



# INSTALLATION INSTRUCTIONS

Connect Airmar CHIRP Transducer to  
CHIRP/Broadband Echosounder

## CHIRP Transducer Junction Box

08/15/13  
17-576-01 rev.02

**Follow the safety precautions below to reduce the risk of poor product performance, property damage, personal injury, and/or death.**

**WARNING:** Always wear safety goggles and a dust mask when installing.

**CAUTION:** Do not cut off the echosounder's connector.

**CAUTION:** To reduce electrical interference from other electrical wiring and any on-board equipment with strong magnetic fields such as radar equipment, radio transmitters, engines, generators, etc., separate the cables by at least 1 m (3'). Ensure that all the cable shields are appropriately grounded.

**CAUTION:** Be careful not to tear the cable jackets when passing them through compartments, bulkheads, or walls. Use grommets to prevent chaffing.

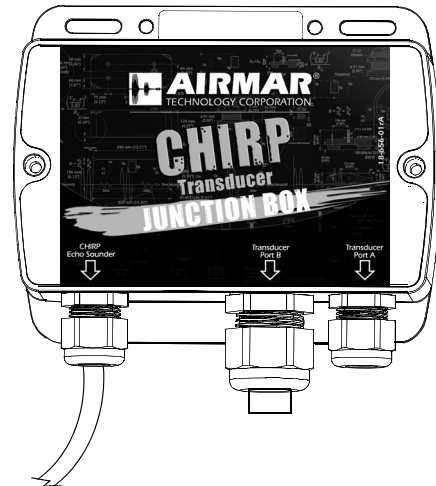
**CAUTION:** If there is an unused compression nut, insert the plug so the Junction Box will be water resistant.

**CAUTION:** Make certain there are no bare wires, frayed strands, or loose ends to cause a short circuit inside the Junction Box.

**IMPORTANT:** Please read the instructions completely before proceeding with the installation. These instructions supersede any other instructions in your instrument manual if they differ.

## Tools & Materials

Safety goggles  
Dust mask  
Pencil  
Electric drill  
Drill bit: 3mm or 1/8"  
Grommets (some installations)  
Cutting pliers  
Phillips screwdrivers  
Wire strippers  
Heat gun  
Needle-nose pliers  
Slip-joint pliers



## Applications

The CHIRP Transducer Junction Box allows an Airmar CHIRP Transducer to be connected to a chirp/broadband enabled echosounder.

## Installation

Remove the cover of the CHIRP Transducer Junction Box. Set it aside along with the two screws, packet of silicone lubricant, and bag of hardware containing heat-shrink tubing, four 6 x 1/2" screws, two terminal blocks, and a **TINY** Rsense connector. Be careful not to lose the connector.

### Mounting Location & Hole Drilling

1. Select a convenient dry mounting location for the water-resistant Junction Box, a minimum of 1 m (3') from other cables and electronic equipment.
2. Hold the Junction Box at the selected location and mark the position of the four screw holes.

**NOTE:** If the Junction Box will be mounted on a vertical surface, face the compression nuts downward to avoid any possibility of water seeping into the box.

3. At the marked locations, drill 3mm or 1/8" holes to a depth of 10mm (3/8"). Do not fasten the Junction Box in place at this time.

### Cable Routing

1. Route the echosounder cable from the Junction Box to the echosounder. Do not connect the cable to the echosounder or fasten it in place at this time.
2. Route the transducer cable from the transducer to the Junction Box. (Note that some transducer models have two cables, so route both cables.) If you have installed a pair of transducers, route the second transducer cable to the Junction Box. Do not fasten the cable(s) in place at this time.
3. Allowing an extra 25cm (10") for wiring ease, cut the transducer cable(s) to length. Discard any transducer connector(s), as it will not be needed.

