PoE Extenders – POEXTX1, POEXRX1, POEXKIT1

PANDUIT®
SPECIFICATION SHEET

specifications

The PoE Extenders shall deliver 10/100 Mbps full duplex data and shall deliver up to 50W PoE at lengths up to 2000 ft (610m) over standard 2 or 4-pair twisted-pair cable. The PoE Extenders shall reduce the additional costs and disruptions associated with other products or solutions.

technical information

Part Number	POEXTX1	POEXRX1
Model type	Transmitter	Receiver
Dimensions	8.91cm x 5.03cm x 2.57cm (LxWxH); 3.51"x1.98"x1.01" (LxWxH)	
Weight	114g (4oz.)	
Interface on both sides	1 RJ45 port to 1 RJ45 port	
Power consumption	1.5W	
RoHS compliance	Compliant	
UL rated	UL 60950-1	
Data support capability	Switch and End IP Device must both be capable of transmitting at the same data rate of either 10BASE-T (for 10 Mbps) or 100BASE-TX (for 100 Mbps)	
PoE support capability	End IP device must be IEEE 802.3af/at compliant	
Operating temperature	-40°C to 70°C (-40°F to 158°F)	
Mean time before failure (MTBF)	20+ years	
Humidity	10% to 95% (non-condensing) at 35°C	
Cable requirements	Required: 24 AWG 2-pair Category 5e Recommended: 23AWG 4-pair Category 6	
Supported data rate	10/100Mbps full duplex	
Optional Power Supply	The PoE Extenders will accept an optional power supply with an output of 55 VDC, 2 amperes (37 to 56 VDC required, 48 to 55 VDC recommended).	

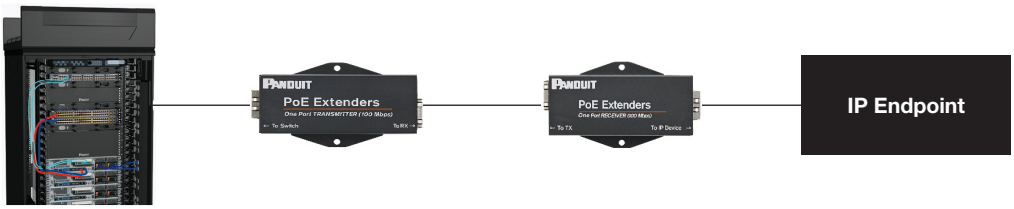
PoE and length guidelines, See tables located on page 2 of specification sheet

key features and benefits

Low cost of installation	Significant cost savings compared to fiber cable and media convertors option or other options in the market
Compatibility with existing PoE or non-PoE switches	These extenders fit very easily into an existing infrastructure and help extend PoE over the standard 100m range
Uses standard twisted 4-pair cable	Does not require the usage of specialized cables such as hybrid copper/fiber cables
RJ45 interface	Utilizes standard RJ45 interfaces which makes it easy for field terminations of copper cable being used to transmit PoE
Individually serialized	Marked with quality control number for future traceability
Doubles as PoE injectors	Optional external power supply option helps to inject power into the channel when non-PoE switch is being used
Small profile	Small size makes it fit into smaller spaces like a base of a light pole

applications

PoE extenders are best suited for providing power and 100Mbps data to IEEE 802.3af/at compliant devices such as cameras, VoIP phones, access card readers, PoE lights and others, at a distance beyond the standard 100m channel.



PoE Extender Kits	
POEXKIT1 – 1-Port Extender Kit includes:	
1 x POEXTX1	1-port transmitter box
1 x POEXRX1	1-port receiver box
1 x 60W, 55V	power supply
PoE Extender Transmitters	
POEXTX1	1-port transmitter box
PoE Extender Receivers	
POEXRX1	1-port receiver box
Field-term Plugs	
RJ45 Plug, 4-pair, Category 5e, 6, 6A compatible	FP6X88MTG
UTP Copper Cable	
PUO6C04BL-U =	Category 6 Outside plant (OSP), 1,000 ft. Reel
PUO6C04BL-UQ =	Category 6 Outside plant (OSP), 2000 ft. Reel
PUP6004BU-W =	Category 6 Plenum (CMP), 1,000 ft. Reel
PUP6C04BU-UQ =	Category 6 Plenum (CMP), 2000 ft. Reel
PUR6004BU-W =	Category 6 Riser (CMR), 1,000 ft. Reel
PUR6C04BU-UQ =	Category 6 Riser (CMR), 2000 ft. Reel
UTP Patch Cords	
UTPSP*Y	Category 6, UTP with TX6™ Modular Plugs
Tools and Accessories	
EGJT-1	(for FP6X88MTG)

