

Installation Manual

AC Edge 120

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



Model AC120V60DF 6/6
P/N 1101-1188

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Introduction

Transtector's AC Edge 120 is a compact (2U) 120 Vac secondary power distribution panel featuring two, 120 Vac single phase 60 A 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 circuit breakers found in Table 4 on Page 14 range from 1 A to 15 A and are UL489 listed. 5 A, 10 A, and 15 A 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 back of unit 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.

Input ground connection made with 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 NEMA 5-15R connectors on the back of the unit.

Product Specifications

Electrical	Specification
Nominal Universal Voltage Range	110 Vac to 120 Vac
Frequency Rating	50 / 60 Hz
Input Rating	60 A, 138 Vac per phase, max
Input Interrupt Device	Installation must meet all local codes and jurisdictions. Supply breakers must be rated for 125% of MAX load.
Input Configuration	2 wire + PE ground each phase
Output Configuration	6, NEMA 5-15R outlets per phase (total of 12 positions not to exceed a total of 60A output per phase and 80% of breaker rating per output position). L1 input feeds L1 outputs, L2 input feeds L2 outputs.
Breaker Output Current	1 A to 15 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	120 Vac, 1.5 A
Bay Relay Activation	12 Vdc

Product Specifications cont.

Mechanical	Specification
Input Terminals	4 position terminal block, #20 to #2 AWG
Output Load Terminals	NEMA 5-15R receptacle
Ground Terminal	Dual 1/4-20 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 19.00" W x 13.48" D (88 mm x 483 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	UL/cUL Listed, E211453

Factors Affecting Installation

Elevated Operating Ambient

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with 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 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 connection of the equipment to the supply circuit and effect that overloading of 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 be installed and serviced by qualified personnel only. 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



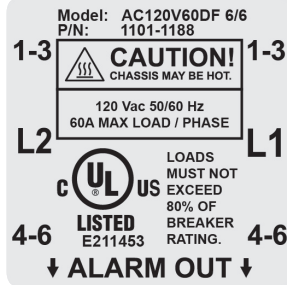
Hazardous Voltage. Multiple power sources may be available. Disconnect all power before servicing. Before connecting input power cables make sure input power to panel is turned off. Read and understand these instructions before installing this product. If necessary, contact Transtector for technical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

Installation Procedure

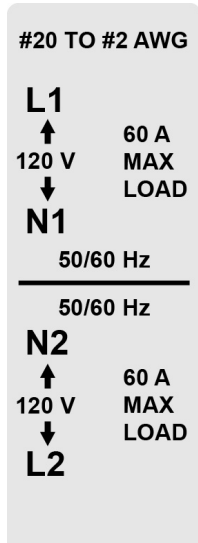
Product Warning Labels



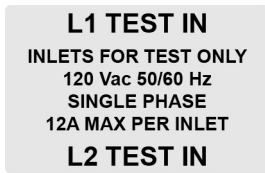
Label indicates the potential hazards associated with installation and operation of unit.
DANGER! RISK OF ELECTRIC SHOCK. SERVICE BY QUALIFIED TECHNICIAN ONLY.
WARNING! VOLTAGE/CURRENT RATINGS. 110/120Vac; 2 WIRE + PE EACH PHASE; 60A MAX



Label indicates the potential increased temperature of the external surfaces of the chassis.
CAUTION! CHASSIS MAY BE HOT.



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.



Label indicates the need to disconnect all power supply source prior to servicing the unit
WARNING! DISCONNECT ALL SUPPLY SOURCES PRIOR TO SERVICE.

Inspect Shipping Container





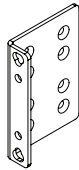
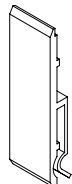
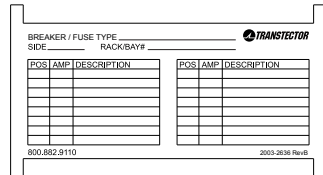
1. If damage is suspected, request that the carrier's representative be present during unpacking. Note: Transtector is not liable for damages incurred during shipping.

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 visit us at transtector.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 visit us at transtector.com.
4. If required, prior to fastening the 19" or 23" brackets to the panel, lightly coat the bracket's contacting surface (between the bracket and the panel) with an anti-oxidant.
5. Fasten 19" or 23" 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 in-lbs (~2.68 Nm). Note: Panel brackets provide near flush front-face mounting or extended mounting up to 5" in 1-1/4" increments.

