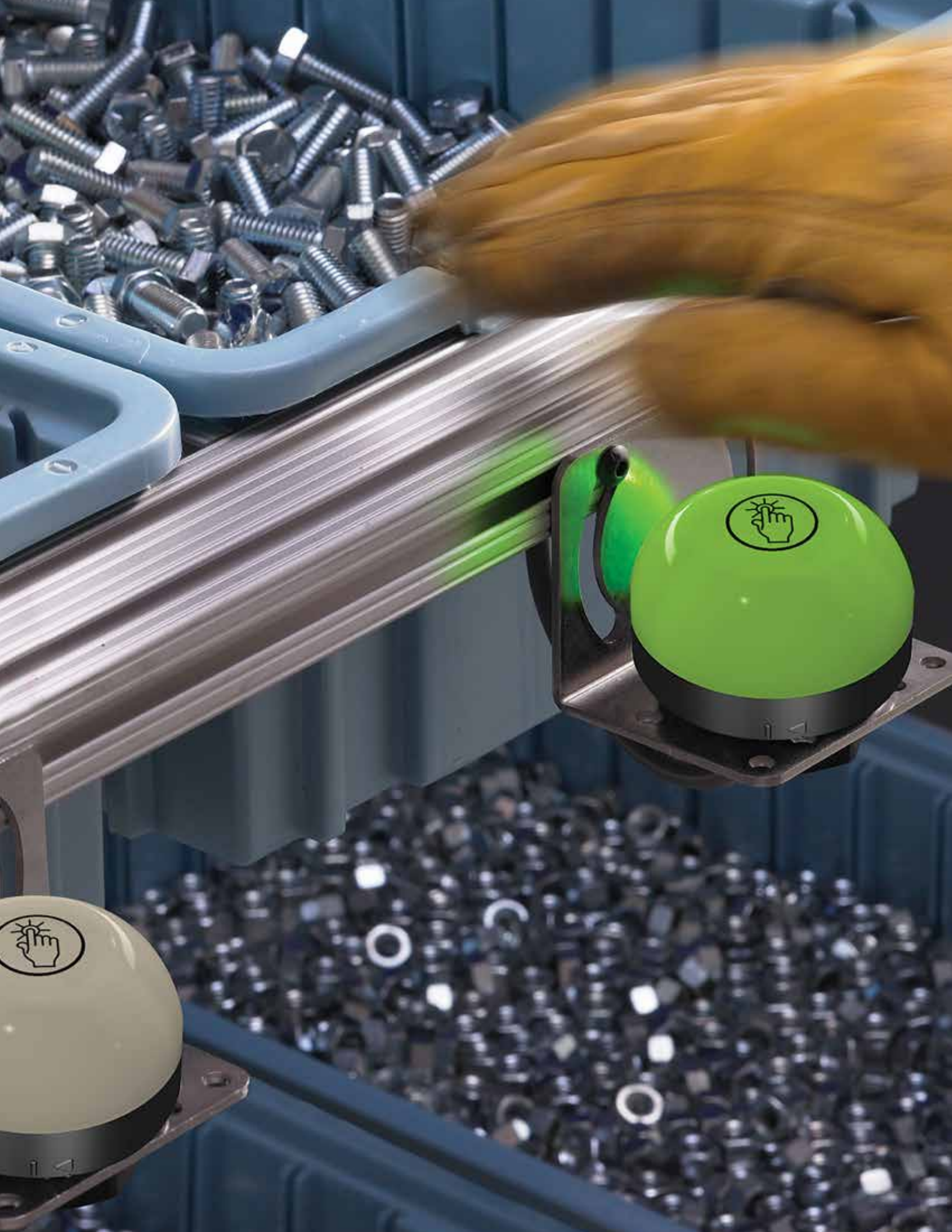


Touch Buttons and Pick-to-Light

Banner is the leader in ergonomic, visual and sealed operator touch buttons for industrial applications. Since Banner Touch Buttons can have multiple colors and I/O capabilities, they can replace several conventional buttons, making them ideal in lean manufacturing environments.

Pick-to-light sensors help industrial automation manufacturers reduce the risk of error in the assembly process, boosting product quality and reducing cost.

Selection Guide

Touch Buttons

Page	102	104	106	108	110	112	114	116	118
Family Name	**S22**	**K30**	**K50**	**K70**	**K30L/K50L Push Button**	**OTB**	**VTB**	**Illuminated E-Stops**	**Flush-Mount Illuminated E-Stops**
Size (mm)	20 mm surface	30 mm dome	50 mm dome	70 mm dome	30/50 mm dome	74.2 x 59.9 x 43.2	73.3 x 43.2 x 43.2	119.8 x ø 80	102.1 x 80.8 x 80.3
Actuation Method									
Color Available									
Multicolor Option									
IP Rating	IP66, IP67, IP69K	IP67, IP69K	IP67, IP69K	IP65	IP65	IP66	IP66	IP65	IP65
Logic Funtion	F2, H	F2, H	F2, H	F2, H					

Pick-to-Light

102	120	122	124	126	128	130	132	136	134
S22	**K30**	**K50**	**K70L**	**K50 Optical**	**K50 Modbus**	**K30/K50/K80 Push Button**	**PVD**	**PVL**	**PVA**
20 mm surface	30 mm dome	50 mm dome	70 mm dome	50 mm dome	50 mm dome	30/50/50 mm dome	137.8 or 266.4	327.5 or 608	137.8 to 416.6
					or				
IP66, IP67, IP69K	IP67, IP69K	IP67, IP69K	IP65	IP67, IP69K	IP67	IP67	IP62	IP50	IP62
C, E, C3, C4	C. D. E	C. D. E C3, C4	C. D. E C3, C4	C. D. E C3, C4	S1	C. D. E C3, C4			

Optical

Mechanical

Capacitive

Logic Functions

Illuminated buttons are available with different logic options to solve a variety of applications with optimized wiring. Multicolor models provide clear operator guidance to improve speed and accuracy.

PICK-TO-LIGHT: Two-color logic options for error-proofing, picking, putting and verification

C	Input activates Color 1. Touch activates Color 2 and Output.
D	Input activates Color 1. Touch activates Output.
E	Input activates Color 1. Touch activates Output. Touch with inactive input activates Color 2.

MULTIPURPOSE: Full color control via three inputs independent of button; momentary output follows button

F2	Three inputs activate three colors. Color 3 overrides Colors 1 and 2, and Color 2 overrides Color 1. Touch changes output state.

ILLUMINATED BUTTONS: One or two colors with momentary or latching bipolar outputs that follow button

H	Power activates Color 1. Touch changes bipolar output state and activates Color 2. Latch and momentary options.

SPECIALTY PICK-TO-LIGHT: Three-color logic options for error-proofing, picking, putting and verification

C3	Input activates Color 1. Touch with active input activates Color 3 and Output. Touch with inactive input activates Color 2 and Output.
C4	Input activates Color 1. Touch with active input activates Color 3 and Output. Touch with inactive input activates Color 2 and Output for 5 seconds.

MODBUS: Color control and input monitoring via Modbus RTU

S1	Modbus commands activate Colors. Touch activates Modbus output.

