

# INDUSTRIAL CONTROL

## PRESENSE PHOTOELECTRIC SENSORS

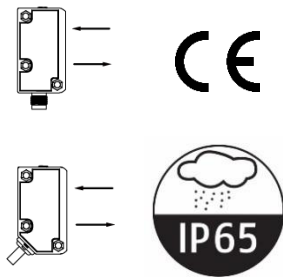
## VLP45 Series

### Diffuse sensor benefits

- Background suppression sensor
- Comfortable and fast teaching procedure
- Comfortable thanks to display LEDs visible from all sides
- Maximum flexibility thanks to uniform housing design
- Sealed housing for absolute impermeability
- Exact positioning and detection of small parts
- Long detection distance
- Excellent performance
- Transparent and dark colors detection
- Precise detection
- Detects objects with various shapes and surfaces even more reliably
- Visible or Infrared LED for all accuracy requirements
- Range of up to 1.2 m
- Response times < 1 ms
- Axial optics
- PNP\NPN Configurable output options
- 2 screws holes for easy installation
- Robust body



## Diffuse background suppression photoelectric proximity sensors series



### PRODUCT HIGHLIGHTS

- Extremely long distance, excellent performance
  - ✓ Diffuse reflection radial type: up to 1.2m
- 24v DC type
- Beautiful and solid shell
- Robust plastic housings (IP 65)
- Powerful complementary push-pull output(4-in-1)
- High device availability in industrial environments, using integrated IC manufacturing, strong anti-jamming performance.
- Range between -25 °C ... +55 °C

Optical data		Functions	
<b>Sensing distance</b>	See Selection Table	<b>Indicator LED, green</b>	Operating voltage indicator
<b>Type of light</b>	See Selection Table	<b>Indicator LED, yellow</b>	Switching output indicator
<b>Light spot size</b>	See Selection Table	<b>Sensitivity adjustment</b>	Via potentiometer
<b>Emitting element</b>	Red LED (peak emission wavelength 630nm, modulated) Infrared LED (peak emission wavelength 940 nm, modulated)	<b>Adjustment possibilities</b>	N.O./N.C. via control input (IN)
<b>Minimum sensing object</b>	• Diffuse type: Opaque, translucent or transparent object (note 1)	<b>Default settings</b>	Max. scanning distance and N.O.
Electrical data		Mechanical data	
<b>Operating voltage, +U<sub>B</sub></b>	10 ~30V/DC	<b>Dimensions</b>	See dimensional drawings
<b>No-load current, I<sub>0</sub></b>	≤ 30 mA	<b>Enclosure rating</b>	IP 65
<b>Output current, I<sub>e</sub></b>	≤ 100 mA	<b>Material, housing</b>	ABS
<b>Protective circuits</b>	Reverse-polarity protection, U <sub>B</sub> / short-circuit protection, 500V AC for one min. between all supply terminals connected together and enclosure	<b>Material, front screen</b>	PMMA
<b>Switching output, Q</b>	PNP/NPN	<b>Type of connection</b>	See Selection Table
<b>Output function</b>	N.O./N.C	<b>Ambient temperature: operation</b>	-25 ... +55 °C
<b>Switching frequency, f (ti/tp 1:1)</b>	≤ 1000 Hz	<b>Weight (plug device)</b>	Approx. 20 g
<b>Response time</b>	≤ 1 ms	<b>Weight (2M cable device)</b>	Approx. 60 g
<b>Control input: Potentiometer</b>	+ = NC - = NO	<b>Distance Control: Potentiometer</b>	0.....Distance
Environmental resistance		EMC	
<b>Population degree</b>	3 (industrial environment)	<b>Vibration resistance</b>	10~55Hz frequency,0.5mm amplitude in X,Y and Z directions for 1.5 hours each
<b>Protection</b>	IP65(IEC)	<b>Shock resistance</b>	294m/s acceleration (30G approx.) in X, Y and Z directions for three times each
<b>Temperature</b>	-25 ~+55°C(No dew condensation or icing allowed), Storage: -40 ~+70°C		
<b>Humidity</b>	50% RH (70°C)		
<b>Light intensity</b>	Incandescent light: less than 5,000Lux/Sunlight: less than 10,000Lux		

(1) With connected IP65 plug

(2) The default measure temperature conditions is +23 °C, when didn't specify measure condition.

(3) Detection range and objects of Retroreflective type sensor apply to TD-08 reflector.

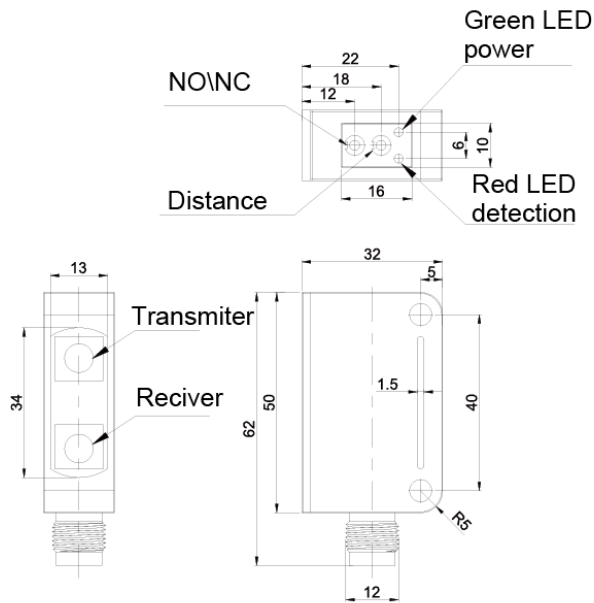
(4) Detection range and hysteresis of diffuse reflective type sensor apply to detection objects of gloss white paper (200×200mm).

