



Pick-to-Light

Banner offers the most extensive line of light-guided assembly solutions. Pick-to-Light products have unique, rugged packages with a choice of verification functions and are easy to mount for quick installation.

Series	Description	Number of Colors	Dimensions H x W x D	Power Supply
	PVD A compact, one-piece solutions useful in many part assembly, pick-to-light and error-proofing applications. page 626	3	H (137.8 or 266.4) 30 x 16.4 mm	12 to 30 V dc
	PVL A retroreflective sensor that offers a reliable, cost-effective solution for bin-picking processes. page 628	3	H (225 or 500) 32.9 x 37.3 mm	12 to 30 V dc
	PVA Helps reduce missed and misassembled parts for increased quality and reduced production costs. page 630	3	H (varies by model) 30 x 15 mm	12 to 30 V dc
	K50 A versatile family that combines a large, bright indicator with solid-state switching capability activated by a simple touch. page 632	1 or 2	ø 30 mm base with ø 50 mm light	12 to 30 V dc
	K30 A versatile family that combines a small, bright indicator with solid-state switching capability activated by a simple touch. page 634	1 or 2	ø 22 mm base with ø 30 mm light	12 to 30 V dc
	K50 A reliable photoelectric sensing for non-contact part-picking applications. page 636	1 or 3	ø 30 mm base with ø 50 mm light	12 to 30 V dc
	K30, K50 & K80 Push Buttons 30 or 50 mm translucent dome containing one to three colored lights and a push button. page 638	1 to 3	K30 ø 22 mm base with ø 30 mm light K50 ø 30 mm base with ø 50 mm light K80 80 mm housing with ø 50 mm light	12 to 30 V dc
	VTB Features a brightly illuminated base for enhanced visual indication. page 642	1	57 x 60 43 mm	12 to 30 V dc



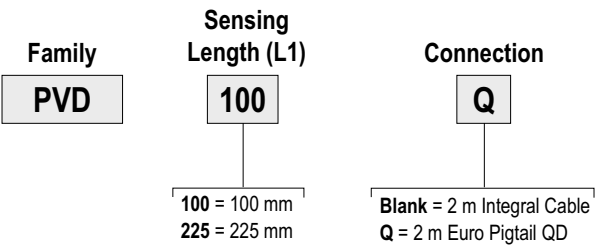
PVD

Parts Verification Array


PVD Pick-to-Light Sensors are compact, one-piece solutions useful in many part assembly, pick-to-light and error-proofing applications.

- Innovative, low-profile design with auto-configuration feature for diffuse or retroreflective modes
- Ideal for bin picking in tube rack or shelving applications
- Green light for pick and red light for mispick with selectable control features
- Rugged housing for high durability
- Protective mounting brackets available



PVD Model Key, 12-30 V DC Example Model Number **PVD100Q**



Length (L)	Models
137.8 mm	PVD100
266.4 mm	PVD225

 **Connection options:** A model with a QD requires a mating cordset (see page 627).
For 9 m cable, add **W/30** to the 2 m model number (example, **PVD100 W/30**).







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 30 V dc (10% max. ripple @ 10% duty cycle) Input Current: less than 40 mA @ 24 V dc and less than 70 mA @ 12 V 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 μ A ON-state saturation voltage: NPN: less than 1.0 V dc at 150 mA PNP: less than 2.0 V 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. QD cordsets are ordered separately.
Operating Conditions	Temperature: 0° to +50° C Relative humidity: 90% relative humidity @ 50° C (non-condensing)
Certifications	 

Cordsets

Euro QD (for Q models)

See page 908

Length	Threaded 5-Pin	
	Straight	Right-Angle
1.83 m	 MQDC1-506	 MQDC1-506RA
4.57 m	 MQDC1-515	 MQDC1-515RA
9.14 m	 MQDC1-530	 MQDC1-530RA

 Additional cordset information available.
See page 902.

Brackets

PVD

See page 890

See page 890

See page 891

SMBPVD...

SMBPVA..C

SMBPVA6

Additional bracket information available.
See page 852.

Other Accessories

Reflectors

See page 932





PVL

Parts Verification Array

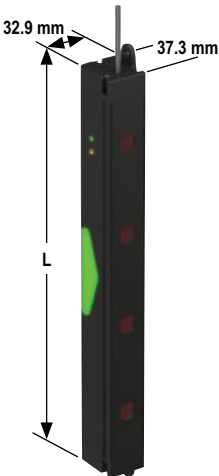
Banner's PVL Pick-to-Light Retroreflective Sensor offers a reliable, cost-effective solution for bin-picking processes. The PVL is easy to install with no assembly required.

