

CS-1 and CS-1T

Professional Cable Splicing Kit

Assembly Instructions

1. Carefully unpack the cable-splice kit, you should have the following:

Qty. 1- Black plastic splice box with two (2) two liquid tight cord-grips already installed.

Qty. 1- Cable splice circuit card inserted in the splice box

Qty. 1- Pouch of 3M brand encapsulation compound

Qty. 1- 12" - #20 AWG Erson Core wire solder

Qty. 1- 3" - #22 AWG Teflon insulated wire

Qty. 1- 18" AWG Clear sleeving

2. Tools you will need for assembly:

Qty. – 1 15 to 25 WATT soldering iron with slender tip

Qty. - 1 pair needle-nosed pliers

Qty. – 1 miniature diagonal cutting pliers

Qty. – 1 pair wire strippers for #18 to #26 AWG wire

3. Before you proceed, figure out the entire splice, what size wire, how many wires, how long, do you have or need Shielding, what is the mounting position. Listed below are recommended cable sizes for different lengths of cable runs:

Recommended Cable Sizes

Length of run	AWG Gauge Cable Sizes
10' to 25'	#22 or #20 AWG 4 or 6 wire, w/shielded
25' to 50'	#22 or #20 AWG, 6wire, w/ shield
50' to 100'	#20 AWG, 6wire, w/ shield
100' to 150'	#18 or #20 AWG 6 wire, w/ shield
150' or more	Consult load cell and/or instrument manufacturer

4. Determine the type and size cable connected to or from the load cell. The most common wire is generally #22 or #23 AWG, 4wire w/ shield. The CS-1 splice box will accept any cable from .187" diameter to .312" diameter.

5. Carefully strip back about 2" of the jacket. If the cable has a foil shield, strip it back as well, but retain at least 1" on the drain wire. If the cable has a braided shield, retain ½" of the braid beyond the jacket. Take the #22 Teflon wire and strip it back ½" to ¾". Connect the Teflon wire to the shield and make a solid solder connection. Use caution not over heat and melt the insulation of the conductors beneath the shield. If the cable has a foil shield and drain wire, tin the drain wire and cover with the clear sleeving.

6. Insert the cable through the strain relief at each end of the board. Extend the main cable jacket until it is even with the end of the strain relief. With finger pressure, snug up the strain relief collar to hold the wire.

7. The terminals should be assigned in the following order:

- #1. – SIGNAL (-output)
- #2. – EXCITATION (-input)
- #3. - +SIGNAL (+output)
- #4. - +EXCITATION (+input)
- #5. – SHIELD (guard)
- #6. - - SENSE
- #7. - +SENSE

8. Slide the circuit card toward the end as far as it will go. Starting with the shield, form the wire toward the side of the box and measure so that it can be comfortably inserted at the top of PIN#5. Allow 3/16" for insertion. Cut the cable and if the wire is an uninsulated drain, cut the PIN#5. Allow 3/16" for insertion. Cut the cable and if the wire is an uninsulated drain, cut the clear tubing and place it over the wire. Insert the cable into pin#5 and solder. Touch to pin shell to the iron and flow the solder onto the wire. DO NOT OVER HEAT!

9. Route the +Excitation wire over the shield toward the side of the shell. Form it back toward pin#4. Allow 3/16" for insertion. Cut the wire and tin the exposed lead. Insert and solder as for the shield.

10. Route the –Signal wire toward the other side of the box (toward pin#1). Route and strip as for the shield. Insert and solder in pin#1. Repeat routing and soldering for pins #2 and #3 IN THAT ORDER! Slide the circuit card/board toward the end as far as it will go. Release the strain-relief and pull the cable back so that there is no exposed shield beyond the cable-fitting mouth. Clamp the wire hand-tight.

11. Select the cable you are going to splice. We recommend 6 wire cable if the instrument is equipped with remote sensing. Carefully measure the length needed and add three feet. Remember, mistakes happen, so leave a little extra. Expose about 2" of wire by removing the jacket and using the procedure in step 5. If you are using braided shield, solder the Teflon wire to it now.

12. Insert the cable as in step 6 and recall the terminal wiring table. Route, strip, and solder in the following: #5, #4, #7, #1, #2, #6, and finally #3. Solder with the iron vertical to the pins so not to burn the insulation.

13. Check your connections! If you are not sure, use an Ohm meter or continuity tester. Locate the instrument cable in the fitting, so that the shield is not exposed. Tighten the nut finger tight. Strip back the exposed end of the spliced cable. Check the leads for shorts and proper readings with the manufacturer's data sheet for the load cell. If you are in doubt, hook up an instrument to the load cell and check the stability and readability of the signal.

14. Open the 3M sealant package and follow the directions. Pour over the interior to just below the top of the shell. Let the material settle. Discard any remaining mixture. Let the shell sit undisturbed at 65° to 80° F. The cure is complete in about 8 hours; it is then water proof and highly impact resistant.