MDS-G4000-4XGS/ MDS-G4000-L3-4XGS Series Quick Installation Guide

Version 1.5, March 2026

Technical Support Contact Information
www.moxa.com/support

P/N: 1802040000025

Package Checklist

Moxa's MDS-G4000-4XGS/MDS-G4000-L3-4XGS Series industrial modular DIN-rail switch is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

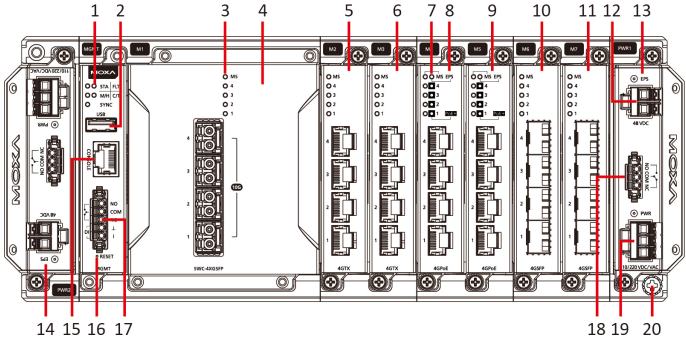
- 1 MDS-G4000-4XGS or MDS-G4000-L3-4XGS switch
- Pre-installed DIN-rail kit
- 2 screws (M4 x 8 mm & M3 x 8 mm)
- Quick installation guide (printed)
- Substance Disclosure Table
- Product Certificate of Quality Inspection (Simplified Chinese)
- Product Notices (Simplified Chinese)
- Warranty card

NOTE You can find information and software downloads on the relevant product pages located on Moxa's website: www.moxa.com

Default Settings

- IP address: 192.168.127.253
- Subnet mask: 255.255.255.0
- Username: admin
- Password: moxa

Panel Layouts

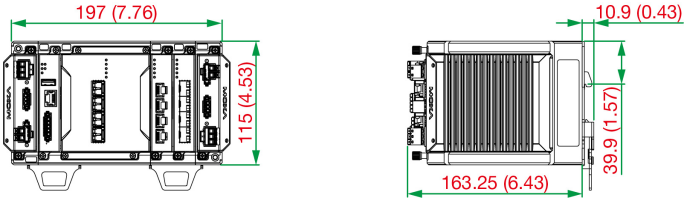


1. System status LEDs (from left to right, top to bottom) STATE, FAULT, MASTER/HEAD, COUPLER/TAIL, and SYNC LED indicators
2. USB storage port
3. Module Status
4. Switch and Control Module slot 1 (embedded)
5. Ethernet module slot 2
6. Ethernet module slot 3
7. External power input status from EPS
8. Ethernet module slot 4
9. Ethernet module slot 5
10. Ethernet module slot 6
11. Ethernet module slot 7

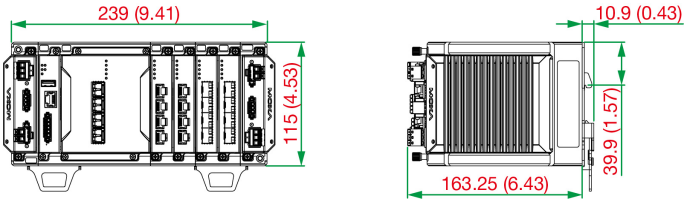
12. External Power Supply (EPS) input for PoE
13. Redundant power module slot 1
14. Redundant power module slot 2
15. RS-232 console port with RJ45 interface
16. Reset button (Pin hole 0.9 mm diameter)
17. Relay output and Digital Input port
18. Relay output
19. Power input
20. Grounding screw

Dimensions

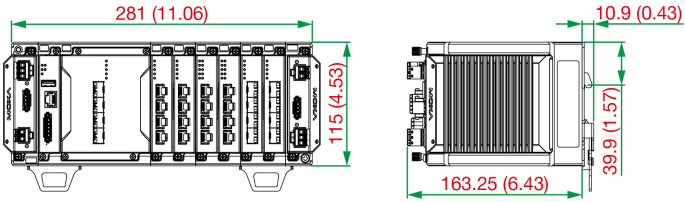
MDS-G4012-4XGS and MDS-G4012-L3-4XGS Series



MDS-G4020-4XGS and MDS-G4020-L3-4XGS Series



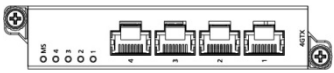
MDS-G4028-4XGS and MDS-G4028-L3-4XGS Series



