Potentiometer type

JRF series

Water resistant specification, with light axis adjustments that can be checked at a glance

- **Degree of protection on IP66**
- **With an emitted-light color change function to enable easier light axis adjustments**

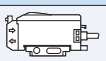
Related products

High-speed digital **D3RF** ● P.110

Low cost type **BRF** ● P.130

Amplifier separate type **DS** ● P.280

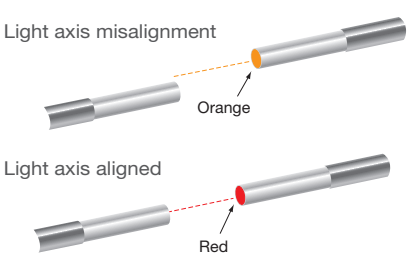
Selection table

Connection type	Shape	Distance adjustment	Model	
			NPN type	PNP type
Cable type		Potentiometer type	**JRF-N**	**JRF-P**
Connector type			**JRF-NC**	**JRF-PC**

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

With an emitted-light color change function to enable easier light axis adjustments

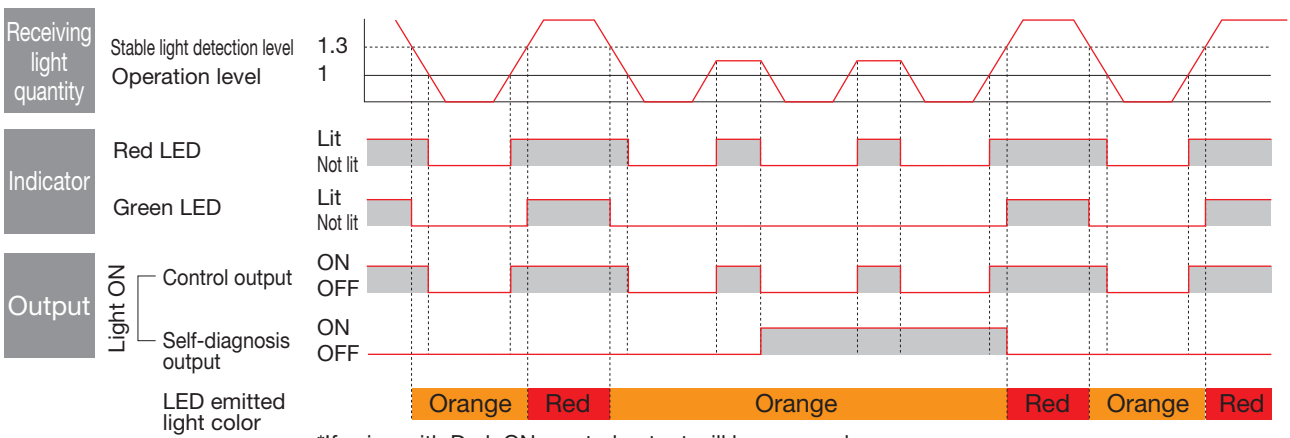
Equipped with an emitted-light color change function that changes the color of the light emitted from the fiber depending on the amount of light received.
Red is emitted when light detection is stable, while orange is emitted when light is not detected or when light detection is unstable. This enables light axis adjustments to be made without having to check the amplifier indicator.



Degree of protection on IP66

Water resistant specifications have cleared the IP66 requirements for fiber-type amplifiers. Expands the possibilities in which sensors can be used in wet and dusty environments.

Operating mode



*If using with Dark ON, control output will be reversed.

