# LED INDICATOR OVERVIEW

**The small circle between the warning light(s) on the front of the indicator is a hole to the combination proximity sensor AND photo sensor. The proximity sensor works by sliding a finger across it, not actually pressing on the lens. It is used to calibrate and interact with the indicator. The photo sensor portion detects the available light and automatically adjusts for the condition; low light = low intensity, and bright sun = bright intensity.**

**NOTE: Best results are obtained by covering the proximity sensor and sliding a finger across to one side or the other. A button press or 'cover and lift' will not work as well for this setup. A "*Cover and Slide to the Side*" movement is recommended, and will be referred to throughout these instructions as:**

**CSS = Cover (wait the time limit), then Slide to the Side.**

## Button CSS Types:

Online Video Tutorial

www.youtube.com

Search for :

Livorsi Marine ALEDI Video 7

1. **Short CSS** – cover, wait 1 second and slide finger to side
   - Used to select options of bar direction and type
   - Use to advance running point LED selection
2. **Normal CSS** – cover, wait 3 seconds and slide finger to side
   - Used to advance through setup steps
   - Used to save setup
   - LED BRIGHTNESS will dim and then spike to maximum intensity to indicate that the normal button press time is reached. Sliding finger to the side will accept the Normal CSS. There is a 2 second tolerance to slide finger to the side after the LED brightness spikes before the Indicator will reject the button press and dim the LED intensity.
3. **Extended CSS** – 6 seconds (or more)
   - Used to continuously step through the running point LED or Preset selections

**Calibration for 3- or 4-Slot Indicators**
Please note that this setup procedure is for 1 and 2 slot indicator cards. If a 3- or 4-slot indicator is what is being worked on, this setup will have to be performed twice. There are two separate boards on a 3- and 4- slot indicator and therefore requires 2 separate calibration procedures.

**Electronic Senders**
In order for these new indicators to function, there must be either an electronic sender to transmit the signal, or a mechanical to electrical device to convert the mechanical orientation into a voltage or resistance, which will 'feed' the signal up to the indicator
**Livorsi Part Number: CBME5V**
Many of today's tabs, drives, jackplates, fuel tanks, or rudders already have a sender on it. These versatile indicators can be used with a wide variety of senders such as voltage, resistance, or CAN BUS NMEA2000 or SAEJ1939 protocols. We have many ideas to adapt senders for these devices, so let us know your application and we will determine the best solution for your application.

The type of sender used whether voltage, resistance or CAN BUS must be known at the time of order, with respect as to how the indicator will be programmed to read what type of connection used.

The Indicator can be configured to include a Demo mode where it will demonstrate the different bar types and turn the Warning LEDs ON and OFF. The Demo mode is entered when Setup mode is initiated from power-on, but the button is not "Pressed" within 3 seconds to confirm entry to Setup mode. The Indicator will exit Demo mode when any of the analog inputs change by more than 10%. The Indicator will re-enter Demo mode after 10 seconds of a stable signal on the analog inputs. The Indicator will completely exit Demo mode with a power cycle.

This indicator is setup for the application it was ordered for. **No change is needed.** Once the desired Preset selection is made, a **Normal CSS** (2 sec) will save the Preset selection and move on to the next step. The LEDs will illuminate to maximum intensity to confirm the selection.

**Setup Procedure:**

1. **Enter Setup**

**There are 3 different levels of LED Indicator Setup depending on the software version:**

i. **Versions earlier than 1.6.0 (Bar Setup Only):**
Cover button, power indicator, and release within 3 seconds. The "Setup Pattern" of the top, middle, and bottom LEDs will be displayed.

Press and hold the button for 3 seconds. The LEDs will dim to 25% brightness, then brighten to 100% when the indicator is ready to enter configuration. Setup will then go to step 2, direction and type for Bar 1. Preset configuration is not available in these software versions.

ii. **Version 1.6.0 – 1.6.6 (Preset Selection, then Bar Setup):**
Cover button, power indicator, and release within 3 seconds. The "Setup Pattern" of the top, middle, and bottom LEDs will be displayed.

Press and hold the button for 3 seconds, then release. The LEDs will dim to 25% brightness, then brighten to 100% when the indicator is ready to enter configuration. Setup will then go to preset selection, which applies default input modes, values, and bar types.

- LEDs at the top of the bar indicate tens digits.
- LEDs at the bottom of the bar indicate ones digits

Use a Short Button press to advance the Preset selection. When the desired preset is selected, use a Normal Button press to accept the preset and advance to Step 2 of the setup procedure.

iii. **Version 1.6.7 and later, *November 2013 and later* (Preset Selection and Bar Setup are separate procedures):**
To enter Bar Setup:

- Press and hold the button for 3 seconds, then release. The LEDs will dim to 25% brightness, then brighten to 100% when the indicator is ready to enter configuration. Proceed to Step 2.

To enter Preset Selection:

- Press and hold the button for 8 seconds, then release. The LEDs will dim to 25% brightness, then brighten to 100% after 3 seconds, and then dim slightly to 75% to indicate preset configuration is selected.

- LEDs at the top of the bar indicate tens digits.
- LEDs at the bottom of the bar indicate ones digits.
- If power is removed power during preset configuration, the previous Preset and Bar Setup values will be retained.
- The Indicator will reset if the selected preset is changed.
- The indicator will not go through standard configuration after preset configuration is completed.
- Default values for the Bar Setup will be applied if the preset is changed.

