



SISGM1040-284-LRT

Managed Hardened Gigabit Ethernet Switch

(8) 10/100/1000Base-T Ports + (4) 100/1000Base-X SFP Slots

Install Guide

Part Number 33808
Revision E October 2022

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Revision History

Date	Rev.	Description of Changes
9/9/20	B	FW v7.10.2667: update install procedure and add MRP, update ordering information, add UL certification, note that Power Supply is not included (sold separately), delete Power Supply 25083, add SPS-UA12DHT and PS-DC-DUAL Series, add Auto-Logout timeout; update specs and warranty, add RADIUS and TACACS Key encrypt on Show Running Config, add Unified API support, update Web UI timeout, and modify System Information Name display.
3/24/21	C	Note to adjust the power supply output voltage if the switch won't power up. Update Ordering Information and Software Features.
7/16/21	D	Add UL listed, IEC62368-1/EN62368-1 and NEMA TS-2.
10/4/22	E	Initial Lantronix rebrand. FW v 7.20.0121: Add ConsoleFlow Cloud and LPM support and add First Time Wizard. Update Radius server in Web UI. Add DHCP per port function to select a specific IP interface. Change default settings for SNMP mode and Auth Method. Add DHCP option 229 support. Add encryption in Firmware file.

Safety Warnings and Cautions

These products are not intended for use in life support products where failure of a product could reasonably be expected to result in death or personal injury. Anyone using this product in such an application without express written consent of an officer of Lantronix does so at their own risk and agrees to fully indemnify Lantronix for any damages that may result from such use or sale.



Attention: This product, like all electronic products, uses semiconductors that can be damaged by ESD (electrostatic discharge). Always observe appropriate precautions when handling.



Note: Emphasizes important information or calls your attention to related features or instructions.



Caution: Alerts you to a potential hazard that could cause loss of data or damage the system or equipment.



Warning: Alerts you to a potential hazard that could cause personal injury.

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Introduction

The SISGM1040-284-LRT industrial L2+ managed GbE switch is a next generation industrial grade Ethernet switch offering powerful L2 and basic L3 features with better functionality and usability. In addition to the extensive management features, the SISGM1040-284-LRT also provides carrier Ethernet features such as OAM/CF, ERPS/EPs, and PTPv2, making it suitable for industrial and carrier Ethernet applications.

The SISGM1040-284-LRT delivers eight 10M/100M/1G RJ45 ports, four GbE SFP ports and one RJ45 console port. SISGM1040-284-LRT provides high hardware performance and environment flexibility for industrial applications.

The embedded Device Managed System (DMS) features provide ease-of-use, configuration, installation, and troubleshooting in video surveillance, wireless access, and other industrial applications. The SISGM1040-284-LRT delivers management simplicity, great user experience, and low total cost of ownership.

Features

- Built in Device Management System (DMS)
- ConsoleFlow Cloud and LPM support
- Rapid Ring and Ring-To-Ring
- ITU-T G.8031 Ethernet Linear Protection Switching (EPS)
- ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
- Media Redundancy Protocol (MRP)
- IEEE 1588v2 PTP
- IEEE 802.3ah OAM
- IEEE 802.1ag CFM (ITU-T Y.1731 Performance monitoring)
- DHCP Server
- IEEE 802.3az Energy Efficient Ethernet for green Ethernet applications
- IPv4/IPv6 L3 static route
- 8-port 10/100/1000Base-T and 4 100/1000 SFP slots
- Power input range: dual 12-48VDC inputs
- Hardened temperature : - 40 to +75°C
- Din Rail Mounting
- CE/FCC/LVD/UL/ IEC62368-1/EN62368-1 for EMI and Safety compliance
- 5 Year Warranty

Benefits

- Feature-rich specifications to support various applications: The switch delivers extensive industrial and carrier grade functionalities, including R-Ring, ITU-T G.8031, ITU-T G.8032, IEEE 1588v2 PTP, OAM, CFM, etc. It also has enhanced L2/L3 features for better manageability and usability. It offers better price/performance ratio in industrial applications and provides secure and reliable functionalities for metro/carrier Ethernet deployments.
- Exceptional precision with IEEE 1588v2 PTP: The switch performs IEEE1588v2 PTP with transparent clock capability, implementations in hardware, so there is no performance penalty on packet processing. The hardware architecture ensures low latency and high time accuracy, which is critical for delay-sensitive financial and mobile applications.

- Superior reliability with OAM and CFM for Service Assurance, which is provided through a rich feature set of operations, administration, and maintenance (OAM) functions. The device also offers standards-based fault and performance management with adherence to 1731 PM and 802.1ag connectivity fault management (CFM) standards. These features contribute to significant reduction in operational expenditures and allow for troubleshooting without expensive truck rolls.
- Easy to install, configure and troubleshoot with DMS. The Device Management System provides embedded functions to facilitate devices management anytime, anywhere. Its user-friendly interface helps you manage devices intuitively. It supports various IP device types (e.g., PC, IP phone, IP camera, WAP) to enhance manageability and save time/cost during installation and maintenance.
- Lower Total Cost of Ownership (TCO) with Energy-efficient design: The switch is designed to help save power with Energy Efficient Ethernet (IEEE 802.3az). It can be used to build a green Ethernet networking environment.

Ordering Information

SKU	Description
SISGM1040-284-LRT	Hardened Managed Switch, (8) 10/100/1000Base-T + (4) 100/1000Base-X SFP Slots
Optional Accessories (Order Separately)	
Power Supply 25165	Industrial DIN Rail Mounted Power Supply.
ConsoleFlow	Centralized Management Software for PoE Switches, Remote Environment Management (REM) and IoT Gateway products. Sold separately.
Power Supply 25130	Industrial DIN Rail Mounted Power Supply; 48VDC, 39.8Watts.
SPS-UA12DHT	Power Supply, Input: 90-264 VAC, 12VDC, 18 Watts output
PS-DC-DUAL-5624T	PS-DC-DUAL Series; Input: 100-240 VAC; 56VDC + 24V output
SFPs	See Lantronix full line of SFP transceivers on our SFP webpage .
EDCA-DIO-01	Enclosure Door Contact Alarm
OCA-P181610	18x16x10" Polycarbonate Enclosure
WMBH-01	Wall Mount Bracket
DRBH-01	Din Rail Bracket

Specifications

Port Configuration

Total Ports	RJ45 (10M/100M/1G)	Uplinks (100M/1G)	Console	Ring Mgmt.	DI/DO
12	8	4 SFP	RJ45	DIP Switch	1/1

Hardware Performance

Forwarding Capacity (Mpps)	Switching Capacity (Gbps)	Mac Table (K)	Jumbo Frames (Bytes)
17.856	24	8	9216

Environmental

Operating Temperature		Storage Temperature		Operating Humidity	Altitude	
Fahrenheit	Centigrade	Fahrenheit	Centigrade	5% to 95% non-condensing	Feet	Meters
-40 to +167°	-40 to +75°	-40 to +185°	-40 to +85°		< 10000	<3000

Dimension, Weights, Mounting

Dimension (WxHxD)		Weight		Mounting Type
Millimeters	Inches	Kilograms	Pounds	
62 x 135 x 130	2.4 x 5.3 x 5.1	0.66 (switch) 0.975 (switch + pkg.)	1.45 (switch) 2.15 (switch + pkg.)	DIN rail

Voltage and Frequency

Primary Power Supply - DC Input Voltage	
DC Nominal	12/24/48 VDC dual inputs
DC Operating Range	12 to 48 VDC

Certifications

Regulatory Compliance	
EMS	EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5 Surge, EN61000-4-6 CS, EN61000-4-8 PFMF
EMI	FCC Part 15 Class A
Safety	CE, LVD, UL Listed, IEC62368-1/EN62368-1
Environmental	NEMA TS-2-2016 (Power, Transients, Temperature Test)

Mechanical Stability	
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32

Software Features

Ring Management	
ITU-T G.8031	Supports ITU-T G.8031 Ethernet Linear Protection Switching
ITU-T G.8032	Supports ITU-T G.8032 Ethernet Ring Protection Switching
Rapid Ring	Enables self-recovery time in less than 20ms
MRP	The Media Redundancy Protocol data network protocol standardized IEC 62439-2 allows rings of Ethernet switches to overcome a single failure with recovery time much faster than with Spanning Tree Protocol.
Device Management System (DMS)	
Graphical Monitoring	<ul style="list-style-type: none"> • Topology view: Intuitive way to configure and manage switches and devices visually • Floor view: Drag and drop devices to easily plan IP device installation locations onto the custom uploaded floor images. • Map view: Enhance efficiency; drag and drop devices and monitor surroundings on Google Maps
Find my Switch	Search for and manage your switches quickly.
Traffic Monitor	Display visual chart of network traffic of all devices and monitor all ports at any time
Troubleshooting	<ul style="list-style-type: none"> • Network diagnostic between Master (Controller) switch and devices • Check Connection status and Cable status quickly and easily
Ethernet OAM	
IEEE 802.3ah OAM	Supports Operations, Administration & Management
IEEE 802.1ag & ITU-T Y.1731 Flow OAM	<ul style="list-style-type: none"> • Supports IEEE 802.1ag Ethernet CFM (Connectivity Fault Management) • Supports ITU-T Y.1731 Performance Monitoring • Supports performance management and link management through IEEE 802.3ah and IEEE 802.1ag (Y.1731)
Layer 2 Switching	
Spanning Tree Protocol (STP)	<ul style="list-style-type: none"> • Standard Spanning Tree 802.1d • Rapid Spanning Tree (RSTP) 802.1w • Multiple Spanning Tree (MSTP) 802.1s
Trunking	<ul style="list-style-type: none"> • Link Aggregation Control Protocol (LACP) IEEE 802.3ad • Up to 6 groups and up to 4 ports per group
VLAN	<ul style="list-style-type: none"> • Port-based VLAN • 802.1Q tag-based VLAN • MAC-based VLAN • Management VLAN • Private VLAN Edge (PVE) • Q-in-Q (double tag) VLAN • Voice VLAN • GARP VLAN Registration Protocol (GVRP)
DHCP Relay	<ul style="list-style-type: none"> • Relay of DHCP traffic to DHCP server in different VLAN. • Works with DHCP Option 82
IGMP v1/v2/v3	IGMP limits bandwidth-intensive multicast traffic to only the requesters.

