 18 mm barrel, and 8, 18 or 30 mm T-style housing

**Indicators for Safety Devices** page 425

- Solid or flashing lights in a sealed housing to indicate the status of a machine or process
- 30 or 50 mm dome, 18 mm barrel, and 18 or 30 mm T-style housing
- Models for use with EZ-SCREEN® Safety Light Screens and DUO-TOUCH® SG Run Bars

**Segmented Displays** page 426

- Up to 4 color segments in one housing
- Quadrants can be lighted separately or in combination
- K80L housing for flat or DIN mounting
- Optional labels for those with limited color recognition

**Daylight Visible** page 427

- Indicators with intense levels of light output for outdoor applications
- Up to three colors in one housing
- 50 mm diameter with flat profile and 30 mm mounting base

**Traffic Lights** page 428

- Preassembled indicators for signaling and traffic control
- Intense levels of light output for outdoor applications
- Controlled field of view for signage and narrow lane use
- One, two or three indicators, with one or three colors



EZ-LIGHT™ Tower Lights

- Delivers highly visible operational status indication for workers and supervisors
- Preassembled and preconfigured multi-segment indicators; no assembly required
- Uses LED technology for low-power consumption (2W) and long life (100,000 hours typical)
- Offers choice of models for 30 mm base or flat surface mounting
- Features models with IP67-rated, water- and oil-tight industrial housings for direct machine mounting
- Displays up to five lights in a single tower, multiple lights can be on simultaneously
- Includes models with audible alert; intensity adjustable
- Installs directly on machine quickly and easily with prewired or quick-disconnect options
- Provides excellent yet non-aggressive light brilliance and visibility at long distances
- Eliminates false indication from ambient light; indicators appear gray when off
- Offers an extensive line of elevated mounting accessories, legend plates and brackets for almost any installation requirement

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Wireless

Indicators

Safety
Light Screens

Safety
Laser Scanners

Fiber Optic
Safety Systems

Safety Controllers &
Modules

Safety Two-Hand
Control Modules

Safety Interlock
Switches

Emergency Stop
Devices

ACCESSORIES

page
419

EZ-LIGHT™ INDICATORS

EZ-LIGHT™ SENSORS



EZ-LIGHT™ TL50 Tower Lights

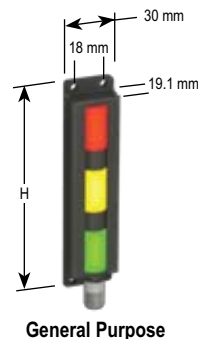
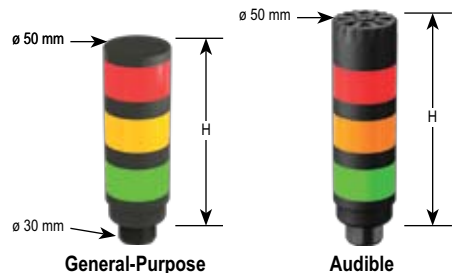
- Up to five colors in a single tower; choice of green, yellow, red, blue or white LED colors
- Optional audible function with variable intensity control
- 30 mm threaded base for direct cabinet and panel mounting with a single drilled hole
- IP67-rated (audible IP50) housings
- Standoff pipe and adaptors for elevated mounting



EZ-LIGHT™ TL30F Tower Lights

- Models with five or three lights in a single tower
- Rugged, flat metal housing for mounting to horizontal or vertical surfaces
- IP65-rated housing
- Extensive line of brackets for any installation requirement, including direct mounting to 28 mm pipe

EZ-LIGHT™ Tower Lights



TL50






Color Count	Tower Height (H)	
	General-Purpose	Audible†
1	61.2 mm	92.0 mm
2	101.9 mm	132.7 mm
3	142.6 mm	173.4 mm
4	183.3 mm	214.1 mm
5	224.0 mm	—

† Tower height (H) with top unscrewed approximately 3.5 mm to allow sound to escape.



TL30F

Color Count	Tower Height (H)
3	128.1 mm
5	204.3 mm


EZ-LIGHT™ General-Purpose Tower Lights

	LED Function*	Connection	Supply Voltage	Input	Model		
					TL50*	TL30F	
	1 Color: Red	4-Pin Euro QD	18 to 30V dc or 24V ac	BiModal NPN/PNP	TL50RQ	—	
	2 Color: Green, Red				TL50GRQ	—	
 TL50 TL30F	3 Color: Green, Yellow, Red				TL50GYRQ	TL30FGYRQ	
	4 Color: Blue, Green, Yellow, Red				5-Pin Euro QD	TL50BGRQ	—
 TL50 TL30F	5 Color: White, Blue, Green, Yellow, Red				8-Pin Euro QD	TL50WBGYRQ	TL30FWBGYRQ

EZ-LIGHT™ Audible Tower Lights

	LED Function*	Audible Alarm†	Connection	Supply Voltage	Input	Model*
	1 Color: Red	Adjustable Max. Intensity (typical) 92 dB @ 1 m	4-Pin Euro QD	18 to 30V dc or 24V ac	BiModal NPN/PNP	TL50RAQ
	2 Color: Green, Red					TL50GRAQ

More
on next
page



 **Connection options:** A model with a QD requires a mating cordset (see page 419).


Integral QD models are listed. For 150 mm PVC pigtail with QD, replace **Q** with **QP** in model number (example, **TL50GYRQP**).
For 2 m cable, omit suffix **Q** from model number (example, **TL50GYR**). Contact factory for other connector and cable options.

* The first color listed is the bottom color, going up in successive order. Contact factory for other colors and color combinations, or visit bannerengineering.com/build_tl50 to configure your own TL50 model.

† Minimum intensity is 84 dB @ 1 m with center plug removed.

EZ-LIGHT™ Audible Tower Lights (cont'd)

	LED Function*	Audible Alarm†	Connection	Supply Voltage	Input	Model*
	3 Color: Green, Yellow, Red	Adjustable Max. Intensity (typical) 92 dB @ 1 m	5-Pin Euro QD	18 to 30V dc or 24V ac	BiModal NPN/PNP	TL50GYRAQ
	4 Color: Blue, Green, Yellow, Red		8-Pin Euro QD			TL50BGYRAQ

 **Connection options:** A model with a QD requires a mating cordset (see page 419).




Integral QD models are listed. For 150 mm PVC pigtail with QD, replace **Q** with **QP** in model number (example, **TL50GYRAQP**). For 2 m cable, omit suffix **Q** from model number (example, **TL50GYR**). Contact factory for other connector and cable options.

* The first color listed is the bottom color, going up in successive order. Contact factory for other colors and color combinations, or visit bannerengineering.com/build_tl50 to configure your own TL50 model.

† Minimum intensity is 84 dB @ 1 m with center plug removed.

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- Safety Controllers & Modules
- Safety Two-Hand Control Modules
- Safety Interlock Switches
- Emergency Stop Devices

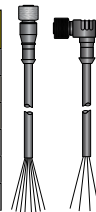
EZ-LIGHT™ Tower Light Specifications


Supply Voltage and Current	TL50: 18 to 30V dc (10% max. ripple); or 21 to 27V ac General Purpose: @ 45 mA max. current per LED color Audible Alarm: 25 mA max. current TL30F: 18 to 30V dc (10% max. ripple); or 21 to 27V ac @ 15 mA max per LED color
Indicators	TL50: LEDs are independently selected— Green, Red, Yellow, Blue or White; 1-5 colors depending on model TL30F: LEDs are independently selected— Green, Red, Yellow, Blue or White; 3 or 5 colors depending on model
Input Response Time	Indicators ON/OFF: 10 milliseconds (max.)
Audible Alarm (TL50 Only)	Oscillation Frequency: 2.7 KHz ± 500 Hz Max. Intensity: Typical—92 dB @ 1 m Minimum—84 dB @ 1 m with center plug removed
Audible Adjustments (TL50 Only)	The audible intensity can be adjusted by unscrewing the cover. The cover should not be unscrewed more than one and a half turns or it may detach during operation. For max. intensity, remove the center plug by rotating it 180° counterclockwise.
Construction	TL50: Bases and Covers— ABS Light Segment— Polycarbonate TL30F: Black painted aluminum housing; thermoplastic polyester end caps; acrylic light bar
Environmental Rating	TL50: General-Purpose— IEC IP67 Audible— IEC IP50 TL30F— IEC IP65
Connections	Integral 4-pin, 5-pin or 8-pin Euro-style QD, 150 mm PVC pigtail with QD, or 2 m integral cable, depending on model
Operating Conditions	General-Purpose: -40° to +50° C Audible: -20° to +50° C
Certifications	TL50:   TL30F: 
Hookup Diagrams	4-pin models: IN01 (p. 740) 5-pin: models: IN02 (p. 740) 8-pin models: IN03 (p. 740)

- EZ-LIGHT™ INDICATORS**
- EZ-LIGHT™ SENSORS





Cordsets


Euro QD			
See page 658			
Length	Threaded 4-Pin		Threaded 8-Pin
	Straight	Right-Angle	Straight
2 m	MQDC-406	MQDC-406RA	MQDC2S-806
5 m	MQDC-415	MQDC-415RA	MQDC2S-815
9 m	MQDC-430	MQDC-430RA	MQDC2S-830
Length	Threaded 5-Pin		
	Straight	Right-Angle	
2 m	MQDC1-506	MQDC1-506RA	
5 m	MQDC1-515	MQDC1-515RA	
9 m	MQDC1-530	MQDC1-530RA	



 Additional cordset information available. See page 655.

