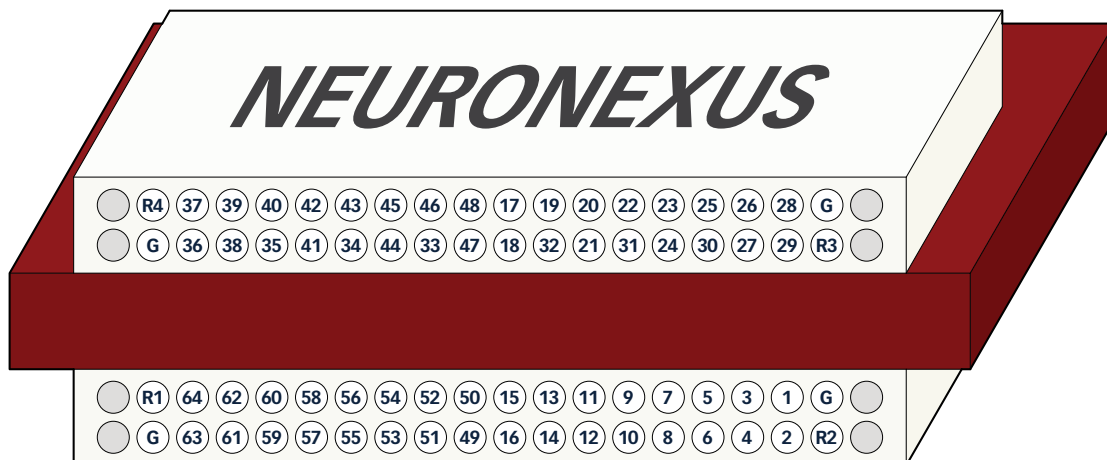


This wiring guide will help you:

1. Identify the exact probe package you are using, and
2. Help you understand and configure the reference channel wiring specific to your package

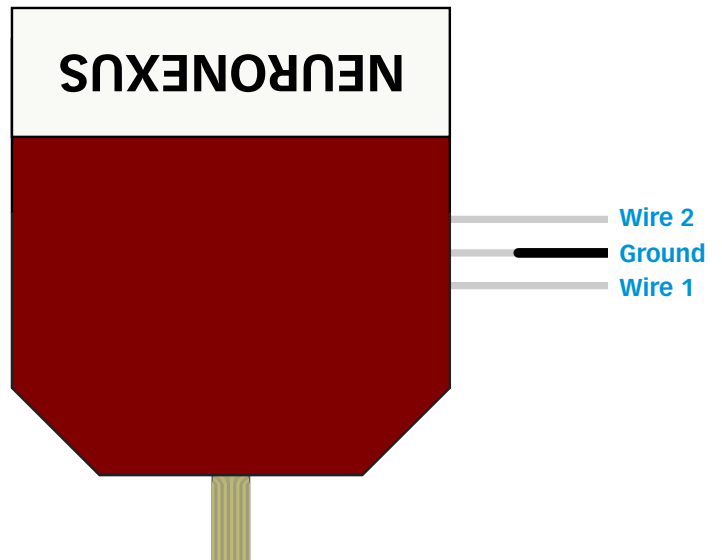
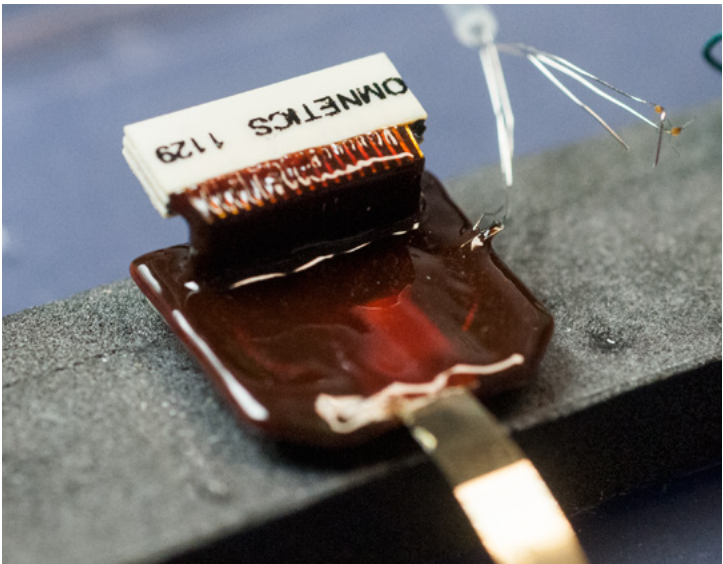
The H64LP Pin Out diagram below applies for all wiring configurations. You will need to turn back to this page to check the reference channel locations.



