



## Industrial Unmanaged Ethernet Switch

■ ■ EH7310

RoHS compliant

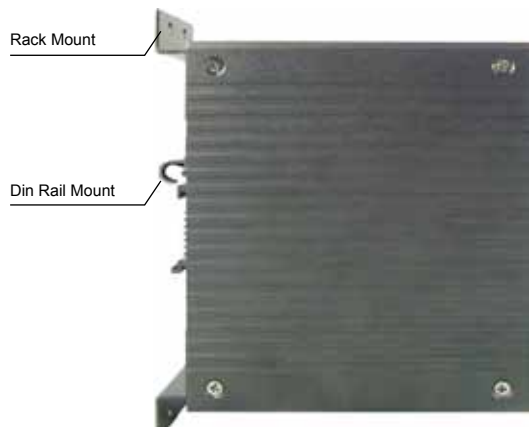
The EH7000 series has been designed for industrial environments, such as in hazardous locations that comply with FCC, UL, and CE standards.

The EH7000 series protects itself from receiving too many broadcast packets. During normal use, broadcast packets will be forwarded to all ports except the source port. However, EH7000 series will discard broadcast or multicast packets if the number of those packets exceeds a threshold in a preset period of time. When the preset period expires (about 800ms), it will then resume receiving broadcast or multicast packets until the threshold is reached again.

The EH7000 series provides two redundant power inputs that can be connected simultaneously to wide-range DC power sources. If one of the power inputs fails, the other live source acts as a backup to provide the EH7000 series power needs automatically.

### Outline

2-port 10/100/1000Base T(X) (copper)  
or 2-port 100Base FX (SC connector)  
or 2-port 1000Base FX (SC connector)



Rack Mount

Din Rail Mount



8-port 10/100Base T(X) (RJ45)  
shielding with LED



Redundant inputs power supply  
(12/24/48 VDC)

PWR 1 or PWR 2  
Failure to Trigger Fault  
(Normally Closed)(1A @ 24VDC)

### Advantages

#### Designed for Harsh Environments

- Extended Operating Temperature Range: -40 ~ 80°C(-40 ~ 176°F) !
  - No rotating fans or mechanical parts inside ensure the highest reliability.
- Wide Power Supply Options: Redundant Dual Inputs !
  - 12/24/48 VDC
- Failure to Trigger Fault Output Relay:
  - Relay output warning for power failure and break alarm. Normally Closed.

#### Advanced Networking Features

- Technologies:
  - Standards:
    - IEEE 802.3 for 10BaseT (10Mbps Ethernet)
    - IEEE 802.3u for 100BaseT(X) & 100BaseFX (Fast Ethernet 100Mbps)
    - IEEE 802.3x for Flow Control
  - Processing Type
    - Store and Forward
  - Flow Control
    - IEEE802.3x Full Duplex, back pressure flow control
- Properties:
  - Support up to 8K MAC addresses with automatic learning and aging.
  - Transmits 802.1Q VLAN and 802.1p priority tagged message transparently.
  - Smart broadcast storm protection.

# Regulatory Approvals and Environmental Type Tests

## EMI Immunity Type Tests

Test	Description		Test Levels	Severity Levels
FCC part 15	-	Subpart B	-	class A
EN55022	-	2006+A1:2007	-	class A

## EMS Tests

Test	Description		Test Levels	Severity Levels
EN61000-4-2	ESD	Contact discharge	8 KV, Criterion A	level 4
		Air discharge	15 KV, , Criterion A	level 4
EN61000-4-3	RS	Enclosure ports	10 V/m (80 - 1000 MHz), Criterion A	level 3
EN61000-4-4	EFT	Power Line	2 KV, Criterion B	level 3
EN61000-4-5	Surge	Line to earth	1 KV, Criterion B	level 2
		Power Line	2 KV, Criterion B	level 3
EN61000-4-6	CS	Line to earth	3 V (0.15 - 80 MHz), Criterion A	level 3
		Power Line	10 V (0.15 - 80 MHz), Criterion B	level 3

## Safety Tests

Test	Description		Rating	Severity Levels
UL60950-1	-	2nd Edition, 2007-03-27	12~48V DC, 1.2A	-
CSA C22.2 No.60950-1-07	-	2nd Edition, 2007-03	12~48V DC, 1.2A	-
CB	-	IEC 60950-1:2005 second version	12~48V DC, 1.2A	-

## Environmental Type Tests

Test	Description		Test Levels	Severity Levels
MIL-STD-810F	Shock	Impact acceleration & Pluse duration	40g @ 11ms	-
MIL-STD-810F	Freefall	8 corners, 12 edges, 6 faces	122 cm	-
MIL-STD-810F	Vibration	Packaged Random waveform	x: 2.4 Grms y: 1.28 Grms z: 3.85 Grms	-
		Operating Random waveform	x: 0.740 Grms y: 0.204 Grms z: 1.04 Grms	-

