

DATA SHEET

Form 443-070914

Connections

Each Opto 22 **AD3**, **AD3T**, and **AD2T** analog input module provides a single channel of optically-isolated current-to-digital conversion. The AD3T and AD2T modules offer additional channel-to-channel isolation. For the AD3 and AD3T modules, the nominal input range is 4 to 20 mA with an under/over range capability from less than 3 mA to greater than 35 mA. The AD2T module has a nominal input range of 0 to 20 mA with an under/over range capability from less than -1.25 mA to greater than 35 mA. The "T" modules also provide 4,000 V_{rms} channel-to-channel isolation which eliminates any loop problems. These modules plug into a Classic Standard analog I/O rack and are secured by a captive screw.

Part Numbers	Description
AD3	4 to 20 mA Input
AD3T	4 to 20 mA Input Isolated
AD2T	0 to 20 mA Input Isolated



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Specifications

	AD3	AD3T	AD2T
Input Impedance	249 Ohms	249 Ohms	50 Ohms
Nominal Input Range	4 to 20 mA	4 to 20 mA	0 to 20 mA
Over/under Range	3 to 35 mA	3 to 35 mA	-1.25 to 35 mA
Accuracy*	16 μ A (0.1% of span)	16 μ A (0.1% of span)	20 μ A (0.1% of span)
Resolution	12 bits (3.9 μ A)	12 bits (3.9 μ A)	12 bits (4.9 μ A)
Response Time	Full-scale step change in 3 ms		
Isolation Transient Input-to-Output	4,000 Vrms n/a	4,000 Vrms 4,000 Vrms	4,000 Vrms 4,000 Vrms
Power Requirements	13 mA at +15 VDC 7.5 mA at -15 VDC	35 mA at +15 VDC 35 mA at -15 VDC	35 mA at +15 VDC 35 mA at -15 VDC
Ambient Temperature: Operating Storage	0 to 70 °C - 25 to 85 °C		

*Accuracy figures assume use of Gain and Offset commands.

Connections

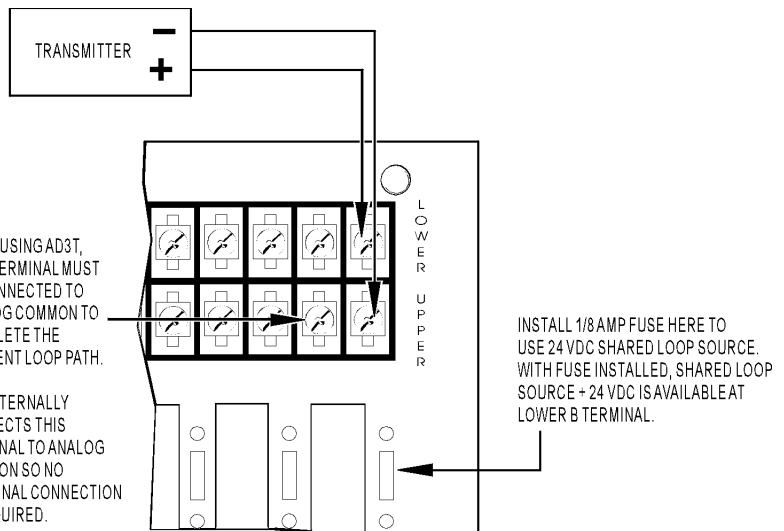
AD3 MODULES USING SHARED LOOP SERVICE

NOTE: For connecting the **AD2T** module, use AD3T module diagrams and instructions.

AD3T: All of the lower A terminals on the mounting rack are tied together. These provide a convenient tie point for shared loop source return. To use the AD3T module with a common loop power supply, connect any one lower A terminal to the shared loop source "-", then jumper upper A to lower A for each AD3T.

NOTE:
WHEN USING AD3T,
THIS TERMINAL MUST
BE CONNECTED TO
ANALOG COMMON TO
COMPLETE THE
CURRENT LOOP PATH.

