

IR-SA SERIES

ONLINE INFRARED RADIATION THERMOMETER



IR-SA series are infrared radiation thermometer realized environment resistance under harsh environment, high accuracy and fast response.

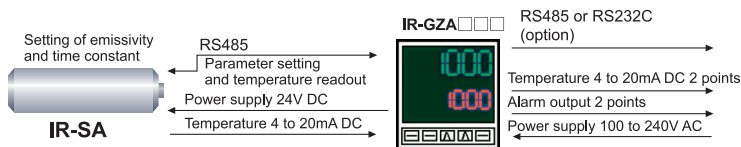
Four models of low temperature, medium temperature, high temperature and 2 colors type are available in various fields like as process line and non-contact temperature measuring.

FEATURES

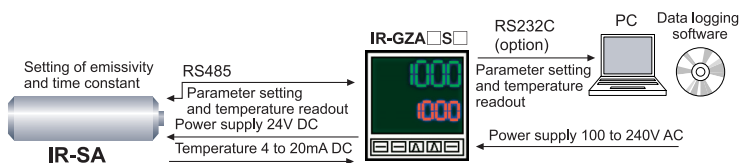
- Environment resistance, withstand temperature 90°C, IP67 dustproof and waterproof.
- High accuracy in the high temperature range by eutectic points of metal carbon scale calibration.
- Robust and small size of $\phi 50 \times 170\text{mm}$ with stainless case.
- Fast response of 0.002sec for medium and high temperature.
- Communications and RS485 as standard equipment. Remote setting and monitoring on maximum 31 units by connecting setting display or pc are available.
- Telescope or laser pointer for targeting
- Abundant accessories for various applications and setting environment.
- Conformed to RoHS.

STRUCTURE

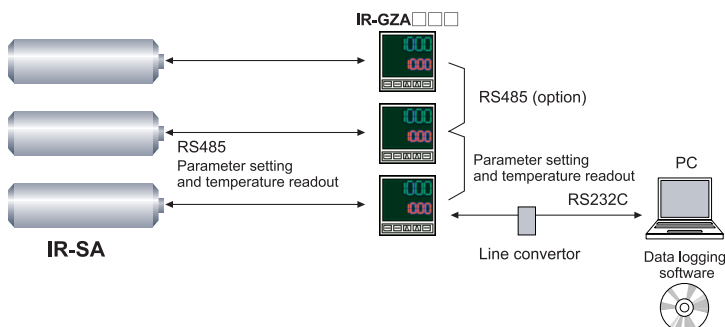
- Basic system by IR-GZA



- Remote monitoring and data acquisition by PC



- Plural units monitoring



*Telescope (option)

MODELS

- Low temperature

IR-SAB□□N

- Measuring diameter/distance
- 50 : $\phi 25/500\text{mm}$
- 51 : $\phi 40/1000\text{mm}$
- 52 : $\phi 80/2000\text{mm}$
- 55 : $\phi 200/5000\text{mm}$ (Option)
- 5S : $\phi 8/200\text{mm}$ (Option)
- 00 : $\phi 10/500\text{mm}$
- 01 : $\phi 20/1000\text{mm}$
- 02 : $\phi 40/2000\text{mm}$
- 05 : $\phi 100/5000\text{mm}$ (Option)
- 0S : $\phi 4/200\text{mm}$ (Option)

- Medium to high temperature, two color type

IR-SA□□□N

- Types/element
- I : Medium temp·InGaAs
- S : High temp·Si
- H : Two color·Si/InGaAs
- Measuring diameter/distance
- 10 : $\phi 5/500\text{mm}$
- 11 : $\phi 10/1000\text{mm}$
- 12 : $\phi 20/2000\text{mm}$
- 15 : $\phi 50/5000\text{mm}$ (Option)
- 1S : $\phi 2/200\text{mm}$ (Option)
- 20 : $\phi 3/500\text{mm}$
- 21 : $\phi 5/1000\text{mm}$
- 22 : $\phi 10/2000\text{mm}$
- 25 : $\phi 25/5000\text{mm}$ (Option)
- 2S : $\phi 1/200\text{mm}$ (Option)