- Rugged housing for high durability and works well for larger openings and parts
- 70 mm beam spacing with two available lengths
- Highly visible pick/mispick dual-function indicator
- Can mount directly to a racking profile vertically or horizontally
- Slotted housing design allows cable to exit on either end

PVL Model Key, 12-30 V DC

Example Model Number **PVL225PQ**


Family	Sensing Length	Output	Connection
PVL	225	P	Q
	225 = 225 mm 500 = 500 mm	P = PNP N = NPN	Blank = 2 m Integral Cable Q = 2 m Euro Pigtail QD



Length (L)	Models
327.5 mm	PVL225
608 mm	PVL500

 **Connection options:** A model with a QD requires a mating cordset (see page 629).
For 9 m cable, add **W/30** to the 2 m model number (example, **PVL250P W/30**).







PVL Specifications

Sensing Range	1.5 m, using 25 mm wide retroreflective tape
Sensing Beam	630 nm, Visible red
Beam Spacing	70 mm
Supply Voltage and Current	Input Voltage: 12 to 30 V dc (10% max. ripple) PLV225; Input Current: less than 140 mA @ 12 V dc and less than 70 mA @ 30 V dc (exclusive of load) PVL500; Input Current: less than 220 mA @ 12 V dc and less than 100 mA @ 30 V dc (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity and transient over-voltage
Output Rating	150 mA max. OFF-state leakage current: less than 10 µA ON-state saturation voltage: NPN: less than 1.5 V at 10 mA dc PNP: less than 2.0 V dc at 10 mA NPN: less than 2.0 V at 150 mA dc PNP: less than 2.5 V dc at 150 mA
Output Response Time	Less than 2 milliseconds ON and OFF
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.
Construction	Black anodized aluminum housing, painted zinc end caps, thermoplastic front face and lenses
Environmental Rating	IEC IP50
Connections	2 m PVC-jacketed cable which is either unterminated or terminated, depending on model. QD cordsets are ordered separately.
Operating Conditions	Temperature: 0° to +50° C Relative humidity: 90% relative humidity @ 50° C (non-condensing)
Certifications	

Cordsets

Euro QD (for Q models)

See page 906

	Threaded 4-Pin	
Length	Straight	Right-Angle
1.83 m	 MQDC-406	 MQDC-406RA
4.57 m	 MQDC-415	 MQDC-415RA
9.14 m	 MQDC-430	 MQDC-430RA



Additional cordset information available.
See page 902.

Brackets

PVL

See page 892	See page 893	See page 893	See page 892	See page 892
SMBPVL1	SMBPVL2-(225 or 500)	SMBPVL3-(225 or 500)	SMBPVL4	SMBPVL5



Additional bracket information available.
See page 852.

Other Accessories

Reflectors

See page 932





PVA

Parts Verification Array

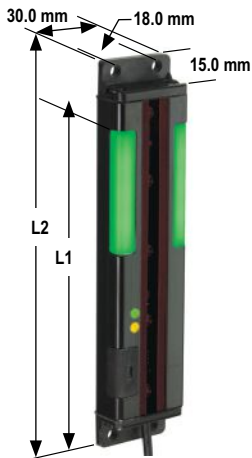
The PVA Pick-to-Light Sensor helps reduce missed and misassembled parts for increased quality and reduced production costs. With highly visible job lights, Banner's PVA provides the most reliable solution for error proofing.

- Emitter/receiver arrays for high resolution sensing
- Four lengths to cover a variety of openings and applications
- Highly reliable sensing over a long operating range
- Wide field-of-view makes alignment easy
- Protective mounting brackets available


PVA Model Key, 12-30 V DC

Example Model Number **PVA100P6EQ**

Family	Length	Output	Emitter/ Receiver	Connection
PVA	100	P6	E	Q
	100 = 100 mm 225 = 225 mm 300 = 300 mm 375 = 375 mm	P6 = PNP N6 = NPN	E = Emitter R = Receiver Blank = E/R Pair	Blank = 2 m Integral Cable Q = 2 m Euro Pigtail QD









Models	No. of Beams	Length (L1)	Length (L2)
PVA100	5	100	137.8 mm
PVA225	10	225	266.4 mm
PVA300	13	300	341.4 mm
PVA375	16	375	416.6 mm


 **Connection options:** A model with a QD requires a mating cordset (see page 631).
For 9 m cable, add W/30 to the 2 m model number (example, **PVA100P6E W/30**).

