Aquam5/8
5/8 Port Unmanaged EN50155 Industry Ethernet Switch

⟫ Overview

Aquam5/8 as IP65 and unmanaged Ethernet Switch, supports 5 or 8 Fast Ethernet interfaces of with M12 connector to ensure the tightness and the firmness of the connection and ensure reliable operation, especially suitable for application that are subject to high vibration and shock. Aquam5/8 supports panel mounting, supports IP65 protection class to meet the requirements of dustproof and waterproof performance, supports a wide range of operation temperature(-40℃~75℃), and meets EN50155, EN50121, EN55022 Class A&B and FCC CFR47 Part 15 standard requirements, making the product is suitable for the industrial field of various harsh environment, especially rail transportation and automation industry with strict requirements on reliability.

⟫ Key Features

Supports a maximum of 8 10/100Base-TX ports

Supports M12 connectors

Supports panel mounting

Supports redundant power input

Complies with the requirements of EN50155 and EN50121 industrial standards

IP65/67 protection class

⟫ Product Specifications

>Technical Specification
-Technical Parameter

Standard

IEEE 802.3i(10Base-T)

IEEE 802.3u(100Base-TX)

-Switch Properties

MAC Table 2K

Packet Buffer 1Mbit

Packet Forwarding Rate Aquam5: 0.7Mpps

Aquam8: 1.2Mpps

Switching Delay <10us

-Interface

Fast Ethernet Port 10/100Base-T(X) , M12 D-coded connector

-LED

LEDs on Front Panel Power LED: PWR1,PWR2

Interface LED: Link/ACT

-Power Requirements

Power Input 24VAC/DC(12-48VDC/18-30VAC)

110VDC(50.4-137.5VDC)

Power Terminal M12

Power Consumption <4.6W

Overload Protection Support

Reverse Connection Protection Support

-Physical Characteristics

Housing Metal

cooling Nature cooling,fanless

Protection Class IP65/67

Dimensions 74mm×220mm×50.9mm(W×H×D)

Weight <0.9Kg

Mounting panel mounting

-Environmental Limits

Operating Temperature

Storage Temperature

Ambient Relative Humidity

-Warranty

MTBF 3402241h

Warranty Period 5 years

-Approvals

24VAC/DC Model: CE FCC UL61010 EN50155 EN50121 E9

110VDC Model: CE EN50155 EN50121 (pending)

