

Standard Analog ICTD Module

Features

- Single channel of optically-isolated current-to-digital conversion
- designed for use with an ICTD probe from Opto 22 or from other vendors
- can be used in energy management, freezer control, and similar applications

Description

The AD4 module provides a single channel of optically-isolated temperature-to-digital conversion. Modules plug into any Opto 22 standard analog I/O rack and are secured by a captive screw. Field connections to the module are made via two terminals on the analog I/O rack.

The AD4 module is designed for use with an ICTD probe from Opto 22 or from other vendors. The ICTD probe is encapsulated and completely isolated from ground loop possibilities. The ICTD can be used in energy management, freezer control, and similar applications.



AD4

Part Numbers

Part	Description
AD4	ICTD Temperature Input
AD3T	ICTD Temperature Probe

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Specifications

AD4

Input Temperature Range	- 188.4 °C to 150 °C
Input Response Time	5% full scale step change in 7.8 seconds 63% full scale step change in 150 seconds
Accuracy of AD4 Accuracy with ICTD Probe	± 0.3 °C ± 0.8 °C
Resolution with ICTD Probe	0.083 °C
Power Requirements: Module Logic	16 mA at +15 (+/- 0.25) VDC 11 mA at -15 (+/- 0.25) VDC 1.6 mA at 5 VDC
Thermal Time Constant	2.5 minutes typical (still air)
Cable Length	> 2,000 feet (610 meters)
Isolation Input-to-Output	4,000 Vrms
Ambient Temperature Operating Storage	0 °C to 70 °C -25 °C to 85 °C

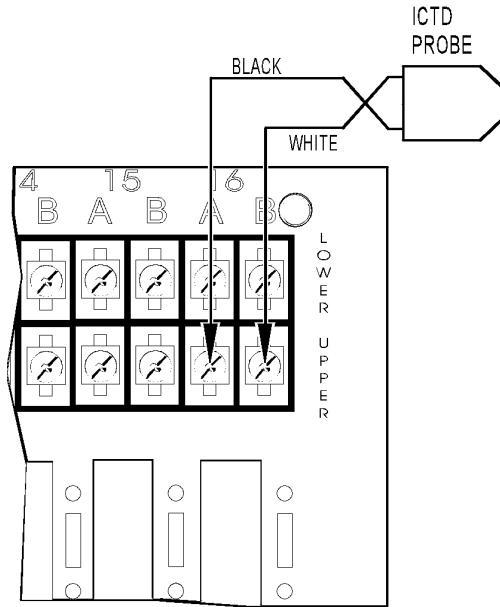
ICTD

Input Temperature Range	- 40 °C to 100 °C
Output	233 µA @ -40 °C 373 µA @ 100 °C
Sensitivity	1 µA/°K
Input Response Time (% of Span/Δ °C/ΔTime)	5 %/7 °C/7.8 seconds 20 %/28 °C/33.6 seconds 63.2 %/88.48 °C/150 seconds
Output Accuracy	±0.5 °C @ 25 °C. Factory calibrated.
Repeatability	±0.25 °C
Thermal Time Constant	2.5 minutes typical (still air)
Cable Length	>2,000 ft (610 meters)
Dimensions	Overall length: 39" (1 m) Cylinder tip: 0.70" (1.78 cm) L, 0.375" (0.95 cm) D

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Connections

AD4 Connection Diagram



More About Opto 22

Products

Opto 22 develops and manufactures reliable, flexible, easy-to-use hardware and software products for industrial automation, energy management, remote monitoring, and data acquisition applications.

OptoEMU Energy Management System

The easy-to-use OptoEMU Sensor monitors electrical energy use in your facility and delivers detailed, real-time data you can see and analyze. The Sensor can monitor energy data from pulsing meters, electrical panels or subpanels, and equipment. View energy data online using a software service or incorporate the data into your control system for complete energy management.

SNAP PAC System

Designed to simplify the typically complex process of selecting and applying an automation system, the SNAP PAC System consists of four integrated components:

- SNAP PAC controllers
- PAC Project™ Software Suite
- SNAP PAC brains
- SNAP I/O™

SNAP PAC Controllers

Programmable automation controllers (PACs) are multifunctional, modular controllers based on open standards.

Opto 22 has been manufacturing PACs for over two decades. The standalone SNAP PAC S-series and the rack-mounted SNAP PAC R-series both handle a wide range of digital, analog, and serial functions for data collection, remote monitoring, process control, and discrete and hybrid manufacturing.

SNAP PACs are based on open Ethernet and Internet Protocol (IP) standards, so you can build or extend a system easily, without the expense and limitations of proprietary networks and protocols.

PAC Project Software Suite

Opto 22's PAC Project Software Suite provides full-featured, cost-effective control programming, HMI (human machine interface) development and runtime, OPC server, and database connectivity software for your SNAP PAC System.

Control programming includes both easy-to-learn flowcharts and optional scripting. Commands are in plain English; variables and I/O point names are fully descriptive.

PAC Project Basic offers control and HMI tools and is free for download on our website, www.opto22.com. PAC Project Professional, available for separate purchase, adds

OptoOPCServer, OptoDataLink, options for controller redundancy or segmented networking, and support for legacy Opto 22 serial *mistic*™ I/O units.

SNAP PAC Brains

While SNAP PAC controllers provide central control and data distribution, SNAP PAC brains provide distributed intelligence for I/O processing and communications. Brains offer analog, digital, and serial functions, including thermocouple linearization; PID loop control; and optional high-speed digital counting (up to 20 kHz), quadrature counting, TPO, and pulse generation and measurement.

SNAP I/O

I/O provides the local connection to sensors and equipment. Opto 22 SNAP I/O offers 1 to 32 points of reliable I/O per module, depending on the type of module and your needs.

Analog, digital, and serial modules are all mixed on the same mounting rack and controlled by the same processor (SNAP PAC brain or rack-mounted controller).

Quality

Founded in 1974, Opto 22 has established a worldwide reputation for high-quality products. All are made in the U.S.A. at our manufacturing facility in Temecula, California. Because we do no statistical testing and each part is tested twice before leaving our factory, we can guarantee most solid-state relays and optically isolated I/O modules for life.

Free Product Support

Opto 22's California-based Product Support Group offers free, comprehensive technical support for Opto 22 products. Our staff of support engineers represents decades of training and experience. Support is available in English and Spanish by phone or email, Monday–Friday, 7 a.m. to 5 p.m. PST.

Additional support is always available on our website: how-to videos, OptoKnowledgeBase, self-training guide, troubleshooting and user's guides, and OptoForums.

In addition, hands-on training is available for free at our Temecula, California headquarters, and you can [register online](#).

Purchasing Opto 22 Products

Opto 22 products are sold directly and through a worldwide network of distributors, partners, and system integrators. For more information, contact Opto 22 headquarters at 800-321-6786 or 951-695-3000, or visit our website at www.opto22.com.

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