**End of Enter Setup**

2. **Set Direction and Bar Type for Bar 1**
   The Indicator will start the setup procedure by strobing a single LED from the top to the bottom to indicate a (Pointer Type) bar using a single lit LED with low voltage at the top of the bar and high voltage at the bottom.
   - A Short Button Press will cycle through the 4 Bar Type options:
     - Pointer Type Bar with low voltage at the top
     - Fill Type Bar with low voltage at the top
     - Pointer Type Bar with low voltage at the bottom
     - Fill Type Bar with low voltage at the bottom
   - A Normal button press will accept the current bar type for Bar 1
3. **Set Direction and Bar Type for Bar 2 (If Available)**
   If LED Bar 2 is fitted, the Indicator will begin strobing a single LED from the top to the bottom of this bar to indicate a Pointer Type bar to be used for this bar with low voltage at the top of the bar and high voltage at the bottom of the bar. Use the same procedure from Step 1 to select and accept the desired bar type for Bar 2.
4. **Set Direction and Bar Type for Bar 3 (If Available)**
   If LED Bar 3 is fitted, the Indicator will begin strobing a single LED from the top to the bottom of this bar to indicate a Pointer Type bar to be used for this bar with low voltage at the top of the bar and high voltage at the bottom of the bar. Use the same procedure from Step 1 to select and accept the desired bar type for Bar 3.
5. **Set Direction and Bar Type for Bar 4 (If Available)**
   If LED Bar 4 is fitted, the Indicator will begin strobing a single LED from the top to the bottom of this bar to indicate a Pointer Type bar to be used for this bar with low voltage at the top of the bar and high voltage at the bottom of the bar. Use the same procedure from Step 1 to select and accept the desired bar type for Bar 4.
6. **Set Low Voltage for Bar 1**
   The Indicator will light up the LED on Bar 1 configured for the low end voltage. Adjust the input for the lowest voltage or CAN input and use a Normal button press to accept it.
7. **Set Low Voltage for Bar 2 (If Available)**
   The Indicator will light up the LED on Bar 2 (if available) configured for the low end voltage. Adjust the input for the lowest voltage or CAN input and use a Normal button press to accept it.
8. **Set Low Voltage for Bar 3 (If Available)**
   The Indicator will light up the LED on Bar 3 (if available) configured for the low end voltage. Adjust the input for the lowest voltage or CAN input and use a Normal button press to accept it.
9. **Set Low Voltage for Bar 4 (If Available)**
   The Indicator will light up the LED on Bar 4 (if available) configured for the low end voltage. Adjust the input for the lowest voltage or CAN input and use a Normal button press to accept it.
10. **Set High Voltage for Bar 1**
    The Indicator will light up the LED on Bar 1 configured for the high end voltage. Adjust the input for the highest voltage or CAN input and use a Normal button press to accept it.
11. **Set High Voltage for Bar 2 (If Available)**

The Indicator will light up the LED on Bar 2 (if available) configured for the high end voltage. Adjust the input for the highest voltage or CAN input and use a Normal button press to accept it.

12. **Set High Voltage for Bar 3 (If Available)**
    The Indicator will light up the LED on Bar 3 (if available) configured for the high end voltage. Adjust the input for the highest voltage or CAN input and use a Normal button press to accept it.
13. **Set High Voltage for Bar 4 (If Available)**
    The Indicator will light up the LED on Bar 4 (if available) configured for the high end voltage. Adjust the input for the highest voltage or CAN input and use a Normal button press to accept it.
14. **Set Running Point for Bar 1 (If Desired)**
    The Indicator will light all but the top and bottom LEDs of Bar 1 to indicate that no running point should be used. If a running point is desired, adjust the input to the running point voltage.
    - If not running point is required, the LED Indicator will scale the indicated position linearly between the low and high voltage settings. This option is selected by using a Normal button press when all but the top and bottom LEDs are tuned on.
    - If the input voltage for the running point is within 5% of the low or high end voltage, no running point will be used and the LED Indicator will scale the indicated position linearly between the low and high voltage settings.
    - If a running point is desired, use short button presses to advance to the LED to be used for the running point.
    - Continued short button presses will cycle back to all but the top and bottom LEDs being lit to select no running point and then cycle back around through each LED with each short button press.
    - An extended button press will continuously advance the running point 1 LED every ½ second. The button should be released as soon as the LED is at the desired running point position.
    - Once the desired running point LED is turned on, use a Normal button press to accept the desired running point position and voltage.
15. **Set Running Point for Bar 2 (If Available and If Desired)**
    Setup Bar 2 (if available) in the same way described above in step 13.
16. **Set Running Point for Bar 3 (If Available and If Desired)**
    Setup Bar 3 (if available) in the same way described above in step 13.
17. **Set Running Point for Bar 4 (If Available and If Desired)**
    Setup Bar 4 (if available) in the same way described above in step 13.
18. **Save Setup**
    The Top, Middle, and Bottom LED of each Bar on the LED Indicator will be turned on to indicate that the unit is ready to save the setup. Use a Normal button press to accept and save the new configuration to non-volatile memory, or just turn off power to reject the new configuration and revert to the previous configuration. If power is turned off at any point during the setup procedure prior to completing this step, the setup will revert to the previous setup.

**For 3 and 4 slot indicators repeat steps above. Note that there are 2 separate boards and require 2 separate procedures.**

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**Online Video Tutorial**

Visit www.youtube.com and search for Livorsi Marine ALEDI Video 7

Or type in this address:
http://www.youtube.com/watch?v=zerZv-Ll0hQ

For additional technical assistance calibrating the adjustable LED indicator, please call the Livorsi Marine office at 847.752.2700.

