

PVL Parts Verification Array

Retroreflective Array Sensor Error Proofing and Light-Guided Assembly



- Rugged metal frame with 225 mm (8.9 in) or 500 mm (19.7 in) sensing length; 1.5 m (4.9 ft) sensing range using included retroreflective tape (up to 6 m (20 ft) range when used with multiple BRT-84X84A retroreflectors)
- Highly visible green pick arrow
- Red mis-pick arrow
- Flexible mounting options; rugged steel mounting brackets
- Fast response time—excellent for part detection applications



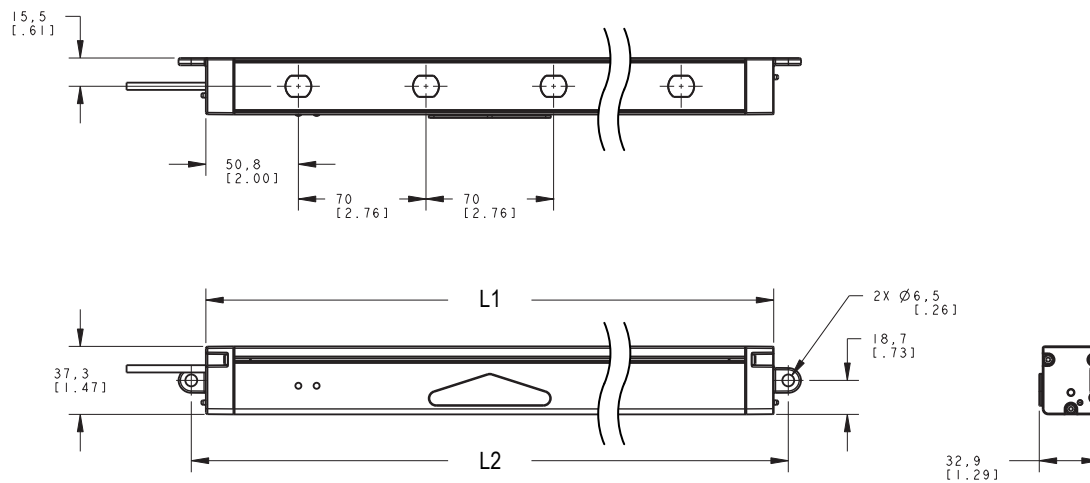
WARNING: Not To Be Used for Personnel Protection

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

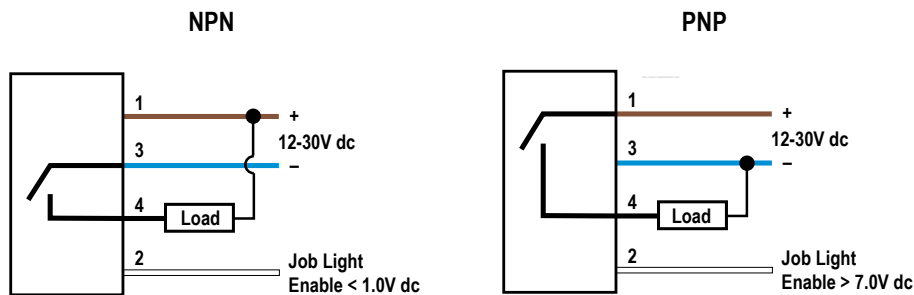
Model Number	Description	Cable	Output
PVL225P	225 mm (8.9 in) length, with up to 1.5 m (4.9 ft) separation between sensor and retroreflective tape (included)	2 m (6.5 ft), 4 wire unterminated cable	PNP
PVL225N			NPN
PVL225PQ		2 m (6.5 ft), cable terminated in 12 mm QD	PNP
PVL225NQ			NPN
PVL500P	500 mm (19.7 in) length with up to 1.5 m (4.9 ft) separation between sensor and retroreflective tape (included)	2 m (6.5 ft), 4 wire unterminated cable	PNP
PVL500N			NPN
PVL500PQ		2 m (6.5 ft), cable terminated in 12 mm QD	PNP
PVL500NQ			NPN

Dimensions



Model	L1	L2
PVL225	311.5 mm (12.26 in)	327.5 mm (12.89 in)
PVL500	592 mm (23.31 in)	608 mm (23.94 in)

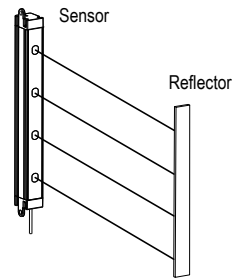
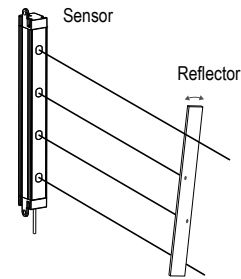
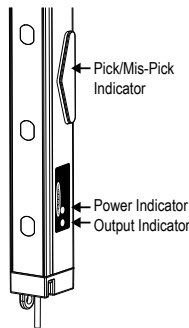
Wiring Diagram



NOTE: Pin 5 (center) is not used.

Installation

Multiple sensors located farther than the sensor's maximum range from one another are unlikely to cause crosstalk problems. However, when multiple sensors are mounted in a confined area, take care to avoid crosstalk between them. Make sure that the sensor's beams fall in the center of the reflector.

