



**JAPAN SENSOR**

**Infrared Thermometer**

Challenge, Create, Customize



**Measurements at  
hard-to-reach spots**



**TMHX** series

## TMHX-CUE<sup>\*1</sup>

The world's fastest response time of 0.1ms(0.0001s) by using Indium antimonide(InSb).

\*1 small type also available:TMHX-CHE (1ms) \*2 at room temperature (20 ~ 25°C)



## TMHX-CNE

New standard model with additional functions.



## TMHX-CLE

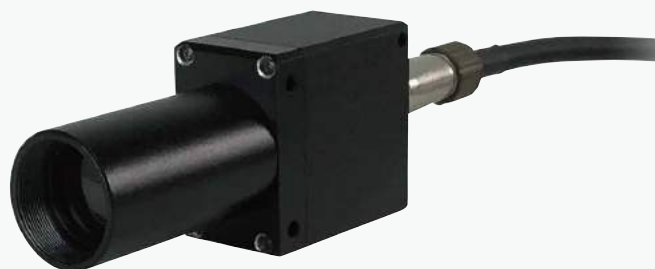
Usable at the long distance of 500mm.  
Wide temperature range : 0~1350°C



## TMHX-CSE<sup>\*3</sup>

Usable for a very small spot size of  $\phi 0.7\text{mm}$ .

\*3 small type available:measurement distance 100mm & spot size  $\Phi 1\text{mm}$ .



●Aluminium body with robustness, heat resistance and chemical resistance is equivalent to IP67.

●We have more various thermometers for low-temperature metals, mirror surface, glass, film, through quartz, lamp heating and flame detection.  
Please check the specifications sheet.

# Performance remarkably improved with indium antimonide(InSb).

## Quick response time with direct conversion of infrared rays.

Generally, a thermopile element converts infrared rays into thermal energy first, and then into electrical energy. Therefore, its response time is constrained. However, our the TMHX series using indium antimonide (InSb) is able to convert infrared rays directly into electrical energy and realizes the world's fastest response time for measuring at room temperature (20 ~ 25°C).

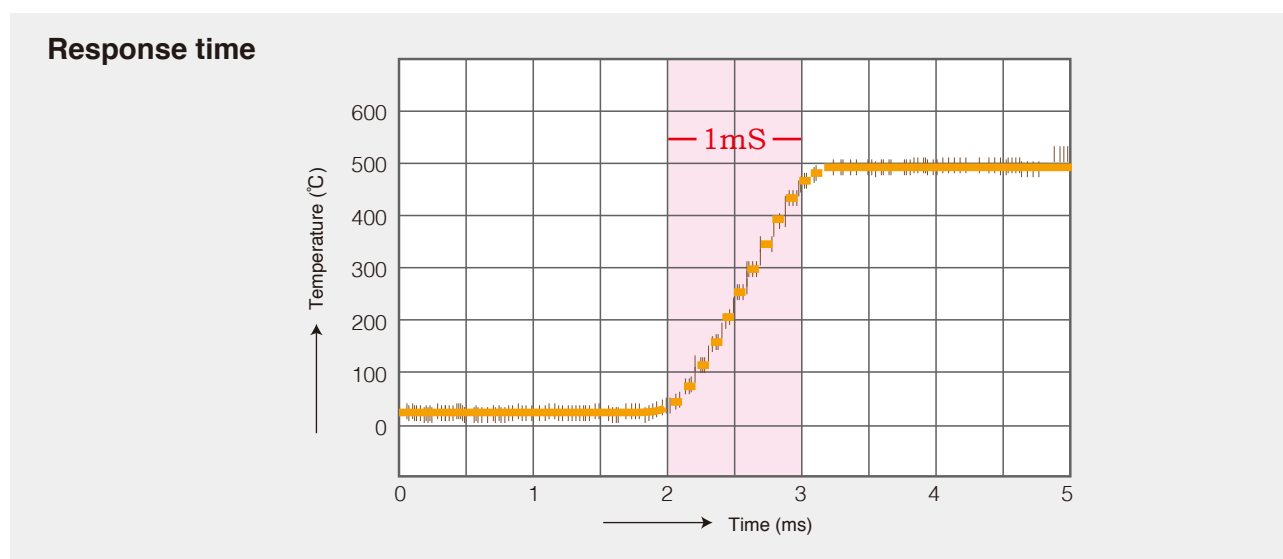
Thermopile method  
(conventional products)



TMHX series

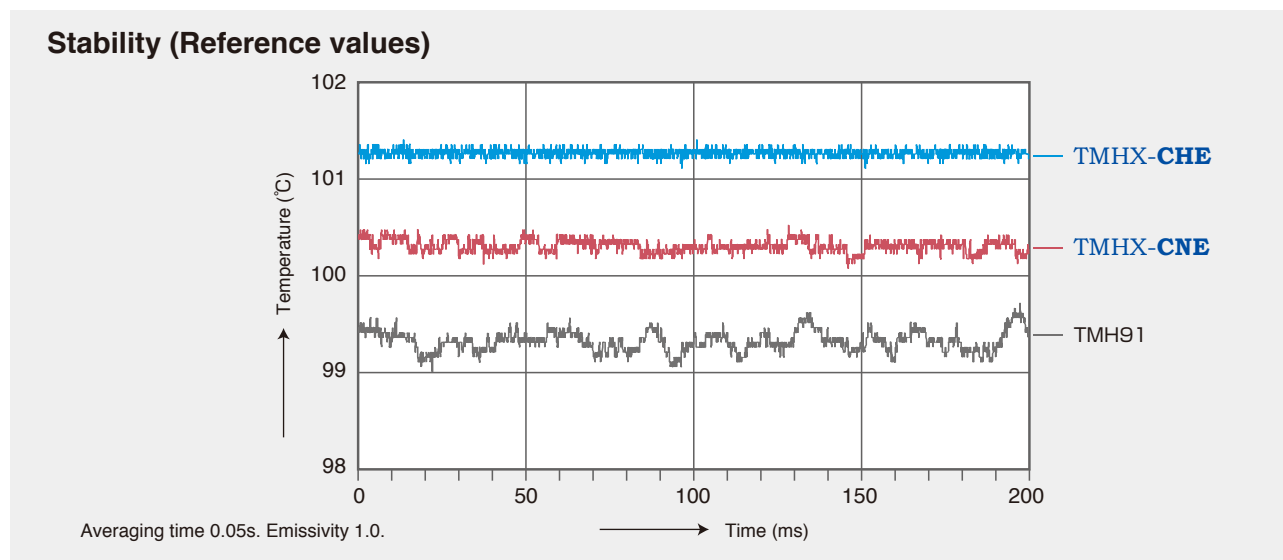


TMHX-**CHE**=1ms (0.001s) TMHX-**CNE/CLE/CSE**=10ms (0.01s)



## Stability remarkably improved.

The TMHX series using indium antimonide(InSb) remarkably improves the stability of measurement compared to the previous model, the TMH91, which uses a thermopile element(check the chart below). The TMHX series uses a short wavelength 2 ~ 6.8 $\mu$ m, which gets almost twice the emissivity measurement values for metals(iron, SUS, chrome, etc.) and realizes more stability in the measurement.

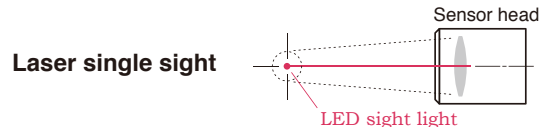
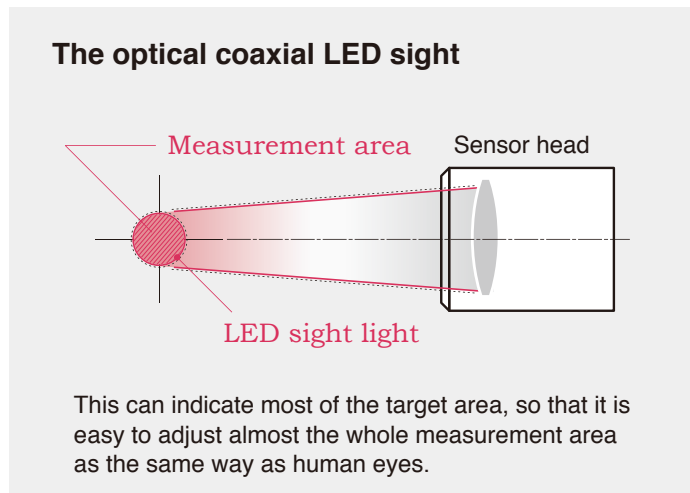


# Pursuing usability and durability.

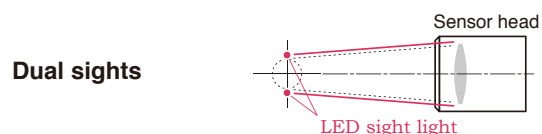
## Easy alignment with "the optical coaxial LED sight"

It is critical to accurately focus on a target in order to get a precise measurement.

The TMHX series uses "the optical coaxial LED sight" that can emit the visible light to sight on a target for easy alignment.



The single sighting cannot measure the whole measurement area since it can indicate only the center of the target area.



The dual sighting cannot measure the whole measurement area since it can indicate only both sides of the target area and the focus error becomes large once the focus is lost.

## Measuring a very minute point of $\varnothing 0.7\text{mm}$ .

The TMHX-CS can measure a very minute spot size down to a diameter of 0.7mm. You can choose the target size from 0.7mm to 9.0mm for your application.

