BPD-500 series

Low Voltage Daylight Sensor

TRANS

OVERVIEW

The BPD-500 series member of the TRANS family is a low voltage daylight sensor designed for automatic daylighting control. This sensor is able to continuously measure the ambient light level in the controlled area and respond with digital and analog outputs for automatic lighting control via an IR-TEC Power Pack or panel system.

This daylight sensor employs a cutting edge digital ambient light sensor (ALS) with an advanced algorithm to provide closed loop, dynamic ambient light level sensing capability. When the ambient light level is lower/higher than the setpoint for a period of time, the sensor will automatically engage/disengage its isolated dry contact output to turn the connected light ON/OFF. In addition to the digital output, the sensor also provides 0-10V analog output to report the ambient light level change of the controlled area in timely basis.

The innovative Accu-Set digital potentiometer makes ON/OFF threshold adjustment easier, faster and more accurate than conventional potentiometer. Like all sensors in the TRANS family, the BPD-500 series is also available in various mounting options. This feature offers a second-to-none design and installation flexibility for daylight harvesting and control applications in sustainable buildings.

FEATURES

- Digital data control ambient light sensor
- Human-eye matching spectral response
- Sensor operation LED indicator built-in
- 12~24VDC low voltage power operation
- Isolated dry contact for ON/OFF switching
- 0~10V present ambient light level output
- Accu-Set digital ON/OFF threshold settings
- Available with variety of mounting options

APPLICATION

The BPD-500 series daylight sensor can be used in various applications to meet the requirements for daylight harvesting in areas defined as daylight control zones.

- ☑ Educational
- ☑ Industrial/retail
- ☑ Public Buildings
- ☑ Commercial

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OPERATION

The BPD-500 series is a closed loop daylight sensor operated by 12-24VDC to provide digital and analog outputs for automatic daylighting control. The sensor can be applied to control lights in areas that receive sufficient daylight, thus the electric lights can be reduced or switched OFF via IR-TEC Power Pack or panel system. The isolated dry contact will be activated when the ambient light level is lower than the ON setpoint. The relay output will be disengaged when the ambient light level is higher than the OFF setpoint.

Mounting Options

The BPD-500SX series can be mounted into the ceiling or attached to a fixture. The mounting options are available by combining a specific mounting bracket from the chart below. The bracket will be shipped with the sensor when ordered with the respective code.

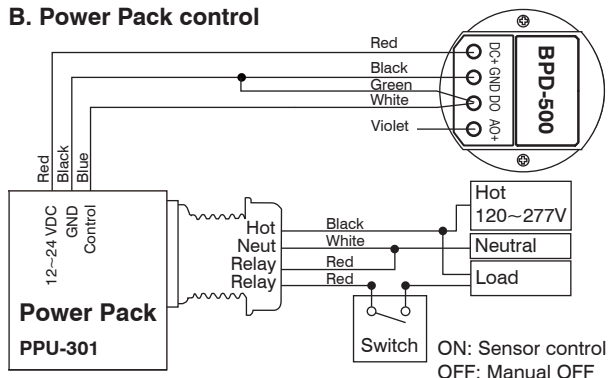| Code	Mounting Option	Mounting Bracket
F	Fixture Integrated	---
W*	Wet Location	---
E	Fixture External	EMB-500
S	Ceiling Surface	SMB-500
P*	IP-66 Fixture External	PMB-500
C	Junction Box	CMB-500
R	Ceiling Recess	RMB-500

*Available for IP-66 fixture integration

Wiring Diagram

A. Building Management System control
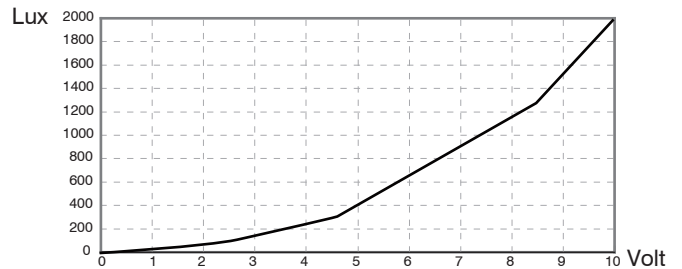

B. Power Pack control
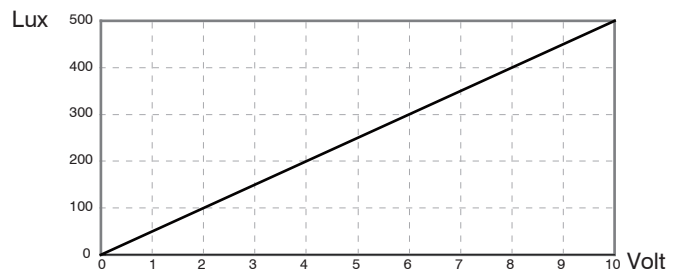

ON: Sensor control
OFF: Manual OFF
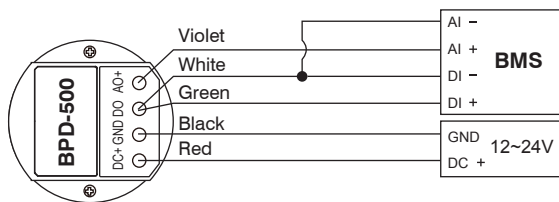
Output vs Ambient Light Level

The analog output of BPD-500 series will vary with ambient light level. The below charts indicate the output vs ambient light of different models.

BPD-500Sx   (0~2,000 Lux)

BPD-500Sx-L   (0~500 Lux)

The above charts are based on the test result result from manufacturer's lab. Actual performance may vary with different installation site.

SPECIFICATIONS

Power supply	12~24 VDC ± 5%
Photo sensor	Digital data control ambient light sensor
Current drain	15mA typical
Digital output (DO)	Isolated dry contact, max. 1A
Analog output (AO)	0-10V
Sensing range	BPD-500Sx: Approx. 0.2~200 fc (2~2,000 lux)
	BPD-500Sx-L: Approx. 0.2~50 fc (2~500 lux)
Mounting height	8~12 ft. (2.4~3.6m)
Field of view	Approx. 80°
Threshold setting	7-level Accu-Set digital potentiometer
Op. humidity	Max. 95% RH
Op. temperature	-40°F~131°F (-40°C~55°C)
Dimensions	Ø2.56"x H1.77" (Ø65 x H45mm)