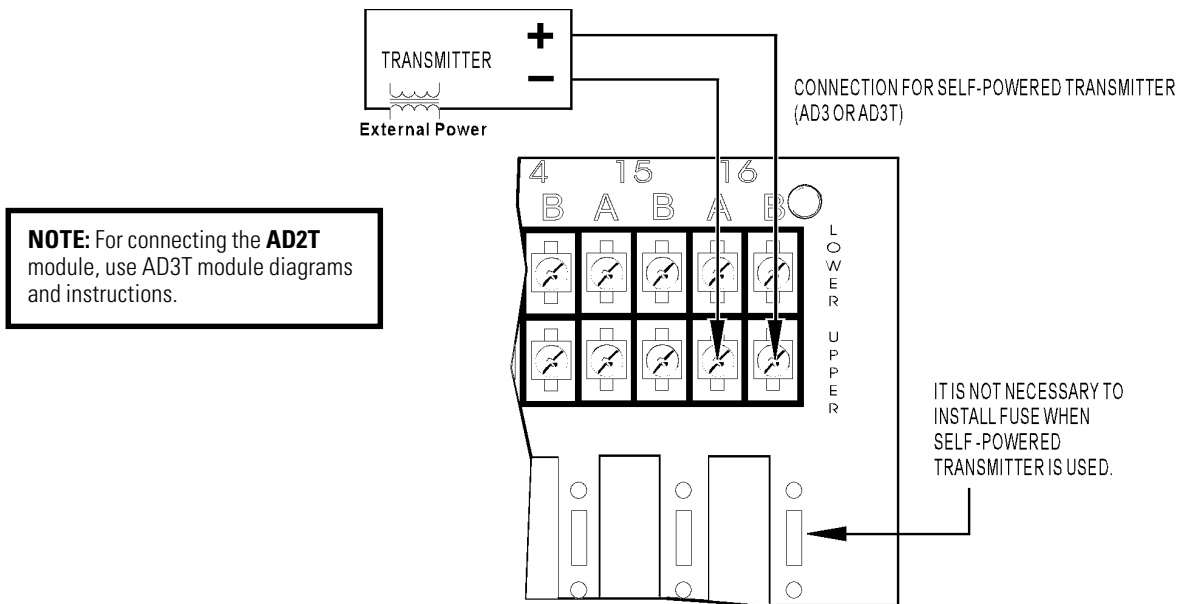
AD3 INTERNALLY
CONNECTS THIS
TERMINAL TO ANALOG
COMMON SO NO
EXTERNAL CONNECTION
IS REQUIRED.