### Images of the actual dimensions

TMHX-CSE  $\varnothing 0.7\text{mm}$



TMHX-CNE  $\varnothing 1.6\text{mm}$



TMHX-CHE  $\varnothing 3.5\text{mm}$

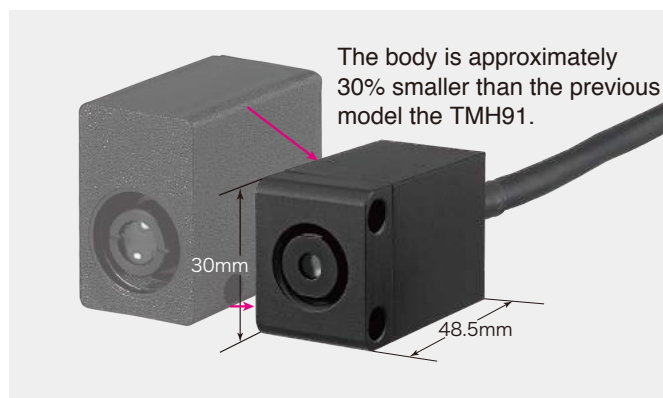


TMHX-CLE  $\varnothing 9.0\text{mm}$



## Aluminium body ensures a high durability equivalent to IP67.

The TMHX series uses an aluminium body that improved robustness, heat resistance and chemical resistance (compliant with the IP67 rating), equivalent to IP67. The size is approximately 30% smaller than the previous model the TMH91. The symmetric design is easy to install in various locations and the new cable has also improved durability.



※IP67

Ingress Protection ratings defined in international standard EN 60529.

The first number - Protection against solid objects.

6: Protected against dust that may harm equipment.

The second number - Protection against liquids.

7: Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 minutes.

# Supporting various applications.

The TMHX series has various displays and parameter setting units to meet your requirements such as the way to show the temperature, input emissivity and data communication. You can configure the systems by yourself with the TMHX series and the equipment you have. Please check the display guide and the display specifications sheet.

Display : TMCX-NDE CE

→ RS232C  
Analog



→ Analog output  
Alarm output  
Emissivity input

Display : TMCX-HA/HD

→ RS232C  
Analog



→ Analog output  
Alarm output  
Emissivity input  
RS485

Touch screen type : TMCX-TDE

→ RS232C  
Analog

CE



→ Analog output  
Alarm output  
microSD card

Parameter setting unit : PWCX

→ RS232C



Batteries type

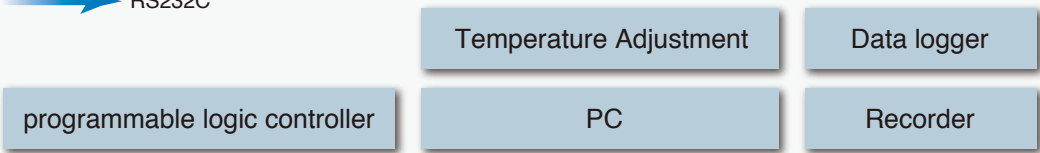
Software for parameter setting : PWSX

→ RS232C

USB-RS232C converter : PWUX



→ RS232C



# Specifications

Model	TMHX -CNE0500 -0035E1.6	TMHX -CNE0500 -0070E003	TMHX -CNE0500 -0120E5.5	TMHX -CUE0500 -0200H008	TMHX -CLE1350 -0500B009	TMHX -CSE0500 -0040H0.7
Temperature range	 0~500°C			 0~1350°C		 0~500°C
Spectral range	2~6.8μm				3~5.6μm	5~6.8μm
Measurement distance	35mm	70mm	120mm	200mm	500mm	40mm
Spot size	 ø 1.6mm	 ø 3.0mm	 ø 5.5mm	 ø 8.0mm	 ø 9.0mm	 ø 0.7mm
Response time	10ms (0.01s) ~			0.1ms (0.001s) ~		10ms (0.01s) ~
Analog output	4~20mA / 0~20mA / 0~1V / mV/°C (switchable)					
Alarm output	open-drain: 27VDC, 0.2A					
Communications	RS232C (non-isolated)					
Supply voltage	DC4.7~27V, 0.1A max.					

CE mark certified (EMC EN61326-1:2013, RoHS EN50581:2012)

## Accessories

Shield case	Mounting bracket	Protective window	Air purge food	Airless dust protector	Right angle mirror
TMSX-A TMSX-B4	TMAX-A TMAX-B	TMDX-A1C TMDX-15C	TMPX-A1 TMPX-25	TMNX-A1 TMNX-25	TMLX-A1C TMLX-15C
Use with the sensor head to protect from electromagnetic at applications.	Bracket for sensor head installation.	Use with the lens to prevent contamination and damage.	Use with the lens to prevent dust and condensation.	Use with the lens to prevent dust. No air supply required.	Reflects sensor field of view by 90 degrees.
Water cooling jacket	Extension cable	Branch cable	Resistor	Capacitor	Ferrite core
TMWX-A1 TMWX-B4	TMBX-E05	TMBX-B01	TR-251N TR-501N	TC-105N	FC-2032
Use for installing sensor heads where the ambient temperature is more than 50°C	Extension cable:5m e-CON	For setting unit when thermometer is used alone. e-CON branch.	For the analog output 0-5V/10V	For analog output noise. Connect to analog signal receiver.	For power noise. Install to cables.

•The contents described in this catalog are subject to change for improvement without notice.

JAPAN SENSOR CORPORATION

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



# TMHX-C series Specifications sheet



Features	General purpose			Minute points		Long distance:500mm
Photo						
Model	<b>TMHX</b> -CNE0500 -0035E1.6	<b>TMHX</b> -CNE0500 -0070E003	<b>TMHX</b> -CNE0500 -0120E5.5	<b>TMHX</b> -CSE0500 -0100E001	<b>TMHX</b> -CSE0500 -0040H0.7	<b>TMHX</b> -CLE1350 -0500B009
Temperature range	<p>0 ~ 500°C</p>			<p>0 ~ 500°C</p>		<p>0 ~ 1350°C</p>
Spectral range	2.0 ~ 6.8μm			2.0 ~ 6.8μm	5.0 ~ 6.8μm	3.0 ~ 5.6μm
Measurement distance	35mm	70mm	120mm	100mm	40mm	500mm
Spot size *2	 ∅ 1.6mm	 ∅ 3mm	 ∅ 5.5mm	 ∅ 1mm	 ∅ 0.7mm	 ∅ 9mm
Accuracy *1	< 300°C:±3.0°C ≥ 300°C: measured value ±1%			± 5°C	< 300°C:±3.0°C ≥ 300°C: measured value ±1%	<300°C:±3.0°C ≥ 300°C: measured value ±1%
Repeatability *1	±0.5°C			±2°C	±1°C	±1°C
Resolution *1	≤ 0.5°C			< 100°C: ≤ 3°C ≥ 100°C: ≤ 1.5°C	< 50°C: ≤ 1°C ≥ 50°C: ≤ 0.5°C	< 50°C: ≤ 1°C ≥ 50°C: ≤ 0.5°C
Response Time	0.01 ~ 5s (0 ~ 95% analog output) configurable by smoothing function			0.05 ~ 5s (0 ~ 95% analog output) configurable by smoothing function	0.01 ~ 5s (0 ~ 95% analog output) configurable by smoothing function	0.01 ~ 5s (0 ~ 95% analog output) configurable by smoothing function *3
Warm-up time	1min			1min	3min	1min
Dimension category	HX-C1			HX-C2a	HX-D4	HX-C2b
Weight (cable not included)	80g			85g	190g	90g
Cable	2m Direct leading out			2m Direct leading out	2m With a connector	2m Direct leading out
Accessory category	A			B	C	B *4

*1	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.05s.
*2	Check the optics diagrams for spot sizes outside of the ranges in the measurement distance section above. It shows the area where 90% of the total energy is included.
*3	The response time may be longer by 0.001s when switching the internal range.
*4	Water cooling jacket the TMWX-A3 is available.



Features	Quick response : 1ms		Ultra quick response : 0.1ms	Glass				
	Photo							
Model	<b>TMHX</b> -CHE0500 -0100B3.5	<b>TMHX</b> -CHE0500 -0200B007	<b>TMHX</b> -CUE0500 -0200H008	<b>TMHX</b> -CGE1200 -0180E007	<b>TMHX</b> -CGE1200 -0500E020	<b>TMHX</b> -CGE2400 -0150H2.2	<b>TMHX</b> -CGE2400 -0300H4.5	<b>TMHX</b> -CGE2400 -1500H020
Temperature range	 0 ~ 500°C		 0 ~ 500°C	 50 ~ 1200°C		 50 ~ 2400°C		
Spectral range	2.0 ~ 6.8μm		2.0 ~ 6.8μm	5.0 ~ 5.6μm				
Measurement distance	100mm	200mm	200mm	180mm	500mm	150mm	300mm	1500mm
Spot size *2	 ø 3.5mm	 ø 7mm	 ø 8mm	 ø 7mm	 ø 20mm	 ø 2.2mm	 ø 4.5mm	 ø 20mm
Accuracy *1	< 350°C: ±3.5°C ≥ 350°C: measured value ±1%		< 400°C: ±4.0°C ≥ 400°C: measured value ±1%	< 300°C: ±3.0°C ≥ 300°C: measured value ±1%		< 300°C: ±3.0°C ≥ 300~1200°C: measured value ±1% ≥ 1200°C: measured value ±2% *5		
Repeatability *1	±1°C		±0.5°C	±1°C		Measured value ±0.2% ±2°C		
Resolution *1	< 50°C: ≤ 1.5°C ≥ 50°C: ≤ 0.7°C		< 50°C: ≤ 4°C ≥ 50°C: ≤ 3°C	< 100°C : ≤ 1°C ≥ 100°C : ≤ 0.5°C				
Response Time	0.001 ~ 5s (0~95% analog output) configurable by smoothing function		0.0001 ~ 5s (0~95% analog output) configurable by smoothing function	0.05 ~ 5s (0~95% analog output) configurable by smoothing function *3		0.01 ~ 5s (0~95% analog output) configurable by smoothing function *4		
Warm-up time	1 min		3 min	1 min		3 min		
Dimension category	HX-C2a		HX-D4	HX-C1		HX-D4		
Weight (cable not included)	85g		190g	80g		190g		
Cable	2m Direct leading out		2m With a connector	2m Direct leading out		2m With a connector		
Accessory category	B		C	A		C		

*1	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.001s.	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.0001s.	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.05s.					
*2	Check the optics diagrams for spot sizes outside of the ranges in the measurement distance section above. It shows the area that 90% of the total energy is included.							
*3	The response time may be longer by 0.001s when switching the internal range.							
*4	The response time may be longer by 0.002s when switching the internal range.							
*5	Accuracy not guaranteed for the temperature higher than 2,000°C.							





