# IC 100M Series (INDICON)
# (RGO Small Bar Type Indicators With Alarm)

NEWINS
http://www.newins.co.kr

## Contents

**※ Be sure to observe following warning / cautions and those provided in the text. In order to secure safety in handing the instrument.**

## ⚠ WARNING

**General**
- In order to prevent electric shock, be sure to disconnected this instrument from the main power source when wiring.

**Protective Grounding**
- In order to prevent electric shock ; be sure to provided protective grounding prior to turning on this instrument.

Do not cut a protective grounding conductor disconnected protective grounding.

**Power Source**
- Make sure that the supply voltage for this instrument conforms to the voltage source.
- Attach protective cover prior to turning on this instrument.

**Fuse**
- In order to prevent a fire, use only our specified fuse.
- Don't short-circuit a fuse.

**Working Environment**
- Do not operate this instrument in the environment where it is exposed to a combustible, explosive, corrosive gas or water, steam.

**Input and Output wiring**
- Provide input and output wiring after turning off the power.

## ⚠ CAUTION

**Inside of instrument**
- Do not disassemble the inside of the instrument.
- Prevent inflow of dust, water, oil and wiring dregs in to the instrument.

**Input and Output wiring**
- Do not use empty terminals for other purposes such as relaying, etc.
- Wire correctly after checking the polarity and purpose of the terminal.
- When wiring the instrument, separate from high voltage cables, power lines, and motor lines to prevent inductive noise.

**Transportation**
- When transporting this instrument or the equipment with this instrument incorporated in it, take measures to prevent opening the door and falling out the inner module.

## ⚠ NOTE

**Instruction manual**
- Deliver this instruction manual to an end user.
- prior to handing the instrument be sure to read this manual.
- If you have any question on this manual or fine any errors omissions in this manual, contact our sales representative
- After reading this manual, keep it carefully by the instrument.
- When the manual, is lost or stained, contact our sales representative.
- It is prohibited to copy or reproduce this manual without our permission.

**Checking the accessories**
- Upon delivery instrument, unpack and check its accessories and appearance. if there are missing accessories or damage on the appearance contact our dealer where you purchased the instrument or our sales representative.

**Installation**
- When installing this instrument, put on a protective gear such as safety shoes, helmet, etc. for your safety.

**Maintenance**
- Only our serviceman or persons authorized by NEWINS are allowed to remove and take the inner module, the main unit and printed circuit boards apart.

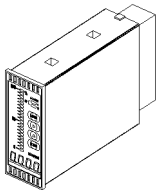
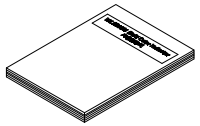
**Disposal**
- Disposed the used products in a correct way.
- Do not incinerate plastics of maintenance parts and replacement parts. A harmful gas mat be produced.
- To disposed of this instrument, consign to the special agent as an industrial waste.

**Cleaning**
- Use dry cloth to clean the surface of this instrument
- Do not use any organic solvent.
- Cleaning the instrument after turning off the power.

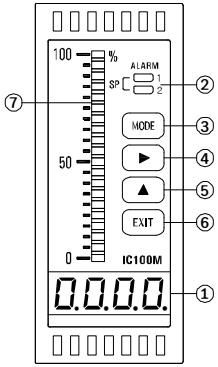
**Revisions**
- This instruction manual is subject to change without prior notice.

**Evasion of responsibility guarantee**
- Be sure to observe the caution in operating, maintaining, and repairing this instrument. We will not be responsible for or guarantee the damage resulting from negligence of them.

## 1. Accessory Confirmation

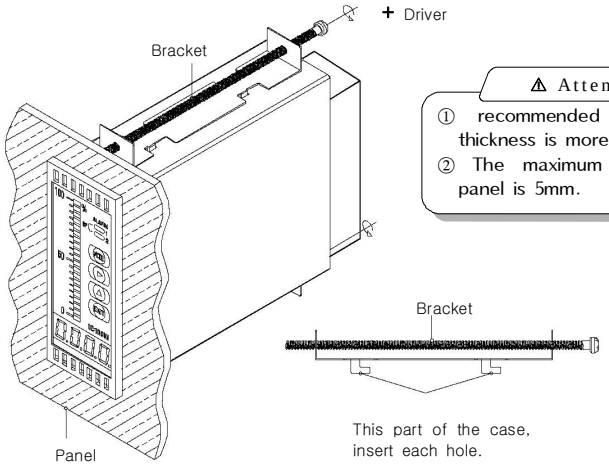
| | |
|---|---|
|  |  |
| CONVERTER | product manual |

