**ADVANTECH**
*eAutomation*

# Adam- 3013
# Isolated RTD Input Module
# User's Manual

# Introduction

ADAM-3013 is a DIN-rail mounted, RTD input signal conditioning module with 1000VDC 3-way isolation between input, output and power. The switch configurable input and output offers flexible ,wide raging capability for Platinum and Nickel RTDS. The input of the ADAM-3013 RTD input can be configured for any one of up to fourteen defined temperature ranges (see "Input Range" under "Specification" below) and two OEM-defined ranges. The output is linearized to the RTD temperature input and can be set for either 0~5V, 0~10V or 0~2 m A.

The ADAM-3013 is equipped with a dual function LED signal monitor. The front mounted LED indicates both line power and conversion status. Conversion operation is indicated by a flashed LED.If the LED is off, please check that the power connection and wiring connections are correct.

3-way isolation completely eliminates ground loops from any source.Isolation protects expensive SCADA systems from ground faults and

significantly reduces the effect of high common mode voltage which are prevalent in many RTD applications.

The ADAM-3013 can be mounted on a DIN-rail and features daisy chain power wiring to connect easily from adjacent ADAM-3000 series modules in a compact space.Also,the ADAM-3013  modules uses single +24 VDC with very low power consumption and can be operate in environments with high humidity and wide temperature variation.

# Features

- Switch configurable input ranges for Platinum and Nickel RTDs.
- Switch configurable linearized output ranges (V and m A).
- 1000 VDC 3-way isolation
- Flexible DIN-rail mounting
- Power/Signal status LED indicator
- Operates from a single of 24 VDC
- Operating temperature range: 0~70°C.

# Specifications

- **Input range**

| | |
|---|---|
| **PT100(a=.00385) –100~100°C.** | **PT100(a=.00392) –100~100°C.** |
| **PT100(a=.00385) 0~100°C** | **PT100(a=.00392) 0~100°C** |
| **PT100(a=.00385) 0~200°C** | **PT100(a=.00392) 0~200°C** |
| **PT100(a=.00385) 0~600°C** | **PT100(a=.00392) 0~600°C** |
| **PT100(a=.00385) –100~0°C** | **NI120          0~100°C** |
| **PT100(a=.00385) –100~200°C** | **NI120        –80~100°C** |
| **PT100(a=.00385) –50~50°C** | **PT100(a=.00385)  OEM defiened** |
| **PT100(a=.00385) –50~150°C** | **PT100(a=.00392) OEM defiened**. |

# Input Connections

- Input Connections: 2,3  or 4 wires

- Input range: 0~5V, 0~10V,0~20m A
- Accurancy: +/- 0.1% of full range (voltage) or
-                   +/- 0.15°C (voltage)
                 +/- 0.2% of full range (current)
  - Temperature drift: +/- 30 ppm of full range
  - Input CMR at DC: 92dB minimum
  - Isolation: 1000 VDC.
  - Supply voltage: 24 Vdc +/- 10%
  - Operating temperature range: 0~70°C
  - **Bandwidth: 4Hz**
  - **Power consumption: <0.95W**

