

High accuracy fiber optic amplifier with twin adjuster

■ Features

- Convenient DIN rail mounting type
- Response time : 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
- Enable 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 ±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"> ● NPN open collector output Load voltage : Max. 30VDC, Load current : Max. DC200mA, Residual voltage : Max. 1V 	<ul style="list-style-type: none"> ● PNP open collector output Output voltage : Min. (Power supply-2.5)V Load current : Max. DC200mA
Protection circuit	Reverse power polarity, Output short-circuit (Overcurrent) protection circuit	
Indication	Operation indicator : Red LED	
Connection	Outgoing cable (2m)	
Insulation resistance	Min. 20MΩ (at 500VDC megger)	
Noise strength	±240V the square wave noise (pulse width : 1μs) by the noise simulator	
Dielectric strength	1,000VAC 50/60Hz for 1minute	
Vibration	1.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 2 hours	
Shock	500m/s ² (50G) in X, Y, Z directions for 3 times	
Ambient illumination	Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx	
Ambient temperature	-10 to 50°C (at non-freezing status), Storage : -25 to 70°C	
Ambient humidity	35 to 85%RH, Storage : 35 to 85%RH	
Material	Case : ABS, Cover : PC	
Cable	φ 5, 4P, Length : 2m, AWG24, Insulator diameter : φ 1.0	
Unit weight	Approx. 90g	

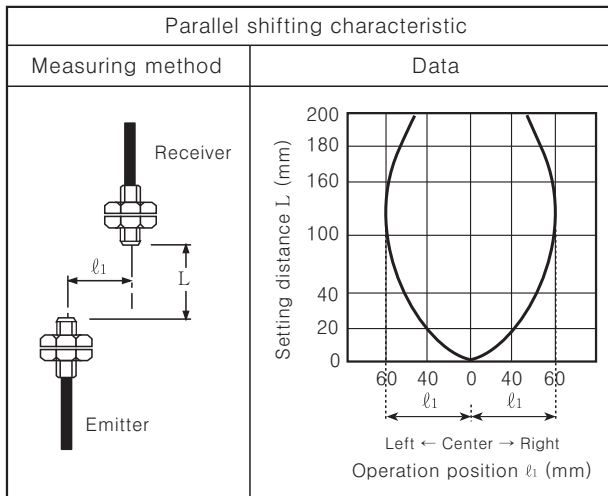
- (A) Photo electric sensor
- (B) Fiber optic sensor
- (C) Door/Area sensor
- (D) Proximity sensor
- (E) Pressure sensor
- (F) Rotary encoder
- (G) Connector/Socket
- (H) Temp. controller
- (I) SSR/Power controller
- (J) Counter
- (K) Timer
- (L) Panel meter
- (M) Tacho/Speed/Pulse meter
- (N) Display unit
- (O) Sensor controller
- (P) Switching power supply
- (Q) Stepping motor & Driver & Controller
- (R) Graphic/Logic panel
- (S) Field network device
- (T) Production stoppage models & replacement

