

---

# **FnIO G – Series :**

## ***GT-3814***

### ***GT-3814***

***(4 Channels, TEMP. Controller, TC Input, SSR Output)***

---

## Table of Contents

|                                                                                      |                    |
|--------------------------------------------------------------------------------------|--------------------|
| <a href="#">Table of Contents.....</a>                                               | <a href="#">2</a>  |
| <a href="#">History.....</a>                                                         | <a href="#">3</a>  |
| <a href="#">1.ENVIRONMENT SPECIFICATION.....</a>                                     | <a href="#">4</a>  |
| <a href="#">2.GT-3814 (4 Channels, TEMP. Controller, TC Input, SSR Output ).....</a> | <a href="#">5</a>  |
| <a href="#">2.1.GT-3814 Specification.....</a>                                       | <a href="#">5</a>  |
| <a href="#">2.2.GT-3814 Wiring Diagram.....</a>                                      | <a href="#">7</a>  |
| <a href="#">2.3.GT-3814 LED Indicator.....</a>                                       | <a href="#">8</a>  |
| <a href="#">2.3.1.LED Indicator.....</a>                                             | <a href="#">8</a>  |
| <a href="#">2.3.2.Channel Status LED .....</a>                                       | <a href="#">8</a>  |
| <a href="#">2.4.Mapping data into the image table.....</a>                           | <a href="#">9</a>  |
| <a href="#">2.5.Temp. Channel Object.....</a>                                        | <a href="#">11</a> |
| <a href="#">3.Dimension.....</a>                                                     | <a href="#">13</a> |

# Specification

## History

| Rev  | Pages | Remarks                                     | Date       | Editor        |
|------|-------|---------------------------------------------|------------|---------------|
| 1.00 |       |                                             | 2016/07/28 | JinHyun, Hong |
| 1.01 | 5     | Module Accuracy is revised.                 | 2017/02/03 | JinHyun, Hong |
| 1.02 | 4     | External CJC Accuracy is added              | 2017/03/14 | JinHyun, Hong |
| 1.03 |       | Typo error is revised.                      | 2017/07/18 | JinHyun, Hong |
| 1.04 | 10    | Add Command Format                          | 2019/10/15 | HongSeok, Kim |
| 1.05 | 6     | Add description                             | 2019/12/05 | HongSeok, Kim |
| 1.06 | 10    | Add Command Format                          | 2020/01/30 | HongSeok, Kim |
| 1.07 |       | Release                                     | 2020/04/21 | Seokhyun, Jun |
| 1.08 | 5     | Certificate Update and Specification change | 2023/06/08 | HongSeok, Kim |
| 1.09 | 1~13  | Specification form update                   | 2023/07/31 | HongSeok, Kim |
| 1.10 | 11    | Change alarm parameters range               | 2023/11/27 | HongSeok, Kim |
| 1.11 | 12    | Add Lock/Unlock Parameter                   | 2025/05/16 | HongSeok, Kim |
| 1.12 | 5     | Edit System, Field Power Dissipation        | 2025/05/30 | Suna, Hwang   |
| 1.13 | 10,11 | Added Low Limit function                    | 2025/12/10 | HongSeok Kim  |
| 1.14 | 6     | Add Wiring-Module Connector                 | 2026/03/10 | Soyeong, Park |
|      |       |                                             |            |               |

## 1. ENVIRONMENT SPECIFICATION

| Environmental specification |                                                   |
|-----------------------------|---------------------------------------------------|
| Operation Temperature       | -20°C to 50°C                                     |
| Storage Temperature         | -40°C to 85°C                                     |
| Relative Humidity           | 5% to 90% Non-condensing                          |
| Mounting                    | DIN Rail                                          |
| General specification       |                                                   |
| Shock Operating             | IEC 60068-2-27 : 2008 / 15g, 11ms                 |
| Vibration Resistance        | Based on IEC 60068-2-6, 4g                        |
| Industrial Emissions        | EN61000-6-4/All : 2011                            |
| Industrial Immunity         | EN61000-6-2 : 2005                                |
| Installation Position       | Vertical and horizontal installation is available |
| Product Certifications      | CE                                                |