## 2. Parts Name



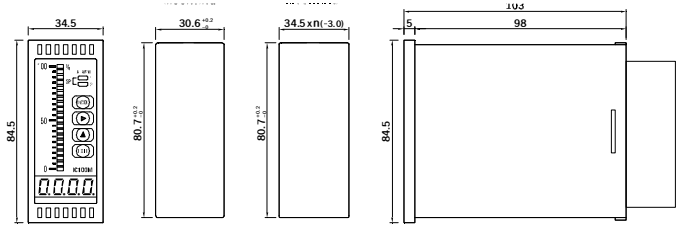

① Measured value display
② MODE Key
: Storage the set data and change the operation menu
③ ⇨ Key
: Enter into the data setting mode and modify the changed location
④ ⇧ Key
: Change the data value
⑤ EXIT Key
: Out of mode

## 3. Establishment Method




⚠ Attention
① recommended that the panel thickness is more than 1.2mm.
② The maximum thickness of the panel is 5mm.

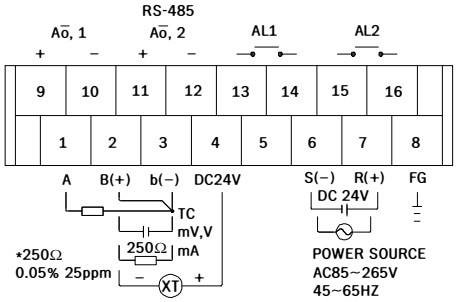
## 4. Dimension




* n = Quantity

## 5. Wiring

1. Terminal wiring




2. A power source wiring

⚠ Caution
1. For an electric shock prevention to turn on electricity to the machinery and tools which after one sees a protective ground connection surely.
2. To the electric wire terminal to use the insulation sleeve compression terminal.
3. The device's power supply voltage to match the voltage of the power is in check.
4. For the protection of life to turn on an electric current to the instrument after attaching the cover.

⚠ Attention
1. To all the member front line 600V vinyl insulation front lines (JIS C3307), or to use the front line of above considerable width.
2. To the protective ground terminal to connect above of 3rd type(to connect below earth resistance 100Ω and smallest size 1.6㎜).
3. Other protection devices and grounding, the grounding in public may be affected by noise. Accordingly the public are advised not to other devices.

## 6. Features

- RGO Color bar display setting (Auto alarm point)
- Clear bar by 50mm (20 bar LED)
- Multi-range input (TC, RTD, Volt, mA)
- Peak hold function (Highest & Lowest)
- RS-485(Modbus) Communication interface
- 2 Wire sensor power source DC 24V
- Filter function (4, 8, 16, 32, 64)
- 2Points alarm & Isolation current 2output (mA & Volt) output scaling

## 7. Specifications

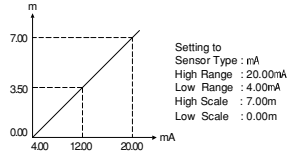
▷ Input Type

| Sensor Type | | Range | Scale | Symbol |
|---|---|---|---|---|
| TC | B(PR) | 0~1800℃ | - | TC-B |
| | R(PR) | 0~1750℃ | - | TC-R |
| | S(PR) | 0~1750℃ | - | TC-S |
| | K(CA) | -200~1350℃ | - | TC-K |
| | E(CRC) | -199.9~700.0℃ | - | TC-E |
| | J(IC) | -199.9~800.0℃ | - | TC-J |
| | T(CC) | -199.9~400.0℃ | - | TC-T |
| Volt | mV | -50.0~50.0mV | -1999~9999 | MV |
| | Volt | -1.000~1.000V | -1999~9999 | 1V |
| | Volt | -10.0~10.0V | -1999~9999 | 10V |
| mA | mA | 4.00~20.00mA | -1999~9999 | MA |
| PT | Pt100Ω | -199.9~800.0℃ | - | D-PT |
| | JPt100Ω | -199.9~500.0℃ | - | J-PT |

