comnet
Communication Networks

Instructions in this manual apply to the following model numbers:

CNMC2+1SFP

CNMC2+1SFP/M

INSTALLATION AND OPERATION MANUAL

CNMC2+1SFP[/M]

2 CHANNEL 10/100/1000 MBPS ETHERNET ELECTRICAL TO OPTICAL MEDIA CONVERTER

The ComNet Ethernet CNMC2+1SFP electrical-to-optical Ethernet media converters accept two 10/100 or 1000 Mbps electrical inputs and converts this to a single 100 or 1000 Mbps optical output (selected by a DIP switch) and the 100/1000 Mbps optical input back to the 10/100/1000 Mbps electrical output. "Auto-Negotiating" is supported on the copper interface side. These devices use either one or two optical fibers, depending upon the selection of sold-separately SFP optical module. The ComNet exclusive Demux feature allows for port isolation, replicating two media converters over one fiber. The ComNet exclusive Mux feature prevents network video flooding of multicast traffic with DIP switch selection of the fiber port as a dedicated uplink path. The CNMC2+1SFP series can be powered by wide range of AC or DC input power supplies.

LED indicators confirm operational status. All models are environmentally hardened with no electrical or optical adjustments (Plug and Play). DIP Switches on the outside of each unit allow for fine-tuning of features. See **Figures 1 – 12** for complete operation details. See **Figures A and B** for mounting instructions.

