FEATURES

◉ **Multi-range input (T/C, RTD, Volt, mA, Etc)**

◉ **4step LED brightness control**

◉ **High accuracy 16bit A/D converter**

◉ **Peak hold function (Highest & Lowest)**

◉ **Cut off function (low value limit function)**

◉ **RS-485 Communication interface**

◉ **4 points alarm & Dead band set**

◉ **Isolation current two output (4.0~20.0mA) & Output scaling**

◉ **Sensor power source DC 24V in STD specification**

SPECIFICATIONS
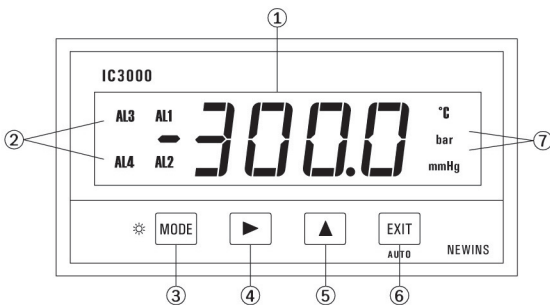
▷ **Measuring and display cycle :**
   200ms(mV, Volt, mA type)
   400ms(TC, RTD type)

▷ **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

▷ **Built-in sensor power source :** DC 24V 30mA ±0.5%

▷ **Accuracy**   : Display ±0.2% FS

▷ **Isolation current output(Option)**
   Current   : DC 4.00~20.00mA
   Maximum load resistance   : 600Ω
   Isolation resistance(Input-Output) : 100MΩ or more
                                  (DC 500V)

▷ **Alarm(Option)**
   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 85~265V(45~65Hz)
                          DC 24V(Option)
   Power consumption   : Max 4VA
   Isolation resistance : 100MΩ, DC 500V
                          (FG-Input, FG-Power,
                           Power-Input, Input-Output)

▷ **Communication interface(Option)**
   Type   : RS-485 & modbus.RTU
   Speed   : 4800, 9600, 19200bps
   ID(address) setting : 0~99

▷ **Etc**
   Weight   : 500g
   Mounting   : Panel mount
   Dimension   : 99(W) X 51(H) X 112(D)mm

INPUT TYPE

Sensor Type		Range	Scale	Simbol
TC	B(PR)	0~1800℃	-	tC-b
	R(PR)	0~1750℃	-	tC-r
	S(PR)	0~1750℃	-	tC-5
	K(CA)	-200~1350℃	-	tC-Ł
	E(CRC)	-199.9~700.0℃	-	tC-E
	J(IC)	-199.9~800.0℃	-	tC-J
	T(CC)	-199.9~400.0℃	-	tC-Ł
Volt	mV	-50.0~50.0mV	-1999~9999	ɱu
	Volt	-1.000~1.000V	-1999~9999	Iu
	Volt	-10.0~10.0V	-1999~9999	IƆu
mA	mA	4.00~20.00mA	-1999~9999	ɱA
PT	Pt100Ω	-199.9~800.0℃	-	d-Pt
	JPt100Ω	-199.9~500.0℃	-	J-Pt

* mA type : External 250Ω(±0.1% 25ppm) resistance is attached

PARTS NAME

① Measured value display : white color
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
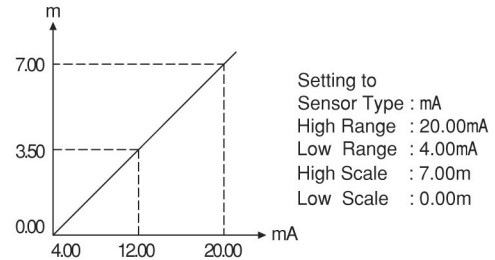⑦ Unit

MAJOR FUNCTIONS

▷　**FND Bright set function**

Mode 1 - FND bright 100%
Mode 2 - FND bright 75%
Mode 3 - FND bright 25%
Mode 4 - FND off

* This mode is display measure value after 10second
　disappear measure value.
　Push the any key expression measure value.

▷ **Display scaling function(mV, Volt, mA only)**

This function changes and sets the display value
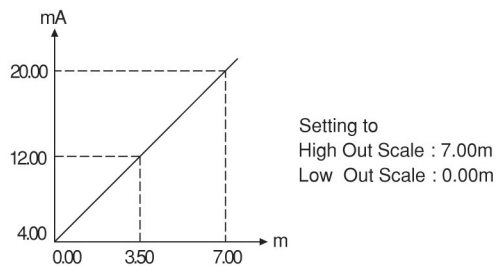according to scale and input range.

