comnet
Communication Networks

INSTALLATION AND OPERATION MANUAL

FVT/FVR110(M,S)1[/M]

10-BIT DIGITAL VIDEO WITH ONE BI-DIRECTIONAL DATA CHANNEL

The ComNet FVT/FVR110 series is a video transmitter/receiver and data transceiver that supports the simultaneous transmission of short haul quality 10-bit EIA RS-250C digitally encoded video and bi-directional data over one multimode or single mode optical fiber. The FVT110 also transmits a single bi-directional contact closure signal.

The module is universally compatible with major CCTV camera manufacturers. **Figures 6** and **7** starting on **Page 4** illustrate the specific data connections for RS232, RS422, 2 or 4-wire RS485 data transmission.

The FVT/FVR110 also supports "up-the-coax" data transmission from all major manufacturers, utilizing time-base correction these units can achieve distances of 48km. The FVT/FVR110 supports Panasonic Proteus™, Pelco Coaxitron™ and Bosch Bilinx™ Up-the-Coax systems.

Bi-color (Red/Green) LED indicators are provided for rapidly ascertaining equipment operating status. **Figure 10** on **Page 6** describes the LED indicators for each light on the unit.

The FVT110 and FVR110 units are interchangeable between stand-alone or card mount configurations, or may be DIN-rail mounted by the addition of ComNet model DINBKT1 adaptor plate. The FVT110M is stand-alone only. See **Figure A** on **Page 8** for mounting instructions.

