LDT-3200
Digital Temperature Gauge
Installation & Operation Instructions

The LDT-3200 combines a temperature gauge, voltmeter and clock in one housing. It displays the temperature in either Fahrenheit °F or Celsius °C and may be set to rotate between four gauge displays or "pages." The unit fits in a standard 2-1/8" (54 mm) hole used by most marine equipment manufacturers.
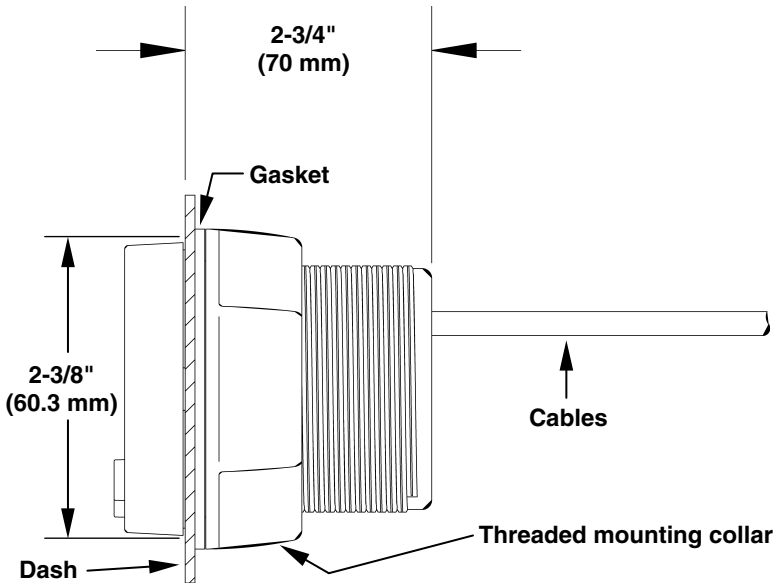
The gauge and its temperature sensor are designed to show surface water temperature in a transom installation, but the sensor can be installed to monitor the temperature elsewhere, such as in a live well.

LDT-3200 temperature gauge.

Mounting Preparations

When installed, the gauge will cover an area on the dash 2-3/8" (60.3 mm) in diameter. To mount the unit, first make sure there is at least 2-3/4" (70 mm) from the front of the dash to any obstruction behind the dash. The maximum usable dash thickness is 1-1/8" (28.5 mm). Also, be sure there is room to route the power and sensor cables. The following figure shows gauge dimensions.

2-3/4"
(70 mm)

Gasket

2-3/8"
(60.3 mm)

Cables

Threaded mounting collar

Dash

Dash installation, cross-section view.

Caution:

You should read over the entire installation section before drilling any holes in your vessel!

You can install this gauge in some other order if you prefer, but we recommend this installation sequence, which is summarized below:

1. Determine the location for the gauge so you can plan how and where to route the cables. This will help you make sure you have enough cable length for the desired configuration.

2. Determine the location of your battery or other power connections, along with the power cable route.

3. Determine the location for the temperature sensor and its cable route.

4. Determine the location for the alarm buzzer and its wire route.

5. If you want to turn on the gauge backlights whenever you turn on your dashboard lights, locate your boat's dash light switch and determine how to route the dash light wires to it.

6. Install the temp sensor, connect power wires to the battery and route the power/sensor cable to the gauge location.

7. Install the gauge, and connect the power/sensor cable.

8. Connect the buzzer wires and install the buzzer. If desired, connect the dash light wires to the boat's dash light switch.

Recommended Tools and Supplies

Supplies are not included, unless otherwise indicated. A transom mount requires one #8 stainless steel screw (3/4" long) and a high quality, marine-grade above- or below-waterline sealant/adhesive compound. If you want to make a pilot hole for the screw, use a drill and a 1/8" drill bit. If you prefer the option of routing the temp sensor cable through the transom (instead of over it), you will also need a 1/2" drill bit.
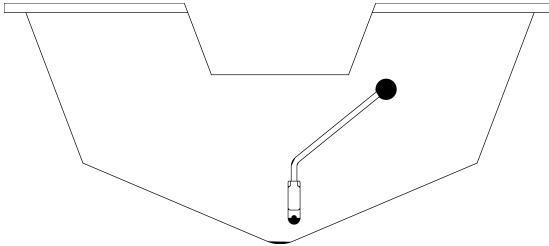
If the dash does not have a standard 2-1/8" (54 mm) hole, you will need a drill or saw to make the hole. Carefully measure the dash thickness and the hole area before cutting or drilling.