Brackets

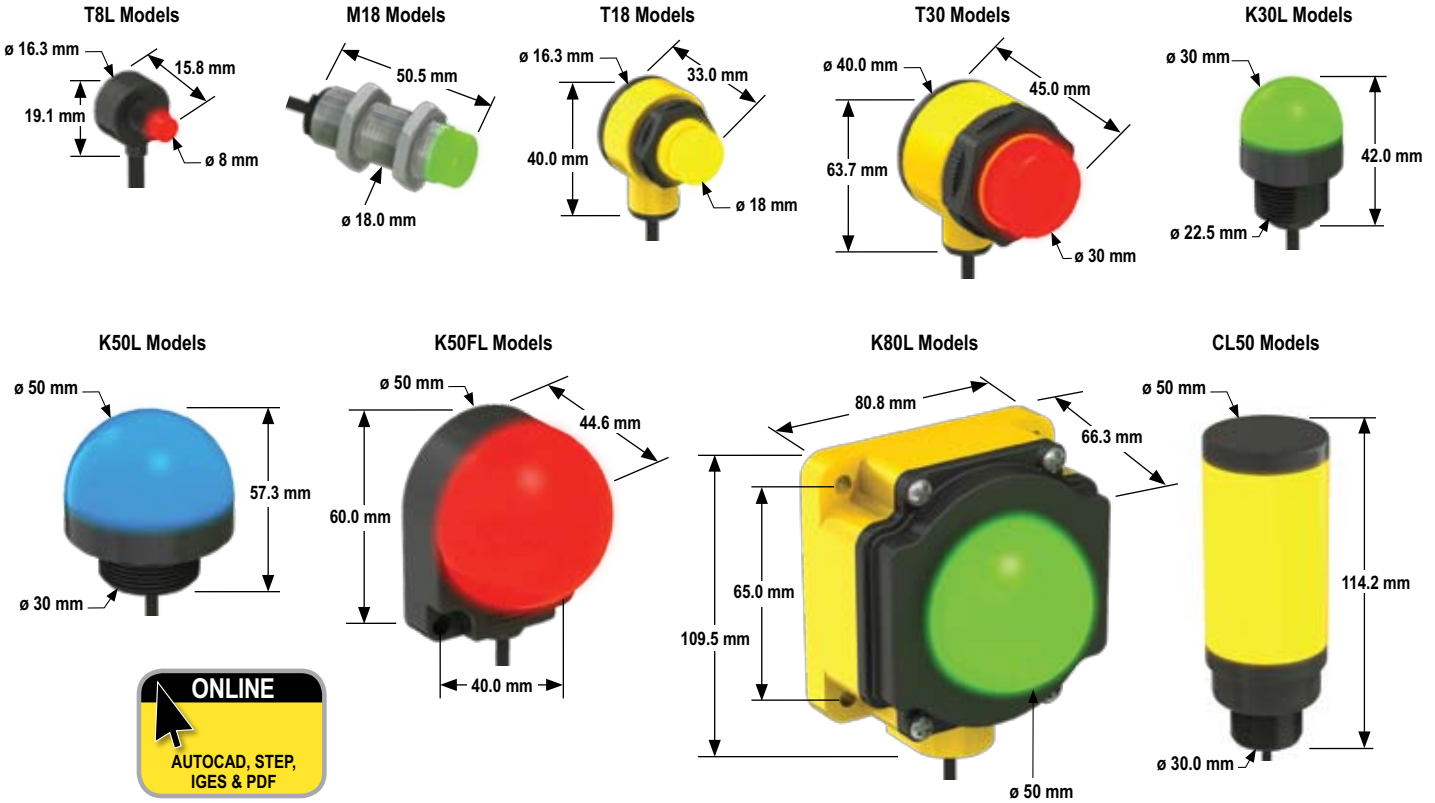
TL50		TL30F	
			
pg. 619	pg. 619	pg. 642	pg. 642
SMB30A	SMB30FA..	SMBPVA2	SMBPVA1

 Additional brackets and information available. See page 601.





Elevated mounting accessories see page 696.

EZ-LIGHT™ Indicators



EZ-LIGHT™ Indicators—Multi-Color, General-Purpose

Construction	LED Function*	Connection	Supply Voltage	Inputs	Model
 8 mm mount polycarbonate/ABS blend	2 Color: Green, Red	4-pin Euro Pigtail QD	10 to 30V dc	PNP	T8LGRXPQP
	2 Color: Green, Yellow			NPN	T8LGRXNQP
	2 Color: Red, Yellow			PNP	T8LGXYPQP
				NPN	T8LGXYNQP
				PNP	T8LXRYQPQ
				NPN	T8LXRYNQP
 18 mm mount nickel-plated brass	3 Color: Green, Red, Yellow	4-pin Euro QD	10 to 30V dc	PNP	M18GRYPQ
	2 Color: Green, Red			NPN	M18GRYNQ
	2 Color: Green, Yellow			PNP	M18GRXPQ
				NPN	M18GRXNQ
	2 Color: Red, Yellow			PNP	M18GXYPQ
				NPN	M18GXYNQ
				PNP	M18XRYQPQ
				NPN	M18XRYNQ

More on next page

Connection Option: A model with a QD requires a mating cordset (see page 430).

T8L models: 150 mm PVC Pigtail QD models are listed. For 2 m cable, omit suffix **QP** from model number (example, **T8LGRXP**).
Other Models: Integral QD models are listed. For 150 mm PVC pigtail with QD, replace **Q** with **QP** in model number (example, **M18GRXPQP**).
 For 2 m cable, omit suffix **Q** from model number (example, **M18GRXP**).

* Single-color models are available. Colors are independently selectable. Contact factory for other colors and color combinations.

EZ-LIGHT™ Indicators—Multi-Color, General-Purpose (cont'd)

Construction	LED Function*	Connection	Supply Voltage	Inputs	Model
 18 mm mount thermoplastic polyester	3 Color: Green, Red, Yellow	4-pin Euro QD	10 to 30V dc	PNP	T18GRYPQ
	2 Color: Green, Red			NPN	T18GRYNQ
	2 Color: Green, Yellow			PNP	T18GRXPQ
	2 Color: Green, Yellow			NPN	T18GRXNQ
	2 Color: Red, Yellow			PNP	T18GXYPQ
 30 mm mount thermoplastic polyester	3 Color: Green, Red, Yellow	4-pin Euro QD	10 to 30V dc	PNP	T30GRYPQ
	2 Color: Green, Red			NPN	T30GRYNQ
	2 Color: Green, Yellow			PNP	T30GRXPQ
	2 Color: Green, Yellow			NPN	T30GRXNQ
	2 Color: Red, Yellow			PNP	T30GXYPQ
 30 mm dome/ 22 mm mount polycarbonate	3 Color: Green, Red, Yellow	4-pin Euro QD	10 to 30V dc	PNP	K30LGRYPQ
	2 Color: Green, Red			NPN	K30LGRYNQ
	2 Color: Green, Yellow			PNP	K30LGRXPQ
	2 Color: Green, Yellow			NPN	K30LGRXNQ
	2 Color: Red, Yellow			PNP	K30LGXYPQ
 50 mm dome/ 30 mm mount polycarbonate	3 Color: Green, Red, Yellow	5-pin Micro QD	85-130V ac	85-130V ac	K50LGRYA120Q
		4-pin Euro QD	18 to 30V dc	PNP	K50LGRYPQ
	2 Color: Green, Red	4-pin Euro QD	18 to 30V dc	NPN	K50LGRYNQ
				PNP	K50LGRXPQ
	2 Color: Green, Yellow			NPN	K50LGRXNQ
				PNP	K50LGXYPQ
	2 Color: Red, Yellow	NPN	K50LGXYNQ		
		PNP	K50LXRYPQ		
 50 mm dome/ Flat mount ABS/polycarbonate	3 Color: Green, Red, Yellow	4-pin Euro QD	18 to 30V dc	PNP	K50FLGRYPQ
				NPN	K50FLGRYNQ
	2 Color: Green, Red			PNP	K50FLGRXPQ
				NPN	K50FLGRXNQ
	2 Color: Green, Yellow			PNP	K50FLGXYPQ
				NPN	K50FLGXYNQ
	2 Color: Red, Yellow			PNP	K50FLXRYPQ
				NPN	K50FLXRYNQ

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Fiber Optic
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Safety Controllers &
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Safety Two-Hand
Control Modules

Safety Interlock
Switches

Emergency Stop
Devices

ACCESSORIES
page
430

**EZ-LIGHT™
INDICATORS**

EZ-LIGHT™
SENSORS





More on next
page

Connection Option: A model with a QD requires a mating cordset (see page 430).

Integral QD models are listed. For 150 mm PVC pigtail with QD, replace Q with QP in model number (example, T18GRXPQP).
For 2 m cable, omit suffix Q from model number (example, T18GRXP).

* Single-color models are available. Colors are independently selectable. Contact factory for other colors and color combinations.




EZ-LIGHT™ Indicators—Multi-Color, General-Purpose (cont'd)


Construction		LED Function*	Connection	Supply Voltage	Inputs	Model
	50 mm dome/ Flat or DIN-mount polycarbonate	3 Color: Green, Red, Yellow	5-pin Micro QD	85-130V ac	85-130V ac	K80LGRYA120Q
			4-pin Euro QD	18 to 30V dc	PNP	K80LGRYPQ
		NPN			K80LGRYNQ	
		2 Color: Green, Red	4-pin Euro QD	18 to 30V dc	PNP	K80LGRXPQ
					NPN	K80LGRXNQ
		2 Color: Green, Yellow			PNP	K80LGXYPQ
					NPN	K80LGXYNQ
		2 Color: Red, Yellow	PNP	K80LXRYPQ		
NPN	K80LXRYNQ					
	Large single illuminated segment/ 30 mm mount polycarbonate	3 Color: Green, Red, Yellow	4-pin Euro QD	18 to 30V dc	PNP	CL50GRYPQ
					NPN	CL50GRYNQ
		2 Color: Green, Red			PNP	CL50GRXPQ
					NPN	CL50GRXNQ

ACCESSORIES

page
430

EZ-LIGHT™ Indicators—Audible

Construction		LED Function*	Connection	Supply Voltage	Typical Audible Tone†	Inputs	Model
	50 mm dome/ 30 mm mount polycarbonate	3 Color: Green, Red, Yellow	5-pin Euro QD	18 to 30V dc	Steady (75 dB @ 1 m)	PNP	K50LGRA1YPQ
						NPN	K50LGRA1YNQ
					Pulsed (75 dB @ 1 m)	PNP	K50LGRA2YPQ
						NPN	K50LGRA2YNQ
	50 mm dome/ Flat or DIN-mount polycarbonate	3 Color: Green, Red, Yellow	5-pin Euro QD	18 to 30V dc	Steady (75 dB @ 1 m)	PNP	K80LGRA1YPQ
						NPN	K80LGRA1YNQ
					Pulsed (75 dB @ 1 m)	PNP	K80LGRA2YPQ
						NPN	K80LGRA2YNQ
	Large single illuminated segment/ 30 mm mount polycarbonate	2 Color: Green, Red	5-pin Euro QD	18 to 30V dc	Adjustable Max Intensity: 92 dB @ 1 m	PNP	CL50GRXAPQ
						NPN	CL50GRXANQ
		3 Color: Green, Red, Yellow				PNP	CL50GRYAPQ
						NPN	CL50GRYANQ

 **Connection options:** A model with a QD requires a mating cordset (see page 430).

K80L Models: Integral QD models are listed. For terminal-wired models, omit suffix **Q** from model number (example, **K80LGRA2YP**).

Other Models: Integral QD models are listed. For 150 mm PVC pigtail with QD, replace **Q** with **QP** in the model number (example, **K50LGRA1YPQP**). For a 2 m cable, omit suffix **Q** from model number (example, **K50LGRA1YP**).

* Single-color models are available. Colors are independently selected. Contact factory for other color and color combinations.

