



Outstanding 802.3at PoE+ Network Solution for  
Hardened Environment  
Select your new network engine!

As a leading provider of network equipment for Industrial Communication, Benchu group understands the importance of providing stability and safety that can adapt to your business' needs, whether in the Safe City, Traffic, Mining, industrial automatic, Power or energy. The IES7211-4PFE1FE-DC with IP30 protection class and meet EMC industrial level 3 requirements. The product supports wide power input voltage range of 48-54VDC redundant power with reverse polarity protection and wide operating temperature range of -30 to the +75°C.

The switches can be easily installed on a DIN rail as well as in distribution boxes. In addition to its compact size for space-saving installation, each product has passed a 100% burn-in test to ensure its quality high-reliability transmission. The IES7211-4PFE1FE-DC is equipped with 5-10/100BASE-T fast ethernet ports with redundant power input. Its 4 fast ethernet ports are integrated with an 802.3at PoE+ injector function. It offers a safe and reliable power solution for outdoor industrial environments deploying Power over Ethernet networks

Plug-and-play functionality simplifies the installation process, Users can quickly identify and resolve connectivity issues without needing to delve into complex configurations, ensuring their network remains operational with minimal effort.

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## Highlights

Benchu group IES7211-4PFE1FE-DC industrial PoE+ switch, featuring 4-10/100BASE-T 802.3at PoE+ ports with each port powering up to 30 watts, with 1-10/100MGBASE-T ethernet port uplink, Its in a IP30 rugged metal case, can be installed in any difficult environment. Support 8kV lightning protection, ensures high network availability by preventing downtime caused by power surges. support redundant power input, ensures continuous operation even if one power source fails, the risk of network outages due to power supply failure is significantly reduced. DIN-Rail mounting allows for compact and organized installation of industrial PoE switches, maximizing the use of available space. Wide temperature range, low-power consumption and fanless design, It is able to operate reliably, stably and quietly in the temperature range from -30 to 75 degrees C.

#### Key features include:

- Complies with IEEE 802.3af/at Power over Ethernet
- Up to 4 ports of IEEE 802.3af/802.3at devices powered
- PD alive check function
- Each port supports 52V DC power to PoE powered device
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- Hardware-based 10/100Mbps auto-negotiation and auto MDI/MDI-X
- Flow control for full duplex operation and back pressure for half duplex operation
- Integrates address look-up engine, supporting 8K absolute MAC addresses
- Automatic address learning and address aging
- Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)

#### Build a future-proof network with BENCHU:

- Solid performance with non-blocking architecture, 2K MAC addresses, 1.6Gbps Backplane bandwidth, 0.75Mpps Switch Throughput
- Up to 4 ports of IEEE 802.3af/802.3at devices powered
- PoE+ support on all ports, PoE power up to 30 watts for each PoE port

#### Fast Access

- The remote units provide the full line-speed forwarding capability. All ports support non-blocking data packet forwarding, providing users with high-speed access experience and meeting the requirements of high-bandwidth services such as HD video conferencing, online video, and large file download.

#### BENCHU Quality and Reliability

- Low power consumption, fanless.
- High strength aluminum alloy shell
- IP30 Industrial design
- Contact Discharge 8KV DC; Air Discharge 15KV DC
- -30 to 75 degrees operating temperature
- Dual power input
- Din Rail mounting installation
- CE, FCC, RoHS,CB.

#### Easy operation and maintenance

- Hardware-based 10/100Mbps auto-negotiation and auto MDI/MDI-X.
- Flow control for full duplex operation and back pressure for half duplex operation
- Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)
- Din Rail mount installation and dual power input
- Plug and play, No configuration required
- The user-friendly panel can show the device status through the LED indicator of PWR, Link.