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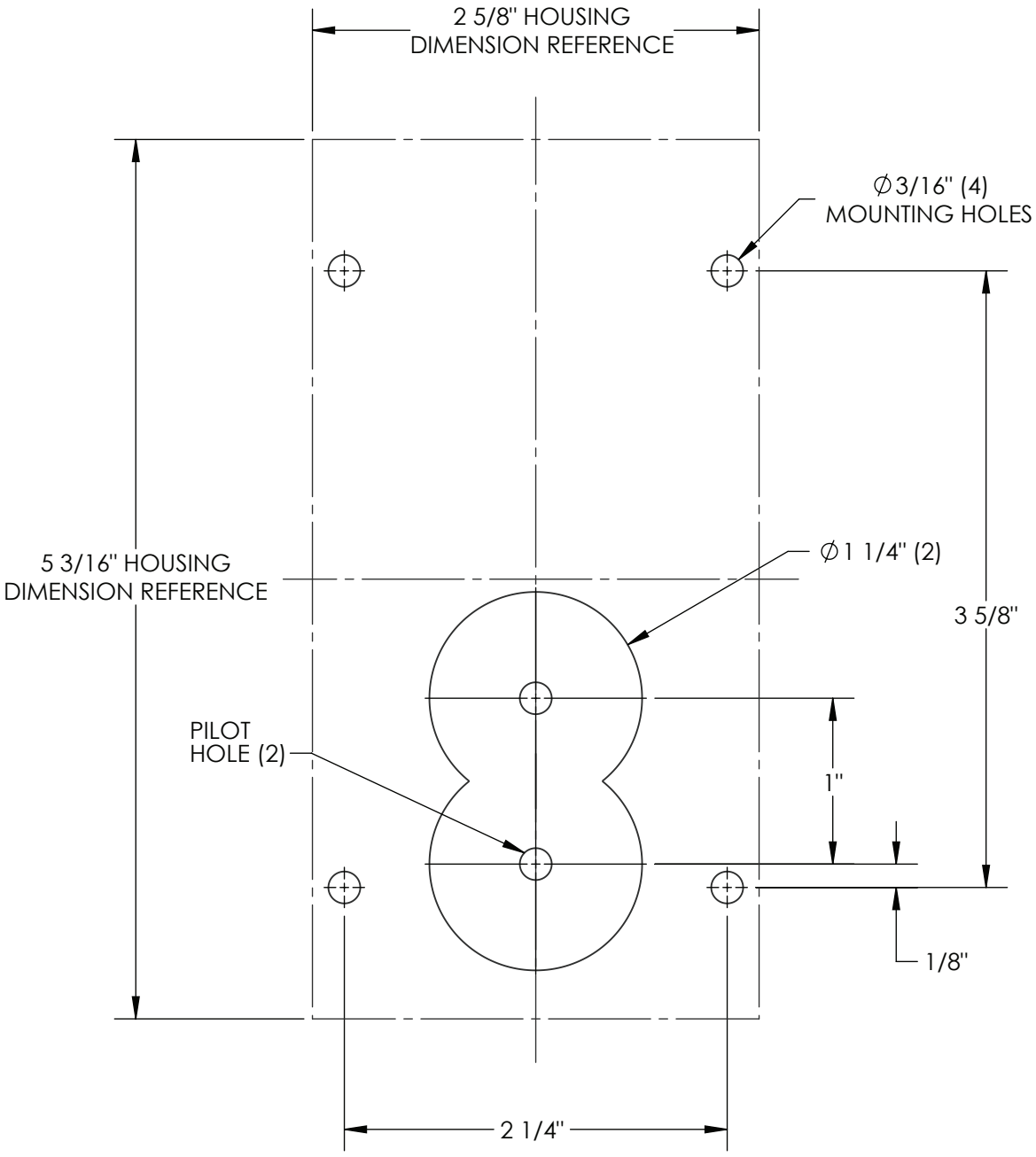
# LED INDICATOR CUT OUT TEMPLATE

## 1-2 SLOT HOUSING CUTOUT GEN 3

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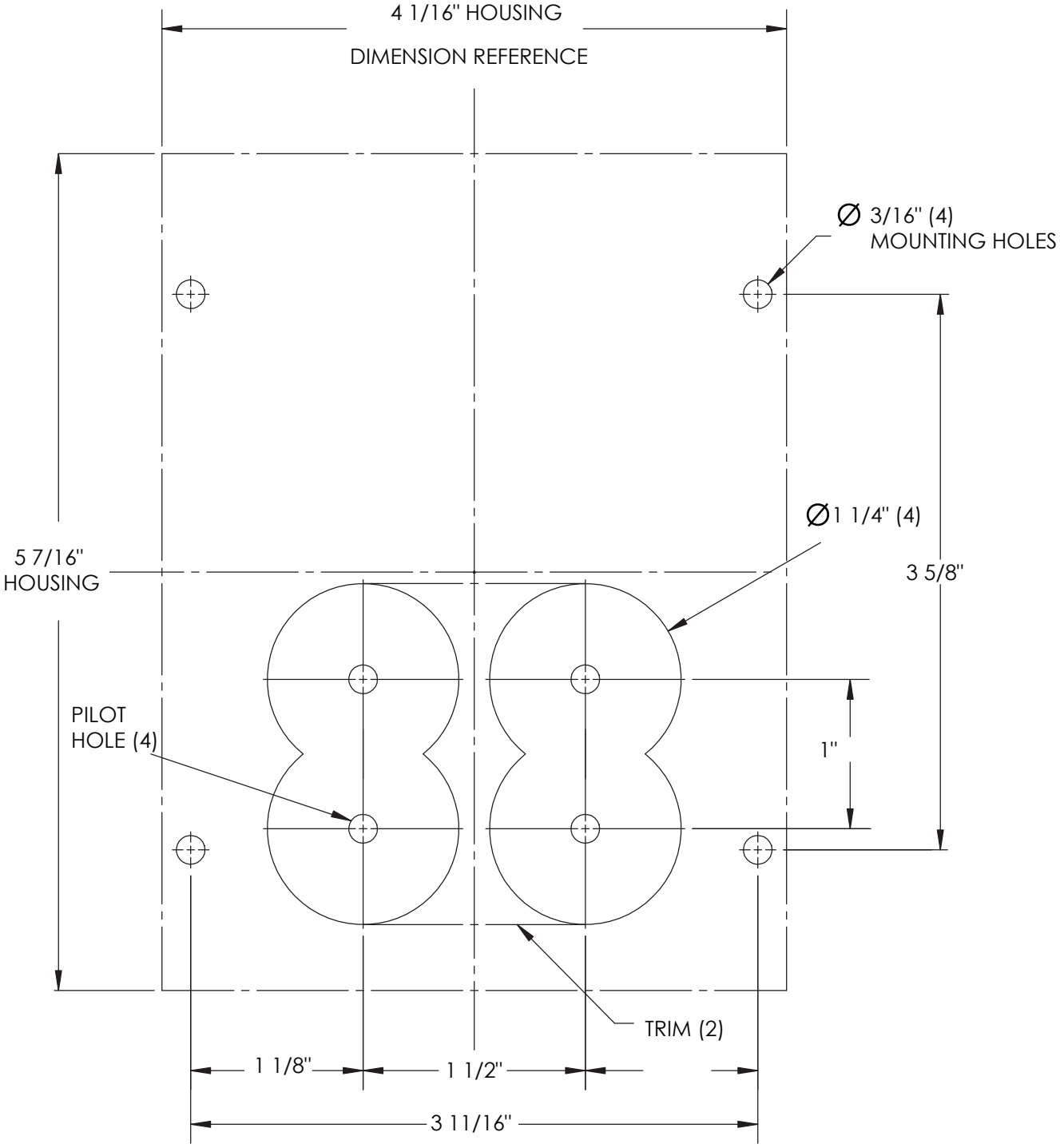
# LED INDICATOR CUT OUT TEMPLATE

