

# BelAir20EO and AP 511x Series Quick Install Guide

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QUICK GUIDE

PRELIMINARY

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# 1 Getting Started

## 1.1 Package Contents



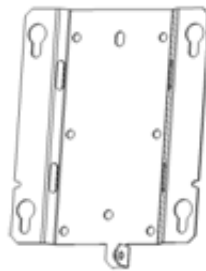
BelAir20EO or  
AP 511x Series AP



Quick Guide



Power Cable  
Connector Kit  
(AP 5115 to  
AP 5118 Only)



Mounting Plate



Mounting Screws

External antennas are ordered and shipped separately.

For AP 5115 to AP 5118:

- Customers supply their own power cable and use the power cable connector kit to terminate the cable.
- Units can be powered either by AC power or by Power over Ethernet (PoE).



## 1.2 AC Power (AP 5115 to AP 5118 only)

These units accept AC input power in the range of 100 to 240 V AC. The units do not have a power switch. They are powered on when connected to a power source. Maximum AC power consumption is 14.5 W.



### Warning!

The unit contains a 5-A fuse and relies on the rated fuse or circuit breaker of the wall outlet (15 A in North America, 10 A in Europe).



### Warning!

Use ONLY the Ericsson power cable connector supplied with the unit. Use of any other power cable connector may damage the unit and voids Ericsson's product warranty.

## 1.3 Internet Port and Power

The unit can be powered with IEEE 802.3af or IEEE 802.3at Power over Ethernet (PoE). Use IEEE 802.3af PoE for most applications. IEEE 802.3af PoE supplies a maximum of 12.95 W to the powered device.

Table 1 PoE Power Consumption Table

State	Internet Port only	Internet Port and One LAN Port
Idle	3.6 W	4.05 W
Medium Traffic	8.4 W	8.85 W
High Traffic	10.8 W	11.25 W
Max. Traffic	11.76 W	12.21 W

The PoE switch or power injector must meet local and national regulatory requirements.

### 802.11at Power Source Equipment (PSE) Specification:

- 50.0 to 57 V DC, with 30 W output power from the PSE

**802.11at Powered Device (PD) Specification:**

- 42.5 to 57 V DC at the PD, with 25.5 W maximum input power to the PD

**802.11at Cable Specification:**

- 100 m maximum length
- Maximum cable pair resistance of 12.5 Ohms, satisfied by using CAT5 or CAT5e as specified by ANSI/TIA/EIA-568 or Class D as specified by ISO/IEC 11801:1995
- 600 mA maximum current per pair

## 1.4 Functional Earth Ground and Lightning Protection

Units are not designed to survive a direct lightning hit. However, they are intended to withstand the voltage and current surges induced from nearby lightning activity.

The level of required lightning protection depends on regional lightning conditions and location of installation. For example, an AP installed on a roof top requires greater lightning protection than an AP installed on the side of a building. The following is a list of recommended installation practices to mitigate the voltage and current surges induced from lightning activity. In the event of a conflict between these recommendations and local or national electrical codes, the local or national electrical codes should be followed in all instances.

- For streetlight or hydro/telecom pole mounting the AC power adapter should be protected with a lightning surge protector. AC power routed to the power adapter should be routed inside the pole. If power is routed on the pole exterior, the power should be routed through a metal conduit grounded at the base of the pole.
- For rooftop installations, the unit should not be mounted at the highest point on the building. If the building has installed lightning arrestor(s), the unit should be located within the umbrella protection zone—a 60 degree zone under the lightning arrestor, but if possible, the unit should not be located closer than 30 feet (approx. 10 m) from the lightning arrestor. Power and Ethernet cables should be routed through independent grounded metal conduits.
- For lightning surge protection, the installer must connect a separate ground wire between the external chassis of the unit and a ground on the pole. The ground point on the AP accepts a 1/4" screw.
- It is strongly recommended for areas susceptible to lightning activity, such as on poles, rooftops, or on or near any tall structures, that shielded CAT 5e or CAT 6 Ethernet cable be employed.



- The external antennas ports of the unit require lightning arrestors to be employed whenever the external antenna is located more than 3 feet (approx. 1 m) from the unit. When lightning arrestors are used, they should be located within 3 feet (approx. 1 m) of the unit and must be grounded to both the unit and protective earth ground. The  $\frac{1}{4}$ " GND screw of the unit may be used for this application.

