



**Models**

- WS-26-400-AC
- WS-26-400-IDC
- WS-26-500-DC
- WS-26-DC
- WS-12-250-AC
- WS-12-400-AC
- WS-12-250-DC
- WS-12-DC
- WS-8-150-AC
- WS-8-150-DC
- WS-6-MINI

# Netonix<sup>®</sup>

## WISP Switch<sup>™</sup>

Managed POE Gigabit Switches with SFP

- Gigabit Ethernet RJ45 and SFP Ports
- Non-Blocking Throughput Switching Performance
- Software Configurable Passive POE
- Powers airFIBER<sup>™</sup> and other high power radios

## Introduction

The Netonix® WISP Switch™ product line was designed specifically for the WISP industry with a rugged chassis and extended operating temperature range. It features a simple yet powerful user interface providing the software features WISPs need in a switch.

## Software Features

- LAG – Port aggregation LACP / Static
- STP/RSTP/MSTP/ERP
- Port mirroring
- VLAN dot1Q / QinQ / Port Trunking
- SNMP - complete statistical reporting
- SMTP alerts - configurable
- Bandwidth limiting per port
- Quality of Service - QOS
- Ping watch dog per port
- Scheduled port bouncing
- Cable Diagnostics
- Loop Protection
- DHCP Snooping
- IGMP Snooping
- Flow Control - with back pressure
- Storm Control
- Multicast Filtering
- Port Isolation
- Auto TFTP Backup on Config Change
- UDP - Ubiquiti Discovery Protocol
- CDP - Cisco Discovery Protocol
- LLDP – Link Layer Discovery Protocol
- Security - access control list and login tarpit

The WISP Switch™ features the ability to power many popular 24V, 48V/50V passive POE devices from many manufacturers including the Ubiquiti Networks® airMAX™, UniFi™, SAF™, MIMOSA™, Ligowav™, and airFIBER™ product lines.

## Configuration Interface

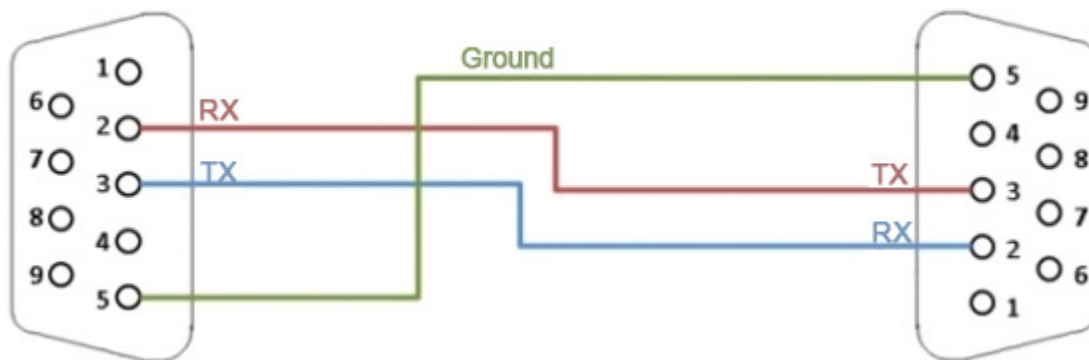
To access the Configuration Web User Interface perform the following steps:

- Ensure that your computer is connected to one of the ports on the WISP Switch™.
- Configure the Ethernet adapter on your host system with a static IP address in the 192.168.1.x subnet (e.g., 192.168.1.10).
- Launch your web browser and type <https://192.168.1.20> in the address field and press enter.
- The login screen should appear.
- Enter “admin” in the Username and Password fields then click Login.

The Configuration Interface should appear, allowing you to configure your WISP Switch™.

## Console Interface

You will need a NULL serial cable as shown below.



You will also need a terminal emulator software like PUTTY or HyperTerminal.

### Console settings:

- Baud: 115,200
- Data Bits: 8
- Stop Bits: 1
- Parity: None
- Flow Control: XON/XOFF

















