PF-JT80 Charger

Installation Guide

PF-JT80 Charger Installation Guide

Revision 1.2.2

PRODUCT SPECIFICATIONS

All specifications and descriptions contained in this document are verified to be accurate at the time of printing. However, because continuous improvement is a goal at PowerFlex, we reserve the right to make product modifications at any time. To communicate any inaccuracies or omissions in this manual, send an e-mail to: site-support@powerflex.com.

SAFETY CONCERNS

This manual contains important instructions that should be followed for the safe installation, operation, and maintenance of PF-JT80 chargers.

This guide contains important instructions for the PF-JT80 that must be followed during installation and maintenance. Special symbols are used throughout the guide:

	Warning: Indicates a hazardous situation that could result in injury or death.
	Risk of electric shock: Indicates components or a procedure that risks electric shock or injury.
	Caution: Indicates a hazardous situation that could result in minor injury equipment damage.
Note:	**Note:** A best practice alert, tip, or technique that results in successful results.

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Getting technical assistance

To get assistance for PF-JT80 installation or commissioning, please contact PowerFlex support at site-support@Powerflex.com during the hours of 9 am to 5 pm (PST).

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Risk of Electric Shock. Always follow basic electrical safety precautions when installing and using this product, including wearing appropriate personal protection equipment. This product should only be installed by a trained electrical professional.

Follow these safety instructions when *installing* this product:

- Always follow local building and electrical codes when installing the charger.
- The charger should be installed by a qualified technician.
- Use appropriate personal electrical protection throughout the installation and especially when installing or connecting the power distribution cable.
- Type B, C, or D breaker should be installed in the upstream AC distribution box, with the current rating corresponding to the desired charger max output current (see specifications in this guide).
- Disconnect switch for each ungrounded conductor of AC input shall be provided by others in accordance with the National Electric Code, ANSI/NFPA 70.

In addition, be sure to follow these safety instructions when *using* this product:

- Read these instructions completely before using this product.
- This device should be supervised when used around children.
- Do not put your fingers into the electric vehicle connector.
- Do not use this product if the flexible power cord or EV cable is frayed, has broken insulation, or shows any other signs of damage.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other signs of damage.
- To reduce the risk of fire, connect only to a circuit provided with branch circuit over-current protection in accordance with CSA C22.1–15 Canadian Electrical Code, Part 1 (Canada); NOM-001-SEDE Electrical installations (utility) (Mexico); or ANSI / NFPA 70 National Electrical Code (USA).
- To avoid the risk of fire or electric shock, do not use this device with an extension cord.
- The suitability of the use of a flexible cord in accordance with CE Code, Part I, Rule 4-012, is to be determined by the local inspection authority.
- Do not remove the cover of the device or attempt to open the enclosure, as there is a risk of electric shock. There are no user serviceable parts inside. Refer servicing to a qualified service personnel.
- Do not install the charger near flammable, explosive, or combustible material.

FCC Part 15 Compliance

This device complies with FCC Part 15, which stipulates that radio frequency devices comply with specific radio emission limits.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

To satisfy FCC radio frequency exposure requirements, a distance of 20 cm (7.9 inches) or more should be maintained between the antenna of this device and persons during device operation.

Caution: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the equipment's warranty.

Contents

Getting Started

Welcome

This guide instructs how to install the PF-JT80 in preparation for energizing and commissioning with the PowerFlex system.

An overview of the PowerFlex PF-JT80

PF-JT80 is an EV charger designed and manufactured by PowerFlex. It has an LCD display and two preinstalled cables: a *connection cable* and a *charging cable* (with a *charging connector* to charge an electric vehicle).