## Hardware at a Glance

FRONT				REAR	SIDE
Model Name	Form-Factor	10/100Base-T RJ45 ports	PoE+ 802.3at Ports	Power Supply	Fans
IES7211-4PFE1FE-DC	Din Rail Mounting	5	4 PoE+	Dual power input DC48~54V	Fanless

## Performance at a Glance

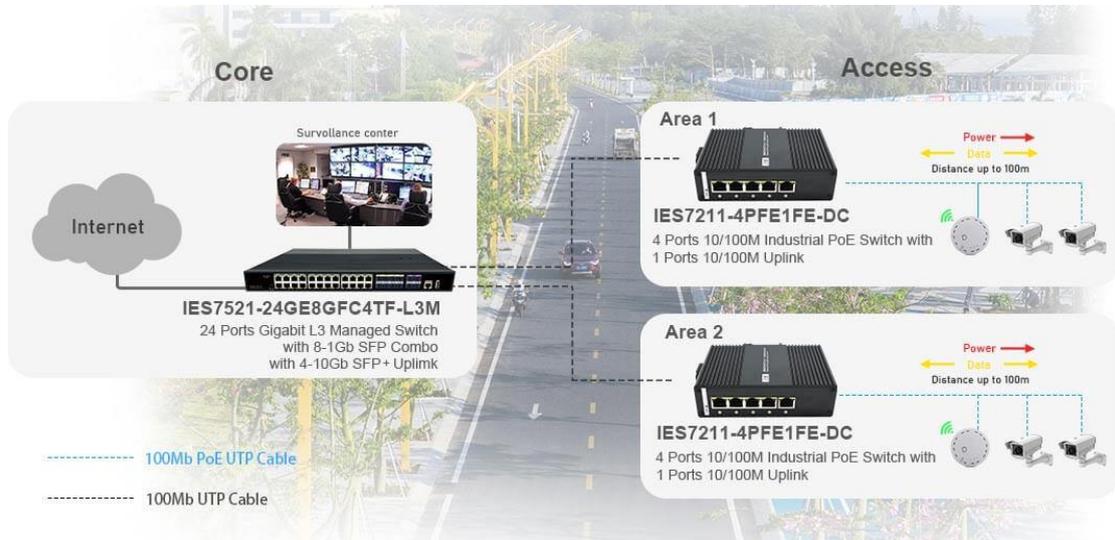
Model Name	Chip	Packet buffer	Fabric	Switch Throughput	MAC Address Table	Latency (Max Connection Speed)
IES7211-4PFE1FE-DC	Realtek	0.4MB	1.6Gbps	0.75Mpps line-rate	2K MAC	100M Copper: <8.6μs

## Features and Benefits

Hardware Features	
10/100BASE-T Copper Ethernet PoE+ Connections	Support Surveillance, Wi-Fi AP, VoIP, Access control and Speaker, deployments, scal-able for future growth. Never face the risk of running out of PoE ports.
100BASE-T Copper Ethernet Connections	One 100M RJ45 ports for aggregation to the network core.
Redundant Power Input	By having a secondary power supply, the switch can seamlessly switch to the backup power, maintaining network connectivity without interruption.
8kV Lightning Protection	Enhanced protection minimizes the risk of costly repairs and replacements, maintaining network stability and reliability in environments prone to lightning activity.
Wide Operating Temperature Range of -30 to 75°C	Remains reliable in both extremely cold and hot environments. Reliable performance in extreme conditions reduces downtime and maintenance needs, ensuring continuous operation.