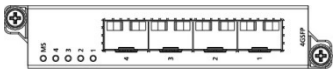
Unit: mm (inch)

Ethernet Modules (Hardware Rev.2.0.0 and above)

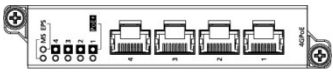
LM-7000H-4GTX



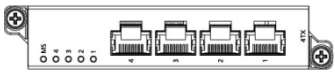
LM-7000H-4GSFP



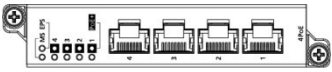
LM-7000H-4GPoE



LM-7000H-4TX



LM-7000H-4PoE



LM-7000H-2GPHR (L2 only)

NOTE
- The maximum PoE output per LM-7000H-4(G)PoE is 120 W.
- LM-7000H-2GPHR modules require Hardware Rev v2.0.0 or above for both the L2 switch and the module.
- Maximum 1 2GPHR module installed per unit, using slot M3.
- 2GPHR modules may experience startup issues at low temperatures, including red fault LEDs and dropped packets. If this occurs, Moxa recommends startup at >-20°C, with operating temperatures of >-40°C. The device is capable of stable operation down to -40°C.

Power Modules (Hardware Rev.2.1.0 and above)

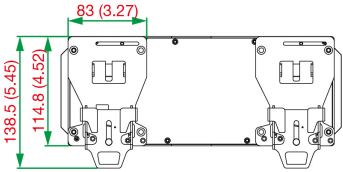
PWR-HV-P48-A

PWR-LV-P48-A

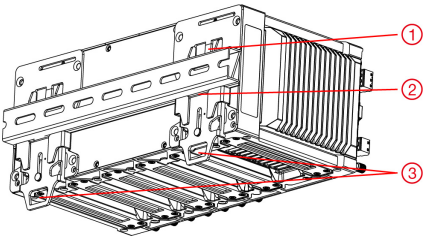
PWR-HV-NP

PWR-LV-NP

DIN-rail Dimension and Instructions



Unit: mm (inch)



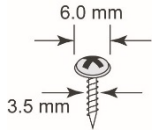
1. Insert the upper lip of the DIN rail into the DIN-rail mounting kit.
2. Press the device towards the DIN rail until it snaps into place.
3. Pull down the two latches one by one to release the DIN-rail kit and lift up to remove the device from the DIN rail.

NOTE The DIN-rail must use TS35 (15 mm) specification for the MDS-G4000-4XGS/MDS-G4000-L3-4XGS Series.

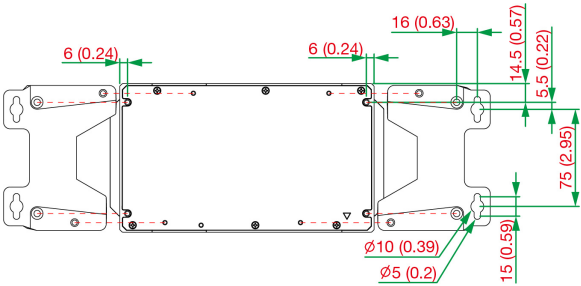
Wall Mount Dimension and Instructions (Optional: WK-112-01)

NOTE The wall-mount kit is certified for Hazardous Location usage.

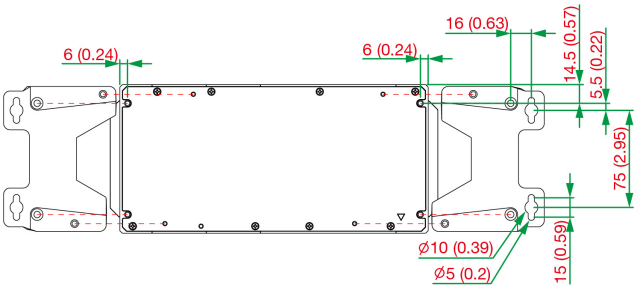
Mounting the switch to a wall requires four screws per kit (there are two kits). The heads of the screws should be between 6.0 to 9.0 mm in diameter, and the diameter of screw thread should be between 3.5 to 4 mm, as shown in the figure on the right. Use the switch with the wall-mounting kit attached as a guide to mark the correct locations of the eight screws.