# Specifications - WS-26-400-IDC

Manufactured / Assembled	North America
Standard 19" rack mount / Desktop / Wall mount	YES
Dimensions (W x D x H)	343mm x 248mm x 44mm
Weight	<4kg
Power Input (negative or positive voltage) This unit will work with telecom -48V DC as the power supply has DC input to DC output isolated power supply	32-72 VDC
Chassis Earth Ground Lug	YES
Max. Power Consumption	400 Watts
Intelligent Forced Air Cooling With Fan RPM Monitoring	YES
Switch Core and PHYs	Vitesse
Processor	MIPS 24K 416MHz
System Memory	128 MB
Flash Storage	16 MB
Total Non-Blocking Line Rate	26 Gbps
Certifications	CE, FCC, IC
Operating Temperature	-25 to 55°C (-13 to 131° F)
Operating Humidity	5 to 95% Non-Condensing
Console Port	RS-232
Ethernet Ports	(24) 10/100/1000 Ethernet Ports (2) SFP Ports
Passive POE Configured Per Port via UI / CLI	24V 0.75A pins 4,5(+) 7,8(-) 48V 0.75A pins 4,5(+) 7,8(-) 24VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-) 48VH 1.5A pins 1,2,4,5(+) 3,6,7,8(-)
POE Out Voltage Range	50 VDC / 24 VDC
Passive POE Current Sensors Per Port	YES
ESD Rating	24 kV Air / 24 kV Contact






<b>24V POE Ports</b> Pins 4,5 (+) Pins 7,8 (-) 1A - MAX	<b>48V POE Ports</b> Pins 4,5 (+) Pins 7,8 (-) 1A - MAX	<b>24VH POE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) 2A - MAX	<b>48VH POE Ports</b> Pins 1,2,4,5 (+) Pins 3,6,7,8 (-) 2A - MAX
Ports 01-24	Ports 01-24	Ports 01-02	Ports 01-06

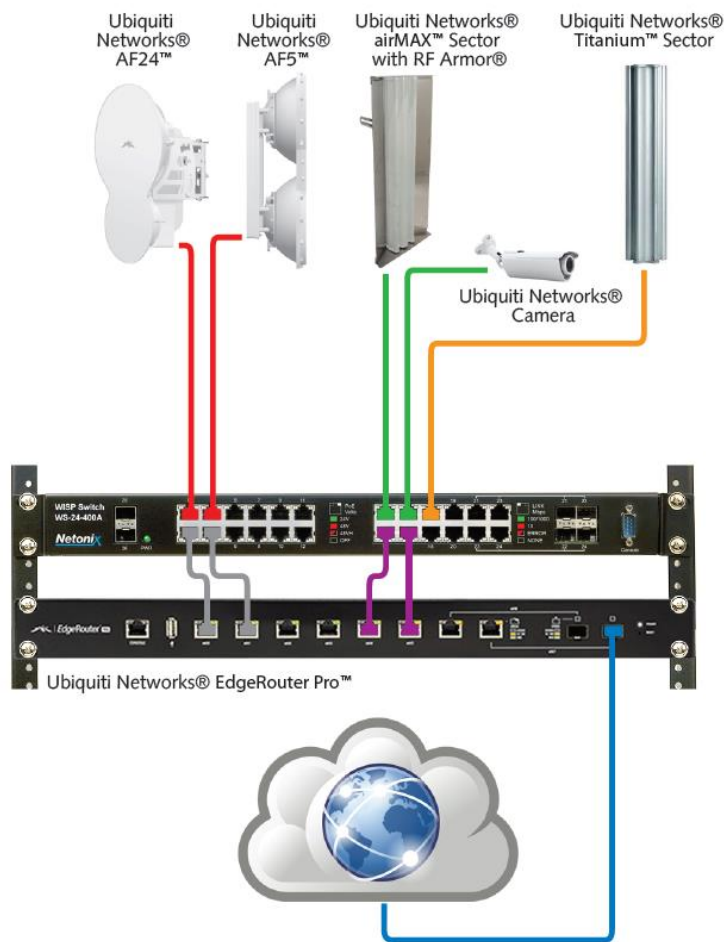


## 802.3 af/at Standards A and B & Passive POE

PINS	T568A Color	T568B Color	Passive PoE 24V	Passive PoE 48VH	10/100 Mixed DC & Data (mode A)	1000 (1 Gigabit) DC & Bi-Data (mode B)	1000 (1 Gigabit) DC & Bi-Data (mode A)
1	 white/green stripe	 white/orange stripe		DC+	Rx+ DC+	TxRx A+	TxRx A+ DC+
2	 green solid	 orange solid		DC+	Rx- DC+	TxRx A-	TxRx A- DC+
3	 white/orange stripe	 white/green stripe		DC-	Tx + DC-	TxRx B+	TxRx B+ DC-
4	 blue solid	 blue solid	DC+	DC+	Unused	TxRx C+ DC+	TxRx C+
5	 white/blue stripe	 white/blue stripe	DC+	DC+	Unused	TxRx C- DC+	TxRx C-
6	 orange solid	 green solid		DC-	Tx - DC-	TxRx B-	TxRx B- DC-
7	 white/brown stripe	 white/brown stripe	DC-	DC-	Unused	TxRx D+ DC-	TxRx D+
8	 brown solid	 brown solid	DC-	DC-	Unused	TxRx D- DC-	TxRx D-

