

# InfraGreEn IG5 Rack Series Hardened Managed Ethernet Switch

## Installation Guide

### 1 Unpacking

Open the carton and unpack the items. Your package should include:

- IG5 rackmount hardened managed Ethernet switch
- 2 Mounting brackets
- 8 x M4 rack screws
- 1 RJ45 console cable
- 2 Power cables (RCR models)
- 1 Power protection cover (FWR models)
- 2 x M3 power cover screws + 2 spacer bolts (FWR models)
- Quick install guide

If any items are missing or damaged, notify your EtherWAN representative. If possible, save the carton and packing material in case you need to ship or store the switch in the future. The full product manual can be downloaded from:

<https://www.etherwan.com/products/ethernet-switches/hardened-managed-ethernet-switches/ig5-rack-series>



### 2 What Else You Need

Appropriate cables for data ports. To prevent damage to the switch from electrical surges, it is recommended to use STP (Shielded twisted pair) cabling.

Personal computer or laptop

Appropriate SFP modules for SFP ports

### 3 Select a Location

Installation: Rack mount. Use the enclosed brackets and screws to mount the switch in an open or enclosed 19" rack.

Select a power source within 6 feet (1.8 meters).

Choose a dry area with ambient temperature between -40 and 75°C (-40 and 167°F) for model FTR, FWR series; -40 and 65°C (-40 and 149°F) for model RCR series.

Keep away from heat sources, sunlight, warm air exhausts, hot-air vents, and heaters.

Be sure there is adequate airflow.

### 4 Connect to the Data Ports

Depending on the model, your switch can have the following ports:

0, 8, 16, or 24 10/100/1000 Mbps TX ports

0, 8, 16, or 24 100/1000Base-SFP ports

4 SFP+ slots, supporting 10Gbps or 1Gbps

Use category 5e or higher UTP/STP cable for TX ports. For SFP and SFP+ ports, ensure that the same type of transceiver is used at both ends of the link and that the correct type of fiber cable is used.

### 5 Connect Power

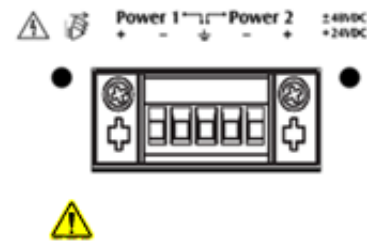
#### Power Input Interfaces

FTR - 24VDC/+-48VDC Redundant (Terminal Block)

FWR - 100-240VAC / 100-250VDC Redundant (Terminal Block)

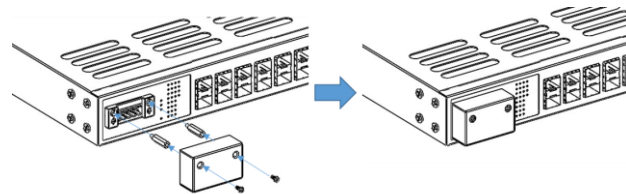
RCR - 100-240VAC Redundant (AC Inlet)

FTR models: Connect to a suitable power supply using 12 to 18 AWG wire. It is suggested to use two power sources to power the IG5.



Supplied by a Listed Power Adapter or DC power source, rated  $\pm 24$  VDC or  $\pm 48$  VDC, minimum 1 A, SELV/ES1 and evaluated in accordance with UL/IEC 60950-1 and/or UL/IEC 62368-1. If you need further assistance with purchasing the power source, contact ETHERWAN SYSTEMS INC for further information.

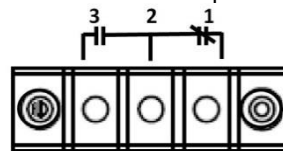
FWR models: Remove the two screws on the terminal block and replace with the supplied spacer bolts. After connecting the power wires to the terminal block, affix the power protection cover over the terminal block and secure with the supplied M3 screws.



RCR models: Connect the supplied AC power cords to the AC power receptacles at the rear of the switch.

