

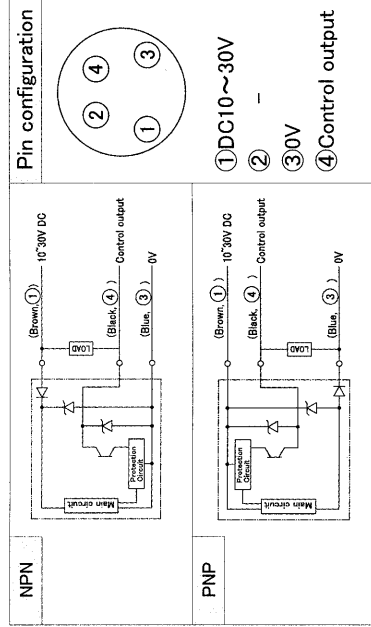
BRF SERIES

INSTRUCTION MANUAL

BRF-□ Standard	B2RF-□ Extension Amp. Standard
BRF-H□ Speed	B2RF-H□ Extension Amp. Speed
B6F-□ Mark sensing	B2GF-□ Extension Amp. Mark sensing
B1F-□ Moisture sensing	B2IF-□ Extension Amp. Moisture sensing

- Confirm if the item meets your needs.
- Before the use, you should first thoroughly read this manual and operate correctly as mentioned.
- You should keep this manual at hand for proper use.

Input/ Output circuit design

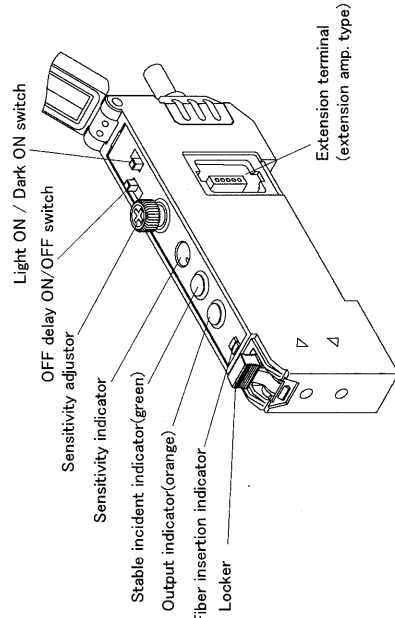


Warnings

- Usage in the following environment must cause damages.
 - Dusty and vaporous place
 - Corrosive gas environment
 - Water and oil scattering environment
 - Intense shock and shake
- In case of switching regulator, frame ground (FG) must be grounded.
- Warm-up period (approx. 100 ms.) must be secured.
- Should avoid parallel wiring with high-voltage wire and/or power line. Never install in same conduit.

⚠ Must not use the item for the purpose of human body protection.

