

# BF3RX

## High accuracy fiber optic amplifier with twin adjuster

### ■ Features

- Convenient DIN rail mounting type
- High speed response : Max. 1ms
- Able to adjust sensitivity with high accuracy by dual adjuster
- Selectable Light ON/Dark ON mode by control wire
- Reverse power polarity and short-circuit (Overcurrent) protection circuit
- Able to use for explosion proof (Fiber part)
- Adjustable length with free cut type fiber optic cable



**⚠ Please read "Caution for your safety" in operation manual before using.**

### ■ Specifications

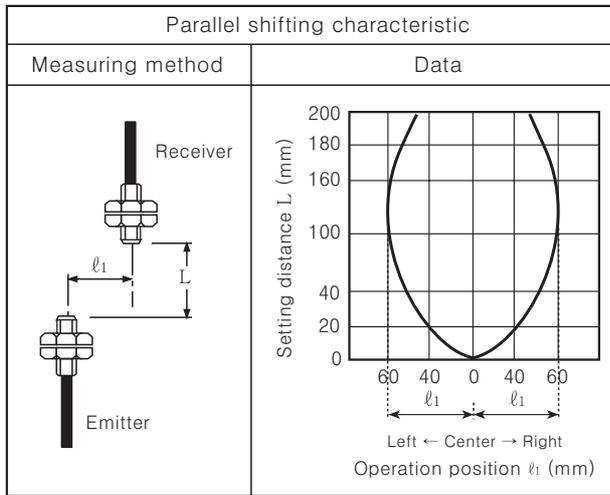
Model	BF3RX	BF3RX-P
Response time	Max. 1ms	
Power supply	12-24VDC $\pm 10\%$ (Ripple P-P:Max. 10%)	
Current consumption	Max. 40mA	
Light source	Red LED (Modulated)	
Sensitivity adjustment	VR (Dual adjustment : Coarse adjustment, Fine adjustment)	
Operation mode	Selectable Light ON/Dark ON by control wire	
Control output	<ul style="list-style-type: none"> <li>● NPN open collector output <math>\Rightarrow</math></li> <li>Load voltage : Max. 30VDC,</li> <li>Load current : Max. DC200mA,</li> <li>Residual voltage : Max. 1V</li> </ul>	<ul style="list-style-type: none"> <li>● PNP open collector output <math>\Rightarrow</math></li> <li>Output voltage : Min. (Power supply-2.5)V</li> <li>Load current : Max. DC200mA</li> </ul>
Protection circuit	Reverse power polarity, Output short-circuit (Overcurrent) protection circuit	
Indication	Operation indicator : Red LED	
Connection	Outgoing cable (2m)	
Insulation resistance	Min. 20M $\Omega$ (at 500VDC mega)	
Noise strength	$\pm 240V$ the square wave noise (pulse width:1 $\mu s$ ) by the noise simulator	
Dielectric strength	1,000VAC 50/60Hz for 1minute	
Vibration	1.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours	
Shock	500m/s <sup>2</sup> (50G) in X, Y, Z directions for 3 times	
Ambient illumination	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx	
Ambient temperature	-10 ~ +50 $^{\circ}C$ (at non-freezing status), Storage : -25 ~ +70 $^{\circ}C$	
Ambient humidity	35 ~ 85%RH, Storage : 35 ~ 85%RH	
Material	Case : ABS	
Cable	4P, $\phi$ 5mm, Length : 2m	
Unit weight	Approx. 90g	

