



# RJE International, Inc.

YOUR SOURCE FOR DIVER NAVIGATION AND UNDERWATER RELOCATION EQUIPMENT



## DG-100

### DIGITAL DEPTH GAUGE AND TIMER OPERATIONS MANUAL

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P/N: 102-17000  
REV. A

## Preface

This manual describes the installation and operation of the DG100. This manual is divided into the following six sections:

- 1 Description**
- 2 Theory of Operation**
- 3 Specifications**
- 4 Maintenance**
- 5 Return Procedures**
- 6 Warranty**

## Proprietary Information

The information, description and illustrations in this manual are the property of RJE International, Inc. Materials may not be reproduced or disseminated without the prior written consent of RJE International, Inc.

## Changes

RJE International, Inc. reserves the right to make changes to meet new specifications at any time without incurring any obligation to modify previously installed units. This manual is provided for informational and reference purposes only and is subject to change without notice. For any updates of this manual visit our website, [www.rjeint.com](http://www.rjeint.com).

## Notes and Warnings

Where applicable, special notes and warnings are presented as follows:

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<b>NOTE:</b>	A reminder to check that certain criteria are met before proceeding further in a step or sequence.
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<b>WARNING:</b>	A reminder that dangerous consequences could result if certain recommended procedures are not followed.
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**WARNING:** READ THIS MANUAL BEFORE USING THE DG100. The DG100 default setting is to measure depth in feet (Imperial). To display depth in meters (Metric), please follow instructions on page 6. Ensure that the DG100 is properly set to measure in feet or meters before diving.

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**WARNING:** Diving is a dangerous and potentially life threatening activity. The DG100 digital depth gauge must be used by a person who is certified by a recognized agency (PADI, NAUI, SSI, NASDS, YMCA, etc.). Improper use or misuse of the DG100 could result in serious injury or death. Do not use the DG100 until you have read and fully understand instructions and safety precautions in this manual.

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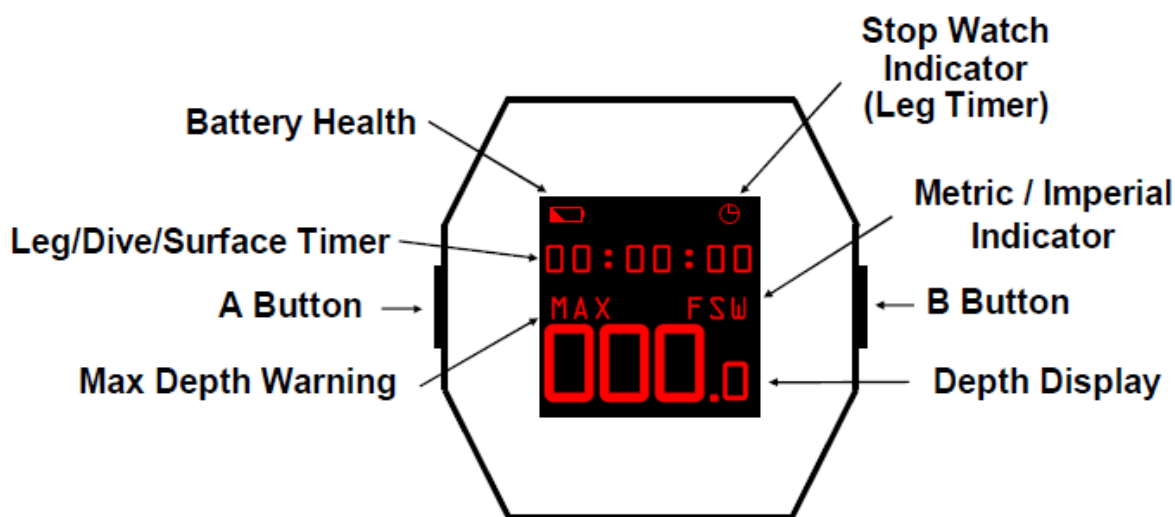
**NOTE:** Always check battery health before diving. It is recommended that the battery be fully charged before every use.

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# 1 Description

The DG100 is a digital depth gauge that measures and displays depth accurately from 0 to 330ft (0-100m). Using a state-of-the-art pressure transducer, the DG100 depth resolution is 0.1ft when set for feet of sea water or 0.1m when set for meters of sea water. A max depth indicator illuminates when the DG100 exceeds a preprogrammed max depth. Timer functions automatically track dive time and surface time. A built-in stopwatch feature allows tracking of leg times independent of dive or surface times. The DG100 allows the diver to recall their deepest excursion and total dive time.

Depth and timer readings are provided to the diver on a large red OLED display that has three user adjustable brightness settings. Depth readings are displayed on the bottom of the screen. Dive, Leg and Surface Time are displayed on the top of the screen. All functions of the DG100 are controlled by buttons on each side of the depth gauge.



## Display and Controls

Buttons are operated in two modes: short press or long press. Short press is defined as less than 1 second. A long press is defined as lasting 2 seconds or more.

