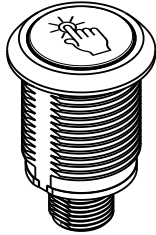


S22 Pro Touch Button



Datasheet

22 mm Programmable Multicolor RGB Flush Mount Indicator with Independent Momentary or Latching Touch Button Output



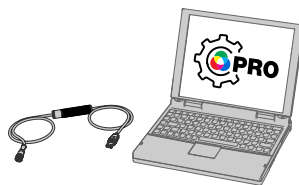
- Programmable using Banner Pro Editor software and Pro Converter Cable; Pro Editor compatibility applies to all S22 Pro Touch Button models
- Resistance to false triggering by water spray, detergents, oils, and other foreign materials
- Rugged, cost-effective, and easy-to-install multicolor indicator with touch button
- Waterproof IP69K per DIN 40050-9 construction for washdown environments
- Up to 7 independent colors in one unit
- 22 mm threaded polycarbonate base
- 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 gloves
- 10 V DC to 30 V DC operation
- Terminal connection models available for panel wiring applications
- Bimodal inputs and outputs (PNP/NPN), depending on source wiring



WARNING:

- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

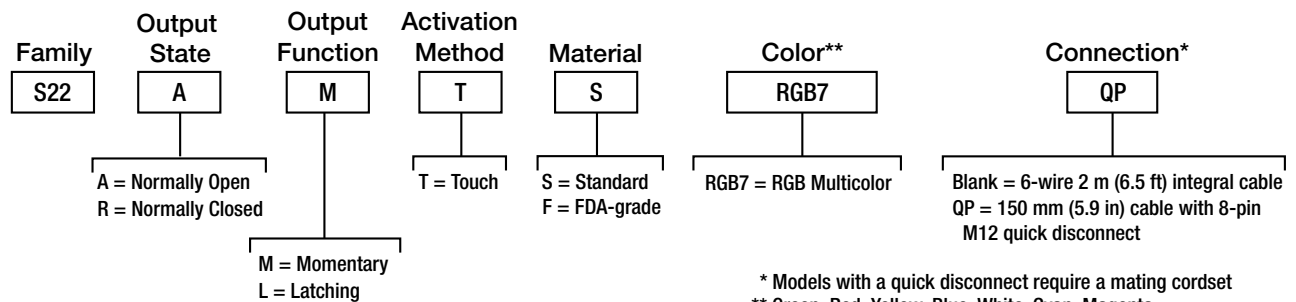
Pro Editor



Use Banner's Pro Editor software and Pro Converter Cable to create custom configurations by selecting different colors, flash patterns, and animations. For more information visit www.bannerengineering.com/proeditor.

Models

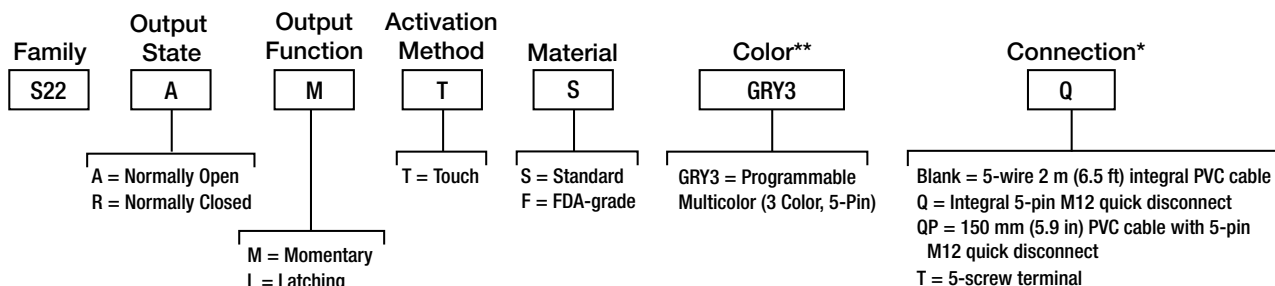
RGB7 Multicolor Models



Three inputs activate seven colors. Touch changes output state.