Cordsets

Euro QD (for Q models)

See page 906

Length	Threaded 4-Pin	
	Straight	Right-Angle
1.83 m	 MQDC-406	 MQDC-406RA
4.57 m	 MQDC-415	 MQDC-415RA
9.14 m	 MQDC-430	 MQDC-430RA

 Additional cordset information available.
See page 902.

Brackets


PVA

See page 890



See page 890

See page 890



 Additional bracket information available.
See page 852.

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 30 V 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 μ A ON-state saturation voltage: less than 1 V dc at 10 mA and less than 1.5 V 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		
Status Indicators	Emitter: One Green LED to indicate power ON/OFF One Red LED to indicate frequency selected Receiver: One Green LED to indicate power ON/OFF One Yellow LED to indicate output state 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.		
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	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. 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.		
Operating Temperature	0° to +50° C		
Certifications	 		



K50 Touch

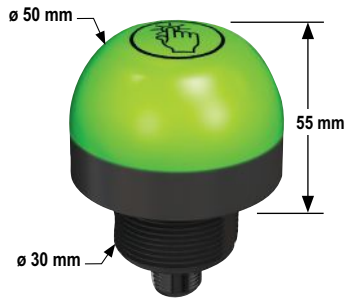
Pick-to-Light Sensor


The K50 Touch Series is a versatile family that combines a large, bright indicator with solid-state switching capability activated by a simple touch. These easy-to-use lighted touch button indicators allow for increased productivity with highly visible indication.

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Ideal for efficient pick-to-light applications where a rugged device is needed
- Simple operation with the touch of a finger, hand or whole palm with or without gloves
- One-, two- and three-color models available with a variety of colors and option of custom laser surface marking
- Rugged, water-resistant IP69K housing

K50 Touch One or Two Color Model Key, 12-30 V DC Example Model Number K50APTGRQCQ

Family	Output	Input	Actuation Method	1 or 2 Color Models		Function	Connection
K50	A	P	T	G	R	C	Q
	A = Normally Open R = Normally Closed	P = PNP N = NPN	T = Touch	G = Green Y = Yellow R = Red B = Blue W = White O = Orange T = Turquoise V = Violet M = Magenta X = Not used		1-Color Only D = Job light always ON with job input. Touch activates output. 2-Color Only C = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light. E = Job light always ON with job input. Touch activates output. Touch with inactivate job input activates sense light.	Blank = 2 m Integral cable Q = Euro Integral QD QP = Euro Pigtail QD



 **Connection options:** A model with a QD requires a mating cordset (see page 633).

* For less than 4 colors, use X as model placeholder (example, K80L2HGXX1PQ)

K50 Touch Three Color Model Key, 12-30 V DC







Example Model Number K50APTGRYC4Q


Family	Output	Input	Actuation Method	Job	Mispick	Sense	Function	Connection
K50	A	P	T	G	R	Y	C4	Q
A = Normally Open R = Normally Closed		P = PNP N = NPN	T = Touch	G = Green Y = Yellow R = Red B = Blue W = White O = Orange T = Turquoise V = Violet M = Magenta X = Not used			C3 = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light. Touch with inactive job input activates mispick light and activates output. C4 = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light until job input is removed. Touch with inactive job input activates mispick light for 5 seconds after touched and activates output.	Blank = 2 m Integral cable Q = Euro Integral QD QP = Euro Pigtail QD

Cordsets

Euro QD (for Q models)

See page 908

Length	Threaded 5-Pin	
	Straight	Right-Angle
1.83 m	 MQDC1-506	 MQDC1-506RA
4.57 m	 MQDC1-515	 MQDC1-515RA
9.14 m	 MQDC1-530	 MQDC1-530RA

 Additional cordset information available. See page 902.




Brackets


K50

See page 869



See page 891

See page 870

SMB30A	SMBPVA..C	SMB30SC
		

 Additional bracket information available. See page 852.