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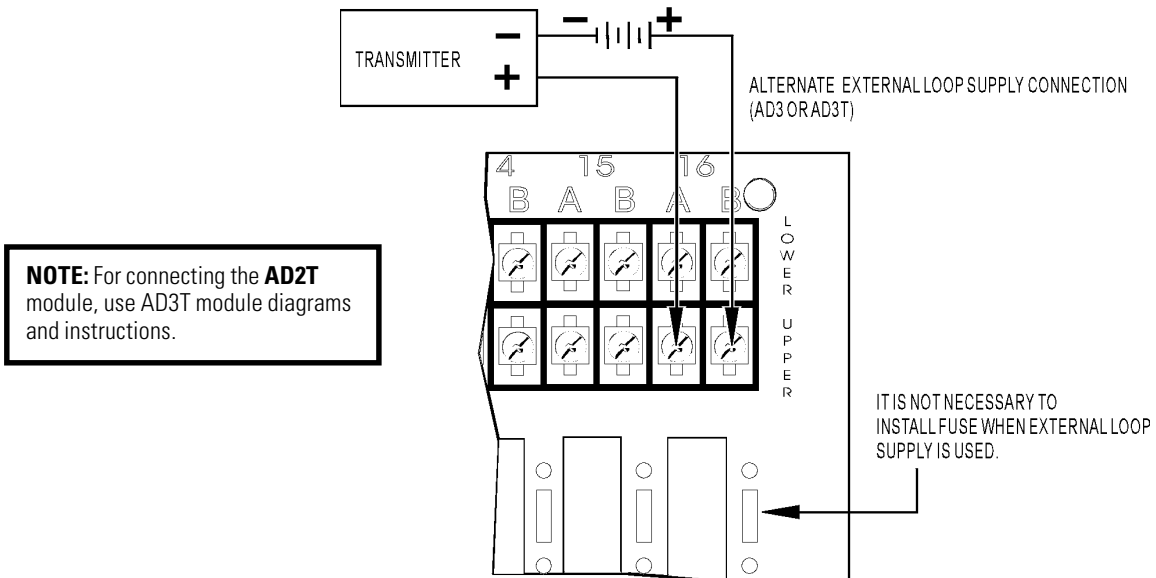
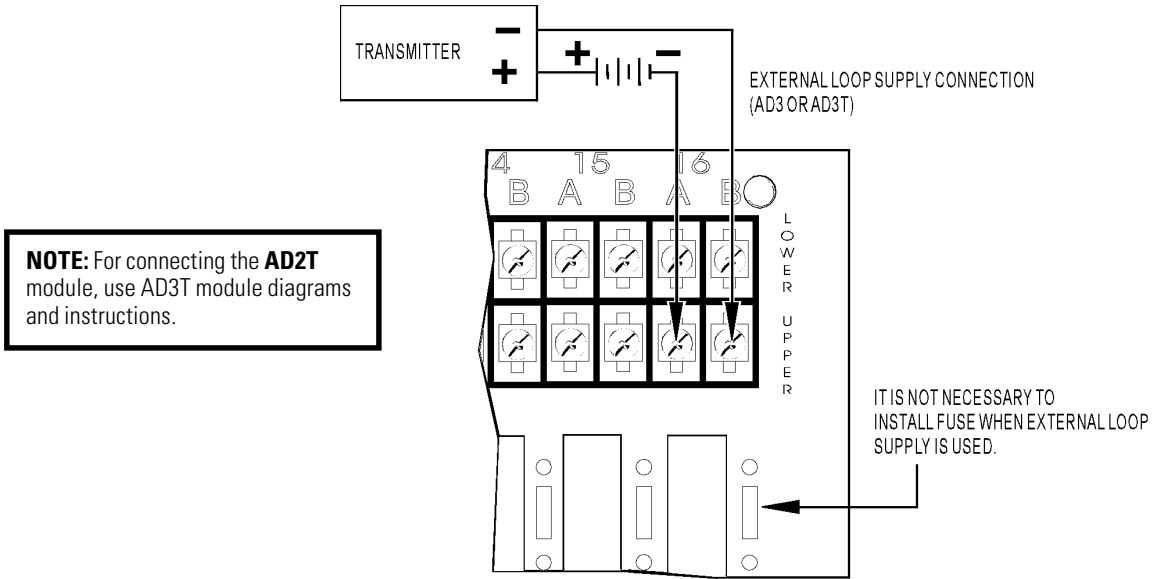
Connections

AD3 MODULES USING SELF-POWERED TRANSMITTER



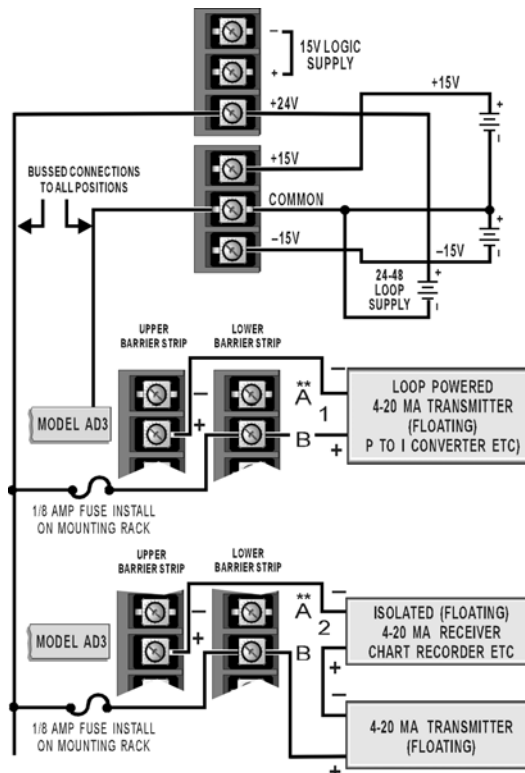
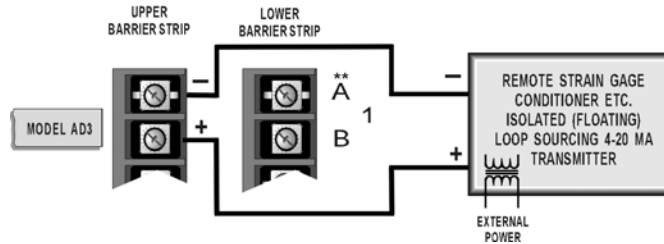
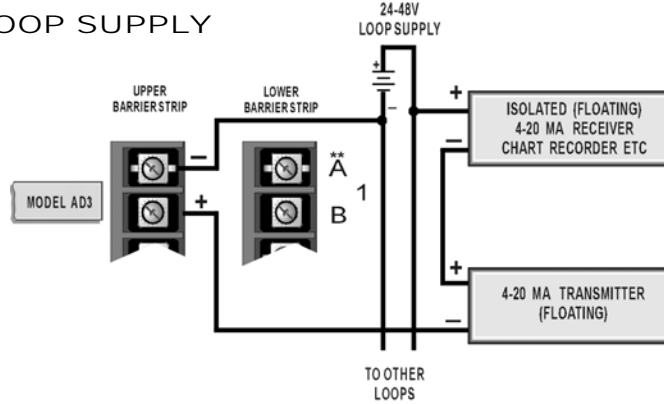
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Connections (cont.)