IR-SA SERIES

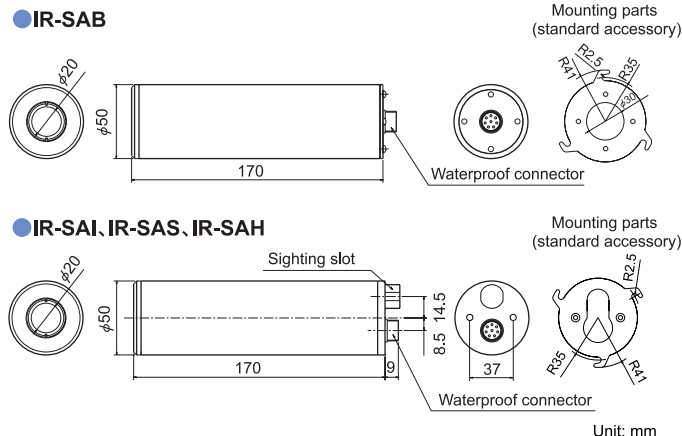
SPECIFICATIONS

Model	Low temperature	Medium temperature	High temperature	2-color
	IR-SAB	IR-SAI	IR-SAS	IR-SAH
Measuring system	Broadband radiation thermometer	Narrow-band radiation thermometer		Ratio thermometer
Element	PE	InGaAs	Si	Si/InGaAs
Measuring wavelength	8 to 14 μm	1.55 μm	0.9 μm	0.9/1.55 μm
Measuring range	0 to 1000°C	300 to 1600°C	600 to 2500°C	900 to 2500°C
Accuracy rating ($\epsilon = 1.0$, reference operation condition : ambient temperature 23 \pm 5°C)	200°C or less --- $\pm 2^\circ\text{C}$ 200°C or more --- $\pm 1\%$ of measured value	1000°C or less: $\pm 0.2\%$ of measured value $\pm 2^\circ\text{C}$ 1000 to 1500°C: $\pm 0.4\%$ of measured value 1500°C or more: $\pm 0.5\%$ of measured value		1500°C or less: $\pm 0.5\%$ of measured value 1500°C or more: $\pm 0.6\%$ of measured value
Repeatability		0.2°C		1°C
Temperature drift	0.1°C/°C	0.1°C/°C or 0.015%/°C of measured value whichever larger		0.2°C/°C or 0.02%/°C of measured value whichever larger
Resolution		0.5°C		1°C
Response time (95%)	0.2s	0.002s		0.01s
Lens aperture	$\phi 15\text{mm}$	$\phi 10\text{mm}$		
Distance factor	25, 50	100, 200		
Sighting	Laser unit	Telescope or laser pointer		
Emissivity adjustment	1.999 to 0.200	1.999 to 0.050		1.250 to 0.750 (emissivity ratio)
Working temperature	0 to 50°C	0 to 90°C		
Power consumption	Approx. 5VA	Approx. 2.4VA		

COMMON SPECIFICATIONS

Optics:	Fixed focus lens type
Setup:	Setting in the setting display unit by using communication RS485
Signal modulation:	Delay --- First order lag Modulation time constant 0 to 99.9s (time constant 0 = real) Peak --- Peak tracing Decay time 0, 2, 5, 10 °C/ sec (Decay time 0 = peak hold)
Analog output:	4 to 20 mA DC isolated output Allowable load resistance --- 780 Ω or less (530 Ω or less for IR-SAB) Scaling --- Optional setting in the measuring range
Communications:	RS485
Power supply:	24V DC $\pm 10\%$
Connection:	Connector (exclusive cable)
Case:	Stainless steel
Dimensions:	$\phi 50 \times \text{D}170\text{mm}$
Weight:	Approx. 0.7kg
Protection:	IP67
CE marking:	Conformity standards --- EN61326-1: 2006 class A Conformity condition --- Connecting cable 30m or less (inside installation) *Stability under test environment requested by EMS directive --- $\pm 1\%$ of measuring range

