

## Cylindrical (Ø18mm) Type

### ■ Features

- Suitable for sensing in narrow space (narrow beam type)
- Superior noise resistance with digital signal processing
- High-speed response time under 1ms
- Power reverse polarity protection circuit, output short over current protection circuit
- External sensitivity adjustment
- Light ON, Dark ON switchable by control wire
- Protection structure IP66 (IEC standard)



Cable type

Connector Type

**⚠ Please read "Safety Considerations" in the instruction manual before using.**



### ■ Specifications

※ The model name with '-C' is connector type.

Model	NPN open collector output	BRP200-DDTN BRP200-DDTN-C	BR200-DDTN BR200-DDTN-C
	PNP open collector output	BRP200-DDTN-P BRP200-DDTN-C-P	BR200-DDTN-P BR200-DDTN-C-P
Case	Plastic		Metal
Sensing type	Narrow beam reflective type		
Sensing distance <sup>※1</sup>	200mm		
Sensing target	Opaque, translucent materials		
Hysteresis	Max. 20% at rated sensing distance		
Response time	Max. 1ms		
Power supply	12-24VDC $\pm$ 10% (ripple P-P: max. 10%)		
Current consumption	Max. 45mA		
Light source	Infrared LED (940nm)		
Sensitivity adjustment	Sensitivity adjuster		
Operation mode	Selectable Light ON or Dark ON by control wire (white)		
Control output	NPN or PNP open collector output ● Load voltage: max. 30VDC $\pm$ ● Residual voltage - NPN: max. 1VDC $\pm$ , PNP: max. 2.5VDC		● Load current: max. 200mA
Protection circuit	Power reverse polarity protection circuit, output short over current protection circuit		
Indicator	Operation indicator: red LED, power indicator: red LED		
Connection	Cable type, connector type		
Insulation resistance	Over 20M $\Omega$ (at 500VDC megger)		
Noise immunity	$\pm$ 240V the square wave noise (pulse width: 1 $\mu$ s) by the noise simulator		
Dielectric strength	1000VAC 50/60Hz for 1 minute		
Vibration	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours		
Shock	500m/s <sup>2</sup> (approx. 50G) in each X, Y, Z direction for 3 times		
Environment	Ambient illu.	Sunlight: max. 11,000lx, incandescent lamp: max. 3,000lx (receiver illumination)	
	Ambient temp.	-10 to 60°C, storage: -25 to 75°C	
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH	
Protection structure	IP66 (IEC standard)		
Material	Case: Polyamide (black), Sensing part: Polycarbonate Lens		Case: Brass, Ni-plate, Sensing part: Polycarbonate Lens
Cable	Cable type	Ø5mm, 4-wire, 2m (AWG22, core diameter: 0.08mm, number of cores: 60, insulator out diameter: Ø1.25mm)	
	Connector type	M12 connector	
Accessory	M18 fixing nut: 2, adjustment screwdriver		M18 fixing nut: 2, washer: 1, adjustment screwdriver
Approval	CE		
Weight <sup>※2</sup>	Cable type	Approx. 140g (approx. 100g)	Approx. 160g (approx. 120g)
	Connector type	Approx. 70g (approx. 30g)	Approx. 90g (approx. 50g)

※1: Non-glossy white paper 100×100mm.

※2: The weight includes packaging. The weight in parenthesis is for unit only.

※ Tightening torque for connector is 0.39 to 0.49N·m.

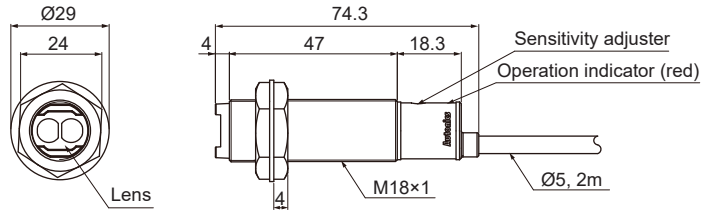
※ The temperature or humidity mentioned in Environment indicates a non freezing or condensation.