K50 Touch Specifications

Supply Voltage	12 to 30 V dc
Supply Current	Less than 75 mA max current at 12 V dc (exclusive of load) Less than 50 mA max current at 30 V dc (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity and transient voltages (fast transient and over-voltage) and reverse polarity
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	IEC IP67, IP69K per DIN 40050-9 Cabled models also meet IP69K if the cable and cable entrance are protected from high-pressure spray
Connections	Integral 4-pin Euro style QD, or 2m PVC integral cable
Operating Conditions	Temperature: -40° to +50° C Max. Relative Humidity: 90% @ +50° C max. relative humidity (non-condensing) Storage Temperature: -40° to +70° C
Certifications	 



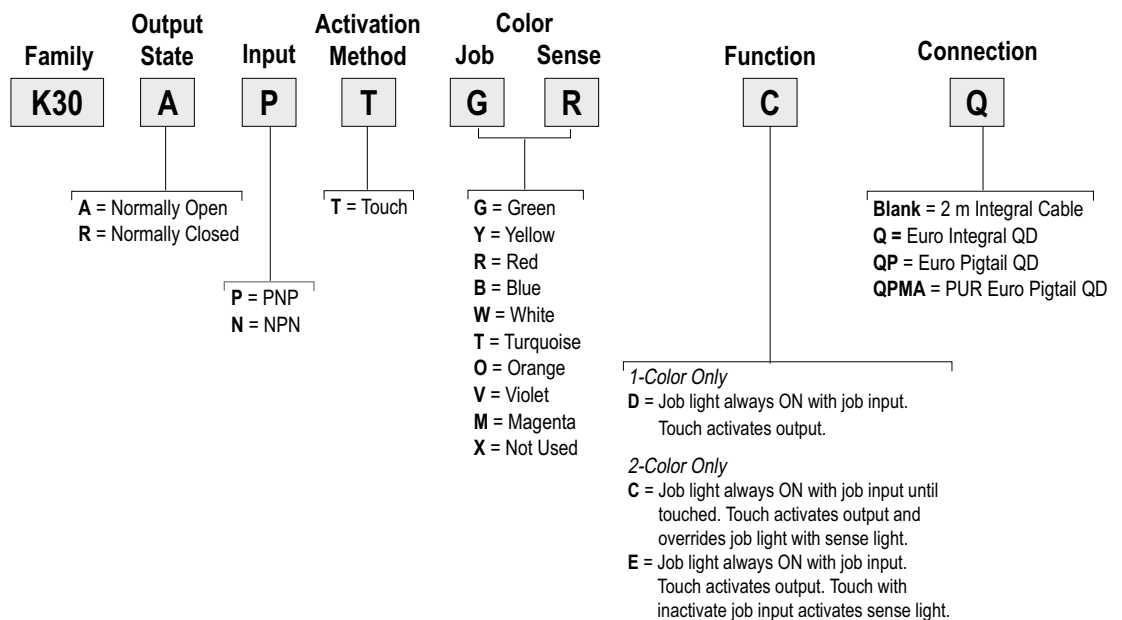
K30 Touch Pick-to-Light Sensor

Banner's K30 Touch Pick-to-Light Series is a versatile family that combines a small, bright indicator with solid-state switching capability activated by a simple touch. These easy-to-use small indicators are cost effective with a 22 mm threaded base to fit into industry standard punched holes and are ideal for error proofing of bin-picking and parts-verification applications.

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Ideal for efficient pick-to-light applications where a rugged device is needed
- Simple operation with the touch of a finger, hand or whole palm with or without gloves
- One- and two-color models available with a variety of colors and option of custom laser surface marking
- Rugged, water-resistant IP69K housing

K30 Touch One or Two Color Model Key, 12-30 V DC

Example Model Number **K30APTGRQC**









Connection options: A model with a QD requires a mating cordset (see page 635).


For 9 m cable, add **W/30** to the 2 m model number (example, **K30APTGRQC W/30**)

Cordsets

Euro QD (for Q models)

See page 906

Length	Threaded 4-Pin	
	Straight	Right-Angle
1.83 m	 MQDC-406	 MQDC-406RA
4.57 m	 MQDC-415	 MQDC-415RA
9.14 m	 MQDC-430	 MQDC-430RA




Additional cordset information available.
See page 902 .

Brackets


K30

SMB22A	SMB22FVK	SMBAMS22P	SMB22RAVK
			



Additional bracket information available.
See page 852.

