

# CB2 and CB4 Series Cable Termination Boxes



## FEATURES:

- Cost effective
- Connects remotely installed accelerometers to portable data collectors
- Weatherproof enclosure & protective BNC cap covers
- 2 & 4 channel versions
- Cord grip inputs provide quick & secure cable entry into enclosure
- Ferrite bead for RF rejection

## SPECIFICATIONS

### ELECTRICAL

Inputs .....	Terminal block, 3 inputs / channel (+ -, shield)
Outputs .....	BNC jack per channel, electrically isolated

### ENCLOSURE

Rating .....	NEMA 4X / IP65
Material .....	ABS
Door Attachment / Removal .....	4 captive stainless steel screws
Dimensions .....	3 1/8" x 4 3/4" x 2 1/4" (H x W x D)

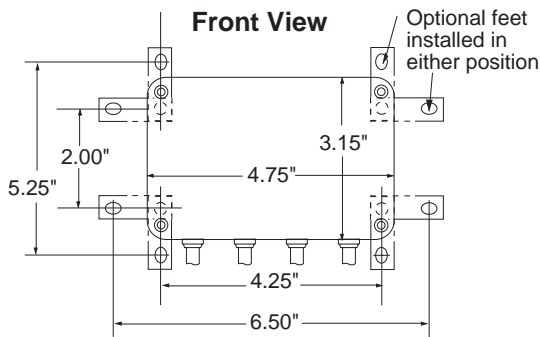
### ENVIRONMENTAL

Temperature Range .....	-40 to 180°F (-40 to 82°C)
Resistance .....	Resists humidity & outdoor environments

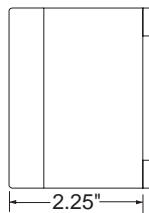
### PART NUMBER

CB2 .....	2
CB4 .....	4

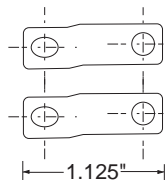
### CHANNELS



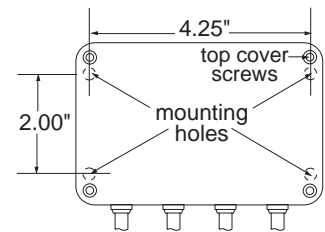
Side View



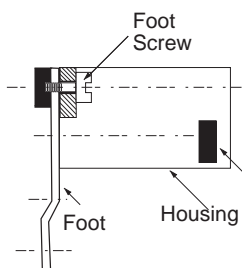
Included Feet



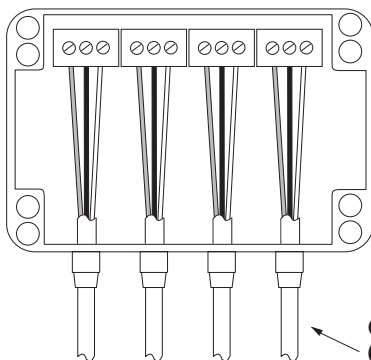
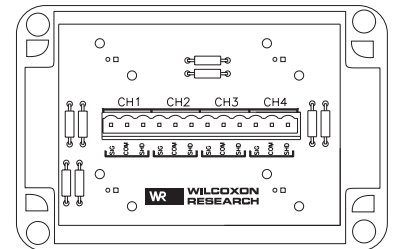
Back View



Bottom Housing Side View



Top Cover Side View



Channel (sensor) #1

### Parts Included:

- (4) termination plugs (CB4 only)
- (2) termination plugs (CB2 only)
- (4) feet
- (4) screws
- (4) washers
- (1) installation instructions

### Optional Feet Assembly Instructions:

1. Remove feet from package.
2. Slide washer onto screw.
3. Install screw into Connection Box housing.
4. Match up threaded holes in feet with holes through enclosure.
5. Rotate feet to desired position.
6. Tighten screw.