## Target Application

### Network Convergence

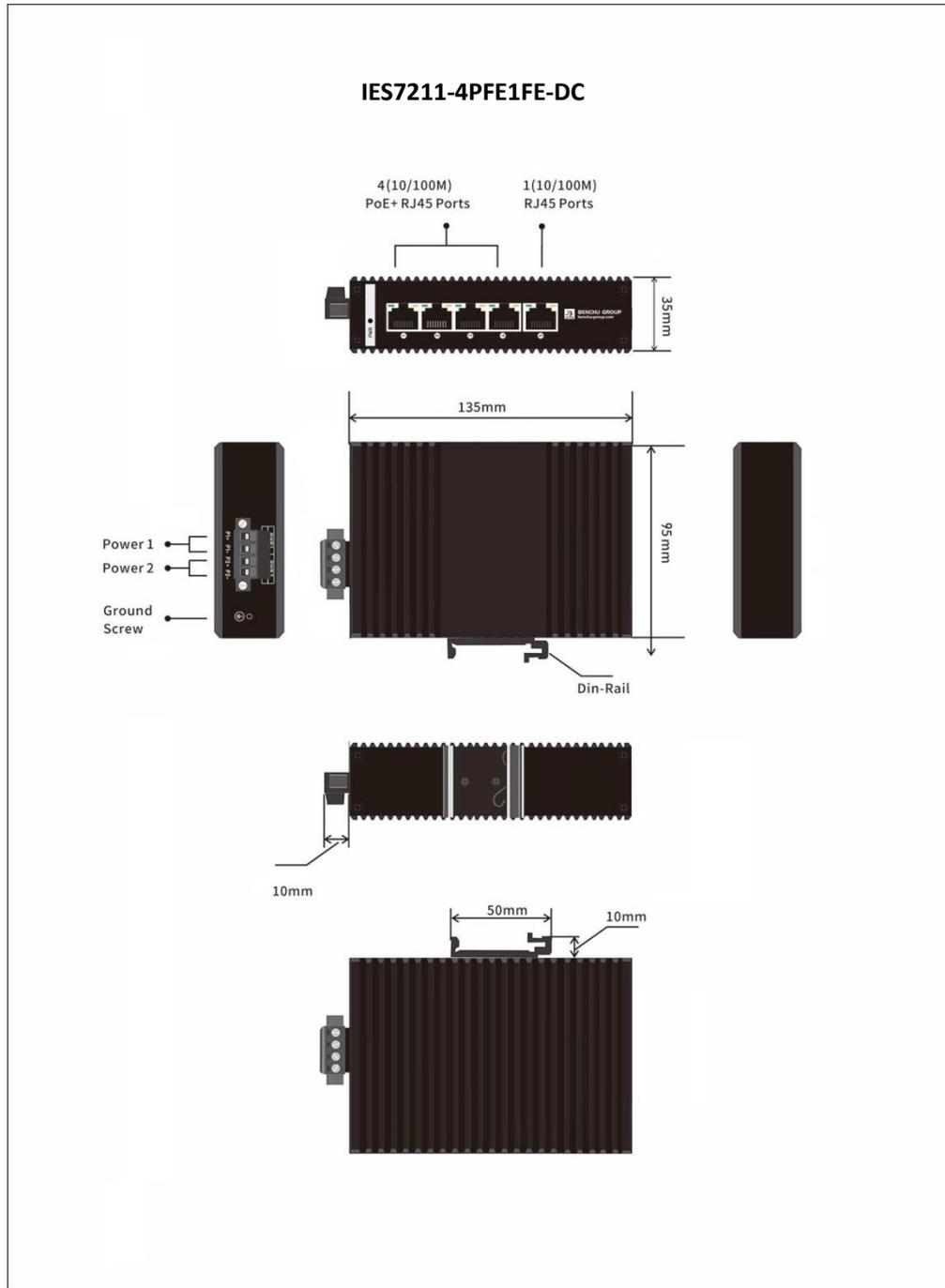


Within industry organizations — especially in the Industrial Park, industrial automation, Power, Public safety and energy — there is growing deployment of VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, secure access door locks, and other IoT devices. The dense proximity of these devices requires Industrial network switches capable of supporting PoE so a network manager can add power-hungry devices to the network with a single wire for power AND connectivity. Wireless access points and pan-tilt-zoom surveillance cameras with features such as night vision and built-in motion tracking also require PoE+ power (802.3af), Severe environments require industrial grade network switches with stronger adaptability, increasing the power demands on Industrial PoE switches.

The BENCHU GROUP 5-port Industrial PoE Switches support dense deployments of these modern high-power PoE+ devices. They offer enhanced performance and a focus on usability within Industrial environments:

- Provide 4-10/100M 802.3af/at PoE+ ports
- 1-10/100M RJ45 ports for aggregation to the network core
- Dual power input --- the risk of network outages due to power supply failure is significantly reduced.
- Wide Operating Temperature Range of -30 to 75°C
- Contact Discharge 8KV DC; Air Discharge 15KV DC
- High strength aluminum alloy shell, IP30 Industrial design
- Excellent features such as fast response, resisting vibration, enduring dust, adapting for the hard environment, etc.
- Plug and play, No configuration required --- simplifies the installation process
- Limited Lifetime\* Warranty, Tech support

