GIGABIT SWITCH INDUSTRIAL

Quick Installation Guide

IGS-9844/9848GPFX Series

Industrial Managed Gigabit Switch

Introduction

The **IGS-9844/9848GPFX series** are managed Ethernet switches with 8x10/100/1000Base-T(X) ports, 4x100/1000Base-X SFP ports, and 4 **(IGS-9844 GPFX series)** or 8 **(IGS-9848GPFX series)** 100Base-X optical fiber ports with SC connectors.

Package Contents

The **IGS-9844/9848GPFX series** are shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

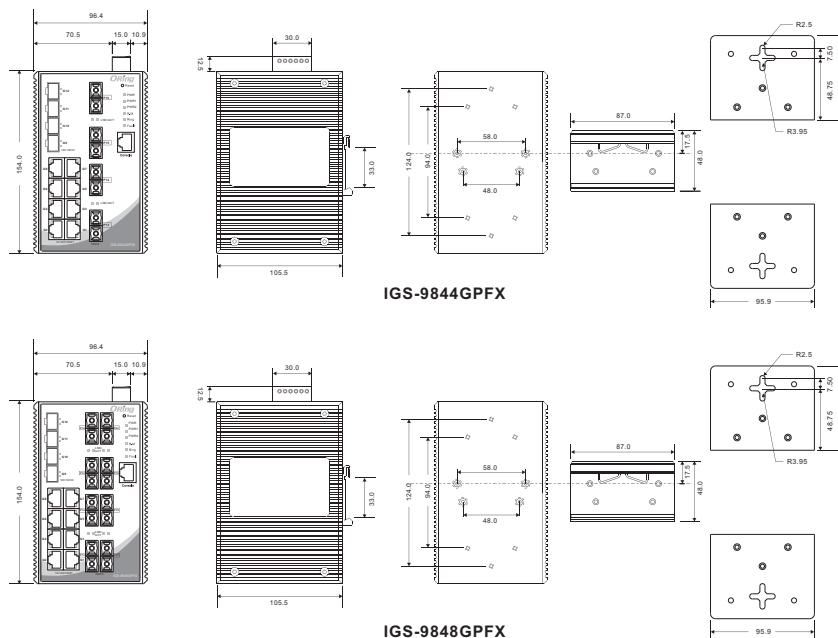| Contents	Pictures	Number	Number
IGS-9844GPFX		X 1	
IGS-9848GPFX			X 1
CD		X 1	X 1
DIN-rail Kit		X 1	X 1
Wall-mount Kit		X 2	X 2
Console Cable		X 1	X 1
QIG		X 1	X 1

Preparation

Before you begin installing the switch, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.
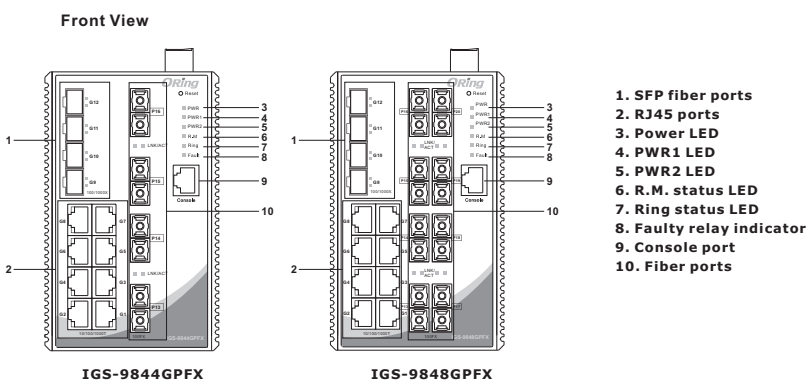
Safety & Warnings

⚠️ **Elevated Operating Ambient:** If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