A screwdriver is needed for mounting the temp sensor. The buzzer installation requires two cable ties.

If you need to extend any of the wires, use a minimum of 24 gauge wire and wire connectors of your choice. Wire nuts or electrical tape are required to cap any unused bare wires.

Mounting

The temperature sensor can be mounted in any convenient location. However, make sure it is placed on the transom where it will be in contact with the water at all times. Make sure the location does not interfere with the boat's trailer.

Temp sensor on transom, with cable routed through the transom.

After determining the location, use the sensor as a template and mark the hull for the screw's pilot hole, if desired. Route the sensor and cable over or through the transom to the mounting location. If routing through the transom, drill a 1/2" hole to accommodate the sensor. Attach the sensor to the hull with one #8 stainless steel screw, then seal the screw with the below-waterline sealant compound.

Caution:

> *If you drill a hole in the transom for the cable, make sure it is located above the waterline. After installation, be sure to seal the cable hole with the same marine grade above-or below-waterline sealant used for the screw.*

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When you determine the location for the LDT-3200, drill a 2-1/8" (54 mm) hole in the dash or use an existing gauge hole. Slide the unit's cables through the hole from the front side of the dash, then push the LDT-3200 housing through the hole until it is flush with the dash surface. Make sure the gauge is aligned correctly. Next, slide the rubber gasket and plastic mounting collar over the cables and onto the back side of the gauge.

Insert gauge through the hole in the front side of the dash (left). Slide the rubber gasket over the cables, followed by the plastic collar (right).
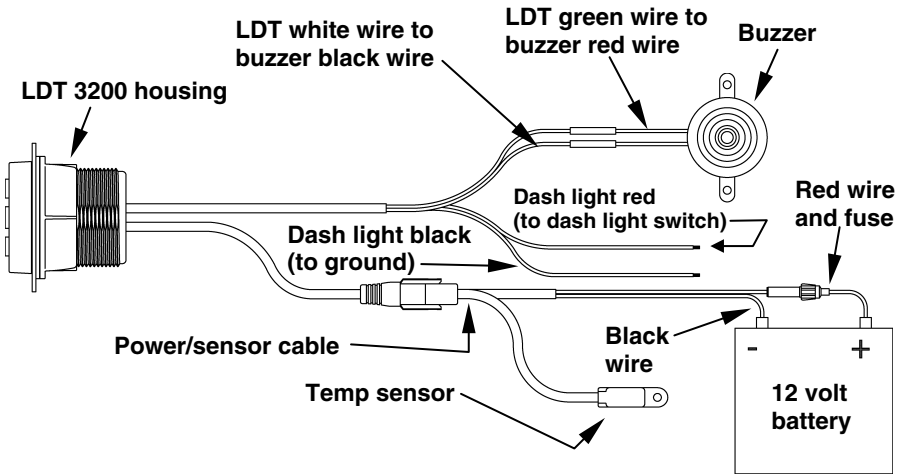
Slide the gasket forward so it is flush with the back of the dash, then screw on the mounting collar, turning it until it is snug against the gasket and the back of the dash.

Find a buzzer location that is protected from the elements, but still lets you hear it. We recommend that you connect the buzzer wires, then use two cable ties and attach the buzzer to one or both of the cables at the back of the gauge. (Some dashboards are too thin to screw into.)

Finish the installation by connecting the cables as described in the following wiring diagrams and photos.