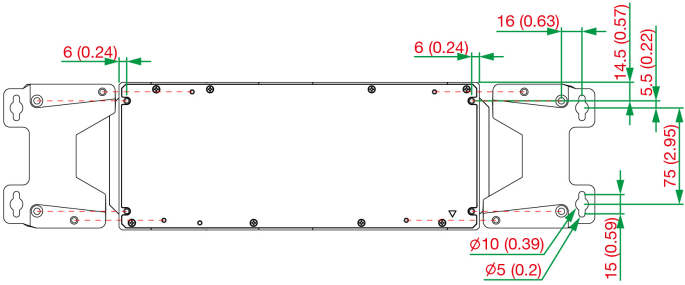
MDS-G4012-4XGS and MDS-G4012-L3-4XGS Series



MDS-G4020-4XGS and MDS-G4020-L3-4XGS Series



MDS-G4028-4XGS and MDS-G4028-L3-4XGS Series



Please note, there are two wall-mount kit screws for the MDS Series (M4 x 8 mm and M3 x 6 mm).

Rack-mounting Kit Dimensions and Instructions (Optional: RK-3U-02)

Please refer to the RK-3U-02 Series QIG.

Matters That Require Attention

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

NOTE To ensure reliable operation, make sure the operating temperature of the environment does not exceed the spec. When mounting a rack-mounted switch with other operating units in a cabinet without forced ventilation, it is recommended that 1U of space is reserved between each rack-mounted switch and/or device.

2. **Required 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.
3. **Mechanical Loading:** Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
4. **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.
5. **Reliable Grounding:** Reliable grounding 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).

ATTENTION

Safety First!

Be sure to disconnect the power cord before installing and/or wiring your Ethernet Switch. Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size. If the current goes above the maximum ratings, the wiring could overheat, which can cause serious damage to your equipment.

WARNING

Optical SFP communications modules must be limited to Laser Class 1.

Connecting the Power Inputs

NOTE The required power module depends on the choice of LM-7000H module. Refer to the following power/module combination requirements.

- LM-7000H non-PoE modules: Any power module.
- LM-7000H PoE modules: PWR-HV-P48-A, PWR-LV-P48-A only.

The MDS-G4000-4XGS/MDS-G4000-L3-4XGS Series supports 4 types of power supply:

- PWR-HV-P48-A: one 110/220 VAC/VDC (90 to 264 VAC, 88 to 300 VDC), one 48 VDC PoE power input for PoE+/PoE++ ports.
- PWR-LV-P48-A: one 24/48 VDC (18 to 72 VDC), one 48 VDC PoE power input for PoE+/PoE++ ports.
- PWR-HV-NP: one 110/220 VAC/VDC (90 to 264 VAC, 88 to 300 VDC) power input.
- PWR-LV-NP: one 24/48 VDC (18 to 72 VDC) power input.

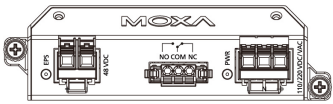
For the PWR-HV-P48-A, the 110/220 VAC/VDC power supplies provide power to the switch. Separate 48 VDC power supplies are required to provide power to all PoE+/PoE++ ports (50 to 57 VDC is recommended for IEEE 802.3at devices; 52 to 57 VDC recommended for IEEE 802.3bt devices. The maximum PoE output from an external power supply is 720 W when the operating temperature is under 60°C; 360 W when the operating temperature is under 75°C.)

For the PWR-LV-P48-A models, the 24/48 VDC power supplies provide power to the switch. Separate 48 VDC power supplies are required to provide power to all PoE+/PoE++ ports (50 to 57 VDC is recommended for IEEE 802.3at devices; 52 to 57 VDC is recommended for IEEE 802.3bt devices. The maximum PoE output from an external power supply is 720 W when the operating temperature is under 60°C; 360 W when the operating temperature is under 75°C.)

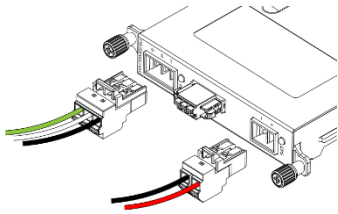
For the PWR-HV-NP, the 110/220 VAC/VDC power supplies provide power to the switch. For the PWR-LV-NP, the 24/48 VDC power supplies provide power to the switch.

Power Terminal Blocks

The connections for the power input are on the power modules.

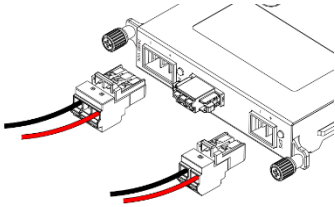


PWR-HV-P48-A/PWR-HV-NP



1. Insert the neutral/line (L/N/Ground) AC wires into the terminals.
2. Insert the terminal block connector into the terminal block receptor.

PWR-LV-P48-A/PWR-LV-NP



1. Insert the negative/positive (-/+) DC wires into the terminals.
2. Insert the terminal block connector prongs into the terminal block receptor.

