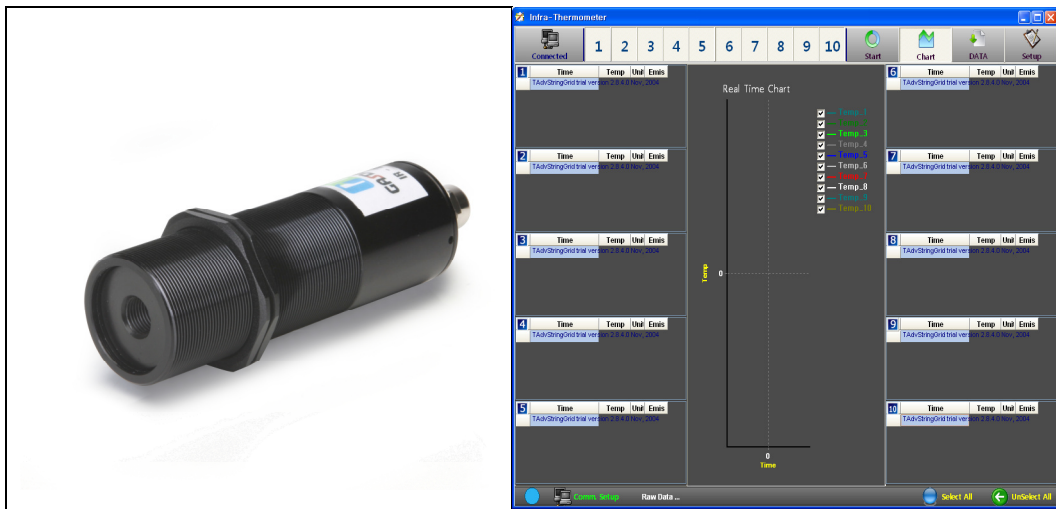


Non-Contact Infrared Temperature Sensor/Transmitter

Temperature Range: 0~400°C

IR – 21



Best Detectors, Best Service



C-910C, Bupyeong Woolim Lion's Valley, #425 Cheongcheon-Dong,
Bupyeong-Gu, Incheon, Korea

TEL: +82-32-623-7507 FAX: +82-32-623-7510

E-mail: sales@gasdna.com | Web: www.gasdna.com

1. Features

IR-21 non-contact infrared thermometer measures the infrared wavelength emitted from the target spot and converts it to standard current signal output (4~20mA) and RS-485 communication signal output.

RS-485 communication enables to store data in computer.

It can measure from -20 °C to maximum 400 °C in the distance of 12:1 D:S (Distance to Spot).

※Applications



Plastics, Fluids, Rubber, Coated components, Asphalt, Wood, Paper, Ceramics, Textiles, Glass, Food etc.

2. Ordering information

Code Number IR-21-□-□-□

MODEL	Description
IR-21	
Code A	Temperature Range
1	0~200℃
2	0~400℃
3	-20~400℃
Z	Other
Code B	Output
M	DC 0~20mA
N	DC 4~20Ma
V	Voltage Output(1~5V)
Z	Other
Code C	Cable Length
1	3M
Z	Other

