

60A Universal Voltage GMT Fuse Panels with Power and Fuse Alarms

Installation Guide



Installation Guide Part Number, 140680-2

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About

Amphenol Network Solutions is a global innovative original equipment manufacturer that serves the data and communications markets. We design, manufacture, and distribute products for customers who need an end to end solution for network connectivity, fiber, power distribution and rack management. We collaborate with our customers to deliver product solutions that exceed expectations with innovative designs and world class quality. Amphenol Network Solutions is the industry thought leader on network cable management.



Telect, Inc. has been a market leader in secondary DC power distribution for over 36 years. Through our acquisition by Amphenol and our merger with All Systems Broadband, to become Amphenol Network Solutions, we have continued to deliver reliable, high-quality solutions to power, protect, and monitor today's network servers and equipment. We are proud to be an Amphenol company that will continue to be Powered by Telect.

Technical Support

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Phone: 509.926.6000

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1.1 Overview

The Amphenol Network Solutions 60A dual-feed GMT panels are shallow and compact 1RU EIA power panels enabling ± 24 and -48 VDC power protection for a variety of wireline and wireless telecommunications and data equipment. These GMT panels are ideal for powering tracer lamps in dense DSX bays, as well as network equipment with low-to-medium power requirements. The 60GMT10 and 60GMT20 panels fit in a 19-in. rack. Both panels are white.

The panel provides front access to fuses and LED status. Centered on the front of the panel is a removable designation card.

All terminals for inputs, outputs, ground and alarms are on the rear:

- Inputs are bare conductors for barrel connectors
- The ground terminal accepts a single-hole lug
- Output set-screw terminals accept bare wire
- Power and fuse terminals are set-screw type and accept bare wire

The 60GMT10 and 60GMT20 panels differ only in capacity (10 or 20 GMTs per side). Both panels have a load rating of 60A max. with 15 max. per fuse position and are front/rear access. Both panels are 1RU.

The GMT fuse holders are mounted upside-down so that the GMT indicator flag flips downward when activated, making identification and detection easier, especially on tall racks. The panel also features separate power and fuse failure status LEDs and power alarm relay connections for each feed.

Visit the Amphenol Network Solutions website at amphenol-ns.com to order GMT fuses and other accessories. The 60GMT10 and 60GMT 20 are UL-recognized (US and Canada, File E139903, Vol. X2).

1.2 Specifications

Inputs:	
Voltage & range	±20 VDC to ±60 VDC @ 20°C ±22 VDC to ±58 VDC @55°C
Max. input load rating	60A
Max. power dissipation at full load	< 50W per side (max.)
% of full load power dissipation	Less than 1% for all models
Max. input interruption device	75A
Input terminals	Pressure clamp terminals for #16 to #6 AWG bare conductor

Outputs:	
Max. GMT output fuse (ea.)	15A
Max. GMT output load (ea.)	10.5A
Max. total GMT output per side	60A
Output terminals (Barrel-style screw down)	#22 to #16 AWG
GMT output wire size range	#22 to #16 AWG, depending on output fuse (1/8A to 15A)
Interrupt rating	450A
Short-circuit withstand current	450A

Alarms:	
Alarm relay contacts	Dry Form-C contacts (1A @ 30 VDC, 0.3A @ 100 VDC, 0.5A @ 125 VAC)
Max. alarm power rating	@24V: 72 mA (1.73W) @48V: 147 mA (7.06W)
Alarm wire size	#26 to #22 AWG
Alarm terminals	Barrel-style screw down

Grounding:	
Chassis GND terminal stud	#8 screw
GND wire size	#10 AWG

Dimensions (Nominal):	
Width x Height x Depth for both panels	19" x 1.75" x 2" (483 x 45 x 51 mm)

Fit & Finish	
Material	16-gauge steel
Color	White powder coat

Weights (Approximate)	
Installed weight	4 lbs. (1.8 kg)

Environment:	
Operating temperature	-10°C (14°F) to 55°C (131°F)
Humidity	0 to 90%, non-condensing

1.3 Important Installation Guidelines

- **Elevated Operating Ambient** – Take care to install the equipment in an environment compatible with the maximum ambient temperature (TMA) specified by the manufacturer.
- **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.
- **Mechanical Loading** – Mount the equipment in the rack so that the load is even.
- **Circuit Overloading** – Consider 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. Consider equipment name plate ratings when addressing this concern.
- **Reliable Earthing** – Maintain reliable earthing of rack-mounted equipment. Pay attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).
- **Disconnect Device** – Incorporate a readily accessible disconnect device in the building installation wiring.