PoE Power Terminal Blocks

1. Insert the negative/positive DC wires into the -/+ terminals, respectively.
2. Insert the terminal block connector prongs into the terminal block receptor.

NOTE For higher levels of surge protection, install a surge protector in front of the power input of the PoE-powered device so that it is suitable for use in IEC 61850 conditions.

WARNING

When wiring the power input, we suggest using 16 AWG (1.31mm²) wiring and corresponding pin cable terminals. Wiring temperature rating should be at least 105°C and the wire type should be CU.

NOTE When two power units are installed on the MDS-G4000-4XGS/MDS-G4000-L3-4XGS Series switch, both power units will be activated simultaneously, which will enable power redundancy.

NOTE The reverse power input connection will not activate the device or PoE input. In addition, the PoE will only activate when the external power supply is installed on the same power unit.

Wiring the Relay Contact

Each power module has one relay output that can provide two types of relay output. Refer to the table below for detailed information.

The relay contact is used to detect user-configured events. Two wires are attached to the relay pins with normally close and normally open options.

FAULT: The relay contact of the 3-pin terminal block connector is used to detect user-configured events. The module provides normally open and normally closed circuits depending on what the user chooses. For pin definitions, refer to the table below.

Relay Connection	Power Off	Boot up Ready	Event Trigger
NO and COM	Closed Circuit	Open Circuit	Closed Circuit
NC and COM	Open Circuit	Closed Circuit	Open Circuit

WARNING

When wiring the relay contact, we suggest using 21-16 AWG (1.31-0.412 mm²) wiring and corresponding pin cable terminals. Wiring temperature rating should be at least 105°C and the wire type should be CU.

Digital Input/Output

Digital Output

1 relay output with a current carrying capacity of 2 A @ 30 VDC.

Digital Input

1 digital output with the same ground, but electrically isolated from the electronics.

- +13 to +30 V for state 1
- -30 to +1 V for state 0
- Max. input current: 8 mA

WARNING

When wiring the Digital Input/Output contact, we suggest using 16-28 AWG (1.31-0.081 mm²) wiring and corresponding pin cable terminals. Wiring temperature rating should be at least 105°C and the wire type should be CU.

Installing and Removing the Ethernet Modules

The Ethernet modules are hot-swappable for the same module type. You can mount or remove the Ethernet module while the device is operating.

NOTE
1. When performing a cold start, you cannot remove and insert a module before the device has fully booted up as this will cause the module to fail initialization.
2. The default module is 4GTX. If this is the first time mounting a 4TX, PoE, SFP or 2GPHR module, reboot the switch after inserting it. The hot-swappable function will work after the device is rebooted for the first time.
3. When swapping out a slotted module with a different type of module, it is recommended to reconfigure the settings or reset the device to factory default settings after rebooting the switch.

The installation procedure is as follows:

1. Insert the Ethernet module straight into the slot.
2. Fasten the module to the device by tightening the 2 screws. The tightening torque is 3.5 kgf-cm (0.35 Nm).

The removal procedure is as follows:

1. Loosen the 2 screws of the module.
2. Pull the module out of the slot.
3. Insert the dummy module into the slot in order to have better protection against dust and EMI.
4. Fasten the dummy module using the 2 screws. The tightening torque is 4 kgf-cm (0.4 Nm).

Installing and Removing the Power Modules

The power supply units are hot-swappable when both power modules are installed. You can mount or remove the power supply units while the device is operating.

The installation procedure is as follows:

1. Insert the power unit straight into the slot.
2. Fasten the unit to the device by tightening the 2 screws. The tightening torque is 3.5 kgf-cm (0.35 Nm).

The removal procedure is as follows:

1. Loosen the 2 screws of the module.
2. Pull the module out of the slot.
3. Insert the dummy module into the slot in order to have better protection against dust and EMI.
4. Fasten the dummy module using the 2 screws. The tightening torque is 4 kgf-cm (0.4 Nm)

NOTE If one of the modules is removed from the device, it is recommended to insert a dummy module in order to provide better protection against dust and EMI.

Grounding the Moxa Industrial DIN-rail Switch

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 prior to connecting devices.

ATTENTION

This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel. We use the green-and-yellow cable type AWG (American Wire Gauge) min. 16 (1.31 mm²) for grounding.

NOTE The PoE power connection is for indoor and local area network usage only.

NOTE Using a shielded cable achieves better electromagnetic resistance.

