

# User Unit Installation Manual

## JuicePump



TRI125-175-S (USA)

175 kW DC



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# Important safety instructions

## SAVE THESE INSTRUCTIONS

This manual contains important instructions for the JuicePump electric vehicle fast charger.

Read the installation and operating instructions before installing and commissioning the equipment.

These instructions must be followed during installation, operation, and maintenance of the unit.



### CAUTION

The JuicePump fast charger user unit must be installed and serviced only by qualified electrical personnel.

To achieve EMC compliance, the chassis of the JuicePump user unit must be bonded to Earth locally at the charger.

### Grounding instructions

This unit must be connected to a grounded, metal, permanent wiring system. An equipment-grounding conductor must be run with circuit conductors and connected to equipment-grounding terminal or lead on the electric vehicle charger.

Connections to the battery charger shall comply with all local codes and ordinances.

Observe all pertinent national, regional, and local safety laws and regulations when installing and commissioning the JuicePump fast charger.

### Identifying symbols



CRITICAL



CAUTION



RISK OF ELECTRIC SHOCK



Equipment Grounding Conductor Symbol



Phase Symbol



Alternating Current Supply Symbol

### Wiring

Power and Protective Earth (PE) Conductor ratings: DC Copper 95 mm<sup>2</sup> (cross section), V90 class, rated to operate at 90°C.

The manufacturer recommends the use of copper cables. Refer to the *TRI125.INS.016 JuicePump RT 175-S Piping and Cabling* document for reference specifications.

Take care to observe local regulations regarding wiring different circuits in the same conduit, including the ethernet link if used. In general, all conductors occupying the same conduit shall have an insulation rating equal to at least the maximum circuit voltage applied to any conductor within the conduit.

# Important safety instructions

## SAVE THESE INSTRUCTIONS

### Warning

Installation shall not be made in a commercial garage (repair facility) or closer than 6,096 mm / 20 feet of an outdoor motor fuel dispensing device.

### Input

950 VDC  
190A

1Ø, 240 VAC  
50/60 Hz ~  
3A

The Veefil-PK user unit must be connected to a circuit provided with appropriate over-current protection in accordance with the National Electrical Code, ANSI/NFPA 70.

### Tightening torque

**Wiring terminals**  
30 Nm / 22 lb-ft

**Service hatch**  
2 Nm / 17.7 lb-in

### Weather rating

IP65 Electronics Enclosure  
NEMA Type 3R

### Usage limitations

Cord extension sets or second cable assemblies shall not be used in addition to the cable assembly for the connection of the vehicle to the charger.

Adaptors shall not be used to connect a vehicle connector to a vehicle inlet.

# Important safety instructions

## **SAVE THESE INSTRUCTIONS**

### FCC Notice

**Information to the User  
(FCC Part 15.105)  
Class A product:**

**NOTE:**

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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

**Modification warning  
(FCC Part 15.21)**

Warning: Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

# Packaging, handling, & receipt

Read these instructions carefully to become familiar with the JuicePump user unit packaging and handling procedures prior to unpacking and installation.

In all cases, the JuicePump user unit must be transported to the installation site in its original packaging and only unpacked at the installation site.

Installation, commissioning, and servicing of the JuicePump user unit should only be carried out by qualified personnel.

## Materials

The JuicePump user unit is transported in a reinforced cardboard crate.

Please respect the environment and recycle/reuse the materials.

## Storage

Store in the original packaging in a horizontal position.

Store in a dry location, protected from the weather, i.e., in warehouse conditions.

Storage temperature:  
-20 to 45°C / -4 to 113°F

## Handling

Only lift the JuicePump user unit packaging in its horizontal orientation using a forklift or pallet jack or with lifting straps and engine hoist, forklift, or crane. Check the weight on the delivery documents and ensure the lifting apparatus used is compatible.

## Receipt

Check that the crate packaging is in good condition and that the JuicePump user unit is not damaged.

If there are any problems noted, make a formal complaint to the carrier and notify your supplier.

## Packed crate weight

300 kg / 660 lbs (approx)

## Crate size

1150(W) x 2150(L) x 850(H) mm  
45.3(W) x 84.6(L) x 33.5(H) inches

# Site configuration

## Site survey

A qualified engineer must survey the installation site to determine the correct ground preparation for the size and weight of the JuicePump user unit in accordance with local regulations.

