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1. Safety information Ariana Digital Refractometer Item No.: 0521015

Please read this user manual carefully and completely before using the device for the first time. The device may only be used by carefully trained personnel. Damage caused by non-observance of the instructions in the operating instructions is without any liability.

- This meter may only be used in the manner described in this instruction manual. If the measuring device is used elsewhere, dangerous situations can occur.
- Always remove residues and residues from the sample trough immediately. This is especially true if corrosive liquids have been tested, as they can irreparably damage the prism as well as the metal surface of the sample well. (Optional)
- Always keep the pipette and the cleaning cloth used clean.
- Use the meter only if the environmental conditions (temperature, humidity, ...) are within the limits specified in the specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or wetness.
- Do not expose the device to shocks or strong vibrations.
- The device housing may only be opened by qualified personnel of Ariana Industrie GmbH.
- If you are not going to use the device for a long time, remove the battery and store it in a cool and dry place.
- Never use the meter with wet hands.
- No technical changes may be made to the device.
- The sample well should be cleaned with distilled water after each measurement and then dried with a soft textile or paper towel. Do not use abrasive cleaners or solvent-based cleaners to clean the appliance.
- The device may only be used with the accessories offered by Ariana GmbH or equivalent replacements.
- Check the housing of the measuring device for visible damage before each use. If visible damage occurs, the device must not be used.
- The measuring device must not be used in an explosive atmosphere.
- The measuring range specified in the specifications must not be exceeded under any circumstances.
- Failure to follow the safety instructions can result in damage to the device and injury to the operator.

We assume no liability for printing errors and errors in the content of this manual.

We expressly refer to our general warranty conditions, which you can find in our General Terms and Conditions.

2. Introduction

The digital refractometers are equipped with a laboratory-specific microprocessor, which they use to measure the refraction index, concentration and other parameters of many liquids very accurately and quickly. The user-friendly menu and easy-to-read display make it easy to use. The refractometers have an automatic temperature compensation function.

Specifications in general

	Measuring range	Accuracy	Resolution
Temperature	0,0 ... 50,0 °C	±0,2 °C	0,1 Brix
Dimensions	121 x 58 x 25 mm		
Weight	90 g (without battery)		

3. Device description Item no.: 0521015

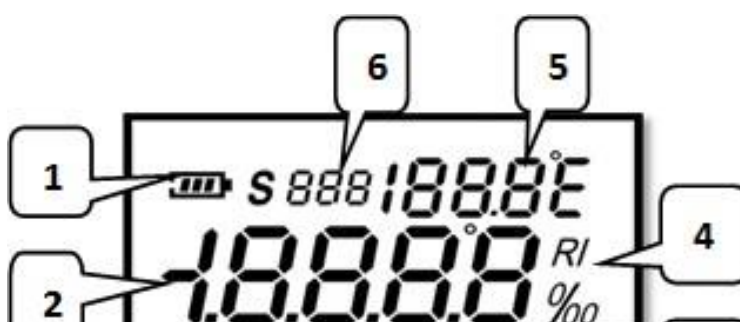




1. Stainless steel sample trough
2. LCD Display
3. Key field
4. Prism
5. Battery compartment cover
6. Removable rubber protection
7. Prism cover

4 Display description

1. Battery Level Indicator
2. Display
3. Unit (% or ‰)
4. Unit Refraction Index
5. Temperature Display Range
6. Multi-Purpose Display Area





4.1 Battery Level Indicator

Symbol	Battery
	80 ... 100 %
	50 ... 80 %
	20 ... 50 %
Shiny	<20%

4.2 Key field



- READ Start / Measurement
- CAL Mode Zero Point Calibration
- SCALE Setting Measurement Parameters

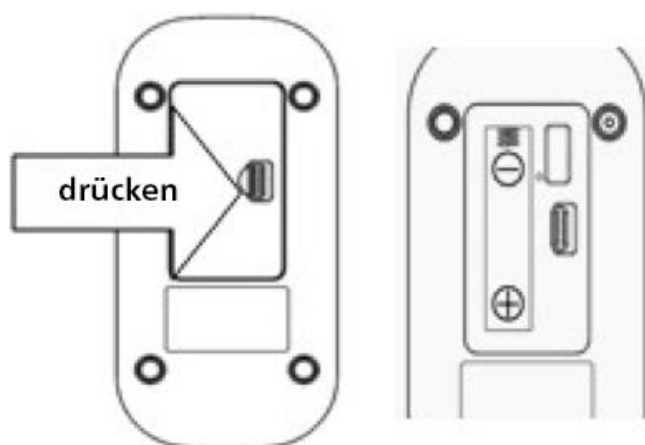
4.3 Scope of delivery

- 1 x Refractometer
- 1 x Pipette
- 1 x Removable Rubber Protector
- 1 x 1.5V AAA Battery

5 Measurement Preparation

5.1 Inserting the batteries

1. Open the battery compartment by pressing the cover lock in the direction of the arrow, see illustration.
2. Insert a 1.5 V AAA battery. Pay attention to the correct polarity. Now reattach the battery compartment cover.