The PF-JT80 offers the following features:

- Durable design with corrosion protection
- Multiple installation configurations: wall, single pedestal, back-to-back pedestal, or side-to-side pedestal
- Up to 80A at 240VAC, maximum output power: 19kW
- Waterproof LAN interface
- OCPP 1.6 JSON (OCPP 2.0 compatible) internal network connectivity
- Optional LAN+4G or Wi-Fi external connectivity
- Standard LED indicator with optional 4.3 LCD screen
- 25-foot charging cable
- Emergency stop

How to use this guide

To complete the installation of a PF-JT80 EV charger to a wall or pedestal, there are four steps:
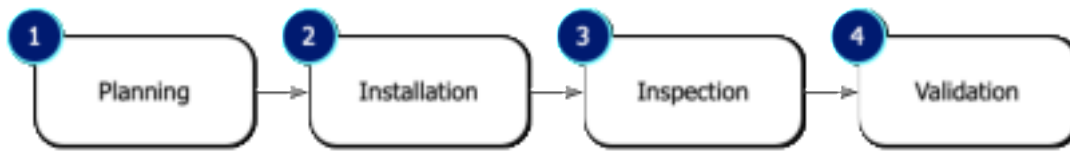
1. **Planning:** Inspect the PF-JT80 box contents and gather the tools necessary to install the EV charger.
2. **Installation:** Mount the PF-JT80 enclosure and connect wiring as required at your site.
3. **Inspection:** Record site information and start the commissioning process.
4. **Validation:** Energize the PF-JT80 and confirm that everything is up and running.

Although these steps appear to be a sequence of steps, some activities may be performed in parallel (or in a slightly different order). To further assist in PF-JT80 installation, refer to the following information in this guide:

- [Checklist of things to do during the installation](#)
- Technical [specifications](#)

> Other guides that will help with site installation:
> - *Nexus Core Installation Guide* — includes download and instructions for how to use the FastField Forms (FFF) app and how to energize and commission the PowerFlex system.

Setting up the PF-JT80

Step 1: Planning

What's in the box

PF-JT80 chargers are shipped with the following components. Carefully remove from the shipping box.

PF-JT80 Charger (with the connection and charging cables)

Mounting bracket and 2x M5 teeth screws (to be mounted on back of charger)

*4x M6 hexagonal expansion anchor screws*

What you'll need

You can install the PF-JT80 charger to a wall or pedestal. Check your site plan and before installing the wall-mounted charger, gather the following tools and equipment:

- Phillips screwdriver
- Drill and drill-bit (¼") for expansion anchor screws for wall installation
- Drill and 1 1/8" (29 mm) drill-bit for pedestal installation
- Drill and 3/8" drill bit for cable retractor
- Voltmeter or digital multimeter for measuring AC voltage at the installation site
- AWG #6 wire nuts for connecting wiring in the junction box

- Level (any 9-inch torpedo level will do) to make sure that brackets are installed correctly
- Pencil (or magic marker) to mark where drilling should occur
- Wrench (or wrench socket) that can work with 3/8" bolt (for cable retractor)

Step 2: Installation
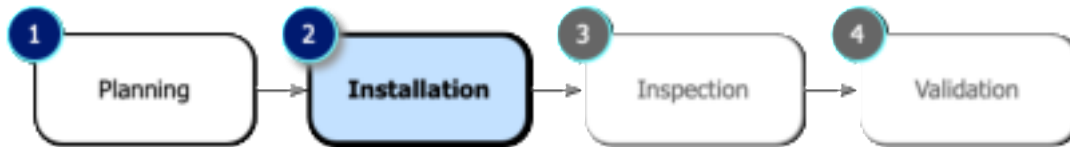
To install the PF-JT80, you'll do the following:

- [Mount the EV charger to a concrete wall](#)
- [Mount the EV charger to a pedestal](#)
- [Install cable management](#)

Before continuing with any installation, practice this safety measure:

⚠ Make sure that electrical breakers are switched off so that no electricity is flowing during installation.

Mounting the PF-JT80 on a wall

This picture shows how the EV charger would look like once installed on the wall (with a junction box):

1. Identify where the charger is to be installed on the wall.

   Installation notes:

   - For ADA compliance, the bottom of the charger station should be no higher than 45" (1.14 m) from the ground.


   - Make sure that the location of the charger is compatible with the location (or expected location) of a mounted junction box where the wires from the electrical panel will terminate.

