

# TRANS

## BPD-512 series

Low Voltage SmartDIM Daylight Sensor

### INSTALLATION INSTRUCTIONS



#### ⚠️ WARNING & CAUTION

- Turn power OFF at circuit breaker before installing Power Pack or Sensors.
- Do Not Install To and/or Cover a Junction Box Having Class 1, 3 or Power and Lighting Circuits.
- Class 2 Device Wiring Only – Do Not Reclassify and Install as Class 1, 3 or Power and Lighting Wiring.
- Suitable wiring range 16-20 AWG solid copper wire only.

#### ⚠️ AVERTISSEMENT & PRUDENCE

- Coupez l'alimentation au disjoncteur avant d'installer Power Pack ou capteurs.
- Ne pas installer ou couvrir une boîte de jonction ayant les classes 1 et 3 ou circuits de puissance et d'éclairage.
- Classe 2 Câblage de périphériques Seulement - Ne PAS reclasser et installer Classe 1, 3 ou alimentation et circuits d'éclairage.
- Convient gamme de câblage 16-20 AWG en cuivre massif seulement.

### OVERVIEW

The BPD-512 series member of the TRANS family is a low voltage daylight sensor designed for automatic daylighting control. This sensor is capable of maintaining the ambient light level within a preset range via continuous dimming the connected lights based on the daylight available in the space. For the spaces with minor daylight, the sensor can also be used to provide energy efficient automatic dimming control, thus prevents energy waste from over lighting.

This daylight sensor employs a cutting edge digital ambient light sensor (ALS) with an advanced SmartDIM control algorithm developed by IR-TEC to provide a closed loop, continuous dimming lighting control for achieving the energy efficiency required by today's sustainable buildings. When daylighting level increases/decreases, the sensor will fade down/ramp up the connected lights in a smooth way to maintain the combined ambient light level within the preset range. The sensor will open its isolated dry contact to shut off the lights if ambient light level exceeds the shut-off threshold to maximize energy saving.

Like all sensors in the TRANS family, the BPD-512 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.

### INSTALLATION NOTES

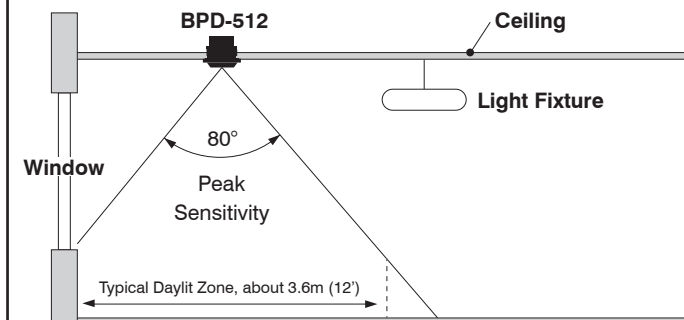
1. Care must be taken when selecting the mounting location of sensor. The ambient light level may vary greatly at different measure points in the room, depending on the location of the windows, lighting fixtures, wall colors, floor material, desk top, etc.
2. Note the path of shadows which may affect the sensor operation. Daylighting control may be problematic if part of controlled area is in shadows while other part has plentiful daylight.
3. The sensor is designed to measure ambient light level by looking down from ceiling height. Sensing performance will vary if sensor is mounted to look out from wall. Avoid installing the sensor to directly look into the skylight, the daylight level could easily exceed the maximum threshold of sensor.
4. The ambient light level on the ceiling can be much lower than that at the windows, corners of the room, or especially the workplace level. Therefore, it is important to set the optimum SmartDIM range based on the lighting level measured over the workplace.
5. Avoid placing the sensor at position that will receive strong light directly, such as within the lighting range of a pendant light with upward lamp.

### SELECTING A LOCATION

The BPD-512 series daylight sensor can be applied to control the lights of areas that receive sufficient daylight, thus the electric lights can be reduced or switched OFF based on the daylight available in the space. Ensure that the sensor will not receive strong light directly.

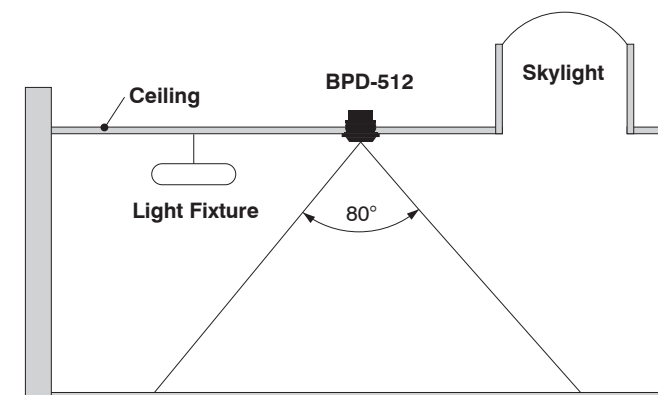
#### Side-lighting area

If the primary daylight source is a window, the daylight sensor is typically mounted between the window and the first row of fixtures.



#### Top-lighting area

If the primary daylight source is a skylight, the daylight sensor should be mounted on the ceiling between the skylight and fixtures, looking down at the floor.