⚠️ **Reduced Air Flow:** Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

⚠️ **Mechanical Loading:** Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

⚠️ **Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
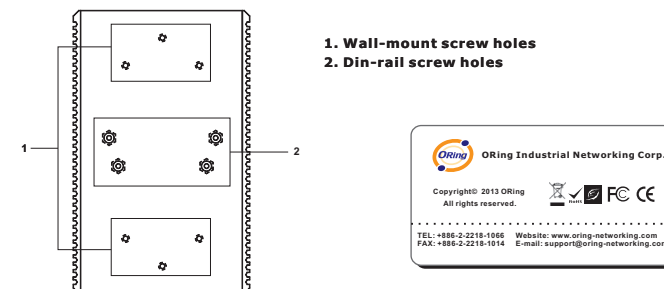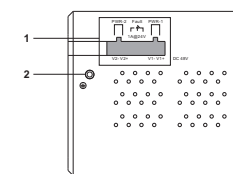
Dimension

IGS-9844GPFX

IGS-9848GPFX

Panel Layouts

Front View

IGS-9844GPFX   IGS-9848GPFX

1. SFP fiber ports
2. RJ45 ports
3. Power LED
4. PWR1 LED
5. PWR2 LED
6. R.M. status LED
7. Ring status LED
8. Faulty relay indicator
9. Console port
10. Fiber ports

Rear View

1. Wall-mount screw holes
2. Din-rail screw holes

ORing Industrial Networking Corp.

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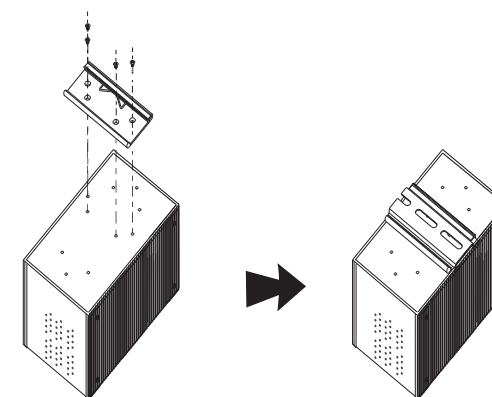
Top Panel

1. Terminal blocks: PWR1, PWR2 (12-48V DC), Relay
2. Ground wire.

Installation

DIN-rail Installation

Step 1: Slant the switch and screw the Din-rail kit onto the back of the switch, right in the middle of the back panel.
Step 2: Slide the switch onto a DIN-rail from the Din-rail kit and make sure the switch clicks into the rail firmly.

Wall-mounting

Step 1: Screw the two pieces of wall-mount kits onto both ends of the rear panel of the switch. A total of six screws are required, as shown below.
Step 2: Use the switch, with wall mount plates attached, as a guide to mark the correct locations of the four screws.
Step 3: Insert four screw heads through the large parts of the keyhole-shaped apertures, and then slide the switch downwards. Tighten the four screws for added stability.
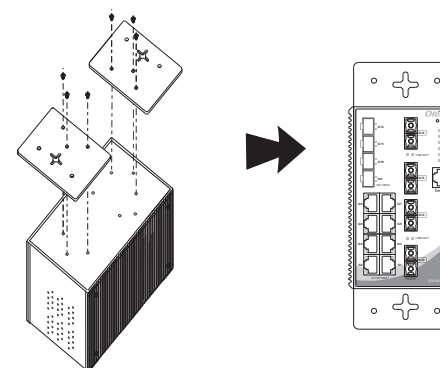
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Quick **I**nstallation **G**uide

Network Connection

The **IGS-9844/9848GPFX series** have standard Ethernet ports. According to the link type, the switch uses CAT 3,4,5,5e UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications:

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45
1000BASE-TX	Cat. 5/Cat. 5e 100-ohm UTP	UTP 100 m (328ft)	RJ-45

For pin assignments for different types of cables, please refer to the following tables.

1000 Base-T(X) RJ-45	
Pin Number	Assignment
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

10/100 Base-T(X) RJ-45	
Pin Number	Assignment
1	TD+
2	TD-
3	RD+
4	Not used
5	Not used
6	RD-
7	Not used
8	Not used

10/100 Base-T(X) MDI/MDI-X		
Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	Not used
5	Not used	Not used
6	RD-(receive)	TD-(transmit)
7	Not used	Not used
8	Not used	Not used

1000Base-T(X) MDI/MDI-X		
Pin Number	MDI port	MDI-X port
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-

Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.

