

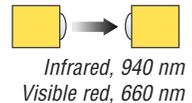


VS2 Series Features

- Totally self-contained miniature sensors
- 10 to 30V dc operation
- Visible red or infrared sensing beam, depending on model
- Up to 3 m (118") sensing range (see Range specifications below)
- 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
- Sensors may be purchased in pairs, or individually



VS2 Series miniature self-contained sensors are designed for precision sensing in small areas previously accessible only to remote or fiber optic models. Typical applications include mounting inside vibrating feeders and electronic component handling equipment.



VS2 Series Opposed-Mode Sensors

| Component | Cabled Models* | QD Models** | Sensing Beam/Range | Supply Voltage | Output Type | Excess Gain | Beam Pattern |
|------------------------------------|-------------------------------|----------------------------------|---|-----------------|--------------------------|-------------|--------------|
| Emitter Receiver Sensor Pair | VS25EV VS2AN5R VS2KAN5V | VS25EVQ VS2AN5RQ VS2KAN5VQ | Visible Red, 660 nm 1.2 m (47") | 10 to 30V dc | NPN/ Light Operate | | |
| Emitter Receiver Sensor Pair | VS25EV VS2AP5R VS2KAP5V | VS25EVQ VS2AP5RQ VS2KAP5VQ | | | PNP/ Light Operate | | |
| Emitter Receiver Sensor Pair | VS25EV VS2RN5R VS2KRN5V | VS25EVQ VS2RN5RQ VS2KRN5VQ | | | NPN/ Dark Operate | | |
| Emitter Receiver Sensor Pair | VS25EV VS2RP5R VS2KRP5V | VS25EVQ VS2RP5RQ VS2KRP5VQ | | | PNP/ Dark Operate | | |
| Emitter Receiver Sensor Pair | VS25E VS2AN5R VS2KAN5 | VS25EQ VS2AN5RQ VS2KAN5Q | Infrared, 940 nm 3.0 m (118") | | NPN/ Light Operate | | |
| Emitter Receiver Sensor Pair | VS25E VS2AP5R VS2KAP5 | VS25EQ VS2AP5RQ VS2KAP5Q | | | PNP/ Light Operate | | |
| Emitter Receiver Sensor Pair | VS25E VS2RN5R VS2KRN5 | VS25EQ VS2RN5RQ VS2KRN5Q | | | NPN/ Dark Operate | | |
| Emitter Receiver Sensor Pair | VS25E VS2RP5R VS2KRP5 | VS25EQ VS2RP5RQ VS2KRP5Q | | | PNP/ Dark Operate | | |

* Cabled models have 2 m (6.5') integral cable; 2-wire for emitters, 3-wire for receivers.

** QD models have 3-pin 150 mm (6.5") Pico-style QD pigtail. QD models require mating cable; see page 4.

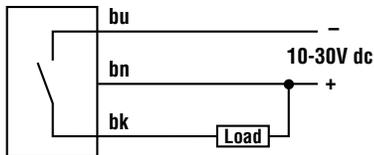
VS2 Series – Opposed Mode

VS2 Series Opposed-Mode Sensor Specifications

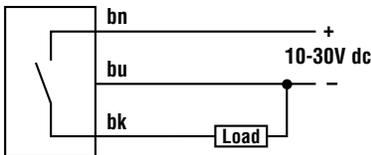
| | |
|---------------------------------------|---|
| Supply Voltage and Current | 10 to 30V dc (10% maximum ripple) Emitter: 25 mA (visible beam); 30 mA (infrared beam) Receiver: 25 mA (exclusive of load) |
| Supply Protection Circuitry | Protected against reverse polarity and transient voltages |
| Output Configuration | SPST solid-state switch Choose NPN (current sinking) or PNP (current sourcing) models Choose light operate (N.O.) or dark operate (N.C.) models |
| 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 \geq 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 |
| 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 (1-1.5x) in light condition |
| Construction | Black ABS housing with clear MABS lens |
| Environmental Rating | IP67; NEMA 6 |
| Connections | 2 m (6.5') 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) Maximum Relative 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 brackets are available (page 4). |
| Certifications | CE |

VS2 Series Sensor Hookups

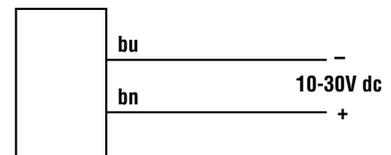
**Sensors with NPN Outputs
Cabled hookup**