PRELIMINARY



## 2 Installing the BelAir20EO and AP 511x series AP

### 2.1 Step 1—Select Location

Choose a proper place for the unit. In general, the best location is at the center of the intended wireless coverage area, within line of sight of all wireless devices. For optimum performance, consider these guidelines:

- Mount the unit as high as possible above any obstructions in the coverage area.
- Avoid mounting next to or near building support columns or other obstructions that may cause reduced signal or null zones in parts of the coverage area.
- Mount away from any signal absorbing or reflecting structures (such as those containing metal).

The unit can be mounted on any wall or on a pole.



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#### **Warning!**

Do not install the unit in any areas where blasting (blasting caps, radio controlled equipment) or explosive gases may be present.

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#### **Warning!**

To comply with FCC radio frequency (RF) exposure limits (FCC OET 65C) for the general population, antennas must be located at a minimum distance of 12 inches (approx. 30 cm) or more from the body of all persons.

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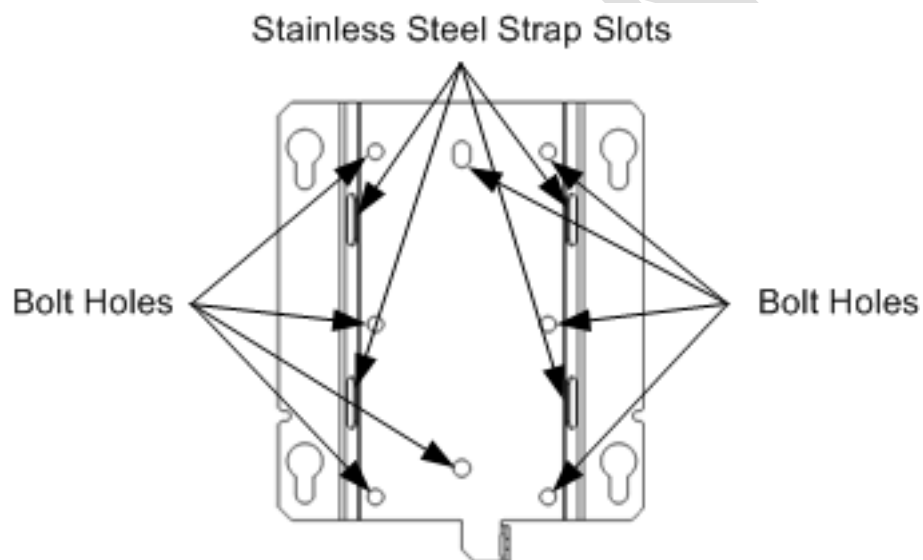


## 2.2 Step 2—Mount Unit

### Wall or Large Pole Mounting

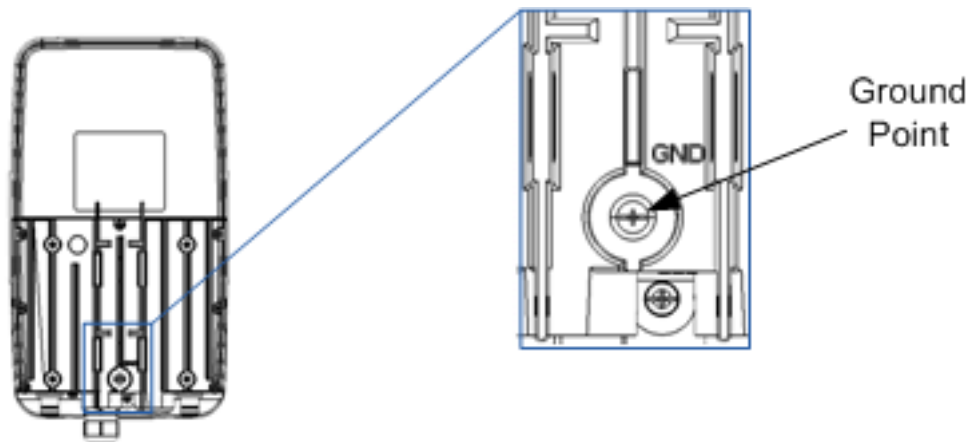
Large poles have an outer diameter greater than 3 inches (7.6 cms). If mounted on a flat surface, the unit should be mounted to a surface that is at least 1/2-inch plywood or its equivalent. Poles should have the equivalent rigidity.