NOTE: Your reference wire color may vary based on specification. If you specify silver-coated copper wires, all reference wires will have white insulation, but the reference channel connections remain the same.

The pictures in this document are of H64 packages (not H64LP). The wiring configurations are exactly the same for both packages.

Reference Channel Configuration (Gen. 1)

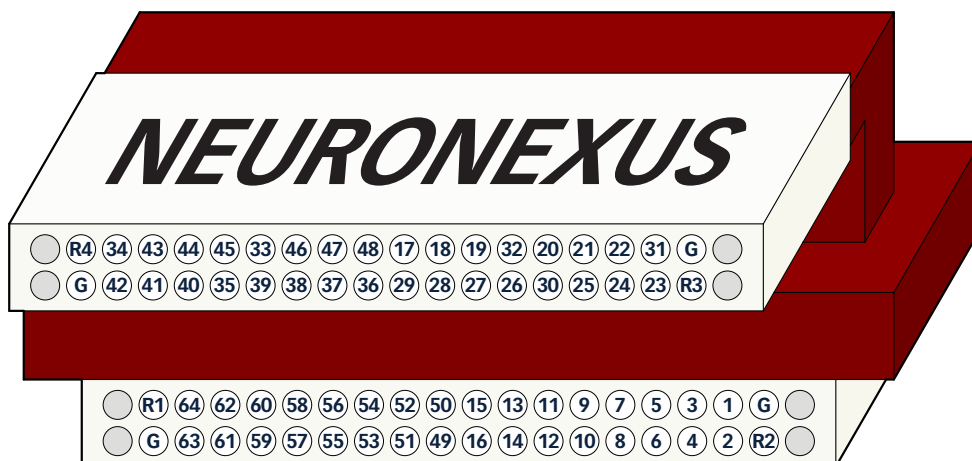


IMPORTANT: Check our catalog to see if your probe model has a probe reference (PR) site.