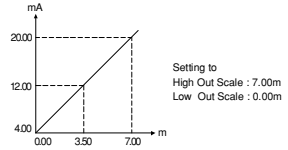
▷ Bar color : Red, Green, Orange
▷ Measuring and display cycle : 200ms(mV, Volt, mA) type), 400ms(TC, RTD type)
▷ Input resistance : Volt-400kΩ Others type-1MΩ
▷ Signal source resistance : Pt 100Ω type-30Ω/line, Others type-300Ω/line
▷ CMRR(Common Mode Rejection Ratio) : 140dB or more
▷ NMRR(Normal Mode Rejection Ratio) : 60dB or more
▷ Moving average filter : 4, 8, 16, 32, 64
▷ Built-in sensor power source : DC 24V 30mA ±0.5%
▷ Accuracy : ±0.2% FS
▷ Isolation current output : 2 output is isolation between output
Current : DC 4.00~20.00mA
Maximum load resistance : 600Ω
Isolation resistance(Input-Output) : 100MΩ or more(DC 500V)
▷ Isolation voltage output(Option) :
Voltage : DC 0~10V
Minimum load resistance : 1kΩ
Isolation resistance(Input-Output) : 100MΩ or more(DC 500V)
▷ Alarm output(Alarm setter)
Contact output type : Normal open, Normal close
Max switching power : 60W 125VA
Max switching voltage : DC 220V, AC 250V
Max switching current : DC 2A, AC
Max Carrying current : DC 3A, AC
▷ Ambient temperature & Humidity
Operation : -10~50℃, 10~90%
Storage : -20~70℃, 5~95%
▷ Power supply
Voltage : AC 85~265V(45~65Hz)
: DC 24V(Option)
Power consumption : Max 4VA
Isolation resistance : 100MΩ, DC 500V
(FG-Input, FG-Power, Power-Input, Input-Output)
▷ Etc
Weight : 200g
Mounting : Panel mount
Dimension : 34.8(W) X 84.5(H) X 127.0(D)mm

## 8. Major Functions

**▷ Display scaling function(mV, Volt, mA only)**
This function changes and sets the display value according to scale and input range.
Ex) In case of input range 4.00~20.00mA and Level 0.00~7.00m

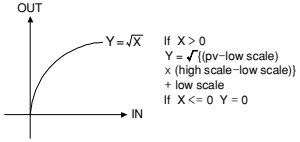



**▷ Output scaling function**
This function can change the 4.00~20.00mA value as the output scale.
Ex) In case of display value 0.00~7.00m, Output 4.00~20.00mA




**▷ Function(mV, Volt, mA type)**
**LIN** : Pass the input as it is.
Used for general input type and linearity input.

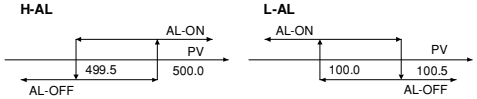
**ROOT** : Pass the input after √.
Used for flow rate by orifice.




**LIMT** : Like level measuring, when it does not display measuring under zero, it always can display zero by using limit function.

**▷ Alarm function**
Alarm type : High, Low
The alarm consists of 2 relays, and it can output relay contact output individually

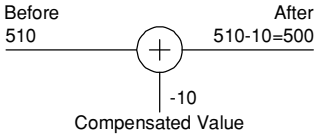
Ex) AL-1 : High alarm value 500.0,
AL-2 : Low alarm value 100.0,
Alarm dead band setting 0.5




The high alarm(AL-1) is ON when the present value(PV) is 500.0 or more, and OFF when 499.5 or less. The low alarm(AL-2) is OFF when the present value(PV) is 100.5 or more, and ON when 100.0 or less.

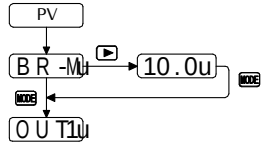
**▷ Sensor compensation function**
The function is useful for compensating error by long sensor line or changed zero point by aged sensor.