*For lengths 1 to 20 feet (increments of one foot) and 25, 30, 35, 40 feet, change the length designation in the part number to the desired length. For standard cable colors other than Off White, add suffix BL (Black), BU (Blue), GR (Green), RD (Red), YL (Yellow), OR (Orange) or VL (Violet) before the Y at the end of the part number. For example, the part number for a blue 15-foot patch cord is UTPSP15BUY

additional specifications

EMC	Emission (Class A for POEXRX4 and Class B for POEXRX1 and POEXTX1) EN 55032:2012, FCC Part 15, EN 5021-4:2015 (POEXRX4, POEXRX1, and POEXTX1) Immunity: EN 55024:2010, EN 50121-4:2015 (POEXRX4, POEXRX1, and POEXTX1)
Safety	CSA C22.2 No. 60950-1-07 2nd Ed 2014-10 IEC 60950-1:2005 + A1 + A2, EN 60950-1:2006 + A11 + A12 + A1 + A2

power supply options

Power supply options show the power available at the Powered Device (PD).

Scenario 1: 1 Port (POEXTX1) Transmitter Box Powered by 50W Power Sourcing Switch (assuming 55VDC output)

PoE Class	Standard	Max Wattage at PD	Under Voltage Lockout at PD	PSE - TX1	TX1 - RX1 - Cable Distance (ft)		RX1 - PD
					23AWG 1.04Ω/100ft	24AWG 1.43Ω/100ft	
1	802.3af	3.84	37	50ft	2000	2000	50ft
2	802.3af	6.49	37		2000	2000	
3	802.3af	12.95	37		1791	1303	
4	802.3at	25.5	42		1257	914	
5	802.3bt	N/A	N/A		N/A	N/A	
6	802.3bt	N/A	N/A		N/A	N/A	

Scenario 2: 1 Port (POEXTX1) Transmitter Box Locally powered (55VDC output)

PoE Class	Standard	Max Wattage at PD	Under Voltage Lockout at PD	SW - TX1	TX1 - RX1 - Cable Distance (ft)		RX1 - PD
					23AWG 1.04Ω/100ft	24AWG 1.43Ω/100ft	
1	802.3af	3.84	37	Up to 100m	2000	2000	50ft
2	802.3af	6.49	37		2000	2000	
3	802.3af	12.95	37		1798	1303	
4	802.3at	25.5	42		1263	915	
5	802.3bt	N/A	N/A		N/A	N/A	
6	802.3bt	N/A	N/A		N/A	N/A	

Scenario 3: 1 Port (POEXRX1) Receiver Box Locally powered (PoE Switch at head end)

PoE Class	Standard	Max Wattage at PD	Under Voltage Lockout at PD	PSE - TX1	TX1 - RX1 - Cable Distance (ft)		RX1 - PD
					23AWG 1.04Ω/100ft	24AWG 1.43Ω/100ft	
1	802.3af	3.84	37	50ft	2000	2000	50ft
2	802.3af	6.49	37		2000	2000	
3	802.3af	12.95	37		2000	2000	
4	802.3at	25.5	42		2000	2000	
5	802.3bt	40	42		2000	2000	
6	802.3bt	N/A	N/A		N/A	N/A	

Terms used:

2-pair:	In a PoE system, power is provided on only 2 of the Ethernet pairs of wires. Standards based systems use Mode A or Mode B, but not both.
4-pair:	In a PoE system, power is provided on all 4 of the Ethernet pairs of wires. Standards based systems will provide both Mode A and Mode B power delivery. Power loss in a 4-pair PoE system is usually half that in a 2-pair PoE system.
Class:	In a PoE system, powered devices (PDs) are specified by class, based on the power they consume, their under-voltage lockout (UVLO) and whether they are 2-pair or 4-pair devices.
Mode A:	In a PoE 2-pair system, power is supplied on Ethernet connector pins 12 and 36.
Mode B:	In a PoE 2-pair system, power is supplied on Ethernet connector pins 45 and 78.
PD: Powered Device	In a PoE system, these devices draw power from the source, or PSE. Currently, there are up to eight “classes” of powered devices enumerated in the PoE standards.
PSE: Power Sourcing Equipment	In a PoE system, this device transmits power to the system. Currently, there are four “types” of PSE enumerated in the PoE standards.
UVLO: Under Voltage Lock Out	In power systems, this is the voltage threshold below which a device no longer operates. Most PoE systems have UVLO of about 30 volts. If the PoE voltage drops below 30V, the power devices (PDs) may stop operating.

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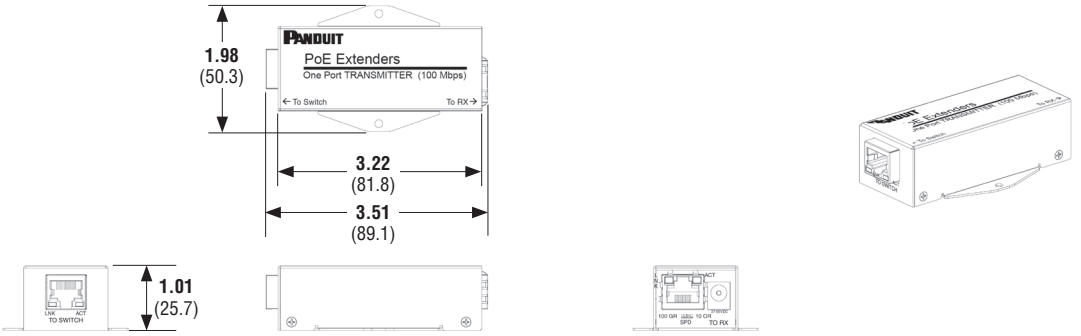
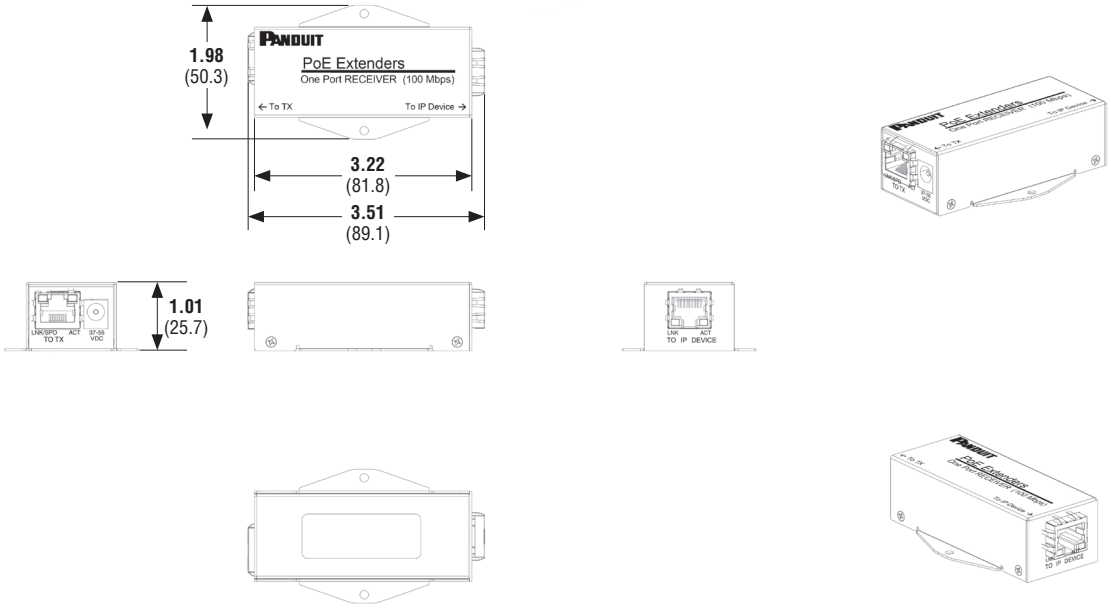
1-Port Transmitter



1-Port Receiver



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