Non-Contact Infrared Temperature Sensor/Transmitter

6 - IRman

Temperature Range: 0~600°C

GASDNA

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1. FEATURES

6-IRMAN non-contact infrared thermometer measures the amount of infrared energy emitted from object and transmits standard current output signal (4~20mA) or RS-485 communication output signal. Also, it transmits relay contacts for alarm signal.

As 6-IRMAN is composed of infrared sensor head & LCD display with keypad, you can check the temperature value in real-time at the installation site.

Adapting optical lens offers improved measuring accuracy and 10:1 Field of View offers accurate measurement for long distance object.

You can measure the temperature ranged from -20 to max. 600℃ with adjustable measurable temperature range.

Emissive rate can be adjusted 0.10 ~ 0.99.

※ Applications:

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

2. Ordering information

Code Number 6-IRMAN-□-□-□

MODEL	Description
6-IRMAN	
Code A	Temperature Range
1	-20~600℃
2	0~600℃
Z	Other
Code B	OutPut
M	0~20Ma
N	4~20mA
Z	Other
Code C	Cable Length
1	3m Cable
Z	Other

3. Accessories

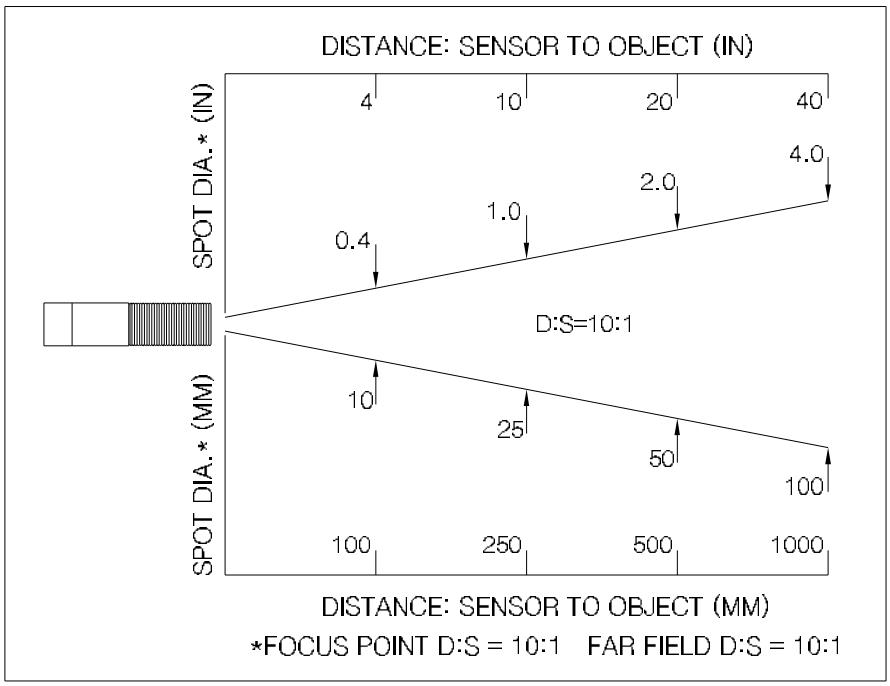
Description	Shape	Usage	Remark
Fixing nut		Sensor fixing nut	Basic accessory

