LIAMOS AMF-500

LIAMOS Digital Force Gauge AMF-500 Instruction Manual

Model: AMF-500 (3256801656714687)

1. Introduction and Overview

The LIAMOS Digital Force Gauge is a compact, versatile, and high-precision instrument designed for measuring push and pull forces. It is widely utilized across various industries, including electronics, construction hardware, textiles, automotive, and scientific research, for tasks such as load testing, insertion force testing, and destructive testing.

This instrument features high resolution, rapid sampling speed, and user-friendly operation, making it an efficient and accurate tool for force measurement.

2. Key Features

- **High Precision and Resolution:** Ensures accurate and detailed force measurements.
- **Multiple Measurement Modes:** Selectable modes include Real-time, Peak, and First Peak for diverse testing requirements.
- **Gravity Acceleration Setting:** Allows users to input the precise local gravity acceleration value for enhanced testing accuracy and unit conversion.
- **Minimum Force Value Shielding:** A function to ignore data within a user-defined minimum range, preventing irrelevant readings.
- **Unit Conversion:** Supports four selectable units: Newton (N), Kilogram (Kg), Pound (Lb), and Ounce (Oz).
- **Automatic Backlight:** Enhances display visibility in various lighting conditions.
- **Buzzer Alarm Function:** Provides audible alerts, especially when set limits are exceeded.
- **Upper and Lower Limit Settings:** Enables statistical analysis by setting thresholds; an alarm sounds if measurements fall outside these limits.
- **Automatic Shutdown:** Configurable auto-shutdown time to conserve battery power during periods of inactivity.

3. Setup

3.1 Battery Installation

The device requires two (2) AAA 1.5V batteries. To install:

1. Locate the battery compartment cover on the back of the device.
2. Slide or unclip the cover to open.
3. Insert two AAA batteries, ensuring correct polarity (+/-) as indicated inside the compartment.
4. Replace the battery compartment cover securely.

3.2 Attaching Measurement Accessories

The force gauge comes with various attachments for different testing scenarios. These accessories screw into the measurement shaft at the top of the device.



Image 3.2.1: The LIAMOS Digital Force Gauge shown with its interchangeable measurement accessories, including flat, conical, chisel, and hook attachments, ready to be screwed onto the device's shaft.

To attach an accessory:

1. Select the appropriate accessory for your measurement task (e.g., flat head for compression, hook for tension).
2. Carefully screw the accessory onto the threaded shaft at the top of the force gauge until it is finger-tight. Do not overtighten.



Image 3.2.2: The LIAMOS Digital Force Gauge displayed with its protective carrying case and a selection of measurement accessories, demonstrating how the device and its components are stored.

4. Operating Instructions



Image 4.0.1: Front view of the LIAMOS Digital Force Gauge, showing its digital display with a reading of 0.57 N, and clearly labeled buttons for SET, ZERO, PEAK, and UNIT, along with the central power button.

4.1 Power On/Off

- To power on the device, press the central **Power** button (red circle with power symbol).
- To power off, press and hold the **Power** button until the display turns off. The device also features an automatic shutdown function (see section 4.8).

4.2 Unit Selection

The device supports four units of measurement: Newton (N), Kilogram (Kg), Pound (Lb), and Ounce (Oz).

- Press the **UNIT** button to cycle through the available measurement units. The selected unit will be displayed on the screen.

4.3 Zeroing the Display

Before taking a measurement, it is crucial to zero the display to ensure accuracy.

- Ensure no force is being applied to the measurement shaft.
- Press the **ZERO** button. The display should show "0.00" or a similar zero reading.

4.4 Measurement Modes

The device offers three measurement modes:

- **Real-time Mode:** Displays the current force being applied.
- **Peak Mode:** Captures and holds the maximum force detected during a measurement cycle.
- **First Peak Mode:** Captures and holds the first significant peak force detected.

- To switch between modes, press the **PEAK** button. The active mode will typically be indicated on the display.

4.5 Setting Upper and Lower Limits

You can set upper and lower force limits for quality control or statistical analysis. If a measurement exceeds these limits, the buzzer will sound.