Ex) Before sensor adjust = 510℃
After sensor adjust
= measured value + compensated value
= 510 - 10
= 500℃

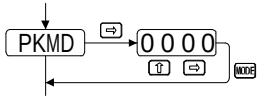



**▷ Filter function**
5-Kinds of average transfer filter function.
1) Because input is irregular use when output and display are unstable.
2) When need high speed reply, if use filter, response is slow.

**▷ Adjustment the FND brightness function.**
· 10steps FND brightness.
· 1step FND brightness turns off after 3seconds.
· As push the any key, FND display the PV value and, turns off after 3seconds.
100.0% : maximum brightness.
10.0% : minimum brightness.



**⊳ Peak hold function**




- Peak mode 0 (High peak mode) :
  Remember the highest input value and display the highest value when pressing the key.
- Peak mode 1 (Low peak mode) :
  Remember the lowest input value and display the lowest value when pressing the key.
- Peak mode 2 (High peak & Display mode)
  Remember the highest input value, display the highest value in ordinary times, and output the highest transmit output.
- Peak mode 3 (Low peak & Display mode)
  Remember the lowest input value, display the lowest value in ordinary times, and output the lowest transmit output.

## 9. Operation & Setting

**⚠ CAUTION** **Initialization of the data (All Reset)**

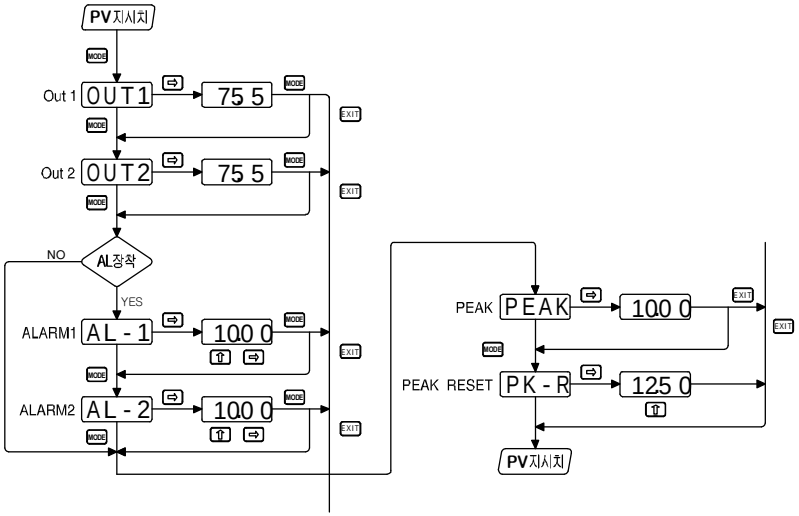
It is All reset when ship the goods from factory. If you want initialize all parameter, please reset the instrument. Push the MODE KEY and EXIT KEY at the same time and ON the power. It is initialized and operation by new setting value.

▸ Initial setting value is, Sensor type(TC-K), Alarm 1(1350), Alarm 2(1350), Dead Band(3), Sensor 보정치(0), Peak mode(0), Function(LIN), Output scale high(1350), Output scale low(-200), Alarm 1 type(H), Alarm 2 type(H).