#### Relay Output Alarm

The switch provides two relay output contacts. Both Relay 1 and Relay 2 signal actions from one of the digital inputs. The relay outputs can be connected to an alarm signaling device. The Current is 0.6A@30VDC at Normal Open or Normal Close.



Normal state: 3 & 2 closed, 2 & 1 open

Alarm state: 3 & 2 open, 2 & 1 closed

#### Power-Up Sequence

When the switch is powered up:

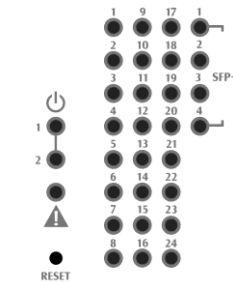
All **Link/ACT** LEDs blink momentarily.

The **Power 1, 2** LEDs light up and stay lit.

LEDs for every port connected to a device will flash, as the switch conducts a brief Power On Self-Test (POST).

### 6 Front Panel LEDs

#### LED Panel Layout



Green LED ON = network connection established

FLASHING = Port sending or receiving data

RED = Link down or power down

### 7 Console Configuration

Connect to the switch console by connecting the RJ-45 console cable to the console port of the switch and to the serial port of the computer running a terminal emulation application (such as HyperTerminal or Putty).

Configuration settings of the terminal-emulation program: Baud rate: 115,200bps, Data bits: 8, Parity: none, Stop bit: 1, Flow control: none.

The default login name is "root," no password.

### 8 Web Configuration

Log in to the switch by launching a web browser and entering 192.168.1.10 in the address bar. Enter the default login ID: root (no password) and click "Login."

### 9 USB Port

The switch is equipped with one USB port (Type A connector) for configuration file and syslog backup. The USB port can be used to save the configuration and Syslog to a (FAT32) USB storage device.

Plug the device into the USB port, and use the "Save Configuration" command in the web interface, or "copy running-config startupconfig" in the CLI. Use the "Export Logs to USB" command in the web interface, or "export logs" in the CLI. Note: USB function will be available in Q2 2023.

### 10 Digital IO-Setting

Connecting the Digital Inputs

The pin definitions for the digital input module are shown below. Each digital input consists of two contacts on the 5-pin connector located on the top of the switch. The inputs can be wired as either dry or wet contacts.

Dry Contacts:

[DI1-/GND] [DI2-/GND]

Logic level 1: Close to GND

Logic level 0: Open

Wet Contacts:

[DI1+/DI1-] [DI2+/DI2-]

Logic level 1 (High): 13-30 Volts

Logic level 0 (Low): 0-3 Volts

### 11 Safety Information

The power cord must be connected to a properly earth grounded outlet.

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions:

(A) 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.

B) 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.

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

D) 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.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

The socket-outlet shall be installed near the equipment and shall be easily accessible.

Do not disable the power cord grounding plug. The grounding plug is an important safety feature



**Caution:** Disconnect all power sources before servicing the device.

Hazardous voltages may occur within this unit when connected to all power supplies.



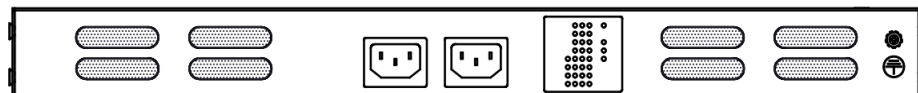
Caution: Double pole, neutral fusing. Disconnect mains before servicing.

Plug the power cord made by metals and polymers into a grounded (earthed) electrical outlet that is easily accessible at all times.

This equipment is intended to be used in a restricted access location and be used by a qualified person.

