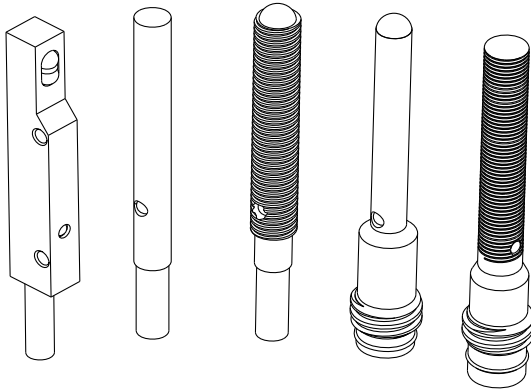


VSM Series Micro Sensors

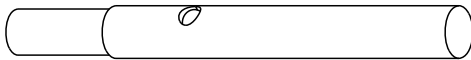
Miniature self-contained sensors in stainless steel housing



- Tough - 300 series stainless steel body with sapphire lens withstands a wide variety of chemicals and cutting fluids
- Tiny sensors are available as small as a 4 mm barrel (about the size of a single optical fiber assembly)
- Economical, self-contained sensors are available in convergent or opposed sensing modes; no separate amplifier required
- Advanced convergent optical design provides high performance, and very repeatable sensing
- Well-focused, narrow beam allows the entire barrel sensor to be recessed into fixtures (excluding 50 mm range models)
- Smooth, stainless steel barrel is perfect for hygienic applications that require routine cleaning
- A choice of threaded or smooth barrel housings or flat-pack side-looking housing

Models

Table 1: Housing Style: 4 mm Smooth Barrel



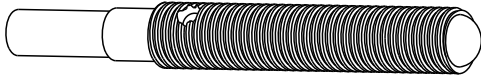
NPN Models	PNP Models	Sensing Mode	Range	Output Type	Connection	
VSM46E Emitter		<p>OPPOSED</p>	250 mm	—	2 m	
VSM46EQ7 Emitter					3-Pin Pico QD	
VSM4RN6R	VSM4RP6R			DO	2 m	
VSM4RN6RQ7	VSM4RP6RQ7				3-Pin Pico QD	
VSM4AN6CV10	VSM4AP6CV10	<p>CONVERGENT</p>	10 mm	LO	2 m	
VSM4AN6CV10Q7	VSM4AP6CV10Q7			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



WARNING: Not To Be Used for Personnel Protection

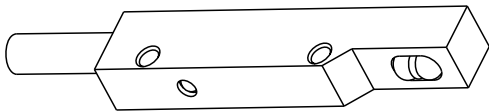
Never use this product as a sensing device for personnel protection. Doing so could lead to serious injury or death. This product does NOT include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized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

Table 2: Housing Style: 5 mm Threaded Barrel



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

Table 3: Housing Style: Flat-Pack Side-Looker



NPN Models	PNP Models	Sensing Mode	Range	Output Type	Connection
VSMQAN6CV20	VSMQAP6CV20	<p>CONVERGENT</p>	20 mm	LO	2 m
VSMQAN6CV50	VSMQAP6CV50		50 mm		
VSMQAN6CV90	VSMQAP6CV90		90 mm		

Specifications

Supply Voltage and Current

10 to 30V dc (10% maximum ripple)

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Output Configuration

Single-output: 1 NPN or 1 PNP; light operate (LO) or dark operate (DO), depending on model

Output Rating:

100 mA max

OFF-state leakage current: less than 100 mA

ON-state saturation voltage: less than 2V @ 100 mA

Output Protection Circuitry

Protected against false pulse on power-up and continuous overload or short circuit of outputs

Overload trip point \geq 100 mA

Response Time

2.5 milliseconds

Delay at Power-Up

20 milliseconds

Repeatability

1 millisecond

Indicators

Yellow LED: light sensed

Construction

300 series stainless steel with sapphire lens and PVC cable

Environmental Rating

IP67

Connections

2 m PVC-jacketed cable or 3-pin Pico-style integral QD (Q7), depending on model.

