

## Introduction





**IBS-102FX series** are external Bypass switches for 100M/1G/10G fiber optical networks. These fiber optical bypass switches protect the network from failures and Network maintenance by ensuring network integrity during power loss. Each of these optical bypass switches includes Network ports and Monitor ports. The Network ports are used for connection to main-network connections and provide protection mechanism, and the Monitor ports are used for down-link local networking device. When the power is on, the operating mode of the Bypass switch is set to Normal, and the local networking device is connected with main-network. When power failure occurs, the Bypass switch is swiftly set to bypass mode to isolate the main-network from the local networking device.

## Features

- > Support 100M/1G/10G optical bypass function of 2 port duplex or 4 port simplex fiber connection
- > Different models supported for multi-mode or single-mode optical fiber
- > Low insertions loss
- > Throughput not affected and no extra delay
- > Bypass switching time < 8ms
- > Dual Wide range power inputs: 12~48VDC
- > Relay output for pwr failed warning
- > Rigid IP-30 housing design
- > Din-Rail/Wall-mount installation

## Package Contents


The device is 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
IBS-102FX-MM-LC or IBS-102FX-SS-LC		X 1
DIN-rail Kit		X 1
Wall-mount Kit		X 2
QIG		X 1

## Preparation

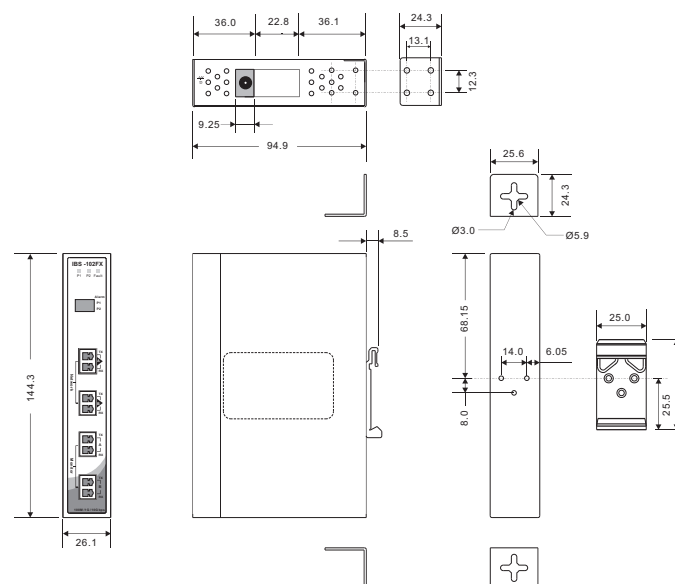
Before you begin installing the switch, make sure you have all of the package contents available.

### Safety & Warnings

-  **Elevated Operating Ambient:** If installed in a closed cabinet, 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 (T<sub>ma</sub>) specified by the manufacturer.

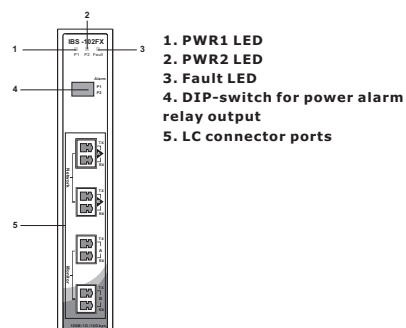
-  **Reduced Air Flow:** Installation of the equipment should be such that the amount of air flow required for safe operation of the equipment is not compromised.
-  **Mechanical Loading:** Mounting of the equipment in the din-rail should be such that a hazardous condition is not achieved due to uneven 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 Unit =mm (Tolerance ±0.5mm)

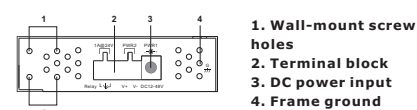


### Panel Layouts

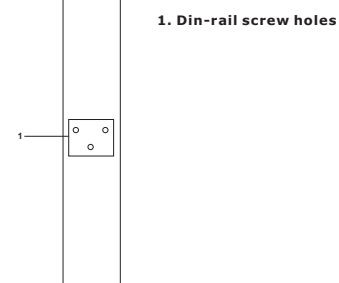
#### Front Panel



#### Top Panel



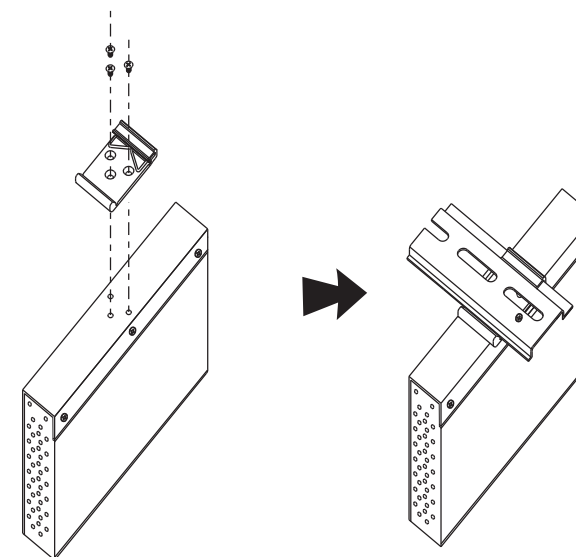
#### Real Panel



## Installation

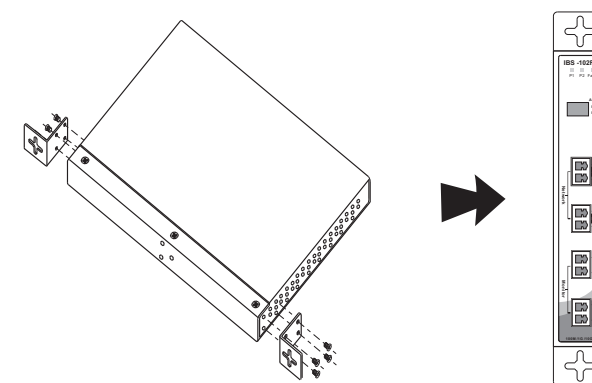
### DIN-rail Installation

- 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 sides of the switch. A total of eight 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.



