



PoE-Extend, Easily overcomes the distance limits of POE networks

### Data and power extend

Cable lengths in Ethernet networks are limited to 100 metres (328 ft), which is a serious restriction for many security installations. POE-IEX02G-WF90 UPoE+ Extender enables installers to overcome this network limitation. Simply connecting an POE-IEX02G-WF90 in line with the network cable instantly doubles the range from 100 metres to 200 metres (656 ft).

### Simple to install

Fitting POE-IEX02G-WF90 is simple because no set-up is required. Its only connections are three RJ45 network ports, three of which immediately self-configure for 10/100/1000Base-TX operation. POE power is automatically transferred between connected equipment. No local power supply connection is needed, because POE-IEX02G-WF90 is powered by POE.

POE-IEX02G-WF90 can easily be located anywhere along the network cable, as long as no single length of cable is greater than 100 metres. For example, to extend the network connection between a POE switch and an IP

an POE-IEX02G-WF90 could be installed 90 metres from the switch. A further 90 metres of cable would run from the POE-IEX02G-WF90 to the camera.

### Max POE power

Benchu group's POE-IEX02G-WF90 UPoE+ Extender enables network range extension to all POE devices that are compatible with IEEE 802.3af, which is the universal POE standard for low power network devices such as fixed IP cameras.

In addition, POE-IEX02G-WF90 is compatible with POE Plus (IEEE 802.3at) and higher power 4-pair POE (IEEE 802.3bt) up to 90W.

### Go further

If POE and network extension beyond 200 metres (656 ft) is required, more than one POE-IEX02G-WF90 may be installed in series. For example, a 300 metre (984 ft) connection between a POE switch and a 10 watt IP camera can be achieved by fitting two POE-IEX02G-WF90 units at 100 metre intervals along the cable.

The maximum extension distance depends on how much power is required and which POE source is used. See the tables on the next page. Gigabit versions are also available.

### No restrictions

Because POE-IEX02G-WF90 simply restores the network connection every 100 metres, the full (1000Mbps) bandwidth of 1000Base-TX Ethernet is maintained across the entire link. This maximises performance and transparency, with no risk of a reduced or unpredictable bandwidth, even at distances of several hundred metres.

### POE power comparison table

Benchu group's PoE Extender devices are ideal for Ethernet extension to 200m or 300m. The POE power source required will depend on the distance to the powered device (e.g. IP camera) and the power requirement of that device. As shown in this table.

POE SOURCE	MAXIMUM POE POWER		
	at 200m	at 300m	at 400m
IEEE 802.3af POE Switch (15W)	12W	9W	5W
IEEE 802.3at POE Switch (30W)	25W	20W	15W
IEEE 802.3bt POE Switch/ injector (90W)	65W	52W	40W

The power levels quoted above assume the use of high quality Cat6 Ethernet cabling. Smaller gauges may result in higher losses and reduced power delivery.

### Application diagrams

Diagram 1. A single PoE Extender doubles the cable range to a POE IP Camera. Each cable segment can be up to 100 metres.