Snooping	Supports 1024 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
IGMP Proxy	IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
Multicast VLAN Registration (MVR)	Uses a dedicated manually-configured VLAN, called the multicast VLAN, to forward multicast traffic over Layer 2 network in conjunction with IGMP snooping.
Layer 3 Switching	
IPv4 Static Routing	IPv4 Unicast: Static routing
IPv6 Static Routing	IPv6 Unicast: Static routing
Security	
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch
IEEE 802.1X	<ul style="list-style-type: none"> • IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions • Supports IGMP-RADIUS based 802.1X • Dynamic VLAN assignment
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks.
Port Security	Locks MAC addresses to ports, and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing to specific port in the switch
RADIUS/ TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
DHCP Snooping	A feature acts as a firewall between untrusted hosts and trusted DHCP servers
ACLs	Supports up to 256 entries. Drop or rate limitation based on: <ul style="list-style-type: none"> • Source and destination MAC, VLAN ID or IP address, protocol, port, • Differentiated services code point (DSCP) / IP precedence • TCP/ UDP source and destination ports • 802.1p priority • Ethernet type • Internet Control Message Protocol (ICMP) packets • TCP flag
Loop Protection	Prevents unknown unicast, broadcast and multicast loops in Layer 2 switching configurations.
Rate-limiting	Protection mechanism to protect your devices from brute-force downloading
Quality of Service	
Hardware Queue	Supports 8 hardware queues

Scheduling	<ul style="list-style-type: none"> • Strict priority and weighted round-robin (WRR) • Queue assignment based on DSCP and class of service
Classification	<ul style="list-style-type: none"> • Port based • 802.1p VLAN priority based • IPv4/IPv6 precedence / DSCP based • Differentiated Services (DiffServ) • Classification and re-marking ACLs
Rate Limiting	<ul style="list-style-type: none"> • Ingress policer • Egress shaping and rate control • Per port
Management	
HW Monitoring	Temperature Detection and Alarm
HW Watchdog	Supported to resume operation from CPU hang up
IEEE 1588v2 PTP	Support IEEE 1588 v2 PTP (Precision Time Protocol)
DHCP Server	Support DHCP server to assign IP to DHCP clients
Remote Monitoring (RMON)	Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to $n-1$ (where n is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
UPnP	The Universal Plug and Play Forum is an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play
s-Flow	The industry standard for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
IEEE 802.1ab (LLDP)	<ul style="list-style-type: none"> • Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network • Support LLDP-MED extensions
Web GUI Interface	Built-in switch configuration utility for browser-based device configuration, monitoring, diagnostics, etc.
CLI	For users to configure/manage switches in command line modes
Dual Image	Independent primary and secondary images for backup while upgrading
SNMP	SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Firmware Upgrade	Web browser upgrade (HTTP/ HTTPS), TFTP, and CLI
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched
Other Management	<ul style="list-style-type: none"> • HTTP/HTTPS; SSH • DHCP Client/ DHCPv6 Client • Cable Diagnostics • Ping • Syslog • IPv6 Management

ConsoleFlow and LPM	
ConsoleFlow	<ul style="list-style-type: none"> • Auto-discovery of devices connected to the switch interfaces • Perform on-demand backup and restore of device configuration • Perform secure remote device firmware upgrades • Lantronix-hosted public cloud offering
LPM	Lantronix Provisioning Manager allows easy administration of Lantronix devices. LPM lets you quickly update firmware, update configuration, and provision one or more devices simultaneously.

MTBF

GB, GC - Ground Benign, Controlled 25°C	951,258 Hrs.
GB, GC - Ground Benign, Controlled 75°C	193,332 Hrs.

DC Power Consumption

* Measured DC power consumption after 60 minutes under full loading with wire speed forwarding.

12 VDC Input

Device Status	Operation Interface	DC Current Consumption (A)	DC Voltage (V)	DC Power Consumption (W)
Non-loading	None	0.43	12	5.16
Standby mode	1G TP Port x 8 1G SFP Port x 4	0.77	12	9.24
Full-loading 60 minutes later	1G TP Port x 8 1G SFP Port x 4	0.79	12	9.48

24 VDC Input

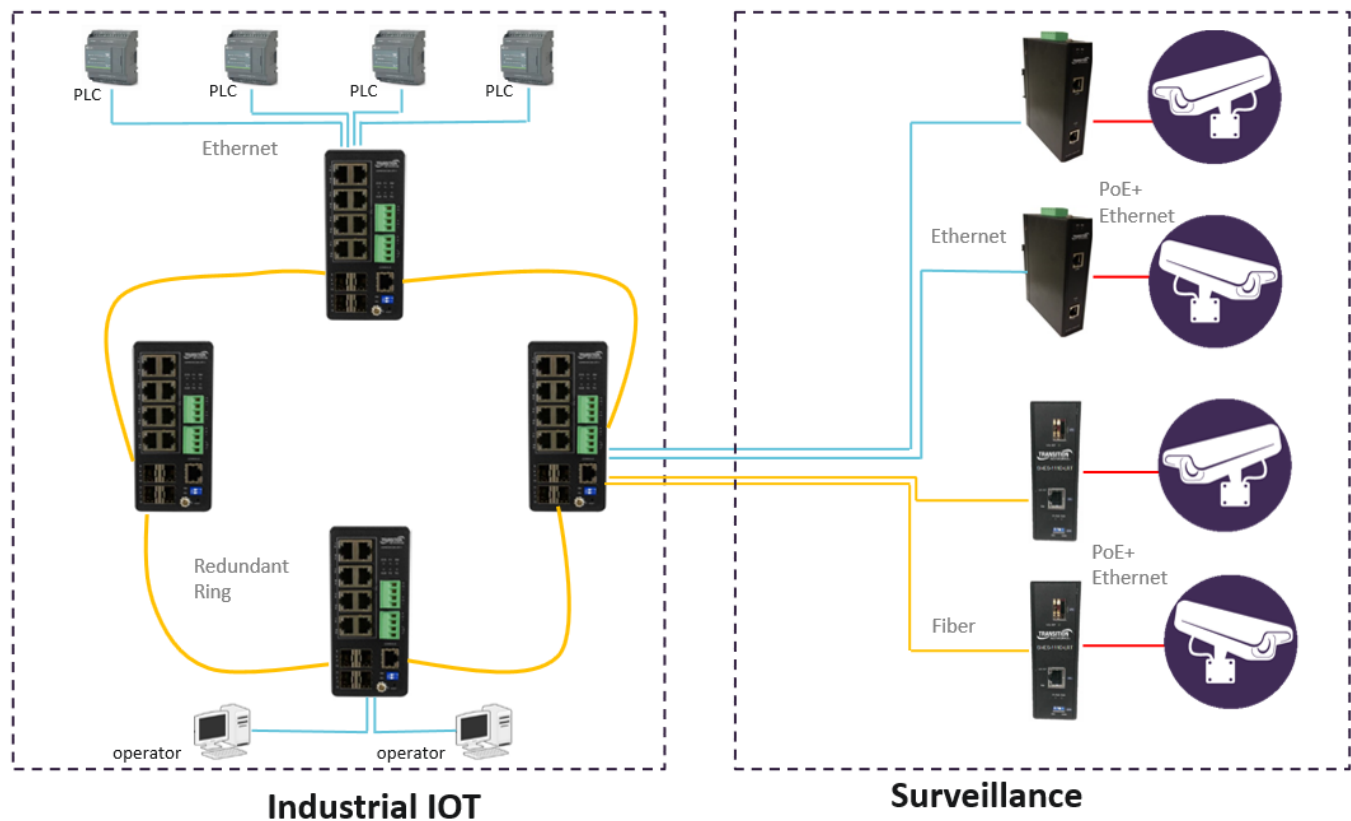
Device Status	Operation Interface	DC Current Consumption (A)	DC Voltage (V)	DC Power Consumption (W)
Non-loading	None	0.22	24	5.28
Standby mode	1G TP Port x 8 1G SFP Port x 4	0.37	24	8.88
Full-loading 60 minutes later	1G TP Port x 8 1G SFP Port x 4	0.38	24	9.12

48 VDC Input

Device Status	Operation Interface	DC Current Consumption (A)	DC Voltage (V)	DC Power Consumption (W)
Non-loading	None	0.13	48	6.24
Standby mode	1G TP Port x 8 1G SFP Port x 4	0.21	48	10.08
Full-loading 60 minutes later	1G TP Port x 8 1G SFP Port x 4	0.22	48	10.56

Application Example

The SISGM1040-284-LRT switch is shown below in Industrial IOT and Surveillance applications.



About This Manual

This manual describes how to install, configure, and troubleshoot the switch, including how to:

- Install the switch.
- Check switch status by reading the LED behavior.
- Reset or restore the switch to factory defaults.
- Initially configure the switch.
- Troubleshoot switch installation.

Related Manuals

SISGM1040-284-LRT Quick Start Guide, 33807

SISGM1040-284-LRT Web User Guide, 33809

SISGM1040-284-LRT CLI Reference, 33810

SISGM1040-284-LRT API User Guide, 33827

Power Supply manuals (model specific)

Release Notes (version specific)

For Lantronix Documentation, Firmware, App Notes, etc. go to <https://www.lantronix.com/technical-support/>

Note that this manual provides links to third party web sites for which Lantronix is not responsible.