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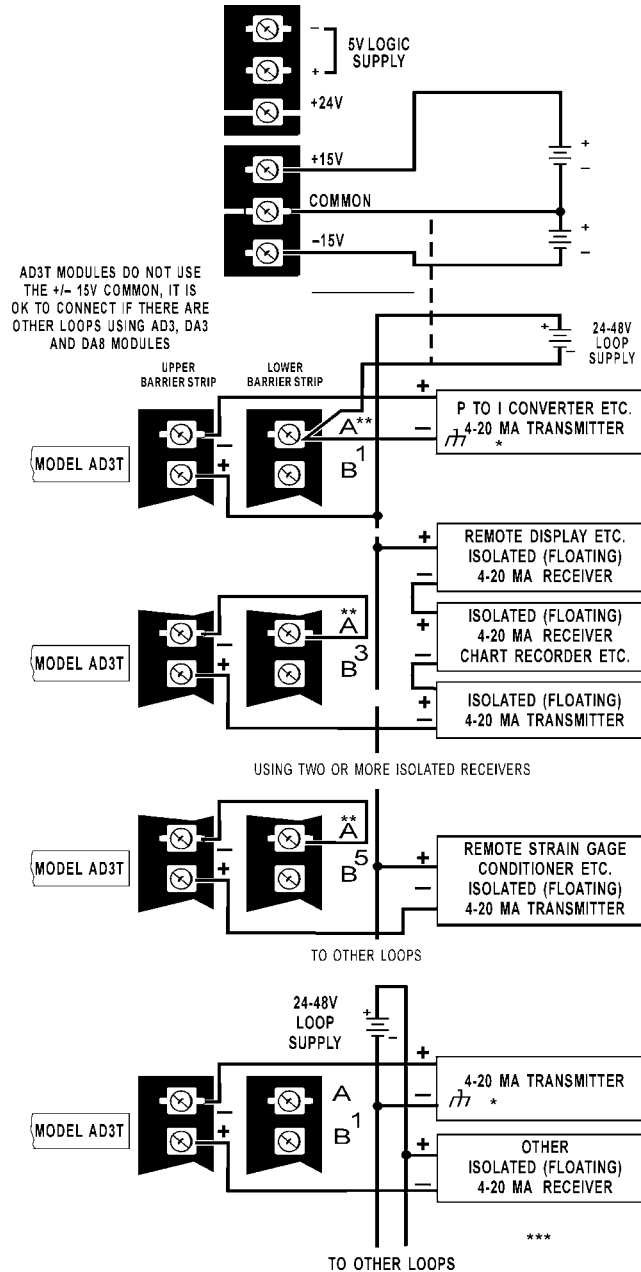
Connections LOOP SUPPLY



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Connections LOOP SUPPLY (CONT.)

