

# CABLE CONSTRUCTION GUIDE

## 01






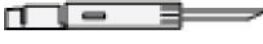
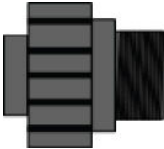
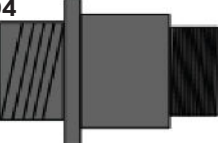
Thank you for purchasing the SeaHawk sensing and non-sensing cable construction kit (part number CCK-LD). This guide describes how to use this kit to construct cables in the length required for your application. Note that RLE cannot warranty cables that are assembled outside our manufacturing facilities.

Before you build your cable, check the website to ensure you are using the most recent version of our documentation.






If you need further assistance, please contact RLE Technologies at [support@rletech.com](mailto:support@rletech.com).

## 02

**INSTALLATION SUPPLIES:** Included with the CCK

RLE PN	Qty	Description
<b>3257</b> 	2	Sensing Cable Sockets Use 2 for each sensing cable. Not used for non-sensing cables.
<b>3254</b> 	4	Universal Cable Sockets Use 2 for each sensing cable. Use 4 for each non-sensing cable.
<b>3256</b> 	2	Sensing Cable Pins Use 2 for each sensing cable. Not used for non-sensing cables.
<b>3255</b> 	4	Universal Cable Pins Use 2 for each sensing cable. Use 4 for each non-sensing cable.
<b>1298</b> 	1	Plug Use 1 for each cable.
<b>1294</b> 	1	Receptacle Use 1 for each cable.

# 02

RLE PN	Qty	Description
<b>2410</b> 	2	Grip Use 2 for each cable.
<b>2409</b> 	2	Boot Use 2 for each cable.
<b>1151</b> 	2	3/8" x 1/2" Shrink Tubing Use 2 for each sensing cable. Not used for non-sensing cables.
<b>2505</b> 	2	3/16" x 1" Shrink Tubing Use 2 for each non-sensing cable. Not used for sensing cables.
<b>2550</b> 	2	1/4" x 1" Shrink Tubing Use 2 for each non-sensing cable. Not used for sensing cables.

### AVAILABLE FROM RLE, SOLD SEPARATELY

- SeaHawk Leak Detection Sensing Cable, LD-SC-xx
- SeaHawk Non-Sensing Cable, LD-NSC-xx
- Cable Connector Kit, CCK-LD
- Pin Crimp Tool, SCPC
- Cable Stripper, SCCS

# 03

## SENSING CABLE ASSEMBLY - ORANGE CABLE

1. Gather the following supplies from the CCK:

- RLE PN 3257 - Sensing Cable Sockets - Qty 2
- RLE PN 3254 - Universal Cable Sockets - Qty 2
- RLE PN 3256 - Sensing Cable Pins - Qty 2
- RLE PN 3255 - Universal Cable Pins - Qty 2
- RLE PN 1298 - Plug - Qty 1
- RLE PN 1294 - Receptacle - Qty 1
- RLE PN 2410 - Grip - Qty 2
- RLE PN 2409 - Boot - Qty 2
- RLE PN 1151 - 3/8" x 1/2" Shrink Tubing - Qty 2

**03** 2. Spool the bulk sensing cable to the desired length - 1 foot minimum. RLE recommends sensing cable lengths no longer than 50 feet.

3. Slide the 3/8 x 1/2 inch shrink tube (RLE PN 1151) over each end of the sensing cable. Shrink it with a heat source 1 inch from each end.