## 2. GT-3814 (4 Channels, TEMP. Controller, TC Input, SSR Output )

### 2.1. GT-3814 Specification

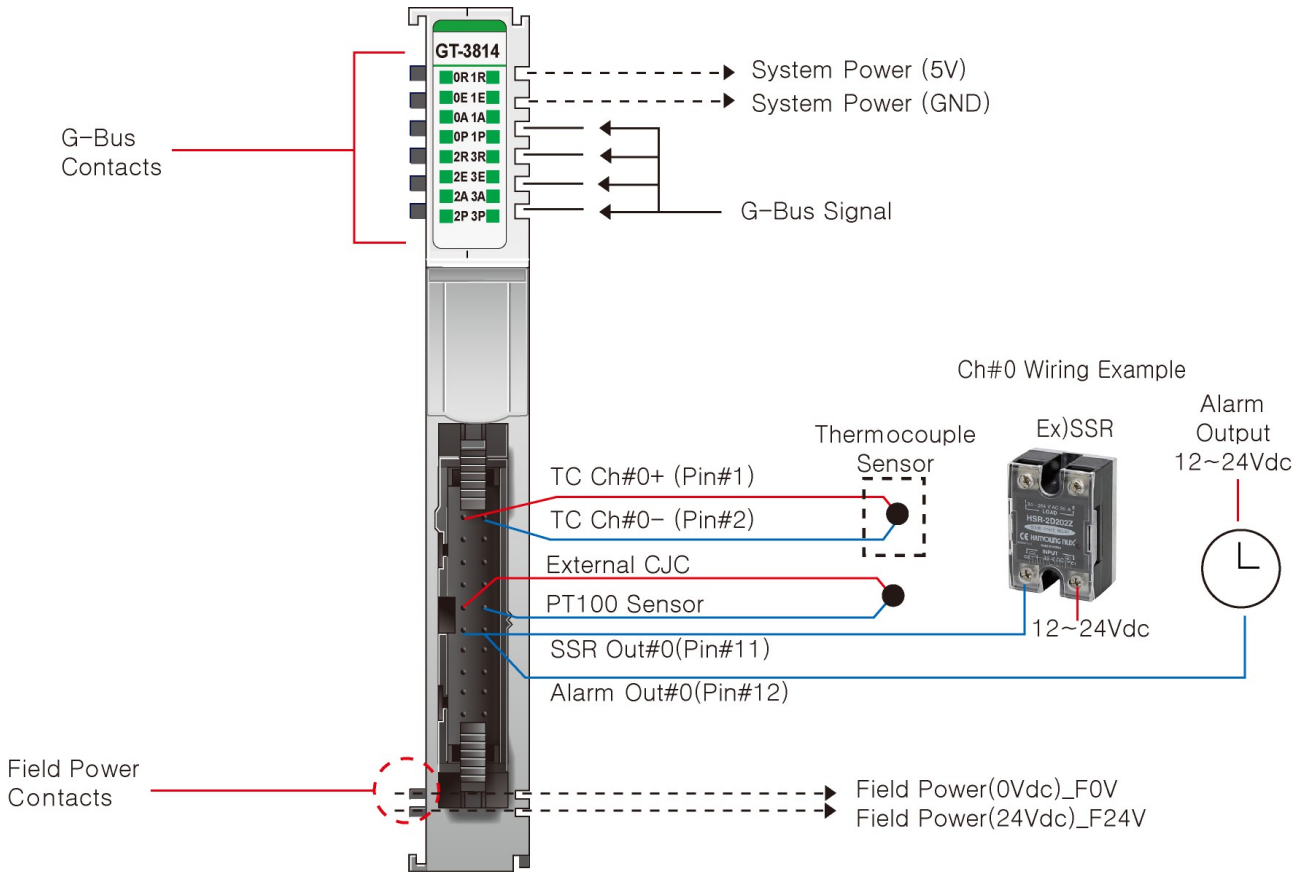
| Items                                                                      | Specification                                                                                                                                     |                     |                         |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------|
| Input Out Specification                                                    |                                                                                                                                                   |                     |                         |
| Inputs per module                                                          | 4 Channels                                                                                                                                        |                     |                         |
| Indicators(Logic side )                                                    | 4 Green Input status                                                                                                                              |                     |                         |
| Sensor Types                                                               | Thermal Couple Input Range                                                                                                                        |                     |                         |
|                                                                            | Type                                                                                                                                              | Maximum Input Range | Recommended Input Range |
|                                                                            | K                                                                                                                                                 | -270 ~ 1372°C       | -200 ~1200°C            |
|                                                                            | J                                                                                                                                                 | -210 ~ 1200°C       | -40 ~ 1100°C            |
|                                                                            | T                                                                                                                                                 | -270 ~ 400°C        | -200 ~ 350°C            |
|                                                                            | B                                                                                                                                                 | 30 ~ 1820°C         | 600 ~ 1700°C            |
|                                                                            | R                                                                                                                                                 | -50~1768°C          | 0 ~ 1600°C              |
|                                                                            | S                                                                                                                                                 | -50 ~ 1768°C        | 0 ~ 1600°C              |
|                                                                            | E                                                                                                                                                 | -270 ~ 1000°C       | -200 ~ 800°C            |
|                                                                            | N                                                                                                                                                 | -270 ~ 1300°C       | -200 ~ 1250°C           |
|                                                                            | L                                                                                                                                                 | -200 ~ 900°C        | -100 ~ 850°C            |
|                                                                            | U                                                                                                                                                 | -200 ~ 600°C        | -100 ~ 550°C            |
|                                                                            | C                                                                                                                                                 | 0 ~ 2310°C          | 100 ~ 2100°C            |
|                                                                            | D                                                                                                                                                 | 0 ~ 2490°C          | 100 ~ 2200°C            |
