



# **SRS-3106**

**Managed Rugged Switch**

# **SRS-3106-4BT**

**Managed Rugged PoE Switch**

## **User's Guide**

Version: 0.9

## Revision History

Version	Date	Changes
0.9	10/22/2024	First release.

## FCC Warning

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 this user's guide, 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 their own expense.

## CE Mark Warning

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.

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# About this manual

In this user's guide, we will not only introduce CTS's SRS-3106 and SRS-3106-4BT, Managed Rugged Switches, with the latter featuring 4 PoE ports, but provide detailed installation instructions.

**\*NOTE: The following content will be illustrated with the images of SRS-3106-4BT, given that SRS-3106 and SRS-3106-4BT share mainly the same panels and appearances.**

## Organization of the Manual

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- Chapter 1 “Introduction” describes the features of the Switches
- Chapter 2 “Installing the Switch”
- Chapter 3 “Operation”
- Chapter 4 “Maintenance”

# 1

## Introduction

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CTS's Managed Rugged Switch Series is designed to meet the emerging FTTX & Metro Ethernet requirements in the environment, where temperature fluctuates severely. In particular, when high power supply is required, the managed rugged PoE switch provides the best balance of performance and cost-effectiveness.

### 1.1 Overview of the Managed Rugged Switch Series

The SRS-3106 series is designed to operate within a wide temperature range from -20°C to 60°C. This series includes the SRS-3106 and SRS-3106-4BT models, with the latter featuring 4 PoE injectors, each supporting up to 90W of PoE.

1. SRS-3106
  - 2 x 100/1000Base-X SFP
  - 4 x 10/100/1000Base-T RJ-45
2. SRS-3106-4BT
  - 2 x 100/1000Base-X SFP
  - 4 x 10/100/1000Base-T RJ-45 with IEEE 802.3af/at/bt injector, capable of delivering up to 90W per port with a total budget of 300W.

This Managed Rugged Switch Series is designed to meet the massive needs of Gigabit Ethernet network deployments, particularly in PoE applications that require a wide operating temperature range (-20°C to 60°C), SRS-3106-4BT comes in handy. This Managed Rugged Switch Series also delivers high performance with store-and-forward switching capabilities, along with advanced features such as QoS, VLAN, Spanning Tree, and more.

LED indicators located on the front panel make it easier for users to monitor and manage the

## ***Introduction***

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network status. The built-in management module enables users to configure, control and monitor the system locally via console or remotely via SNMP-based management system.

In the harsh environment, the SRS-3106-4BT is a reliable solution for delivering power over Ethernet to network devices. With power redundancy, users can prevent the network disconnection during the unexpected power outages. Additionally, it can be used as a stand-alone switch, and is easily mounted with the provided DIN-rail for installation.

## 1.2 Key Features

### ■ Interface

#### **RJ-45 Port**

4 x 10/100/1000Base-T RJ-45 (SRS-3106 only)

4 x 10/100/1000Base-T RJ-45 with IEEE 802.3af/at/bt PoE++ injector (SRS-3106-4BT only)

#### **Fiber Port**

2 x 100/1000Base-X SFP

#### **Console**

1 x RS-232 to RJ-45 Serial Port

#### **Terminal Block**

1 x Digital Output (Alarm Relay), relay output with current carrying capacity of 1A @ 24VDC

1 x Digital Input (Dry Contact)

#### **Standards**

IEEE 802.3 10Base-T

IEEE 802.3u 100Base-TX/FX

IEEE 802.3ab 1000Base-T

IEEE 802.3z 1000Base-X

IEEE 802.3x Flow Control

IEEE 802.3ad Link Aggregation (Static) \*

IEEE 802.1ab LLDP

IEEE 802.1p Priority

IEEE 802.1q Tag VLAN

IEEE 802.1D STP \*

IEEE 802.1w RSTP \*

IEEE 802.3af Power over Ethernet (SRS-3106-4BT only)

IEEE 802.3at Power over Ethernet + (SRS-3106-4BT only)

IEEE 802.3bt Power over Ethernet ++ (SRS-3106-4BT only)

### ■ H/W Specification

Store and Forward Switching Mechanism

Auto-Crossover for MDI/MDI-X in TP Port

Auto-Negotiation in TP Port

Half/Full Duplex Mode Operation

Jumbo Frame : 9K Bytes

MAC Address Table : 2K

Non-Blocking Switching Fabric : 12Gbps

Throughput @ 64Bytes : 8.928Mpps

6KV Surge Immunity on RJ-45 Copper Port

Dual Power Input : 12~57 VDC (SRS-3106)