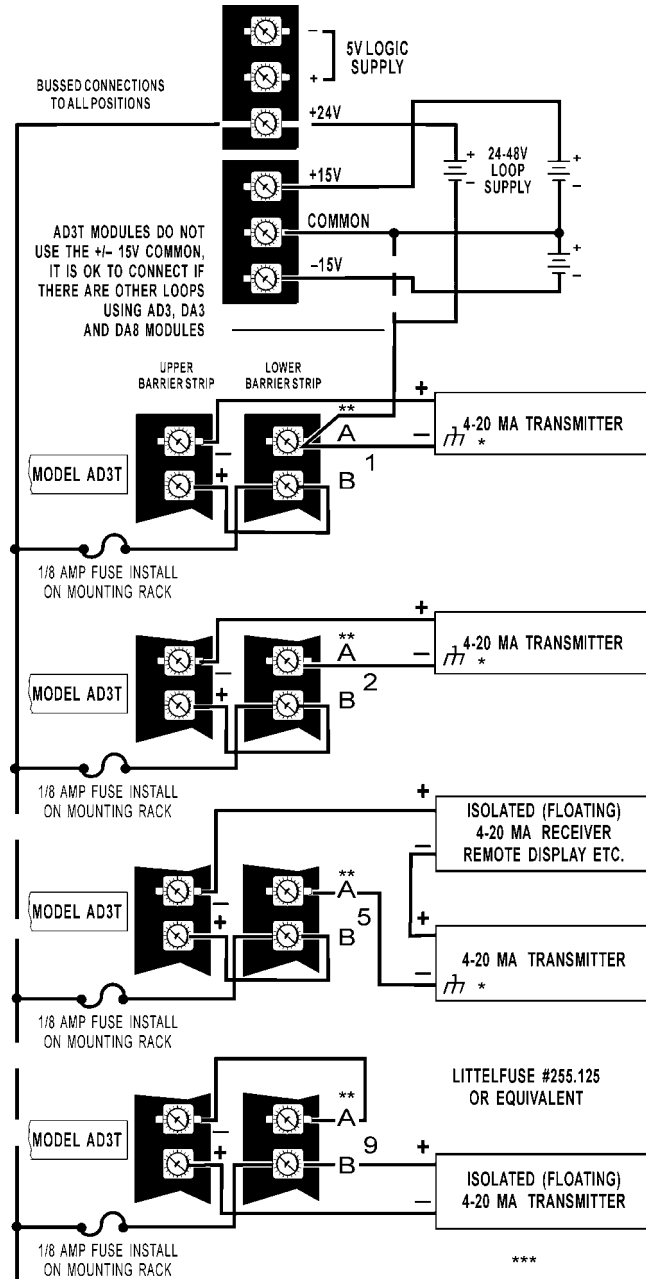
NOTE: For connecting the **AD2T** module, use AD3T module diagrams and instructions.