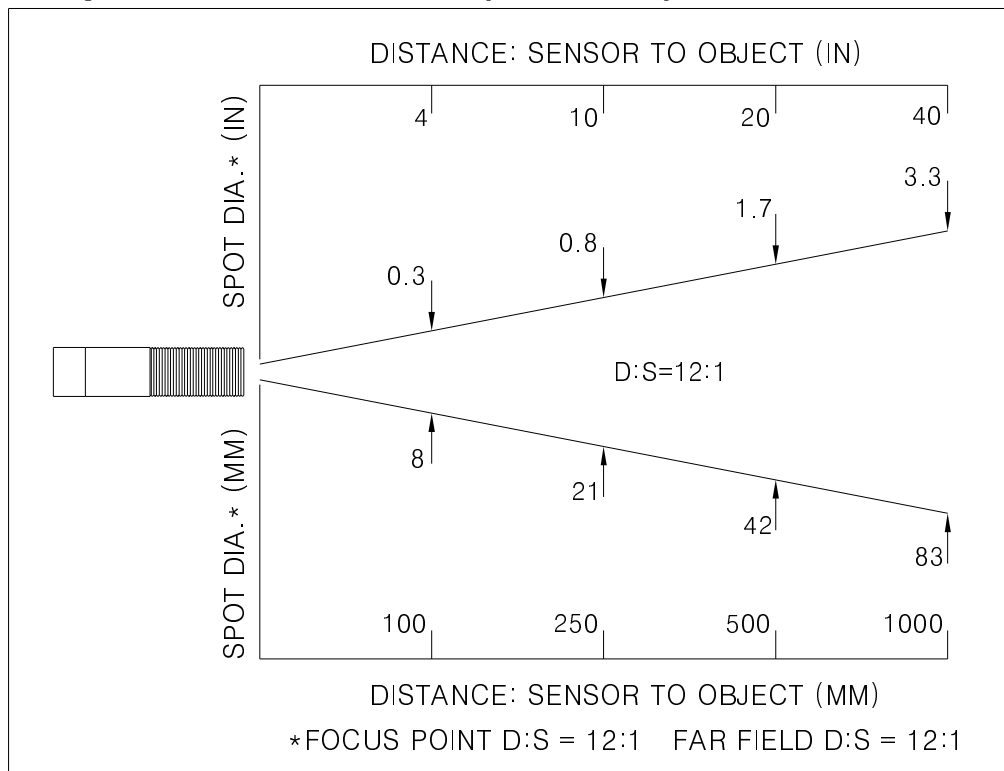
3. Accessories

Name	Shape	Usage	Remark
Fixing nut		Sensor fixing nut	Basic accessory
Mounting bracket		Sensor mounting bracket	Basic accessory

