

PakTrakr Installation Tips and Troubleshooting

Installation Tips

Installation Cautions

1. Get each Remote working independently BEFORE connecting to other Remotes or to the Display.
2. Make CERTAIN to disconnect the black lead on the Remote before connecting or disconnecting the Display.
3. A Remote with an LED that stays lit (no blinking at all) almost ALWAYS indicates that the Display was connected or disconnected with the Remote powered up. **Disconnect the black lead immediately to avoid destroying the Remote.** If this is not done within a minute or so, the Remote will be permanently damaged, indicated by a lack of LED illumination.
4. A Display that continuously displays "Calib..." is waiting on data from the Remote(s). Disconnect the black leads from the Remotes and get them working FIRST before connecting the Display (or current sensor or serial interface).
5. The Remote's blue connectors should ONLY be connected to the expansion port on other Remotes or to the Display. Do NOT remove the connectors and splice the wires from multiple Remotes together.
6. The black leads from the Remotes should be connected to the negative post of the lowest battery in the sub-string that Remote is monitoring (not the lowest pack battery). The red lead should be connected to the positive post on the same battery the black lead is connected to.

General PakTrakr Installation Tips

1. Make a "dry run" test of the entire PakTrakr system when possible before routing, cutting, or splicing any cables. The best place to conduct this test is right next to or inside the battery bay. Connect the Remotes (see tips below), then connect the Display and check for proper system operation before the Display and Remotes are mounted in their permanent locations.
2. If you have multiple Remotes, note that one of the Remotes likely does not have an expansion port (a hole in the side for plugging in another Remote.) This Remote obviously MUST be the last Remote in the daisy chain, farthest from the Display. Check for this before making any connections, to save time and eliminate re-work.
3. A Remote should only be connected to a continuous series string of 1-8 batteries. I.E. a Remote should monitor batteries 1-6 or 7-12, etc. NOT batteries 1-5 and battery 10.
4. 8-battery Remotes may NOT be connected to 12V batteries, as doing so will destroy the Remote. 6-battery Remotes may be connected to 6V, 8V, or 12V batteries.
5. Each Remote should be installed and blinking before individual Remotes are connected together or to the Display (see Installing Multiple Remotes section below).
6. To ensure proper calibration, the Pack should be charged before installing the PakTrakr system.

Installing PakTrakr Remotes

1. Start with the Remote's black and red leads. Make SURE the black lead is on the negative post, and the red lead is on the positive post of the SAME battery. Connect these leads FIRST, then STOP and make sure the Remote is operating correctly (LED blinking) before connecting the rest of the leads.
2. If the Remote is not blinking or on solid within ten seconds of connecting the black and red leads, something is not right. Disconnect the black lead to reset it and try again.
3. Connect all leads and make sure the Remote is operating correctly (LED blinking).

Installing Multiple Remotes

1. Verify that each Remote works independently but don't connect them together yet (see Remote Troubleshooting above). Connect the black leads for all Remotes to power them up. They should each begin blinking their LEDs.
2. Disconnect the black lead on the Remote to be attached to the Display, connect the Remote's blue connector to the Display, then re-connect the Remote's black lead.
3. Verify that the Display shows all batteries connected to that Remote.
4. Connect the next Remote's blue connector to the expansion port on the Remote connected to the Display.
5. Verify that the connected Remotes begin blinking in sync.
6. Verify that the Display now shows batteries and temps from multiple remotes (e.g. "A" and "B"). If not, check that all pins on the second Remote are firmly seated in the blue connector, and that the blue connector is firmly seated in the first Remote's expansion port.
7. Note that the highest letter (e.g. "D") refers to the Remote connected directly to the display, while the lowest letter ("A") refers to the Remote furthest from the Display.
8. Repeat step 4-6 for each additional Remote.

PakTrakr Current Sensor

1. The current sensor can monitor battery current or motor current (and no, they are not always the same).
2. The sensor may be placed on any cable – it makes no difference.
3. If the arrow on the top of the sensor points to a negative battery post the amps reading will be positive for charging and negative for loads.
4. If the cable and/or lug won't fit through the current sensor, use a short battery bus bar made of copper or aluminum, with one end fastened directly to the battery post, and the battery cable attached to the other end. The losses through a short bus bar will be negligible if properly connected. If you need a bus bar we can provide one.
5. The current sensor capacity (100, 200, 400, or 600A) is determined at power-up. The system must be reset by momentarily disconnecting the black lead on the Remote attached directly to the Display after the current sensor is connected.