Wiring

The LDT-3200 operates from 10 to 15 volts DC (12-volt system). It must be wired to a 1-amp fuse. Failure to use a fuse with this product will void the warranty and could result in damage to the unit or your boat.
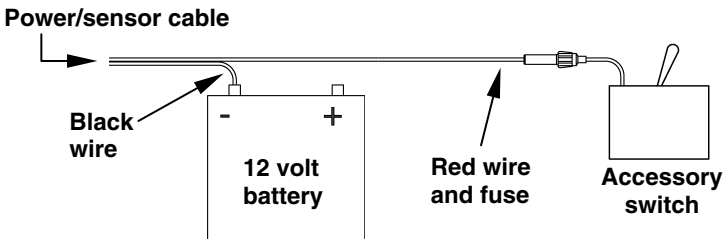
LDT-3200 cable connections.

In the configuration above, the unit is always on. It will draw 11 milli-amps of current with backlight off and 40 milliamps with backlight on full brightness. Typically, the maximum recommended current load on a boat in storage is about 50 milliamps. A battery will self discharge at a rate of about 9 milliamps. A battery's normal discharge plus the gauge current (lights off) amounts to approximately 20 milliamps, well below the recommended load limit in storage.

To automatically turn on the gauge backlights when you turn on your other dashboard lights, connect the red dash light wire to the switch controlling the dash lights.

If you want to turn off the gauge when not in use, connect the red wire from the power/sensor cable to your boat's accessory switch, or install an optional switch between the unit and the power source. See the following figure.

This wire configuration lets you turn off the gauge when it's not in use. You will need to reset the clock each time you turn the gauge back on.

Caution:

> *The bare ends on any unused wires could cause an electrical short if left exposed. To prevent this, you should cover the individual wire ends — either by capping them with wire nuts or wrapping them with electrical tape. (You should cut off the bare wire before taping off the ends.)*

After connecting to the battery or switch, the power /temp sensor cable interlocks with the gauge's power cable.

The unit won't be harmed if the power wires are connected backwards, but it won't work until they're connected correctly.

Operation

The displays and settings in this digital gauge are controlled by a three-button keypad. The buttons are Menu, Up and Down. The Menu key takes you to the gauge's main menu, allows you to access other internal menus and is used to modify menu options. The up and down buttons allow you to scroll through all menus.
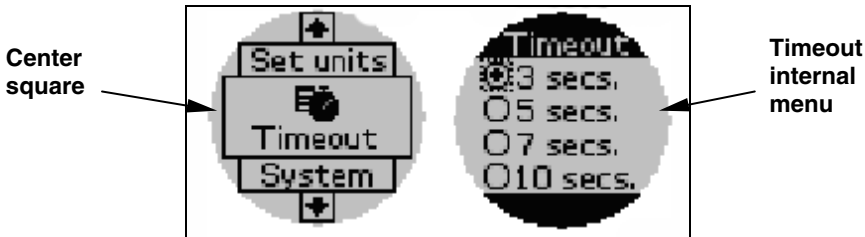

LDT-3200 keypad.

Timeout

There is no exit key in the LDT 3200. The menus time out instead. That means menus close on their own after a preset amount of time. When you install the gauge, the default time out duration is 5 seconds. You can modify the "**TIMEOUT**" setting by pressing **MENU** and using the up and

down keys to scroll through the main menu. When **TIMEOUT** appears in the center square — like the illustration below — press **MENU**. That will open the Timeout Menu, which has four settings: 3, 5, 7 and 10 seconds. To choose a setting, use the up and down keys and press **MENU**.

Timeout in the center square on the main menu (left) will take you to the Timeout menu. All items on the main menu (except Rev Video) will function in the same way. The Timeout menu (right).
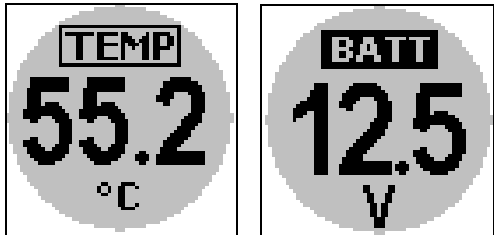
LDT 3200 Menus

The unit has 11 menus. To access a menu, press **MENU** and use the up and down keys to scroll it into the center square, then press **MENU**.