|                                                                            | * Negative temperature increases by ±0.1% compared to existing temperature                                                                        |                     |                         |
| Module Accuracy<br>( Need 20 minute preheating to get enhanced accuracy. ) | Recommend Input Range <ul style="list-style-type: none"><li>±0.1% Recommended Scale @ 25°C</li><li>±0.3% Recommended Scale @ -20°C~50°C</li></ul> |                     |                         |
|                                                                            | T,B,R,S,C,D type Recommend Input Range <ul style="list-style-type: none"><li>±0.3% Recommended Scale @ -20°C~50°C</li></ul>                       |                     |                         |
|                                                                            | External CJC Measurement <ul style="list-style-type: none"><li>±3°C@ -20 ~ 50°C (incl. Cold junction compensation)</li></ul>                      |                     |                         |
|                                                                            |                                                                                                                                                   |                     |                         |
| Connection Method                                                          | 2-Wire                                                                                                                                            |                     |                         |
| Data Format                                                                | 16bits Integer (2' complement )                                                                                                                   |                     |                         |
| Control Method                                                             | P, PI, PD, PID with Auto tuning (Limit Cycle Method), On/Off (PB=0)                                                                               |                     |                         |
| Control Output                                                             | 1 DC-Sink PWM Output for SSR control (18~26.4Vdc)<br>1 DC-Sink Alarm Output (18~26.4Vdc)                                                          |                     |                         |
| Cold Junction Compensation                                                 | External PT100                                                                                                                                    |                     |                         |
| PWM Output Accuracy                                                        | ±0.3% FS @ Operating Temperature                                                                                                                  |                     |                         |
| Calibration                                                                | Not Required                                                                                                                                      |                     |                         |
| Etc Functions                                                              | ARW, MR, Temp. Offset, Hysteresis (On/Off)                                                                                                        |                     |                         |
| General specification                                                      |                                                                                                                                                   |                     |                         |
| Power dissipation                                                          | Max. 55mA @ 5Vdc                                                                                                                                  |                     |                         |
| Isolation                                                                  | I/O to Logic : Isolation<br>Field power : Non - Isolation                                                                                         |                     |                         |
| Field Power                                                                | Supply Voltage : 24Vdc nominal<br>Voltage Range : 18~26.4Vdc<br>Power Dissipation : 75mA @ 24Vdc                                                  |                     |                         |
| Wiring                                                                     | According to the connector specification                                                                                                          |                     |                         |

