# 8-Port 10/100/1000Mbps Industrial Gigabit Ethernet Switch - NS3050-8P - User Manual

## Package Contents

Thank you for purchasing IFS 8-Port 10/100/1000T industrial Gigabit Ethernet Switch, NS3050-8T. In the following section, the term "**Industrial Gigabit Ethernet Switch**" means the NS3050-8T.

Open the box of the Industrial Gigabit Ethernet Switch and carefully unpack it. The box should contain the following items:

Industrial Gigabit Ethernet Switch x 1

User's Manual x 1

DIN Rail Kit x 1

Wall-mount Kit x 1

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

## 2. Hardware Introduction

### 2.1 Physical Dimensions

NS3050-8T dimensions (W x D x H): 135 x 87 x 32mm

See Figure 2.1 on page 6.

### 2.2 Switch Front Panel

The front panel of the Industrial Gigabit Ethernet Switch consists of 5 or 8 auto-sensing 10/100/1000Mbps Ethernet RJ45 ports. The LED Indicators are also located on the RJ45 ports of the Gigabit Ethernet Switch.

Figures 2-2 show the front panels of Industrial Gigabit Ethernet Switches.

**Figure 2-2: NS3050-8T Front Panel**



### 2.3 LED Indicators

| LED | Color | Function |
| --- | --- | --- |
| P1 | Green | **Lit**: indicates power 1 has power. |
| P2 | Green | **Lit**: indicates power 2 has power. |
| FAULT | Red | Lit: indicates either power 1 or power 2 has no power. **(See Note: 1)** |
| 1000 | Green | **Lit**: indicates the port is successfully connecting to the network at 1000Mbps.<br>Off: indicates that the port is successfully connecting to the network at 10Mbps or 100Mbps.<br>**Blinking**: indicates that the port is actively sending or receiving data. |
| 100 | Orange | **Lit**: indicates the port is successfully connecting to the network at 100Mbps or 10Mbps.<br>**Off**: indicates that the port is successfully connecting to the network at 1000Mbps.<br>Blinking: indicates that the port is actively sending or receiving data. |

**(Note: 1) Notice the fault light will go out if you tie power 1 to power 2 if you are not using redundant power.**

## 2.4 Switch Upper Panel

The upper panel of the Industrial Gigabit Ethernet Switch consists of one terminal block connector within two DC power inputs.

Figure 2-4 shows the upper panel of the Industrial Gigabit Ethernet Switch.

**Figure 2-4: Industrial Gigabit Ethernet Switch Upper Panel**
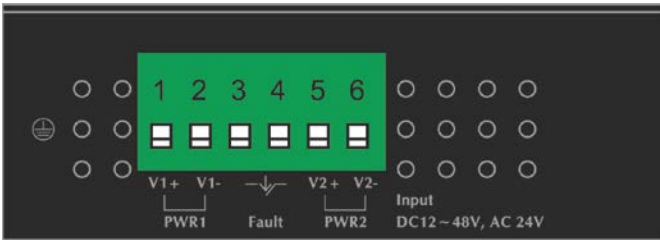


### 2.5 Wiring the Power Inputs

The 6-contact terminal block connector on the top panel of Industrial Gigabit Ethernet Switch is used for two DC redundant power inputs. Please follow the steps below to insert the power wire.

1. Insert positive and negative DC power wires into contacts 1 and 2 for Power 1 or 5, and 6 for Power 2.
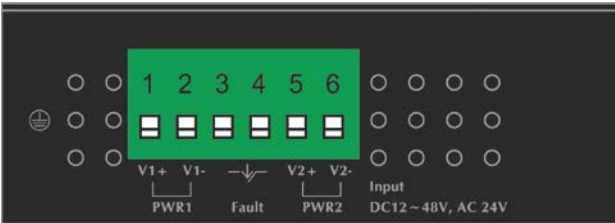