Mounting bracket		Sensor mounting bracket	Basic accessory

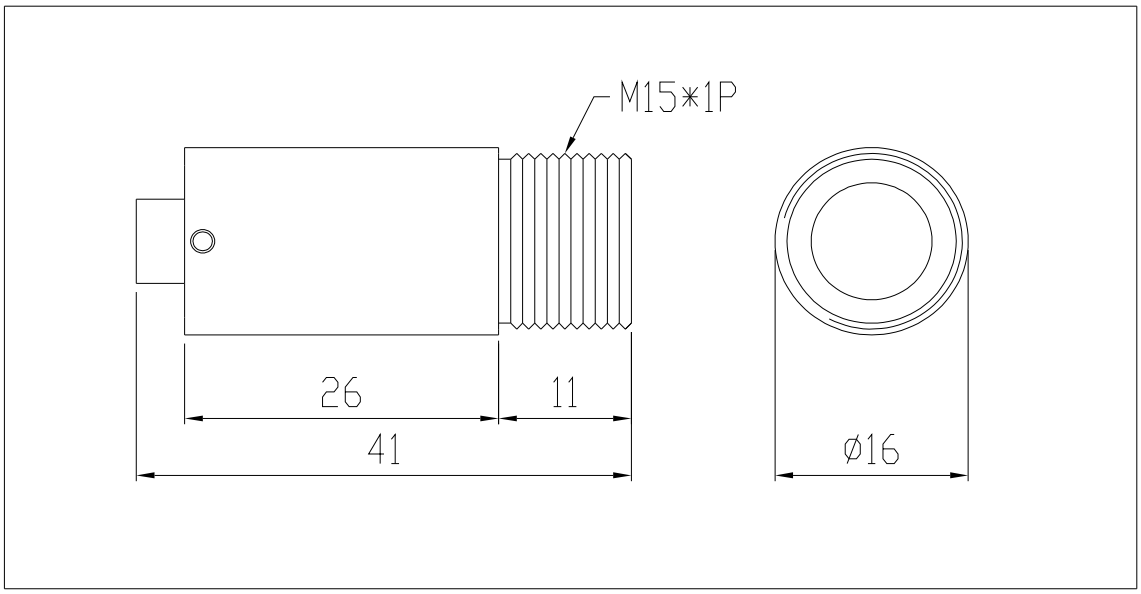
4. SPECIFICATIONS

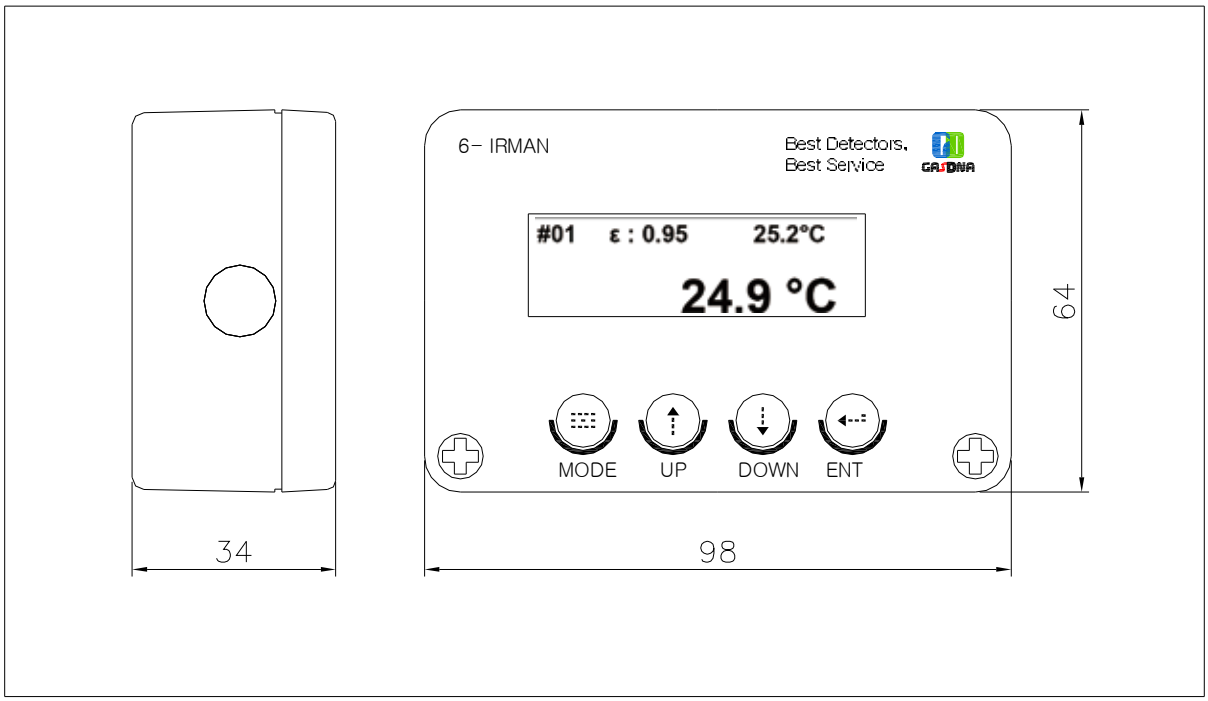
Segment	Specification
Temperature Range	-20~600℃
Device	Thermopile
Accuracy	±1%/F.S
Repeatability	±1% of Rdg
Field of View(D:S)	10:1
Optical spectrum wave	8~14㎛
Responsive Time	0.5 sec or below
Emissive rate	0.10~0.99
Analog Output	4~20mA, 1~5V(option)
Communication output signal	RS-485 communication signal
Relay Output	2 step- Relay Contact (High/Low)
Power	DC 12~24V(Max 100mA)
Ambient temperature(no water cooling)	0~70℃
Temperature Resolution	0.1℃
Operating Relative Humidity	5~90%
Storing Ambient Temperature	-30~85℃
Waterproof	IP65,NEMA 4
Dimensions	Signal Process Module: 98 × 64 Sensor Head: 41 × Ø16
Casing material	SUS
Weight	285g
Cable length	3m, other