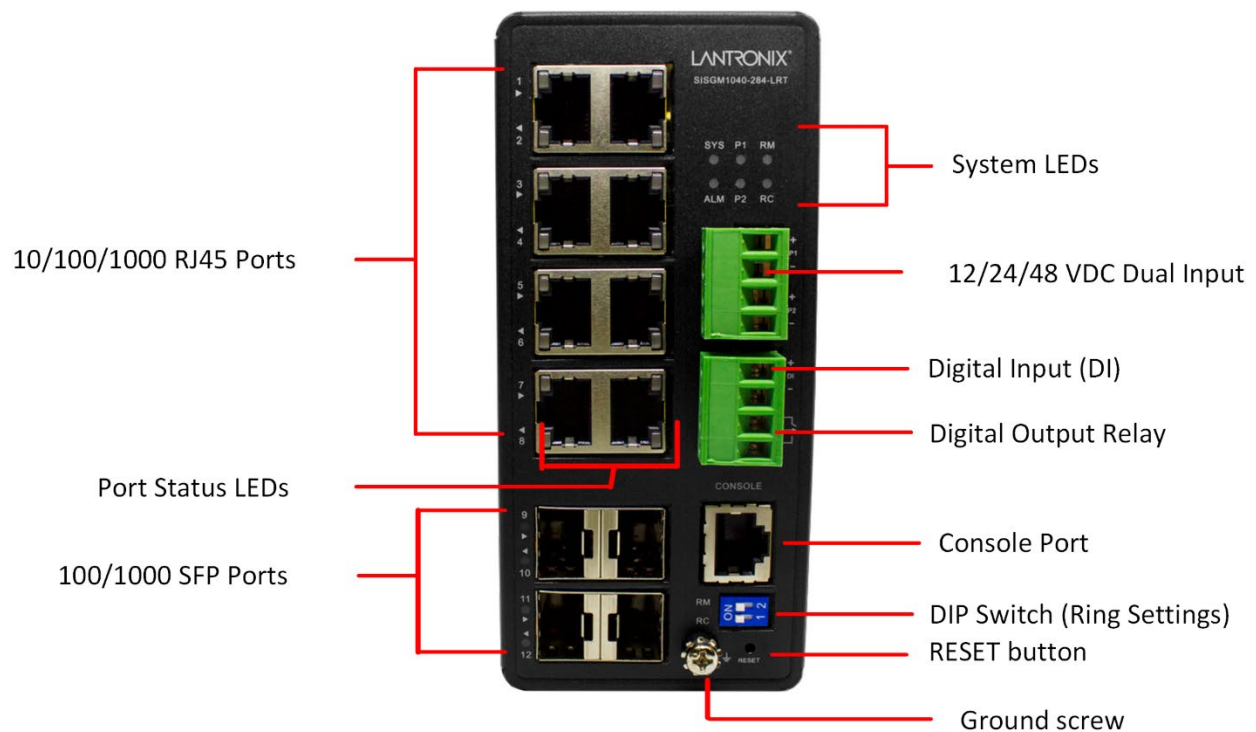
Laser Safety Instructions

When a connector is removed during installation, testing, or servicing, or when an energized fiber is broken, a risk of ocular exposure to optical energy that may be potentially hazardous occurs, depending on the laser output power. The primary hazards of exposure to laser radiation from an optical-fiber communication system are:

- Damage to the eye by accidental exposure to a beam emitted by a laser source.
- Damage to the eye from viewing a connector attached to a broken fiber or an energized fiber.

Front Panel

The switch front panel provides all the connections, controls and LED indicators as shown and described below.



LED Descriptions

The front panel LEDs provide switch status as follows:

Power LEDs (P1 and P2): indicate whether the switch is powered up correctly.

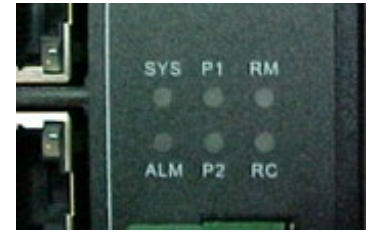
SYS (System) LED: indicates if the system is ready or not.

ALM (Alarm) LED: indicates if the system is operating normally.

RM (Ring Master) LED: indicates if Ring Master(s) or Slave is enabled.

RC (Rapid Chain) LED: indicates the status of the Rapid-Chain.

Port Status LEDs: indicate the current status of each port. Check these LEDs to determine the port status.



The following tables details the functions and descriptions of these LED indicators.

Table 1: Power LEDs

LED	Color	State	Description
P1 (Power1)	Green	On	The switch is powered ON correctly.
		Off	The switch is not receiving power from power1.
P2 (Power2)	Green	On	The switch is powered ON correctly.
		Off	The switch is not receiving power from power2.

Table 2: System LED

LED	Color	State	Description
SYS (System)	Green	On	The switch is ready.
		Off	The switch is not ready.

Table 3: Alarm LED

LED	Color	State	Description
ALM (Alarm)	Red	On	An abnormal state, such as temperature, voltage, or DC power1/2 was detected in the switch.
		Off	The system is normal.

ALM (Alarm) LED

The **ALM** (Alarm) LED lights if the monitored temperature or internal voltages are exceeded.

Issue critical stage for High / Low **Voltage** alarm (Power A or B Voltage)

Lit Alarm LED in RED Color if Test-point (max) < Volts or if Test-point (min) < Volts.

V1 (PHY, TTL, LED, SFP): (max: 3.465V, min: 3.135V) (+- 5%)

V2 (MAC): (max: 2.625V, min: 2.375V) (+- 5%)

V3 (MAC, DDR): (max: 1.575V, min: 1.425V) (+- 5%)

V4 (MAC): (max: 1.05V, min: 0.95V) (+- 5%)



Issue critical stage for High **Temperature** alarm: Lit Alarm LED in RED Color if Test-point (max) < temperature max: 100'C.

You can view temperature and voltage settings at **Monitor > Port > SFP Detail Info**.

You can view and configure current trap event severity parameters via the Web Interface at **Configuration > System > Alarm Notification > Trap Event Severity**. See the Web User Guide for more information.

Check the port status by reading the LED behaviors per the table below.

Table 4: Port Status LEDs

LED	Color	State	Description
RJ45 Ports UP *	Green	On	The port is enabled and has established a link to the connected device, and the connection speed is 1000Mbps.
	Green	Blinking	The port is transmitting/receiving packets, and the connection speed is 1000Mbps.
	Amber	On	The port is enabled and has established a link to the connected device, and the connection speed is 10/100Mbps.
	Amber	Blinking	The port is transmitting/receiving packets, and the connection speed is 10/100Mbps.
	--	Off	The port has no active network cable connected, or it has not established a link to a connected device. Otherwise, the port may have been disabled via the switch user interface.
SFP Ports	Green	On	The port is enabled and has established a link to a connected device, and the connection speed is 1000Mbps.
	Green	Blinking	The port is transmitting/receiving packets, and the connection speed is 1000Mbps.
	Amber	On	The port is enabled, has established a link to the connected device, and the connection speed is 100Mbps.
	Amber	Blinking	The port is transmitting/receiving packets, and the connection speed is 100Mbps.
	--	Off	The port has no active network cable connected, or it has not established a link to a connected device. Otherwise, the port may have been disabled via the switch user interface.

Table 5: RM (Ring Master) and RC (Rapid-Chain) LEDs

LED	RM (Ring Master)	RC (Rapid-Chain)
Off	disable	disable
Green	Ring Master is Enabled	Rapid-Chain (Active path)
Amber	Ring Slave is Enabled	Rapid-Chain (Backup path)
Blink Amber	Error: More than one Master in this ring.	Error: Rapid-Chain Switch did not find the other Rapid-Chain Switch partner (active & backup).



Installation

This section describes switch mounting, grounding, cable connection, configuration, and power connection.

Caution: Make sure you have read “[Safety Warnings and Cautions](#)” on page 2, “[Safety Instructions](#)” on page 17, and “[Power Supply Warnings & Cautions !!](#)” on page 27 before proceeding.

Package Checklist

Verify that the box contains the following items:

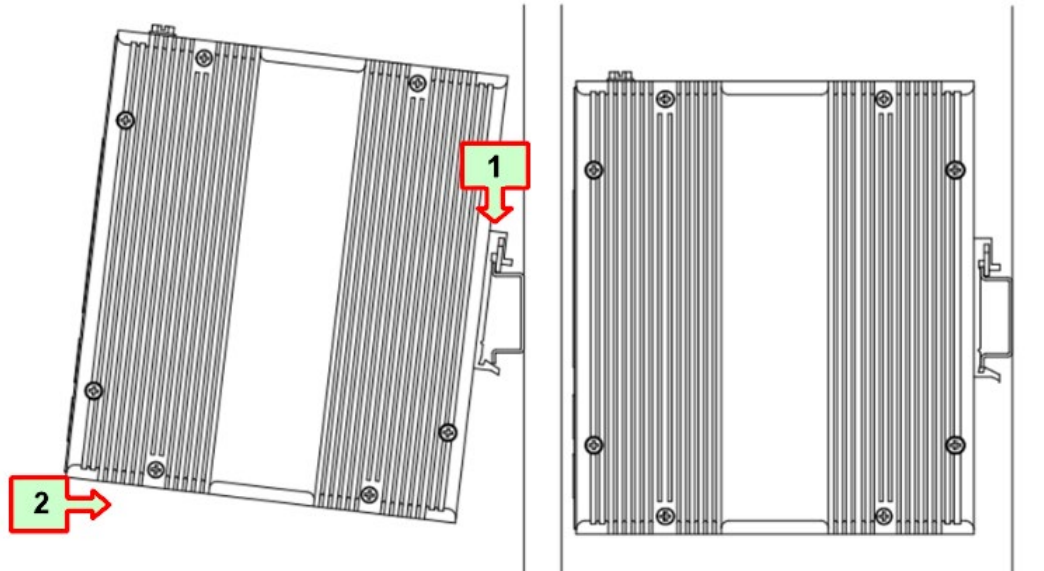
- ☐ One Managed Ethernet Switch
- ☐ One DIN-Rail Clip
- ☐ Three Screws for DIN-Rail Clip
- ☐ One DB9F to RJ45 Console cable
- ☐ One printed Quick Start Guide
- ☐ One documentation postcard

Contact your sales representative if you have not received these items. Save the packaging for possible future use. Note that a Power Supply is not included (sold separately).