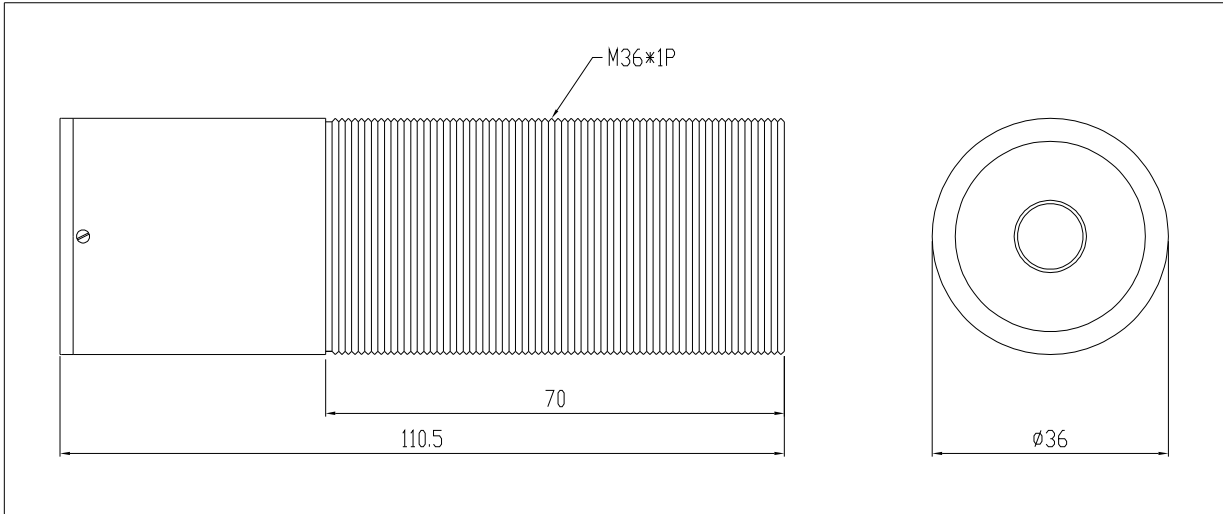
4. Specification

Segment	Specification
Measurement Range	0~400℃
Device	Thermopile
Accuracy	±1% / full scale
Repeatability	±1% of reading
Field of View(D:S)	12:1
Optical spectrum wave	8~14 μm
Responsive Time	0.5sec or below
Emissive rate	0.95 (Changeable when using PC software program)
Analog Output	4~20mA, 1~5V(option)
Communication output signal	RS-485 communication signal
Power	DC 20~24V(Max 50mA)
Ambient temperature(no water cooling)	0~70℃
Temperature Resolution	0.1℃
Warm up Period	1 to 2 minutes
Operating Relative Humidity	5~90%
Operating Ambient Temperature	-30~85℃
Waterproof	IP65,NEMA 4
Dimensions	Ø36 ×110.5(L)
Signal Cable	4 wire shield type
Casing material	Aluminum Alloy
Weight	210g
Cable length	3m(standard), other(option)

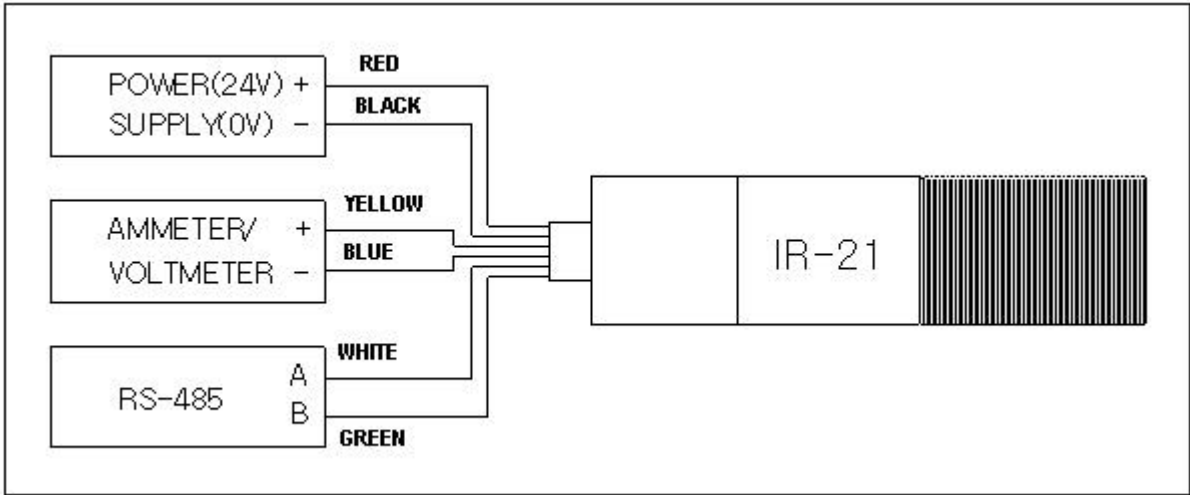
5. Optical Field of View (D:S 12:1)