Ex) In case of input range 4.00~20.00mA and
　　Level 0.00~7.00m

Setting to
Sensor Type : mA
High Range : 20.00mA
Low Range : 4.00mA
High Scale : 7.00m
Low Scale : 0.00m

▷ **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

Setting to
High Out Scale : 7.00m
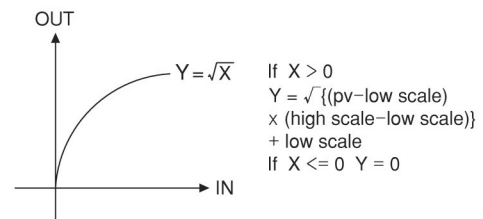Low Out Scale : 0.00m

▷ **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 $\sqrt{\ }$. Used for flow rate by orifice.

If X > 0
$Y = \sqrt{}${(pv−low scale)
x (high scale−low scale)}
+ low scale
If X <= 0　Y = 0

C-oF

Like level measuring, when it does not display
measuring under cut off value, it always can display
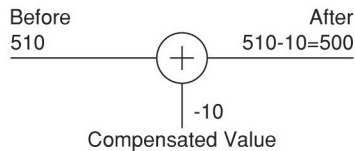zero by using cut off value function.

▷ **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℃

```
Before                        After
510                           510-10=500
          (+)
                    -10
          Compensated Value
```

▷ **Alarm function**

Alarm type : High, Low

The alarm consists of 4 relays, and it can output relay contact output individually.
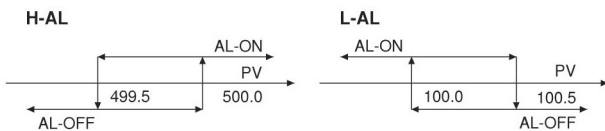
Ex) AL-1 : High alarm value 500.0,

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.

```
H-AL                      L-AL
              AL-ON         AL-ON
                     PV                  PV
       499.5   500.0        100.0    100.5
   AL-OFF                          AL-OFF
```

▷ **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.
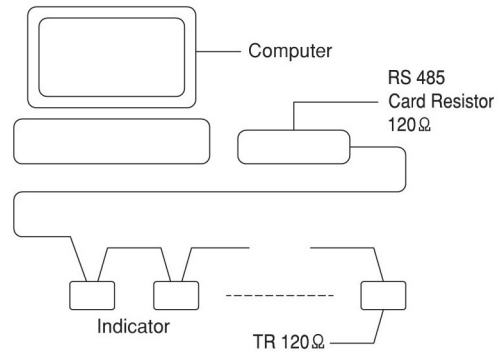
[Peak mode 2] High peak & Display mode

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.

▷ **Communication interface**

It is possible to communicate with computer and to monitor remote by using RS-485 and modbus communication interface.

```
                  ┌──────────┐
                  │          │──── Computer
                  └──────────┘        RS 485
                  ┌──────────┐        Card Resistor
                  └──────────┘        120Ω
                  ┌──────────┐   ┌──────────┐
                  └──────────┘   └──────────┘
                   ┌──┐  ┌──┐  ---------  ┌──┐
                   └──┘  └──┘             └──┘
                  Indicator      TR 120Ω
```

ORDERING CODE

IC 3				–		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 (2 Output)
		3				Etc
Power			0			AC 85~265V (45~65Hz)
			1			DC 24V
			2			Etc
Interface					0	None
					1	RS-485
					2	Modbus RTU(485)

In case of 2AO dual output does not became interface communication.

TERMINAL DIAGRAM

POWER SOURCE
AC 85~265V
45~65Hz

COM1 AL1 AL2 COM2 AL3 AL4

FG

⑧ — ⑨ — ⑩ — ⑪ — ⑫ — ⑬ — ⑭ — ⑮ — ⑯ — ⑰

U(+) DC24V V(−)

250Ω (mA)

(RS−485)
S+   S−

① — ② — Ⓐ — ③ — Ⓑ — Ⓒ — ④ — ⑤ — ⑥ — ⑦

A   B   b

RTD

OUT2
+ −

Transmitter Power
DC24V, 30mA

OUT1
+ −

Volt, mA

mV, V

T / C

XT
−   +

2Wire Transmitter

* mA Input(+ −) Needs 250 OHM 0.05% 25ppm Resistance (2, 3 Pin)

DIMENSION & PANEL CUT

99

51

IC3000

AL3 AL1
AL4 AL2

-300.0

°C
bar
mmHg

☼ MODE ► ▲ EXIT

AUTO   NEWINS

12   100

92 +0.5

45
+0.5

125min

Multi Mounting

(48X(N−1)+45.5) +0.5

45.5 +0.5

92 +0.5

N=QTY
Panel Thickness
1~6mm