Network Infrastructure Products

Features

- Wired industrial Ethernet switches and wireless access points built for tough industrial use
- Coated steel enclosures for high noise environments
- Redundant power supply inputs, 10–30 VDC or 20–49 VDC, with low current requirements
- Extremely high MTBF, shock, and vibration specs
- Mounting and network cabling options for wired units

N-TRON Industrial Ethernet Devices

Description

N-TRON products are strongly recommended for your wired or wireless Ethernet networks in any industrial environment.

N-TRON's industrially hardened Layer II Ethernet switches and wireless access points (APs) are designed specifically for industrial, marine, utility, and military applications where high reliability and speed are required.

Unlike standard switches and APs, these units stand up to harsh environments—extended temperature, high shock and vibration, and elevated RFI/EMI levels. All are UL listed and approved for use in Class I, Division II Hazardous areas.

Because power is the most likely cause of failure for network devices, these products feature wide-ranging redundant power inputs, 10–30 VDC on wired models and 20–49 VDC on the wireless N-TRON702-W. Opto 22's SNAP-PS24 or SNAP-PS24U power supplies are good choices to provide power to these units.

Wired Ethernet switches are available with IEEE 802.3 10/100 BaseTX twisted pair copper ports or with both copper and 100BaseFX fiber optic ports. All TX ports autonegotiate speed and duplex. Crossover cables are not required. Switches can be DIN-rail or panel mounted. For panel mounting, also order the mounting kit ("Other N-TRON Products Available Through Opto 22" on page 3).

All switches include N-View monitoring software, an OPC server providing switch diagnostic and performance data to OPC clients.

All wired switches in the 700 series and 500-A series include Virtual Local Area Network (VLAN), Quality of Service (QoS), port trunking, port mirroring, and Internet Group Management Protocol (IGMP) snooping. With IGMP snooping, the unit filters and forwards multicast messages to reduce network traffic, which is a requirement on networks with EtherNet/IP™ devices (such as Allen-Bradley® RSLogix®-based PLCs).

Products

Opto 22 stocks five N-TRON products for industrial use: one wireless access point and four Ethernet swtiches.

Wireless Access Point

The **N-TRON702-W** wireless access point is ideal for wireless local area networks (LANs) in an industrial setting. Opto 22 has tested this AP and highly recommends it for use with Wired+Wireless™ SNAP PAC controllers and brains.

In addition to its excellent reliability in harsh physical situations, the N-TRON702-W matches Opto's Wired+Wireless options by supporting 802.11a, b, and g network standards and WPA2/TKIP, WPA/AES, and WEP security standards.

Wired Ethernet Switches

N-TRON708TX and **N-TRON708FX2-ST**—These 700 series switches add several features to the impressive list already mentioned. They include ESD and surge protection diodes on all ports, a configurable alarm contact, N-Ring technology, Rapid Spanning Tree Protocol (RSTP), Dynamic Host Configuration

Part Numbers

Part	Description
N-TRON702-W	Wireless access point
N-TRON708TX	Fully managed switch, 8 copper ports
N-TRON708FX2-ST	Fully managed switch, 6 copper ports, 2 fiber optic ports, multimode, ST connectors
N-TRON508TX-A	Managed switch with advanced features, 8 copper ports, plug & play
N-TRON304TX-N	Unmanaged switch, 4 copper ports

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Protocol (DHCP), and full SNMP (Simple Network Management Protocol) and web browser management. These two switches are identical except for their ports:

- N-TRON708TX has eight 10/100 BaseTX RJ-45 copper ports.
- N-TRON708FX2-ST has six 10/100 BaseTX RJ-45 copper ports and two 100BaseFX fiber optic ports with ST connectors.

N-TRON508TX-A—This plug-and-play managed switch in the 500-A series offers eight 10/100 BaseTX RJ-45 copper ports and advanced management features.

N-TRON304TX-N—This compact, unmanaged 300-series industrial switch has four 10/100 BaseTX RJ-45 copper ports.