The JuicePump user unit is best installed following the recommended site configuration requirements.

## Ground fixing

The JuicePump user unit is to be fixed to the ground through the baseplate fixing holes with 4 x M16 fasteners or 5/8 inch fasteners.

Fasteners are not supplied, as the type required depends on the foundation used and must be chosen by the installer accordingly.

The fasteners should fix the JuicePump user unit securely to the foundation through the baseplate in accordance with the dimensions and fixing points shown in the "Baseplate dimensions" section.

**Note:** Keep the plastic inserts from the bolts for use in the baseplate holes.

## Conduit requirement

Ø 110 mm OD conduit.

When preparing the foundation, ensure that conduit and wiring terminates above ground according to the document *TRI125.INS.016 JuicePump RT 175-S Piping and Cabling*.

## Foundation requirements

The foundation must be flat, even, and have the appropriate density for the weight of the JuicePump user unit.

Check the flatness and level of the foundation and level of the JuicePump user unit baseplate prior to fixing.

## Communications

A site can utilize Ethernet or optical fiber between the IPU and UU. If the UU and IPU are configured for use of optical fiber, then use optical fiber. If not, use Ethernet (default).

4G network capability.

Category 6a STP Ethernet cable required with a minimum length from the foundation surface.

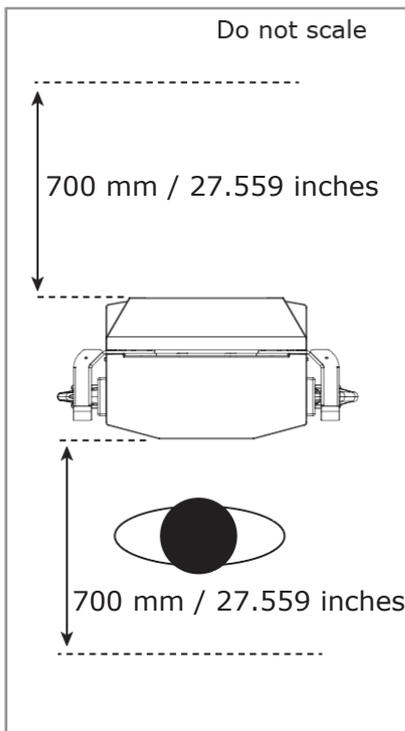
Fiber Optic Cable: OM3 Multi Mode 2 Core

For detailed wiring instructions, see *TRI125.INS.016 JuicePump RT 175-S Piping and Cabling*.

