

PVL Parts Verification Array



Datasheet

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.

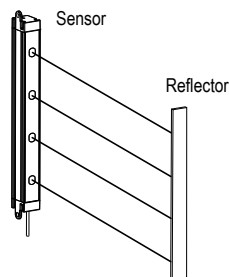
Models

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

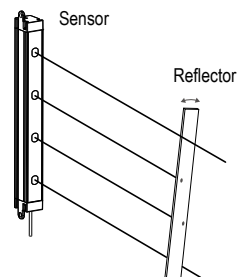
Installation

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.

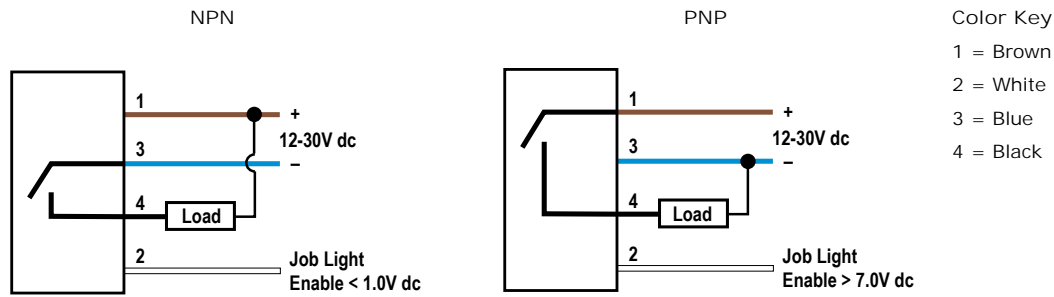
Correct Alignment



Incorrect Alignment

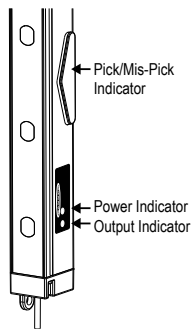


Wiring Diagram



NOTE: Pin 5 (center) is not used.

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 V dc to 30 V dc (10% maximum ripple)

Supply Current
PVL225:
< 140 mA max current at 12 V dc (exclusive of load)
< 70 mA max current at 30 V dc (exclusive of load)
PVL500:
< 220 mA max current at 12 V dc (exclusive of load)
< 100 mA max current at 30 V 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: < 2 V dc at 10 mA; < 2.5 V dc at 150 mA
NPN: < 1.5 V dc at 10 mA; < 2.0 V dc at 150 mA
OFF-state leakage current: < 10 µA at 30 V dc

Indicators
Job ("pick") indicator: Green
Mis-pick indicator: Flashing Red
Green LED: Power ON/OFF
Yellow LED: Output ON/OFF

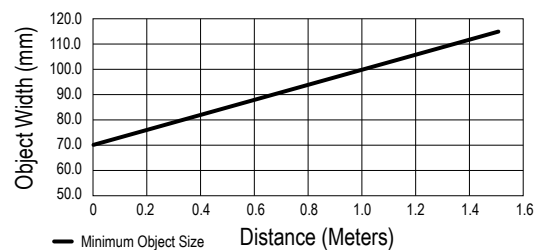
Output Response Time
Less than 2 milliseconds ON and OFF

Beam Spacing
70 mm
PVL225: 4 beams
PVL500: 8 beams

Sensing Range
1.5 m (4.9 ft) with retroreflective tape

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
IEC IP50

Operating Conditions
Temperature: 0 °C to +50 °C (+32 °F to +122 °F)
Humidity: 90% at 50 °C maximum relative humidity (non-condensing)
Storage: -40 °C to +70 °C (-40 °F to +158 °F)