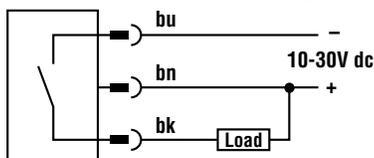
**Sensors with PNP Outputs
Cabled hookup**



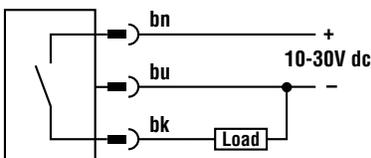
**Emitters
Cabled hookup**



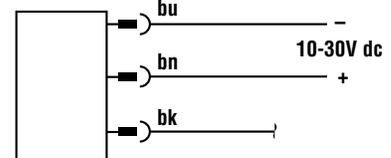
Quick-Disconnect hookup



Quick-Disconnect hookup

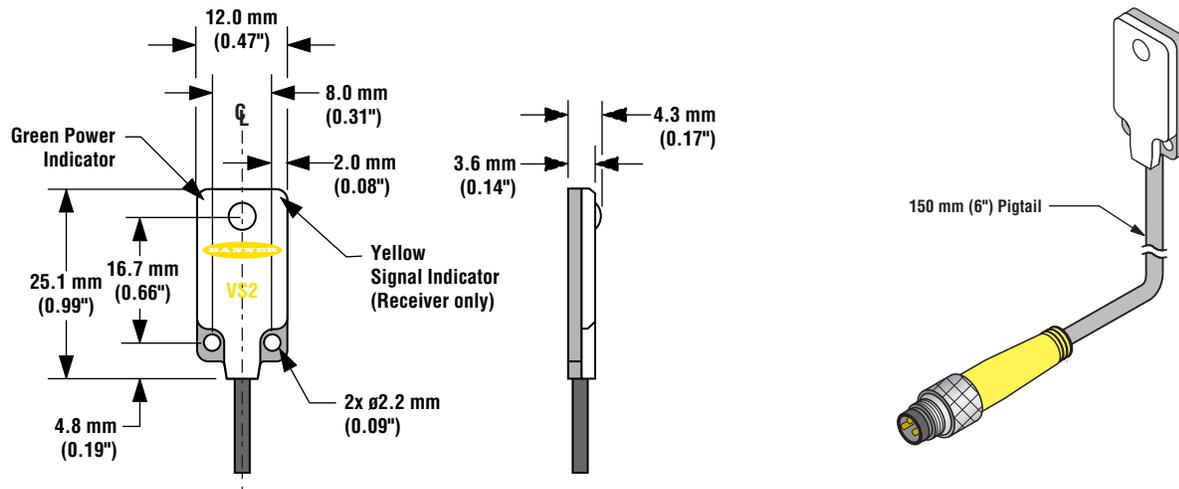


Quick-Disconnect hookup



VS2 Series – Opposed Mode

VS2 Series Opposed-Mode Sensor Dimensions



Accessories

Quick-Disconnect (QD) Cables

| Style | Models | Length | For Use With | Dimensions | Pinout |
|------------------------------|--------------------|-------------------------|--|------------|--------|
| 3-pin Pico Style Straight | PKG3M-2 PKG3M-9 | 2 m (6.5') 9 m (30') | All VS2 Series sensors with model suffix "Q". | | |



WARNING . . . Not To Be Used for Personnel Protection

Never use this product as a sensing device for personnel protection. Doing so could lead to serious injury or death.

This product 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. Consult your current Banner Safety Products catalog for safety products which meet OSHA, ANSI and IEC standards for personnel protection.

VS2 Series – Opposed Mode

Accessories

VS2 Apertures

| | | | |
|-------------------|--|-------------------|--|
| APVS2-0204 | <ul style="list-style-type: none"> • 0.5 mm and 1.0 mm apertures • 0.1 mm 300 series stainless steel | APVS2-0608 | <ul style="list-style-type: none"> • 1.5 mm and 2.0 mm apertures • 0.1 mm 300 series stainless steel |
| | | | |
| APVS2-02R | <ul style="list-style-type: none"> • 0.5 mm wide aperture • 0.1 mm 300 series stainless steel | APVS2-04R | <ul style="list-style-type: none"> • 1 mm wide aperture • 0.1 mm 300 series stainless steel |
| | | | |

VS2 Series Mounting Brackets

| | |
|-----------------|---|
| SMBVS2RA | <ul style="list-style-type: none"> • Right-angle bracket • 300 series stainless steel |
| | |

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