5. OPTICAL FIELD OF VIEW (D:S = 10:1)

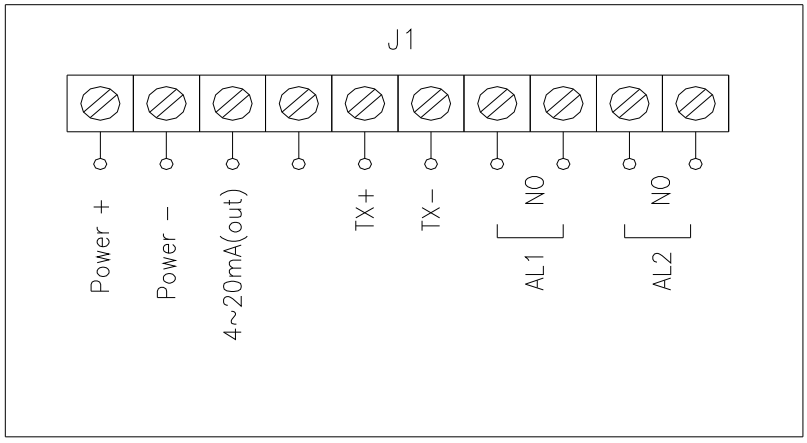

DISTANCE: SENSOR TO OBJECT (IN)
SPOT DIA.* (IN)
4
10
20
40
4.0
2.0
1.0
0.4
D:S=10:1
SPOT DIA.* (MM)
10
25
50
100
100
250
500
1000
DISTANCE: SENSOR TO OBJECT (MM)
*FOCUS POINT D:S = 10:1 FAR FIELD D:S = 10:1

