

**IC 3400 Series MANUAL**  
(Digital Potentiometer)



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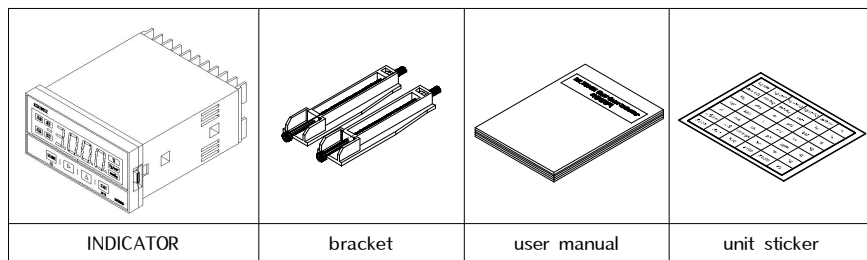
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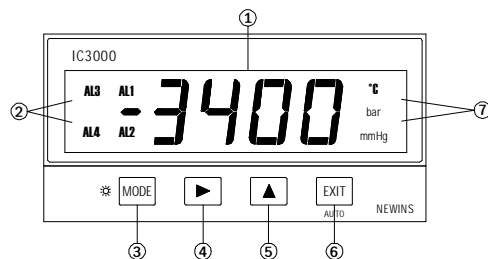
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## 1. Accessory Confirmation

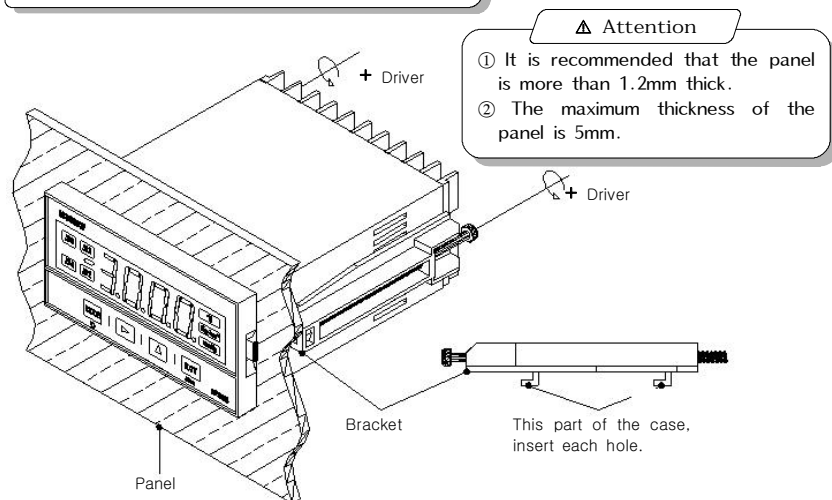


## 2. Parts Name

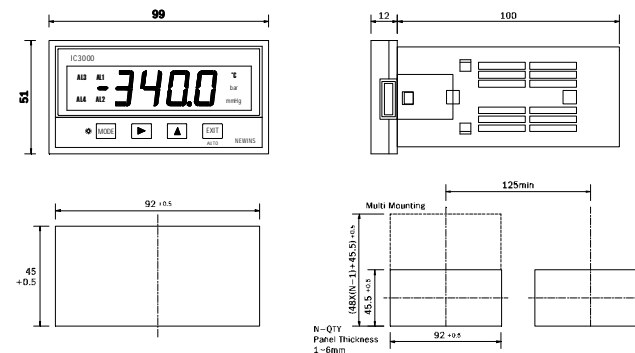


- ① Measured value display
- ② Alarm condition display
- ③ **MODE** Key: Storage the set data and change the operation menu
- ④ **→** Key : Enter into the data setting mode and modify the changed location
- ⑤ **↑** Key : Change the data value
- ⑥ **EXIT** Key : Out of mode
- ⑦ Unit