K30 Touch Specifications

Supply Voltage	12 to 30 V dc
Supple Current	55 mA max current (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	IEC IP67, IP69K per DIN 40050-9 Cabled models also meet IP69K if the cable and cable entrance are protected from high-pressure spray
Connections	Integral 4-pin Euro style QD, or 2m PVC integral cable
Operating Conditions	Temperature: -40° to +50° C Max. Relative Humidity: 90% @ +50° C max. relative humidity (non-condensing) Storage Temperature: -40° to +70° C
Certifications	



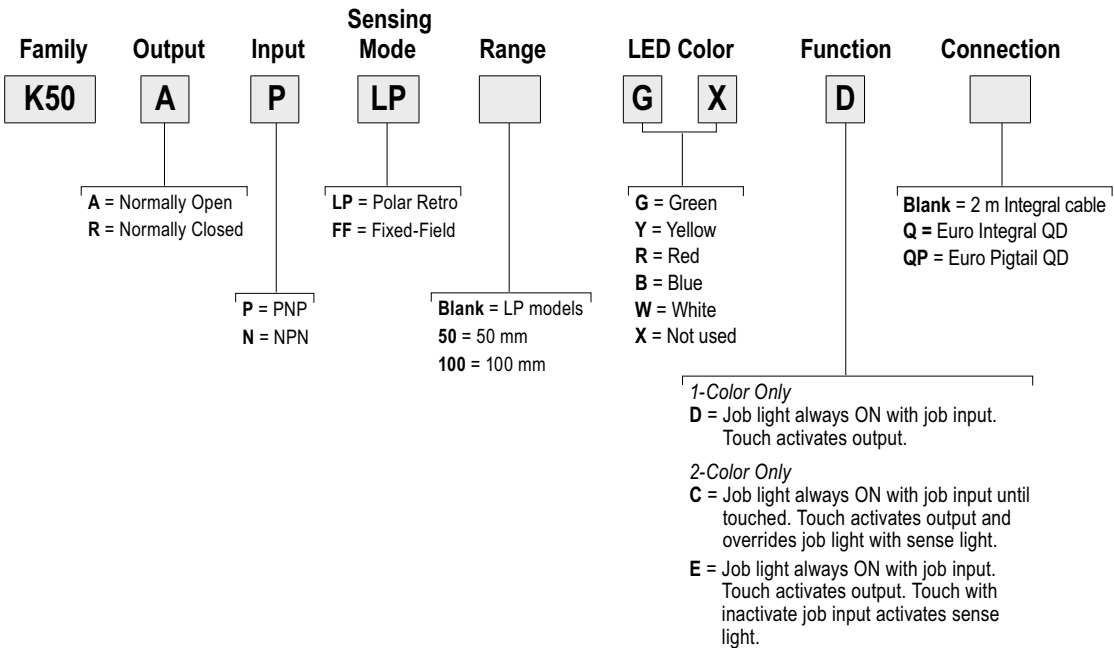
K50 Optical Pick-to-Light Sensor

The K50FF and K50LP use reliable photoelectric sensing for non-contact part-picking applications.

- Photoelectric pick acknowledgment
- Fixed-field or polarized retroreflective depending on model
- Simple, one-piece, cost-effective installations
- Easily mounted on any type of tube rack or shelving
- Several logic functions available to customize the operation of the application and control system

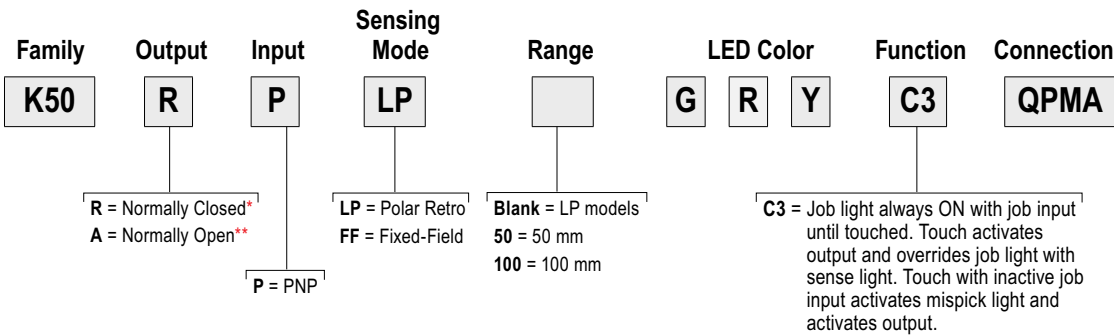
K50 One or Two Color Model Key, 12-30 V DC

Example Model Number **K50APLPGXD**



K50 Three Color Model Key, 12-30 V DC

Example Model Number **K50RPLPGRYC3QPMA**















* Polar Retro only available with Normally Closed input
** Fixed-Field only available with Normally Open input


Connection options: A model with a QD requires a mating cordset (see page 637).

