

Single / Dual Display Fiber Optic Amplifiers



BF5 Series CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Dual-display for light incident level and setting value (BF5-D)
- Enables to detect the minute object with 1/10,000 high resolution
- Enables to detect with high-speed moving object (response time 50 μs)
- 5 response times
 - : ultra fast mode (50 μs), fast mode (150 μs), standard mode (500 μs), long distance mode (4 ms), ultra long distance mode (10 ms)
- Anti-saturation setting function prevents malfunction by saturated light
- Easy sensitivity setting
- Long lasting amplifier regardless of element's life degradation or temperature change
- Multiple sensitivity setting modes available
 - : auto-tuning, 1-point (maximum sensitivity), 2-point, positioning teaching
- Up to 8 units enable to connect with mutual interference prevention function using side connectors
- Auto channel setting function for multiple installations
- Adopts red, green, blue light sources
- Slim design with depth 10 mm (W 10 × H 30 × L 70 mm)

Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

BF5 ① - ② 1 - ③

① Light source

R: Red LED
G: Green LED
B: Blue LED

② Display part

D: Dual display
S: Single display

③ Control output

N: NPN open collector output
P: PNP open collector output

Product Components

- Product
- Connector cable
- Instruction manual
- Side connector

Specifications

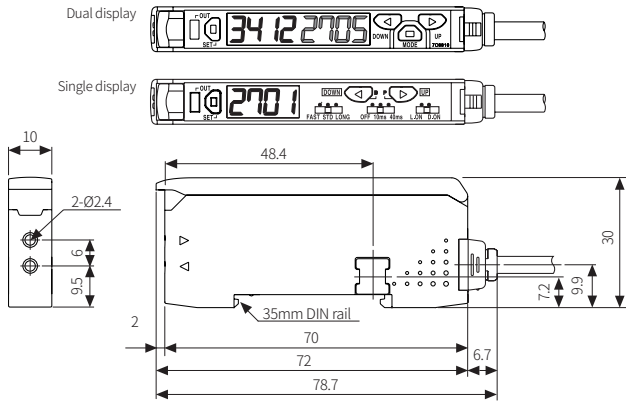
| Model | BF5R-D1-□ | BF5G-D1-□ | BF5B-D1-□ |
|--------------------------------|--|-------------------|-------------------|
| Light source | Red LED | Green LED | Blue LED |
| Peak emission wavelength | 660 nm, modulated | 530 nm, modulated | 470 nm, modulated |
| Response time | Standard (500 μs), Long distance (4 ms), Ultra long distance (10 ms), Ultra fast (50 μs), Fast (150 μs) mode | | |
| Sensitivity setting | Manual, Teaching (Auto-tuning, 1-point, 2-point, positioning) | | |
| Operation mode | Light ON, Dark ON | | |
| Measured value display | 7-segment LCD, 4-digit (decimal, percentage) | | |
| Operation mode of the timer | OFF, OFF Delay, ON Delay, One-shot | | |
| Max. cascading units | ≤ 31 units | | |
| Mutual interference prevention | ≤ 8 units | | |
| Indicator | Operation indicator (red), display screen (PV display part: red LED, SV display part: green LED) | | |
| Approval | CE ENEC | CE ENEC | CE ENEC |
| Unit weight (packaged) | ≈ 20 g (≈ 138 g) | ≈ 20 g (≈ 138 g) | ≈ 20 g (≈ 138 g) |

| Model | BF5R-S1-□ |
|--------------------------------|---|
| Light source | Red LED |
| Peak emission wavelength | 660 nm, modulated |
| Response time | Standard (500 μs), Long distance (4 ms), Fast (150 μs) mode |
| Sensitivity setting | Manual, Teaching (Auto-tuning) |
| Operation mode | Light ON, Dark ON |
| Measured value display | 7-segment LCD, 4-digit (decimal, percentage) |
| Operation mode of the timer | OFF Delay (time range: OFF, 10 ms, 40 ms) |
| Mutual interference prevention | ≤ 8 units |
| Indicator | Operation indicator (red), display screen (PV / SV display part: red LED) |
| Approval | CE ENEC |
| Unit weight (packaged) | ≈ 20 g (≈ 138 g) |

| | |
|--|--|
| Power supply | 12-24 VDC± ±10% (ripple P-P: ≤ 10%) |
| Current consumption | ≤ 50 mA |
| Control output | NPN open collector output / PNP open collector output model |
| Load voltage | ≤ 24 VDC± |
| Load current | ≤ 100 mA |
| Residual voltage | NPN: ≤ 1 VDC±, PNP: ≤ 3 VDC± |
| Protection circuit | Reverse power protection circuit, output short over current protection circuit, surge protection circuit |
| Insulation resistance | ≥ 20 MΩ (500 VDC± megger) |
| Dielectric strength | 1,000 VAC~50 / 60 Hz for 1 min |
| Vibration | 1 mm double amplitude at frequency 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours |
| Shock | 500 m/s ² (≈ 50 G) in each X, Y, Z direction for 3 times |
| Ambient illuminance (receiver) | Sunlight: ≤ 11,000 lx, incandescent lamp: ≤ 3,000 lx |
| Ambient temperature | -10 to 50 °C, storage: -20 to 70 °C (no freezing or condensation) |
| Ambient humidity | 35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation) |
| Protection rating | IP40 (IEC standard) |
| Connection | Connector cable |
| Cable spec. | Ø4 mm, 3-wire, 2 m |
| Wire spec. | AWG22 (0.08 mm, 60-core), insulator outer diameter: Ø 1.25 mm |
| Tightening torque for fiber optic unit | ≥ 2kgf |
| Material | Case: PBT, cover: PC |

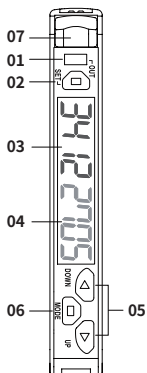
Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.



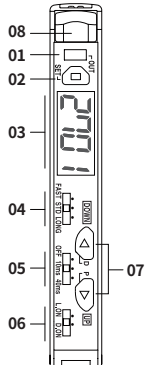
Unit Descriptions

■ Dual display model



- 01. Operation indicator (red)**
- 02. [SET] key**
Teaching sensitivity setting, group teaching, data back setting, incident light level monitoring, initialization
- 03. PV display part (red 4-digit LED)**
RUN mode: it shows PV (present value).
Setting mode: it shows the parameter.
- 04. SV display part (green 4-digit LED)**
RUN mode: it shows SV (setting value).
Setting mode: it shows the setting value, parameter value.
- 05. [◀] [▶] key**
Manual sensitivity setting, select the setting value
- 06. [MODE] key**
Enter mode, return to RUN mode, move parameter, save the setting value
- 07. Lever lock**
It is used to fix the fiber optic unit.

■ Single display model



- 01. Operation indicator (red)**
- 02. [SET] key**
Teaching sensitivity setting, group teaching, incident light level monitoring
- 03. PV / SV display part (red 4-digit LED)**
- 04. Setting switch for the response time**
- 05. Setting switch for the time of the timer**
- 06. Setting switch for the operation mode**
- 07. [◀] [▶] key**
Enter mode, manual sensitivity setting, select the setting value
- 08. Lever lock**
It is used to fix the fiber optic unit.

Sold Separately

- Fiber optic units
- Communication converter: BFC Series