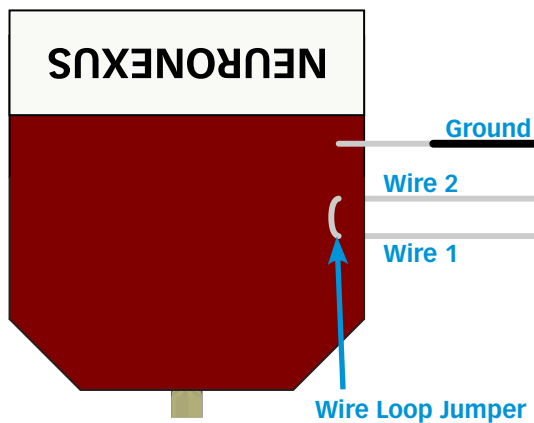
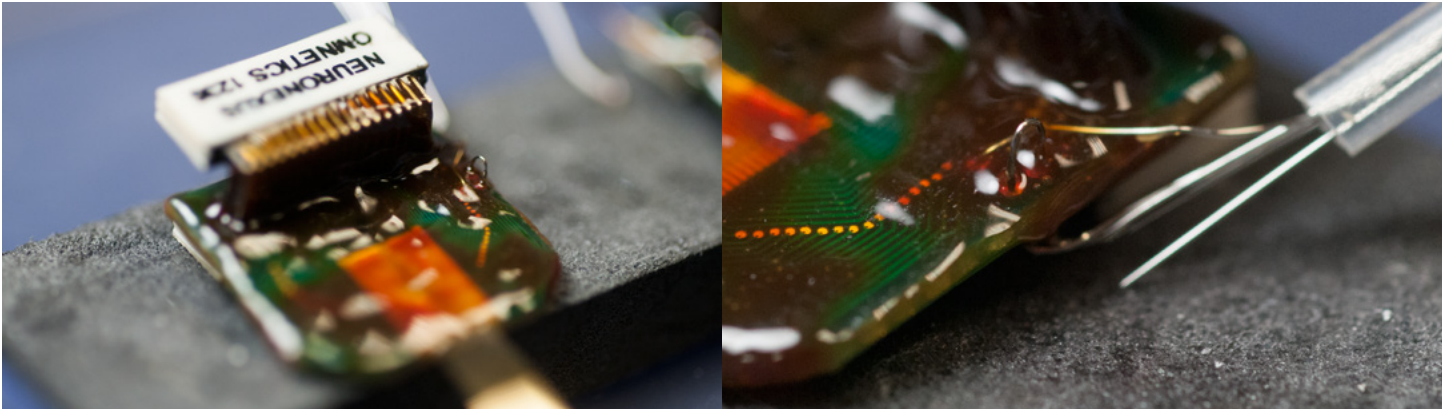
If your design has a PR site, and you plan on using it:

1. **Cut** Wire 1 (see above)
2. Make sure that the PR site is completely implanted
3. Reference channels R2 and R4 (see below) now function as the Probe Reference

If you do not intend to use the PR site, cut Wire 1, connect Wire 2 to your external reference source, and use reference channels R1 and R3 as your external reference channels.



Reference Channel Configuration (Gen. 2)