† Minimum decibel levels: K50L and K80L (steady and pulsed)—66 dB @ 1 m
K50L and K80L (loud steady) and CL50—84 dB @ 1 m

EZ-LIGHT™ Indicators—Multi-Color, Multi-Function

Construction		LED Function*	Connection	Supply Voltage	Inputs	Model
	18 mm mount nickel-plated brass	3 Color: Choose Green, Red or Yellow ON, flashing or alternating	5-pin Euro QD†	10 to 30V dc	PNP	M18GRY2PQ
					NPN	M18GRY2NQ
	30 mm mount thermoplastic polyester	3 Color: Choose Green, Red or Yellow ON, flashing or alternating	5-pin Euro QD†	10 to 30V dc	PNP	T30GRY2PQ
					NPN	T30GRY2NQ
	50 mm dome/ 30 mm mount polycarbonate	5 Color: Green, Red, Yellow, Blue or White ON, flashing or alternating	8-pin Euro QD	18 to 30V dc	PNP	K50LGRYBWPQ8
		4 Color: Green, Red, Yellow or Blue ON, flashing or alternating	5-pin Euro QD		NPN	K50LGRYBWNQ8
		3 Color: Choose Green, Red or Yellow ON, flashing or alternating	5-pin Euro QD†		PNP	K50LGRYB4PQ
					NPN	K50LGRYB4NQ
	50 mm dome/ Flat mount ABS/polycarbonate	5 Color: Green, Red, Yellow, Blue or White ON, flashing or alternating	8-pin Euro QD	18 to 30V dc	PNP	K50FLGRYBWPQ8
		4 Color: Green, Red, Yellow or Blue ON, flashing or alternating	5-pin Euro QD		NPN	K50FLGRYBWNQ8
		3 Color: Green, Red or Yellow ON, flashing or alternating	5-pin Euro QD†		PNP	K50FLGRYB4PQ
					NPN	K50FLGRYB4NQ
					PNP	K50FLGRY2PQ
					NPN	K50FLGRY2NQ
	50 mm dome/ Flat or DIN-mount polycarbonate	5 Color: Green, Red, Yellow, Blue or White ON, flashing or alternating	8-pin Euro QD	18 to 30V dc	PNP	K80LGRYBWPQ8
		4 Color: Green, Red, Yellow or Blue ON, flashing or alternating	5-pin Euro QD		NPN	K80LGRYBWNQ8
		3 Color: Green, Red or Yellow ON, flashing or alternating	5-pin Euro QD†		PNP	K80LGRYB4PQ
					NPN	K80LGRYB4NQ
					PNP	K80LGRY2PQ
					NPN	K80LGRY2NQ

Connection options: A model with a QD requires a mating cordset (see page 430).

K80L Models: Integral QD models are listed. For terminal-wired models, omit **Q** or **Q8** from model number (example, **K80LGRYBWP**).

Other models: Integral QD models are listed. For 150 mm PVC pigtail QD, replace **Q** with **QP** (example, **K50LGRYB4PQP**) or **Q8** with **QP8** (example, **K50LGRYBWPQP8**).
For a 2 m cable, omit suffix **Q** or **Q8** from model number (example, **K50LGRYBWP**).

* Contact factory for other colors and color combinations.

† Connects to Banner 4-pin Euro QD cordset. If cordset other than a Banner 4-pin Euro QD is used, a 5-pin cordset maybe required.

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Vision
Wireless

Indicators

Safety
Light Screens

Safety
Laser Scanners

Fiber Optic
Safety Systems

Safety Controllers &
Modules

Safety Two-Hand
Control Modules

Safety Interlock
Switches









Emergency Stop
Devices


ACCESSORIES
page
430

EZ-LIGHT™ INDICATORS

EZ-LIGHT™
SENSORS

EZ-LIGHT™ Indicators–Sensor Emulators








Construction		LED Function*	Connection	Supply Voltage	Inputs	Model
	8 mm mount polycarbonate/ABS blend	Use with discrete output of photoelectric and proximity sensors to duplicate the sensor's Green and Yellow indicator function. When the sensor is powered, the Green LED is ON. When the sensor's output is energized, the Yellow LED is ON.	4-pin Euro Pigtail QD	10 to 30V dc	PNP	T8LGYX7PQP
					NPN	T8LGYX7NQP
	18 mm mount nickel-plated brass		4-pin Euro QD	10 to 30V dc.	PNP	M18GYX7PQ
					NPN	M18GYX7NQ
	18 mm mount thermoplastic polyester		4-pin Euro QD	10 to 30V dc	PNP	T18GYX7PQ
					NPN	T18GYX7NQ
	30 mm mount thermoplastic polyester		4-pin Euro QD	10 to 30V dc	PNP	T30GYX7PQ
					NPN	T30GYX7NQ
	30 mm dome/22 mm mount polycarbonate		4-pin Euro QD	10 to 30V dc	PNP	K30LGYX7PQ
					NPN	K30LGYX7NQ
	50 mm dome/30 mm mount polycarbonate	4-pin Euro QD	18 to 30V dc	PNP	K50LGYX7PQ	
				NPN	K50LGYX7NQ	
	50 mm dome/Flat mount ABS/polycarbonate	4-pin Euro QD	18 to 30V dc	PNP	K50FLGYX7PQ	
				NPN	K50FLGYX7NQ	
	50 mm dome/Flat or DIN-mount polycarbonate	4-pin Euro QD	18 to 30V dc	PNP	K80LGYX7PQ	
				NPN	K80LGYX7NQ	

 **Connection options:** A model with a QD requires a mating cordset (see page 430).

T8L models: 150 mm PVC Pigtail QD models are listed. For 2 m cable, omit suffix **QP** from model number (example, **T8LGYX7P**).
K80L models: Integral QD models are listed. For terminal-wired models, omit suffix **Q** from model number (example, **K80LGYX7P**).
Other Models: Integral QD models are listed. For 150 mm PVC pigtail with QD, replace **Q** with **QP** in model number (example, **M18GYX7PQP**). For 2 m cordset, omit suffix **Q** from model number (example, **M18GYX7P**).

* Contact factory for other colors and color combinations.

EZ-LIGHT™ Indicators for Safety Devices

Construction		Connection	LED Function	Supply Voltage	Inputs	Model	Used With
	18 mm mount nickel-plated brass	M12/ 8-pin Euro QD	2 Color: Red/Green indication follows OSSD output of the EZ-SCREEN receiver	24V dc	PNP	M18RGX8PQ8*	EZ-SCREEN
	18 mm mount thermoplastic polyester					T18RGX8PQ8	
	30 mm mount thermoplastic polyester					T30RGX8PQ8	
	30 mm dome/ 22 mm mount polycarbonate					K30LRGX8PQ8	
	50 mm dome/ 30 mm mount polycarbonate					K50LRGX8PQ8	
	50 mm dome/ Flat mount ABS/ polycarbonate					K50FLRGX8PQ8	
	50 mm dome/ Flat or DIN-mount polycarbonate					K80LRGX8PQ8	

Photoelectrics
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Fiber Optic
Sensors
Special Purpose
Sensors
Measurement &
Inspection Sensors

Vision

Wireless

Indicators

Safety
Light Screens

Safety
Laser Scanners

Fiber Optic
Safety Systems

Safety Controllers &
Modules

Safety Two-Hand
Control Modules

Safety Interlock
Switches

Emergency Stop
Devices

ACCESSORIES


page
430

**EZ-LIGHT™
INDICATORS**

EZ-LIGHT™
SENSORS





More
on next
page

 **Connection options:** A model with a QD requires a mating cordset (see page 430).

Typically a CSB splitter and DEE2R-8..D cordsets are used.

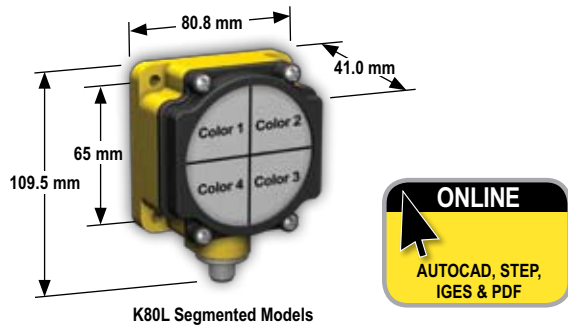
* Available in a kit that includes one M18 EZ-LIGHT, one SMB18A mounting bracket, and hardware for mounting to the side channel of an EZ-SCREEN housing (kit model number **EZA-M18RGX8PQ8**).

EZ-LIGHT™ Indicators for Safety Devices (cont'd)


Construction		Connection	LED Function	Supply Voltage	Inputs	Model	Used With
	30 mm mount thermoplastic polyester	2 m	4 Color: Green, Red, Yellow, Blue	24V dc	PNP	T30GRYB11P	DUO-TOUCH SG Run Bars
	50 mm dome/ 30 mm mount polycarbonate					K50LGRYB11P	


EZ-LIGHT™ Indicators—Segmented Displays

ACCESSORIES
page
430



EZ-LIGHT™ Indicators—Segmented Displays

Construction	LED Colors*	Connection	Supply Voltage	Inputs	Model			
	Color 1: Green Color 2: Red Color 3: Yellow Color 4: Blue	5-pin Euro QD	18 to 30V dc	PNP	K80L4GRYB1PQ			
				NPN	K80L4GRYB1NQ			
	Color 1: Green Color 2: Red Color 3: Yellow			PNP	K80L3THGRYX1PQ			
				NPN	K80L3THGRYX1NQ			
	Color 1: Green Color 2: Red			PNP	K80L2HGRXX1PQ			
				NPN	K80L2HGRXX1NQ			
	Color 1: White			Color 1: Yellow	PNP			K80L1WXXX1PQ
								K80L1YXXX1PQ
								K80L1RXXX1PQ
								K80L1GXXX1PQ
								K80L1BXXX1PQ



 **Connection options:** A model with a QD requires a mating cordset (see page 430).

Integral QD models are listed. For 150 mm PVC pigtail with QD, replace **Q** with **QP** in model number (example, **K80L4GRYB1PQP**).
For terminal-wired models, omit suffix **Q** from model number (example, **K80L4GRYB1P**).

* Contact factory for other colors and color combinations.