Installation Procedure cont.

Table 1 - 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	
Designation Card	Recording Output Assignments	2	
Quick Install Sheet	Assist with Installation	1	N/A

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).

Table 2 - 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
1/4-20	55 inch pounds	6.2 Newton meters

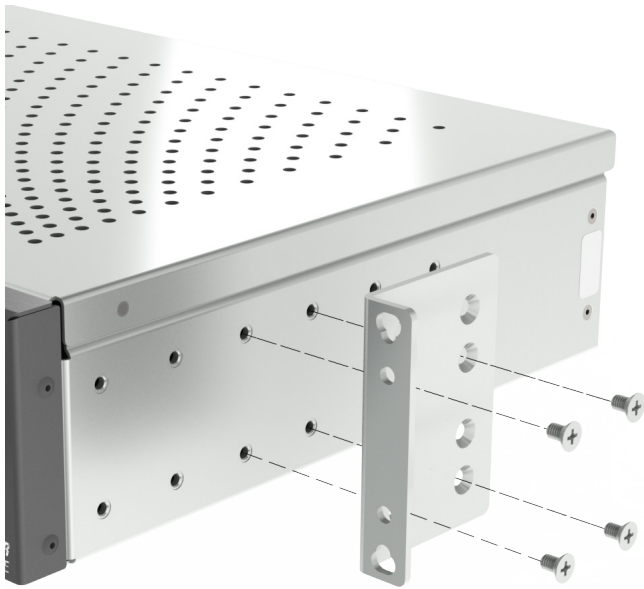


Figure 1: Bracket installation



Figure 2: Rack mounting

Installation Procedure cont.

Ground Wiring

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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 120 Vac 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 3a.)
12. Fasten lug to panel using the provided 1/4-20 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 lug will support wire size from 4 - 14 AWG.



Figure 3a: Ground wire connection to RBB

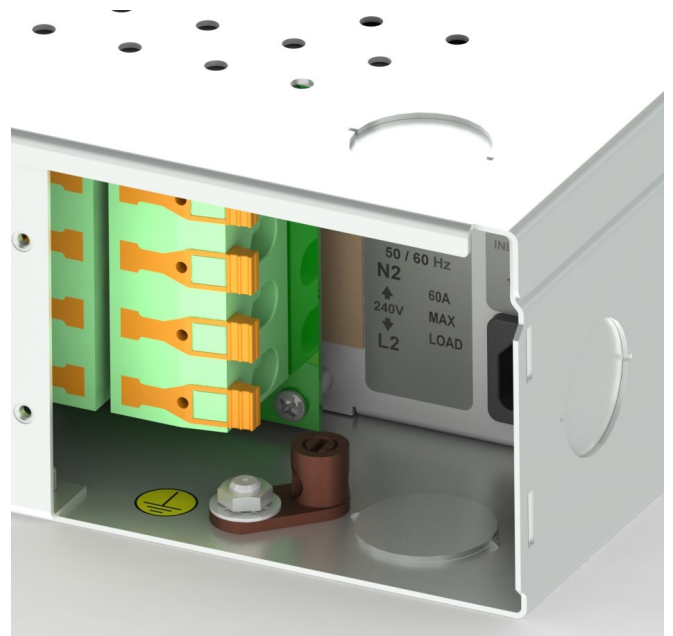


Figure 3b: Lug ground location for incoming branch power.

Installation Procedure cont.

Input Wiring

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At the power source(s), install one, single pole, high inrush circuit breaker per phase (75A max each, derated 80%), or a 2-pole breaker with identified handle tie 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 on back of unit.
14. Feed input cable through strain relief and label all wiring for clear identification.
15. Secure LINE 1 to the 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 4). Torque terminal block screw connections to 30 ± 5 inch pounds (3.4 ± 0.6 Newton meter).
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 current per test feed is 12 A. 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.

