

NS4702-24P-4X A&E Specifications, Division 28 00 00 Electronic Safety and Security



• ISS

This A&E Specification conforms to CSI Master Format 2016 guidelines.

28 05 00 Common Work Results for Electronic Safety and Security

28 05 07 Power Sources for Electronic Safety and Security

28 05 07. 21 PoE Power Sources for Electronic Safety and Security

# Specifications

## UTC Fire & Security Model Number: **NS2052-8P-2C**.

### The switch shall comply with IEEE 802.3at / 802.3af Power over Ethernet.

### The switch shall support IEEE 802.3at Power over Ethernet detection and 54 VDC power injection at port 1 to port 24.

### The switch is also the power injectors which transmit DC Voltage to the Cat5/5e/6 cable and transfer data and power simultaneously to remote PD (Powered Device) units.

### The switch shall auto-detect PoE IEEE802.3at/802.3af equipment to protect devices from being damaged by incorrect installation.

### The switch shall support a total distance up to 100 meters on PoE ports.

28 05 33 Safety and Security Network Communications Equipment

28 05 33.17 Security Data Communications Non-Power-Over-Ethernet Switches

# System Description

## Performance Requirements: Provides 24 10/100/1000Base-T copper ports with IEEE 802.3at Power over Ethernet Injector.

### The system shall utilize EIA568, category 5/5e/6, four-pair cables for 10Base-T or 100Base-TX and 1000Base-T to transfer Ethernet data and 54 VDC power simultaneously.

### The system shall utilize 850 to 1310 nm optics capable of data transmission of 1/10 Gbps on multimode / single mode optical fibers.

## The Gigabit SFP ports can be optical 1000Base-SX-LX or 100Base-FX through SFP (Small Form-Factor Pluggable) interface.

### The SFP module shall utilize **850 nm** optics capable of bi-directional data transmission of **1000Base-SX** on four multimode optical fibers.

### The SFP module shall utilize **1310 nm** optics capable of bi-directional data transmission of **1000Base-LX** on four single-mode optical fibers.

### The SFP module shall utilize **1310 nm/1490 nm or 1310 nm/1550 nm** optics capable of bi-directional data transmission of **1000Base-BX** on one single-mode optical fiber.

## The 10 Gigabit SFP ports can be optical 1000 Base-SX-LX and 10G Base-SR/LR through SFP+ interfaces.

### The SFP+ modules shall utilize 850 nm optics capable of bi-directional data transmission of 10GBase-SR on four multimode optical fibers.

### The SFP+ modules shall utilize 1310 nm optics capable of bi-directional data transmission of 10GBase-LR on four single-mode optical fibers.

## The NS4702-24P-4X Managed PoE Switch provides 24 100/1000 Mbps Gigabit Ethernet ports with 4 1/10Gbps SFP+ interfaces with 24 802.3at / 802.3af PoE injector

### The PoE in-line power following the standard IEEE 802.3at / 802.3af makes the NS4702-24P-4X able to power on 24 PoE compliant devices at the distance up to 100 meters through the 4-pair Cat 5/5e UTP wire..

28 05 45 Systems Integration and Interconnection Requirements

28 05 45.11 Mechanical

# Surface Mount Dimensions: 17” x 11.8” x 2.2” (440 mm x 300 mm x 56 mm)

# Finish: Module shall be constructed of a metal enclosure with a powder coat.

# Weight: 10.2 lb. / 4.64 kg

28 05 45.13 Electrical

# Power Characteristics:

## Voltage Input:100~240 VAC / 50-60 Hz.

## Current: 7 A max.

## Power Consumption: Maximum 488 W with PoE full load.

# PoE Output Power of NS4702-24P-4X:

## PoE output budget: 400 W.

## IEEE 802.3af class 3 (15.4 W): Max. 24 ports.

## IEEE 802.3at class 4 (30.8 W): Max. 14 ports.

28 05 45.15 Information

# Submittals

## Manufacturer’s Installation and Operating Manual: Printed installation and operating information for the managed PoE switch.