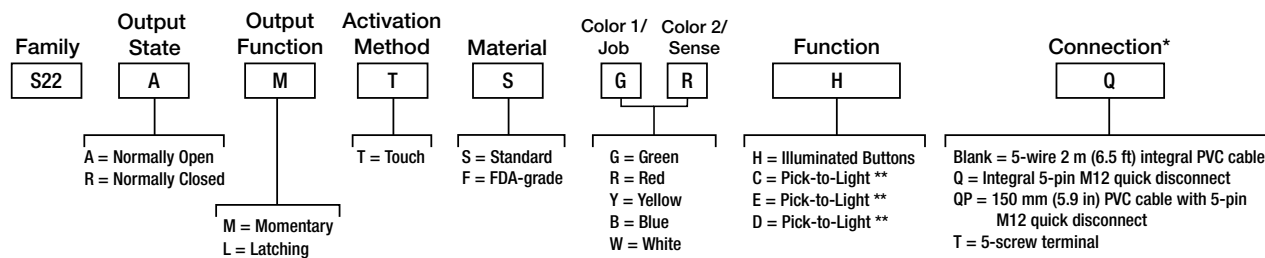
GRY3 Multicolor Models



* Models with a quick disconnect require a mating cordset
 ** Green, Red, Yellow

Two inputs activate three colors. Touch changes output state.

One- or Two-Color/Function Models



* Models with a quick disconnect require a mating cordset
 ** Latching output function not available

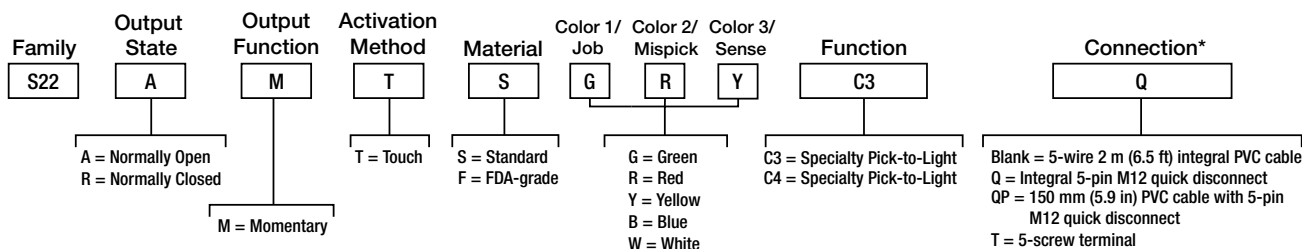
H Logic: Power activates Color 1. Touch changes output state and activates Color 2. Latch and momentary options.

C Logic: Input activates Color 1. Touch activates Color 2 and Output.

E Logic: Input activates Color 1. Touch activates Output. Touch with inactive input activates Color 2.

D Logic: Input activates Color 1. Touch activates Output.

One-, Two-, or Three-Color/Function Models



* Models with a quick disconnect require a mating cordset

C3 Logic: Input activates Color 1. Touch with active input activates Color 3 and Output. Touch with inactive input activates Color 2 and Output. 500 ms leading edge off-delay.

C4 Logic: 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. 500 ms leading edge off-delay.

Wiring Diagrams

RGB7 Multicolor Models

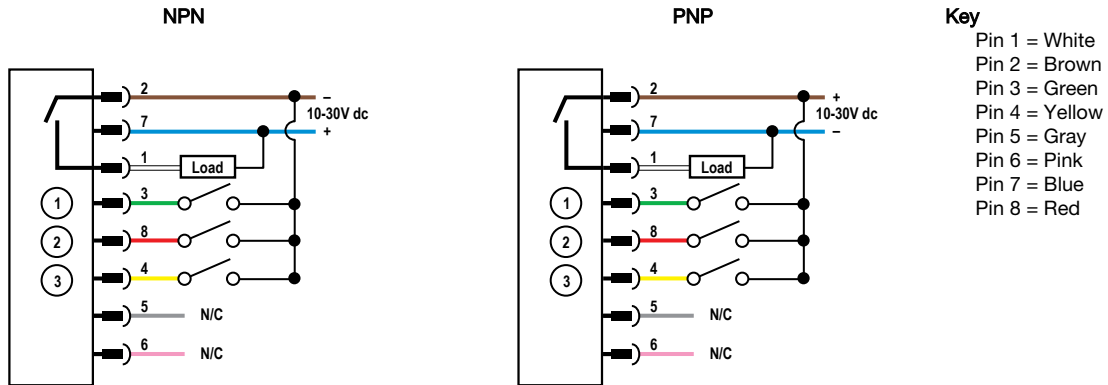


Table 1: RGB Multicolor Color/Function Definition

	Red	Yellow	Green	Cyan	Blue	Magenta	White
Input 1	X	X				X	X
Input 2		X	X	X			X
Input 3				X	X	X	X

