

NS3702-24P-4S-V2 A&E Specifications, Division 28 00 00 Electronic Safety and Security



This A&E Specification conforms to CSI MasterFormat 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

## Carrier Fire & Security Model Number: **NS3702-24P-4S-V2**.

### 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 56 VDC power injectors 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 56 VDC power simultaneously.

### The system shall utilize 850 to 1550 nm optics capable of data transmission of 100/1000 Mbps 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 SFP module shall utilize 1310nm optics capable of bi-directional data transmission of 100Base-FX on multimode or single-mode optical fibers

## The Managed PoE Switch provides 24 100/1000 Mbps Gigabit Ethernet ports with 4 100/1000 Mbps 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 switch 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 1.75” (440 mm x 300 mm x 44.5 mm)

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

# Weight: 10 lb. / 4.75 kg

28 05 45.13 Electrical

# Power Characteristics:

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

## Current: 6 A max.

## Power Consumption: Maximum 500 W with PoE full load.

# PoE Output Power:

## PoE output budget: 380 W.

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

## IEEE 802.3at class 3 (30 W): Max. 12 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 Carrier Fire & Security Inc. Comprehensive Warranty: Carrier Fire & Security warrants the product to be free of factory defects under the manufacturer’s 3 Years Warranty.

# General Specifications

## The Managed PoE Switch shall be a NS3702-24P-4S-V2 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 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, LNK/ACT status and PoE in-use status indicating LEDs for monitoring proper system operation.

## 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 21 to Port 24 SFP: 100/1000 Mbps

## Data Inputs: 24

## Operation Mode: Simplex or Duplex

# Status Indicators

## System

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

## 10/100/1000Base-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 successfully connecting to the network at 10/100Mbps. |
| **Blinking**: 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 56 VDC in-line power. |
| **Off**: indicates that the port connected device is not a PoE Powered Device (PD) or the PoE inject capability is disabled by a manual setting. |

## 100/1000X SFP Interfaces (Shared with Ports 21 and 24)

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| LNK/ACT | Green | **Lit:** indicates that the link through that port is successfully connecting to the network at 100 or 1000 Mbps.. |
| **Blinking**: indicates that the port is actively sending or receiving data over that port. |
| 1000 | Amber | **Lit:** indicates that the port is successfully established at 1000 Mbps. |
| **Off**: indicates that the port is successfully established at 100 Mbps. |

## Alert

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| PWR | Green | **Lit:** indicates a PoE power failure. |
| FAN1 | Green | **Lit:** indicates FAN1 failure. |
| FAN2 | Green | **Lit:** indicates FAN2 failure. |
| FAN3 | Green | **Lit:** indicates FAN3 failure. |

# Connectors

## Optical: SFP slot.

## Power: Universal AC socket.

## Data: RJ45.

## Console: DB9 Type RS-232 serial com.

# Environmental Specifications

## MTBF: > 50,000 Hours

## Operating Temp: 0 to +50˚C

## Storage Temp: –20 to +70˚C

## Relative Humidity: 0% 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, Class A

### EN61000-3-2: 2014

### EN61000-3-3: 2013

### EN 55024:2015

# Accessories

## AC Power cord

## Rubber feet

## Rack-mount brackets

## RS-232 DB9 male console cable

## SFP dust caps

# 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 user 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 Carrier 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 Carrier 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 NS3702-24P-4S-V2 24-port 10/100/1000 Mbps 802.3at PoE with 4 shared SFP slots managed switch.

## Manufacturer

### Acceptable Manufacturer:

#### IFS Brand

#### Carrier Fire & Security Americas Corporation Inc

#### 13995 Pasteur Blvd

#### Palm Beach Gardens

#### FL 33418, USA

### 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\*** |
| NS3702-24P-4S-V2 | L2+ 24-Port 100/1000Base-T 802.3at PoE w/ 4 shared SFP Full Managed Ethernet Switch | 328 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 |
| 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 |
| 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 sure that power is applied to the PoE switch.

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

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

Contacting Support

EMEA:

See specific country listings at:

https://firesecurityproducts.com

Australia/New Zealand

https://firesecurityproducts.com.au/