



Technical Sales
United States
(866) 531-6285
orders@ni.com

NI cFP-TC-120

8-Channel Thermocouple Input Module for Compact FieldPoint

- 8 differential inputs
- 16-bit resolution; 50/60 Hz noise rejection
- HotPnP (plug and play) operation
- Measures thermocouple or millivolt signals
- Software-configurable input range or thermocouple type (per channel)
- -40 to 70° C operating range



Overview

The National Instruments cFP-TC-120 is an 8-channel input module for direct measurement of temperature from standard J, K, T, N, R, S, E, and B thermocouple types. With signal conditioning, double-insulated isolation, input noise filtering, and a high-accuracy delta-sigma 16-bit analog-to-digital converter, the NI cFP-TC-120 delivers reliable, accurate temperature or millivolt measurements. Designed from top to bottom for productivity and reliability, the cFP-TC-120 features HotPnP (plug-and-play) operation, easy configuration, self-diagnostics, and automatic scaling to engineering units. An onboard microcontroller compensates and linearizes thermocouple readings to the NIST-90 standard, using an advanced linearization routine for maximum accuracy. The cFP-TC-120 module comes with a NIST-traceable calibration certificate ensuring accurate, reliable measurements.

Specifications

Specifications Documents

- Data Sheet

Specifications Summary

General

Form Factor	Compact FieldPoint, Ethernet
Operating System / Target	Windows, Real-Time
Measurement Type	Thermocouple, Voltage
LabVIEW RT Support	Yes
Isolation Type	Bank Isolation
RoHS Compliant	No

Analog Input

Number of Channels	8 DI
Sample Rate	0.88 S/s
Bandwidth	3 Hz
Resolution	16 bits
Maximum Bandwidth	3 Hz
Input Impedance	20 MOhm
Maximum Voltage Range	-100..100 mV
Range Accuracy	3.05 μ V
Minimum Voltage Range	-25..25 mV
Range Accuracy	0.76 μ V
Signal Conditioning	Cold-junction compensation, Low-pass filtering, Open thermocouple
Analog Output	
Number of Channels	0
Digital I/O	
Number of Channels	0
Counter/Timers	
Number of Counter/Timers	0

Part Number	Description	Est Ship	US Dollars*	Qty
Compact FieldPoint Products				
777318-120	cFP-TC-120 16-Bit Thermocouple Input Module (TC, mV)	1 - 2	\$ 529.00	0
777317-2120	cFP-2120 LabVIEW Real-Time/Ethernet Network Controller	1 - 2	\$ 2,599.00	0
778617-04	cFP-BP-4 4-Slot Backplane	1 - 2	\$ 599.00	0
778618-01	cFP-CB-1 Connector Block	1 - 2	\$ 169.00	0
778618-03	cFP-CB-3 Isothermal Connector Block	1 - 2	\$ 229.00	0
778805-90	PS-5 Power Supply, 24 VDC, 5 A, Universal Power Input	12 - 20	\$ 259.00	0

* You have selected the United States as the country where you will use the product(s). Pricing may have changed since you printed this document on 12/03/2009. Please visit ni.com to see current pricing.

Place Order or Obtain Quote

Order Online or by Fax

- 1 . Navigate to ni.com/products and select "Order by Part Number" found under the "Business Center" section.
- 2 . Once you have added your items to your cart, see the "Your Cart Options" section to place your order, obtain a quote, or print a fax form.

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Call (866) 531-6285 to place your order or obtain a quote.

Services

System Assurance Programs

Reduce your setup time and total cost of ownership, and get a system you can use out of the box with National Instruments system assurance programs. System assurance programs include:

- Installation and integration test of all individual hardware
- Courtesy installation of system driver sets and application development environments
- Three-year warranty and calibration coverage
- Custom documentation plus a custom restore and startup utility

This service is only available for PXI, NI CompactRIO, and NI Compact FieldPoint systems.

- Learn More About System Configuration and Deployment Services [<http://www.ni.com/services/configuration.htm>]
- Customize Your NI CompactRIO System [<http://ohm.ni.com/advisors/crio>]
- Customize Your NI Compact FieldPoint System [<http://ohm.ni.com/advisors/cfp>]
- Customize Your PXI System [<http://ohm.ni.com/advisors/pxi>]
- Talk to an Expert About Custom System Configurations [[javascript:openCallMeWindowCTA\(document.referrer,%20'US'\)](http://www.ni.com/services/configuration.htm)]

Extended Warranties

National Instruments designs and manufactures all products to minimize failures, however unexpected failures can still occur. Extended warranties provide a fixed economical price at the time of system purchase, covering any repair costs for up to three years. In addition, they offer the following benefits:

- Significant cost savings compared to individual repair incidents
- Fault location, diagnostics, and repair by NI any time the system product fails
- All parts and labor costs covered as well as any adjustments needed to restore the hardware to manufacturing specifications

For more information about your warranty options:

- Learn More About Warranty Services [<http://www.ni.com/services/warranty.htm>]
- Talk to an Expert About Extended Warranties [[javascript:openCallMeWindowCTA\(document.referrer,%20'US'\)](http://www.ni.com/services/warranty.htm)]
- View Warranty Repair Policies [http://www.ni.com/services/warranty_repair_policies.htm]

Calibration

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. NI provides manual calibration procedures, services to recalibrate your products, and automated calibration software to calibrate many NI measurement products.

- Learn More About Calibration Services [<http://www.ni.com/services/calibration.htm>]

Training

NI training is the fastest, most certain route to productivity with NI tools and successful application development.

- Learn More About NI Training and Certification [<http://www.ni.com/training/>]
- Find a Course Near You and View Schedules [<http://sine.ni.com/apps/utf8/nisv.custed>]

Repair Services

Return your registered product under warranty at no additional labor and parts cost. NI offers fault location, diagnostics, and repair any time the system fails as well as any adjustments needed to restore the hardware to manufacturing specifications.

- Learn More About Repair Services [<http://www.ni.com/services/warranty.htm>]
- Contact NI to obtain a Return Material Authorization (RMA) form and shipping instructions. [http://sine.ni.com/apps/utf8/nicc.call_me]
- View your RMA support request status online. [<http://www.ni.com/support/servicereq/>]
- Register your product [<http://www.ni.com/register>].

Technical Support

[ni.com/support](http://www.ni.com/support) [<http://www.ni.com/support/>]

Resources

Additional Product Information

- [Manuals \(3\)](#)
- [Dimensional Drawings \(1\)](#)
- [Product Certifications \(1\)](#)

Related Information

- [Configure your complete Compact FieldPoint System](#)