## Specification

|                              |                                                                       |
|------------------------------|-----------------------------------------------------------------------|
|                              | Hirose Connector : HIF3BA-20PA-2.54DSA<br>Omron Connector : XG4A-2031 |
| Weight                       | 60g                                                                   |
| Module Size                  | 12mm x 99mm x 70mm                                                    |
| <b>Environment Condition</b> | <b>Refer to 'Environment Specification'</b>                           |

\*GT-3714,3734,3814, 3834, can be connected up to 16 slots per network adapter module.

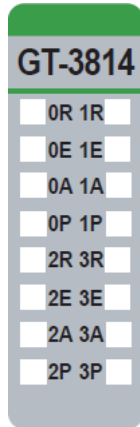
## 2.2. GT-3814 Wiring Diagram



| Pin No. | Signal Description   | Signal Description   | Pin No. |
|---------|----------------------|----------------------|---------|
| 0       | TC Channel 0+        | TC Channel 0-        | 1       |
| 2       | TC Channel 1+        | TC Channel 1-        | 3       |
| 4       | TC Channel 2+        | TC Channel 2-        | 5       |
| 6       | TC Channel 3+        | TC Channel 3-        | 7       |
| 8       | Cold Junction Sensor | Cold Junction Sensor | 9       |
| 10      | SSR Out Ch#0         | Alarm Out Ch#0       | 11      |
| 12      | SSR Out Ch#1         | Alarm Out Ch#1       | 13      |
| 14      | SSR Out Ch#2         | Alarm Out Ch#2       | 15      |
| 16      | SSR Out Ch#3         | Alarm Out Ch#3       | 17      |
| 18      | COM                  | COM                  | 19      |

## 2.3. GT-3814 LED Indicator

### 2.3.1. LED Indicator



| LED No. | LED Function / Description | Color |
|---------|----------------------------|-------|
| 0       | Ch#0 Ready                 | Green |
| 1       | Ch#0 Error                 | Green |
| 2       | Ch#0 Alarm                 | Green |
| 3       | Ch#0 Output                | Green |
| 4       | Ch#2 Ready                 | Green |
| 5       | Ch#2 Error                 | Green |
| 6       | Ch#2 Alarm                 | Green |
| 7       | Ch#2 Output                | Green |
| 8       | Ch#1 Ready                 | Green |
| 9       | Ch#1 Error                 | Green |
| 10      | Ch#1 Alarm                 | Green |
| 11      | Ch#1 Output                | Green |
| 12      | Ch#3 Ready                 | Green |
| 13      | Ch#3 Error                 | Green |
| 14      | Ch#3 Alarm                 | Green |
| 15      | Ch#3 Output                | Green |

### 2.3.2. Channel Status LED

| Status             | LED            | Cause                           | To indicate                                       |
|--------------------|----------------|---------------------------------|---------------------------------------------------|
| Ready (R)          | Green          | Module Ready                    | Normal Operation                                  |
|                    | Flashing Green | Auto Tuning in progress         | Searching PID Gain                                |
|                    | Off            | Not connection                  | Checking the connection                           |
| Error (E)          | Green          | Module Error.                   | Sensor open or error occurred.                    |
|                    | Off            | Normal status.                  | Normal Operation                                  |
| Alarm Output (A)   | Green          | Output status when alarm is set | Normal Operation (when the alarm is set)          |
|                    | Off            | Not setting the alarm           | Make sure the alarm setting                       |
| Process Output (P) | Green          | Current output state            | Normal Operation (when the current output is set) |
|                    | Off            | Not setting the current output  | Make sure the current output state                |