Other Available N-TRON Products

Other N-TRON products are also available through Opto 22. See page 3 for a list.

Specifications

General Specifications for Wired Switches

- 2,000,000 hours MTBF
- FCC Part 15 Class A
- UL Listed (US, Canada) Class I, Div 2, Groups A, B, C, D, T4A
- Shock: 200 g @ 10 ms
- Vibration/Seismic: 50 g, 5–200 Hz, Triaxial

NOTE: Specifications differ for the N-TRON702-W wireless access point. See the data sheet for details.

For individual unit specifications, see the unit's data sheet on our website, www.opto22.com. Data sheets contain full descriptions, specifications, and drawings for each product.

Product Warranty

N-TRON products carry a 3-year limited warranty from the date of purchase. To minimize downtime in the field, this warranty includes advance replacement for covered products.

Opto 22 customers should contact Opto 22 with any warranty questions.

For warranty details, see the *N-TRON Limited Warranty*, form #1895.

Documentation

Data sheets and user's guides are on our website, www.opto22.com. The fastest way to locate a document is to search on its form number, shown in the table below.

Product	Data Sheet	User's Guide
N-TRON702-W	1879	1885
N-TRON708TX	1880	1884
N-TRON708FX2-ST	1881	
N-TRON508TX-A	1878	1883
N-TRON304TX-N	1833	1882

In addition, you may need form 1894, the *N-View OPC User's Manual*, also available at www.opto22.com.

Why Buy from Opto 22?

When you buy these N-TRON switches through Opto 22, you get exactly the same industrial-quality switches at the same price you would through the manufacturer. But you get more.

- You get the convenience of immediate shipping, together with your Opto 22 products.
- You have the confidence of knowing we've tested these switches with our products and recommend them for your industrial application.
- And product support for your system is simplified, too: just call Opto.

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Other N-TRON Products Available Through Opto 22

In addition to the switches listed on the first page, which we carry in stock, you can also order the following N-TRON products through Opto 22.

Data sheets with full descriptions, specifications, and diagrams are on our website, www.opto22.com. The easiest way to find one is to search on its form number.

Part Number	Description	Data Sheet	User's Guide
N-TRON716TX	Fully managed switch, 16 copper	1893	1884
N-TRON716FX2-ST	Fully managed switch, 14 copper, 2 fiber, multimode, ST connectors	1892	
N-TRON508FX2-A-ST-S	Managed switch with advanced features, 6 copper, 2 fiber, multimode, ST, plug-and-play, standard temperature rating	1889	1883
N-TRON516TX-A	Managed switch with advanced features, 16 copper, plug-and-play	1890	
N-TRON517FX-A-ST-S	Managed switch with advanced features, 16 copper, 1 fiber, multi-mode, ST connectors, plug-and-play, standard temperature rating	1891	
N-TRON306FX2-N-ST	Unmanaged switch, 4 copper, 2 fiber, multimode, ST connectors	1887	1882
N-TRON308TX-N	Unmanaged switch, 8 copper	1888	
N-TRON302MC-N-ST	Copper-to-fiber media converter, multimode, ST connector	1886	--
N-TRON700-PM	Panel mounting kit for 700 series wired switches	--	--
N-TRON900-PM	Panel mounting kit for 300 and 500 series wired switches	--	--
N-TRON702-W-PM	Panel mounting kit for 702-W, wireless	--	--

More About Opto 22

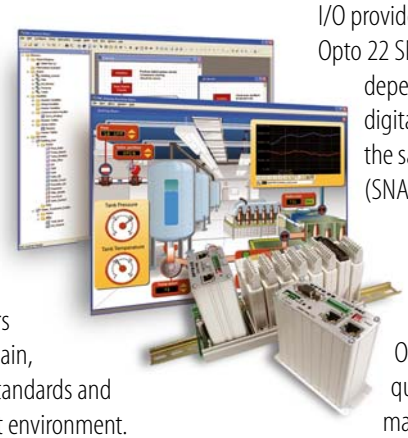
Products

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.

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