

NVT PHYBRIDGE FLEX8 DATASHEET



Fast Ethernet and PoE over Multi-Pair UTP with up to 2,000ft (610m) Reach

FLEX8 Unmanaged Switch

The plug and play FLEX8 unmanaged switch makes the modernization to IP devices (IoT) simple, secure and cost-effective. When paired with the FLEX Adapters, this powerful enterprise-grade switch delivers fast Ethernet and PoE over Multi-Pair UTP with up to 2,000ft (610m) reach - **that's 6Xs the reach of standard Ethernet switches.**

With the FLEX8, customers are taking full advantage of Modern LAN principles, protecting existing infrastructure assets, and eliminating any need to rip and replace the established UTP cabling. The FLEX8 unmanaged switch optimizes network design with advanced interoperability and easy integration into the overall LAN creating a secure, robust path for IP endpoints.

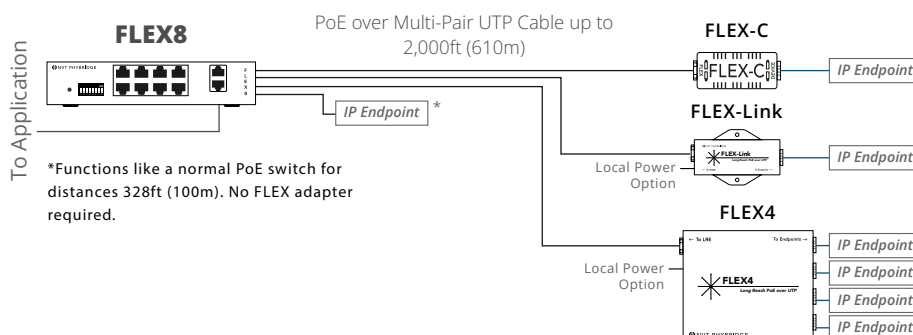
- Accelerate your return on investment by reducing infrastructure costs.
- Simplify your IP modernization, collapsing planning and deployment time.
- Eliminate infrastructure barriers, risks, disruption and costs.
- Create a robust plug-and-play IP platform that is easy to deploy and manage.
- Be environmentally responsible during your IP upgrades.

Speed, Reach and Power

FLEX8 delivers 10/100Mbps symmetrical (full duplex) and PoE++ (50W) over 4-pair UTP or PoE+ (30W) over 2-pair UTP with 2,000ft (610m) reach, providing substantial power to support bandwidth demanding IP endpoints easily and reliably.

Simple Deployment

FLEX8 comes preconfigured and ready to deploy, making modernization to IP quick and efficient in organizations of every size. Modernizing multiple sites is greatly simplified with a repeatable, predictable and scalable deployment methodology across every location.



AT A GLANCE

(NV-FLX-08)

- 8-port plug-and-play long reach PoE switch
- 10/100Mbps symmetrical (full duplex) and PoE++ (50W) over 4-pair UTP or PoE+ (30W) over 2-pair UTP with 2,000ft (610m) reach
- 2 x 1 GB uplink ports
- 190W external power supply
- EN 50121-4 Standard for Railway/ Subway environments



FLEX8 Technical Specifications

Model	FLEX8
Part Number	NV-FLX-08
Dimensions	<ul style="list-style-type: none"> 7.09" x 4.53" x 1.45" (LxWxH) 18cm x 11.5cm x 3.68cm, (LxWxH)
Weight	1.3 lbs (0.59 kgs)
Mounting	Standalone, rack or shelf-mountable; 2 brackets included for installation
Interface: Ethernet Uplink (Trunk IP)	2 RJ45 ports: 10/100/1000 Base-T autosensing, independent speed selection, Ethernet IEEE 802.3, CAT5e copper cable
Interface: Downlink (PoE and IP to Adapter)	8 x RJ45 Jacks Speed: 10/100Mb/s (full duplex) PoE Power: <ul style="list-style-type: none"> 50 Watts Maximum on 4-Pairs 30 Watts Maximum on 2-Pairs

Power Supply	48-58VDC (55VDC, 190W power supply included)
Power Consumption	6W
Power Injection (PoE)	DC voltage: 48VDC to 58VDC IEEE 802.3af/at If power is provided on all 4-pairs then maximum 50W; If power is provided on 2-pairs then maximum 30W
Operating Temperature	+14°F to +149°F (-10°C to +65°C) Tests conducted against international safety standard at maximum ambient temperatures of +104°F (40°C)
Humidity	10% to 95% (non-condensing) at +95°F (+35°C)
Ambient Temperature	Minimum ambient temperature for cold start-up is 32°F (0°C)

FLEX8 Compliance and Agency Approval

EMC	Emissions: FCC Part 15, ICES-003, EN 55032:2015, EN 50121-4:2015 Class A Immunity: EN 55035:2017, EN 50121-4:2015
Safety	UL 60950-1 2nd Ed 2014-10-14, CAN/CSA C22.2 No. 60950-1-07 2nd Ed 2014-10 IEC 62368-1:2014, EN 62368-1:2014, AS/NZS 62368.1:2018
Environment	RoHS Directives 2011/65 and 2015/863