GRY3 Multicolor Models

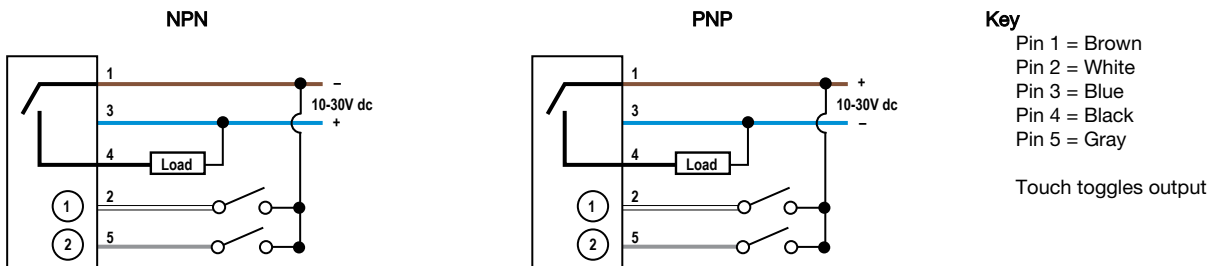
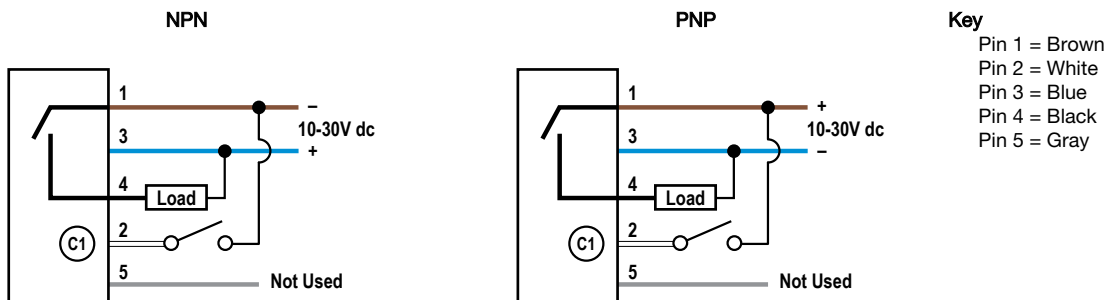


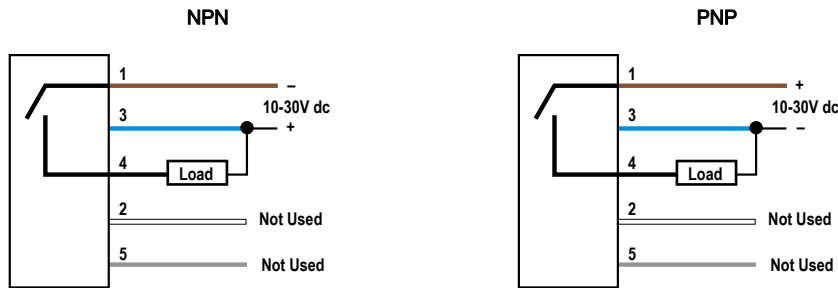
Table 2: GRY3 Multicolor Color/Function Definition

	Green	Yellow	Red
Input 1	X	X	
Input 2		X	X

One- or Two-Color/Function; C, D, and E Logic Models



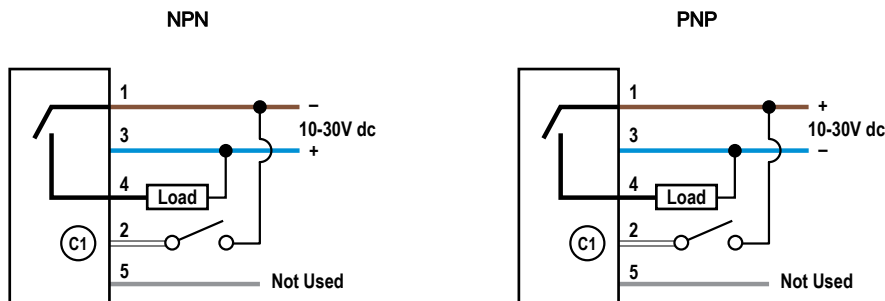
One- or Two-Color/Function; H Logic Models



Key

Pin 1 = Brown
 Pin 2 = White
 Pin 3 = Blue
 Pin 4 = Black
 Pin 5 = Gray

One-, Two-, or Three-Color/Function; C3 & C4 Logic Models



Key

Pin 1 = Brown
 Pin 2 = White
 Pin 3 = Blue
 Pin 4 = Black
 Pin 5 = Gray

Cabled wiring diagrams are shown. Quick disconnect wiring diagrams are functionally identical.

