

# 45PVA Parts Verification Array

## Slim Type Picking Sensor



### Description

The Allen-Bradley 45PVA is a photoelectric Parts Verification Array designed for bin picking applications and object detection in the parts assembly industry. When used as part of a suitably configured bin-picking system, the 45PVA effectively prevents mispicks to enhance efficiency and minimize down time. It is also the ideal solution to address the “error proofing” initiatives prevalent in the automotive industry.

The 45PVA uses transmitted beam technology to create a light screen that can be spanned across bins at an assembly station. By mounting the separate emitter and receiver units on each side of a bin entry and wiring the receiver output into a controller programmed with the necessary logic, a virtually error-free bin-picking process can be achieved. ‘Job lights’ on the 45PVA will not only show the assembler the bins required to complete the current process, but will also indicate the correct picking sequence. In the event the assembler attempts to pick an incorrect part, a fault light on the 45PVA will illuminate to indicate the error; additional fault enunciation can be achieved via controller logic in conjunction with a tower light or audible alarm.

In addition to increasing efficiency and quality control by preventing faults in the bin-picking process, the 45PVA is instrumental in personnel stress reduction and the simplification of personnel training—especially in multi-lingual facilities.

### General Specifications

<b>Detection</b>	Transmitted-Beam
<b>Range</b>	2m (Max.)
<b>Detection Object</b>	φ 35 mm (Min.) Opaque Object
<b>Optical Axis Pitch</b>	25 mm
<b>Power Supply</b>	12 to 24VDC ± 10 %, Ripple 10 % (Max.)
<b>Output Mode</b>	NPN/PNP Output Selectable Rating: Current 50mA (30VDC) Max. Residual Voltage 2V or less
<b>Operation Mode</b>	Light-on/Dark-on Selectable
<b>Job Indicator Input</b>	Noncontact or Contact Input
<b>Light Source</b>	Infrared LED, Wave-length 880nm
<b>Indicator: Transmitter Receiver</b>	Power indicator (Green LED)/Job indicator (Green LED) Light status indicator (Green LED/Orange LED)/Dark indicator(Orange LED) Job indicator (Green LED)/Warning indicator (Red LED)
<b>Job Indicator</b>	Lights/Flickering Selectable/Lighting Speed Switch (Fast/Slow)
<b>Short Circuit Protection</b>	Built-in
<b>Cross Talk Elimination</b>	Built-in
<b>Material</b>	Enclosure: Aluminum, Lens: Polycarbonate, End plate: Resin
<b>Wiring</b>	4-Pin DC Micro Connection with 2m pigtail

### Features

- Robust metal enclosure with super slim 13mm profile
- Large highly-visible job indicator lights
- Optional Red fault light indicator to notify operator of incorrect component selection
- Dip switch selectable lighting operation for job lights
- NPN or PNP dip switch selectable output reduces inventory
- Two frequency dip switch selectable cross talk protection
- Four sizes available depending on size of a component rack (100mm (4in), 225mm (9in), 300mm (12in), 375mm (15in))

### General Information

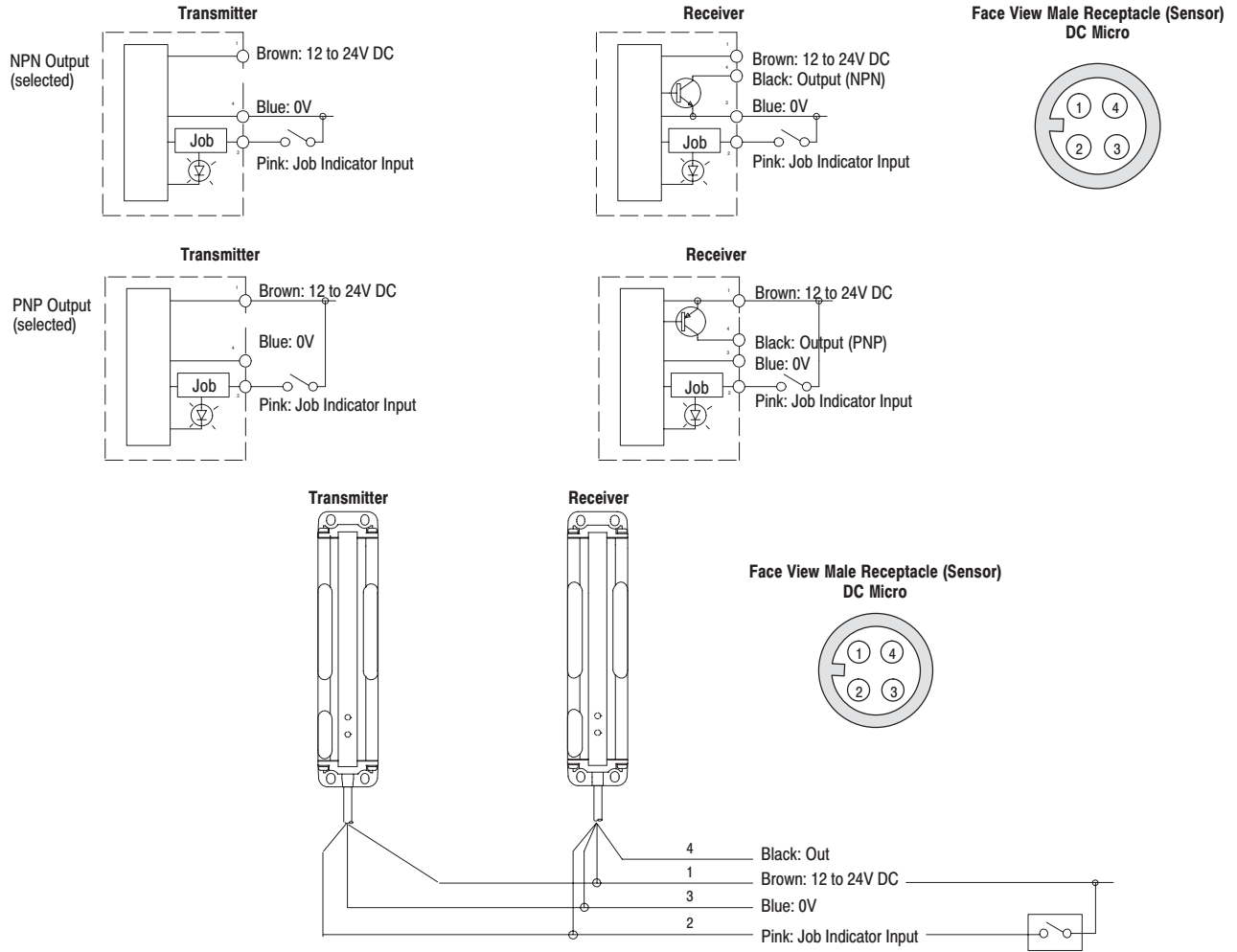
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### Accessories