## 3, 4 and 5 SLOT HOUSING CUTOUT GEN 3

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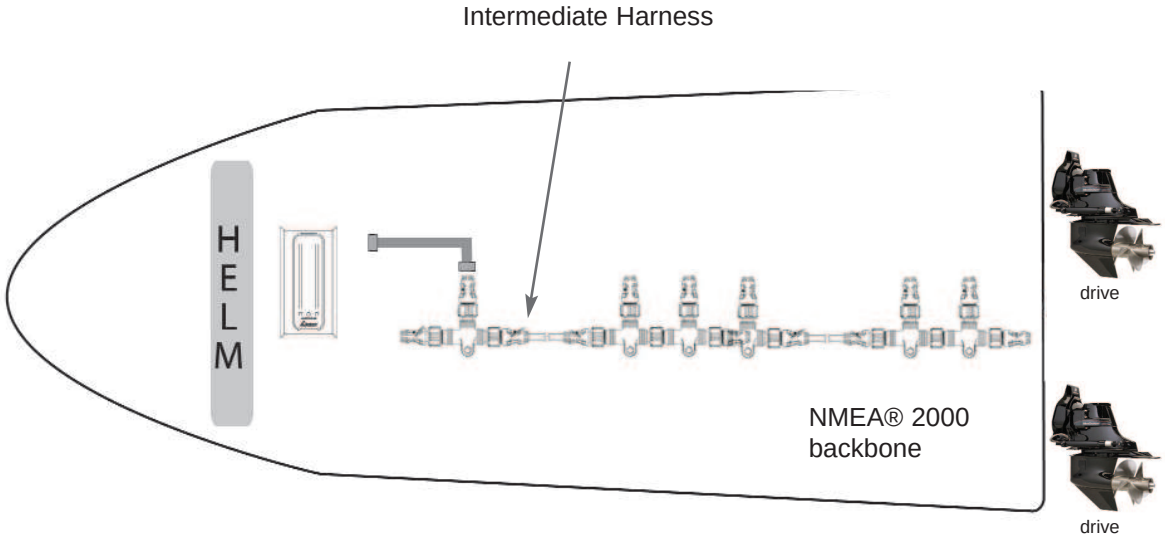
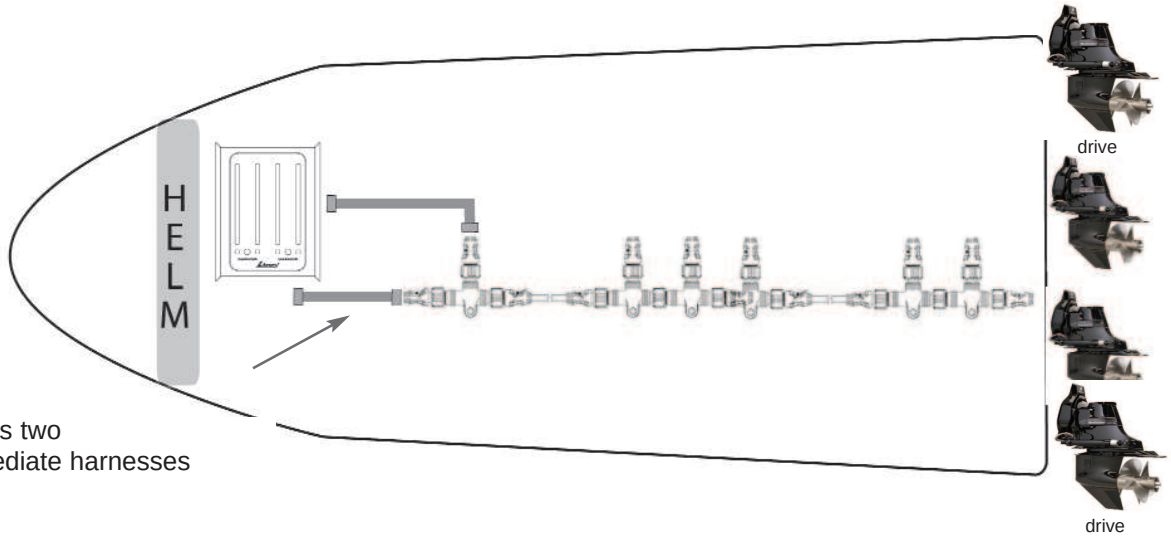
Intermediate Harness: LEDHNM30



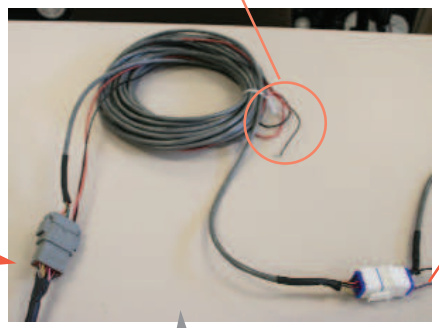




requires two
intermediate harnesses

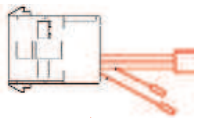
**Adjustable LED Indicator Connection to Merc Drives** **Indicator Harness:**LEDHINT(Indicator) to LEDEXTS

back of indicator

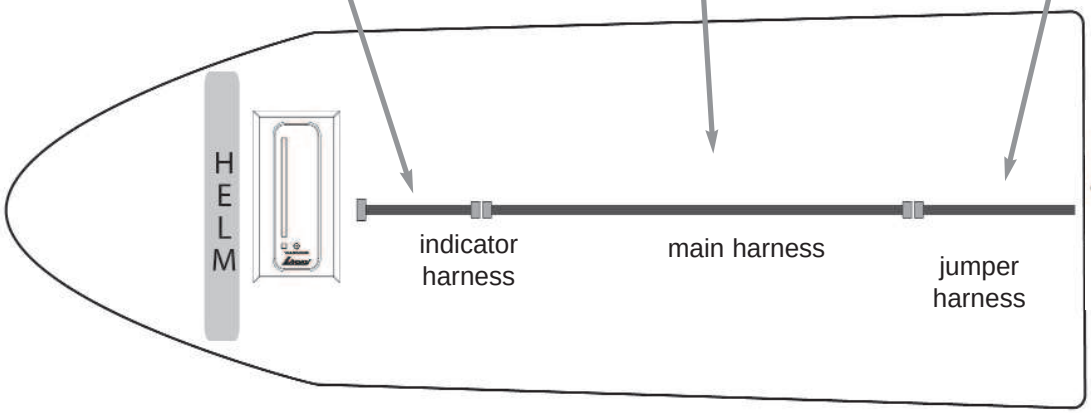
LEDHSA + length
Red wire = (Switch) 12V
Black wire = Vessel ground