DIMENSIONS



MEASURING DIAMETER & DISTANCE

IR-SAB			
Code	Measuring diameter & distance	Code	Measuring diameter & distance
50	$\phi 55$ $\phi 25$ $\phi 15$ 1000 500 0	00	$\phi 35$ $\phi 10$ $\phi 15$ 1000 500 0
51	$\phi 95$ $\phi 40$ $\phi 15$ 2000 1000 0	01	$\phi 55$ $\phi 20$ $\phi 15$ 2000 1000 0
52	$\phi 180$ $\phi 80$ $\phi 15$ 4000 2000 0	02	$\phi 100$ $\phi 40$ $\phi 15$ 4000 2000 0
55 (Option)	$\phi 420$ $\phi 200$ $\phi 15$ 10000 5000 0	05 (Option)	$\phi 220$ $\phi 100$ $\phi 15$ 10000 5000 0
5S (Option)	$\phi 31$ $\phi 8$ $\phi 15$ 400 200 0	0S (Option)	$\phi 23$ $\phi 4$ $\phi 15$ 400 200 0

IR-SAI, IR-SAS, IR-SAH			
Code	Measuring diameter & distance	Code	Measuring diameter & distance
10	$\phi 20$ $\phi 5$ $\phi 10$ 1000 500 0	20	$\phi 15$ $\phi 3$ $\phi 10$ 1000 500 0
11	$\phi 30$ $\phi 10$ $\phi 10$ 2000 1000 0	21	$\phi 20$ $\phi 5$ $\phi 10$ 2000 1000 0
12	$\phi 50$ $\phi 20$ $\phi 10$ 4000 2000 0	22	$\phi 30$ $\phi 10$ $\phi 10$ 4000 2000 0
15 (Option)	$\phi 110$ $\phi 50$ $\phi 10$ 10000 5000 0	25 (Option)	$\phi 60$ $\phi 25$ $\phi 10$ 10000 5000 0
1S (Option)	$\phi 14$ $\phi 2$ $\phi 10$ 400 200 0	2S (Option)	$\phi 12$ $\phi 1$ $\phi 10$ 400 200 0

*Distance from front lens of IR-SA

SETTING DISPLAY UNIT IR-GZA (Option)

IR-GZA is combined with IR-SA for enabling parameters setup, data display and 24V DC power supply to IR-SA. Wall-hanging box is also prepared.



Wall-hanging box IR-ZGBW

Model

IR-GZA

External input

0 : None

1 : Remote emissivity

2 : Reflection compensation

Communication interface

N : None

S : RS485

Damp proof treatment

N : None

C : With damp treatment

SPECIFICATIONS

Emissivity (ratio) setting: 1.999 to 0.050

Thermometer input: RS485

Signal modulation: DELAY --- First-order lag
 Time constant: 0.0 to 99.9sec with 0.1sec increment or 0.00 to 9.99sec with 0.01 sec increment (time constant 0 = real)
 PEAK --- Peak tracing
 Decay time 0, 2, 5, 10°C/sec selectable (Decay time 0 = peak hold)

Display: Temperature, thermometer number of connected units, status display

Analog output: Output 1: 4 to 20 mA DC (IR-GZ output, load resistance: less than 500Ω)
 Output 2: 4 to 20 mA DC (IR-SA output, load resistance: less than 780Ω or less than 530Ω for IR-SAB)

Output renewal cycle: Output 1: 100ms
 Output 2: Depending on the model of IR-SA

Output accuracy ratings: ±0.2% of output range
 Stability under the test environment required by EMC directive --- ±1%

Event output: 2 points ---
 Select 2 points from "high temperature alarm", "high-high temperature alarm", "low temperature alarm" and "low-low temperature alarm".
 Relay a contact output (common)
 Contact capacity 240V AC 1.5A
 30V DC 1.5A

Analog input: 4 to 20 mA DC (Remote emissivity setup)

Communications interface: RS232C, RS485 (option)

Power supply to IR-SA: 24V DC 0.45A

Power supply: 100 to 240V AC universal power supply, 50Hz/60Hz

Power consumption: Maximum 20VA

Working temperature: -10 to 50°C

Working humidity: 20 to 90%RH (No dew condensation)