# Fiber Optic Amplifier

## Feature data

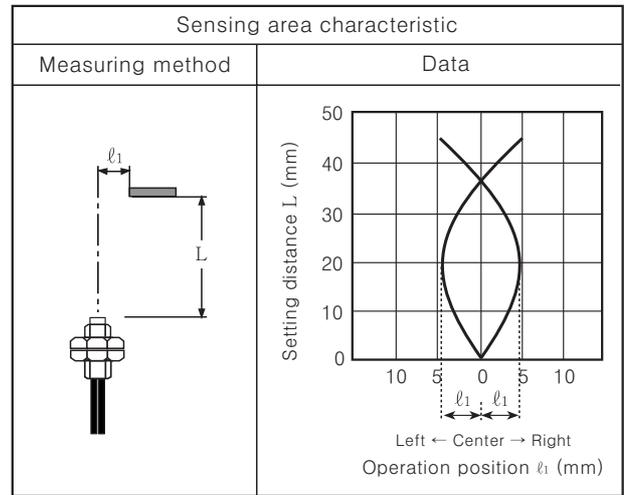
### Transmitted beam

Measurement : BF3RX + FT-420-10



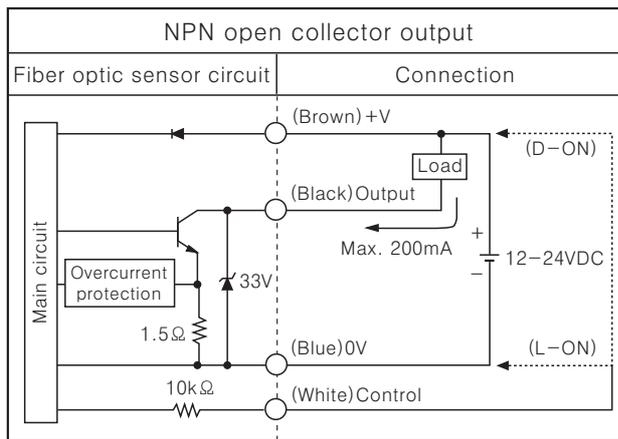
### Diffuse reflective

Measurement : BF3RX + FD-620-10

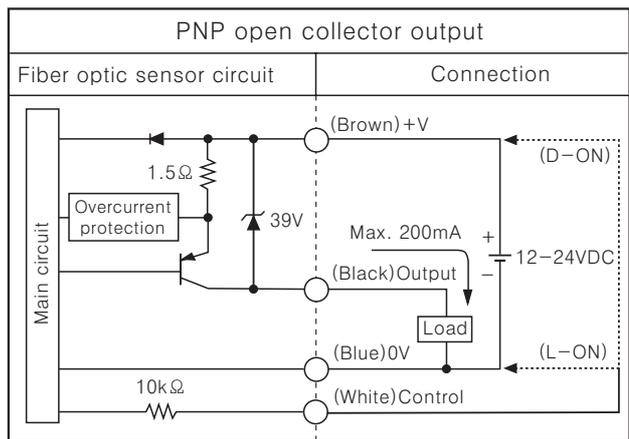


## Control output diagram

### BF3RX

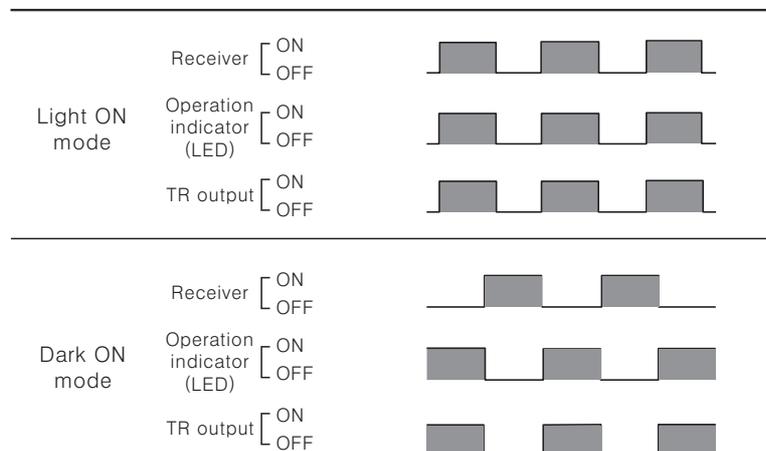


### BF3RX-P



※When select Dark ON or Light ON, please use control wire(White) [ Light ON : Connect control wire to 0V  
Dark ON : Connect control wire to +V

## Operation mode



(A)  
Counter

(B)  
Timer

(C)  
Temp. controller

(D)  
Power controller

(E)  
Panel meter

(F)  
Tacho/ Speed/ Pulse meter

(G)  
Display unit

(H)  
Sensor controller

(I)  
Switching power supply

(J)  
Proximity sensor

(K)  
Photo electric sensor

(L)  
Pressure sensor

(M)  
Rotary encoder

(N)  
Stepping motor & Driver & Controller

(O)  
Graphic panel

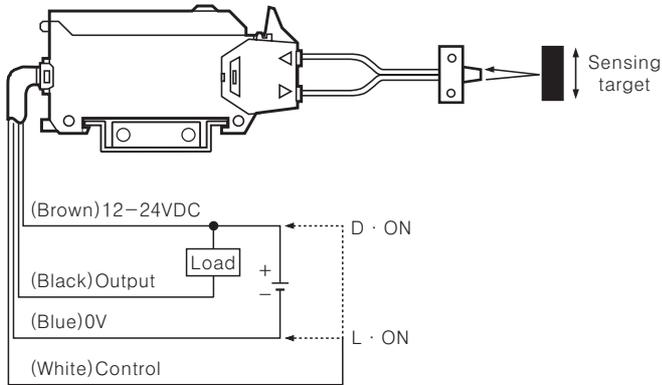
(P)  
Field network device

(Q)  
Production stoppage models & replacement

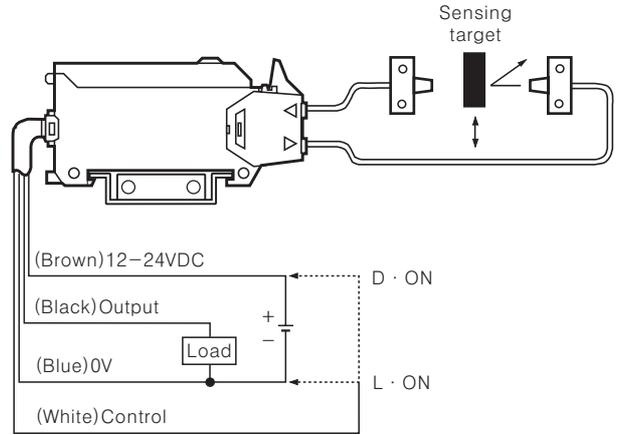
# BF3RX

## Connections

### BF3RX



### BF3RX-P



※ Enable to use as Diffuse reflective type or Transmitted beam type according to the fiber Optic Cable.

