# Adding a Shore Power Hardwire Sensor

Install, connect, and configure a Shore Power Hardwire Sensor to BRNKL to monitor shore power.

🕐 **45 min**

BRNKL ALL-IN-ONE
BRNKL EXTERNAL CAMERA

**BRNKL**

# Before you start

Take a moment to consider
if this guide is for you.

If you're comfortable handling everyday electrical repair and maintenance tasks on your boat, follow the instructions in this guide.

If your boat electrical system is complex, or you are unfamiliar with basic electrical systems, hire a professional installer or marine electrician.
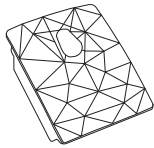
⚠ **WARNING: Working with AC power is dangerous.** Hire a licenced electrician or certified professional installer to prepare AC power wiring and make electrical panel connections.
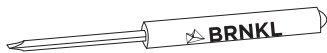
# What you need

You need these things add a Shore Power Hardwire Sensor to BRNKL:
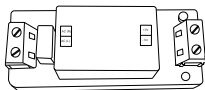
### In the box

- BRNKL
  *powered and positioned*

- 2.5 mm flathead screwdriver

### Accessories *sold separately*

- Shore Power Hardwire Sensor (includes two screws)

### Services

- BRNKL account
- BRNKL subscription

### Devices

- mobile device connected to internet (BRNKL installed)

## Tools

- wire stripper/crimper tool
- butane torch

*You may need:*

- power drill and bit set
- non-conducive fish tape
- flashlight or headlamp

## Supplies

- marine grade wire, 18 AWG (red)
- marine grade wire, 18 AWG (black)
- marine grade wire, 18 AWG (white)
- heat-shrink ring terminals, 22–18 AWG (ring sizes to fit AC electrical panel)
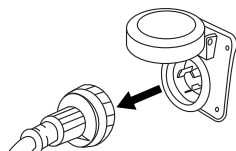
*You may need:*

- cable ties
- cable tie mounts

# Install Shore Power Hardwire Sensor

To install a Shore Power Hardwire Sensor, follow these steps:

## (A) Disconnect shore power

- Disconnect the boat AC shore power connection.



## (B) Mount sensor

1. Choose a location:
   - Place close to the boat AC electrical panel.
   - Provide access to the **non-inverted** side of the AC electrical panel.
   - Ensure a stable mounting surface.
2. Mount and secure the sensor using the two supplied screws.

## ⓒ Prepare wiring

Follow these guidelines:

- DO NOT connect the wires at this stage.
- Run two wires from the AC electrical panel to the sensor.
    - One **white [N]** wire.
    - One **black [L]** wire.
- Leave 20 cm of extra wire at each end.
- Hide the wires in conduit, wall cavities or wiring channels.
- Secure the wires with cable ties and mounts.

## ⓓ Connect AC panel

At the AC panel end of the wiring:

1. Trim any extra wire.
2. Strip 10 mm of insulation from the end of the **white [N]** and **black [L]** wires.
3. Connect and crimp a ring terminal to each wire.

    Size the terminals to fit the AC panel terminal.
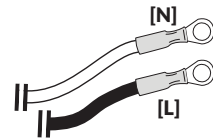


4. Heat seal the connections.
5. On the AC panel:
    - Attach the **white [N]** wire ring terminal to a non-inverted **neutral [N]** terminal.
    - Attach the **black [L]** wire ring terminal to a non-inverted **line [L]** terminal.
6. Secure the wires with cable ties and mounts.

## Ⓔ Connect sensor

At the sensor end of the wiring:

1. Trim any extra wire.
2. Strip 5 mm of insulation from the end of the **white [N]** and **black [L]** wires.
3. Loosen the screws on the left end of the sensor.
4. Insert the **white [N]** wire into the **AC (N)** slot.
5. Insert the **black [L]** wire into the **AC (L)** slot.
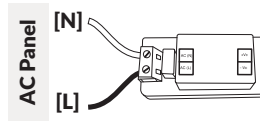


6. Tighten the screws to fasten.
7. Secure the wires with cable ties and mounts.

## Ⓕ Check connection

1. Reconnect the boat AC shore power connection.
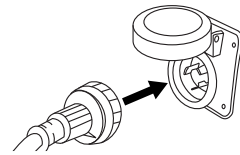


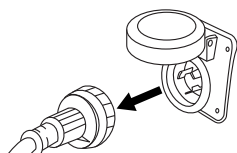2. Check the indicator light on the transformer.

