

Stationary-type non-contact thermometer
Fiber-type thermometer for high-temperature metal

Measurement range

400 to 1200°C (752 to 2192°F)

THERMO-HUNTER®
BF series

BF-30 I-A



Compact sensor head

Wide meas. range

Heat-resistant fiber tip

Analog output (with scaling)

Emissivity teaching

Features

Wide measurement range

This product is suitable for a wide variety of applications thanks to its wide 400 to 1200°C (752 to 2192°F) measurement range.

Scaling

The temperature range of the analog output (4 to 20 mA) can be set as desired. This makes post-processing with recorders and the like easy.

Simple emissivity adjustment: Teaching function

This product is equipped with a TEACH function that allows users to calculate and store emissivity automatically by inputting a temperature. This allows for drastic reductions in time spent on configuring settings.

50 ms high-speed response

The product's high-speed response capabilities make it possible to track measurement targets moving relatively fast.

Heat-resistant up to 150°C (302°F) (fiber tip)

The fiber tip features a heat-resistant design capable of withstanding ambient temperatures up to 150°C (302°F). This means no cooling device is required.

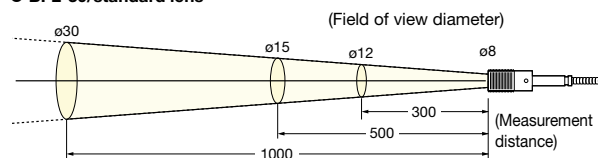


Space-saving glass-fiber model

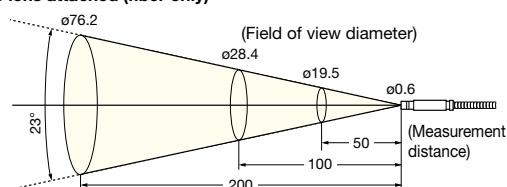
The fiber tip (lens attachment) features an M16 compact design. Moreover, the adoption of glass fiber provides better resistance to breakage. This design is ideal for incorporation in machines and other equipment.

Field of view

● BFL-30/standard lens



● With no lens attached (fiber only)



*The device is calibrated to the standard lens upon shipment. When using an optional lens or the fiber only, TEACH/ε (emissivity) adjustment must be performed.
 *The field of view stated above are measurement diameters with an optical response of 90%.
 *The size of the measurement target must be sufficiently larger than the measurement diameters shown in the above diagram.



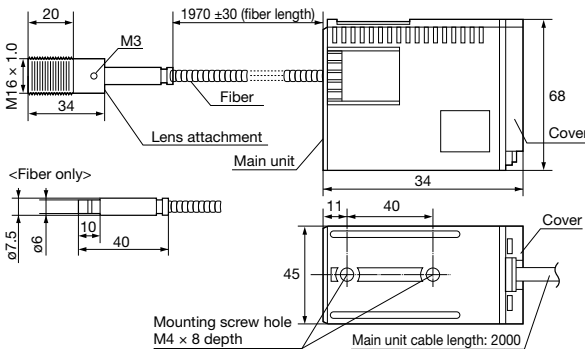
Specifications

Model	BF-301-A
Measurement range	400 to 1200°C (752 to 2192°F)
Field of view	ø30 mm/1000 mm (with standard lens attached)
Optics	Glass-based infrared light fiber
Sensing element/spectral response	InGaAs/1.2 to 2.6 µm
Response time	50 ms/90% response
Accuracy (ε=1.0)	±2% of reading
Repeatability	±1°C (1.8°F)
Display resolution	1°C (33.8°F)
Analog output	4 to 20 mA
Output resolution	Equivalent to 0.1 to 0.5°C (32.2 to 32.9°F) (output width: 100 to 800°C (212 to 1472°F))
Emissivity (ε) adjustment	0.10 to 1.20
Response time selection (DELAY)	1 to 200
Supply voltage/current consumption	12 to 24 VDC ±10%/100 mA or less (at max. load)
Ambient temperature	0 to 50°C (32 to 122°F) (main unit), 0 to 150°C (32 to 302°F) (Fiber tip part)
Ambient humidity	35 to 85% RH (no condensation)
Storage temperature	-10 to +60°C (14 to 140°F)
Vibration resistance	10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions
Water resistance	IP65
Material	[Main unit] Ring/housing: Glass-filled PBT, Rear: PSF, Cover: PC; Fiber: SUS; Lens attachment: BS/Ni plating
Weight	Approx. 500 g
Included accessories	Mounting bracket x1, mounting screw (M4) x2, Lens attachment mounting nut (M16) x 2

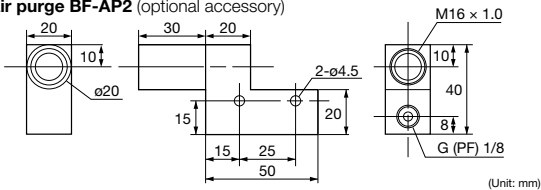
*Note that specifications are subject to change without prior notice for product improvement purposes.

