IC 7400 Series Manual
(Isolated Pulse Converter)

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

Contents

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.

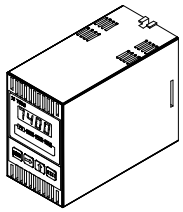
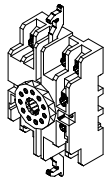
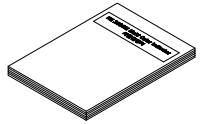
Cleaning
- Use dry cloth to clean the surface of this instrument
- Do not use any organic solvent.
- Cleaning the instrument after turning off the power.

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

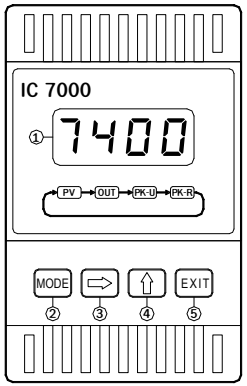
Evasion of responsibility guarantee
- Be sure to observe the caution in operating, maintaining, and repairing this instrument. We will not be responsible for or guarantee the damage resulting from negligence of them.

1. Checking the Accessories

when you received, please check the Insufficient accessories and defective products shape.
If the lack of parts, please contact the company.

		
CONVERTER	SOCKET	manual

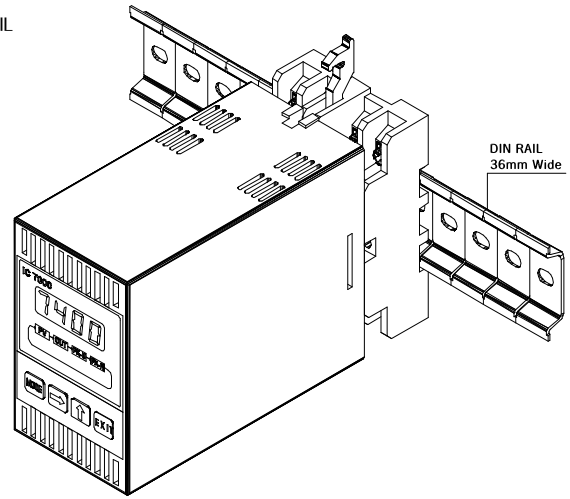
2. Parts Name



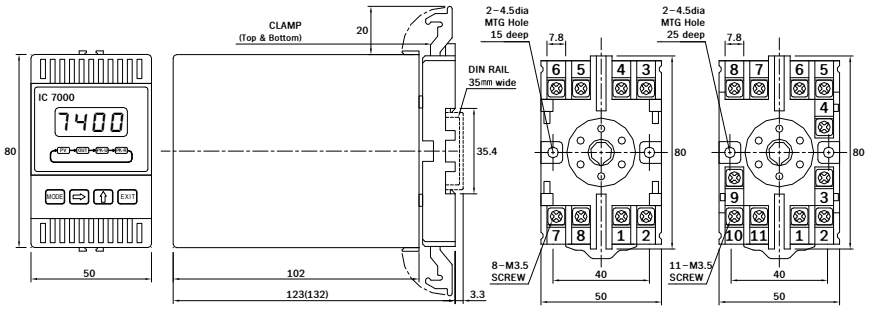
① Measured value display
② MODE KEY
Storage the set data and change the operation menu
③ ⇨ KEY
Enter into the data setting mode and modify the changed location
④ ⇧ KEY
Change the data value
⑤ EXIT KEY
Out of mode

3. Installation

1. DIN RAIL

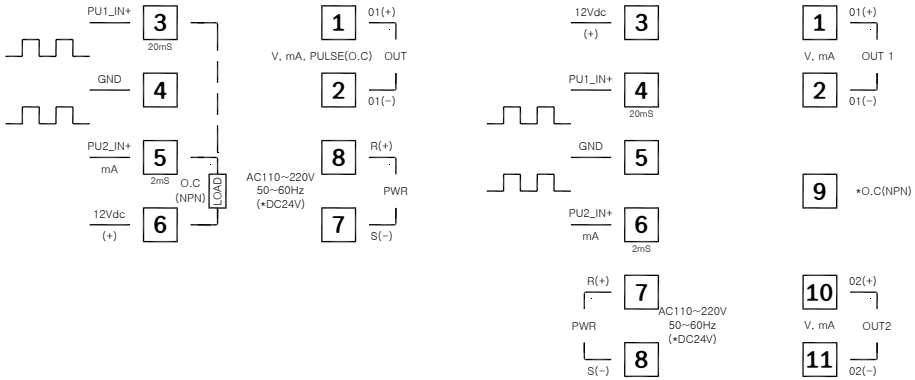


2. Outside dimension and Panel cutting size



4. Terminal diagram

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.

