

# Cylindrical Photoelectric Sensors

## BR Series



### Features

- Superior noise resistance with digital signal processing
- High-speed response time under 1 ms
- Built-in reverse power protection circuit and output short overcurrent protection circuit
- Suitable for sensing in narrow space (narrow beam type)
- External sensitivity adjustment
- Light ON / Dark ON mode selectable by control wire
- IP66 protection rating (IEC standard)

### Specifications

Model	BR□200-DDTN-□-□
Sensing type	Narrow beam reflective
Sensing distance	200 mm <sup>01)</sup>
Sensing target	Opaque materials, translucent materials
Hysteresis	≤ 20 % of sensing distance
Response time	≤ 1 ms
Light source	Infrared
Peak emission wavelength	850 nm
Sensitivity adjustment	YES (Adjuster)
Operation mode	Light ON mode - Dark ON mode selectable (Control wire)
Indicator	Operation indicator (red)
Approval	CE ENEC

01) Non-glossy white paper 100 × 100 mm

Unit weight (packaged)	Metal material model	Plastic material model
Cable type	≈ 120 g (≈ 160 g)	≈ 100 g (≈ 140 g)
Connector type	≈ 50 g (≈ 90 g)	≈ 30 g (≈ 70 g)
Power supply	12-24 VDC± ±10 % (ripple P-P: ≤ 10 %)	
Current consumption	≤ 45 mA	
Control output	NPN open collector output / PNP open collector output model	
Load voltage	≤ 30 VDC±	
Load current	≤ 200 mA	
Residual voltage	NPN: ≤ 1 VDC±, PNP: ≤ 2.5 VDC±	
Protection circuit	Reverse power protection circuit, output short overcurrent protection circuit	
Insulation resistance	≥ 20 MΩ (500 VDC± megger)	
Noise immunity	±240 VDC± the square wave noise (pulse width: 1 μs) by the noise simulator	
Dielectric strength	1,000 VAC~ 50/60 Hz for 1 min	
Vibration	1.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours	
Shock	500 m/s <sup>2</sup> (≈ 50 G) in each X, Y, Z direction for 3 times	
Ambient illuminance (receiver)	Sunlight: ≤ 11,000 lx, incandescent lamp: ≤ 3,000 lx	
Ambient temperature	-10 to 60 °C, storage: -25 to 75 °C (no freezing or condensation)	
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)	
Protection rating	IP66 (IEC standard)	
Connection	Cable type / Connector type model	
Cable spec.	Ø 5 mm, 4-wire, 2 m	
Wire spec.	AWG22 (0.08 mm, 60-core), insulator outer diameter: Ø 1.25 mm	
Connector	M12 4-pin plug type	
Material	Case: Brass, Ni-plate (metal material model) or PA Black (plastic material model), sensing part: PC lens	



View product detail