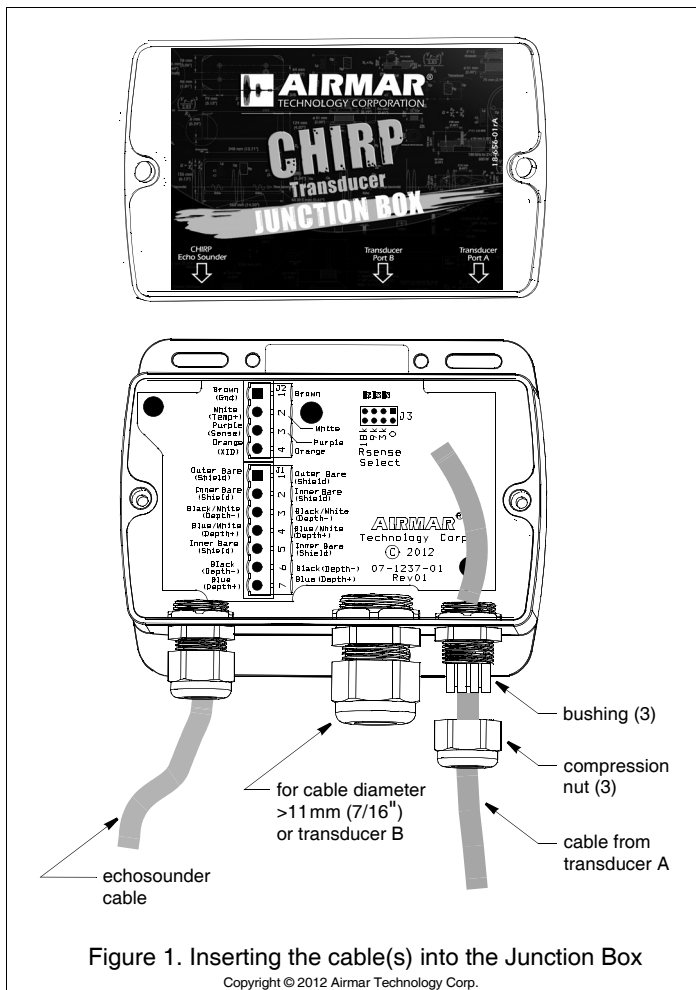


Figure 1. Inserting the cable(s) into the Junction Box

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### Preparing the Cables

**Single transducer with one cable**—The diameter of the transducer cable will determine which port to use. Select the small compression nut at Port A if the cable's diameter is less than 11 mm (7/16"). Select the large compression nut at Port B if the cable's diameter is greater than 11 mm (7/16"). **NOTE:** Be sure the plug is inserted into the unused compression nut so the Junction Box is water resistant.

**Single transducer with two cables**—If you have a two cable transducer, you will need to use both Port A and Port B. Loosen the large compression nut at Port B and remove the plug. **Note that the large compression nut can accommodate small cables.**

**Two transducers**—If you are connecting a pair of transducers, you will need to use both Port A and Port B. Loosen the large compression nut at Port B and remove the plug. **Note that the large compression nut can accommodate small cables.**

1. Loosen the appropriate compression nut. Push approximately 200mm (8") of the cable through the compression nut and bushing into the Junction Box (see Figure 1). If there are two cables, repeat the process with the second compression nut.
2. Strip 105mm (5") of the outer jacket and foil shielding from the cut end of the cable (see Figure 2).
3. Separate the shielded pairs. Remove about 95mm (4-1/2") of the inner foil shielding from each pair. However be sure to stagger the cut ends of the foil. Do not cut all the foil shielding the same length.
4. **No temperature function**—The white wire(s) will *not* be used. Cut off the white wire(s) flush with the cable jacket.

**Two transducers with temperature function**—Only the white wire from one of the cables will be used. (It does not matter which one.) The other white wire will not be connected. (It can be used later if needed.) Cover the cut end of the other white wire with heat-shrink tubing; Use a heat gun to shrink the tubing.

5. Strip 7 mm (1/4") of insulation from the end of each insulated wire to make stripped ends.
6. Protect bare wires and foil shielding from causing a short circuit inside the Junction Box. Cover each bare wire with clear heat-shrink tubing so that only 7 mm (1/4") of the end is exposed for connecting. (Note that the larger diameter tubing is for the outer bare wire.) Cover the inner foil shielding with the black tubing, being sure it extends a minimum of 3 mm (1/8") beyond the foil. Use the yellow tubing around the cable jacket where the wires emerge from the cable. The tubing must overlap the wires a minimum of 6 mm (1/4"). Use a heat gun to shrink the tubing.