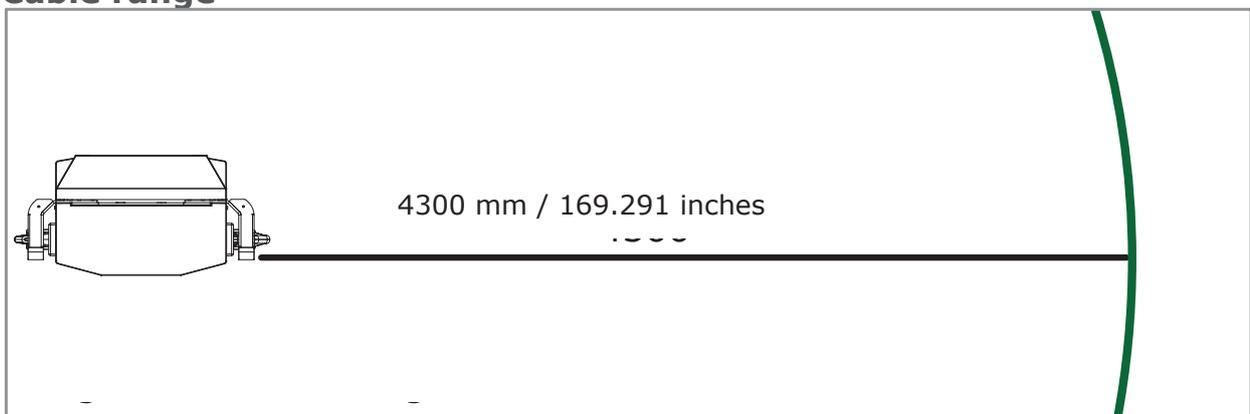
# Site configuration

## Servicing distance

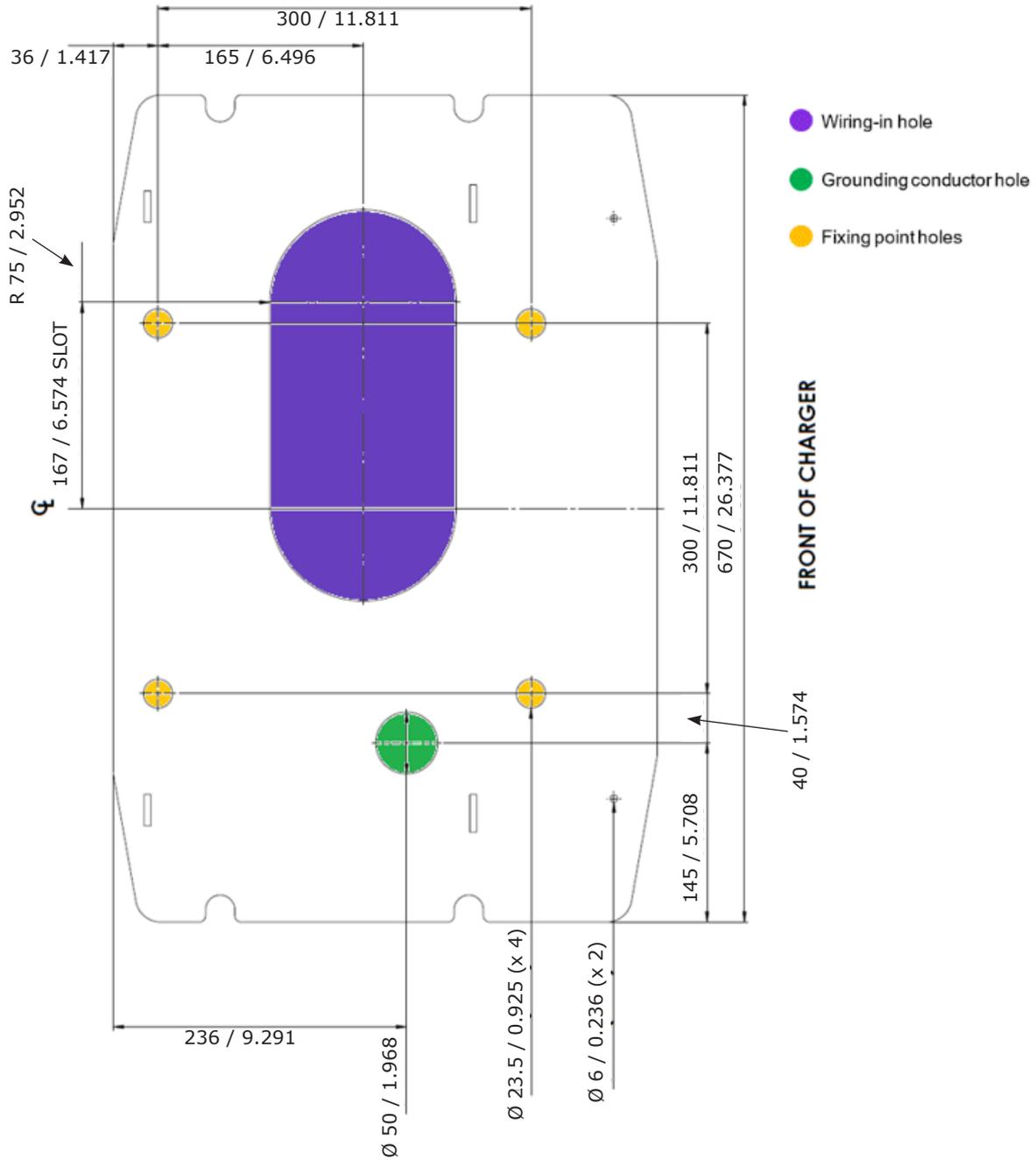
An additional space of 700 mm / 27.559 inches from the front and rear of the JuicePump user unit is required to open the front panel for servicing, as shown in the image below.



## Cable range



# Baseplate dimensions



**Note:** Do not scale. All dimensions shown in millimeters (mm)/inches (in). A mounting stencil may be supplied by the manufacturer at customer request.

