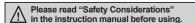
Cylindrical (Ø18mm) Type

Features

- Suitable for sensing in narrow space (narrow beam type)
- Superior noise resistance with digital signal processing
- High-speed response time under 1ms
- Power reverseA 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

SENSORS

MOTION DEVICES

SOFTWARE

(B) Fiber Optic Sensors

(C) LiDAR

Specifications

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

			X The model name with '-C' is connector type.	
Model	NPN open collector output	BRP200-DDTN	BR200-DDTN	
		BRP200-DDTN-C	BR200-DDTN-C	
	PNP open	BRP200-DDTN-P	BR200-DDTN-P	
	collectoroutput	BRP200-DDTN-C-P	BR200-DDTN-C-P	
Case		Plastic	Metal	
Sensing type		Narrow beam reflective type		
Sensing distance ^{*1}		200mm		
Sensing target		Opaque, translucent materials		
Hysteresis		Max. 20% at rated sensing distance		
Response time		Max. 1ms		
Power supply		12-24VDC±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== ■Load current: max. 200mA		
		Residual voltage - NPN: max. 1VDC=-, PNP: max. 2.5VDC Residual voltage - NPN: max. 1VDC=-, PNP: max. 2.5VDC		
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 20MΩ (at 500VDC megger)		
Noise immunity		±240V the square wave noise (pulse width: 1μs) 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/s² (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)		
		Case: Polyamide (black),	Case: Brass, Ni-plate,	
Material		Sensing part: Polycarbonate Lens	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		C€		
Weight**2	Cable type	Approx. 140g (approx. 100g)	Approx. 160g (approx. 120g)	
	Connector type	Approx. 70g (approx. 30g)	Approx. 90g (approx. 50g)	
×1: Non-alo	ssy white paper	100×100mm.		

^{※1:} Non-glossy white paper 100×100mm.

(D) Door/Area Sensors

(E) Vision Sensors

(F) Proximity Sensors

(G) Pressure Sensors

(H) Rotary Encoders

(I) Connectors/ Connector Cables/ Sensor Distribution

Boxes/ Sockets

Autonics A-101

 $[\]ensuremath{\mathbb{X}}$ 2: The weight includes packaging. The weight in parenthesis is for unit only.

 $[\]mbox{\ensuremath{\mbox{\textbf{X}}}}\mbox{Tightening torque for connector is 0.39 to 0.49N·m.}$

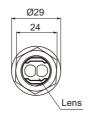
^{**}The temperature or humidity mentioned in Environment indicates a non freezing or condensation.

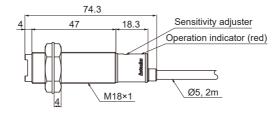
BR Series

Dimensions

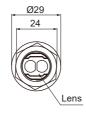
• BR200-DDTN(-P)

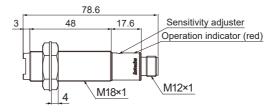




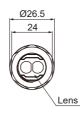


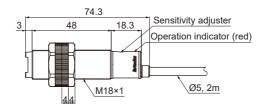
• BR200-DDTN-C(-P)



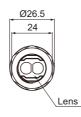


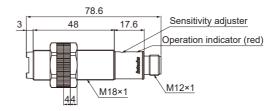
• BRP200-DDTN(-P)





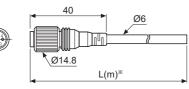
• BRP200-DDTN-C(-P)

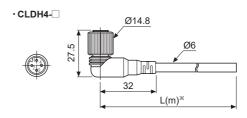




• Connection cable (sold separately)





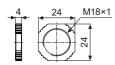


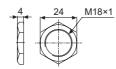
%Specifi cation of connector cable: Ø6mm, 4-wire, 2m/3m/5m/7m

(AWG22, core diameter: 0.08mm, number of cores: 60, insulator out diameter: Ø1.65mm)

XPlease refer to the connector cable section.

• M18 fixing nut

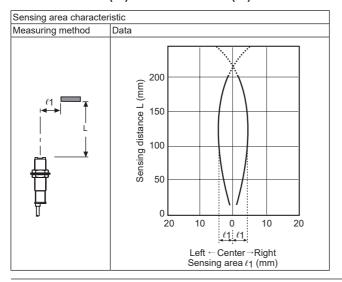




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■ Feature Data

•BR200-DDTN- □(-P)/BRP200-DDTN- □(-P)



SOFTWARE

SENSORS

CONTROLLERS

MOTION DEVICES

(B) Fiber Optic Sensors

(C) LiDAR

(D) Door/Area Sensors

(E) Vision Sensors

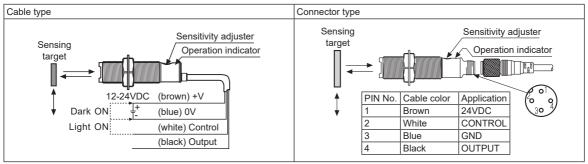
> (F) Proximity Sensors

(G) Pressure Sensors

(H) Rotary Encoders

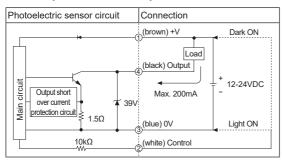
(I) Connectors/ Connector Cables/ Sensor Distribution Boxes/ Sockets

Connections

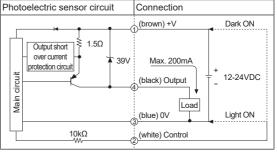


■ Control Output Diagram

• 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 rateda specification, normal control signal is not output due to the output short over current protection circuit.

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Operation Mode

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

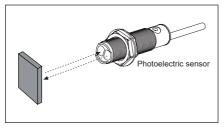
**The transistor output will be held OFF for 0.5 sec after supplied power in order to prevent malfunction of this photoelectric sensor.

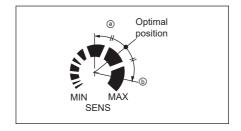
■ Installation and Sensitivity Adjustment

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 (a) 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 (a) where the operation indicator turns ON. If the indicator dose not turn ON, max. position is (a).
- 4. Set the Sensitivity adjuster at the center of two switching position (a), (b).





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

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