4. Using dikes or needle nose pliers, untwist the orange carrier above the shrink tube. Trim both ends to 3/4".

5. Split the orange carrier as far as the shrink tube and strip them 3/8".

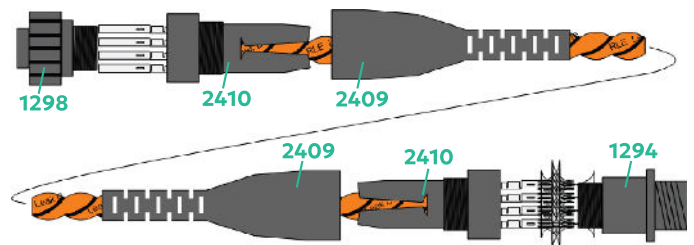
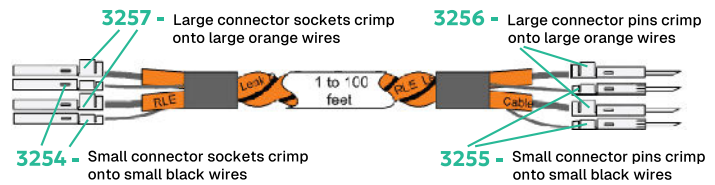
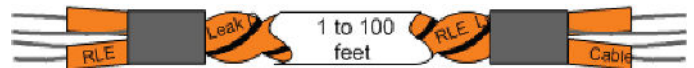
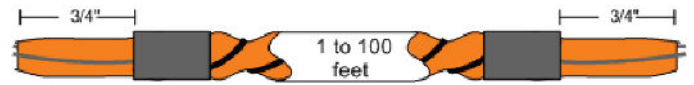
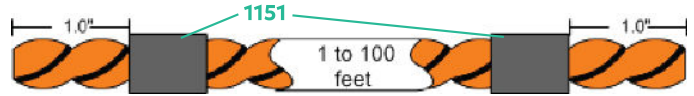
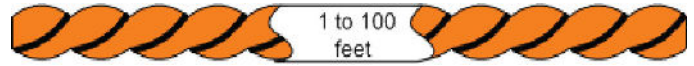
**Note:** If you are not going to put the pins or sockets on at this time, leave the strip plug on the wires.

6. Slide back the black braiding to expose approximately 1/8" of the silver wire at the ends of the cable - this prepares the cable to receive the sockets and pins. Crimp the connector sockets (RLE PN 3254 & 3257) onto one side of the cable. Crimp the connector pins (RLE PN 3255 & 3256) on the opposite side of the cable.

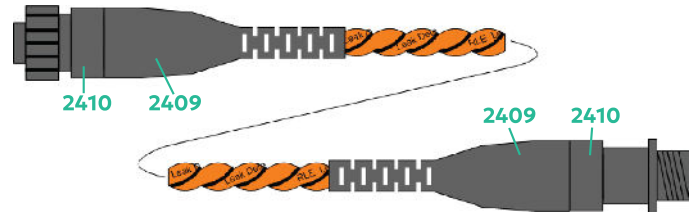
7. Slide one boot (RLE PN 2409) and one grip (RLE PN 2410) over each end of the cable as shown below. Note that the four holes on the plug and receptacle are numbered. It is important that the sockets and pins are placed into the correct holes in the plug and receptacle. If you don't seat the wires correctly, the cable won't function correctly.

Snap the sockets into the plug (RLE PN 1298) and the pins into the receptacle (RLE PN 1294) in order as follows:

- RLE PN 3256 - Sensing Cable Pins - Qty 2
- Pin 1 - Orange wire with writing
- Pin 4 - Orange wire without writing
- Pins 2 and 3 - One black braided wire in each



- 03** 8. Screw the grips onto the plug and receptacle, and tighten by hand. Screw the boots onto the grips, and tighten by hand. The cable assembly is complete.

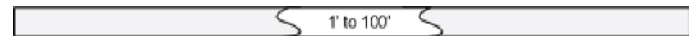


**04 NON-SENSING CABLE ASSEMBLY - WHITE CABLE**

1. Gather the following supplies from the CCK:

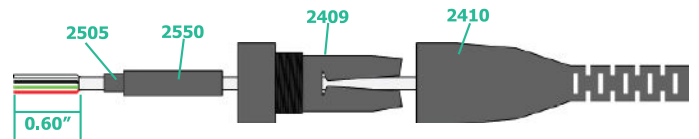
- RLE PN 3254 - Universal Cable Sockets - Qty 4
- RLE PN 3255 - Universal Cable Pins - Qty 4
- RLE PN 1298 - Plug - Qty 1
- RLE PN 1294 - Receptacle - Qty 1
- RLE PN 2410 - Grip - Qty 2
- RLE PN 2409 - Boot - Qty 2
- RLE PN 2505 - 3/16" x 1" Shrink Tubing - Qty 2
- RLE PN 2550 - 1/4" x 1" Shrink Tubing - Qty 2

2. Spool the bulk non-sensing cable to the desired length - 1 foot minimum. RLE recommends lengths no longer than 100 feet.