# Installation requirements & equipment



These instructions provide a systematic guide for installing and commissioning the JuicePump user unit.

The JuicePump user unit must be installed and serviced by qualified electrical personnel.

Observe all pertinent national, regional, and local safety regulations when you install and commission the JuicePump user unit.

The JuicePump user unit has an IP65 electronics enclosure rating, however, as it must be opened for installation, this is best done in dry weather or under cover to avoid moisture and debris ingress.

The JuicePump user unit must be properly installed, assembled, and commissioned according to these instructions before it is used.

Prior to installation contact your supplier to organize commissioning information.

## Supplied with JuicePump user unit:

- 5 mm pin hex tool to remove the M8 security screws fixing the plastic panels
- 4 mm Allen key to remove fasteners on the enclosure access cover
- 4 x M32 cable glands
- 1 x M25 cable gland
- M10 fasteners for wiring in
- External Ethernet connector

## Required equipment (not supplied):

- Lifting apparatus. See the "Packaging, handling, & receipt" section for weights. Ensure lifting apparatus is sufficiently rated.
- 110 mm / 4.330 inch OD Conduit
- 4 x M10 lugs and crimping equipment for wiring installation.
- 4 x site-specific fasteners. Fasteners are not supplied, as the type required depends on the foundation used and must be chosen by the installer accordingly.
- Socket set & ratchet
- Torque wrench with 30 Nm setting
- Torque wrench with 2 Nm setting
- 1 x M8 lug for ground wire

# Unpacking



Do not work under suspended loads.

Two people may be required as the unit may swing.

## DOCUMENT KEY:

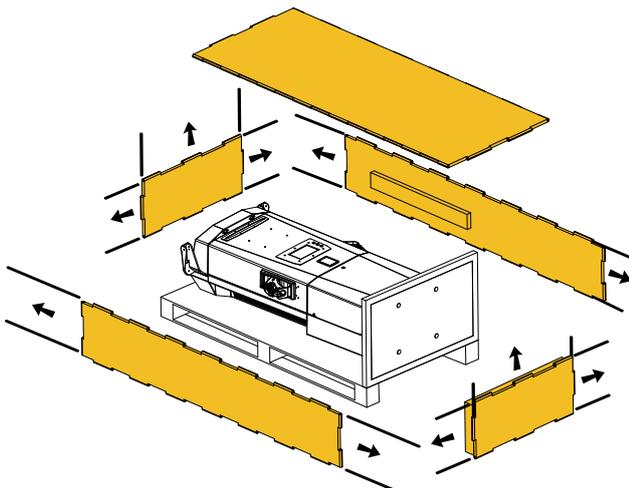


Items shown in orange are parts that require action for that step.

### 1. Open crate

Move the crate as close to the prepared installation site as possible. Ensure there is enough room to maneuver the lifting apparatus.

Remove/slide out all crate tubes to disassemble the cardboard crate.

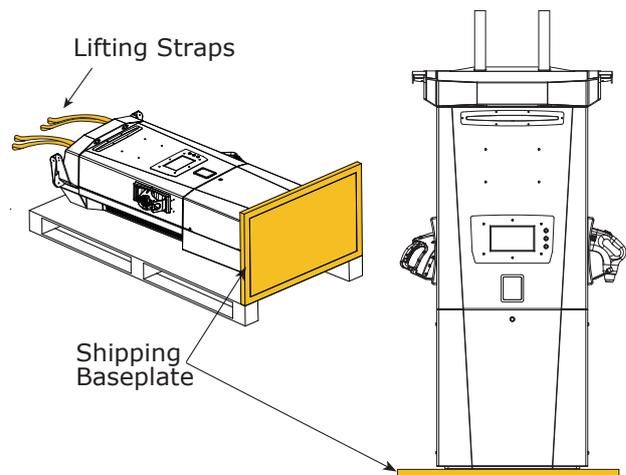


### 2. Lift JuicePump user unit to vertical

Securely attach the lifting straps at the top of JuicePump to the lifting apparatus and gently raise to a standing position on the shipping baseplate.

