

# IR-AH SERIES HAND-HELD TYPE DIGITAL RADIATION THERMOMETER



## MODELS IR-AHS, IR-AHU, IR-AHT

*Light weight and easy operation!!!*

Models IR-AHS, IR-AHU and IR-AHT are the non-contact hand-held type digital radiation thermometers for portable measurement and logging of surface temperature.

The thermometers offer a wide measuring range of -50 °C to 3000°C (-50 to 1000°C for IR-AHT, 600 to 3000°C for IR-AHS and 900 to 3000°C for IR-AHU), digital display of the measured value in a viewfinder and an LCD display, plus storage of measured data.

RS232C serial port is provided to transmit the stored data to a personal computer. Optional data logging software package IR-VXH2E allows management tagged with an index number for identification.



## FEATURES

### ● Data storage

Maximum 1000 data can be stored. Two storing modes are available. The manual storing mode is to store the measured data on demand and the interval storing mode is to store the measured data at the interval time programmed.

The stored data are readable on the display with index numbers for easy classification of data.

### ● Easy-to-read internal and external digital display

A measured value is digitally displayed in the view finder and on the front panel.

### ● RS232C port

The communications interface port (RS232C) is provided to transmit the measured data to a personal computer.

### ● Signal modulation

Measurement modes of real value (real), maximum value (peak), average value (delay) and minimum value (valley) are selectable for measuring purposes.

### ● Data logging software (option)

The data logging software is separately prepared for the analysis and management of the measured data.

### ● Analog output (option)

The analog output of 0 to 1V DC is offered at option. By using an AC power adapter (option), the continuous measurement is enabled.

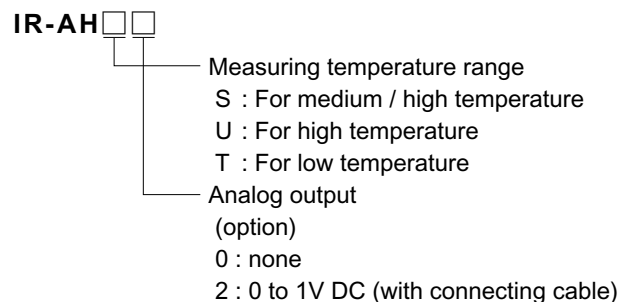
### ● Focusable lens type

Easy to focus the object and sharp optical system.

### ● Other functions

Various functions including high/low alarms, °C/°F selection, auto-power-off, battery check and users' calibration (zero/span) are available.

## MODEL



## CE-MARKING

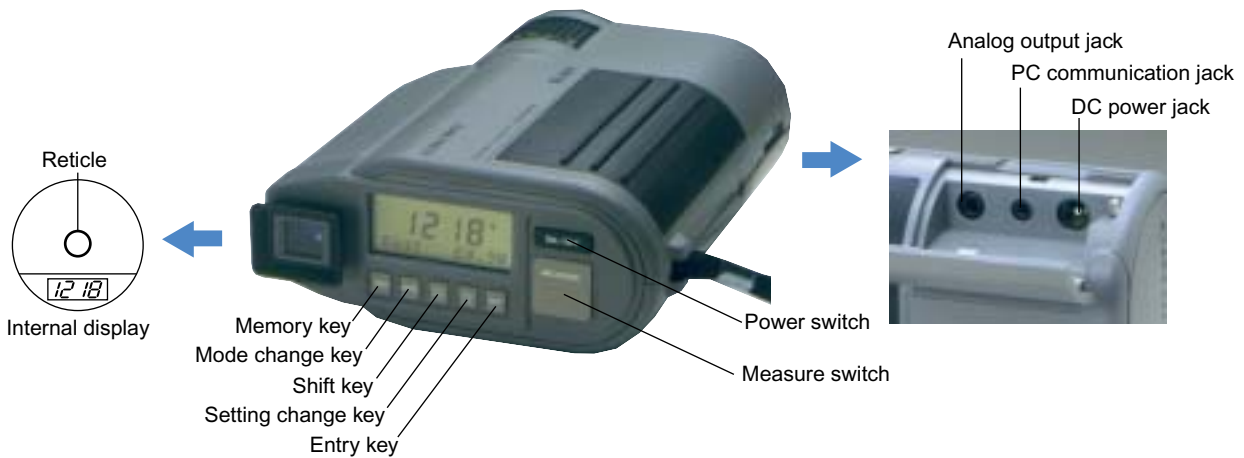
EN61326-1: 2006

Emission: Class B

Immunity: Table 1-Basic immunity requirements

Exceptions: AC powered model (with AC power adapter) and analog output model are excluded from CE-marking. The thermometer connecting with the cable (IR-VHCN) for RS232C is excluded from CE-marking.

