

Industrial Managed L3 Switch

# ON-8712G-4XFPI

The Optech Network Solutions ON-8712G-4XFPI is a DIN-rail industrial managed Layer 3 Ethernet switch designed for high-bandwidth industrial networks requiring Gigabit connectivity, 10G fiber uplinks, and PoE.

The ON-8712G-4XFPI is a managed industrial Layer 3 PoE switch featuring 8 × Gigabit Ethernet ports and 4 × 10G SFP+ uplinks. It delivers high-speed connectivity, PoE support, static routing, NAT, VLAN, QoS, and advanced network management.

Designed for reliable industrial networking, the switch supports X-Ring Pro, STP/RSTP/MSTP, and ERPS redundancy. Comprehensive security features include 802.1X, MAB, ACL, RADIUS, TACACS+, SNMPv3, SSH, SSL, DHCP Snooping, and IP Source Guard.

Built for demanding environments, it features dual 48–57 VDC power inputs, a 240 W PoE budget, DIN-rail/wall mounting, and an IP40 metal enclosure. With an operating temperature of -40°C to +75°C, it is suitable for automation, utilities, surveillance, transportation, and industrial IoT networks.

## Benefits

- X-Ring Pro Redundancy
- RSTP/STP and ERPS
- Advanced Network Security
- Comprehensive Network Management
- Rugged Industrial Design
- Dual 48–57 VDC Power Inputs

## Features

- 8 Gigabit PoE Ports
- 4 × 10G SFP+ Uplinks
- IEEE 802.3af/at Support
- Industrial Layer 3 Switching
- Static Routing Support
- NAT Traffic Management

## Applications

- Industrial automation networks
- Utility and infrastructure networks
- Industrial surveillance and PoE camera networks
- Transportation and control systems

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- Remote equipment connectivity
- Industrial IoT networks
- High-bandwidth machine and automation networks

## Technical Specification

| | |
|---|---|
| Model | ON-8712G-4XFPI |
| Ethernet Ports | aPort 1–8, IEEE 802.3af/at |
| PoE Ports | 240 W |
| PoE Power Budget | 4 × SFP+ (Mini-GBIC) |
| 10G Uplink Ports | Auto-Negotiation, Full/Half Duplex, Auto MDI/MDI-X |
| Copper Port Features | RS-232, RJ-45 |
| Console Port | 1 channel |
| Digital Input | +13 to +30 V |
| Digital Input — Logic 1 | -30 to +3 V |
| Digital Input — Logic 0 | 8 mA |
| Maximum Digital Input Current | 1 × USB Type-A |
| USB Interface | 1 × relay output, 1 A @ 24 VDC |
| Relay Output | 8-pin screw terminal block |
| Power Connector | Dual 48–57 VDC |
| Power Input | 53–57 VDC for IEEE 802.3at operation |
| Recommended PoE Supply | 24 W @ 54 VDC |
| System Power Consumption | 96 Gbps |
| Switching Capacity | 71.2 Mpps |
| Transmission Rate | 16K |
| MAC Address Table | 12,288 bytes |
| Jumbo Frame | 256 |
| Maximum IGMP Groups | 256 |
| Maximum VLAN Groups | 1–4094 |
| VLAN ID Range | IEEE 802.1Q, IEEE 802.1ad QinQ VLAN Stacking |
| VLAN | 1-to-1, N-to-1; up to 4 mirror sessions |
| Port Mirroring | Supported |
| RSPAN | IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate Leave |

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| | |
|---|---|
| Multicast | IGMP Snooping v1/v2/v3, MLD Snooping, IGMP Immediate Leave |
| Storm Control | Broadcast, Multicast, Unknown Unicast |
| LLDP | IEEE 802.1ab LLDP, LLDP-MED |
| Industrial Protocol | Modbus/TCP |
| Link Aggregation | IEEE 802.3ad Dynamic Port Trunking, Static Port Trunking |
| QoS Scheduling | WRR, Strict Priority, Hybrid Priority |
| Priority Queues | Up to 8 |
| Class of Service | IEEE 802.1p, IP ToS, DSCP |
| Rate Limiting | Ingress and Egress |
| Layer 3 Routing | Static Routing, NAT |
| Network Redundancy | X-Ring Pro, STP, RSTP, MSTP, ERPS |
| Port Security | Static/Dynamic MAC, MAC Learning Limit, MAC Violation Notification |
| Authentication | 802.1X Port/MAC-based, MAB |
| Authentication Servers | RADIUS, TACACS+ |
| IP Security | IP Source Guard, DHCP Snooping, ARP Spoofing Prevention |
| ACL | IP-ACL, MAC-ACL; up to 128 entries |
| Management Protocols | SNMP v1/v2c/v3, Web, Telnet, RMON |
| Management MIBs | Standard MIB-II, Private MIB, Ethernet-Like MIB, RMON MIB |
| Secure Management | SSH 2.0, SSL |
| Software Upgrade | TFTP, SFTP, HTTP, Dual Image |
| Time Synchronization | SNTP Client |
| DHCP | Client, Server, Relay, Option 66/67/82 |
| Network Monitoring | NMS support for remote monitoring and management |
| Enclosure | Metal Shell |
| Protection Class | IP40 |
| Installation | DIN-Rail, Wall-Mount |
| Dimensions (W × H × D) | 57.5 × 152 × 116 mm |
| Operating Temperature | -40°C to +75°C |
| Storage Temperature | -40°C to +85°C |
| Copper SFP Operating Limitation | -40°C to +50°C when using copper SFP ×4 |
| Relative Humidity | 5–95% RH, non-condensing |

