

Maintenance Manual

JuicePump



TRI125-175-S (USA)

175 kW DC

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Important safety instructions

SAVE THESE INSTRUCTIONS

This manual contains information about maintenance for the JuicePump DC charger model:

TRI125-175-01, 175 kW DC

The purpose of this document is to guide the manufacturer-certified service agent through a series of preventative maintenance checks for the JuicePump DC charger system.

The scope of this document covers the maintenance interval schedule to be carried across all the subsystems of the JuicePump DC charger system. The subsystems include:

- User unit: The user unit provides an interface for the user (the electric vehicle driver/owner) and uses the CHAdeMO or Combo 2 (CCS2) connector to connect one electric vehicle to the power supply.
- Isolated power unit: The IPU outputs regulated 750 – 950 VDC to the user unit. It also provides galvanic isolation of the charging system from the AC grid interface through the isolation transformer, as well as charge control and communication to back-office services.



Service and maintenance must be performed by a manufacturer-certified service agent only. In the absence of a certified service agent, the actions recommended in this manual should not be completed.

All maintenance work should be conducted ONLY when the site is completely de-energized.

For assistance with maintenance of the charger, contact your supplier, or ENEL X Customer Support.

Identifying symbols



CAUTION



RISK OF ELECTRIC SHOCK



CRITICAL



CAUTION

In the event of a circuit breaker trip, the charger must be inspected by a manufacturer-certified service agent before the charger is re-energized.

Operating temperature:

-30° to 50°C / -22° to 122°F

Weather rating:

User unit

IP65 Electronics Enclosure

NEMA Type A4

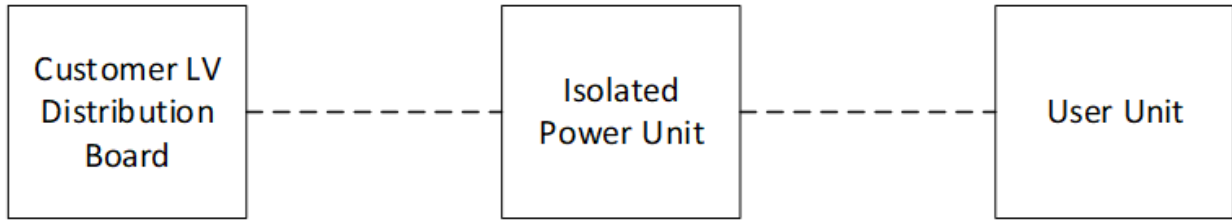
IPU

IP55

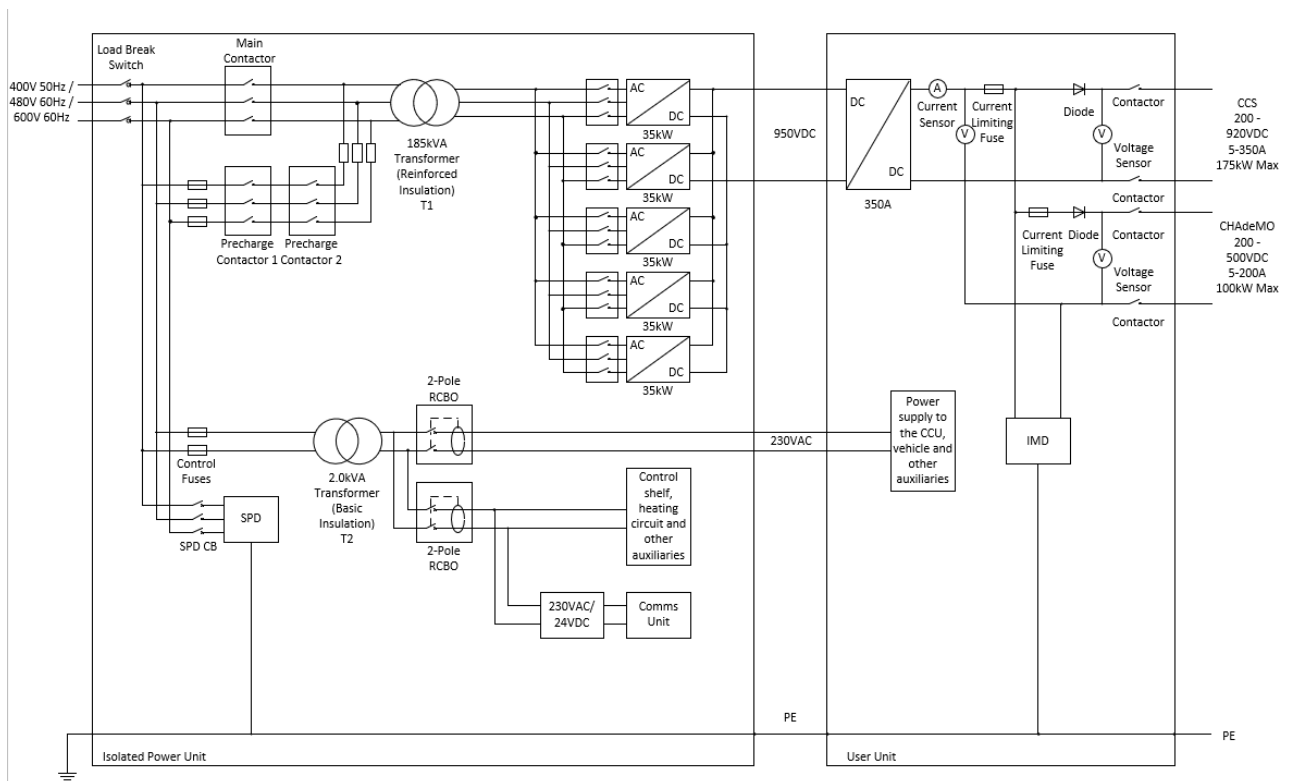
NEMA Type 3R

Block diagram

Simplified



Detailed (excluding LV board)



Maintenance intervals

Key

C = Check, R = Replace

User unit

Part	Test	Action	1 yr	2 yr
Liquid cooling system	Inspect coolant level	If too low, top up	C	
Charge plug/cable	Inspect cable and plug	Inspect cable and plug	C	
Coolant pump (front)	Check for operation	Periodic replacement	C	R
Radiator fans (x2)	Inspect and clean	Clean/replace as required (1)	C	R

Isolated power unit

Part	Test	Action	1 yr	2 yr	10 yr
Front door filters	Check filter	Clean/replace as required (1)	C	R	
Primary transformer	Inspect electrical connections for signs of heat or corrosion	Ensure connections are tight and firm	C		
Rear door fans + filter (x2)	<ul style="list-style-type: none"> Check filter Check for airflow 	Clean/replace as required (1)	C	R	
UPS battery	Check battery controller for alerts/alarms	Check and replace batteries as required	C		R

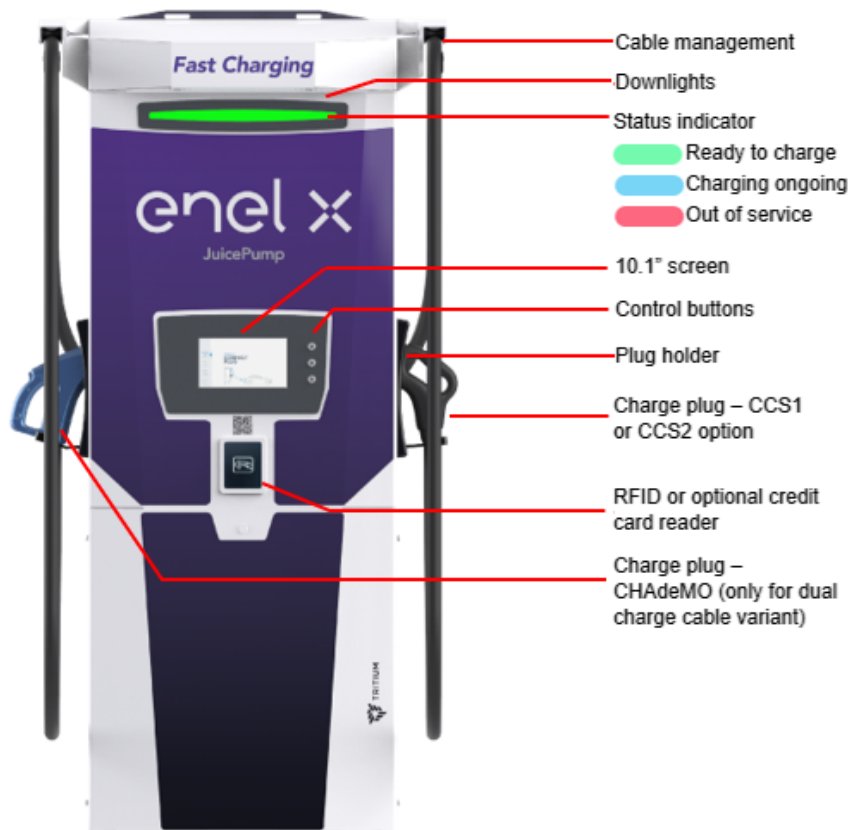
- Filter cleaning/replacement is environment dependent. Perform more frequently in higher pollution environments.
- Used batteries must not be thrown away with regular waste, they should be disposed of in accordance with applicable national regulations. They can also be returned to the manufacturer.