Actuation Methods

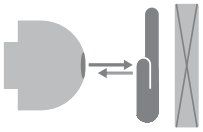
The actuation method is the means by which an operator's actions are sensed. Banner's Pick-to-Light line includes a variety of actuation methods, including contact and non-contact sensors covering a single point on a small bin or a wide opening on a large bin. These actuation methods enable error proofing in a large variety of assembly and kitting applications. Below is a description of each actuation method offered to help you select the best solution for your specific application.

Push Buttons

Push buttons take physical force to press and actuate the button.

Touch Buttons

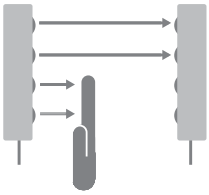
Touch buttons can be actuated with no force, just contact with the surface. The contact can be made with a whole hand, palm or finger.



Fixed-Field Mode

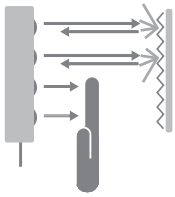
Background suppression sensors have a definite limit to their sensing range, ignoring objects that lie beyond their range.

Fixed-field sensors compare the amount of reflected light that is seen by two differently aimed receiver elements. If the light reaching the second receiver element is equal to or greater than the light reaching the first receiver element, then the object will be recognized.



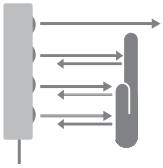
Emitter/Receiver

In opposed-mode sensing, the sensor's emitter and receiver are housed in two separate units. The emitter is placed opposite the receiver, so that the light beam goes directly from the emitter to the receiver.



Retroreflective Mode

Retroreflective sensors contain both the emitter and receiver elements. The beam(s) is(are) established between the emitter, the retroreflector and the receiver. An object is sensed when it interrupts or "breaks" the effective beam.



Diffuse

With a diffuse-mode sensor, the object is detected when the object reflects the sensor's transmitted light energy back to the sensor.

S22 Flush-Mount Touch Buttons

- Large, bright illuminated area for clear visibility of input and touch status
- Flush mount design sits tight against panel, machine and bracket surfaces
- Independent color control or preconfigured models to suit your indication needs
- Momentary versions remain activated as long as touch is present, while latching versions toggle between activated and not activated states on successive touches
- Excellent immunity to false triggering by water spray, detergents, oils, and other foreign materials
- Rugged, water-resistant IP69K design for washdown environments
- Ergonomically designed to eliminate hand, wrist and arm stresses, requiring no physical pressure to operate and can be actuated with bare hands or work gloves

RGB Multicolor

Family	Output State	Output Function	Activation Method	Material	Color**	Connector
S22	A	M	T	S	RGB7	QP
	A = Normally Open **R** = Normally Closed	**M** = Momentary **L** = Latching	**T** = Touch	**S** = Standard **F** = FDA Grade	**RGB7** = RGB Multicolor	**Blank** = 2 m Integral Cable **QP** = Euro Pigtail QD

** Green, Yellow, Red, Blue, White, Cyan, Magenta

QD models require mating cordset

One- or Two-Color/Function

Family	Output State	Output Function	Activation Method	Material	Color 1/Job	Color 2/Sense	Function	Connector
S22	A	M	T	S	G	R	H	Q
	A = Normally Open **R** = Normally Closed	**M** = Momentary **L** = Latching	**T** = Touch	**S** = Standard **F** = FDA Grade	**G** = Green **Y** = Yellow **R** = Red **B** = Blue **W** = White **X** = Not used		**H** = Illuminated Buttons **C** = Pick-to-Light **E** = Pick-to-Light see page 100	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD **QP** = Euro Pigtail QD **T** = Terminal Screws QD models require mating cordset

One-, Two-, or Three Color/Function

Family	Output State	Output Function	Activation Method	Material	Color 1/ Job	Color 2/ Sense	Color 3/ Mispick	Function	Connector
S22	A	M	T	S	G	G	R	C3	Q
	A = Normally Open **R** = Normally Closed	**M** = Momentary **L** = Latching	**T** = Touch	**S** = Standard **F** = FDA Grade	**G** = Green **Y** = Yellow **R** = Red **B** = Blue **W** = White **X** = Not used			**C3** = Specialty Pick-to-Light **C4** = Specialty Pick-to-Light see page 100	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD **QP** = Euro Pigtail QD **T** = Terminal Screws QD models require mating cordset

Supply Voltage	10 to 30 V dc
Supply Current	80 mA max current (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Construction	Housing: Polycarbonate or FDA grade plastic, depending on model Translucent dome: Polycarbonate or FDA grade plastic, depending on model Mounting Nut: PBT or FDA grade plastic
Environmental Rating	Standard: UL Type 4x, 13 FDA Grade: UL Type 4x (indoor) Cable, Pigtail, QD models: IEC IP66, IP67, IP69K per DIN 40050-9 on front and back Terminal models: IEC IP66, IP67, IP69K per DIN 40050-9 on front only
Connections	2 m PVC integral cable, integral Euro-style QD 150 mm Euro-style pigtail QD or terminal screws
Operating Conditions	Temperature: –40 to +50 °C Storage Temperature: –40 to +70 °C
Certifications	CE, cULus LISTED

Cabled Models

Laser Marking Available

QD Models

Field-Wired Models (Terminals)

SMB22A

SMB22FVK

SMBAMS22P

5-Pin Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

5-pin M12 Euro-Style Washdown Cordset
Straight connector models only

MQDC-WDSS-0506
2 m (6.5')
MQDC-WDSS-0515
5 m (15')
MQDC-WDSS-0530
9 m (30')

Additional accessories are available at bannerengineering.com

K30 Illuminated Touch Buttons

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Simple operation with the touch of a finger
- Easily actuated with bare hands or work gloves
- Rugged, fully encapsulated IP69K construction for high-pressure wash-down environments
- Models with either latching or momentary outputs
- 1-, 2-, or 3- color models available to solve a variety of applications

Independent Input/Output Models with up to Three Indicator Colors Controlled by Separate Inputs

The output is activated by touching the device and is totally independent of the indicator inputs.

Family	Output State	Input/ Output	Activation Method	Color 1	Color 2	Color 3	Function	Connection*
K30	A	P	T2	G	R	Y	F2	Q

- **A** = Normally Open; **R** = Normally Closed
- **P** = PNP; **N** = NPN
- **T2** = Touch; **T2F** = Touch, FDA Grade
- **G** = Green; **Y** = Yellow; **R** = Red; **B** = Blue; **W** = White; **X** = Not Used
- **F2** = Multipurpose see page 100
- **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD; **QP** = Euro Pigtail QD; **T** = 5-Screw Terminal

QD models require mating cordset

One- or Two-Color Momentary or Latching Bipolar (1 NPN and 1 PNP) Output Models

These models do not have inputs to control the indicator. The color of the indicator is determined by the non-activated or activated condition.