6. DIMENSION


M15*1P
26
11
41
ø16



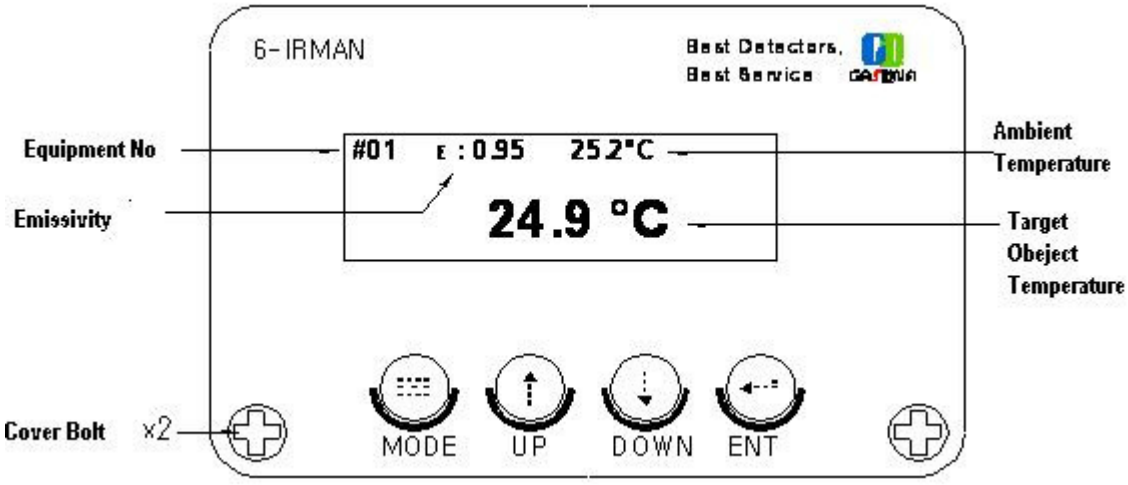
7. ELECTRICAL CONNECTION



No.	Printed Name	Usage
1	Power+	Power 24VDC(+)
2	Power-	Power 0V(-)

3	4~ 20mA	Analogue Signal Output (+)
4		Analogue Signal Output (-)
5	TX+	RS485 TX+
6	TX-	RS485 TX-
7	NO[AL1]	Alarm #1 Relay Contact Terminal
8		
9	NO[AL2]	Alarm #2 Relay Contact Terminal
10		