## Typical Sensor Channel Wiring Instructions:

1. Start sensor cable routing from mounted sensor's end, leaving enough slack in the sensor wire to maintain the sensor, but not so much as to create an obstacle. Run cabling from each sensor (up to 2-sensors for CB2, 4-sensors for CB4) to a common point where you will install the *Connection Box*. Remove sensor cables from sensors until all wiring is properly terminated (to reduce the chance for damage by ESD).
2. Securely mount the Connection Box, examine *Optional Feet Assembly Instructions* below if necessary.
3. Once *Connection Box* is securely mounted, loosen cable-grip nuts enough to insert un-stripped sensor cable through the bottom of the cable-grip. The right-most cable-grip is for Channel #1, the next cable-grip to the left is for Channel #2, etc.
4. Gently pull all excess cable into the mounted *Connection Box*, stop pulling cable into box when proper cable routing is complete, do not secure cabling at this time. Mark the end of the sensor cable at the point where the cable enters the *Connection Box* from the cable-grip. Ensure you have at-least 2" of sensor cable extending inside of the Connection Box to work with! Repeat this step for each sensor cable that will be installed.

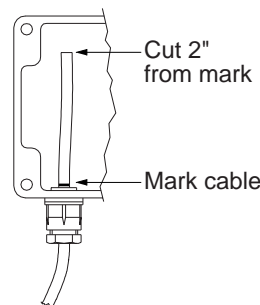


Figure A

5. Cut sensor cable exactly 2.00" from mark placed on sensor cable in the previous step. See **Figure A**.
6. Continue to gently pull sensor cable into box, until there is enough room to strip sensor cable comfortably.
7. Begin stripping each sensor cable at the mark you placed, making sure not to damage the outer braided shield which is required for noise immunity of the sensor. Separate each conductor from the shield. You should now have a shield (SHD), a black (COM), and a white (SIG) conductor.
8. Strip 0.25" of insulation from the end of the COM and SIG conductors as shown in **Figure B**. Repeat Steps 7 and 8 for each sensor wire.
9. Using the termination plugs that were included with the Connection Box, secure each sensor wire as illustrated. With the plug's screws facing you, ensure the wires enter the bottom of each connector. Tighten each retaining screw, ensuring that the SHD conductor is to the left, the COM conductor is in the center, and the SIG conductor enters the right terminal of the connector.

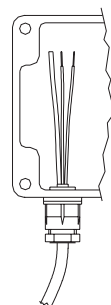


Figure B

As shown in **Figure C**, proper termination as outlined will ease the following assembly procedures! Repeat for each sensor cable.

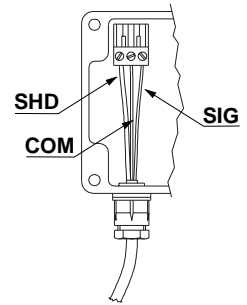


Figure C

For any channel where it is desired to have the shield connected to the BNC connector shell, a jumper wire must be connected between the shield (SHD) and common (COM) connections in the termination plug as shown in figure D.

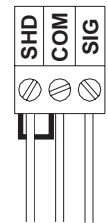


Figure D

10. When all sensor cables are properly terminated, gently pull all sensor wires back through the cable-grip until your mark (from Step 4) is at the bottom of the Connection Box. Tighten cable-grip nuts until each sensor cable is held snugly in place, make sure that the termination plug's screws still face you as you tighten.
11. Secure all sensor cabling. Check that no sensor wires pulled through the tightened cable-grips after all cables were secured.
12. Install *Connection Box Cover* by properly lining up each sensor cable's termination plug with the corresponding jack on the back of the *Connection Box Cover*. The jack is keyed so that the plugs can only be inserted in one direction, but care must be taken to ensure that the plugs are not installed offset by one or two pins. Take note of the labeling on the Printed Circuit Board (PCB) to ensure that each conductor lines up with the corresponding label.
13. Secure the *Connection Box Cover* by tightening the four retained cover screws. Do not over tighten.
14. Using a DMM, there should be infinite resistance between each channel's BNC center conductor and outer conductor with no sensor attached. There should also be infinite resistance from a good *GROUND* point and each conductor of the BNC with no sensor installed, if the jumper in Figure D is not installed..
15. If no cable errors are detected, reattach each sensor cable to each sensor, and verify expected output using normal sensor recording devices attached to each BNC jack on the front of the *Connection Box*. Reattach *Connection Box's* BNC covers when not in use.

### Shielding and Grounding of CB2/CB4

Cables that connect to the sensor should be isolated styles. That is, the shield should not connect to the sensor case. For these style cables, the shield and common connections should be jumpered as in Figure D. For non-isolated sensor connector style cables, the connection should be as in Figure C, using no jumper. If any of the cables installed in a single CB2/CB4 box are non-isolated, all channels should be wired as in Figure C.