

Cable assembly using ACD/CJB/002 reference junction block

TEC/NOT/059

**CURTISS-
WRIGHT**

This technical note describes how to wire an ACD/CJB/002 for use with specific thermocouple modules such as the KAD/TDC/107. This technical note is divided into the following sections:

- “33.1 Tools required” on page 1
- “33.2 Parts required” on page 1
- “33.3 Assembly overview” on page 2
- “33.4 Cable assembly” on page 2

33.1 Tools required

You will need the following for the cable assembly:

- ACD/KIT/001 (must be ordered separately)
- Crimp tool
- Flat-tip screwdriver
- Nut-locking solution

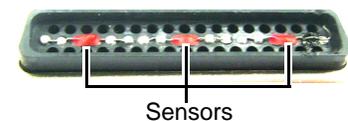
NOTE: We recommend always using a nut-locking solution on the clamp bar assembly screws.

33.2 Parts required

The ACD/CJB/002 is comprised of the following parts.

			
Back shell	Insulator A	Insulator B	Aluminum block
			
Rubber grommet	CON/KAD/010 connector	Connector cover	Clamp bar
			
Contacts	Two M2 screws	Four M2.5 screws	Two UNC 4-40 screws

WARNING: The sensors on the CON/KAD/010 connector can be easily damaged. Do not touch or scratch the sensors with the insertion tool when inserting pins into the connector.



33.3 Assembly overview

All the connector parts are bevelled; that is, one face is wider than the other. Before cable assembly, ensure all parts are oriented as shown in the following figure.

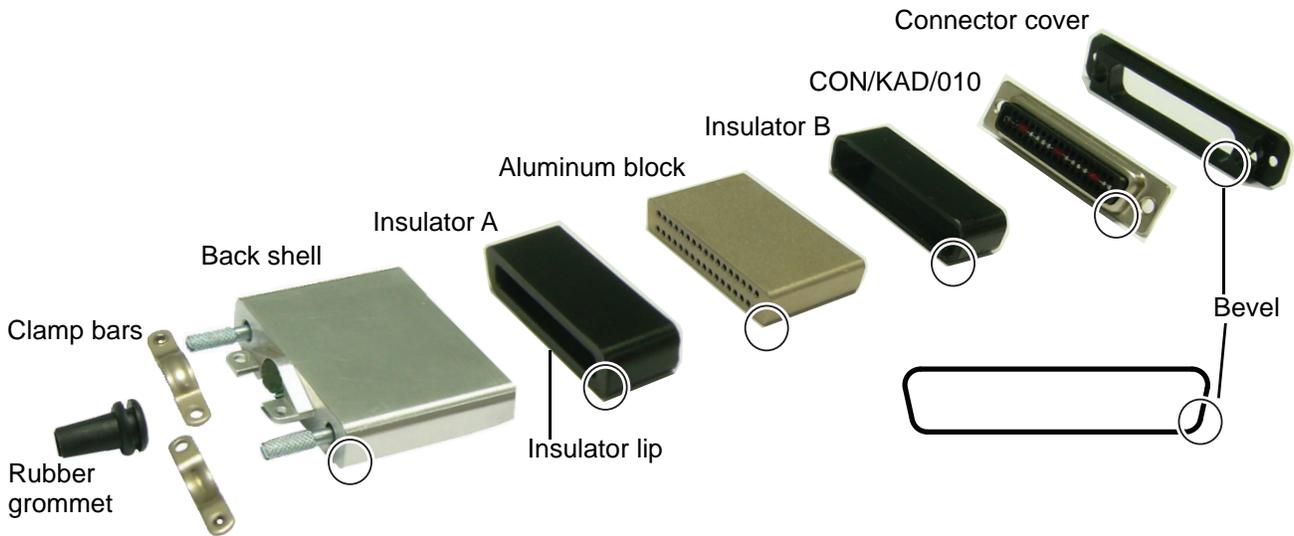


Figure 33-1: Parts placement

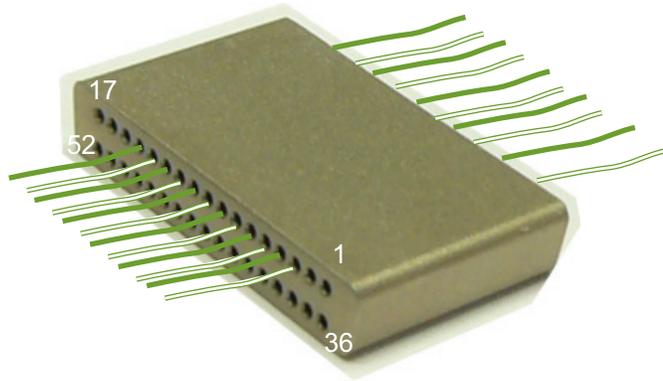
33.4 Cable assembly

The following cable assembly uses a KAD/TDC/107 module as an example.