Features	Mirror surface		Film	Through quartz		Lamp heating	Through flame	Flame detection
Photo								
Model	<b>TMHX</b> -CME0250 -0020E004	<b>TMHX</b> -CME0250 -0050H003	<b>TMHX</b> -CFE0350 -0200E012	<b>TMHX</b> -CQE0500 -0200E011	<b>TMHX</b> -CQE0500 -0200H004	<b>TMHX</b> -CPE1200 -0180E007	<b>TMHX</b> -CVE1300 -0200H4.5	<b>TMHX</b> -CBE1500 -0300E018
Temperature range	 1500°C 1000°C 500°C 0°C 50 ~ 250°C		 80 ~ 350°C	 50 ~ 500°C		 0 ~ 1200°C	 200 ~ 1300°C	 150 ~ 1500°C
Spectral range	2 ~ 6.8μm		3.4μm	3.0 ~ 4.0μm	2.8 ~ 3.9μm	5.0 ~ 6.8μm	3.9μm	4.3μm
Measurement distance	20mm *Note5	50mm *Note5	200mm	200mm		180mm	200mm	300mm
Spot size *2	 ∅ 4mm	 ∅ 3mm	 ∅ 12mm	 ∅ 11mm	 ∅ 4mm	 7mm	 ∅ 4.5mm	 ∅ 18mm
Accuracy *1	±5°C	±4°C	±4°C	< 300°C: ±3.0°C ≥ 300°C: measured value ±1%	< 300°C: ±4.0°C ≥ 300°C: measured value ±1.5%	< 300°C: ±3.0°C ≥ 300°C: measured value ±1%	< 300°C: ±3.0°C ≥ 300~1200°C: measured value ±1% ≥ 1200°C: measured value ±2%	none
Repeatability *1	±2°C		±1°C	±1°C		±0.5°C	Measured value ±0.2% ±0.2°C	±5°C
Resolution *1	≤ 2°C		< 120°C: ≤ 1°C ≥ 120°C: ≤ 0.5°C	< 100°C: ≤ 1°C ≥ 100°C: ≤ 0.5°C	≤ 0.5°C	≤ 0.5°C	< 300°C: ≤ 1°C ≥ 300°C: ≤ 0.5°C	≤ 1°C
Response time	0.05 ~ 5s (0~95% analog output) configurable by smoothing function		0.05 ~ 5s (0~95% analog output) configurable by smoothing function	0.05 ~ 5s (0~95% analog output) configurable by smoothing function *3		0.01 ~ 5s (0~95% analog output) configurable by smoothing function *3	0.01 ~ 5s (0~95% analog output) configurable by smoothing function *4	0.05 ~ 5s (0~95% analog output) configurable by smoothing function
Warm-up time	3 min		1 min	1 min	3 min	1 min	3 min	1 min
Dimension category	HX-C1 + Light shielding hood	HX-D5	HX-C1	HX-C1	HX-D4	HX-C1	HX-D4	HX-C1
Weight (cable not included)	110g	210g	80g	80g	190g	80g	190g	80g
Cable	2m Direct leading out	2m With a connector	2m Direct leading out	2m Direct leading out	2m With a connector	2m Direct leading out	2m With a connector	2m Direct leading out
Accessory category	A	C	A	A	C	A	C	A

*1	Ambient temperature 23±5°C, Emissivity 0.05, Averaging time 0.5s.	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.5s.	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.1s.		Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.05s.	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.05s.	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 1s.	
*2	Check the optics diagrams for spot sizes outside of the ranges in the measurement distance section above. It shows the area that 90% of the total energy is included							
*3	The response time may be longer by 0.001s when switching the internal range.							
*4	The response time may be longer by 0.002s when switching the internal range.							
*5	Valid measurement distance; ±10mm.							

## Common Specifications

Detective Element	InSb (Indium antimonide)	
Sight	Red LED sight *switchable on/off	
Output	Analog output (non-isolated)	
	Output type (selective)	Output Range
	0 ~ 1V	≥ 30mV
	mV/°C	≥ 30mV (30°C)
	0 ~ 20mA	≥ 0.2mA
	4 ~ 20mA	≥ 4.0mA
	Output Accuracy *1	
	±1.5mV	
±1.5mV		
±0.02mA		
±0.02mA		
RS232C output (non-isolated)		
output swing: approx. ±4V baud rate: 4800, 9600, 19200, 38400, 57600, 115200bps		
Alarm output (non-isolated)		
open-drain: 27VDC, 0.2A hysteresis: 0 ~ 99.9°C		
Peak Hold	reset (switchable)	time: 0.01 ~ 10s (configurable) discharge: time 0.01 ~ 10s, level 0.2 ~ 1.0
Emissivity correction	guaranteed range ; 0.3 ~ 1.0 *2 setting range ; 0.05 ~ 1.000 (setting resolution:0.001) ☉ reflected correction function	
Sensor correction function	span:0.500 ~ 2.000 / zero: -50 ~ +50( °C or °F selectable)	
Temperature indication	none	
Cable length	2m (standard)	
Protection class	same quality as IP67, not included:e-con connector	
Ambient temperature	0 ~ 50°C *3	
Ambient humidity	30 ~ 85%RH (non-condensing)	
Storage temperature	-15 ~ 70°C *3	
Supply voltage	DC4.7 ~ 27V、 0.1A max.	

CE Aquired CE marking (EMC EN61326-1:2013,RoHS EN50581:2012)

\*1 : Static error is reflected in the accuracy rating.

\*2 : The TMHX-CME, guaranteed range is 0.05 ~ 1.0.

\*3 : The TMHX-CME250-0020E004, ambient temperature 0 ~ 70°C, storage temperature -15 ~ 80°C.

Ordering information	Cable length	-00	2m (standard)	Analog output mV/°C 4 - 20mA 0 - 20mA switchable	0	0 ~ 1V (standard)
		-05	5m		5	0 ~ 5V (built-in resistor)
		-10	10m		1	0 ~ 10V (built-in resistor)

## Operations

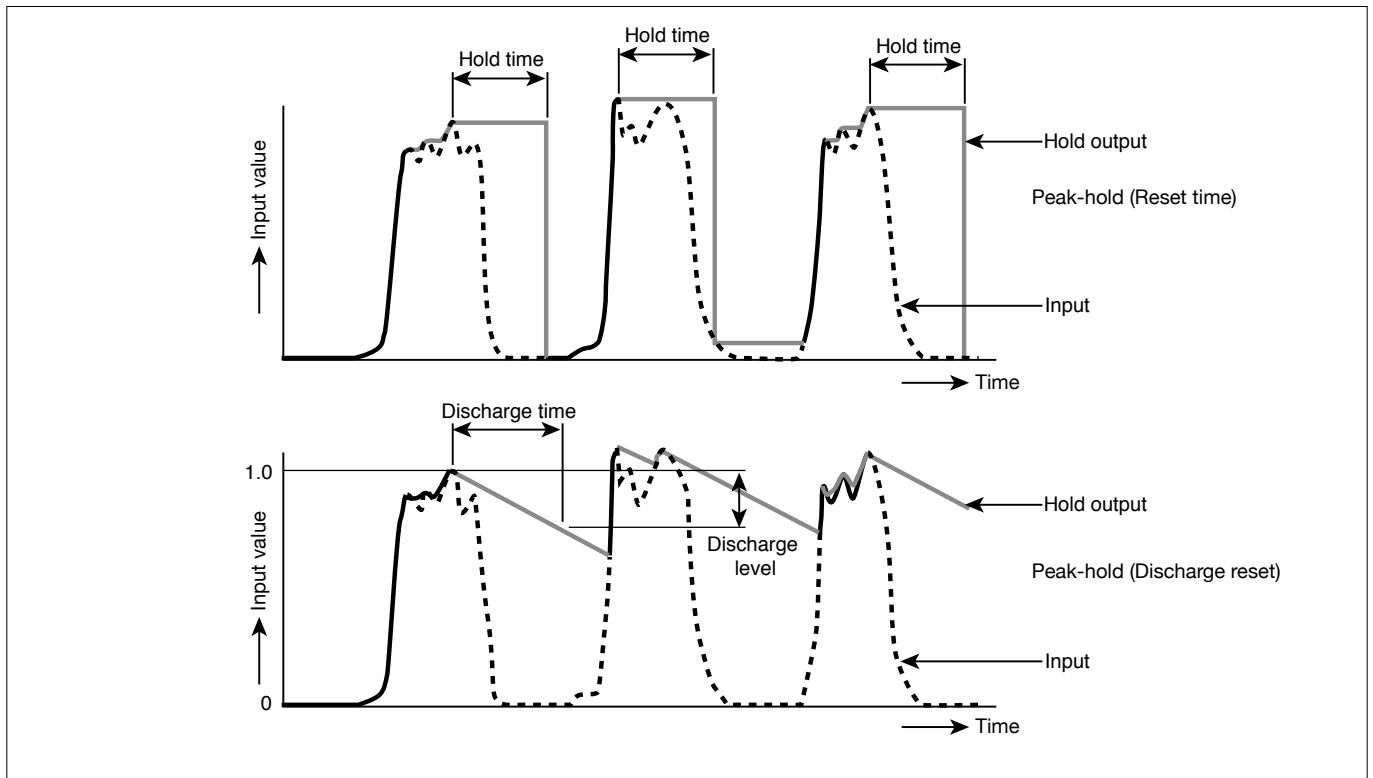
### Alarm outputs

Mode No.	Alarm name	Measurement temperature			
		← Low	Low set point	High set point	High →
1	High ON				█
2	High OFF	█			
3	Low ON	█			
4	Low OFF		█		
5	Band ON		█		
6	Band OFF	█			█
7	Error ON	█			█
8	Error OFF				

