JAPAN SENSOR CORPORATION
Challenge, Create, Customize

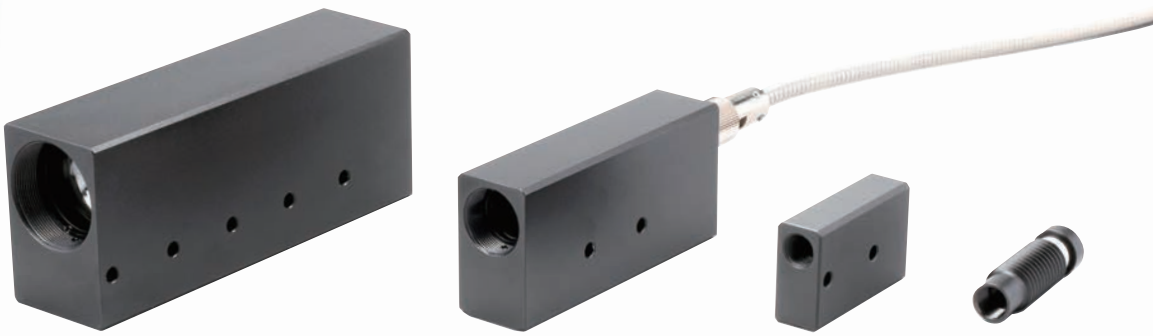
Modular design with a wide range of customer choices

Fiber type infrared thermometers

FTKX *Series*

CE

This series is a built-to-order
product line to meet
your specifications and environment



This series is a built-to-order product line

Fiber type infrared thermometers the FTKX Series

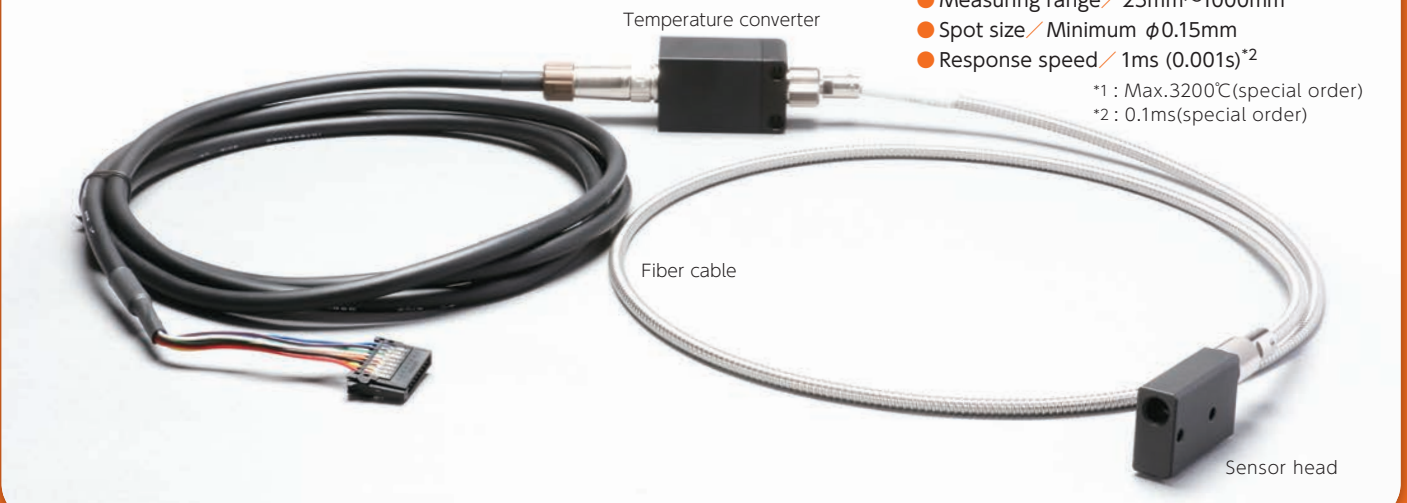
This FTKX series is a fiber type infrared thermometer that can meet customer applications such as temperature ranges, measurement distances or spot sizes.
This series does not have a circuitry on the sensor head and so is appropriate for adverse environments or small areas.

You can choose a sensor head, a fiber cable and a temperature converter to meet your requirements.

You can customize and select from more than 140 patterns.