1. Attach the mounting plate to the wall or pole.
  - For walls, use up to four 1/4 inch (M6) anchoring bolts. Use the plate as a drill hole template. The outer edges of the plate should be elevated from the wall surface while the center channel should touch the wall surface.
  - For large poles, use through bolts or use the pairs of slots for stainless steel strapping. The center channel should touch the pole surface.

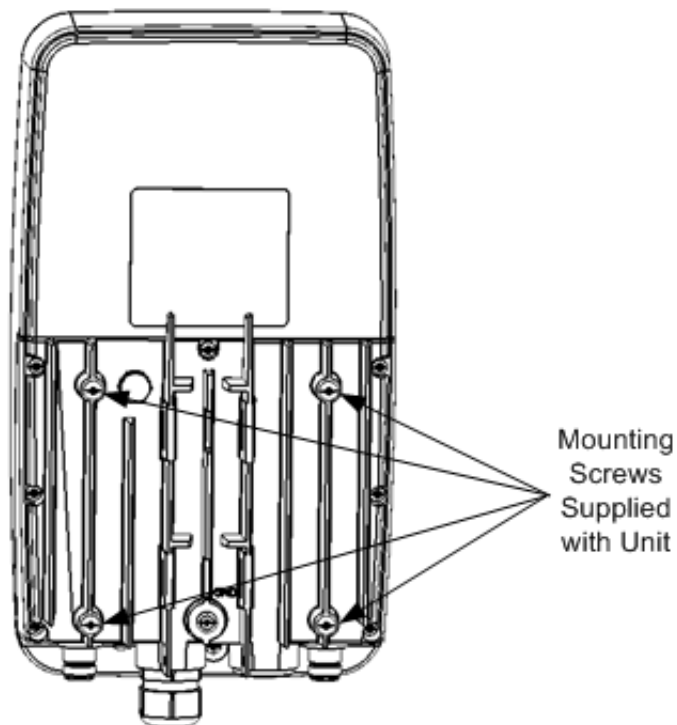


2. Connect ground wire to unit.



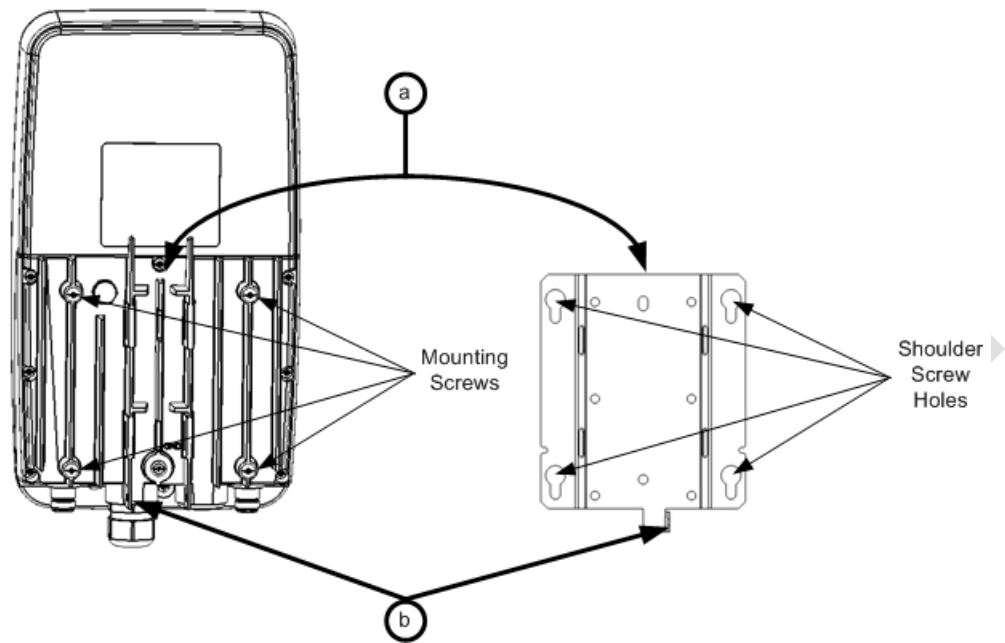


3. Attach four mounting screws to unit back.



**Note:** Ground wire not shown.

4. Attach unit to mounting plate:
  - a. Insert mounting screws on the unit's back into shoulder screw holes on mounting plate. Slide unit down until screws are into the slots. Tighten screws snug.
  - b. Screw in the remaining mounting screw at base of unit into the mounting plate hole.