All units

Part	Test	Action	1 yr
Tilt sensor/door switches	Verify correct operation	If it does not operate correctly, troubleshoot	C
Electrical safety checks		See section <i>Electrical Safety Checks</i>	C

User unit maintenance

The following image shows the features and components of the JuicePump user unit.



The following maintenance can be performed by the owner/user. All other servicing must be conducted by qualified service personnel.

If there is any damage to the charger, contact your supplier.

It is recommended to perform general maintenance at least every 6 months, depending on the environment. In harsher environments, you should perform general maintenance more often.

General exterior maintenance

Regular cleaning is recommended to avoid accumulation of debris/dust/dirt on or around the unit. Wipe surfaces with a soft cloth dampened with water, or use an alcohol-based cleaner for marks harder to remove.

Do not spray with high-pressure cleaning hoses or use abrasive chemicals.

Snowfall areas

Regularly remove snow build up if present in front of the radiator panels.

This should be checked daily in areas with high snowfall.

User unit maintenance checks

General external checks

1. Surfaces

Check for cuts, damage, and debris.
If debris is present, remove it.
If you find damage, contact your supplier.

2. Metalwork

Check for damage and corrosion.
If present, contact your supplier.

3. Interface panel

- Check the Human Machine Interface (HMI) for damage/signs of faded color/pixels that are clearly visible.
- Press each button and check if they work.

4. Plug holders

Ensure that there is no debris or damage inside or around the plug holders and plug holder hinges.
If present, remove debris/notify the supplier.

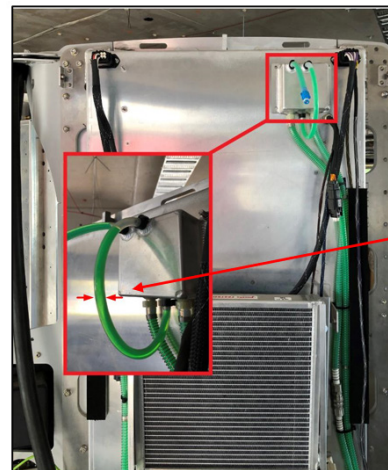
5. Cable Management system

Pull on the cables to check the retraction system of the cables.
If blocked, contact your supplier.

Coolant level and radiator fans check

1. Coolant level inspection

- Check if the coolant is at the correct level.
Note: The coolant should be above the level indicated by the arrows in the following image.
- If the coolant level is below the half-way arrow mark of the hose, inform the supplier.



Coolant should be above the level indicated by the arrows.

2. Radiator fans

- Periodically check for debris/damage.
- Clean fans to ensure free airflow.



Clean with water and soft-bristled brushes and/or low-pressure hoses to avoid bending or damaging the fans. Allow to air dry before operating.

User unit maintenance checks

Charge cable checks

1. Inspect both cables and plugs.
2. Check for cuts, holes, cracks, sharp edges, and exposed copper.
3. If you observe any cuts, holes, cracks etc., contact your supplier.



4. Check the contact pins for signs of corrosion.
5. If corrosion is present, contact your supplier.



Isolated power unit maintenance

The following image shows the features and components of the JuicePump RT 175-S.



