



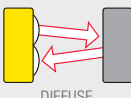
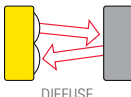
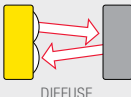
# VSM Series

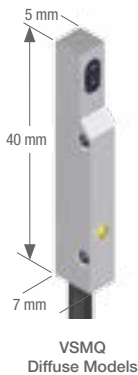
## Self-Contained Metal Sensors

- Heavy-duty, compact, metal sensors that are ideal for use in confined areas.
- Sapphire lens
- Tough 300 series stainless steel body withstands a wide variety of chemicals and cutting fluids
- Smooth barrel models are ideal for hygienic applications that require frequent cleaning
- Advanced optical design provides high performance with repeatable sensing

### VSMQ (Flat-Pack, Side-Looker)

 Infrared LED

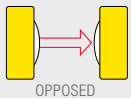
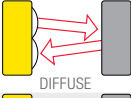
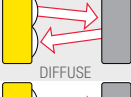
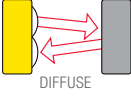
| Sensing Mode                                                                                   | Range     | Connection | Output Type | Models NPN  | Models PNP  |
|------------------------------------------------------------------------------------------------|-----------|------------|-------------|-------------|-------------|
| <br>DIFFUSE  | 20-50 mm  | 2 m        | LO          | VSMQAN6CV20 | VSMQAP6CV20 |
| <br>DIFFUSE | 50-140 mm | 2 m        | LO          | VSMQAN6CV50 | VSMQAP6CV50 |
| <br>DIFFUSE | 90-200 mm | 2 m        | LO          | VSMQAN6CV90 | VSMQAP6CV90 |



VSMQ  
Diffuse Models

### VSM4 (4 mm Smooth Barrel)

 Infrared LED

| Sensing Mode                                                                                   | Range     | Connection    | Output Type | Models NPN       | Models PNP    |
|------------------------------------------------------------------------------------------------|-----------|---------------|-------------|------------------|---------------|
| <br>OPPOSED | 250 mm    | 2 m           | —           | VSM46E Emitter   |               |
|                                                                                                |           | 3-Pin Pico QD |             | VSM46EQ7 Emitter |               |
|                                                                                                | 250 mm    | 2 m           | DO          | VSM4RN6R         | VSM4RP6R      |
| <br>DIFFUSE |           | 3-Pin Pico QD |             | VSM4RN6RQ7       | VSM4RP6RQ7    |
|                                                                                                | 10-30 mm  | 2 m           | LO          | VSM4AN6CV10      | VSM4AP6CV10   |
|                                                                                                |           | 3-Pin Pico QD |             | VSM4AN6CV10Q7    | VSM4AP6CV10Q7 |
| <br>DIFFUSE | 20-50 mm  | 2 m           | LO          | VSM4AN6CV20      | VSM4AP6CV20   |
|                                                                                                |           | 3-Pin Pico QD |             | VSM4AN6CV20Q7    | VSM4AP6CV20Q7 |
|                                                                                                | 50-140 mm | 2 m           | LO          | VSM4AN6CV50      | VSM4AP6CV50   |
| <br>DIFFUSE |           | 3-Pin Pico QD |             | VSM4AN6CV50Q7    | VSM4AP6CV50Q7 |

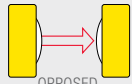
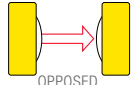
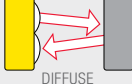
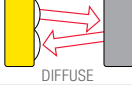
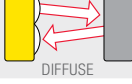


VSM4  
Opposed and  
Diffuse Models

 Connection options: A model with a QD requires a mating cordset.

## VSM5 (5 mm Threaded Barrel)

 Infrared LED

| Sensing Mode                                                                             | Range     | Connection           | Output Type | Models NPN                         | Models PNP                   |
|------------------------------------------------------------------------------------------|-----------|----------------------|-------------|------------------------------------|------------------------------|
|  OPPOSED | 250 mm    | 2 m<br>3-Pin Pico QD | —           | VSM56E Emitter<br>VSM56EQ7 Emitter |                              |
|  OPPOSED | 250 mm    | 2 m<br>3-Pin Pico QD | DO          | VSM5RN6R<br>VSM5RN6RQ7             | VSM5RP6R<br>VSM5RP6RQ7       |
|  DIFFUSE | 10-30 mm  | 2 m<br>3-Pin Pico QD | LO          | VSM5AN6CV10<br>VSM5AN6CV10Q7       | VSM5AP6CV10<br>VSM5AP6CV10Q7 |
|  DIFFUSE | 20-50 mm  | 2 m<br>3-Pin Pico QD | LO          | VSM5AN6CV20<br>VSM5AN6CV20Q7       | VSM5AP6CV20<br>VSM5AP6CV20Q7 |
|  DIFFUSE | 50-140 mm | 2 m<br>3-Pin Pico QD | LO          | VSM5AN6CV50<br>VSM5AN6CV50Q7       | VSM5AP6CV50<br>VSM5AP6CV50Q7 |


 Connection options: A model with a QD requires a mating cordset.