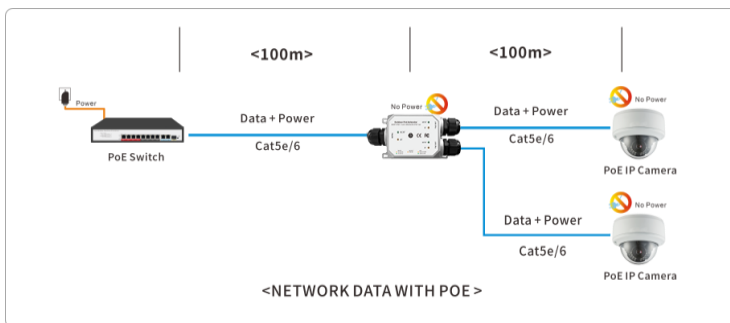
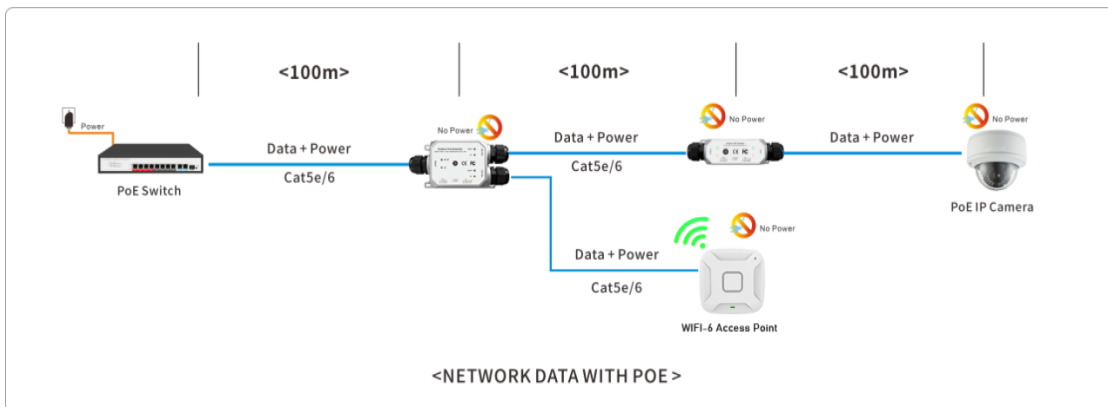
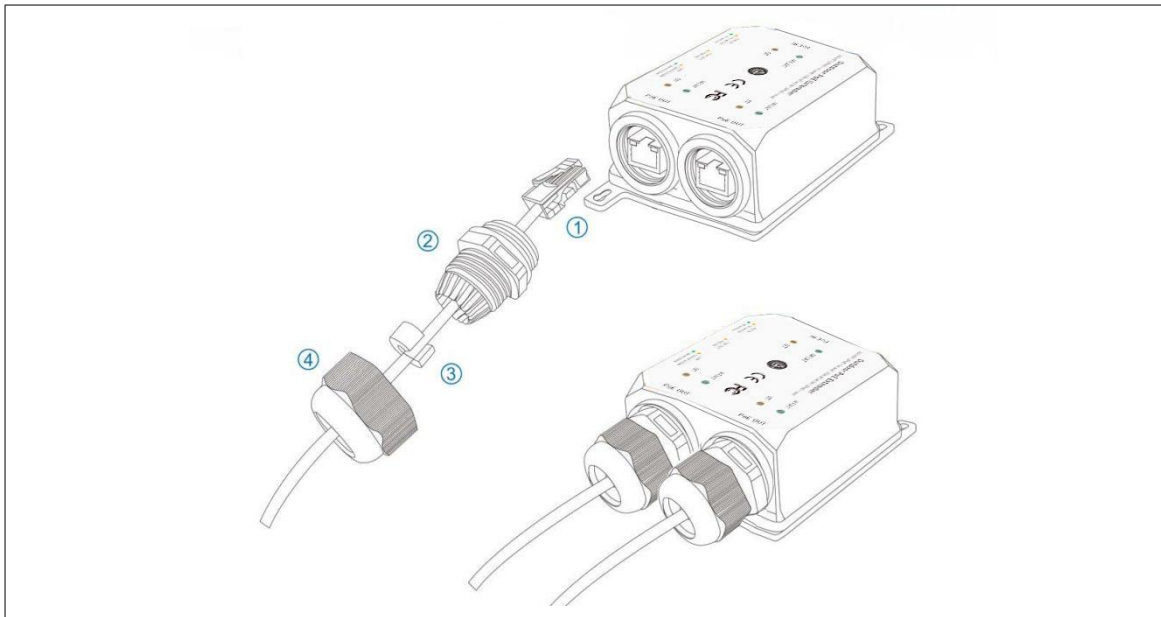


