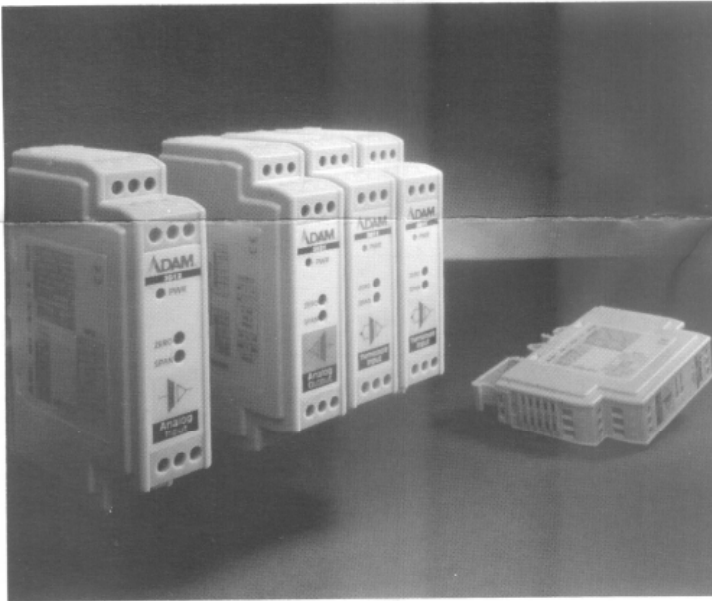


ADAM-3011

Thermocouple Input Signal Conditioning Module



Introduction

The ADAM-3011 is field-configurable, isolation-base, thermocouple input signal conditioner. ADAM-3011 uses microprocessor-controlled high-resolution 16-bit dual-slope, integrating A/D converter to acquire thermocouple signal and cold junction compensation input. Temperature measurement is handled by thermocouple linearization and cold junction compensation function. The field configurable input offer wide range of J,K,T,R,S,E,B type thermocouples and the output is linear to temperature. A wide variety of T/C input can be configured, therefore, stock investment for spare parts can be reduced and the most system flexibility can be achieved.

The ADAM-3011 features optical isolation technique providing 1000V_{DC} isolation. The power supply that drives the module's input and output circuitry is internally isolated, enabling ADAM-3011 to offer true channel-to-channel isolation.

ADAM-3011 provides the temperature measurement capability to the device which cannot perform thermocouple measurement and ensure the accuracy of the temperature measurement. The ADAM-3011 is powered by a single +24 V_{DC}. Power can be easily connected from the adjacent modules, making the wiring simple and easy to maintain. The ADAM-3011 can be mounted on a DIN-Rail and operate in environments with high humidity and wide temperature variation.

Features

- 1000 V_{DC}, fully isolated
- Linearized thermocouple measurement.
- Flexible DIN-rail mounting
- Configurable thermocouple type
- Operates from a single +24V_{DC}
- Temperature range of 0 to 50°C

Specifications

Input

T/C type, temperature range and accuracy at 25°C:

J	-40 to 760°C	± 2°C
K	0 to 1000°C	± 2°C
T	-100 to 400°C	± 2°C
E	0 to 1000°C	± 2°C
S	500 to 1750°C	± 4°C
R	500 to 1750°C	± 4°C
B	500 to 1800°C	± 4°C

Note:

$T_x = V_x * (\text{Max } T - \text{Min } T) / (\text{Max } V - \text{Min } V)$

T_x is the temperature acquired.

V_x is voltage fed back by ADAM-3011

Max T and Min T represent the maximum and minimum temperature, which depends on the T/C you choose.

Max V and Min V represent the maximum and minimum output voltage.

Output

- Voltage output: 0 - 10V
- Impedance: 0.5 Ω

General

Isolation (three way): 1000 V_{DC}

Stability (Temperature drift): ± 2°C

Common Mode Rejection: 115 dB min

Operating Temperature Range: 0 to 50°C

Power

- Range: 24 V_{DC} ±10%
- Consumption: 1.4 W

Ordering Information

- ADAM-3011: Thermocouple Input Signal Conditioning Module

Configuration

Figure 1 shows the terminal wiring of ADAM-3011. Positive power 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-3011 uses single +24 Vdc. Table 1 shows the switch positions to configure the Thermocouple Type. The Type configuration switches are located inside the module. To reach the switches, you need to remove the DIN-rail bracket by sliding it down.