1.4 Inspection

Please read and understand all instructions before starting installation. If you have questions, contact Amphenol Network Solutions Technical Support at support@amphenol-ns.com or call 1.509.926.6000.

When you receive the equipment, carefully unpack it and compare it to the packaging list. Please report any defective or missing parts to Amphenol Network Solutions Quality at quality@amphenol-ns.com or call 1.509.926.6000.

Amphenol Network Solutions is not liable for transit damage. If the product is damaged, please report it to the carrier and contact Amphenol Network Solutions Quality.

1.5 Installation

! ALERT

ALERT! Install this product within a restricted access location where access is through the use of a tool, lock and key, or other means of security and is controlled by the authority responsible for the location. This product must be installed and maintained only by qualified technicians.

Verify all connections meet requirements specified in local electric codes or operating company guidelines before supplying power. Unit shall be protected by a listed circuit breaker or branch-rated fuse rated maximum 75A.

Both panels can be flush-mounted in 19-in. EIA racks. Amphenol Network Solutions also offers adapter kits for WECCO and ETSI racks.

(See our website at amphenol-ns.com.)

1. Locate an unused rack position, normally at the top of the rack. Mount the panel to the rack using four, #12-24 thread-cutting screws and lock washers provided, as shown in Figure 3.
2. Tighten the screws to 35 in.-lb. (4.29 N•m).

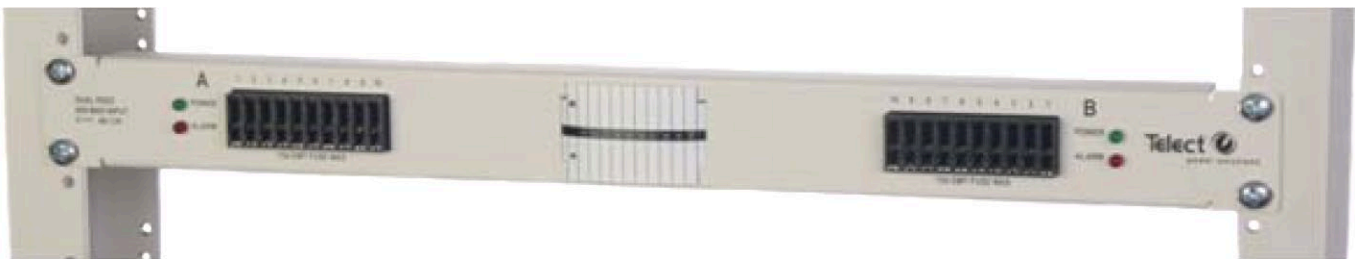


Fig. 1: Rack Mounting



WARNING

WARNING! Failure to properly ground this equipment can create hazardous conditions for installation personnel and for the equipment.



ALERT

ALERT! Only use components and crimping tools approved by agencies or certifying bodies recognized in your country or region, such as Underwriter's Laboratories (UL), TUV, etc.

- Use a listed (approved) crimping tool to attach a listed (approved), single-hole, right-angle terminal ring for #8 studs #10 AWG ground wire.



Fig. 2: Ground Lug Connection

- If desired (highly recommended), lightly coat antioxidant on the lug, grounding terminal and surrounding contacting surface.
- Connect the ring terminal using the #8 screw and flat washer provided, as shown in Figure 2.
- Tighten the screws to ~16 in.-lb. (~1.8 N•m), max.
- Make sure input power is off (open breaker, phony fuse or open fuse holder at the primary distribution unit, or PDU) before connecting this panel's input cables to that PDU.



WARNING

WARNING! Before connecting input power cables, make sure the input power to the panel is turned off.

8. For input wiring — wiring used as inputs to this distribution panel:
 - a. Strip off about $\frac{3}{4}$ in. (10 mm) of insulation at the end of the input conductors (min. #6 AWG for a 60A feed).
 - b. Lightly coat antioxidant on the bare conductor.
 - c. Insert the bare conductor into the snap connector as indicated in the illustration and then push the tab down to secure the conductor.

