

Potentiometer type

**BRF, BIF** series

## Easy sensitivity adjustments without the use of tools

- | Easy to turn sensitivity adjustment potentiometer
- | Both standard and water detection types are available

Related products

High-speed digital

**D3RF**  
● P.110



Fiber unit

**NF**  
● P.28



Amplifier separate type

**DS**  
● P.280



Detection of chemicals in transparent bottles



Detection of adhesives



### Selection table

Type	Shape	Light source	Model (Models in parentheses are connector types)	
			NPN type	PNP type
Standard		Red LED	<b>BRF-N</b> (BRF-CN)	<b>BRF-P</b> (BRF-CP)
Water detection		Infrared LED	<b>BIF-WN</b> (BIF-CWN)	<b>BIF-WP</b> (BIF-CWP)

● For the connector type, please purchase an optional JCN series connector cable.

### Options/Accessories

Connector cable

Straight



**JCN-S**

Cable length: 2 m

**JCN-5S**

Cable length: 5 m

**JCN-10S**

Cable length: 10 m

L-shaped



**JCN-L**

Cable length: 2 m

**JCN-5L**

Cable length: 5 m

**JCN-10L**

Cable length: 10 m

End plate



**BEF-EB01-W190**

(2 pieces)

## Variation

Both standard type and water detection type amplifiers are available to meet various applications. Cable types and connector types are available for both.

**Standard fiber sensors:**  
**BRF-N, BRF-CN**



Optimal long range detection

**Fiber sensors which can detect water BIF-WN, BIF-CWN**

Employs an LED (wavelength: 1.45 μm) for the light source that are absorbed by water. Detection of water is made possible using water detection amplifier BIF-WN and the specialized fiber unit shown below.

**Through-beam type fiber units NF-TW01 (P.97)**  
Sensing distance max. 100 mm



Detection of chemicals in transparent bottles

**Diffuse type fiber units NF-DW01 (P.97)**  
Sensing distance max. 30 mm



Detection of adhesives

## 10-turn potentiometer for sensitivity adjustment that can be turned using fingers

Features a 10-turn potentiometer for sensitivity adjustments that enables adjustments to be made easily, even when fine adjustments are necessary. Also, because it can be turned by fingers, there is no need to concern about screw threads will become damaged by screwdrivers, causing sensitivity adjustments to no longer be possible.



## Large indicators

Equipped with large indicators to enable easy confirmation of sensor operation status, even from far away.



Output indicator (orange)

Stability indicator (green)

## Low cost

A low cost option from Optex FA.

## Highly water resistant: IP66

Cleared the IP66 requirements for fiber-type amplifiers. Expands the possibilities in which sensors can be used in wet environments.

Photoelectric Sensors

Specialized Photoelectric Sensors

Laser Displacement Sensors

Fiber Amplifiers

D3RF, D3IF

UC1-CL11

D2RF

BRF, BIF

JRF

## Specifications

Type		Standard type	Water detection type	
Model	NPN	Cable type	<b>BRF-N</b>	<b>BIF-WN</b>
		Connector type	<b>BRF-CN</b>	<b>BIF-CWN</b>
	PNP	Cable type	<b>BRF-P</b>	<b>BIF-WP</b>
		Connector type	<b>BRF-CP</b>	<b>BIF-CWP</b>
Light source		Red LED	infrared LED (1.45 μm)	
Response time		250 μs	1 ms	
Distance adjustment		10-turn potentiometer		
Indicators		Output indicator (orange LED), stable indicator (green LED)		
Control output		NPN/PNP type open collector Max. 100 mA/30 VDC		
Timer function		OFF delay 40 ms fixed (can be released)		
Output mode		Light ON / Dark ON selectable		
Connection type		Cable type: Cable length: 2 m, ø3.8 mm / Connector type: M8, 4-pin		
Insulation resistance		20 MΩ or more (with 500 VDC)		
Rating	Supply voltage	10 to 30 VDC, including 10% ripple (p-p)		
	Current consumption	25 mA or less (with 12 VDC)		
Applicable regulations		EMC directive (2004/108/EC)		
Applicable standards		EN 60947-5-2		
Company standards		Noise resistance: Feilen Level 3 cleared		
Environmental resistance	Ambient temperature/humidity	-25 to +55°C (no freezing) / 35 to 85% RH (no condensation)		
	Ambient illuminance	Sunlight: 10,000 lx Incandescent lamp: 3,000 lx		
	Vibration resistance	10 to 55 Hz; double amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions		
	Shock resistance	Approx. 50 G (500 m/s <sup>2</sup> ), 3 times in each of the X, Y, and Z directions		
	Degree of protection	IEC standard, IP66		
Material		Housing: PBT cover: Polycarbonate		
Weight without cable		Cable type: Approx. 20 g / Connector type: Approx. 20 g		
Included accessories		Mounting bracket		

