

Thank you very much for purchasing Panasonic products. Read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product. Kindly keep this manual in a convenient place for quick reference.

1 CAUTIONS FOR FIBER

- This product has been developed / produced for industrial use only.
- Take care that the sensing performance may deteriorate depending on the connecting condition to the fiber amplifier.
- Keep the sensing surface intact. If it is scratched, the detectability will deteriorate.
- If the sensing surface gets dirty, wipe dirt or stains from the sensing faces with a soft cloth.
- Do not allow any organic solvent (such as thinner), strong acid, alkaline, oil or grease to splash onto the fiber cables. (except for chemical-resistant fiber)
- Do not apply excessive tensile force to the fiber cable.
- The bending radius of the fiber cable must be R25mm or more. If the bending radius is smaller than the specification, the sensing ability is decreased. Note that some fiber cables can be bent to a radius of less than R25 mm. Refer to the product specifications for the allowable bending radius specification value.
- Take care that the sensor is not directly exposed to fluorescent light from a rapid-starter lamp or a high frequency lighting device, as it may affect the sensing performance.
- The free-cut type fibers must be cut with a fiber cutter before insertion into the amplifier.
- In case the thru-beam type fiber is used with the expansion lens, take care that the beam becomes narrow. Particularly, when the multi-core thru-beam type fiber (the sharp bending type and the heat-resistant type) is used, make sure to align the beam axis beforehand.
- Mount to fiber an amplifier after cleaning up end of fiber with air blow gun.
- When inserting a fiber attaching a fiber attachment, use the fiber attachment (accessory).
- Do not cut off a fixed length fiber type with a tool such as nipper.
- Furthermore, do not use the cut fiber.
- Make sure not applying an excessive stress like bending or tension after installing to a fiber amplifier.
- Avoid dust, dirt, and steam.
- Avoid using this product at vibrating or impact location.

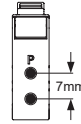
2 FIBER ATTACHMENT FX-AT□

<Product outline>

- When the emitter and receiver fibers are inserted into the fiber sensor amplifier (FX-500 series etc.), the enclosed fiber attachment (FX-AT2/AT3/AT4/AT5/AT6) facilitates insertion of the fibers and reduces the possibility of incorrect fiber insertion.

<Cautions>

- Take care that FX-AT2, FX-AT3, FX-AT4, FX-AT5 and FX-AT6 cannot be used with fiber sensor amplifiers having a pitch, between the emitter and the receiver fibers, other than 7mm. When using small-diameter fiber cables with a fiber amplifier whose pitch is not 7 mm, use the FX-AT10, FX-AT13 or FX-AT15 attachment.



<Component description>

FX-AT2

(Attachment for mounting fixed-length fiber plug: Orange)



FX-AT3

(Attachment for ø2.2mm free-cut fiber: Clear orange)



FX-AT4

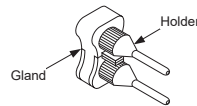
(Attachment for ø1.0mm free-cut fiber: Black)

FX-AT5

(Attachment for ø1.3mm free-cut fiber: Gray)

FX-AT6

(Compound attachment for ø1.0mm / ø1.3mm free-cut fiber)
(For ø1.0mm fiber: Black / for ø1.3mm fiber: Gray)

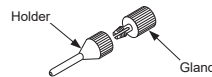


FX-AT10

(Attachment for ø1.0mm free-cut fiber: Black)

FX-AT13

(Attachment for ø1.3mm free-cut fiber: Gray)



FX-AT15

(Attachment for ø1.0 / ø1.3 mm mixed free-cut fiber)
(For ø1.0 mm fiber: Black / for ø1.3 mm fiber: Gray)

<Method of mounting>

For the method of connection to the fiber sensor amplifier, please refer to the instruction manual enclosed with the fiber sensor amplifier.

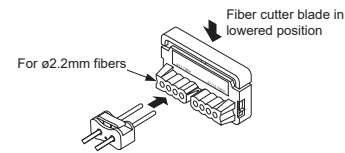
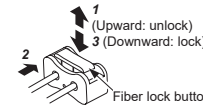
FX-AT2

1. Mount the plug part of the fibers in FX-AT2, as shown in the figure below. (The resin plug has a groove to hold it in place.)
2. Connect the fibers, in condition 1, to the fiber sensor amplifier.



FX-AT3

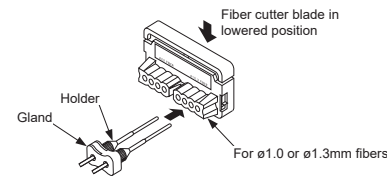
1. Confirm that the fiber lock button of FX-AT3 is in unlock side.
2. Insert the fibers one by one, in condition 1.
3. Insert the fibers, in condition 2, into the holes for ø2.2mm fibers of the fiber cutter FX-CT2 from the direction shown in the figure below.
4. After inserting, press down the fiber lock button. The fibers are fixed at the desired position. (In order to unlock the fibers, press the fiber lock button towards unlock direction from the opposite side.)



FX-AT4, FX-AT5, FX-AT6

1. Mount the holders on the gland lightly.
2. Insert the fibers into the holders, in condition 1.
3. Insert the fibers, in condition 2, into the holes for ø1.0mm or ø1.3mm fibers of the fiber cutter FX-CT2 from direction shown in the figure right.
4. Tighten the holders to fix the fibers at the desired length.

Notes: 1) In case of FX-AT6, match the colors of the holders and the gland. The black color is for ø1.0mm fiber and the gray color is for ø1.3mm fiber.
2) The colors of the fiber cable and attachment may differ in some cases. Please take note of this when attaching the attachment.

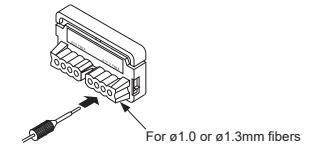


FX-AT10, FX-AT13, FX-AT15

1. Thread the fiber through the gland and holder separately, and screw the gland into the holder clockwise.
2. Insert the fibers one by one into the holes for ø1.0mm or ø1.3mm fiber of the fiber cutter FX-CT2 from the direction shown in the figure below. (At this time, in-



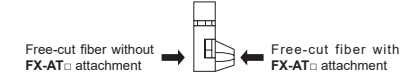
sert the attachment to a position at which it stops. The fibers will be cut at a position approx. 0.5mm from the holder.)



3 FIBER CUTTER FX-CT2

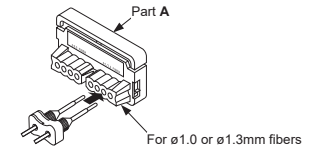
- To cut the fibers, insert them from the direction shown below.

(Fiber insertion direction)



<How to use fiber cutter FX-CT2>

1. Slide part A of the fiber cutter fully upward till it stops.
2. Insert the fibers, mounted in the attachment, till they stop. (Take care that there are separate fiber insertion holes for ø2.2mm and ø1.0mm or ø1.3mm fibers.)
3. Slide part A of the fiber cutter down to cut the fibers. The fibers will be cut at the position about 10 mm from the attachment.



Notes: 1) The fibers should be cut in one stroke.
2) Once a fiber is cut off at a hole, do not use the hole again. If used, it degrades the cut surface quality and the detectability may deteriorate.
3) The blade cannot be replaced. Please purchase an additional fiber cutter, if required.
4) Note that the sensing range may be reduced by up to 20% depending on the cut condition. Hence, decide the setting distance by taking sufficient margin.

4 OPERATING TEMPERATURE

- Keep more than 150 mm of the fiber cables in normal temperature range to protect the amplifier.