# Specification

## 2.4. Mapping data into the image table

### ● Input Image Value

| Bit No  | Bit7                                                            | Bit6 | Bit5 | Bit4                   | Bit3                      | Bit2                 | Bit1                      | Bit0                 |
|---------|-----------------------------------------------------------------|------|------|------------------------|---------------------------|----------------------|---------------------------|----------------------|
| Byte 0  | 0                                                               | 0    | 0    | Ch#0<br>Auto<br>Tuning | Ch#0<br>Process<br>Out(P) | Ch#0<br>Alarm<br>(A) | Ch#0<br>Sensor Err<br>(E) | Ch#0<br>Ready<br>(R) |
| Byte 1  | 0                                                               | 0    | 0    | Ch#1<br>Auto<br>Tuning | Ch#1<br>Process<br>Out(P) | Ch#1<br>Alarm<br>(A) | Ch#1<br>Sensor Err<br>(E) | Ch#1<br>Ready<br>(R) |
| Byte 2  | 0                                                               | 0    | 0    | Ch#2<br>Auto<br>Tuning | Ch#2<br>Process<br>Out(P) | Ch#2<br>Alarm<br>(A) | Ch#2<br>Sensor Err<br>(E) | Ch#2<br>Ready<br>(R) |
| Byte 3  | 0                                                               | 0    | 0    | Ch#3<br>Auto<br>Tuning | Ch#3<br>Process<br>Out(P) | Ch#3<br>Alarm<br>(A) | Ch#3<br>Sensor Err<br>(E) | Ch#3<br>Ready<br>(R) |
| Byte 4  | Ch#0 Temperature(PV), 16bit signed, Little Endian, Unit=0.1C    |      |      |                        |                           |                      |                           |                      |
| Byte 5  |                                                                 |      |      |                        |                           |                      |                           |                      |
| Byte 6  | Ch#1 Temperature(PV), 16bit signed, Little Endian, Unit=0.1C    |      |      |                        |                           |                      |                           |                      |
| Byte 7  |                                                                 |      |      |                        |                           |                      |                           |                      |
| Byte 8  | Ch#2 Temperature(PV), 16bit signed, Little Endian, Unit=0.1C    |      |      |                        |                           |                      |                           |                      |
| Byte 9  |                                                                 |      |      |                        |                           |                      |                           |                      |
| Byte 10 | Ch#3 Temperature(PV), 16bit signed, Little Endian, Unit=0.1C    |      |      |                        |                           |                      |                           |                      |
| Byte 11 |                                                                 |      |      |                        |                           |                      |                           |                      |
| Byte 12 | Ch#0 Temperature(SV,CV), 16bit signed, Little Endian, Unit=0.1C |      |      |                        |                           |                      |                           |                      |
| Byte 13 |                                                                 |      |      |                        |                           |                      |                           |                      |
| Byte 14 | Ch#1 Temperature(SV,CV), 16bit signed, Little Endian, Unit=0.1C |      |      |                        |                           |                      |                           |                      |
| Byte 15 |                                                                 |      |      |                        |                           |                      |                           |                      |
| Byte 16 | Ch#2 Temperature(SV,CV), 16bit signed, Little Endian, Unit=0.1C |      |      |                        |                           |                      |                           |                      |
| Byte 17 |                                                                 |      |      |                        |                           |                      |                           |                      |
| Byte 18 | Ch#3 Temperature(SV,CV), 16bit signed, Little Endian, Unit=0.1C |      |      |                        |                           |                      |                           |                      |
| Byte 19 |                                                                 |      |      |                        |                           |                      |                           |                      |

- If the input of channel is open or over-ranged, its conversion data will be 0x8000(-32678)

### ● Output Image Value

| Bit No  | Bit7                  | Bit6 | Bit5 | Bit4 | Bit3 | Bit2 | Bit1 | Bit0 |
|---------|-----------------------|------|------|------|------|------|------|------|
| Byte 0  | Ch#0 Command          |      |      |      |      |      |      |      |
| Byte 1  | Ch#1 Command          |      |      |      |      |      |      |      |
| Byte 2  | Ch#2 Command          |      |      |      |      |      |      |      |
| Byte 3  | Ch#3 Command          |      |      |      |      |      |      |      |
| Byte 4  | Ch#0 Value for update |      |      |      |      |      |      |      |
| Byte 5  |                       |      |      |      |      |      |      |      |
| Byte 6  | Ch#1 Value for update |      |      |      |      |      |      |      |
| Byte 7  |                       |      |      |      |      |      |      |      |
| Byte 8  | Ch#2 Value for update |      |      |      |      |      |      |      |
| Byte 9  |                       |      |      |      |      |      |      |      |
| Byte 10 | Ch#3 Value for update |      |      |      |      |      |      |      |
| Byte 11 |                       |      |      |      |      |      |      |      |

- If the input of channel is open or over-ranged, its conversion data will be 0x8000(-32678)