2. Tighten the wire-clamp screws for preventing the wires from loosening.
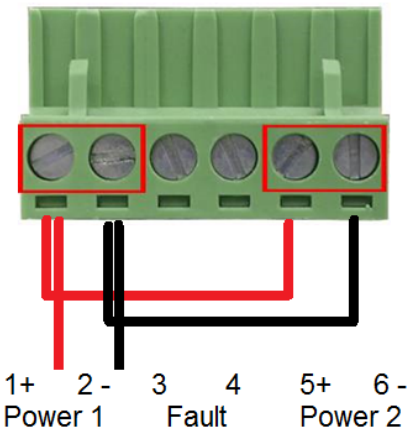


**Note**:

1. The wire gauge for the terminal block should be in the range between 12 and 24 AWG.

2. The device must be grounded.

3. The DC power input range is 12V ~ 48 VDC.

## 2.6 Wiring the Fault Alarm Contact

The fault alarm contacts are in the middle of the terminal block connector as the picture shows below. Inserting the wires, the Industrial Gigabit Ethernet Switch will detect the fault status of the power failure and then forms an open circuit. The following illustration shows an application example for wiring the fault alarm contacts.
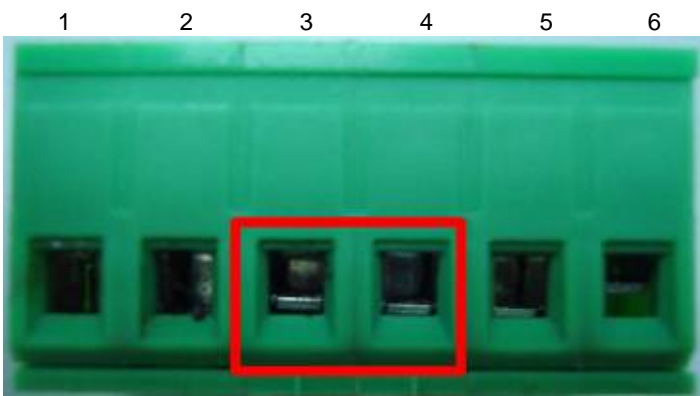


Insert the wires into the fault alarm contacts

**Note**:

1. The wire gauge for the terminal block should be in the range between 12 and 24 AWG.

2. Alarm relay circuit accepts up to 30 V, max. 3 A currents.
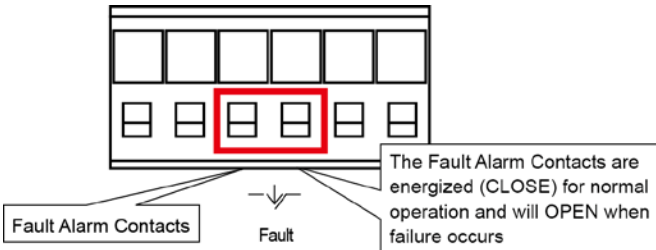


## 2.7 Product Specifications

| Hardware Specifications | |
| --- | --- |
| 10/100/1000BASE-T Ports | 8 |
| Dimensions (W x D x H) | 135 x 87 x 32 mm |
| Weight | 461g |
| Power Requirements | 12 to 48 VDC, redundant power with polarity reverse protection function, 24 VAC power support |
| Power Consumption/ Dissipation | 48 VDC @ 140 mA 6.72 W / 23 BTU |
| Installation | DIN rail kit and wall-mount ear |
| **Switch Specifications** | |
| Switch Processing Scheme | Store-and-Forward |
| Address Table | 4K |
| Buffer | 1.5Mbits SRAM packet buffer |

| | |
|---|---|
| Flow Control | Back pressure for half duplex IEEE 802.3x pause frame for full duplex |
| Switch Fabric | 16Gbps |
| Throughput (packet per second) | 11.9Mpps |
| Jumbo Frame | 9K |
| Network Cables | 10/100/1000BASE-T: Cat3, 4, 5, 5e, 6 UTP cable (100 m, max.) EIA/TIA-568 100-ohm STP (100 m, max.) |
| **Standards Conformance** | |
| Standards Compliance | IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3x Full-Duplex Flow Control |
| Temperature | Operating: -40 to +75 °C Storage: -40 to 75 °C |
| Humidity | Operating: 5% to 95%, Storage: 5% to 95% (non-condensing) |
| Regulatory Compliance | FCC Part 15 Class A, CE |

# 3. INSTALLATION

## 3.1 DIN-rail Mounting Installation

You need to screw the DIN-rail on the Industrial Gigabit Ethernet Switch. To replace the wall-mount application with DIN-rail application on Industrial Gigabit Ethernet Switch, please refer to the following figures to screw the DIN-rail on the Industrial Gigabit Ethernet Switch.

To hang the Industrial Gigabit Ethernet Switch, please follow the steps below:

**Step 1:** Screw the DIN-rail on the Industrial Gigabit Ethernet Switch.



**Step 2:** Place the bottom of DIN-rail lightly into the track.



**Step 3**: Check whether the DIN-rail is securely on the track.



To remove the Industrial Gigabit Ethernet Switch from the track, follow the steps below:

**Step 1:** Carefully pull out the bottom of DIN-rail to remove it from the track.



## 3.2 Wall-mount Plate Mounting

To install the Industrial Gigabit Ethernet Switch on the wall, please follow the steps below.

**Step 1:** Remove the DIN-rail from the Industrial Gigabit Ethernet Switch. Loosen the screws to remove the DIN-rail.

**Step 2:** Place the wall-mount plate on the rear panel of the Industrial Gigabit Ethernet Switch.

**Step 3:** Use the screws to screw the wall-mount plate on the Industrial Gigabit Ethernet Switch.

**Step 4:** Use the hook holes at the corners of the wall-mount plate to hang the Industrial Gigabit Ethernet Switch on the wall.

**Step 5:** To remove the wall-mount plate, reverse the steps above.

# 4. TROUBLESHOOTING

This chapter contains information to help you solve issues. If the Industrial Gigabit Ethernet Switch is not functioning properly, make sure the Industrial Gigabit Ethernet Switch was set up according to instructions in this manual.