Specifications

Supply Voltage

10 V DC to 30 V DC

Supply Current

80 mA maximum current at 10 V DC (exclusive of load)
 70 mA maximum current at 12 V DC (exclusive of load)
 45 mA maximum current at 24 V DC (exclusive of load)
 40 mA maximum current at 30 V DC (exclusive of load)

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Output Rating

Maximum Load: 150 mA
 ON-state saturation voltage: <2 V DC at 10 mA; <2.5 V DC at 150 mA
 OFF-state leakage current: <10 µA at 30 V DC

Leakage Current Immunity

400 µA

Response Time

Power-Up Delay: 250 milliseconds maximum
 Input Response: 20 milliseconds maximum
 Output Response: 300 milliseconds maximum

Touch Dwell Time

If touch dwells for longer than 60 seconds, the output will revert back to the untouched state.

Connections

5-pin or 8-pin integral M12 quick disconnect, 2 m (6.5 ft) integral PVC cable, or 5-pin or 8-pin 150 mm (5.9 inch) PVC cable with a M12 quick disconnect, depending on model
 Models with a quick disconnect require a mating cordset

Mounting

M22 by 1.5 threaded base, maximum torque 2.25 N-m (20 inch-lbf)

Construction

Standard Model Base, Dome, and Nut: Polycarbonate
 FDA Model Base, Dome, and Nut: FDA-grade copolyester

Vibration and Mechanical Shock

Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 1.0 mm amplitude, 5 minutes sweep, 30 minutes dwell)
 Meets IEC 60068-2-27 requirements (Shock: 30G 11 ms duration, half sine wave)

Pro Editor Configuration

Connection to Pro Editor software enables control of:

- **Animation:** Steady, Flash, Two Color Flash, Intensity Sweep, Demo
- **Color:** Green, Red, Yellow, Blue, White, Cyan, Magenta, Amber, Rose, Lime Green, Orange, Sky Blue, Violet, Spring Green
- **Intensity:** Low, Medium, High
- **Speed:** Slow, Standard, Fast
- **Output State:** Normally Open, Normally Closed, Momentary, Latching, On Delay, Off Delay
- **Logic Type:** Three State Advanced Control (F2 Mode), Seven State Advanced Control (F2 Mode), Four State Full Logic (Custom)

Pro Converter Cable required to interface between PC and indicator, see accessories

Default Indicator Characteristics

Color	Dominant Wavelength (nm) or Color Temperature (CCT)	Color Coordinates ¹		Lumen Output (Typical at 25 °C)
		x	y	
Green	527	0.178	0.700	0.175
Red	625	0.699	0.297	0.075
Yellow	572	0.438	0.500	0.250
Blue	465	0.141	0.056	0.025
White	5700K	0.328	0.337	0.240
Cyan	492	0.192	0.336	0.195
Magenta	-	0.354	0.149	0.095
Amber	585	0.520	0.434	0.165
Rose	-	0.506	0.213	0.085
Lime Green	557	0.350	0.564	0.210
Sky Blue	485	0.167	0.240	0.165
Orange	597	0.594	0.379	0.130
Violet	424	0.184	0.085	0.045
Spring Green	507	0.167	0.517	0.180

¹ Refer to the CIE 1930 (x,y) Chromaticity Diagram, to show equivalent color with indicated color coordinates.

Operating Conditions

-40 °C to +50 °C (-40 °F to +122 °F)
 90% at +50 °C maximum relative humidity (non-condensing)
 Storage Temperature: -40 °C to +70 °C (-40 °F to +158 °F)

Environmental Rating

Standard Models: IEC IP66, IEC IP67, IP69K per DIN 40050-9
 Cabled models also meet IP69K per DIN 40050-9 if the cable and cable entrance are protected from high-pressure spray
 Indicator side of terminal models meet IP69K per DIN 40050-9 when installed in an enclosure
 Screw connection points meet IEC IP00
FDA Models: IEC IP66, IEC IP67, and IP69K per DIN 40050-9