Family	Output State	Output Function	Output Type	Activation Method	Color (not activated)	Color (activated)	Function	Connection*
K30	A	L	B	T2	G	R	H	Q

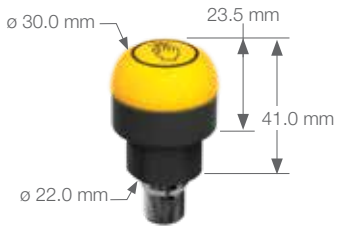
- **A** = Normally Open; **R** = Normally Closed
- **Blank** = Momentary; **L** = Latching
- **B** = Bipolar Output (NPN & PNP)
- **T2** = Touch; **T2F** = Touch, FDA Grade
- **G** = Green; **Y** = Yellow; **R** = Red; **B** = Blue; **W** = White; **X** = Not Used
- **H** = Illuminated Buttons see page 100
- **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD; **QP** = Euro Pigtail QD; **T** = 5-Screw Terminal

QD models require mating cordset

* FDA Grade models only available with pigtail QD

Laser Marking Available

Supply Voltage	12 to 30 V dc
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	IEC IP67, IP69K per DIN 40050
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	CE, cULus LISTED



K30 Touch

K30 Touch FDA Grade

SMB22A

SMB22FVK

SMBAMS22P

SMB22RAVK

TC-K30-CL
Touch Guard

4-Pin M12/Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

Additional accessories are available at bannerengineering.com

K50 Illuminated Touch Buttons

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Simple operation with the touch of a finger, hand or whole palm
- Easily actuated with bare hands or work gloves
- Rugged, fully encapsulated IP69K construction for high-pressure wash-down environments
- Models with either latching or momentary outputs
- One-, two- and three-color models available to solve a variety of applications
- Smart electric field sensing on second generation models provides excellent immunity to false triggering from water spray, detergents and other foreign materials
- Second generation models feature superior electrical noise immunity
- Models made with food-grade materials available

Independent Input/Output Models with up to Three Indicator Colors Controlled by Separate Inputs

The output is activated by touching the device and is totally independent of the indicator inputs.

Family	Output State	Input/ Output	Activation Method	Color 1	Color 2	Color 3	Function	Connection*
K50	A	P	T2	G	R	Y	F2	Q

K50
K50C = Compact

A = Normally Open
R = Normally Closed

P = PNP
N = NPN

T2 = Touch
T2F = Touch, FDA Grade

G = Green
Y = Yellow
R = Red
B = Blue
W = White
X = Not Used

F2 = Multipurpose
see page 100

Blank = 2 m Integral Cable
Q = Euro Integral QD
QP = Euro Pigtail QD

QD models require mating cordset

One- or Two-Color Momentary or Latching Bipolar (1 NPN and 1 PNP) Output Models

These models do not have inputs to control the indicator. The color of the indicator is determined by the non-activated or activated condition.

Family	Output State	Output Function	Output Type	Activation Method	Color (not activated)	Color (activated)	Function	Connection*
K50	A	L	B	T2	G	R	H	Q

K50
K50C = Compact

A = Normally Open
R = Normally Closed

Blank = Momentary
L = Latching

B = Bipolar Output (NPN & PNP)

T2 = Touch
T2F = Touch FDA Grade

G = Green
Y = Yellow
R = Red
B = Blue
W = White
X = Not Used

H = Illuminated Buttons
see page 100

Blank = 2 m Integral Cable
Q = Euro Integral QD
QP = Euro Pigtail QD

QD models require mating cordset

* FDA Grade models only available with pigtail QD

Laser Marking Available

Supply Voltage	12 to 30 V dc
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	Standard: UL Type 4x, 13 FDA Grade: UL Type 4x IEC IP67, IP69K per DIN 40050
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	CE c UL us LISTED

K50 Touch

K50 Touch FDA Grade

K50C Touch Compact

SMB30A

SMB30FA

SMB30FVK

SMB30SC

TC-K50-CL or TC-K30-CL
Touch Guard

Additional accessories are available at bannerengineering.com

4-Pin M12/Euro-Style
For use with K30 models

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

5-Pin M12/ Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

8-Pin M12/Euro-Style
For use with 3 color F2 models.

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC2S-806RA)

MQDC2S-806
2 m (6.5')
MQDC2S-815
5 m (15')
MQDC2S-830
9 m (30')

K70 Illuminated Touch Button

- Excellent immunity to false triggering by water spray, detergents, oils, and other foreign materials
- Ergonomically designed to eliminate hand, wrist, and arm stresses associated with repeated switch operation; require no physical force to operate
- Can be actuated with bare hands or work gloves
- Rugged IP65 polycarbonate construction
- Momentary versions remain activated as long as touch is present
- Latching versions start up not activated and toggle between activated and not activated on successive touches
- Available in five color options and one-, two- and three-color models
- Wireless models simplify installation and provide a simple operator interface for pick-to-light, call button and general industrial applications

Independent Input/Output Models with up to Three Indicator Colors Controlled by Separate Inputs

Family	Output State	Input/ Output	Activation Method	Color 1	Color 2	Color 3	Function	Connection
K70	A	P	T2	G	R	Y	F2	Q

- **A** = Normally Open; **R** = Normally Closed
- **P** = PNP; **N** = NPN
- **T2** = Touch
- **G** = Green; **Y** = Yellow; **R** = Red; **B** = Blue; **W** = White; **X** = Not Used
- **F2** = Multipurpose see page 100
- **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD; **QP** = Euro Pigtail QD
  QD models require mating cordset

One- or Two-Color Momentary or Latching Bipolar (1 NPN and 1 PNP) Output Models

Family	Output State	Output Function	Output Type	Activation Method	Color (not activated)	Color (activated)	Function	Connection
K70	A	L	B	T2	G	Y	H	Q

- **A** = Normally Open; **R** = Normally Closed
- **Blank** = Momentary; **L** = Latching
- **B** = Bipolar Output (NPN & PNP)
- **T2** = Touch
- **G** = Green; **Y** = Yellow; **R** = Red; **B** = Blue; **W** = White; **X** = Not Used
- **H** = Illuminated Buttons see page 100
- **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD; **QP** = Euro Pigtail QD
  QD models require mating cordset

Wireless

Family	Output State	Activation Method	Color 1	Color 2	Color 3	Connection
K70	DXN2	T2	G	R	Y	Q

- **DXN2** = Wireless 2.4 GHz; **DXN9** = Wireless 900 MHz
- **T2** = Touch
- **G** = Green; **Y** = Yellow; **R** = Red; **B** = Blue; **W** = White; **X** = Not Used
- **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD; **QP** = Euro Pigtail QD
  QD models require mating cordset

Supply Voltage and Current	12 V to 30 V dc; 220 mA Max. at 12 V dc; 110 mA Max. at 30 V dc
Supply Protection Circuitry	Protected against transient voltages
Construction	Housing: Polycarbonate Dome: Polycarbonate
Environmental Rating	IEC IP65
Operating Temperature	–40 to 50 °C
Certifications	CE, UL LISTED