DIN Rail Mounting

Mounting steps:

1. Screw the DIN-Rail bracket on with the bracket and screws in the accessory kit.
2. Hook the unit over the DIN-Rail.



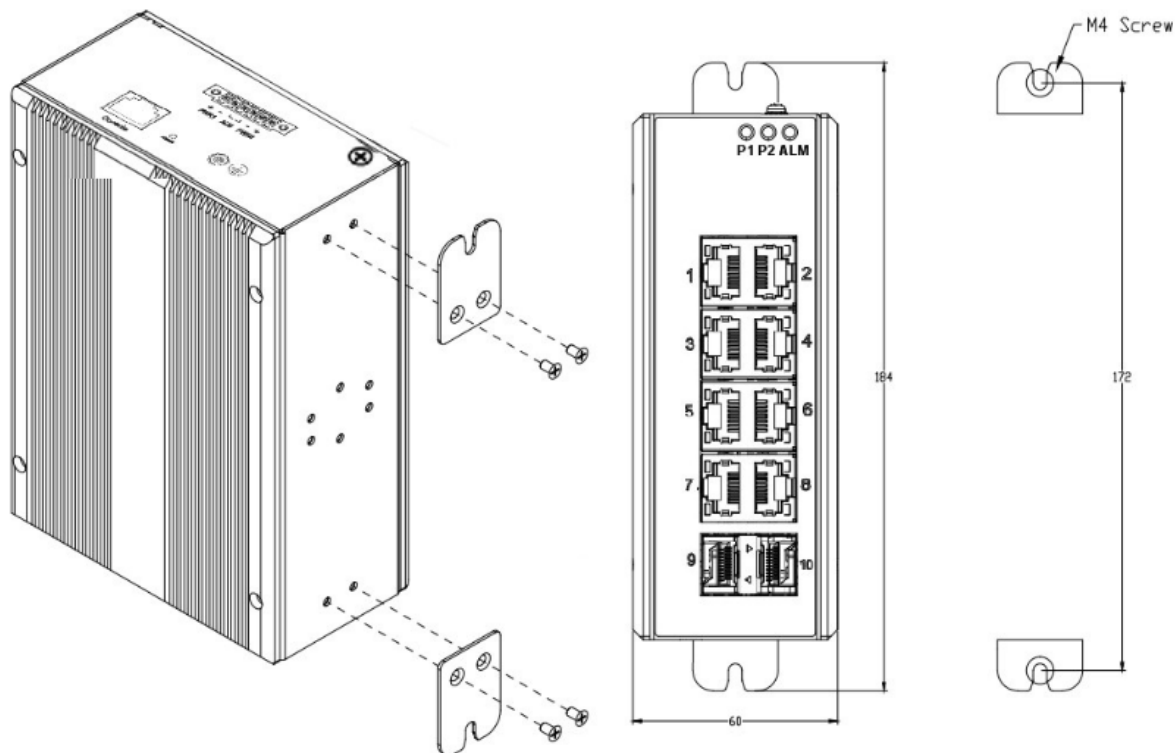
3. Push the bottom of the unit towards the DIN-Rail until it snaps into place.

Wall Mounting

The Wall Mount Bracket WMBH-01 is an optional accessory that you must order separately.

Mounting steps:

1. Screw on the wall-mount plate with the plate and screws in the accessory kit.

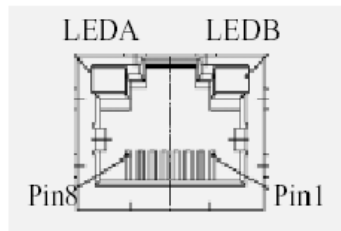


Ethernet Interface Connecting (RJ45 Ethernet)

The switch provides two types of electrical interfaces: RJ45 and optical (mini-GBIC). Connecting the Ethernet interface via RJ45:

- To connect to a PC, use a straight-through or a cross-over Ethernet cable,
- To connect the SISGM1040-184D-LRT to an Ethernet device, use UTP (Unshielded Twisted Pair) or STP (Shielded Twisted Pair) Ethernet cables.

The pin assignment of RJ-45 connector is shown below.



Pin	Assignment
1,2	T/Rx+,T/Rx-
3,6	T/Rx+,T/Rx-
4,5	T/Rx+,T/Rx-
7,8	T/Rx+,T/Rx-



Ethernet Interface Connecting (Fiber, SFP)

For a 100 Mbps fiber port available, prepare the LC connectors or SC connectors (with the use of an optional SC-to-LC adapter).

For the available 1000 Mbps fiber ports, use mini-GBIC SFPs. These accept plug in fiber transceivers that typically have an LC style connector. They are available with multimode, single mode, long-haul or special-application transceivers.

Warning: Never attempt to view optical connectors that might be emitting laser energy. Do not power up the laser product without connecting the laser to the optical fiber and putting the cover in position, as laser outputs will emit infrared laser light at this point.

Caution: We strongly recommend that you do not install or remove the SFP module with fiber-optic cables attached to it because of the potential damage to the cables, the cable connector, or the optical interfaces in the SFP module. Disconnect all cables before removing or installing an SFP module.

For more information see the Lantronix manual specific to your SFP on the Lantronix SFP webpage.



Fiber optics cable with LC duplex connector



Connect the optical fiber to the SFP socket

For More Information

The Fiber Optic Association ([FOA](https://www.thefoa.org)) is an international non-profit educational organization that is chartered to promote professionalism in fiber optics through education, certification and standards.

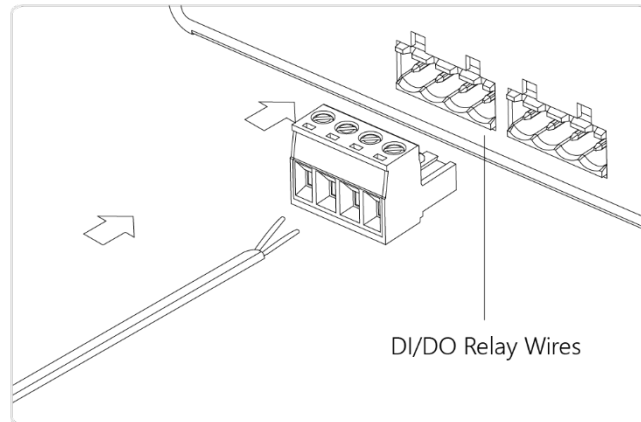
Visual Inspection and Cleaning Of Connectors: <https://www.thefoa.org/tech/ref/testing/test/scope.html>

Testing & Troubleshooting Fiber Optic Systems: <https://www.thefoa.org/tech/ref/contents.html#Test>

Alarm Relay (Digital Input and Digital Output Relay)

Connecting the DI/DO (Digital Input / Digital Output) Relay

1. Insert the negative (ground)/positive DI/DO Relay wires into the + and - terminals, respectively.
2. To keep the DI/DO Relay wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the Terminal Block connector.
3. Insert the Terminal Block connector prongs into the Terminal Block receptor.



Note:

Digital output (relay): 24VDC/1A

Digital input: level 0 (Low) -> 0V to 6V, level 1 (High) -> 10V to 24V

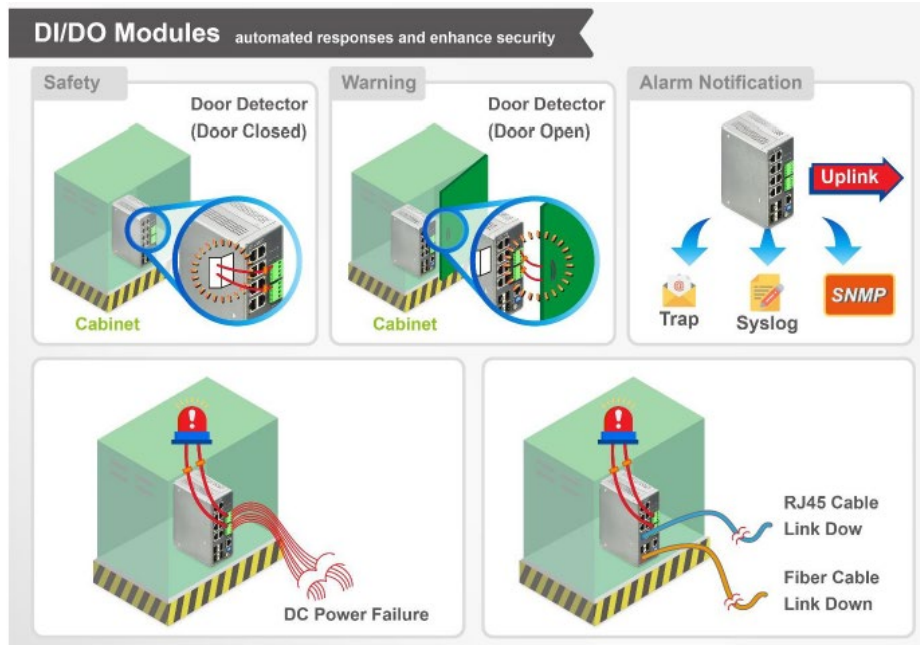
FAULT: The two contacts of the terminal block connector are used to detect user-configured events. The two wires attached to the fault contacts form an open circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains closed.

