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)

CE EAC

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 ❶ - ❷ 1 - ❸

❶ Light source
R: Red LED
G: Green LED
B: Blue LED

❷ Display part
D: Dual display
S: Single display

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

Product Components

- Product
- Connector cable
- Instruction manual
- Side connector

Specifications

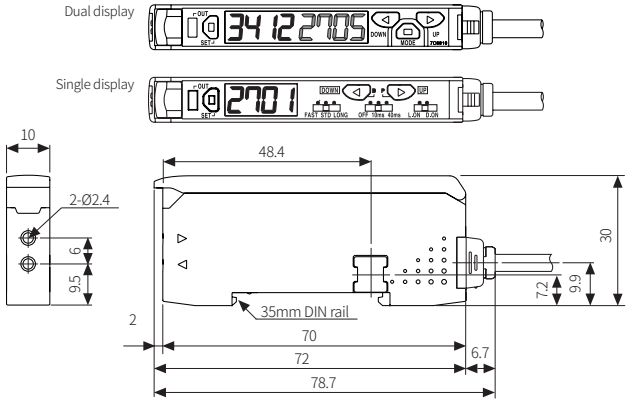
Model	BF5R-D1-□	BF5G-D1-□	BF5B-D1-□
Light source	Red LED	Green LED	Blue LED
Peak emission wavelength	660 nm, modulated	530 nm, modulated	470 nm, modulated
Response time	Standard (500 μs), Long distance (4 ms), Ultra long distance (10 ms), Ultra fast (50 μs), Fast (150 μs) mode		
Sensitivity setting	Manual, 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 EAC	CE EAC	CE EAC
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 EAC
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/s² (≈ 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.	Ø 4 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

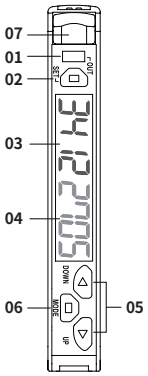
Dimensions

• 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.

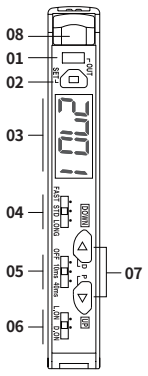
04. SV display part (green 4-digit LED)
RUN mode: it shows SV (setting value).
Setting mode: it shows the setting value, parameter value.

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