Console Port Pin Definition

To connect the console port to an external management device, you need an RJ-45 to DB-9 cable, which is also supplied in the package. Below is the console port pin assignment information.

PC (male) pin assignment	RS-232 with DB9 (female) pin assignment (RJ45-DB9 cable)	RJ45 pin assignment
PIN#2 RxD	PIN#2 RxD	PIN#2 RxD
PIN#3 TxD	PIN#3 TxD	PIN#3 TxD
PIN#5 GND	PIN#5 GND	PIN#5 GND

Wiring

Power inputs

The switch supports dual redundant power supplies, Power Supply1 (PWR1) and Power Supply 2 (PWR2). The connections for PWR1, PWR2 and the RELAY are located on the terminal block.

STEP 1: Insert the negative/positive wires into the V-/V+ terminals, respectively.

STEP 2: To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

PWR-2   Fault   PWR-1
1A@24V
V2- V2+   V1- V1+
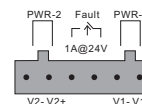
Relay contact

The two sets of relay contacts of the 6-pin terminal block connector are used to detect user-configured events. The two wires attached to the fault contacts form an open circuit when a user-configured when an event is triggered. If a user-configured event does not occur, the fault circuit remains closed.

Grounding

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screws to the grounding surface prior to connecting devices.
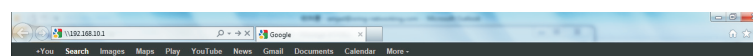
Configurations

After installing the switch card, the green power LED should turn on. Please refer to the following tablet for LED indication.

LED	Color	Status	Description
PWR	Green	On	DC power on
PW1	Green	On	DC power module 1 activated
PW2	Green	On	DC power module 2 activated
R.M	Green	On	Ring Master
Ring	Green	On	Ring enabled
		Blinking	Ring structure is broken (i.e. part of the ring is disconnected)
Fault	Amber	On	Faulty relay (power failure or port malfunctioning)
10/100/1000Base-T(X) Fast Ethernet ports			
LNK/ACT	Green	On	Ethernet running at 1000Mbps
	Amber	On	Ethernet running at 10/100Mbps
SFP			
LNK	Green	On	Port link up
ACT	Green	On	Data transmitted
100Base-FX or 1000Base-X Fiber Port			
LNK	Green	On	Port link up
ACT	Green	On	Data transmitted

Follow the steps to set up the card:

1. Launch the Internet Explorer and type in IP address of the switch. The default static IP address is **192.168.10.1**

2. Log in with default user name and password (both are **admin**). After logging in, you should see the following screen. For more information on configurations, please refer to the user manual. For information on operating the switch using ORing's Open-Vision management utility, please go to ORing website.

Windows Security
Enter Network Password
Enter your password to connect to: PC-SWRD19
admin
•••••
Domain: ORING
☐ Remember my credentials
⊗ Logon failure: unknown user name or bad password.
OK   Cancel

Resetting

To reboot the switch, press the **Reset** button for 2-3 seconds.

To restore the switch configurations back to the factory defaults, press the **Reset** button for 5 seconds.