48~57 VDC (SRS-3106-4BT)

### ■ Switching Features

#### **Port Management**

State, Description, Media Type, Port Type, Speed, Duplex and Flow Control

#### **Network Redundancy**

IEEE 802.1d Spanning Tree Protocol (STP) \*

IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) \*  
Proprietary Fast Ring v2 (<50ms) and Chain (<1 second) redundancy protocols for fast redundancy after encountering connection issues \*  
Static Port Trunking (Up to 3 Aggregation Groups, 2-4 Ports per Group) \*

### **VLAN**

IEEE802.1q Tag Based VLAN  
VLAN ID: 4094 IDs  
VLAN Concurrent Groups: 128 VLAN Groups  
Port-Based VLAN  
Q-in-Q Double tag with Configuration EtherType

### **QoS**

Based on 802.1p CoS and DSCP  
Scheduling Algorithm Weighted Round Robin (WRR)  
Strict Priority Queuing (SPQ)  
QoS Priority Queues: 4 Queues  
802.1p P-bit & DSCP Remarking  
Port-Based Rate Limit (Ingress/Egress)

### **Multicast**

IGMP Snooping v1/v2/v3  
MLD Snooping v1/v2  
IGMP/MLD Fast Leave  
IGMP/MLD Snooping Group: 64/32 Groups

### **IPv6 Feature**

IPv6 over Ethernet (RFC 2464)  
IPv6 Addressing Architecture (RFC 4291)  
IPv6 Dual Stack (RFC 4213)  
ICMPv6 (RFC 4884)  
Path MTU Discovery for IPv6 (RFC 1981)  
Neighbour Discovery (RFC 4861)  
DHCPv6 Client

## ■ **PoE Management**

System/per port PoE off and on  
PoE Usage Alarm Threshold \*  
PoE Inline Mode Auto af/at, Auto bt, Fix, Force  
PoE Priority Critical, High, Low  
PoE off/on by schedule

## ■ **Security**

802.1x RADIUS Authentication for login username/password  
DHCP Server Trust Port  
Port Isolation  
Broadcast Storm Control  
Loop Detection

## ■ **Management**

SNMP v1, v2c & v3 (Support Traps)  
Web (HTTP/HTTPS)  
CLI (Console/Telnet/SSHv2)  
SNTP with Daylight Saving Time

LLDP

**Upgrade/Restore**

Firmware Upgrade/Downgrade

HTTP/HTTPS/FTP/TFTP

DHCP Auto-provision via DHCP Option 60/43

Configuration Upload/Backup

HTTP/HTTPS/FTP/TFTP

DHCP Auto-provision via DHCP Option 60/43

Auto configure backup

FTP/TFTP

**■ Maintenance**

Diagnostic

Port Mirror

ICMP Ping

Event log

Syslog

SFP SFF-8472 DDMI Monitor Temp/Voltage/TX Bias/TX Power/RX Power

CPU Temperature/Utilization

Memory Statistics

Digital Input Normal Open, Normal Close

Digital Output Event Trigger (Digital Input, Power 1/2 Down and Port Down)