Power & Distance Table

FLEX8 used with FLEX-Link									
	20ft (6m)	250ft (76m)	500ft (152m)	750ft (228m)	1,000ft (305m)	1,250ft (381m)	1,500ft (457m)	1,750ft (533m)	2,000ft (610m)
Cat6 4-Pairs	47W	45	43	41	39	37	35	33	30
Cat6 2-Pairs	31W	29	28	26	24	22	20	18	16
Cat5e 4- Pairs	47W	44	41	39	36	33	30	27	24
Cat5e 2-Pairs	31W	29	26	24	21	18	16	13	11
FLEX8 used with FLEX-C									
Cat6 4-Pairs	31W	30	29	29	28	27	26	25	24
Cat6 2-Pairs	31W	29	28	26	24	22	20	18	16
Cat5e 4- Pairs	31W	30	29	27	26	25	24	22	21
Cat5e 2-Pairs	31W	29	26	24	21	18	16	13	11
FLEX8 used with FLEX4									
Cat6 4-Pairs	47W	45	43	41	39	37	35	33	30
Cat6 2-Pairs	31W	29	28	26	24	22	20	18	16
Cat5e 4- Pairs	47W	44	41	39	36	33	30	27	24
Cat5e 2-Pairs	31W	29	26	24	21	18	16	13	11

100Mbit
 10Mbit

FLEX FAMILY ADAPTER OPTIONS

FLEX Adapter Options

There are three media converter options available to pair with the FLEX family of switches and extend PoE over Multi-Pair UTP. The FLEX-C and FLEX-Link are single endpoint solutions and the FLEX4 enables 4 IP endpoints from a single long run Multi-Pair UTP cable.

FLEX-C



FLEX-Link



FLEX4



	FLEX-C	FLEX-Link	FLEX4
Power	<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 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 Local power option to support greater power delivery to IP device Adapter is IEEE-compliant and will negotiate power requirements with IP device
Casing	Plastic	Metal	Metal
Single-pair Supported	No	Yes (needs local power)	Yes (needs local power)
EN 50121-4 Standard	Yes – approved to operate in a railway/subway environment		

FLEX Adapters Technical Specifications

Model	FLEX -C	FLEX -Link	FLEX4
Part Number	NV-FLXLK-C	NV-FLXLK	NV-FLX-04
802.1x Support	Supported	Supported	Not Supported
Dimensions	8.1cm x 3.8cm x 2.3cm (LxWxH); 3.19" x 1.50" x 0.90" (LxWxH)	8.8cm x 5.0cm x 2.5cm (LxWxH); 3.46" x 1.97" 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.)	106g (3.74oz.)	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 (1-pair, 2-pair or 4-pair)	1 RJ45 port: UTP/STP cable (1-pair, 2-pair or 4-pair)
Line Speed	10/100Mbps full duplex	10/100Mbps full duplex	10/100Mbps full duplex
Interface: IEEE Side (IP Device)	1 RJ45 port; device must be IEEE 802.3af/at compliant, 10/100Mbps connection to IP end device	1 RJ45 port; device must be IEEE 802.3af/at compliant, 10/100Mbps connection to IP end device	4 RJ45 ports; device must be IEEE 802.3af/at compliant, 10/100Mbps connection to IP end device
Power Supply	PoE from the FLEX switch or from FLEX-Base; maximum 30W (over 2-pairs)	PoE from the FLEX 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 – 58VDC 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 – 58VDC 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
Operating Temperature	-40°C to 70°C <i>Tests conducted against international safety standard at maximum ambient temperatures of 60°C at 15W and 50°C at 30W</i>	-40°C to 70°C <i>Tests conducted against international safety standard at maximum ambient temperatures of 60°C at 30W and 50°C at 50W</i>	-40°C to 70°C <i>Tests conducted against international safety standard at maximum ambient temperatures of 60°C at 64W and 55°C at 120W</i>
MTBF	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
Ambient Temperature	Minimum ambient temperature for cold startup is 32°F (0°C)	Minimum ambient temperature for cold startup is 32°F (0°C)	Minimum ambient temperature for cold startup is 32°F (0°C)

FLEX Adapters Compliance and Agency Approval

EMC	Emissions: FCC Part 15, ICES-003, EN 55032:2015, EN 50121-4:2015 Class A (FLEX4), Class B (FLEX-C and FLEX-Link) Immunity: EN 55035:2017, EN 50121-4:2015
Safety	UL 60950-1 2nd Ed 2014-10-14, CAN/CSA C22.2 No. 60950-1-07 2nd Ed 2014-10
Environment	IEC 62368-1:2014, EN 62368-1:2014, AS/NZS 62368.1:2018 RoHS Directives 2011/65 and 2015/863