## Sample Deployment

-  **Passive PoE 24V .75A/1A**  
Pins 4,5 + 7,8 -
-  **Passive PoE 48V .75A/1A**  
Pins 4,5 + 7,8 -
-  **Passive PoE 48V 1.5A/2A**  
Pins 1,2,4,5 + 3,6,7,8 -  
Ports configured with private VLANs working as Mid Span PoE injectors for airFiber™ units.  
airFiber™ back hauls to OSPF Routed Interfaces on EdgeRouter™.
-  **1Gbps FD**
-  **2 Gbps Aggregated LACP 802.3ad**  
This is the trunk for sector and camera VLANs.



All other trademarks mentioned are the property of their respective owners and are not associated with Netonix®.


## Safety Notices

Read, follow, and keep these instructions.

Heed all warnings.

Only use attachments/accessories specified by Netonix®.

 **WARNING:** Do not use this product near water.

 **WARNING:** Avoid using this product during an electrical storm.  
There may be a remote risk of electric shock, injury, or death from lightning.

## Electrical Safety Information

Compliance is required with respect to voltage, frequency, and current requirements indicated on the manufacturer's label. Connection to a different power source than those specified may result in improper operation, damage to the equipment or pose a fire hazard if the limitations are not followed.

There are no operator serviceable parts inside this equipment. Service should be provided only by a qualified service technician.

This equipment is provided with a detachable power cord which has an integral safety ground wire intended for connection to a grounded safety outlet.

Always connect an additional earth ground to the grounding lug at the back of the chassis.

Do not substitute the power cord with one that is not the provided approved type. Never use an adapter plug to connect to a 2-wire outlet as this will defeat the continuity of the grounding wire.

The equipment requires the use of the ground wire as a part of the safety certification; modification or misuse can provide a shock hazard that can result in serious injury or death.

Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment.

Protective earth ground is provided by Listed AC adapter. Building installation shall provide appropriate short-circuit backup protection.

Protective bonding must be installed in accordance with local and national wiring rules and regulations.

## General Warranty

Netonix, LLC (“Netonix®”) represents all of its products as a commercial and or industrial product. Netonix does not manufacturer consumer electronics for the general public and should only be used by professionals in commercial and or industrial applications.

Netonix, LLC (“Netonix®”) represents and warrants that the products furnished hereunder shall be free from defects in material and workmanship for a period of one (1) year from the date of shipment by Netonix® under normal use and operation. Netonix® sole and exclusive obligation under the foregoing warranty shall be to repair or replace, at its sole discretion, any defective product that fails during the warranty period.

The expense or removal and reinstallation of any item are not included in this warranty.

The warranty is exclusive and in lieu of all other warranties, express or implied, including the implied warranties of merchantability and fitness for a particular purpose and any warranties arising from a course of dealing, usage or trade practice with respect to the products. Repair or replacement in the manner provided herein shall be the sole and exclusive remedy of the buyer for breach of warranty and shall constitute fulfillment of all liabilities of Netonix with respect to the quality and performance of the products.

Netonix® reserves the right to inspect all defective products, which must be returned by buyer to Netonix® freight prepaid.

No products will be accepted for replacement or repair without obtaining a Return Materials Authorization (RMA) number from Netonix®. Products returned without an RMA number will not be processed and may be discarded.

Netonix® shall have no obligation to make repairs or replacement necessitated by catastrophe, fault, negligence, misuse, abuse, or accident by buyer, buyer’s customers or any other parties.

The warranty period of any repaired or replaced product shall not extend beyond its original term.

## Warranty Conditions

The warranty shall apply only if:

- The product has not been subjected to misuse, neglect or unusual physical, electrical or electromagnetic stress, or some other type of accident.
- No modification, alteration or addition has been made to the product by persons other than Netonix® authorized representatives or otherwise approved by Netonix®.
- The product has been properly installed and used at all times in accordance, and in all material respects, with the applicable Product documentation.
- All Ethernet cabling runs use CAT5 (or above) and is shielded cabling with and ESD drain wire and ESD RJ-45 end/connector.

## Returns

In the unlikely event a defect or failure (not damage) occurs all RMAs are handled directly with the manufacturer, Netonix, LLC.

## Disclaimer:

Netonix® does not warrant that the operation of the products is error-free or that operation will be uninterrupted. In no event shall Netonix® be responsible for damages or claims of any nature or description relating to system performance, including coverage, buyer’s selection of products for buyer’s application and/ or failure of products to meet government or regulatory requirements.