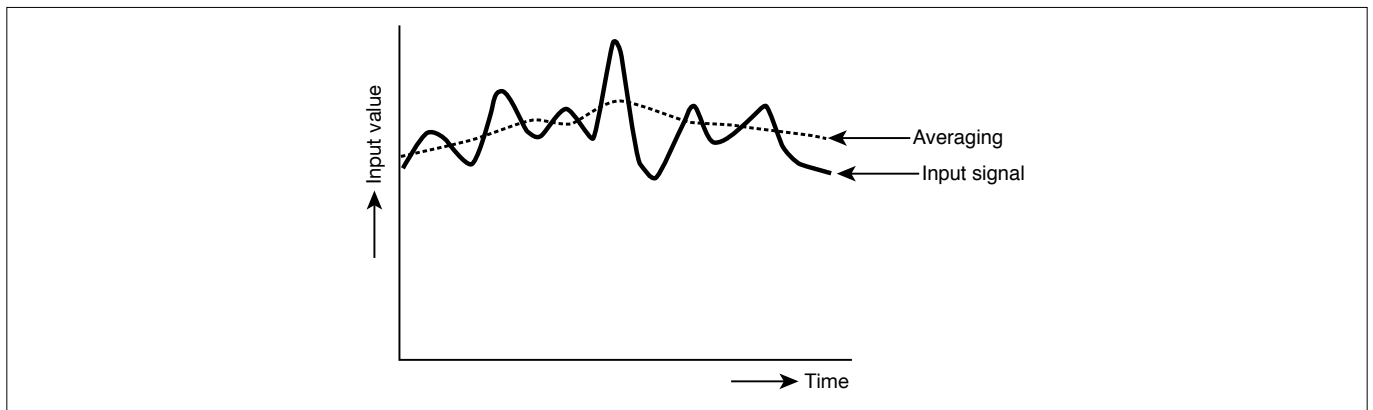
\*Error : an inner voltage malfunction

ON █

### Peak-hold operation

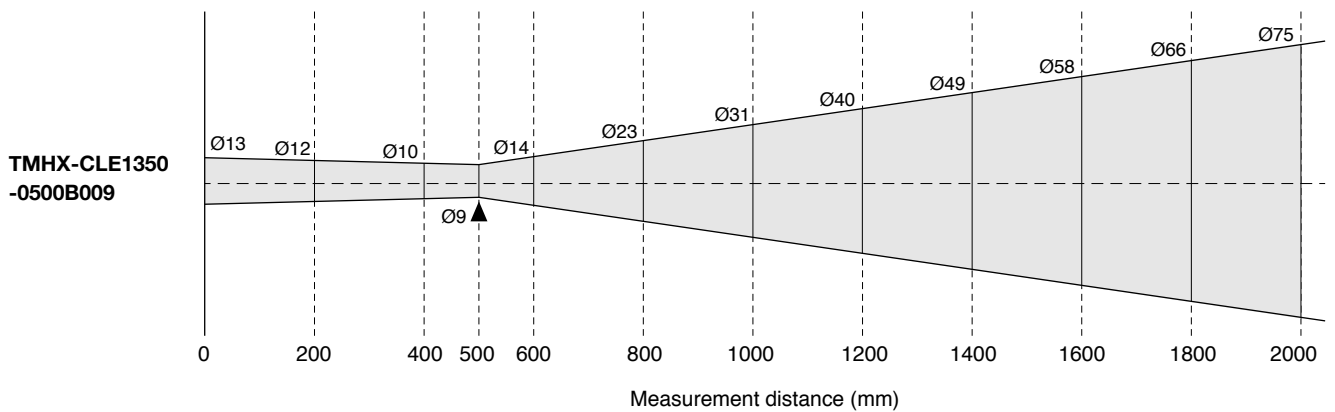
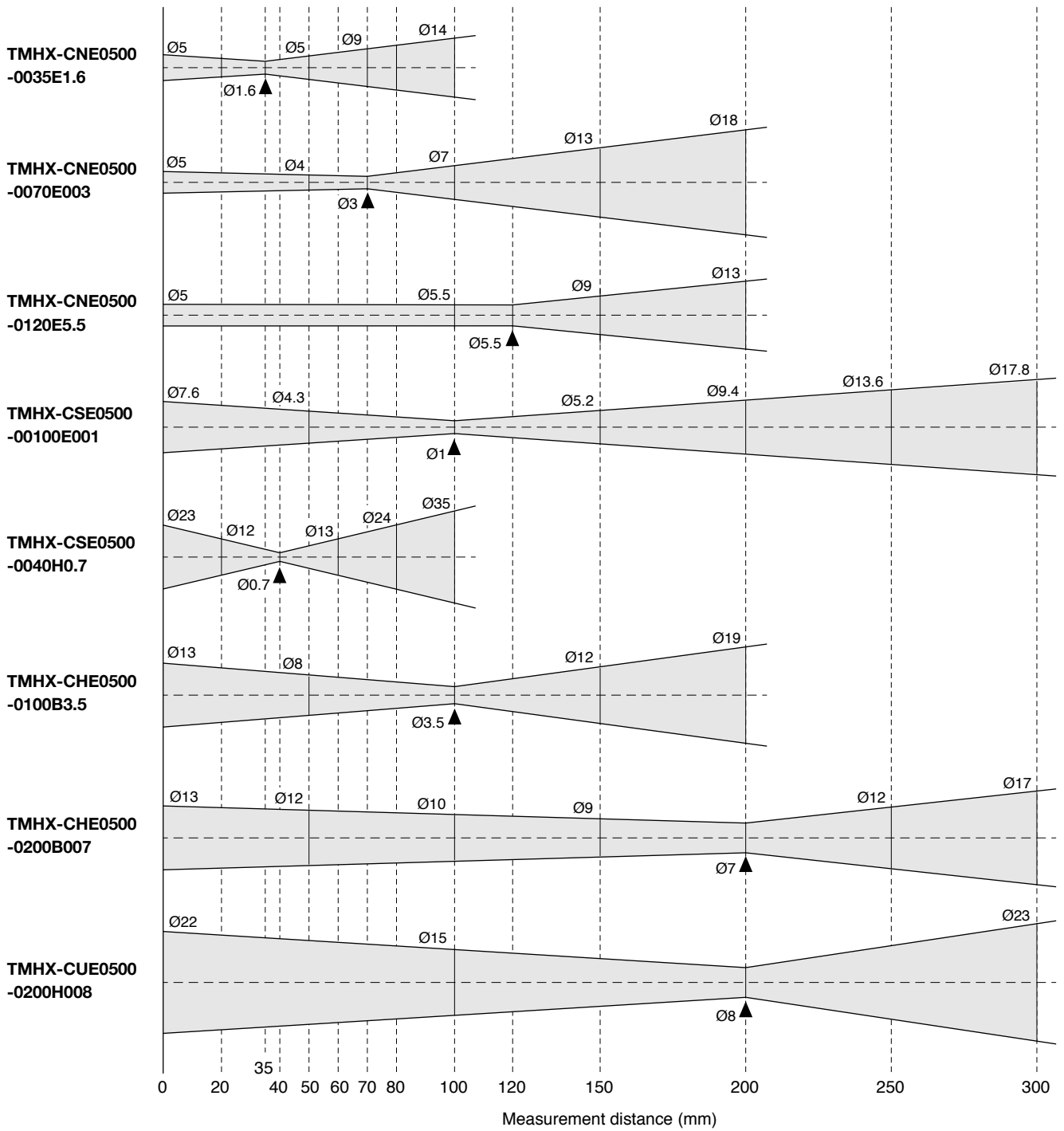


