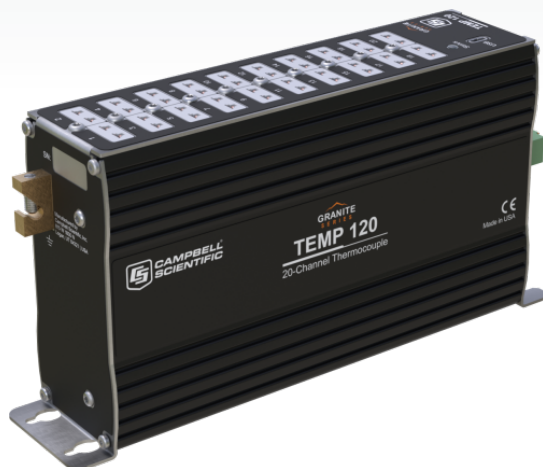## CAMPBELL® SCIENTIFIC
WHEN MEASUREMENTS MATTER

Granite Temp 120
20-Channel Thermocouple Module

Better Temperature Measurements

With dedicated reference temperatures

Overview

The Granite™ Temp 120 is a purpose-built thermocouple measurement module. It has 20 thermocouple inputs using universal-alloy miniature thermocouple jacks. The Temp 120 is made to handle extreme temperature environments and rapid thermal gradients applied to the measurement module. It has a dedicated temperature reference for every input terminal and is carefully designed to reduce temperature errors in the presence of external temperature gradients.

Benefits and Features

❯ Universal-type standard miniature thermocouple connectors

❯ Cold-junction reference temperatures on every channel

❯ Exceptional accuracy and temperature stability

❯ CPI DAQ connection for channel expansion

❯ CANbus 2.0 A/B output available

❯ USB 2.0 interface for PC-based operation

Detailed Description

The inputs of the Temp 120 are a universal copper-copper junction and can accept any standard thermocouple alloy type. The Temp 120 is part of a data-acquisition system that includes a DAQ such as a Granite 6, 9, or 10, or the CR6 or CR1000X Dataloggers. The clock timing synchronization across modules is managed by the DAQ or data logger via the CPI communication port. The time base can be referenced either to GPS or a temperature-compensated real-time clock. Applications requiring hundreds of terminals of thermocouples can be easily assembled as a single data-acquisition system. Measurement modules can be collocated or spread out via a networking cable to be closer to the point of measurement.

Specifications

Operating Temperature Range	❯ -55° to +85°C (extended) ❯ -40° to +70°C (standard)	Terminals	20 channels: universal (copper/copper), miniature socket connectors

For comprehensive details, visit: **www.campbellsci.com/temp120**

Supported Thermocouple Types	B, E, J, K, N, R, S, T
Resolution	0.015℃
Speed	❱ 1 Hz when filtering is enabled (maximum measurement rate for all 20 channels) ❱ 10 Hz when filtering is disabled (maximum measurement rate for all 20 channels)
Input Limits	0.25 to 3.0 Vdc (built-in 1.65 Vdc bias voltage)
Maximum Input Voltage	±10 Vdc
DC Common-Mode Rejection	≥ 115 dB
Normal Mode Rejection	> 80 dB (at 50 and 60 Hz)
Internal Cold Junction Accuracy	❱ ±0.28℃ maximum (-40° to +70℃) for -SD option ❱ ±0.36℃ maximum (-55° to +85℃) for -XD option ❱ ±0.05℃ typical (20° to 40℃)
Total Measurement Accuracy in Static Temperature Environment	❱ ±0.4℃ typical (20° to 40℃) ❱ ±0.8℃ maximum (-40° to +70℃) for -SD option ❱ ±1.0℃ maximum (-55° to +85℃) for -XD option

Total Measurement Accuracy for Rapid Temperature Environment Ramps	±3℃ maximum (8℃ per minute ambient gradient)
Dimensions	21.5 x 10.8 x 5.1 cm (8.5 x 4.25 x 2 in.)
Weight	0.9 kg (1.95 lb)

Communications

CPI	RJ45 interface to Campbell Scientific data loggers and CDM measurement peripherals and sensors
USB	USB micro-B device only, 2.0 full-speed 12 Mbps, for computer connection

System

Processor	Renesas RX63N (32-bit with hardware FPU, running at 96 MHz)
Memory	2 MB SRAM
A/D Converter	24-bit sigma-delta

Power Requirements

Voltage	9.6 to 32 Vdc
Typical Current Drain	❱ 5 mA (sleep) ❱ 30 mA (active)

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