   The light illuminates when connected to power.

# Connect Shore Power Hardwire Sensor

To connect a Shore Power Hardwire Sensor to BRNKL, follow these steps:

## (A) Disconnect shore power

- Disconnect the boat AC shore power connection.



## (B) Prepare wiring

Follow these guidelines:

- DO NOT connect the wires at this stage.
- Run two wires from the BRNKL to the sensor.
    - One **red [+]** wire.
    - One **black [-]** wire.
- Leave 20 cm of extra wire at each end.
- Hide the wires in conduit, wall cavities or wiring channels
- Secure the wires with cable ties and mounts.

## Ⓒ Connect sensor

At the sensor end of the wiring:

1. Trim any extra wire.
2. Strip 5 mm of insulation from the end of the **red [+]** and **black [-]** wires.
3. Loosen the terminal screws on the right side of the sensor.
4. Insert the **red [+]** wire into the **positive [+Vo]** slot.
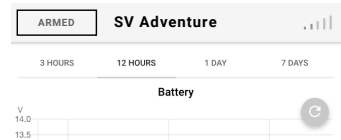5. Insert the **black [-]** wire into the **negative [-Vo]** slot.
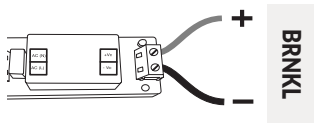


6. Tighten the screws to fasten.
7. Secure the wires with cable ties and mounts.
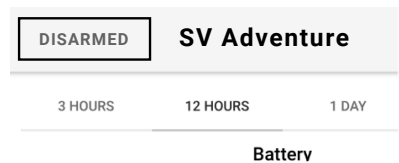
## Ⓓ Disarm BRNKL

On the mobile device:

1. Open BRNKL.
2. From the **Map**, **Graphs**, **Photos**, or **Alerts** view, go to the status bar.



3. Do one of the following:
   - If the status is **DISARMED**, do nothing.
   - If the status is **ARMED**, select the status bar to disarm.

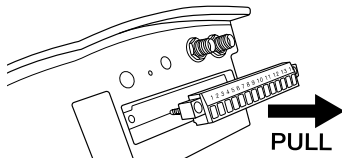   BRNKL is disarmed when the status is **DISARMED**.

## (E) Remove connector

On the BRNKL:

1. Locate the connector on the bottom of the BRNKL.
2. Loosen the screws at each end of the connector.
3. Grasp and pull.



**PULL**

## (F) Connect wiring to connector

At the BRNKL end of the wiring:

1. Trim any extra wire.
2. Strip 5 mm of insulation from the end of the **red [+]** and **black [-]** wires.
3. On the connector, loosen the screws above **slot 9** and **slot 14**.
4. Insert the **red [+]** wire into **slot 9**.
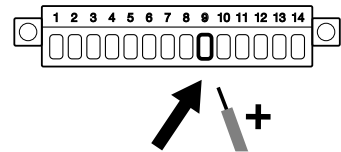


5. Insert the **black [-]** lead wire into **slot 14**.
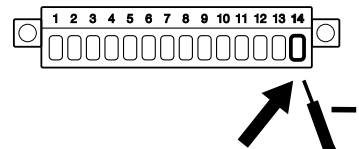


6. Tighten the screws to fasten.
7. Secure the wires.

## Ⓖ Reattach connector

At the BRNKL end of the wiring:

1. Align the connector and the BRNKL.
2. Insert the connector.
3. Tighten the screws to fasten.

## Ⓗ Reconnect shore power

- Reconnect the boat AC shore power connection.

# Configure shore power connection

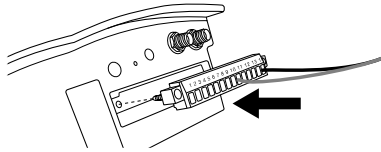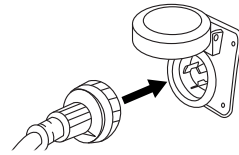To configure a shore power connection, follow these steps:

## Ⓐ Enable connection

On the mobile device:

1. Open BRNKL.

2. Go to **Settings** > **Sensors** > **Shore Power**.

3. Turn on **Show On Grid**.

| Settings | Save |
| --- | --- |
| Alerts Enabled | ⬤ |
| Sensor Name | Shore Power |
| High Name | Connected |
| Low Name | Disconnected |

4. Turn on **Alerts Enabled**.

| SHORE POWER (SLOT SHORE POWER) | |
| --- | --- |
| Show On Grid | ⬤ |
| Alerts Enabled | ◯ |
| Sensor Name | Shore Power |
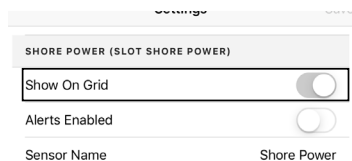
5. **Save**.