## 3. Establishment Method

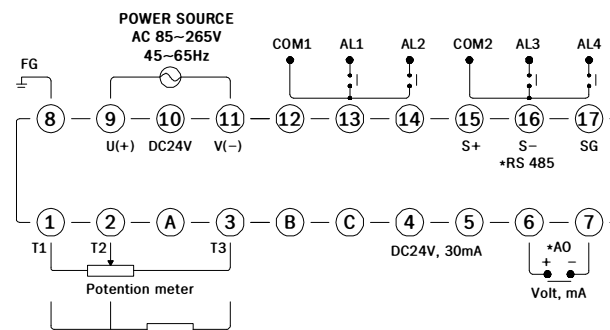


## 4. Dimension



## 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 1.6mm).
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

- ▶ Potention meter input
- ▶ High accuracy 16bit A/D converter
- ▶ RS-485 Communication interface
- ▶ 2 points alarm & Dead band set
- ▶ Isolation current output (DC 4.00~20.00mA) & Output scaling

## 7. Specifications

### ▶ Input Type

Sensor Type	Range	Scale
500	0~500Ω	-1999~9999
5k	0~5kΩ	-1999~9999

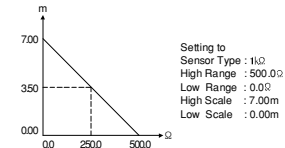
- ▶ Measuring and display cycle : 100ms
- ▶ Input resistance : Max 1MΩ
- ▶ CMRR(Common Mode Rejection Ratio) : 140dB or more
- ▶ NMRR(Normal Mode Rejection Ratio) : 60dB or more
- ▶ Moving average filter
- ▶ Accuracy :  $\pm 0.2\%$  FS
- ▶ Isolation current output(Optional)
  - Current : DC 4.00~20.00mA
  - Maximum load resistance : 600Ω
  - Isolation resistance(Input-Output) : 100MΩ or more (DC 500V)
- ▶ Alarm(Optional)
  - Contact output type : Normal open
  - 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 110/220V(50~60Hz), DC 24V(Optional)
  - Power consumption : Max 4VA
  - Isolation resistance : 100MΩ, DC 500V (FG-Input, FG-Power, Power-Input, Input-Output)
- ▶ Communication interface(Optional)
  - Type : RS-485
  - Speed : 4800, 9600, 19200bps
  - ID(address) setting : 0~15
- ▶ Etc
  - Weight : 500g
  - Mounting : Panel mount
  - Dimension : 96(W) X 48(H) X 112(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.

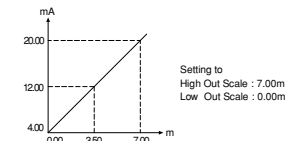
Ex) In case of input range 500.0~0.0Ω and Level 0.00~7.00m



### ▶ Output scaling function

This function can change the 4.00~20.00mA value as the output scale.

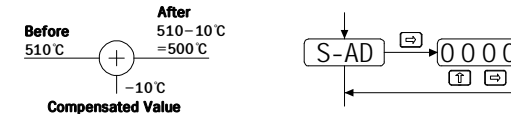
Ex) In case of display value 0.00~7.00m, output 4.00~20.00mA



### ▶ 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 = 110℃ After sensor adjust  
 = measured value + compensated value  
 = 110 - 10  
 = 100℃



### ▶ Alarm function

Alarm type : High, Low

The alarm consists of 4 relays, and it can output relay contact output individually

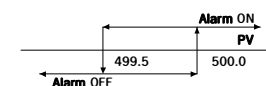
Ex) AL-1 : High alarm value 500.0, AL-2 : Low alarm value 100.0,

Alarm dead band setting 0.5

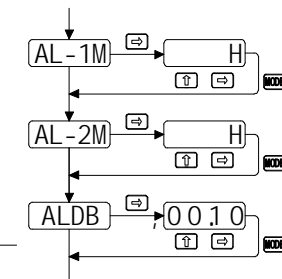
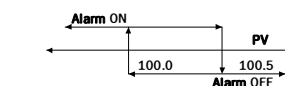
The high alarm(AL-1) is ON when the present value(PV) is 500.0 or more, and OFF when 499.5 or less.