FIGURE 1 – Standard Mount CNMC2+1SFP

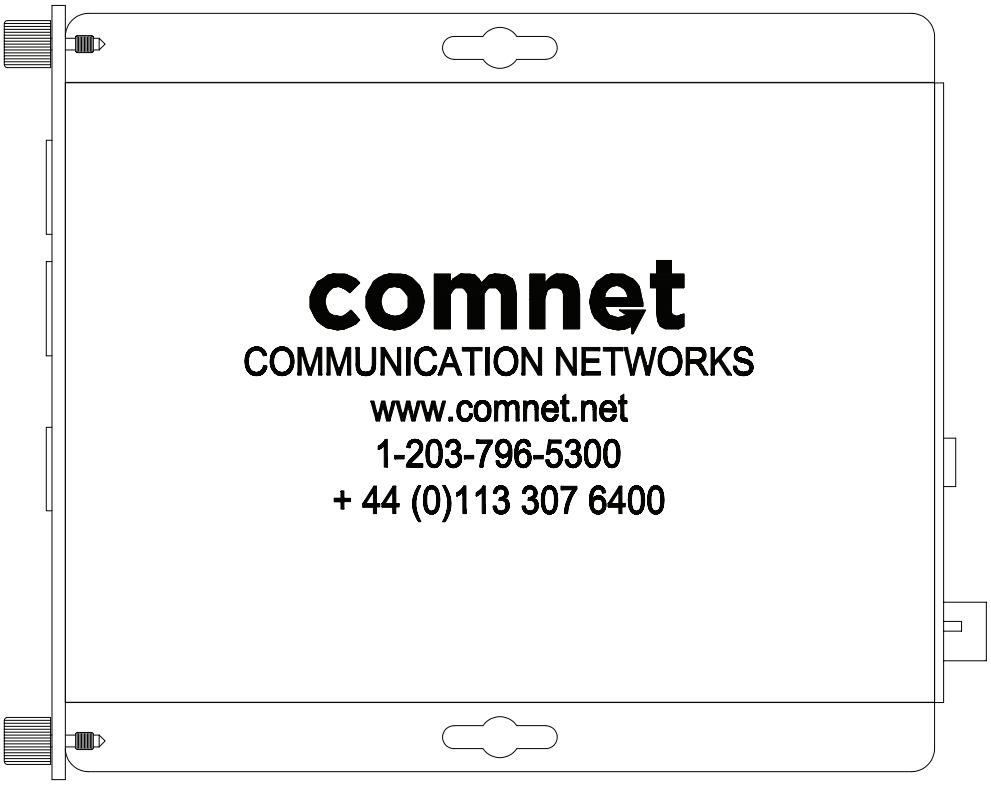


FIGURE 2 – Standard Mount CNMC2+1SFP

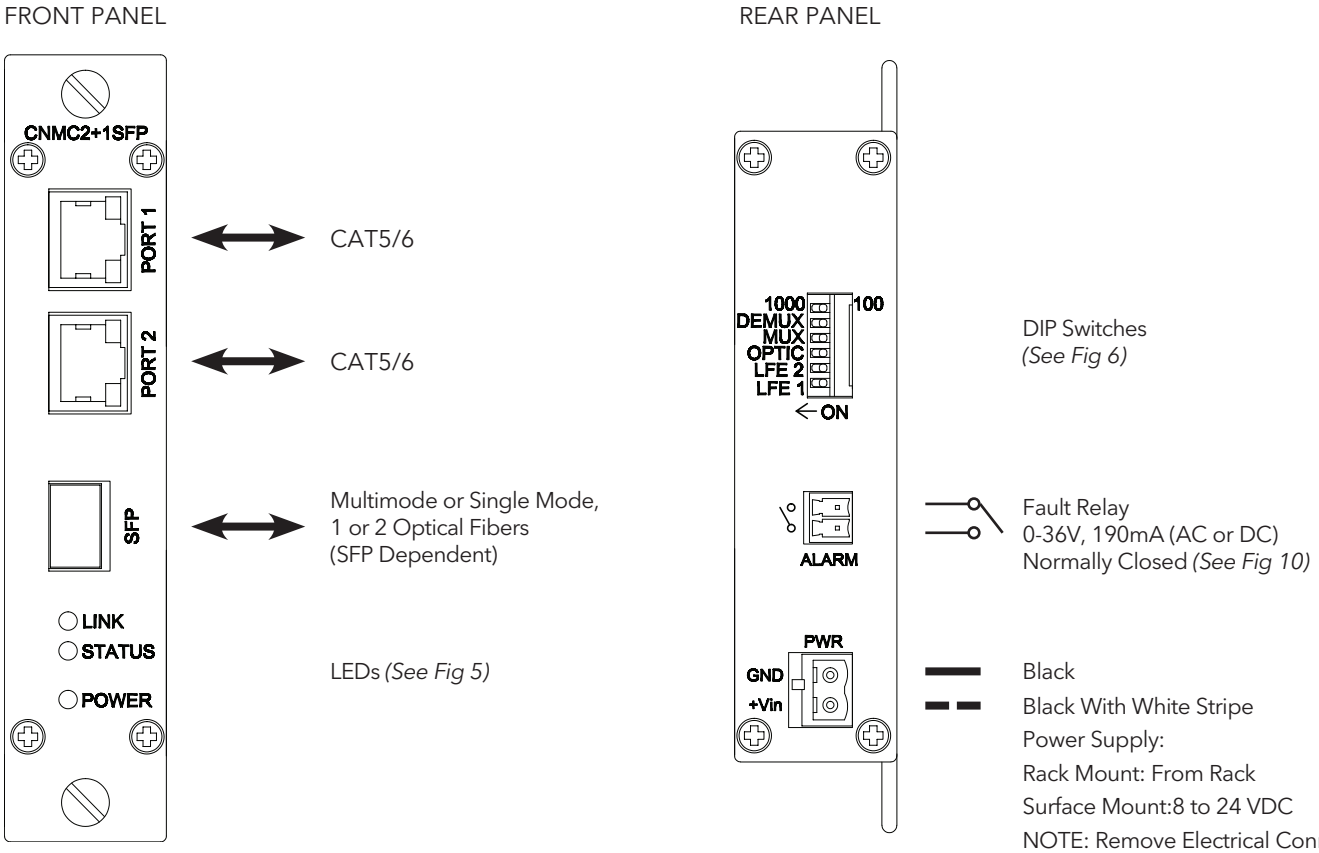


FIGURE 3 – Mini CNMC2+1SFP/M

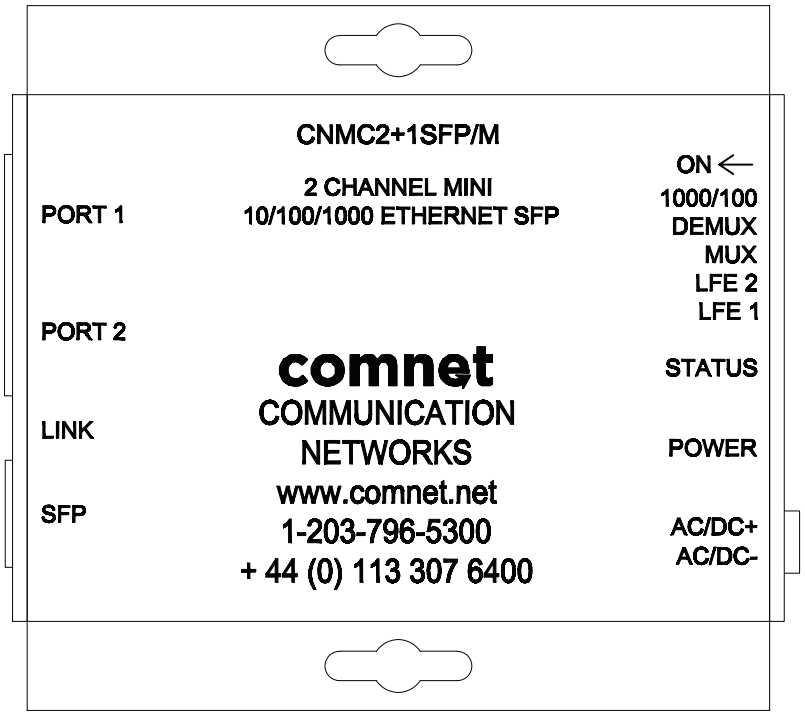


FIGURE 4 – Mini CNMC2+1SFP/M

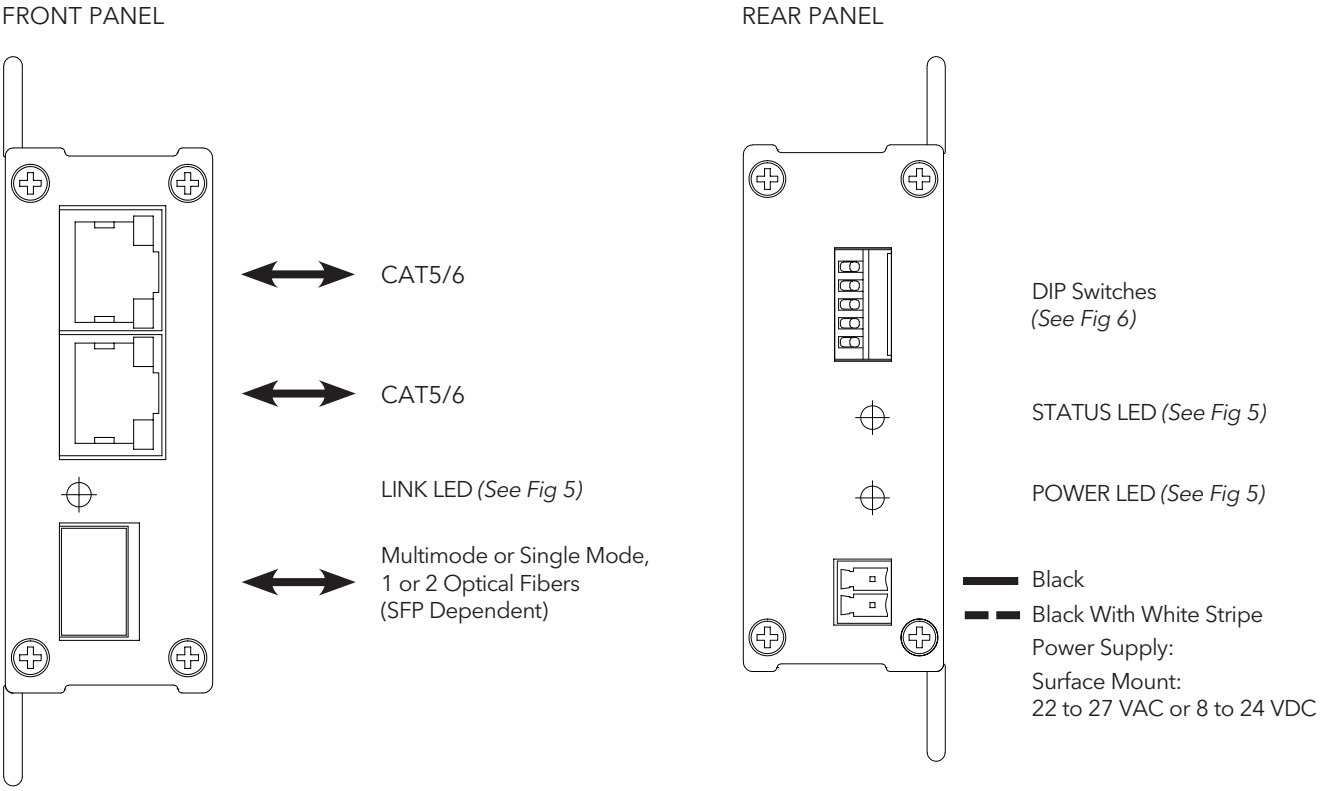


FIGURE 5 – Indicating LEDs

	LINK	STATUS (See Figures 8 & 9)	POWER	ETHERNET LINK/ACTIVITY
GREEN	Communication link has been established over optical fiber. Flashes when data is being transmitted.	No Fault conditions detected	Unit is correctly powered up	Unit is operational
YELLOW	N/A	N/A	N/A	Fiber failure or copper failure (Link Fault DIP Switch must be Enabled / ON)
RED	N/A	Fault detected (One or more DIP Switch relays must be enabled)	N/A	N/A
OFF	Communication link has not been established.	Unit not correctly powered up	Unit not correctly powered up	Unit not correctly powered up.

FIGURE 6 – DIP Switches (CNMC2+1SFP Standard Size Units Only)

SW	NAME	OFF (DOWN)	ON (UP)