Cordsets

Euro QD (for Q5 models)

See page 908

Length	Straight		Right-Angle	
	4-Pin	5-Pin	4-Pin	5-Pin
1.83 m	 MQDC-406	 MQDC1-506	 MQDC-406RA	 MQDC1-506RA
4.57 m	 MQDC-415	 MQDC1-515	 MQDC-415RA	 MQDC1-515RA
9.14 m	 MQDC-430	 MQDC1-530	 MQDC-430RA	 MQDC1-530RA


 Additional cordset information available.
See page 906.


Brackets

K50

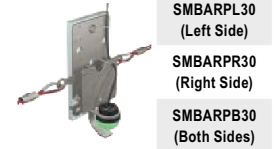
See page 869

See page 869


 Additional bracket information available.
See page 852.

Andon Solutions

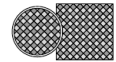
K50





Other Accessories

Reflectors

See page 932



K50 Specifications

Supply Voltage and Current	12 to 30 V dc, (10% max. ripple)		
Supply Protection Circuitry	Protected against reverse polarity and transient voltages (fast transient and over-voltage) and reverse polarity		
Output Configuration	PNP or NPN (depending on model)		
Output Rating	150 mA max. C3 models: ON-state saturation voltage: PNP models: Less than 2 V @ 10 mA dc; less than 2.5 V @ 150 mA dc NPN models: Less than 1.5 V @ 10 mA dc; less than 2 V @ 150 mA dc OFF-state leakage current: Less than 10 μ A @ 30 V dc All others: OFF-state leakage current: Less than 10 μ A @ 30 V dc ON-state voltage: less than 2 V @ 10 mA dc; less than 2.5 V @ 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: 8000 Ω Sinking —Input low less than 1.5 V Sourcing —Input high greater than 7 V		
Construction	Base and translucent dome: Polycarbonate Lens: Polycarbonate or acrylic Push Button: Thermoplastic		
Environmental Rating	Fully encapsulated; IEC IP67 Integral QD models: 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. 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.		
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	K30, K50 & K80:  K50: 		



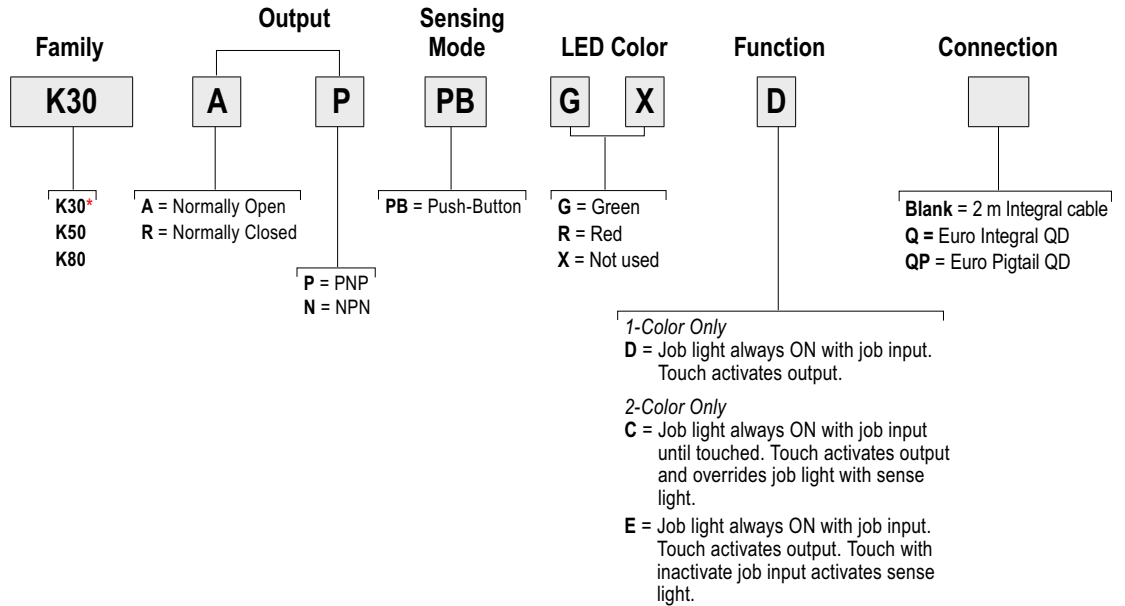
Push Button EZ-LIGHT® K30, K50 & K80

- Requires no external controller to operate; completely self-contained
- Indicates job pick status with 30 & 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
- Models available with 30 mm, Flat or DIN-rail mounting
- Ideal for use in abusive environments—fully encapsulated IP67 construction; some models rated to IP69K depending on installation
- QPMA model options also available

K30, K50 & K80 One or Two-Color Model Key, 12-30 V DC

Example Model Number **K30APPBGXD**

- Job light is ON at all times while job input is active.
- Pressing push-button initiates output change of state.



