

Installation Manual

AC Edge 240

Dual Phase 60A (6/6) AC Power Distribution Unit



Model AC240V60DF 6/6
P/N 1101-1173

an INFINIT[®] company

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Introduction

Transtector's AC Edge 240 is a compact (2U) 240Vac secondary power distribution panel featuring two, 240Vac single phase 60A input buses with dedicated neutrals. The AC Edge provides power for a wide range of local or remote, wireless and wireline, data and mission critical communications applications. The panel fits 19 in. or 23 in. racks (23 in. brackets sold separately; need 2X of P/N 2001-389).

The AC Edge supports the use of six breaker output positions per line. Accepted breakers listed in the table on Page 14 range from 1A to 10A with a UL classification of QVNU2. 5A and 10A breakers are available from Transtector, sold separately and installed by site personnel (see Page 14 for part numbers).

The front of the panel contains six LEDs:

- One on each line (labeled PWR, the LED is green when power is supplied to the unit and off when no power is supplied)
- One on each line for tripped breaker indication (labeled FA, the LED is off during normal operation and red indicating a tripped breaker)
- One on each suppression module (the LED is green when powered and functioning and red when powered and not functioning).

Form C dry contacts on the rear provide connectivity via a single 15-socket (female), D-type connector (HD-15) to remote audible/visual alarm devices for announcing/displaying power, breaker, and bay failures. The suppression modules can be replaced when required (only when the unit is not powered, see page 14 for instructions).

Input ground connection made via a two hole compression lug on the back of the chassis. Chassis ground connection is tied to input ground. All output connections are made via the IEC 320-C13 connectors on the back of the unit.

Product Specifications

Electrical	Specification
Nominal Universal Voltage Range	220 Vac to 240 Vac
Frequency Rating	50 / 60 Hz
Input Rating	60 A, 250 Vac per phase, max
Input Interrupt Device	Not provided, building install must be capable of interrupting up to a 60 A source.
Input Configuration	2 wire + PE ground each phase
Output Configuration	6, IEC 320-C13 outlets per phase (total of 12 positions not to exceed a total of 60 A output per phase and 10 A per output position). L1 input feeds L1 outputs, L2 input feeds L2 outputs.
Breaker Output Current	1 A to 10 A single-pole, hydraulic-magnetic, non-delay, slow-trip breakers (sold separately; see page 14 for breaker part numbers).
Output Wire Size	#18 AWG to #12 AWG, depending on output breaker rating
Alarm Indicators	Power L1, L2 LEDs (2): green for power on; off for power off/failure Fuse Alarm LEDs (2): red for tripped breaker; off for normal operation Surge LEDs (1 per module): green for good; red for failure
Alarm Relay Contacts	Dry Form C for power, fuse, and bay alarm failures
Relay Contact Rating	240 Vac, 1.5 A
Bay Relay Activation	12 Vdc

Product Specifications cont.

Mechanical	Specification
Input Terminals	4 position spring-cage terminal block, #18 to #4 AWG
Output Load Terminals	IEC 320-C13 receptacle
Ground Terminal	Dual M6 studs on 5/8" centers
Alarm Terminals	Single 15-socket, high density, D-type connector
Chassis Material	18 gauge CRS, zinc plated with black powder coat bezel
Weight (out of box)	≈ 17 lbs (≈ 7.7 kg)
Weight (shipping)	≈ 20 lbs (≈ 9 kg)
Chassis Dimensions (Nominal, without rack mounting brackets)	3.47" H x 17.4" W x 13.5" D (88 mm x 442 mm x 342 mm)
Rack Mounting	2RU, 19" per EIA Standard, RS-310-D (optional 23" brackets available) Mount near flush to rack or extended up to 5" in 1 1/4" increments.
Rear Panel Safety	Screw mounted, hinged access panel provides tooling access only.

Environmental	Specification
Storage Temperature	14°F to 149°F (-10°C to 65°C)
Operating Temperature	14°F to 131°F (-10°C to 55°C)
Relative Humidity	90% (non condensing)

Compliance	Specification
Safety	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013

Factors Affecting Installation

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 specified by Transtector.

Reduced Air Flow

Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to the uneven mechanical loading.

Circuit Overloading Consideration

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 over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Earthing

Reliable earthing of the rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuits (ACEG).