FIGURE 1 – FVT/FVR110 TRANSMITTER AND RECEIVER

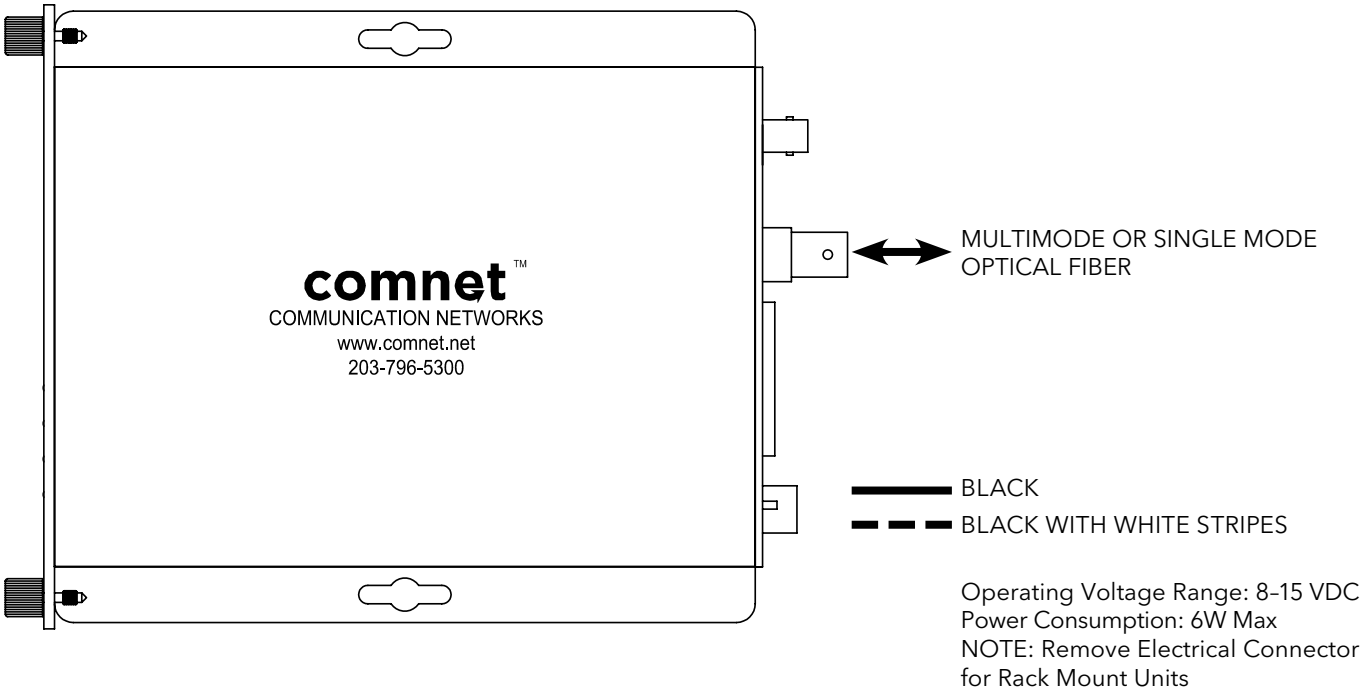


FIGURE 2 – FVT110 TRANSMITTER

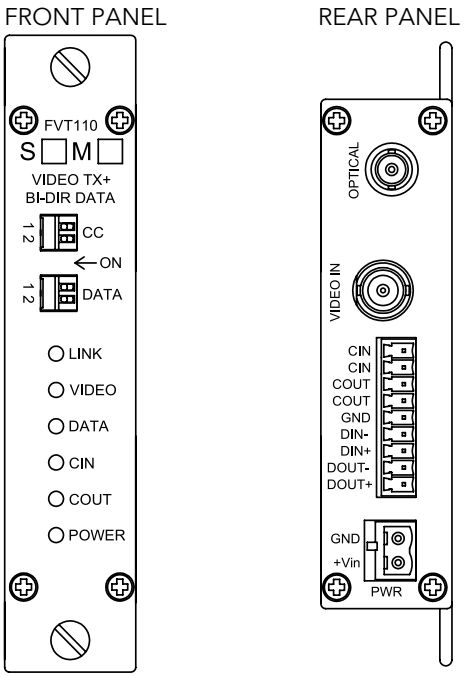


FIGURE 3 – FVR110 RECEIVER

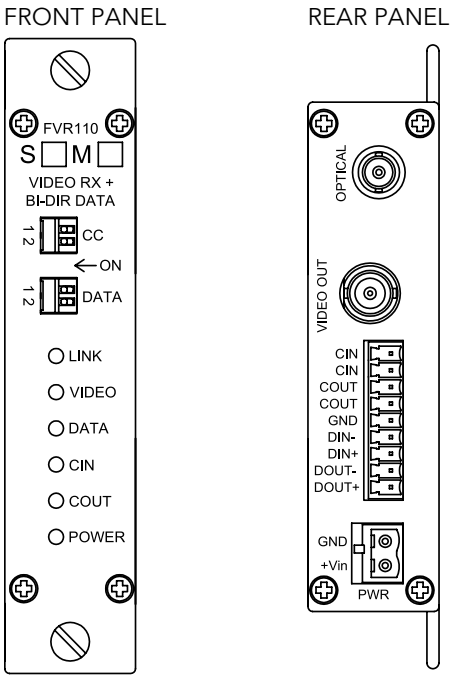


FIGURE 4 – FVT110/M TRANSMITTER

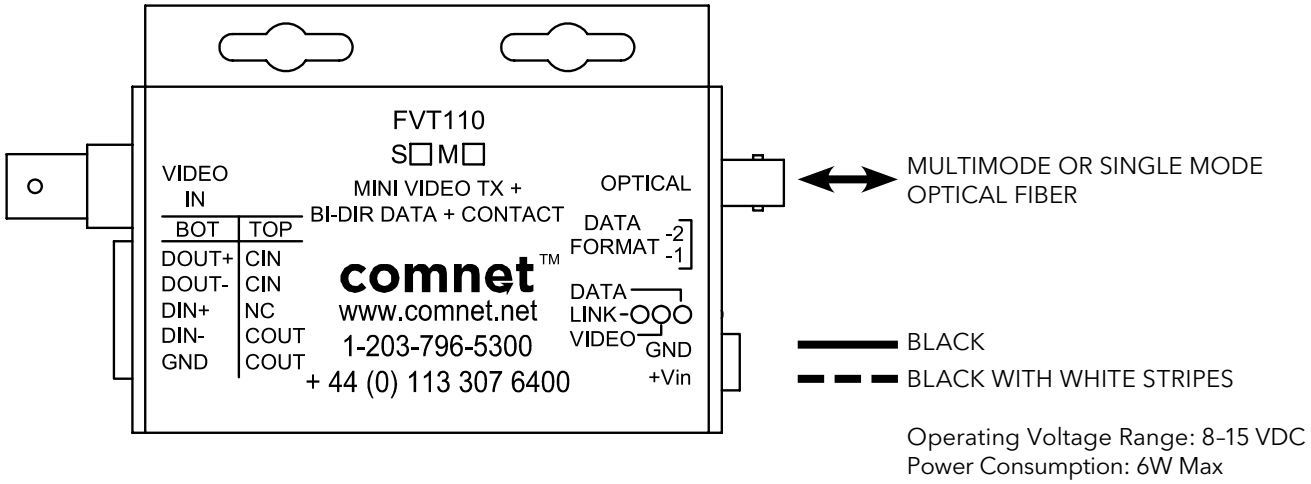


FIGURE 5 – FVT110M TRANSMITTER

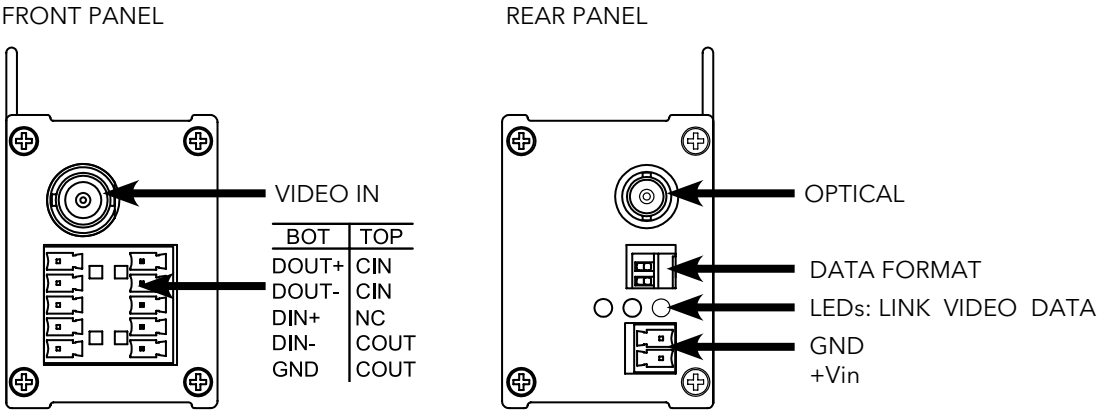
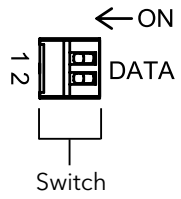
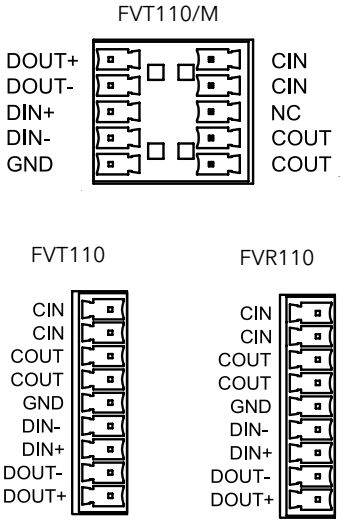


FIGURE 6 – DATA SWITCH POSITIONS

The mode for each data channel is configured using a pair of switches on the front panel of the unit.



Switch 1	Switch 2	Resulting Mode
ON	ON	RS232
ON	OFF	RS422, Bi-Phase or Manchester
OFF	ON	RS485 2W, Sensornet
OFF	OFF	RS485 4W



	GND	DIN–	DIN+	DOUT–	DOUT+
RS232	●	●		●	
RS422, Bi-Phase, Manchester	●	●	●	●	●
RS485 2W, Sensornet	●	●	●		
RS485 4W	●	●	●	●	●