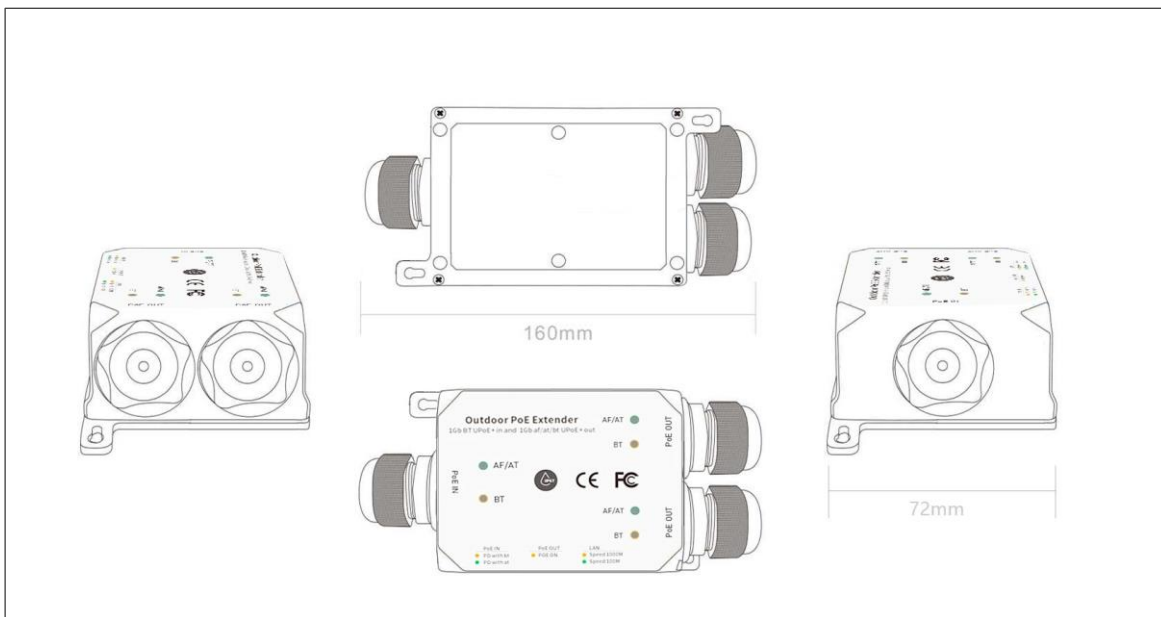
Diagram 2. UPoE+ Extender provides enough power to allow 300 metres (984 ft) of extension to a POE Plus wireless access point, using two UPoE+ Extender units located at 100 metre intervals.



## Wiring diagram



## Structure Diagrams





Technical Specifications		POE-IEX01G-WF90
10M/100/1000M RJ-45 copper ports		2
UPoE+ ports (PSE)		2
UPoE+ ports (PD)		1
Power over Ethernet		
PoE Standard	IEEE 802.3bt Power over Ethernet Plus+/PSE IEEE 802.3bt Power over Ethernet Plus+/PD Backward compatible with IEEE 802.3at Power over Ethernet Backward compatible with IEEE 802.3af Power over Ethernet	
PoE Power Supply Type	End-span: 1/2 /4/5(+), 3/6/7/8 (-)	
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) Per port 52V DC, 1800mA. max. 90 watts (IEEE 802.3bt)	
PoE Power Budget(PoE Source)	90 Watts	
Maximum PoE Power, at 200m	65 Watts	
Maximum PoE Power, at 300m	52 Watts	
Maximum PoE Power, at 400m	40 Watts	
Performance Specification		
Chip	Realtek	
Packet buffer memory (Dynamically shared across only used ports)	2 Mb	
Forwarding modes	Store-and-forward	
Bandwidth	10 Gbps	
Packet forwarding rate (64 byte packet size) (Mpps)	3Mpps	
MAC address database size (48-bit MAC addresses)	2K	
Mean Time Between Failures (MTBF) @ 25°C	106,325 hours	
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.321µs; 8.622µs; 8.435µs	
1G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.414µs; 3.545µs; 3.628µs	
IEEE Network Protocols		
<ul style="list-style-type: none"> <li>• IEEE 802.3i 10BASE-T</li> <li>• IEEE 802.3u 100BASE-T</li> <li>• IEEE 802.3ab 1000BASE-T</li> <li>• IEEE 802.3af PoE</li> </ul>	<ul style="list-style-type: none"> <li>• IEEE 802.3at PoE+</li> <li>• IEEE 802.3bt UPoE+</li> <li>• IEEE 802.3az Energy Efficient Ethernet (EEE)</li> <li>• IEEE 802.3x Full-Duplex Flow Control</li> </ul>	
Monitoring		
LEDs	Yes	
Per port	Speed, Link, Activity; PoE in different mode	

### Physical Specifications

Dimensions	160 x 72 x 36mm (6.3 x 1.69 x 1.42 in)
Weight	0.35 kg (0.77 lb)
Enclosure	IP67 Metal case
Installation	Wall-mount

### Environmental Specifications

#### Operating

Operating Temperature	-30° to 65°C (-22° to 149°F)
Humidity	90% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum

#### Storage

Storage Temperature	-40° to 75°C (-40° to 167°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum

### 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) UL listed (UL 1950)/cUL IEC 950/EN 60950 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*

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**POE-IEX02G-WF90**

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