Certifications



Required Overcurrent Protection

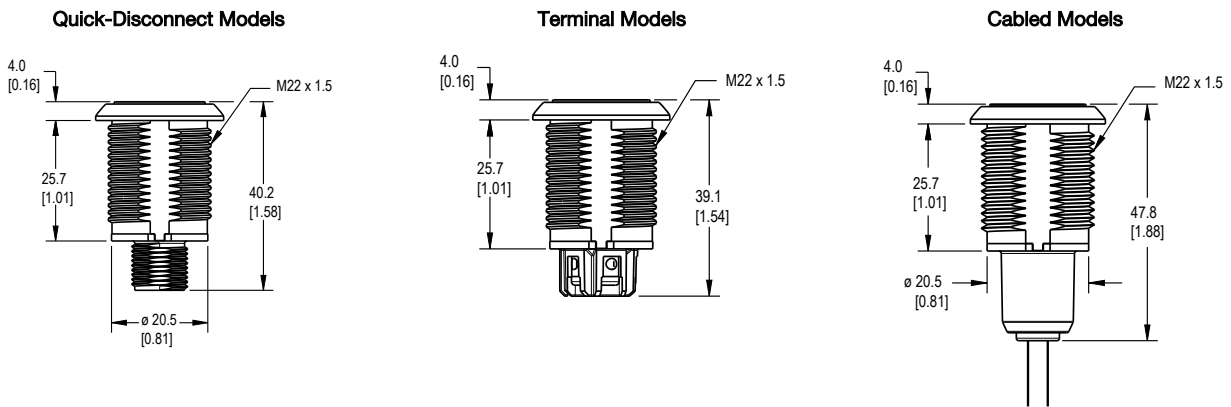


WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.
 Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.
 Supply wiring leads < 24 AWG shall not be spliced.
 For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

Dimensions



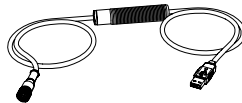
All measurements are listed in millimeters [inches], unless noted otherwise.

Accessories

Pro Editor Hardware

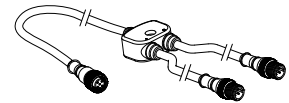
MQDC-506-USB

- Pro Converter Cable
- 1.83 m (6 ft) length 5-pin M12 quick disconnect to Device and USB to PC
- Required for connection to Pro Editor



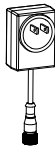
CSB-M1251FM1251M

- 5-pin parallel Y splitter (Male-Male-Female)
- For full Pro Editor preview capability
- Requires external power supply, sold separately



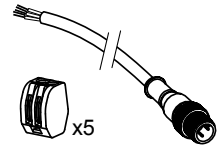
PSW-24-1

- 24 V DC, 1 A power supply
- 2 m (6.5 ft) PVC cable with M12 quick disconnect
- Provides external power with splitter cable, sold separately



ACC-PRO-CABLES

- Mating accessory for cabled and terminal models
- 150 mm (6 inch) PVC cable with M12 quick disconnect
- Lever wire nuts included (qty 5)
- Required to connect cabled models and screw terminal models to Pro Converter Cable, sold separately

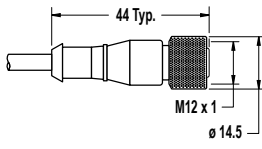
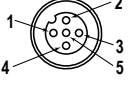
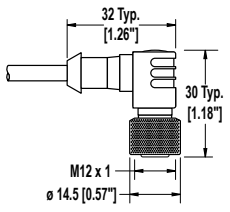


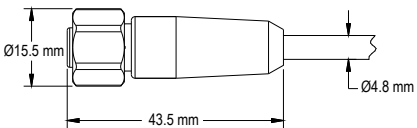
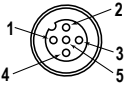
MQDC-801-5M-PRO

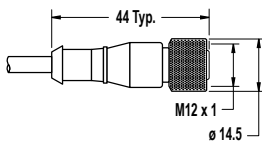
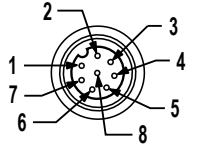
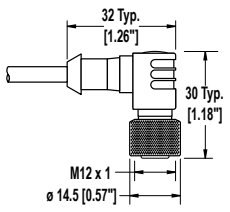
- 8-pin to 5-pin double-ended cordset
- 0.31 m (1 ft) PVC cable with M12 quick disconnects
- Required to connect 8-pin Pro Series-enabled devices to Pro Converter Cable (MQDC-506-USB), sold separately

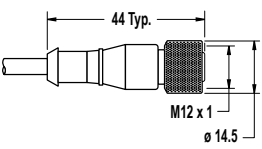
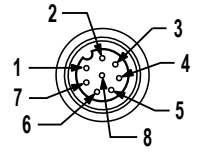