RS-232 with RJ45 Interface Console Connection

The switch has an RS-232 serial console with an RJ45 interface. Please use a Moxa 9-pin female console cable to connect to your PC's COM port (or via USB-to-Serial converters or hubs). You can then use a console terminal program, such as Moxa's PComm Terminal Emulator, to access the console configuration utility of the switch.

RS-232 Setup:

- Baud rate: 115,200
- Data Bits: 8
- Parity: None
- Stop Bits: 1
- Terminal Type: VT100

USB Storage Connection

Use Moxa's ABC-02-USB automatic backup configurator to connect to the USB storage port (Type A connector; see the diagram below for pinout assignments) to back up and restore configuration files, auto-load configuration files, upgrade firmware, and back up system log files.

Pin	Description
1	VCC (+5V)
2	D- (Data-)
3	D+ (Data+)
4	GND (Ground)

The Reset Button (diameter 0.9 mm)

The reset button can perform two functions. One is to reset the switch to factory default settings and the other is to reboot the switch if the button has been depressed and release immediately.

Resetting to Factory Default Settings

Depress the Reset button for five seconds to load the factory default settings. Use a pointed object, such as a straightened paper clip or needle (the diameter must not exceed 0.9 mm), to depress the Reset button. When you do so, the STATE LED will start to blink about four times per second. Continue to depress the STATE LED until it begins

blinking more rapidly; this indicates that the button has been depressed for five seconds and you can release the Reset button to load factory default settings.

NOTE Do NOT power off the switch when loading default settings.

Configuring PTP

To ensure that IEEE 1588—also known as Precision Time Protocol (PTP)—functions correctly:

- Ensure IEEE 1588 PTP uses slot M2 for cross-module sync.
  - M2 not required if cross-module sync not used.
- Ensure that MS LEDs are green before connecting cables.

NOTE Hot-swapping modules with PTP enabled may cause timing jitter. Hot-swapping the M2 module removes the master clock, resulting in timing fluctuations. PTP stays active but will resynchronize after the new module is inserted.

LED Indicators

The function of each LED is described in the table below.

LED	Color	State	Description
System LEDs			
STA (STATE)	Green	On	Normal operation.
		Blinking (1 Hz)	1. System service initialization. 2. When pressing the reset button for 5 seconds to reset to factory default settings.
		Blinking (4 Hz)	1. The system is ready to perform a factory reset after pressing the reset button for 5 seconds. 2. When the external storage ABC-02 automatic backup device is connected to the switch.
		Off	N/A
	Red	On	The system failed to initialize.
FLT (FAULT)	Red	On	1. Network loop detected with loop protection enabled. 2. Relay contact triggered. 3. External storage loading/saving failed. 4. Port disabled, shutdown mode ingress rate limit exceeded. 5. Invalid ring port connection. 6. Incorrect multiple network coupling connected.
		Blinking	The switch boots up and the firmware loads to memory.
		Off	System successfully booted up and no events triggered.
M/H (MSTR/ HEAD)	Green	On	1. Master of Turbo Ring 1 or Turbo Ring 2. 2. Head of the Turbo Chain. 3. Manager of the MRP Ring.

LED	Color	State	Description
		Blinking	1. Master of Turbo Ring 1 or Turbo Ring 2 and at least one ring is broken. 2. Member of a Turbo Ring and all the corresponding ring ports are down. 3. Head of Turbo Chain and chain is broken. 4. Manager of MRP Ring and the ring is open. 5. Member of Turbo Chain and corresponding Member Port 1 is down. 6. Tail of the Turbo Chain and the link of the corresponding Member Port is down.
		Off	1. Not the Master of Turbo Ring 1 or Turbo Ring 2. 2. Not the Head of the Turbo Chain. 3. Not the Manager of the MRP Ring.
C/T (CPLR/ TAIL)	Green	On	1. Ring coupling or dual homing function is enabled. 2. Turbo Chain Tail.
		Blinking	1. Turbo Chain Tail, Chain broken. 2. Turbo Chain Head, corresponding Member Port down. 3. Turbo Chain Member, corresponding Member Port 2 down.
		Off	1. Coupling disabled or switch is **not** Turbo Chain Tail. 2. Dual Homing disabled or Dual Homing session not configured.
SYNC	Amber	On	The PTP function is enabled.
		Blinking	Receiving sync packets, convergence in progress.
		Off	The PTP function is disabled.
	Green	On	The PTP function has successfully converged.
System LEDs (Except PWR)	Green/ Red/ Amber	Blinking (4 Hz)	The switch is being discovered/located by the locator function. Applies to the following LEDs: S, F, M/H, C/T, SYNC. Each LED will light up in its default color.