## Pico QD (for Q models)

Straight connector models listed;  
for right-angle, **W** replaces **G** in  
the model number.  
(example, PKW3M-2)



## 3-Pin

PKG3M-2  
2 m (6')  
PKG3M-5  
5 m (15')  
PKG3M-9  
9 m (30')



## SMBVSM4

Additional cordset information is available  
See page 758

Additional bracket information is available  
See page 722

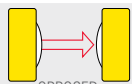
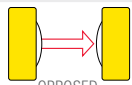
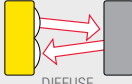
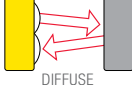
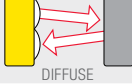
## VSM Specifications

|                             |                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Supply Voltage and Current  | 10 to 30 V dc (10% max. ripple)                                                                                                    |
| Supply Protection Circuitry | Protected against reverse polarity and transient voltages                                                                          |
| Output Configuration        | <b>Single-output:</b> 1 NPN or 1 PNP, Light Operate (LO) or Dark Operate (DO), depending on model                                  |
| Output Rating               | 100 mA max.<br><b>OFF-state leakage current:</b> less than 1 $\mu$ A<br><b>ON-state saturation voltage:</b> less than 2 V @ 100 mA |
| Output Protection Circuitry | Protected against false pulse on power-up and continuous overload or short circuit of outputs<br>Overload trip point $\geq$ 100 mA |
| Response Time               | 2.5 milliseconds                                                                                                                   |
| Delay at Power-up           | 20 milliseconds                                                                                                                    |
| Repeatability               | 1 millisecond                                                                                                                      |
| Indicators                  | <b>Yellow LED:</b> light sensed                                                                                                    |
| Construction                | 300 series stainless steel with PVC cable<br><b>CV10 &amp; CV20:</b> sapphire lens<br><b>CV50 &amp; Opposed:</b> Glass lens        |
| Environmental Rating        | IP67                                                                                                                               |
| Connections                 | 2 m PVC-jacketed cable or 3-pin Pico-style integral QD (Q7), depending on model. QD cordsets ordered separately.                   |
| Operating Conditions        | Operating temperature: 0° to +55° C                                                                                                |
| Certification               |                                                                                                                                    |



## VSM5 (5 mm Threaded Barrel)

 Infrared LED

| Sensing Mode                                                                                | Range     | Connection           | Output Type | Models NPN                         | Models PNP                   |
|---------------------------------------------------------------------------------------------|-----------|----------------------|-------------|------------------------------------|------------------------------|
| <br>OPPOSED | 250 mm    | 2 m<br>3-Pin Pico QD | —           | VSM56E Emitter<br>VSM56EQ7 Emitter |                              |
| <br>OPPOSED | 250 mm    | 2 m<br>3-Pin Pico QD | DO          | VSM5RN6R<br>VSM5RN6RQ7             | VSM5RP6R<br>VSM5RP6RQ7       |
| <br>DIFFUSE | 10-30 mm  | 2 m<br>3-Pin Pico QD | LO          | VSM5AN6CV10<br>VSM5AN6CV10Q7       | VSM5AP6CV10<br>VSM5AP6CV10Q7 |
| <br>DIFFUSE | 20-50 mm  | 2 m<br>3-Pin Pico QD | LO          | VSM5AN6CV20<br>VSM5AN6CV20Q7       | VSM5AP6CV20<br>VSM5AP6CV20Q7 |
| <br>DIFFUSE | 50-140 mm | 2 m<br>3-Pin Pico QD | LO          | VSM5AN6CV50<br>VSM5AN6CV50Q7       | VSM5AP6CV50<br>VSM5AP6CV50Q7 |


 Connection options: A model with a QD requires a mating cordset.
**Pico QD (for Q models)**

Straight connector models listed;  
for right-angle, **W** replaces **G** in  
the model number.  
(example, PKW3M-2)

**3-Pin**

**PKG3M-2**  
2 m (6')  
**PKG3M-5**  
5 m (15')  
**PKG3M-9**  
9 m (30')

**SMBVSM4**

Additional cordset information is available  
See page 758

## VSM Specifications

|                             |                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Supply Voltage and Current  | 10 to 30 V dc (10% max. ripple)                                                                                                    |
| Supply Protection Circuitry | Protected against reverse polarity and transient voltages                                                                          |
| Output Configuration        | <b>Single-output:</b> 1 NPN or 1 PNP, Light Operate (LO) or Dark Operate (DO), depending on model                                  |
| Output Rating               | 100 mA max.<br><b>OFF-state leakage current:</b> less than 1 $\mu$ A<br><b>ON-state saturation voltage:</b> less than 2 V @ 100 mA |
| Output Protection Circuitry | Protected against false pulse on power-up and continuous overload or short circuit of outputs<br>Overload trip point $\geq$ 100 mA |
| Response Time               | 2.5 milliseconds                                                                                                                   |
| Delay at Power-up           | 20 milliseconds                                                                                                                    |
| Repeatability               | 1 millisecond                                                                                                                      |
| Indicators                  | <b>Yellow LED:</b> light sensed                                                                                                    |
| Construction                | 300 series stainless steel with PVC cable<br><b>CV10 &amp; CV20:</b> sapphire lens<br><b>CV50 &amp; Opposed:</b> Glass lens        |
| Environmental Rating        | IP67                                                                                                                               |
| Connections                 | 2 m PVC-jacketed cable or 3-pin Pico-style integral QD (Q7), depending on model. QD cordsets ordered separately.                   |
| Operating Conditions        | <b>Operating temperature:</b> 0° to +55 °C                                                                                         |

## Certification