Disconnect Device

A readily accessible disconnect device should be incorporated in the building installation wiring.

Warnings

CAUTION



This product shall be installed and serviced only by qualified personnel. The product is intended for installation in a restricted access area. Only use tools (for example, crimping tools, dies) and components (for example, breakers and wiring connectors) approved by recognized agencies and authorities (for example, UL, TUV, NEC).

⚠ DANGER



Hazardous Voltage. Multiple power sources may be available. Disconnect all power before servicing. Before connecting input power cables make sure input power to panel is turned off. Read and understand these instructions before installing this product. If necessary, contact Transtector for technical assistance: by phone at 1.800.882.9110 or 208.772.8515. Or email us at customerservice@smithspower.com.

Installation Procedure

Product Warning Labels



Label indicates the potential hazards associated with installation and operation of unit.

DANGER! RISK OF ELECTRIC SHOCK. SERVICE BY QUALIFIED TECHNICIAN ONLY.
WARNING! VOLTAGE/CURRENT RATINGS. 230/240Vac; 2 WIRE + PE EACH PHASE; 60A MAX EACH L-N.



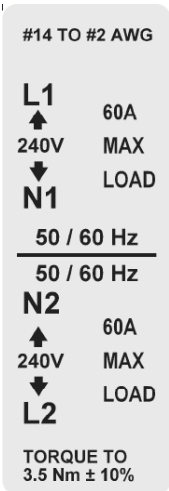
Label indicates the potential increased temperature of the external surfaces of the chassis.

CAUTION! CHASSIS MAY BE HOT.

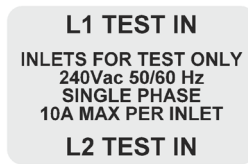


Label indicates the need to disconnect all power supply source prior to servicing the unit.

WARNING! DISCONNECT ALL SUPPLY SOURCES PRIOR TO SERVICE.



Label indicates LINE and NEUTRAL connections, max load current, voltage, and frequency for permanent wire connections.



Label indicates test input terminals, voltage, frequency, and maximum load current.



Label indicates ground connection location.

Inspect Shipping Container





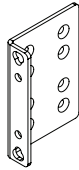
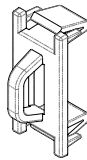
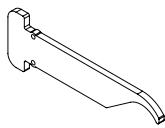
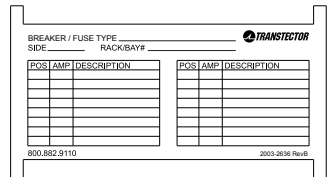
1. If damage is suspected, request that the carrier's representative be present during unpacking. Note: Transtector is not liable for damages incurred during shipping.

Inspect Contents of Container

2. During unpacking, inspect panel for damage. If damaged, contact the carrier. Report details of damage to Transtector by phone at 1.800.882.9110 or 208.772.8515, or email us at customerservice@smithspower.com.
3. Check contents of accessory kit, as listed in the table on page 8. If any items are missing, contact Transtector by phone at 1.800.882.9110 or 208.772.8515, or email us at customerservice@smithspower.com.
4. If required, prior to fastening the 19 in. or 23 in. brackets to the panel, lightly coat the bracket's contacting surface – between the bracket and the panel – with an anti-oxidant.
5. Fasten 19 in. or 23 in. rack brackets to panel using supplied fasteners (eight, 10-32 flat head screws). (See "Bracket Installation" on Page 9.) Torque fasteners to no greater than 23.7 inch pounds (~2.68 Newton meter). Note: Panel brackets provide near flush front-face mounting or extended mounting up to 5 inch in 1 1/4 inch increments.

Installation Procedure cont.

Accessory Kit

Accessory	Purpose	Quantity	Illustration
Flat Head Screw #10-32 x 3/8" with Nylock Patch	Bracket Installation	8	
Flat Washer #12	Panel to Rack Installation	4	
Lock Washer #12, Split	Panel to Rack Installation	4	
Screw #12-24 x .5" Pan Head Phillips	Panel to Rack Installation	4	
19" Mounting Bracket	Rack Mounting	2	
Blank Cover	Breaker Blank	12	
Breaker Removal Tool	Assist with Breaker Removal	2	
Designation Card	Recording Output Assignments	2	

Installation Procedure cont.