1. Operation Mode

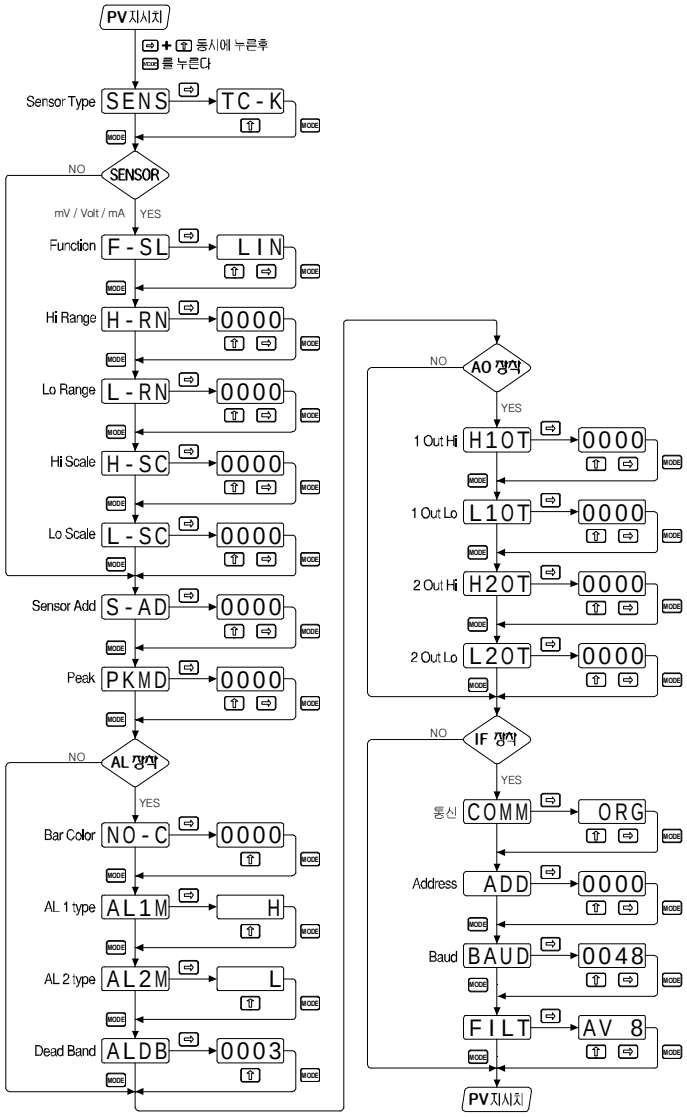
- ▸ Usually user may setting the Alarm value and confirming the Peak value during operation.
- ▸ The peak value must not erased at least 10years because it stored in the semipermanent EP-ROM.
- ▸ The Alarm mode (High, Low) is operated setting value which set in the setting mode.

▸ Make flickering the wanted place by ⇨ and setting the value for data setting.
▸ Push the ⇧, the figure repeat to 0,1,2… 9,0 and the best position repeat to 0,1,2 …,9,-,-1,0 . If you want to output the mode,
▸ push the EXIT, then will go out into the PV value Mode.




2. Setting Mode

◉ Change the setting ⇨ ⇧ push at the same time to move setting mode.
◉ Move to display mode in every mode push the EXIT.
◉ Data setting method
  ① Setting the decimal point by ⇧
  ② Flickering the purpose digit by ⇨
  ③ Selecting the data by ⇧
  ④ Setting data by pushing the "mode"
  ⑤ Decimal point can set only the input range high or input scale high mode.



## 10. Ordering Code

| IC 1 | | | M | | Description |
|---|---|---|---|---|---|
| **Analog output** | 0 | | | | 2ALARM |
| | 1 | | | | 2ALARM + 4.00~20.00mA |
| | 2 | | | | 2ALARM + 1~5Volt |
| | 3 | | | | 2ALARM + 4.00~20.00mA (2Out) |
| | 4 | | | | 2ALARM + 1~5Volt (2Out) |
| | 5 | | | | 2ALARM + 4.00~20.00mA + 1~5Volt |
| | 6 | | | | 2ALARM + 4.00~20.00mA + RS-485 |
| | 7 | | | | 2ALARM + 1~5Volt + RS-485 |
| | 8 | | | | DC 4.00~20.00mA |
| | 9 | | | | DC 1~5Volt |
| | 10 | | | | Etc |
| **Power** | | 0 | | | AC 85~265V(45~65㎐) |
| | | 1 | | | DC 12~32V |
| | | 2 | | | Etc |
| **Interface** | | | | 0 | None |
| | | | | 1 | RS-485 |
| | | | | 2 | Modbus RTU |

## ※ Purchase & A/S


* Seoul Office : (Sales Department) 502, DaelimMotors B/D, 535, Gonghang-daero, Gangseo-gu, Seoul, KOREA
Tel : +82-2-2668-3333, Fax : +82-2-2668-5100

* Head Office : (Factory) 301-1101~3, 3th, Buchen Techno-Park, 397, Seokcheon-ro, Ojeong-gu, Buchen-city, Gyeonggi-do, KOREA
Tel : +82-32-624-0770, Fax : +82-32-624-0772
http://www.newins.co.kr
E-mail : sales@newins.co.kr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