1. IPU Main Disconnect Switch
2. UPS Batteries
3. Escutcheon Panel
4. IPU Rear Fans & Filters
5. Door Switch (top)
6. Door Switch (bottom)
7. Isolation Transformer
8. Control Shelf
9. Rectifier Racks
10. Data Module
11. IPU Front Filters

The following maintenance can be performed by the owner/user. All other servicing must be conducted by a qualified service personnel.

If there is any damage to the unit, contact your supplier.

It is recommended to perform general maintenance at least once a year, depending on the environment. In harsher environments, you should perform general maintenance more often.

General exterior maintenance

Regular cleaning is recommended to avoid accumulation of debris/dust/dirt on or around the unit. Wipe surfaces with a soft cloth dampened with water, or use an alcohol-based cleaner for marks harder to remove.

Do not spray with high-pressure cleaning hoses or use abrasive chemicals.

Snowfall areas

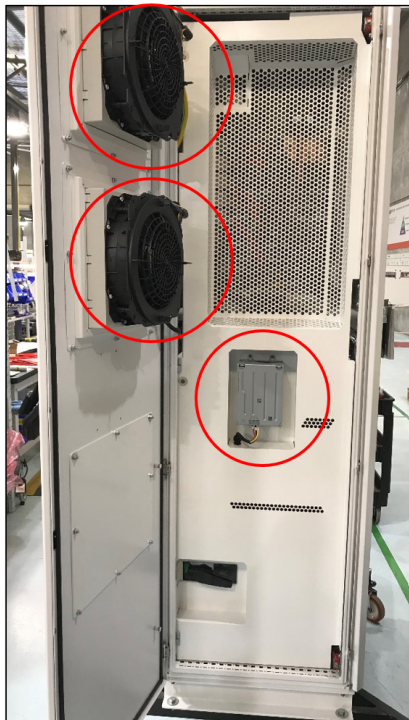
Regularly remove snow build up if present around the inlet fans.

This should be checked daily in areas with high snowfall.

Isolated power unit maintenance checks

Door fans and filters

1. Inspect the four filters located on the Isolated power unit (IPU) front door for accumulated dust.
2. Clean or replace as required.



UPS battery

1. Check the Uninterruptable Power Supply (UPS) controller for errors or warning lights.
2. The Lithium-ion UPS batteries should last 7-10 years; however it may be necessary to replace the batteries periodically as part of continuous maintenance.

Doors

1. Check hinges for ease of movement and spray with a suitable water-free lubricant.
2. Check the lock for ease of movement and spray with a suitable water-free lubricant.

Seals

1. Check the seals for damage around the contact areas.
2. If there is any damage, replace the seal.

Metalwork/enclosure

1. Check for signs of corrosion or damage such as scratches.
2. For minor corrosion or damage, use a polish or a light sand and paint to repair.
3. For major damage, contact your supplier.

Electrical safety checks

It is recommended to complete the following checklist annually.

1. Check the protective earth connections around enclosure for:
 - Breakage or loss
 - Signs of corrosion
2. Measure the resistance of the main protective earth connection.
3. Inspect connections to buried earth electrode for signs of:
 - Corrosion
 - Breakage
 - Loss
4. Inspect all buried site cables interconnecting the equipment for signs of insulation degradation.
5. Check any insulating supporters and insulators for condition and fitment.
6. Check all connections and visible components for signs of overheating (especially IPU contactors and main power connections).
7. Check cable support/strain relief structures.
8. Re-torque any screw terminals (especially contact).
9. Inspect the retention of rectifier module screw terminals (these cannot be re-torqued).
10. Check the resistance of 50 ohm discharge resistor and 25 ohm discharge resistor (can be done with a digital multimeter with the power off).
11. Re-torque and check Insulation Monitoring Device (IMD) connections and terminals.
12. Check AC contactors in the IPU are in the released/open position when de-energized (this can be visually checked with the power off).
13. Visual inspection of Surge Protection Device (SPD) devices and associated fuses in the IPU.
14. Evaluate the amount of deposited pollution visible in the enclosure. Consider cleaning as necessary.
15. Manually engage all 10 power unit contacts and listen for chatter or intermittent operation.
16. Check isolation transformer primary/secondary connections for corrosion or heating.