### Rsense Connector

An Rsense connector is required at J3 (see Figure 3) The placement of the connector depends upon your model. Find the model name printed on the cable tag. Then identify the Rsense Select number on the table below. Mate the Rsense connector to the appropriate pins at J3 using needle nose pliers.

Model	Rsense Select
B75H/L/M*	9k
B150M	NA
B175H/L/M*	9k
B265LH/LM	3k
B765LH/LM	0
CM599LH/LM	3K
M265LH/LM	3k
PM111LH/LM	3k
PM260LH/LM	3K

Model	Rsense Select
PM265LH/LM	3k
R109LH/LM	3k
R111LH/LM	3k
R509LH/LM	3K
R599LH/LM	3K
SS150M	NA
SS175H/L/M	9k
TM150M	NA
TM265LH/LM	3k

\* This model must be installed as a pair (2 transducers).

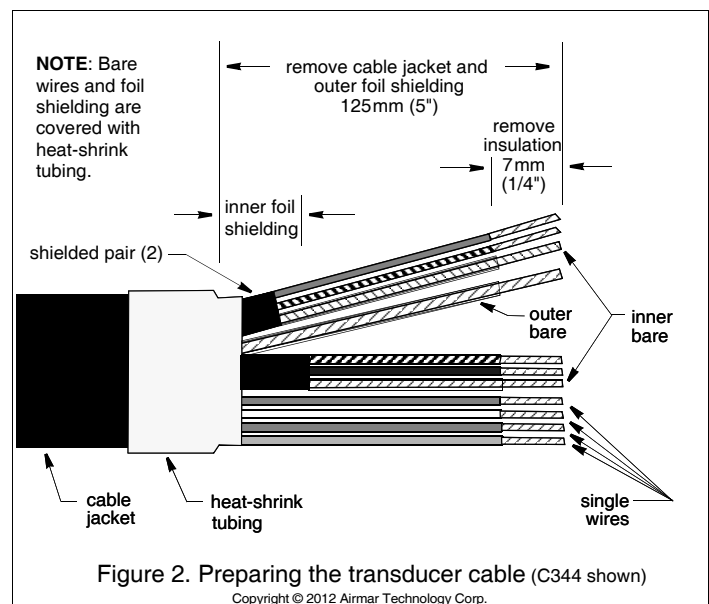


Figure 2. Preparing the transducer cable (C344 shown)

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## Connecting the Terminals

**CAUTION:** Take care when choosing each wire because the colors may look similar. Note, there are wires with *striped* insulation.

1. Hold each terminal block oriented the way that it will be mated to the pins on the circuit board (see Figure 3). This is necessary so the wires are connected to the correct terminals and not in the reverse order.
2. Follow the color labels printed on the inside of the Junction Box. Be sure to connect the wire with blue and white *striped* insulation to the terminal labeled Blue/White. Likewise connect the wire with black and white *striped* insulation to the terminal labeled Black/White.

**Two Transducers**—There will be two brown, purple, and orange wires connected to the J2 terminals 1, 3, and 4 respectively. Twist the stripped ends of each pair of matching colored wires together. Then proceed by treating each twisted pair as a single wire.

3. Make connections by inserting the stripped end of a colored wire into the square hole in the appropriately labeled terminal. (You may want to use needle-nose pliers.) Tighten the terminal screw until the wire is held firmly in place. Check by gently tugging on the wire. Connect each wire in turn.
4. Visually inspect all the wires. Make certain the heat-shrink tubing completely covers any bare wires and foil shielding. There should be no frayed strands or loose ends to cause shorting. If any bare wire is visible outside a terminal, shorten the stripped end and reconnect it.
5. After all the wires are connected, mate each terminal block with the appropriate set of pins on the circuit board. Push each terminal block firmly into place.