- Temperature range／100～2000℃ (9 types)*1
- Measuring range／25mm～1000mm
- Spot size／Minimum ϕ0.15mm
- Response speed／1ms (0.001s)*2

*1 : Max.3200℃(special order)
*2 : 0.1ms(special order)

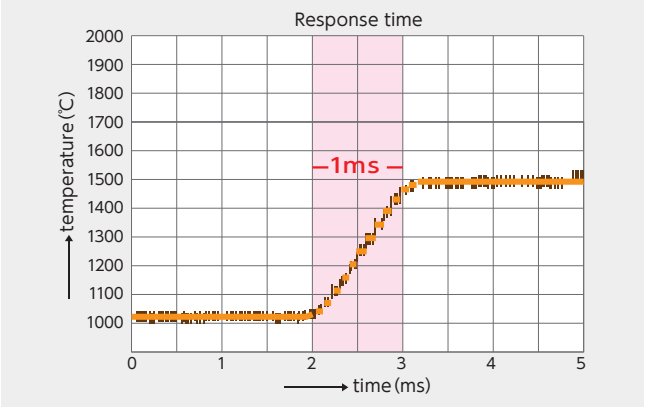


Usable with small targets

Spot size ; Minimum ϕ0.15mm

The world's fastest response time

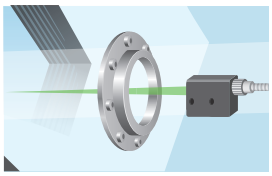
The world's fastest response time of 1ms (0.001sec) allows detection of rapid temperature changes. The sensor head never misses sudden temperature changes.



CE Mark Compliant

Measurable through glass

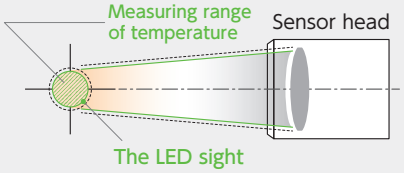
Using the quartz permeable wavelength, it allows measurement through glass.



Easy adjustment

The FTKX series is easy to position. This series of products uses the optical coaxial LED sights. It can measure the target precisely.

[The optical coaxial LED sight]



The optical coaxial LED sights can indicate most of the target area, so that it is easy to adjust positions precisely.

Ruggedized to work in an adverse environment with strong body

By using an aluminium body, enclosure strength, heat resistance and chemical resistance are improved. The enclosure is rated IP67.

Analog output and RS232 output

Analog output; 4~20mA, 0~20mA, 0~1V, mV/℃ switchable

Immune to electromagnetic fields

The sensor head does not have a circuit and not being affected by electromagnetic fields.
It is appropriate for adverse environments.

Supporting small areas

The sensor head is small and light, so that it can be used in small or unstable areas. The sensor head and the fiber cable are removable.

Heat resistance up to 150℃

The sensor head and the fiber cable are heat resistance up to 150℃ without being affected by noise.

Easy adjustment and accurate measurement

This series used a green LED for the sight. Green LEDs are brighter than red LEDs. So they are much more visible.

Improved optics

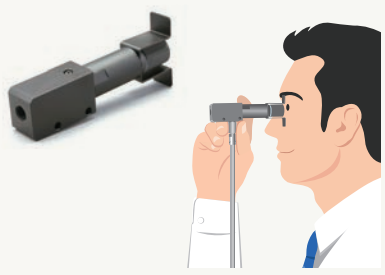
Enhanced optical components are used, so that it is possible to measure much smaller points.

CE

Special accessories

Different types of sensor heads

ex; the sensor head of the optical sight



CCD Camera

Laser pointer

Our laser pointer can accurately measure the distance when the sight is unclear or long ranges from the target.

Please check the specifications sheet for combinations and specifications of our items.
We can accommodate your custom specifications. Please feel free to contact us with any requests.

How to select the infrared thermometer

Selection guide for infrared thermometers

The following four factors should be considered before making your selection.

1 Temperature range

What is the desired temperature range of operation?

2 Material of targets

You need to identify the wavelength of measurement according to the material of the target (film, glass or semiconductor).

3 Size of the spot

What is the target size? The spot size must be less than 80% of the diameter of the target.

4 Measurement of distance

Distance between the thermometer and the target. Generally, the longer the distance of measurement, the larger the spot size.

Recommended cases

Professor

We test the board temperature fluctuation with vapor deposited to 10mm sample chips in a vacuum tank. The temperature changes quickly. The vacuum tank has a quartz window.