6. Dimension

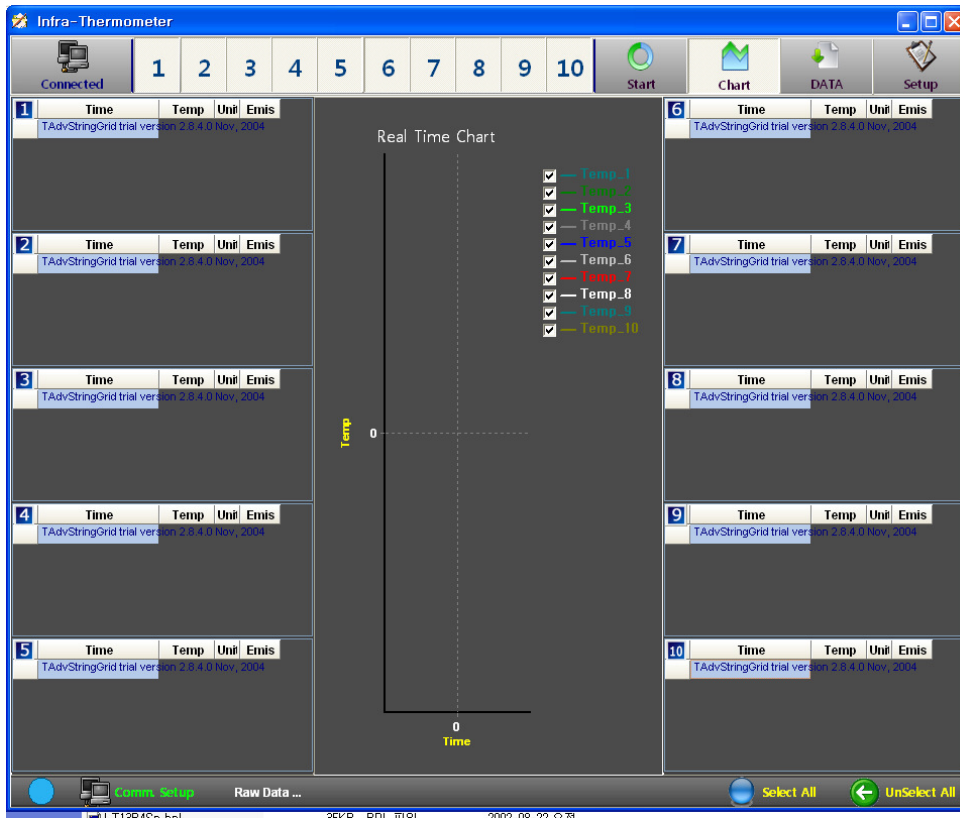


7. Wiring



No.	Cable color	Usage
1	Red	Power 24VDC(+)
2	Black	Power 0V(-)
3	White	RS485 A
4	Green	RS485 B
5	Yellow	Analogue output(+)
6	Blue	Analogue output(-)

8. Communication specification and Software



The screenshot shows the 'Infra-Thermometer' software interface in the configuration mode. The top menu bar includes 'Connected', 'Start', 'Chart', 'DATA', 'Setup', 'Program Info', and 'GALDNA'. Below the menu bar is a row of 10 numbered tabs (1-10). The main area is divided into several configuration panels:

- Model:** Radio buttons for 6irman, IR-21, IR-40, and IR-80.
- Communication Address:** 'Comm. ID' and 'Change ID' spinners, both set to 1. Includes 'Comm. Setup', 'Read', and 'Write' buttons.
- Communication Baudrate:** Spinner set to 4800 baudrate. Includes 'Read' and 'Write' buttons.
- Laser:** Dropdown menu set to OFF. Includes 'Read' and 'Write' buttons.
- Data Request Time:** Spinner set to 2.0 sec.
- Ambient Temperature:** Spinner set to 20 °C. Includes 'Read' button.
- Emissivity:** Spinner set to 0.95. Includes 'Read' and 'Write' buttons.
- Emissivity Set-Up:** Dropdown menu set to Rotary Switch. Includes 'Read' and 'Write' buttons.
- DB Save Temperature:** 'Low Temperature' spinner set to -60 °C and 'High Temperature' spinner set to 150 °C. Includes explanatory text: 'If lower than set temperature, shall be failed to save DB.' and 'If higher than set temperature, shall be failed to save DB.'
- Alarm:** 'Low Alarm' spinner set to -60 °C and 'High Alarm' spinner set to 4000 °C. Includes explanatory text: 'If lower than set temperature, boundary line of low alarm on strip chart shall turn green.' and 'If higher than set temperature, boundary line of high alarm on strip chart shall turn red.'