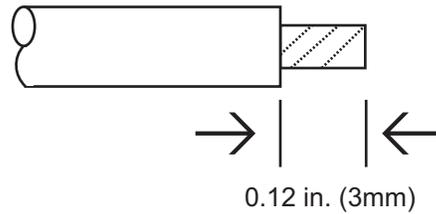
<ol style="list-style-type: none"> 1. Gather the number of wires you will need for the module type. WARNING: At this point DO NOT crimp any of the wires; crimped wires will not pass through the aluminum block. 2. With the rubber grommet oriented as shown, insert the wires through the rubber grommet. 	
<ol style="list-style-type: none"> 3. Insert the wires through the back shell. 4. With the insulator lip orientated as shown, insert the cables through the insulator A. 	

5. Insert the wires through the aluminum block.

NOTE: The example shown is for a KAD/TDC/107. To determine which pins to use and for pin descriptions, see the respective data sheet connector pinout table.

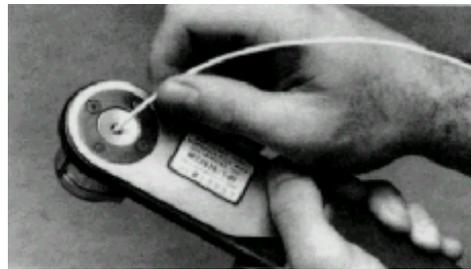


6. Strip 0.12 in. (3 mm) of insulation from the end of each wire.
7. Adjust the crimping stop point to match the wire diameter.

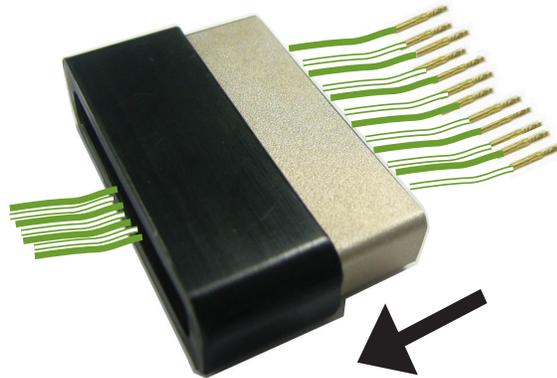


8. Insert the contact into the locator (if required).
9. Insert the stripped end of the wire into the contact crimp pot.
10. Squeeze the handles firmly to crimp the contact to the wire.

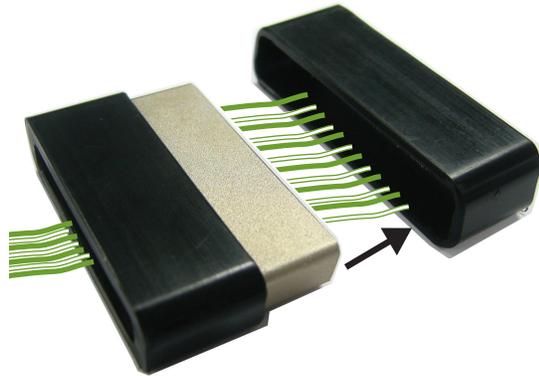
WARNING: The tool will not release if crimping is incomplete.
11. Repeat for the other wires to be crimped.
12. Before resuming cable assembly, check all wires for damage, frayed insulation, or loose contacts.



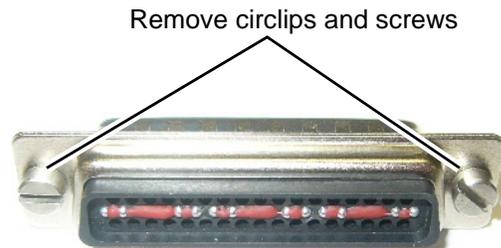
13. Insert the aluminum block into insulator A.



14. Insert the wires through insulator B.
15. Then insert the aluminum block into insulator B.



16. Remove and discard the two circlips and screws from the CON/KAD/010 connector. (Skip this step if there are no screws attached to the CON/KAD/010 connector that shipped.)

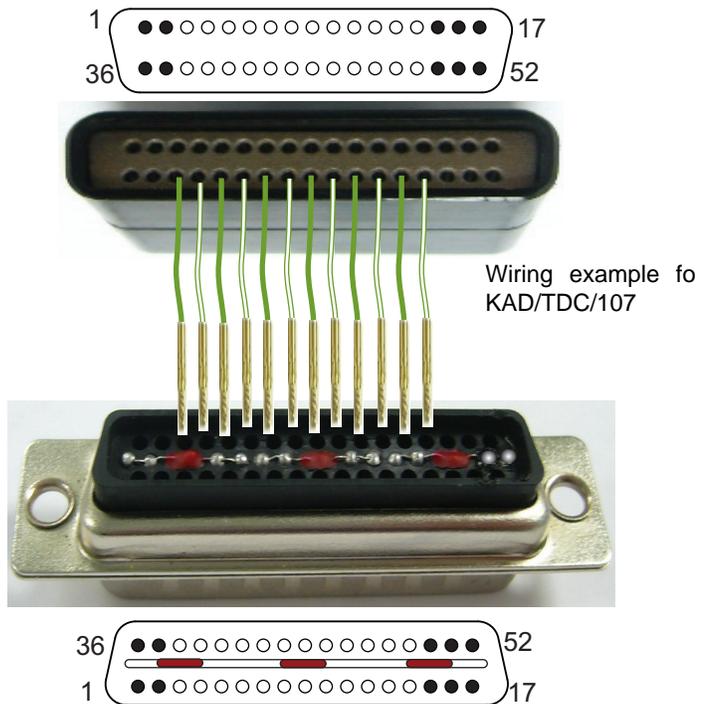


17. Ensure the block and connector are correctly aligned before inserting pins into the connector.
18. Using the insertion tool, insert pins 38 to 49 (for KAD/TDC/107) from the aluminum block to the connector.
19. Then insert pins 3 to 14 (for KAD/TDC/107).