The menus are: AutoScroll; Backlight; Contrast; Options; Pages; Rev Video; Set Alarm; Set Time; Set Units; Timeout; and System
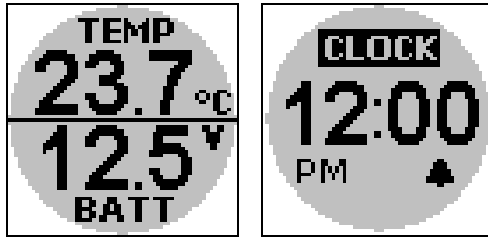
Pages

When you first start using the gauge it will display the Temperature page by default. But there are three other pages: the Voltmeter page, Dual Display page and Clock page. You can cycle through the pages manually or set them to be displayed at various intervals with the AutoScroll menu, discussed on page 8.

To cycle through the pages manually, press the up or down keys. The Clock page is the only page not set for display by factory default.

Temperature Page (left) and Voltmeter Page (right).

Dual Display Page (left) and Clock Page (right).

To modify what pages will be displayed, press **MENU** and use the up and down keys until **PAGES** appears in the center square. Press **MENU** and use the up and down keys to move through the page options. Press **MENU** to check or uncheck the boxes next to the page category you want shown on the main display. After making your selection, the menu will time out and take you back to the main screen. Use the up and down keys to cycle through the four page displays, which are broken down in more detail below.
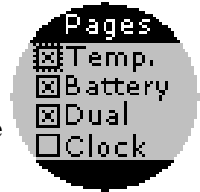
Temperature Page
The temperature sensor is mounted on the transom to monitor water temperature.

Voltmeter Page
The voltmeter displays the voltage.

Dual Display Page
The dual display page shows the temperature and the voltage, simultaneously.

Clock Page
The clock displays local time and is the only page category not included in the gauge display rotation by default.

Setting the clock
Press **MENU,** then use the up and down keys until **SET TIME** appears in the center square display, then press **MENU** again. Use the up and down keys to set the hours and minutes. When you are satisfied with one setting, press **MENU** to modify the other, then let the menu time out.

AutoScroll
If you would like your page displays to rotate automatically, then you need to check out AutoScroll, the first category on the main menu. Autoscroll allows you to not only turn on an automatic page rotation, but gives you control over how long the duration will be before the gauge switches to the next page. To access the AutoScroll menu, press **MENU|MENU** and use the up and down keys to select the desired duration. The settings are Off, 3, 5 and 10 seconds. The default setting for

Autoscroll is off. When you have made the desired changes, let the menu time out.

Alarms

The Alarms menu features more options than any other menu in the LDT 3200. It has alarms for Low Temperature, High Temperature, Battery and Time. Once in the Alarms menu, use the up and down keys to scroll through the alarm options. Press **MENU** to select one of the four options.

Setting an alarm

All four alarms have an **ENABLED** box at the bottom of their respective menus. To modify the Battery and Low and High Temperature alarms, use the up and down keys to change the values. Press **MENU** to check the **ENABLED** box, which will turn on the alarm or press menu to uncheck it, which will turn off the alarm. When setting the Time alarm, modify the hour and minute settings with the up and down keys. When you are satisfied with one setting, press **MENU** to modify the other. To check **ENABLED,** press **MENU** until the **ENABLED** box border is highlighted. Use the up and down keys to check it (turn it on) or uncheck it (turn it off). When finished, let the menu time out. When the Time Alarm is enabled, a bell icon will be displayed at the bottom of the clock page.

Setting LDT-3200 Options

The gauge gives you a trio of display options, customized in the **BACKLIGHT**, **CONTRAST** and **REV VIDEO** menus. You can modify alarm settings and change unit and clock formats in the **SET ALARM**, **SET UNITS** and **OPTION** menus.

Autoscroll

This menu lets you choose the intervals page displays will rotate. See detailed entry on page 8.