The H64 Gen. 2 package has 1 bare wire loop jumper (see above) and 3 bare wires. The Ground wire is designated with black shrink wrap. Wire 1 (closer to probe) is connected to channels R1 and R3. Wire 2 (closer to connectors) is connected to channels R2 and R4. **Please read fully before making your desired changes - it may not be possible to reconnect the wire loops once they have been cut.**

NeuroNexus recommends taking **one of two** reference configuration options. **You must choose one option (see below) and act accordingly or a ground loop may form.**

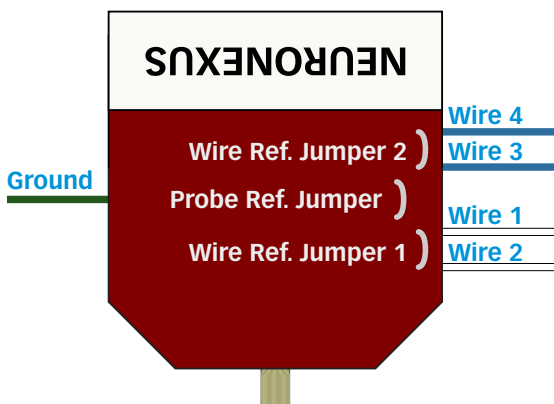
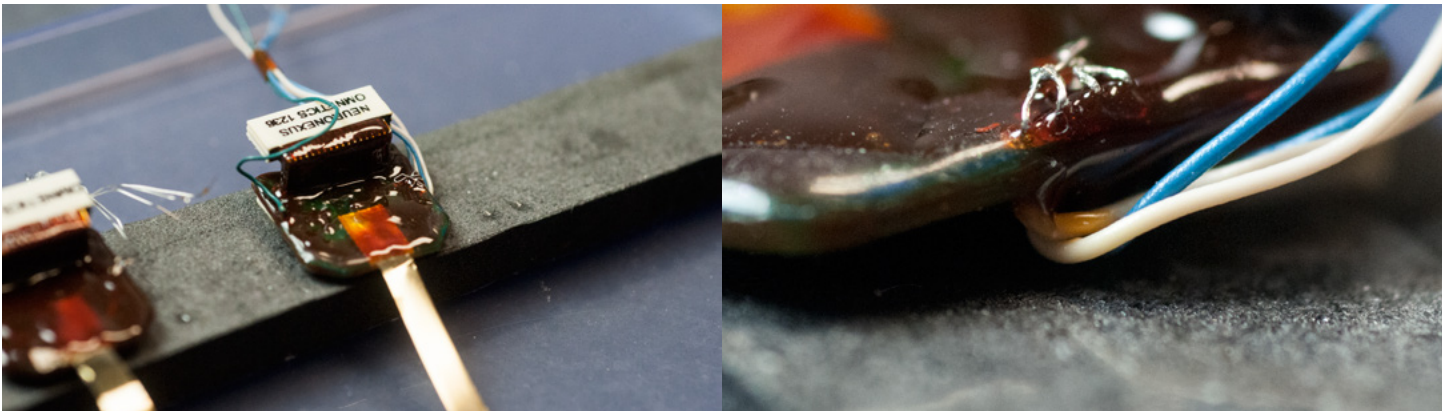
To use only the Probe Reference site, follow these instructions:

1. Do **not** cut the wire loop jumper.
2. Cut **both** reference wires (Wire 1 and Wire 2). This prevents ground loops from forming.
3. All the connector reference channels (**R1**, **R2**, **R3**, and **R4**) connect to the **Probe Reference site**.

To use an external headstage reference, follow these instructions:

1. Cut the wire loop jumper. **Do not cut the reference wires yet.**
2. With the wire loop jumper cut, connector channels **R1** and **R3** now connect to the **Probe Reference**, and connector channels **R2** and **R4** can be connected to an **external headstage reference** with **Wire 2** (closer to connectors).
3. To prevent a ground loop from forming, cut Wire 1 (closer to probe).

Reference Channel Configuration (Gen. 3)



The H64 Gen. 3 package has 3 bare wire loop jumpers (see above) and 5 white insulated wires. The Ground wire is designated with black shrink wrap. Wires 1, 2, 3, and 4 correspond to the Reference pins on the Omnetics connectors (Wire 1 connects to R1, etc.). **Please read fully before making your desired changes - it may not be possible to reconnect the wire loops once they have been cut.**

Below are 7 possible wiring configurations. You must choose one option and act accordingly or a ground loop may form.

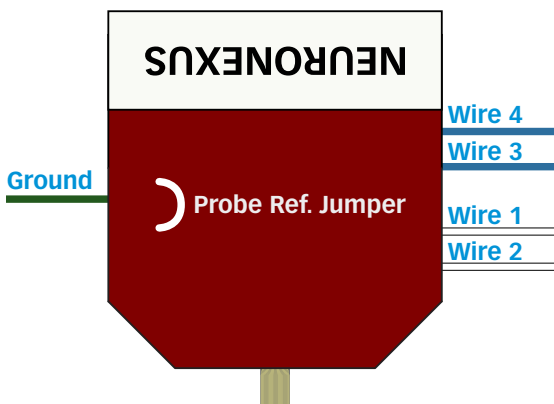
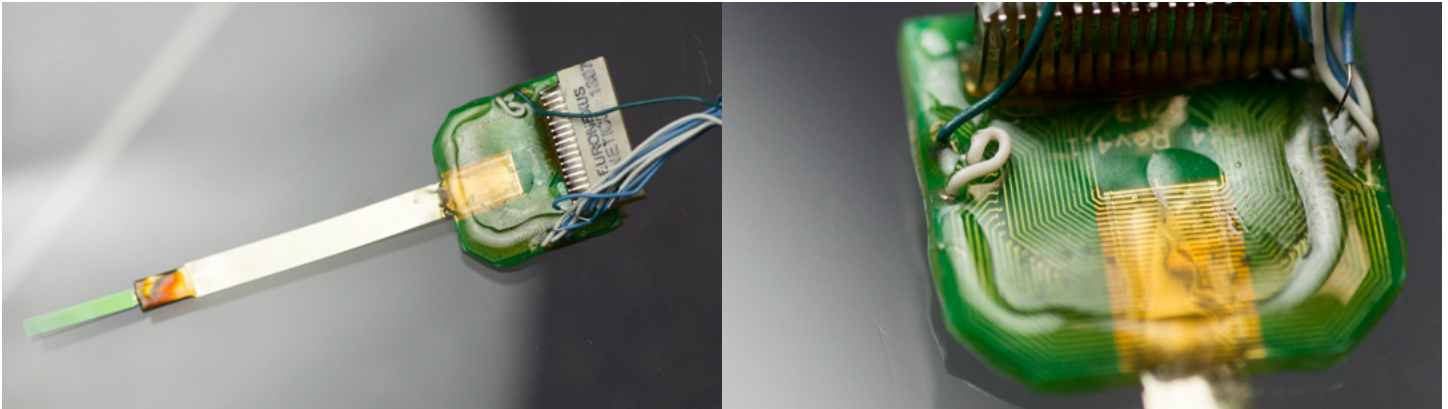
To use the Probe Reference site, pursue **only one** of the following 4 options:

- To feed the Probe Reference into all 4 Reference pins, **cut** Wires 1 and 4, **twist** Wires 2 and 3 together, and leave the jumpers uncut.
- Cut** Wires 1 and 2, and leave the jumpers uncut. Channels R1 and R2 serve as the Probe Reference, and 1 wire reference can be fed to both channels R3 and R4.
- Cut** Wires 1, 2, and Wire Reference Jumper 2. Channels R1 and R2 serve as the Probe Reference, and Channels R3 and R4 serve as independent wire references (via Wire 3 and Wire 4, respectively).
- Cut** Wire 1 and both Wire Reference Jumpers. Channel R1 serves as the Probe Reference, and Channels R2, R3, and R4 serve as independent wire references (via Wire 2, Wire 3, and Wire 4, respectively).

To disable the Probe Reference site, **cut the Probe Reference jumper**, then take **only one** of the following 3 actions:

- For **two wire reference signals**, leave the Wire Reference jumpers uncut. Wires 1 and 2 feed into Channels R1 and R2, and Wires 3 and 4 feed into Channels R3 and R4.
- For **three wire reference signals**, cut Wire Reference Jumper 1. Wires 1 and 2 (Channels R1 and R2) serve as independent wire references, and Wires 3 and 4 (Channels R3 and R4) serve as one combined wire reference.
- For **four independent wire reference signals**, cut all jumpers.

Reference Channel Configuration (Gen. 4)



The H64 Gen. 4 package has 1 insulated wire loop jumper (see above) and 5 colored insulated wires. The Ground wire is green. Wires 1, 2, 3, and 4 correspond to the Reference pins on the Omnetics connectors (Wire 1 connects to R1, etc.). **Please read fully before making your desired changes - it may not be possible to reconnect the wire loops once they have been cut.**

Below are 2 possible wiring configurations. You must choose one option and act accordingly or a ground loop may form.

To use the Probe Reference site, follow these instructions:

1. Do **not** cut the wire loop jumper.
2. Cut **both** Wire 1 and Wire 2. This prevents ground loops from forming.
3. Reference channels **R1 and R2** connect to the **Probe Reference site**. Reference channels R3 and R4 can be connected to an external reference via Wires 3 and 4.

To disable the Probe Reference site, follow these instructions:

1. Cut the wire loop jumper. **Do not cut the reference wires yet.**
2. With the wire loop jumper cut, each of the reference wires can be connected to an external reference source.