# Ordering Information

- ADAM-3013 : Isolated RTD Input Module

# Configuration

Please refer to the following pages on the Adam-3013 configuration. Figure 1 shows the RTD Wiring of ADAM-3013. Figure 2 shows the terminal wiring of ADAM-3013.Positive terminals 9 and 7 are internally connected, as are negative terminals 12 and 10.Power can be connected through the adjacent modules, making wiring much easier.ADAM-3013 uses single 24 VDC. Table 1 shows the switch setting to configure the RTD input type and range.To reach the switches,you need to remove the DIN-rail bracket by sliding it down.
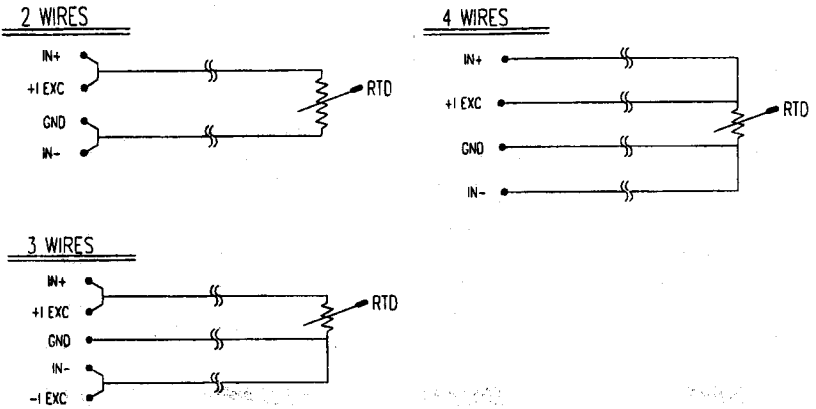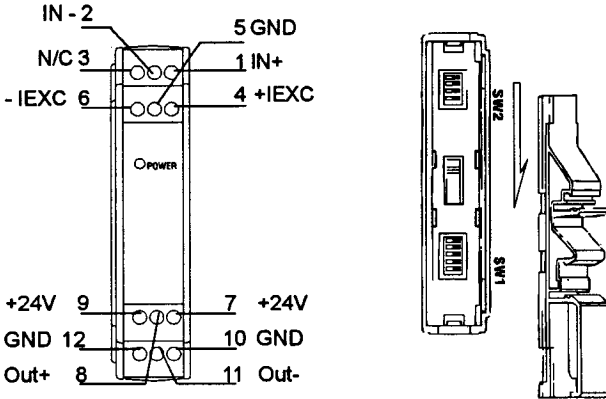
## Figure 1: RTD Wiring Diagram

2 WIRES
IN+
+I EXC
GND
IN-
RTD

4 WIRES
IN+
+I EXC
GND
IN-
RTD

3 WIRES
IN+
+I EXC
GND
IN-
-I EXC
RTD

## Figure 2: Terminal Wiring Diagram

IN - 2          5 GND
N/C 3           1 IN+
- IEXC 6        4 +IEXC

O POWER

+24V  9         7  +24V
GND  12        10 GND
Out+  8        11 Out-

SW2
SW1

## Table 1. Input Range Setting (SW2)

| Range | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| PT100($\alpha$ = .00385)   -100 ~ 100 °C | ■ | ■ | ■ | ■ |
| PT100($\alpha$ = .00385)    0 ~ 100 °C |   | ■ | ■ | ■ |
| PT100($\alpha$ = .00385)    0 ~ 200 °C | ■ |   | ■ | ■ |
| PT100($\alpha$ = .00385)    0 ~ 600 °C |   |   | ■ | ■ |
| PT100($\alpha$ = .00385)   -100 ~   0 °C | ■ | ■ |   | ■ |
| PT100($\alpha$ = .00385)   -100 ~ 200 °C |   | ■ |   | ■ |
| PT100($\alpha$ = .00385)   -50 ~ 50 °C | ■ |   |   | ■ |
| PT100($\alpha$ = .00385)   -50 ~ 150 °C |   |   |   | ■ |
| PT100($\alpha$ = .00392)   -100 ~ 100 °C | ■ | ■ | ■ |   |
| PT100($\alpha$ = .00392)    0 ~ 100 °C |   | ■ | ■ |   |
| PT100($\alpha$ = .00392)    0 ~ 200 °C | ■ |   | ■ |   |
| PT100($\alpha$ = .00392)    0 ~ 600 °C |   |   | ■ |   |
| Ni120                      0 ~ 100 °C | ■ | ■ |   |   |
| Ni120                    -80 ~ 100 °C |   | ■ |   |   |
| PT100($\alpha$ = .00385)   OEM Defined | ■ |   |   |   |
| PT100($\alpha$ = .00392)   OEM Defined |   |   |   |   |

**Switch Key: ■ = ON**

| Range | 1 | 2 | 3 | 4 | 5 |
|-------|---|---|---|---|---|
| 0 ~ 5 V | ■ | | ■ | | |
| 0 ~ 10 V | ■ | | ■ | | ■ |
| 0 ~ 20 mA | | ■ | | ■ | |

**Switch Key: ■ = ON**

*Dimensions*



Unit:mm