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

#### High Alarm

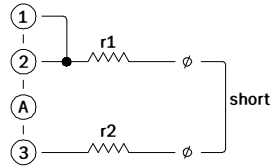


#### Low Alarm



## ► compensation the line ( TRIM )

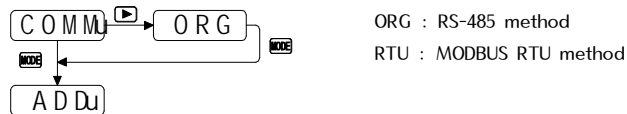
removal the occurred resistance value r1, r2 by line length



ex) in the R1-5Ω, R2-5Ω case, enter the trim mode and push the "exit"key then the resistance value (R1, R2) become 0Ω and "16L" appears in FND

## ► setting the communication method

this function is selection the communication method of Rs-485 or MODEBUS RTU method



## ► Filter

This function is moving average filter and has 4 kinds

It displays sample value on an average the in recent input value 4,8,16,32,64

In case of setting the filter function, the response will be delay.

When the output and display value are changed by irregular input, it is possible to get regular Input and display value by using filter function.

## ► Setting the display unit.

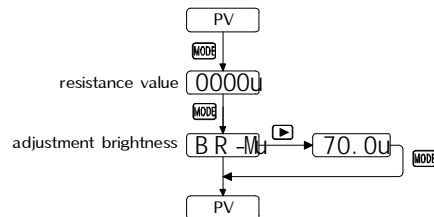
none(0), °C(1), bar(2), mmHg(3)

## ► Adjustment the FND brightness

100% mode : max brightness

10% mode : min brightness

0% mode : the FND turns off after 5seconds at the max brightness mode



\* the first stage brightness is 70%

\* Push any keys then the FND displays PV value(100%) and turns off after 10seconds.

## 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

Sensor type(500), Alarm설정지(500.0), TRIM (0) Dead Band(1), Sensor 보정치(0), High Output scale (100.0), Low Output scale (0), Alarm type(H), Unit(0), Filter(AV8)

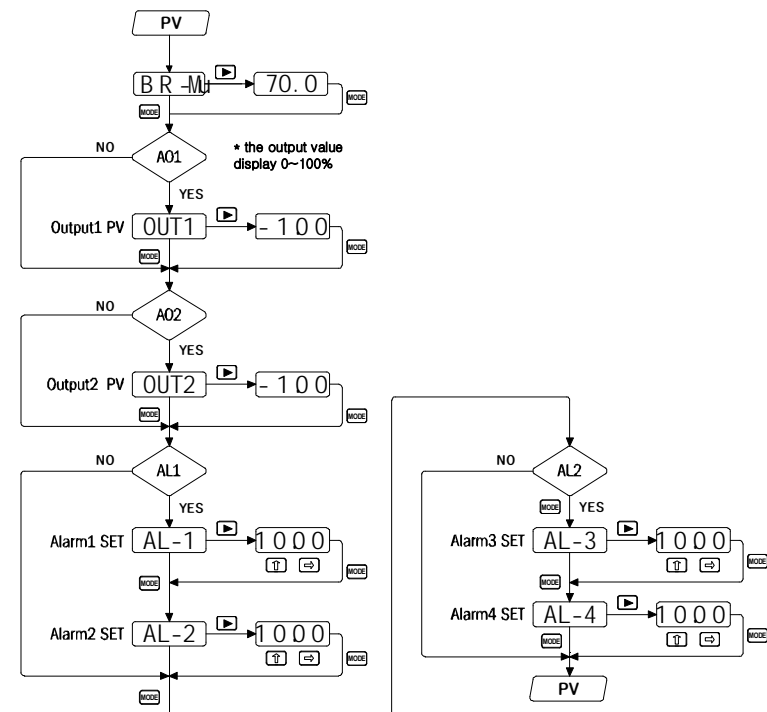
► Usually user may setting the Alarm value and confirming the Peak value during operation.

