

IP MODERNIZATION MADE SIMPLE

NVT PHYBRIDGE FLEX ADAPTERS & EXTENDERS DATA SHEET

FLEX-Link



FLEX-C



FLEX4



FLEX-Base



FLEX Adapters & Extenders

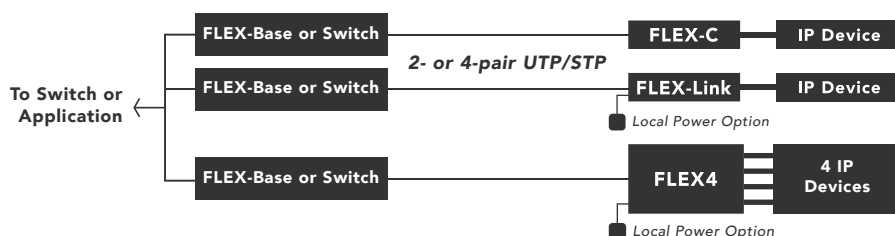
The FLEX series of adapters and extenders are designed to extend PoE far beyond standard Ethernet reach. When used with the FLEX24 Switch or the FLEX-Base Extender, the FLEX adapters can deliver 10/100Mbps (symmetrical, full duplex) and PoE (up to 50W) over 1- (needs local power), 2-, or 4-pair UTP/STP with up to 2,000ft (610m) reach. This helps eliminate the costs and disruptions associated with IDF closet requirements. There are three adapter options that provide deployment flexibility:

- FLEX-Link is IEEE-compliant and negotiates power requirements with an IP device, delivers 50W of power over 4-pairs, and can be locally powered.
- FLEX-C supports IEEE-compliant devices with lower power requirements.
- FLEX4 is IEEE-compliant and negotiates power requirements with up to 4 IP devices, delivers 30W of power over 2-pairs, and can be locally powered

	FLEX-Link	FLEX-C	FLEX4
Power	<ul style="list-style-type: none"> Maximum 50W, delivered on 4-pairs Local power option to support greater power delivery to IP device Adapter is IEEE-compliant and will negotiate power requirements with IP device 	<ul style="list-style-type: none"> Maximum 30W, delivered on 2-pairs (spare pairs) No local power option available Does not negotiate power requirements with IP device Device should be IEEE compliant 	<ul style="list-style-type: none"> Maximum 30W, delivered on 2-pairs Local power option to support greater power delivery to IP device Adapter is IEEE-compliant and will negotiate power requirements with IP device
Casing	Metal	Plastic	Metal
Single-pair Supported	Yes (needs local power)	No	Yes (needs local power)
EN 50121-4 Standard	Yes (Approved to operate in a Railway/Subway environment)	No	Yes (Approved to operate in a Railway/Subway environment)

FLEX Adapter Applications

10/100Mbps (full duplex, symmetrical) and PoE++ over multi-pair UTP/STP with 2,000ft (610M) reach



Features

- 10/100BASE-T(X) Ethernet with PoE++ (up to 50W)
- 10/100Mbps, full duplex data rate
- Power Injection or Pass-through PoE++ over standard UTP or STP cable
- Up to 2,000ft (610m) at 100Mbps over 4-pair, or at 10Mbps over 1- (needs local power) or 2-pair
- Operating temperature from -40°C to +70°C
- Supports Multicast, Unicast and Broadcast
- Auto detect data rate for maximum bandwidth and transmission distance utilization
- Compliant with all major IP and IEEE standards for RFC network protocols such as UDP and TCP.
- EN 50121-4 Standard for Railway/ Subway environments (FLEX-Base, FLEX-Link and FLEX4)
- LED indicators for operating status
- Designed and manufactured in North America
- 5-Year Warranty
- FLEX-Base, FLEX-Link and FLEX4 can be locally powered
- Power consumption: 1.5W or less

FLEX Extender Kits

The FLEX Extender Kits are single-port extender solutions.

1-Port Extender Kit (NV-FLXLK-XKIT)

- 1 x FLEX-Base unit
- 1 x FLEX-Link adapter
- 1 x 60W, 55V power supply

4-Port Extender Kit (NV-FLX-04-XKIT)

- 1 x FLEX-Base unit
- 1 x FLEX4 adapter
- 1 x 110W, 55V power supply



Bandwidth Availability for FLEX Extender Kit (FLEX-Base, FLEX-Link, 60W, 55V power supply)

4-Pair UTP/STP	100Mbps full duplex, symmetrical to 2,000ft (610m)
2-Pair UTP/STP	100Mbps full duplex, symmetrical to 1,000ft (305m), 10Mbps full duplex, symmetrical from 1,000ft (305m) to 2,000ft (610m)
1-Pair UTP/STP	10Mbps full duplex, symmetrical to 2,000ft (610m) - Only with the FLEX-Link locally-powered

PoE Power Available to FLEX-Link, FLEX4 and FLEX-C

FLEX-Link/FLEX4	20ft (6m)	250ft (76m)	500ft (152m)	750ft (228m)	1,000ft (305m)	1,250 (381m)	1,500ft (457m)	1,750ft (533m)	2,000ft (610m)
4-Pair UTP/STP	50W	47W	44W	41W	38W	35W	32W	30W	27W
2-Pair UTP/STP	30W	30W	27W	25W	22W	20W	17W	14W	12W

The FLEX-Link can support up to 50W of power using all 4-pairs or maximum of 30W using 2-pairs. FLEX4 can accept up to 120W of power and it can output up to 30W of power for 802.3af/at compliant devices. To account for cable losses and increase PoE delivery, the FLEX-Link and FLEX4 adapters have the option of using a local external power supply. The FLEX-Link and FLEX4 are IEEE-compliant and will negotiate power with the IP device.