## Rail Traffic Application

Test	Description		Application	Severity Levels
EN50155	EMC	EN50121-3-2	Railway Application	-
	Environment	EN60068-2-1	Railway Application	-
		EN60068-2-2 EN61373		-
EN50121-4	EMC	-	Railway Application	-

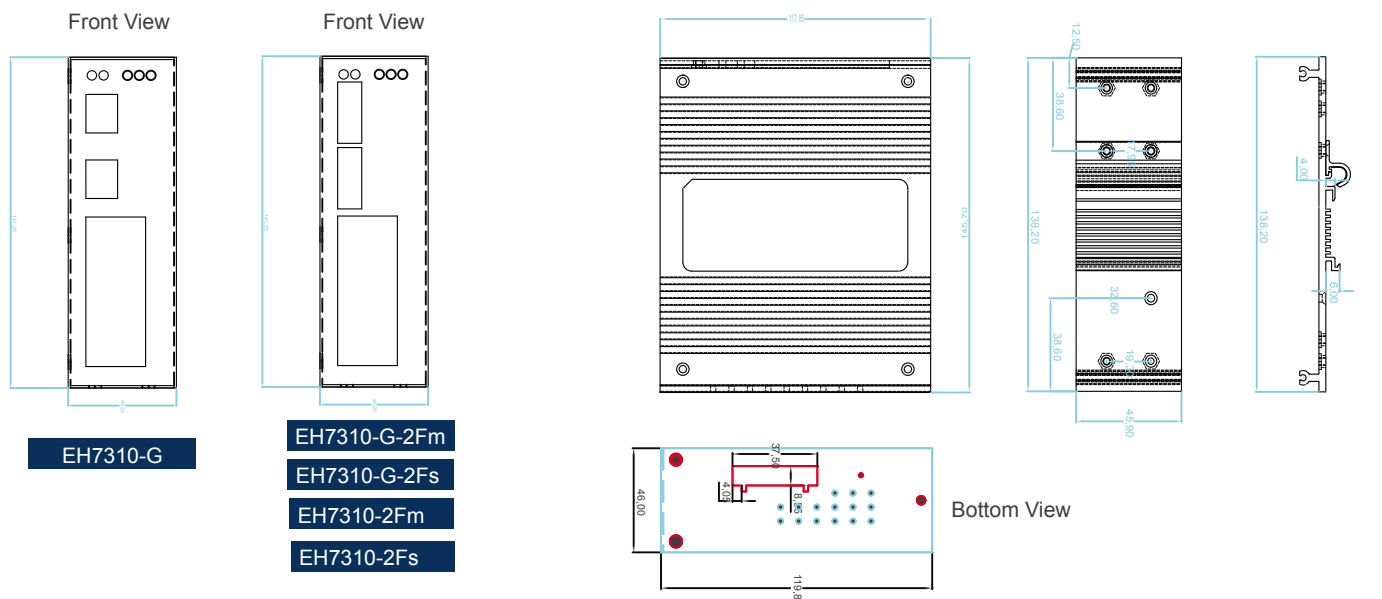
### Atop Technologies, Inc.

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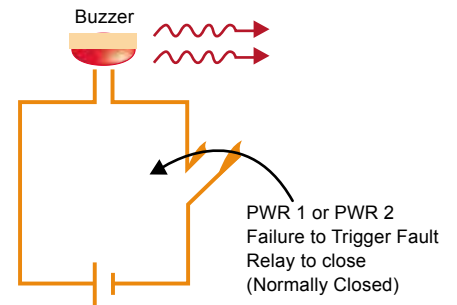
# Mechanical

## Dimensions (unit = mm)



Ordering Information							
Model Name	Port Interface						
Extended Temperature (-40°C to 80°C)	10/100BaseT(X)	100BaseFX		1000BaseFX		Gigabit Ethernet	
		Multi Mode, SC Connector	Single Mode, SC Connector	Multi Mode, SC Connector	Single Mode, SC Connector	10/100/1000 BaseT(X)	100/1000 Base SFP
EH7310-G	8	---	---	---	---	2	---
EH7310-G-2Fs	8	---	---	---	2	---	---
EH7310-G-2Fm	8	---	---	2	---	---	---
EH7310-2Fs	8	---	2	---	---	---	---
EH7310-2Fm	8	2	---	---	---	---	---