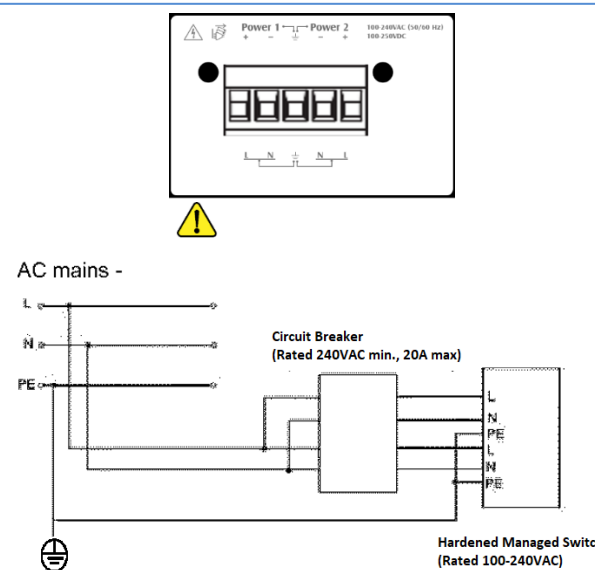
This equipment is not suitable for use in locations where children are likely to be present.

RCR series AC Inlet



The power cord shall be IEC 60227 certified, rated 0.75 mm<sup>2</sup> x 3C or UL recognized minimum 18AWG, suitable for the application and subject to country's national codes and regulations.

FWR series terminal block:



All power connection wiring by a qualified electrician in accordance with National Electrical Code, ANSI/NFPA 70 and Canadian Electrical Code, Part I, CSA C22.1. An IEC certified or UL listed single-phase double pole type circuit-breaker, rated maximum 20A, shall be installed between mains circuit and equipment. For supply connections use copper conductors, wires suitable for at least 105°C.

Thumbscrews should be tightened with a tool after both initial installation subsequent access to the panel.

**Caution:** This equipment has a connection between the earthed conductor of the DC supply circuit and the earthing conductor. All of the following installation conditions must be met.

- This equipment shall be connected directly to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode is connected.
- This equipment shall be located in the same immediate area (such as adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same DC supply circuit and the earthing conductor, and also the point of earthing of the DC system. The DC system shall not be earthed elsewhere.
- The DC supply source is to be located within the same premises as this equipment.
- There shall be no switching or disconnecting devices in the earthed circuit conductor between the DC source and the point of connection on the earthing electrode conductor.

**Note:** This equipment must use UL recognized Laser Class 1 optical transceiver.

This equipment is intended to be used in a restricted access location and be used by a qualified person.

This equipment is not suitable for use in locations where children are likely to be present.

#### SAFETY INFORMATION



Caution

Read these instructions carefully before connecting the system to the power source.

Keep these instructions for later reference.

- Protect the power cord from being walked on or pinched.
- To reduce the risk of electrical shock, do not open the equipment. For safety reasons, may only be opened by qualified service personnel.
- Protect equipment from humidity.
- Disconnect equipment from power supply before cleaning. Do not use any liquid or aerosol cleaner. Use only dampened cloth.
- Equipment should be placed on a reliable surface. A drop or fall could cause damage.
- If the equipment is not used for long time, disconnect the equipment from power supply to avoid being damaged by transient over voltage.
- 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, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- Max operated altitude is 2000m.
- Do not dispose of electrical appliances as unsorted municipal waste. Use separate collection facilities.

Contact your local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging health and well-being.

When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposal free of charge.



Les matériels sont destinés à être installés dans des EMPLACEMENTS À ACCÈS RESTREINT.



**Power wiring information:**

The rating of the power wire used must be at least 105°C.

USE COPPER CONDUCTORS ONLY.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

WARNING - Explosion hazard. Do not disconnect the terminal block while the circuit is live or unless the area is known to be free of ignitable concentrations.

For repair or maintenance needs, contact EtherWAN directly.

**Informations de câblage d'alimentation:**

Le calibre du fil d'alimentation utilisé doit être d'au moins 105°C.

DESTINÉ À ÊTRE UTILISÉ AVEC DES CONDUCTEURS EN CUIVRE SEULEMENT.

Si la méthode d'utilisation de l'équipement diffère de celle décrite par le fabricant, la protection assurée par l'équipement risque d'être altérée.

Contactez-nous pour l'entretien ou la réparation.

Manufacturer information:

**ETHERWAN SYSTEMS, INC.**

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