EZ-LIGHT™ Segmented Indicator Label Kits

Model	Description	Size
 SALK-K80L4	4-segment transparent laser label (Includes 30 labels and 1 protective cover label)	8.5" x 11"
 SALK-K80L4-0	1-segment transparent laser label (Includes 30 labels)	

- Photoelectrics Sensors
- Fiber Optic Sensors
- Special Purpose Sensors
- Measurement & Inspection Sensors
- Vision
- Wireless
- Indicators**
- Safety Light Screens
- Safety Laser Scanners
- Fiber Optic Safety Systems
- Safety Controllers & Modules
- Safety Two-Hand Control Modules
- Safety Interlock Switches
- Emergency Stop Devices

ACCESSORIES
page 430

EZ-LIGHT™ INDICATORS
EZ-LIGHT™ SENSORS



EZ-LIGHT™ Indicators—Daylight Visible



K50L Daylight Models



EZ-LIGHT™ Indicators—Daylight Visible, DC Voltage

Construction	LED Function*	Connection	Supply Voltage	Inputs**	Models†
 30 mm mount polycarbonate	3 Color: Green, Red, Yellow	4-Pin Euro QD	15 to 30V dc	PNP	K50LDGRYPQ
	1 Color: Green			NPN	K50LDGRYNQ
	1 Color: Red			PNP/NPN	K50LDXGXPQ
	1 Color: Yellow			PNP/NPN	K50LDXRX PQ
	1 Color: White			PNP/NPN	K50LDXYXPQ
	1 Color: Blue			PNP/NPN	K50LDXWXPQ
 thermoplastic polyester	Sun Shield	-	-	-	K50DS

Connection options: A model with a QD requires a mating cordset (see page 430).

Integral QD models are listed. For 150 mm PVC pigtail with QD, replace **Q** with **QP** in model number (example, **K50LDGRYPQP**). For 2 m cable, omit suffix **Q** from model number (example, **K50LDGRYP**)

† Optional sun shield model **K50DS** is available for enhanced visibility in desert sun brightness levels.

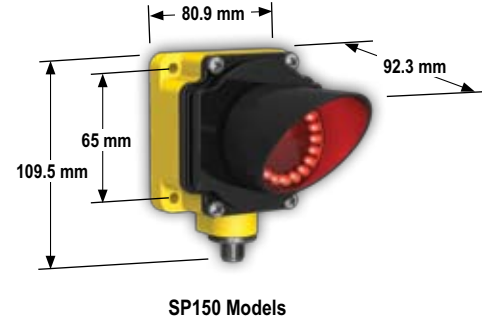
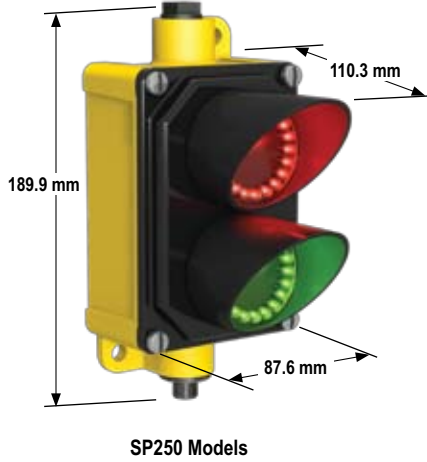
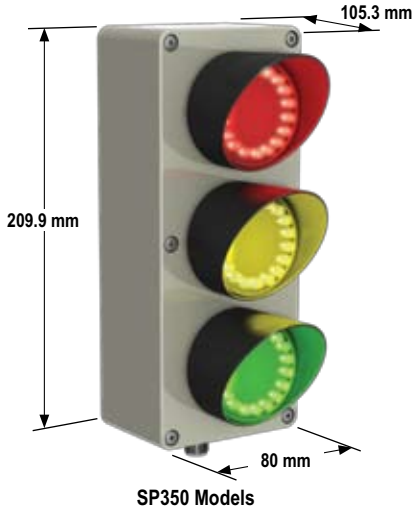
* Contact factory for other colors and color combinations.

3-color models: 6 LEDs per color

1-color models: 18 LEDs per color




** 1-color models are PNP/NPN selectable, depending on hookup.


EZ-LIGHT™ Indicators—Traffic Lights



ACCESSORIES
page
430

EZ-LIGHT™ Indicators—Traffic Light

Construction	Indicators	LED Function*	Connection	Supply Voltage	Inputs	Models
	1	3 Color: Green, Red, Yellow (6 LEDs per color) 1 Color: Green (18 LEDs) 1 Color: Red (18 LEDs) 1 Color: Green (18 LEDs) 1 Color: Red (18 LEDs)	4-Pin Euro QD	15 to 30V dc	PNP	SP150GRYPQ
					NPN	SP150GRYNQ
					PNP/NPN selectable	SP150GPQ SP150RPQ
			Field-wired	85 to 130V ac	85 to 130V ac	SP150GA120 SP150RA120
				2	Top Indicator: Red (18 LEDs) Bottom Color: Green (18 LEDs)	4-Pin Euro QD
		NPN				SP250GRNQ
Field-wired	85 to 130V ac	85 to 130V ac				SP250GRA120
	3	Top Indicator: Red (18 LEDs) Middle Indicator: Yellow (18 LEDs) Bottom Indicator: Green (18 LEDs)	4-Pin Euro QD	15 to 30V dc	PNP	SP350GYRPQ
					NPN	SP350GYRNQ
			Field-wired	85 to 130V ac	85 to 130V ac	SP350GYRA120

 **QD models:** A model with a QD requires a mating cordset (see page 430).

DC models: Standard 4-pin Euro integral QD models are listed. For field-wired model, omit suffix **Q** from model number (example, **SP150GP**).

* Contact factory for other colors and color combinations.

EZ-LIGHT™ Indicator Specifications

<p>Supply Voltage and Current</p>	<p>DC models: T8L models: 10 to 30V dc @ 20 mA max. per LED color K30L, M18 and T18 General-Purpose models: 10 to 30V dc @ 25 mA max. per LED color K30L, M18 and T18 Emulators: 10 to 30V dc @ 30 mA max. M18 models: 10 to 30V dc Multi-Function: @ 40 mA max. T30 models: 10 to 30V dc General-Purpose: @ 40 mA max. per LED color Multi-Function: @ 50 mA max. Emulators: @ 45 mA max. K50L, K50FL and K80L models: 18 to 30V dc Multi-Function: @ 50 mA max. Emulators: @ 45 mA max. All others: @ 40 mA max. per LED color (alarm) CL50 models: 18 to 30V dc (10% max. ripple) Indicators: @ 100 mA max. current at 18V dc; 70 mA max. current at 30V dc; Audible Alarm: @ 25 max. current at 18 to 30V dc Segmented displays: 18 to 30V dc K80L4: @ 35mA max. per LED color; @ 90 mA max. with all LEDs ON; K80L3 @ 50 mA max. with color 1 ON, @ 35 mA max. with colors 2 or 3 ON, @ 90 mA max. with all LEDs ON; K80L2: @ 50 mA max. with colors 1 or 2 ON, @ 90 mA max. with all LEDs ON; K80L1: @ 90 mA max Daylight Visible models: 15 to 30V dc 1-Color: @ 120 mA max.; 2- & 3-Color: @ 40 mA max. per LED color SP150/SP250/SP350 models: 15 to 30V dc 1-Color: @ 120 mA max. per LED color; 3-Color: @ 40 mA max. per LED color</p> <p>AC models: 85 to 130V ac @ 15 mA max.</p> <p>Indicators for use with Safety Devices: K30L, M18 and T18 models: +24V dc @ 30 mA max. T30, K50L, K50FL and K80L models: +24V dc @ 45 mA max.</p>
<p>Indicators</p>	<p>Multi-Color, General-Purpose: Entire translucent diffuser or dome provides indication. LEDs are independently selected: Green, Red, Yellow; 1, 2 or 3 colors, depending on model. Multi-Color, Multi-Function: Entire translucent diffuser or dome provides indication. LEDs are independently selected: Green, Red, Yellow, Blue or White, ON steady or flashing; up to 5 colors, depending on model. 2-Color for Sensor Emulation: Entire translucent diffuser or dome provides indications. Green and Yellow, when connected to discrete output of 3-wire or 4-wire sensor. Audible: LEDs or audible independently selected: Green, Red, Yellow. Segmented and Daylight Visible: LEDs are independently selected: colors and operation, depending on model. SP150/SP250/SP350: LED colors are independently selected depending on model. Indicators for use with EZ-SCREEN: Entire translucent dome provides indication. Red/Green indication follows EZ-SCREEN OFF/ON OSSD#1 output.</p>
<p>Input Response Time</p>	<p>Multi-Color, Multi-Function models: Indicator ON: 250 milliseconds max.; Indicator OFF: 10 milliseconds max. CL50, Daylight Visible, SP150/SP250/SP350 and Audible models: 10 milliseconds max. Indicator ON/OFF</p> <p>Segmented models: Indicator ON: Initial light—250 milliseconds max. Additional lights—10 milliseconds max. Indicator OFF: 10 milliseconds max.</p>
<p>Indicator Flash Rate</p>	<p>Multi-Color Multi-Function models only: Single color: 1 second flash rate (500 milliseconds ON); 3-color: 1.5 second rotation rate (500 milliseconds per color); 4-Color: 2 second rotation rate (500 milliseconds per color)</p>
<p>Oscillation Frequency (Audible only)</p>	<p>K50L and K80L models: A1 models—3 KHz ± 500 Hz A2 models—3 KHz ± 500 Hz; pulse rate 3 Hz ± 20% AL1 models—2.7 KHz ± 500 Hz CL50 models: 2.7 KHz ± 500 Hz; Max Intensity: Typical—92 dB @ 1 m Minimum—84 db @ 1 m</p>
<p>Audible Adjustments (Audible only)</p>	<p>CL50 models only: The audible intensity can be adjusted by unscrewing the cover. The cover should not be unscrewed more than one and a half turns or it may detach during operation. For max. intensity, remove the center plug by rotating it 180° counterclockwise.</p>
<p>Environmental Rating</p>	<p>Audible: IEC IP50 T8L models: IEC IP67 (not encapsulated) K80L models: IEC IP67 (encapsulated electronics only) K50L and K50FL QD models: Meet IP69K per DIN 40050-9. Cabled models meet IP69K if the cable and cable entrance are protected from high-pressure spray. SP150/SP250/SP350 models: Fully encapsulated; Electronics: IP66 Enclosure: SP150—IEC IP67; SP250 & SP350: IEC IP65 All others: Fully encapsulated, IEC IP67</p>

- Photoelectrics
- Sensors
- Fiber Optic
- Sensors
- Special Purpose
- Sensors
- Measurement &
- Inspection Sensors
- Vision
- Wireless
- Indicators**
- Safety
- Light Screens
- Safety
- Laser Scanners
- Fiber Optic
- Safety Systems
- Safety Controllers &
- Modules
- Safety Two-Hand
- Control Modules
- Safety Interlock
- Switches
- Emergency Stop
- Devices

EZ-LIGHT™ INDICATORS
EZ-LIGHT™ SENSORS

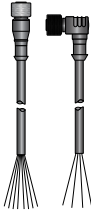
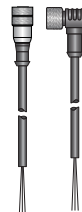



EZ-LIGHT™ Indicator Specifications (cont'd)