NOTE: Use a flathead screwdriver to open and close the snap connector. To open the connector, insert the head of the screwdriver under the white tab and lift up. See Figure 4.



Fig. 3: Input Connections

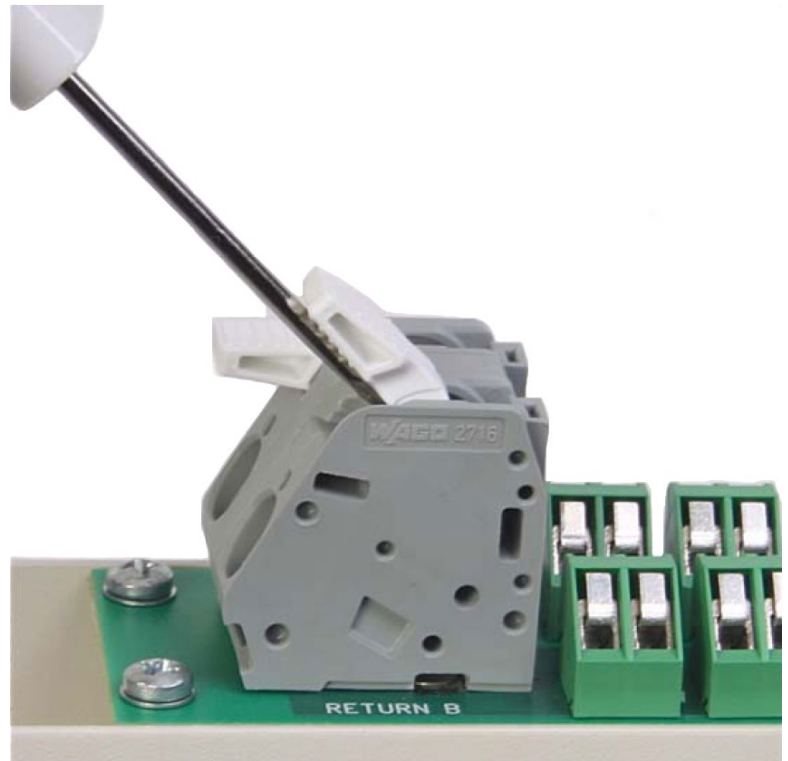


Fig. 4: Opening the Connector

To close the connector, insert the head of the screwdriver in the gray recess and pull back against the tab. See Figure 5.

⚠ ALERT

ALERT! Only qualified service personnel may replace fuses. The installer must verify that a readily accessible protection device is incorporated in the building wiring feeding the fuse panel: 75A (max.)

9. Make sure GMT fuse positions are either empty or contain dummy fuses (phony, inoperative, all-plastic slugs).
10. Enable a protection device (fuse or breaker) at the primary PDU to turn on Feed A to Side A of the panel. Check voltage and polarity at input connectors of the panel. Also, check that:
 - **PWR A** LED on the front of the panel turns on (green).
 - **PWR B** LED and both **ALARM** LEDs must be off (unlit).
11. With **PWR A** lit — but with **PWR B** LED off — test the power-fail relay and contacts at the **PWR A** alarm terminals on the rear of the panel:
 - Expect continuity (0Ω) between Terminals **C** and **NC**.
 - Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NO**.



Fig. 5: Closing the Connector



Fig. 6: Status LEDs

12. Also, test the fuse alarm relay contacts at **ALARM** terminals, then:
 - Expect continuity (0Ω) between Terminals **C** and **NC**.
 - Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NO**.
13. Repeat Steps 10 through 12 to power up Side B. **PWR A** and **PWR B** LEDs must both be green.
14. With **PWR A** and **PWR B** lit, test the power-fail relay and contacts at the **PWR A** and **PWR B** alarm terminals:
 - Expect continuity (0Ω) between Terminals **C** and **NC**.
 - Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NO**.
15. Make sure none of the fuse positions contain real, operable fuses.
16. For GMT output wiring, proceed as follows:
 - a. Working with one wire at a time, strip $\frac{3}{8}$ in. (10 mm) of insulation from a #30 to #16 copper wire for a bare-wire connection.
 - b. Clean the panel terminals and lug with a non-abrasive, non-metallic cleaning pad.
 - c. Connect to terminals. (NEC specifies only one load at each output terminal.) Tighten #5 40 screws using a flat-tipped screwdriver to no greater than 5 in.-lb. (~ 0.6 N•m). Connect other end of the output wire to *load*.
17. Record circuit assignments in accordance with operating company procedures and guidelines.