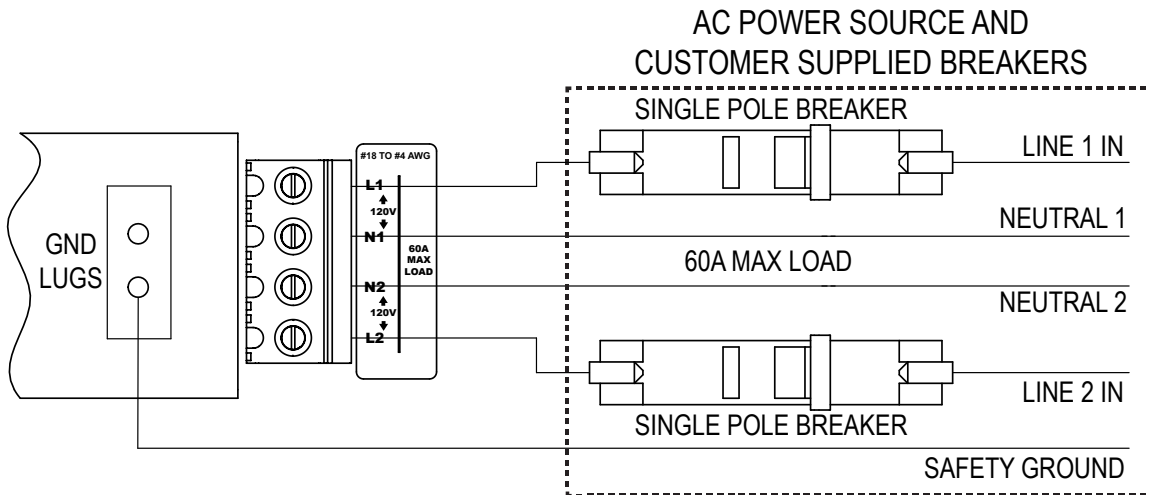


Figure 4: Input wiring diagram



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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. Supply breakers must be rated for 125% of MAX load.

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 3 - 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 3.
 - 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 NEMA 5-15R connectors per phase. The panel accepts 2 feeds at 120 Vac each with dedicated neutrals. Output positions accept standard NEMA 5-15P connectors (see Figure 5).
23. Connect opposite ends of output conductors to the output loads and label all wiring for clear identification.
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.
24. Remove blank cover over selected breaker position. Pull the handle of the blank cover to remove. See “Breaker Replacement” on Page 14.
25. During installation of breakers, ensure that circuit breakers are switched OFF.
26. Install circuit breakers in the “OFF” position, with ON letters oriented towards the top of the unit and OFF towards the bottom.
27. 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.
28. Disable AC Edge output loads at the equipment.
29. Turn ON output breakers.
30. Turn ON or enable fuses, breakers, or other disconnect devices to feed power to the AC Edge unit.
31. 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.
32. 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.
33. Make sure all breakers are ON.
34. Test power and polarity at the input of each output load.
35. Enable AC Edge output loads at equipment. Check loads for proper operation.

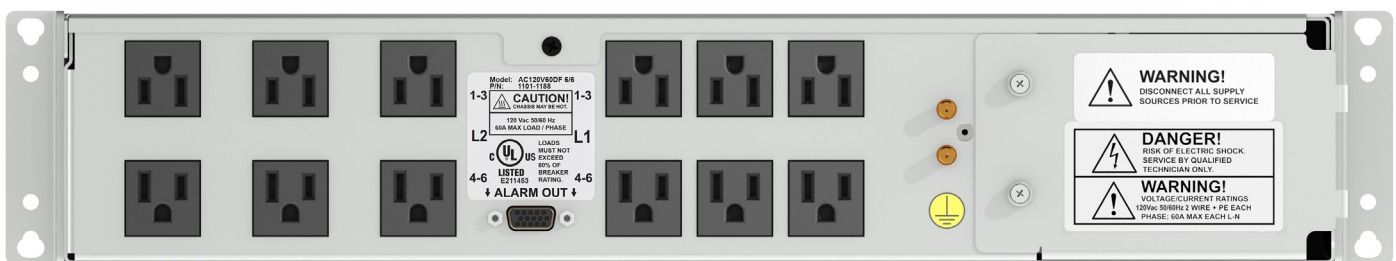


Figure 5: NEMA 5-15R output positions and alarm connection

Breaker Replacement

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All power sources must be disabled to unit prior to inserting or removing breakers.

