IP MIGRATION MADE SIMPLE

NVT PHYBRIDGE
FLEX ADAPTERS & EXTENDERS
DATA SHEET

FLEX-Link

FLEX-C

FLEX-Base

FLEX Adapters & Extenders

The FLEX series of adapters and extenders are designed to extend PoE far beyond standard Ethernet reach. They enable easy device deployment over a UTP/STP infrastructure for distances up to 2,000ft (610m). This helps eliminate the costs and disruptions associated with IDF closet requirements.

FLEX Adapters

FLEX adapters provide extended PoE reach beyond standard Ethernet using 1-, 2-, or 4-pair UTP/STP infrastructure. The adapters, when used with the FLEX24 Switch or the FLEX-Base Extender, deliver 10/100Mbps symmetrical, full duplex. There are two 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; can be locally powered
- FLEX-C supports IEEE-compliant devices with lower power requirements

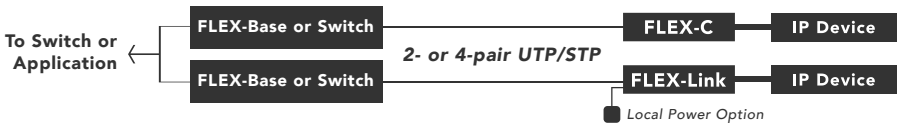
FLEX Extenders

When paired with FLEX-Link or FLEX-C, the FLEX-Base creates a robust, single-port extender solution. Connecting the FLEX-Base to an Ethernet switch extends 10/100Mbps bandwidth and PoE over 1-, 2-, or 4-pair UTP/STP up to 2,000ft (610m) reach. The FLEX-Base can be locally powered.

	FLEX-Link	FLEX-C
Power	• 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	• 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
Casing	Metal	Plastic
Single-pair Supported	Yes	No
EN 50121-4 Certification	Yes (Approved to operate in a Railway/Subway environment)	No

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)
- 10/10024Mbps, 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- or 2-pair
- Operating temperature from -40°C to +70°C
- Supports Multicast and Unicast
- Auto detect data rate for maximum bandwidth and transmission distance utilization
- Compliant with all major IEEE standards and RFC network protocols for UDP, TCP/IP, HTTP/HTTPs
- EN 50121-4 Certification for Railway/ Subway environments (FLEX-Base and FLEX-Link)
- LED indicators for operating status
- Designed and manufactured in North America
- 5-Year Warranty
- FLEX-Link and FLEX-Base can be locally powered
- Power consumption: 1.5W or less

FLEX Extender Kit (NV-FLXLK-XKIT)

The FLEX Extender Kit is a packaged solution that is convenient to order. The Kit includes one of each:

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

When connected to the FLEX-Base via a 2- or 4-pair UTP/STP, the FLEX-Link can deliver 100Mbps (full duplex, symmetrical) with up to 50W of power with 2,000ft (610m) reach.

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

4-Pair UTP/STP	100Mbps full duplex, symmetrical to 2000ft (610m)
2-Pair UTP/STP	100Mbps full duplex, symmetrical to 1000ft (305m), 10Mbps full duplex, symmetrical from 1,000ft (305m) to 2,000ft (610m)
1-Pair UTP/STP	10Mbps full duplex, symmetrical to 2000ft (610m) - Only with the FLEX-Link locally-powered

PoE Power Available with FLEX-Link and FLEX-C

FLEX-Link	20ft (6m)	250ft (76m)	500ft (152m)	750ft (228m)	1000ft (305m)	1250 (381m)	1500ft (457m)	1750ft (533m)	2000ft (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. To account for cable losses and increase PoE delivery, the FLEX-Link adapter has the option of using a local external power supply. The FLEX-Link is IEEE-compliant and will negotiate power with the IP device.									
FLEX-C	**20ft (6m)**	**250ft (76m)**	**500ft (152m)**	**750ft (228m)**	**1000ft (305m)**	**1250 (381m)**	**1500ft (457m)**	**1750ft (533m)**	**2000ft (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 FLEX-Link instead.									

FLEX Adapter Technical Specifications

Model Number	FLEX-C	FLEX-Link	FLEX-Base
Part Number	NV-FLXLK-C	NV-FLXLK	NV-FLXLK-BSE
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)
Weight	44g (1.5oz.)	114g (4oz.)	114g (4oz.)
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)
Interface: IEEE Side (IP Device)	1 RJ45 port; device must be IEEE 802.3 af/at compliant and it must be plugged in while PoE negotiation takes place between the switch and device. If power is directly sent from the FLEX24 Switch (no negotiations) or FLEX-Base, then since line will be powered, IEEE 802.3 af/at non-compliant devices may be damaged.	1 RJ45 port; device must be IEEE 802.3 af/at compliant	(For General/PoE Switch) 1 RJ45 port: supports negotiation with IEEE 802.3 af/at switches
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 the FLEX24 switch, PoE switch, or external power supply; maximum 50W (over 4-pairs) or 30W (over 2-pairs)
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.
Power Consumption	1.3W	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*
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

Compliance and Agency Approval

EMC	Emission (FLEX-Base, FLEX-Link, and FLEX-C = Class B): FCC Part 15, EN 55032:2012, EN 50121-4:2015 (FLEX-Base and FLEX-Link) Immunity: EN 55024:2010, EN 50121-4:2015 (FLEX-Link and 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