**■ Operation Environment**

Operating Temperature: -20°C~60°C

Storage Temperature: -30°C ~70 °C

**■ Standards and Certifications****CE/FCC Class A**

-Safety: IEC 62368-1

-EMC: EN 55032 / EN 55035

-ESD

Air Discharge: +/-8kV

Contact Discharge: +/-4kV

-EFT

DC Input: +/-0.5kV

Signal (RJ-45): +/-0.5kV

-Surge Protection

DC Input: +/-0.5kV

Signal (RJ-45): +/-6kV

**Freefall/Shock/Vibration**

-IEC 60068-2-32

-IEC 60068-2-27

-IEC 60068-2-6

**UKCA/RCM****RoHS 2.0**

\*Coming soon

## 1.3 Front & Rear & Top Panels

### 1.3.1 Front and Rear Panels

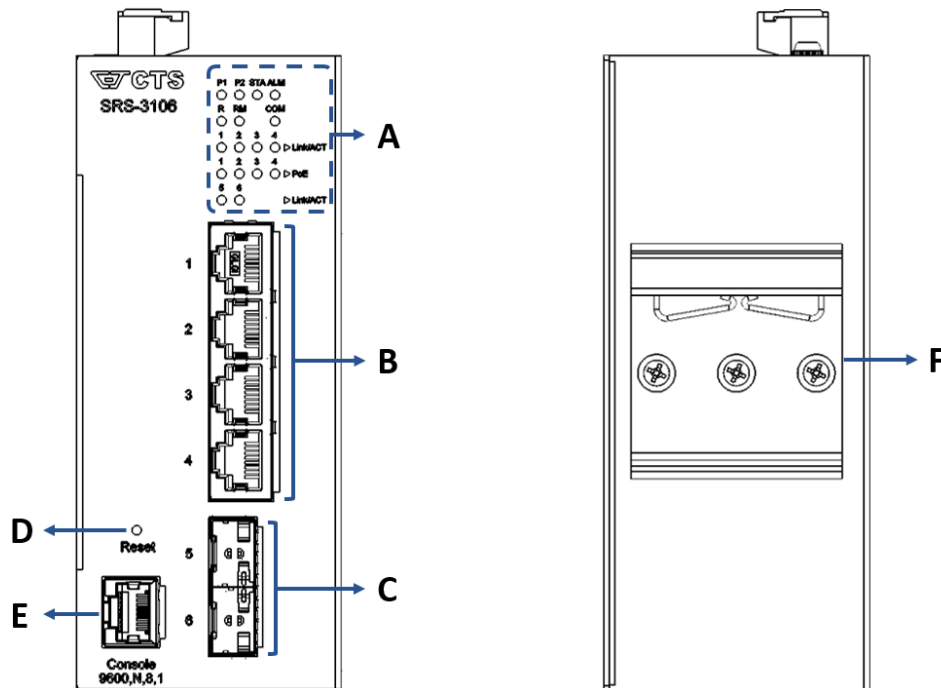


Figure 1-1. Front and Rear Panels of SRS-3106-4BT

The interfaces on the front and rear panels of the Managed Rugged PoE Switch are described below:

#### A. LEDs:

- Includes Power LEDs of P1 and P2, STA, ALM, COM, Ring, RM, Link/Act LEDs of 1~6 ports and PoE LEDs of 1~4 ports. For more details, please refer to [Section 1.4 LED Definitions](#).

#### B. 4 x 10/100/1000Base-T RJ-45 (Ports 1-4)

- 4 x 10/100/1000Base-T RJ-45 (SRS-3106), or
- 4 x 10/100/1000Base-T RJ-45 each with an IEEE 802.3af/at/bt PoE injector, up to 90W PoE output (SRS-3106-4BT)

#### C. 2 x 100/1000Base-X SFP (Ports 5-6)

#### D. Reset Button :

- Press the reset button for more than 5 seconds until the STA LED lights up in orange, then release it to restart the system.
- Press the reset button for more than 10 seconds, then release it to reset the system. The system will restart with default settings.

#### E. Console Port (RJ-45 to RS-232) :

- An asynchronous serial console port supports the RS-232 electrical specification. The console port can be used to manage the device, and the serial console port settings should be configured as 9600, 8, n, 1.

#### F. Din-Rail Metal Spring (For more information, please refer to [Section 2.3.1](#))

## 1.3.2 Top Panel

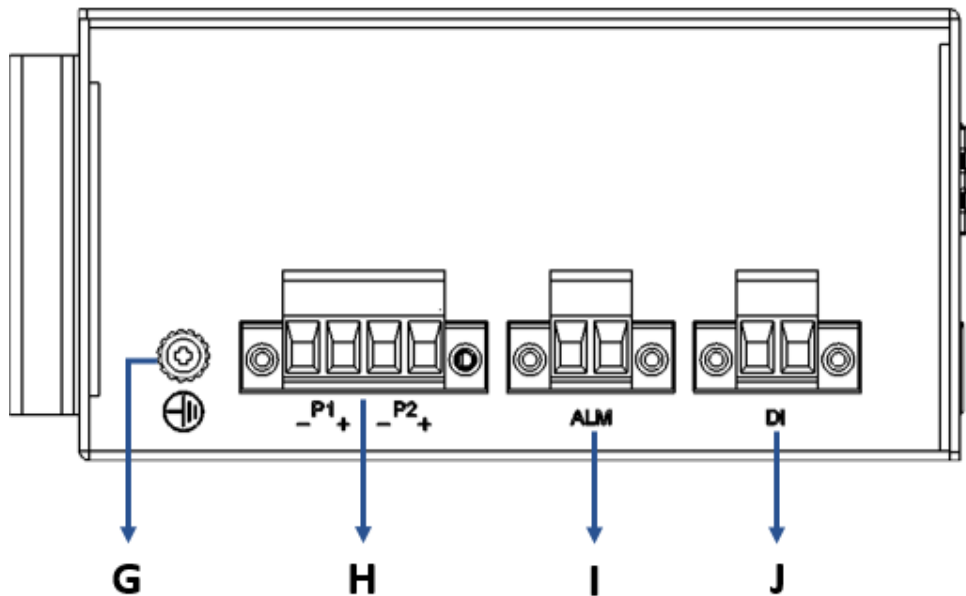


Figure 1-2. Top Panel of SRS-3106-4BT

The interfaces on the top panel of the Managed Rugged PoE Switch are described below:

- G. Ground Screw** (For more information, please refer to [Section 2.3.2](#))
- H. Terminal Block for Power Supply** (For more information, please refer to [Section 2.4](#))
- I. Digital Output for Relay Alarm** (For more information, please refer to [Section 2.4](#))
- J. Digital Input** (For more information, please refer to [Section 2.4](#))

## 1.4 LED Definitions

The Managed Rugged PoE Switch is Plug & Play compliant. The real-time operational status can be monitored through a set of LED indicators located on the front panel.

**Note:** \*The PoE LED only present on SRS-3106-4BT.

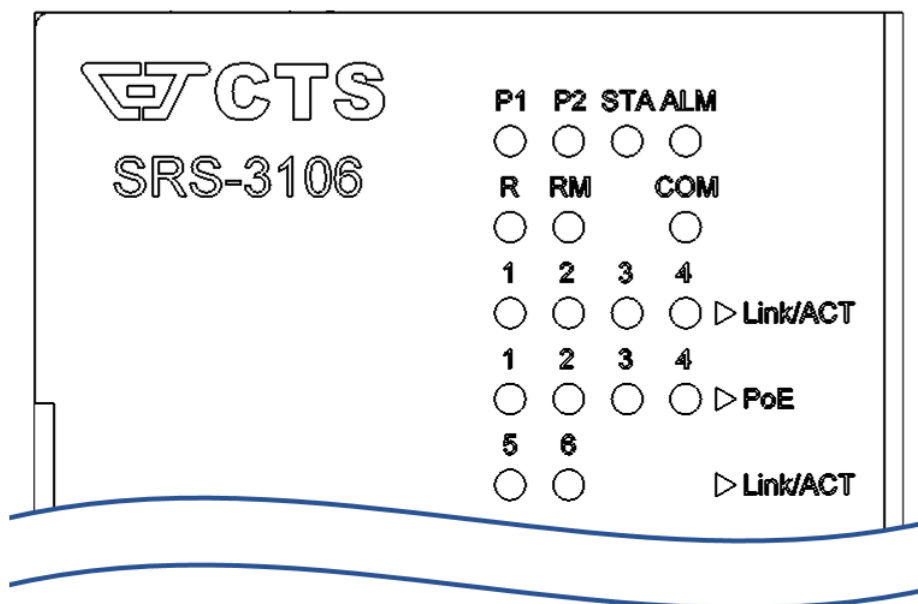


Figure 1-3. LEDs of SRS-3106-4BT

LED	Color	Operation
P1 (Power 1)	OFF	Device is powered down or works abnormally.
	Green	Lit when this power is operating normally.
P2 (Power 2)	OFF	Device is powered down or works abnormally.
	Green	Lit when this power is operating normally.
STA (System Status)	Green	Lit when this power is operating normally.
	Orange	<b>Lit</b> when the device is currently booting up. *Press the reset button for more than 5 seconds until the STA LED lights up in orange, then release it to restart the system. <b>Blinks</b> when the device is resetting to default settings. *Press the reset button for more than 10 seconds, then release it to reset the system. The system will restart with default settings.
ALM (Alarm)	OFF	No events are triggering.
	Red	Lit when the configured digital output event has been triggered.  Please refer to User's Manual for details.