Parts name



Specification

Type	Standard	Speed	Mark sensing	Moisture sensing
normal	BRN(N,P) BRF-CN(P) B2RF-CN(P)	BRF-HN(P) BRF-CHN(P) B2RF-CHN(P)	BGF(N,P) BGF-CN(P) B2GF-CN(P)	B1F-W(N,P) B1F-WN(P) B2IF-W(N,P)
extension	BRN(N,P) BRF-CN(P) B2RF-CN(P)	BRF-HN(P) BRF-CHN(P) B2RF-CHN(P)	BGF(N,P) BGF-CN(P) B2GF-CN(P)	B1F-W(N,P) B1F-WN(P) B2IF-W(N,P)
light source	Red LED	Red LED	Green LED	IR LED(1.45μm)
supply voltage	DC10 ~ 30V including 10% ripple(P-P)	DC10 ~ 30V including 10% ripple(P-P)	DC10 ~ 30V including 10% ripple(P-P)	DC10 ~ 30V including 10% ripple(P-P)
current consumption	normal type 25mA max.(12V) , extension amp. type 35mA max.(12V)	normal type 25mA max.(12V) , extension amp. type 35mA max.(12V)	normal type 25mA max.(12V) , extension amp. type 35mA max.(12V)	normal type 25mA max.(12V) , extension amp. type 35mA max.(12V)
response time	250 μs	50 μs	250 μs	1ms
timer function	40ms Off delay timer	40ms Off delay timer	40ms Off delay timer	40ms Off delay timer
sensitivity adjustment	10 rotation volume	10 rotation volume	10 rotation volume	10 rotation volume
indicator	Output indicator (orange LED)	Output indicator (orange LED)	Output indicator (orange LED)	Output indicator (orange LED)
control output	NPN/PNP open collector DC30V/100mA max.	NPN/PNP open collector DC30V/100mA max.	NPN/PNP open collector DC30V/100mA max.	NPN/PNP open collector DC30V/100mA max.
operation mode	Light ON / Dark ON switch selectable	Light ON / Dark ON switch selectable	Light ON / Dark ON switch selectable	Light ON / Dark ON switch selectable
circuit protection	Reverse polarity / output over current / short circuit protection	Reverse polarity / output over current / short circuit protection	Reverse polarity / output over current / short circuit protection	Reverse polarity / output over current / short circuit protection
ambient temp/ humid	-25~55°C ±1/ 35~85%	-25~55°C ±1/ 35~85%	-25~55°C ±1/ 35~85%	-25~55°C ±1/ 35~85%
ambient illuminance	sunlight: 10,000 lx max. incandescent light: 3,000 lx max.	sunlight: 10,000 lx max. incandescent light: 3,000 lx max.	sunlight: 10,000 lx max. incandescent light: 3,000 lx max.	sunlight: 10,000 lx max. incandescent light: 3,000 lx max.
protection category	normal type: IE Standard IP66, extension amp. type:IE Standard IP50 / housing: PBT cover: PC	normal type: IE Standard IP66, extension amp. type:IE Standard IP50 / housing: PBT cover: PC	normal type: IE Standard IP66, extension amp. type:IE Standard IP50 / housing: PBT cover: PC	normal type: IE Standard IP66, extension amp. type:IE Standard IP50 / housing: PBT cover: PC
weight	cable type: about 70g / connector type: about 25g / extension amp. cable type: about 20g / extension amp. connector type: about 25g	cable type: about 70g / connector type: about 25g / extension amp. cable type: about 20g / extension amp. connector type: about 25g	cable type: about 70g / connector type: about 25g / extension amp. cable type: about 20g / extension amp. connector type: about 25g	cable type: about 70g / connector type: about 25g / extension amp. cable type: about 20g / extension amp. connector type: about 25g

*1 extension 3-fps -25~55°C Moisture types (B1F-W, etc) are not connectable together with other types due to slower response time.

Set up amplifier unit

- Set up:
 - ① Attach sensor forehead to bracket or DIN rail.
 - ② Pop down sensor back to bracket or DIN rail.
- Removal:
 - Slide sensor to the direction arrow indicates, and lift fore part to release.

Set up fiber unit

- ① Open protection cover
- ② Push down locker (unlock).
- ③ Fully push fiber into the unit.
- ④ Lift up locker to complete stop (lock).

- For pulling out fiber, push down (locker unlock) and pull out fiber.

*Coaxial type---set white-lined fiber or single-cored fiber to emitter, and plural-cored fiber to receiver.

Cable In/Out (extension amp. type)

- In: Insert cable until pop
 - Out: Pull out with lever down.
- ! Overpower to lever will cause mechanical damages.

Amplifier extension (extension amp. type)

- Extension
 - ① Set extension connector to amplifier.
 - ② Set on DIN rail and slide to appropriate position one by one.
 - Removal
 - Slide aside and remove from DIN rail.
- ! Moisture types (B1F-W, etc) are not connectable together with other types due to slower response time.
- ! In case of using more than 3 extensions, ambient temp. must be in the range of -25~50°C
- ! In case of using extensions, fixture should be used.(BEF-BE01-W190)
- ! Should switch off while amplifier set up
- ! Set the protection cover at both ends of the amplifier.

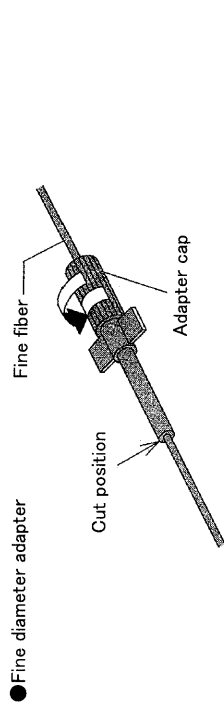
Check (extension amp. type)

- Interference protection
 - Interference protection functions in 4pcs as a group. If you install over 4pcs, interference protection can run by multiple of 4.
- ! Moisture types (B1F-W, etc) are not connectable together with other types due to slower response time.
- ! Interference protection is not in Speed type.
- Ambient temp
 - Ambient temperature shall be restricted by numbers of amplifiers as well as by ambient temp. We guarantee parallel installation up to 16pcs under ambient temperature as listed in the right.