-Industrial 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

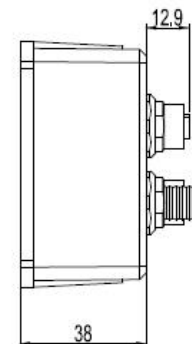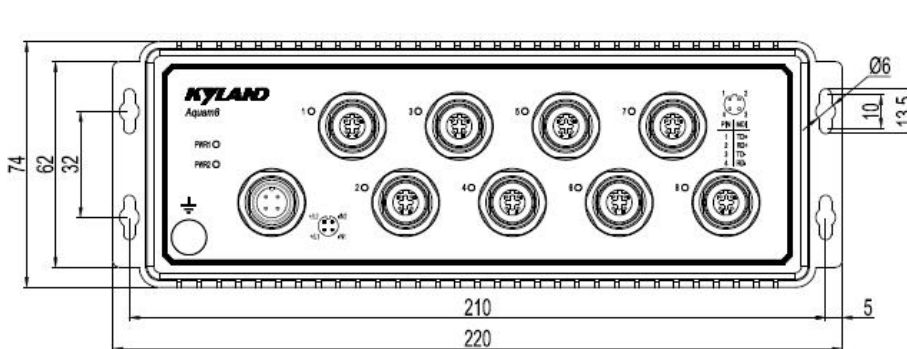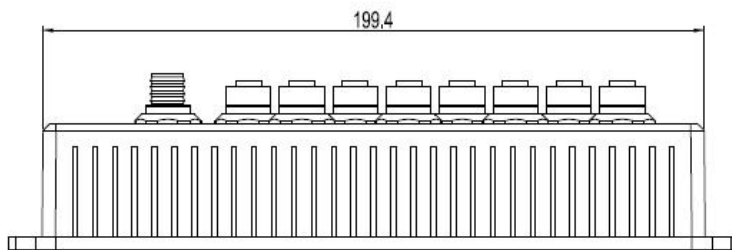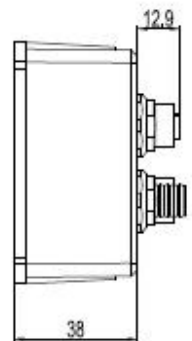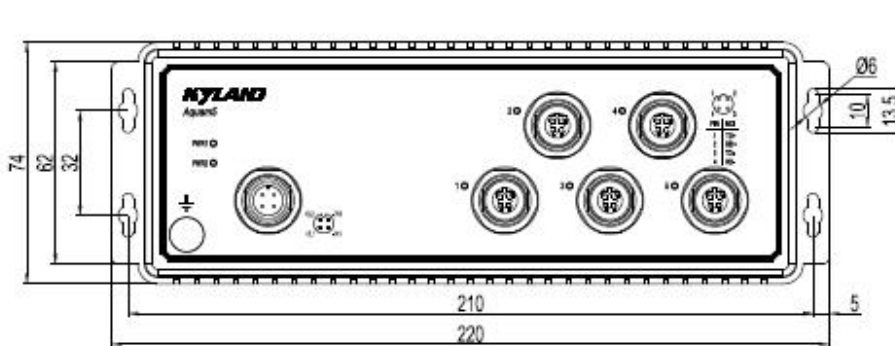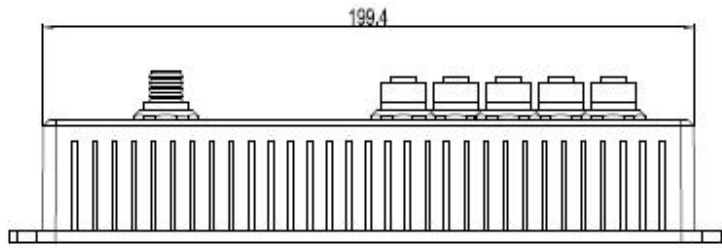IEC61000-4-29 (Voltage Short interruptions) 10ms 100%

Safety EN60950-1

Machinery

IEC61373 (Vibration and Shock)

IEC60068-2-32 (Free Fall)

Mechanical Drawing

Ordering Information

Recommended Models

Product Model	Aquam5-Ports-PS1-PS2
Code Definition	Ordering Codes
Ports	5T = 5 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input
Product Model	Aquam5-H-Ports-PS1-PS2
H: High protection class	Product support IP67 protection class, while others without this mark support IP65 protection class
Ports	5T = 5 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input
Product Model	Aquam5-N-Ports-PS1-PS2
N: Neutral	The product appearance without kyland logo
Ports	5T = 5 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input
Product Model	Aquam5-NH-Ports-PS1-PS2
H: High protection class N: Neutral	Product support IP67 protection class, while others without this mark support IP65 protection class; Product appearance without kyland logo;
Ports	5T = 5 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input

Product Model	Aquam8-Ports-PS1-PS2
Code Definition	Ordering Codes
Ports	8T = 8 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input
Product Model	Aquam8-H-Ports-PS1-PS2
H: High protection class	Product support IP67 protection class, while others without this mark support IP65 protection class
Ports	8T = 8 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input
Product Model	Aquam8-N-Ports-PS1-PS2

N: Neutral	The product appearance without kyland logo
Ports	8T = 8 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input
Product Model	Aquam8-NH-Ports-PS1-PS2
H: High protection class N: Neutral	Product support IP67 protection class, while others without this mark support IP65 protection class; Product appearance without kyland logo;
Ports	8T = 8 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	LV-LV=24VAC/DC(12-48VDC/18-30 VAC), redundant power input

