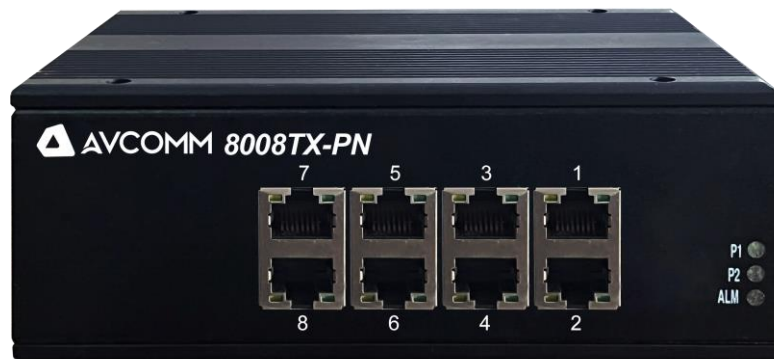# 8008TX-PN
# Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.

**AVCOMM®**

## PROFINET I/O Gigabit Switches

# 8008TX-PN

### Industrial 8-port PROFINET I/O Profile Full Gigabit Managed Ethernet Switch

8008TX-PN is industrial 8-port PROFINET I/O profile managed gigabit ethernet switch. 8008TX-PN offer PROFINET I/O functionality that can be integrated into STEP 7 management tool. 8008TX-PN is full Gigabit Ethernet switch, providing 8 Gigabit ports for upgrading the existing network infrastructure to full gigabit speed. With the powerful features, 8008TX-PN is easily to prioritize, partition and organize user's network and provide reliable and quality services that fit perfectly into factory automation applications.

| PROFINET | |
|---|---|

- PROFINET standard v2.32
- PNIO System Redundancy
- MRP: Media Redundancy
- L2 wire-speed switching engine

| Full Gigabit | |
|---|---|

- 9K Jumbo frames
- 8K MAC forwarding addresses
- Network redundant Port Trunking, Spanning tree (STP, RSTP & MSTP) and Ring Protection (recovery < 20ms)

| L2+ Managed | |
|---|---|

- Port-based /tag-based VLAN, IEEE 802.1ad/QinQ VLAN, Protocol-based VLAN
- SPQ, WRR and SPQ+WRR scheduling; 8 queues per port
- Multicasting support IGMP v1/v2/v3, proxy & snooping
- Multicast/Broadcast/Flooding Storm Control
- IEEE802.1x access control with RADIUS Client

| EN 50121-4 | |
|---|---|

- Support of LLDP
- Dual power input (12~58 VDC) & Reverse power protection
- Hi-POT 1.5kV

| -40~75°C | |
|---|---|

- Din-rail and Wall mounting options
- IP30

### Ordering Information

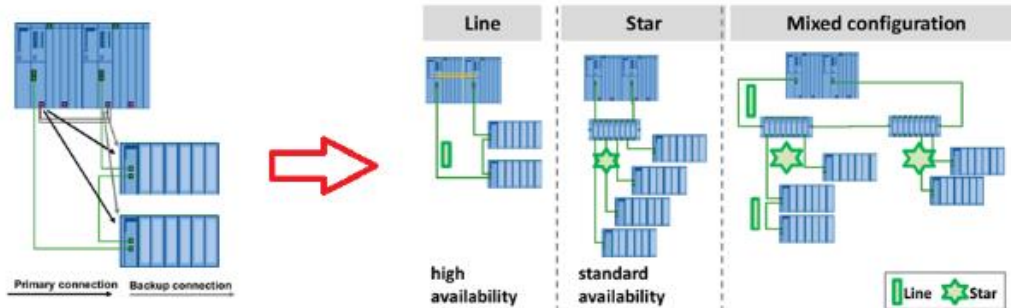| Model Name | Description |
|---|---|
| 8008TX-PN | Industrial 8-port PROFINET I/O Profile Managed Gigabit Ethernet Switch, 8 RJ45 Ports 10/100/1000Base-T(X), DIN-Rail, Dual Power Input 12-58 VDC, -40 to +75°C |

## ✓ Features

- PI introduces an open real-time Industrial Ethernet standard for automation
- Utilizing TCP/IP and IT standards
- A real-time automation technology
- Protect existing investments by seamlessly integrating with fieldbus systems
- PROFINET standard v2.32

**Two-way Simultaneous Communication**

PROFINET full-duplex communication

100 MBit/s full duplex

→ More applications on one cable

**PROFINET Uses IT Standards**

Separate channels are used for IO data and TCP/IP

→ No need to prepare additional networks for TCP/IP

**Topology Property**

PROFINET is "Ethernet Switch"

No need for repeater

Switches connected into a line

→ Design the topology following the production process

**Integrated Diagnostic Function**

All PROFINET devices provide device diagnostics and network diagnostics.