BF3R Series

Feature data

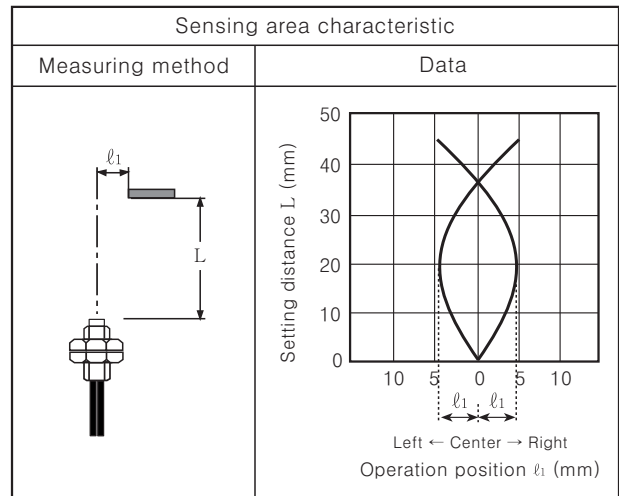
Through-beam

Measurement : BF3RX + FT-420-10



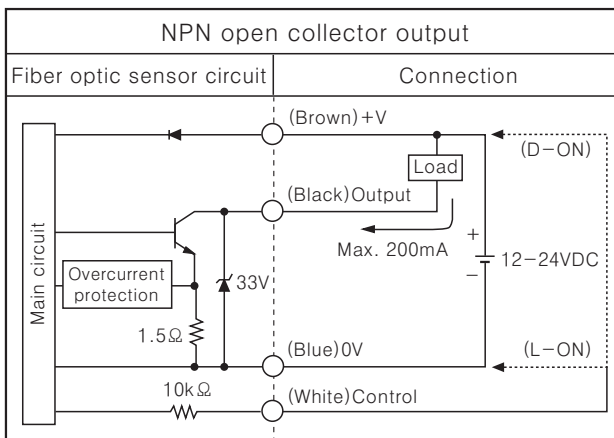
Diffuse reflective

Measurement : BF3RX + FD-620-10

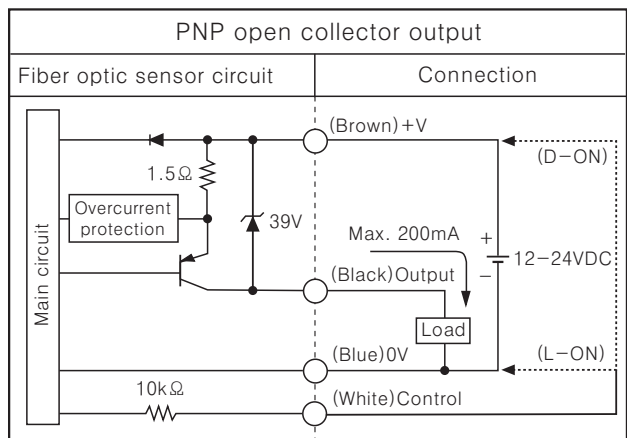


Control output diagram

BF3RX

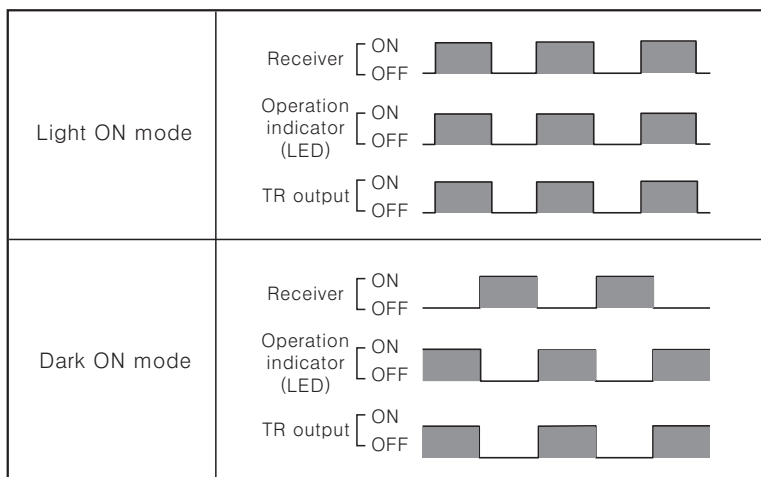


BF3RX-P



※ 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

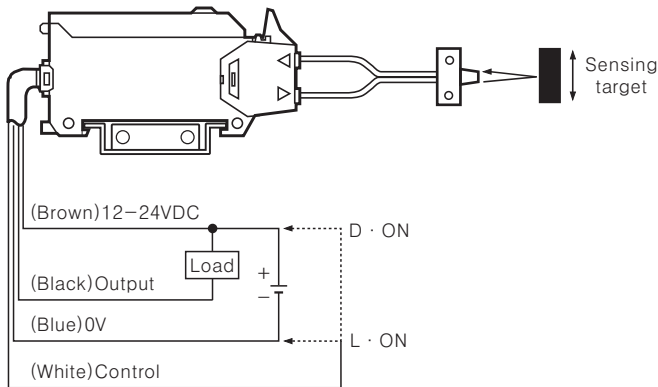
Operation mode



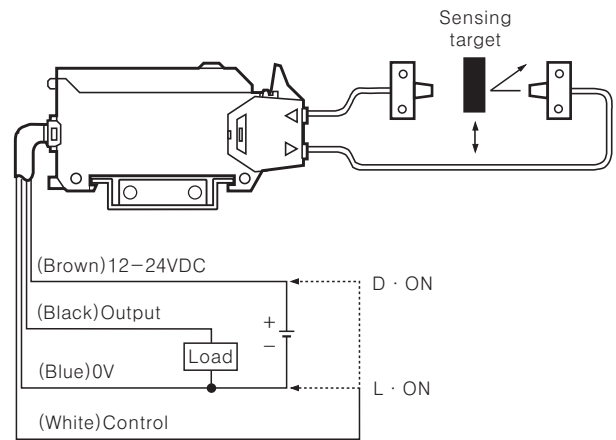
Fiber Optic Amplifier

Connections

○BF3RX



○BF3RX-P



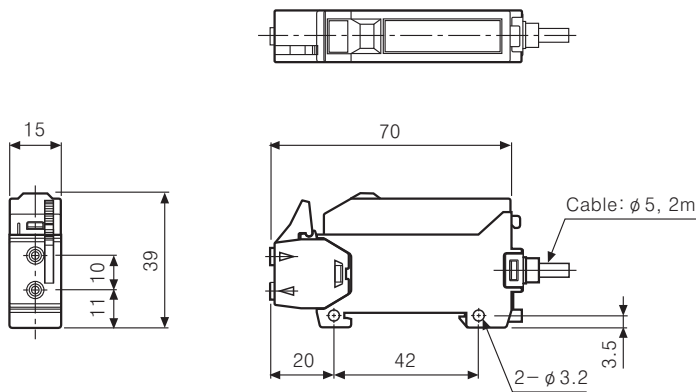
※ Enable to use as diffuse reflective type or through-beam type according to the fiber optic cable.

※ **Adapter** marked fiber optic cable should be used with adapter ().

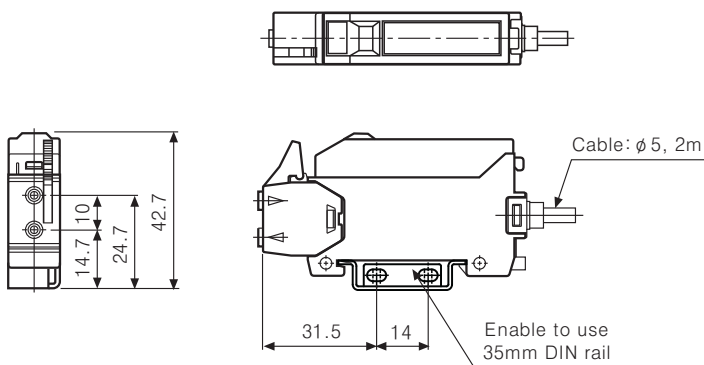
※ GT-420-13H2 cannot be used because the length inserted into amp is too short.