## Warranty: Manufacturer’s Printed Warranty.

# Delivery, Storage, and Handling

## Store in original packaging in a climate controlled environment.

## Storage Temperature not to exceed: **–10 to +70˚C**

# Project/Site Conditions

## Temperature Requirements: Products shall operate in an environment with an ambient temperature range of **0** to **+50˚C** with the assistance of fan-forced cooling.

## Humidity Requirements: Products shall operate in an environment with relative humidity of 5 to 95% (non-condensing).

# Warranty

## Standard UTC Fire & Security Inc. Comprehensive Warranty: UTC Fire & Security warrants the product to be free of factory defects under manufacture’s 3 Years Warranty.

# General Specifications

## The Managed PoE Switch shall be a NS4702-24P-4X model.

## The switch features 24 fixed 10/100/1000Base-T electrical ports.

## The switch features four 1000SX/LX and 100FX optical SFP slots.

## The switch features four 10GBase-SR/LR optical SFP+ slots.

## The switch shall support the Ethernet data IEEE 802.3 protocol using auto-negotiating and auto-MDI/MDI-X features.

## The switch shall provide power, fan failure, power failure, link / act status and PoE in-use status indicating LEDs for monitoring proper system operation.

## The switch shall provide two digital input groups and two digital output groups.

## The switch shall provide a RS-232 serial connection for local management of the device.

## The switch shall be a 1U (one U, 19 inches) 19-inch equipment.

## The switch shall be connected with EIA568A/B Cat 5/5e/6 UTP/STP cable system for its RJ45 interface ports.

# Data Specifications

## Data Interface: Ethernet IEEE 802.3/3u/3ab/3z

## Data Rate:

### Port 1 to Port 24: 10/100/1000 Mbps

### Port 25 to Port 28 SFP+: 1/10 Gbps

## Data Inputs: 28

## Operation Mode: Simplex or Duplex

# Status Indicators

## System

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| SYS | Green | **Lit:** indicates that the system boot is complete. |
| PWR | Green | **Blink:** indicates that thesystem is booting. |

## 100/1000X SFP Interfaces

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| LNK/ACT | Green | **Lit:** indicates that the link through that SFP port is successfully established at 1000 Mbps. |
| **Off:** indicates that the SFP port is link down. |
| **Blink**: indicates that the switch is actively sending or receiving data over that port. |
| Amber | **Lit:** indicates that the link through that SFP or Copper port is successfully established at 100 Mbps. |
| **Off:** indicates that the SFP port is link down. |
| **Blink**: indicates that the switch is actively sending or receiving data over that port. |

## 10/100/100 0Base-T Interfaces

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| LNK/ACT | Green | **Lit:** indicates that the link through that port is successfully connecting to the network at 10/100/1000 Mbps. |
| **Off**: indicates that the switch is not connected. |
| **Blink**: indicates that the port is actively sending or receiving packets from the TX device. |
| PoE In-use | Amber | **Lit:** indicates that the port is providing 54 VDC in-line power. |
| **Off**: indicates that the port connected device is not a PoE Powered Device (PD) or PoE inject capability be disabled by manual setting. |

## 1/10GBase-SR/LR SFP+ Interfaces (Ports 25 to 28)

|  |  |  |
| --- | --- | --- |
|  | **Color** | **Function** |
| 1G LNK/ACT | Green | **Lit:** indicates that the link through that port is successfully connecting to the network at 1000 Mbps. |
| **Blink**: indicates that the switch is actively sending or receiving data over that port. |
| 10G LNK/ACT | Amber | **Lit:** indicates that the link through that port is successfully established at 10 Gbps. |
| **Blink**: indicates that the switch is actively sending or receiving data over that port.. |

## Alert

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| Fault | Red | **Lit:** indicates a PoE power failaure. |
| FAN1 | Red | **Lit:** indicates FAN1 failure. |
| FAN2 | Red | **Lit:** indicates FAN2 failure. |
| FAN3 | Red | **Lit:** indicates FAN3 failure. |