FIGURE 7 – DATA CONNECTIONS

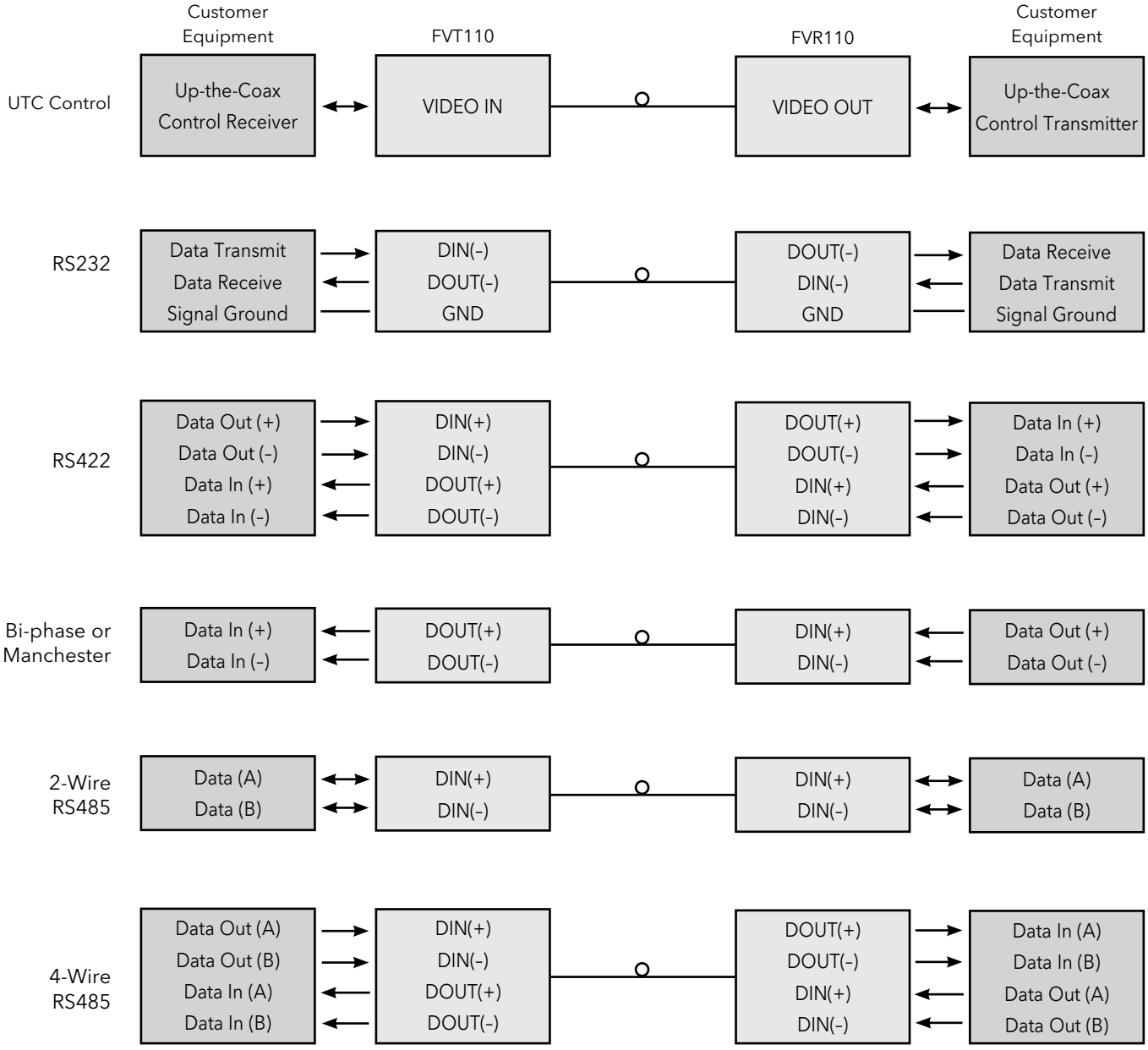
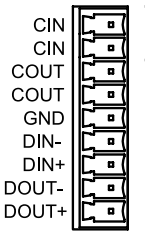


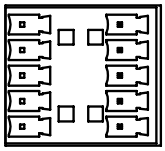
FIGURE 8 – CONTACT CHANNEL

Full Size



Dry contact closure input. Applying a voltage to these pins may damage the unit.

Small Size

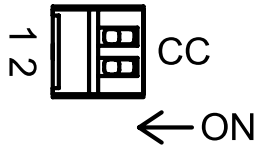


Dry contact closure input. Applying a voltage to these pins may damage the unit.

FIGURE 9 – CONTACT CHANNEL SWITCH SETTINGS

The switch is located on the front of the standard size units. The FVT110M small-size unit only supports the CIN mode.