→ Reduce downtime

## ✓ Redundancy in PROFINET

**PNIO System Redundancy (SR)**

SR refers to the communication connection of IO devices via PROFINET with two fault-tolerant CPUs (H CPUs). This communication connection can be established through any topology and is not limited to ring topology, and there are no requirements for switches.

**MRP**

MRP achieves redundant transmission paths by monitoring and controlling the status of the ring Ethernet network.
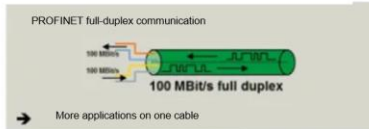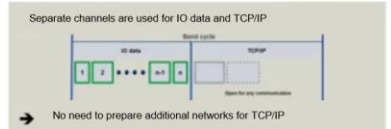
## ✓ Combination topology of SR and MRP

In small-scale SR(comprising only H CPUs and IO devices), both SR open ring and MRP closed ring configurations can achieve high availability and meet the requirements for system redundancy.
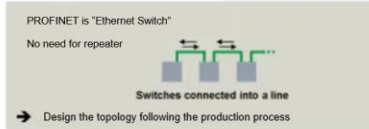
SR open ring

Small-scale SR

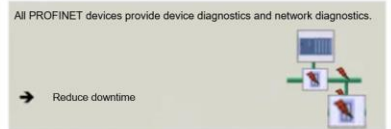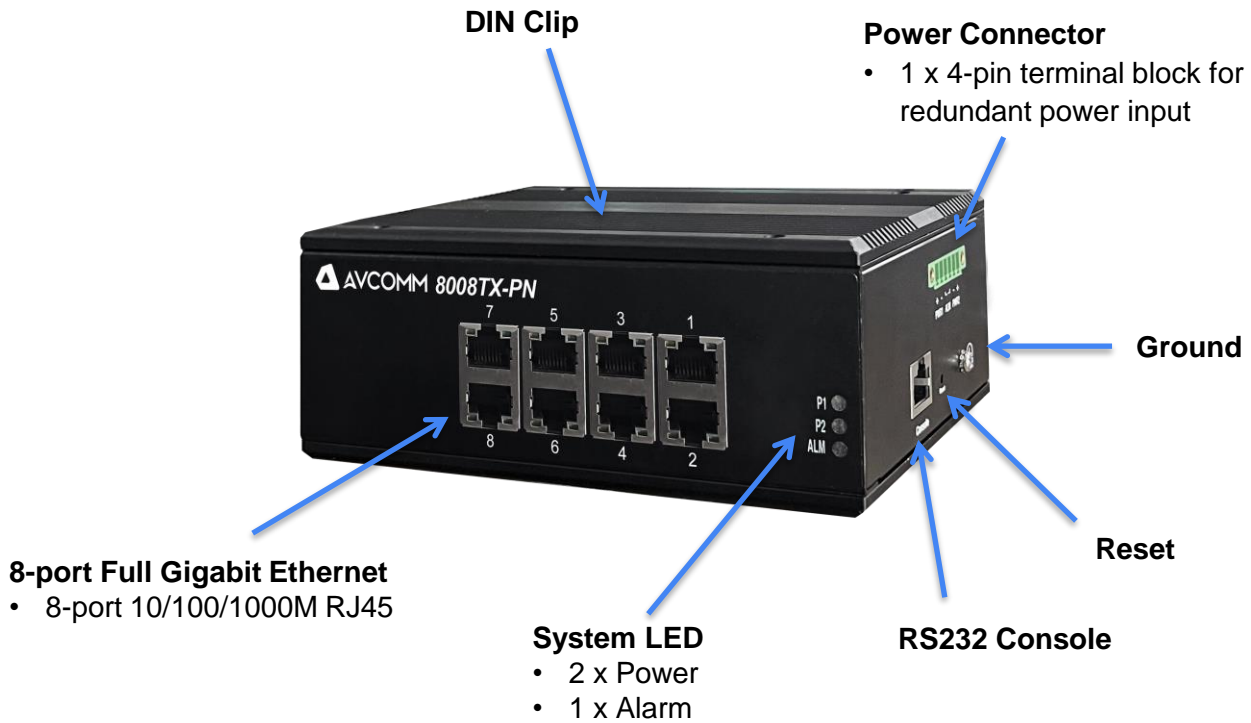MRP ring