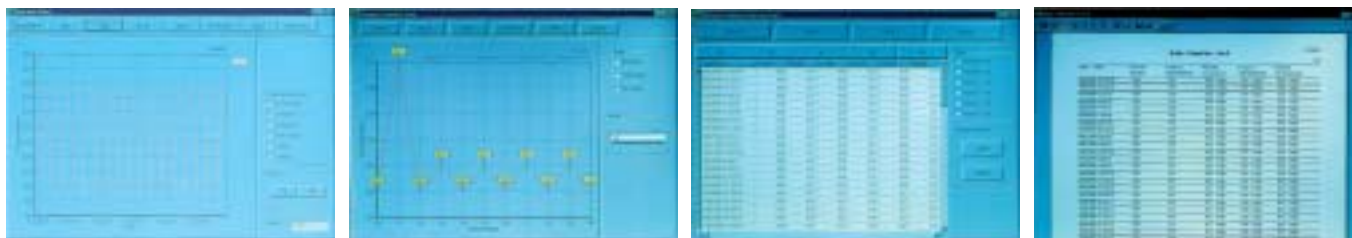
■ GENERAL SPECIFICATIONS



Model	IR-AHS	IR-AHU	IR-AHT
Measuring system	Narrow band radiation thermometer		Broadband radiation thermometer
Detecting element	Si		Thermopile
Measuring wavelength	0.96 $\mu$ m	0.65 $\mu$ m	8 to 13 $\mu$ m
Measuring range	600 to 3000 $^{\circ}$ C	900 to 3000 $^{\circ}$ C	-50 to 1000 $^{\circ}$ C
Accuracy ratings	Lower than 1500 $^{\circ}$ C: $\pm$ 0.5% of measured value $\pm$ 1digit 1500 $^{\circ}$ C to 2000 $^{\circ}$ C: $\pm$ 1% of measured value $\pm$ 1digit Higher than 2000 $^{\circ}$ C: $\pm$ 2% of measured value $\pm$ 1digit ( $\epsilon$ =1.0, Reference operating condition: 23 $^{\circ}$ C $\pm$ 5 $^{\circ}$ C, 35 to 75%RH)		Lower than 200 $^{\circ}$ C $\pm$ 2 $^{\circ}$ C $\pm$ 1digit Higher than 200 $^{\circ}$ C $\pm$ 1% of measured value $\pm$ 1digit
Repeatability	1 $^{\circ}$ C $\pm$ 1digit		
Stability	1) Temperature drift: 0.015% of measured value/ $^{\circ}$ C 2) Stability: $\pm$ 5 $^{\circ}$ C under EMC test environment		1) Temperature drift: Lower than 300 $^{\circ}$ C: 0.15 $^{\circ}$ C/ $^{\circ}$ C 300 to 700 $^{\circ}$ C: 0.05% of measured value/ $^{\circ}$ C Higher than 700 $^{\circ}$ C: 0.025% of measured value/ $^{\circ}$ C 2) Stability: $\pm$ 10% under EMC test environment
Resolution	1 $^{\circ}$ C		1 $^{\circ}$ C (higher than 50 $^{\circ}$ C)
Response time	0.5 second		1 second
Emissivity compensation	$\epsilon$ =1.99 to 0.10 (0.01 increment)		
Signal modulation	Modulation: Real, peak, delay, and valley Modulation ratio: 0 to 99 seconds, 1-sec increment Peak hold, valley hold, hold with the measuring switch turned off		
Display system	LCD digital 4 digits, displayed in the viewfinder and on the panel board		
Data storage function	Maximum 1000 data		
Users calibration function	Calibration at zero and span		
Communications	RS232C (data logging software IR-VXH2E:option)		
Optical system	Focusable lens type		Cassegrain focusable mirror type
Distance factor	100	250	40
Measuring distance	L=500mm to $\infty$		L=700mm to $\infty$
Measuring diameter	D=L/100 ( $\phi$ , mm)	D=L/250 ( $\phi$ , mm)	D=L/40( $\phi$ , mm)
Collimation	Direct viewing finder		
Lens diameter	$\phi$ 30mm		$\phi$ 40mm
Other functions	Auto-power-off, continuous measurement, $^{\circ}$ C/ $^{\circ}$ F selection, battery check, high/low alarms		
Working temperature	0 to 50 $^{\circ}$ C (No dew condensation)		
Power supply	4 pieces of AA (UM-3) battery, (about 20 hours for continuous measurement)		
Casing material and color	ABS plastic, gray		
Dimensions and weight	W135 $\times$ H60 $\times$ D175mm, about 700g (thermometer only)		
Accessories	4 pieces of AA (UM-3) battery, adapter for tripod, carrying case		

## DATA LOGGING SOFTWARE / IR-VXH2E

Three kinds of data management mode, real-time trend mode, multi-point monitoring mode by utilizing memory, and 1-point historical trend mode are available. Graph display, report creation, printing and data storage can be easily executed. The export of the measured data to spreadsheet applications is also available.