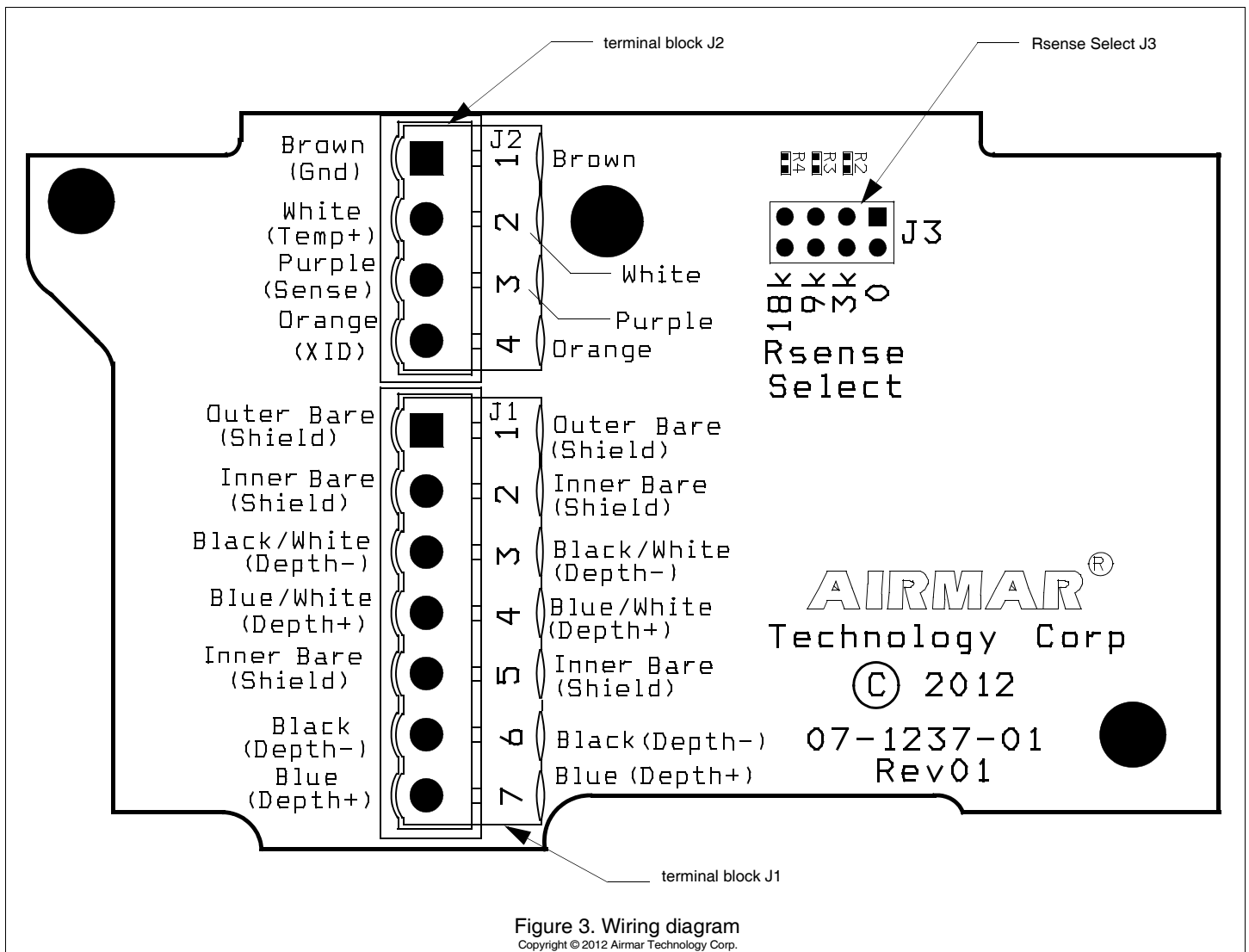


Figure 3. Wiring diagram  
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### ***Completing the Installation***

1. From outside the Junction Box, pull the cable(s) until only 5mm (1/4") of jacket remains inside the box. Using slip-joint pliers, tighten each compression nut to make a watertight seal.
2. Arrange the wires neatly inside the Junction Box. Check to be sure the gasket is firmly installed in the channel on the back side of the cover (see Figure 4). Lubricate the gasket with the silicone lubricant supplied. Screw the cover in place with the two long screws supplied.
3. Fasten the Junction Box in place with the four 6 x 1/2" screws supplied.
4. Plug the connector on the echosounder cable into the echosounder.
5. Fasten all the cables in place.

### **Parts**

Obtain parts from your sensor manufacturer or marine dealer.

Gemeco	Tel: 803.693.0777
(USA)	Fax: 803.693.0477
	email: sales@gemeco.com
Airmar EMEA	Tel: +33.(0)2.23.52.06.48
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	email: sales@airmar-emea.com