### Averaging time



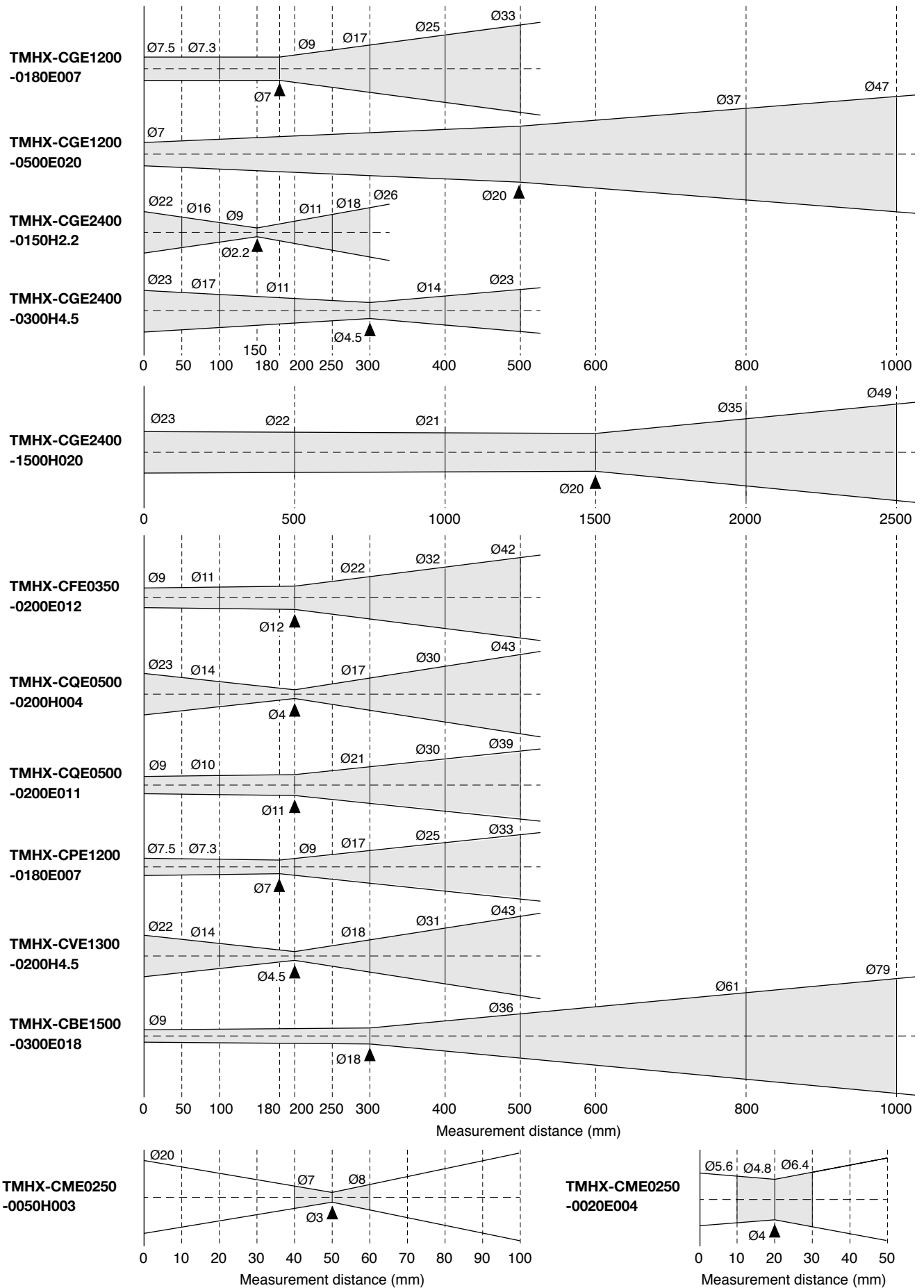
Optics diagram

It shows the area that 90% of the total energy is included.



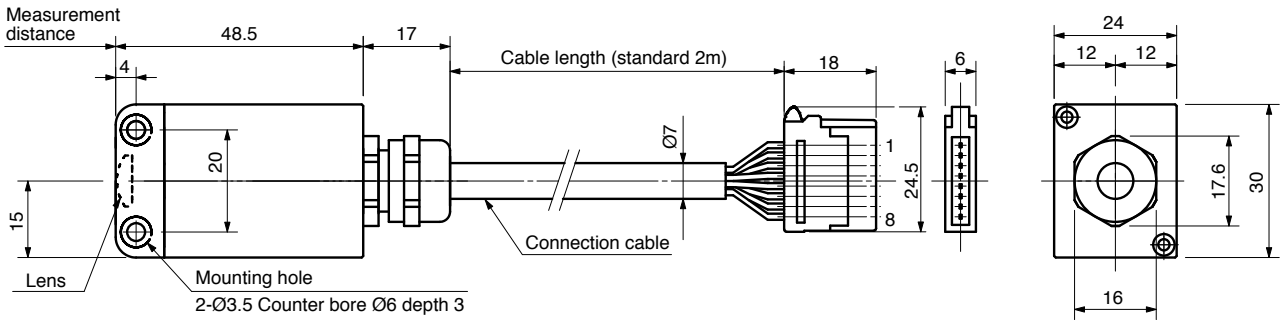
Optics diagram

It shows the area that 90% of the total energy is included.

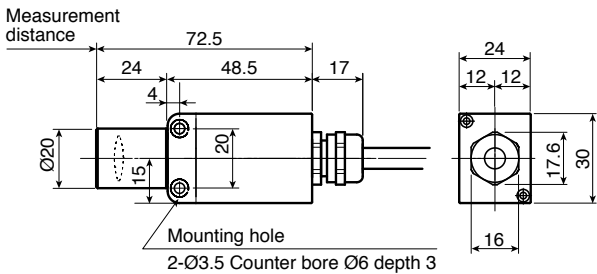


Sensor head dimensions (mm)