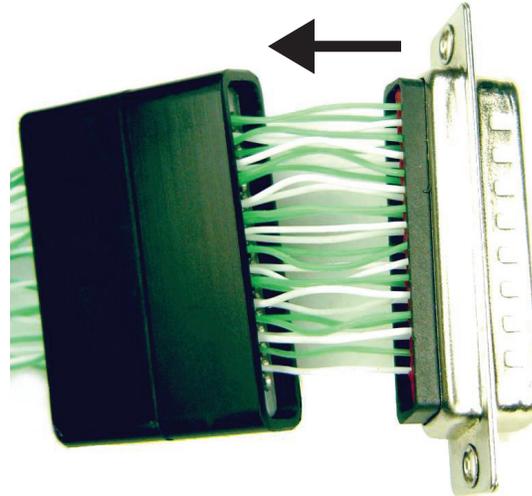
NOTE: Make sure the wires are not twisted between the block and the connector.

WARNING: The middle row of the connector is populated with the temperature sensors; touching or scratching the sensors with the insertion tool can damage the sensors.

NOTE: Unused connector holes can be filled with un-crimped pins; this should be completed at this stage of assembly.

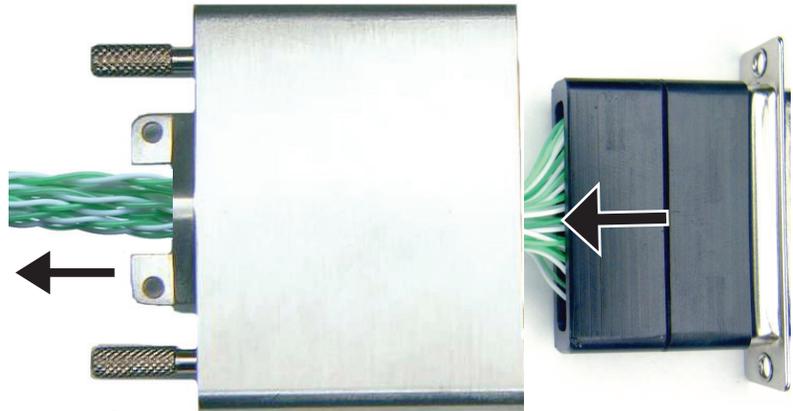


20. Insert the CON/KAD/010 connector into the block/insulator assembly.

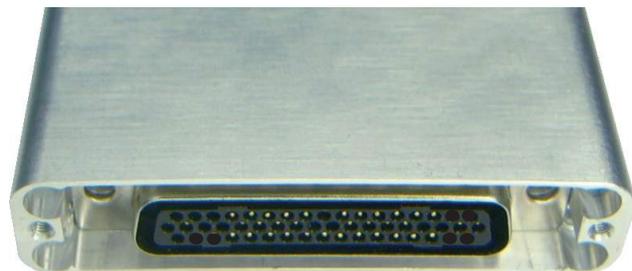


21. Insert the block/insulator/CON/KAD/010 assembly into the back shell. Keep the wires taut on the other side of the back shell.

WARNING: If the assembly is correctly oriented but does not slide easily into the back shell, then most likely a wire is caught between the assembly and the inside wall of the back shell. Keeping the wires taut helps to avoid this.



22. Ensure the block/insulator/CON/KAD/010 assembly is fully inserted as shown here.



23. Secure the connector to the backshell with four M2.5 screws.

NOTE: Do not exceed tightening torque of 0.4 Nm.

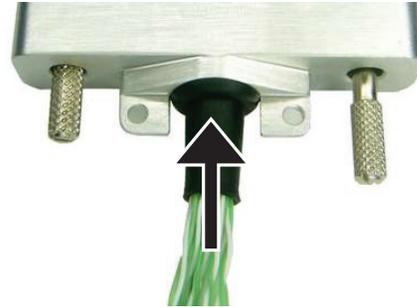


24. Secure the connector cover with two M2 countersunk screws.

NOTE: Do not exceed tightening torque of 0.25 Nm.



25. Secure the rubber grommet to the backshell.



26. Secure the clamp bar to the backshell with two UNC 4-40 screws.

NOTE: Do not exceed tightening torque of 0.4 Nm.

NOTE: If using small gauge thermocouple wire, you may need to reverse one of the clamp bars in order to properly hold the wire. This may cause the grommet to be deformed.

27. Apply nut-locking solution to both screws.