Dimensions

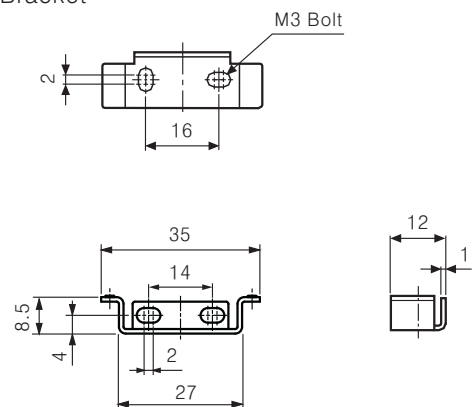
(Unit:mm)



●Connect the bracket



●Bracket



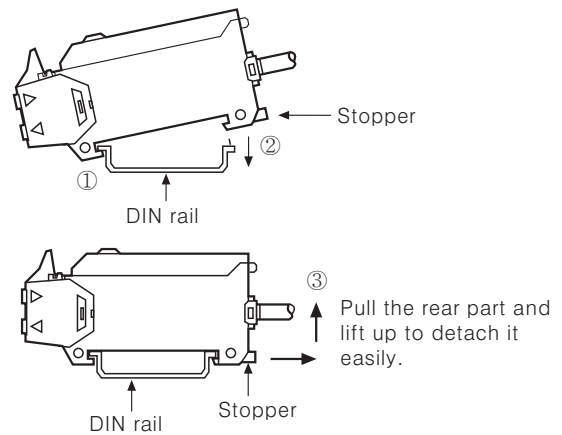
(A)	Photo electric sensor
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BF3R Series

■ Installations

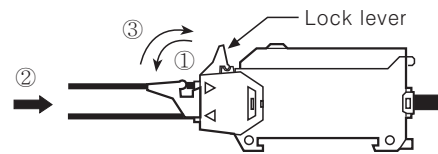
◎ Amplifier unit mounting

- ① Hook the amplifier on the front of DIN rail (or bracket).
- ② Press the rear part of the amplifier on DIN rail (or bracket).
- ③ Use screwdriver to move the stopper on rear of the amplifier backward.



◎ Fiber cable connection

- ① Open the Lock lever to "↙" direction. (Unlock)
- ② Insert the fiber optic cable in the amplifier slowly. (Depth : 21mm)
- ③ Close the Lock lever to "↗" direction. (Lock)



■ 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	Through-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.		