

Adding A Remote Charging Jack To A Drop-In Decoder

What You Need To Obtain And Where To Get It

You will need a DC power jack designed for panel mounting. To fit the supplied charger pigtail, the jack's outside diameter must be 6.4mm and the inside diameter must be 2.0mm.

There are two different suitable jacks, one from Switchcraft which mounts with a nut and washer. The other is from Kycon and mounts in a rectangular hole. If the Switchcraft jack is used, you must change the charger's pigtail's plug since the supplied plug is too short for the jack. Heatshrink tubing can also be ordered from Mouser.

Mouser Catalog Number for the Kycon jack 806-KLDPX-0207-A

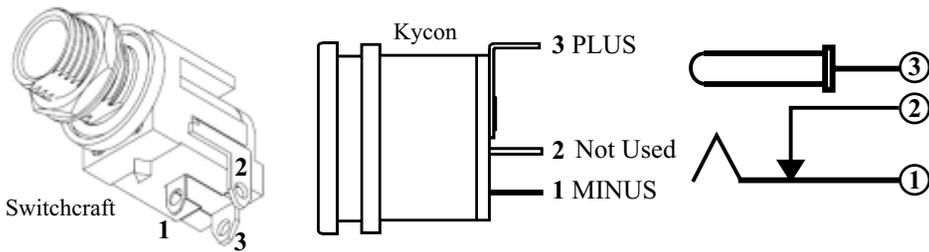
Mouser Catalog Number for the Switchcraft jack 502-RAPC10P

Mouser Catalog Number for the Switchcraft matching plug. 502-S1017

Mouser Electronics www.mouser.com

(800) 346-6873 1000 North Main Street, Mansfield, TX 76063 USA

DC Power Jack Pictorial and Pinout



The plus wire connects to pin 3 of either jack which is the center pin. The minus wire connects to pin 1 of either jack which is called the sleeve.

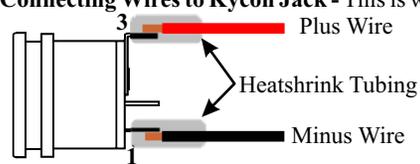
Wire Recommendation

To connect the jack to the Drop-In decoder board, use #24 AWG stranded wire. Large wire is not necessary because the charging current is relatively low.

Use two different colors of wire cut to them desired length. They must reach from the Drop-In to the remote jack location. The wires must not be near the antenna.

Strip back about a quarter inch of insulation on each end. Tin both ends and trim the stripped ends to about 1/8 inch in length.

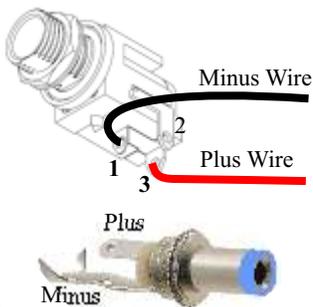
Connecting Wires to Kycon Jack - This is will be easier to do on the bench before mounting it in the locomotive. The center lug, #2 can be cut off since it is not used. Solder the wires to the jack and then slide on heatshrink tubing to insulate the connections. For easier fishing of wires through the locomotive, twist them together. This jack fits the pigtail supplied with the Drop-In.



Connecting Wires To Switchcraft Jack - It is OK to cut off lug #2 since it isn't used. Using small heatshrink is not practical given the lug locations. Instead, wrap some electrical tape around the jack. The purpose is to make sure the lugs and solder joints do not accidentally short out against metal, wiring or other circuitry.

The matching Switchcraft plug is required to use the Switchcraft jack. The plug will fit the existing jack on the Drop-In locomotive although it is longer and you will have to tip the loco on its side.

When attaching charger wires to the Switchcraft plug, make sure the shorter center conductor connects to the chargers's plus wire. The longer outer barrel lug connects to the minus wire.



Mounting The Jack In Locomotive

Select an appropriate site, preferably in a hidden recess that is easy to reach. Inspect the location to insure the wires will not be near the antenna. Create an opening the same size as the jack. Insert the jack and fasten it in place. Route the wires down to the Drop-In decoder. Make sure they stay away from the antenna. Use twist ties or tie-wraps to fasten them to the existing wiring and to keep them away from mounting posts.



Bend The Large Capacitor Out Of The Way

Your first step is to gently bend upwards the large brown capacitor until it is vertical. This exposes the two solder joints where the new jack will be connected.

The capacitor leads are tolerant of bending but don't get carried away or you risk them breaking.

Bend the leads just enough so you can make the solder connections

Connection Location on Drop-In Decoders

For each Drop-In decoder, the connection location is always the same. It will be on the top side of the circuit board which is where all the components are located and directly underneath the large brown capacitor.

There is no need to remove the original jack.

Proper polarity is mandatory or you risk damaging the charger. The plus terminal on the new jack connects to the identified plus terminal on the Drop-In board and the minus terminal on the new jack connects to the identified minus terminal on the Drop-In board.

Find your Drop-In board in the column of images to the right. For clarity, the large brown capacitor is not shown. Notice the red and black wires along with their polarity symbols. Notice which hole each wire in connected to. You must match these locations exactly or you risk damaging the decoder, the charger or both.

Soldering Wires To The Drop-In Decoder

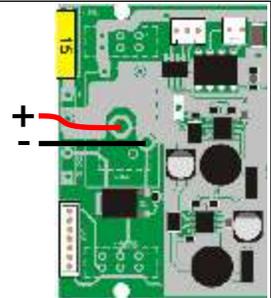
To attach a wire, first heat the solder joint on the decoder until it is molten. There is usually plenty of solder so you won't need to add any. Insert the wires vertically into the solder joint while it is molten. Check for proper polarity.

After both wires are soldered, bend them flat to the board. Check that no bare wire is touching anything on the decoder.

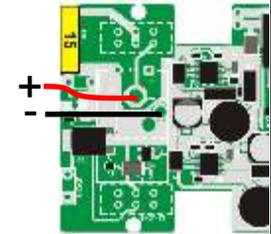
Push the capacitor flat to the board in its original position.

Checkout Procedure

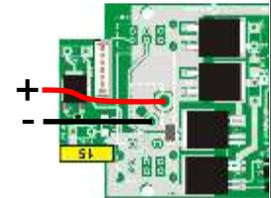
Turn the Drop-In power switch to the off position. Plug in the charger while watching the charger's indicator light. It should go red indicating it is connected to the battery and charging the battery. If it remains green, there is a wiring error. Go back and check all of your work. Look for broken wires, crossed wires, or bad solder joints.



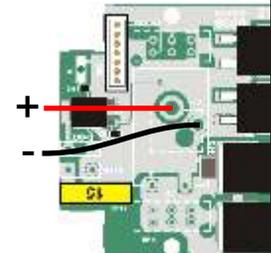
F3A-B



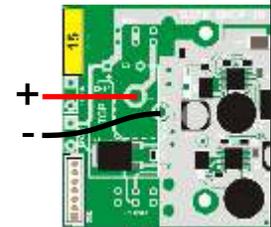
GP7/9 and PA-B



GP30



GP38



SD70