Product Model	Aquam5-Ports-PS1-PS2
Code Definition	Ordering Codes
Ports	5T = 5 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	H6-H6=72-110VDC(50.4-137.5VDC), redundant power input
Product Model	Aquam8-Ports-PS1-PS2
Ports	8T = 8 X 10/100BASE-T(X) M12 port
PS1-PS2 (Power Supply)	H6-H6=72-110VDC(50.4-137.5VDC), redundant power input

Accessories

Accessory Model	Description	Note
M12-A-4P-F	Female cable connector with M12, A-Coding, 4 Pin	Power interface Connector
M12-D-4P-M	Male cable connector with M12, D-Coding, 4 Pin	10/100Base-TX interface 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

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Aquam5G/8G

5G/8G Port Unmanaged EN50155 Industrial Ethernet Switches

- Supports a maximum of 5/8 10/100/1000Base-T(X) ports
- Supports M12 connectors with X coded for Gigabit ports
- Supports redundant power inputs
- Complies with the requirements of EN50155 and EN50121 industrial standards
- IP65 protection class

Overview

As IP65 EN50155 unmanaged industrial Ethernet switches, the Aquam5G/8G support 5/8 1000M Ethernet interfaces with M12 connector to ensure the tightness and the firmness of the connection and ensure reliable operation. They are especially suitable for applications subjected to high vibration and shock. The Aquam5G/8G have a wide operation temperature of -40°C to 75°C and support panel mounting. The IP65 protection class meets the requirements of dustproof and waterproof performance. The Aquam5G/8G fulfill EN50155, EN50121, EN55022 Class A&B and FCC CFR47 Part 15 standards which makes the products suitable for the industrial field of various harsh environment, especially rail transportation and automation industry with strict requirements on reliability.

Technical Specification

Technical Parameters

Standard
- IEEE 802.3i(10Base-T)
- IEEE 802.3u(100Base-TX)
- IEEE 802.3ab(1000Base-T)

Switch Properties

MAC Table	16K
Packet Buffer	2Mbit
Packet Forwarding Rate	11.9Mpps
Length of Jumbo	10K Bytes
Switching Delay	<10us

Interface

Fast Ethernet Port
- 10/100/1000Base-T(X), M12 connector

LED

LEDs on Front Panel
- Power LED: PWR1,PWR2
- Interface LED: Link/ACT

Power Requirements

Power Input	24VDC(16.8-30VDC)
	110VDC(50.4-137.5VDC)
Power Terminal	M12
Power Consumption	5.6W@24VDC
	7.1W@110VDC
Overload Protection	Support
Reverse Connection Protection	Support

Physical Characteristics

Housing	Metal
cooling	Nature cooling,fanless
Protection Class	IP65
Dimensions	74mm×220mm×50.9mm(W×H×D)
Weight	<0.9Kg
Mounting	panel mounting

Environmental Limits

Operating Temperature	-40°C to +75°C
Storage Temperature	-40°C to +85°C
Ambient Relative Humidity	5-95% (non-condensing)