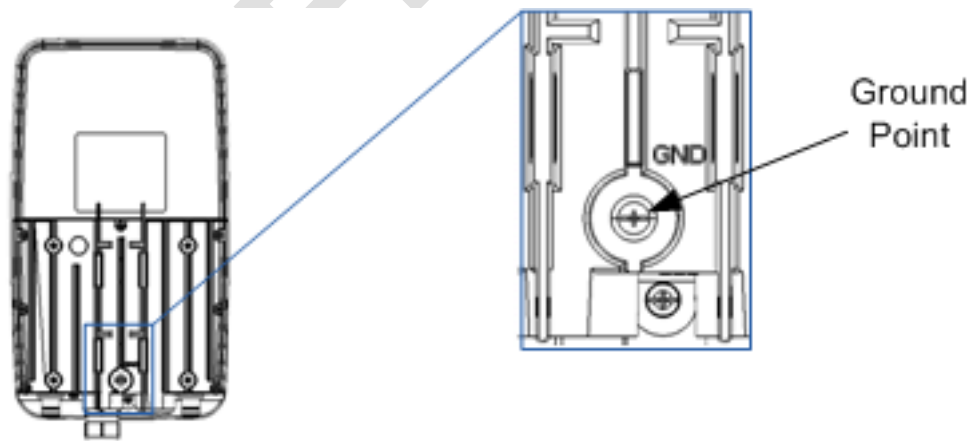


**Note:** Ground wire not shown.

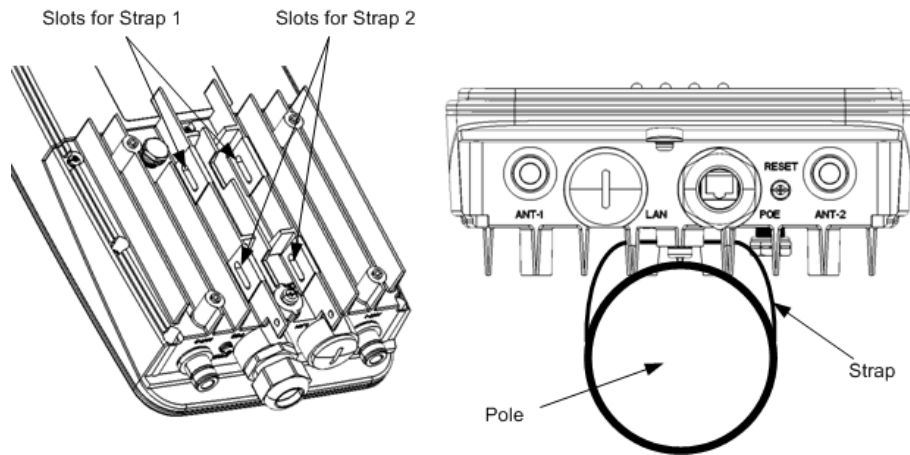
### Small Pole Mounting

Small poles have an outer diameter less than 3 inches (7.6 cms).

1. Connect ground wire to unit.



2. Use two stainless steel straps to secure unit to pole.



**Note:** Ground wire not shown. Strap mounting applies to all units except the AP 5115 to AP 5118.

## 2.3 Step 3—Mount and Attach External Antennas

This step applies only to the following APs:

*Table 2 APs and Required Antennas*

APs	Required Antennas	Ericsson Description and Part Number
BelAir20EO-11C, BelAir20EO-11CR2, AP 5117R, AP 5117U	Two 5 GHz External 11.5 dBi	5 GHz 11.5 dBi Dual Feed Directional Antenna (BNCKH0091 or INE 105 2162)
BelAir20EO-11D, BelAir20EO-11DR2, AP 5118R, AP 5118U	Two 2.4 GHz External 8 dBi	2.4 GHz 8 dBi Dual Feed Directional Antenna (BNCKH0007 or INE 105 2159)
AP 5113	One 2.4 GHz External 12 dBi	Dual Polarization 2.4–2.5 GHz Flat Panel Antenna 12 dBi (KRE 105 217)  Mounting Kit (KRY 901 293)

The external antennas must be approved by Ericsson specifically for the APs. The antennas are ordered and shipped separately.