Installing Mounting Brackets

- Secure mounting brackets to the sides of the panel using 4, #10-32 flat head screws provided. Torque fasteners to 23 inch pounds. (see Figure 1)

Mounting Panel to Rack

- Select a location for the AC Edge panel on the rack. Choose to mount power panels at topmost or highest possible rack position.
- Note: Panel weighs approximately 17 lbs (7.7 kg). Take care to support the panel when installing panel to rack. Two persons may be required in the following step.
- Mount panel to rack using two sets of supplied fasteners per side (total of four #12-24 thread-forming, Phillips-head screws, split lock washers, and flat washers.), as shown in Figure 2 below. Tighten screws to no greater than 35 inch pounds (~4.29 Newton meter).

Torque Rating Chart

Fastener Connections	Maximum Torque (inch pounds)	Maximum Torque (Newton meters)
10-32	23 inch pounds	2.65 Newton meters
12-24	35 inch pounds	4.29 Newton meters
M6	55 inch pounds	6.2 Newton meters

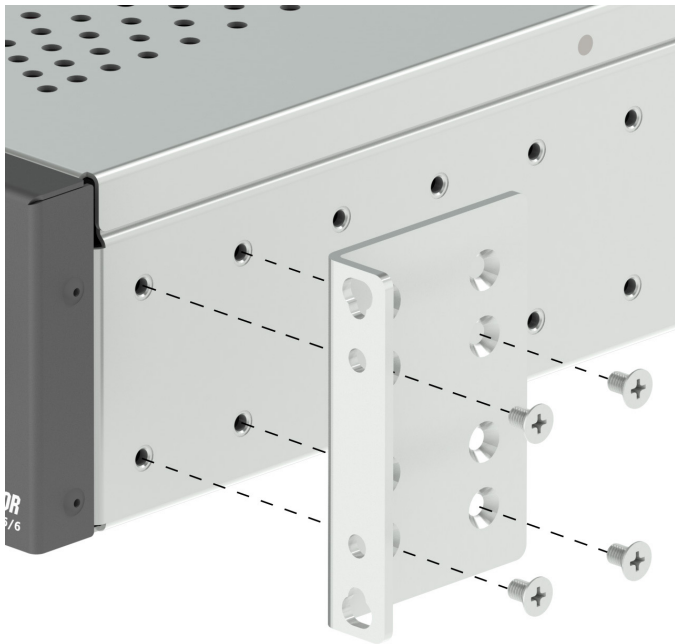


Figure 1: Bracket Installation



Figure 2: Rack Mounting

Installation Procedure cont.

Ground Wiring

⚠ DANGER



This product must be properly grounded to the facility's ground bus. Failure to do so is dangerous to personnel and may result in equipment malfunction.

10. Crimp ground lug to a #6 AWG stranded copper wire. One #6 AWG ground wire is the minimum requirement for 240Vac single phase input to the panel.
11. If required, lightly coat anti-oxidant on contacting surface of the ground lug. (The ground lug is located just left of the access panel shown in Figure 3.)
12. Fasten lug to panel using the provided M6 KEPS nuts and flat washers. Tighten to 50 - 55 inch pounds (~6.2 Newton meter). Secure ground wire to rack bonding bar (RBB).
13. Alternate ground lug can be found inside the rear access panel (see Figure 3b). This dual lug will support wire size from 14 AWG to 2/0 AWG. Ground lug for incoming branch power can be found inside the rear access service wiring panel (see Figure 3b). This lug will support wire size from 14 AWG to 4 AWG.