Warranty

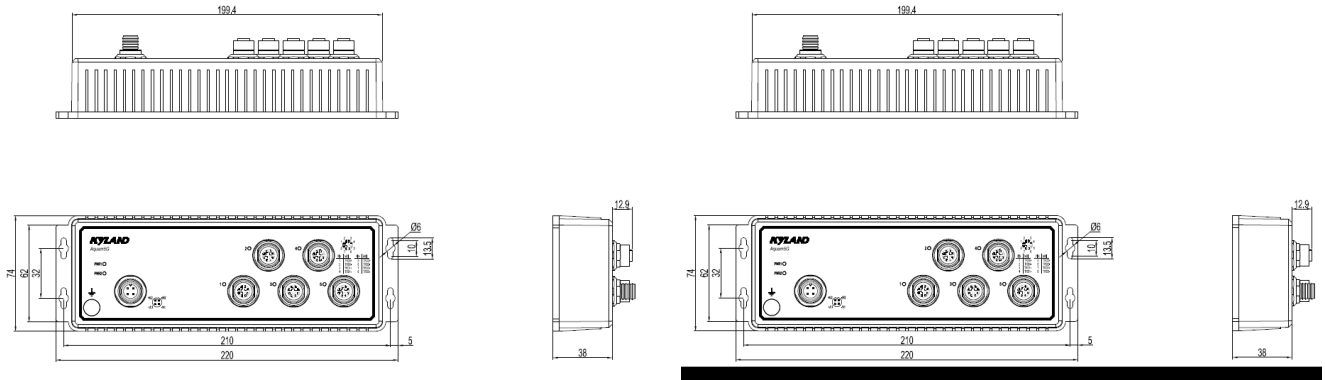|	
MTBF	2388722h
Warranty Period	5 years

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

Aquam5G-Ports-PS1-PS2	
Ports	
5G	5 X 10/100/1000BASE-T(X) M12 port
PS1-PS2 (Power Supply)	
H6-H6	72-110VDC(50.4-137.5VDC), redundant power inputs
L13-L13	24VDC(16.8-30VDC), redundant power inputs

Aquam8G-Ports-PS1-PS2	
Ports	
8G	8 X 10/100/1000BASE-T(X) M12 port
PS1-PS2 (Power Supply)	
H6-H6	72-110VDC(50.4-137.5VDC), redundant power inputs
L13-L13	24VDC(16.8-30VDC), redundant power inputs

⟫ Accessories

Accessory Model	Description	Note
M12-A-4P-F	Female cable connector with M12, A-Coding, 4 Pin	Power Interface Connector
M12-X-8P-M	Male cable connector with M12, X-Coding, 8 Pin	10/100/1000Base-T(X)interface 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

KYLAND

Aquam5S/8S
5/8 Port Unmanaged EN50155 PoE Industry Ethernet Switch

›› Overview

As unmanaged EN50155 industrial Ethernet switches, Aquam5S/8S support 5 or 8 Fast Ethernet PoE/PoE+ (IEEE 802.3af/at) ports with M12 connector to ensure the tightness and the firmness of the connection and ensure the reliable operation which are especially suitable for applications subjected to high vibration and shock. The Aquam5S/8S have a wide operation temperature of -40°C to 75°C and support panel mounting. The IP65 protection class meets the requirements of dustproof and waterproof performance. The Aquam5G/8G fulfill EN50155, EN50121, EN55022 Class A&B and FCC CFR47 Part 15 standards which makes the products suitable for the industrial field of various harsh environment, especially rail transportation and automation industry with strict requirements on reliability.

›› Key Features

Support a maximum of 5 or 8 10/100Base-TX ports

Support M12 connectors with D code for Fast Ethernet ports

Support 5/8 PoE/PoE+ (IEEE 802.3af/at) ports

Support redundant power inputs

Complies with the requirements of EN50155 and EN50121 industrial standards

IP65 protection class

≫ Product Specifications

>Technical Specification
-Technical Parameter

Standard

IEEE 802.3i(10Base-T)

IEEE 802.3u(100Base-TX)

IEEE 802.3af(PoE)

IEEE 802.3at(PoE+)

-Switch Properties

MAC Table 16K

Packet Buffer 2Mbit

Packet Forwarding Rate Aquam8S: 1.2Mpps

Aquam5S: 0.7Mpps

Switching Delay <10us

-Interface

Fast Ethernet Port 10/100Base-T(X)，M12 D-coded connector

-LED

LEDs on Front Panel

Power LED: PWR1,PWR2

Interface LED: Link/ACT

PoE LED: ACT

-Power Requirements

Power Input 24-110VDC（16.8-154VDC）

Power Terminal M23

Power Consumption 11.8W@SW(without PD)

140W@MAX(with 80W PD)