Laser Marking Available

SMB30A

SMB30MM

SMBAMS30P

SSA-MBK-EEC1

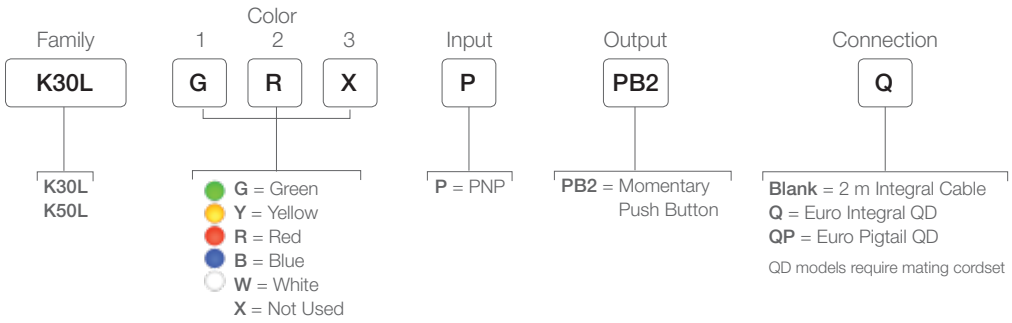
5-Pin M12/Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

Additional accessories are available at bannerengineering.com

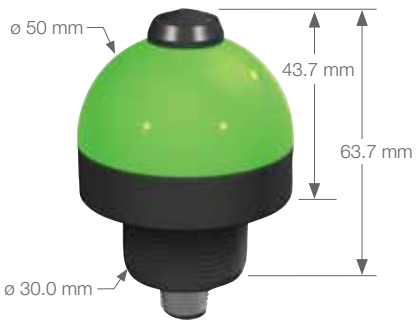
K50L and K30L Illuminated Push Buttons

- Three sourcing inputs control the green, yellow and red indicator lights
- Ideal for use in abusive environments, featuring rugged, fully encapsulated construction
- Cabled and Euro Quick Disconnect models available
- Available in momentary push button output



Supply Voltage	K30L: 10 to 30 V dc K50L: 12 to 30 V dc
Construction	Base: Polycarbonate Translucent dome: Polycarbonate Push button: Thermoplastic
Environmental Rating	IEC IP65
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	

K30 Push Models



K50 Push Models

SMBCK30
use with K30L
on 28 mm pipe

SMB22A
use with K30L

SMB30A
use with K50L

Additional accessories are available at
bannerengineering.com

4-Pin M12/Euro-Style
For use with K30 models

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

5-Pin M12/ Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

8-Pin M12/Euro-Style
For use with 3 color F2 models.

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC2S-806RA)

MQDC2S-806
2 m (6.5')
MQDC2S-815
5 m (15')
MQDC2S-830
9 m (30')

OTB Optical Touch Buttons

- OPTO-TOUCH Optical Touch Buttons are zero-force ergonomic replacements for mechanical push buttons.
- OTB models are momentary-action touch buttons with electromechanical relay or solid-state outputs.

Family
OTB

OTB = Momentary Action

Output
VP6

VP6 = Complementary PNP (1 NO & 1 NC)
VN6 = Complementary NPN (1 NO & 1 NC)
VR81 = 20-30 V ac or dc SPDT electromechanical relay
A5 = 120 V ac SPDT electromechanical relay
B5 = 220/240 V ac SPDT electromechanical relay

Upper Housing Material
[ ]

Blank = Polysulfone
L = Polycarbonate

Connection
QD

Blank = 2 m Integral Cable
QD = Mini Integral QD
QDH = Euro Integral QD*

QD models require mating cordset

* Only available for OTBVP6 or OTBVN6 models

Supply Voltage	Models for 105 to 130 V ac, 210 to 250 V ac (50/60 Hz), 10 to 30 V dc, or 20 to 30 V ac/dc
Construction	Upper Housing: Black polysulfone or Polycarbonate Base: Fiber-reinforced PBT
Environmental Rating	IEC IP66 NEMA 1, 3, 4X, 12 and 13
Operating Temperature	-20 to +50°C (-4 to +122°F)
Certifications	

SMB30A

SMB30MM

SMB30SC

Optional Field Covers

Black	**OTC-1-BK**
Green	**OTC-1-GN**
Red	**OTC-1-RD**
Yellow	**OTC-1-YW**

Black	**OTCL-1-BK**
Green	**OTCL-1-GN**
Red	**OTCL-1-RD**
Yellow	**OTCL-1-YW**

Additional accessories are available at bannerengineering.com

4-Pin M12/ Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406 2 m (6.5')
MQDC-415 5 m (15')
MQDC-430 9 m (30')

4-Pin Mini-Style

MBCC-406 1.83 m (6')
MBCC-412 3.66 m (12')
MBCC-430 9.14 m (30')

5-Pin Mini-Style

MBCC-506 1.83 m (6')
MBCC-512 3.66 m (12')
MBCC-530 9.14 m (30')

VTB Verification 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

One-Color Illuminated Base Models

Family	Output	Job Light Color	Upper Housing Material	Connection
VTB	P6			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 QD models require mating cordset

Two-Color Illuminated Base Models

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

Supply Voltage	12 to 30 V dc
Construction	Upper Housing: Polysulfone or polycarbonate Base: White polycarbonate
Environmental Rating	IP66
Operating Temperature	-20 to +50 °C (-4 to +122 °F)
Certifications	CE cULus

SMB30MM

SMB30FA

SMB30SC

SMBAMS30RA

4-Pin M12/Euro-Style
For use with K30 models

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

5-Pin M12/ Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

Additional accessories are available at bannerengineering.com

Optional Field Covers

Black	**OTC-1-BK**
Green	**OTC-1-GN**
Red	**OTC-1-RD**
Yellow	**OTC-1-YW**

Black	**OTCL-1-BK**
Green	**OTCL-1-GN**
Red	**OTCL-1-RD**
Yellow	**OTCL-1-YW**

30 mm Mount Illuminated E-Stops

- Available with two-color: yellow and red, one color: red
- Reduces intensive labor costs with a fully enclosed E-Stop button ready for installation
- Multiple buttons can be wired in series, with built-in logic allowing for clear indication of pushed button
- Latching design complies with ISO 13850 direct (positive) opening operation per IEC 60947-5-1
- Rugged design rated to IP65
- Available with illuminated Safety BUS Gateway compatibility

Model*	Description	Illumination
SSA-EB1PLYR-12ECQ8	2NC / 1NO (PNP)	YEL/RED-Flash/Solid
SSA-EB1PLGR-12ECQ8	2NC / 1NO (PNP)	GREEN/RED-Flash/Solid
SSA-EB1PLXR-12ECQ8	2NC / 1NO (PNP)	OFF/RED-Flash/Solid
SSA-EB1PL-12ECQ8	2NC / 1NO (PNP)	OFF/RED-Solid/Solid
SSA-EB1PLYR-02ECQ5A	2NC – Safety BUS node compatible	YEL/RED-Flash

Model*	Description	Illumination
SSA-EB1PLYR-02ECQ5B	2NC – Safety BUS node compatible	YEL/RED-Flash
SSA-EB1PLXR-02ECQ5A	2NC – Safety BUS node compatible	OFF/RED-Flash
SSA-EB1PLXR-02ECQ5B	2NC – Safety BUS node compatible	OFF/RED-Flash
SSA-EB1PL-02ECQ5A	2NC – Safety BUS node compatible	OFF/RED-Solid
SSA-EB1PL-02ECQ5B	2NC – Safety BUS node compatible	OFF/RED-Solid