Figure 3a: Ground wire connection to RBB

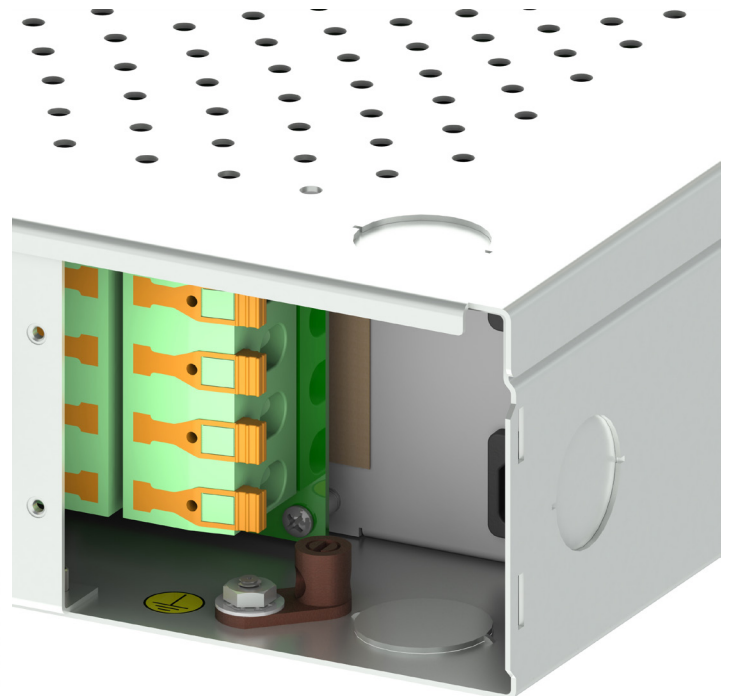


Figure 3b: Ground wire connection for incoming branch power

Installation Procedure cont.

Input Wiring

⚠ DANGER



At the power source, install two, single pole, high inrush, circuit breakers (60A max) following proper wire sizing and conduit guidelines (per NFPA 70 2011 Article 220, Chapter 9 and local/national codes).

Check that input power to the panel is off or disabled before installing input cabling and install customer provided strain relief to one of three knockout locations located near the access panel on the top, side, and bottom of the chassis.

13. Open input panel door shown in Figure 4a.
14. Feed input cable through strain relief and label all wiring for clear identification.
15. Secure LINE 1 to top location of terminal block, NEUTRAL 1 to second position from the top, LINE 2 to the bottom position, and NEUTRAL 2 to the 2nd position from the bottom of the input terminal block (see Figure 4a and 4b). To secure wires, follow figure 4a: (1) Strip wire to 18mm [0.70in]; (2) Fully insert wire into terminal block with latch in the open (vertical) position; (3) Fully depress latch into the closed (horizontal) position.
16. (Optional) For low power test purposes only, power may be fed to the unit via two IEC 320-C14 power entry modules (labeled L1 Test and L2 Test) found to the right of the input terminal block. Max power per test feed is 10A. After connecting inputs, close input panel door and secure with captive fasteners. This door must be closed prior to supplying power to the unit. Failure to do so can result in severe electric shock.