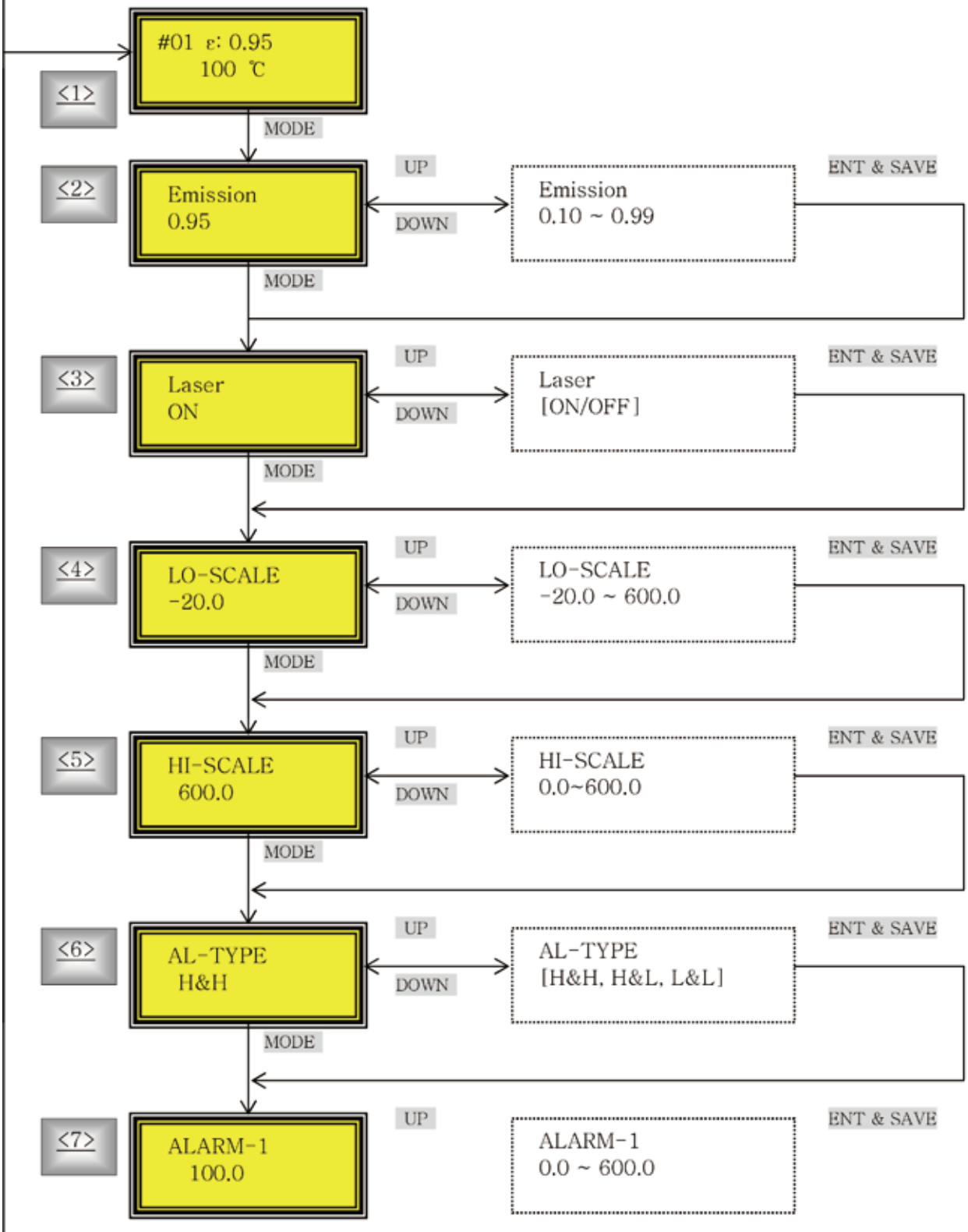
8. LCD DISPLAY & KEYPAD

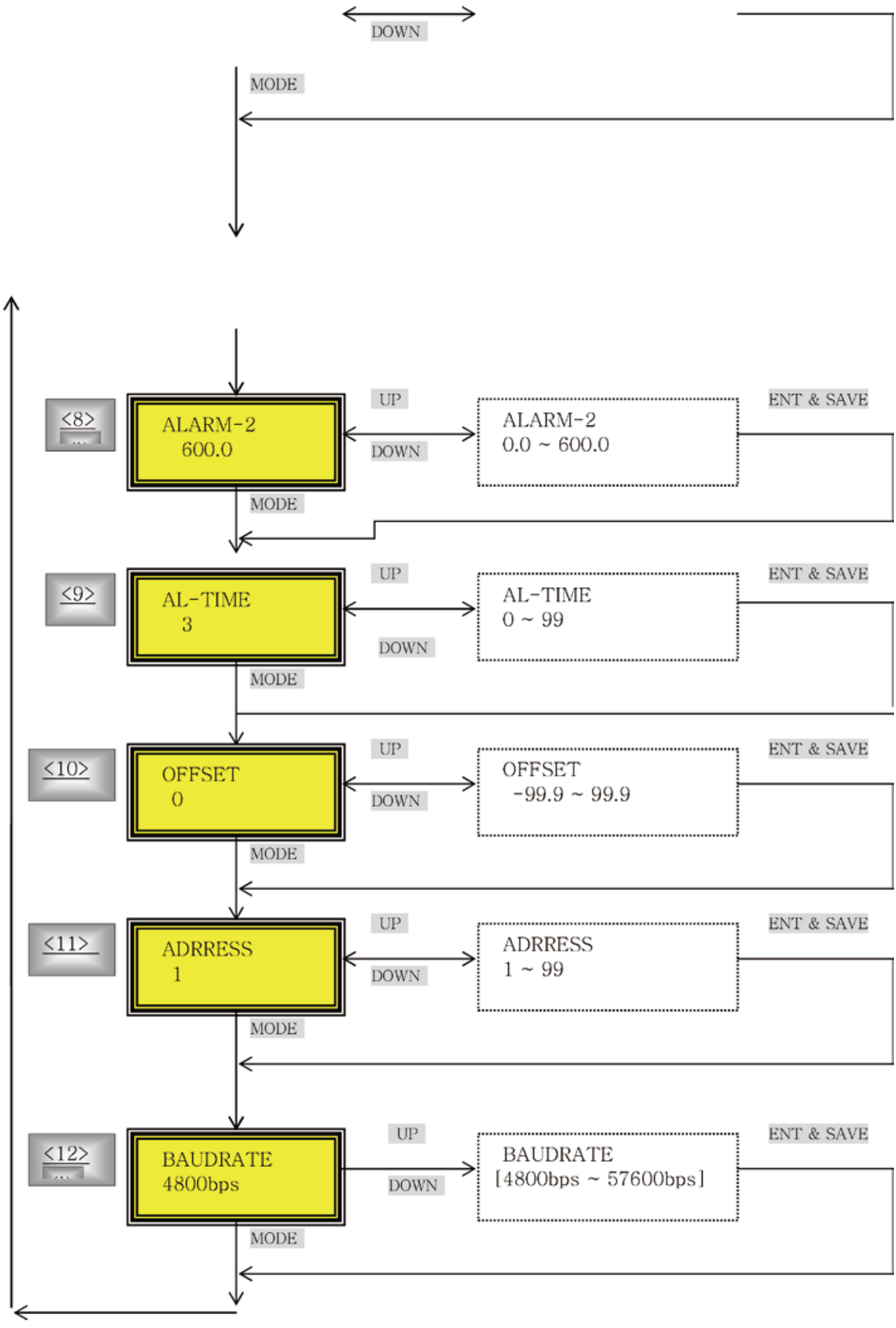


Label	Function

MODE	- Enter into Set-up Mode. - In Set-up Mode, move the setting area.
UP	Increase the value of measuring range by 1 unit. ※ When you keep touching it during 5 sec, the value increases fast.
DOWN	Decrease the value of measuring range by 1 unit. ※ When you keep touching it during 5 sec, the value decreases fast.
ENT	Store the set value.

9. Menu (PARAMETERIZING)




DOWN
MODE
<8>
ALARM-2
600.0
UP
DOWN
ALARM-2
0.0 ~ 600.0
ENT & SAVE
MODE
<9>
AL-TIME
3
UP
DOWN
AL-TIME
0 ~ 99
ENT & SAVE
MODE
<10>
OFFSET
0
UP
DOWN
OFFSET
-99.9 ~ 99.9
ENT & SAVE
MODE
<11>
ADRRESS
1
UP
DOWN
ADRRESS
1 ~ 99
ENT & SAVE
MODE
<12>
BAUDRATE
4800bps
UP
DOWN
BAUDRATE
[4800bps ~ 57600bps]
ENT & SAVE
MODE

<1> Measuring Mode

- Measure the temperature of object and display it on LCD in real time.
- When you push [MODE] during 2 seconds, you can enter into Set-up Mode.

<2> Adjust Emissivity

- When the surface of object is highly reflexible, you have to adjust the emissivity.
- You can adjust the emissivity rate from 0.10 to 0.99.