General Specifications	
<b>Technology</b>	
<b>Standards</b>	IEEE 802.3 10-Base-T IEEE 802.3u 100Base-TX IEEE 802.3 100Base-FX IEEE 802.3 1000Base-SX, LX
<b>Switching Latency</b>	5 $\mu$ S
<b>Flow Control</b>	IEEE 802.3x Flow Control and Back-pressure
<b>Processing type</b>	Store-and-Forward
<b>Interface</b>	
<b>RJ45 Ports</b>	10/100BaseT(X), Auto MDI/MDI-X 10/100/1000BaseT(X), Auto MDI/MDI-X (Uplink)
<b>Fiber Ports</b>	100BaseFX ports (SC connector) (Uplink) 1000BaseFX ports (SC connector) (Uplink)
<b>LED Indicators</b>	LNK/ACT(Steady green-Link up/Blinking-data transmitting & receiving) PWR1(Green), PWR2(Green), Fault(Red)
<b>Power Requirements</b>	
<b>Dual Inputs Voltage</b>	12/24/48 VDC
<b>Dual Inputs Current</b>	0.49A @ 24VDC
<b>Overload Current Protection</b>	0.8A @ 12VDC
<b>Connection</b>	Removable dual 3-pin Terminal Block for power input
<b>Reverse Polarity Protection</b>	Present
<b>Consumption</b>	11.875 Watts
<b>Physical Characteristics</b>	
<b>Housing</b>	IP50 protection (>2.5mm objects, IEC60529), metal case(AL6063T5).
<b>Dimensions (W x H x D)</b>	53.4mm x 145.7mm x 119.9mm (2.10 x 5.74 x 4.72 in)
<b>Weight</b>	Approx 1000 g
<b>Installation</b>	DIN-Rail mount kit, wall mount kit (optional)
<b>Environmental Limits</b>	
<b>Operating Temperature</b>	-40 ~ 80°C (-40 ~ 176°F)
<b>Storage Temperature</b>	-40 ~ 85°C (-40 ~ 185°F)
<b>Ambient Relative Humidity</b>	5% to 95% (non-condensing)
<b>Notes:</b> For UL policy the maximum operating temperature is 50°C, and the human body can tolerate maximum temperature is 70°C.	
<b>Regulatory Approvals</b>	
<b>Safety</b>	UL60950-1, CSA C222, No.60950-1-07, CB
<b>EMI</b>	FCC part 15, CISPR (EN55022) class A
<b>EMS</b>	EN61000-4-2 (ESD) level 4, EN61000-4-3 (RS) level 3 EN61000-4-4 (EFT) level 3, EN61000-4-5 (Surge) level 2/3 EN61000-4-6 (CS) level 3
<b>Shock</b>	MIL-STD-810F
<b>Free Fall</b>	MIL-STD-810F
<b>Vibration</b>	MIL-STD-810F
<b>MTBF</b>	201,976 hrs (23.06 Years) (Data base: MIL-HDBK-217F, GB 25°C )
<b>Warranty</b>	5 years (please visit <a href="http://www.atop.com.tw">www.atop.com.tw</a> for more details)



Relay ON-OFF Status					
No.	PWR1	PWR2	Fault LED	Relay contact	External Buzzer
1	off	off	off	closed	buzzing
2	off	on	red	closed	buzzing
3	on	off	red	closed	buzzing
4	on	on	off	open	no buzz

Optical Fiber Specifications							
Speed	Fast Ethernet 100BaseFX			Gigabit Ethernet 1000BaseFX			
	Multimode	Single Mode	Single Mode	Multimode	Multimode	Single Mode	Single Mode
Mode							
Connectors	SC	SC	SC	SC	SC	SC	SC
Typical Distance	2 km	2 km	30 km	550 m	300 m	10 km	70 km
Cable Size Core/Cladding	50/125 $\mu$ m	62.5/125 $\mu$ m	9/125 $\mu$ m	50/125 $\mu$ m	62.5/125 $\mu$ m	9/125 $\mu$ m	9/125 $\mu$ m
Wavelength	1,310 nm	1,310 nm	1,310 nm	850 nm	850 nm	1310 nm	1550 nm
Max. TX Power	-14 dBm / -14 dBm	-8 dBm	5 dBm	-4 dBm	-4 dBm	-3 dBm	5 dBm
Min. TX Power	-23.5 dBm / -20 dBm	-15 dBm	0 dBm	-9.5 dBm	-9.5 dBm	-9.5 dBm	-9.5 dBm
RX Sensitivity	-31 dBm	-34 dBm	-36 dBm	-18 dBm	-18 dBm	-20 dBm	-24 dBm
Link Budget	7.5 dB / 11 dB	19 dB	36 dB	8.5 dB	8.5 dB	10.5 dB	24 dB
Saturation / overload	0 dBm	0 dBm	0 dBm	0 dBm	0 dBm	-3 dBm	-3 dBm
Typical Budget							