SWC-4XGSFP

LED	Color	State	Description
MS (Module State)	Green	On	Normal operation.
		Blinking	The module is booting up.
		Off	The module is out of service.
	Red	On	1. The module initialization has failed, or 2. A module designed for a different model was inserted.
SFP+ (10GbE)	Green	On	Port active and linking at 10 Gbps.
		Blinking	Data transmitting at 10 Gbps.
		Off	Port inactive or link down.
	Amber	On	Port active and ; linking at 1000 Mbps.
		Blinking	Data transmitting at 1000 Mbps.
		Off	Port inactive or link down.

LM-7000H-4GTX/LM-7000H-4GSFP/LM-7000H-4TX

LED	Color	State	Description
MS (Module State)	Green	On	Normal operation.
		Blinking	The module is booting up.
		Off	The module is out of service.
	Red	On	1. The module initialization has failed, or 2. A module designed for a different model was inserted.
Copper (10/100 Mbps)	Green	On	Port active and linking at 100 Mbps.
		Blinking	Data transmitting at 100 Mbps.
		Off	Port is inactive or link down.
	Amber	On	Port active and linking at 10 Mbps.
		Blinking	Data transmitting at 10 Mbps.
		Off	Port is inactive or link down.
Copper (10/100/ 1000 Mbps)	Green	On	Port active and linking at 1 Gbps.
		Blinking	Data transmitting at 1 Gbps.
		Off	Port inactive or link down.
	Amber	On	Port active and linking at 10/100 Mbps.
		Blinking	Data transmitting at 10/100 Mbps.
		Off	Port inactive or link down.
SFP (100/1000 Mbps)	Green	On	Port active and linking at 1 Gbps.
		Blinking	Data transmitting at 1 Gbps.
		Off	Port inactive or link down.
	Amber	On	Port active and linking at 100 Mbps.
		Blinking	Data transmitting at 100 Mbps.
		Off	Port inactive or link down.

LM-7000H-4GPoE/LM-7000H-4PoE

LED	Color	State	Description
MS (Module State)	Green	On	Normal operation.
		Blinking	The module is booting up.
		Off	This module is out of service.
	Red	On	1. The module failed to initialize. 2. A user inserted a module designed for a different model. 3. When performing a cold start, the module was removed and inserted before initialization was complete.
EPS (External Power Supply for PoE module)	Amber	On	Normal operation.
		Off	No external power supply for PoE.
Copper (10/100 Mbps)	Green	On	Port active and linking at 100 Mbps.
		Blinking	Data transmitting at 100 Mbps.
		Off	Port is inactive or link down.
	Amber	On	Port active and linking at 10 Mbps.
		Blinking	Data transmitting at 10 Mbps.
		Off	Port is inactive or link down.
Copper (10/100/ 1000Mbps)	Green	On	Port active and linking at 1 Gbps.
		Blinking	Data transmitting at 1 Gbps.
		Off	Port inactive or link down.

LED	Color	State	Description
	Amber	On	Port active and linking at 10/100 Mbps.
		Blinking	Data transmitting at 10/100 Mbps.
		Off	Port inactive or link down.
PoE/PoE+/ PoE++	Green	On	Port connected to an IEEE 802.3bt powered device (PD).
		Off	1. Power is not being supplied to a powered device (PD). 1. The port is not connected to an IEEE 802.3bt/at/af standard powered device (PD).
	Amber	On	Port connected to IEEE 802.3af/at-powered device (PD).
		Blinking	PoE power shut off due to low power budget.
		Off	1. Power not being supplied to a powered device (PD). 2. The port not connected to an IEEE 802.3af/at standard PD.
	Red	On	Powered device (PD) detection failure.
		Blinking	Over-current or short circuit detected on powered Device (PD).
		Off	PoE operating normally.

LM-7000H-2GPHR

LED	Color	State	Description
MS (Module State)	Green	On	Normal operation.
		Blinking	Module booting up.
		Off	Module out of service.
	Red	On	1. The module failed to initialize. 2. A module designed for a different model was inserted. 3. On cold start, module removed and reinserted before initialization completed. 4. LM-7000H-2GPHR in a slot other than slot M3.
PRP	Green	On	PRP working.
		Off	PRP not enabled.
HSR	Green	On	HSR working.
		Off	HSR not enabled.
COUP	Green	On	PRP/HSR Coupling working.
		Off	PRP/HSR Coupling not enabled.
A	Green	On	Port active and linking at 1 Gbps.
		Blinking	Data transmitting at 1 Gbps.
		Off	Port is inactive or link down.
	Amber	On	Port active and linking at 10/100 Mbps.
		Blinking	Data transmitting at 10/100 Mbps.
		Off	Port is inactive or link down.
B	Green	On	Port active and linking at 1 Gbps.
		Blinking	Data transmitting at 1 Gbps.
		Off	Port inactive or link down.
	Amber	On	Port active and linking at 10/100 Mbps.