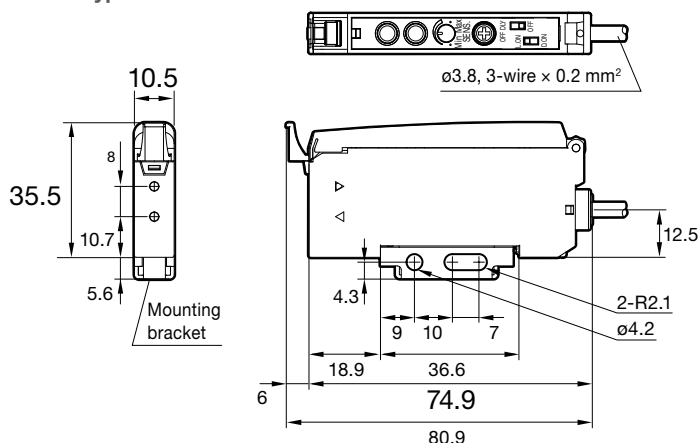
● Specifications are subject to change without prior notice for product improvement purposes.

## Dimensions

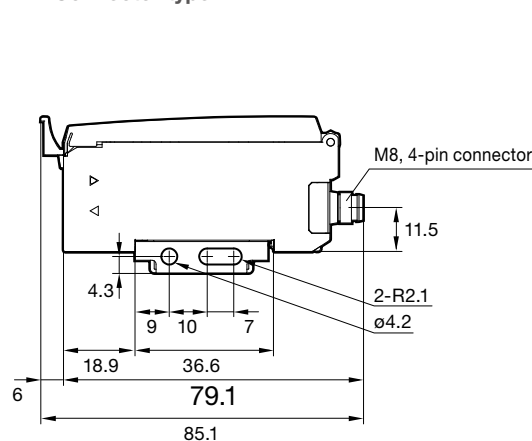
### Fiber amplifier

(Unit: mm)

#### ■ Cable type



#### ■ Connector type

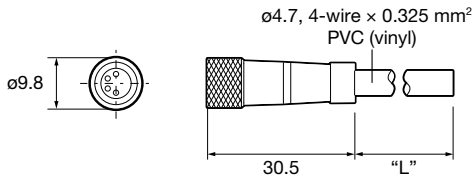


## Dimensions

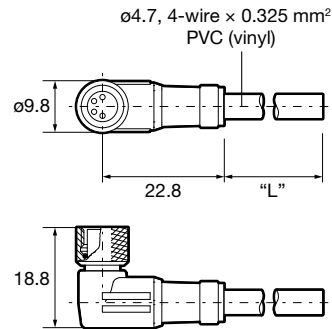
### Connector cable (optional)

(Unit: mm)

#### ■ JCN-S, JCN-5S, JCN-10S

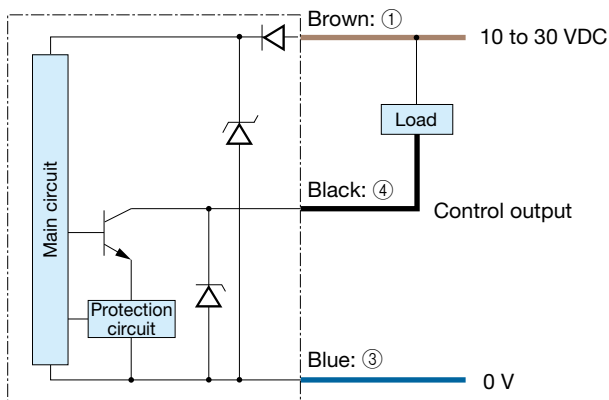


#### ■ JCN-L, JCN-5L, JCN-10L

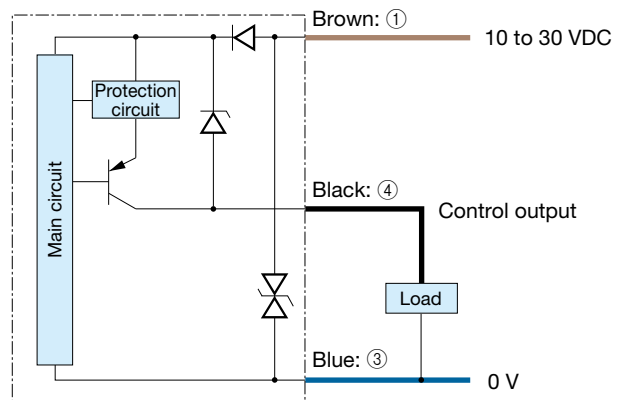


## Output circuit diagram

#### ■ NPN output type



#### ■ PNP output type



#### ■ Connector type

(Pin configuration) Sensor side Connector cable side



- ① 10 to 30 VDC
- ② —
- ③ 0 V
- ④ Control output

#### Connecting

- ① to ④ are connector pin No.

#### Notes

- When using a switching regulator for the power supply, be sure to ground the frame ground terminal.
- Because wiring sensor wires with high-voltage wires or power supply wires can result in malfunctions due to noise, which can cause damage, make sure to wire separately.
- Avoid using the transient state while the power is on (approx. 100 ms).
- The connector direction is fixed as the drawing below when you use L-shaped connector cable. Be aware that rotation is not possible.