6. Current in excess of the sensor's rated capacity will have no adverse affect on the sensor or on the PakTrakr.

PakTrakr Serial Interface ES1

1. The serial interface works best with USB serial interfaces.
2. The serial interface may be connected or disconnected without removing power from the PakTrakr Display.
3. Once connected to an operating PakTrakr Display, the serial interface should be outputting data once per second. If it is not, it is likely a problem with the HyperTerminal program configuration. Check for correct COM port and correct baud rate settings (19200 baud, no parity, 8 bits, no flow control), and check to make sure the port is "off hook" or connected.

PakTrakr Automatic Logging Serial Interface ES1R

1. The ES1R serial interface works best with USB serial interfaces.
2. The ES1R draws power from the PakTrakr Display, and therefore must be connected to the Display for programming, downloading, etc.
3. When connecting the ES1R to the PakTrakr Display for the first time it is advisable to connect a laptop to the ES1R and bring up HyperTerminal to verify proper operation and program the logging frequency.
4. If not programmed otherwise, the ES1R will by default log ALL data to memory until the entire 2MB is filled (usually in 5 hours or less, depending on how many batteries are being monitored.)
5. When subsequently powered up (by being disconnected and re-connected or by PakTrakr system reset), the ES1R will immediately prompt for a command, providing the user an opportunity to download previously stored data before memory is over-written with new data. The data may be downloaded to a PC using the download ("d") command with HyperTerminal in "text capture" mode.
6. In any case, once connected to an operating PakTrakr Display and laptop (via HyperTerminal), the ES1R should display a command prompt OR begin outputting data once per second. If neither occurs, enter a carriage return in HyperTerminal to bring up the command prompt. If neither the command prompt nor data appear, there is likely a problem with the HyperTerminal program. Check for correct COM port and correct baud rate settings (56400 baud, no parity, 8 bits, no flow control).
7. If no laptop is connected at ES1R power-up when the ES1R has previously stored data, the ES1R will wait two minutes for user input, then begin logging data to memory, over-writing any previous data.

PakTrakr Troubleshooting

Remote Troubleshooting

1. Troubleshoot and get each Remote working separately BEFORE trying to connect Remotes to each other or to the Display.
2. Disconnect the black lead from all Remotes to power them down.
3. Disconnect all blue connectors from the Remote expansion ports and from the Display.
4. Verify that the red lead is connected to the positive post of the lowest battery in the sub-string the Remote is monitoring
5. Re-connect the Remote's black lead to the negative post of the lowest battery in the sub-string (the SAME battery the red lead is connected to).
6. The Remote should start blinking within ten seconds. If it doesn't, disconnect ALL the leads from that Remote and then re-connect just the red and black leads. If the Remote still doesn't start blinking the fuse is blown or the Remote is damaged.
7. If the LED is blinking, disconnect the black lead, then connect the Remote's blue connector to the Display (without a current sensor or serial interface connected to the Display), then re-connect the black lead.
8. Verify that the Display boots up and that each of the Remote's batteries is being monitored. If the Display doesn't exit the "Calib..." screen, the blue connector might have a loose pin. Disconnect the black lead from the Remote, then disconnect the blue connector from the Display and check that each pin is securely seated in the connector. Re-connect the blue connector, then the black lead and re-check the Display.
9. Repeat steps 2-8 for each Remote.

Daisy-Chain Troubleshooting

1. Verify that each Remote works independently but don't connect them together yet (see Remote Troubleshooting above). Re-connect the black leads for all Remotes except the one to be attached to the Display. They should each begin blinking their LEDs.
2. Disconnect the black lead on the Remote to be attached to the Display, connect the Remote's blue connector to the Display, then re-connect the Remote's black lead.
3. Verify that the Display show all batteries connected to that Remote.
4. Connect the next Remote's blue connector to the expansion port on the Remote connected to the Display.
5. Verify that the Remotes begin blinking in sync.
6. Verify that the Display now shows batteries "A" and "B". If not, check that all pins on the second Remote are firmly seated in the blue connector, and that the blue connector is firmly seated in the Remote's expansion port.
7. Repeat step 4-6 for each additional Remote.