**The per port LED is not lit**

*Solution***:**

Check the cable connection of the Industrial Gigabit Ethernet Switch.

**Performance is bad**

*Solution:*

Check the speed duplex mode of the partner device. The Industrial Gigabit Ethernet Switch is run in auto-negotiation mode and if the partner is set to half duplex, then the performance will be poor.

**Per port LED is lit, but the traffic is irregular**

*Solution:*

Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

**The Industrial Gigabit Ethernet Switch doesn't connect to the network**

*Solution:*

Check per port LED on the Industrial Gigabit Ethernet Switch. Try another port on the Industrial Gigabit Ethernet Switch. Make sure the cable is installed properly. Make

sure the cable is the right type. Turn off the power. After a few moments, turn on the power again.

# APPENDIX A: NETWORKING CONNECTION

## A.1 Switch's RJ45 Pin Assignments

**1000Mbps, 1000BASE-T**

| Contact | MDI | MDI-X |
|---------|--------|--------|
| 1 | BI_DA+ | BI_DB+ |
| 2 | BI_DA- | BI_DB- |
| 3 | BI_DB+ | BI_DA+ |
| 4 | BI_DC+ | BI_DD+ |
| 5 | BI_DC- | BI_DD- |
| 6 | BI_DB- | BI_DA- |
| 7 | BI_DD+ | BI_DC+ |
| 8 | BI_DD- | BI_DC- |

**10/100Mbps, 10/100BASE-TX**

| RJ45 Connector pin assignment | | |
|---------|--------|--------|
| | MDI | MDI-X |
| Contact | Media Dependent Interface | Media Dependent Interface -Cross |
| 1 | Tx + (transmit) | Rx + (receive) |
| 2 | Tx - (transmit) | Rx - (receive) |
| 3 | Rx + (receive) | Tx + (transmit) |
| 4, 5 | Not used | |
| 6 | Rx - (receive) | Tx - (transmit) |
| 7, 8 | Not used | |

## A.2 RJ45 Cable Pin Assignments
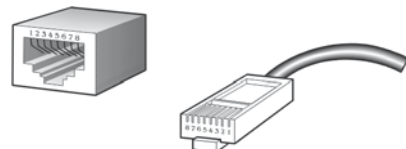


**The standard RJ45 receptacle/connector**

There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight-through cable and crossover cable connection:

**Figure A-1: Straight-through and Crossover Cable**

| Straight-through Cable | | SIDE 1 | SIDE 2 |
|---|---|---|---|
| 1 2 3 4 5 6 7 8 **SIDE 1** | | 1 = White / Orange | 1 = White / Orange |
| | | 2 = Orange | 2 = Orange |
| | | 3 = White / Green | 3 = White / Green |
| | | 4 = Blue | 4 = Blue |
| | | 5 = White / Blue | 5 = White / Blue |
| | | 6 = Green | 6 = Green |
| | | 7 = White / Brown | 7 = White / Brown |
| 1 2 3 4 5 6 7 8 **SIDE 2** | | 8 = Brown | 8 = Brown |
| **Crossover Cable** | | **SIDE 1** | **SIDE 2** |
| 1 2 3 4 5 6 7 8 **SIDE 1** | | 1 = White / Orange | 1 = White / Green |
| | | 2 = Orange | 2 = Green |
| | | 3 = White / Green | 3 = White / Orange |
| | | 4 = Blue | 4 = Blue |
| | | 5 = White / Blue | 5 = White / Blue |
| | | 6 = Green | 6 = Orange |
| | | 7 = White / Brown | 7 = White / Brown |
| 1 2 3 4 5 6 7 8 **SIDE 2** | | 8 = Brown | 8 = Brown |

Please make sure your connected cables are with the same pin assignment and color as the above

## Regulatory information

| Manufacturer | Interlogix. 2955 Red Hill Avenue, Costa Mesa, CA 92626 5923, USA Authorized EU manufacturing representative: UTC Fire & Security B.V. Kelvinstraat 7, 6003 DH Weert, The Netherlands |
|---|---|
| FCC compliance | Class A: 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 radio communications. Operation 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. |
| FCC conditions | This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. (2) This Device must accept any interference received, including interference that may cause undesired operation. |
| ACMA compliance | Notice! 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. |
| Canada | This Class A digital apparatus complies with CAN ICES-003 (A)/NMB-3 (A). Cet appareil numérique de la classe A est conforme à la norme CAN ICES-003 (A)/NMB-3 (A). |

| Certification | CE | |
|---|---|---|
| European Union directives | 12004/108/EC (EMC directive): Hereby, UTC Fire & Security declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC. | |
| | 2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info. | |
| | 2013/56/EU & 2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info. | |
| Trademarks and patents | The trade names used in this document may be trademarks or registered trademarks of the manufacturers or vendors of the respective products. | |

## Contact information

For contact information, see www.interlogix.com or www.utcfssecurityproducts.eu.

# Physical Dimensions

**Figure 2.1: NS3050-8T dimensions (W x D x H): 135 x 87 x 32mm**



Dimensions ( unit = mm )