Case: Fire-retardant polycarbonate resin

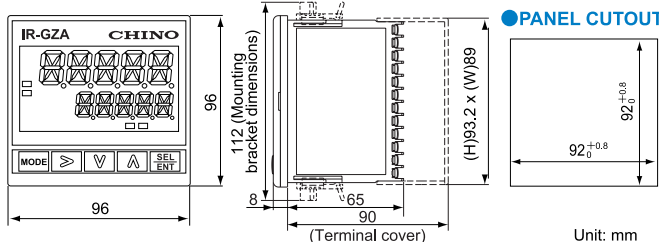
Installation: Panel mounting

Weight: Approx. 0.5kg

CE marking: EMC EN61326 + A1

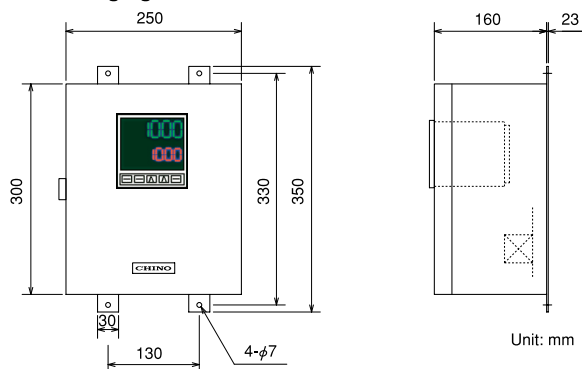
Low voltage EN61010-1 + A2
 Overvoltage category II, pollution level 2

DIMENSIONS

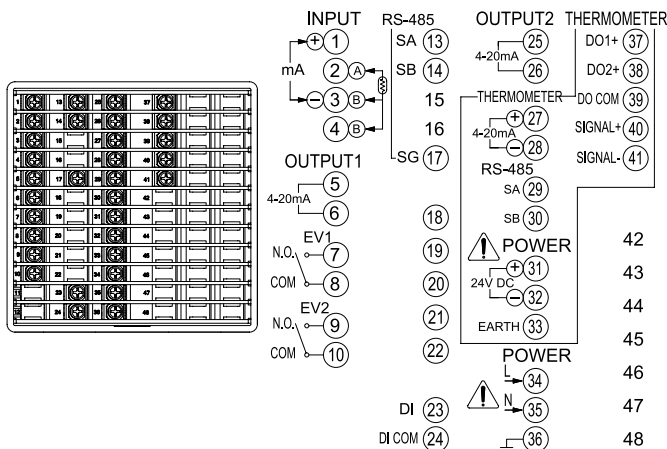


ACCESSORIES

Wall-hanging box IR-ZGBW



TERMINAL DIAGRAMS



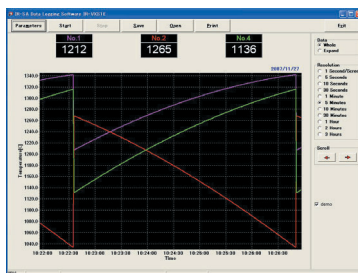
100-240V AC 50/60 Hz
 100 V AC 28VA MAX
 240 V AC 36VA MAX

DATA LOGGING SOFTWARE (OPTION)

MODEL

IR-VXS1E

Measured value trend display and parameter settings available by connecting to maximum 3 units of IR-SA.



Environment	OS	Windows 2000 / XP / Vista / 7 32bit
	Hard drive	Capacity: 20MB or more
	Drive	CD-ROM (use when installation)
Functions	<ul style="list-style-type: none"> Real time trend display Data storage (CSV type) / replay / printing Parameter setup and readout 	
Option	<ul style="list-style-type: none"> Protocol convertor Communication cable (for protocol convertor and PC) 	

ACCESSORIES

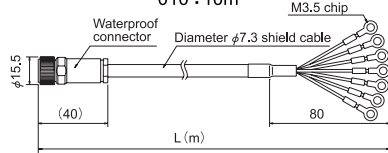
Connecting cable

Model: IR-ZYRC

For connecting IR-SA with setting display unit

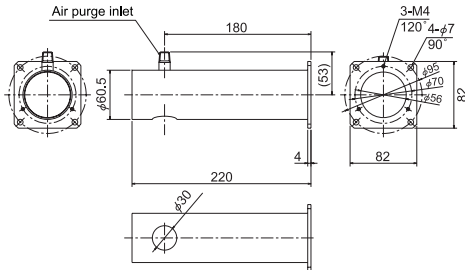
Length

002 : 2m 020 : 20m *Please ask for the length other than options.
005 : 5m 100 : 100m
010 : 10m