**CH#0,1,2,3 COMMAND FORMAT**

| Bit No | Bit7                                                             | Bit6 | Bit5  | Bit4                                                                                                                                                                                                                                                                                                                                             | Bit3 | Bit2 | Bit1 | Bit0 |
|--------|------------------------------------------------------------------|------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|
|        | =00 : WRITE<br>RELEASE<br>=01 : READ<br>=10 : WRITE<br>=11 : PID |      | ----- | =0_0000(0x00) : PV(READ ONLY),PID(STOP)<br>=0_0001(0x01) : SV(READ/WRITE),PID(RUN)<br>=0_0010(0x02) : CV(READ ONLY)<br>=0_1001(0x09) : PID P_0.1C(READ/WRITE)<br>=0_1010(0x0A) : PID I_1S(READ/WRITE)<br>=0_1011(0x0B) : PID D_1S(READ/WRITE)<br>=0_1100(0x0C) : OP High Limit_0.1%(READ/WRITE)<br>=0_1101(0x0D) : OP Low Limit_0.1%(READ/WRITE) |      |      |      |      |

Example) PID Control On/Off

0ch PID Control On =C1 00 00 00 00 00 00 00 00 00 00 00

0ch PID Control OFF =C0 00 00 00 00 00 00 00 00 00 00

Example) Update Ch#0's SV = 150℃, then Ch#0's SV=250℃

IO Output Data = 00 00 00 00 00 00 00 00 00 00 00

IO Output Data = 81 00 00 00 DC 05 00 00 00 00 00 00 //Ch#0's SV=150℃, 0x05DC=1500d

IO Output Data = 00 00 00 00 C4 09 00 00 00 00 00 00 //Write Command Release

IO Output Data = 81 00 00 00 C4 09 00 00 00 00 00 00 //Ch#0's SV=250℃, 0x09C4=2500d

Example) Read ch#0's CV Data

IO Output Data = 42 00 00 00 00 00 00 00 00 00 00 //Ch#0's Read CV Data

\* 12 ~ 13byte data of input image is changed from SV data to CV data.

## 2.5. Temp. Channel Object

### ► DeviceNet

- Class Code: 81HEX(129<sub>DEC</sub>)
  - Common Service

| Service Code | Implemented for |          | Service Name         |
|--------------|-----------------|----------|----------------------|
|              | Class           | Instance |                      |
| 0x0E         | Yes             | Yes      | Get Attribute Single |
| 0x10         | No              | Yes      | Set Attribute Single |

- Class Attribute

| Instance ID | Attribute ID | Access Rule | Name            | Data Type  | Value |
|-------------|--------------|-------------|-----------------|------------|-------|
| 0           | 0            | Get         | Object Revision | UINT Array |       |
|             | 1            | Get/Set     | Sv,Set Value    | INT Array  | 0.1°C |