FLEX-C	20ft (6m)	250ft (76m)	500ft (152m)	750ft (228m)	1,000ft (305m)	1,250 (381m)	1,500ft (457m)	1,750ft (533m)	2,000ft (610m)
4-Pair UTP/STP	30W	30W	30W	29W	27W	26W	25W	23W	22W
2-Pair UTP/STP	30W	30W	27W	25W	22W	20W	17W	14W	12W

The FLEX-C supports IEEE-compliant devices and can support up to 30W of power using 2-pairs. If additional power is required use the FLEX-Link instead.

FLEX Adapter Technical Specifications

Model Number	FLEX-C	FLEX-Link	FLEX-Base	FLEX4
Part Number	NV-FLXLK-C	NV-FLXLK	NV-FLXLK-BSE	NV-FLX-04
Dimensions	8.1cm x 3.8cm x 2.3cm (LxWxH); 3.19" x 1.50" x 0.90" (LxWxH)	8.8cm x 5.5cm x 2.5cm (LxWxH); 3.46" x 2.16" x 0.98" (LxWxH)	8.8cm x 5.5cm x 2.5cm (LxWxH); 3.46" x 2.16" x 0.98" (LxWxH)	9.8cm x 9.6cm x 2.5cm (LxWxH); 3.86" x 3.78" x 0.98" (LxWxH)
Weight	44g (1.5oz.)	114g (4oz.)	114g (4oz.)	214 g (7.6 oz.)
Interface: Network Infrastructure side (FLEX)	1 RJ45 port: UTP/STP cable (2-pair or 4-pair)	1 RJ45 port: UTP/STP cable (2-pair or 4-pair)	1 RJ45 port: UTP/STP cable (2-pair or 4-pair)	1 RJ45 port: UTP /STP cable (2-pair or 4-pair)
Interface: IEEE Side (IP Device)	1 RJ45 port; device must be IEEE 802.3 af/at compliant	1 RJ45 port; device must be IEEE 802.3 af/at compliant 50W, 10/100Mbps connection to IP end device	(For General/PoE Switch) 1 RJ45 port: supports negotiation with IEEE 802.3 af/at switches	4 RJ45 ports: device must be IEEE 802.3 af/at compliant, 10/100Mbps connection to IP end device
Power Supply	PoE from the FLEX24 switch or local power from FLEX-Base, maximum 30W (over 2-pairs)	PoE from the FLEX24 switch or external power supply; maximum 50W (over 4-pairs) or 30W (over 2-pairs)	PoE from standard PoE switch, or external power supply; maximum 50W (over 4-pairs) or 30W (over 2-pairs)	PoE from the FLEX switch, or external power supply; maximum 30W (over 2-pairs) each port
DC IN (Barrel Connector)		Optional (sold separately) 48V – 56VDC via an external AC/DC Power Adapter (IEC Class II isolated only) NOTE 1: Local power supply used must have its output isolated from Earth potential. NOTE 2: If voltage of local power supply is lower than the power voltage provided from the PoE switch, then power on the PoE switch should be turned off.	Optional (sold separately) 48V – 56VDC via an external AC/DC Power Adapter (IEC Class II isolated only) NOTE: local power supply must have its output isolated from Earth potential.	Optional (sold separately) 48V – 56VDC via an external AC/DC Power Adapter (IEC Class II isolated only) NOTE 1: Local power supply used must have its output isolated from Earth potential. NOTE 2: If voltage of local power supply is lower than the power voltage provided from the PoE switch, then power on the PoE switch should be turned off.
Power Consumption	1.3W	1.5W	1.5W	1.5W
Operating Temperature	-40°C to 70°C Tests conducted against international safety standard at maximum ambient temperatures of 60°C at 15W and 50°C at 30W	-40°C to 70°C Tests conducted against international safety standard at maximum ambient temperatures of 60°C at 30W and 50°C at 50W	-40°C to 70°C Tests conducted against international safety standard at maximum ambient temperatures of 60°C at 30W and 50°C at 50W	-40°C to 70°C Tests conducted against international safety standard at maximum ambient temperatures of 60°C at 64W and 55°C at 120W
Mean Time Before Failure (MTBF)	20+ years	20+ years	20+ years	20+ years
Humidity	10% to 95% (non-condensing) at 35° C	10% to 95% (non-condensing) at 35° C	10% to 95% (non-condensing) at 35° C	10% to 95% (non-condensing) at 35° C

Compliance and Agency Approval

EMC	Emission (Class A for FLEX4 and Class B for FLEX-Link, FLEX-Base, FLEX-C): EN 55032:2012, FCC Part 15, EN 50121-4:2015 (FLEX4, FLEX-Link, FLEX-Base) Immunity: EN 55024:2010, EN 50121-4:2015 (FLEX4, FLEX-Link, FLEX-Base)
Safety	UL 60950-1 2nd Ed 2014-10-14, 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
Environment	EU RoHS Directive 2011/65