Digital Input and Digital Output Use Case

The switch supports Digital Input and Digital Output. The Digital Input enables the switch to detect and log external device status (such as door intrusion detector). The Digital Output could be used to tell administrators if the switch port shows link down, link up or power failure. **Note:**

Digital output (relay): 24VDC/1A

Digital input: level 0(Low) -> 0V to 6V, level 1 (High) -> 10V to 24V



DI: Use for receiving external signal and trigger DO. You may set the voltage input as high or low as DI normal, when DI stays in normal (assume it's set as low), then DO will not response. But the voltage input change to high, DI will show high/ abnormal and at the same time, DO will automatically switch to "abnormal" and send a signal to connected devices, switch will have system recorded.

Water level application example:

Setting: low water level: DI normal. High water level: DI abnormal, DIO connected to external alarm notification.

DI will show "normal" when the water level is low. DI will not send signal to DO.

DI will show "abnormal" when sensor senses high water level and will send signal to DO at the same time. DO will turn to abnormal and send signal to external alarm notification to trigger the alarm LED.

DI is used for connecting external alarm devices and once it is triggered the switch can send the trap. An external alarm device (for example: power supply, IP camera) can activate this input pin.

Level 0 (Low): 0V to 6V

Level 1 (High): 10V to 24V

For DO, it's similar but the switch is the alarm device, when the switch has temperature or voltage alarm, it will trigger the digital output (24V/1A) to the external device such as a contact relay.

Ground Screw

The front panel provides a ground screw. After the Switch is mounted and connected, the front panel grounding screw can be used for grounding. Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface before connecting devices.



ATTENTION: This case must be earth grounded. No DC input may be earth grounded. Use Isolated Power Supply.

RESET Button

The system Reset button is provided to reboot the system without the need to remove power. Under normal circumstances, you will not have to use it. However, on rare occasions, the switch may not respond, and you may need to push the Reset button.



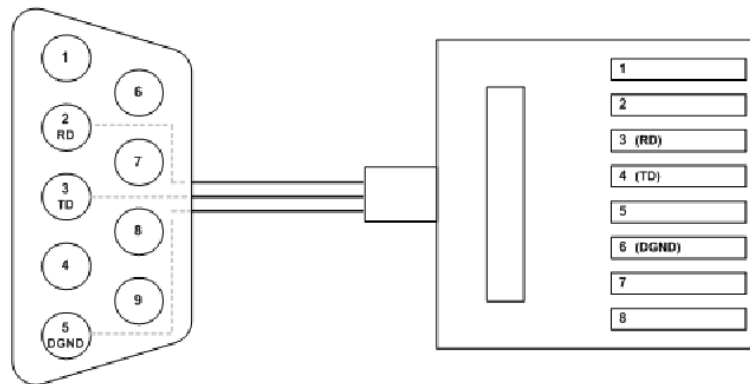
Console Port

The Console port is for local management by using a terminal emulator or a computer with terminal emulation software.

- DB9 connector connect to PC COM port
- Baud rate: 115200bps
- 8 Data bits, 1 Stop bit
- Priority: None
- Flow control: None



To connect the host PC to the console port, an RJ45 (male) connector-to-RS232 DB9 (female) connector cable is required. The RJ45 connector of the cable is connected to the Console port of the SISGM1040-384D-LRT. The DB9 connector of the cable is connected to the PC COM port. The console cable pin assignments are shown below:



Host PC <----- DB9 Connector ----- Switch RJ45 Console Port

DIP Switch (Ring Settings)

The front panel RM/CPL DIP switch lets you set Ring Settings.

See “[DIP Switch \(Ring Settings\)](#)” on page 27.

Note that you can also configure Ring settings via the Web UI and CLI.



Power Supply Information

ATTENTION: This case must be earth grounded. No DC input may be earth grounded. Use Isolated Power Supply

Power Connection Warning: Connect the power supply to the switch first, and then connect the power supply to power. Otherwise, catastrophic product failure may occur. **1.** Verify that power is off to the DC circuit that you are going to attach to the switch DC-input connector. This can be either of the two power supplies (AC-input or DC-input) or site source DC. **2.** As an added precaution, place an appropriate safety flag and lockout device at the source power circuit breaker, or place a piece of adhesive tape over the circuit breaker handle to prevent accidental power restoration while you are working on the circuit.



Power Disconnection: To disconnect power from the switch after a successfully boot, follow these steps: **1.** Turn off power to the switch. **2.** Disconnect the cables.

Warning: Only wire with insulation should extend from the connector. An exposed wire lead from a DC-input power source can conduct harmful levels of electricity. Be sure that no exposed portion of the DC-input power source wire extends from the connector(s) or terminal block(s).

Power Supply Warnings & Cautions !!

1. Risk of electrical shock and energy hazard. All failure should be examined by a qualified technician. Please do not remove the case of the power supply by yourself!
2. Risk of electric arcs and electric shock (danger to life). Connecting both the primary and the secondary sides together is not allowed.
3. Risk of burn hazard. Do not touch the unit in operation and shortly after disconnection!
4. Risk of fire and short circuit. The openings should be protected from foreign objects or dripping liquids.
5. Only install the unit in a pollution degree 2 environment (where there is only non-conductive pollution that might temporarily become conductive due to occasional condensation. Generally refer to dry, well-ventilated locations, such as control cabinets).
6. Please do not install the unit in places with high moisture or near the water.
7. The maximum operating temperature is 60°C. Please do not install the unit in places with high ambient temperature or near fire source.
8. The FG (⏏) must be connected to PE (Protective Earth).
9. Output current and output wattage must not exceed the rated value on its specification.
10. Disconnect system from supply voltage: Before commencing any installation, maintenance or modification work: Disconnect your system from supply voltage. Make sure that inadvertent connection in circuit will be impossible!
11. For continued protection against risk of fire, replace only with same type and rating of fuse.
Pour ne pas compromettre la protection contre les risques d'incendie, remplacer par un fusible de même type et de mêmes caractéristiques nominales.

Power Supply Specifications

Various power supply models are available from Lantronix. Note that a Power Supply is not included (sold separately).

Warning: You must use an isolated power supply in order for Lantronix to honor the warranty.

The power supplies that Lantronix makes available are:

- Power Supply 25165
- Power Supply 25130
- SPS-UA12DHT
- PS-DC-DUAL-5624T

Each power supply model is described on the following pages.

Industrial Power Supply 25165

Features

- Protected against Short Circuit, Overload, Over Voltage
- Convection air cooling
- DIN rail mountable
- RoHS compliant
- MTBF 968.1 Khrs
- No load power consumption < 0.3W
- Isolation class II
- Pass LPS (Limited power source)
- DC output voltage adjustable
- LED indicator for power on

Specifications

Output Voltage 12VDC
 Output Current Rating 2A
 Output Power Rating 24 Watts
 Output Ripple & Noise Max 120mVp-p
 Output Voltage Range 10.8 ~ 13.8VDC
 Output Voltage Tolerance $\pm 1.0\%$
 Output Line Regulation $\pm 1.0\%$
 Output Load Regulation $\pm 1.0\%$
 Output Setup, Rise Time 500ms, 50ms full load
 Output Hold Up Time 30ms / 230VAC, 12ms / 115VAC at full load

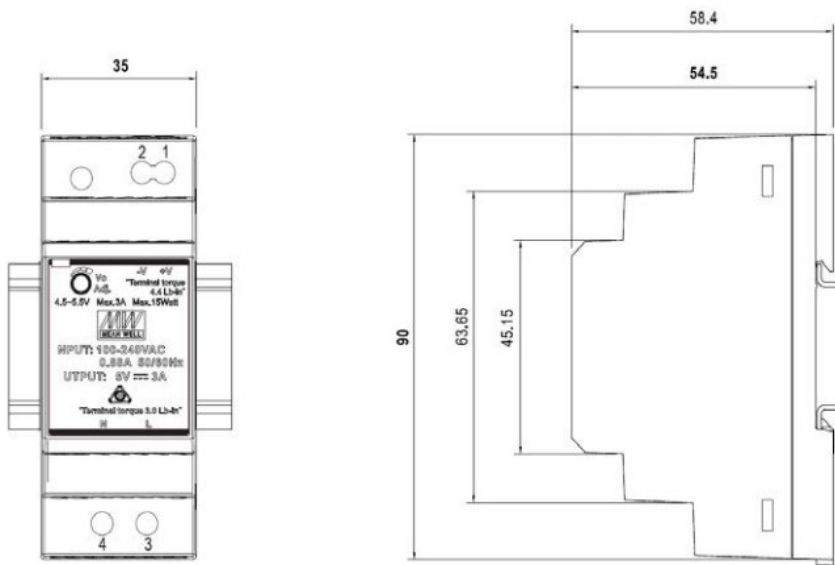
Input Voltage Range Switch Selectable
 85 ~ 264VAC
 120 ~ 370VDC
 Input Frequency Range 47 ~ 63Hz
 Input Efficiency 88%
 Input AC Current (Typical) 0.88A@115VAC
 0.48A@230VAC
 Input Inrush Current (Cold) 25A@115VAC
 45A@230VAC
 Protection Overload 105 ~ 160%
 Protection Overvoltage 15 ~ 18V
 Dimensions W: 1.38" [35 mm] x D: 2.15" [54.5 mm]



Environment Operating: -30°C to +70°C. Storage: -40°C to +85°C. Humidity: 10% to 95% RH(non-condensing)
 Weight 0.26 lbs. [0.12 kg]

Compliance Safety: UL 60950-1, UL508, TUV EN61558-2-16, IEC60950-1, EAC TP TC 004, BSMI CNS14336-1 approved; EMC Emission: EN55032, CISPR32, CNS13438, EN61000-3-2, EN61000-3-3. EMC Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN55035, EN61000-6-2, EN61204-3

Warranty 5 Year



Industrial Power Supply 25130

The 25130 (MDR-40-48) front panel has a DC OK LED and a +V ADJ screw.