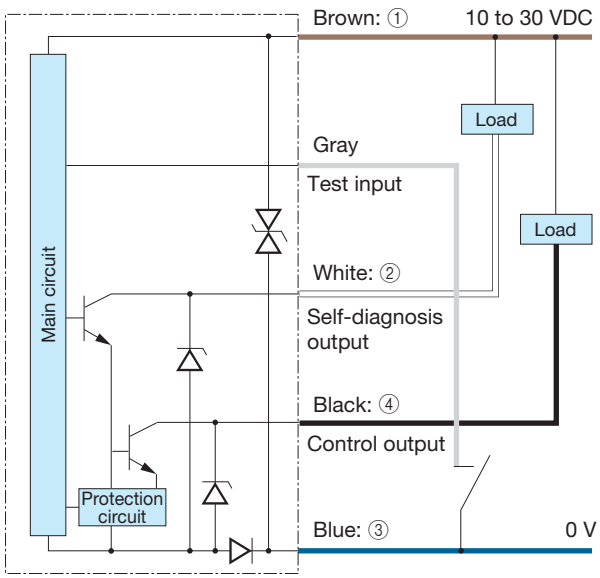
Specifications

Type		Cable type	Connector type
Model	NPN	**JRF-N**	**JRF-NC**
	PNP	**JRF-P**	**JRF-PC**
Light source		Red LED (660 nm)	
Response time		350 µs or less	
Distance adjustment		4-turn endless potentiometer (with indicator)	
Indicators		Light detection indicator (red LED), stability indicator (green LED)	
Timer function		OFF delay timer 5 to 100 ms (variable)	
Control output		NPN/PNP type open collector Max. 100 mA/30 VDC	
Self-diagnosis output		NPN/PNP type open collector Max. 100 mA/30 VDC	
Test input		Equipped	—
Output mode		Light ON / Dark ON selectable	
Connection type		Cable type: Cable length: 2 m, ø4.2 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	40 mA or less	
Applicable regulations		EMC directive (2004/108/EC)	
Applicable standards		EN 60947-5-2	
Company standards		Noise resistance: Feilen Level 4 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^2), 3 times in each of the X, Y, and Z directions	
	Degree of protection/materials	IEC regulation IP66 housing: ABS cover: PC (polycarbonate)	
Included accessories		Mounting bracket: BEF-WLL160	

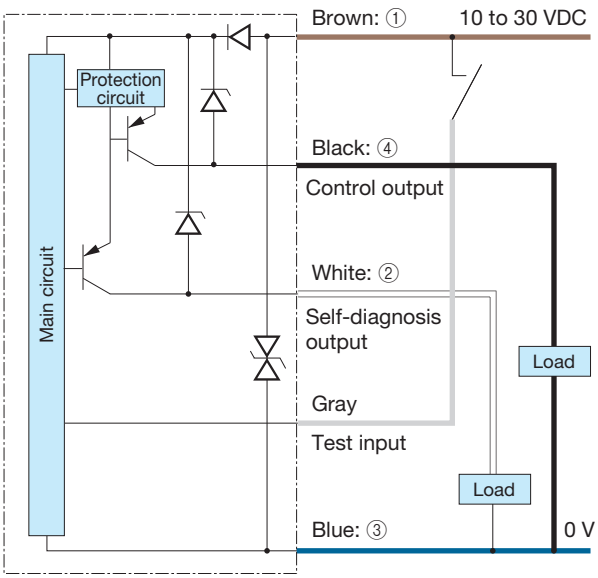
● Specifications are subject to change without prior notice for product improvement purposes.

I/O circuit diagram

NPN output type



PNP output type



Connector type

(Pin configuration) Sensor side Connector cable side

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

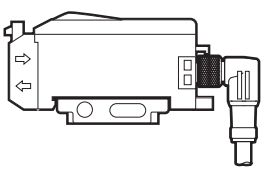
*The connector type is not equipped with a Test input.

Connecting

- When not used for self-diagnosis output or Test input, cut the lead wire and wrap it individually with insulating tape, and do not connect it to any other terminal.
- 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.

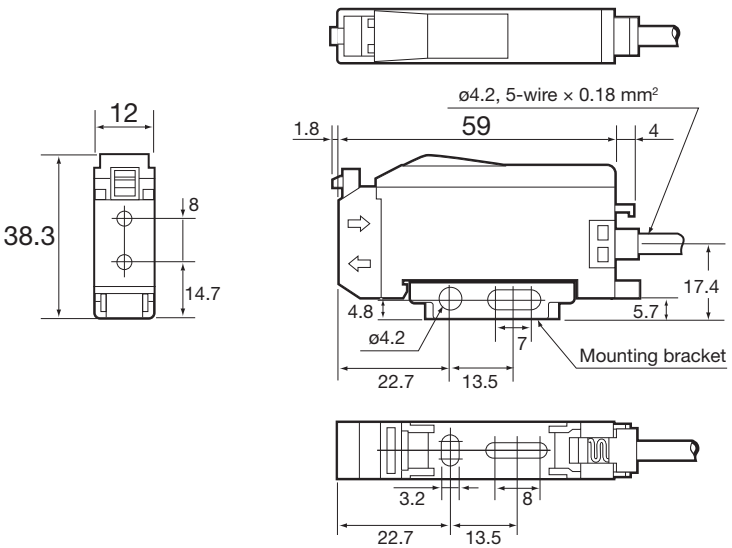


Dimensions

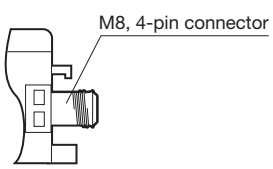
Fiber amplifier

(Unit: mm)

Cable type

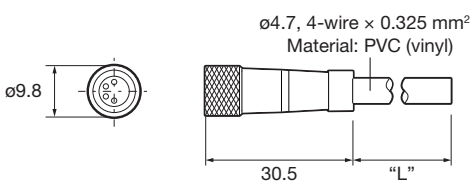


Connector type



Connector cable (optional)

JCN-S, JCN-5S, JCN-10S



JCN-L, JCN-5L, JCN-10L