The manufacturer's designation card, shown in Figure 8, is a small card that fits in a card holder located in the center of the panel.



Fig. 7: Alarm Terminals on the Rear of the Panel

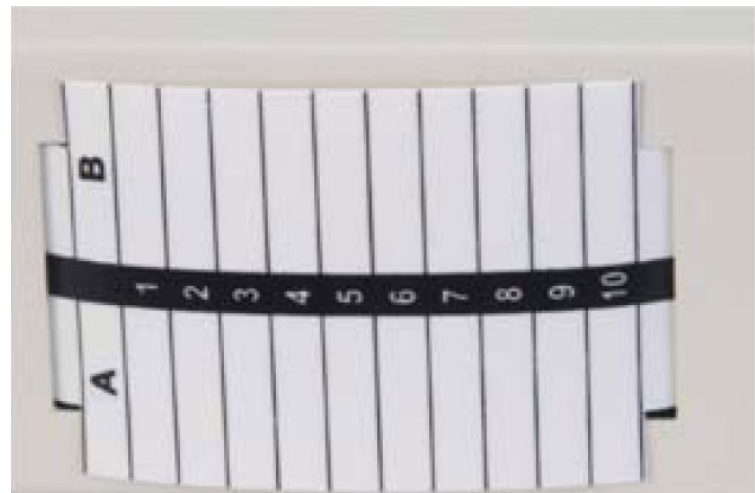


Fig. 8: Designation Card

! ALERT

ALERT! GMT fuses have a small inherent electrical resistance resulting in a small inherent power loss. For this reason, the GMT fuse manufacturer recommends that the load for GMT fuses up to and including 7.5A not exceed 80% of the fuse rating and that the load for GMT fuse sizes between 10A and 15A not exceed 70% of the fuse rating. For example, the load for a 15A GMT fuse should not exceed 10.5A ($15A \times .70 = 10.5A$).

The total load for all fuse outputs on each side must not exceed the panel's 60A load rating.

18. Make sure load devices are off (disabled) and then install the GMT fuses. Remember, GMT fuses need to be installed so that failure indication flags are at the bottom.
19. Test power and polarity at the input of each equipment load.

20. If possible, replace one of the operable GMT fuses with a blown fuse to verify that the applicable ALARM LED turns red. Also, check the ALARM terminals on the rear of the panel:
- Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NC**.
 - Expect continuity (0Ω) between Terminals **C** and **NO**. Re-install an operable GMT fuse before proceeding.
21. Lastly, enable equipment loads one at a time to verify the proper operation of the loads.

1.5 Accessories

The following lists optional and replacement items for the panel.



WARNING

WARNING! Use only UL-listed fuses or UL-recognized component secondary protection devices.

1.5.1 Ground Terminal Ring

Order Amphenol Network Solutions part number 06122-04 to support a #10 AWG cable on the ground terminal.

1.5.2 GMT Fuses

For dummy fuses, order part number 132748. For GMT safety (splash/splatter) covers, order part number 116915 for GMT fuses up to 15A. Amphenol Network Solutions recommends using only UL-recognized supplementary protectors.

GMT Fuse	Part Numbers for GMT Fuses
0.18A Yellow (YEL)	130781
0.25A Violet (VIO)	100151
0.50A Red (RED)	004001
0.75A Brown (BRN)	004008
1A Gray (GRY)	100991
1.33A White (WHT)	004006
1.5A White/Yellow (WHT/YEL)	004011
2A Orange (ORN)	004002
2.5A White/Orange (WHT/ORN)	130783
3A Blue (BLU)	004012
3.5A White/Blue (WHT/BLU)	130782
4A White/Brown (WHT/BRN)	004013
5A Green (GRN)	004014
7.5A Black/White (BLK/WHT)	004010
10A Red/White (RED/WHT)	004015
12A Yellow/Green (YEL/GRN)	102287
15A Red/Blue (RED/BLU)	102288

1.6 Diagram

The diagram that follows is representative of the Amphenol Network Solutions 60GMT10 and 60GMT20 power panels.