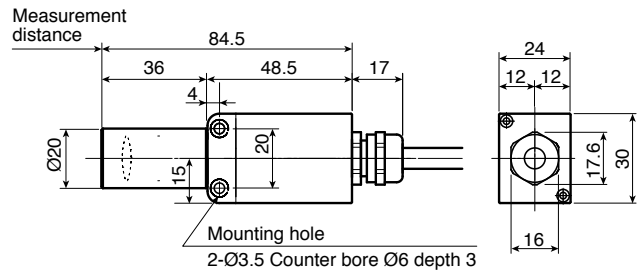
HX-C1



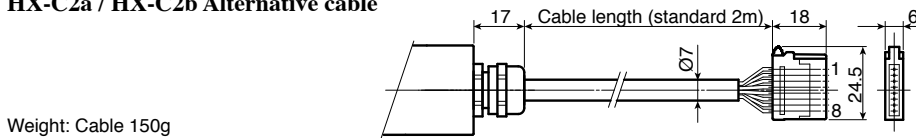
HX-C2a



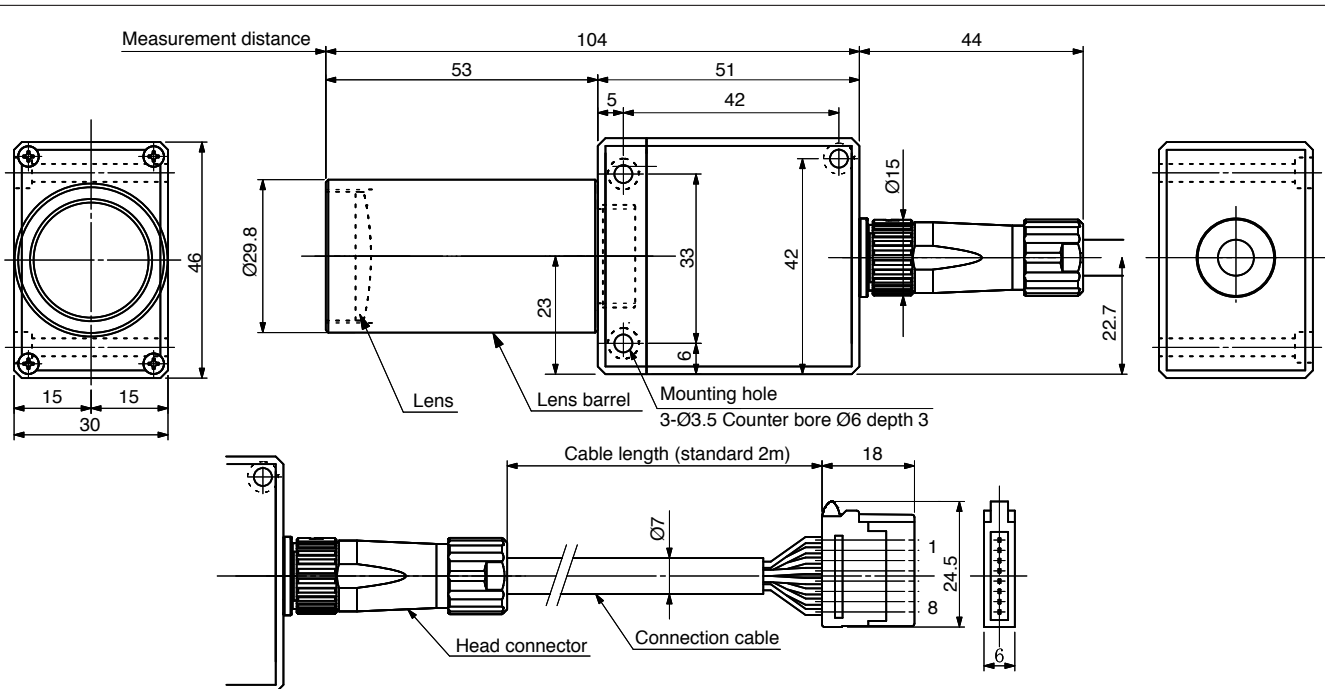
HX-C2b



HX-C2a / HX-C2b Alternative cable

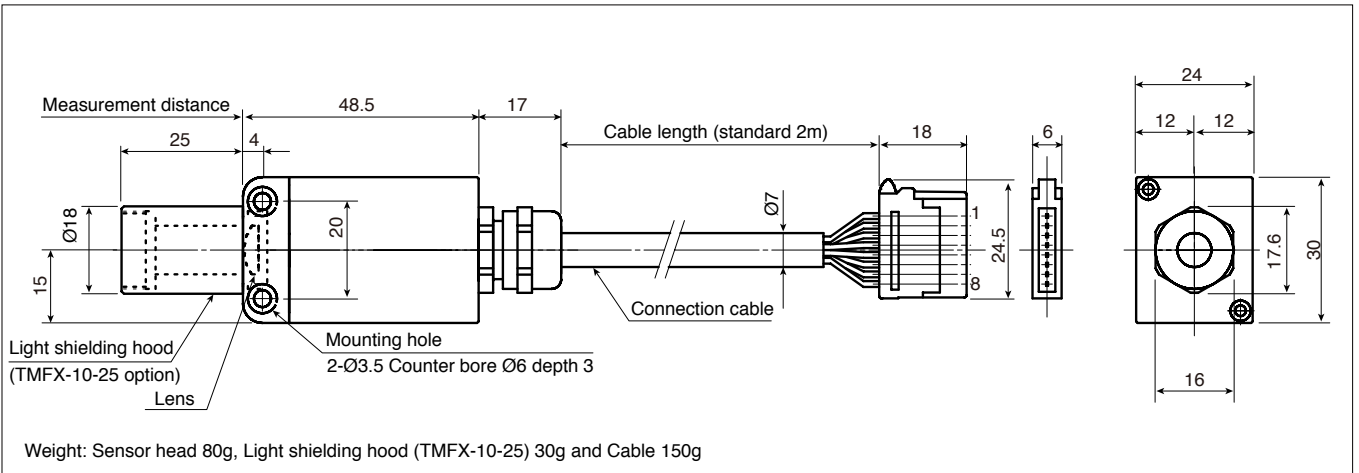


HX-D4

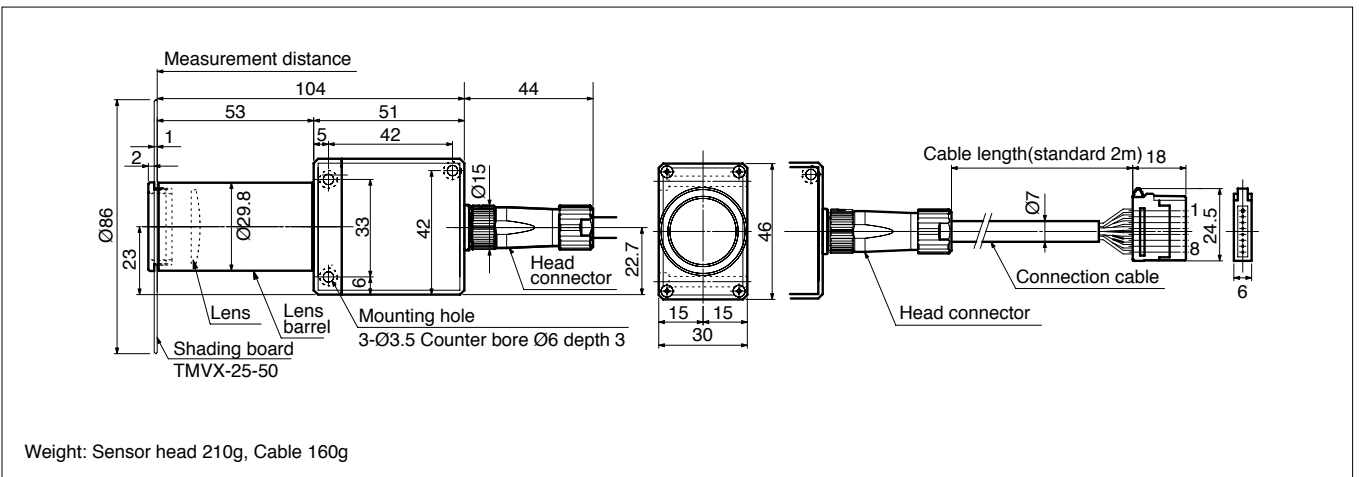


Sensor head dimensions (mm)

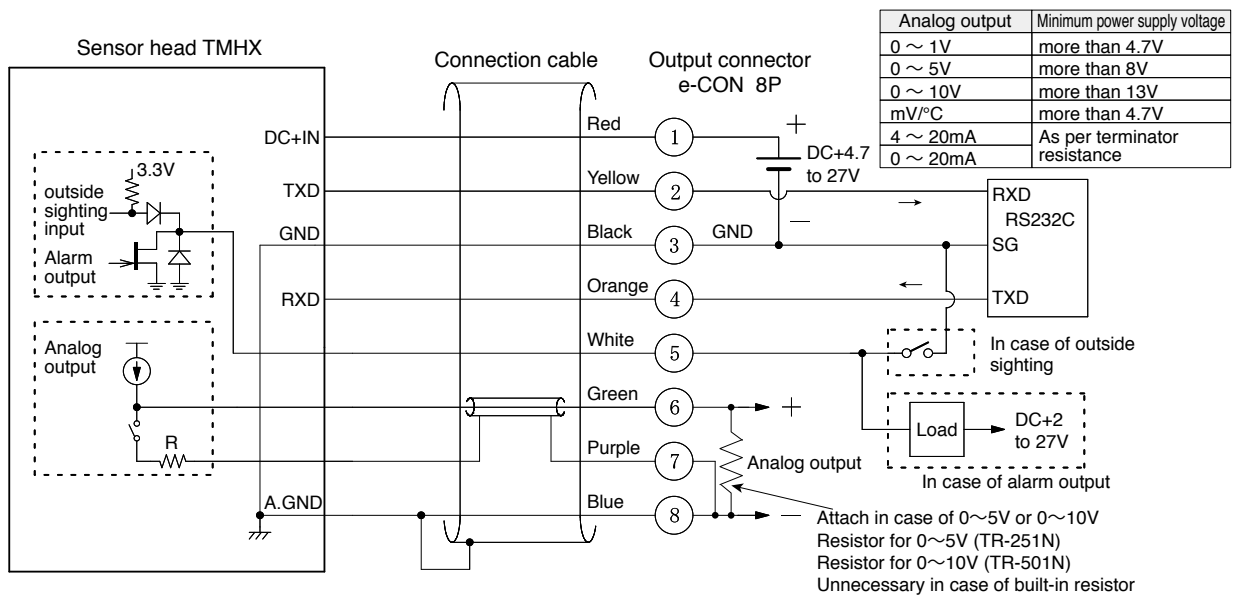
HX-C1+Shading hood



HX-D5



Wiring (in case the thermometer is used alone)



Accessories

**Mounting bracket TMAX-A**

Bracket for sensor head installation Accessory : A,B

t 2.0  
Weight : 45g

**Mounting bracket TMAX-B**

Bracket for sensor head installation Accessory : C

t 2.0  
Weight : 85g

**Protective window TMDX-A1C / TMDX-15C / TMDX-25C**

Use with the lens to prevent contamination and damage.

Model	A	B	C	D	Accessories
TMDX-A1C	Ø20.5	7	12	M16P2	A
TMDX-15C	Ø20.5	7	10	M16P0.75	B
TMDX-25C	Ø30.5	9	12	M26P0.75	C

**Air purge hood TMPX-A1 / TMPX-15 / TMPX-25**

Use with the lens to prevent dust and condensation.

Model	A	B	C	D	E	F	Accessories
TMPX-A1	Ø18	Ø10	35	40	M16P2	24.5	A
TMPX-15	Ø20	Ø17	50	53	M16P0.75	27	B
TMPX-25	Ø30	Ø25	75	79	M26P0.75	32	C

**Airless dust protector TMNX-A1 / TMNX-15 / TMNX-25**

Use with the lens to prevent dust. No air supply required.

Model	A	B	C	D	Accessories
TMNX-A1	Ø28	50	54.5	M16P2	A
TMNX-15	Ø40	70.5	73.5	M16P0.75	B
TMNX-25	Ø66	107	112.5	M26P0.75	C

**Right angle mirror TMLX-A1C / TMLX-15C / MLX-25C**

Reflects sensor field of view by 90 degrees.


Model	A	B	C	D	E	F	G	Optical path	Accessories
TMLX-A1C	23.8	20	5	14.9	M16P2	34	29.8	34.9	A
TMLX-15C	23.8	20	3	14.9	M16P0.75	34	29.8	34.9	B
TMLX-25C	36	30	5	22	M26P0.75	50	45	52	C



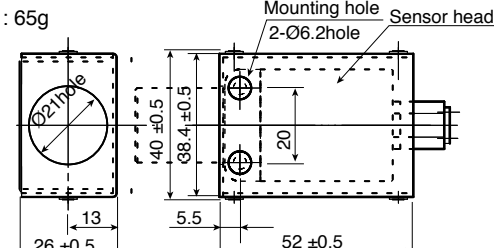
Accessories

**Shield case** **TMSX-A**

Use with the sensor head to protect from electromagnetic at applications such as high frequency heating. **Accessory : A,B**