Connections	<p>QD cordsets are ordered separately. See page and 430.</p> <p>DC models: Multi-Color, General Purpose and Daylight Visible: K80L Models: 4-pin Euro-style integral QD. Terminal-wired models available for use with bulk cable; compression fitting is optional. Contact factory for cable information. T8L Models: 2 m attached cable or 150 mm PVC pigtail with 4-pin Euro-style QD, depending on model. Other Models: 2 m attached cable, 4-pin Euro-style integral QD, or 150 mm PVC pigtail with 4-pin Euro-style QD, depending on model.</p> <p>Multi-Color, Multi-Function: K80L Models: 5-pin (3- or 4-color) or 8-pin (5-color) Euro-style integral QD. Terminal-wired models available for use with bulk cable; compression fitting is optional. Contact Factory for cable information. Other Models: 2 m attached cable, 5-pin (3- or 4-color), or 8-pin (5-color) Euro-style integral QD or 150 mm PVC pigtail Euro-style QD.</p> <p>K50L and CL50 Audible models: 2 m attached, or 5-pin Euro-style integral QD or 150 mm PVC pigtail with 5-pin Euro-style QD. K80L Segmented and Audible models: 5-pin Euro-style integral QD or 150 mm PVC pigtail with 5-pin Euro-style QD. Terminal-wired models available for use with bulk cable; compression fitting is optional. Contact factory for cable information. SP150/SP250/SP350 models: 4-pin Euro-style integral QD or 150 mm PVC pigtail with Euro-style QD. Terminal-wired models available for use with bulk cable (wire nuts included); ½-14 NPSM cord grip or conduit adapter are optional.</p> <p>AC models: K50L and K80L: 2 m attached cable, 5-pin Micro-style integral QD or 150 mm PVC pigtail with 5-pin Micro-style QD, depending on model. SP150/SP250/SP350 models: Terminal-wired models available for use with bulk cable. Indicators for use with EZ-SCREEN: 8-pin Euro-style integral QD.</p>
Operating Temperature	Audible models: -20° to +50°C All others: -40° to +50° C
Certifications	<p>K50L & K80L:  K50L: </p>
Hookups	<p>General-purpose: DC: IN04 (p. 740) AC: IN05 (p. 741) Audible: K50L & K80L: IN06 (p. 741) CL50: IN07 (p. 741) Multi-Function: 3- or 4-color: IN08 (p. 741) 5-color: IN09 (p. 742) Segmented: IN11 (p. 742) Sensor Emulators: IN10 (p. 742) Daylight Visible: 1-color models: IN12 (p. 742) 3-color models: IN13 (p. 743) DC Traffic Lights: SP150 models IN04 (p. 740) SP250 models: IN14 (p. 743) SP350 models: see data sheet AC Traffic Lights: see data sheet</p>







Cordsets


Euro QD				Micro (With Shield)			
See page 658				See page 673			
	Threaded 4-Pin		Threaded 8-Pin		Threaded 5-Pin		
Length	Straight	Right-Angle	Straight	Length	Straight	Right-Angle	
2 m	MQDC-406	MQDC-406RA	MQDC2S-806	2 m	MQVR3S-506	MQVR3S-506RA	
5 m	MQDC-415	MQDC-415RA	MQDC2S-815	5 m	MQVR3S-515	MQVR3S-515RA	
9 m	MQDC-430	MQDC-430RA	MQDC2S-830	10 m	MQVR3S-530	MQVR3S-530RA	
	Threaded 5-Pin				Threaded 5-Pin		
Length	Straight	Right-Angle		Length	Straight	Right-Angle	
2 m	MQDC1-506	MQDC1-506RA		2 m	MQVR3S-506	MQVR3S-506RA	
5 m	MQDC1-515	MQDC1-515RA		5 m	MQVR3S-515	MQVR3S-515RA	
9 m	MQDC1-530	MQDC1-530RA		9 m	MQVR3S-530	MQVR3S-530RA	

 Additional cordset information available. See page 655.

Brackets

T8L	T18/M18	T30/K50L/CL50		K30L	K80L
					
pg. 625	pg. 617	pg. 616	pg. 619	pg. 618	pg. 631
SMB8MM	SMB18A	SMB1815SF	SMB30A	SMB22A	SMBDX80DIN

 Additional brackets and information available. See page 601.



Elevated mounting accessories see page 696.

EZ-LIGHT™ PICK-TO-LIGHT SENSORS

K50



K80



PVD



PVA



VTB



Photoelectrics
Sensors
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Fiber Optic
Safety Systems

Safety Controllers &
Modules

Safety Two-Hand
Control Modules

Safety Interlock
Switches

Emergency Stop
Devices



K50 & K80 page 432

- Highly visible 50 mm dome light is available in two housing styles.
- Single-point sensor features a large integrated pick light.
- Fixed-field background suppression, long-range retroreflective or push button models are available.
- Models are available for 30 mm, Flat or DIN-rail mounting.



PVD page 436

- Large highly visible job lights indicate the action to perform and signal errors.
- One-piece self-contained sensor requires no controller to operate.
- Sensor automatically operates in either diffuse or retroreflective mode, depending on the application.
- Two lengths fit existing bin sizes and configurations.



PVA page 438

- Highly visible LEDs on the emitter and receiver show the part-assembly sequence.
- Four lengths are available to fit common bin sizes.
- Range is up to 2 m.
- Array can also be used for detecting parts at least 35 mm in diameter.



VTB page 441

- Illuminated button base provides a bright, easy-to-see job light to guide assembly sequence.
- VTB buttons provide a cost-effective and easy-to-install solution for areas that cannot accommodate a light screen.
- Ergonomic design requires no physical pressure to operate, reducing hand, wrist and arm stress.

EZ-LIGHT™
INDICATORS
EZ-LIGHT™
SENSORS



EZ-LIGHT Indicator Lights page 416

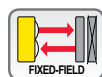
- Indicator lights provide real-time operational status indication for workers and supervisors.
- Thirteen housing styles are available.
- A single light displays up to five colors, eliminating the need for multiple post or stack lights.

EZ-LIGHT™ K50 & K80

- Requires no controller to operate; completely self-contained
- Indicates job pick status with a large 50 mm translucent dome containing one, two or three colored lights
- Shows correct order for selecting parts using a green job light in all models
- Models available with a red light to indicate detection of operator action or mispick
- Features models with background suppression to avoid sensing background objects in the sensor field of view, reliable retroreflective (break beam) mode or pressure activated push buttons
- Offers choice of models for 30 mm, Flat or DIN-rail mounting
- Ideal for use in abusive environments—fully encapsulated IP67 construction; rated to IP69K depending on installation
- Offers AS-i module compatibility, depending on model
- Available without sensor for use as indicator light (EZ-LIGHT™ K50L & K80L, see page 435)



ACCESSORIES
page 435



K50 Models



K80 Models

ONLINE
AUTOCAD, STEP,
IGES & PDF



EZ-LIGHT™ K50 and K80 Standard—Single Color, 12-30V dc

- Job light is ON at all times while job input is active.
- Presence of hand initiates output change of state.

→ Visible Red LED

Sensing Mode/LED	Housing	Range	Connection	Output	Job Light	PNP Models	NPN Models
	50 mm dome/ 30 mm mount polycarbonate	2 m	2 m	NO	Green	K50APLPGXD	K50ANLPGXD
			4-pin Euro QD			K50APLPGXDQ	K50ANLPGXDQ
			2 m	NC		K50RPLPGXD	K50RNLPGXD
			4-pin Euro QD			K50RPLPGXDQ	K50RNLPGXDQ

More on next page

Connection options: A model with a QD requires a mating cordset (see page 435).

QD models: For 150 mm 4-pin Euro-style PVC pigtail, add suffix **QP** to 2 m model number (example, **K50APLPGXDQP**). For 9 m cable, add suffix **W/30** to the 2 m model number (example, **K50APLPGXD W/30**).

NO = Normally Open, NC = Normally Closed

EZ-LIGHT™ K50 and K80 Standard–Single Color, 12-30V dc (cont'd)

- Job light is ON at all times while job input is active.
- Presence of hand initiates output change of state.

Infrared LED

Sensing Mode/LED	Housing	Range	Connection	Output	Job Light	PNP Models	NPN Models			
 FIXED-FIELD	50 mm dome/ 30 mm mount polycarbonate	50 mm Cutoff	2 m	NO	Green	K50APFF50GXD	K50ANFF50GXD			
			4-pin Euro QD			K50APFF50GXDQ	K50ANFF50GXDQ			
		100 mm Cutoff	2 m	NO		K50RPF50GXD	K50RNFF50GXD			
			4-pin Euro QD			K50RPF50GXDQ	K50RNFF50GXDQ			
	50 mm dome/ 30 mm mount polycarbonate	-	2 m	4-pin Euro QD		NO	K50APFF100GXD	K50ANFF100GXD		
				4-pin Euro QD			K50APFF100GXDQ	K50ANFF100GXDQ		
		50 mm dome/ Flat or DIN-mount polycarbonate	-	2 m		4-pin Euro QD	NO	K50RPF100GXD	K50RNFF100GXD	
						4-pin Euro QD		K50RPF100GXDQ	K50RNFF100GXDQ	
 PUSH-BUTTON	50 mm dome/ 30 mm mount polycarbonate	-	2 m	NO	Green	K50APPBGXD	K50ANPBGXD			
			4-pin Euro QD			K50APPBGXDQ	K50ANPBGXDQ			
			50 mm dome/ Flat or DIN-mount polycarbonate	-		2 m	4-pin Euro QD	NC	K50RPPBGXD	K50RNPBGXD
							4-pin Euro QD		K50RPPBGXDQ	K50RNPBGXDQ
	50 mm dome/ Flat or DIN-mount polycarbonate	-	2 m	4-pin Euro QD		NO	K80APPBGXD	K80ANPBGXD		
				4-pin Euro QD			K80APPBGXDQ	K80ANPBGXDQ		
			-	2 m		4-pin Euro QD	NC	K80RPPBGXD	K80RNPBGXD	
						4-pin Euro QD		K80RPPBGXDQ	K80RNPBGXDQ	

Photoelectrics
Sensors
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Sensors
Special Purpose
Sensors
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Inspection Sensors

Vision

Wireless

Indicators

Safety
Light Screens

Safety
Laser Scanners

Fiber Optic
Safety Systems

Safety Controllers &
Modules

Safety Two-Hand
Control Modules

Safety Interlock
Switches

Emergency Stop
Devices

ACCESSORIES
page
435

EZ-LIGHT™
INDICATORS

EZ-LIGHT™
SENSORS

K50 & K80

PVD

PVA

VTB

EZ-LIGHT™ K50 and K80 Specialty C-Series–Two Color, 12-30V dc

- Job light is Green while job input is active (unless hand is present.)
- Presence of hand (or pressing push button) initiates output change of state and turns light Red for visual verification that action was sensed.
- Aids in alignment of retroreflective models by providing Red signal when retroreflective target is not aligned or present.