Real-time trend

Historical trend

Multi-point monitoring data

Alarm summary

General specifications	Model	•IR-VXH2E		
	Environment	•OS Windows 2000/XP/vista (Minimum 10MB is required to install)		
	Media	•CD-R (2 m of RS232C cable with D-SUB 9 pins female connector)		
	Readout	•Readout of transmitted data by RS232C from IR-AHS, IR-AHU or IR-AHT		
	Functions	•Display on a personal computer •Data storage and playback •Printer output		
	Graphic display	•640×480 dots (initial) •1024×768 dots (resized by a personal computer)		
	Measurement mode	•Multi-point monitoring mode (30 points) •1-point trend mode (1000 data) •Real-time trend mode		
		Real-time trend	Multi-point monitoring (30 points)	1-point trend (1000 data)
Readout of data	Readout of stored data	•Real-time trend graph (in real-time trend logging mode) •Alarm summary	•Readout of monitoring data up to 30 points  •Creation of reports (table, graph)  •[[Input of measurement place name] and [settings of high/low alarms] are enabled on each measurement place.  •[Grouping each 5-point] on table and graph	•Readout of continuous data up to 1000 data  •Display by graph  •Display of all data  •Display of specified data (100 points/10 points selectable)  •Maximum, minimum and average
	Data logging and graphic display	•Measuring cycle: 0.5 to 10 seconds •Chart speed: 10-second 1-minute, 5-minute, 10-minute, 1-hour, 2-hour/screen (6-step selection) •Scroll function: Chart time axis can be scrolled after measurement stop or playback of stored data •Temperature range: Auto-range or fixed range is selectable.) •High/low alarms •Alarm summary (at stop of data logging)		
Storage/output	Storage type	•File for various trend graphs	•Storage of 30 points data base	•Continuous data up to 1000 data
	Export to Excel	•All data of data, time and temperature on real-time trend •Alarm summary	•Monitoring data base table up to 30 points	
	Stored data	•Maximum 1000 data (Maximum memory capacity 600KB) •Alarm summary 100 data (Renewed to up-dated data)	•Data base up to 30 points	
	Printer output	•Real-time trend graph •Alarm summary report	•Table form report •Graph form report	•Historical trend graph

**OPTIONS/ACCESSORIES**

Option	Model	Name	Specification
	IR-AH□2*	Analog output	0 to 1V DC, with 2m cord
Accessory	IR-VHRA*	AC power adapter	Input 100 to 240V AC
	IR-ZBMT	Tripod	
	IR-VMS	Universal head	
	IR-VHCN*	RS232C cable	D-SUB 9 pins ↔ 3P jack, 2m

\*Marked are not available for CE-marking (EMC directive)

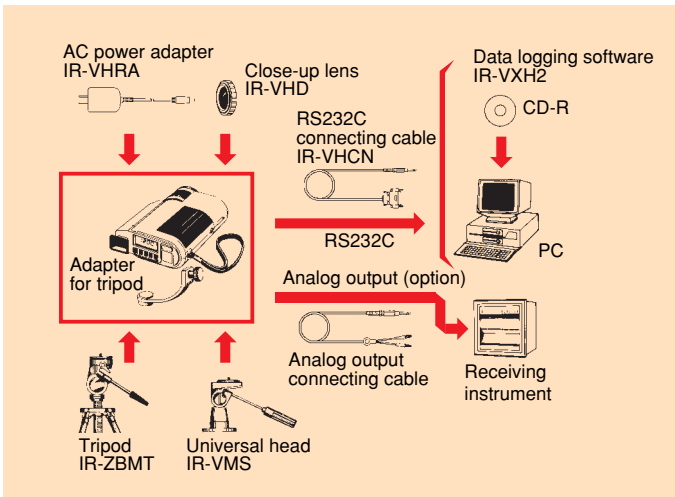
**CLOSE-UP LENS**

For measurement of measuring distance shorter than 0.5 m

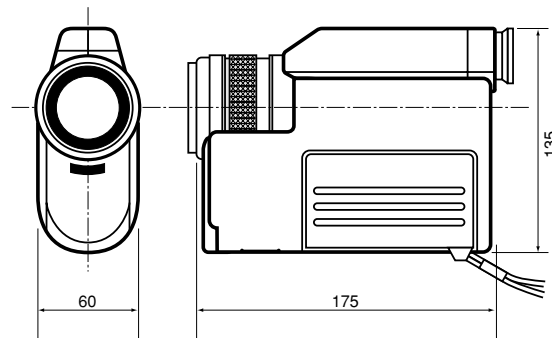
Model	Measuring distance	Min. measuring diameter (IR-AHS)	Model
IR-VHD13	100 to 130 (mm)	φ1.0 to φ1.3mm	IR-AHS
IR-VHD18	130 to 180 (mm)	φ1.3 to φ1.8mm	IR-AHS
IR-VHD29	180 to 290 (mm)	φ1.8 to φ2.9mm	IR-AHS
		φ0.7 to φ1.2mm	IR-AHU
IR-VHD54	250 to 540 (mm)	φ2.5 to φ5.4mm	IR-AHS
		φ1.0 to φ2.2mm	IR-AHU

Note : Close-up lens can not be installed to IR-AHT

**STRUCTURE**



**EXTERNAL DIMENSIONS**



Unit : mm

Specifications subject to change without notice. Printed in Japan (I) 2009. 11

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