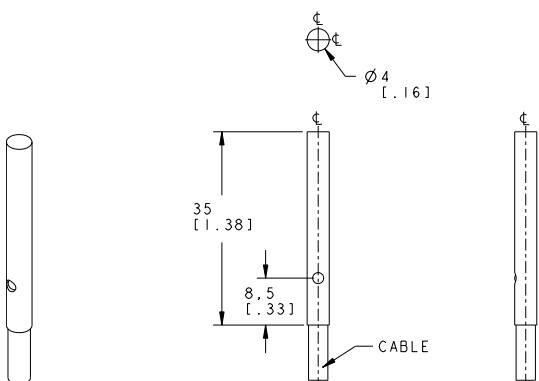
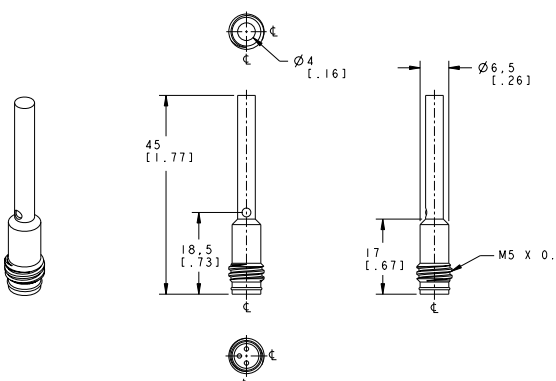
Operating Conditions

Operating Temperature: 0° to +55° C (32° to +131° F)

Certifications

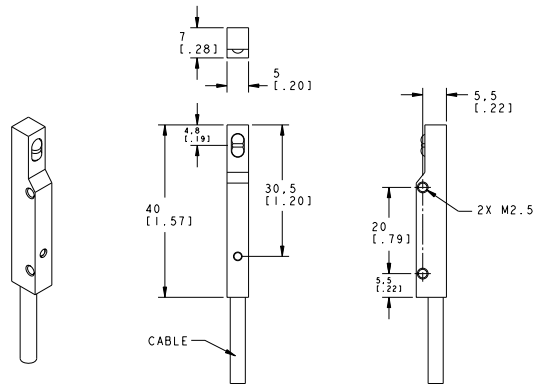
CE  US LISTED (pending)

Dimensions

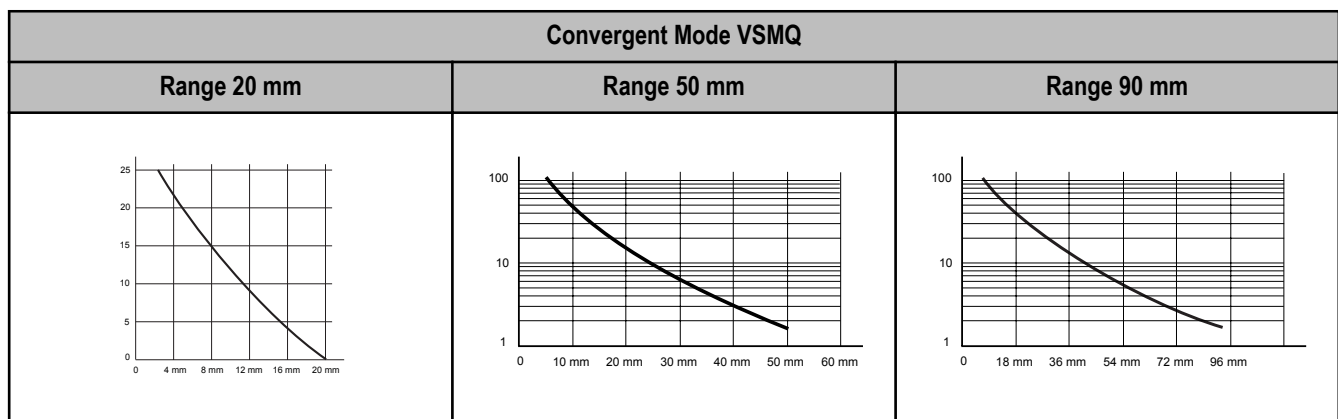
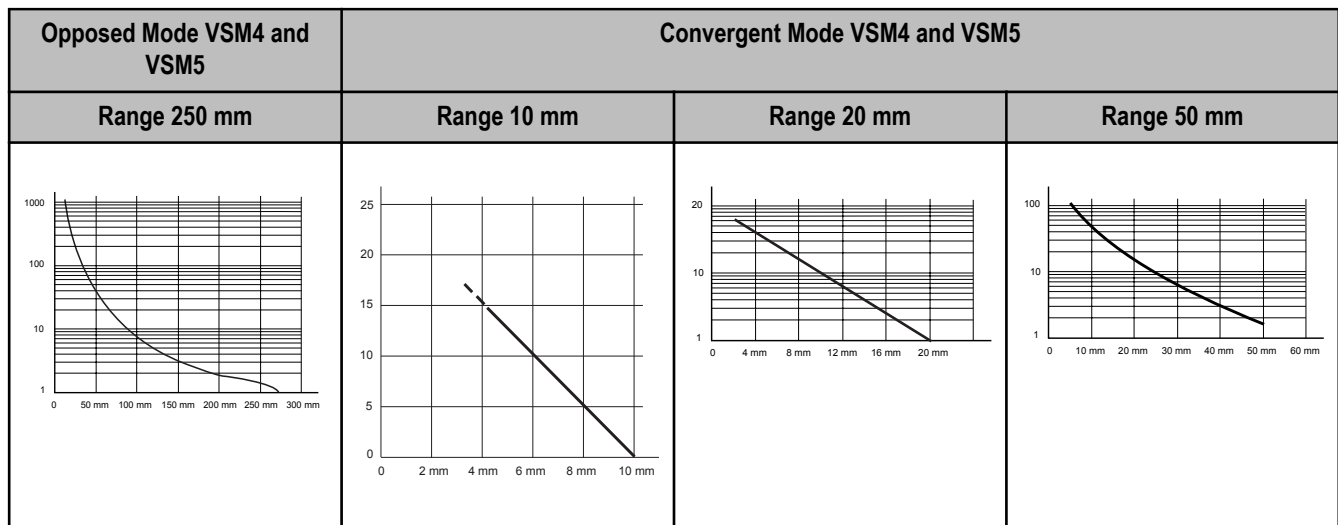
4 mm Smooth Barrel Emitter/Receiver Cable and 50 mm CV Models	4 mm Smooth Barrel Emitter/Receiver QD and 50 mm CV Models
	