1	LINK FAULT ENABLE PORT 1	Link Fault Pass-Through Disabled	Link Fault Pass-Through Enabled.If the Copper Port is Down or Not Connected, the Optical Port will turn on and off at a ~1 sec rate to indicate copper port 1 fault.
2	LINK FAULT ENABLE PORT 2	Link Fault Pass-Through Disabled	Link Fault Pass-Through Enabled.If the Copper Port is Down or Not Connected, the Optical Port will turn on and off at a ~1 sec rate to indicate copper port 2 fault.
3	FFE	Fiber Fault Relay Disabled	Fiber Fault Relay Enabled. If the optical link is lost or there is a power failure then the alarm relay output will be triggered.
4	MUX	MUX Disabled	Mux Enabled. All Ethernet traffic is diverted from the copper ports to the fiber port, copper-to-copper traffic will be disabled.
5	DEMUX	DEMUX Disabled	DeMux Enabled. When two CNMC2+1SFP units are connected via fiber and both have DeMux enabled, traffic from Port 1 will go to Port 1 and traffic from Port 2 will go to Port 2 only, functioning like two separate media converters over one fiber.
6	1000/100	100 MBPS (Unit must be restarted for a speed change to take effect)	1000 MBPS (Unit must be restarted for a speed change to take effect)

FIGURE 7 – DIP Switches (CNMC2+1SFP/M Small Size Units Only)

SW	NAME	OFF (DOWN)	ON (UP)
1	LINK FAULT ENABLE PORT 1	Link Fault Pass-Through Disabled	Link Fault Pass-Through Enabled.If the Copper Port is Down or Not Connected, the Optical Port will turn on and off at a ~1 sec rate to indicate copper port 1 fault.
2	LINK FAULT ENABLE PORT 2	Link Fault Pass-Through Disabled	Link Fault Pass-Through Enabled.If the Copper Port is Down or Not Connected, the Optical Port will turn on and off at a ~1 sec rate to indicate copper port 2 fault.
3	MUX	MUX Disabled	Mux Enabled. All Ethernet traffic is diverted from the copper ports to the fiber port, copper-to-copper traffic will be disabled.
4	DEMUX	DEMUX Disabled	DeMux Enabled. When two CNMC2+1SFP units are connected via fiber and both have DeMux enabled, traffic from Port 1 will go to Port 1 and traffic from Port 2 will go to Port 2 only, functioning like two separate media converters over one fiber.
5	1000/100	100 MBPS (Unit must be restarted for a speed change to take effect)	1000 MBPS (Unit must be restarted for a speed change to take effect)