**NOTE:** The JuicePump user unit is 2,060 mm / 81.102 inches tall on the shipping baseplate.

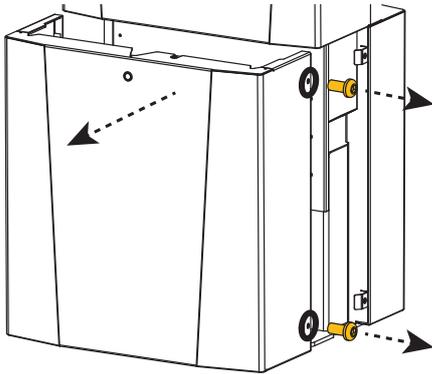
Once the unit is upright remove all wrapping. Ensure the connection to the lifting apparatus is secure at all times.



# Installation

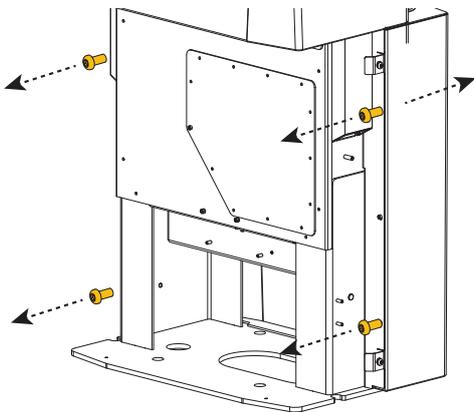
## 1. Remove lower front panel

Use the 5 mm pin hex tool to unscrew the 4 security screws (2 per side) from the front panel, then remove them. Pull the front panel forward to remove and safely store all parts.



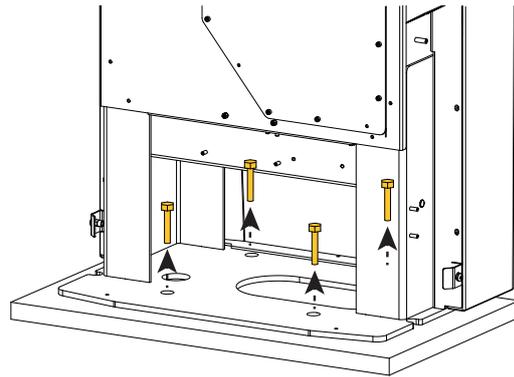
## 2. Remove rear lower panel

Follow this step to increase visibility and access to the mounting holes. If visibility and access is sufficient, go to step 3. Use the 4 mm Allen key to unscrew the 4 screws that attach the rear panel to the enclosure and slide out to remove.



## 3. Remove shipping bolts

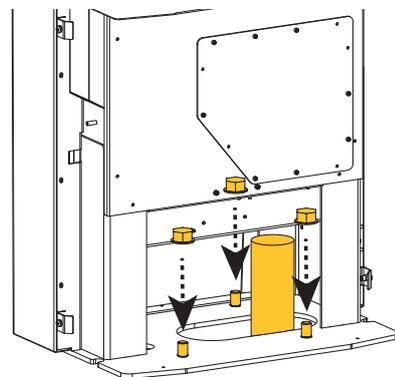
Unscrew the 4 bolts from the shipping base (optional fiber optic interface module not shown).



## 4. Secure to foundation

Lift the JuicePump user unit and place over the prepared foundation. Feed the conduit and wiring through the power in hole and secure to the foundation fixing points (fasteners not supplied).

**Note:** Use the plastic inserts in the holes of the baseplate.

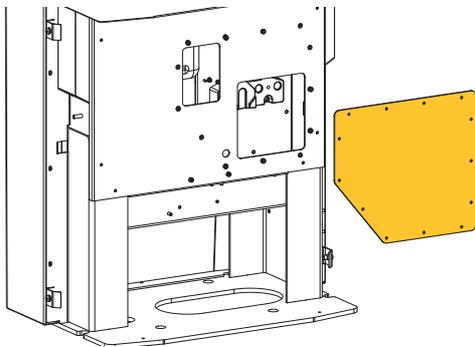


# Installation

## 5. Remove enclosure access cover

Remove the enclosure access cover screws with the 4 mm allen key to prepare the JuicePump for wiring installation.

The enclosure access cover has an attached gasket. Ensure this is carefully stored to avoid damage or accumulation of debris.



## 6. Remove tape and attach cable glands

Remove the tape from the field wiring input holes and fit the supplied 4 x M32 cable glands and 1 x M25 cable gland.