Temperature range: 350℃ ～ 1600℃
Measurement distance: 500mm
Spot size: ≦ϕ5.0mm

JS
Temperature range: 300℃ ～ 2000℃
Measurement distance: 500mm
Spot size: ϕ3.0mm

Through glass
High-speed response time

We recommend the FTKX-PNE0300-0500B201-000.
This thermometer has a wavelength that goes through quartz, so that it is able to measure the target through glass. The response time is extremely fast, with a speed of 1ms (0.001s), it never misses a sudden temperature change. It is possible to secure the measurement because the spot size is smaller than Φ5.0mm.

Electronics parts maker

We have to measure soldering points by YAG laser. We need to measure tiny points because the target area is very small.

Temperature range: 120℃ ～ 600℃
Measurement distance: 25mm
Spot size: ≦ϕ1.0mm

JS
Temperature range: 100℃ ～ 1500℃
Measurement distance: 25mm
Spot size: ϕ0.6mm

Tiny spot

We recommend the FTKX-TNE0100-0025B601-000.
This is able to measure the temperature of a minute point (ϕ 0.6mm) and suitable for measuring a soldering point or a small point of devices. This is able to measure regardless of the wavelength of the YAG laser. The optical coaxial LED sight can indicate most of the target area, so that it is easy to adjust the target in the same way as human eyes.

Steelmaker

We manufacture steel pipes that we bend by high-frequency heating. We have to measure a gap of 10mm between the surrounding coils. The air in the workplace is not good, because we splash coolant water, however we have instrument air blowing equipment.

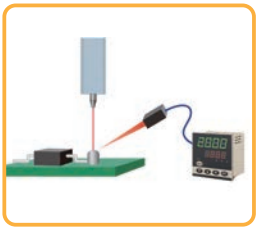
Temperature range: 900℃ ～ 1200℃
Measurement distance: 300mm
Spot size: ≦ϕ4.0mm

JS
Temperature range: 600℃ ～ 2000℃
Measurement distance: 300mm
Spot size: ϕ4mm

Adverse environment

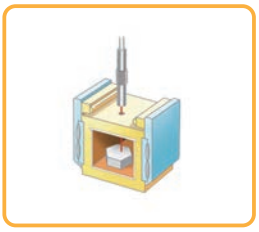
We recommend the FTKX-ANE0600-0300S201-000.
This is able to measure a stable target because the sensor head has no effect on radio frequency. You can use an air purge hood for protection of lens from stain if the target is in an adverse environment. By putting the temperature converter into the electronic control panel cabinet, and putting an extension cable on the fiber cable, it is able to measure a stable target without being affected by noise.

Application examples



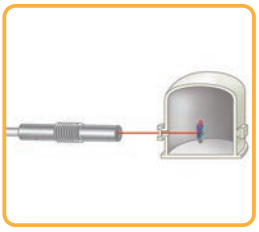
Laser soldering equipment

・You need to monitor the temperature of soldering
・You need to check the point of laser welding.



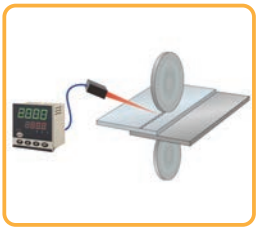
Microwave burning furnace

・You need to monitor the temperature during (a) food processing, (b) tires and rubber processing, (c) powder of phosphor, plastic or chemical material, (d) heating and drying-out (e) heating, welding or drying-out of ceramic, (f) glass or hollow fiber membrane.



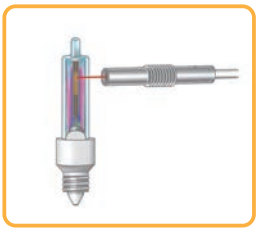
Inside of vacuum tank

・You need to measure the target's temperature inside of vacuum tank through glass window.



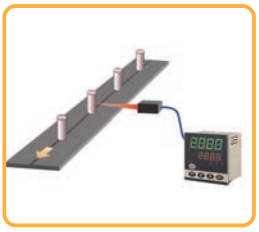
Temperature control immediately after seam welding

・You need to monitor the temperature at seam welding used for products such as steel cans.