Air purge case

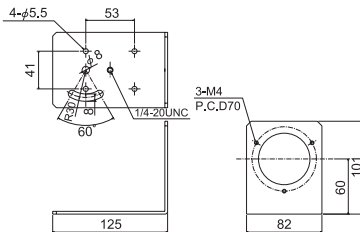
Model: IR-ZYCP



Mounting bracket

Model: IR-ZYHG1

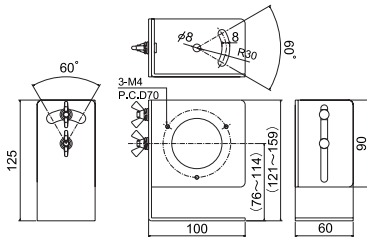
Horizontal adjustment of measuring spot is available. It can be fixed to universal head IR-ZMSS.



Adjustable bracket

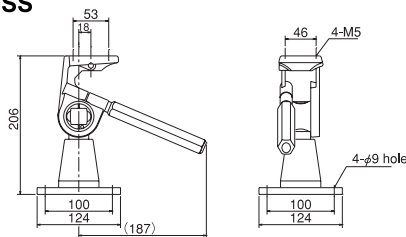
Model: IR-ZYHG2

Horizontal and vertical adjustment of measuring spot.



Heat resistance universal head

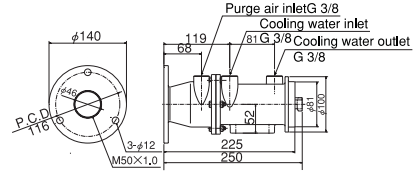
Model: IR-ZMSS



Protecting case

Model: IR-ZYCH

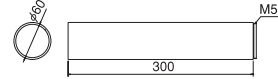
Case for housing IR-SA when measuring in a harsh environment like as smoke, oily smoke and dust. It also has water cooling and air purge functions.



Air purge hood

Model: IR-ZYSS

Blocking off the light by using with a protecting case IR-ZYCH and keeping measuring light path by air guide

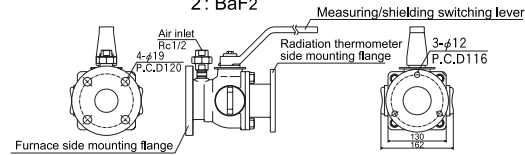


Sealing window

Model: IR-ZWC

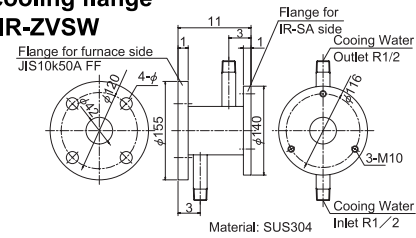
Installing in the furnace wall for sealing between inside of furnace and outside of furnace when furnace inner presser is high. Sealing glasses is replaced easily while keeping sealing.

Window materials
0: Quartz
2: BaF2



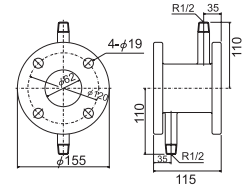
Water-cooling flange

Model: IR-ZVSW



Water-cooling flange

Model: IR-VSW

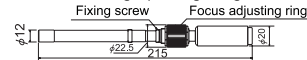


Telescope

Model: IR-ZYTS

Applicable models IR-SAI, IR-SAS, IR-SAH

Installed to IR-SA for measuring spot sighting

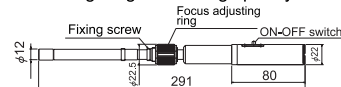


Laser pointer

Model: IR-ZYLZ1

Applicable models IR-SAI, IR-SAS, IR-SAH

Installed to IR-SA for targeting measuring spot by laser beam



Laser unit (for protecting case storage)

Model: IR-ZYLZ2

Replacement when targeting measuring spot of IR-SAB and housed by a protecting case.



* A telescope and a laser pointer can be used for multiple units as they are removable.

Unit: mm

Specifications subject to change without notice. Printed in Japan (I) 2018. 12

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