R (Fast Redundancy)	OFF	All groups are disabled.
	Green	<b>Lit</b> when all Ring port of the enabled fast redundancy group(s) are functioning normally, with no connection failure.
		<b>Blinks</b> when the Ring port of another device in the enabled fast redundancy group(s) experiences a connection failure.
	Orange	<b>Blinks</b> when the Ring port of this device in the enabled fast redundancy group(s) experiences a connection failure.
RM (Ring Master, Chain Head/Tail)	OFF	This device and all of its port in enabled fast redundancy group(s) are set to the following options: 1. Ring Protocol, Role: Slave 2. Chain Protocol, Port Role: Member
	Green	Lit when this device or any of its port in enabled fast redundancy group(s) is set to the following options: 1. Ring Protocol, Role: Master 2. Chain Protocol, Port Role: Head/Tail
COM	OFF	Either the console port is not activated or no session exists.
	Green	Lit when the console port is activated and the session exists.
Link/ACT/Speed (1~4 Ports)	OFF	No link is established.
	Green	<b>Lit</b> when 10/100Mbps link is established.
		<b>Blinks</b> when the port is receiving and transmitting data at the speed of 10/100Mbps.
	Orange	<b>Lit</b> when 1000Mbps link is established.
		<b>Blinks</b> when the port is receiving and transmitting data at the speed of 1000Mbps.
Link/ACT/Speed (5~6 Ports)	OFF	No link is established.
	Green	<b>Lit</b> when 100Mbps link is established.
		<b>Blinks</b> when the port is receiving and transmitting data at the speed of 100Mbps.
	Orange	<b>Lit</b> when 1000Mbps link is established.
		<b>Blinks</b> when the port is receiving and transmitting data at the speed of 1000Mbps.
PoE* (1~4 Ports)	OFF	The connected device is not a PoE Powered Device. (The port is not delivering power.)
	Green	<b>Lit</b> the port is providing DC in-line power with auto IEEE 802.3af/at.
		<b>Blinks</b> when the port has output issue with auto IEEE 802.3af/at mode, such as: over per port budget, over total PoE budget, etc.
	Orange	<b>Lit</b> the port is providing DC in-line power with auto IEEE 802.3bt, force or fix mode.
		<b>Blinks</b> when the port has output issue with auto IEEE 802.3bt, force or fix mode, such as: over per port budget, over total PoE budget, etc.

## 1.5 Cable Specifications

The following table contains various cable specifications for the Switch. Please make sure that you use the proper cable when connecting the Switch.

Cable Type	Description
10Base-T	UTP Category 3, 4, 5 (100 meters max.) EIA/TIA- 568 150-ohm STP (100 meters max.)
100Base-TX	UTP Cat. 5 (100 meters max.) EIA/TIA-568 150-ohm STP (100 meters max.)
1000Base-T	UTP Cat. 5e (100 meters max.) UTP Cat. 5 (100 meters max.) EIA/TIA-568B 150-ohm STP (100 meters max.)
100BASE-FX	Multi-mode fiber module(2km) / Single-mode fiber module
1000BASE-SX	Multi-mode fiber module (550m)
1000BASE-LX	Single-mode fiber module (10km)
1000BASE-LH	Single-mode fiber module (30km/50km)
1000BASE-ZX	Single-mode fiber module (80km)
SFP Transceiver	SFP Transceiver for 1000BASE-SX Multi-mode fiber module (550m) SFP Transceiver for 1000BASE-LX Single-mode fiber module (10km) SFP Transceiver for 1000BASE-LH Single-mode fiber module (30km/50km) SFP Transceiver for 1000BASE-ZX Single-mode fiber module (80km)

# 2

## Installation

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To properly install the Managed Rugged Switch Series, please follow the procedures listed below. These procedures will be respectively described in detail in the following sections.

- Installation Requirements
- Checking the Package Contents
- Installing the Switch
- Powering on the Switch
- Connecting the Switch to the Network

## 2.1 Installation Requirements



### ATTENTION

Be sure to power off before installing or wiring your Switch.

Be sure to calculate the maximum possible current in each power wire and common wire. If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

Be sure to read and follow important guidelines as below:

- Do not run signal or communications wiring and power wiring through the same wire conduit. Wires with different signal characteristics should be routed separately to avoid interference.
- It is recommended that wiring which shares similar electrical characteristics can be bundled together.
- Keep input wiring and output wiring separate and label the wiring to all devices in the system if necessary.

Basic installation requirements:

- Environmental conditions
  - Proper ventilation
  - Proper isolation to electrical noise, radio, etc.
- Required SFP Transceiver

## 2.2 Checking the Package Contents

Unpack the package carefully and check the package contents. The standard package should contain the following items:

- SRS-3106-4BT x 1, or  
SRS-3106 x 1
- Quick Guide x 1
- DIN-Rail mounting bracket x 1 (locked on the Switch)

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**Note:** *If any of the above items is found missing or damaged, please contact your local sales representative for support or replacement.*

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## 2.3 Installing the Switch



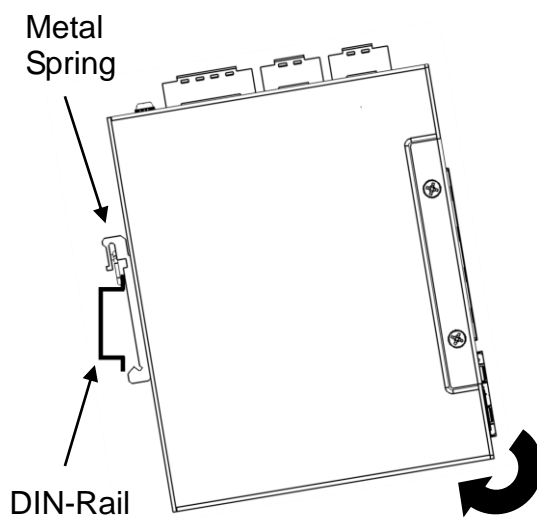
### ATTENTION

This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel.