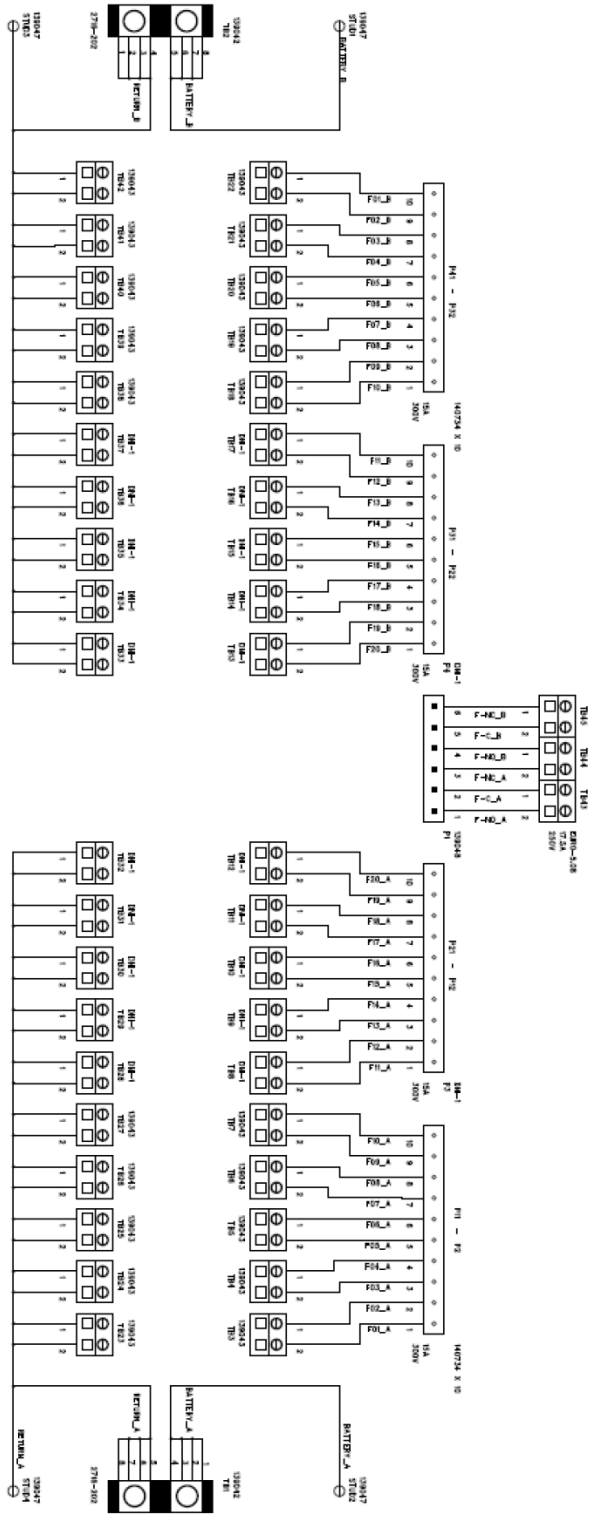


Fig. 9: 60GMT10 and 60GMT20

1.7 Dimensions

The drawings and dimensions that follow are representative of the Amphenol Network Solutions 60GMT10 and 60GMT20 power panels.