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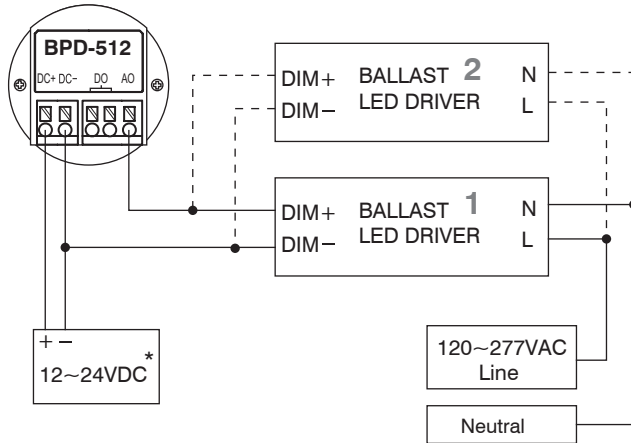
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## WIRING DIAGRAM

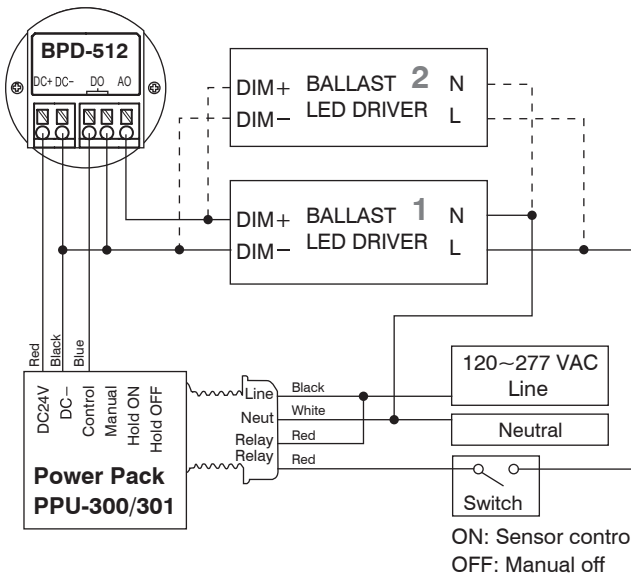
Following wiring diagrams are provided for typical control reference. Consult with a professional BMS engineer or an IR-TEC team member if a more complex wiring diagram is required.

### • Standalone Fixture Control



\* DC power can be supplied from the driver with auxiliary DC power output or other source.

### • Power Pack Control



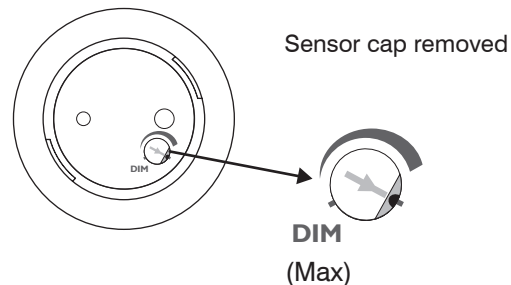
## INSTALLATION

The BPD-512 series can be mounted on the ceiling surface, mounted with a 4" octagonal junction box, recess mounted into the ceiling, or externally attached with a fixture via various mounting brackets. For more details of available mounting options, please refer to the mounting instructions attached.

## OPERATION & SETTING

After the sensor is installed and correct wiring connected, power can be applied to the sensor for operation. When power is first applied, the sensor will measure the ambient light level and regulate the lighting output based on the initial SmartDIM range.

If the factory set SmartDIM range does not meet the light level requirement, you may adjust the DIM potentiometer (after sensor cap removed) in clockwise/counterclockwise to increase/decrease the lighting output to achieve the desired light level. Replace the sensor cap after adjustment, and the sensor will measure and memorize the adjusted light level as the new range for SmartDIM control. The connected lighting will flash 2 times in about 1 minute after DIM adjustment to indicate the operation of new SmartDIM setting.



**NOTE:** Do NOT set the SmartDIM level at nighttime or while the space is having abundant daylight that is much higher than optimum light level.

## SPECIFICATIONS

Power supply	12~24 VDC $\pm$ 5%
Photo sensor	Digital data control ambient light sensor
Current drain	17/20 mA @ 24 VDC, standby/active
Digital output	Isolated dry contact, max. 1A
SmartDIM output	0-10V
SmartDIM level	Manual set
Field of view	Approx. 80°
Maximum control	50 drivers/ballasts, sink current <0.5mA ea.
Mounting height	2.4~3.6m (8~12 ft.)
Op. humidity	Max. 95% RH
Op. temperature	-40°C~55°C (-40°F~131°F)
Dimensions	Ø65 x H45mm (Ø2.56" x H1.77")

## WARRANTY

IR-TEC International Ltd. warrants this product to be free of defects in materials or workmanship for a period of five years from date of shipment. There are no obligations or liabilities on the part of IR-TEC International Ltd. for consequential damages arising out or in connection with the use or performance of this product or other indirect damages with respect to loss of property, revenue, profit, or cost of removal, installation or reinstallation.