- Press the **SET** button to enter the settings menu.
- Navigate through the options using the **PEAK** or **UNIT** buttons until you reach the "Upper Limit" or "Lower Limit" setting.
- Use the **ZERO** button to adjust the value.
- Press **SET** again to confirm and exit the setting.

4.6 Gravity Acceleration Setting

For highly precise measurements, especially when converting between mass and force units, you can input the local gravity acceleration value.

- Access the settings menu by pressing the **SET** button.
- Locate the "Gravity Acceleration" setting.
- Adjust the value to match the accurate gravity acceleration at your location using the **ZERO** button.
- Confirm and exit the setting by pressing **SET**.

4.7 Minimum Force Value Shielding

This function allows you to set a minimum force threshold below which readings will be ignored, preventing noise or insignificant forces from being recorded.

- Enter the settings menu using the **SET** button.
- Find the "Min Force Shielding" option.
- Set the desired minimum force value using the **ZERO** button.
- Save the setting by pressing **SET**.

4.8 Automatic Shutdown Setting

To conserve battery life, the device can be configured to automatically shut down after a period of inactivity.

- Access the settings menu via the **SET** button.
- Locate the "Auto Shutdown Time" setting.
- Adjust the inactivity duration (e.g., 5 minutes, 10 minutes) using the **ZERO** button.
- Confirm and exit by pressing **SET**.

5. Maintenance

Proper maintenance ensures the longevity and accuracy of your LIAMOS Digital Force Gauge.

- **Cleaning:** Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents. Avoid getting moisture into the device.
- **Storage:** Store the force gauge and its accessories in the provided protective case in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Battery Replacement:** If the battery indicator shows low power, replace both AAA batteries promptly to avoid operational issues. Remove batteries if the device will not be used for an extended period.

- **Calibration:** While the device is factory calibrated, professional recalibration may be required periodically depending on usage and industry standards. Refer to a qualified service center for calibration.



Image 5.0.1: The LIAMOS Digital Force Gauge, its various measurement attachments, and two AAA batteries neatly organized within its black protective carrying case, illustrating proper storage.

6. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Low or dead batteries; incorrect battery installation.	Replace batteries with new AAA 1.5V batteries. Ensure correct polarity.
Inaccurate or inconsistent readings.	Device not zeroed; incorrect gravity acceleration setting; external interference; damaged sensor.	Press **ZERO** before measurement. Verify gravity acceleration setting. Ensure stable testing environment. Contact support if sensor damage is suspected.
Buzzer alarm sounds unexpectedly.	Measurement exceeded set upper/lower limits.	Review and adjust upper/lower limit settings (see section 4.5) or ensure measurements are within desired range.
Device shuts off too quickly.	Automatic shutdown time set too short.	Adjust the automatic shutdown time in the settings (see section 4.8).

7. Specifications

Specification	Value
Model Number	AMF-500 (3256801656714687)
Brand	LIAMOS
Measurement Units	N, Kg, Lb, Oz
Measurement Modes	Real-time, Peak, First Peak
Power Source	2 x AAA 1.5V Batteries
Item Weight	1.76 ounces
Package Dimensions	1.18 x 0.79 x 0.39 inches
Assembly Required	No
Number of Pieces	1 (main unit)

8. Safety Information

- This device is intended for industrial and scientific measurement purposes only. Do not use for medical or life-critical applications.
- Keep the device out of reach of children and pets.
- Do not expose the device to extreme temperatures, humidity, or corrosive environments.
- Avoid dropping or subjecting the device to severe impacts, as this may damage internal components.
- Always ensure the correct battery type and polarity when installing or replacing batteries. Dispose of used batteries responsibly according to local regulations.
- Do not attempt to disassemble or modify the device. Unauthorized modifications will void any warranty and may lead to malfunction or injury.
- When applying force, ensure the device and the object being measured are stable to prevent accidents.

9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the documentation provided at the time of purchase or contact your retailer or the manufacturer directly. Please have your model number (AMF-500) and purchase details ready when contacting support.

Manufacturer: LIAMOS

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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