Features

- Variable AC input range
- Protected against Overload, Over Voltage
- Convection air cooling
- DIN rail mountable
- UL 508 approved
- Full load burn in test
- RoHS Compliant
- MTBF 301.7Khrs

Specifications

Power Output

- Output Voltage: 48VDC
- Current Rating: 0.83A
- Power Rating: 39.8 Watts
- Ripple & Noise Max: 200mVp-p
- Voltage Range: 48~56VDC
- Voltage Tolerance: $\pm 1.0\%$
- Line Regulation: $\pm 1.0\%$
- Load Regulation: $\pm 1.0\%$
- Setup, Rise Time: 500ms, 30ms
- Hold Up Time: 20ms/115VAC

Power Input

- Voltage Range Switch Selectable: 88~264VAC, 120~370VDC
- Frequency Range: 47~63Hz
- Efficiency: 88%
- AC Current (Typical): 1.1A@115VAC, 0.7A@230VAC
- Inrush Current (Cold): 30A@115VAC, 60A@230VAC
- Leakage Current: <1mA@240VAC

Protection: Overload: 105~150%; Overvoltage: 57.6~64.8V

LED: Front panel **DC OK** LED lights (green) when DC output is good.

+V Adj: Recessed front panel screw to raise and lower output voltage.

Dimensions: Width: 1.57" [40 mm] x Depth: 3.94" [100 mm] x Height: 3.54" [90 mm]

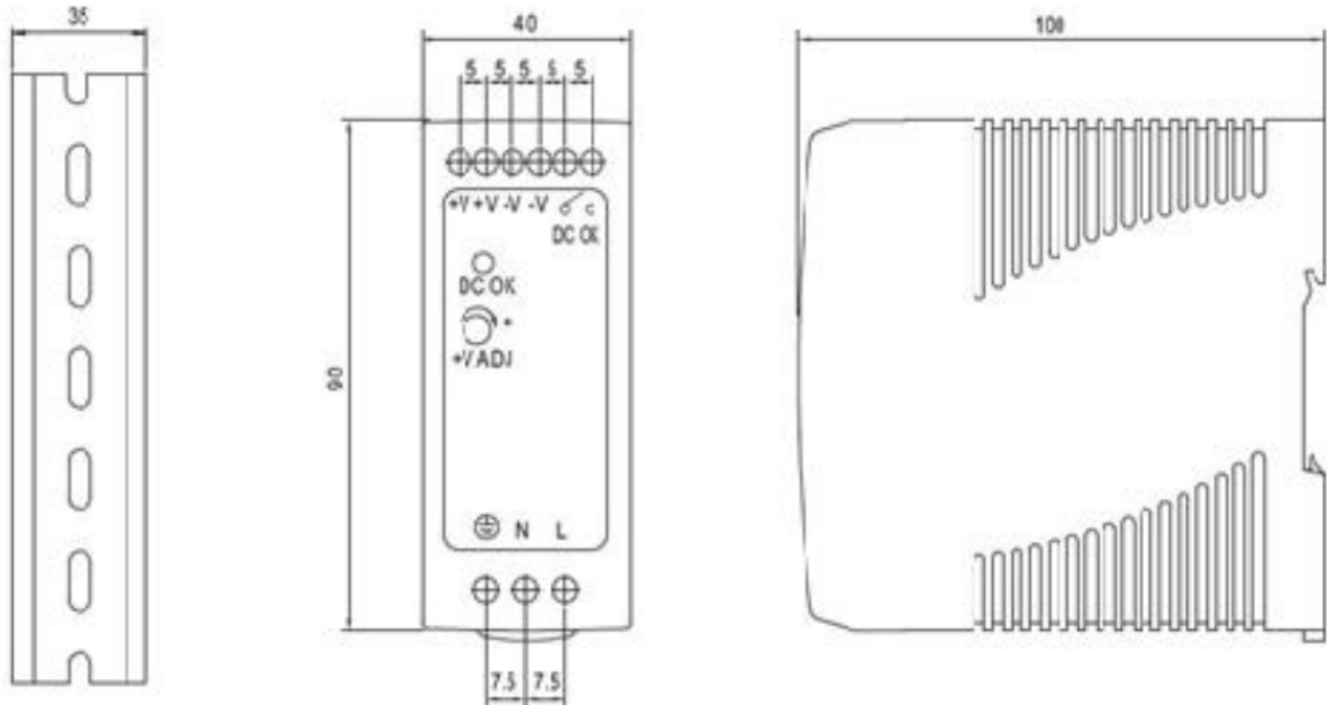
Environment: Operating: -20°C to +70°C; Storage: -40°C to +85°C; Humidity: 20% to 90% (non-condensing)

Weight: 0.66 lbs. [0.3 kg]

Certifications: Safety: UL508, TUV EN60950-1, NEC Class 2, LPS Compliant, UL60950-1, EN55011, EN55022, CISPR22, EN61204-3 Class B, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-2, EN50082-2, EN61204-3 A, IEC60068-2-6 (Vibration)

Warranty: Lifetime



25130 Layout and Dimensions**25130 Back Panel**

PS-DC-DUAL-5624T Stand-Alone Hardened Power Supply

This stand-alone power supply is designed to offer dual DC power output in extended temperature environments. It has a compact form factor and can be DIN rail mounted.

Ordering Information

PS-DC-DUAL-5624T: 345 Watt Power Supply with 56VDC and 24VDC dual output.

Features

- Compact Stand-Alone or DIN Rail form factor
- Wide 100 – 240VAC power input with externally accessible fuse
- Dual Output: 315W at 56VDC and 30W at 24VDC or 12VDC, Terminal Block Connectors
- Maximum output: 345 Watts
- Active fan speed control based on temperature
- Front panel LED to indicate the status of power supply, fan faults and temperature
- 2-Pin alarm DC relay output with 5 event monitoring
 - Fan tachometer monitoring for low speed or lock conditions
 - Over or under temperature
 - 12/24V output out of spec

Specifications

Output 1	Voltage	56V (terminal block)
	Regulation	+/- 2%
	Current Rating	5.7A
	Power Rating	315W
Output 2	Voltage	24V (terminal block) (5624T)
	Regulation	+/- 5%
	Current Rating	1.25A
	Power Rating	30W

Input Frequency Range	47 - 63 HZ
Power Consumption	4A at 120 VAC (typical)
Dimensions Width:	6.25" [159 mm] x Depth: 6.45" [164 mm] x Height: 1.75" [44 mm]
Weight	1.8 lbs. [0.82 kg]
MTBF	623,377 hrs
Environment	Operating: -20°C to +70°C (restricted). -20°C to +50°C (unrestricted).
Storage	-30°C to +70°C
Operating Humidity:	5% to 95% (non-condensing)
Compliance	EMI: EN55032 Class A, EN55024
	Safety: EN60950, UL 60950
Warranty	5 Years

Power Cord Included: To order the corresponding country specific power cord, add a Country Code extension to the end of the SKU: -NA = North America, AL = North America locking right angle, LA = Latin America, EU = Europe, UK = United Kingdom, SA = South Africa, JP = Japan, OZ = Australia, BR = Brazil.



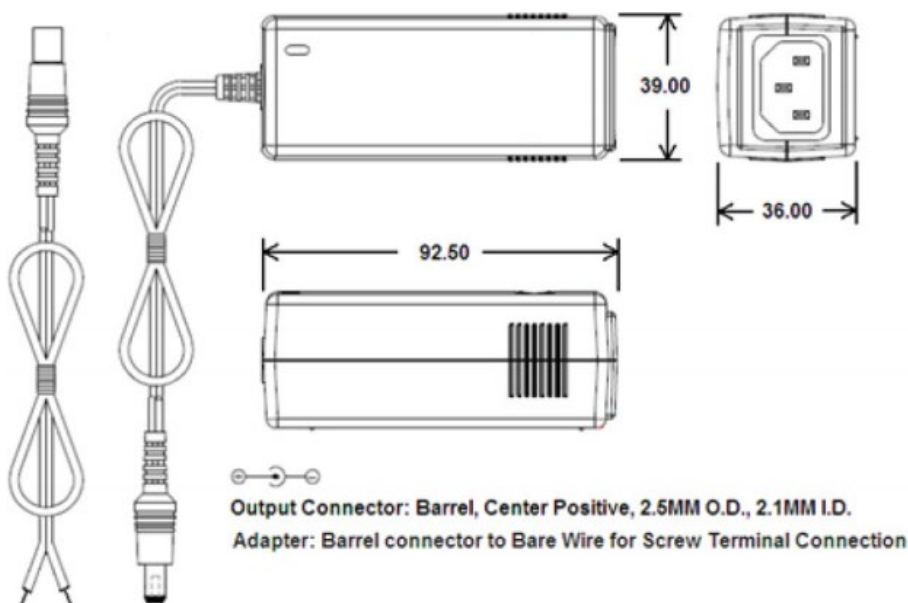
SPS-UA12DHT Industrial Power Supply

Features

- Input: 90 ~ 264 VAC; Output: 12 VDC, 1.3A, 18 Watts
- Protection: Short Circuit, Overload, Over Voltage, Overheating
- Full load burn in test, RoHS compliant, MTBF 100.0 Khrs