LEDHEXTS
Black wire = ground to illuminate red LED
Violet wire = switch/warning light



White wire = +5
Green wire = Analog
Black wire = ground




drive

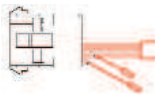
or

3-wire 0-5 volt

NOTE:
Verify which type of drive trim sensor you have: • resistive type (ohms) • or 0-5 volt (3 wire)
Then determine how it is terminated • bullet connectors • or 3 pin plug

LEDHYS

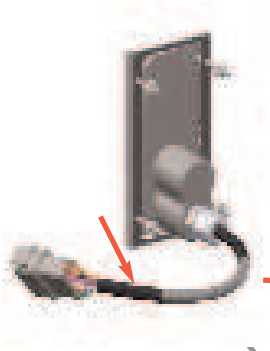
Violet wire = Switch/warning light
Black wire = ground to illuminate red LED

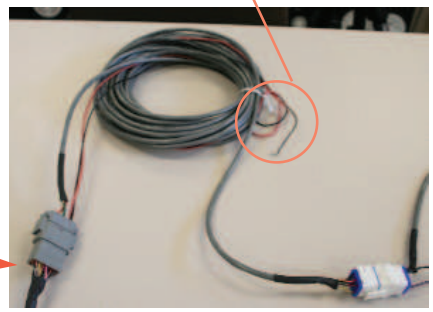


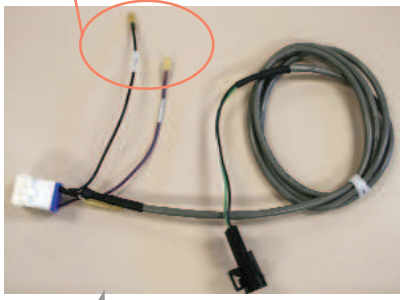
LEDHSA + length

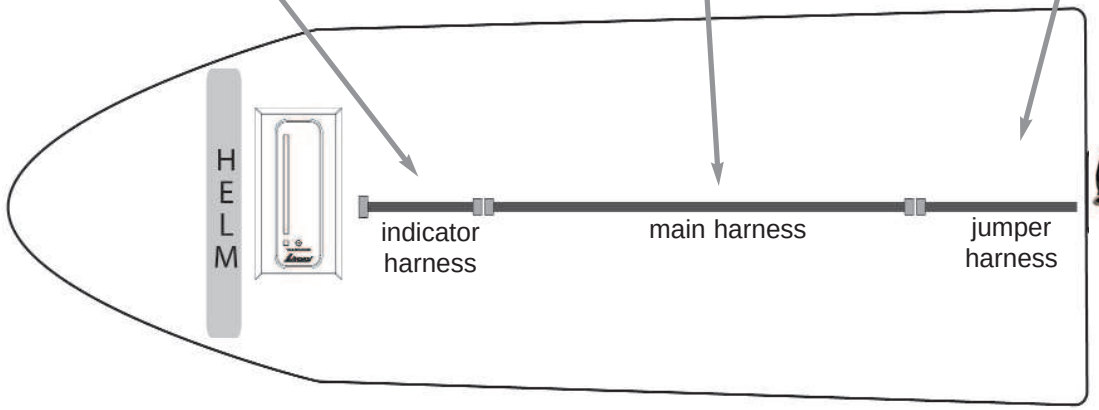
Red wire = (Switch) 12V
Black wire = Vessel ground

back of indicator










drive

or

3-wire 0-5 volt

NOTE:
Verify which type of drive trim sensor you have: • resistive type (ohms) • or 0-5 volt (3 wire)
Then determine how it is terminated • bullet connectors • or 3 pin plug

## Adjustable LED Indicator Connection to Merc Drives

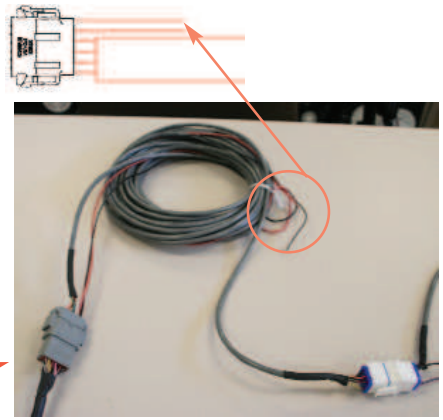
**Indicator Harness:**
LEDHINT to LEDHYD5, LEDHYD10 or LEDHYD15

back of indicator

LEDHINT(Indicator)