Display Abbreviations Used:

MAX = Maximum Depth

FSW = Feet of Sea Water

MSW = Meters of Sea Water

ft = feet

m = meter

# DG-100 Digital Depth Gauge and Timer

<u>BUTTON MATRIX</u>	<u>Dive Mode</u> Unit Underwater	<u>Surface Mode</u> Unit returning to surface	<u>Stop Watch</u> Surface or Dive mode	<u>Hibernation Mode</u>	<u>Operations Menu</u>
Short Press A	Toggles Brightness Low Med High	N/A	Reset to Zero	Surface Mode	Toggle cursor down
Short Press B	N/A	N/A	Pause / Start	Surface Mode	Toggle setting
Long Press A	N/A	Activate Operations Menu	N/A	N/A	N/A
Long Press B	Displays Max Depth for 2 Seconds then Current	Displays Max Depth for 2 Seconds then Current	Displays Max Depth for 2 Seconds then Current	N/A	Fast scroll Max Depth Setting Only
Press A & B	Toggle Stop Watch / Dive Mode	Toggle Stop Watch / Surface Mode	Toggle Stop Watch / Dive Mode	N/A	N/A

DG100 Button Matrix

# 2 Theory of Operation

## Power Saving Mode

To conserve battery life, after 24 hours of inactivity the DG100 will enter “Power Saving Mode”. To enter “Dive Mode” from “Power Saving Mode” the user must first enter “Surface Mode” by short pressing the A-Button or B-Button.



### WARNING:

When the DG100 has not been used for more than 24 hours, the automatic “Dive Mode” from immersion in 3 feet or 1 meter of water is disabled. Place the DG100 in “Surface Mode” by short pressing the A-Button or B-Button before diving.

## Hibernation Mode

Once the DG100 is on the surface for 1 minute, the unit enters “Hibernation Mode” and shuts down. Please note the unit is not powered off but hibernating. To activate unit and enter “Surface Mode”, short press either the A or B button.

## Surface Mode

Once activated the unit will display Battery Health, Timer, Imperial/Metric Indicator and Depth. From “Surface Mode” the operations menu can be accessed by long pressing the A-Button. Pressing the A-Button and B-Button together will switch DG100 from “Surface Mode” to “Stopwatch Mode”, pressing the A-Button and B-Button again will toggle the DG100 back to “Surface Mode”. While in “Surface Mode”, long press the B-Button and the unit will display the maximum depth and duration of the last dive.



SURFACE MODE

## Operations Menu

The “Operations Menu” allows the user to set brightness, max depth alert and select imperial (feet) or metric (meters) operation. The “Operations Menu” can be accessed only from “Surface Mode” by long pressing the A-Button. Short press the A-Button to scroll through the menu options and short press the B-Button to change the setting. The menu item selected is underlined. Surface brightness can be set to: Low, Med, and High. Max Depth can be set to 0 – 330 feet in 3 foot increments, or 0 – 100 meters in 1 meter increments. While in max depth setting, pressing and holding the B-Button allows the user to fast scroll through the values. Meter/Feet can be set to FSW feet of sea water or MSW meters of sea water. Exit Menu returns to “Surface Mode”. The bottom of the Operations Menu displays the firmware revision and revision date.



OPERATIONS MENU



STOPWATCH MODE

## Stopwatch Mode

When in “Surface Mode” or “Dive Mode” switch to “Stopwatch Mode” by pressing A-Button and B-Button together. The stopwatch functions independently from the dive and surface timers and can be used as a leg timer. Short press the B-Button to start or pause the stopwatch. Short press the A-Button to reset stopwatch to zero.

## Dive Mode

When in “Surface Mode” and not in hibernation, the DG100 will enter “Dive Mode” automatically once immersed in water to a minimum depth of 3 feet (1 meter). Once activated, the OLED display, in “High” brightness mode, will display depth and track the length of the dive. During the dive, the user can adjust the brightness, low-medium-high, by short pressing A-Button. The DG100 will stop monitoring the length of the dive once the unit is less than 3ft (1m) from the surface for more than 1 minute and enter “Surface Mode”, where the DG100 starts a timer that monitors surface time for up to 24 hours. The surface time will reset on the next dive. When the DG100 enters “Surface Mode” from “Dive Mode” the maximum depth obtained and dive time are automatically stored in memory. The user can recall the dive time and maximum depth obtained by long pressing the B-Button in both “Dive Mode” and “Surface Mode”. The MAX Depth indicator will illuminate once the DG100 exceeds programmed MAX depth. The MAX Depth indicator remains on and can only be reset by entering “Dive Mode” from “Surface Mode”.