<3> Laser Pointer

- Operate Laser Pointer to aim at object.

<4> LO-SCALE

- 4mA for FULL SCALE

(ex) if you set LO-SCALE as 500:

4mA Analogue Output ---------- [500] Display.

<5> HI-SCALE

- 20mA for FULL SCALE

(ex) If you set HI-SCALE as 100:

4mA Analogue Output ---------- [0.0] Display.

12mA Analogue Output ---------- [50.0] Display.

20mA Analogue Output ---------- [100.0] Display

<6> AL-TYPE(ALARM-TYPE)

- 3 types of alarm settings - H&HH, H&L, or L&LL
- two(2) alarm relays – ALARM-1 & ALARM-2

ex) If you set H&L:

➔ ALARM-1: ALARM-1(If more than set value, relay on)

➔ ALARM-2: ALARM-2(If less than set value, relay on)

<7> ALARM-1

- ALARM-1 alarm relay output (according to ALARM TYPE, alarm on)

<8> ALARM-2

- ALARM-2 alarm relay output(according to ALARM TYPE, alarm on)

<9> AL-TIME(ALARM TIME)

- This menu is to prevent abrupt malfunction affected by shock or noise from outside.

<10> OFFSET(Compensate measured value)

- compensate the error of measured value which happened by sensor.

ex) OFFSET: If you set -5:

➔ When the sensor output error is +5, display shows 0 after it compensates -5.