2. Remove the mounting bracket from the back of the charger by removing the two screws on the side of the charger.
3. Place the mounting bracket on the wall at a location no higher than 45" from the ground.
4. Use a level to ensure the plate is level (L) and mark the positions for the four screws on the wall (R):

5. Place the mounting bracket to the side and pre-drill four ¼" holes into the wall:

6. Using the provided anchors and screws, attach the mounting bracket onto the wall:
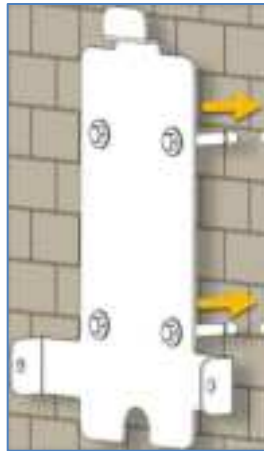
7. Remove the two screws on the side of the charger. Carefully slide the charger onto the mounting bracket (L) and lock it into place with the screws (R). Verify that the charger is securely fastened on the wall.

8. Connect the chargers' wires to the circuit branch wires in a junction box, using AWG #6 wire nuts:

Use cable gland waterproof connectors, if necessary.

You can use a single junction box with two PF-JT80 chargers.

⚠ For safety reasons, make sure that the front opening of the junction box is covered.

The PF-JT80 is now mounted on the wall. To complete the installation, you'll need to spend a few more minutes doing cable management.

Mounting the PF-JT80 on a pedestal

Note: The initial mounting instructions for the PF-JT80 charger on a pedestal is similar to mounting the charger onto a wall.

1. Identify where the charger is to be installed on a pedestal.

    Installation notes:

    - For ADA compliance, the bottom of the charger station should be no higher than 45" (1.14 m) from the ground.

    - Make sure that the location of the charger is compatible with the location (or expected location) of a mounted junction box where the wires from the electrical panel will terminate.

2. Remove the mounting bracket from the back of the charger by removing the two screws on the side of the charger.
3. Place the mounting bracket on the pedestal at a location no higher than 45" from the ground.
4. Use a level to ensure the plate is level and mark the positions for the four screws on the pedestal.

5. Place the mounting bracket to the side and pre-drill four ¼" holes into the pedestal.
6. Attach the mounting bracket onto the pedestal using M6 screws (not provided).

7. If no wire management hole exists in the pedestal, use a 1 1/8" (29 mm) drill-bit to drill a hole between 6-12 inches under the location of the charger, directly under the left cable. Use a 1" cable gland to waterproof the cable opening:

8. Pass the charger wiring cable through the hole and connect to the circuit branch opening in the pedestal. Connect the cables with wire nuts inside the pedestal to the junction box:

For safety reasons, make sure that the wiring opening is covered. To complete the installation, you'll spend a few more minutes to perform cable management (in the next section).

Finishing up with cable management

Cable management is important to complete for every EV charger installation. This includes the installation of the following:

- A charging connector holster
- A cable retractor or a high-point anchor

Install a charging connector holster

At the end of a charging cable is a charging connector that is inserted into a vehicle for charging. For safety reasons, the charging connector should be hung up when not in use. Two holsters are offered:

Direct holster

Z holster

Both holsters come with two sets of screws to be used depending on where it will be installed. For pedestal installation, install the holster underneath the station using the four screws. For wall installation, install the holster on a nearby wall using the four anchor screws.

Install a cable retractor or a high-point anchor

Another key cable management feature improves safety by keeping the charging cable off the ground, avoiding the risk of tripping, and reduces cable wear.

PowerFlex offers a *cable retractor* provides spring-loaded tethered support and suspends a charging cable above the mounted charger when not in use. A cable retractor releases the charging cable when a vehicle is being charged.