5. Features

- Multi input (Pulse voltage, Contact, Open collector, DC 4.00~20.00mA)
- High response
- Peak hold function (Highest & Lowest)
- Pulse output (O.C, Contact, Pulse voltage)
- 1 point alarm & Dead band set
- Isolation current output (DC 4.00~20.00mA)
- Sensor power source DC 12V in STD specification (*DC 24V Option)

6. Specification

1. Pulse input

   Low level voltage : DC 0.7V or less
   High level voltage : DC 1.5V or more
   Max high voltage : DC 30V
   Input resistance : 150kΩ

Range Code	Input	Maximum setting range
Range 0	4.00~20.00mA	-
Range 1	0.000~1.000Hz	1.00Hz
Range 2	0.000~9.999Hz	10.0Hz
Range 3	0.00~99.99Hz	100Hz
Range 4	0.0~999.9Hz	1.000Hz
Range 5	0.000~9.999kHz	10.00kHz
Range 6	0.00~40.00kHz	40.00kHz

*Others is order made

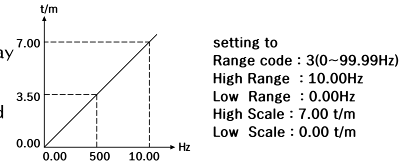
2. Measuring and display cycle : Min 1s, more short according to input frequence
3. CMRR(Comon Mode Rejection Ratio) : 140dB or more
4. NMRR(Normal Mode Rejection Ratio) : 60dB or more
5. Moving average filter by selection (None, 4, 8, 16)
6. SBuilt-in sensor power source : DC 12V / 30mA / ±0.5%
7. Accuracy : ±0.2% FS
8. Isolation current output(Option)
   - Current : DC 4.00~20.00mA
   - Maximum load resistance : 600Ω
   - Insolation resistance : Input~Output 100MΩ or more (DC 500V)
9. Isolation voltage output(Option)
   - Voltage : DC 0~10V
   - Maximum load resistance : 1kΩ or more
   - nsolation resistance : Input~Output 100MΩ or more (DC 500V)
10. Pulse output
    - Open collector output : Max 100Hz, DC 50V/within 30mA
    - Voltage output : Max 100Hz, Lo(DC 0V), Hi(DC 24V)
    - Relay contact output : Max 5Hz
11. Alarm Output
    - Contact output type : Normal open, Normal close
    - Max, switching power : 60W, 125VA
    - Max, switching current : DC 2A, AC
    - Max, switching voltage : DC 220V, AC 250V
    - Max, carrying current : DC 3A, AC
12. Ambient temperature & Humidity
    - Operation : -10~50℃, 10~90%
    - Storage : -20~70℃, 5~95%
13. Power supply
    - Voltage : AC110/220V(50~60Hz), DC 24V(Option)
    - Isolation resistance : 100MΩ (DC 500V)
    - Power consumption : MAX 4VA
    - Isolation(FG-INPUT, FG-POWER, POWER-INPUT, INPUT-OUTPUT)
14. Etc
    - Weight : 500g
    - Mounting : Din rail & wall mounted
    - Dimension : 50(W)× 80(H)× 102(D)mm

7. Major Functions

1. Display scaling function(mV, Volt, mA only)

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

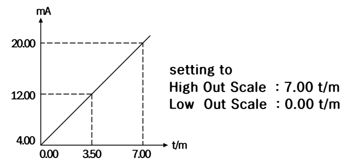
   Ex) In case of input range 0.00~10.00Hz and Level 0.00~7.00t/m



2. Current output scaling function

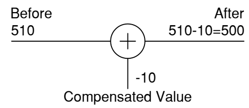
   This function is that 4.00~20.00mA output value is changed by output scale.