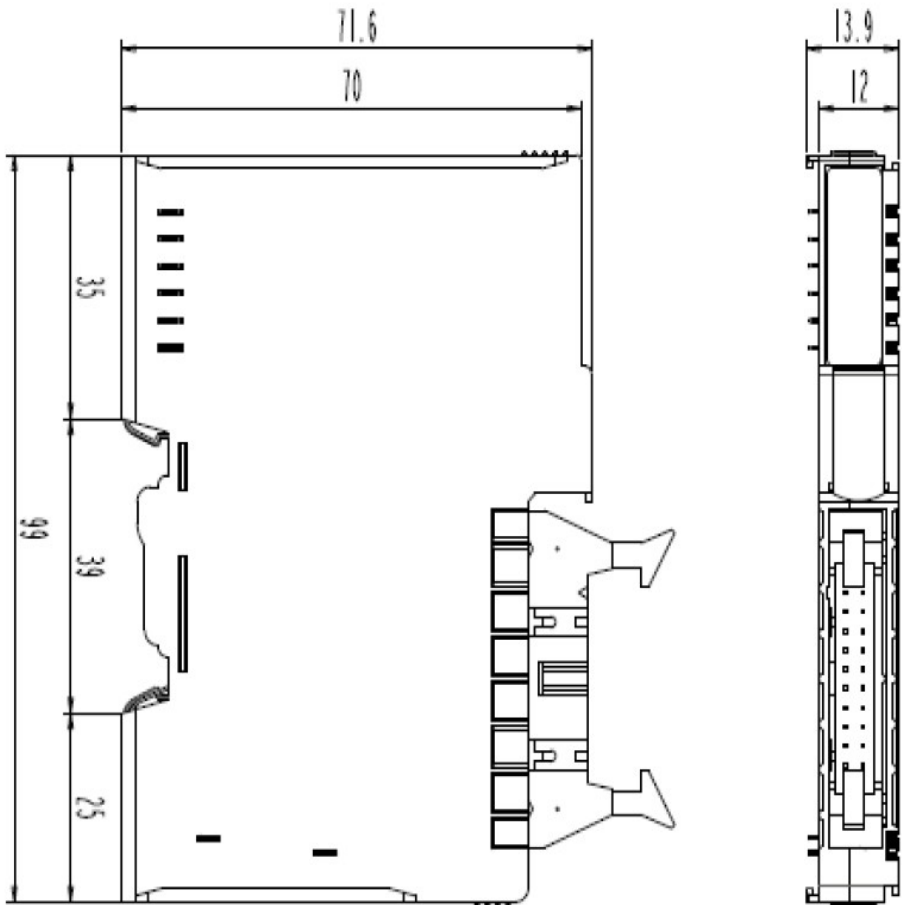
- Instance Attribute

| Instance ID | Attribute ID | Access Rule | Name                     | Data Type | Value                                                          |
|-------------|--------------|-------------|--------------------------|-----------|----------------------------------------------------------------|
| 1-64        | 0x00(0)      | Get         | Object Revision          | UINT      |                                                                |
|             | 0x01(1)      | Get/Set     | SV, Set Value            | INT       | Rev = 0.1°C, Range : 0°C ~ 2500.0°C                            |
|             | 0x02(2)      | Get/Set     | PB, Proportional Band    | INT       | Rev = 0.1, Range : 0°C ~ 1000.0°C                              |
|             | 0x03(3)      | Get/Set     | Ti, Integral Time        | INT       | Rev = 1sec, Range : 0 ~ 3600sec                                |
|             | 0x04(4)      | Get/Set     | Td, Derivative Time      | INT       | Rev = 1sec, Range : 0 ~ 3600sec                                |
|             | 0x05(5)      | Get/Set     | Tc, Control Cycle time   | UINT      | Rev = 1sec, Range : 1 ~ 60sec                                  |
|             | 0x07(7)      | Get/Set     | MR, Manual Reset         | INT       | Rev = 0.1% Range = 0.0~100.0%                                  |
|             | 0x08(8)      | Get/Set     | HYST, Hysteresis         | UINT      | Rev = 0.1, Range : 1.0°C ~ 1000.0°C                            |
|             | 0x09(9)      | Get/Set     | Alarm Low                | INT       | Rev = 0.1, Range : 0°C ~ 2500.0°C                              |
|             | 0x0A(10)     | Get/Set     | Alarm High               | INT       | Rev = 0.1, Range : 0°C ~ 2500.0°C                              |
|             | 0x0B(11)     | Get/Set     | Alarm Deviation          | UINT      | Rev = 0.1°C, Range : 0°C ~ 1000.0°C                            |
|             | 0x0C(12)     | Get/Set     | Alarm Function           | UINT      | Various Functions (Value : 0~13)                               |
|             | 0x0D(13)     | Get/Set     | Alarm Option             | UINT      | Various Functions (Value : 0~3, 128~131)                       |
|             | 0x10(16)     | Get/Set     | All Parameter            | INT*7     | SV,PB,Ti,Td,Tc,MR,HYST                                         |
|             | 0x11(17)     | Get/Set     | All Alarm                | INT*6     | Alarm Low, Alarm High, Alram Dev, Alarm Function, Alarm Option |
|             | 0x20(32)     | Get         | Status                   | UINT      | Same as Channel's Status 1 Byte                                |
|             | 0x21(33)     | Get         | PV, Present Value        | INT       | Rev = 0.1, Range : -3276.7°C ~ 3276.7°C                        |
|             | 0x22(34)     | Get         | CV, Control Value        | INT       | Rev = 0.1% Range = 0.0~100.0%                                  |
|             | 0x23(35)     | Get         | Status, PV               | INT*2     | Status, PV                                                     |
|             | 0x24(36)     | Get         | Alarm                    | UINT      | Single Channel Alarm Status( ON/OFF )                          |
|             | 0x27(39)     | Get         | PV, CV                   | INT*2     | Rev = 0.01°C                                                   |
|             | 0x28(40)     | Get         | Cold Junction            | INT*2     | Cold Junction(Rev = 0.1°C), Ohm( Rev = 0.01)                   |
|             | 0x29(41)     | Get/Set     | Temp. Offset             | INT       | Rev = 0.1°C, Range : -100°C ~ 100.0°C                          |
|             | 0x2D(45)     | Get/Set     | OP Low Limit             | INT       | Rev = 0.1% Range = 0.0~100.0%                                  |
|             | 0x2E(46)     | Get/Set     | OP High Limit            | INT       | Rev = 0.1% Range = 0.0~100.0%                                  |
|             | 0x30(48)     | Get         | All Status               | INT*4     | Status, PV, CV, 0x0000                                         |
|             | 0x31(49)     | Get         | SV, PV, CV, Status       | INT*4     | SV, PV, CV, Status                                             |
|             | 0x40(64)     | Get/Set     | Auto Tuning              | Bool      | 0: Stop Auto Tuning 1: Run Auto Tuning                         |
|             | 0x41(65)     | Get/Set     | Select Auto Tuning Point | UINT      | 0 : SV's 100%, 1: SV's 80%                                     |