A cable retractor can be installed for either wall or pedestal installations with two simple steps:

1. Mount the retractor to the wall or pedestal
2. Mount the charging cable to the cable retractor

The cable retractor provided by PowerFlex has the following components:

	Description
A	Mounting holes on the cable retractor
B	Cable retractor rope (on the cable retractor)
C	Cable clamp (on the cable retractor)
D	4x 3/8" wall anchor bolt for mounting on the wall (with washer and nut)
E	4x 3/8" short bolts for mounting on a pedestal (with washer and nut)

To mount the retractor to the wall or pedestal:

1. Identify the best location for the cable retractor. We recommend 2-3 FT above the mounted charger.
2. Place the retractor on the surface, use a level to make sure it is straight, and mark the four screw locations on the wall or pedestal.
3. Place the retractor to the side. Using a 3/8" drill bit, drill holes at the four marked screw locations.
4. Remove the nut and washer from the wall-mounting nuts and bolts.
5. Insert each bolt with a wall anchor in the drilled holes.
6. Place the retractor and the washers on the bolts and secure by tightening the nuts with a wrench socket.

Note: If mounting on a pedestal, use the four short bolts to secure the cable retractor.

To mount the cable to the retractor:

1. Pull the *cable retractor rope* so that the cable clamp touches the floor and Is firmly in position. The cable clamp is shown below:

2. Unscrew the two screws on the retractor's *cable clamp*:

3. Insert the charging cable in the cable clamp (both front and back view shown):

4. Put the cable clamp pieces back together and then reinsert the nuts and bolts (back view shown):

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Installation notes:

- Place the cable clamp along the charging cable, at least 2 feet to the top of the charger. Also, Give the cable slack to the bottom of the charger as shown in the picture:

Ensure the cable is not twisted between the charger and the cable clamp.

The *high-point anchor* is an alternative to the cable retractor that is not provided by PowerFlex. This simple assembly can be mounted on a wall or onto a pedestal.

1. Using a ¾" metal cable clamp with rubberized cushions, route the charging cable 2-3 FT above the charger. Make sure there are no twists in the cable.

2. Install a cable clamp to hold the cable.

3. Use a ¼" diameter screw with a wall anchor as appropriate for the wall material to secure the cable clamp to the wall.

Before proceeding to the next step …

1. Confirm that the PF-JT80 charger is securely mounted to a wall or pedestal.
2. Perform a quick verification that all cables to the charger enclosure are fully connected.

Step 3: Inspection

Inspection is performed once the entire PowerFlex system is ready to be energized, commissioned, and validated. Inspection is where installation information is recorded and a request for commissioning with PowerFlex is initiated.
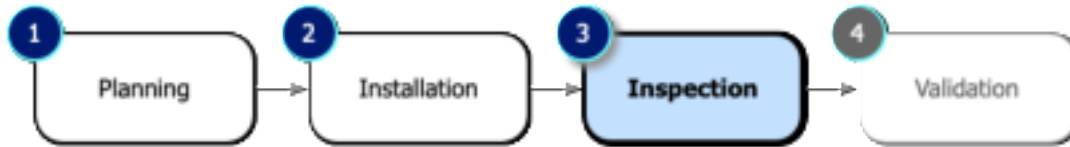
PowerFlex uses a customized mobile app, available from either the Google Play store or the Apple Store, called FastField Forms (FFF). This app enables installers to gather important installation information and photographs for each PF-JT80 charger being installed:
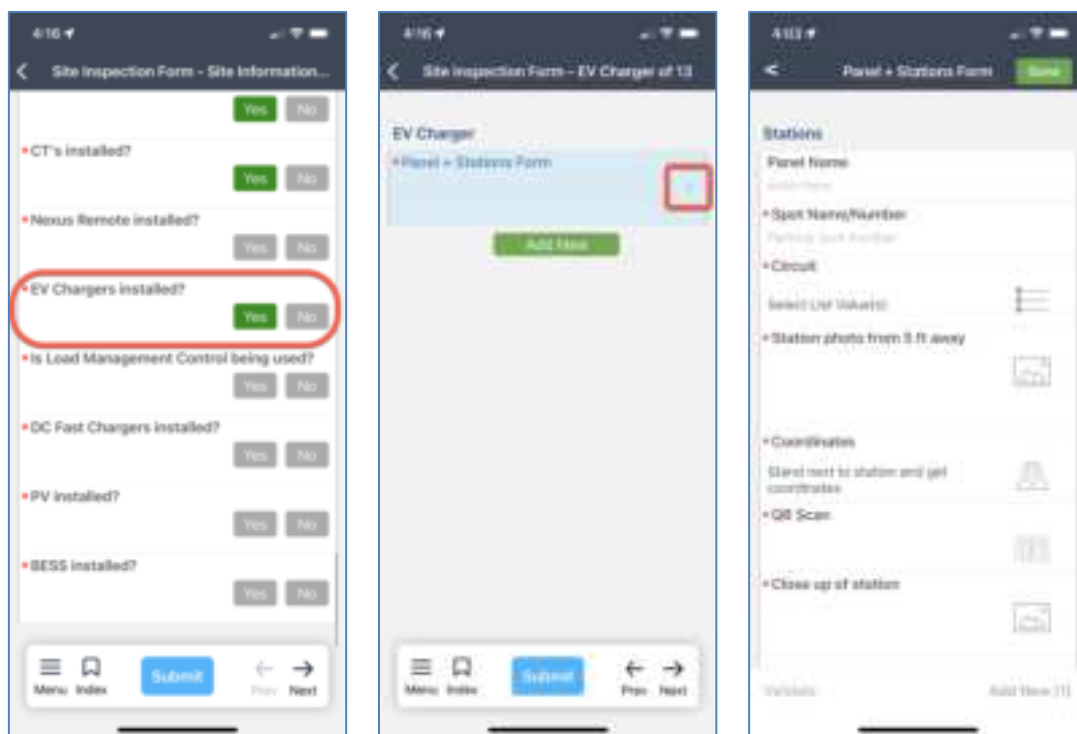