Specifications

- Output Ripple & Noise Max 180mVp-p
- Output Voltage Range 11.4 ~ 12.6VDC
- Output Voltage Tolerance $\pm 0.5\%$
- Output Hold Up Time 20ms
- Input Frequency 50 ~ 60Hz
- Input Efficiency 79.4%
- Input AC Current (Typical) 0.45A@115VAC
- Input Inrush Current (Cold) 50A@100VAC. 50A@240VAC
- Protection Overload Output Voltage Drop
- Protection Overvoltage Regulated
- Protection Short Circuit Continuous Short Circuit Protect
- Dimensions Width: 3.64" [92.5 mm] x Depth: 1.54" [39 mm] x Height: 1.54" [39 mm]
- Environment Operating Temp: 0°C to +70°C. Storage Temp: -40°C to +70°C
Humidity: 10% to 95% (non-condensing)
- Compliance Safety: UL60950-1, CUL 60950-1, TUV EN60950-1, CE Mark, J60950
Vibration: IEC60068-2-6. EMC Emission: FCC Part 15 Class B, EN55022 Class B. EMC Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11, EN55024
- Warranty Lifetime



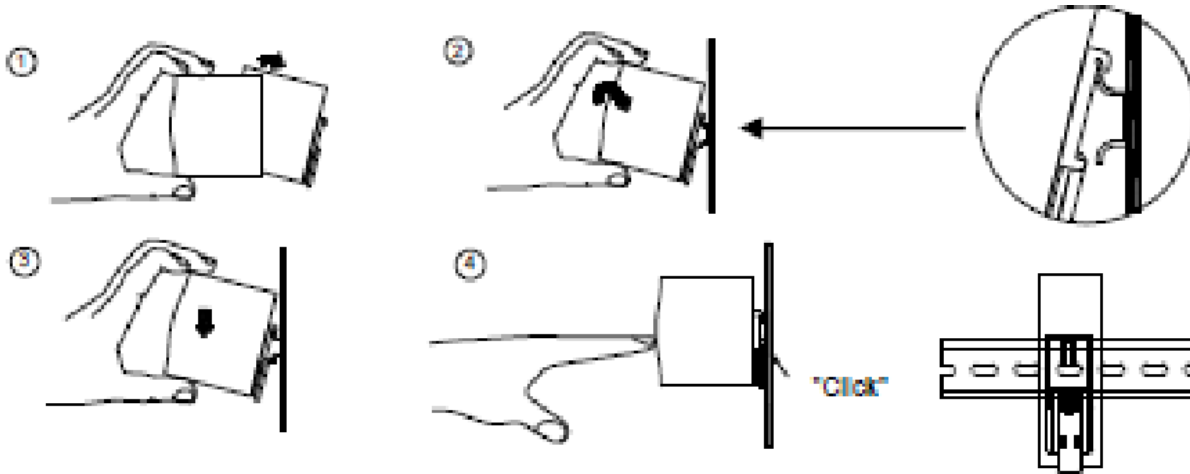
Power Cord Included: To order the corresponding country specific power cord, add a Country Code extension to the end of the SKU: -NA = North America, AL = North America locking right angle, LA = Latin America, EU = Europe, UK = United Kingdom, SA = South Africa, JP = Japan, OZ = Australia, BR = Brazil.

Power Supply Mounting Instructions

Mount as shown in figure only, with input terminals down, or else sufficient cooling will not be possible.
Admissible DIN Rail: TS35/7.5 or TS35/15.

For DIN Rail fastening:

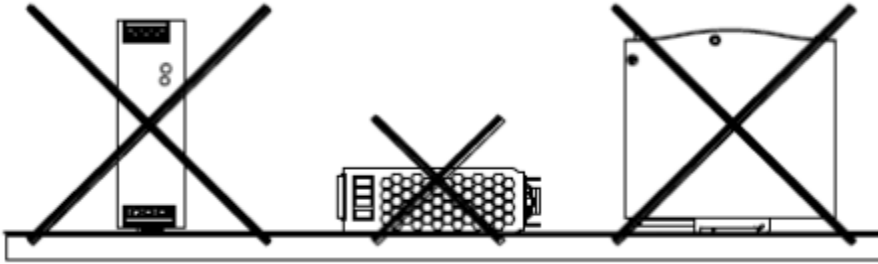
1. Tilt the unit slightly rearwards.
2. Fit the unit over top hat rail.
3. Slide it downward until it hits the stop.
4. Press against the bottom for locking.
5. Shake the unit slightly to check the locking action.



Power Supply Installation

Each power supply is a DIN rail power supply with a 150% peak load capability (3 seconds) and high efficiency of up to 94%. They can be mounted on a TS35 Standard DIN rail.

- 1) Always allow good ventilation clearances (5mm left and right, 40mm above and 20mm below) around the unit in use to prevent it from overheating. Also a 10-15 cm clearance must be kept when the adjacent device is a heat source.
- 2) The appropriate mounting orientation for the unit is vertical, the input terminals at the bottom and output on the top. Mounting orientations other than that, such as upside down, horizontal, or table-top mounting, is not allowed.



- 3) Use copper wire only, and recommended wires as shown below.

AWG	18	16	14	12	10
Rated Current of Equipment (Amps)	6A	6-10A	13-16A	16-25A	25-32A
Cross-section of Lead (mm ²)	0.75	1.00	1.5	2.5	4
Note 1. Current: each wire should be de-rated to 80% of the current suggested above when using 5 or more wires connected to the unit.					
Note 2: The maximum allowable wire cross-sectional area for the terminal of the SDR-75 is 12AWG/2.5 mm ² .					

- 4) Make sure that all strands of each stranded wire enter the terminal connection and the screw terminals are securely fixed to prevent poor contact. If the power supply possesses multi-output terminals, please make sure each contact is connected to wires to prevent too much current stress on a single contact.
- 5) Use wires that can withstand temperatures of at least 80°C, such as UL1007.
- 6) Recommended wire strapping length is 5mm (0.197").
- 7) Recommended screwdriver is 4mm, slotted type.
- 8) The recommended torque setting for terminals is:
 - SDR-120-24 I/P = 6.3 kgf-cm (5.5 Lb-in) and O/P = 8 kgf-cm (7 Lb-in)
 - SDR-240-48 I/P = 5 kgf-cm (4.4 Lb-in) and O/P = 8 kgf-cm (7 Lb-in)
- 9) Suggested fuse and maximum number of the SDR PSUs that can be connected to a circuit breaker at 230V are:
 - SDR-120-24 Fuse = T4A/L250V, C16 = 7, D16 = 14.
 - SDR-240-48 Fuse = T5A/L250V, C16 = 4, D16 = 8.
- 10) Adjust the power supply output voltage if the switch won't power up.

Connecting Power

ATTENTION This case must be earth grounded. No DC input may be earth grounded. Use Isolated Power Supply.

The switch can be powered from two power supplies (input range 12V ~ 58V).

Insert the positive and negative wires into **P1+** and **P1-** contacts on the terminal block and tighten the wireclamp screws to prevent the wires from being loosened. If redundant power supplies are to be configured, insert the positive and negative wires into P2+ and P2- contacts on the terminal block and tighten the wireclamp screws.

Note: See “[Power Supply Warnings & Cautions !!](#)”, “[Power Supply Installation](#)”, and “[Power Supply Mounting Instructions](#)” later in this manual for detailed information.

Note: Make all cable connections before connecting Power.

Power Connector (4-Pin Terminal Block)

Input:	DC 12-58V
P1 +/-	Power Input 1 + and -
P2 +/-	Power Input 2 + and -
ALM	Alarm Relay Output



Note: The DC power should be connected to a well-fused power supply.

Note: See “[Power Supply Warnings & Cautions !!](#)”, “[Power Supply Installation](#)”, and “[Power Supply Mounting Instructions](#)” later in this manual for detailed information.

Connect and Log In via the CONSOLE Port

Access to the Switch is protected by a logon security system. You can log on to the switch with the user name and password. After a failed logon attempt, the system displays *Wrong username or password!*.

After you log on, the system monitors the interface for periods of inactivity. If the interface is inactive for too long, you are automatically logged off.

The CLI initial user name and password is **admin**. You should change the password as soon as possible, because the initial password is known to anyone who reads this manual. You can also change the user name or add additional user names.

Console:	Baud rate:	115200bps,
	Data bit:	8,
	Parity:	None,
	Stop bit:	1
	Flow control:	none
Telnet Port	23	
SSH	Port 22 (In Windows, you can run a terminal emulator such as PuTTY)	

CLI Initialization and Configuration (Optional)

1. Connect a PC to the SISGM1040-284-LRT Ethernet port (RJ45 Ethernet port).
2. In Telnet, enter the command `telnet 192.168.1.77`.
3. Login with default account and password (Username: admin / Password: admin).
4. Change the IP address with the CLI commands below:

```
# enable
# configure terminal
(config)# interface vlan 1
(config-if-vlan)# ip address 172.16.100.123 255.255.255.0
(config-if-vlan)# exit
#
```

See the CLI Reference for more information.

Connect and Log In via a Web Browser

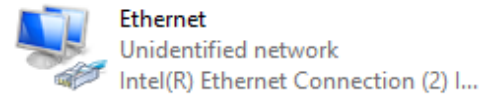
After initial power up, perform the initial switch configuration using a web browser. To begin the initial configuration stage, reconfigure your PC's IP address and subnet mask so the PC can communicate with the switch. After changing PC's IP address, you can access the switch's Web GUI using the switch's default IP address of 192.168.1.77. The default Subnet Mask is 255.255.255.0. The default Username and Password are **admin**.

See the Web User Guide for more information.

Connect the Switch to a Windows 10 PC

Refer to your PC and OS documentation for more information.

1. Go to your PC's Control Panel > Network and Internet.
2. Click on Network and Sharing Center.
3. Click on Change adapter settings.
4. Select the first available Ethernet connection:
5. Right click on it and go to Properties.
6. On the Networking tab, select Internet Protocol Version 4(TCP/IPv4).
7. Click on the Properties tab.
8. Click the "Use the following IP address" button.
9. Give the same IP subnet as the switch: 192.168.1.5 (your switch is .77), Subnet mask: 255.255.255.0.
10. Click OK.
11. Connect your network cable from your PC to your switch.
12. In your web browser address bar type the IP for the switch (192.168.1.77) and hit Enter.
13. Enter the default User name (admin) and Password (admin) all lower case.