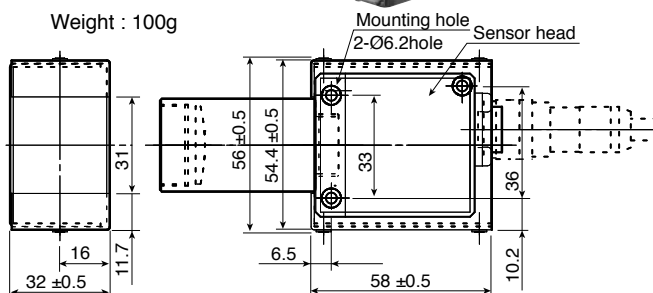
Weight : 65g



**Shield case** **TMSX-B4**


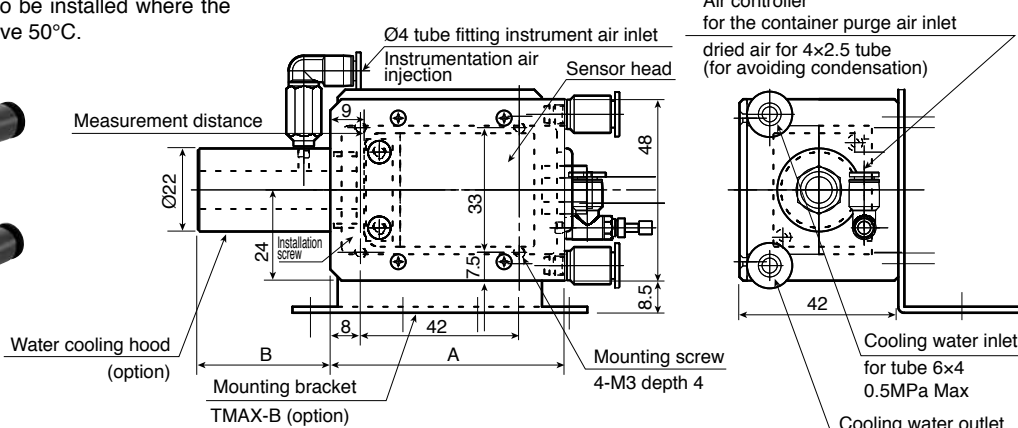
Use with the sensor head to protect from electromagnetic at applications such as high frequency heating. **Accessory : C**

Weight : 100g

**Water cooling jacket** **TMWX-A1 / TMWX-A2 / TMWX-A3**

Use with the sensor head to be installed where the ambient temperature is above 50°C.





Model	A	B	Accessories	Hood Model
TMWX-A1	62	35	A	TMPX-10W
TMWX-A2	86	50	B ※	TMPX-15W
TMWX-A3	98	50	TMHX-CLE	TMPX-15W

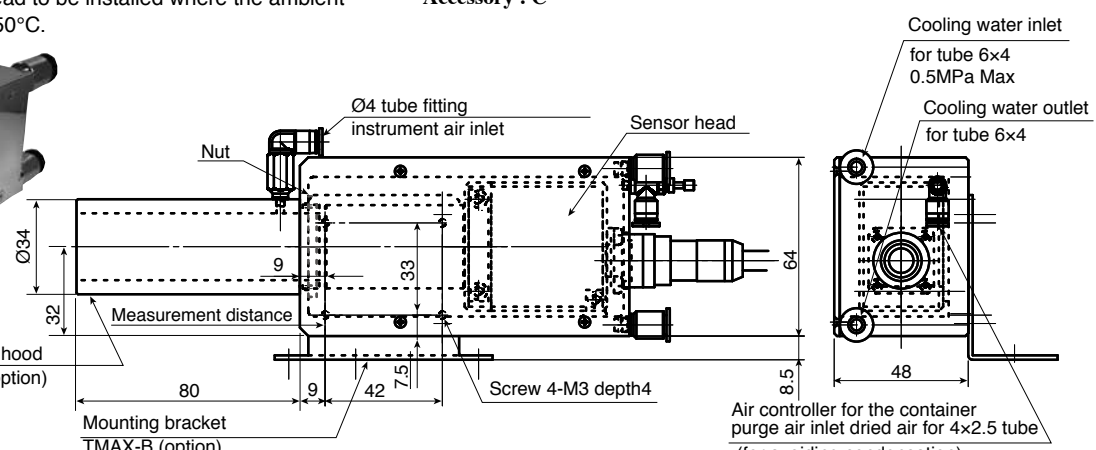
※not included : TMHX-CLE

**Water cooling jacket** **TMWX-B4**

Use with the sensor head to be installed where the ambient temperature is above 50°C. **Accessory : C**





\*Image




**Accessories**

Extension cable	<b>TMBX-E05</b>
Extension cable : 5m e-con female / e-con male	Accessory : <b>A,B,C</b>
	
Weight : 390g	

Branch cable	<b>TMBX-B01</b>
For setting unit when thermometer is used alone. e-con branch	Accessory : <b>A,B,C</b>
	
Weight : 85g	

Resistor	<b>TR-251N / TR-501N</b>
Analog output TR-251N : 0 ~ 5V TR-501N : 0 ~ 10V To change from current to voltage : 0 ~ 20mA	Accessory : <b>A,B,C</b>
	
Weight : 0.5g	

Capacitor	<b>TC-105N</b>
Noise suppressor for analog.	Accessory : <b>A,B,C</b>
	
Weight : 0.5g	

Ferrite core	<b>FC-2032</b>
For power noise. Install to cables.	Accessory : <b>A,B,C</b>
	
Weight : 23g	

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



# TMHX-T series Specifications sheet



Features	low-temperature metals			
Photo				
Model	<b>TMHX</b> -TME0050 -0050H001	<b>TMHX</b> -TME0050 -0100H002	<b>TMHX</b> -TME0050 -0200H3.5	<b>TMHX</b> -TME0050 -0200E011
Temperature range	<p>50 ~ 600°C</p>			
Spectral range	1.95 ~ 2.6μm			
Detecting element	InGaAs			
Measurement distance	50mm	100mm	200mm	
Spot size *2	• Ø 1mm	• Ø 2mm	• Ø 3.5mm	• Ø 11mm
Accuracy *1	< 300°C: ±3.0°C (sensor head temperature +25°C < a target temperature ) ≥ 300°C: measured value ±1%			
Repeatability *1	Measured value ±0.2% ±2°C			
Measuring Resolution *1	< 100°C : ≤ 2°C, ≥ 100°C : ≤ 0.5°C			
Response Time	0.001 ~ 5s (0 ~ 95% analog output) configurable by smoothing function *3			
Warm-up time	1min			
Power supply voltage	DC4.7 ~ 27V, 0.1A max.			
Dimension category	HX-D4+Shading hood *4			HX-C1+Light shielding hood *4
Weight (cable not included)	190g (not included: light shielding hood)			80g (not included: light shielding hood)
Cable	2m (with a connector)			2m Direct leading out
Accessory category *5	C			A

*1	Ambient temperature 23±5°C, Emissivity 1.0, Averaging time 0.05s.
*2	Check the optics diagrams for spot sizes outside of the ranges in the measurement distance section above. It shows the area where 90% of the total energy is included.
*3	The response time may be longer by 0.003s when switching the internal range.
*4	Light shielding hood is optional.
*5	Check the TMHX-C series' specifications sheet.



Common Specifications

Sight	Red LED sight *switchable on/off	
Output	Analog output (non-isolated)	
	Output type (selective)	Output Range
	0 ~ 1V	≥ 30mV
	mV/°C	≥ 30mV (30°C)
	0 ~ 20mA	≥ 0.2mA
	4 ~ 20mA	≥ 4.0mA
	Output Accuracy *1	
±1.5mV		
±1.5mV		
±0.02mA		
±0.02mA		
RS232C output (non-isolated)		
output swing range ; approx.±4V baud rate ; 4800, 9600, 19200, 38400, 57600, 115200 bps		
Alarm Output (non-isolated)		
open-drain: 27VDC, 0.2A hysteresis: 0 ~ 99.9°C		
Peak hold	reset (switchable)	time : 0.01 ~ 10s (configurable) discharge : time 0.01 ~ 10s, level 0.2 ~ 0.1
Emissivity	guaranteed range : < 100°C : 0.3 ~ , ≥ 100°C : 0.05 ~ setting range : 0.05 ~ 1.000 (setting resolution: 0.001) © reflected correction function	
Sensor correction function	span ; 0.500 ~ 2.000 / zero ; -50 ~ +50 (°C or °F selectable)	
Temperature indication	none	
Cable length	2m (standard)	
Protection class	same quality as IP67, except output connector	
Ambient temperature	0 ~ 50°C	
Ambient humidity	30 ~ 85% RH (non condensing)	
Storage temperature	-15 ~ 70°C	
Supply voltage	DC4.7 ~ 27V, 0.1A max.	