5 mm Threaded Barrel Emitter/Receiver Cable and 50 mm CV Models	VSM5 Emitter/Receiver QD and 50 mm CV Models
<p>35 [1.38] 43.5 [1.71] 8.5 [0.33] CABLE M5 X 0.8</p>	<p>45 [1.77] 63.5 [2.50] 18.5 [0.73] 15 [0.59] 6.5 [0.26] M5 X 0.8 M8 X 1</p>
4 mm Smooth Barrel Cable/10 and 20 mm CV Models	4 mm Smooth Barrel QD/10 and 20 mm CV Models
<p>36.8 [1.45] 8.5 [0.33] CABLE $\varnothing 4$ [0.16]</p>	<p>46.8 [1.84] 18.5 [0.73] 17 [0.67] M8 X 1 $\varnothing 4$ [0.16]</p>
5 mm Threaded Barrel Cable/10 and 20 mm CV Models	5 mm Threaded Barrel QD/10 and 20 mm CV Models
<p>35 [1.38] 43.5 [1.71] 8.5 [0.33] CABLE M5 X 0.8</p>	<p>45 [1.77] 63.5 [2.50] 18.5 [0.73] 15 [0.59] 6.5 [0.26] M5 X 0.8 M8 X 1</p>

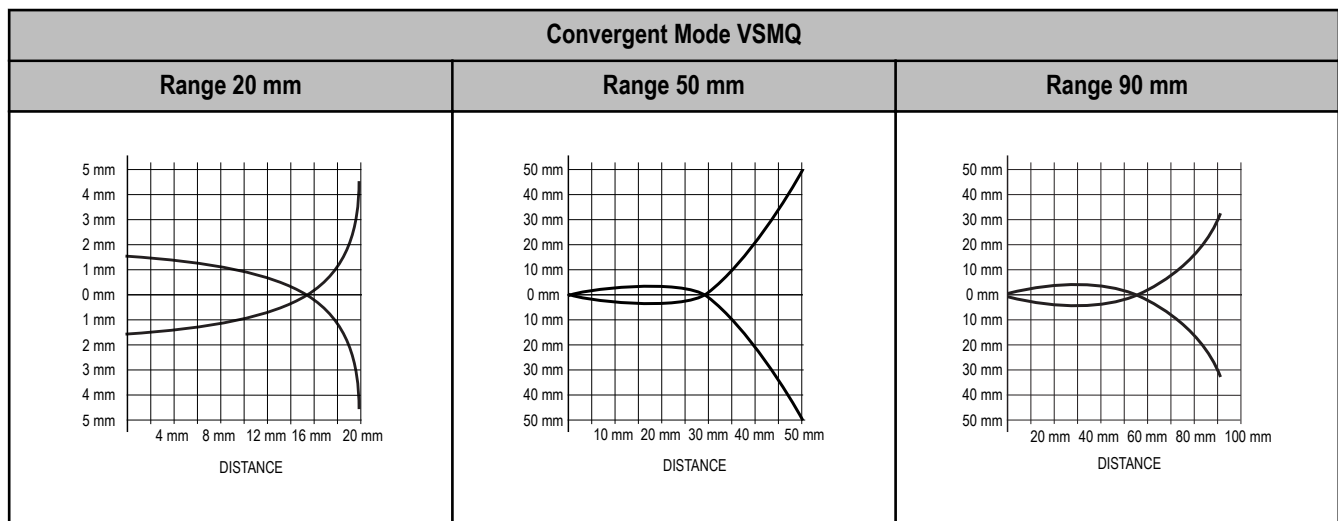
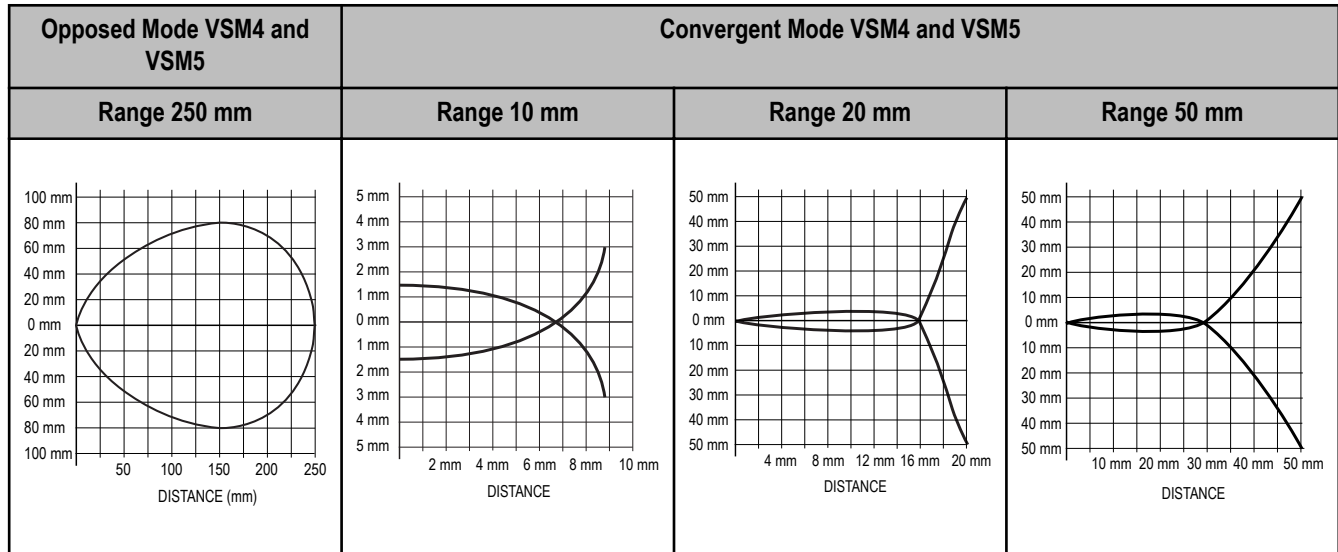
Flat-Pack Side-Looker



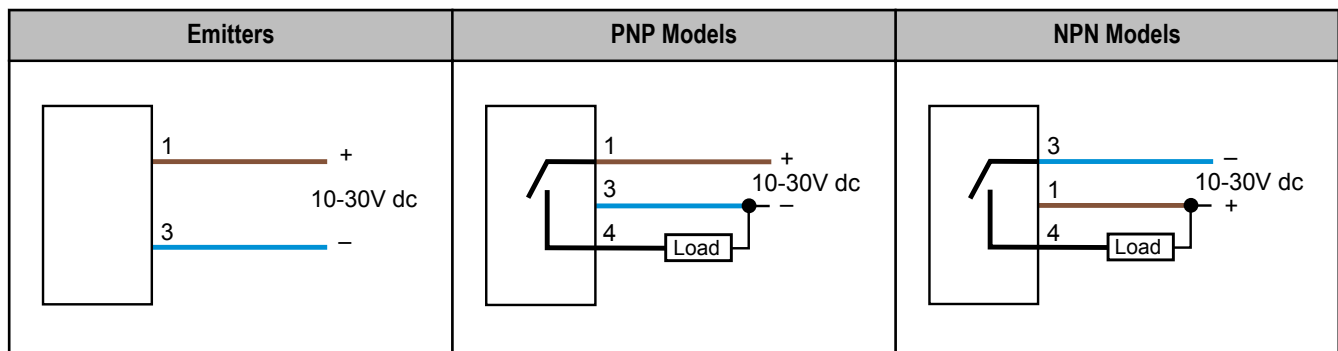
Excess Gain Curves



Beam Patterns



Wiring



Cordsets

Length	Threaded 3-Pin	
	Straight	Right-Angle
2.00 m	PKG3M-2	PKW3M-2
5.00 m	PKG3M-5	PKW3M-5
9.00 m	PKG3M-9	PKW3M-9

Brackets

SMBVSM4