(5) Please use actual sensor to validate testing effect, before testing transparent or translucent object.

Type	Sensing distance (S <sub>n</sub> )	Light source	Power supply	Switching output	Switching mode	Connectio type	Housing Material	Part Number
Diffuse type	0 ... 1.2 m	Red light	10 ~30V/DC	PNP/NPN	NO	Plastic plug, M12, 4-pin	Plastic	VLP45-D-NPAD-1.2CR
Diffuse type	0 ... 1.2 m	Red light	10 ~30V/DC	PNP/NPN	NO	Cable, 2 m, 4-wire	Plastic	VLP45-D-NPAD-1.2YR
Diffuse type	0 ... 1.2 m	Infrared light	10 ~30V/DC	PNP/NPN	NO	Plastic plug, M12, 4-pin	Plastic	VLP45-D-NPAD-1.2CI
Diffuse type	0 ... 1.2 m	Infrared light	10 ~30V/DC	PNP/NPN	NO	Cable, 2 m, 4-wire	Plastic	VLP45-D-NPAD-1.2YI

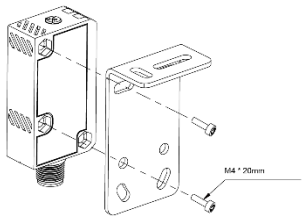
## Mechanical dimensions (mm)

Sensor with M12 connector and integrated cable type

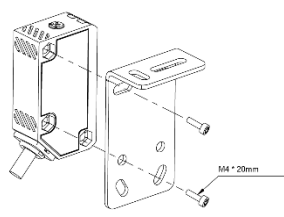


The tightening torque should be below 0.5 N·m.

Plug-in type

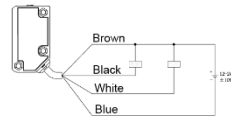


Lead type

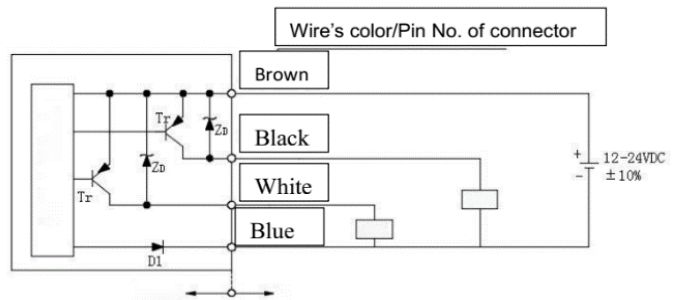
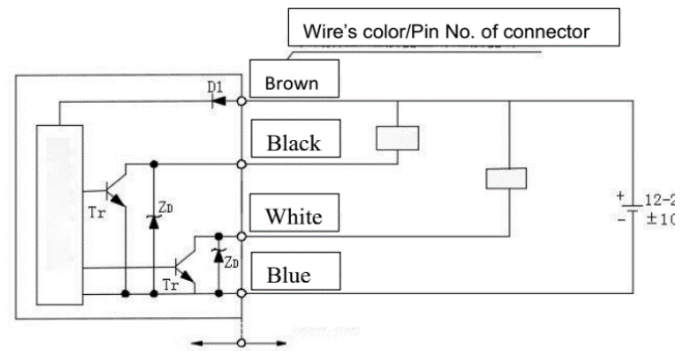
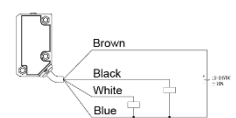


Wiring Diagram

NPN Output type





PNP Output type


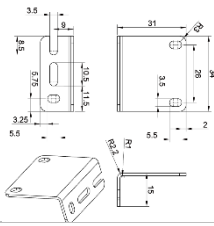
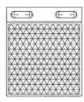
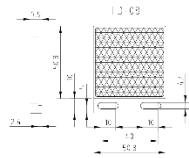

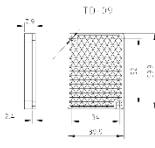
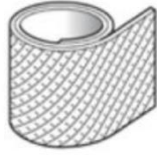


- D1: Power supply reverse protection diode
- D2: Output connection protection diode
- ZD: Zener diode for surge voltage absorption
- Tr: PNP \ NPN output transistor

## Options

Connect cable (2 cables are required for the Through-beam type)

Type	Model	Description		
Suitable for M12 plug-in connector type	Straight type 	V5-SM12-24-C2	Length: 2m	Clamping ring: $\phi$ 14 mm
		V5-SM12-24-C5	Length: 5m	
	L-shaped type 	V5-SM12-24L-C2	Length: 2m	Cable outer: $\phi$ 5.3 mm
		V5-SM12-24L-C5	Length: 5m	

Item	Model	Description
Sensor mounting bracket	VLP45-ZJ-1  VLP45-ZJ-2 	Material: Stainless steel
Reflector	TD-08  	50 x 50mm
	TD-09  	60 x 40mm
Reflective tape	FZ-12 	80 x 3000mm

# CONTACT US

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