IFS NS3050-8T User Manual

Package contents

Thank you for purchasing the NS3050-8T IFS 8-Port 10/100/1000T Industrial Gigabit Ethernet Switch.

Unless specified, the term "**industrial gigabit Ethernet switch**" mentioned in this user manual refers to 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 × 1

• CD with user manual × 1

• DIN rail kit × 1

• Wall-mount kit × 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.

Hardware introduction

Physical dimensions

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

See Figure 4 on page 6.

Switch front panel

The front panel of the industrial gigabit Ethernet switch consists of five or eight auto-sensing 10/100/1000Mbps Ethernet RJ45 ports. The LED indicators are also located on the RJ45 ports of the industrial gigabit Ethernet switch.

Figure 1: NS3050-8T front panel

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.
1000	Green	**Lit**: indicates the port is successfully connecting to the network at 1000Mbps. Off: indicates that the port is successfully connecting to the network at 10Mbps or 100Mbps. **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. **Off**: indicates that the port is successfully connecting to the network at 1000Mbps. Blinking: indicates that the port is actively sending or receiving data.

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 on page 2 shows the upper panel of the industrial gigabit Ethernet switch.

Figure 2: Industrial gigabit Ethernet switch upper panel
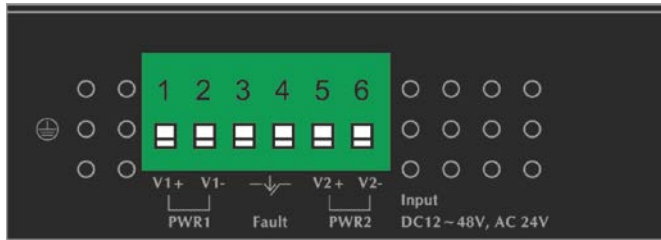
Wiring the power inputs

The six-contact terminal block connector on the top panel of industrial gigabit Ethernet switch is used for two DC redundant power inputs. 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.

V1+ V1 -   V2 + V2 -
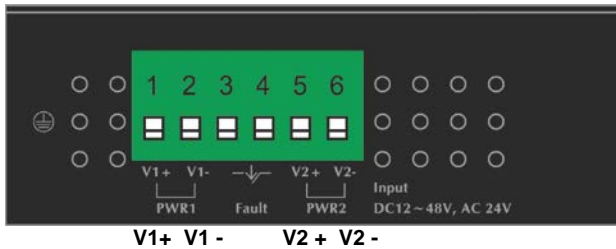
2. Tighten the wire-clamp screws for preventing the wires from loosening.

| 1	2	3	4	5	6
Power 1		Fault		Power 2	
+	-			+	-

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 12 to 48 VDC.

## Wiring the fault alarm contact

The fault alarm contacts are in the middle of the terminal block connector. Upon inserting the wires, the industrial gigabit Ethernet switch detects 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.
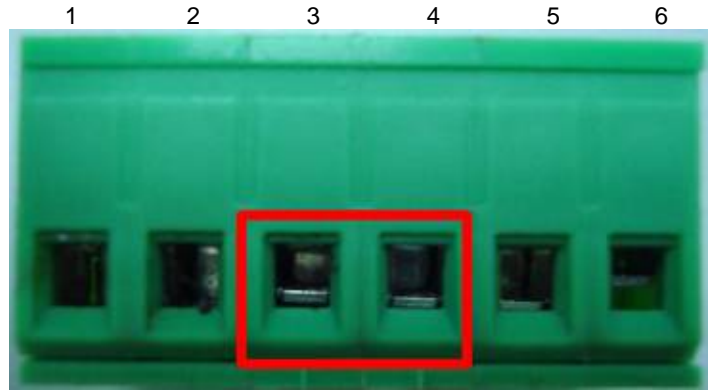
Insert the wires into the fault alarm contacts.

Note:

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

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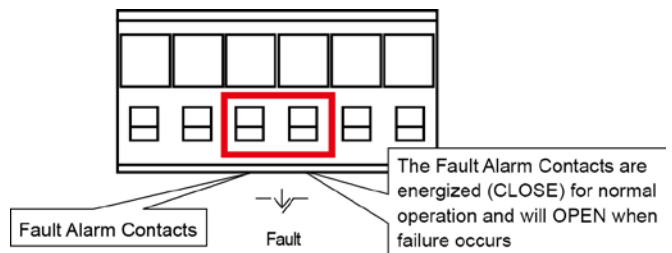
Product specifications

Hardware specifications	
10/100/1000BASE-T Ports	8
Dimensions (W × D × H)	135 × 87 × 32 mm
Weight	461 g
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	1.5 Mbits SRAM packet buffer
Flow control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
Switch fabric	16 Gbps
Throughput (packet per second)	11.9 Mpps
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

Mounting

Note: Ensure that the industrial managed switch is mounted vertically with the power connectors on the top and a minimum of three inches above and below the switch to allow for proper air flow. This device uses a convection flow of hot air which rises and brings cold air in from the bottom and out of the top of the device. Do not mount the switch horizontally as this does not allow air to flow up into the device and will result in damage to the switch. Do not tie DC1 to DC2. DC2 is for secondary power redundancy. Do not plug DC power into the device while the AC power cord is plugged in. This is not a hot-swappable switch. Hot-swapping this device will result in damage.

DIN-rail mounting installation

To replace the wall-mount application with DIN-rail application on industrial gigabit Ethernet switch, refer to the following figures to screw the DIN-rail on the industrial gigabit Ethernet switch.