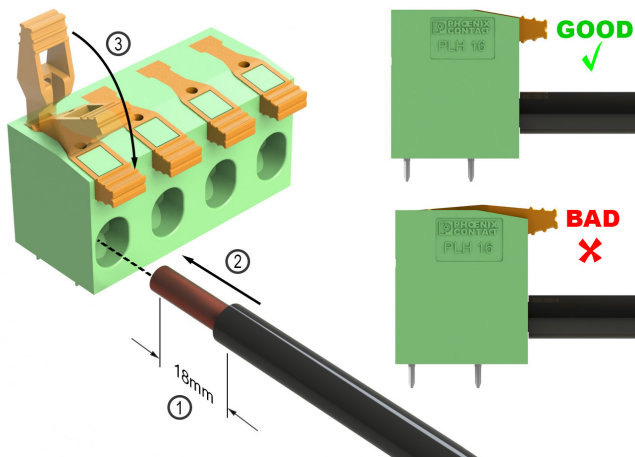


Figure 4a: Terminal block connection

AC POWER SOURCE
CUSTOMER SUPPLIED BREAKERS
OR FUSED DISCONNECTS

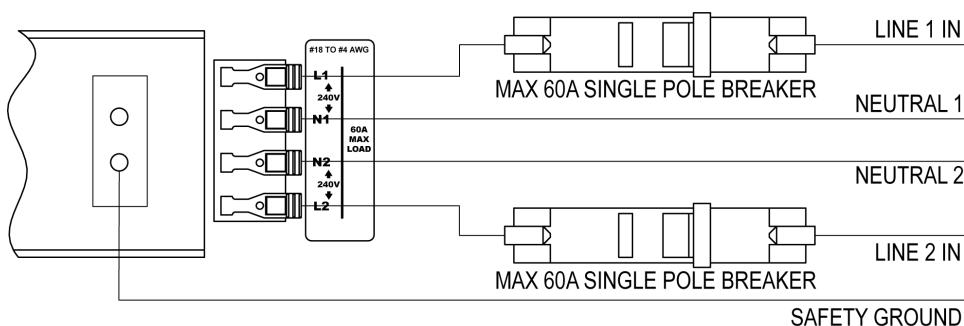


Figure 4b: Input wiring diagram

⚠ DANGER



To prevent possibility of electrical shock, both power sources must be disconnected from AC Edge before servicing. Installation must meet all local codes and jurisdictions.

Installation Procedure cont.

Test Voltages & Alarms

17. Confirm breakers are not installed in the front panel of AC Edge and the provided protective covers are in place.
18. Enable power to the panel via fuse, breaker, or other disconnect device.
19. The LEDs on the front panel should be lit as follows:
 - PWR LED for L1 and L2 is lit (green), and
 - Suppression Module LED is lit (green), and
 - All other LEDs are off

Table 1 - HD15 Pin-Outs

Pin	Assignment	Pin	Assignment
1	L1 Power Alarm NO	9	L1 Suppression Status NC
2	L1 Power Alarm NC	10	L1 Suppression Status NO
3	L2 Power Alarm NO	11	L2 Suppression Status NC
4	L2 Power Alarm NC	12	L2 Suppression Status NO
5	L1 Fuse Alarm NO	13	Common
6	L1 Fuse Alarm NC	14	Common
7	L2 Fuse Alarm NO	15	Common
8	L2 Fuse Alarm NC		

20. Test continuity between pins 1-12 and any Common pin (13,14, or 15) of the HD15 connector per Table 1.
 - Verify continuity (0 Ohms) for all NC pins.
 - Verify an open circuit (∞) for all NO pins.

Note: Normal conditions, that is normally open (NO) and normally closed (NC), are for a normally functioning panel with power on and no tripped breakers.

Alarms

21. If required for site management alarming, connect panel and/or bay alarm wires to the D-type connector on the rear of the panel shown in Figure 5.

Installation Procedure cont.

Outputs

22. The AC Edge power panel outputs consist of 6 IEC 320-C13 connectors per phase. The panel accepts 2 feeds at 240Vac each with dedicated neutrals. Output positions accept standard IEC 320-C14 connectors (see Figure 5).
23. Connect opposite ends of output conductors to the output loads and label all wiring for clear identification.
24. Turn off or disable fuses, breakers, or other disconnect devices feeding power to the AC Edge panel.

Note: The following steps deal with breakers. Good practice involves turning off power to the panel when installing or replacing breakers. When that is not possible, rely on and follow established operating company or regulatory practices. However, NEVER install breakers in a live circuit with the operator handle switched on.

25. Remove blank cover over selected breaker position. Pull the handle of the blank cover to remove. See “Breaker Replacement” on Page 14.
26. During installation of breakers, ensure that circuit breakers are switched off.
27. Install circuit breakers in the “off” position, with ON letters oriented towards the top of the unit and OFF towards the bottom.
28. When installing breakers, record the ratings and position on the designation card shown in Accessory Kit (see page 8). Insert card into slot below breakers.
29. Disable AC Edge output loads at the equipment.
30. Turn on output breakers.
31. Turn on or enable fuses, breakers, or other disconnect devices to feed power to the AC Edge unit.
32. Verify that the PWR LEDs are on (green), FA (fuse alarm) LEDs are off, and surge module LED is on (green) for powered line and off if not powered.
33. Turn off one of the breakers. Expect that the FA (fuse alarm) LED is on (red).
Check the FA (fuse alarm) terminals on the rear of the panel. Expect:
 - An open circuit (∞) between C and NC, and
 - Continuity (0 Ohms) between C and NO.
34. Make sure all breakers are on.
35. Test power and polarity at the input of each output load.
36. Enable AC Edge output loads at equipment. Check loads for proper operation.



Figure 5: IEC 320-C13 output positions and alarm connection

Breaker Replacement

Circuit breakers are held in place by wide plastic bars at the top and bottom of each breaker. The bars lock into cutouts in the top and bottom of the two breaker cages.