The contact channel in the full-size (ComFit) units can operate in one of four modes as determined by the two DIP switches located at the front of each FVT and FVR unit as described below. The contact channel in the compact-size units only operates in the IBCC Mode as described below so there are no DIP switches on the unit to set contact channel mode.



Contact Channel Switch Settings		
Switch 1	**Switch 2**	**Contact Channel Mode**
ON	ON	IBCC - Independent Bi-directional Contact Closure Mode
OFF	ON	VSS - Video Signal Status Mode
ON	OFF	OLS - Optical Link Status Mode
OFF	OFF	NOLS - Negative Optical Link Status Mode

IBCC – Independent Bi-directional Contact Closure Mode

- In this mode, the FVT and FVR must be properly powered and there must be a good optical link between the FVT and the FVR.
- A dry closure across the CIN pair at one unit will result in a non-latching relay contact closure across COUT of the unit at the opposite end of the fiber path. Otherwise, the relay contacts across COUT are normally open. The channel can support closure status in both directions simultaneously.

VSS – Video Signal Status Mode

- In this mode, the FVT and FVR must be properly powered and there must be a good optical link between the FVT and the FVR.
- The presence of a good composite analog video signal at the BNC input of the FVT unit will cause the relay contacts across COUT of the FVR to close. Lack of a good composite analog video signal at the BNC input of the FVT unit will cause the relay contacts across COUT of the FVR to open.
- The status – open or shorted – across the CIN pair of the FVT is not passed to the FVR in this mode.
- A dry closure across the CIN pair of the FVR will cause the relay contacts across COUT of the FVT to open. Lack of a dry closure across the CIN pair of the FVR will cause the relay contacts across COUT of the FVT to close.

OLS – Optical Link Status Mode

- In this mode, the FVT and FVR must be properly powered.
- The presence of a good optical link between the FVT and the FVR units will cause the relay contacts across COUT of the FVT and the FVR to close. Loss of optical link between the FVT and the FVR units will cause the relay contacts across COUT of the FVT and the FVR to open.
- The status – open or shorted – across the CIN pair of the FVT or the FVR is not passed in this mode.

NOLS – Negative Optical Link Status Mode

- In this mode, the FVT and FVR must be properly powered.
- The presence of a good optical link between the FVT and the FVR units will cause the relay contacts across COUT of the FVT and the FVR to open. Loss of optical link between the FVT and the FVR units will cause the relay contacts across COUT of the FVT and the FVR to close.
- The status – open or shorted – across the CIN pair of the FVT or the FVR is not passed in this mode.

FIGURE 10 – LED INDICATORS on Transmitter (FVT) and Receiver (FVR)

Device	Indicator LED Status	POWER LED	LINK LED	VIDEO LED	DATA LED	CIN LED	COUT LED
FVT	OFF	device is not powered or is not powered properly	N/A	N/A	active data signal not present on the pins of the data connector	no closure detected across CIN pair	relay contacts open IBCC mode - no closure detected across CIN pair at FVR VSS mode - closure detected across CIN pair at FVR OLS mode - optical link not detected NOLS mode - optical link detected
	SOLID RED	N/A	optical link not detected	video signal not present on the BNC connector	N/A	N/A	N/A
	SOLID GREEN	device is powered properly	optical link detected	video signal present on the BNC connector	active data signal present on the pins of the data connector	closure detected across CIN pair	relay contacts closed IBCC mode - closure detected across CIN pair at FVR VSS mode - no closure detected across CIN pair at FVR OLS mode - optical link detected NOLS mode - optical link not detected
FVR	OFF	device is not powered or is not powered properly	N/A	N/A	active data signal not present on the pins of the data connector	no closure detected across CIN pair	relay contacts open IBCC mode - no closure detected across CIN pair at FVT VSS mode - video signal not detected at BNC input at FVT OLS mode - optical link not detected NOLS mode - optical link detected
	SOLID RED	N/A	optical link not detected	video signal not present on the BNC connector	N/A	N/A	N/A
	SOLID GREEN	device is powered properly	optical link detected	video signal present on the BNC connector	active data signal present on the pins of the data con-nector	closure detected across CIN pair	relay contacts closed IBCC mode - closure detected across CIN pair at FVT VSS mode - video signal detected at BNC input at FVT OLS mode - optical link detected NOLS mode - optical link not detected

MECHANICAL INSTALLATION INSTRUCTIONS

INSTALLATION CONSIDERATIONS
This fiber-optic link is supplied as a Standalone/Rack module. 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.

