



I-97019/S

8-channel Thermocouple Input Module, Include CN-1824M

Introduction

The I-97019 is a 8-channel universal Analog Input module with an RS-485 interface that is especially designed for extremely accurate thermocouple measurement and features automatic cold-junction compensation for each channel to ensure temperature output consistency and stable temperature output in the field. The innovative design of the enhanced model ensures that thermocouple measurement is more accurate than with the earlier design. Besides the thermocouple inputs, the I-97019 also supports voltage and current input. The voltage input range can be from ± 15 mV to ± 10 V. Up to 8 different types of Analog Input can be connected to a single module. Overvoltage protection of up to 240 Vrms is provided. The module also features per-channel open wire detection for the thermocouple and +4 to +20 mA input channels.

System Specifications

| Communication | | |
|--|---|-------------------------|
| Interface | RS-485 | |
| Format | N, 8, 1 | |
| Baud Rate | 1200 ~ 115200 bps | |
| Protocol | DCON | |
| Dual Watchdog | Yes, Module (1.6 Seconds), Communication (Programmable) | |
| LED Display | | |
| System LED Indicator | 1 LED as Power/Communication Indicator | |
| I/O LED Indicators | - | |
| Isolation | | |
| Intra-module Isolation, Field-to-Logic | 3000 VDC | |
| EMS Protection | | |
| ESD (IEC 61000-4-2) | ± 4 kV Contact for each Terminal ± 8 kV Air for Random Point | |
| Power | | |
| Power Consumption | 0.6 W Max. | |
| Mechanical | | |
| Dimensions (W x L x H) | I-97019 | 31 mm x 134 mm x 134 mm |
| | CN-1824M | 28 mm x 36 mm x 80 mm |
| Environment | | |
| Operating Temperature | -25 ~ +75 °C | |
| Storage Temperature | -40 ~ +85 °C | |
| Humidity | 10 ~ 90% RH, Non-condensing | |

Features

- 8-channel Analog Input
- Current, Voltage and Thermocouple Input
- Individual Channel Configuration
- Open Thermocouple Detection
- Temperature Output Consistency
- Stable Temperature Output in the Field
- 240 Vrms Overvoltage Protection
- 4 kV ESD Protection
- Dual Watchdog
- 3000 VDC Intra-module Isolation, Field-to-Logic
- Wide Operating Temperature Range: -25 to +75 °C



Applications

- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

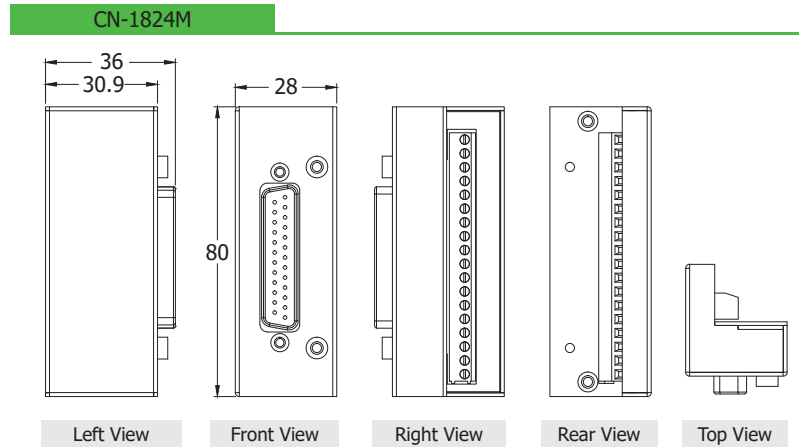
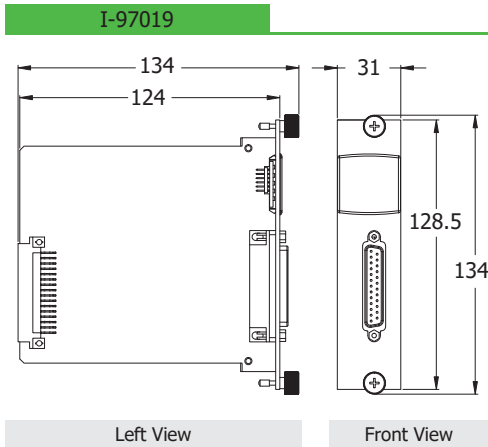
RTD Type Settings (TT)

| Type Code | RTD Type | Temperature Range |
|-----------|-----------------------|-------------------|
| 0E | J | -210 to +760°C |
| 0F | K | -270 to +1372°C |
| 10 | T | -270 to +400°C |
| 11 | E | -270 to +1000°C |
| 12 | R | 0 to +1768°C |
| 13 | S | 0 to +1768°C |
| 14 | B | 0 to +1820°C |
| 15 | N | -270 to +1300°C |
| 16 | C | 0 to +2320°C |
| 17 | L | -200 to +800°C |
| 18 | M | -200 to +100°C |
| 19 | L _{DIN43710} | -200 to +900°C |