Transtector provides two breaker removal tools. The tools are used together to facilitate breaker removal by depressing the bars while prying out the breaker.

In use, slip one tool through the slot at the top of the breaker and one through the bottom of the breaker so that the hooked end of each tool slips into the cutouts above and below the breaker. Then pry up on the top tool and down on the bottom and pull towards the front of the chassis to unlock the bars and free the breaker (see Figure 6).



Figure 6: Removing a breaker

Circuit Breakers

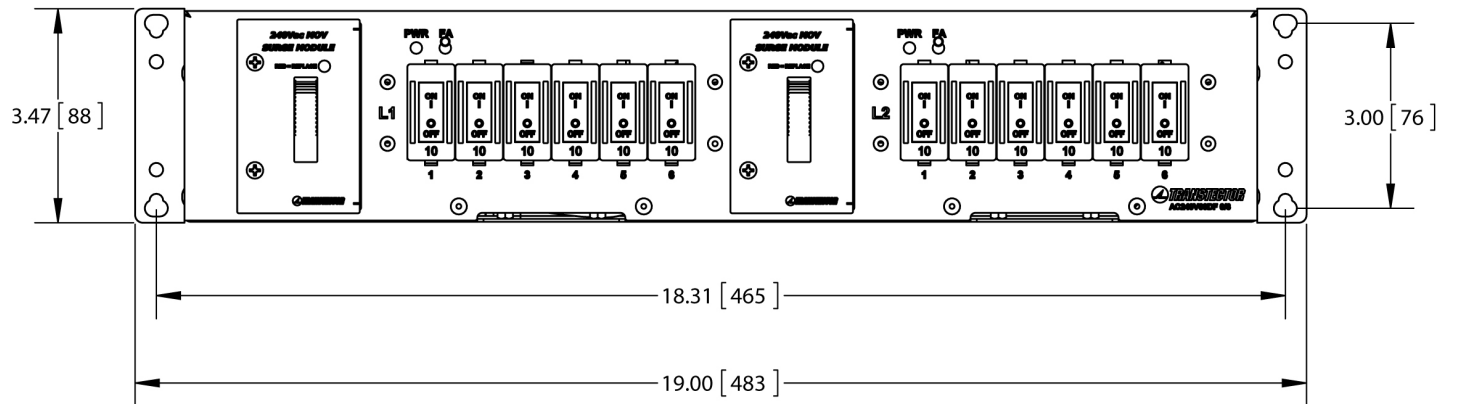
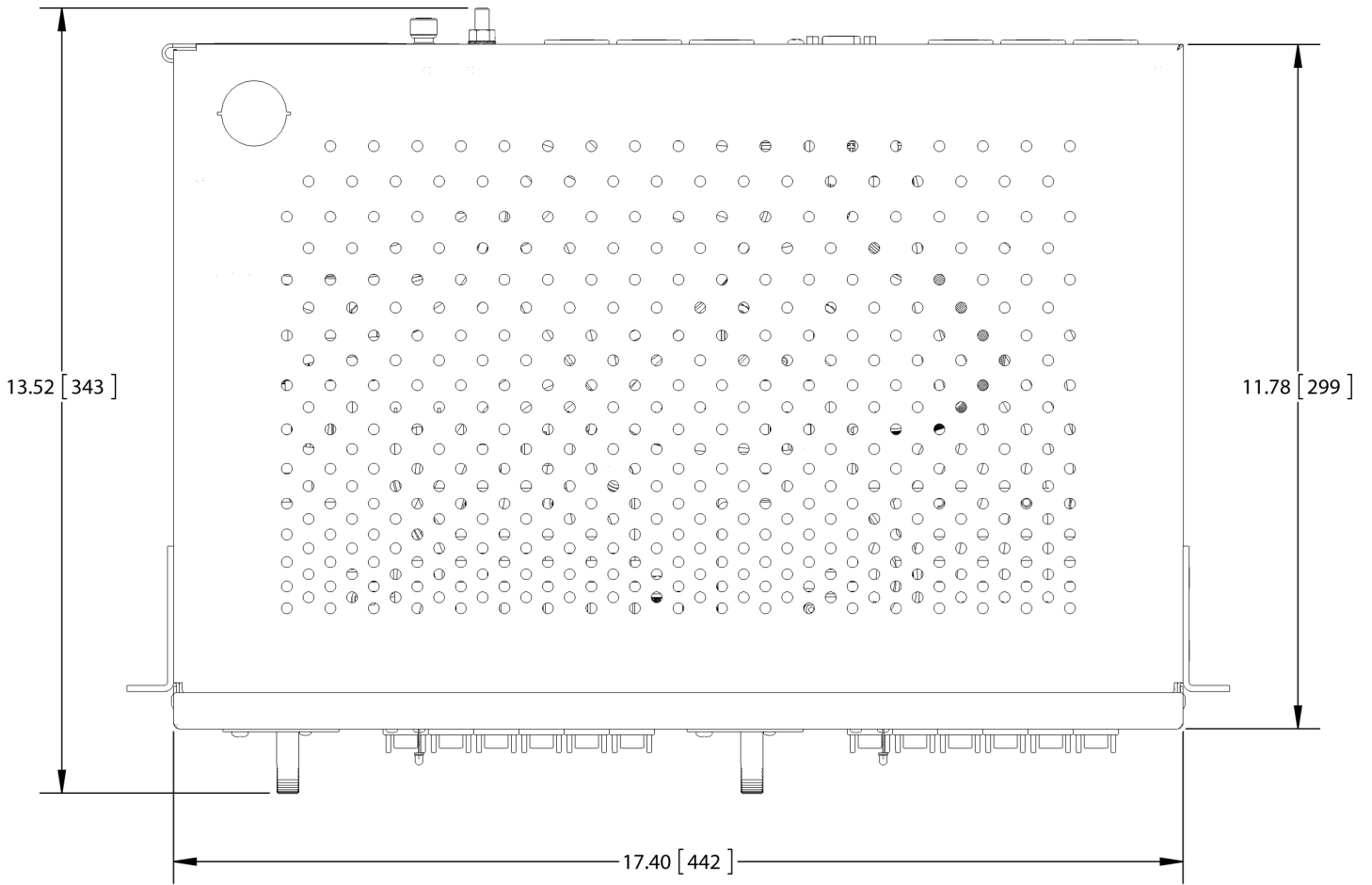
The AC Edge 240 panel is compatible with single-pole, Carling Technologies™ M-Series or AIRPAX™ SNAPAK™ series hydraulic magnetic circuit breakers with on/off rocker positions. All circuit breakers are slow-trip without mid-trip. Transtector sells 5A and 10A breakers under the following part numbers:

