

VS4 Series Opposed-Mode Sensors

Miniature Self-Contained Sensors



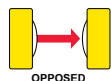
- Totally self-contained miniature sensors
- 10 to 30V dc operation
- Visible red sensing beam, 660 nm
- Up to 1.0 m (39 in) sensing range
- Choose dark or light operate models
- Choose models with NPN (sinking) or PNP (sourcing) output
- 2-wire and 3-wire hookup; output load capacity to 50 mA
- Choice of integral cable or quick-disconnect pigtail



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



Model Number	Sensing Range	Cable	Supply Voltage	Output Type
VS4EV	1.0 m (39 in)	2 m (6.5 ft) 2 wire	10 to 30V dc	-
VS4EVQ		3-pin pico Pigtail QD		
VS4AN5R		2 m (6.5 ft) 3 wire		NPN/LO
VS4AN5RQ		3-pin pico Pigtail QD		
VS4RN5R		2 m (6.5 ft) 3 wire		NPN/DO
VS4RN5RQ		3-pin pico Pigtail QD		
VS4AP5R		2 m (6.5 ft) 3 wire		PNP/LO
VS4AP5RQ		3-pin pico Pigtail QD		
VS4RP5R		2 m (6.5 ft) 3 wire		PNP/DO
VS4RP5RQ		3-pin pico Pigtail QD		

Specifications

Supply Voltage and Current

10 to 30V dc (10% maximum ripple)

Emitter: 25 mA

Receiver: 25 mA (exclusive of load)

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Indicators

Two LEDs: Green and Yellow

Green ON steady: power to sensor is ON

Green flashing: output overload

Yellow ON steady: light is sensed

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

Output Configuration

SPST solid-state switch
 Choose NPN (current sinking) or PNP (current sourcing), depending on model
 Choose light operate (N.O.) or dark operate (N.C.), depending on model

Output Rating

50 mA maximum
Off-state leakage current: < 1 microamp at 24V dc
On-state saturation voltage: < 0.25V at 10 mA dc; < 0.5V at 50 mA dc

Output Protection Circuitry

Protected against false pulse on power-up -and continuous overload or short circuit of outputs
 Overload trip point ≥ 100 mA

Output Response Time

1 millisecond ON and 0.5 milliseconds OFF
 NOTE: 100 millisecond delay on power-up: output is non-conducting during this time

Repeatability

100 microseconds

Environmental Rating

IP67; NEMA 6

Construction

Polycarbonate mounting holes and lens
 Low pressure molded thermoplastic housing (UL 94-V0)

Connections

2 m (6.5 ft) attached cable: three #28 ga stranded conductors with PE insulation; PVC outer cable jacket; or 3-pin Pico-style pigtail quick-disconnect fitting. QD cables are ordered separately.

Operating Conditions

Temperature: -20° to +55° C (-4° to +131°F)
Humidity: 80% at +50° C (non-condensing)

Vibration and Mechanical Shock

Vibration: All models meet IEC 60068-2-6, IEC 60947-5-2, UL491 Section 40, MIL-STD-202F Method 201A; 10 to 60 Hz, 0.5 mm peak to peak
Shock: All models meet IEC 60068-2-27, IEC 60947-5-2; 30g peak acceleration, 11 millisecond pulse duration, half-sine wave pulse shape

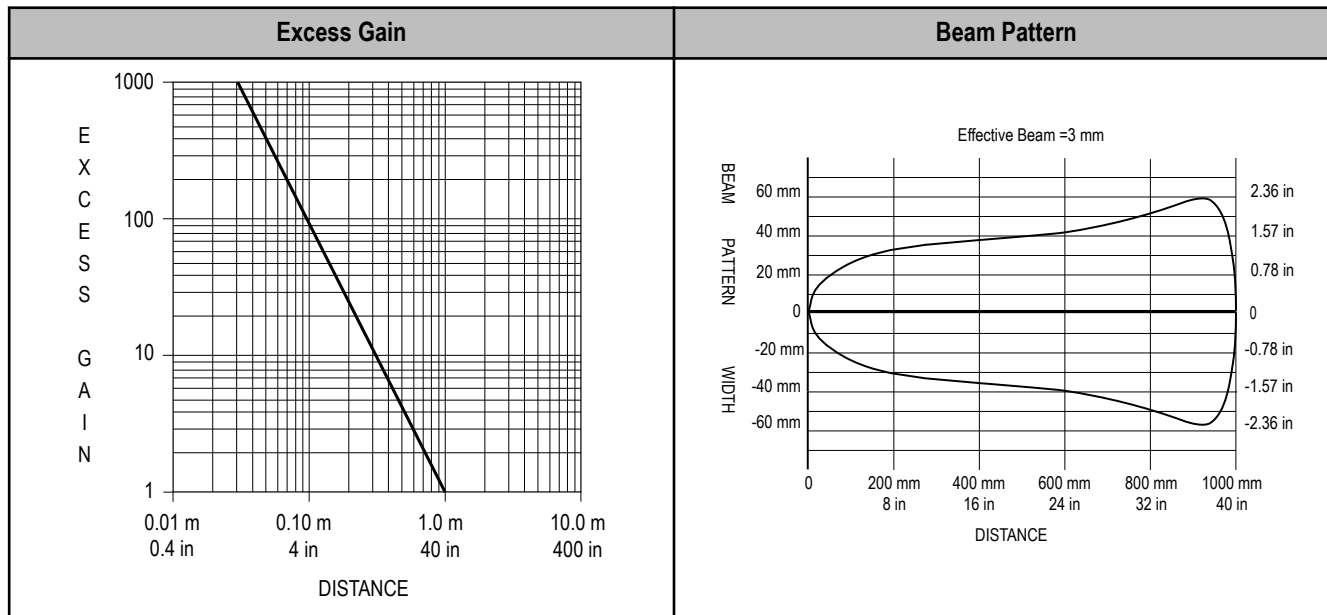
Application Notes

M2 stainless steel mounting hardware included. Optional mounting bracket available.