FVT/FVR110(M,S)[/M] Part Ordering Options:

(M,S): Fiber Type
M: Multimode
S: Singlemode
[/M]: Mini Long Tall Enclosure (optional)

FIGURE A

Dimensions are for a standard ComNet™ one slot module

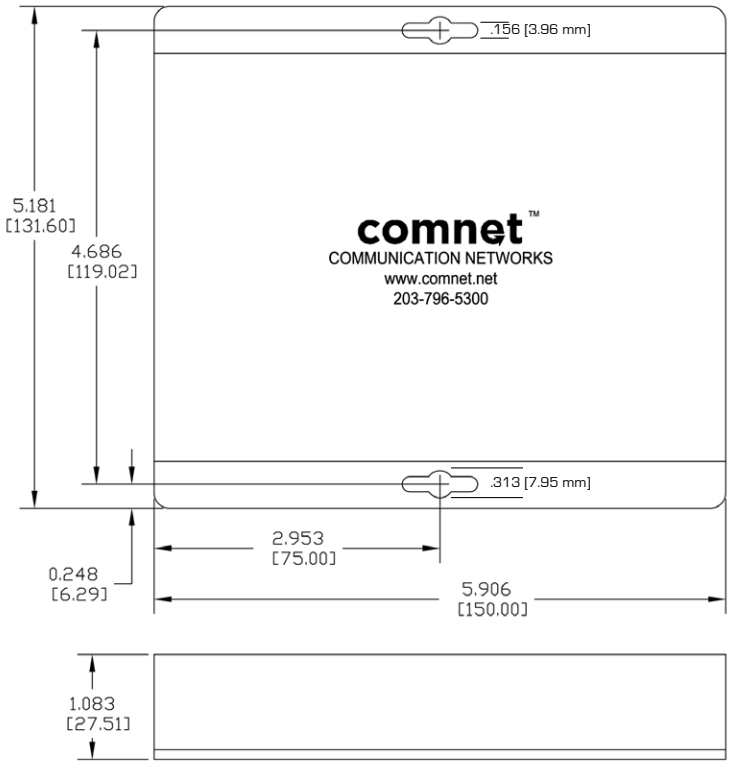
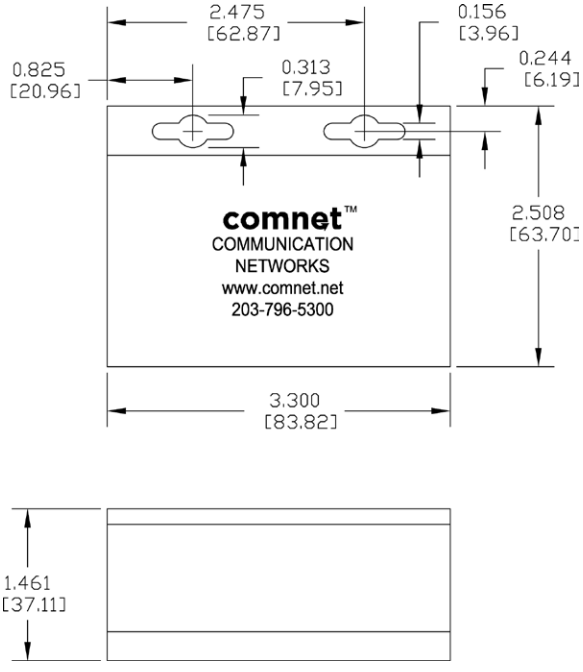


FIGURE B

Dimensions are for a ComNet™ mini long tall module



MADE IN THE USA

comnet Communication Networks

3 CORPORATE DRIVE | DANBURY, CT 06810 | USA
T: 203.796.5300 | F: 203.796.5303 | TECH SUPPORT: 1.888.678.9427 | INFO@COMNET.NET

8 TURNBERRY PARK ROAD | GILDERSOME | MORLEY | LEEDS, UK LS27 7LE
T: +44 (0)113 307 6400 | F: +44 (0)113 253 7462 | INFO-EUROPE@COMNET.NET