► 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.

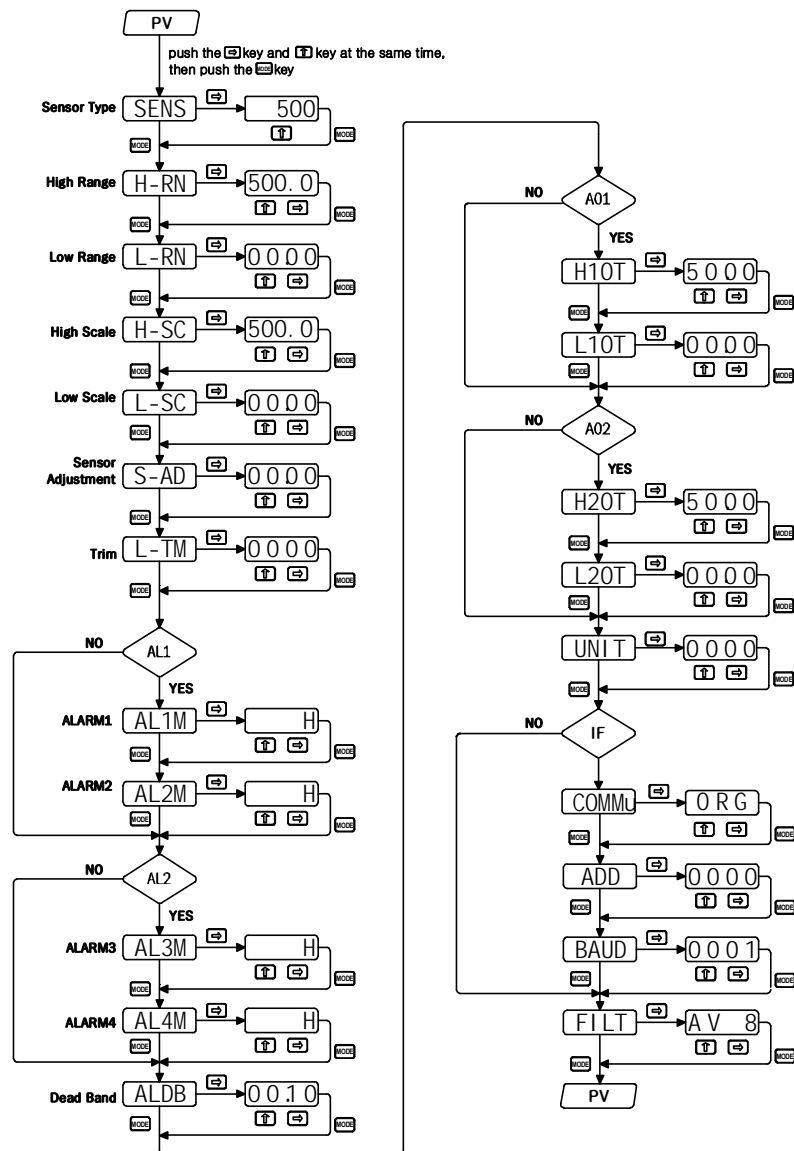
### 1. Operation Mode

- 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 34					Description
Type	1				Indicator
	2				Indicator with 2Alarm
	3				Indicator with 4Alarm
Analog output	0				None
	1				DC 4.00 ~ 20.00mA
	2				DC 4.00 ~ 20.00mA (2Output)
	3				Etc
Power	0				AC 85 ~ 265V (45 ~ 65Hz)
	1				DC 24V
	2				Etc
Interface	0				None
	1				RS-485
	2				Etc

## ※ Purchase & A/S

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