

# Aquam8512A



## 8+4G/9+3G Port Layer 3 Managed EN50155 Industry Ethernet Switches

- Supports a maximum of 3 10/100/1000Base-TX and 9 10/100Base-TX ports or 4 10/100/1000Base-TX and 8 10/100Base-TX ports, and support a maximum 9 POE ports.
- Supports X-coded M12 connector with Gigabit prots, and D-coded M12 connector with 100M ethernet ports
- Supports optional bypass function
- Supports DT-Ring protocols and RSTP/MSTP,DRP ring network redundancy protection and VRRP
- Supports Layer 3 routing protocols such as OSPF
- Complies with IEC61375 standard, supports TTDP(Train Topology Discovery Protocol)
- Complies with the requirements of EN50155 and EN50121 industrial standards
- IP65 protection class, please contact with our company if IP67 needed

### Overview

The Aquam8512A series switches, specially designed for rail industries, support up to 8 Fast Ethernet interfaces and 4 Gigabit uplink interfaces, support panel mounting, support a wide range of operation temperature(-40°C~70°C+), and meets the EN50155, EN50121 and other rail transit industry standard. The switches support IP65 protection class to meet the requirements of dustproof and waterproof performance, and support M12 interface form to ensure the tightness and the firmness of the connection port, which especially suitable for application that are subject to high vibration and shock.

The Aquam8512A series switches support POE function, support isolated power supply of a wide range (Power input range is up to 24VDC~110VDC), provide 9 fast Ethernet M12 ports with 9 IEEE 802.3at POE+ (compatible with IEEE802.3af) ports, and can be used to power up to 9 IEEE 802.3at compliant powered devices (PDs), eliminating the need for additional wiring. The switches are classified as power source equipment (PSE) and provide maximum POE power up to 30.8 watts per port and a total of 61.6 watts+ for the whole POE port.

The Aquam8512A series switches support Layer 3 routing protocols such as OSPF, and supports IGMP protocol and PIM protocol to implement multicast routing, support DHCP protocols for automatic IP address assignment, and support DRP, DT Ring and RSTP ring network redundancy protocol for flexible networking in order to meet the market demand of railway. The switches can be widely used in PIS, CCTV, video monitoring system and train control system, also apply to any other industrial applications of harsh vibration and shock, and high EMC compatibility.

### Software Functions

#### Switching

- Supports VLAN, PVLAN
- Supports GVRP(pending)
- Supports port trunk
- Supports LACP(pending)
- Supports port flow control
- Supports speed limit, broadcast storm control

#### Redundancy

- Supports VRRP
- Supports DR-ring, DT-ring+, DT-VLAN with the recovery time<50ms
- Supports DRP, with the recovery time<20ms
- Supports RSTP/MSTP

#### Multicast

- Supports IGMP-snooping
- Supports GMRP
- Supports static multicast

#### Routing

- Supports OSPFv2
- Supports static routing
- Supports IGMP
- Supports PIM-SM, PIM-DM(pending)

#### Network Security

- Supports IEEE 802.1x
- Supports HTTPS/SSL, SFTP Client
- Supports SSH
- Supports RADIUS
- Supports TACACS+(pending)
- Supports user classification

## Service Quality

Supports ACL  
Supports 802.1p and TOS/DiffServ, Supports SP,WRR queue scheduling

## Management & Maintenance

Supports Console,Telnet,WEB management methods  
Supports SNMPv1/v2c/v3,Kyvison centralized management  
Supports software upgrade by FTP/TFTP  
Supports RMON  
Supports IP/MAC conflict alarm, power failure alarm, port alarm and ring alarm  
Supports port mirroring  
Supports Syslog  
Supports LLDP

## IP Management

Supports DHCP server/client/server option 82

## Clock Management

Supports SNTP Client

## Characteristic Function

Supports bypass power failure bypass function  
Supports TTDTP protocol(pending)  
Supports R-NAT(pending)  
Supports Auto-Backup and Configuration(pending)

# » Technical Specification

## Technical Parameters

Standard IEEE 802.3i(10Base-T)  
▼ IEEE 802.3i(10Base-T)  
▼ IEEE 802.3u(100Base-TX)  
▼ IEEE 802.3ab(1000Base-T)  
▼ IEEE 802.3x(Flow control)  
▼ IEEE 802.1p(Class of Service)  
▼ IEEE 802.1Q(VLAN)  
▼ IEEE 802.1s(MATP)  
▼ IEEE 802.1w(RSTP)  
▼ IEEE 802.1X  
▼ IEC 61375-2-5

## Switch Properties

Priority Queues	8
Number of VLANs	41k
VLAN ID	1-4093
Number of Multicast Groups	256
Routing Table	3.9K
MAC Table	16K
Packet Buffer	12Mbit
Packet Forwarding Rate	7.1Mpps
Switching Delay	<10us

## Interface

Gigabit Port  
▼ 10/100/1000Base-T(X), M12 connector  
Fast Ethernet Port  
▼ 10/100Base-T(X), M12 connector  
Console Port RS232, M12 connector  
USB M12 connector

## LED

LEDs on Front Panel  
▼ Running LED: Run  
▼ Alarm LED: Alarm  
▼ Power LED: PWR1,PWR2  
▼ Interface LED: Link/ACT  
▼ POE LED: ACT(POE models only)

## Power Requirements

Power Input  
▼ 24VDC(16.8-30VDC), 48VDC(33.6-60VDC), 72-110VDC(50.4-137.5VDC)  
▼ PoE models: 24-110VDC(16.8-154VDC)  
Power Terminal M12-4pin connector  
Power Consumption < 18 W (non-PoE models)  
< 108W (PoE models)  
Overload Protection Support  
Reverse Connection Protection Support  
Redundancy Protection Support