Backlight

Once in the Backlight menu, use the up and down keys to select one of four brightness levels, 25%, 50%, 75% or Max. (The backlight is designed to come on when with the rest of the dash lights are turned on, if the unit's dash light wires are connected. See wiring options on page 5.) To control it manually, select Manual by pressing **MENU** when in the Backlight internal menu. Use the down key to turn off the brightness level. The Off setting will appear when Manual is checked in the Backlight menu. In manual mode, you will be able to turn on the backlight from the main display by holding the **MENU** button for three seconds. To turn it off again, you will have to return to the Backlight menu and use the down key to select the off setting.

NOTE:

The Off setting is also supported in the automatic Backlight configuration, but you will only see it when the dash lights are off.

Contrast

After opening the Contrast internal menu, a contrast scroll bar will appear. Use the up and down keys to change the contrast setting. Let the menu time out to return to the main display.

Options

The Options menu allows you to return the unit to its Factory Settings, adjust the Clock Format, and turn on or off the Key Beep setting. Once in the internal Options menu, use the up and down keys to select the desired option and press **MENU**. There are two options for Clock format, 12 hour and 24 hour.

NOTE:

Factory Settings will restore the unit to the default settings used when the gauge was powered up for the first time.

Pages

In the Pages menu you can select which pages you want to see on the main display. See the detailed entry on page 7.

Rev Video

When you press **MENU** after scrolling Rev Video into the center square, you'll notice there is no internal menu. There are two colors on the display (dark numbers and gray background by default). By pressing menu, you swap the predominance of one color for the other. So if you change the default setting, you will alter the screen from the default, dark numbers with gray background scheme, to gray numbers with a dark background.
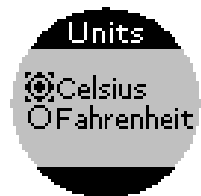
Set Alarm

The Set Alarm menu gives you access to the four LDT 3200 alarms. See detailed entry on page 9.

Set Time

This menu allows you to set the time. See detailed entry on page 8.

Set Units

The Set Units menu gives you the option of switching the Temperature from Fahrenheit (°F) to Celsius (°C). See Units menu illustration on the right.

Timeout

In the Timeout menu, you can modify the time it takes for menus to time out. See detailed entry on 6.

System

The System menu displays the gauge's software information.

LOWRANCE ELECTRONICS
FULL ONE-YEAR WARRANTY

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This warranty does NOT apply in the following circumstances: (1) when the product has been serviced or repaired by anyone other than us; (2) when the product has been connected, installed, combined, altered, adjusted, or handled in a manner other than according to the instructions furnished with the product; (3) when any serial number has been effaced, altered, or removed; or (4) when any defect, problem, loss, or damage has resulted from any accident, misuse, negligence, or carelessness, or from any failure to provide reasonable and necessary maintenance in accordance with the instructions of the owner's manual for the product.

We reserve the right to make changes or improvements in our products from time to time without incurring the obligation to install such improvements or changes on equipment or items previously manufactured.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

REMINDER: You must retain the sales slip or sales receipt proving the date of your original purchase in case warranty service is ever required.

LOWRANCE ELECTRONICS
12000 E. SKELLY DRIVE, TULSA, OK 74128
(800) 324-1356

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Contact the Factory Customer Service Department. Call toll-free:

800-324-1356.

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Contact the dealer in the country where you purchased your unit. To locate a dealer near you, see the instructions in paragraph number 1 below.

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1) Your local marine dealer or consumer electronics store. To locate a Lowrance dealer, visit the web site, www.lowrance.com, and look for the Dealer Locator. Or, consult your telephone directory for listings.

2) U.S. customers: LEI Extras Inc., PO Box 129, Catoosa, OK 74015-0129 **Call toll free in the U.S., 800-324-0045**, 8 a.m. to 5 p.m. Central Standard Time, M-F, or visit our web site www.lei-extras.com.

3) Canadian customers: Lowrance/Eagle Canada, 919 Matheson Blvd. E. Mississauga, Ontario L4W2R7 or fax 905-629-3118.

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