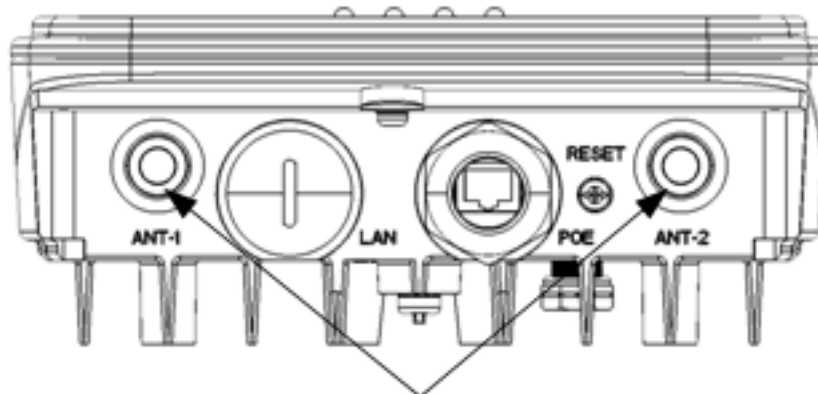
1. Attach the 5 GHz or 2.4 GHz antennas to their mounting surface.

Ericsson provides several different types of 5 GHz and 2.4 GHz antennas, each with its own requirements and procedures for attaching to a mounting surface. For details on attaching the antennas to their mounting surface,



refer to the mounting procedures supplied with the antennas that were ordered.

2. Connect external 5 GHz or 2.4 GHz antennas to connectors. See below. Connect only antennas that are approved specifically for the units. Either antenna can connect to either connector. Use thread-locker and self-amalgamating tape to keep connection tight and waterproof.



Antenna Connectors

- Connect external 5 GHz or 2.4 GHz antennas here.
- Connect only antennas that are approved specifically for the units.
- Either antenna can connect to either connector.
- Use thread-locker and self-amalgamating tape to keep connection tight and waterproof.

**Note:** Ground wire and mounting hardware not shown.

## 2.4

### Step 4—Prepare Power Cable (AP 5115 to AP 5118 only)

Refer to Figure 1.

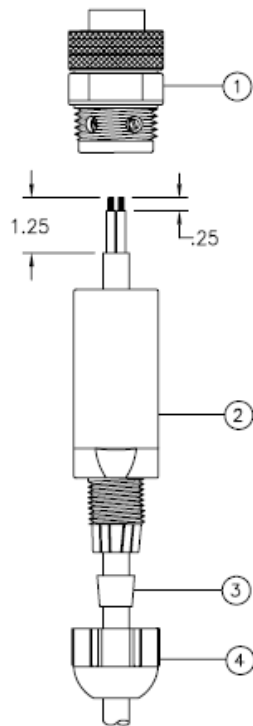


Figure 1 Power Cable Connector Assembly

1. Place compression nut (4), grommet (3) and body (2) over power cable as shown in Figure 1.
2. Strip outer jacket and inner conductors as shown in Figure 1.
3. Secure conductors to appropriate terminals by tightening screws on insert assembly (1). Refer to the following table.

Conductor Type	North American Color	European Color	Terminal ID
Ground	Green/Yellow	Green/Yellow	1
Power	Black	Brown	2
Neutral	White	Blue	3

4. Attach body (2) to insert assembly (1) by rotating black knurled ring on insert assembly in a clockwise direction.
5. Secure compression nut (4) to body (2) by rotating in a clockwise direction.



## 2.5 Step 5—Connect and Power On

### BelAir20EO and all AP 511x Series: Power over Ethernet

The AP gets its operating power from the *PoE* port when connected to a device that provides IEEE 802.3af or 802.3at compliant Power over Ethernet (PoE).

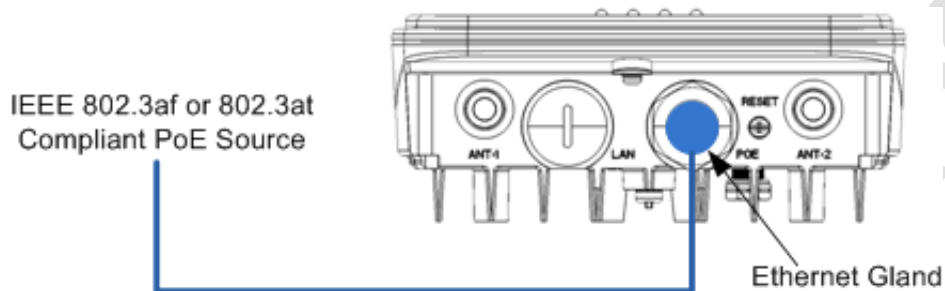


Figure 2 Power Connection for BelAir20EO and All AP 511x Series Power Over Ethernet

**Note:** Ground wire and mounting hardware not shown.



### Warning!

The BelAir20EO and AP 511x series AP must be connected to a power source that complies to IEEE 802.3af or 802.3at.