# BR Series

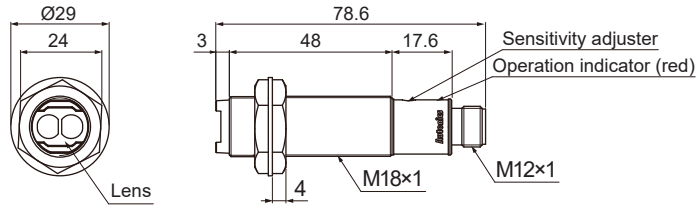
## ■ Dimensions

(unit: mm)

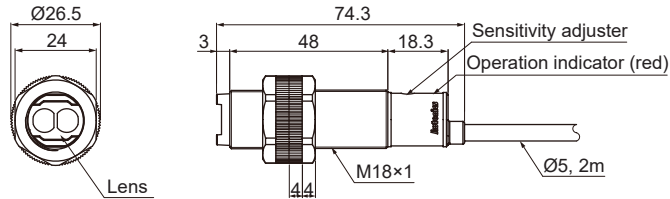
### • BR200-DDTN(-P)



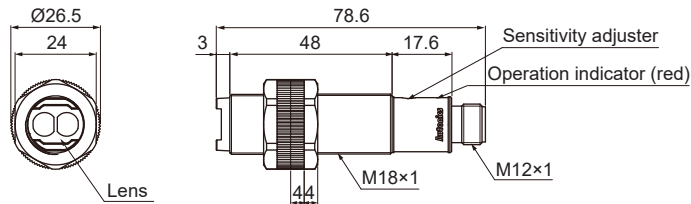
### • BR200-DDTN-C(-P)



### • BRP200-DDTN(-P)

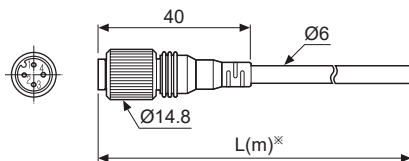


### • BRP200-DDTN-C(-P)

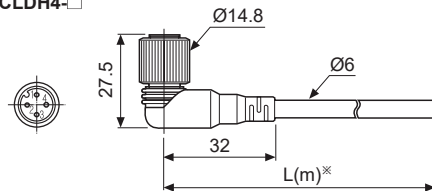


### • Connection cable (sold separately)

• CIDH4-□

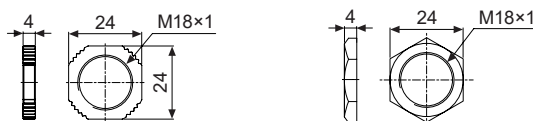


• CLDH4-□



※ Specification of connector cable:  $\text{Ø}6\text{mm}$ , 4-wire, 2m/3m/5m/7m  
 (AWG22, core diameter: 0.08mm, number of cores: 60, insulator out diameter:  $\text{Ø}1.65\text{mm}$ )  
 ※ Please refer to the connector cable section.

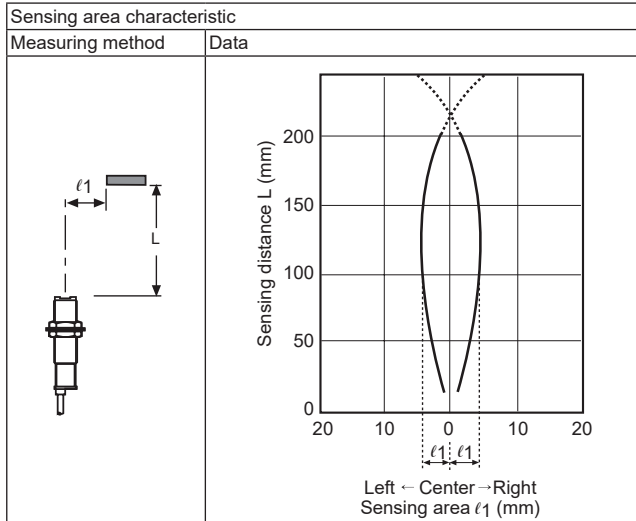
### • M18 fixing nut



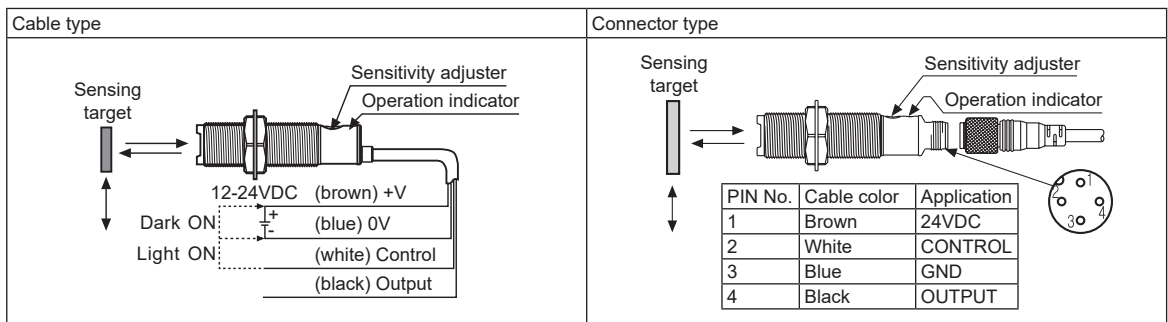
# Cylindrical Type

## Feature Data

●BR200-DDTN- □(-P)/BRP200-DDTN- □(-P)