## Structure Diagrams



Technical Specifications		IES7211-4PFE1FE-DC
10M/100M RJ-45 copper ports		5
PoE / PoE+ ports		4 PoE+
Power over Ethernet		
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE Backward compatible with IEEE 802.3af Power over Ethernet	
PoE Power Supply Type	End-span: 1/2 (+), 3/6 (-)	
PoE Power Output	Per port 52V DC, 300mA. max. 15.4 watts (IEEE 802.3af) Per port 52V DC, 600mA. max. 30 watts (IEEE 802.3at)	
Performance Specification		
Chip	Realtek	
Packet buffer memory (Dynamically shared across only used ports)	0.4 MB	
Forwarding modes	Store-and-forward	
Bandwidth	1.6 Gbps	
Packet forwarding rate (64 byte packet size) (Mpps)	0.75Mpps	
MAC address database size (48-bit MAC addresses)	2K	
Mean Time Between Failures (MTBF) @ 25°C	152,315 hours	
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.314µs; 8.412µs; 8.551µs	
IEEE Network Protocols		
<ul style="list-style-type: none"> <li>• IEEE 802.3i 10BASE-T</li> <li>• IEEE 802.3u 100BASE-T</li> </ul>	<ul style="list-style-type: none"> <li>• IEEE 802.3af PoE</li> <li>• IEEE 802.3at PoE+</li> <li>• IEEE 802.3x Full-Duplex Flow Control</li> </ul>	
Monitoring		
LEDs	Yes	
Per port	Speed, Link, Activity; or PoE in different mode	
Per device	Power	

### Physical Specifications

Dimensions	135 x 95 x 35 mm (5.31 x 3.74 x 1.38 in)
Weight (includes packaging accessories)	0.55 kg (1.21 lb)
Power Input (Dual power input)	DC 48~54V
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	6W
Idle power consumption (all ports link-down standby) (Watts)	4W
Fan	Fanless

### Environmental Specifications

#### Operating

Operating Temperature	-30° to 75°C (-22° to 167°F)
Humidity	95% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum

#### Storage

Storage Temperature	-40° to 85°C (-40° to 185°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum

### Executive Standard & Protection

#### Lightning Protection

IEC61000-4-3 (RS)	10V/m (80~1000MHz)
FCC Part 15/CISPR22 (EN55022)	Class B
CE	EN55032,EN55035
IEC61000-6-2	Common Industrial Standard
IEC61000-4-9 (Pulsed magnet field)	1000A/m
IEC61000-4-10 (Damped oscillation)	30A/m, 1MHz
IEC61000-4-12/18 (Shockwave)	CM 2.5kV, DM 1kV
IEC61000-4-4(EFT)	Power cable:±4kV, Data cable: ±2kV
IEC61000-4-16(Common-mode transmission)	30V, 300V, 1s
IEC61000-4-2 (ESD)	±8kV contact discharge, ±15kV air discharge
IEC61000-4-6 (Radio frequency transmission)	10V(150kHz~80MHz)
IEC61000-4-8 (Power frequency magnetic field)	100A/m, 1000A/m, 1s-3s
IEC61000-4-5 (Surge): Power cable	CM±4kV/ DM±2kV, Data cable: ±4kV

#### Mechanical Properties

IEC60068-2-6	Anti Vibration
IEC60068-2-32	Free Fall
IEC60068-2-27	Anti Shock

### Electromagnetic Emissions and Immunity

Certifications	CE mark, commercial FCC Part 15 Class A, VCCI Class A Class A EN 55022 (CISPR 22) Class A Class A C-Tick EN 55024 CCC 47 CFR FCC Part 15, SubpartB, Class A ICES-003: 2016 Issue 6, Class A ANSI C63.4:2014 IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS CISPR 22:2009+A1:2010 CLASS A
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### Safety

Certifications	CB mark, commercial CSA certified (CSA 22.2 #950) EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS 60950.1:2015 CCC (China Compulsory Certificate)
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### Warranty and Support

Hardware Limited Warranty	Limited Lifetime*
Technical Support via Phone and Email*	Limited Lifetime*
Limited Lifetime* 24x7 Online Chat Technical Support	Limited Lifetime*

### Package Contents

All models	Industrial PoE Switch Brackets and screws for DIN-Rail mounting which are already installed in the industrial switch User's manual
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