

# **S18 Sensors – ac-Voltage Series**

Self-contained, ac-operated sensors

Installation Guide

Additional information on this product is immediately available online at www.bannerengineering.com/116160



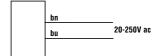
View or download additional information, including excess gain curves, beam patterns and accessories. For further assistance, contact a Banner Engineering Applications Engineer at (763) 544-3164 or (888) 373-6767.







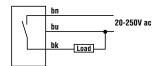
#### **Cabled Emitters**



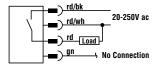
### QD Emitters (4-pin Micro-Style)



#### **All Other Cabled Models**



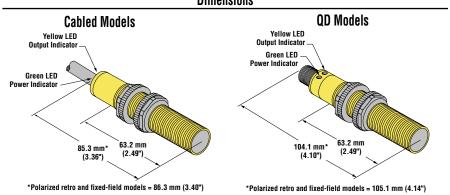
### All Other QD Models (4-pin Micro-Style)



Sensing Mode		Range	LED	Output	Model*
	Opposed	20 m (66')	Infrared 950 nm	-	\$183E
				L0	S18AW3R
				DO	S18RW3R
<b>******</b>	Retro- reflective <sup>†</sup>	2 m		L0	S18AW3L
				DO	S18RW3L
P	Polarized Retro-	(79")	Visible Red 680 nm	L0	S18AW3LP
	reflective <sup>†</sup>			DO	S18RW3LP
	Diffuse	100 mm (4")	Infrared 880 nm	L0	S18AW3D
				D0	S18RW3D
		300 mm (12") 25 mm (1") cutoff		L0	S18AW3DL
				DO	S18RW3DL
<b>□ ≥</b>   <b>X</b>	Fixed Field			L0	S18AW3FF25
				D0	S18RW3FF25
		50 mm (2") cutoff		L0	S18AW3FF50
				D0	\$18RW3FF50
		100 mm (4") cutoff		L0	S18AW3FF100
				DO	S18RW3FF100

- \* Standard 2 m (6.5') cable models are listed.
  - 9 m (30') cable: add suffix "W/30" (e.g., \$183E W/30).
  - 4-pin Micro-style QD models: add suffix "Q1" (e.g., S183EQ1). A model with a QD connector requires a mating cable.
- † Use polarized models when shiny objects will be sensed.

## Dimensions





## 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

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# **S18 Sensors – ac-Voltage Series**

#### **Specifications**

**Supply Voltage and Current** 

20 to 250V ac (50/60 Hz). Average current: 20 mA

Peak current: 200 mA at 20V ac, 500 mA at 120V ac, 750 mA at 250V ac

Supply Protection Circuitry

Protected against transient voltages

**Output Configuration** 

SPST solid-state ac switch; Three-wire hookup; Choose light operate or dark

operate models

Light Operate: Output conducts when sensor sees its own (or the emitter's)

modulated light

Dark Operate: Output conducts when the sensor sees dark

**Output Rating** 

300 mA maximum (continuous);

Fixed-Field Models: derate 5 mA/°C above +50°C (+122°F) Inrush Capability 1 amp for 20 milliseconds, non-repetitive

**OFF-state leakage current:** < 100 microamps

ON-state saturation voltage: 3V at 300 mA ac; 2V at 15 mA ac

**Output Protection Circuitry** 

Protected against false pulse on power-up

**Output Response Time** 

Opposed Mode: 16 milliseconds ON, 8 milliseconds OFF

Other Models: 16 milliseconds ON and OFF NOTE: 100 millisecond delay on power-up

Repeatability

Opposed Mode: 2 milliseconds Other Models: 4 milliseconds

Repeatability and response are independent of signal strength.

Indicators

Two LEDs (Green and Yellow)

Green ON steady: power to sensor is ON Yellow ON steady: sensor sees light

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') attached cable, or 4-pin Micro-style guick-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 Micro-style Straight	MQAC-406 MQAC-415 MQAC-430	2 m (6.5') 5 m (15') 9 m (30')	44 mm max. (1.7") g 1/2-20UNF-2B	Red Wire  Red/White  Wire  Green Wire  Red/Black  Wire	
4-pin Micro-style Right-angle	MQAC-406RA MQAC-415RA MQAC-430RA	2 m (6.5') 5 m (15') 9 m (30')	38 mm max. (1.5") 38 mm max. (1.5") 38 mm max. (1.5")		

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