Visible Red LED Infrared LED

Sensing Mode/LED	Housing	Range	Connection	Output	Job† Light	PNP Models	NPN Models
 POLAR RETRO	50 mm dome/ 30 mm mount polycarbonate	2 m	4-pin Euro QD	NO	Green (Red)	K50APLPGRQC	K50ANLPGRQC
				NC		K50RPLPGRQC	K50RNLPGRQC
 FIXED-FIELD	50 mm dome/ 30 mm mount polycarbonate	50 mm Cutoff	4-pin Euro QD	NO		K50APFF50GRQC	K50ANFF50GRQC
				NC		K50RPF50GRQC	K50RNFF50GRQC
		100 mm Cutoff	4-pin Euro QD	NO		K50APFF100GRQC	K50ANFF100GRQC
				NC		K50RPF100GRQC	K50RNFF100GRQC
 PUSH-BUTTON	50 mm dome/ 30 mm mount polycarbonate	-	4-pin Euro QD	NO		K50APPBGRQC	K50ANPBGRQC
				NC		K50RPPBGRQC	K50RNPBGRQC
	50 mm dome/ Flat or DIN-mount polycarbonate	-	4-pin Euro QD	NO		K80APPBGRQC	K80ANPBGRQC
				NC		K80RPPBGRQC	K80RNPBGRQC

Connection options: A model with a QD requires a mating cordset (see page 435).



QD models: For 150 mm 4-pin Euro-style PVC pigtail, replace suffix **Q** with **QP** (example, **K50APLPGRQP**).
For 2 m cable, remove **Q** from model number (example, **K50APLPGRC**) or 9 m cable, add suffix **W/30** to the 2 m model number (example, **K50APLPGRC W/30**).


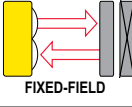
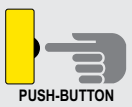
NO = Normally Open, NC = Normally Closed


† For other color combinations, contact factory at 1-888-373-6767.

EZ-LIGHT™ K50 and K80 Specialty C-Series—Three Color, 12-30V dc

- Job light is ON at all times while job input is active (unless hand is present).
- Presence of hand (or pressing button) activates output and turns job light Yellow for visual verification that action was sensed.
- Presence of hand (or pressing button) while job input is not active turns light Red signaling mispick.

 Visible Red LED
  Infrared LED

Sensing Mode/LED	Housing	Range	Connection	Output†	Output† Type	Job Light	Models
 POLAR RETRO	50 mm dome/ 30 mm mount polycarbonate	2 m	5-pin Euro PUR Pigtail QD	NC	PNP	Green/ Yellow/ Red	K50RPLPGRYC3QPMA
 FIXED-FIELD		50 mm Cutoff		NO			K50APFF50GRYC3QPMA
		100 mm Cutoff		NO			K50APFF100GRYC3QPMA
 PUSH-BUTTON	50 mm dome/ 30 mm mount polycarbonate	-	5-pin Euro PUR Pigtail QD	NO			K50APPBGRYC3QPMA
	50 mm dome/ Flat or DIN-mount polycarbonate						K80APPBGRYC3QPMA

 **Connection options:** A model with a QD requires a mating cordset (see page 435).

5-pin 150 mm Euro-style PUR pigtail QD models are listed. Other cable and connector options are available, contact factory at 1-888-373-6767.


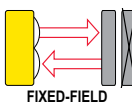
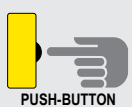
NO = Normally Open, NC = Normally Closed


† PNP models are listed. For other output types, contact factory at 1-888-373-6767.

EZ-LIGHT™ K50 and K80 Specialty E-Series—Two Color, 12-30V dc

- Job light is Green at all times while job input is active.
- Presence of hand (or pressing button) initiates output change of state.
- Presence of hand (or pressing button) while job input is inactive turns light Red, giving operator visual verification that sensor is functioning properly.

 Visible Red LED
  Infrared LED

Sensing Mode/LED	Housing	Range	Connection	Output	Job† Light	PNP Models	NPN Models
 POLAR RETRO	50 mm dome/ 30 mm mount polycarbonate	2 m	4-pin Euro QD	NO	Green (Red)	K50APLPGREQ	K50ANLPGREQ
				NC		K50RPLPGREQ	K50RNLPGREQ
 FIXED-FIELD	50 mm dome/ 30 mm mount polycarbonate	50 mm Cutoff	4-pin Euro QD	NO		K50APFF50GREQ	K50ANFF50GREQ
				NC		K50RPPFF50GREQ	K50RNFF50GREQ
		100 mm Cutoff	4-pin Euro QD	NO		K50APFF100GREQ	K50ANFF100GREQ
				NC		K50RPPFF100GREQ	K50RNFF100GREQ
 PUSH-BUTTON	50 mm dome/ 30 mm mount polycarbonate	-	4-pin Euro QD	NO		K50APPBGREQ	K50ANPBREQ
				NC		K50RPPBGREQ	K50RNPBREQ
	50 mm dome/ Flat or DIN-mount polycarbonate			NO		K80APPBGREQ	K80ANPBREQ
				NC		K80RPPBGREQ	K80RNPBREQ



 **Connection options:** A model with a QD requires a mating cordset (see page 435).

QD models: For 150 mm 4-pin Euro-style PVC pigtail, replace **Q** with **QP** (example, K50APLPGREQP).

For 2 m cable, remove **Q** from model number (example, K50APLPGRE) or 9 m cable, add suffix **W/30** to the 2 m model number (example, K50APLPGRE W/30).

NO = Normally Open, NC = Normally Closed

† For other color combinations, contact factory at 1-888-373-6767.

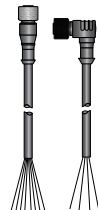
EZ-LIGHT™ K50 and K80 Specifications	
Supply Voltage and Current	12 to 30V dc, (10% max. ripple) C3 models: less than 90 mA max. current @ 12V dc (exclusive of load) less than 60 mA max. current @ 30V dc (exclusive of load) All others: less than 60 mA max. current @ 12V dc (exclusive of load) less than 40 mA max. current @ 30V dc (exclusive of load) AS-i Compatible
Supply Protection Circuitry	Protected against reverse polarity and transient voltages (fast transient and over-voltage)
Output Configuration	PNP or NPN (depending on model)
Output Rating	150 mA max. C3 models: ON-state saturation voltage: PNP models: Less than 2V @ 10 mA dc; less than 2.5V @ 150 mA dc NPN models: Less than 1.5V @ 10 mA dc; less than 2V @ 150 mA dc OFF-state leakage current: Less than 10 µA @ 30V dc All others: OFF-state leakage current: Less than 10 µA @ 30V dc ON-state voltage: less than 2V @ 10 mA dc; less than 2.5V @ 150 mA dc
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short circuit of output
Output Response Time	C3 models: 5 milliseconds ON/OFF All others: 3 milliseconds ON/OFF
Indicators	C3 models: Entire translucent dome provides indicator light. Job ("Pick") indicator –Green Pick Sensed indicator –Yellow Mispick indicator –Red All others: Entire translucent dome provides indicator light; either Job or Pick Sensed indicator inhibits the other light, depending on model. Job ("Pick") indicator –Green Pick Sensed indicator –Red or OFF, depending on model
Job Light Enable Input	Input impedance: 8000Ω Sinking –Input low less than 1.0V Sourcing –Input high greater than 7V
Construction	Base and translucent dome: polycarbonate Lens: polycarbonate or acrylic Push Button: thermoplastic
Environmental Rating	Fully encapsulated; IEC IP67 Integral QD models: DIN 40050 (IP69K) when using IP69K-rated cordsets Pigtail and cable models: IP69K when mounted with conduit
Connections	C3 models: 5-pin 150 mm PUR pigtail Euro-style QD (QPMA). QD cordsets are ordered separately. See page 435. All others: 2 m or 9 m 4-wire attached cable, 4-pin integral Euro-style QD (Q) or 4-pin 150 mm PVC pigtail Euro-style QD (QP), depending on model. QD cordsets are ordered separately. See page 435.
Ambient Light Immunity	Up to 5,000 lux
EMI/RFI Immunity	Immunity to EMI and RFI noise sources per IEC 947-5-2
Operating Conditions	Temperature: -40° to +50° C Relative Humidity: 90% at 50° C (non-condensing)
Certifications	K50 & K80:  K50: 
Hookup Diagrams	1- & 2-color models: IN15 (p. 743) 3-color models: IN16 (p. 743)


- Photoelectrics
- Sensors
- Fiber Optic Sensors
- Special Purpose Sensors
- Measurement & Inspection Sensors
- Vision
- Wireless
- Indicators**
- Safety Light Screens
- Safety Laser Scanners
- Fiber Optic Safety Systems
- Safety Controllers & Modules
- Safety Two-Hand Control Modules
- Safety Interlock Switches
- Emergency Stop Devices

- EZ-LIGHT™ INDICATORS
- EZ-LIGHT™ SENSORS**
- K50 & K80**
- PVD
- PVA
- VTB




Cordsets


Euro QD				
See page 658				
Length	Threaded 4-Pin		Threaded 5-Pin	
	Straight	Right-Angle	Straight	Right-Angle
2 m	MQDC-406	MQDC-406RA	MQDC1-506	MQDC1-506RA
5 m	MQDC-415	MQDC-415RA	MQDC1-515	MQDC1-515RA
9 m	MQDC-430	MQDC-430RA	MQDC1-530	MQDC1-530RA

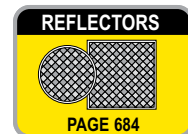


 Additional cordset information available. See page 655.

Brackets

K50/K80		
		
pg. 619	pg. 620	pg. 619
SMB30A	SMB30SC	SMB30FA..

 Additional brackets and information available. See page 601.



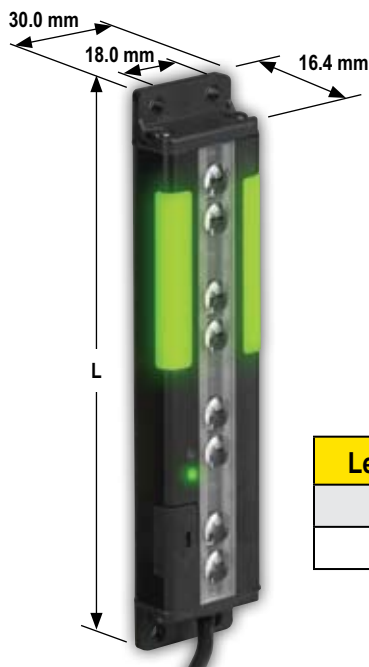
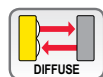
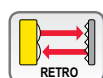
EZ-LIGHT™ PVD

One-Piece Pick-to-Light Sensor

- Large green job light indicates action to perform, and red job light indicates an error.
- Two lengths are available to fit existing bins and configurations: 100 and 225 mm.
- Easy-to-use sensor suits many part assembly, pick-to-light and error-proofing applications.
- One-piece self-contained sensor requires no controller.
- Sensor automatically operates in either diffuse or retroreflective mode, depending on the application.
- Setup and adjustment are automated, and a wide beam pattern provides easy alignment.
- A choice of protective mounting brackets are available.