## Physical Characteristics

Housing	Metal
Cooling	Nature cooling, fanless
Protection Class	IP67
Dimensions	▼ 100mm×177mm×111.7mm(H×W×D)
Weight	<2Kg
Mounting	panel mounting

## Environmental Limits

Operating Temperature	-40°C to +70°C
Storage Temperature	-40°C to +85°C
Ambient Relative Humidity	5 ~ 95% (non-condensing)

## Warranty

MTBF	764615h
Warranty	5 years

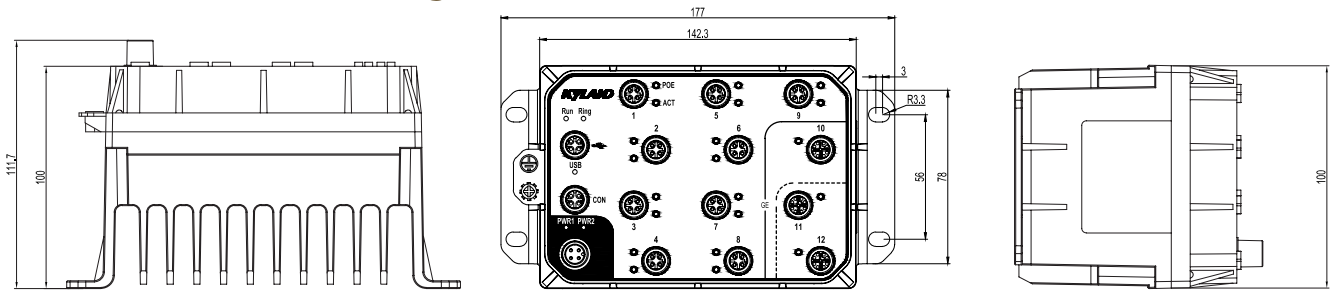
## Approvals

CE, LVD, EN50155, EN50121, EN45545  
For the latest information, please visit the website of Kyland

## Industry Standard

EMI  
▼ FCC CFR47 Part 15,EN55022/CISPR22,Class A  
EMS  
▼ IEC61000-4-2 (ESD) ±6kV (contact), ±8kV (air)  
▼ IEC61000-4-3 (RS) 20V/m (80MHz-2GHz)  
▼ IEC61000-4-4 (EFT) Power Port: ±2kV; Data Port: ±2kV  
▼ IEC61000-4-5 (Surge) Power Port: ±1kV/DM, ±2kV/CM  
▼ IEC61000-4-6 (CS) 10V (150kHz-80MHz)  
▼ IEC61000-4-8(Power frequency magnetic field)50Hz 100A/m  
▼ IEC61000-4-9(Pulsed magnetic field )300A/m  
▼ IEC61000-4-29 (Voltage Short interruptions) 10ms 100%  
Safety  
▼ EN60950-1  
Machinery  
▼ IEC61373 (Vibration and Shock)  
▼ IEC60068-2-32 (Free Fall)

## Mechanical Drawing



## Ordering Information

### Aquam8512A-Ports-PS1-PS2

#### Ports

None PoE models

3GE9T	3 X 10/100/1000BASE-T(X) M12 port; 9 X 10/100BASE-T(X) M12 port;
4GE8T	4 X 10/100/1000BASE-T(X) M12 port; 8 X 10/100BASE-T(X) M12 port;
3GE9P	3 X 10/100/1000BASE-T(X) M12 port; 9 X 10/100BASE-T(X) M12 PoE port;
4GE8P	4 X 10/100/1000BASE-T(X) M12 port; 8 X 10/100BASE-T(X) M12 PoE port;
9T	9 X 10/100BASE-T(X) M12 port;
9P	9 X 10/100BASE-T(X) M12 PoE port;

### Aquam8512A-B-Ports-PS1-PS2

B

4GE models Gigabit ports support two pair of Bypass function;  
3GE models Gigabit ports support a pair of Bypass function;

#### Ports

3GE9T	3 X 10/100/1000BASE-T(X) M12 port; 9 X 10/100BASE-T(X) M12 port;
4GE8T	4 X 10/100/1000BASE-T(X) M12 port; 8 X 10/100BASE-T(X) M12 port;
3GE9P	3 X 10/100/1000BASE-T(X) M12 port; 9 X 10/100BASE-T(X) M12 PoE port;
4GE8P	4 X 10/100/1000BASE-T(X) M12 port; 8 X 10/100BASE-T(X) M12 PoE port;

#### PS1-PS2

None PoE models

H6-H6	72-110VDC(50.4-137.5VDC), redundant power input
L14-14	48VDC(33.6-60VDC), redundant power input
L13-L13	24VDC(16.8-30VDC), redundant power input

#### PoE models

WV-WV2	4-110VDC(16.8-154VDC), redundant power input(pending)
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## Accessories

### Accessory Model

### Description

### Note

M12-A-4P-F	Female cable connector with M12, A-Coding, 4 Pin	Power Interface Connector
M12-A-4P-M	Male cable connector with M12, A-Coding, 4 Pin	Console or USB interface Connector
M12-D-4P-M	Male cable connector with M12, D-Coding, 4 Pin	10/100Base-TX interface Connector
M12-X-8P-M	Male cable connector with M12, X-Coding, 8 Pin	10/100/1000Base-TX Connector
DT-XL-PWR-M12-XXX-3m	3m connecting line with M12 connector for power ports (from M12 to the exposed end)	Power cable with M12 connector