extension	ambient temp
2pcs	+55° max
3~10pcs	+50° max
11~16pcs	+45° max

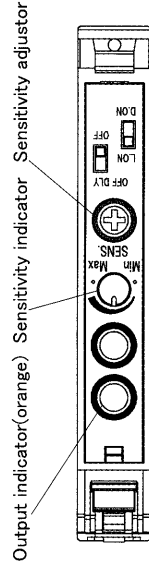
*supply voltage 24V

Fiber unit

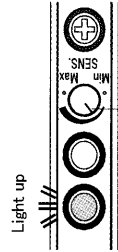


- ① Fully turn adapter cap anticlockwise, and insert fiber as much as needed. Then fully turn back to clockwise and lock.
 - ② Out necessary fiber by fiber cutter.
- Caution: Fiber cutter will lose its performance by repeated use and feathering.

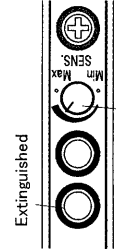
Adjusting the potentiometer



- ① Set the detectable object at the detection position and turn the potentiometer from MIN toward MAX until the output indicator (orange) light up. Call it position A.



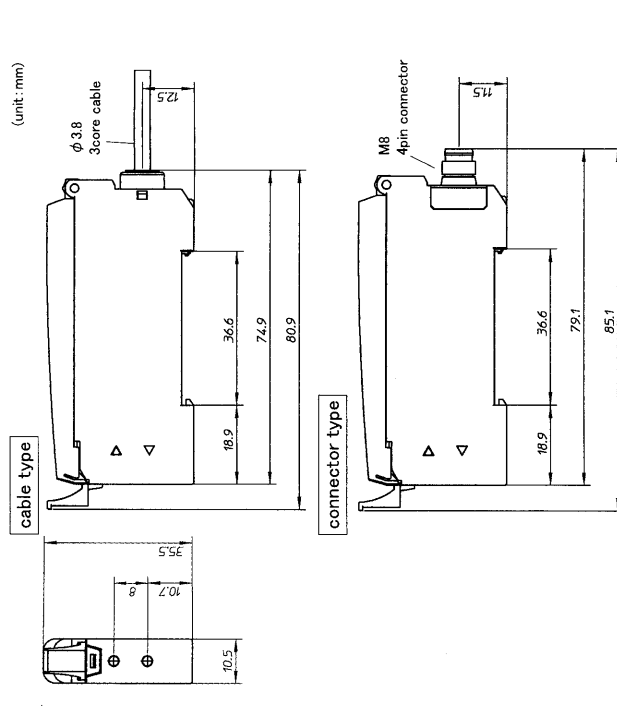
- ② Remove detectable object and turn the potentiometer from MAX toward MIN position where the output indicator (orange) is extinguished. Call it position B.



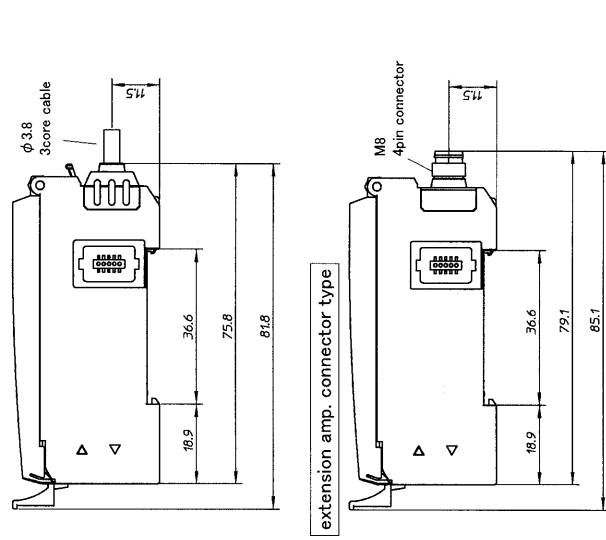
- ③ Point C midway between A and B is the optimum sensitivity position.

The position A and B may reverse by types and detecting situation.

Dimensions



extension amp. cable type



Options

- Cable
 - Base cable DOL-LL1903-02M
 - DOL-LL1903-05M
 - Sub cable DOL-LL1901-02M
 - DOL-LL1901-05M
- Extension connector
 - for cable type STE-WLL190-05P
 - for connector type STE-WLL190-03P
- Protect cover for extension amp. type (2pcs) BF-WLL190-01
- Fixture OFixture
- BEF-BE01-W190

- Specifications and equipment are subject to change without any obligations on the part of manufacture.
- For more information, questions and comments regarding products, please contact us below.

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