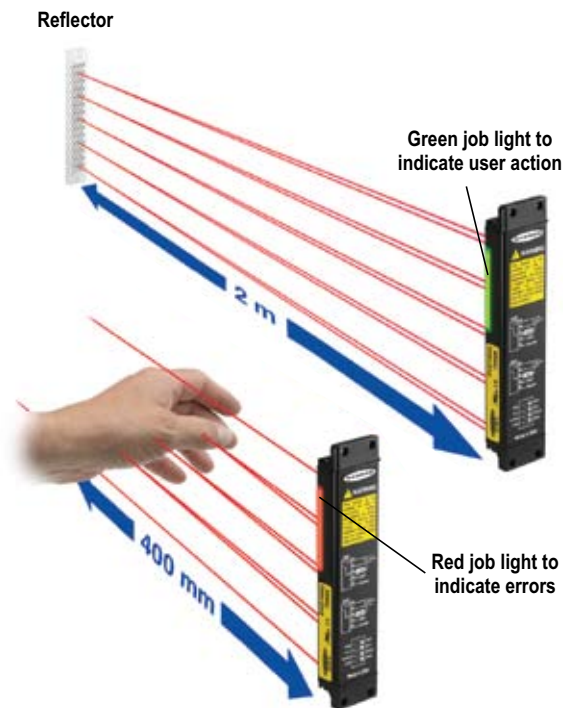


ACCESSORIES
page 437



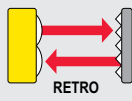
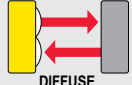
ONLINE
AUTOCAD, STEP,
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Length (L)	Models
137.8 mm	PVD100
266.4 mm	PVD225



EZ-LIGHT™ PVD, 12-30V dc

→ Visible Red LED

Sensing Mode/LED	Range	Array	Connection	Output	Models
 RETRO	Retroreflective Mode: up to 2 m	100 mm (4 Beams)	2 m 5-pin Euro Pigtail QD	NPN/PNP	PVD100 PVD100Q
 DIFFUSE	Diffuse Mode: up to 400 mm	225 mm (8 Beams)	2 m 5-pin Euro Pigtail QD		PVD225 PVD225Q

Connection options: A model with a QD requires a mating cordset (see page 437).

For 9 m cable, add W/30 to the 2 m model number (example, PVD100 W/30).

EZ-LIGHT™ PVD Specifications

Sensing Range	Retroreflective applications: 2 m, using 25 mm wide retroreflective tape Diffuse applications: 400 mm, with 18% reflectivity gray card target
Sensing Beam	630 nm, Visible red
Beam Spacing	28.6 mm
Sensing Height	4-channel models: 111 mm 8-channel models: 240 mm
Supply Voltage and Current	Input Voltage: 12 to 30V dc (10% max. ripple @ 10% duty cycle) Input Current: less than 40 mA @ 24V dc and less than 70 mA @ 12V dc (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity and transient over-voltage
Sensing Resolution	Retroreflective: 51 mm at 406 mm range, 100 mm at 2 m Diffuse: 55 mm dia. at 400 mm range
Output Configuration	User-selectable via DIP switch: 1 open-collector PNP (current sourcing) or 1 open-collector NPN (current sinking)
Output Rating	150 mA max. OFF-state leakage current: less than 10 µA ON-state saturation voltage: NPN: less than 1.0V dc at 150 mA PNP: less than 2.0V dc at 150 mA
Output Protection Circuitry	Protected against false pulse at power-up and short circuit of outputs
Output Response Time	400 milliseconds (Includes standard 100 milliseconds ON-delay and 100 milliseconds OFF-delay)
Delay at Power-Up	Less than 1.0 second
Indicators	Green: LED to indicate power ON/OFF Yellow: LED to indicate output ON/OFF Job Light: (Diffused Green LED) Turned ON and OFF by applying an external signal to the Job input (white wire). The job lights will be active high or active low, depending on user selection of DIP switch 4. Error Light: (Diffused Red LED) Turned ON and OFF by detection of an output event when job light is not ON.
Adjustments	4 DIP switches, located behind access panel († denotes default setting): 1. PNP†/ NPN output 2. Normally Open operation† / Normally Closed 3. Job light ON solid† / Job light flashing 4. Job light input high† / Job light input low
Construction	Black painted aluminum housing; acrylic lenses; thermoplastic polyester end caps; thermoplastic elastomer programming switch cover; stainless steel mounting brackets and hardware
Environmental Rating	NEMA 2; IEC IP62
Connections	5-conductor PVC-jacketed 2 m cable which is either unterminated or terminated with a 5-pin Euro-style quick-disconnect connector, depending on model. Cable diameter is 3.3 mm. See page 437.
Operating Conditions	Temperature: 0° to +50° C Relative humidity: 90% relative humidity @ 50° C (non-condensing)
Certifications	
Hookup Diagrams	IN17 (p. 744)

- Photoelectrics Sensors
- Fiber Optic Sensors
- Special Purpose Sensors
- Measurement & Inspection Sensors
- Vision
- Wireless
- Indicators**
- Safety Light Screens
- Safety Laser Scanners
- Fiber Optic Safety Systems
- Safety Controllers & Modules
- Safety Two-Hand Control Modules
- Safety Interlock Switches
- Emergency Stop Devices

- EZ-LIGHT™ INDICATORS
- EZ-LIGHT™ SENSORS**
- K50 & K80
- PVD**
- PVA
- VTB

Cordsets

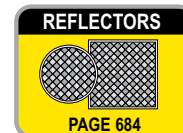
Euro QD		
See page 661		
Threaded 5-Pin		
Length	Straight	Right-Angle
2 m	MQDC1-506	MQDC1-506RA
5 m	MQDC1-515	MQDC1-515RA
9 m	MQDC1-530	MQDC1-530RA

Additional cordset information available. See page 655.

Brackets

PVD		
pg. 645 SMBPVD...	pg. 643 SMBPVA..C	pg. 643 SMBPVA6

Additional brackets and information available. See page 601.



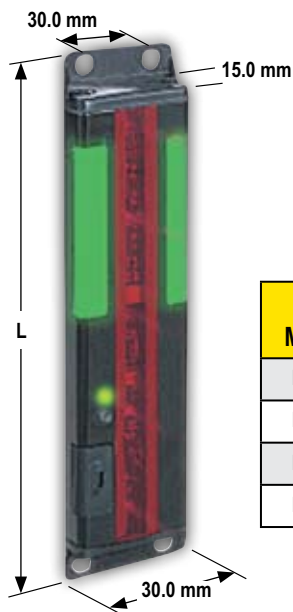
EZ-LIGHT™ PVA

Pick-to-Light Parts Verification Array

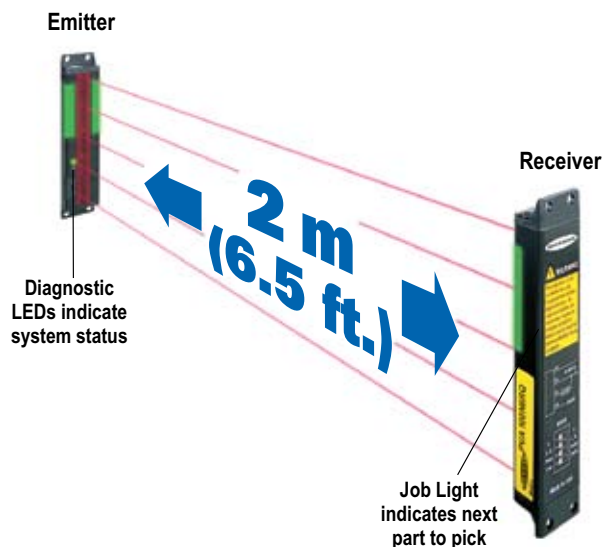
- Highly visible job lights on each emitter and receiver guide assemblers through the correct part-gathering sequence.
- Reduced chance of missed parts and parts assembled in the wrong order increases quality and decreases production costs.
- Asynchronous emitter and receiver requires no controller.
- Sensor can also be used to sense objects larger than 35 mm in diameter.
- Emitter and receiver interface easily with the existing process controller, saving installation time, wiring costs and maintenance.
- Diagnostic LEDs indicate setup and system errors at a glance, and the wide field of view makes alignment easy.
- Operating range is up to 2 m.
- Four lengths are available: 100, 225, 300 and 375 mm.
- A choice of protective brackets are available.



ACCESSORIES
page
440



Models	No. of Beams	Length (L)
PVA100	5	137.8 mm
PVA225	10	266.4 mm
PVA300	13	341.4 mm
PVA375	16	416.6 mm



EZ-LIGHT™ PVA, 12-30V dc

⇨ Infrared LED

Sensing Mode/LED	Description	Range	Array Length & Response Time	Connection	Job Light Input	NPN Models	PNP Models
<p>OPPOSED</p>	Emitter/Receiver Pair	2 m	100 mm (5 Beams) 20 ms	2 m	NPN: 0V dc PNP: +5 to 30V dc	PVA100N6	PVA100P6
	Emitter					PVA100N6E	PVA100P6E
	Receiver					PVA100N6R	PVA100P6R
	Emitter/Receiver Pair			2 m 4-pin Euro Pigtail QD		PVA100N6Q	PVA100P6Q
	Emitter					PVA100N6EQ	PVA100P6EQ
	Receiver					PVA100N6RQ	PVA100P6RQ

More on next page

Connection options: A model with a QD requires a mating cordset (see page 440).

EZ-LIGHT™ PVA, 12-30V dc (cont'd)

Infrared LED

Sensing Mode/LED	Description	Range	Array Length & Response Time	Connection	Job Light Input	NPN Models	PNP Models			
 OPPOSED	Emitter/Receiver Pair	2 m	225 mm (10 Beams)	2 m	NPN: 0V dc	PVA225N6	PVA225P6			
	Emitter					PVA225N6E	PVA225P6E			
	Receiver					PVA225N6R	PVA225P6R			
	Emitter/Receiver Pair					40 ms	2 m 4-pin Euro Pigtail QD	PNP: +5 to 30V dc	PVA225N6Q	PVA225P6Q
	Emitter								PVA225N6EQ	PVA225P6EQ
	Receiver								PVA225N6RQ	PVA225P6RQ
	Emitter/Receiver Pair		300 mm (13 Beams)	2 m	NPN: 0V dc	PVA300N6	PVA300P6			
	Emitter					PVA300N6E	PVA300P6E			
	Receiver					PVA300N6R	PVA300P6R			
	Emitter/Receiver Pair					52 ms	2 m 4-pin Euro Pigtail QD	PNP: +5 to 30V dc	PVA300N6Q	PVA300P6Q
	Emitter								PVA300N6EQ	PVA300P6EQ
	Receiver								PVA300N6RQ	PVA300P6RQ
	Emitter/Receiver Pair	375 mm (16 Beams)	2 m	NPN: 0V dc	PVA375N6	PVA375P6				
	Emitter				PVA375N6E	PVA375P6E				
	Receiver				PVA375N6R	PVA375P6R				
	Emitter/Receiver Pair				64 ms	2 m 4-pin Euro Pigtail QD	PNP: +5 to 30V dc	PVA375N6Q	PVA375P6Q	
	Emitter							PVA375N6EQ	PVA375P6EQ	
	Receiver							PVA375N6RQ	PVA375P6RQ	

Connection options: A model with a QD requires a mating cordset (see page 440).