| Technology | |
|---|---|
| **Standard** | IEEE 802.3 10Base-T Ethernet |
| | IEEE 802.3u 100Base-TX Fast Ethernet |
| | IEEE 802.3ab 1000Base-T Gigabit Ethernet Copper |
| | IEEE 802.1D STP |
| | IEEE 802.1w RSTP |
| | IEEE 802.1s MSTP |
| | IEEE 802.3x (Full Duplex) and Back-Pressure(Half Duplex) |
| | IEEE 802.1ab Link layer Discovery Protocol (LLDP) |
| | IEEE 802.1p QoS |
| | IEEE 802.1Q tag-based VLANs |
| | IEEE 802.1X authentication Network Access Control |

| Performance | |
|---|---|
| **Operating mode** | Store and forward, L2 wire-speed/non-blocking switching engine |
| **MAC addresses** | 8K |
| **Jumbo frames** | 9K Bytes |

| Interface | |
|---|---|
| **Ethernet Port** | 8008TX-PN: 8 x 10/100/1000Base-T RJ45 |
| **System LED** | 2 x Power: Green On，1 x Alarm: Red On |
| **Reset** | System reboot |
| **Console** | 1 x RS232 in RJ45 for system configuration. Baud Rate: 115200bps |
| **Ethernet Port LED** | Link (Green On), Activity (Green Blinking), Speed 1000M(Amber On), Speed 100M (Off) |
| **MDI/MDIX Auto-crossover** | Support straight or cross wired cables |
| **Ethernet Isolation** | 1500 VRMS 1 minute |
| **Auto-negotiating** | 10/100/1000 Mbps speed auto-negotiation; Full and half duplex |
| **Power Input** | Redundant input terminals |

| Power Requirement | |
|---|---|
| **Input Voltage** | 12-58 VDC |
| **Reverse power protection** | Yes |
| **Transient protection** | > 15,000 watts peak |
| **Power Consumption** | 14W |

| Network Redundancy | |
|---|---|
| **Fast failover protection rings** | Link loss recovery < 20ms<br>Single & Multiple rings; dual-homing; ring-coupling |
| **Spanning Tree Protocol** | IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP |
| **Port Trunk with LACP** | Static trunk or Dynamic via LACP (Link Aggregation Control Protocol) |

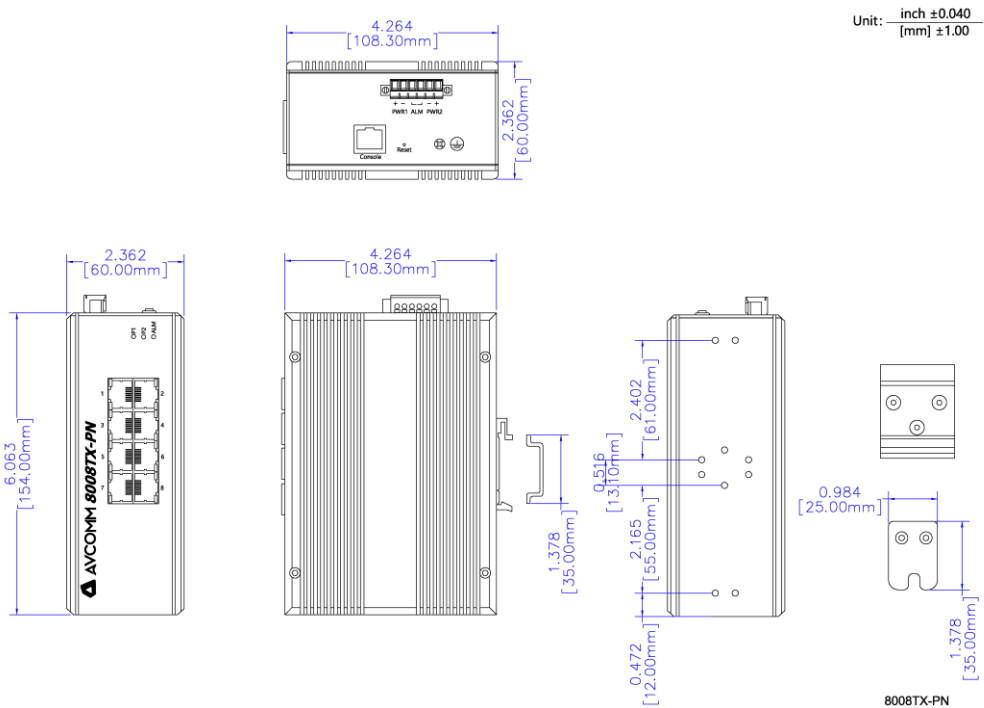| Bridge, VLANs & Protocols | |
|---|---|
| **Flow Control** | IEEE 802.3x (Full Duplex) and Back-Pressure(Half Duplex) |
| **Max VLANs** | 256 |
| **VLAN Types** | Port-based VLANs, IEEE 802.1Q tag-based VLANs |