DIVE MODE



DIVE MODE  
MAX DEPTH  
ACTIVATED



# 3 Specifications

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## General Specifications

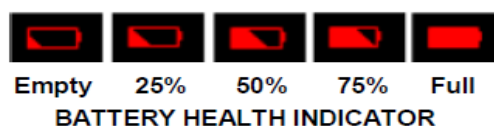
Depth Range	0-330ft (0-100m)
Depth Tolerance	± 1% of Full Scale
Depth Resolution	0.1ft FSW 0.1m MSW
Display	Red OLED
Timer Tolerance	± 1%
Leg Timer Functions	Start / Pause / Reset
Leg Timer Duration	24 Hours Maximum
Battery Life	300 Charges
Operating Life (Fully Charged Battery)	12 Hours (High Brightness) 16 Hours (Low Brightness)
Operating Temperature	29°F - 95°F (-2°C - 42°C)
Storage Temperature	-4°F - 140°F (-20°C - 60°C)
Dimensions	2.1" X 2.2" (5.3cm X 5.6cm)
Weight	2.6oz (72.3gm)

# 4 Maintenance

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## Battery Maintenance

The DG100 comes with a rechargeable Lithium Ion battery that provides up to 16 hours of continuous use. The battery can be charged over 300 times to provide over 4,800 hours of dive time. Upon activation, the battery health indicator (see below) is displayed on the top-left corner of the display. When fully charged, the battery indicator will appear full.



It is recommended that you check the battery level before every dive. The battery is sealed in the unit and functions just like a cell phone battery. Contacts on the back of the unit provide access for the battery charger.

## Battery Charging

Connect the supplied charging cable to the DG100 by clamping the cable's tab into the corresponding slot on the back of the DG100, aligning the cable contacts with the contacts on the back of the DG100. Plug the USB end of charging cable into connector on the supplied power adapter, and plug the power adapter into an AC outlet. The battery health indicator will begin flashing on and off. The DG100 will charge to 90% in 2 to 3 hours and to 100% in 6 hours. Once the unit has completed charging, remove charging cable from DG100. After charging, short press the A-Button to update the battery health display.



## Maintenance Precautions

The DG100 is designed to need very little maintenance to meet its functional requirements. Although it is built for the rigors of underwater use, the DG100 is a precision instrument and should be treated as such. Avoid violent bumps and drops that could affect the pressure transducer and reliability of the gauge. Do not exceed the maximum depth of 330ft (100m) as this may damage the unit.

## Cleaning and Storage

Use mild soap and rinse with fresh water after every use. Store in a cool and dry location when not in use. Replace the strap if it becomes frayed or damaged.

# 5 Return Procedures

Before returning any equipment to RJE, you must contact RJE and obtain a CASE number. The CASE number assists RJE in identifying the origin and tracking the location of returned items.

You will need to provide the following information to obtain a CASE number.

- Reason for return
- Model Number
- Serial Number
- Shipping method, if applicable

When returning items to RJE from outside the United States, follow the checklist presented below to prevent any delays or additional costs.

- ✓ Include with all shipments two copies of your commercial invoice showing the value of the items and the reason you are returning the product. Whenever possible, send copies of the original export shipping documents with the consignment.
- ✓ Route via courier (FedEx or UPS).
- ✓ If there is more than one item per consignment include a packing list with the shipment. It is acceptable to combine the commercial invoice and packing list with the contents of each carton clearly numbered and identified on the commercial invoice.
- ✓ If it is necessary to ship via airfreight contact RJE for specific freight forwarding instructions.
- ✓ You will be charged for customs clearance and inbound freight.
- ✓ Insure the items for their full value.
- ✓ Refer to the RJE issued Case number on all documents and correspondence.
- ✓ Prepay the freight.

## TITLE

Title shall pass to buyer on delivery to carrier at Irvine, CA. Risk of damage or loss following such delivery shall be to the buyer and RJE International shall in no way be responsible for safe arrival of the shipment. Title shall so pass to buyer regardless of any provision for payment of freight or insurance by RJE International or of the form of shipping documents. If shipment is consigned to RJE International it shall be for the purpose of securing buyer's obligations under the contract.

# 6 Warranty

RJE International, Inc. (RJE) guarantees its products to be free of defects in materials and workmanship for a period of one year from the date of shipment. In the event a product malfunctions during this period RJE's obligation is limited to the repair or replacement, at RJE's option, of any product returned to the RJE factory. Products found defective should be returned to the factory freight prepaid and carefully packed, as the customer will be responsible for any damage during shipment.

Repairs or replacements, parts, labor, and return shipment under this warranty will be at no cost to the customer. This warranty is void if, in RJE's opinion, the product has been damaged by accident or mishandled, altered, or repaired by the customer, where such treatment has affected its performance or reliability. In the event of such mishandling all costs for repair and return freight will be charged to the customer. All products supplied by RJE that are designed for use under hydrostatic loading have been certified by actual pressure testing prior to shipment. Any damage that occurs as a direct result of flooding is NOT covered by this warranty.

If a product is returned for warranty repair and no defect is found the customer will be charged a diagnostic fee plus all shipping costs. Incidental or consequential damages or costs incurred as a result of a product's malfunction are not the responsibility of RJE.

All returned products must be accompanied by a CASE number issued by RJE International. Shipments without a CASE number will not be accepted.

## LIABILITY

RJE shall not be liable for incidental or consequential damages, injuries, or losses as a result of the installation, testing, operation, or servicing of RJE products.