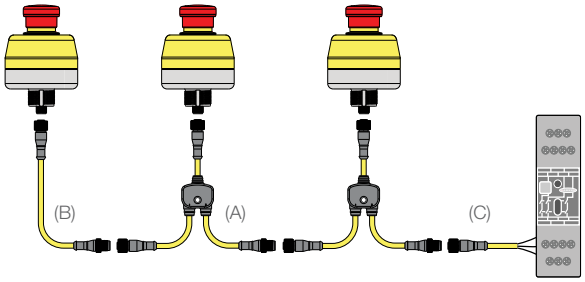
* Washdown cover can be ordered separately or ad -WC to the end of the model number

Supply Voltage	12 to 30 V dc
Construction	Upper Housing: Polycarbonate/Polymide Base: White polycarbonate
Environmental Rating	IP65, IP69K with cover
Operating Temperature	Temperature: –25 to +55 °C (–13 to +131 °F) Humidity: 45% to 85% RH (no condensation)
Certifications	CE c UL us LISTED

SSA-EB1P-ECWC

CSS Series Hookup Cordset Solution

This interconnection solution allows for quick hookup of a series string of emergency stop buttons. The user must ensure that the CSS series hookup cordsets are installed so that they cannot be easily defeated by not allowing access to the QD connectors or allowing improper connection bypassing the function of the Emergency Stop.



SSA-MBK-EEC1

SSA-MBK-EEC2

SSA-MBK-EEC3

Cordsets available on page 119

Flush-Mount Illuminated E-Stop Buttons

- Available with two-color: yellow (or green) and red or one color: red
- Rugged design rated to IP65
- Available with illuminated Safety BUS Gateway compatibility
- Latching design complies with ISO 13850 direct (positive) opening operation per IEC 60947-5-1
- Safe Break Action ensures NC contacts will open if the contact block is separated from the actuator
- Multiple buttons can be interfaced and series connected with CSS Series Hookup Cordsets
- Compliant with ANSI B11.19, ANSI NFPA79, and IEC/EN 60204-1 Emergency Stop requirements

Illuminated Flush-mount E-Stop Push-Buttons

Model	Description	Illumination
SSA-EB1PLYR-12ED1Q8	2NC / 1NO (PNP)	YEL/RED-Flash/Solid
SSA-EB1PLGR-12ED1Q8	2NC / 1NO (PNP)	GREEN/RED-Flash/ Solid
SSA-EB1PLXR-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Flash/Solid
SSA-EB1PL-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Solid/Solid
SSA-EB1PLYR-02ED1Q5A	2NC – Safety BUS node compatible	YEL/RED-Flash

Model	Description	Illumination
SSA-EB1PLYR-02ED1Q5B	2NC – Safety BUS node compatible	YEL/RED-Flash
SSA-EB1PLXR-02ED1Q5A	2NC – Safety BUS node compatible	OFF/RED-Flash
SSA-EB1PLXR-02ED1Q5B	2NC – Safety BUS node compatible	OFF/RED-Flash
SSA-EB1PL-02ED1Q5A	2NC – Safety BUS node compatible	OFF/RED-Solid
SSA-EB1PL-02ED1Q5B	2NC – Safety BUS node compatible	OFF/RED-Solid

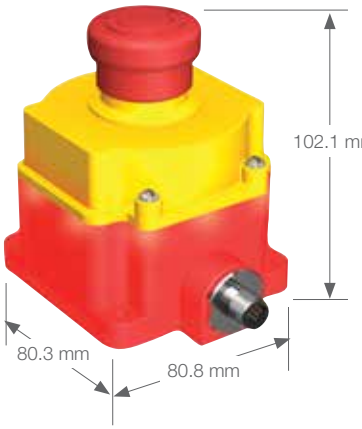
Lockable Illuminated Flush-mount E-Stop Push-Buttons

Model	Description	Illumination
SSA-EB1MLYRP-12ED1Q8	2NC / 1NO (PNP)	YEL/RED-Flash/Solid
SSA-EB1MLGRP-12ED1Q8	2NC / 1NO (PNP)	GREEN/RED-Flash/ Solid

Model	Description	Illumination
SSA-EB1MLXRP-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Flash/Solid
SSA-EB1MLP-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Solid/Solid

E-stops can be cascaded.
See diagram on page 117.

Supply Voltage	12 to 30 V dc
Construction	Upper Housing: Polycarbonate/Polymide Base: White polycarbonate
Environmental Rating	IP65
Operating Temperature	Temperature: –25 to +55 °C (–13 to +131 °F) Humidity: 45% to 85% RH (no condensation)
Certifications	CE



Illuminated Flush-mount Model

Lockable Illuminated Flush-mount Model

4-Pin M12/ Euro-Style
Straight connector models listed

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

8-Pin M12/ Euro-Style
Straight connector models listed

MQDC2S-806
2 m (6.5')
MQDC2S-815
5 m (15')
MQDC2S-830
9 m (30')

5-Pin Double-Ended Euro-Style
(Male/Female)

8-Pin Double-Ended Euro-Style
(Male/Female)

DEE2R-51D 0.31 m (1') **DEE2R-53D** 0.91 m (3') **DEE2R-58D** 2.44 m (8') **DEE2R-515D** 4.57 m (15')	**DEE2R-525D** 7.62 m (25') **DEE2R-550D** 15.2 m (50') **DEE2R-575D** 22.9 m (75') **DEE2R-5100D** 30.5 m (100')

DEE2R-81D 0.31 m (1') **DEE2R-83D** 0.91 m (3') **DEE2R-88D** 2.44 m (8') **DEE2R-815D** 4.57 m (15')	**DEE2R-825D** 7.62 m (25') **DEE2R-850D** 15.2 m (50') **DEE2R-875D** 22.9 m (75') **DEE2R-8100D** 30.5 m (100')

4-Pin M12 Euro-Style Splitter
(Female/Male/Female)
CSS-M12F41M12M41M12F41

8-Pin M12 Euro-Style Splitter
(Female/Male/Female)
CSS-M12F81M12M81M12F81

K30 Pick-to-Light Touch Buttons

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Simple operation with the touch of a finger; easily actuated with bare hands or work gloves
- Rugged, fully encapsulated IP69K construction for high-pressure wash-down environments; Models with food grade materials available
- Models with either latching or momentary outputs
- Ideal for pick-to-light and call button applications in a variety of industries
- One-, two-, or three-color models available to solve a variety of applications
- Smart electric field sensing provides excellent immunity to false triggering from water spray, detergents and other foreign materials
- Superior electrical noise immunity

Independent Input/Output Models with up to Three Indicator Colors Controlled by Separate Inputs

The output is activated by touching the device and is totally independent of the indicator inputs.

