

NS3550-2T-8S A&E Specifications, Division 28 00 00 Electronic Safety and Security



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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 07.25 Power Source Monitoring

# Specifications

## UTC Fire & Security Model Number: **NS3550-2T-8S**.

### The module shall provide two powers, power fault, Ring and RO, fiber port speed and link / act status, TP port speed and link / act status indicating LED’s for monitoring proper system operation.

### The unit also provides a contact closure for a power fault alarm.

### The module shall have redundant power supply connections to minimize single point failure.

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: Provide eight 100/1000 Mbps SFP slots and two 10/100/1000Base-T copper ports.

### The system shall utilize EIA568, category 5/5e/6, 4-pair cables for 10Base-T or 100Base-TX and 1000Base-T to transfer Ethernet data and 48 to 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 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 two multimode optical fibers.

### The SFP module shall utilize **1310 nm** optics capable of bi-directional data transmission of **1000Base-LX** on two 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 1310 nm optics capable of bi-directional data transmission of 100Base-FX on multimode or single-mode optical fibers.

28 05 45 Systems Integration and Interconnection Requirements

28 05 45.11 Mechanical

# Surface Mount Dimensions: 5.9” x 4.2” x 2.83” (152 mm x 107 mm x 72 mm)

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

# Weight: 2.2 lb. / 1 kg

28 05 45.13 Electrical

# Power Characteristics:

## Power:

### 12 to 48 VDC @ 1 A, AC24V

## Current protection: Automatic resettable solid state current limiters

## Voltage regulation: Solid state, independent on each board

28 05 45.15 Information

# Submittals

## Manufacturer’s Installation and Operating Manual: Printed installation and operating information for the Managed Ethernet Switch.

## Warranty: Manufacturer’s Printed Warranty.

# Delivery, Storage, and Handling

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

## Storage Temperature not to exceed: **–40 to +85˚C**

# Project/Site Conditions

## Temperature Requirements: Products shall operate in an environment with an ambient temperature range of –4**0** to **+75˚C** without the assistance of fan-forced cooling.

## Humidity Requirements: Products shall operate in an environment with relative humidity of 0 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 the manufacturer’s 3 Years Warranty.

# General Specifications

## The Managed Ethernet Switch shall be a NS3550-2T-8S model.

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

## The switch features two fixed 10/100/1000T electrical ports.

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

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

## 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 8 SFP: 100/1000 Mbps

### Port 9 and Port 10: 10/100/1000 Mbps

## Data Inputs: 10

## Operation Mode: Simplex or Duplex

# Optical Specifications

## Optical Fiber:

### 9/125 micron single mode

### 62.5/125 micron multimode

## Number of Optical ports: 1

## Number of Fibers Required: 1 or 2, depends on various SFP module

## Optical Wavelength: depends on various SFP module

## Optical Power Budget: depends on various SFP module

## Maximum Distance: depends on various SFP module

# Status Indicators

## System

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| P1 | Green | **Lit:** indicates the power 1 has power. |
| P2 | Green | **Lit:** indicates the power 2 has power. |
| FAULT | Green | **Lit:** indicates that either power 1 or power 2 has no power. |
| RING | Green | **Lit:** indicates that the ERPS Ring has been created successfully. |
|  |  | **Off**: indicates that the ERPS Ring hasn’t been created. |
| R.O. | Green | **Lit:** indicates that the switch has enabled Ring Owner. |
|  |  | **Off**: indicates that the Ring Owner hasn’t been enabled. |

## 100/1000X SFP Interfaces

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

## 10/100/1000Base-T Interfaces

|  |  |  |
| --- | --- | --- |
| **LED** | **Color** | **Function** |
| LNK/ACT | Green | **Lit:** indicates that the link through that port is successfully established. |
| **Blink**: indicates that the switch is actively sending or receiving data over that port. |
| 1000 | Green | **Lit:** indicates that the port is successfully connecting to the network at 1000 Mbps. |
| **Off**: indicates that the port is successfully connecting to the network at 10/100 Mbps. |

# Connectors

## Optical: SFP Slot/LC interface

## Power: Terminal block with screw clamps

## Data: RJ45

## Contact closure: Terminal block with screw clamps

# Environmental Specifications

## MTBF: > 100,000 Hours

## Operating Temp: –40 to +75˚C

## Storage Temp: –40 to +85˚C

## Relative Humidity: 0 to 95% (non-condensing). If the product is installed under condensation conditions, it shall have conformal coating applied to the printed circuit board.

# Regulatory Agencies/Approvals and Listings

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

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

### EN 55022:2006, Class A

### EN61000-3-2:2006

### EN61000-3-3+A2:2005

### EN 55024+A2:2003

# Accessories

## DIN rail kit

## Wall mount kit

# Execution

## Examination

### All electronic RJ45 connectors shall be covered with dust caps and remain on the fixed port until cable connector installation.