FIGURE 8 - Fault Relay Operation (CNMC2+1SFP Standard Size Units Only)

The fault relay is normally closed and will open on any of the following alarm conditions:

- Link Fault is enabled on the **remote** CNMC2+1SFP unit and a copper port has been disconnected.
- Link Fault is enabled on the **local** CNMC2+1SFP unit and a copper port has been disconnected.
- Fiber Fault is enabled on the **local** CNMC2+1SFP unit and the fiber link is down or the power has been lost to either the local or remote CNMC2+1SFP unit.

FIGURE 9 – MUX Disabled

Multicast traffic will be flooded on all ports.

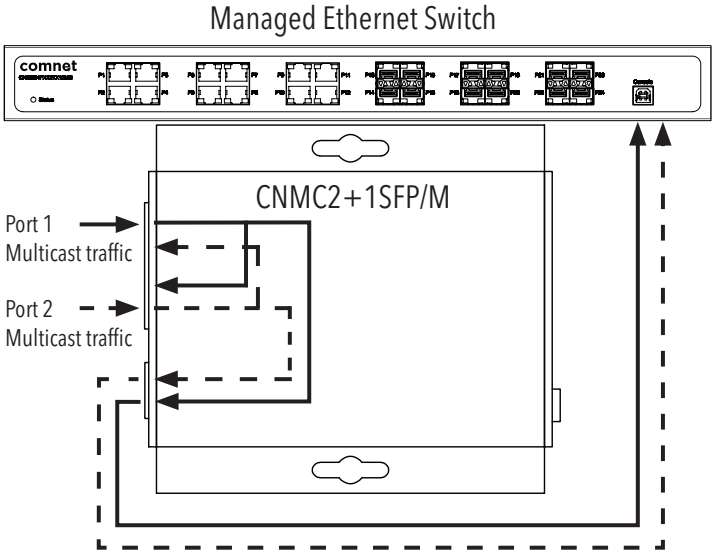


FIGURE 10 – MUX Enabled

IGMP is Enabled on the CWGE2FE24MODMS Managed Switch. Multicast traffic is diverted only to the fiber port preventing flooding on the local device.

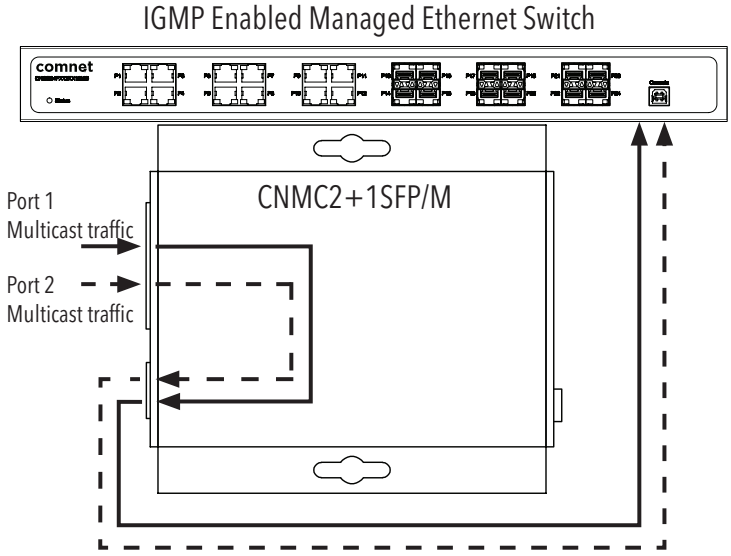


FIGURE 11 – DEMUX Disabled

Traffic can be sent/received on all electrical and fiber ports.