Family	Output State	Input/ Output	Activation Method	Color 1	Color 2	Color 3	Function	Connection*
K30	A	P	T2	G	R	Y	C3	Q

- **A** = Normally Open; **R** = Normally Closed
- **P** = PNP; **N** = NPN
- **T2** = Touch; **T2F** = Touch, FDA Grade
- **G** = Green; **Y** = Yellow; **R** = Red; **B** = Blue; **W** = White; **X** = Not Used
- **C3** = Specialty Pick-to-Light; **C4** = Specialty Pick-to-Light see page 100
- **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD; **QP** = Euro Pigtail QD
- QD models require mating cordset

One- or Two-Color Momentary or Latching Bipolar (1 NPN and 1 PNP) Output Models

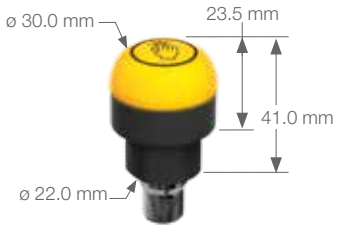
These models do not have inputs to control the indicator. The color of the indicator is determined by the non-activated or activated condition.

Family	Output State	Output Function	Output Type	Activation Method	Color (not activated)	Color (activated)	Function	Connection*
K30	A	L	B	T2	G	Y	C	Q

- **A** = Normally Open; **R** = Normally Closed
- **Blank** = Momentary; **L** = Latching
- **B** = Bipolar Output (NPN & PNP)
- **T2** = Touch; **T2F** = Touch, FDA Grade
- **G** = Green; **Y** = Yellow; **R** = Red; **B** = Blue; **W** = White; **X** = Not Used
- **1-Color Only**: **D** = Pick-to-Light
- **2-Color Only**: **C** = Pick-to-Light; **E** = Pick-to-Light see page 100
- **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD; **QP** = Euro Pigtail QD
- QD models require mating cordset
- * FDA Grade models only available with pigtail QD

Laser Marking Available

Supply Voltage	12 to 30 V dc
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	IEC IP67, IP69K per DIN 40050
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	CE, c UL us LISTED



K30 Touch

K30 Touch
FDA Grade

SMB22A

SMB22FVK

SMBAMS22P

SMB22RAVK

TC-K30-CL
Touch Guard

4-Pin M12/Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

Additional accessories are available at bannerengineering.com

K50 Pick-to-Light Touch Buttons

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Simple operation with the touch of a finger, hand or whole palm
- Easily actuated with bare hands or work gloves
- Rugged, fully encapsulated IP69K construction for high-pressure wash-down environments
- Models with either latching or momentary outputs
- Ideal for pick-to-light and call button applications in a variety of industries
- One-, two- and three-color models available to solve a variety of applications

One- or Two-Color

Family: K50
- **K50** = Standard
- **K50C** = Compact

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

Input: P
- **P** = PNP
- **N** = NPN

Activation Method: T2
- **T2** = Touch
- **T2F** = Touch FDA Grade

Color — Job: G
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

Color — Sense: R

Function: C

1-Color Only
- **D** = Pick-to-Light

2-Color Only
- **C** = Pick-to-Light
- **E** = Pick-to-Light
see page 100

Connection*: Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD
- **T** = 5-Screw Terminal

QD models require mating cordset

Three-Color

Family: K50
- **K50** = Standard
- **K50C** = Compact

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

Input: P
- **P** = PNP
- **N** = NPN

Activation Method: T2
- **T2** = Touch
- **T2F** = Touch FDA Grade

Color — Job: G

Color — Mispick: R

Color — Sense: Y
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

Function: C3
- **C3** = Specialty Pick-to-Light
- **C4** = Specialty Pick-to-Light
see page 100

Connection*: Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

QD models require mating cordset

* FDA Grade models only available with pigtail QD

Supply Voltage	12 to 30 V dc
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	Standard: UL Type 4x, 13 FDA Grade: UL Type 4x IEC IP67, IP69K per DIN 40050
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	CE, c UL us LISTED

K50 Touch | K50 Touch FDA Grade | K50C Touch Compact

SMB30A

SMB30FA

SMB30FVK

SMB30SC

TC-K50-CL or TC-K30-CL
Touch Guard

Additional accessories are available at bannerengineering.com

4-Pin M12/Euro-Style
For use with K30 models

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

5-Pin M12/ Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

8-Pin M12/Euro-Style
For use with 3 color F2 models.

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC2S-806RA)

MQDC2S-806
2 m (6.5')
MQDC2S-815
5 m (15')
MQDC2S-830
9 m (30')

K70 Illuminated Pick-to-Light Touch Button

- Excellent immunity to false triggering by water spray, detergents, oils, and other foreign materials
- Ergonomically designed to eliminate hand, wrist, and arm stresses associated with repeated switch operation; requires no physical force to operate
- Can be actuated with bare hands or work gloves
- Rugged IP65 polycarbonate construction
- Momentary versions remain activated as long as touch is present
- Latching versions start up not activated and toggle between activated and not activated on successive touches
- One-, two- and three-color models available

Pick-To-Light

Family	Output State	Input	Activation Method	Color: Not Activated	Color: Activated	Function	Connection
K70	A	P	T2	G	X	D	Q

Family: K70

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

Input: P
- **P** = PNP
- **N** = NPN

Activation Method: T2
- **T2** = Touch

Color — Not Activated: G
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

Color — Activated: X

Function: D

1-Color Only
- **D** = Pick-to-Light

2-Color Only
- **C** = Pick-to-Light
- **E** = Pick-to-Light

see page 100

Connection: Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD

QD models require mating cordset

Specialty Models

Family	Output State	Input	Activation Method	Color 1	Color 2	Color 3	Function	Connection
K70	A	P	T2	G	R	Y	C4	Q

Family: K70

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

Input: P
- **P** = PNP
- **N** = NPN

Activation Method: T2
- **T2** = Touch

Color 1, 2, 3: G, R, Y
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

Function: C4
- **C3** = Specialty Pick-to-Light
- **C4** = Specialty Pick-to-Light

see page 100

Connection: Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

QD models require mating cordset

Laser Marking Available

Supply Voltage and Current	12 V to 30 V dc; 220 mA Max. at 12 V dc; 110 mA Max. at 30 V dc
Supply Protection Circuitry	Protected against transient voltages
Construction	Housing: Polycarbonate Dome: Polycarbonate
Environmental Rating	IEC IP65
Operating Temperature	–40 to 50 °C
Certifications	CE, UL LISTED

SMB30A

SMB30MM

SMBAMS30P

SSA-MBK-EEC1

5-Pin M12/Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

- **MQDC1-506** 2 m (6.5')
- **MQDC1-515** 5 m (15')
- **MQDC1-530** 9 m (30')

Additional accessories are available at bannerengineering.com

K50 Optical Pick-to-Light Series

- Rugged, cost-effective and easy-to-install solutions for error-proofing and parts-verification applications
- Illuminated dome provides easy-to-see job light status
- Choose either polarized retro-reflective or fixed-field models
- Fully encapsulated IP67 construction