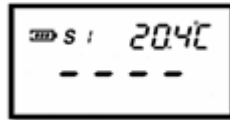
5.2 Attaching the carrying strap

Hook the carrying strap into the opening provided on the bottom of the device.



6. Start

1. Press the READ button for one second to start the device. The following screen appears with the current measurement parameter (here: S1):



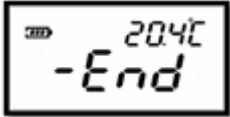
2. Before placing the sample, clean the sample well and prism with a clean, soft textile or paper towel.
3. Place the measuring device on a horizontal flat surface.
4. Select the desired measurement parameter using the "SCALE" button.
5. Make sure that the device, as well as the environment and the sample, are at the same temperature before you start the measurement.

7 Calibration

1. Add 4-5 drops of distilled water to the sample well and close the prism cover.
Please note that calibration is only possible with distilled water.
2. Press and hold the CAL button for 2-3 seconds until "CAL" flashes on the display.



3. Press the CAL button again within 10 seconds. When "End" appears on the display,



the calibration is complete. The value then appears as "0.0%"



If the CAL button is not pressed within 10 seconds, the device switches back to start mode.
If the calibration was not successful, an error message will appear on the display, e.g.

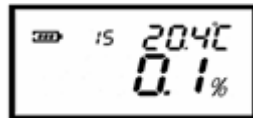


If you see the error message "A1", the calibration temperature is too high. Other error messages are described later in this guide.

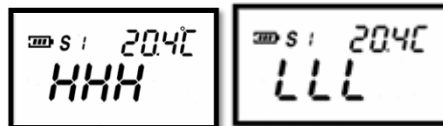


8 Measurement

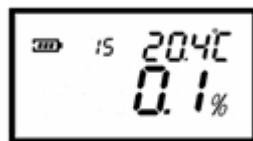
After calibration, remove the distilled water and dry the sample well. Now add 4-5 drops of the sample to the sample well and close the prism cover. Press the READ button. After automatic temperature compensation, the device then displays the measured value.



If the value is out of range, "HHH" will be displayed if it is exceeded and "LLL" if it is not reached.



Press and hold the READ button for 2 seconds to trigger an average reading. The refractometer takes 15 measurements and then shows you the average from those measurements. A countdown counter shows you the remaining measurements.



After the measurement, the display shows the set measurement parameter again.

9 Setting the measurement parameters and temperature unit

9.1 Setting the measurement parameters

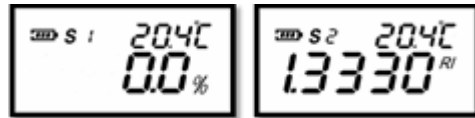
By repeatedly pressing the SCALE button, various model-dependent measurement parameters with the corresponding measured values can be set before or after the measurement.





9.2 Setting temperature unit

To switch between the °C and °F units, press the SCALE button for 2 seconds at a time.



If the temperature range is exceeded or undercut, the display shows "HHH" or "LLL".



10 Automatic shut-off function

After 1 minute of inactivity, the device will automatically turn off.

11 Troubleshooting

Error message	Cause
A01	Calibration temperature out of range (0.0 ... 40.0 °C)
A02	Incorrect fluid during calibration
A03	Lack of fluid during calibration or hardware issue

12 Guarantee

You can read about our warranty conditions in our General Terms and Conditions.

13 Disposal

NOTE according to the Battery Ordinance (BattV)

Batteries must not be disposed of in household waste: the end consumer is legally obliged to return them. Used batteries can be returned to established take-back points, among other places.

In order to implement the ElektroG (Take-Back and Disposal of Waste Electrical and Electronic Equipment), we take back our equipment. They are either recycled by us or disposed of by a recycling company in accordance with legal requirements. Alternatively, you can also hand in your old appliances at designated collection points.