2557 16-Channel Isolated RTD Input Module

Description

The 2557 is a high-speed 16-channel RTD input module designed to be compatible with the CTI 2500 Series or Simatic® 505 I/O base. The 2557 translates millivolt level signals from the RTD element into a scaled temperature value. Multiple RTD types are supported as well as millivolt inputs. The module performs scaling, alarm detection, filtering, peak and valley hold, and averaging. The standard mode logs in as a 16 WX input module. The advanced mode logs in as 16 X, 16 Y, 32 WX, and 32 WY registers in the PLC.

Features

- Simatic® 505 I/O base format
- 1500 V isolation channel-to-PLC backplane
- 1500 V isolation channel-to-channel
- 16 bit ADC for each channel
- Supports 10Ω Cu, 100Ω Pt, and 120Ω Ni RTDs and millivolt inputs
- Fast 20 mSec update time
- Support for 2, 3, or 4 wire RTD elements

Specifications

- Input Channels: 16 RTD or Millivolt inputs (isolated in groups of 2)
- RTD Types: 10Ω Cu (TCR= 0.00427 Ω/°C)
- 100Ω Pt (TCR= 0.003850 Ω/°C)
- European DIN 43760
- 120Ω Ni (TCR= 0.00672 Ω/°C)
- 2, 3, and 4 wire modes
- RTD Excitation Current: 250 micro amp
- Millivolt Input Range: 0 to 100 mV
- Millivolt Input Impedance: >1000MΩ @ DC
- > 10KΩ @ 16 Hz
- Millivolt Accuracy: ± 1.0% full scale or ± 1.0 mV
- Lead Compensation: 20Ω per lead wire
- Input Overrange Protection: 30 VDC/VAC
- Measurement Ranges:
  - 10Ω Cu -100°C to 260°C (-148°F to 500°F)
  - 100Ω Pt -200°C to 850°C (-328°F to 1562°F)
  - 120Ω Ni -80°C to 260°C (-112°F to 500°F)
- Measurement Units: Degrees C or F
- Digital Filtering Time Constant: 80 mSec (16 WX mode)
  80-6000 mSec (Advanced mode)
- Update Time (all 16 channels):
  - 18 mSec no filtering
  - 20 mSec digital filtering enabled
  - 48 mSec advanced functions enabled
- Repeatability:
  ±0.2°C or °F all RTD types (16 WX mode)
  ±0.1°C or °F all RTD types (advanced mode)
- Accuracy:
  - 10Ω Cu
    (±0.5°C at 25°C) (±1°C from 0° to 60°C)
    (±1°F at 25°C) (±2°F from 0° to 60°C)
  - 100Ω Pt
    (±0.5°C at 25°C) (±1°C from 0° to 60°C)
    (±1°F at 25°C) (±2°F from 0° to 60°C)
  - 120Ω Ni
    (±0.5°C at 25°C) (±1°C from 0° to 60°C)
    (±1°F at 25°C) (±2°F from 0° to 60°C)
- Common Mode Rejection: >130 db @ 60 Hz
- Normal Mode Rejection: >180 db @ 60 Hz
- Input ESD Protection: 2 Kv
- Connector: 64 position fixed, wire press in
- Wire Gauge: 18 to 30 AWG
- Module Size: Single-wide
- Backplane Power Consumption: 6 Watts
- Isolation: 1500 VDC channel group to channel group, 1500 VDC channel to backplane
- Operating Temperature: 0° to 60°C (32° to 140°F)
- Storage Temperature: -40° to 85°C (-40° to 185°F)
- Humidity, Relative: 5% to 95% (non-condensing)
Agency Approvals: UL, UL for Canada
FM (Class I, Div 2), CE
Shipping Weight: 1.5 lbs (0.68 kg)

Standard Shipping Configuration:
- 3 wire 100 W Pt RTD
- Digital Filtering Enabled
- Degrees Centigrade
- Low Density Mode 16 WX

2557 Connector

NOTE: The front connector on the module contains a G terminal which may be used for the shield wire if the installation is in a noise free environment. If the installation is in an extremely noisy environment CTI strongly recommends that the shield wires be terminated to the PLC chassis ground.