LEDHSA + length

Red wire = (Switch) 12V
Black wire = Vessel ground

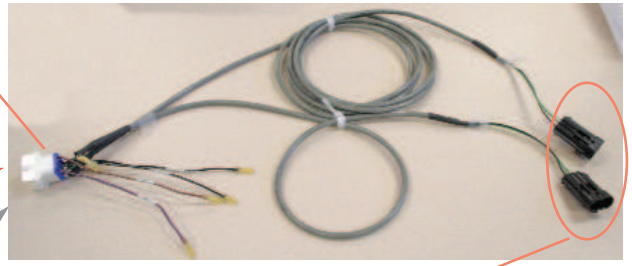


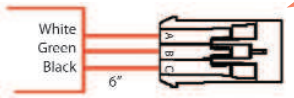
main harness

jumper harness

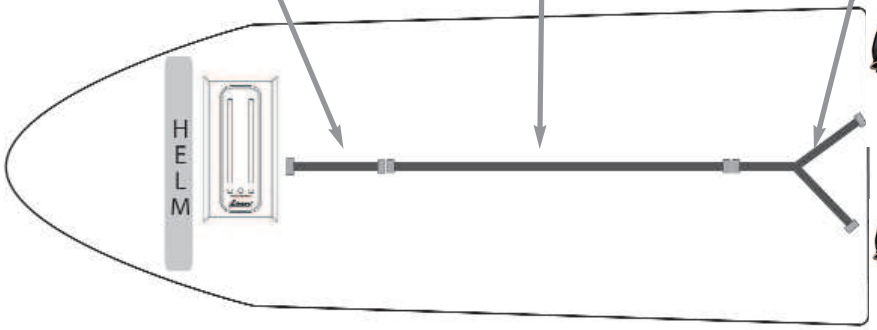
LEDHYD + length

Violet wire = Switch/warning light
Black wire = ground to illuminate red LED
Black wire = ground to illuminate red LED
Brown wire = Switch/warning light






White wire = +5
Green wire = analog
Black wire = ground




drive

drive

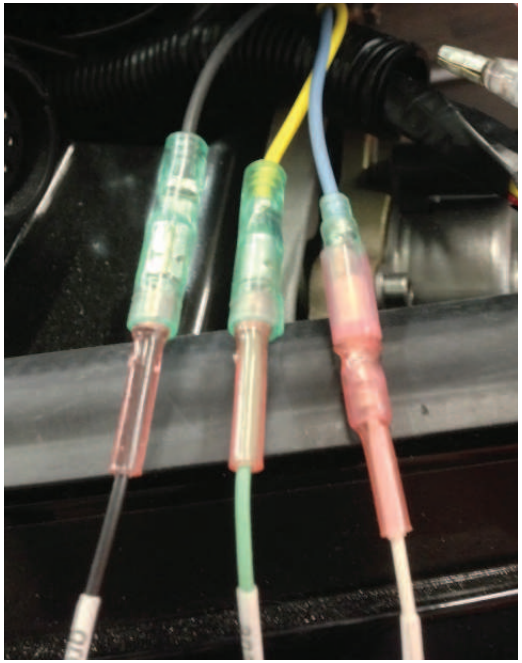
3-wire 0-5 volt

NOTE:
Verify which type of drive trim sensor you have: • resistive type (ohms) • or 0-5 volt (3 wire)
Then determine how it is terminated • bullet connectors • or 3 pin plug

## Mercury wiring

| | | |
|---|---|---|
| black | to | black (Ground) |
| yellow | to | green (signal -analog voltage) |
| blue | to | white (5 volt source) |

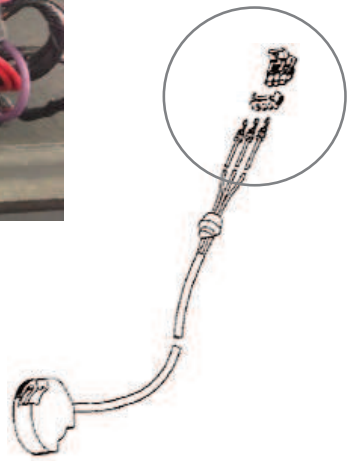
black yellow blue



black green white

(Livorsi harness wires)

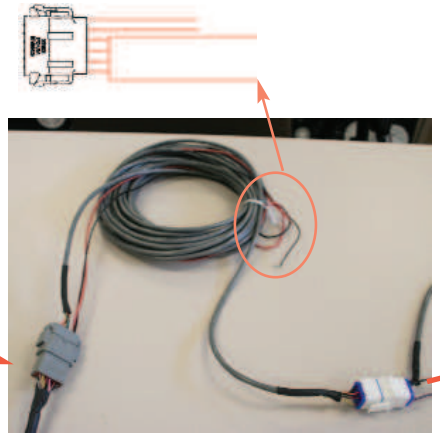
Location of the sender wires (starboard side) with the Mercury sender plugged into the SmartCraft® wiring which needs to be unplugged for our crossover harness.



NOTE:
Verify which type of drive trim sensor you have: • resistive type (ohms) • or 0-5 volt (3 wire)
Then determine how it is terminated • bullet connectors • or 3 pin plug

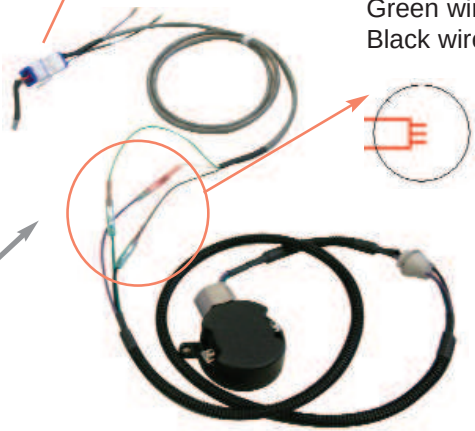
LEDHSA + length
Red wire = (Switch) 12V
Black wire = vessel ground

back of indicator

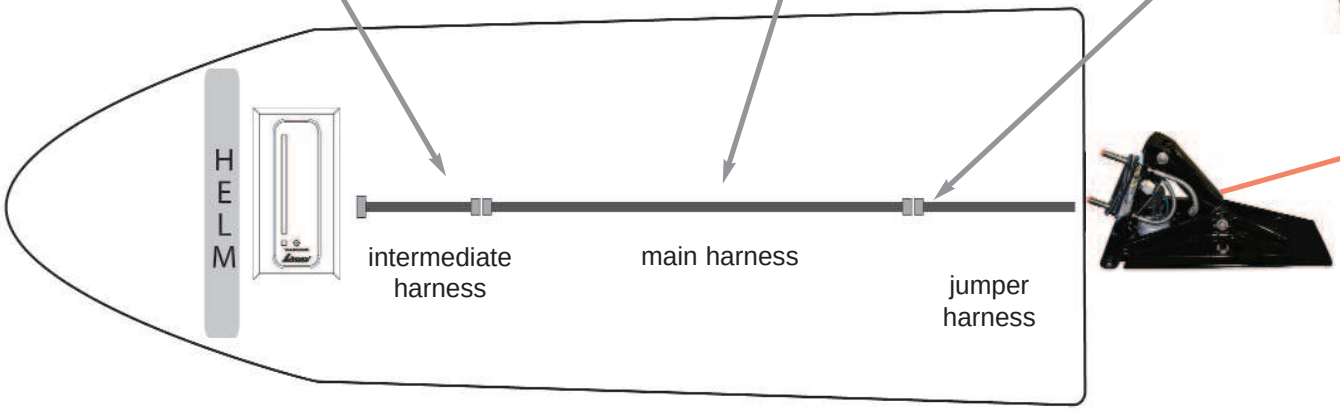


LEDHEXTS
Purple wire = switch/warning light
Black wire = ground to illuminate red LED