To hang the industrial gigabit Ethernet switch, follow the steps below:

1. Screw the DIN-rail on the industrial gigabit Ethernet switch.

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

3. Ensure that the DIN-rail is secured to the track.

To remove the industrial gigabit Ethernet switch from the track, carefully pull out the bottom of the DIN-rail to remove it from the track.

Wall-mount plate mounting

To install the industrial gigabit Ethernet switch on the wall, follow the steps below.

1. Remove the DIN-rail from the industrial gigabit Ethernet switch. Loosen the screws to remove the DIN-rail.

2. Place the wall-mount plate on the rear panel of the industrial gigabit Ethernet switch.

3. Use the screws to screw the wall-mount plate on the industrial gigabit Ethernet switch.

4. Use the hook holes at the corners of the wall-mount plate to hang the industrial gigabit Ethernet switch on the wall.

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

Troubleshooting

This section contains issue-solving information. If the industrial gigabit Ethernet switch is not functioning properly, ensure that the industrial gigabit Ethernet switch was set up according to instructions in this manual.

Issue	Solution
The per port LED does not illuminate.	*Check the cable connection and try swapping out a cable.*
Performance is poor	*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.*
Theper port LED illuminates, but the traffic is irregular.	*Ensure that the attached device is not set to dedicated 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	*Check the per port LED and/or try another port on the industrial gigabit Ethernet switch. Ensure that the cable is installed properly and is the correct type. Turn off the power and then, after a while, turn on the power again.*

# Appendix: Networking connection

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

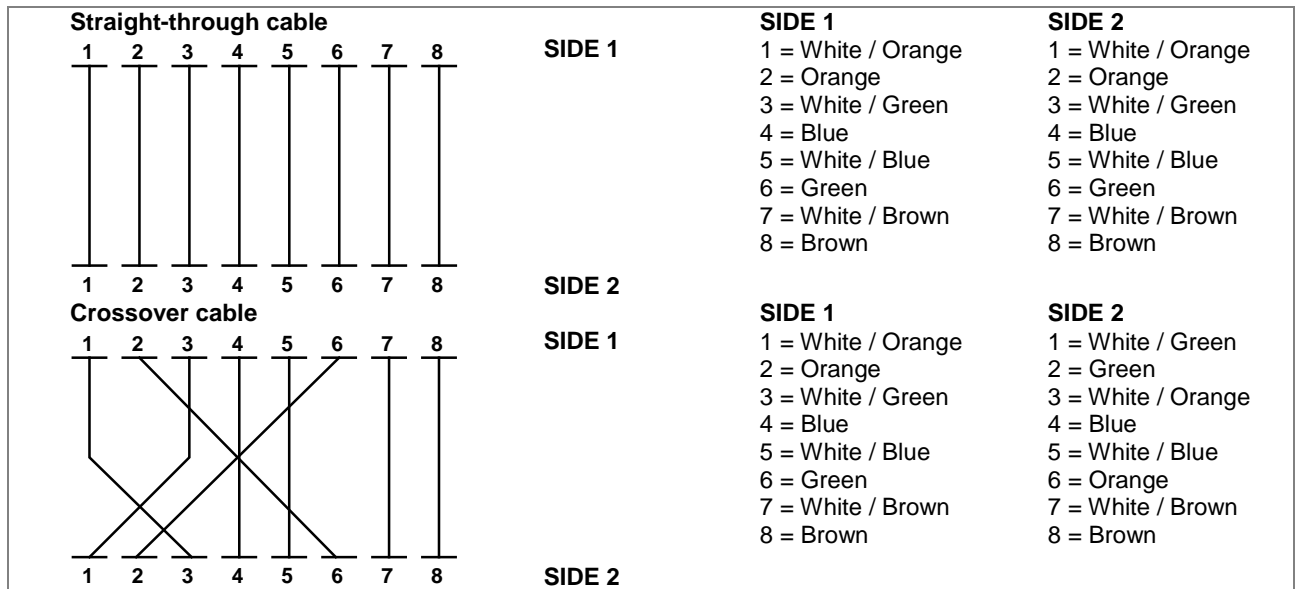| Contact	MDI Media Dependent Interface	MDI-X Media Dependent Interface -Cross
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5	Not used	
6	Rx - (receive)	Tx - (transmit)
7, 8	Not used	

RJ45 cable pin assignments
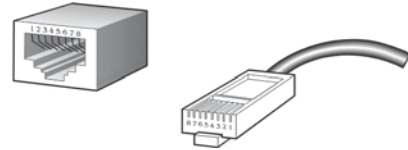
The standard RJ45 receptacle/connector

There are eight wires on a standard UTP/STP cable and each wire is color-coded. Figure 3 on page 5shows the pin allocation and color of straight-through cable and crossover cable connection:

Figure 3: Straight-through and crossover cable

Straight-through cable	
SIDE 1	SIDE 2
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
8 = Brown	8 = Brown

Crossover cable	
SIDE 1	SIDE 2
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
8 = Brown	8 = Brown

Ensure that the connected cables have the same pin assignment and color as described above.
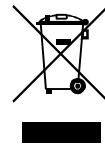
Regulatory information

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 [RCM mark]

European Union directives	This product complies with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU.
[WEEE symbol]	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.
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.

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Physical dimensions

Figure 4: NS3050-8T dimensions (W × D × H): 135 × 87 × 32 mm

Side View

Bottom View

Top View

Rear View

Mounting Kit

DIN-Rail Kit

Mounting Kit

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NS3050-8T

Dimensions (unit = mm)