| Multicast protocols | IGMP v1, v2 and V3<br>IGMP snooping and querying, Immediate leave and leave proxy, Throttling and filtering |
|---|---|
| GVRP | Yes |
| PROFINET | PROFINET standard v2.32 |
| MRP | Media Redundancy Protocol |
| LLDP | IEEE 802.1ab Link layer Discovery Protocol (LLDP) |
| **Traffic management & QoS** | |
| QoS | IEEE 802.1p QoS |
| Number of queues per port | 8 |
| Scheduling schemes | SPQ, WRR, SPQ+WRR |
| Traffic Shaper | Port-based shaping |
| **Security** | |
| Port security | IP and MAC-based access control<br>IEEE 802.1X authentication Network Access Control |
| Storm Control | Multicast/Broadcast/Flooding Storm Control |
| **Management** | |
| User Management interfaces | Cisco-like CLI (command line interface) ,WEB-based Management, SNMP v1, v2c and v3<br>Telnet |
| PROFINET | PROFINET GSD file, PROFINET I/O parameters, I/O cyclic data |
| Management Security | HTTP, HTTPs, SSH |
| Upgrade & Restore | Radius Client for Management,  Configuration Import/Export,  Firmware Upgrade |
| Diagnostic | Syslog, Ethernet Copper connection diagnostic tool |
| MIBs | RFC 1757 RMON 1,2,3,9; RFC 2674 Q-Bridge MIB<br>RFC-1213 MIB-II; RFC-1493 Bridge MIB; RFC 2233 IF MIB |
| DHCP | Client, Server, Relay, Snooping |
| SNTP | Yes |
| System status | Device info/status; Ethernet port status |
| **Mechanical** | |
| Installation | DIN-Rail mounting, Wall mounting |
| Enclosure Material | Steel Metal |
| Dimension | 154mm(H) x 109mm(D) x 60mm(W) without DIN Rail Clip |
| Ingress Protection | IP30 |
| Weight | ~1056g without package |
| **Environmental** | |
| Operating Temperature | -40°C~75°C |
| Humidity | 5%~95% Non- Condensing |
| Storage Temperature | -40°C~85°C |
| MTBF | 463,158 hours |
| Warranty | 5 years |

| Standard | |
|---|---|
| **Vibration, shock & freefall** | IEC68-2-6, -27, -32 |
| **Certification compliance** | CE/FCC; EN 50121-4 |
| **Electrical safety** | UL508 pre-test |
| **EMC** | FCC Part 15, CISPR 22 (EN55022) Class A  IEC61000-4-2, -3, -4, -5, -6 (Level 3) |
| **RoHS and WEEE** | RoHS (Pb free) and WEEE compliant |

## Function interface

**DIN Clip**

**Power Connector**
- 1 x 4-pin terminal block for redundant power input

**Ground**

**Reset**

**8-port Full Gigabit Ethernet**
- 8-port 10/100/1000M RJ45

**System LED**
- 2 x Power
- 1 x Alarm

**RS232 Console**

## Installation dimensions

Unit: inch ±0.040
[mm] ±1.00

4.264 [108.30mm]
2.362 [60.00mm]
2.362 [60.00mm]
4.264 [108.30mm]
6.063 [154.00mm]
2.402 [61.00mm]
0.516 [13.10mm]
2.165 [55.00mm]
1.378 [35.00mm]
0.472 [12.00mm]
0.984 [25.00mm]
1.378 [35.00mm]

8008TX-PN