White wire = +5
Green wire = Analog
Black wire = ground



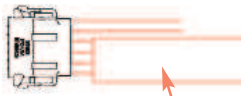
Sensor

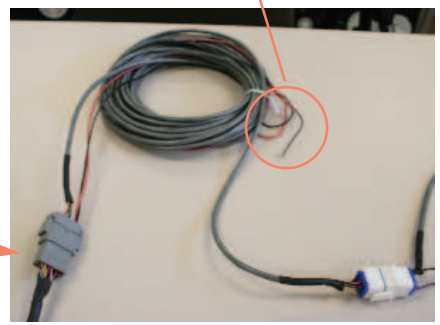


**Adjustable LED Indicator Connection to Trim Tabs Harness:**LEDHINT to LEDHEXT10 or LEDHEXT15

back of indicator

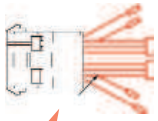
LEDHSA + length
Red wire = (Switch) 12V
Black wire = Vessel ground



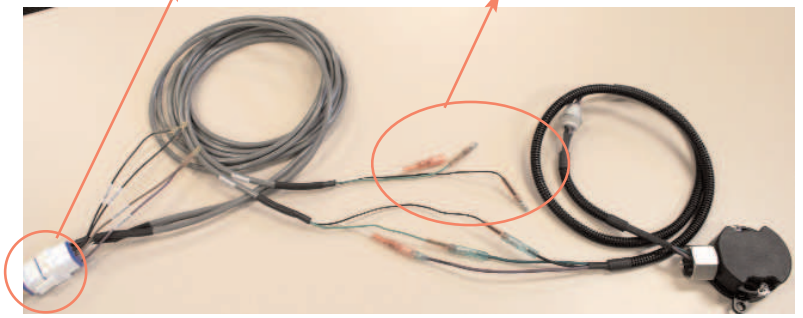


main harness

LEDHEXT10 or LEDHEXT15
Brown wire = STBD switch
Black wire = ground to illuminate red LED
Black wire = ground to illuminate red LED
Violet wire = Port switch

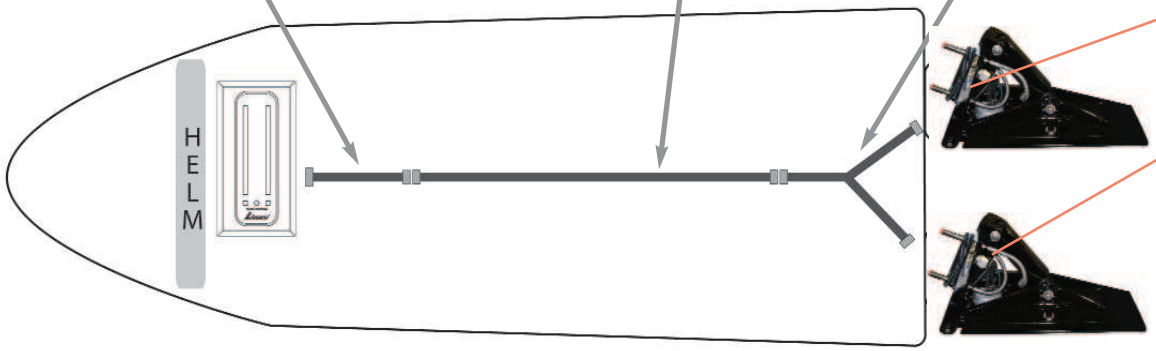


White wire = +5
Green wire = Analog
Black wire = ground



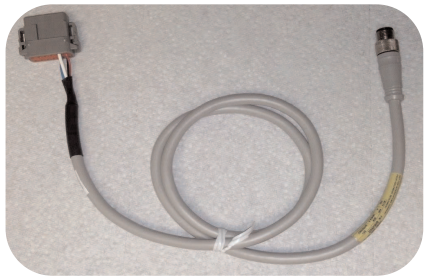
jumper harness

Sensor



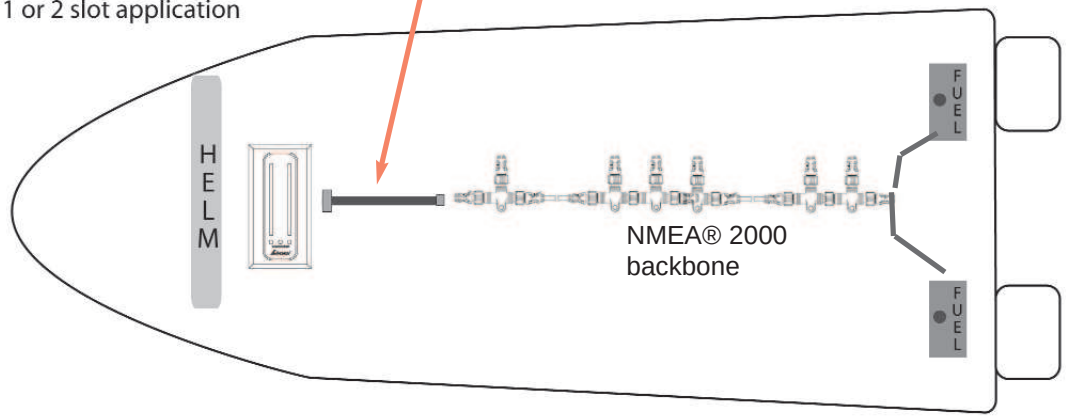
## Adjustable LED Indicator Connection to Fuel Level  Intermediate Harness: LEDHNM30(Intermediate)