To install circuit breakers, first remove two screws securing faceplate to front of unit (see Figure 6a). Remove faceplate to gain access to circuit breaker positions. Push circuit breaker into one of six positions. Circuit breaker is fully seated when faceplate sits flat against front of chassis. Secure faceplate to chassis with two screws previously removed and torque to 8 in-lbf.

To remove circuit breakers, remove two screws securing faceplate to front of unit (see Figure 6b). Attach Sensata Extraction Tool (Sensata P/N 121-450-5061) to front of circuit breaker being removed. Pull circuit breaker straight out from front of unit. Replace with a new circuit breaker or circuit breaker blank. Secure faceplate to chassis with two screws previously removed and torque to 8 in-lbf.



Figure 6a: Installing a breaker



Figure 6b: Removing a breaker

Circuit Breakers

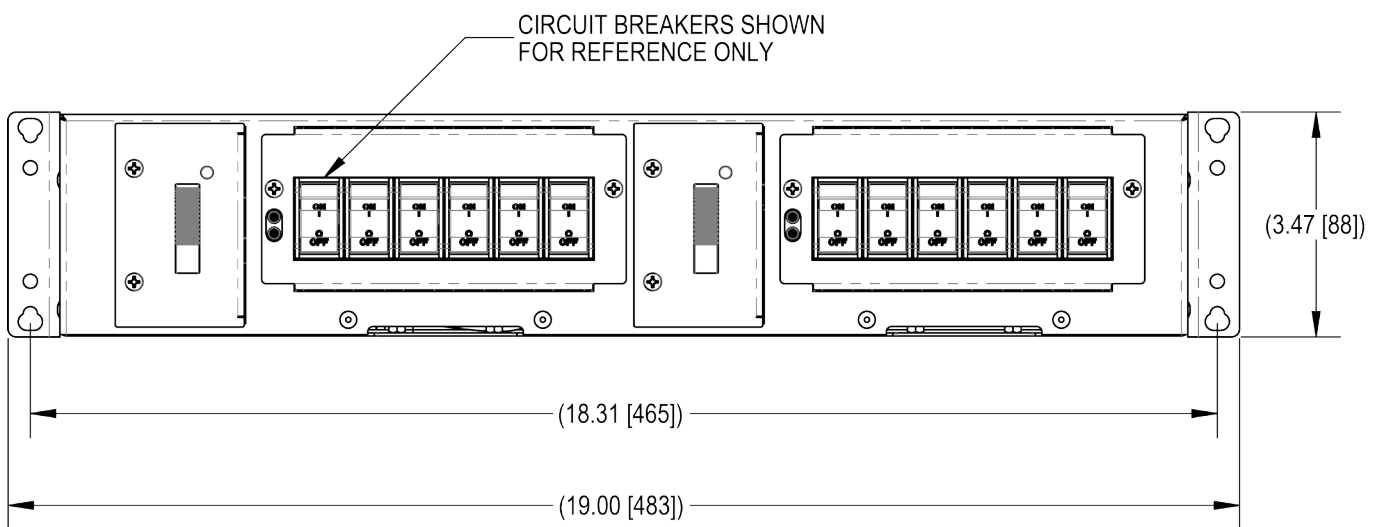
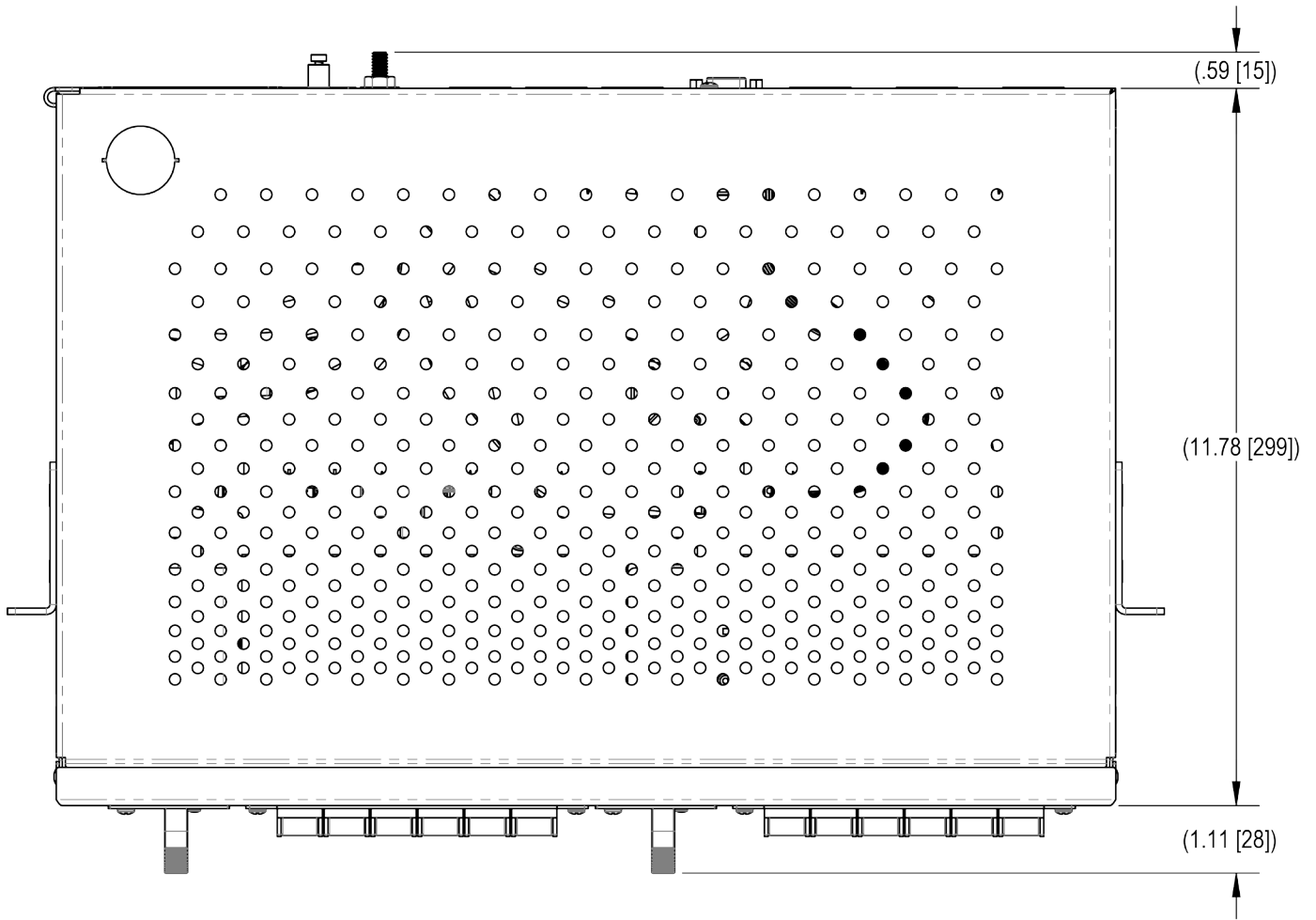