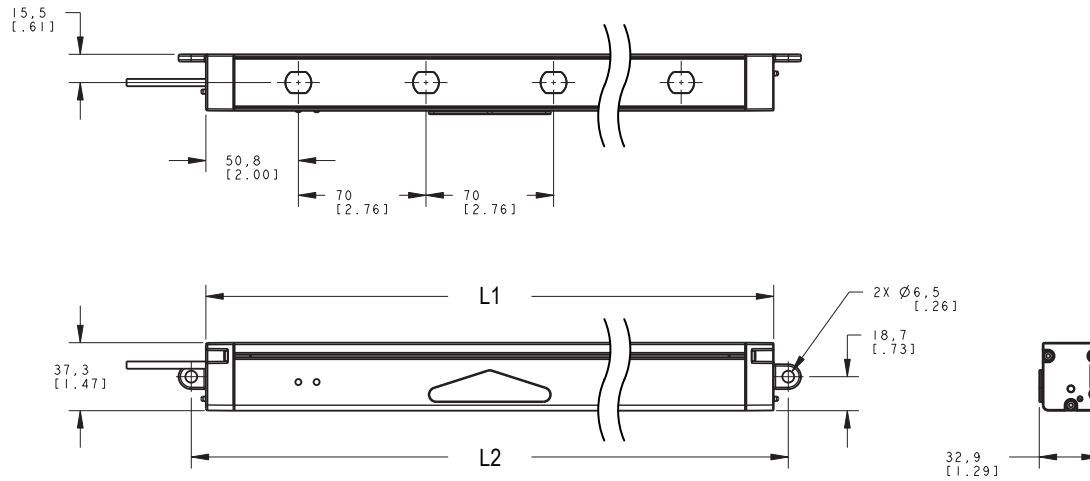
Construction
Housing: aluminum anodized
Translucent dome: polycarbonate

Vibration and Mechanical Shock
All models meet Mil. Std. 202F requirements method 201A (vibration: 10 Hz to 60 Hz max., double amplitude 0.06 in. maximum acceleration 10G). Also meets IEC 947-5-2: 30G 11 ms duration, half sine wave.

Certifications



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)

Accessories

Quick-Disconnect (QD) Cordsets

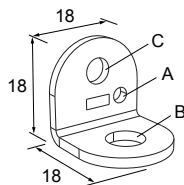
4-Pin Threaded M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	1.83 m (6 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDC-415	4.57 m (15 ft)			
MQDC-430	9.14 m (30 ft)			
MQDC-450	15.2 m (50 ft)			
MQDC-406RA	1.83 m (6 ft)	Right-Angle		
MQDC-415RA	4.57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

Mounting Brackets

SMBPVL1

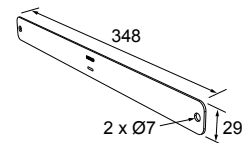
- Right-angle bracket for mounting the pick-to-light array
- 7 mm mounting hole
- 14 gauge cold rolled steel

A = \varnothing 3, B = \varnothing 7, C = \varnothing 4.8



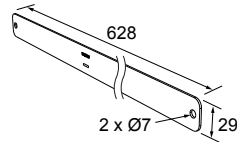
SMBPVL2-225

- Flat bracket for mounting reflector inside bin
- 7 mm mounting hole
- 14 gauge cold rolled steel
- Includes retroreflective tape



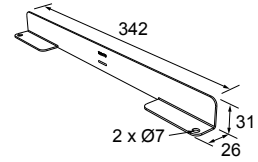
SMBPVL2-500

- Flat bracket for mounting reflector inside bin
- 7 mm mounting hole
- 14 gauge cold rolled steel
- Includes retroreflective tape



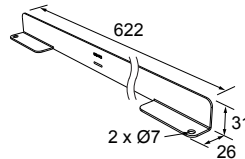
SMBPVL3-225

- Right-angle bracket for mounting reflector outside bin
- 7 mm mounting hole
- 14 gauge cold rolled steel
- Includes retroreflective tape



SMBPVL3-500

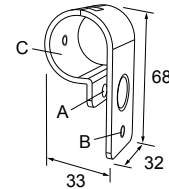
- Right-angle bracket for mounting reflector outside bin
- 7 mm mounting hole
- 14 gauge cold rolled steel
- Includes retroreflective tape



SMBPVL4

- 28 mm tubular mount bracket for mounting outside bin
- Clearance for M6 (1/4 in) hardware
- Painted cold rolled steel

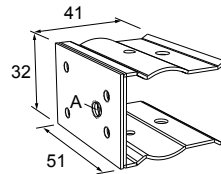
A = \varnothing M6 x 1, B = \varnothing M6 x 1, C = \varnothing 28



SMBPVL5

- 28 mm tubular mount bracket for mounting inside bin
- Clearance for M6 (1/4 in) hardware
- Painted cold rolled steel

A = \varnothing M6 x 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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