- Photoelectrics Sensors
- Fiber Optic Sensors
- Special Purpose Sensors
- Measurement & Inspection Sensors
- Vision
- Wireless
- Indicators**
- Safety Light Screens
- Safety Laser Scanners
- Fiber Optic Safety Systems
- Safety Controllers & Modules
- Safety Two-Hand Control Modules
- Safety Interlock Switches
- Emergency Stop Devices

ACCESSORIES
page 440

- EZ-LIGHT™ INDICATORS
- EZ-LIGHT™ SENSORS**
- K50 & K80
- PVD
- PVA
- VTB

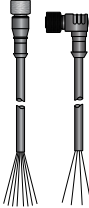
EZ-LIGHT™ PVA Specifications			
Beam Spacing	25.0 mm		
Sensing Height	100, 225, 300 or 375 mm, depending on emitter and receiver models		
Supply Voltage and Current	12 to 30V dc (10% max. ripple) at less than 62 mA for the emitter and 50 mA for the receiver (exclusive of load)		
Supply Protection Circuitry	Protected against reverse polarity		
Output Configuration	Receivers have one solid-state dc output, programmable for light or dark operate: Models PVA...N6R have current sinking (NPN) open-collector transistor Models PVA...P6R have current sourcing (PNP) open-collector transistor		
Output Rating	150 mA max. OFF-state leakage current: less than 2 µA ON-state saturation voltage: less than 1V dc at 10 mA and less than 1.5V dc at 100 mA		
Output Response Time	Sensor Size	Standard	With Crosstalk from Adjacent Units
	100 mm	20 milliseconds	30 milliseconds max.
	225 mm	40 milliseconds	60 milliseconds max.
	300 mm	52 milliseconds	78 milliseconds max.
	375 mm	64 milliseconds	96 milliseconds max.
Output Protection Circuitry	Protected against false pulse at power-up and continuous overload or short circuit of outputs		
Sensing Resolution	35 mm min. diameter		


More on next page

EZ-LIGHT™ PVA Specifications (cont'd)	
Status Indicators	<p>Emitter: One Green LED to indicate power ON/OFF One Red LED to indicate frequency selected</p> <p>Receiver: One Green LED to indicate power ON/OFF One Yellow LED to indicate output state</p> <p>Emitter & Receiver: Both have two highly visible “job lights” which are turned ON/OFF by applying an external signal to the white wire. The job lights may be programmed for steady or flashing green.</p>
Construction	Black painted aluminum housing; acrylic lenses; PBT polyester end caps; thermoplastic elastomer programming switch cover; stainless steel mounting brackets and hardware
Environmental Rating	IEC IP62; NEMA 2
Connections	<p>Emitter: 3-conductor PVC-jacketed 2 m cable which is either unterminated or terminated with a 4-pin Euro-style quick-disconnect connector, depending on model. Cable diameter is 3.3 mm.</p> <p>Receiver: 4-conductor PVC-jacketed 2 m cable which is either unterminated or terminated with a 4-pin Euro-style quick-disconnect connector, depending on model. Cable diameter is 3.3 mm.</p>
Operating Temperature	0° to +50° C
Certifications	
Hookup Diagrams	Emitters: IN19 (p. 744) All others: IN18 (p. 744)

Cordsets




Euro QD		
See page 658		
Threaded 4-Pin		
Length	Straight	Right-Angle
2 m	MQDC-406	MQDC-406RA
5 m	MQDC-415	MQDC-415RA
9 m	MQDC-430	MQDC-430RA






Additional cordset information available. See page 655.

Brackets

PVA		
 <small>pg. 643</small> SMBPVA...	 <small>pg. 643</small> SMBPVA..C	 <small>pg. 642</small> SMBPVA2



Additional brackets and information available. See page 601.



EZ-LIGHT™ VTB

Pick-to-Light Verification

Optical Touch Buttons

- Replaces capacitive touch switches and mechanical push buttons
- Features illuminated base (to provide a bright, easy-to-see job light); solid, flashing or multiple color models available
- Offers choice of models with red, green or blue job light
- Require no physical pressure to operate, eliminating hand, wrist and arm stresses associated with repeated switch operation
- Offers a cost-effective and easy-to-install pick-to-light solution for areas that cannot accommodate a light screen
- Cuts through heavy airborne contamination to function in almost any environment
- Withstands exposure to a variety of chemicals, depending on model



Photoelectrics Sensors
Fiber Optic Sensors
Special Purpose Sensors
Measurement & Inspection Sensors

Vision

Wireless

Indicators

Safety Light Screens

Safety Laser Scanners

Fiber Optic Safety Systems

Safety Controllers & Modules

Safety Two-Hand Control Modules

Safety Interlock Switches

Emergency Stop Devices

ACCESSORIES

page 442

EZ-LIGHT™ INDICATORS

EZ-LIGHT™ SENSORS

K50 & K80

PVD

PVA

VTB


EZ-LIGHT™ VTB, 12-30V dc

Job Light(s) Color	Connection	Upper Housing	Job Light Input	NPN Models	PNP Models		
Green	2 m	Polysulfone	NPN: 0V dc	VTBN6	VTBP6		
	4-Pin Euro QD			VTBN6Q	VTBP6Q		
Red	2 m			VTBN6R	VTBP6R		
	4-Pin Euro QD			VTBN6RQ	VTBP6RQ		
Blue	2 m			VTBN6B	VTBP6B		
	4-Pin Euro QD			VTBN6BQ	VTBP6BQ		
Green & Red	2 m			VTBN6GR	VTBP6GR		
	5-Pin Euro QD			VTBN6GRQ	VTBP6GRQ		
Green	2 m			Polycarbonate	PNP: +5 to 30V dc	VTBN6L	VTBP6L
	4-Pin Euro QD					VTBN6LQ	VTBP6LQ
Red	2 m	VTBN6RL	VTBP6RL				
	4-Pin Euro QD	VTBN6RLQ	VTBP6RLQ				
Blue	2 m	VTBN6BL	VTBP6BL				
	4-Pin Euro QD	VTBN6BLQ	VTBP6BLQ				
Green & Red	2 m	VTBN6GRL	VTBP6GRL				
	5-Pin Euro QD	VTBN6GRLQ	VTBP6GRLQ				

Connection options: A model with a QD requires a mating cordset (see page 442).

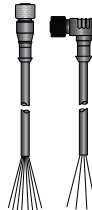
For 9 m cable, add W/30 to the 2 m model number (example, VTBN6 W/30).


EZ-LIGHT™ VTB Specifications

Supply Voltage and Current	12 to 30V dc (10% max. ripple) Single-color models: Less than 120 mA max. current @ 12V dc (exclusive of load) Less than 70 mA max. current @ 30V dc (exclusive of load) Two-color models: Less than 67 mA max. current @ 12V dc (exclusive of load) Less than 40 mA max. current @ 24V dc (exclusive of load) Less than 35 mA max. current @ 30V dc (exclusive of load)
Supply Protection Circuitry	Protected against transient voltages (fast-transient and over-voltage) and reverse polarity
Output Configuration	Choose 1 current sinking (NPN) open collector transistor or 1 current sourcing (PNP) open collector transistor, depending on model
Output Rating	Max. load: 150 mA ON-state saturation voltage: less than 1.5V @ 150 mA OFF-state leakage current: less than 10 µA
Output Protection	All models protected against false pulse on power-up (outputs held OFF for 1 second at power-up). Models with solid-state outputs have overload and short-circuit protection.
Response Time	100 milliseconds ON/OFF
Indicators	2 Red LED indicators: Power ON and Output Conducting Base: Lights green, red, blue, or green and red as a job light when input line is enabled. One-color models may be wired for flashing rather than solid color operation.
Construction	Totally encapsulated, non-metallic enclosure. Black polysulfone or red polycarbonate upper housing (see Application Note below); translucent white polycarbonate base. Electronics fully epoxy-encapsulated.
Environmental Rating	IEC IP66 ; NEMA 1, 3, 4, 4X, 12 and 13
Connections	2 m or 9 m attached cable, or 4-pin (single color) or 5-pin (two color) Euro-style QD fitting. QD cordsets are ordered separately. See pages 442.
Ambient Light Immunity	Up to 120,000 lux (direct sunlight)
EMI/RFI Immunity	Immune to EMI and RFI noise sources, per IEC 947-5-2.
Operating Conditions	Temperature: -20° to +50° C Relative humidity: 90% @ +50° C (non-condensing)
Application Notes	Environmental considerations for models with polysulfone upper housings: The polysulfone upper housing will become brittle with prolonged exposure to outdoor sunlight. Avoid contact with strong alkalis. Clean periodically using mild soap solution and a soft cloth. Environmental considerations for models with polycarbonate upper housings: Avoid prolonged exposure to hot water and moist, high-temperature environments above 66° C. Avoid contact with aromatic hydrocarbons (such as xylene and toluene), halogenated hydrocarbons and strong alkalis. Clean periodically using mild soap solution and a soft cloth.
Certifications	
Hookup Diagrams	NPN Single-Color Models: IN20 (p. 744) PNP Single-Color Models: IN21 (p. 745) Two-Color Models: IN22 (p. 745)


Cordsets


Euro QD				
See page 658				
Length	Threaded 4-Pin		Threaded 5-Pin	
	Straight	Right-Angle	Straight	Right-Angle
2 m	MQDC-406	MQDC-406RA	MQDC1-506	MQDC1-506RA
5 m	MQDC-415	MQDC-415RA	MQDC1-515	MQDC1-515RA
9 m	MQDC-430	MQDC-430RA	MQDC1-530	MQDC1-530RA



 Additional cordset information available. See page 655.

Brackets

VTB		
		
pg. 619 SMB30A	pg. 620 SMB30SC	pg. 619 SMB30FA..

 Additional brackets and information available. See page 601.

Field Covers

VTB	
Models	
Black cover	OTC-1-BK
Green cover	OTC-1-GN
Red cover	OTC-1-RD
Yellow cover	OTC-1-YW