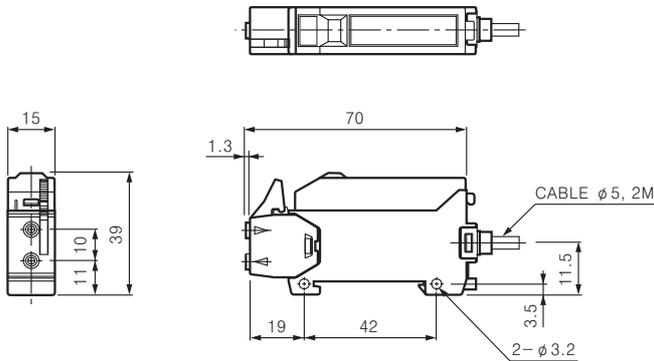
※ **Adapter** marked Fiber Optic Cable should be used with Adapter ( ).

※ GT-420-14H2 cannot be used because the length inserted into Amp is too short.

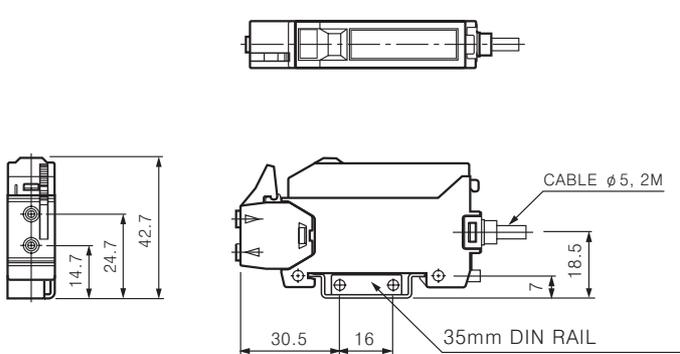
## Dimensions

(Unit:mm)

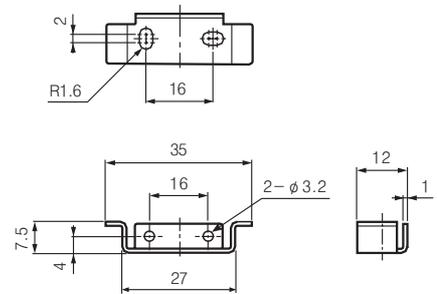
### Product



### Bracket



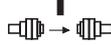
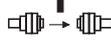
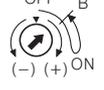
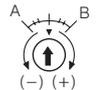
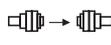
### Bracket



# Fiber Optic Amplifier

## ■ Sensitivity adjustment

- Adjust as the optimum sensitivity according to the order as shown below.
- Please observe below chart because operation lamp will be changed by sensing method.

Order	Sensing type		Adjustment	Adjuster	
	Reflective	Transmitted beam		COARSE	FINE
1	Initial setting		Adjuster(Coarse) should be fixed at min. and fixed at center (▼) for Fine adjustment.		
2	Light ON 	Light ON 	Fix adjuster(Coarse) to ON position by turning clockwise slowly when light is being received.		
3	Light ON 	Light ON 	Turn adjuster(Fine) until it is OFF toward(-), and turn until it is ON toward(+) again, then confirm that this will be A position.	Adjuster(Coarse) is not required to set afterwards.	
4	Dark ON 	Dark ON 	And then turn adjuster(Fine) until it is ON toward(+), and turning until it is OFF toward(-) again when light is not received. Then confirm that this position will be B position. (When it will not be ON, max. position will be B.)		
5	—	—	Fix it at middle of A and B position. This will be the best position to set.		
6	Light ON 	Light ON 	If you cannot adjust as above method, set adjuster(Fine) at max. position toward(+), then execute again.		

(A)  
Counter

(B)  
Timer

(C)  
Temp.  
controller

(D)  
Power  
controller

(E)  
Panel  
meter

(F)  
Tacho/  
Speed/  
Pulse  
meter

(G)  
Display  
unit

(H)  
Sensor  
controller

(I)  
Switching  
power  
supply

(J)  
Proximity  
sensor

(K)  
Photo  
electric  
sensor

(L)  
Pressure  
sensor

(M)  
Rotary  
encoder

(N)  
Stepping  
motor &  
Driver &  
Controller

(O)  
Graphic  
panel

(P)  
Field  
network  
device

(Q)  
Production  
stoppage  
models &  
replacement