Correct Alignment**Incorrect Alignment****Status Indicators/Troubleshooting**

Indicator	Condition	Description
#1	Steady Yellow	Output is active
	OFF	Output is inactive
#2	Steady Green	Power is ON and system is OK
	OFF	Power is OFF

Specifications**Supply Voltage**

12 to 30V dc (10% maximum ripple)

Supply Current**PVL225:**

< 140 mA max current at 12V dc (exclusive of load)

< 70 mA max current at 30V dc (exclusive of load)

PVL500:

< 220 mA max current at 12V dc (exclusive of load)

< 100 mA max current at 30V dc (exclusive of load)

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Output Rating

Maximum Load: 150 mA

ON-state saturation voltage:

PNP: < 2V at 10 mA dc; < 2.5V at 150 mA dc

NPN: < 1.5V at 10 mA dc; < 2.0V at 150 mA dc

OFF-state leakage current: <10 μ A at 30V dc

Indicators

Job ("Pick") Indicator: Green

Mis-pick Indicator: Flashing Red

Green LED: Power ON/OFF

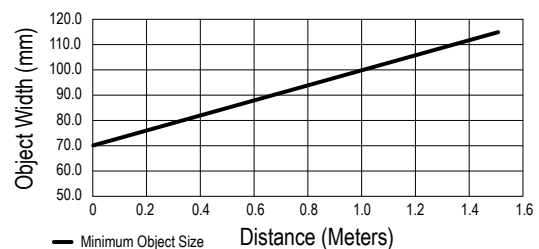
Yellow LED: Output ON/OFF

Output Response Time

Less than 2 milliseconds ON and OFF

Connections

2m (6.5 ft) PVC integral cable with unterminated, or 2m (6.5 ft) cable with 12 mm QD

Minimum Object Detection Size**Environmental Rating**

IP50

Operating Conditions

Temperature: 0° to +50° C (+32° to +122° F)

Humidity: 90% at 50° C max. relative humidity (non-condensing)

Storage: -40° to +70° C (-40° to +158° F)

Construction

Housing: aluminum anodized

Translucent dome: polycarbonate

Vibration and Mechanical Shock

All models meet Mil. Std. 202F requirements method 201A (vibration: 10 to 60 Hz max., double amplitude)

Beam Spacing

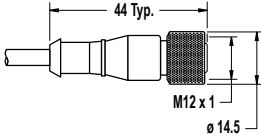
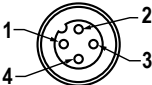
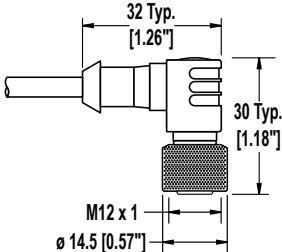
70 mm

PVL225: 4 beams**PVL500:** 8 beams**Sensing Range**

1.5 m (4.9 ft) with retroreflective tape

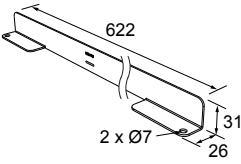
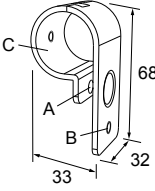
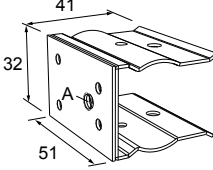
0.06 in. maximum acceleration 10G). Also meets IEC 947-5-2; 30G 11 ms duration, half sine wave.

Certifications**Quick-Disconnect (QD) Cordsets**

4-Pin Threaded M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout
MQDC-406	1.83 m (6 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black
MQDC-415	4.57 m (15 ft)			
MQDC-430	9.14 m (30 ft)			
MQDC-450	15.2 m (50 ft)			
MQDC-406RA	1.83 m (6 ft)	Right-Angle		
MQDC-415RA	4.57 m (15 ft)			
MQDC-430RA	9.14 m (30 ft)			
MQDC-450RA	15.2 m (50 ft)			

Mounting Brackets

SMBPVL1 - Right-angle bracket for mounting the pick-to-light array 7 mm mounting hole 14 gauge cold rolled steel A = ø 3, B = ø 7, C = ø 4.8	SMBPVL2-225 - Flat bracket for mounting reflector inside bin 7 mm mounting hole 14 gauge cold rolled steel - Includes retroreflective tape
SMBPVL2-500 - Flat bracket for mounting reflector inside bin 7 mm mounting hole 14 gauge cold rolled steel - Includes retroreflective tape	SMBPVL3-225 - Right-angle bracket for mounting reflector outside bin 7 mm mounting hole 14 gauge cold rolled steel - Includes retroreflective tape

SMBPVL3-500 • Right-angle bracket for mounting reflector outside bin • 7 mm mounting hole • 14 gauge cold rolled steel • Includes retroreflective tape 	SMBPVL4 • 28 mm tubular mount bracket for mounting outside bin • Clearance for M6 (1/4 in) hardware • Painted cold rolled steel  A = $\varnothing$ M6 $\times$ 1, B = $\varnothing$ M6 $\times$ 1, C = $\varnothing$ 28
SMBPVL5 • 28 mm tubular mount bracket for mounting inside bin • Clearance for M6 (1/4 in) hardware • Painted cold rolled steel  A = $\varnothing$ M6 $\times$ 1 ISO 6H	

Retroreflectors

Model	Reflectivity Factor	Range	Size
Replacement Tape BRT-THG-1-100	0.7	1.5 m (4.9 ft)	25 mm (1 in) wide 2.5 m (8.2 ft) long
Long Range Reflectors BRT-84X84A	2.0	6 m (19.7 ft)	84x84 mm

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