

### 48 Channel Remote Thermocouple Conditioner/Multiplexer



#### Features

- 48-channel Thermocouple Conditioner and Encoder
- Uses three (3) internal card assembly types:
  - RCI-2048 overhead card: controls internal channel sampling and interfaces with the CAIS master unit
  - TCD-2048 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.
- Operates as a CAIS Remote DAU
- True Real-time Thermocouple Linearization
- Compatible with Types J, K, E, & T
  - Programmable on Per-Channel Basis
  - Mixed Types in the Same Unit
- Programmable Measurement Range
  - Full ANSI Range (coarse), or
  - ANSI Range / 2 (fine - approx)
- Programmable Sliding Fine Range (Range Min/Max)
- Programmable Open TC Detection
  - For Non-grounded Thermocouples
  - Output Error Code of "4095" on open
- ± 0.3% System Accuracy
- ± 35VDC Overvoltage Protection
- +28VDC ±4VDC Operation
- 5.800" W x 4.000" D x 3.000" H
- Weighs 4 pounds
- Windows 95/98/NT/2000 Software Included

#### Description

The MRTM-2048C is a 48-channel remote thermocouple conditioner/multiplexer unit. The unit is available in two (2) versions depending on the application: the MRTM-2048C-1 unit accepts direct-input thermocouple wiring, provides electronic cold junction compensation, real-time data linearization, and compatibility with ANSI thermocouple types J, K, E and T, all within a single enclosure. This unit is intended for use in areas where the expected temperature rate of change is less than three degrees C per minute. The MRTM-2048C-2 unit utilizes external cold junction compensation for improved thermal shock performance (qty three RJC-116 blocks required), provides real-time data linearization, and compatibility with ANSI thermocouple types J, K, E and T. The RJC-116 is intended for use in areas where the expected rate of change is up to 10 degrees C per minute. Thermocouple data is digitized to 12-bit resolution. The MRTM-2048C operates as a "remote unit" along with a CAIS compatible master unit such as TTC's CDAU-20XX or MCDAU-2000. Channel sample sequence and conditioning parameters are controlled by the CAIS master, which is user programmable via a serial RS-232/422 hookup to a PC-based computer running TTC's Windows™ 95/98/NT software application called "TTCWare™". Data acquired and encoded by the MRTM-2048C is formatted as serial PCM per IRIG-106-96, Chapter 4 requirements (standard fixed-position PCM format). The MRTM-2048C is a ruggedized, fixed-volume enclosure suitable for use in harsh environments and over a wide temperature range. Thermocouple wiring and input power use circular military style connectors. The RJC-116 uses high reliability D-Sub style connectors for the thermocouple to copper interface. Unit ID strapping uses a standard "D" series connector. All CAIS interface signals use standard CAIS compatible connectors.

#### Applications

- Distributed Data Acquisition Systems
- Remote Temperature Measurement

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#### MRTM-2048C Datasheet

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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)



CAIS  
Compatible



Management  
System  
AS9100C  
ISO 9001:2008