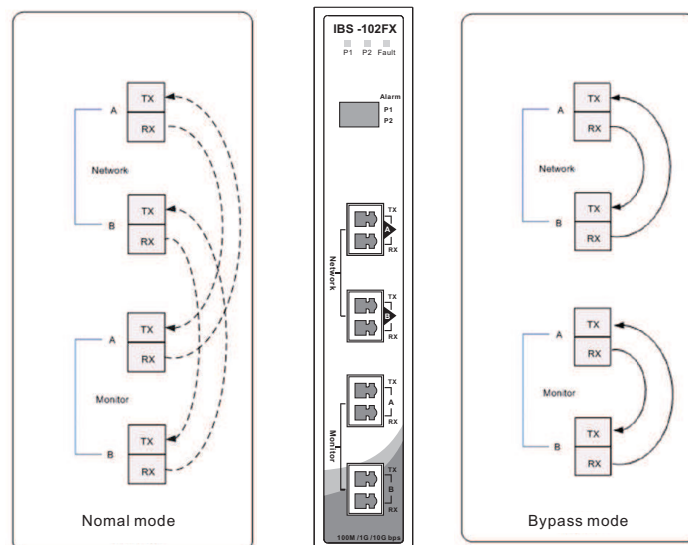
## Practical Operation

### Normal mode:

The Bypass switch deliver the data between the Network ports and the Monitor (local) ports

### Bypass mode:

The Network data traffic routed directly to the other Network port. And the Monitor data traffic routed directly to the other Monitor port.



### DIP Switch Function

DIP-1	DIP-2	Description
OFF	OFF	Power failure relay alarm disabled
ON	OFF	PWR-1 failure, relay alarm enabled
OFF	ON	PWR-2 failure, relay alarm enabled
ON	ON	PWR-1 or PWR-2 failure, relay alarm enabled

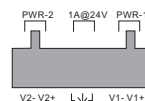
### Wiring

#### Power inputs

The switch supports dual redundant power supplies, Power Supply 1 (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



#### 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.

## Configurations

After installing the IBS-102FX and connecting cables, start the switch by turning on power. The green power and LEDs should turn on.

### LED indication table

LED	Color	Status	Description
PW1	Green	On	DC power module 1 activated
PW2	Green	On	DC power module 2 activated
Fault	Amber	On	Faulty relay (power failure or port disconnected)

## Specifications

ORing Bypass Switch Model	IBS-102FX-SS-LC	IBS-102FX-MM-LC
<b>Physical Ports</b>		
LC connector	4 Duplex Single-mode LC connector	4 Duplex Multi-mode LC connector
<b>Fiber Ethernet</b>		
Optical Fiber	Single-mode: 9/125μm	Multi-mode: 50/125μm or 62.5/125μm
Operating Wavelength	1310±40, 1550±40 nm	850±40, 1310±40 nm
Insert loss	typical 1.2 dB, Maximum 2 dB	typical 1.2 dB, Maximum 1.6 dB
Switching time	< 8ms	
<b>DIP Switch Setting</b>		
DIP-Switch No.1	Power-1 failed warning detection: (On) relay enabled (Off) relay disabled	
DIP-Switch No.2	Power-2 failed warning detection: (On) relay enabled (Off) relay disabled	
<b>LED Indicators</b>		
Power indicator	Green : power LED x 2.	
Normal indicator	Green On : Operated in normal mode	
Fault Indicator	Amber for power failed indicator	
<b>Fault contact</b>		
Relay	Relay output to carry capacity of 1A at 24 VDC	
<b>Power</b>		
Input power	Dual 12~48 VDC power inputs at DC-Jack and 4-pin terminal block	
Power consumption (Typ.)	2.7 Watts	
Overload current protection	Present	
Reverse Polarity	Present on Terminal Block	
<b>Physical Characteristic</b>		
Enclosure	IP-30	
Dimension (W x D x H)	26.1(W)x94.9(D)x144.3(H) mm (1.03x3.74x5.68inch.)	
Weight (g)	405g	
<b>Environmental</b>		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-40 to 75°C (-40 to 167°F)	
Operating Humidity	5% to 95% Non-condensing	

Regulatory approvals	
EMC	CE EMC (EN 55024, EN55032), FCC Part 15B
EMI	EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15B class A
EMS	EN 55024 (IEC/EN 61000-4-2, (ESD), IEC/EN 61000-4-3(RS), IEC/EN 61000-4-4 (FET), IEC/EN61000-4-5 (Surge), IEC/EN61000-4-6 (CS), IEC/EN61000-4-8(PFMIF), EN61000-4-11(DIP))
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31
Vibration	IEC60068-2-6
MTBF	1246758hrs
Warranty	3 years

# ORing

Copyright© 2011 ORing  
All rights reserved.



**ORing Industrial Networking Corp.**

TEL: +886-2-2218-1066 Website: www.oringnet.com  
FAX: +886-2-2218-1014 E-mail: support@oringnet.com