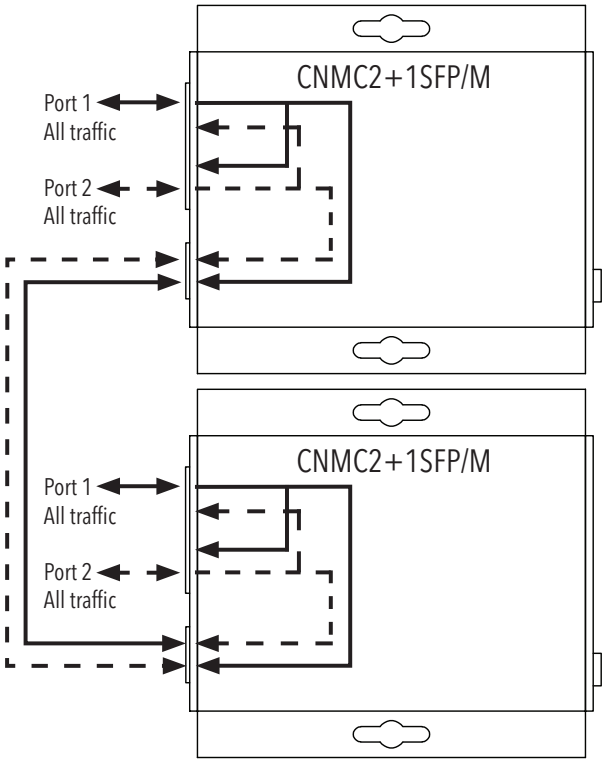
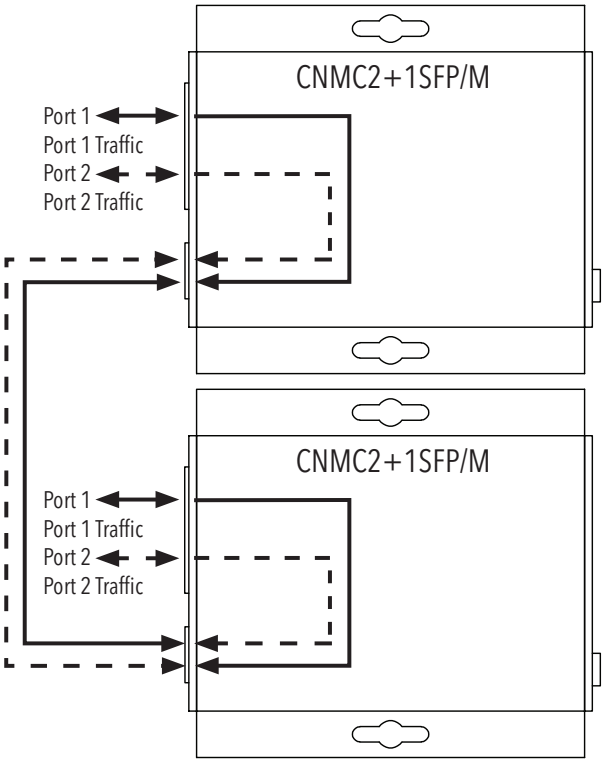


FIGURE 12 – DEMUX Enabled

Traffic from Port 1 will go only to Port 1 and traffic from Port 2 will go only to Port 2 only, functioning like two separate media converters over one fiber.



MECHANICAL INSTALLATION INSTRUCTIONS

INSTALLATION CONSIDERATIONS

This fiber-optic link is supplied as Standalone/Surface Mount and Surface Mount/Rack Mount modules. Units should be installed in dry locations protected from extremes of temperature and humidity.

C1-US, C1-EU, C1-AU or C1-CH Card Cage Racks

CAUTION: Although the units are hot-swappable and may be installed without turning power off to the rack, ComNet recommends that the power supply be turned off and that the rack power supply is disconnected from any power source. Note: Remove electrical connector before installing in card cage rack.

1. Make sure that the card is oriented right side up, and slide it into the card guides in the rack until the edge connector at the back of the card seats in the corresponding slot in the rack's connector panel. Seating may require thumb pressure on the top and bottom of the card's front panel.

CAUTION: Take care not to press on any of the LEDs.