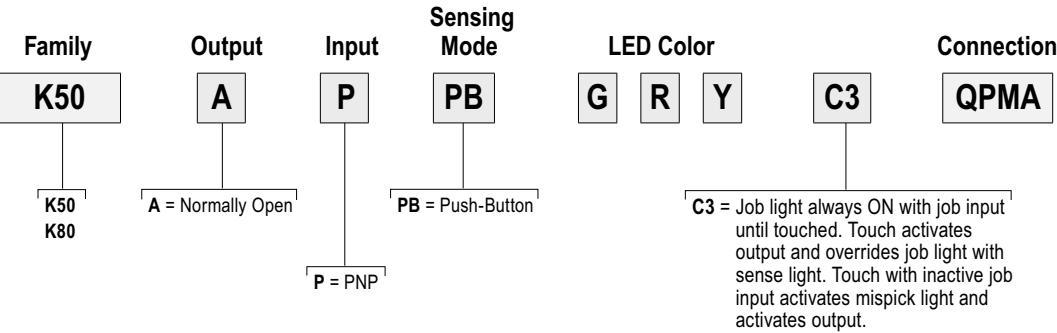
* K30 models only available with Normally Open PNP output



Connection options: A model with a QD requires a mating cordset (see page 640).

EZ-LIGHT® K50 & K80 Three-Color C-Series Model Key, 12-30 V 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

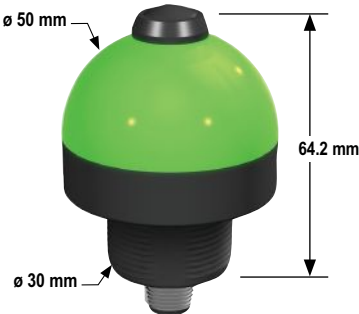


* K30 models only available with Normally Open PNP output

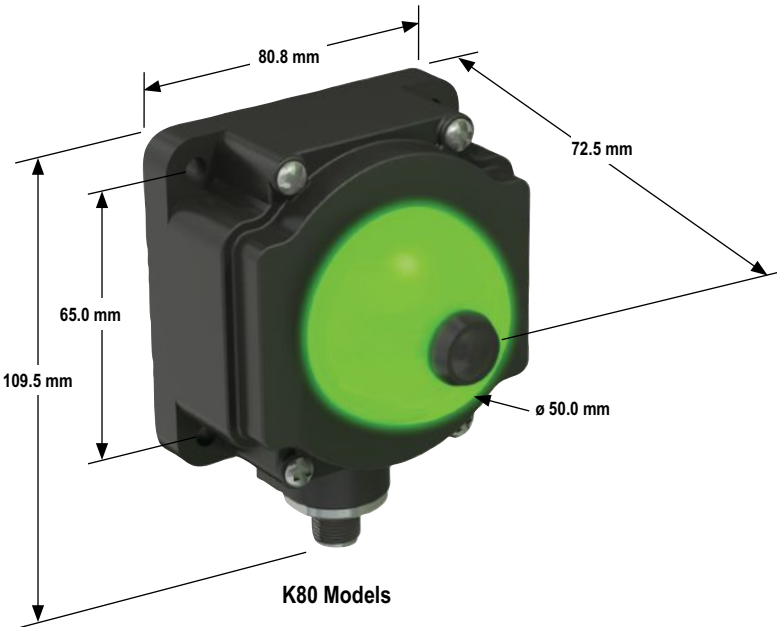
Connection options: A model with a QD requires a mating cordset (see page 640).



K30 Push Models










K50 Push Models



K80 Models

Cordsets

Euro QD (for Q5 models)					
See page 906					
Length	Straight		Right-Angle		
	4-Pin	5-Pin	4-Pin	5-Pin	
1.83 m		MQDC-406	MQDC-506		MQDC-406RA MQDC-506RA
4.57 m		MQDC-415	MQDC-515		MQDC-415RA MQDC-515RA
9.14 m		MQDC-430	MQDC-530		MQDC-430RA MQDC-530RA


 Additional cordset information available.
See page 902.