# Connectors

## Optical: SFP+ slot.

## Power: Universal AC socket.

## Data: RJ45.

## Console: RJ45 Type RS-232 serial com.

# Environmental Specifications

## MTBF: > 50,000 Hours

## Operating Temp: 0 to +50˚C

## Storage Temp: –10 to +70˚C

## Relative Humidity: 5% to 95% (non-condensing)

# Regulatory Agencies/Approvals and Listings

## Federal Communications Commission (FCC) Part 15, Class A

## European Union Compliance (CE) with the following standards:

### EN 55032: 2015+AC:2016, Class A

### EN61000-3-2: 2014

### EN61000-3-3: 2013

### EN 55024: 2010+A1:2015

# Accessories

## AC Power cord

## Rubber feet

## Rack-mount brackets

## RS-232 RJ45 to DB9 male console cable

# Execution

## Preparation

### Standalone Module (Surface Mount)

#### Shall be mounted on a properly prepared surface adequate for the size and weight of module.

#### The placement of the unit shall allow provision for cable installation and maintenance as indicated on the approved detail drawings and in compliance with the installation manual.

### Rack Mount Module (19-inch Rack)

#### The unit is installed in a standard EIA 19-inch (482.6 mm) rack or wall standoff bracket adequate for the size and weight of the rack mount unit..

#### The placement of the unit shall allow provision for cable installation and maintenance as indicated on the approved detail drawings and in compliance with the installation manual.

### Optical Fibers

#### Caution: NEVER look into the end of an active optical fiber when using laser light output. Eye damage can occur. Wear eye protection when cleaving, terminating, and splicing fiber.

#### The number of optical fiber SFP+ slots shall meet the requirements of the UTC Fire & Security model number.

#### All optical fiber cables shall be properly installed and terminated with the mating optical connectors.

#### The optical link shall be tested with either a power meter, at a minimum, or OTDR to ensure the link budget (overall path loss) plus an added 3 dB of optical safety margin does not exceed the optical power budget.

# Installation

## General: Locate fiber optic modules as indicated on the approved detail drawings and install module in compliance with the UTC Fire & Security User’s manual.

# Cleaning

## Follow all instructions for proper use of solvents and adhesives used for termination and splicing.

## At completion of the installation, dispose of all UTP cable scraps properly.

28 05 53 Identification for Electronic Safety and Security

# Products

## Description:

### IFS NS4702-24P-4X 24-port 10/100/1000 Mbps 802.3 PoE ports with four 1/10 Gbps SFP+ Ports managed switch.

## Manufacturer

### Acceptable Manufacturer:

#### IFS Brand

#### UTC Fire & Security, Inc.

#### 2955 Red Hell Ave.

#### Costa Mesa, CA 92626

#### Phone 1-855-286-8889

#### Email: presales@interlogix.com

### Substitutions: Not Permitted

## Manufactured Units

### Model Number Descriptions: Reference Table A: Product Number Descriptions

### Model Compatibility Chart: Reference Table B: Product Compatibility Chart

### MANUFACTURED UNITS REFERENCE TABLES

#### Table A: Product Number Descriptions

|  |  |  |
| --- | --- | --- |
| **Model Name** | **DESCRIPTION** | **MAX. DISTANCE\*** |
| NS4702-24P-4X | 24-Port Gigabit PoE+ plus 4 x 10G SFP+ Ports Managed Switch | 300 feet (100 m) electrical |