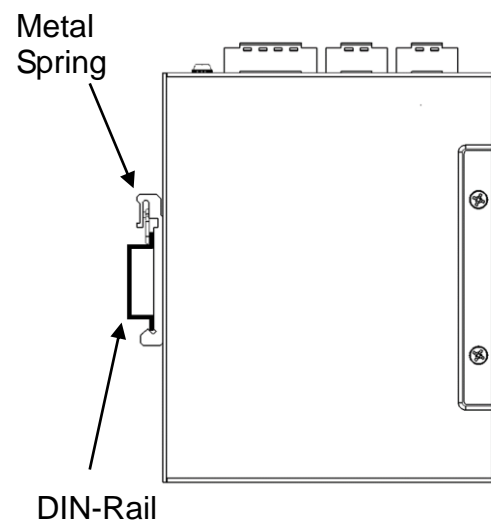
### 2.3.1 DIN-Rail Installation

Just follow the steps below to complete the DIN-Rail installation for your Switch if needed.

**STEP 1 :** Insert the top of the DIN-Rail into the slot just below the metal spring



**STEP 2 :** The DIN-Rail attachment unit will be snapped into place as shown



## 2.3.2 Grounding the Switch

Grounding helps to limit the effects of noise due to electromagnetic interference (EMI). Be sure to install the ground connection from the ground screw to the grounding surface before connecting devices.

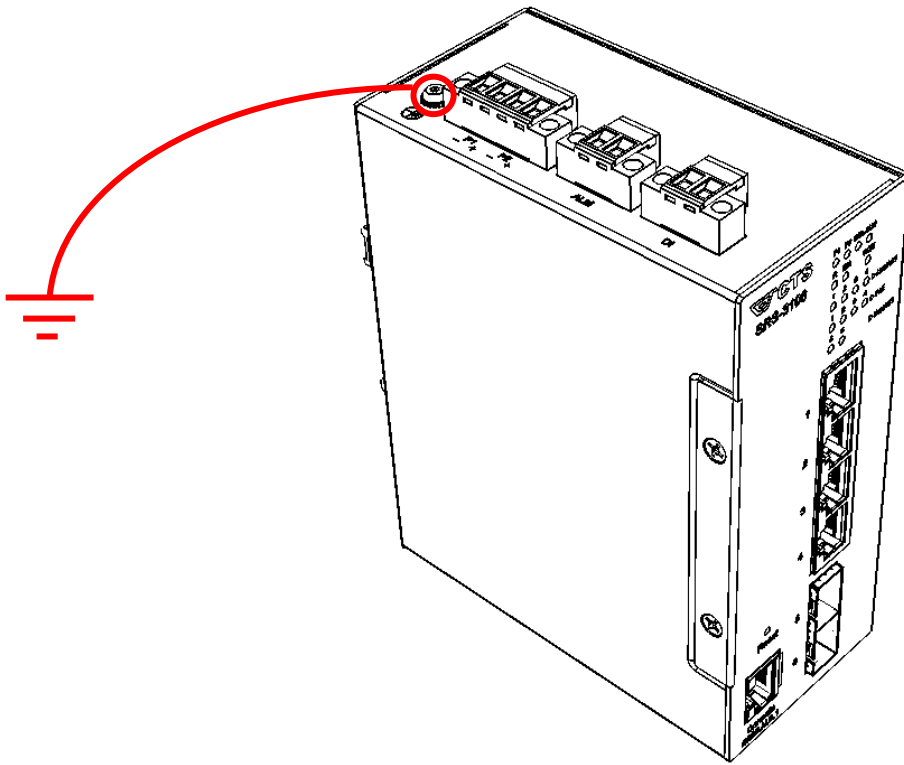


Figure 2-1 Grounding Wiring for SRS-3106 / SRS-3106-4BT

## 2.4 Powering the Switch

The SRS-3106-4BT can be powered with DC power ranging from 48 to 57 VDC through the terminal block, while the SRS-3106 can be powered with DC power ranging from 12 to 57 VDC through the terminal block. The terminal block is located on the upper panel of the switch. Before powering on the Switch, please ensure that network cables and power cables are securely connected.