### Input/Output Circuit and Wiring Diagrams

The NPN/PNP input of the job indicator and the NPN/PNP output of receiver are selected by mode switch.

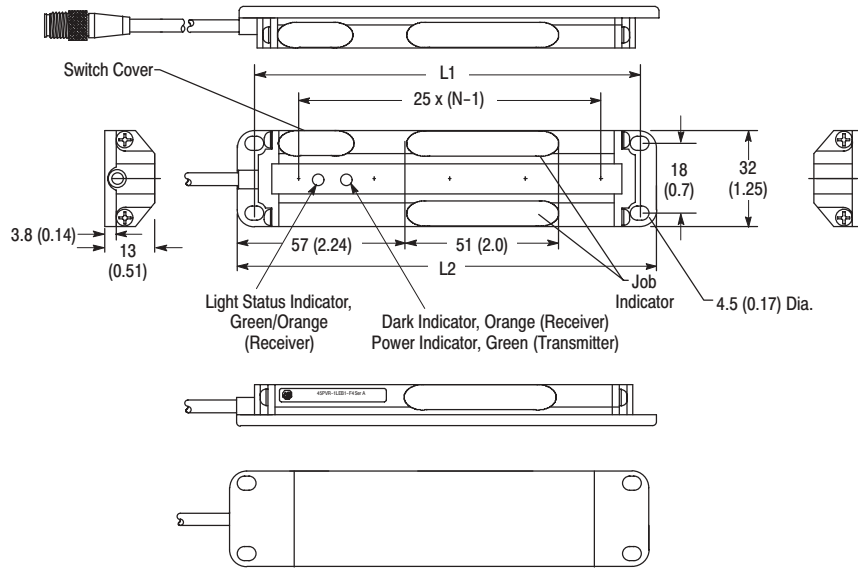


**Note:** Warning light requires no wiring. It is triggered using internal logic when the job light indicator is off (low) and the output is on (high).

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### Dimensions—mm (inches)



Catalog Number	Dimensions—mm (inches)		
	N	L1	L2
45PVA-1LEB1-F4	0.5 (0.196)	13 (5.118)	14 (5.51)
45PVA-1LEB2-F4	1 (0.393)	26.39 (10.39)	26.49 (10.43)
45PVA-1LEB3-F4	1.3 (0.512)	33 (12.992)	34 (13.386)
45PVA-1LEB4-F4	1.6 (0.630)	40.51 (15.95)	41.5 (16.34)

### Product Selection

No. of Optical Axis	Detection Width—mm (inches)	Current Consumption (Max)	Response Time		Catalog Number
			Standard	Interference Protection	
5	100 (3.93)	130mA	Light on: 35 ms Dark on: 25ms	Light on: 45 ms Dark on: 28ms	45PVA-1LEB1-F4
10	225 (8.85)	140mA	Light on: 68 ms Dark on: 42ms	Light on: 84 ms Dark on: 52ms	45PVA-1LEB2-F4
13	300 (11.8)	150mA	Light on: 70 ms Dark on: 42ms	Light on: 88 ms Dark on: 54ms	45PVA-1LEB3-F4
16	375 (14.7)	155mA	Light on: 94 ms Dark on: 58ms	Light on: 116 ms Dark on: 72ms	45PVA-1LEB4-F4