Specifications

ORing Switch Model	IGS-9844GPFX-MM	IGS-9844GPFX-SS	IGS-9848GPFX-MM	IGS-9848GPFX-SS
Physical Ports				
10/100/1000Base-T(X) Ports in RJ45 Auto MDI/MDIX		8		
100/1000Base-X with SFP port		4		
100Base-FX Optical Fiber Port	4		8	
Fiber Ports Number	4		8	
Fiber Ports Standard	100Base-FX	100Base-FX	100Base-FX	100Base-FX
Fiber Mode	Multi-mode	Single-mode	Multi-mode	Single-mode
Fiber Diameter (μm)	62.5/125 μm 50/125 μm	62.5/125 μm 50/125 μm	9/125 μm	9/125 μm
Fiber Optical Connector	SC	SC	SC	SC
Typical Distance (Km)	0.55 Km	10 Km	0.55 Km	10 Km
Wavelength (nm)	850 nm	1310 nm	850 nm	1310 nm
Max. Output Optical Power (dbm)	-4 dbm	-3 dbm	-4 dbm	-3 dbm
Min. Output Optical Power (dbm)	-9.5 dbm	-9.5 dbm	-9.5 dbm	-9.5 dbm
Max. Input Optical Power (Sensitivity)	0 dbm	-3 dbm	0 dbm	-3 dbm
Min. Input Optical Power (Saturation)	-18 dbm	-20 dbm	-18 dbm	-20 dbm
Link Budget (db)	8.5 db	10.5 db	8.5 db	10.5 db
Technology				
Ethernet Standards	IEEE 802.3 for 10Base-T / IEEE 802.3u for 100Base-TX and 100Base-FX / IEEE 802.3z for 1000Base-X / IEEE 802.3ab for 1000Base-T / IEEE 802.3ad for LACP (Link Aggregation Control Protocol) / IEEE 802.3x for Flow control, IEEE 802.1D for STP (Spanning Tree Protocol) / IEEE 802.1p for COS (Class of service) / IEEE 802.1Q for VLAN Tagging / IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) / IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) / IEEE 802.1x for Authentication			
MAC Table	8K			
Priority Queues	8			
Processing	Store-and-Forward			
Switch Properties	Switch latency: 7 us / Switch bandwidth: 40Gbps / Max. Number of Available VLANs: 256 / IGMP multicast groups: 128 for each VLAN / Port rate limiting: User Define			
Processing	Up to 10K Bytes			
Security Features	Device Binding security feature / Enable/disable ports, MAC based port security / Port based network access control (802.1x) / VLAN (802.1q) to segregate and secure network traffic / Radius centralized password management / SNMPv3 encrypted authentication and access security / Https / SSH enhance network security			
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) / Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units / TOS/Diffserv supported / Quality of Service (802.1p) for real-time traffic / VLAN (802.1Q) with VLAN tagging and GVRP supported / IGMP Snooping for multicast filtering / IP-based bandwidth management / Application-based QoS management / DOS/DDOS auto prevention / Port configuration, status, statistics, monitoring, security / DHCP Server / Client support / SMTP Client / Modbus TCP			
Network Redundancy	O-Ring, Open-Ring, O-chain, STP, RSTP, MSTP			
Warning / Monitoring System	Syslog server / client to record and view events / Include SMTP for event warning notification via email / Event selection support			
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. Baud rate setting: 9600bps, 8, N, 1			
Fault contact				
Relay	Relay output to carry capacity of 1A at 24VDC			
Power				
Redundant Input power	Triple DC inputs. 12-48VDC on 7-pin terminal block			
Power consumption(Typ.)	15 Watts			
Overload current protection	Present			
Reverse polarity protection	Present			
Physical Characteristic				
Enclosure	IP-30			
Dimension (W x D x H)	96.4 (W) x 105.5(D) x 154(H) mm (3.8 x 4.15 x 6.06 inch)			
Weight (g)	1100 g	1100 g	1250 g	1250 g
Environmental				
Storage Temperature	-40 to 85°C (-40 to 185°F)			
Operating Temperature	-40 to 70°C (-40 to 158°F)			
Operating Humidity	5% to 95% Non-condensing			
Regulatory Approvals				
EMI	FCC Part 15, CISPR (EN55022) class A			
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge),EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11			
Shock	IEC60068-2-27			
Free Fall	IEC60068-2-32			
Vibration	IEC60068-2-6			
Safety	EN60950-1, UL508 (E331061), UL/cUL Class 1 Division 2 Group A/B/C/D, ATEX Class 1 Zone 2			
Warranty				
	5 years			