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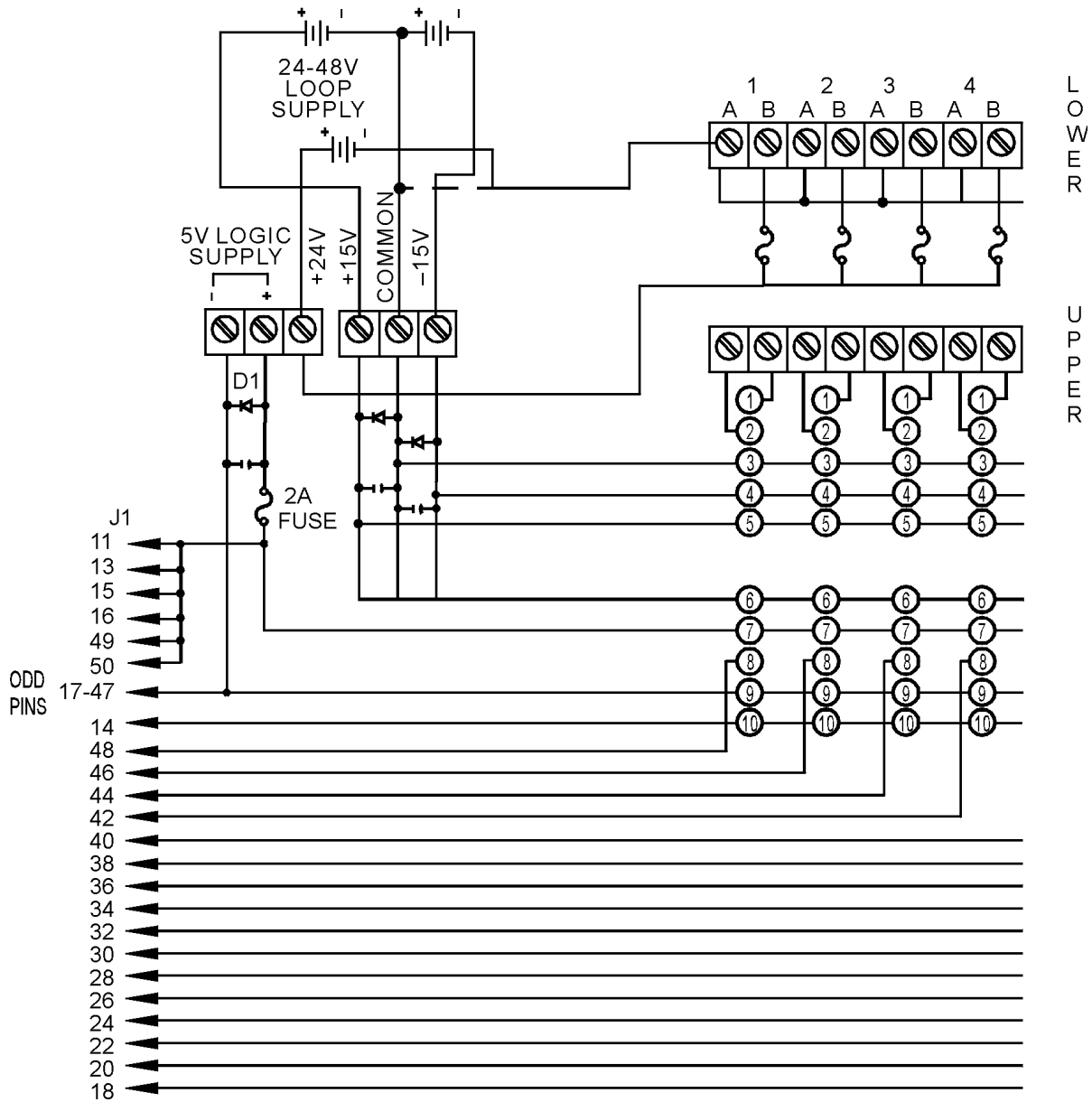
Connections LOOP SUPPLY (CONT.)

NOTE: For connecting the AD2T module, use AD3T module diagrams and instructions.



Schematics

ANALOG MOUNTING RACK
SCHEMATIC (PB4AH, PB8AH, PB16AH)



More About Opto 22

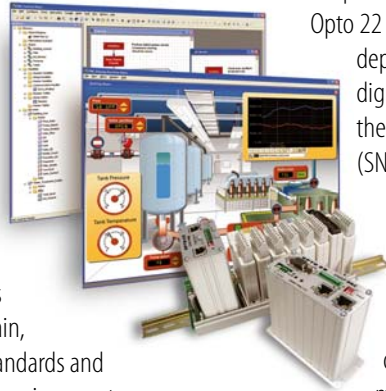
Products

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

SNAP PAC System

Designed to simplify the typically complex process of understanding, selecting, buying, 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, multidomain, modular controllers based on open standards and providing an integrated development environment.

Opto 22 has been manufacturing PACs for many years. The latest models include 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 and are equally suited to 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 without the expense and limitations of proprietary networks and protocols.

PAC Project Software Suite

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

These fully integrated software applications share a single tagname database, so the data points you configure in PAC Control™ are immediately available for use in PAC Display™, OptoOPCServer™, and OptoDataLink™. 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 Ethernet link 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, serial, and special-purpose 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 and with over 85 million devices sold, 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 Product Support Group offers free, comprehensive technical support for Opto 22 products. Our staff of support engineers represents decades of training and experience. Product support is available in English and Spanish, by phone or email, Monday through Friday, 7 a.m. to 5 p.m. PST.

Free Customer Training

Hands-on training classes for the SNAP PAC System are offered at our headquarters in Temecula, California. Each student has his or her own learning station; classes are limited to nine students. Registration for the free training class is on a first-come, first-served basis. See our website, www.opto22.com, for more information or email training@opto22.com.

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.

www.opto22.com