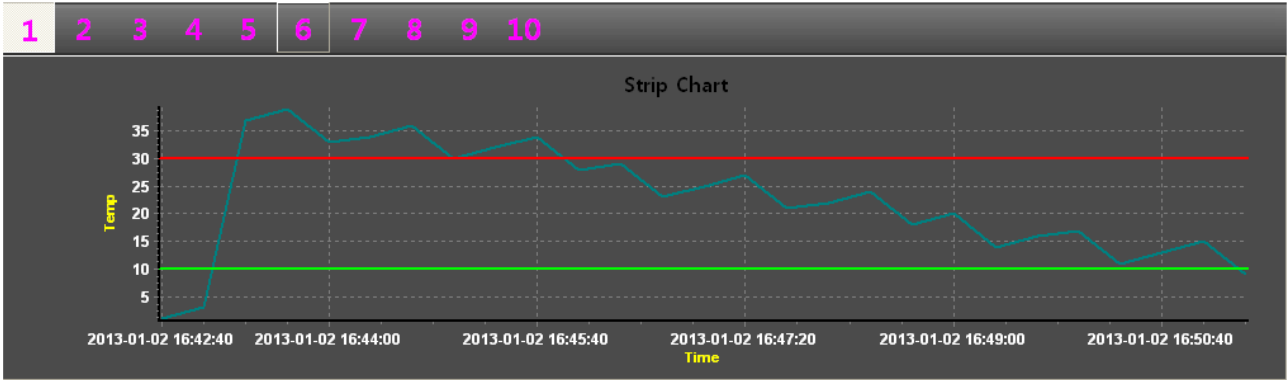
A 'Save' button is located at the bottom left of the configuration area.

Serial Interface(Initial value setting)

- Baud Rate: 4800, 9600 setting
- Data Request time: data reading speed setting
- Ambient temperature: Ambient Temperature
- Emissivity: Emissivity setting
- DB Save Temperature: storage temperature setting

Alarm: setting when you want to see temperature transition in detail by graph within measured temperature range,

EX> Set low alarm to 10°C (Green) and Set High Alarm to 30°C (Red) for No 1 Thermometer as below.



♣ Caution: After setting value, Please do not forget to press 'Save' button

9. OPTION

<p>IR-21-CF-10</p>	<p>D:S unit:mm</p>
<p>IR-21-CF-40</p>	<p>D:S unit:mm</p>
<p>Air-purge</p>	

485 To RS232 converter



Up and down adjustable Bracket



Indicator
(Model No. DI-20)

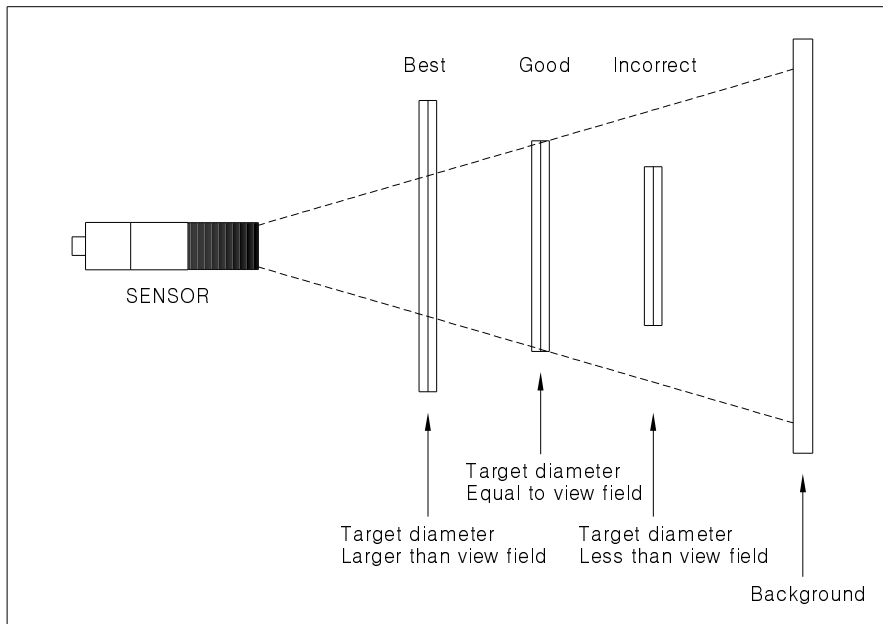


2 Inch LED Display



10. Installation

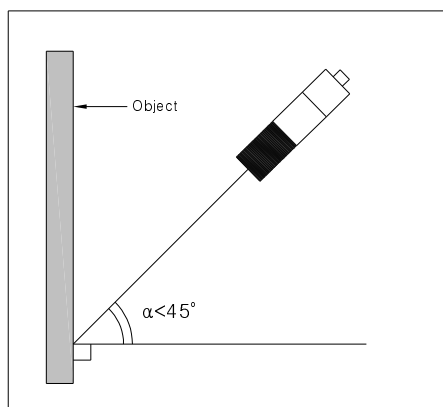
- Please make sure the target area is larger than the field of view.



