

### Network Thermocouple Conditioner/Multiplexer



#### Features

- Network-based 48-channel thermocouple encoding unit
- Includes Fast Ethernet 100BASE-T port for:
  - acquisition setup and configuration
  - SNMP status and control
  - acquisition data transport
  - time synchronization using IEEE 1588 time
- Uses three (3) internal card assembly types:
  - PPC-2048 overhead card: Controls internal channel sampling and interfaces with the network
  - TCD-4048 16-channel thermocouple conditioning card (3 each are included): Provides thermocouple conditioning, electronic cold junction compensation, and real-time thermocouple linearization
  - PSU-2048 power supply: Accepts 28VDC aircraft power and provides multiple internal regulated outputs; provides ground isolation between 28V input, chassis and signal grounds.
- True real-time thermocouple linearization
- Compatible with types J, K, T, E, C and S (N Dash 2)
  - Programmable on a per-channel basis
  - Mixed types in the same unit
- Programmable measurement range
  - User selects zero-scale and full-scale temperatures. Range is “zoomed” accordingly. Up to 4x “zoom” (>1/4 of full TC range)
- Programmable open TC detection for non-grounded thermocouples
- ±0.3% system accuracy
- +28VDC operation, ±35VDC overvoltage protection

#### Description

The nRTM-4048 is a network-based 48-channel thermocouple conditioner/multiplexer unit. The nRTM-4048 unit accepts direct-input thermocouple wiring, provides electronic cold junction compensation, real-time data linearization, and compatibility with ANSI thermocouple types J, K, T, E C and S (N Dash 2), all within a single enclosure. Thermocouple data is digitized up to 16-bit resolution. Channel sample sequence and conditioning parameters are programmed and controlled by the unit's overhead card, which is user-programmable via the network interface using TTCWare. Data acquired and encoded by the nRTM-4048 is formatted as a data packet for output over the network bus using NPD data packet format. The nRTM-4048 is a ruggedized, fixed-volume enclosure suitable for use in harsh environments and over a wide temperature range. Thermocouple wiring uses high reliability D-subminiature-style connectors. All network interface signals use standard 9-pin D-subminiature-style connectors. Input power uses a circular military style connector.

#### Applications

- Distributed data acquisition systems
- Remote temperature measurement

Revision 05/13/2015

#### nRTM-4048 Datasheet

©2015 Teletronics - A Curtiss-Wright Company  
 Specifications subject to change without notice.

Approved for Public Release 16-S-1076

Teletronics - A Curtiss-Wright Company  
 15 Terry Drive, Newtown, PA 18940  
 phone: 267.352.2020 fax: 267.352.2021 Sales@ttcdas.com

[www.ttcdas.com](http://www.ttcdas.com)



Management System  
 AS9100C  
 ISO 9001:2008