## 7. Prepare wiring

Fit the individual power cabling into each M32 cable gland, ensuring there is enough length to add the M10 lugs (not supplied) and attach to the busbars. Fit each wire with an M10 lug.

## 8. Remove M10 fasteners

Each installation busbar is fitted with M10 fasteners. Remove the fasteners ready for wiring in.



### CAUTION

To continue to achieve the IP65 rating, the power cabling must be fitted correctly into the cable gland.

Ensure the cable is sitting correctly in the gland and tighten to ensure no water or debris can enter. If in doubt, use an appropriate outdoor-rated sealant.

When the cable gland has been tightened, pull on the cable to ensure it doesn't slip.

# Wiring & commissioning



## CAUTION

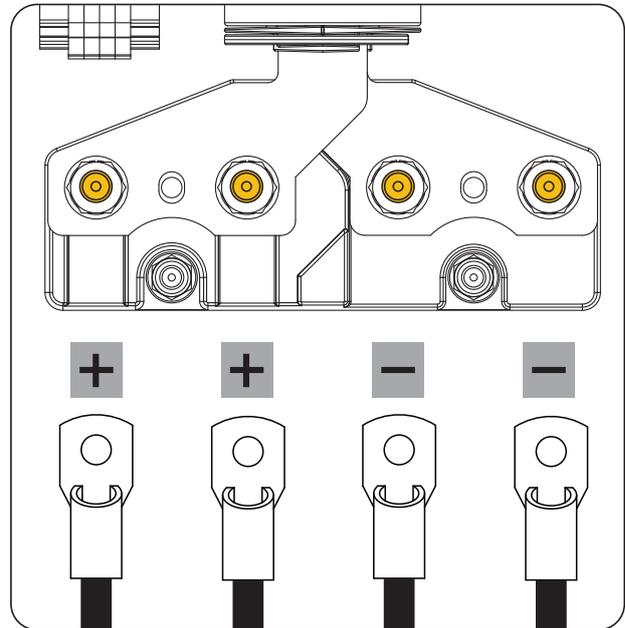
Wiring and commissioning of the charger is to be done by qualified electrical personnel only.

The wiring diagram is also available on the inside of the Service Hatch.

### 1. DC conductors

Attach the M10 lugs onto the negative and positive busbar positions as shown.

Ensure that the lugs and connection points are clean and free of dirt before you make the connections.



**Note:** Refer to the *TRI125.INS.018 JuicePump RT 175-S Site Installation Manual* for a table of all torques used during installation.

Fix grounding yellow/green wire to the M8 grounding stud (M8 lug not supplied) on the inside channel.



## CRITICAL

Clean the surface areas of the mating surfaces with an abrasive pad and use jointing compound between the mating surfaces.

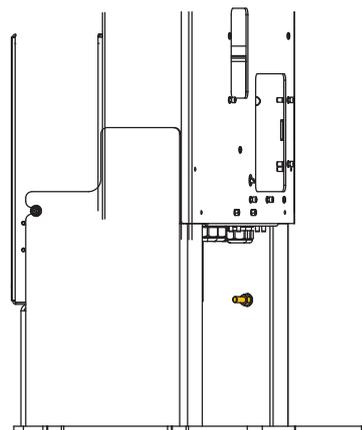
You must use a torque wrench to tighten to the specified tightening torque, and you must apply a torque mark to the stud and nut.



## CRITICAL

### Tightening Torque:

30 Nm / 22 lb-ft

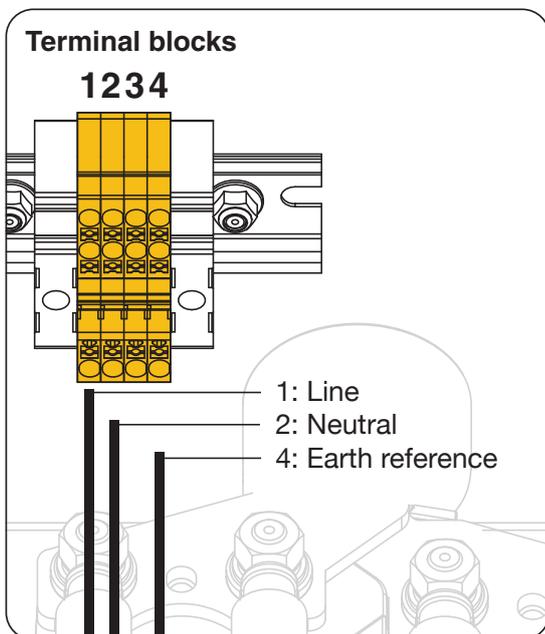


# Wiring & commissioning

**Note:** For all field wiring terminal connections, refer to the wiring diagram sticker on the inside of the Service Hatch.