More about using the FFF app ...

- *Nexus Core Installation Guide* — includes download and instructions for how to use the FastField Forms (FFF) app and how to energize and commission the PowerFlex system.

Step 4: Validation

Once the PF-JT80 charger information is entered and the rest of the PowerFlex stations are recorded in the app, the installer submits the forms to PowerFlex for review and commissioning. After the go-ahead from PowerFlex, the final validation step is performed.
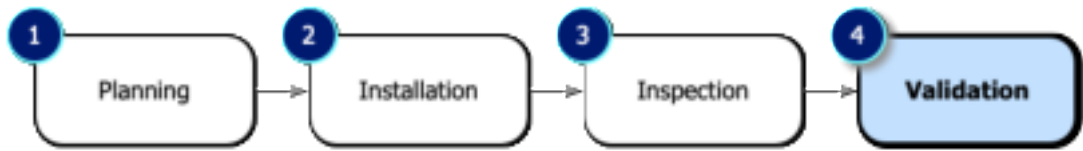
To perform an end-to-end validation, you'll energize with power and confirm each PF-JT80 works as expected. There are three LED light indicators on the front of the charger that indicate its status:

| Display	LED light	Description
READY		If solid blue, the charger is in standby mode.
CHARGE		If solid green, the vehicle connector is inserted in the vehicle's charging inlet and is waiting to charge.
CHARGE		If flashing green, a vehicle is currently being charged.
FAULT		If solid red, there is a problem (more information is in the user guide).

To learn more about …

▪ Inspection and validation for PowerFlex systems, read the *Nexus Core Installation Guide*.

Installation checklist

Done	Task
Step 1: Planning	
☐	Identify the location where the PF-JT80 EV charger will be installed at the site
☐	Unbox the PF-JT80 and verify everything is included
☐	Gather all the required tools before going onsite for the installation
Step 2: Installation	
☐	Install the PF-JT80 securely to a wall or pedestal
☐	Attach power, communications, and ground bond cables to the enclosure
☐	Ensure all external connections are properly sealed and junction box (and any wires) are not exposed
☐	Install the charging connector holster (one of two types available from PowerFlex for cable management)
☐	Install a cable retractor or a high-point anchor (cable management)
Step 3 and 4: Inspection and Validation (usually performed later)	
☐	Gather information from the site using the app
☐	Submit site information to PowerFlex with FFF
☐	Get OK to energize and finalize the installation from PowerFlex support
☐	Energize power to the PF-JT80
☐	Collaborate with PowerFlex that end-to-end diagnostics run successfully

