

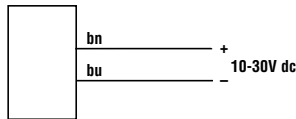
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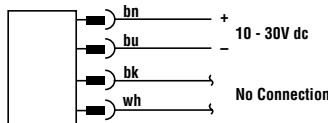
View or download additional information, including excess gain curves, beam patterns and accessories.  
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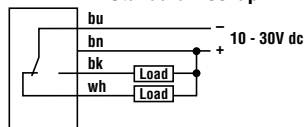
### Cabled Emitters



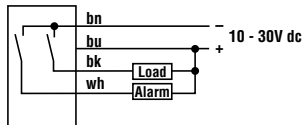
### QD Emitters



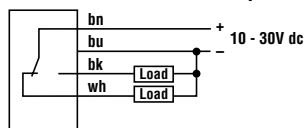
### NPN (Sinking) Outputs Standard Hookup



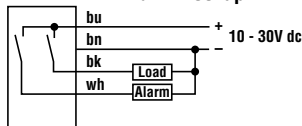
### Alarm Hookup



### PNP (Sourcing) Outputs Standard Hookup



### Alarm Hookup



NOTE: QD hookups are functionally identical.

Sensing Mode	Range	LED	Output	Model*	
Opposed	20 m (66')	Infrared 950 nm	-	<b>S186E</b>	
			NPN	<b>S18SN6R</b>	
			PNP	<b>S18SP6R</b>	
Retro-reflective†	2 m (79")		NPN	<b>S18SN6L</b>	
			PNP	<b>S18SP6L</b>	
Polarized Retro-reflective†	2 m (79")		Visible Red 680 nm	NPN	<b>S18SN6LP</b>
		PNP		<b>S18SP6LP</b>	
Diffuse	100 mm (4")	Infrared 880 nm		NPN	<b>S18SN6D</b>
	300 mm (12")			PNP	<b>S18SP6D</b>
				NPN	<b>S18SN6DL</b>
	PNP			<b>S18SP6DL</b>	
Fixed Field	25 mm (1") cutoff		NPN	<b>S18SN6FF25</b>	
	50 mm (2") cutoff		PNP	<b>S18SP6FF25</b>	
			NPN	<b>S18SN6FF50</b>	
	100 mm (4") cutoff		PNP	<b>S18SP6FF50</b>	
		NPN	<b>S18SN6FF100</b>		
	PNP	<b>S18SP6FF100</b>			

\* Standard 2 m (6.5') cable models are listed.

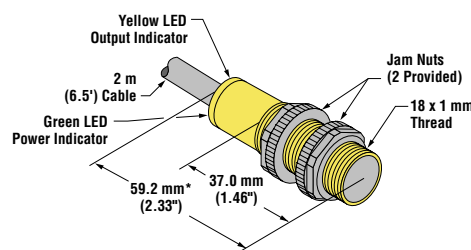
• **9 m (30') cable:** add suffix "W/30" (e.g., **S186E W/30**).

• **4-pin Euro-style QD models:** add suffix "Q" (e.g., **S186EQ**). A model with a QD connector requires a mating cable.

† Use polarized models when shiny objects will be sensed.

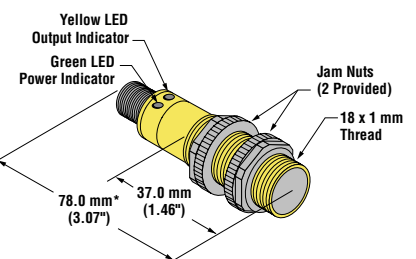
### Dimensions

#### Cabled Models



\*Polarized retro and fixed-field models = 65.0 mm (2.56")

#### QD Models



\*Polarized retro and fixed-field models = 83.8 mm (3.30")



### WARNING . . . Not To Be Used for Personnel Protection

**Never use these products as sensing devices for personnel protection.**

**Doing so could lead to serious injury or death.** These sensors do

NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition. Consult your current Banner Safety Products catalog for safety products which meet OSHA, ANSI and IEC standards for personnel protection.

# EZ BEAM S18 Sensors – dc-Voltage Series

## Specifications

**Supply Voltage and Current (exclusive of load current):** 10 to 30V dc (10% max. ripple); supply current (exclusive of load current):

**Emitters, Non-Polarized Retro, Diffuse:** 25 mA

**Receivers:** 20 mA

**Polarized Retroreflective:** 30 mA

**Fixed-Field:** 35 mA

### Supply Protection Circuitry

Protected against reverse polarity and transient voltages

### Output Configuration

SPDT solid-state dc switch; Choose NPN (current sinking) or PNP (current sourcing) models

**Light Operate:** N.O. output conducts when sensor sees its own (or the emitter's) modulated light

**Dark Operate:** N.C. output conducts when the sensor sees dark; the N.C. (normally closed) output may be wired as a normally open marginal signal alarm output, depending upon hookup to power supply (U.S. patent 5087838)

### Output Rating

150 mA maximum (each) in standard hookup. When wired for alarm output, the total load may not exceed 150 mA.

**OFF-state leakage current:** < 1 microamp @ 30V dc

**ON-state saturation voltage:** < 1V at 10 mA dc; < 1.5V at 150 mA dc

### Output Protection Circuitry

Protected against false pulse on power-up and continuous overload or short circuit of outputs

### Output Response Time

**Opposed mode:** 3 ms ON, 1.5 ms OFF

**Retro, Fixed-Field and Diffuse:** 3 ms ON and OFF

NOTE: 100 ms delay on power-up; outputs do not conduct during this time.

### Repeatability

**Opposed mode:** 375  $\mu$ s

**Retro, Fixed-Field and Diffuse:** 750  $\mu$ s

Repeatability and response are independent of signal strength.

### Indicators

Two LEDs (Green and Yellow)

**Green ON steady:** power to sensor is ON

**Green flashing:** output is overloaded

**Yellow ON steady:** N.O. output is conducting

**Yellow flashing:** excess gain marginal (1 to 1.5x) in light condition

### Construction

PBT polyester housing; polycarbonate (opposed mode) or acrylic lens

### Environmental Rating

Leakproof design rated NEMA 6P, DIN 40050 (IP69K)

### Connections

2 m (6.5') or 9 m (30') attached cable, or 4-pin Euro-style quick-disconnect fitting

### Operating Conditions

**Temperature:** -40° to +70°C (-40° to +158°F)

**Maximum relative humidity:** 90% at 50°C (non-condensing)

### Vibration and Mechanical Shock

All models meet Mil. Std. 202F requirements. Method 201A (Vibration; frequency 10 to 60 Hz, max., double amplitude 0.06" acceleration 10G). Method 213B conditions H&I (Shock: 75G with unit operating; 100G for non-operation)

### Certifications



## Quick-Disconnect (QD) Cables

Style	Model	Length	Dimensions	Pin-Out
4-pin Euro-style Straight	<b>MQDC-406</b> <b>MQDC-415</b> <b>MQDC-430</b>	2 m (6.5') 5 m (15') 9 m (30')		
4-pin Euro-style Right-angle	<b>MQDC-406RA</b> <b>MQDC-415RA</b> <b>MQDC-430RA</b>	2 m (6.5') 5 m (15') 9 m (30')		

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