LED	Color	State	Description
		Blinking	Data transmitting at 10/100 Mbps.
		Off	Port inactive or link down.

PWR-HV-P48-A/PWR-LV-P48-A

LED	Color	State	Description
EPS (External Power Supply)	Amber	On	External power is being supplied to the module's EPS input.
		Off	No external power supply.
PWR	Amber	On	Power is being supplied to the module's power input.
		Off	Power is not being supplied to the module's power input.

PWR-HV-NP/PWR-LV-NP

LED	Color	State	Description
PWR	Amber	On	Power is being supplied to the module's power input.
		Off	Power is not being supplied to the module's power input.

Specifications

Interface	
10GbE Ethernet	4-ports 10GbE SFP+ slots
Gigabit Ethernet	Up to 24 ports
Modules	2/4/6 slots for optional 4-port FE/GbE modules
Slot Combination	See the LM-7000H Series modules datasheet for more information. **NOTE**: The required power module depends on the choice of LM-7000H module. Refer to the following power/module combination requirements: • LM-7000H non-PoE modules: Any power module • LM-7000H PoE modules: PWR-HV-P48-A, PWR-LV-P48-A only
Console Port	RS-232 (RJ45 connector)
Buttons	Reset button
Storage Port	USB (Type A connector)
LED Indicators	PWR, EPS, STATE, SYNC, FAULT, MSTR/HEAD, CPLR/TAIL
Alarm Contact Channels	3 (on the MGMT, PWR1, and PWR2 modules) Relay output with current carrying capacity of 2 A @ 30 VDC.
Digital Input Channels	1 (on the MGMT module)
Digital Inputs	• +13 to +30 V for state 1 • -30 to +3 V for state 0 • Max. input current: 8 mA

Power Requirements	
Input Voltage	**With PWR-HV-P48–A installed:** 110/220 VDC, 110 VAC, 60 HZ, 220 VAC, 50 Hz, PoE: 48 VDC **With PWR-LV-P48–A installed:** 24/48 VDC, PoE: 48 VDC **With PWR-HV-NP installed:** 110/220 VDC, 110 VAC, 60 HZ, 220 VAC, 50 Hz **With PWR-LV-NP installed:** 24/48 VDC
Operating Voltage	**With PWR-HV-P48–A installed:** 88 to 300 VDC, 90 to 264 VAC, 47 to 63 Hz, PoE: 46 to 57 VDC **With PWR-LV-P48–A installed:** 18 to 72 VDC, PoE: 46 to 57 VDC **With PWR-HV-NP installed:** 88 to 300 VDC, 90 to 264 VAC, 47 to 63 Hz **With PWR-LV-NP installed:** 18 to 72 VDC
Rated Input Current	**With PWR-HV-P48-A/PWR-HV-NP installed:** 0.75 A @ 110-220 VDC 1.2 A @ 110-220 VAC **With PWR-LV-P48-A/PWR-LV-NP installed:** 3.3 A @ 24/48 VDC
Input Current (Full modules installed)	**With PWR-HV-P48-A/PWR-HV-NP installed:** Max. 0.50 A @ 110 VDC Max. 0.26 A @ 220 VDC Max. 0.96 A @ 110 VAC Max. 0.66 A @ 220 VAC **With PWR-LV-P48-A/PWR-LV-NP installed:** Max. 2.23 A @ 24 VDC Max. 1.12 A @ 48 VDC **EPS (PoE models only):** Max. 8.2 A @ 48 VDC
Power Consumption (Max.) (Full modules installed)	**With PWR-HV-P48-A/PWR-HV-NP installed:** Max. 55.1 W @ 110 VDC Max. 55.5 W @ 220 VDC Max. 55.4 W @ 110 VAC Max. 57.5 W @ 220 VAC **With PWR-LV-P48-A/PWR-LV-NP installed:** Max. 53.4 W @ 24 VDC Max. 53.6 W @ 48 VDC
Peak Inrush Current	**PWR-HV-P48-A/PWR-HV-NP:** 110 VAC: < 10 A (t > 0.1 ms) 220 VAC: < 20 A (t > 0.1 ms) **PWR-LV-P48-A/PWR-LV-NP:** 24 VDC: < 5 A (t > 0.1 ms) 48 VDC: < 10 A (t > 0.1 ms)
Maximum PoE Power Output per Port	IEEE 802.3at: Up to 30W, high power mode up to 36W (LM-7000H-4(G)PoE rev. 2.0.0) IEEE 802.3bt: Up to 90W (LM-7000H-4(G)PoE rev. 3.0.0 and later)