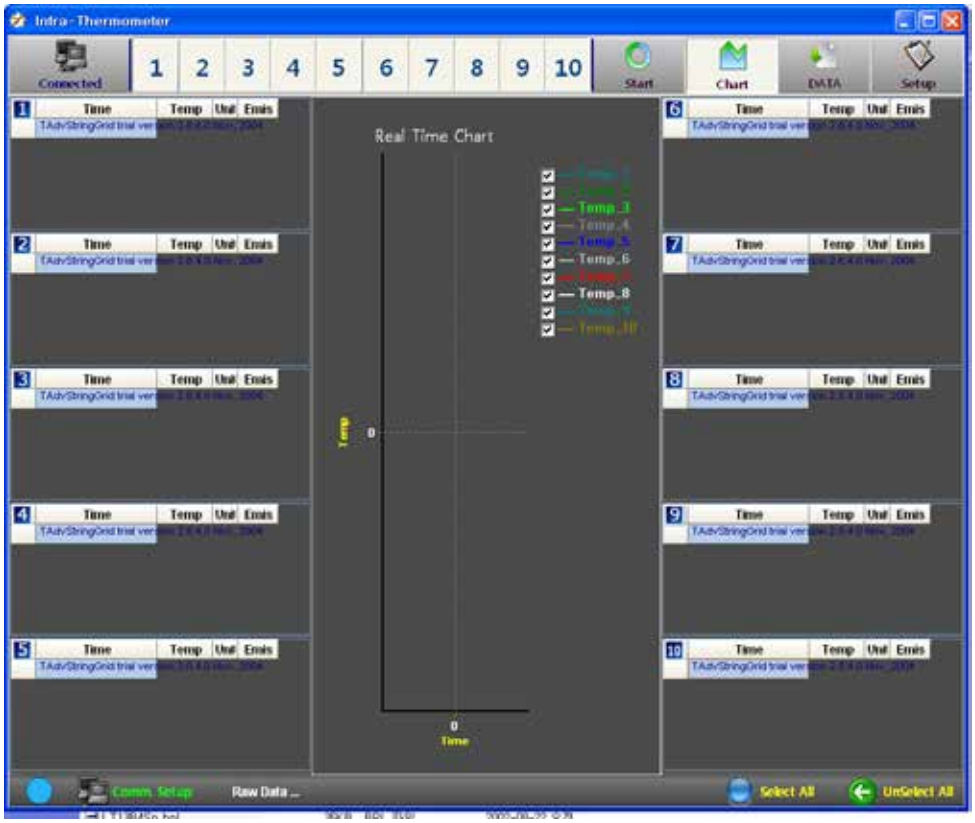
<11> ADDRESS

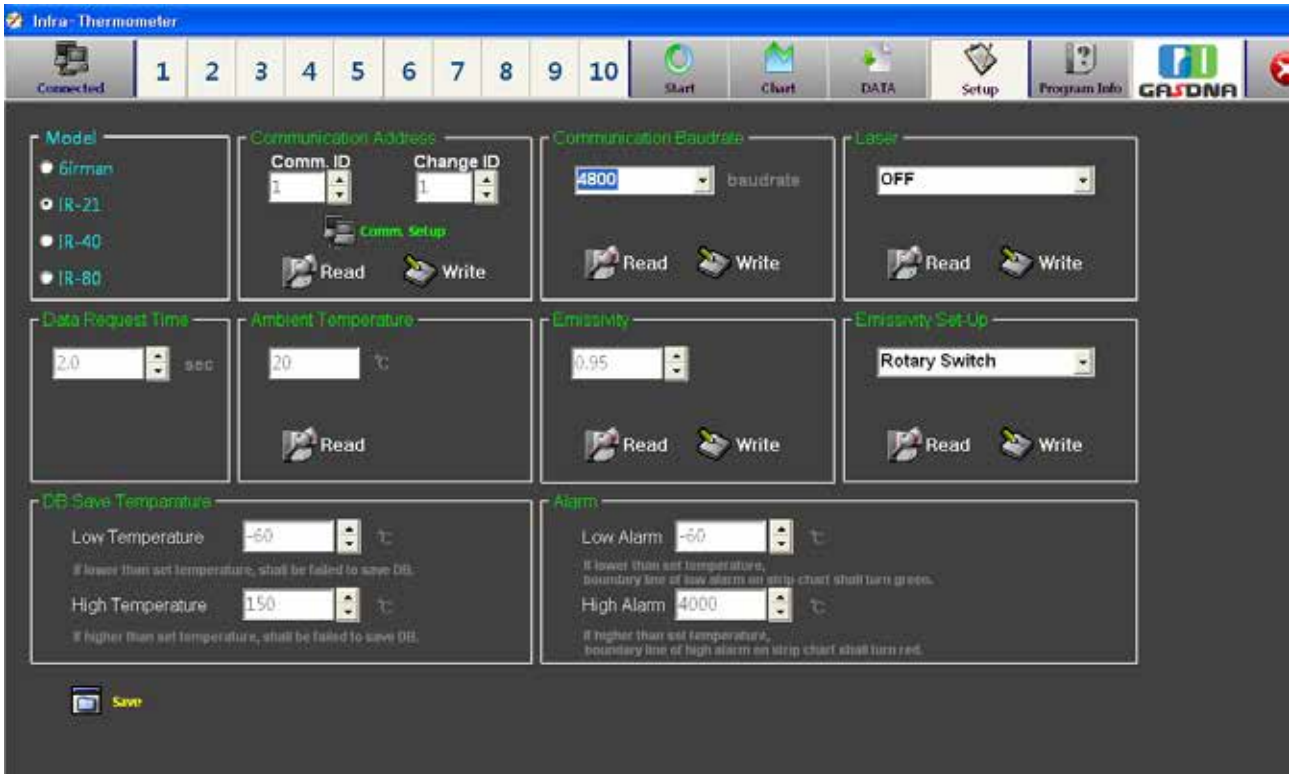
- RS-485 address set

<12> BAUDRATE

- RS-485 Baudrate set

10. Communication specification and Software





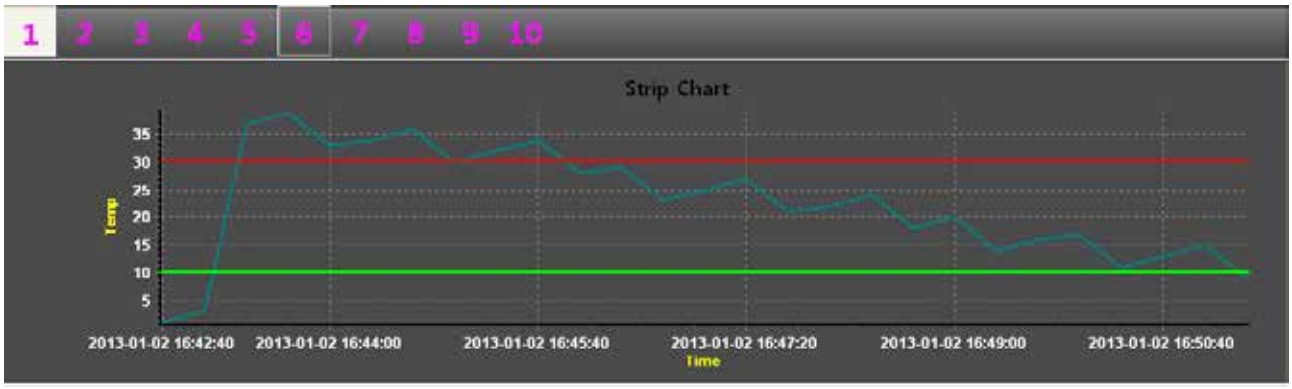
Serial Interface(Initial value setting)

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

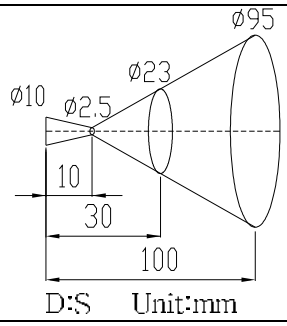
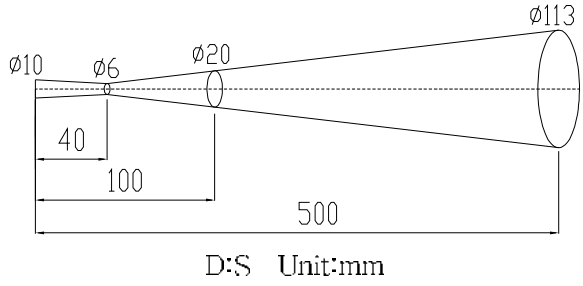
range,

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



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

11. Option

6-IRMAN-CF-10	
6-IRMAN-CF-40	
Air-purge	

485 To RS232 converter	
Up and down adjustable Bracket	
Indicator (Model No. DI-20)	
2 Inch LED Display	

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