## 2. Single phase power

The single-phase power field wiring terminals are located on the underside of the top-left section of the wiring access hatch. Refer to the wiring diagram on the inside of the Service Hatch, or wire into the terminal blocks as follows:



Strip and crimp the single-phase wires before terminating to the appropriate terminals. Once installed, perform a pull-test to ensure that the terminations are secure.



## CRITICAL

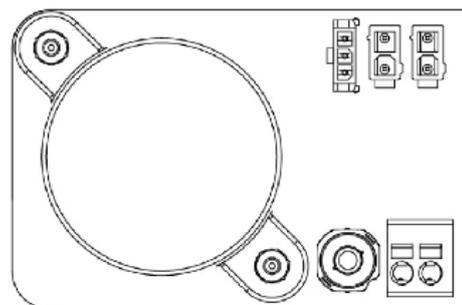
If the single-phase wiring is run in a three-core cable (2C+E), do not terminate the third core (earth) to the common grounding terminal (green and yellow). This wire must be terminated to terminal block 4.

If not installed correctly, it will prevent the IMI from adequately monitoring the site earth.

## 3. Safety loop

The two safety loop terminals are located on the tilt-switch PCB, located on the bottom-right section of the wiring access hatch (push to fit). Polarity is not critical for these wires.

### Tilt switch wiring



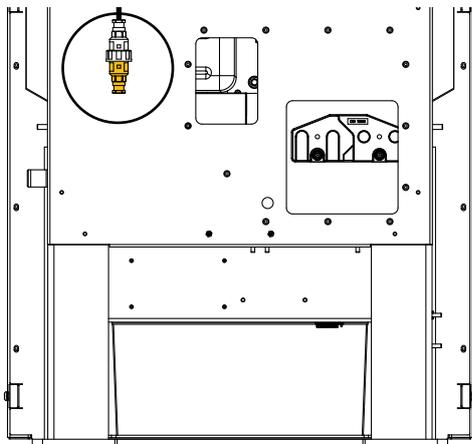
1: Safety loop  
2: Safety loop

# Ethernet port access

The Ethernet port is situated on the front of the enclosure box.

Twist to disengage the base cap and wire in the Category 6a STP Ethernet cable.

Ensure the base cap is securely fitted back into the holder for IP65 protection.



## CAUTION

To ensure the stability of communication to the user unit, it is important that when terminating the network cable, the shield is earthed appropriately to the terminal.

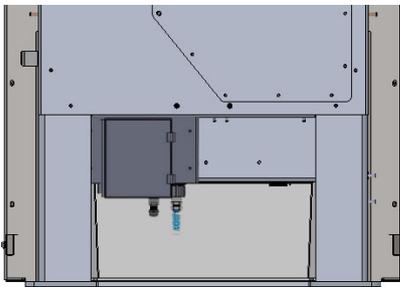
# Fiber optic access

If fiber is to be utilized, then a fiber optic interface module is required.

If this is the case, the fiber optic module shall be mounted at the bottom of the user unit.

The fiber optic interface module plugs into the Ethernet port of the user unit.

Ensure that the coupling ring is tight, so that when the fiber optic cable is connected, the connection is tight.



For detailed wiring instructions, see *TRI125.INS.016 JuicePump RT 175-S Piping and Cabling*.

# Closing checklist

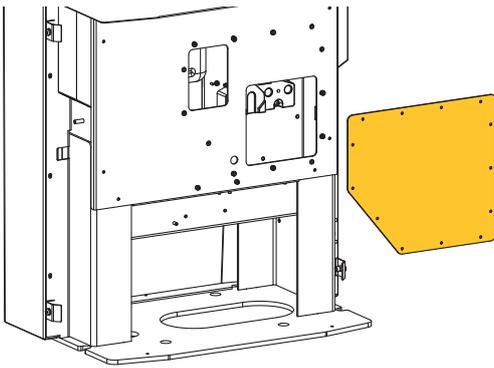
Follow these steps in order to ready the unit for commissioning:

## 1. Remove lifting straps

Carefully remove the lifting straps from the top slots in the plastic.