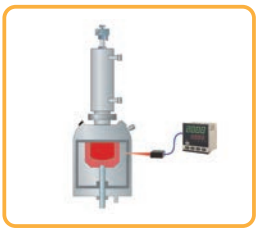
Temperature of filament or electrode in electric bulb.

・Measuring the temperature of filament in order to prolong electric bulb.



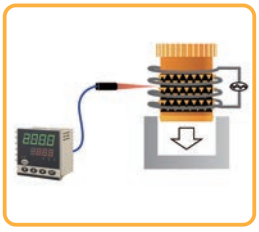
Product on conveyor

・You need to measure the temperature of products on conveyor belt.



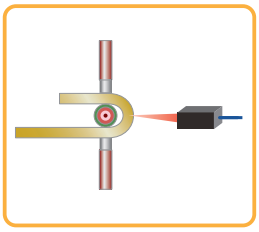
Temperature control of Si/SiC/GaN single crystal production equipment

・You need to monitor the temperature of growing a silicon ingot.



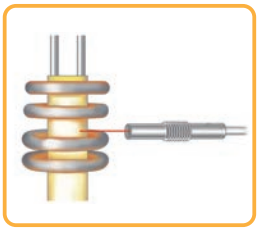
Measuring the temperature before press-fitting of insert nut

・You need to make sure that the insert nut has been precisely heated at the right temperature.



Measurement of fusing

・You need to measure the temperature during coils or inductors fusing.

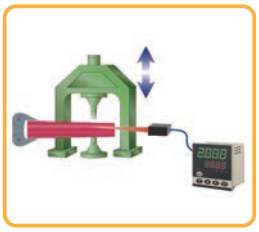


High-frequency heating

・You need to measure and monitor the temperature of the target between a gap of coils or top and bottom of coils.

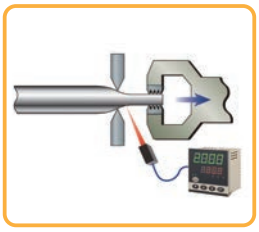
Hot metal

・You need to monitor the temperature of the metal plates during its rolling to keep a constant quality.



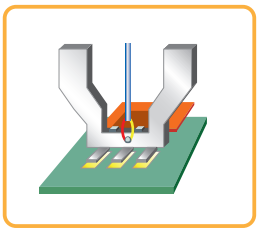
Metal forging

・You need to measure and monitor the temperature during metal forging.



Metal drawing

・You need to monitor the temperature during metal drawing.



Thermode tip

・You need to monitor the temperature during thermode tip implanting.

Please contact us if you do not find your applications in the examples here.

Selections of Displays and Setting Units for your applications

Unit to be built into customer control panel

Small type

TMCX-N

→ Analog output
Alarm output
Emissivity input

Large type

TMCX-H

→ Analog output
Alarm output
Emissivity input
RS485

Touch screen type to check on site

Color LCD, The graph view shows the history of the measured temperature.

Touch screen tyape
TMCX-TDE-110

→ Analog output
Alarm output
microSD card

Portable type

Configurable parameters for different types of thermometers

Parameter setting unit
PWCX

※Analog outputs via optional branch cable
(Model : TMBX-B01)

Batteries type

Monitoring on PC

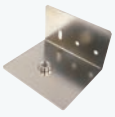
Parameters and the graph view of the measured temperature can be checked on your PC

Parameter setting kit

PC software
Licensed : **PWSX**
USB-RS232C converter : **PWUX**

※Analog outputs via optional branch cable
(Model : TMBX-B01)

Accessories

Mounting bracket for round head	Mounting bracket for square head	Tripod mounting bracket for square head	Mounting bracket for temperature converter	Protective window	Air purge hood to protect lens
FTX9-3	FTX9-1	FTX9-2	TMAX-A	TMDX-06S、TMDX-15S TMDX-25S	TMPX-06
					

Air purge hood to protect lens	Airless dust hood	Right-angled mirror (90degrees)	Fine adjustment stage	Extension cable	Branch cable
FTP9-6、FTP9-15	TMNX-06、TMNX-15 TMNX-25	TMLX-06S、TMLX-15S TMLX-25S	FTT9-3	TMBX-E05	TMBX-B01
					

JAPAN SENSOR CORPORATION
http://www.japansensor.co.jp/
info@japansensor.co.jp

■If you have any questions, contact us at the address or links shown below.

FTKX-Cata-V201906P201906 1K