Table 1: Input Range Setting (SW2)

Input Type			
Type	1	2	3
J	■	■	■
K		■	■
T	■		■
R			■
S	■	■	
E		■	
B	■		
N/C			

Switch key: = ON

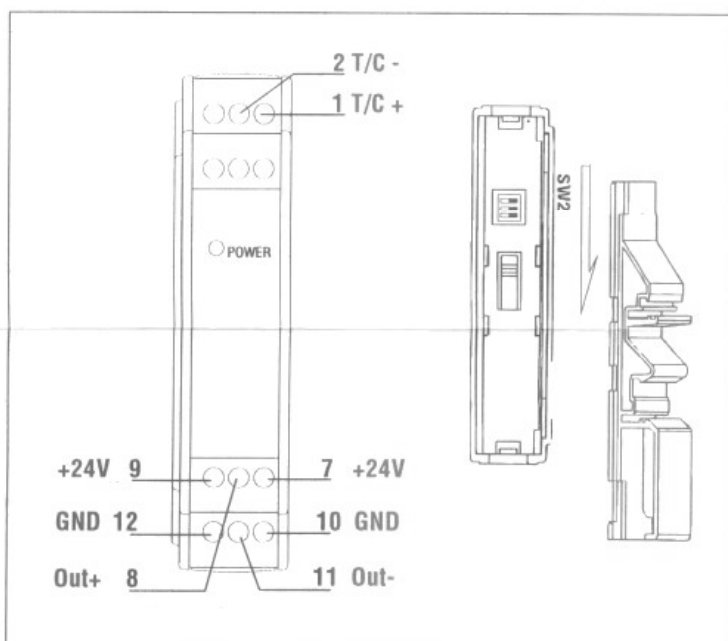


Figure 1: Terminal Wiring Diagram

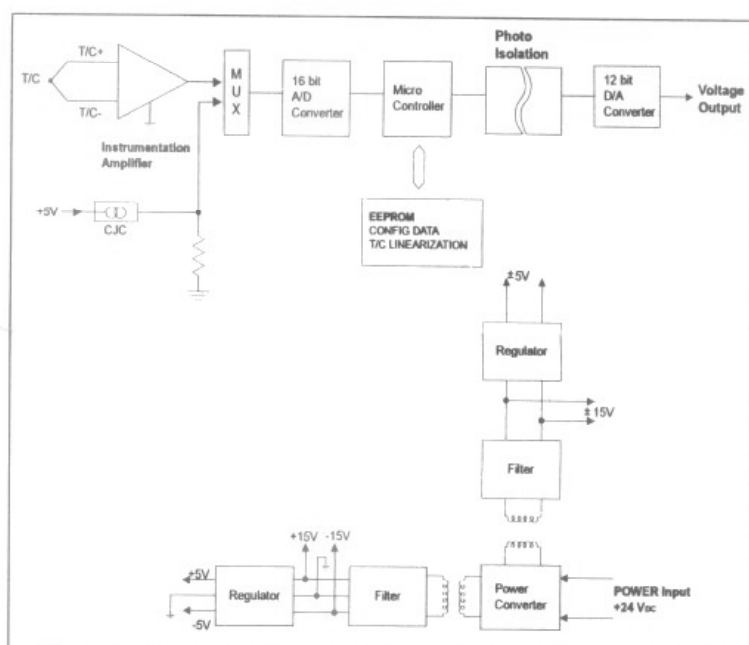
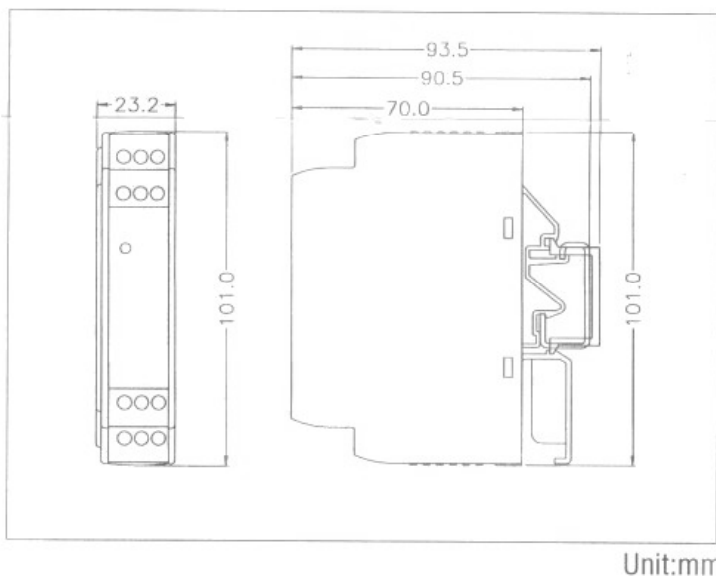


Figure 2: Function Block Diagram

Dimensions



Unit:mm

警告使用者
這是一類的高壓產品，在與任的環境中使用時，可能產生放射線干擾，在這種情況下，使用者應採取必要措施以減少干擾。