LEDHNM30

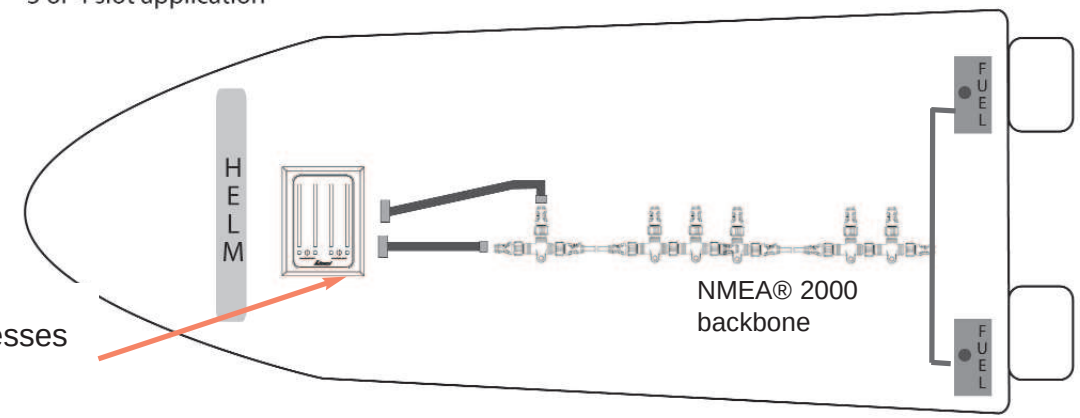


Example below assumes fluid level is already being transmitted on the N2K Bus.

1 or 2 slot application




3 or 4 slot application

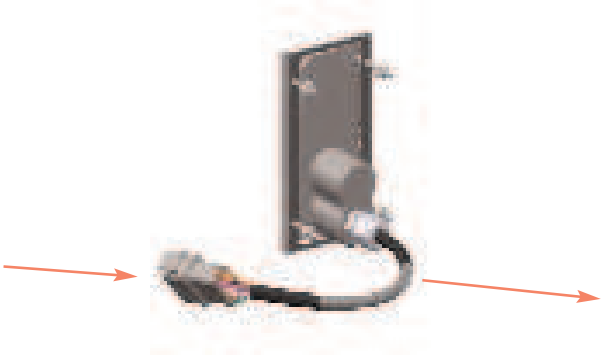


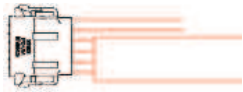

requires two
intermediate harnesses

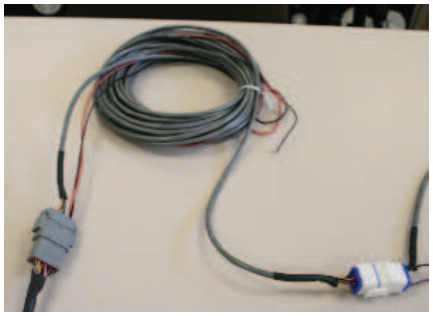
LEDHSA + length
Red wire = (Switch) 12V
Black wire = Vessel ground

LEDHEXTS
Purple wire = switch/warning light
Black wire = ground to illuminate red LED

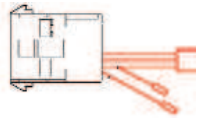
Back of indicator





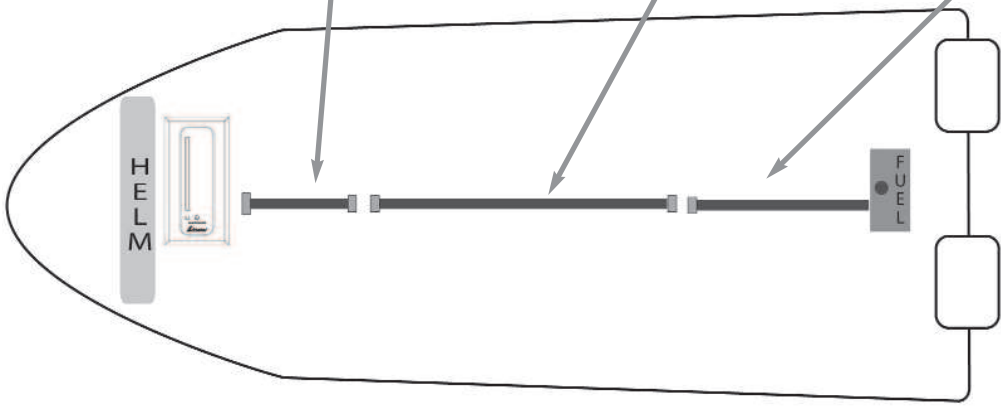


main harness



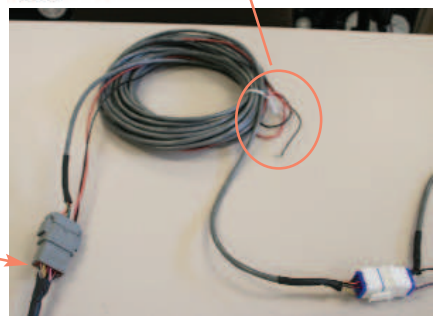
jumper harness

White wire = +5
Green wire = Analog
Black wire = ground

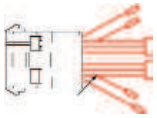


Back of indicator

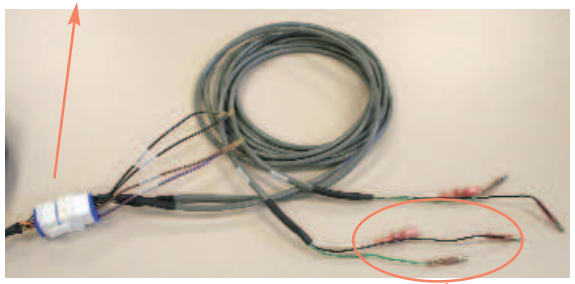
LEDHSA + length
Red wire = (Switch) 12V
Black wire = Vessel ground



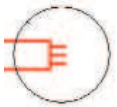
main harness



LEDHEXT10 or LEDHEXT15
Brown wire = STBD switch/warning light
Black wire = ground to illuminate red LED
Black wire = ground to illuminate red LED
Violet wire = Port switch/warning light



jumper harness



White wire = +5
Green wire = Analog
Black wire = ground