Dimensions

● Main unit and fiber <BFL-30/with standard lens attached>



● Air purge BF-AP2 (optional accessory)



Options/Accessories

Air purge

BF-AP2

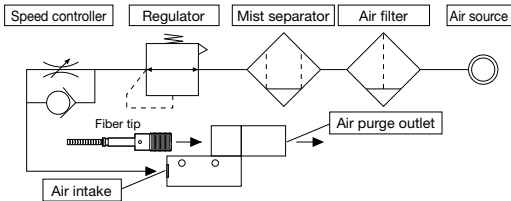


Blowing air on the surface of the lens helps prevent the adherence of dust and dirt.

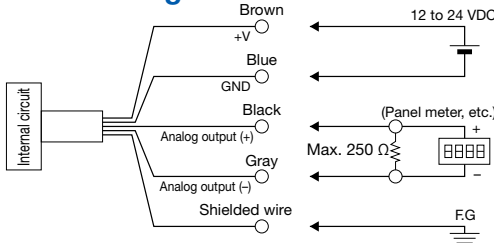
● Specifications

Ambient temperature: 0 to 150°C (32 to 302°F) Port size: G (PF) 1/8
Air flow rate: 50 to 150 NI/min. Weight: Approx. 80 g
Air temperature: 0 to 50°C (32 to 122°F) Material: Aluminum
Air pressure: 0.2 MPa or less (limited to instrumentation air)

● Piping example



Connection diagram



Correct use

■ Handling fibers

This product uses glass-type optical fiber. This type of fiber is susceptible to bending, impacts, and other factors. Be sure to strictly adhere to the following usage guidelines.

- Do not pull on the fiber.
- Do not subject the fiber to impacts.
- Do not bend at a radius of 50 mm (100 mm diameter) or more.

■ Safety precautions

This document indicates a variety of precautions to ensure safe and correct use of the product in order to prevent harm or damage to the user or others. All of these precautions are related to safety and should be followed.

- ⚠ This mark indicates prohibited matters.
- Ⓜ This mark indicates required matters.

■ Environmental precautions

- ⚠ Use and store away from direct sunlight, dust, and hot and humid surroundings. Failing to do so may cause the lens to become dirty or to deteriorate, which can lead to errors.
- ⚠ Please ensure the product is not subject to sudden changes in ambient temperature during use. Sudden changes in temperature can cause measurement errors. Wait a moment until the temperature of the main unit stabilizes before performing measurement.
- ⚠ Do not use the product near objects that generate strong electromagnetic waves, or in environments with corrosive gases or explosive gases. Doing so may cause irreparable damage or measurement errors.

■ Usage precautions

- Ⓜ Avoid measurement of shiny surfaces. Such surfaces can reflect ambient temperatures. Although this can be corrected using reflection settings, an error will occur in the measurement value.
- Ⓜ Use only the rated power supply with the product.
- Ⓜ Using the product at currents outside of the 12 to 24 VDC range may cause malfunction, short-circuiting, fire, or injury.
- Ⓜ Turn off the power immediately if this occurs.
- Ⓜ Do not touch the product to the measurement target.
- Ⓜ This product is a non-contact thermometer. Contact with a high-temperature surface may result in deformation, irreparable damage, or measurement errors.
- Ⓜ Do not touch the lens.
- Ⓜ Do not touch the lens with hard or sharp objects. Also, do not place foreign objects in the light-receiving part. Doing so may scratch the lens and cause errors.
- ⚠ Do not allow the product to come near objects with an electrostatic charge. Doing so may cause irreparable damage or measurement errors.

■ Exporting

The fiber used for this product falls under the category of regulated cargo under the Export Trade Control Ordinance. Exercise caution when exporting the product.

Selection guide

Stationary-type

CS

SA-80

BA

BA-TC

BS

BS-02

BF

Portable-type

PT-7LD

PT-5LD

PT-S80
PT-U80

PT-2LD

PT-3S

Q & A

Support