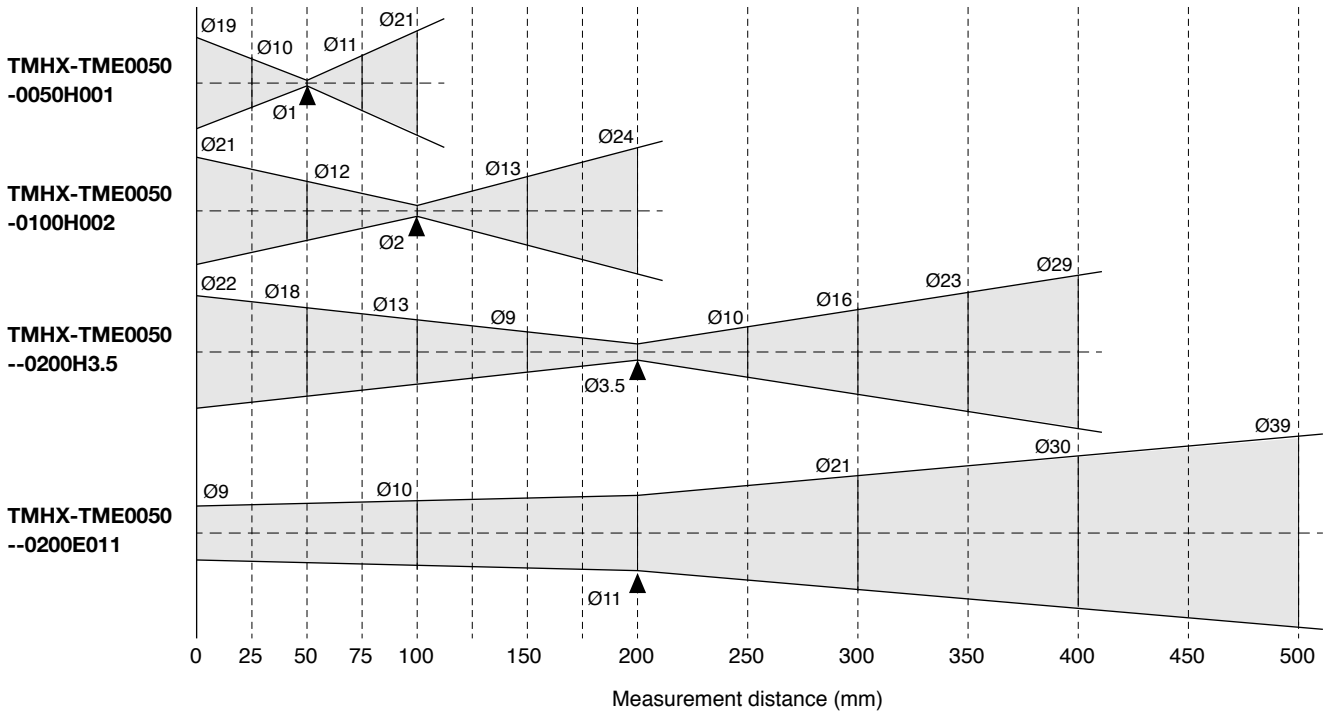
CE CE mark certified(EMC EN61326-1: 2013, RoHS EN50581: 2012)

\*1: Static error is reflected in the accuracy rating.

Ordering information	Cable length	-00	2m (standard)	Analog output mV/°C 4 - 20mA 0 - 20mA switchable	0	0 ~ 1V (standard)
		-05	5m		5	0 ~ 5V (built-in resistor)
		-10	10m		1	0 ~ 10V (built-in resistor)

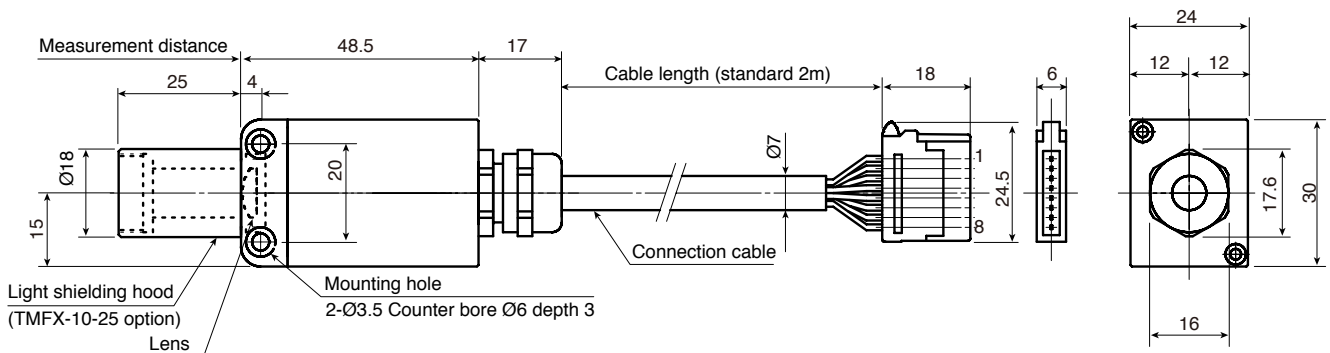
Optics diagram

It shows the area that 90% of the total energy is included.



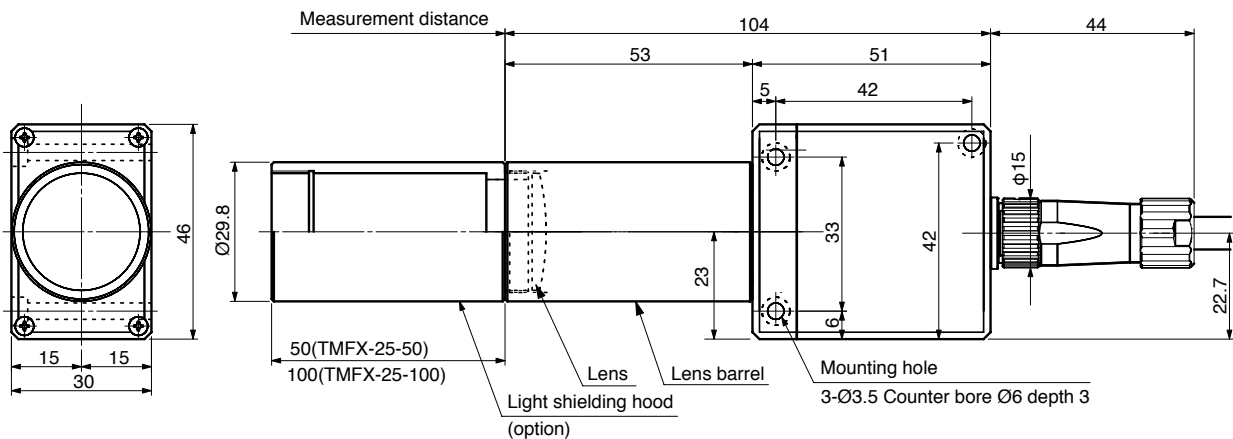
Sensor head dimensions (mm)

HX-C1+Light shielding hood



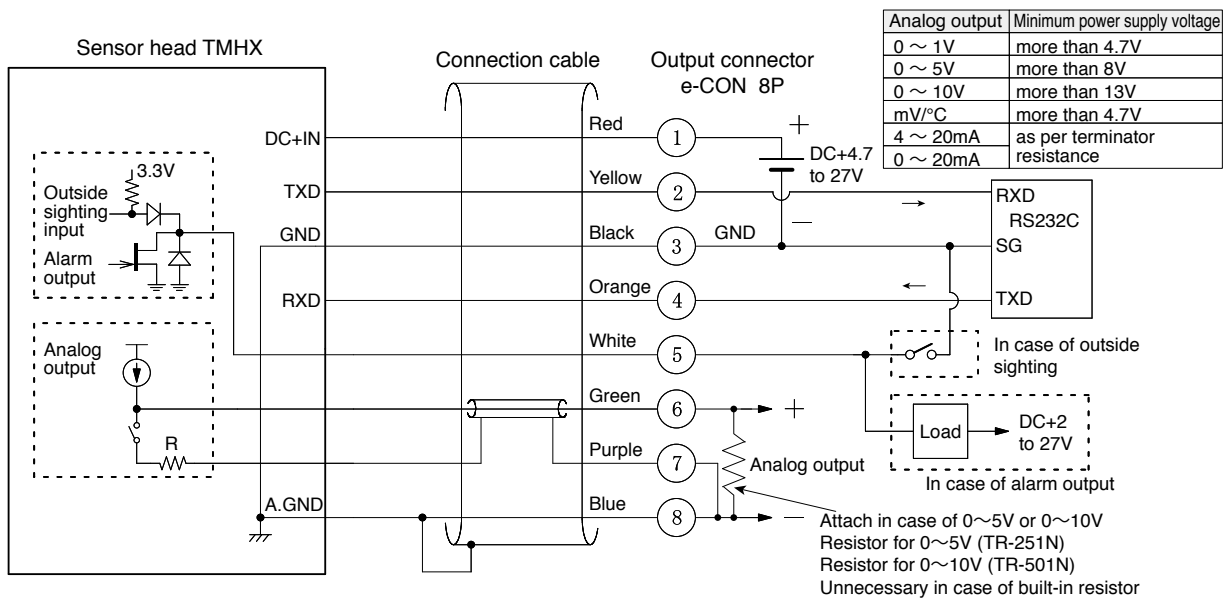
Weight: Sensor head 80g, Light shielding hood (TMFX-10-25) 30g Cable 150g

HX-D4+Light shielding hood



Weight: Sensor head 190g, Light shielding hood (TMFX-25-50) 30g, Light shielding hood (TMFX-25-100) 60g, Cable 160g

Wiring (in case the thermometer is used alone)



Accessories

Shield case	Mounting bracket	Protective window	Air purge food	Airless dust protector	Right angle mirror
TMSX-A TMSX-B4	TMAX-A TMAX-B	TMDX-A1C TMDX-15C	TMPX-A1 TMPX-25	TMNX-A1 TMNX-25	TMLX-A1C TMLX-15C
Use with the sensor head to protect from electromagnetic at applications.	Bracket for sensor head installation.	Use with the lens to prevent contamination and damage.	Use with the lens to prevent dust and condensation.	Use with the lens to prevent dust. No air supply required.	Reflects sensor field of view by 90 degrees.
Water cooling jacket	Extension cable	Branch cable	Resistor	Capacitor	Ferrite core
TMWX-A1 TMWX-B4	TMBX-E05	TMBX-B01	TR-251N TR-501N	TC-105N	FC-2032
Use for installing sensor heads where the ambient temperature is more than 50°C	Extension cable:5m e-CON	For setting unit when thermometer is used alone. e-CON branch.	For the analog output 0-5V/10V	For analog output noise. Connect to analog signal receiver.	For power noise. Install to cables.

•The contents described in this catalog are subject to change for improvement without notice.



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