The AC Edge 120 panel is compatible with single-pole, AIRPAX™ LEL series hydraulic magnetic circuit breakers with on/off rocker positions. All circuit breakers are slow-trip without mid-trip. Transtector sells 5 A, 10 A, and 15 A breakers under the following part numbers:

5A	AIRPAX™ LEL Series	Transtector Part Number 3750-295
10A	AIRPAX™ LEL Series	Transtector Part Number 3750-296
15A	AIRPAX™ LEL Series	Transtector Part Number 3750-297

Table 4 - Approved Circuit Breakers

Rating	AIRPAX™ Part Number
1 A	LELZXB1-1REC4-61-1.00-G1-03
2 A	LELZXB1-1REC4-61-2.00-G1-03
3 A	LELZXB1-1REC4-61-3.00-G1-03
4 A	LELZXB1-1REC4-61-4.00-G1-03
5 A	LELZXB1-1REC4-61-5.00-G1-03
10 A	LELZXB1-1REC4-61-10.0-G1-03
15 A	LELZXB1-1REC4-61-15.0-G1-03

Dimensions




Primary dimensions are inches, millimeters shown in [].

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°).

Table 5 - Ground Lugs

Lug Style	Wire Size	Burndy Part No.	Panduit Part No.
Straight 	14-10 AWG	YAV10-2TC14	N/A
	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 120 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.transtector.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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