### ATTENTION

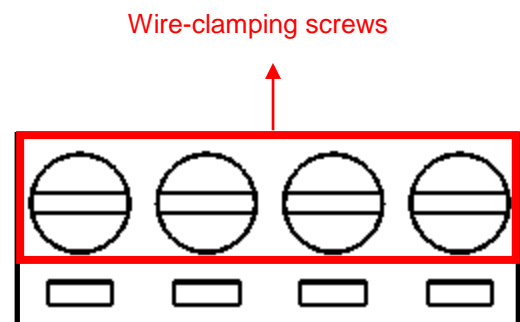
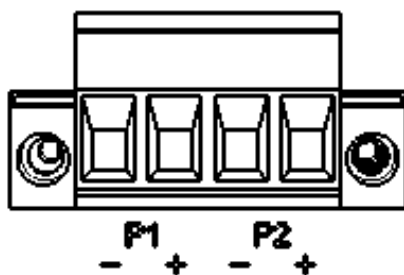
Before connecting the Switch to the DC power inputs, make sure the DC power source voltage is stable.

### Wiring of the Terminal Block for Power Supply/Digital Output for Relay Alarm/Digital Input

- **P1 and P2 (Power Inputs):** Two sets of power inputs are located on the terminal block. For power redundancy purpose, both the P1 and P2 need to be configured. The redundant power input will take over seamlessly when one power source is down to protect your device or network from the loss of power.

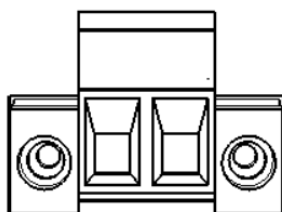
#### Power Input Configuration:

Loosen the wire-clamping screws by using a flat-head screwdriver to insert the positive and negative wires of 14 AWG at least we suggest into the “+” and “-” contacts on the terminal block respectively. P1 and P2 allow the power input that ranges from 48~57 VDC for SRS-3106-4BT and 12~57 VDC for SRS-3106. Tighten the wire-clamping screws to fix wires of 14 AWG by using a flat-head screwdriver.



### ■ Digital Output for Relay Alarm Configuration:

A pair of contacts located on the Digital Output are used to connect alarm devices such as speakers or LEDs to alert users when the digital input alarm, the redundant power failure or any port-link failure occurs. For more details on these settings, please refer to SRS-3106 Series Network Management User's Manual. The default contact is normal open, the capacity of relay alarm is 1A/24VDC.



**ALM**

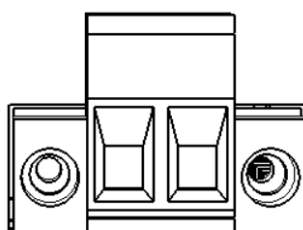
Loosen/tighten the wire-clamping screws to insert/fix alarm-device wires by using a flat-head screwdriver as described above.

### ■ Digital Input (Dry Contact): A voltage-free connector that is used to decide whether the trigger occurs or not by detecting its open/close status. The configuration is as follows:

- Open: Logic Level 0
- Close: Logic Level 1

### Digital Input Configuration:

A pair of contacts located on the Digital Input. Loosen the wire-clamping screws by using a flat-head screwdriver to insert the wires into the contacts on the Digital Input.



**DI**

Tighten the wire-clamping screws to fix the wires by using a flat-head screwdriver as described above.

## 2.5 Connecting the Switch to Network

### Connect to Network

This Managed Rugged Switch Series has 2 100/1000Mbps SFP slots and 4 10/100/1000Mbps RJ-45 ports for you to implement it in your environment. These 2 SFP slots can be plugged with 100Base-FX or 1000Base-X SFP Fiber transceiver. All RJ-45 ports can be plugged with 10/100/1000Base-T UTP cable. The connection of the fiber port must be matched, i.e. Transmitter to Receiver, and vice versa.

## 2.6 Installing and Removing SFP Modules

### 2.6.1 Installing SFP Modules

To connect the fiber transceiver and LC cable, please refer to the following guidelines:

1. Position the SFP transceiver with the handle on top.
2. Locate the triangular marking in the slot and align it with the bottom of the transceiver.
3. Insert the SFP transceiver into the slot until it clicks into place.
4. Make sure the module is seated correctly before sliding the module into the slot. A click sounds when it is locked in place.