# Specification

| 0x42(66)    | Get/Set | Select Auto Tuning PID | UINT | 0 : PID, 1 : P, 2 : PI, 3 : PD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
|-------------|---------|------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------|--------|-----------|---------|------|------|------------|------|------|-------------|------|------|---|---|--|---|---|--|---|---|--|---|---|--|---|---|--|---|---|--|---|---|--|---|----|--|---|----|--|
| 0x44(68)    | Get/Set | Sensor Type            | UINT | <table><tr><th>Type</th><th colspan="2">Value</th></tr><tr><td>K</td><td colspan="2">0</td></tr><tr><td>J</td><td colspan="2">1</td></tr><tr><td>T</td><td colspan="2">2</td></tr><tr><td>B</td><td colspan="2">3</td></tr><tr><td>R</td><td colspan="2">4</td></tr><tr><td>S</td><td colspan="2">5</td></tr><tr><td>E</td><td colspan="2">6</td></tr><tr><td>N</td><td colspan="2">7</td></tr><tr><td>L</td><td colspan="2">8</td></tr><tr><td>U</td><td colspan="2">9</td></tr><tr><td>C</td><td colspan="2">10</td></tr><tr><td>D</td><td colspan="2">11</td></tr></table> |  |  | Type | Value  |           | K       | 0    |      | J          | 1    |      | T           | 2    |      | B | 3 |  | R | 4 |  | S | 5 |  | E | 6 |  | N | 7 |  | L | 8 |  | U | 9 |  | C | 10 |  | D | 11 |  |
| Type        | Value   |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| K           | 0       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| J           | 1       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| T           | 2       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| B           | 3       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| R           | 4       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| S           | 5       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| E           | 6       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| N           | 7       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| L           | 8       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| U           | 9       |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| C           | 10      |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| D           | 11      |                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| 0x45(69)    | Get/Set | Temp Type              | UINT | <table><tr><th></th><th>Normal</th><th>2X Filter</th></tr><tr><td>Celsius</td><td>0x00</td><td>0x10</td></tr><tr><td>Fahrenheit</td><td>0x01</td><td>0x11</td></tr><tr><td>Without CJC</td><td>0x02</td><td>0x12</td></tr></table>                                                                                                                                                                                                                                                                                                                                            |  |  |      | Normal | 2X Filter | Celsius | 0x00 | 0x10 | Fahrenheit | 0x01 | 0x11 | Without CJC | 0x02 | 0x12 |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
|             | Normal  | 2X Filter              |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| Celsius     | 0x00    | 0x10                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| Fahrenheit  | 0x01    | 0x11                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| Without CJC | 0x02    | 0x12                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |
| 0xF8(248)   | Get/Set | Lock/Unlock Parameter  | BOOL | 0 : Unlock<br>1 : Lock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |      |        |           |         |      |      |            |      |      |             |      |      |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |   |  |   |    |  |   |    |  |

3. Dimension



(unit : mm)