5A Carling M-Series - Transtector Part Number 3750-289

10A Carling M-Series - Transtector Part Number 3750-290


Rating	Carling Technologies™ Part Number	AIRPAX™ Sensata Part Number
1 A	MA1-X-02-234-5-A26-2-E	R15-62-1.00A-40384-1-V
2 A	MA1-X-02-234-6-A26-2-E	R15-62-2.00A-40384-2-V
3 A	MA1-X-02-234-7-A26-2-E	R15-62-3.00A-40384-3-V
4 A	MA1-X-02-234-8-A26-2-E	R15-62-4.00A-40384-4-V
5 A	MA1-X-02-227-3-A26-2-E	R15-62-5.00A-40384-5-V
10 A	MA1-X-02-227-2-A26-2-E	R15-62-10.0A-40384-10-V

Dimensions



Lugs

The following table is a list of standard, two-hole lugs that fit the chassis ground termination on the rear of the panel. Comparable angled lugs may be used (45° or 90°).

Lug Style	Wire Size	Burndy Part No.	Panduit Part No.
Straight 	14-10 AWG	YAV10-2TC14	-
	8 AWG	YA8CL-2TC14	LCD8-14A-L
	6 AWG	YA6CL-2TC14	LCD6-14A-L
	4 AWG	YA4CL-2TC14	LCD4-14A-L
	2 AWG	YA2CL-2TC14	LCD2-14A-Q

Maintenance

AC Edge 240 panels require no scheduled maintenance.

Service

For service (warranty or otherwise) contact Transtector by phone at +1 800.882.9110 or +1 208.772.8515, or online at www.smithspower.com to obtain an RMA number. Transtector will contact you with cost of repair or replacement (if applicable) before proceeding with service.

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