Cordsets

5-Pin Threaded M12 Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC1-501.5	0.5 m (1.5 ft)	Straight		 <p>1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray</p>
MQDC1-506	2 m (6.5 ft)			
MQDC1-515	5 m (16.4 ft)			
MQDC1-530	9 m (29.5 ft)			
MQDC1-506RA	2 m (6.5 ft)	Right-Angle		
MQDC1-515RA	5 m (16.4 ft)			
MQDC1-530RA	9 m (29.5 ft)			

5-Pin Threaded M12 Stainless Steel Washdown Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-WDSS-0506	2 m (6.56 ft)	Straight		 <p>1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray</p>
MQDC-WDSS-0515	5 m (16.4 ft)			
MQDC-WDSS-0530	9 m (29.5 ft)			

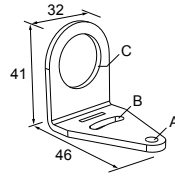
8-Pin Threaded M12 Cordsets with Open-Shield—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC2S-806	2.04 m (6.7 ft)	Straight		 <p>1 = White 2 = Brown 3 = Green 4 = Yellow 5 = Gray 6 = Pink 7 = Blue 8 = Red</p>
MQDC2S-815	5.04 m (16.54 ft)			
MQDC2S-830	10.04 m (32.95 ft)			
MQDC2S-850	16 m (52.49 ft)			
MQDC2S-806RA	2 m (6.56 ft)	Right-Angle		
MQDC2S-815RA	5 m (16.4 ft)			
MQDC2S-830RA	10 m (32.81 ft)			
MQDC2S-850RA	16 m (52.49 ft)			

8-Pin Threaded M12 Cordsets with Open-Shield—Washdown, Stainless Steel				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-WDSS-0806	2 m (6.56 ft)	Straight		 1 = White 2 = Brown 3 = Green 4 = Yellow 5 = Gray 6 = Pink 7 = Blue 8 = Red
MQDC-WDSS-0815	5 m (16.4 ft)			
MQDC-WDSS-0830	9 m (29.53 ft)			

Brackets

SMB22A

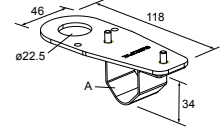
- Right-angle bracket with curved slot for versatile orientation
- 12-ga. stainless steel
- Mounting hole for 22 mm sensor



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

SMB22FVK

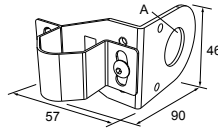
- V-clamp, flat bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm diameter tubing or 1 in. square extrusions
- 22 mm hole for mounting sensor



Hole size: A = ϕ 22.5

SMB22RAVK

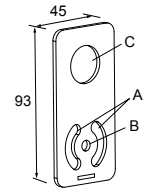
- V-clamp, right-angle bracket and fasteners for mounting to pipe or extensions
- Clamp accommodates 28 mm diameter tubing or 1 in. square extrusions
- 22 mm hole for mounting sensor



Hole size: A = ϕ 22.5

SMBAMS22P

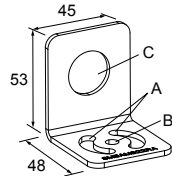
- Flat SMBAMS series bracket with 22 mm hole for mounting sensors
- Articulation slots for 90+° rotation
- 12-ga. (2.6 mm) cold-rolled steel



Hole center spacing: A = 26.0, A to B = 13.0
Hole size: A = 26.8 x 7.0, B = ϕ 6.5, C = ϕ 22.5

SMBAMS22RA

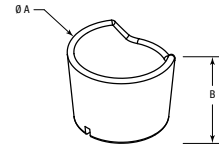
- Right-angle SMBAMS series bracket with 22 mm hole for mounting sensors
- Articulation slots for 90+° rotation
- 12-ga. (2.6 mm) cold-rolled steel



Hole center spacing: A = 26.0, A to B = 13.0
Hole size: A = 26.8 x 7.0, B = ϕ 6.5, C = ϕ 22.5

TC-K30-CL

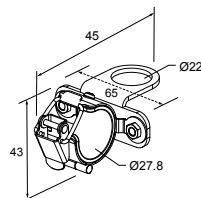
- Touch cover



Diameter: A = 40.7
Height: B = 31

LMB22LPC

- For 28 mm tubular racking
- Toolless mount to racking
- 22 mm mounting hole



All measurements are listed in millimeters, unless noted otherwise.

Banner Engineering Corp. Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. **IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.**

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

FCC Part 15 and CAN ICES-3 (B)/NMB-3(B)

This device complies with part 15 of the FCC Rules and CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules and CAN ICES-3 (B)/NMB-3(B). These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the manufacturer.