   Ex) In case of display value 0.00~7.00t/m, Output 4.00~20.00mA



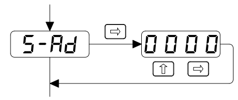
3. Sensor compensation function

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

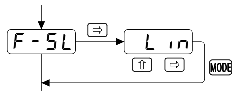


   Ex) Before sensor adjust = 510℃

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



4. Function(Volt, mA type only)

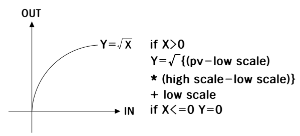


4.1. Lin

Pass the input as it is.
Used for general input type and linearity input.

4.2. root

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



4.3. Lint

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

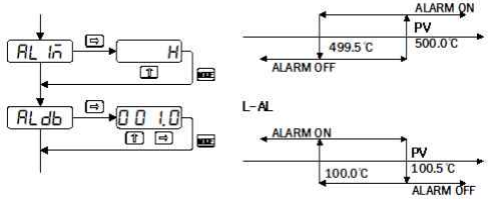
5. Alarm function

Alarm type : High, Low

Alarms can be set individually and relay contact outputs are sent individually.

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



6. Filter function

Filter is moving average filter and it has 4 kinds of function.

Av 4,8,16

Average of the last 4,8,16 sample values is displayed.

Selecting the Filter function slows the response, so do not use a filter when high-speed response is required.

Stable output and display value can be obtained by using the Filter function when the input and the input and the output and display value change.

8. 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.

1. Operation Mode

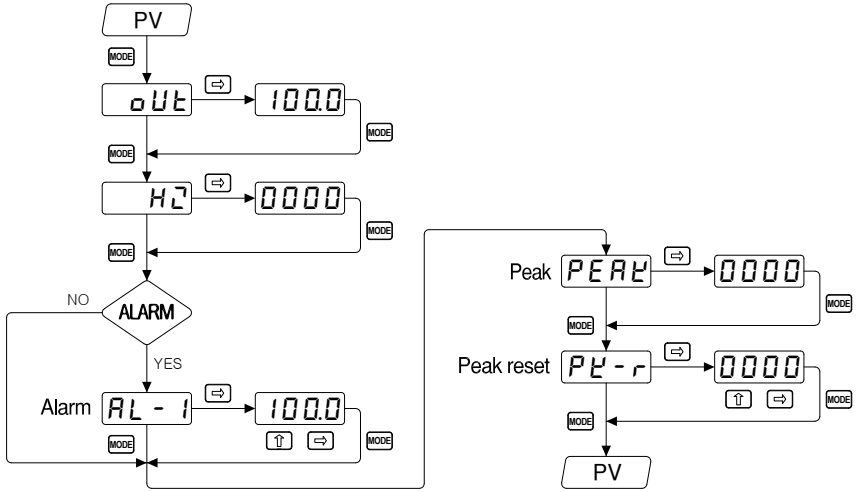
- Usually user may setting the Alarm value and confirming the Peak value during operation.
- The peak value must not erased at least 10years because it stored in the semipermanent EEP-ROM.
- The Alarm mode (High, Low) is operated setting value which set in the setting mode.

◉ DATA SET

Make flickering the wanted place by ⇨ key 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 ⇨