One- or Two-Color Models

Family: K50

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

Input: P
- **P** = PNP
- **N** = NPN

Sensing Mode: FF
- **LP** = Polar Retro
- **FF** = Fixed-Field

Range: 50
- **Blank** = LP models
- **50** = 50 mm
- **100** = 100 mm

Color

Job: G
Sense: R
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

Function: C

1-Color Only
- **D** = Pick-to-Light

2-Color Only
- **C** = Pick-to-Light
- **E** = Pick-to-Light

see page 100

Connection: Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

QD models require mating cordset

Three-Color Models

Family: K50

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

Input: P
- **P** = PNP

Sensing Mode: FF
- **LP** = Polar Retro
- **FF** = Fixed-Field

Range: 50
- **Blank** = LP models
- **50** = 50 mm
- **100** = 100 mm

Color: G R Y
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White

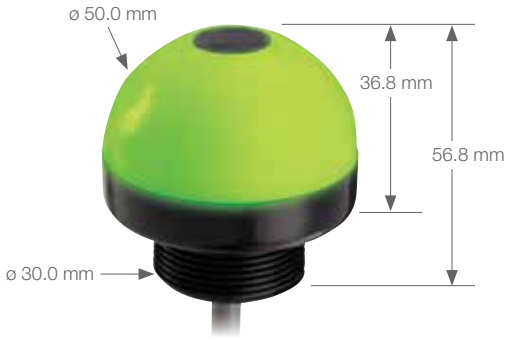
Function: C3
- **C3** = Specialty Pick-to-Light
- **C4** = Specialty Pick-to-Light

see page 100

Connection: Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

QD models require mating cordset

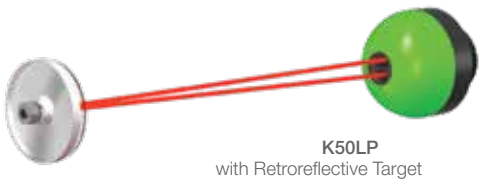
Sensing Range	Polarized Retroreflective: 2.0 m Fixed-field: 50 mm or 100 mm
Supply Voltage	12 to 30 V dc
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	IEC IP67, IP69K per DIN 40050
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	CE, UL LISTED — Some models pending. Contact factory for additional information.



SMB30A

SMB30FA

SMB30RAVK



K50LP
with Retroreflective Target

5-Pin M12/ Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

- **MQDC1-506** 2 m (6.5')
- **MQDC1-515** 5 m (15')
- **MQDC1-530** 9 m (30')

Retroreflective Targets
- **BRT-2X2**
- **BRT-35X35B**
- **BRT-51X51BM**
- **BRT-50D**
- **BRT-100X18A**

Retroreflective Tape
- **BRT-THG-1-100**
- **BRT-THG-2-100**
- **BRT-THG-3-100**
- **BRT-TVHG-2X2**

Additional accessories are available at bannerengineering.com

K50 Modbus Pick-to-Light Series

- Rugged, cost-effective and easy-to-install solutions for error-proofing and parts-verification applications
- Illuminated dome provides easy-to-see job light status
- Choose either polarized retroreflective or fixed-field models
- Fully encapsulated IP67 construction
- User can customize or select standard function configurations
- Modbus communication minimizes the cabling and system programming requirements

Family	Sensing Mode	Range	LED Color			Bus Indicator	Connection
K50	FF	50	G	R	Y	S1	Q

LP = Polar Retro
FF = Fixed-Field

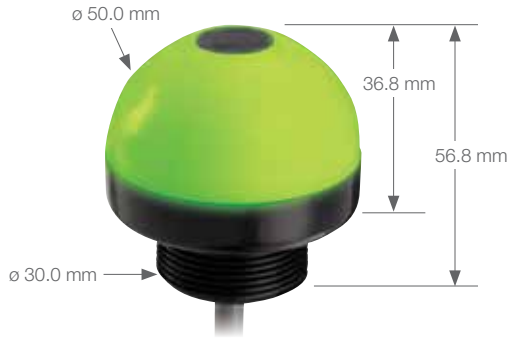
Blank = LP models
25 = 25 mm
50 = 50 mm
100 = 100 mm

G = Green
Y = Yellow
R = Red
B = Blue
W = White

S1 = Modbus
see page 100

Blank = 2 m Integral Cable
Q = Euro Integral QD
QP = Euro Pigtail QD
QD models require mating cordset

Sensing Range	Polarized Retroreflective: 2.0 m Fixed-field: 50 mm or 100 mm
Supply Voltage	12 to 30 V dc
Construction	Housing: Polycarbonate Translucent dome: Polycarbonate Mounting Nut: PBT
Environmental Rating	IEC IP67
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	CE



SMB30A

SMB30FA

SMB30RAVK

K30/K50/K80 Push Button Pick-to-Light Series

- Illuminated dome provides an easy-to-see green job light some models also light red for alternate operation
- Up to three independent colors in one unit
- Waterproof IP65 construction for wet environments
- Immune to EMI and RFI interference
- 12 to 30 V dc operation
- Cabled and Quick Disconnect models available

One- or Two-Color

Family
K30
- **K30***
- **K50**
- **K80**

Output State
A
- **A** = Normally Open
- **R** = Normally Closed

P
- **P** = PNP*
- **N** = NPN

Sensing Mode
PB
- **PB** = Push Button (plastic)
- **PBM** = Push Button (metal)

LED Color
G **X**
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

Function
D

1-Color Only
D = Pick-to-Light

2-Color Only
C = Pick-to-Light
E = Pick-to-Light
see page 100

Connection
Q
- **Blank** = Terminal Wired (K80 only)
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

QD models require mating cordset

* K30 models only available with Normally Open PNP output

Three-Color

Family
K50
- **K50**
- **K80**

Output State
A
- **A** = Normally Open

P
- **P** = PNP

Sensing Mode
PB
- **PB** = Push Button (plastic)
- **PBM** = Push Button (metal)

LED Color
G **R** **Y**
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White

Function
C3
- **C3** = Specialty Pick-to-Light
- **C4** = Specialty Pick-to-Light

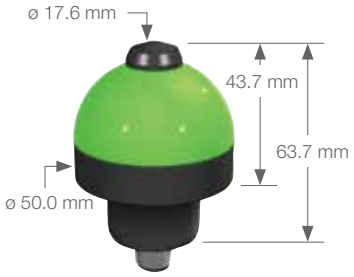
see page 100

Connection
Q
- **Blank** = Terminal Wired (K80 only)
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

QD models require mating cordset

Supply Voltage	12 to 30 V dc
Construction	Base and Translucent Dome: Polycarbonate Push Button: Thermoplastic or Stainless Steel
Environmental Rating	K30: IP65 Other models: IP67
Operating Temperature	–40 to +50 °C (–40 to +122 °F)
Certifications	CE cULus LISTED

K30 Models



K50 Models

SMB22A
with K30

SMBAMS22P
with K30

SMBDX80DIN
for mounting to 35 mm DIN Rail

K80 Models

SMBAMS22RA
with K30

SMB30A
with K50

5-Pin M12/Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

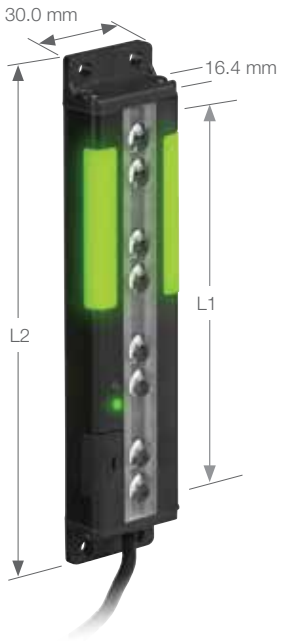
MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