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**Note:** If you are attaching fiber optic cables to the transceiver, continue with the following step. Otherwise, repeat the previous steps to install the remaining SFP transceivers in the device.

---

1. Remove the protective plug from the SFP transceiver.

---

**Note:** Do not remove the dust plug from the transceiver if you are not installing the fiber optic cable at this time. The dust plug protects hardware from dust contamination.

---

2. Insert the fiber cable into the transceiver. The connector snaps into place and locks.
3. Repeat the previous procedures to install any additional SFP transceivers in the switch. The fiber port is now set up.

### 2.6.2 Removing SFP Modules

To disconnect an LC connector, please refer to the following guidelines:

1. Press down and hold the locking clips on the upper side of the optic cable.
2. Pull the optic cable out to release it from the transceiver.
3. Hold the handle on the transceiver and pull the transceiver out of the slot.

## 2.7 Connecting the Switch to Console Port

The switch supports a secondary means of management. By connecting the RJ45 to RS232 serial cable between a COM port on your PC (9-pin D-sub female) and the switch's RJ45 (RJ45) port, a wired connection for management can be established.



## 3

# Operation

A built-in management module of the Managed Rugged Switch Series provides users flexible interfaces to configure, control and monitor the system remotely and locally. To know the further information about the operation of this switch, please refer to our Network Management User's Manual for the detailed management functions and required installation and operation procedures.

## 3.1 Network Management

The following is a list of management options available on this Managed Switch, the Managed Switch will be refer to as "the network device" below:

- Local Console Management
- Telnet Management
- SNMP Management
- Web Management

### Local Console Management

Users can establish a connection between a Terminal or PC running a Terminal Emulator program (such as Putty or Tera Term) and the network device by utilizing the RS-232 cable directly on the serial console port. This connection allows for system configuration, control, and monitoring. Commonly known as Out-Of-Band management, console management proves valuable in situations where there is no network connection to the network device, especially during the initial configuration of the network device.

<b>Baud rate:</b>	9600
<b>Data bits:</b>	8
<b>Parity:</b>	none
<b>Stop bits:</b>	1
<b>Flow control:</b>	none

### Telnet Management

Upon establishing a network connection to the network device, users have the capability to employ Telnet for system configuration, control, and monitoring. This method of management via the network is commonly known as In-Band Management.

### SNMP Management

SNMP, being another form of In-Band Management, necessitates a network connection to the network device. The private Management Information Bases (MIB) specific to the network device are made available for SNMP-based network management programs, enabling the configuration, control, and monitoring of the system.

### Web Management

Upon the network device being accessible on the network, users can log in and remotely or locally monitor its status through a web browser. For local web management, particularly during the initial setup of the network device to configure the necessary IP, users can also utilize the RJ-45 ports situated on the front panel. To facilitate this management, a direct RJ-45 LAN cable connection between a PC and the network device are necessary.

Username	Admin
Password	No password (empty)
IP Address	192.168.0.1/24

# 4

## Maintenance

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This Managed Rugged Switch Series is easy to maintain. The procedures are suggested when you would like to identify faults, perform hardware replacement and do the firmware upgrade.

### 4.1 Fault Identification

Identifying faults can greatly reduce the time required to find problem and solution. Users may perform local check or remote check to find the problems.

#### 4.1.1 Local Check

Users can perform local check by observing LED indicators status or check system setup and configuration through console connection.

- When the whole system fails to function,
  1. Check Power LED status
  2. Check Power connection
  3. Reset power
- When certain network link fails to function,
  1. Locate the port of the switch
  2. Check LINK/ACT/SPEED LED of the port
  3. Check Status LED of the port
  4. Check cable connection between the port and the connected device
  5. Reset power
- When local Console fails to function,
  1. Check COM LED status
  2. Check Console port connection
  3. Check Console configuration
  4. Reset power

## 4.1.2 Remote Check

Users may check the Managed Switch through SNMP manager remotely. For detailed procedures, please refer to the Network Management User's Manual.

## 4.2 Hardware Replacement Procedures



### **WARNING!**

**The Managed Switch contains no user-serviceable parts. DO NOT, UNDER ANY CIRCUMSTANCES, open and attempt to repair it.**

**Failure to observe this warning could result in personal injury or death from electrical shock.**

**Failure to observe the above warning will immediately void any Warranty.**

## 4.3 Firmware Upgrade

This Managed Switch may perform the firmware upgrade when required. The latest firmware can be obtained from your sales representative. For the detailed upgrade procedures, please refer to the Network Management User's Manual.





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