## 2. Attach enclosure access cover

Check to make sure the gasket has not been damaged or soiled. Use the 4 mm Allen key to attach the enclosure access cover screws.



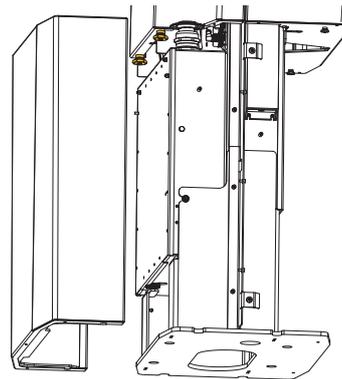
## CAUTION

If using a power drill to fasten the nuts, ensure the correct torque setting of no greater than 2.0 Nm / 17.7 lb-inch. If using a hand tool, fasten until resistance is felt. Do not over-tighten.

Over-tightening may result in damage to the screws and/or gasket, reducing the effectiveness of the seal. This can compromise the ingress protection rating of the enclosure.

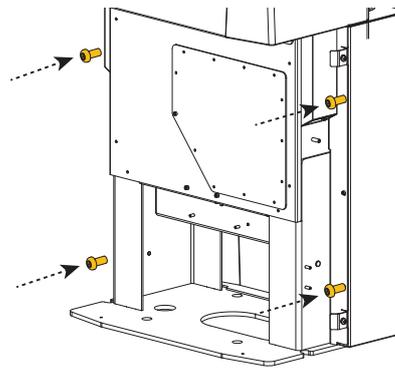
## 3. Attach the rear lower panel

Lift the panel and slide it over the fixing points and rubber cable flanges on both sides until it is secure under the top panel and flush against the enclosure.



Use the 5 mm Pin Hex tool to fasten the screws on both sides.

Do not over-tighten.



# Closing checklist

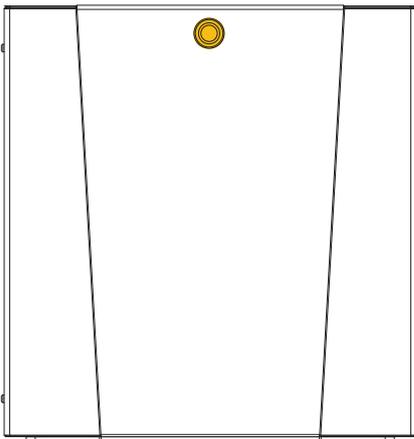
## 4. Plug in the parking sensor

The JuicePump user unit has a parking sensor available for use on the front lower panel.

Unclip the parking sensor plug from the front metal panel and plug into the parking sensor.

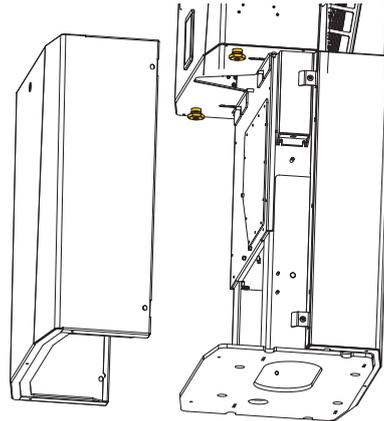
Note that the plug for the parking sensor is located inside and under the central edge of the front panel.

Screw the plugs together to ensure the IP65 seal.



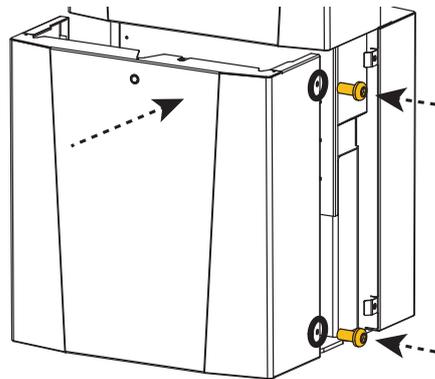
## 5. Attach the front lower panel

Raise and slide the front lower panel into the fixing points located under the front panel.



Fasten both sides with nylon washers and security screws, using the 5 mm Pin Hex tool.

Do not over-tighten.



The JuicePump is now ready for commissioning.