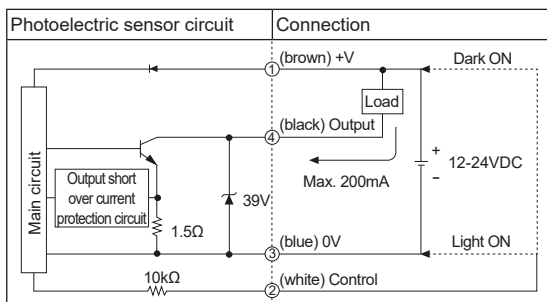


## Connections

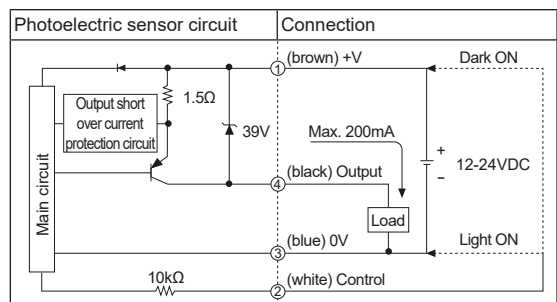


## Control Output Diagram

● NPN open collector output





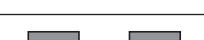





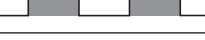

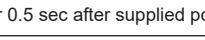
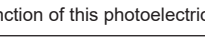
● PNP open collector output



※ Before using this unit, select Light ON/Dark ON with control wire. (light on: connect control wire 0V / dark on: connect control wire with +V)  
 ※ If short-circuit the control output terminal or supply current over the rated specification, normal control signal is not output due to the output short over current protection circuit.

# BR Series

## ■ Operation Mode

Operation mode	Light ON	Dark ON
Receiver operation	Received light 	Received light 
	Interrupted light 	Interrupted light 
Operation indicator (red LED)	ON 	ON 
	OFF 	OFF 
Transistor output	ON 	ON 
	OFF 	OFF 

※The transistor output will be held OFF for 0.5 sec after supplied power in order to prevent malfunction of this photoelectric sensor.

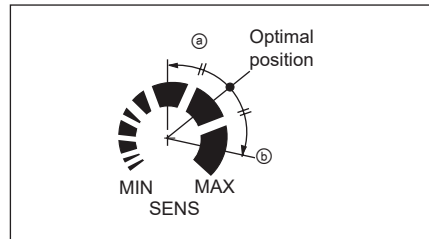
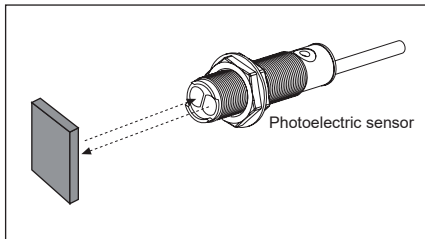
## ■ Installation and Sensitivity Adjustment

Install the sensor to the desired place and check the connections. Supply the power to the sensor and adjust the optical axis and the sensitivity as following.

When using photoelectric sensors closely over two units, it may result in malfunction due to mutual interference.

When installing the product, tighten the screw with a tightening torque of 0.39N·m for BRP and to 14.7N·m for BR.

1. The sensitivity should be adjusted depending on a sensing target or mounting place.
2. Set the target at a position to be detected by the beam, then turn the Sensitivity adjuster until position ㊦ where the operation indicator turns ON from min. position of the Sensitivity adjuster.
3. Take the target out of the sensing area, then turn the Sensitivity adjuster until position ㊧ where the operation indicator turns ON. If the indicator dose not turn ON, max. position is ㊨.
4. Set the Sensitivity adjuster at the center of two switching position ㊦, ㊧.



※Be sure that it can be different by size, surface and gloss of target.

### ООО “РусАвтоматизация”