### Caution!

The PoE connection to the BelAir20EO and AP 511x series AP must use the supplied Ethernet gland to ensure a waterproof connection. Failure to use the Ethernet gland shall void Ericsson's product warranty.

### AP 5115 to AP 5118 Only

The AP can get its operating power directly from an AC power source or from the *Internet* port when connected to a device that provides IEEE 802.3af or 802.3at compliant Power over Ethernet (PoE). If the AP is connected to both a PoE source device and an AC power source, the AP's internal circuits automatically adjust to use the most suitable power source.

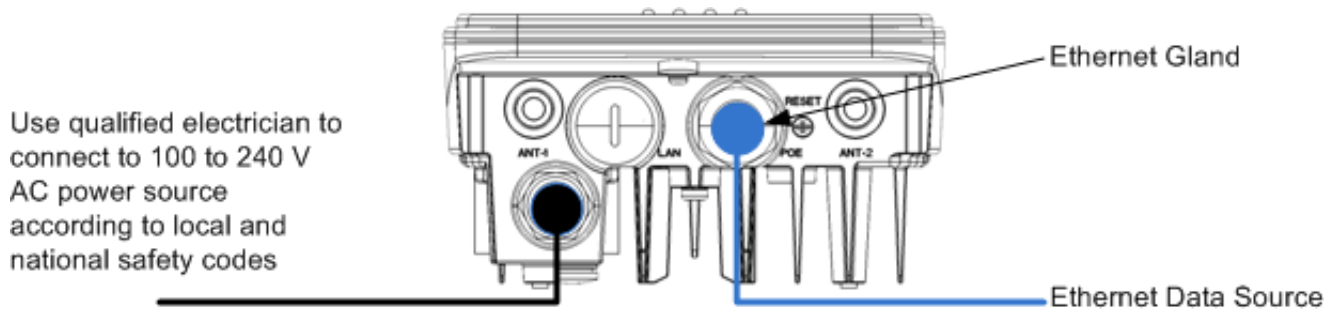
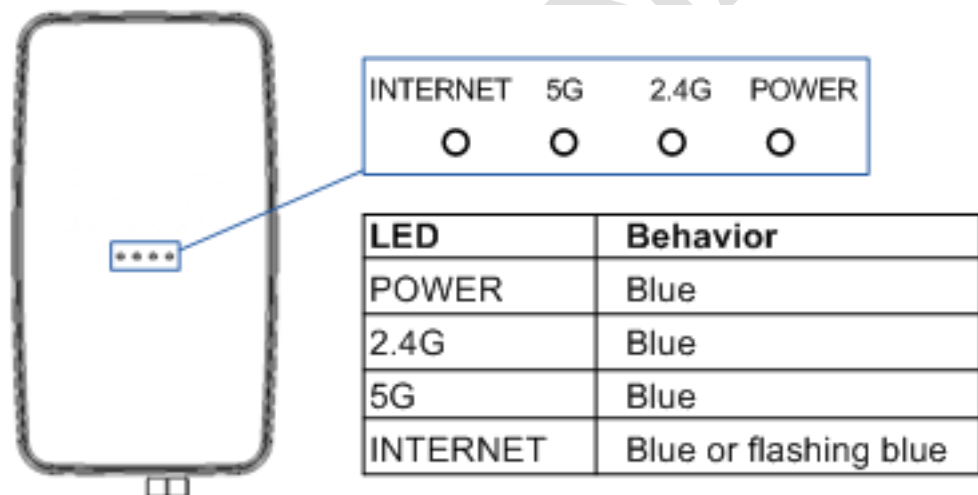


Figure 3 Power Connections for AP 5115 to AP 5118

**Note:** Ground wire and mounting hardware not shown.

## 2.6 Step 6—Check LEDs

After powering on, wait 2 minutes and check the unit's LED.



If the LEDs are not as shown, refer to the *Access Point User Guide, 1/1553-LZA 101 806*.

## 2.7 Step 7—Configure Unit

In most cases, the unit configures itself automatically after powering on. To manually configure the unit through its local Web interface or Command Line Interface (CLI), refer to the *Access Point User Guide, 1/1553-LZA 101 806*.



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