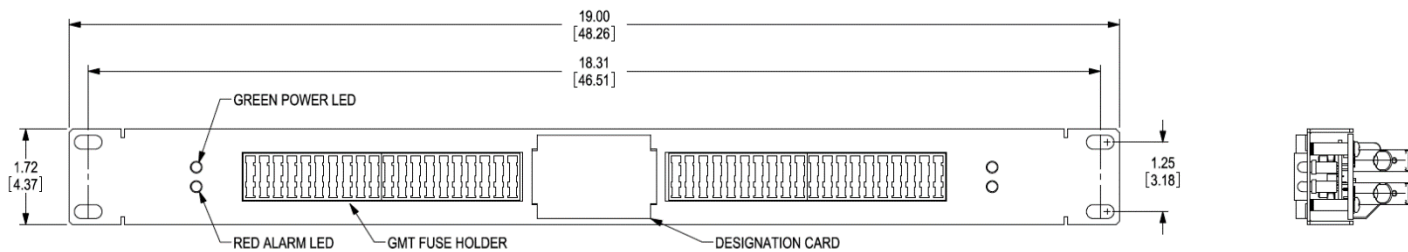
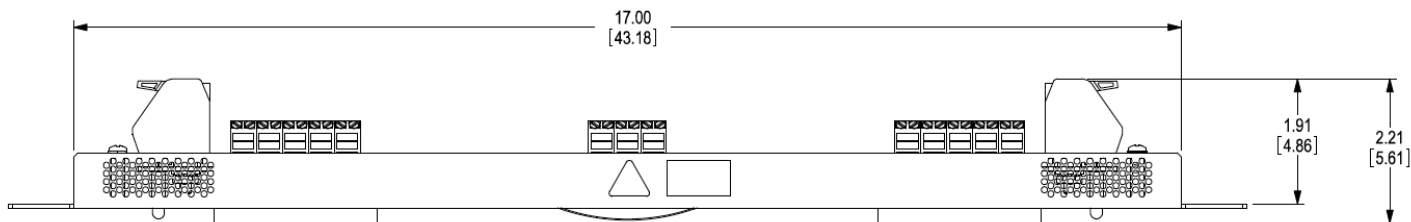
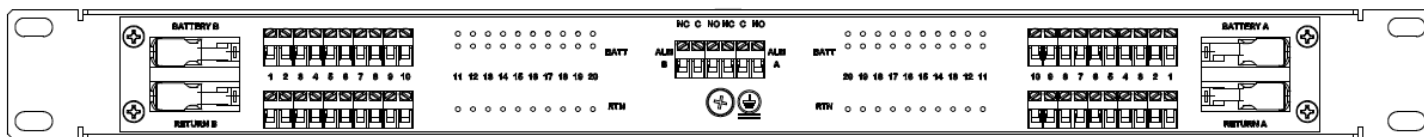
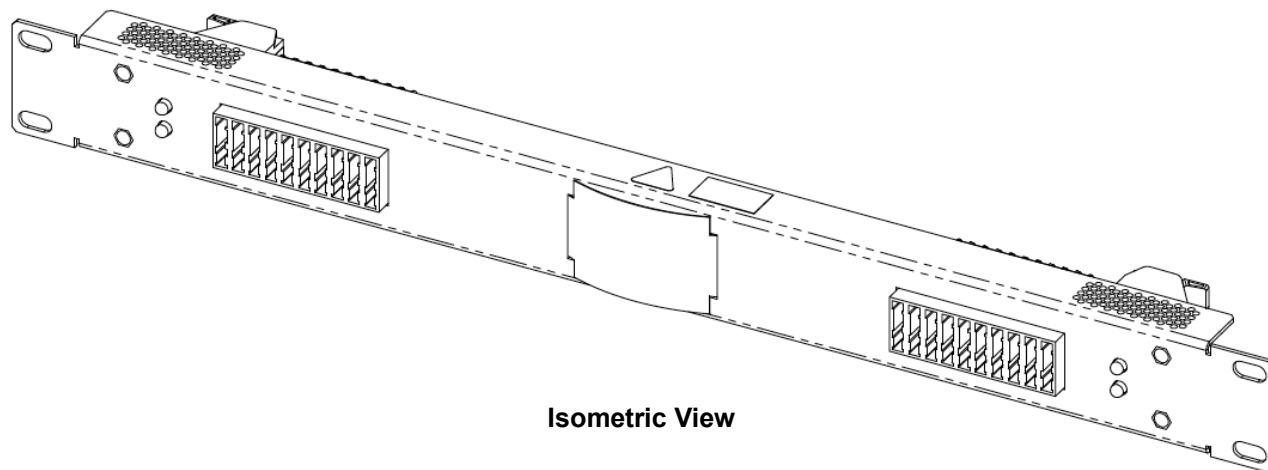