Troubleshooting

If the switch fails, isolate and correct the fault by determining the answers to the following questions and then taking the indicated action. First isolate the problem to the SISGM1040-284-LRT; troubleshoot any other network gear (e.g., other switches, remote devices like IP cameras, WAPs, midspan injectors, etc.) to isolate the problem to the SISGM1040-284-LRT.

1. If one of the Green Power LEDs (PWR1, PWR2) is not lit check the following:
 - Is the power source live and to spec? Adjust the Power Supply front panel +V ADJ screw to increase voltage as needed.
 - Is the power adapter properly installed? Verify that you are using the right power cord/adaptor. Using a power adapter with DC voltage output higher than the rated voltage of the switch will damage the switch. Check connections between the switch, the power cord and the wall outlet.
 - Are the power supply modules completely inserted and the thumb screws tight?
 - Are the power cables properly installed? Check for loose power connections, power losses, or surges at power outlet. See the related section of this manual for details.
2. Check the port LEDs. If the Green port Link/Act LED or the Amber Link LED is not lit, then verify that the copper and fiber cable requirements are met. See [Specifications](#) on page 5.
3. If you are configuring a feature via the web GUI, try using the CLI, and vice versa.
4. Run the device Diagnostics; see the Web User Guide or the CLI Reference manual.
5. Try resetting to factory defaults and/or a system reset. See the [Reset Button](#) on page 10. See the Web User Guide or the CLI Reference manual.
6. Make sure that the function you are trying to use is supported. See [Features](#) on page 4.
7. Verify the install procedures were performed correctly as described in previous sections of this manual.
8. Check that the proper cable type is used, and its length does not exceed specified limits. See [Ethernet Interface Connecting \(RJ45 Ethernet\)](#) on page 8 and [Ethernet Interface Connecting \(Fiber, SFP\)](#) on page 9.
9. Check for improper network topologies. Make sure that your network topology contains no data path loops.
10. Diagnose via the LEDs: The Ethernet switch can be monitored via LEDs on the front panel to help identify problems. See [LED Status Indicators](#) on page 14.
11. If the LED indicators are normal with network cables connected properly but packet delivery still fails, check the status of Ethernet device configurations or status on the network. See the Web User Guide or the CLI Reference manual.
12. Check the port configuration. Make sure ports have not been put into a “blocking” state by Spanning Tree, GVRP, or LACP. The normal operation of the Spanning Tree, GVRP, and LACP features may put the port in a blocking state. Verify that the port has not been configured as disabled via software.
13. Check the device firmware version. Keep your products up to date by downloading the latest firmware.
14. If you forgot your password or cannot log in, physically connect ports 1 and 2 with an Ethernet cable and then reboot the system. This will bring system back to factory default settings.
15. If you still cannot resolve the problem, record the model and system information and contact Technical Support.

Box Label and Device Label

The labels can provide information that can help the Tech Support Specialist.



Record Device and System Information

If possible, perform these basic procedure steps: 1. Enable Port Mirroring and store the packet with Wireshark. 2. Check the Port Counters. 3. Connect a physical console port and save the dump messages. 4. Provide the running configuration, topology, and firmware version.

After performing the troubleshooting procedures above, and before calling or emailing Tech Support, record as much information as possible in order to help the Tech Support Specialist.

Record Model name: _____

SN: _____

Firmware Version: _____ IP Status: _____

LED Status: _____

Syslog: _____

Current Alarm data and alarm history: _____

Your Lantronix service contract number: _____

Describe the failure: _____

Describe any action(s) already taken to resolve the problem (e.g., changing mode, resetting, etc.):

The model # and serial # of all other Lantronix products in the network: _____

Describe your network environment (layout, cable type, cable distance, etc.): _____

Any previous Return Material Authorization (RMA) numbers: _____

List Lantronix or third party equipment in the network (e.g., PCs, servers, switches, routers, or hubs, remote devices (camera, etc.), SFPs, etc.): _____

Compliance Information

CE/EN 55022 EN55024

FCC part 15 approval Class A

CE marking

CISPR22/EN55032 Class A

Radiated and Conducted Emissions: ANSI C63.4:2014 with FCC Method 47 CFR Part 15, Subpart B, Class A Digital Device, CISPR PUB. 22 and Canada Standard ICES-003 Issue 6, Class A.

European Standard EN 55032 Class A. Australian Standard AS/NZS CISPR 32 Class A.

Harmonics: European Standard EN 61000-3-2. Voltage Fluctuations: EN 61000-3-3.

EMS: European Standard EN 55024 (ESD: IEC 6100-4-2, RS: IEC 61000-4-3, EFT: IEC 61000-4-4, Surges: IEC 61000-4-5, CS: IEC 61000-4-6, PFMF: IEC 61000-4-8, DIPs: IEC 61000-4-11.

LVD: IEC 60950-1:2005 (2nd Edition)+ Am 1:2009 +Am 2:2013; and/or EN 60950-1:2006+A11:2009+A12:2013

Safety: LVD, UL Listed, IEC62368-1/EN62368-1

Environmental: NEMA TS-2-2016 (Power, Transients, Temperature Test)

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.

User Information

Caution: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A 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. The 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.

Innovation, Science and Economic Development Canada ICES-003 Compliance Label:

CAN ICES-3 (A)/NMB-3(A)

RoHS, WEEE, and Environmental Programs

<https://www.lantronix.com/legal/rohs/>

Declaration of Conformity

Manufacture's Name: Lantronics, Inc.

Manufacture's Address: 48 Discovery, Suite 250, Irvine, California 92618

Declares that the products: SISGM1040-284-LRT Hardened Managed Ethernet Switch

Conforms to the following Product Regulations:

FCC Part 15 Class A, EN 55032:2015/AC:2016 Class A, EN 61000-3-2:2014, EN 61000-3-3:2013 and EN 55024:2010/A1:2015 (IEC 61000-4-2 Edition 2.0 2008-12, IEC 61000-4-3 Edition 3.2 2010-04, IEC 61000-4-4 Edition 3.0 2012-04, IEC 61000-4-5 Edition 3.1 2017-08, IEC 61000-4-6 Edition 4.0 2013-10, IEC 61000-4-8 Edition 2.0 2009-09, IEC 61000-4-11 Edition 2.1 2017-05), Australian Standard AS/NZS CISPR 32:2015. IEC 60950-1:2005 (2nd Edition)+ Am 1:2009 +Am 2:2013; and/or EN 60950-1:2006+A11:2009+ A12010+A12:2013. UL listed, IEC62368-1/EN62368-1 and NEMA TS-2.

With the technical construction on file at the above address, this product carries the CE Mark

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature: *Fathi Hakam*

Date: September 14, 2022

Full Name: Fathi Hakam

Position: Vice President of Engineering

Cautions and Warnings



Warning: This unit is intended for installation in restricted access areas. A Restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.



External metal part has a marking indicating that this part is hot.

Appendix A. Rapid Ring Operation

Rapid Ring Operation

Rapid Ring is a proprietary redundancy network ring protocol. It can be used to recover the network from critical link failure to provide fault failover protection. Many redundant or network recovery protocols are defined by IEEE, such as spanning tree (STP, RSTP, MSTP) are available to recover the network from link failures. But the recovery time to propagate broadcast packets to the failover port can take several seconds, depending on the amount of network traffic. Rapid Ring recovery is less than 20ms for up to 250 switches.

Note: Only one redundant protocol can be used at the same time. Before you enable Rapid Ring, you must disable Spanning Tree. See the *Web User Guide* for details on configuring Single Ring, Ring to Ring, Dual Ring, and Rapid Chain.

Hardware Setting and Status for Rings

DIP switch settings are shown and described below. Note: **RM** means Ring Master, and **RC** means Rapid Chain.

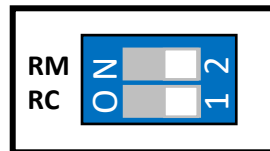


Figure 9: DIP Switch

Configure Rapid Ring by hardware DIP Switch as shown in the table below:

Table 1: DIP Switch Settings

Mode	RM	RC	Rapid Ring Status	1st Port	2nd Port	RM LED	RC LED
HW Control	OFF	OFF	Single Ring Member	The largest Odd Port Number	The largest Even Port Number	Lit Amber	Off
HW Control	ON	OFF	Single Ring Master	The largest Odd Port Number	The largest Even Port Number	Lit Green	Off
HW Control	OFF	ON	Rapid Chain	The largest Odd Port Number	The largest Even Port Number	Off	Lit Green (Active Path); Lit Amber (Backup Path)
SW Control	ON	ON	Rapid Ring Settings by Software	--	--	--	--

Note:

1. Default setting of DIP Switch will be placed at ON/ON (SW Control).
2. In HW mode, all Rapid Ring and Spanning Tree SW config from Web, Telnet, and Console is “deactivated”.
3. Only Single Ring and Rapid Chain are configurable by DIP Switch.
4. The largest Even/Odd ports include both fiber and copper ports. For a Combo port, either fiber or copper can be used as the Ring connecting port.

RM and RC LED Descriptions

The table below describes RM (Ring Master) and RC (Rapid Chain) LED status:

Table 2: LED Status

LED	Color	State	Description
RM (Ring Master)	Green	On	Ring Master has been detected in the switch.
	Amber	On	Ring Member has been detected in the switch.
	--	Off	Disabled
RC (Rapid Chain)	Green	On	Rapid Chain has been detected in the switch (Active path).
	Amber	On	Rapid Chain has been detected in the switch (Backup path).
		Blinking	Error: <i>There is no correspondent Rapid Chain Switch found.</i>
	--	Off	Disabled

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For a current list of our domestic and international sales offices, go to the Lantronix web site at www.lantronix.com/about/contact.