3. Place the following parts over each end of the cable in this order:

- One boot (RLE PN 2410)
- One grip (RLE PN 2409)
- 1/4" x 1" shrink tubing (RLE PN 2550)
- 3/16" x 1" shrink tubing (RLE PN 2505)



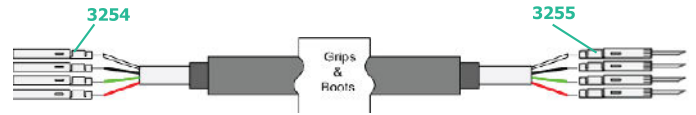
Strip 0.60" of the white jacket off of both ends of the cable to expose the white, black, green, and red wires inside.

4. Strip 0.10" of each white, black, green, and red wires on both ends of the non-sensing cable.



# 04

5. Crimp the four connector sockets (RLE PN 3254) on the four stripped wires on one end of the cable. Crimp the four connector pins (RLE PN 3255) on the four stripped wires on the opposite end of the cable.



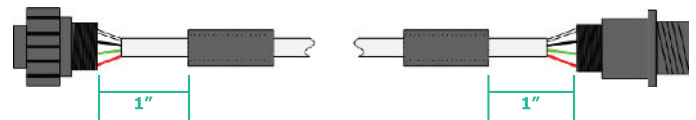
6. Note that the four holes on the plug and receptacle are numbered. It is important that the sockets and pins are placed into the correct holes in the plug and receptacle. If you don't seat the wires correctly, the cable won't function correctly.

Snap the sockets into the plug (RLE PN 1298) and the pins into the receptacle (RLE PN 1294) in order as follows:

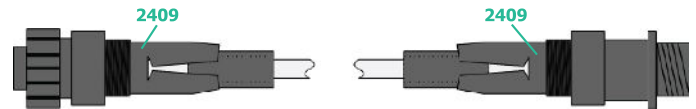
- Pin 1 - White
- Pin 2 - Black
- Pin 3 - Green
- Pin 4 - Red



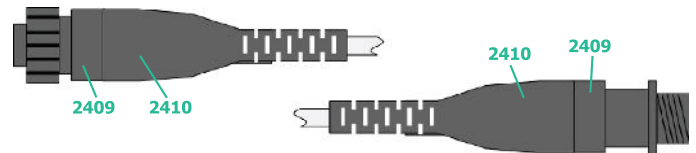
7. Place the smaller shrink tube inside the larger one and shrink together. Be sure to keep the tubes 1" away from the plug and receptacle - as shown below - so there's room left to connect the grips and boots to the plug and receptacle.



8. Slide the grips over the completed heat shrink sections and screw the grips onto the plug and receptacle.



9. Slide the boots up and screw the boots onto the grips.



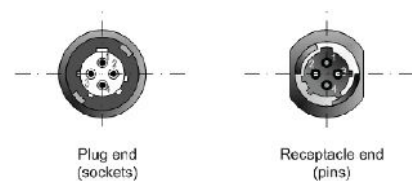
10. The cable assembly is complete.



# 05

**TEST THE ASSEMBLED CABLE:** All cables produced at RLE are tested for quality and "continuity" before they are shipped. When you create your own cables, test them as the last step in your build process.

Each cable has two distinct ends:



# 05

To test your finished cable, you will need an ohmmeter with a pointed probe tip on one lead and a miniclip or microclip on the other lead.

1. Insert the probe tip in the connector socket.
2. Attach the miniclip to the corresponding connector pin. If the cable has been constructed properly, the ohmmeter will register the following values:

Cable Pin Resistance Values - Orange Sensing Cable	
Pin	Resistance +/- 10%
1	Less than 0.1 ohm per foot
2	2.8 ohms per foot
3	2.8 ohms per foot
4	Less than 0.1 ohms per foot

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