Total PoE Power Budget	Max. 360 W (with one power supply) for total PD consumption at 48 VDC input for PoE systems Max. 360 W (with one power supply) for total PD consumption at 53 to 57 VDC input for PoE+/PoE++ systems Max. 720 W (with two power supplies) for total PD consumption at 48 VDC input for PoE systems Max. 720 W (with two power supplies) for total PD consumption at 53 to 57 VDC input for PoE+/PoE++ systems
Overload Current Protection	Present
Reverse Polarity Protection	Present
Physical Characteristics	
Ingress Protection Rating	IP40 (This rating will only be achieved when the relay output terminal block and all modules are installed.)
Dimensions	**MDS-G4012-4XGS/MDS-G4012-L3-4XGS:** 197 x 115 x 163.25 mm 212 x 115 x 163.25 mm with dual PWR-HV-P48-A/ PWR-LV-P48-A power modules installed **MDS-G4020-4XGS/MDS-G4020-L3-4XGS:** 239 x 115 x 163.25 mm 254 x 115 x 163.25 mm with dual PWR-HV-P48-A/ PWR-LV-P48-A power modules installed **MDS-G4028-4XGS/MDS-G4028-L3-4XGS:** 281 x 115 x 163.25 mm 296 x 115 x 163.25 mm with dual PWR-HV-P48-A/ PWR-LV-P48-A power modules installed
Weight	MDS-G4012-4XGS-T/MDS-G4012-L3-4XGS-T Series: 3.03 kg (6.68 lb) MDS-G4020-4XGS-T/MDS-G4020-L3-4XGS-T Series: 3.40 kg (7.50 lb) MDS-G4028-4XGS-T/MDS-G4028-L3-4XGS-T Series: 3.79 kg (8.36 lb) LM-7000H-4GSFP: 0.30 kg (0.66 lb) LM-7000H-4GTX: 0.24 kg (0.53 lb) LM-7000H-4GPoE: 0.31 kg (0.69 lb) LM-7000H-4TX: 0.24 kg (0.53 lb) LM-7000H-4PoE: 0.31 kg (0.69 lb) LM-7000H-2GPHR: 0.31 kg (0.69 lb) PWR-HV-P48-A: 0.42 kg (0.93 lb) PWR-LV-P48-A: 0.40 kg (0.88 lb) PWR-HV-NP/PWR-LV-NP: 0.34 kg (0.75 lb)
Installation	DIN-rail mounting: Pre-installed by default Wall mounting: WK-112-01 (with optional kit) Rack mounting: RK-3U-02 (with optional kit)
Environmental Limits	
Operating Temp.	-40 to 75°C (-40 to 167°F)
Storage Temp.	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications	
Safety	EN 61010-2-201, UL 61010-2-201, EN 62368-1, UL 62368-1, IEC 62368-1, IEC 60950-1
EMC	EN 55032/35, EN 61000-6-2, EN 61000-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power 4 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF IEC 61000-4-11 Voltage Dips & Interruptions
Rail Traffic	EN 50121-4
Traffic Control	NEMA TS2
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-31
Vibration	IEC 60068-2-6
Power Substation	IEC 61850-3, IEEE 1613
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty

Restricted Access Locations

- This equipment is intended to be used in Restricted Access Locations, such as a computer room, with access limited to service personnel or users who have been instructed on how to handle the metal chassis of equipment that is very hot. The location should only be accessible with a key or through a security system.
- External metal parts of this equipment are extremely hot. Before touching the equipment, you must take special precautions to protect your hands and body from serious injury.

ATTENTION

- This device is an open-type equipment and should be installed in a suitable enclosure.
- Please use an optical transceiver (SFP) that complies with IEC 60825-1, 21 CFR 1040 Section 1040.10 and 1040.11, classified as Class 1 laser product.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- The installation and the safety of any system incorporating the equipment is the responsibility of the assembler of the system.
- For any repair or maintenance needs, please contact us.

NOTE

- This device is intended for use indoor and at altitudes up to 2000 meters.
- Overvoltage category II.
- Pollution degree 2.