Appendix A: Technical Specifications

The PF-JT80 charger and mounting bracket have the following dimensions:
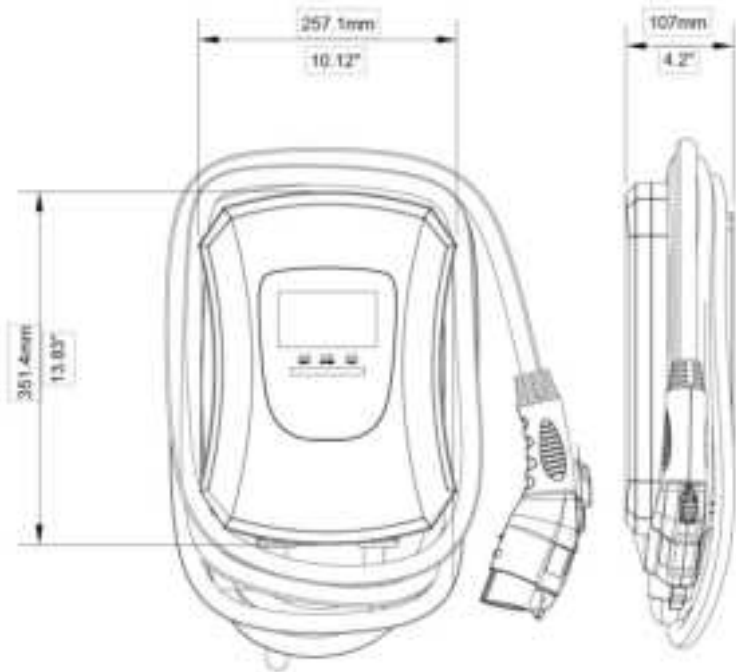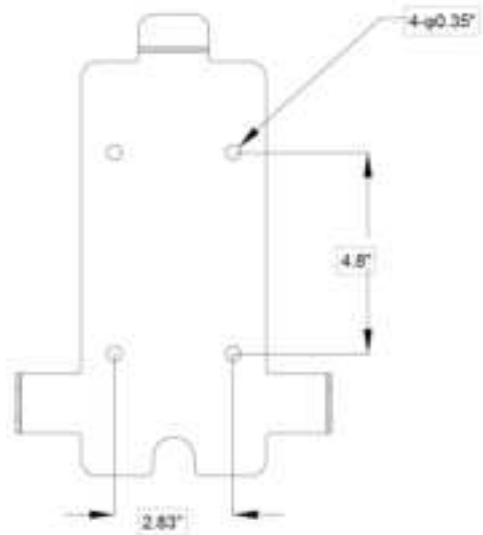
PF-JT80 Charger   *Mounting bracket*

Electrical	
Input voltage	208-240VAC +/- 5 percent
Frequency	50-60Hz
Rated output current	80A (100A, 2-pole breaker) 48A (60A, 2-pole breaker)
Power output	11.5-19.2kW

Environmental	
Storage temperature	-40°F to 158°F / -40°C to 70°C
Operation temperature	-22°F to 122°F / -40°C to 50°C
Relative humidity	Up to 95% RH non-condensing
Enclosure	IK08, IP65, NEMA 3R
Installation	Indoor and outdoor, no ventilation required

Dimension and weight	
Product dimensions	13.8" H x 10.1" W x 4.2" D (351 x 257 x 107 mm)
Cable length	25ft (7.62 m)
Net weight	23 lbs (10.4 kg)

Standard and safety	
Charging interface	SAE J1772 type 1
Safety compliance	UL 2594, UL 2231-1/-2, CSA C22.2 no 280, FCC part 15
Protection features	UVP, OVP, RCD (CCID 20), SPD, Ground Fault Protection OCP, OTP, Control Pilot Fault Protection

Connectivity	
User authentication	RFID (ISO 14443)
Communication protocol	OCPP 1.6 J
Networking	LAN, Wi-Fi (802.11 b/g/n)

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