Fig. 10: 60GMT10

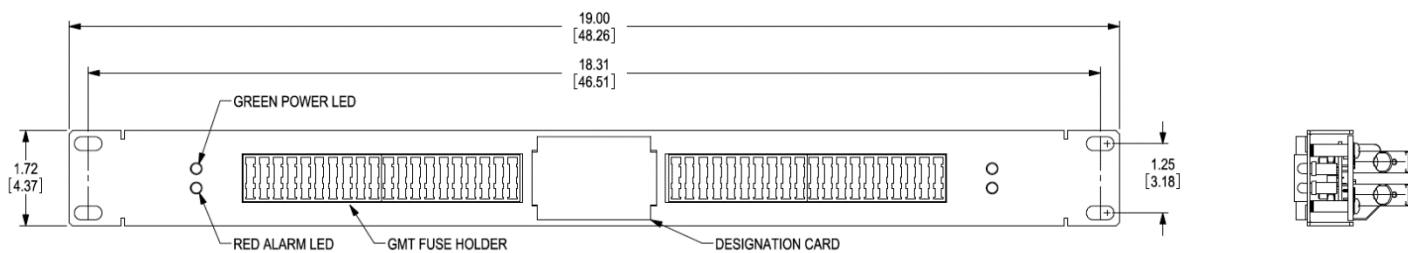
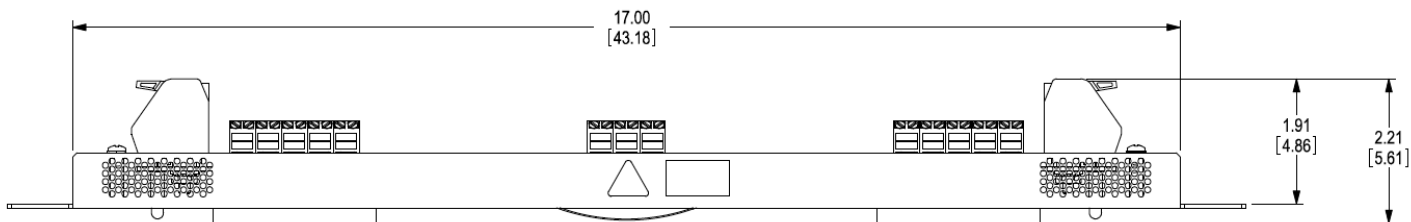
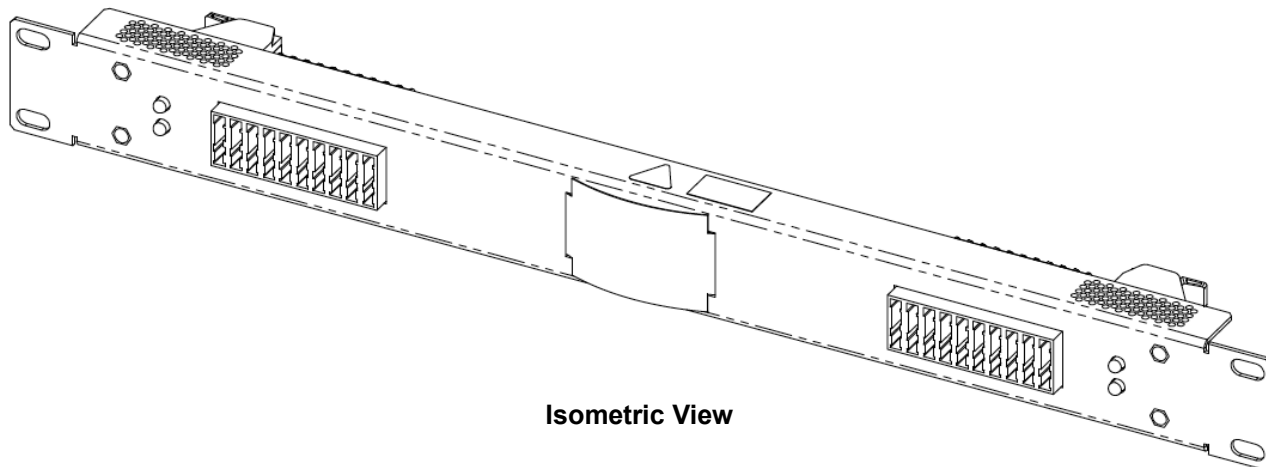


Fig. 11: 60GMT20