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| | |
|---|---|
| Overcurrent Protection | Supported |
| Reverse Polarity Protection | Supported |
| LED Indicators | PWR1, PWR2, SYS, Alarm, R.M.; Link/Speed/Activity/PoE |
| Power Redundancy | Dual DC Power Inputs |
| Power Supply Range | 48–57 VDC |
| Certifications / Standards | Source-referenced: UL 62368, CE, CISPR 32, FCC Part 15B Class A, IEC 61000 series, EN 61000-6-2/-6-4, IEC 60068 series |

| **Layer 2 Networking** | **Network Security** |
|---|---|
| Supports industrial Ethernet networks: | Security functions include: |
| | |
| IEEE 802.1Q tag-based VLAN | 802.1X port-based and MAC-based authentication |
| IEEE 802.1ad QinQ VLAN stacking | MAC Authentication Bypass (MAB) |
| GVRP and GMRP | RADIUS |
| IGMP Snooping v1/v2/v3 | TACACS+ |
| MLD Snooping | Static and dynamic MAC security |
| IGMP Immediate Leave | MAC learning limits |
| Broadcast, multicast and unknown-unicast storm control | MAC violation notification |
| LLDP and LLDP-MED | IP Source Guard |
| Port mirroring and RSPAN | DHCP Snooping |
| Static and dynamic link aggregation | ARP spoofing prevention |
| Modbus/TCP | IP and MAC ACLs |
| STP, RSTP and MSTP | SNMPv3 |
| | SSH 2.0 |
| | SSL |

| **Layer 3 Networking** | **Network Redundancy** | **PoE** |
|---|---|---|
| Provides Layer 3 functionality through: | Support industrial network resilience: | All eight copper Ethernet ports support IEEE 802.3af/at PoE, allowing connected powered devices to receive both network connectivity and power through the Ethernet connection. |
| | | |
| Static routing | X-Ring Pro | |
| Network Address Translation (NAT) | IEEE 802.1D STP | |
| | IEEE 802.1w RSTP | |
| | IEEE 802.1s MSTP | |
| | ERPS (G.8032) | |

| **Fiber Uplinks** | **Service & Control Interfaces** |
|---|---|
| | |
| 4 × SFP+ ports | RS-232 RJ-45 console |
| 10G fiber connectivity | 1 × USB Type-A |
| SFP/SFP+ modules selected according to network distance and fiber type | 1 × digital input |
| | 1 × relay output |

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| Network Management | Interfaces & Connectivity | Standards & Compliance |
|---|---|---|
| Supports local and remote network management: | Copper Ethernet | Referenced Standards and Compliance: |
| | | |
| SNMP v1/v2c/v3 | 8 × 10/100/1000BASE-T/TX RJ-45 | IEEE 802.3 |
| Web management | IEEE 802.3af/at PoE | IEEE 802.3u |
| Telnet | Auto-negotiation | IEEE 802.3ab |
| RMON | Full/Half duplex | IEEE 802.3z |
| Standard and private MIBs | Auto MDI/MDI-X | IEEE 802.3ae |
| DHCP Client/Server/Relay | | IEEE 802.3x |
| DHCP Options 66/67/82 | | IEEE 802.3af/at |
| SNTP | | IEEE 802.1D / 802.1w / 802.1s |
| TFTP/SFTP/HTTP firmware upgrade | | IEEE 802.1Q / 802.1ad |
| Dual-image software support | | IEEE 802.1X |
| NMS-based remote monitoring and management | | IEEE 802.1ab |
| | | IEEE 802.3ad |
| | | UL 62368 |
| | | CE |
| | | CISPR 32 |
| | | FCC Part 15B Class A |
| | | IEC 61000-4 series |
| | | EN 61000-6-2 / EN 61000-6-4 |
| | | IEC 60068-2-27 |
| | | IEC 60068-2-32 |
| | | IEC 60068-2-6 |

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