### All optical connectors shall be covered with dust caps and remain on the interface until cable connector installation.

## 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.

## DIN Rail Mount Installation

### Shall be mounted on a properly installed DIN Rail adequate for the size and weight of the 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.

## 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 and type – multimode of optical fiber 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.

### All optical connectors on the cable shall be cleaned in compliance with the optical connector manufacturer's specifications and covered with dust caps until the fiber optic module is connected.

# 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 NS3550-2T-8S eight 100/1000X plus two 10/100/1000TP IPv6 Managed Ethernet Switch– Standalone

## Manufacturer

### Acceptable Manufacturer:

#### IFS Brand

#### UTC Fire & Security, Inc.

#### 3211 Progress Drive

#### Lincolnton, NC 28092

#### 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\*** |
| NS3550-16P-2T-8S | 8-port Gigabit Fiber (SFP) Industrial Managed Switch  | Depends on various SFP module.  |

#### Table B: Product Compatibility Chart

| SFP Transceiver | DESCRIPTION | MAX. DISTANCE\* |
| --- | --- | --- |
| MULTI-MODE |  |  |
| S30-2MLC | SFP-Port 1000Base-SX Mini-GBIC Module - 2 Fiber – 550 m - Multi-Mode – 850 nm (0~50℃) - Based on 50/125 µm OM2 Fiber | 550 m |
| S35-2MLC | SFP-Port 1000Base-SX Mini-GBIC Module - 2 Fiber – 550 m - Multi-Mode – 850 nm (–40~75℃) - Based on 50/125 µm OM2 Fiber | 550 m |
| S30-2MLC-2 | SFP-Port 1000Base-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 – 2 km - Multi-Mode – 1310 nm (0~50℃) | 2 km |
| S25-2MLC-2 | SFP-Port 100Base-FX Mini-GBIC Module - 2 Fiber – 2 km - Multi-Mode – 1310 nm (-40~75℃) | 2 km |
| SINGLE MODE |  |  |
| S30-2SLC-10 | SFP-Port 1000Base-LX10 Mini-GBIC Module - 2 Fiber – 10 km - Single-Mode – 1310 nm (0~50℃) | 10 km |
| S35-2SLC-10 | SFP-Port 1000Base-LX10 Mini-GBIC Module - 2 Fiber – 10 km - Single-Mode – 1310 nm (–40~75℃) | 10 km |
| S30-2SLC-30 | SFP-Port 1000Base-LHX Mini-GBIC Module - 2 Fiber – 30 km - Single-Mode – 1310 nm (0~50℃) | 30 km |
| S35-2SLC-30 | SFP-Port 1000Base-LHX Mini-GBIC Module - 2 Fiber – 30 km - Single-Mode – 1310 nm (–40~75℃) | 30 km |
| S30-2SLC-70 | SFP-Port 1000Base-ZX Mini-GBIC Module - 2 Fiber – 70 km - Single-Mode – 1550 nm (0~50℃) | 70 km |
| S35-2SLC-70 | SFP-Port 1000Base-ZX Mini-GBIC Module - 2 Fiber – 70 km - Single-Mode – 1550 nm (–40~75℃) | 70 km |
| S30-1SLC/A-10 | SFP-Port 1000Base-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 1000Base-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 1000Base-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 1000Base-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 - 60km - Single-Mode - Tx 1310nm - Rx 1490nm (0~50℃) | 60 km |
| S30-1SLC/B-60 | SFP-Port 1000Base-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 1310 nm - Rx 1550 nm (0~50℃) | 20 km |
| S20-1SLC/B-20 | SFP-Port 100Base-BX20 Mini-GBIC Module - 1 Fiber – 20 km - Single-Mode - Tx 1550 nm - Rx 1310 nm (0~50℃) | 20 km |
| S20-2SLC-20 | SFP-Port 100Base-LX20 Mini-GBIC Module - 2 Fiber – 20 km - Single-Mode – 1310 nm (0~50℃) | 20 km |
| S25-2SLC-20 | SFP-Port 100Base-LX20 Mini-GBIC Module - 2 Fiber – 20 km - Single-Mode – 1310 nm (–40~75℃) | 20 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 Fiber Optic Ethernet Link.

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

## Make sure that power is applied to all fiber optic modules, controllers, and receiver drivers or other equipment used in the system.

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

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

## Verify that the data leads and UTP ports are properly connected.

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

Contacting Support

North America:

855-286-8889

techsupport@interlogix.com

Latin America:

561-998-6114

latam@interlogix.com

Web site:

[www.interlogix.com/customer-support](http://www.interlogix.com/customer-support)

EMEA:

See specific country listings at:

[www.utcfssecurityproducts.eu/support](http://www.utcfssecurityproducts.eu/support)