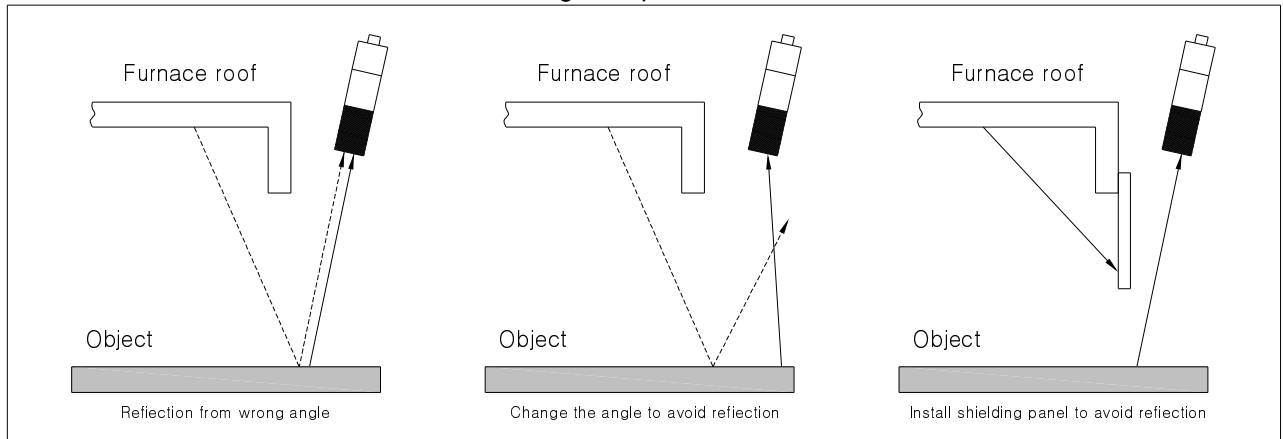
The spot size is decided by the distance from the sensor to the target. Please refer to the 'section 5. Optical field of view' and make sure your target area is larger than the field of view.

- Please locate the sensor vertical against the target.

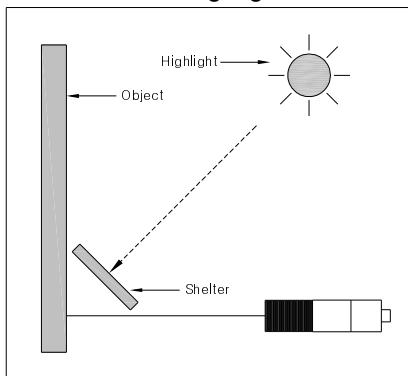
It is the best for you to install the sensor vertical against the target area or object. If it is not available, the sensor should be more than 45° against the target area. Otherwise, it can affect the measuring accuracy.



- Please avoid the heat reflection from other high temperature materials



- Please avoid highlight.



- Please avoid electronic noise.
Please avoid the high frequency or high voltage area such as motor, pump, power line, and so on.

12. Emissivity Table

Material	Emissivity
Black body	0.95
Asphalt	0.90~0.98
Textiles, Fabric	0.98
Concrete	0.94
Ascon	0.95
Skin	0.98
Leather	0.75
Sand	0.90
Soil	0.92~0.96
Paint	0.8~0.95
Water	0.92~0.96
Ice	0.96~0.98
Rubber	0.94
Snow	0.83
Plastic	0.85~0.95
Wood	0.90
Ceramic	0.90~0.94
Glass	0.90~0.94
Marble	0.94
Chromic Oxide	0.78
Iron Oxide	0.78~0.82
Brick	0.93~0.96
Copper oxide	0.78
Mortar	0.89~0.91