2. Tighten the two thumb screws on the card until the front panel of the card is seated against the front of the rack.

WARNING: Unit is to be used with a Listed Class 2 power supply.

IMPORTANT SAFEGUARDS:

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

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FIGURE A

Dimensions are for a standard ComNet one slot module

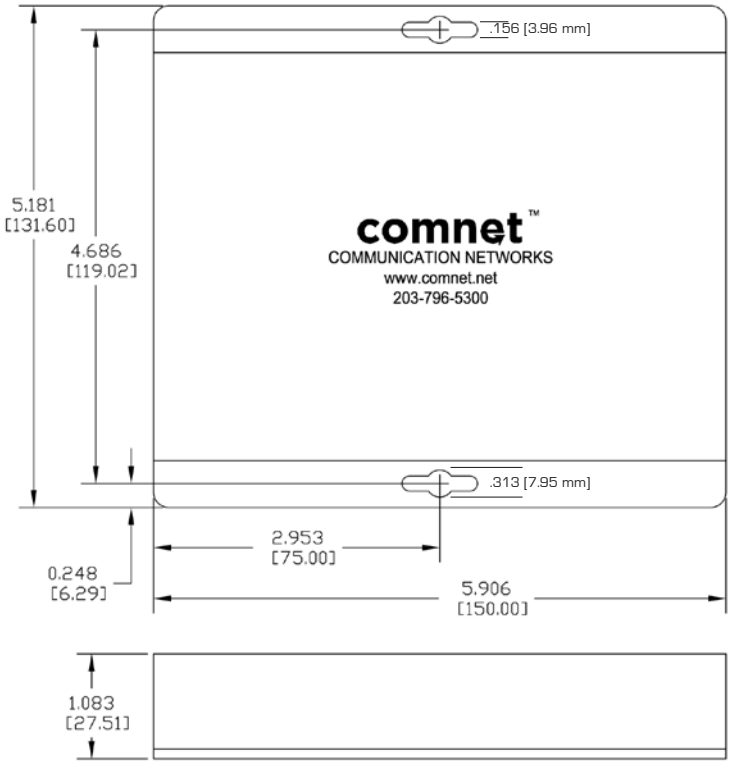
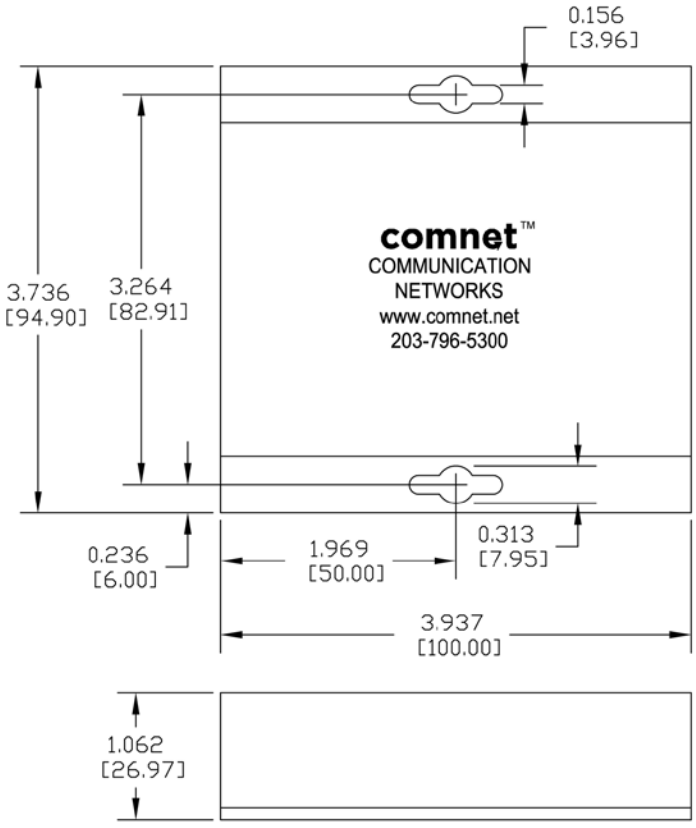


FIGURE B

Dimensions are for a small size ComNet surface mount module



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