

# S30 Sensors AC-Voltage Series



## Quick Start Guide

Self-Contained, AC-Operated Sensors

For additional technical information about this product, including complete instructions, dimensions, accessories, and specifications, see <http://www.bannerengineering.com> and search 121519.



**WARNING: Not To Be Used for Personnel Protection**

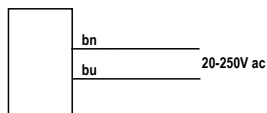
Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.

## Models

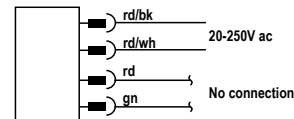
Sensing Mode	Model <sup>1</sup>	Output	Range	LED
<p>OPPOSED</p>	S303E	—	60 m (196.8 ft)	Infrared, 950 nm
	S30AW3R	LO		
	S30RW3R	DO		
<p>POLAR RETRO</p>	S30AW3LP	LO	6 m (19.7 ft)	Visible red, 680 nm
	S30RW3LP	DO		
<p>FIXED-FIELD</p>	S30AW3FF200	LO	200 mm (7.9 in) cutoff	Infrared, 880 nm
	S30RW3FF200	DO		
	S30AW3FF400	LO	400 mm (15.7 in) cutoff	
	S30RW3FF400	DO		
	S30AW3FF600	LO	600 mm (23.6 in) cutoff	
	S30RW3FF600	DO		

## Wiring Diagrams

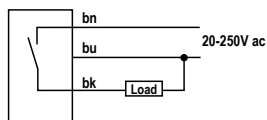
Cabled Emitters



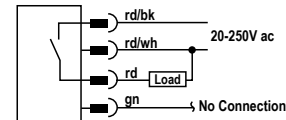
QD Emitters (4-pin Micro-Style)



All Other Cabled Models



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



<sup>1</sup> Standard 2 m (6.5 ft) cable models are listed.

- 9 m (30 ft) cable: add suffix "W/30" (for example, S303E W/30).
- 4-pin Micro-style QD models: add suffix "Q1" (for example, S303EQ1). A model with a QD connector requires a mating cable.



## Specifications

### Supply Voltage and Current

20 av V to 250 V ac (50 Hz to 60 Hz)  
Average current: 20 mA  
Peak current:

200 mA at 20 V ac  
500 mA at 120 V ac  
750 mA at 250 V ac

### Supply Protection Circuitry

Protected against transient voltages

### Output Configuration

SPST solid-state ac switch; three-wire hookup; light operate or dark operate, depending on model

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

Dark Operate: Output conducts when the sensor sees dark

### 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 <http://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

### Output Rating

300 mA maximum (continuous)

Fixed-Field models: derate 5 mA/°C above +50° C (+122° F)

Inrush capability: 1 amp for 20 ms, non-repetitive

OFF-state leakage current: < 100 mA

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

### Output Protection Circuitry

Protected against false pulse on power-up

### Output Response

Time Opposed mode: 16 ms ON, 8 ms OFF

Other models: 16 ms ON and OFF



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

### Repeatability

Opposed mode: 2 ms

Other models: 4 ms

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 1.5 times) in light condition

### Construction

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

### Environmental Rating

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

### Connections

2 m (6.5 ft) attached cable, or 4-pin Micro-style quick-disconnect fitting

### Operating Conditions

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

Humidity: 90% at +50 °C maximum relative humidity (non-condensing)

### Vibration and Mechanical Shock

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

### Certifications



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