Additional accessories are available at bannerengineering.com

PVD Diffuse/Retroreflective Parts Verification Array

- One-component system, easy to mount and even easier to use. Automatically operates in either diffuse or retroreflective mode, depending on the application
- Automatic setup and adjustment; wide beam pattern provides easy alignment
- Range up to 2 m (6.5 ft) when used with retroreflective target; 400 mm (15.7 in) when used in diffuse mode
- Large job lights on either side of the metal housing can be remotely controlled to initiate user action with a solid or a blinking green light; job lights turn red to indicate bin-picking errors
- Compact package size; only 30 mm wide x 15 mm deep (1.2 in x 0.6 in)
- Available in 2 lengths to fit existing parts bin sizes and configurations
- Heavy-duty protective brackets available

Family	Sensing Length (L1)	Connection
PVD	**100**	**Q**
	100 = 100 mm **225** = 225 mm	**Blank** = 2 m Integral Cable **Q** = 2 m Euro Pigtail QD QD models require mating cordset



Sensing Range	Retroreflective: 2 m Diffuse: 400 mm
Supply Voltage	12 to 30 V dc
Construction	Housing: Black painted aluminum Lenses: Acrylic End Caps: Thermoplastic Switch Cover: Thermoplastic
Environmental Rating	NEMA 2; IEC IP62
Operating Temperature	0 to +50 °C (+32 to 122 °F)
Certifications	

Models	No. of Beams	Sensing Length (L1)	Overall Length (L2)
PVD100	4	100 mm	137.8 mm
PVD225	8	225 mm	266.4 mm

SMBPVA1
included with the PVD

SMBPVA2
for use on 28 mm pipe

SMBPVA6
for use on 28 mm pipe

SMBPVA9
Protective Bracket

4-Pin M12/Euro-Style
For use with K30 models

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

5-Pin M12/ Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

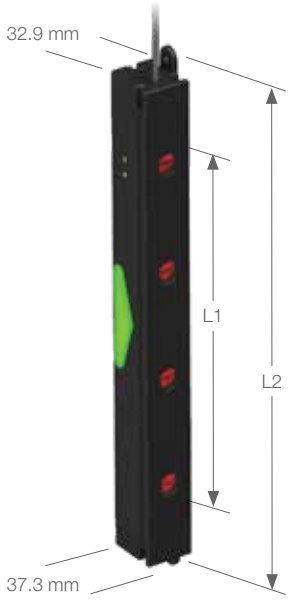
MQDC1-506
2 m (6.5')
MQDC1-515
5 m (15')
MQDC1-530
9 m (30')

Additional accessories are available at bannerengineering.com

PVL Retroreflective Parts Verification Array

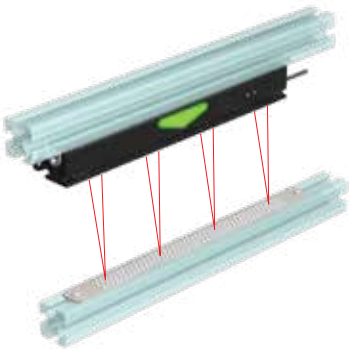
- Cost-effective coverage with the highest reliability
- Opto-mechanical alignment with bright red emitter beams allows for easy setup
- Easy installation with no assembly required
- Can mount directly to racking profile vertically or horizontally
- Rugged, metal compact housing for high durability
- Highly visible, two-color integrated job LED arrows for confirmation of correct pick or indication of mis-pick
- Retroreflective tape can be placed on adjacent unit or one of the brackets for reduced installation costs
- Large mounting holes for securing directly to slotted racking systems
- Slotted housing design allows cable to exit on either end

Family	Sensing Length (L1)	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 QD models require mating cordset



Sensing Range	Retroreflective: 1.5 m
Supply Voltage	12 to 30 V dc
Construction	Housing: aluminum anodized Translucent Indicator: polycarbonate
Environmental Rating	IP50
Operating Temperature	0 to +50 °C (+32 to 122 °F)
Certifications	CE

Models	No. of Beams	Sensing Length (L1)	Hole-to-Hole Length (L2)
PVL225	4	225 mm	327.5 mm
PVL500	8	500 mm	608.0 mm



SMBPVL1 and SMBPVL2-225 or -500

SMBPVL4 and SMBPVL3-225 or -500
for use on 28 mm pipe

4-Pin M12/Euro-Style
Straight connector models listed; for right-angle models, add RA to the end of the model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

BRT-THG-1-100
Replacement retroreflective tape
BRT-84X84A
Long Range Reflectors

Additional accessories are available at bannerengineering.com

PVA Opposed-Mode Parts Verification Array

- Compact package, available in 4 lengths to fit many sizes and configurations of existing parts bins
- Range up to 2 m (6.5 ft)
- Two-component system (asynchronous emitter and receiver) needs no sync wire or controller box.
- Clearly visible green job indicator lights mounted on either side of emitter and receiver housings; the light can be remotely controlled to initiate user action with a solid ON or blinking condition
- Two frequency settings to prevent crosstalk in close-proximity, multiple-array installations
- Heavy-duty protective brackets available

Family	Sensing Length (L1)	Output	Emitter/ Receiver	Connection
PVA	100	P6	E	Q

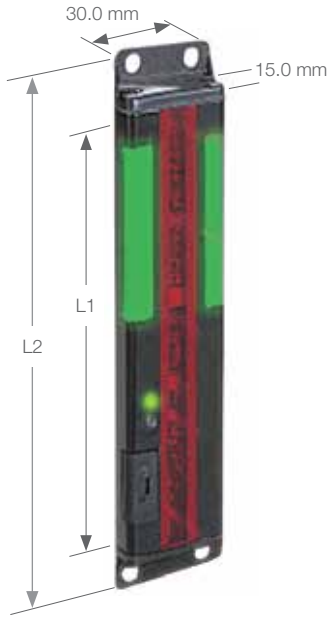
100 = 100 mm
225 = 225 mm
300 = 300 mm
375 = 375 mm

P6 = PNP
N6 = NPN

E = Emitter
R = Receiver
Blank = E/R Pair

Blank = 2 m Integral Cable
Q = 2 m Euro Pigtail QD

QD models require mating cordset



Sensing Range	2 m
Supply Voltage	12 to 30 V dc
Construction	Housing: Black painted aluminum Lenses: Acrylic End Caps: PBT Switch Cover: Thermoplastic
Environmental Rating	NEMA 2; IEC IP62
Operating Temperature	0 to +50 °C (+32 to 122 °F)
Certifications	CE cULus

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

SMBPVA1
pair included with the PVA

SMBPVA2
for use on 28 mm pipe

SMBPVA6
for use on 28 mm pipe

SMBPVA5
Protective Bracket

4-Pin M12/Euro-Style
Straight connector models listed; for right-angle, add RA to the end of the model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

Additional accessories are available at bannerengineering.com

Banner Engineering Corp.

9714 Tenth Avenue North • Minneapolis, Minnesota 55441
763-544-3164 • 1-888-373-6767

www.bannerengineering.com

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