#### Table B: Product Compatibility Chart

| SFP Transceiver | DESCRIPTION | MAX. DISTANCE\* |
| --- | --- | --- |
| MULTI-MODE |  |  |
| S30-2MLC | SFP-Port 1000 Base-SX Mini-GBIC Module - 2 Fiber – 550 m - Multi-Mode – 850 nm (0~50℃) - Based on 50/125 µm OM2 Fiber | 550 m |
| S30-2MLC-2 | SFP-Port 1000 Base-SX2 Mini-GBIC Module - 2 Fiber – 2 km - Multi-Mode – 1310 nm (0~50℃) - Based on 50/125 µm OM4 Laser Optimise | 2 km |
| S20-2MLC-2 | SFP-Port 100Base-FX Mini-GBIC Module - 2 Fiber - 2km - Multi-Mode - 1310nm (0~50℃) | 2 km |
| S40-2MLC | SFP+ Port 10GBase-SR Mini-GBIC Module - 2 Fiber – 300m - Multi-Mode - 850nm (0~50℃) | 300 m |
| SINGLE MODE |  |  |
| S30-2SLC-10 | SFP-Port 1000 Base-LX10 Mini-GBIC Module - 2 Fiber – 10 km - Single-Mode – 1310 nm (0~50℃) | 10 km |
| S30-2SLC-30 | SFP-Port 1000 Base-LHX Mini-GBIC Module - 2 Fiber – 30 km - Single-Mode – 1310 nm (0~50℃) | 30 km |
| S30-2SLC-70 | SFP-Port 1000 Base-ZX Mini-GBIC Module - 2 Fiber – 70 km - Single-Mode – 1550 nm (0~50℃) | 70 km |
| S30-1SLC/A-10 | SFP-Port 1000 Base-BX10 Mini-GBIC Module - 1 Fiber – 10 km - Single-Mode - Tx 1310 nm - Rx 1490 nm (0~50℃) | 10 km |
| S30-1SLC/B-10 | SFP-Port 1000 Base-BX10 Mini-GBIC Module - 1 Fiber – 10 km - Single-Mode - Tx 1490 nm - Rx 1310 nm (0~50 ℃) | 10 km |
| S30-1SLC/A-20 | SFP-Port 1000 Base-BX20 Mini-GBIC Module - 1 Fiber – 20 km - Single-Mode - Tx 1310 nm - Rx 1490 nm (0~50℃) | 20 km |
| S30-1SLC/B-20 | SFP-Port 1000 Base-BX20 Mini-GBIC Module - 1 Fiber – 20 km - Single-Mode - Tx 1490 nm - Rx 1310 nm (0~50℃) | 20 km |
| S30-1SLC/A-60 | SFP-Port 1000Base-BX60 Mini-GBIC Module - 1 Fiber – 60 km - Single-Mode - Tx 1310nm - Rx 1490nm (0~50℃) | 60 km |
| S30-1SLC/B-60 | SFP-Port 1000 Base-BX60 Mini-GBIC Module - 1 Fiber – 60 km - Single-Mode - Tx 1490 nm - Rx 1310 nm (0~50℃) | 60 km |
| S20-1SLC/A-20 | SFP-Port 100Base-BX20 Mini-GBIC Module - 1 Fiber – 20 km - Single-Mode - Tx 1310nm - Rx 1550nm (0~50℃) | 20 km |
| S20-1SLC/B-20 | SFP-Port 100Base-BX20 Mini-GBIC Module - 1 Fiber – 20 km - Single-Mode - Tx 1550nm - Rx 1310nm (0~50℃) | 20 km |
| S20-2SLC-20 | SFP-Port 100Base-LX20 Mini-GBIC Module - 2 Fiber – 20 km - Single-Mode - 1310nm (0~50℃) | 20 km |
| S40-2SLC-10 | SFP+ Port 10GBase-LR Mini-GBIC Module - 2 Fiber – 10 km – Single Mode - 1310nm (0~50℃) | 10 km |
| S25-1MLC-A-2 | SFP - 100Base-BX - 1MM - LC - 2Km TX:1310 nm, RX: 1550 nm (-40~75℃) | 2 km |
| S25-1MLC-B-2 | SFP - 100Base-BX - 1MM - LC - 2Km TX:1550 nm, RX: 1310 nm (-40~75℃) | 2 km |

\* Maximum distance is limited to optical loss of the fiber and any additional loss by connectors, splices and patch panels.

28 08 00 Commissioning of Electronic Safety and Security

28 08 11 Testing for Baseline Performance Criteria

# Testing the 10/100/1000T Gigabit Copper Link.

## Verify that the data leads and optical fibers are properly connected.

## Make surethat power is applied to the PoE switch.

## Successful data link operation should be confirmed at this point by communicating with other equipment.

# Testing the 10/100/1000T PoE Copper output capability.

# Testing the 1/10Gbps SFP+ output capability.

Contacting Support

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EMEA:

See specific country listings at:

[www.utcfssecurityproducts.com/CustomerSupport](http://www.utcfssecurityproducts.com/CustomerSupport)