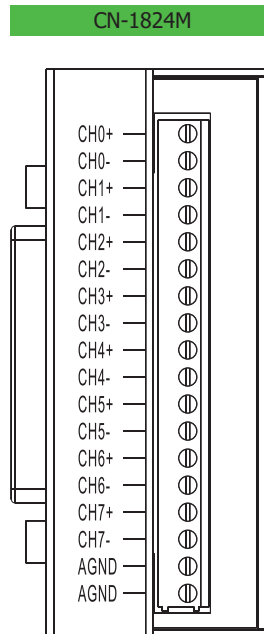
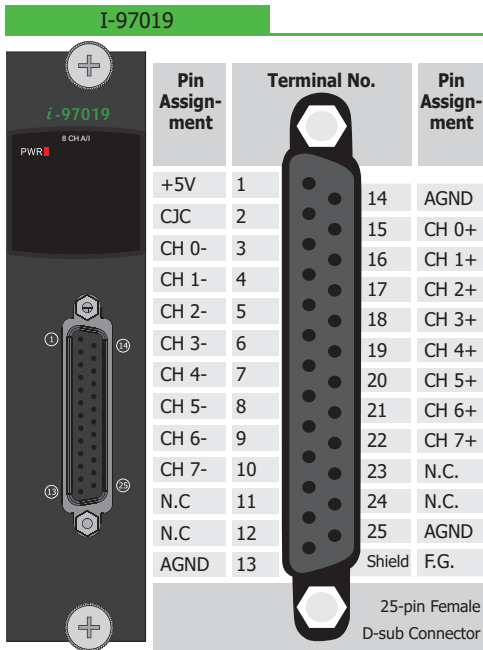
I/O Specifications

| Analog Input | | |
|---|--------------------|---|
| Channels | 8 | |
| Wiring | Differential | |
| Resolution | 16-bit | |
| Sensor Type | Thermocouple | J, K, T, E, R, S, B, N, C, L, M, L _{DIN43710} |
| | Voltage | ± 15 mV, ± 50 mV, ± 100 mV, ± 500 mV, ± 1 V, ± 2.5 V, ± 5 V, ± 10 V |
| | Current | ± 20 mA, 0 to 20 mA, 4 to 20 mA |
| Resolution | 16-bit | |
| Accuracy | $\pm 0.1\%$ of FSR | |
| Sampling Rate | 10 Hz (Total) | |
| Input Impedance | > 400 k Ω | |
| Common Mode Rejection | ± 200 VDC | |
| Individual Channel Configuration | Yes | |
| Overvoltage Protection | 240 Vrms | |
| Open Wire Detection (for thermocouple only) | Yes | |
| Temperature Output Consistency | Yes | |
| Stable Temperature Output in the Field | Yes | |

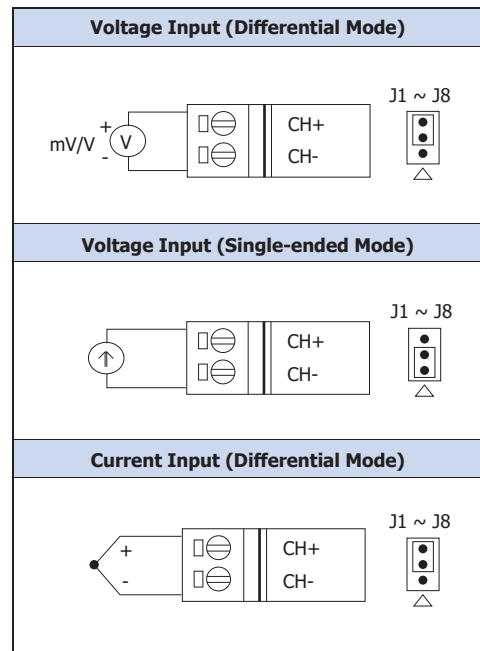
Dimensions (Units: mm)



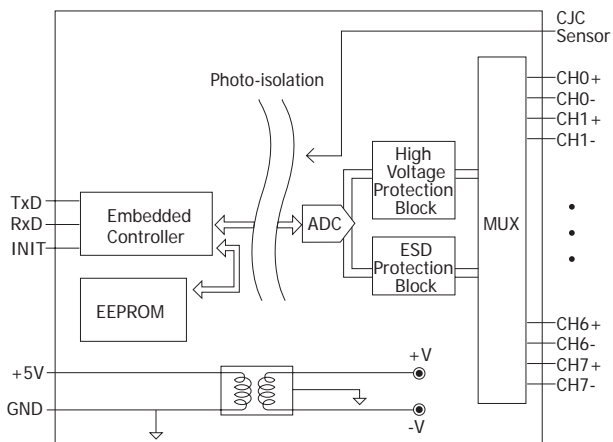
Pin Assignments



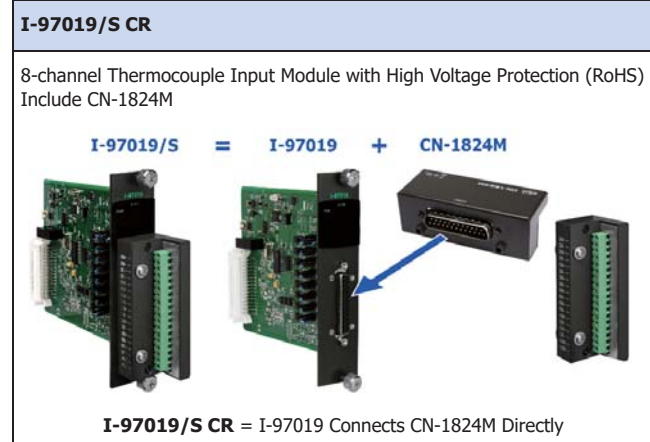
Wire Connections



Internal I/O Structure



Ordering Information



Accessories

| | | | |
|------------------|--|-----------------------|--|
| SG-770 CR | 7-channel Differential or 14-channel Single-ended Surge Protector (RoHS) | SG-3000 series | Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Inputs |
|------------------|--|-----------------------|--|