Overload Protection Support

Reverse Connection Protection Support

-Physical Characteristics

Housing Metal

cooling Nature cooling,fanless

Protection Class IP65

Dimensions 238mm×100mm×89.6mm(W×H×D)

Weight <1.9Kg

Mounting panel mounting

-Environmental Limits

Operating Temperature -40 to +70°C

Storage Temperature -40 to +85°C

Ambient Relative Humidity 5 to 95% (non-condensing)

-Warranty

MTBF 2092908h

Warranty Period 5 years

-Approvals

For the latest information, please visit the website of Kyland

-Industrial 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

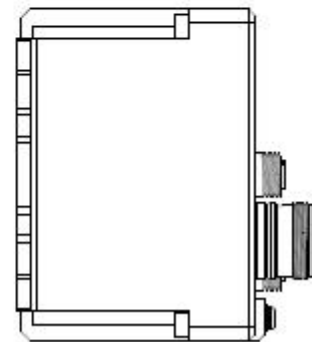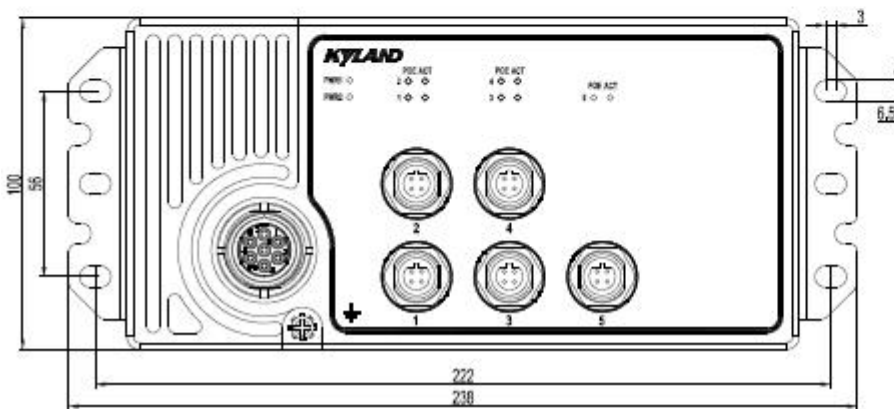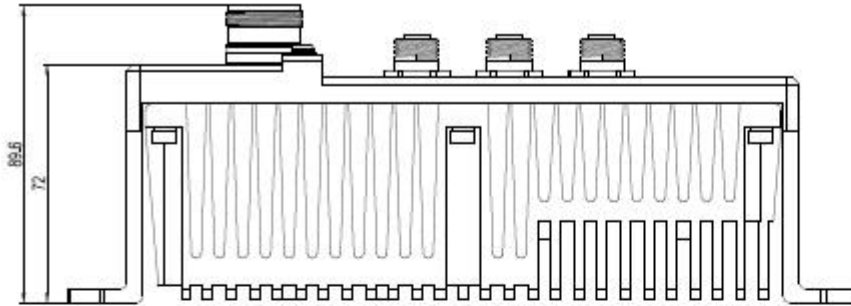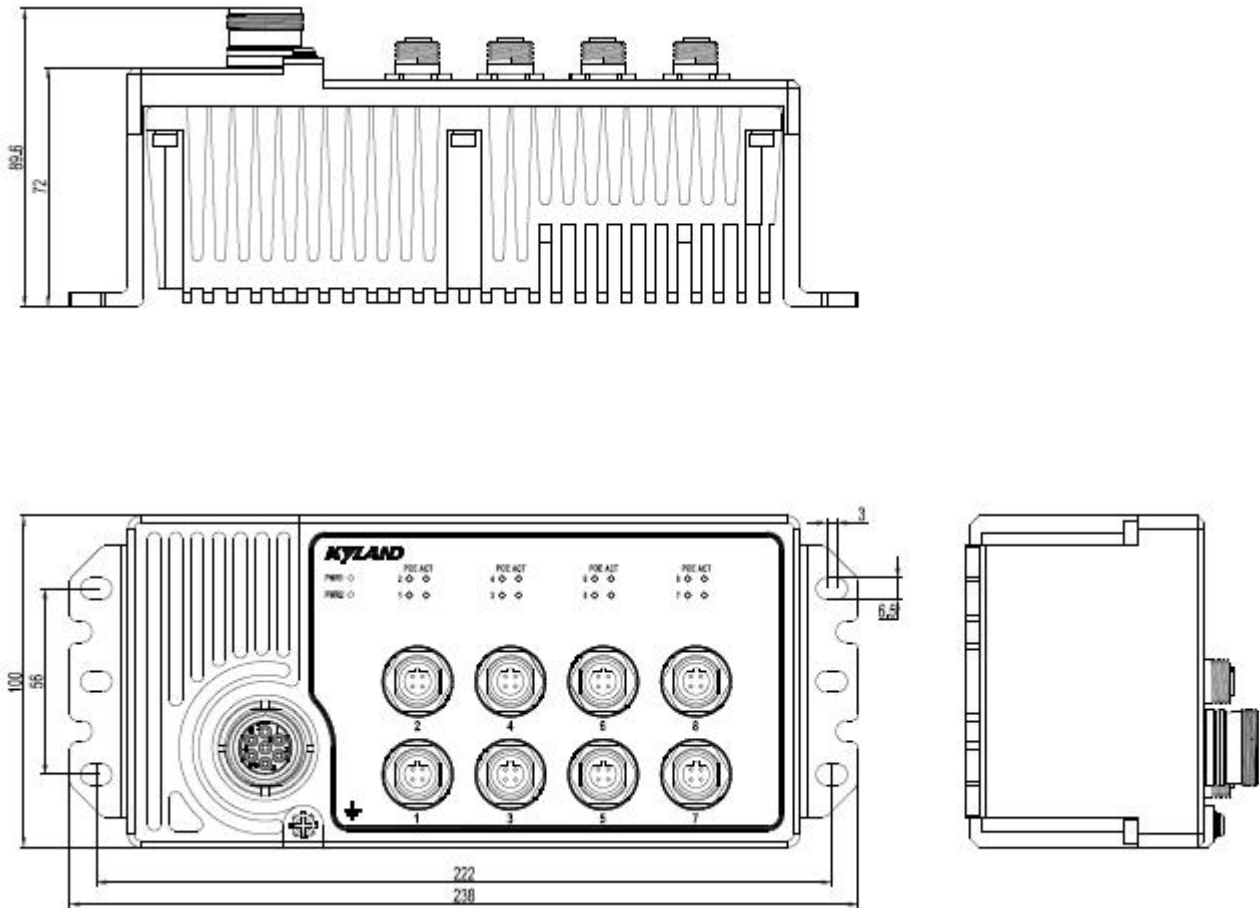IEC61000-4-29 (Voltage Short interruptions) 10ms 100%

Safety

EN60950-1

Machinery

IEC61373 (Vibration and Shock)

IEC60068-2-32 (Free Fall)

⟫ Mechanical Drawing

Ordering Information

Ordering Information

Product Model	Aquam5S-Ports-PS1-PS2
Code Definition	Ordering Codes
Ports	5P=5X10/100BASE-T(X) M12 PoE port
PS1-PS2 (Power Supply)	WV-WV=24-110VDC(16.8-154VDC), redundant power input
Product Model	Aquam8S-Ports-PS1-PS2
Code Definition	Ordering Codes
Ports	8P=8X10/100BASE-T(X) M12 PoE port
PS1-PS2 (Power Supply)	WV-WV=24-110VDC(16.8-154VDC), redundant power input

Accessories

Accessory Model	Description	Note
M23-A-5P-F	Female cable connector with M23, A-Coding, 5 Pin	Power interface Connector
M12-D-4P-M	Male cable connector with M12, D-Coding, 4 Pin	10/100Base-TX interface Connector

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