

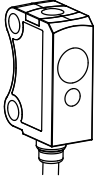
VS8 Series Opposed Mode Sensor



Datasheet

Sub-Miniature Opposed Mode Photoelectric Sensor

This guide is designed to help you set up and install the VS8. For complete information on programming, performance, troubleshooting, dimensions, and accessories, please refer to the Instruction Manual at www.bannerengineering.com. Search for p/n 201958 to view the Instruction Manual. Use of this document assumes familiarity with pertinent industry standards and practices.



- Sub-miniature sensor for installation in the smallest of spaces
- Red laser models provide bright, precise laser light spot for optimum small part detection
- High switching frequency for detection in even the fastest processes
- Beam inhibit on emitter can be used to test normal function of the opposed mode pair
- User-friendly operation using electronic push button or remote input provides reliable and precise detection
- Teach input on receiver adjusts switching threshold to optimize for small part detection
- Robust, glass-fiber-reinforced plastic housing
- PNP or NPN output, depending on model



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.



AVERTISSEMENT: Ne pas utiliser pour la protection de personnes

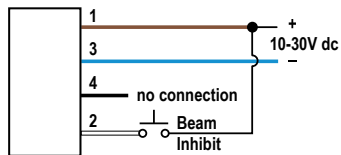
Ces produits ne doivent pas être **utilisés** comme systèmes de **détection** pour la **protection** de personnes. Une **utilisation** dans de telles **conditions** pourrait entraîner des dommages corporels graves, voire mortels. Ce produit n'est pas équipé du circuit redondant d'autodiagnostic nécessaire pour être utilisé dans des applications de protection personnelle. Une panne du capteur ou un mauvais fonctionnement peut entraîner l'activation ou la désactivation de la sortie.

Models

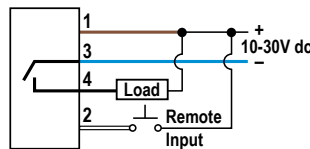
| Model | Sensing Mode | Range | Output | Connection |
|----------|-------------------------------------|-----------------------------|--------|---|
| VS8LEJ | Red Laser Emitter with Beam Inhibit | 0 m to 3 m (0 in to 9.8 ft) | - | 2 m (6.5 ft) unterminated 4-wire PUR cable |
| VS8LEJQ | | | - | 200 mm (7.8 in) PUR cable with a 4-pin M8/Pico-style male quick disconnect (QD) |
| VS8EAPR | Receiver | | PNP | 2 m (6.5 ft) unterminated 4-wire PUR cable |
| VS8EANR | | | NPN | |
| VS8EAPRQ | | | PNP | 200 mm (7.8 in) PUR cable with a 4-pin M8/Pico-style male quick disconnect (QD) |
| VS8EANRQ | | | NPN | |

Wiring Diagrams

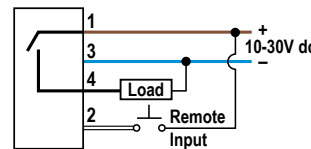
Emitter with Active High Beam Inhibit



NPN Models



PNP Models



Key

1. Brown
2. White
3. Blue
4. Black



Specifications

Supply Voltage and Current

LED models: 10 V dc to 30 V dc (10% max. ripple) at less than 20 mA, exclusive of load
 Laser models: 10 V dc to 30 V dc (10% max. ripple) at less than 12 mA, exclusive of load

Connections

2 m (6.5 ft) unterminated 4-wire PUR cable or 200 mm (7.8 in) PUR cable with a 4-pin M8/Pico-style or 4-pin M12/Euro-style male quick disconnect, depending on model
 Models ending in suffix "Q", "Q3", or "Q5" must be used with a UL recognized cordset R/C (CYJV2)
 Search p/n 201958 at www.bannerengineering.com to view the Instruction Manual for more information on cordsets

Operating Conditions

Laser models: -20 °C to +50 °C (-4 °F to +122 °F)
 Storage Temperature: -20 °C to +80 °C (-4 °F to +176 °F)
 UL Operating Temperature: -20 °C to +30 °C (-4 °F to +86 °F)

Laser Classifications

All Models: Class 1; wavelength: 655 nm; frequency: 5 kHz; pulse duration: 3.2 µs; limit value pulse: ≤ 2.3 mW. Reference IEC 60825-1:2001, Section 8.2.
 All Models: Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to laser Notice No. 50 dated June 24, 2007.

Adjustments

Push button teach input (Receivers)
 Remote wire teach input (Receivers)
 Remote wire beam inhibit (Emitters)

Supply Protection Circuitry

Protected against reverse polarity and short-circuit

Output Configuration

Receivers only: Single PNP or NPN on pin 4 (black wire) with remote input on pin 2 (white wire)

Delay Before Power-Up < 300 ms

Output Protection Circuitry

Protected against output short-circuit, continuous overload, and false pulse on power-up

Output Rating

50 mA

Output Response Time

500 µs

Construction

Housing, cable: PUR
 Front screen: PMMA

Indicators

2 LED indicators on sensor top
 Green on: Power on
 Amber on: Output conducting

Emitter LED Wavelength
 Laser models: 655 nm

Switching Frequency
 ≤ 1000 Hz

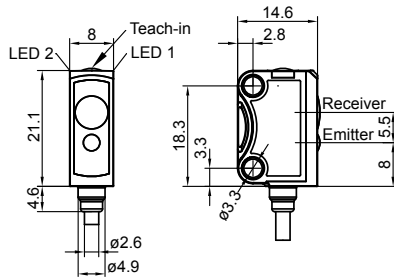
Chemical Compatibility
 ECOLAB® certified (2 m cabled models only)

Environmental Rating
 IEC IP67

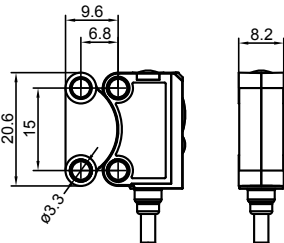
Certifications



Dimensions



Sensor with Bracket (SMBVS8DT)



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 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 |

Protection contre la surintensité requise



AVERTISSEMENT: Les raccordements électriques doivent être effectués par du personnel qualifié conformément aux réglementations et codes électriques nationaux et locaux.

Une protection de surintensité doit être fournie par l'installation du produit final, conformément au tableau fourni. Vous pouvez utiliser un fusible externe ou la limitation de courant pour offrir une protection contre la surtension dans le cas d'une source d'alimentation de classe 2. Les fils d'alimentation < 24 AWG ne peuvent pas être raccordés. Pour obtenir un support produit supplémentaire, rendez-vous sur le site www.bannerengineering.com.

| Câblage d'alimentation (AWG) | Protection contre la surtension requise (ampères) |
|------------------------------|---|
| 20 | 5.0 |
| 22 | 3.0 |
| 24 | 2.0 |
| 26 | 1.0 |
| 28 | 0.8 |
| 30 | 0.5 |

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