## Ⓑ Check connection

*Wait 15 minutes after enabling the shore power connection to allow BRNKL to sync settings over the mobile data network.*

On the mobile device:

1. Open BRNKL.

2. Select grid view, go to **Shore Power**.

| Pitch Angle | Pressure |
| --- | --- |
| -0.1 DEG | 100.5 KPA |
| **Shore Power** **Connected** | Temperature 8 c |
| GPS 48.424324 | -123.30248 |
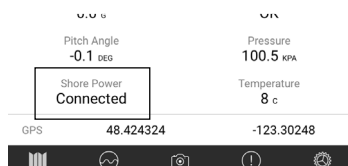
BRNKL displays **Connected** when connected to shore power.

# Wiring reference

**Connector**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| ground | output 1 | output 2 | input 1 | input 2 | input 3 | input 4 | bilge | shore power | battery 1 | battery 2 | battery 3 | battery 4 | ground |

**shore power**

**9** sensor sold separately

**+**

**ground**

**−**
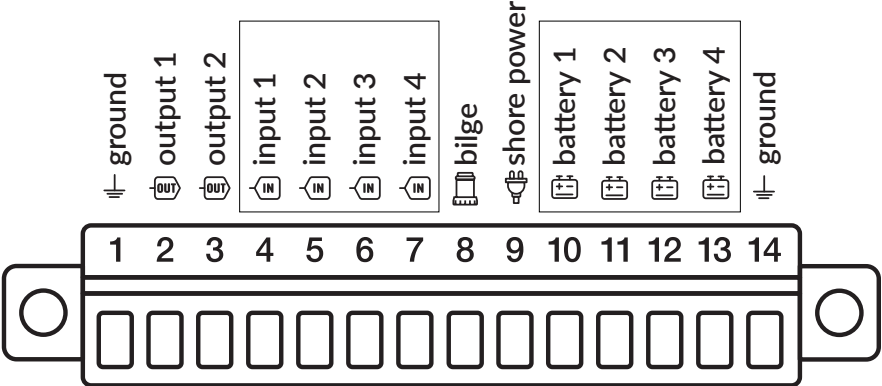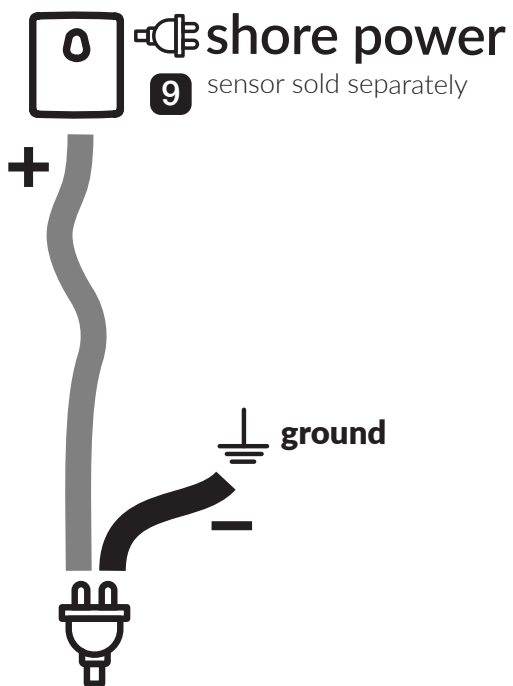
BRNKL

**For warranty, terms and conditions:**

brnkl.io/terms

**For technical support, troubleshooting and more information:**

help.brnkl.io

1-877-552-BRNKL (7655)

## FCC / Industry Canada Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: (1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES-3 (A)/NMB-3(A) – This Class A Digital Apparatus Complies with Canadian ICES-003. Cet Appareil numerique de la classe (A) est conforme a la norme NMB-003 du Canada.

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