## Compliance



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with **Part 15 of the FCC Rules**; operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

**NOTE:** This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to **Part 15 of the FCC Rules**. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to other radio electronic equipment. Operations of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.



This Class A digital apparatus complies with Canadian ICES-003.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause undesired operation of the device.



### Australia and New Zealand

**Warning:** This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.



CE marking on this product represents the product is in compliance with all directives that are applicable to it.



### RoHS/WEEE Compliance Statement

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.



# Declaration of Conformity

## Cesky [Czech]

Netonix ® prohlašuje, tento přístroj je ve shodě se základními požadavky a příslušnými ustanoveními směrnice 1999/5/ES.

## Dansk [Danish]

Netonix ® verklaart hierbij dit apparaat voldoet aan de essentiële eisen en de relevante bepalingen van richtlijn 1999/5/EG.

## Nederlands [Dutch]

Netonix ® verklaart hierbij dit apparaat voldoet aan de essentiële eisen en de relevante bepalingen van richtlijn 1999/5/EG.

## English

Netonix® hereby declares this device is in compliance with the essential requirements and relevant provisions of Directive 1999/5/EC.

## Eesti [Estonian]

Netonix ® kinnitab selle seadme vastavust põhinõuetele ja asjakohastele direktiivi 1999/5/EÜ.

## Suomi [Finnish]

Netonix ® vakuuttaa tämä laite on yhdenmukainen olennaisten vaatimusten ja sitä koskevien direktiivin 1999/5/EY.

## Français [French]

Netonix ® déclare ce dispositif est conforme aux exigences essentielles et aux dispositions pertinentes de la directive 1999/5/CE.

## Deutsch [German]

Netonix ® erklärt hiermit, dieses Gerät in Übereinstimmung mit den grundlegenden Anforderungen und relevanten Vorschriften der Richtlinie 1999/5/EG erfüllt.

## ελληνικά [Greek]

Netonix ® δηλώνει αυτή η συσκευή είναι σύμφωνη με τις βασικές απαιτήσεις και τις σχετικές διατάξεις της οδηγίας 1999/5/EK.

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## Magyar [Hungarian]

Netonix ® ezúton kijelenti, ez a készülék megfelel az alapvető követelményeknek, valamint a vonatkozó 1999/5/EC irányelv.

## Íslenska [Icelandic]

Netonix ® lýsir þetta tæki er í samræmi við grunnkröfur og viðeigandi ákvæði tilskipunar 1999/5/EB.

## Italiano [Italian]

Netonix ® dichiara questo dispositivo è conforme ai requisiti essenziali e le disposizioni pertinenti della direttiva 1999/5/CE.

## Latviski [Latvian]

Ar šo Netonix ® aplicina šī ierīce atbilst pamatprasībām un attiecīgajiem Direktīvas 1999/5/EK.

## Lietuviškai [Lithuanian]

Netonix ® pareiškia, šis prietaisas yra laikomasi esminių reikalavimų ir atitinkamų Direktyvos 1999/5/EB nuostatas.

## Malti [Maltese]

Netonix ® hawnhekk tiddikjara dan l-apparat huwa konformi mar-rekwiżiti essenzjali u d-dispożizzjonijiet rilevanti tad-Direttiva 1999/5/KE.

## Norsk [Norwegian]

Netonix ® erklærer herved denne enheten er i samsvar med de grunnleggende krav og relevante krav i direktiv 1999/5/EF.

## Slovensky [Slovak]

Netonix ® prehlasuje, tento prístroj je v zhode so základnými požiadavkami a príslušnými ustanoveniami smernice 1999/5/ES.

## Svenska [Swedish]

Netonix ® förklarar härmed denna enhet är i överensstämmelse med de grundläggande kraven och relevanta bestämmelser i direktiv 1999/5/EG.

## Español [Spanish]

Netonix ® declara por este dispositivo cumple con los requisitos esenciales y las disposiciones relevantes de la Directiva 1999/5/CE.

## Polski [Polish]

Netonix ® oświadcza, urządzenie to jest zgodne z zasadniczymi wymaganiami oraz odpowiednimi postanowieniami dyrektywy 1999/5/WE.

## Português [Portuguese]

Netonix ® declara este dispositivo está em conformidade com os requisitos essenciais e as disposições da Directiva 1999/5/CE.

## Româna [Romanian]

Netonix ® declară acest dispozitiv este în conformitate cu cerințele esențiale și dispozițiile relevante ale Directivei 1999/5/CE.