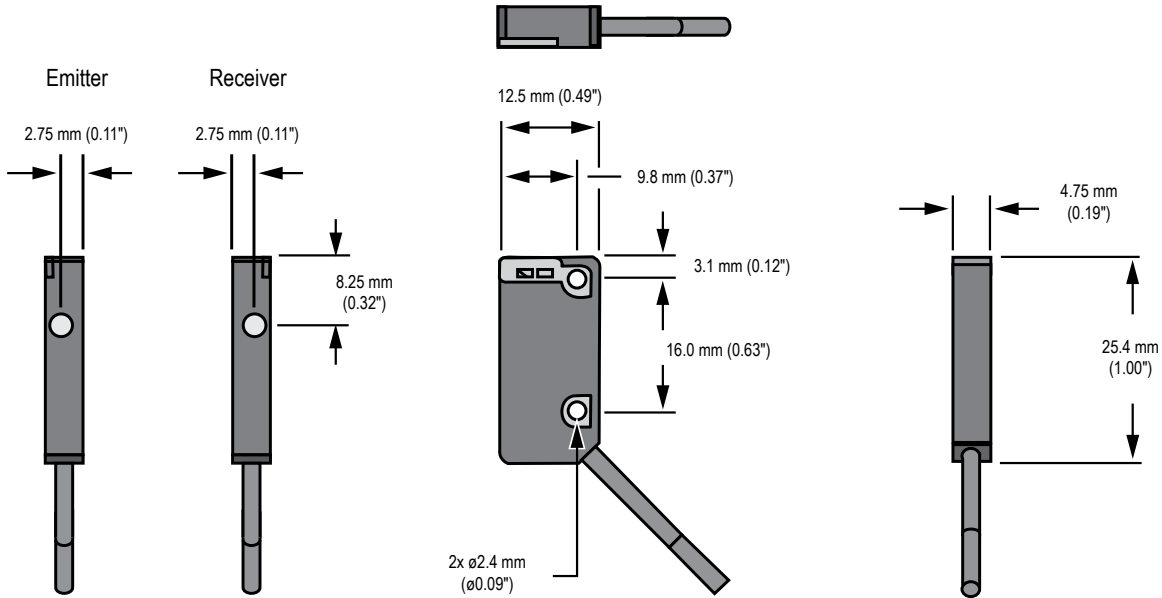
Certifications



Performance Curves

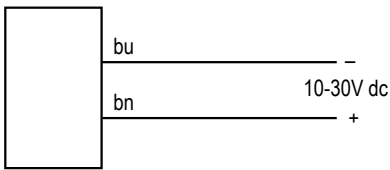


Dimensions

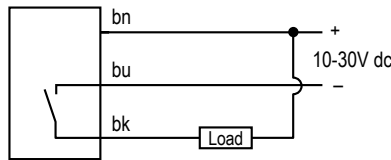


Hookups

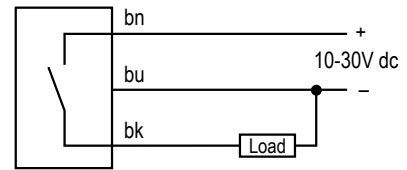
Emitters with Cable



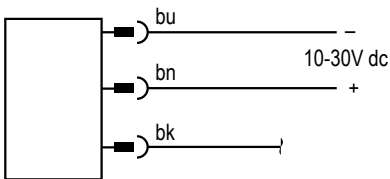
NPN Models with Cable



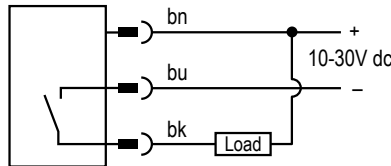
PNP Models with Cable



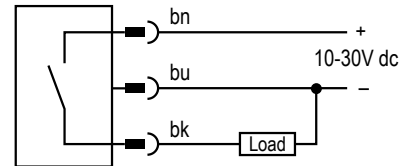
Emitters with Quick-Disconnect



NPN Models with Quick-Disconnect



PNP Models with Quick-Disconnect



Accessories

Quick-Disconnect Cables

3-Pin Threaded M8/Pico-Style Cordsets				
Model	Length	Style	Dimensions	Pinout
PKG3M-2	2.00 m (6.56 ft)	Straight		<p>1 = Brown 3 = Blue 4 = Black</p>
PKG3M-5	5.00 m (16.40 ft)			
PKG3M-7	7.00 m (22.97 ft)			
PKG3M-9	9.00 m (29.53 ft)			
PKG3M-10	10.0 m (32.81 ft)			

Apertures

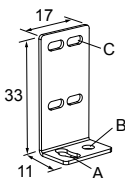
Model	Description	Dimensions
APVS4-0206	<ul style="list-style-type: none"> • 2-holed aperture • 0.020 in and 0.060 in diameter holes 	
APVS4-0408	<ul style="list-style-type: none"> • 2-holed aperture • 0.040 in and 0.080 in diameter holes 	

Brackets

SMBVS4SRA

- Right-angle bracket
- 300 series stainless steel

A = 3 x R1.6, B = \varnothing 3.2,
C = R1.2



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