Brackets

K50		K30	
See page 869	See page 869	See page 870	
SMB30A	SMB30FA..	SMB30SC	SMB22A
			

 Additional bracket information available.
See page 852.

K30, K50 & K80 Specifications

Supply Voltage and Current	12 to 30 V dc, (10% max. ripple)
Supply Protection Circuitry	Protected against reverse polarity and transient voltages (fast transient and over-voltage) and reverse polarity
Output Configuration	PNP or NPN (depending on model)
Output Rating	150 mA max. C3 models: ON-state saturation voltage: PNP models: Less than 2 V @ 10 mA dc; less than 2.5 V @ 150 mA dc NPN models: Less than 1.5 V @ 10 mA dc; less than 2 V @ 150 mA dc OFF-state leakage current: Less than 10 μ A @ 30 V dc All others: OFF-state leakage current: Less than 10 μ A @ 30 V dc ON-state voltage: less than 2 V @ 10 mA dc; less than 2.5 V @ 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: 8000 Ω Sinking —Input low less than 1.5 V Sourcing —Input high greater than 7 V
Construction	Base and translucent dome: polycarbonate Lens: polycarbonate or acrylic Push Button: thermoplastic
Environmental Rating	Fully encapsulated; IEC IP67 Integral QD models: 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 640. 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 640.
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	K30, K50 & K80: 



VTB

Optical Touch Buttons

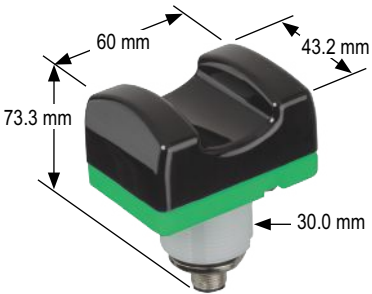
The VTB features a brightly illuminated base for enhanced visual indication. Like the OTB, the VTB is an ergonomic touch button that requires no physical pressure to operate, and is ideal for machine start/stop and other applications where clear, visual indication of the touch button status is desired.


- Illuminated version of the Optical Touch Button
- Ergonomic design eliminates hand, wrist and arm stress
- Provides bright, easy-to-see status indication that can be seen in almost any environment
- One- and two-color models available
- 30 mm threaded base for convenient mounting

VTB One or Two Color Model Key, 12-30 V DC







Example Model Number VTBP6RQ


Family	Output	Job Light 1 Color	Job Light 2 Color	Upper Housing Material	Connection
VTB	P6		R		Q
	N6 = NPN P6 = PNP	Blank = Green R = Red B = Blue		Blank = Polysulfone L = Polycarbonate	Blank = 2 m Integral Cable Q = Euro Integral QD QP = Euro Pigtail QD






 **Connection Option:** A model with a QD requires a mating cordset (see page 643).


Cordsets

Euro QD (for Q5 models)			
See page 906			
Threaded 4-Pin			
Length	Straight		Right-Angle
1.83 m		MQDC-406	 MQDC-406RA
4.57 m		MQDC-415	 MQDC-415RA
9.14 m		MQDC-430	 MQDC-430RA



 Additional cordset information available.
See page 902.

Brackets

VTB		
See page 869	See page 869	See page 870
SMB30FA	SMB30MM	SMB30SC
		

 Additional bracket information available.
See page 852.

Field Covers

OTB/LTB				
Black	OTC-1-BK		OTCL-1-BK	
Green	OTC-1-GN		OTCL-1-GN	
Red	OTC-1-RD		OTCL-1-RD	
Yellow	OTC-1-YW		OTCL-1-YW	

VTB Specifications

Supply Voltage and Current	12 to 30 V dc (10% max. ripple) Single-color models: Less than 120 mA max. current @ 12 V dc (exclusive of load) Less than 70 mA max. current @ 30 V dc (exclusive of load) Two-color models: Less than 67 mA max. current @ 12 V dc (exclusive of load) Less than 40 mA max. current @ 24 V dc (exclusive of load) Less than 35 mA max. current @ 30 V 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 1.5 V @ 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); translucent white polycarbonate base. Electronics fully epoxy-encapsulated.
Environmental Rating	IEC IP66 ; NEMA 1, 3, 4, 4X, 12
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 page 643.
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)
Certifications	