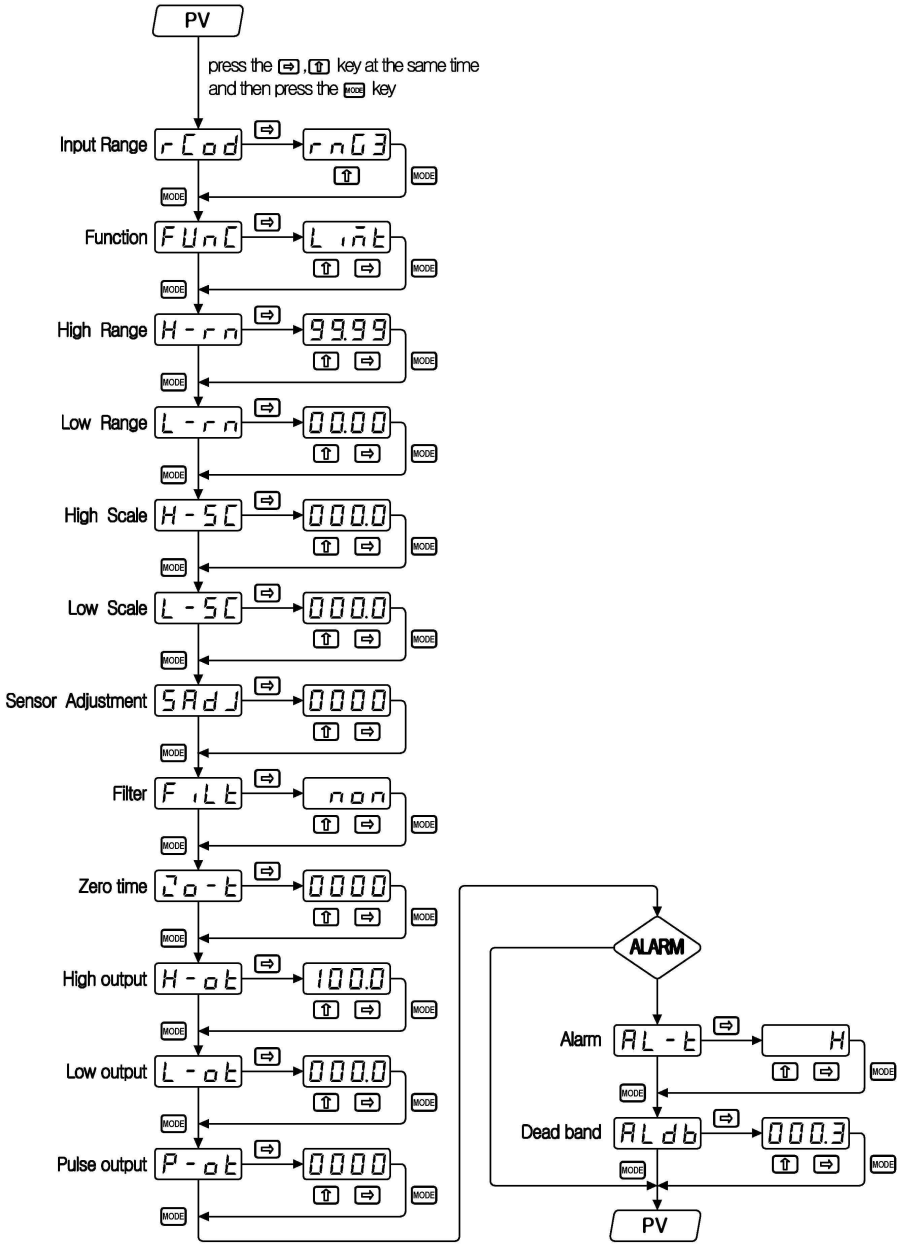
③ Selecting the data by ⇧

④ Setting data by pushing the "mode"

⑤ Decimal point can set only the input range high or input scale high mode.

9. Ordering Code

IC 74					Description
Input	0				Pulse input
	1				DC 4.00~20.00㎃ input
Analog output		0			DC 4.00~20.00㎃
		1			DC 4.00~20.00㎃ + Relay contact
		2			DC 4.00~20.00㎃ + OC pulse output
		3			DC 4.00~20.00㎃ + Voltage pulse output
		4			DC 4.00~20.00㎃ + Relay contact pulse output
		5			Etc
Power				0	AC 110/220V by S/W
				1	DC 24V(Option)


PV
press the ⇨, ⇧ key at the same time
and then press the MODE key
Input Range
rCod
rnG3
Function
FUnC
LinE
High Range
H-rn
99.99
Low Range
L-rn
00.00
High Scale
H-SC
000.0
Low Scale
L-SC
000.0
Sensor Adjustment
SAdJ
0000
Filter
FiLt
non
Zero time
Zo-t
0000
High output
H-ot
100.0
Low output
L-ot
000.0
Pulse output
P-ot
0000
MODE
ALARM
Alarm
AL-t
H
Dead band
ALdb
000.3
PV

※ Purchase & A/S

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