

BIG RED DIGITAL BIG REDM DIGITAL

Digital level with Bluetooth

www.sola.us



Operating instructions **BIG RED(M) DIGITAL** digital level

About this manual

Congratulations on the purchase of your new BIG RED(M) DIGITAL. You have acquired a SOLA measuring device, which can make your work easier, faster, and more precise. To utilize the complete functionality range of this measuring device, and to ensure safe operation, please observe the following instructions:

- Please read these operating instructions before commissioning the device.
- Always keep the operating instructions near the device.
- Only hand over the device to other persons together with the operating instructions.
- Never render the attached warning signs unreadable.

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1. General information

1.1 Signal words and their meaning

DANGER

For an imminent danger that could lead to serious injury or death.

WARNING

For a possibly dangerous situation that could lead to serious injury or death.

CAUTION

For a possibly dangerous situation that could lead to slight injury or property damage.

NOTICE

For application notes and other useful information.

1.2 Pictograms and other information

1.2.1 Warning signs



Warning of dangers in general

1.2.2 Symbols



Read the operating instructions before use.



Batteries and devices may not be disposed of with household waste.



Do not throw battery into the fire.



Do not heat battery above 140°F (60°C).



Class 2 laser device



Do not look into the laser beam!

2. Delivery contents

BIG RED(M) DIGITAL

- 1** 1 × BIG RED(M) DIGITAL
- 2** 3 × 1.5 V Micro (AAA) batteries
- 3** 1 × Quick start



3. Description

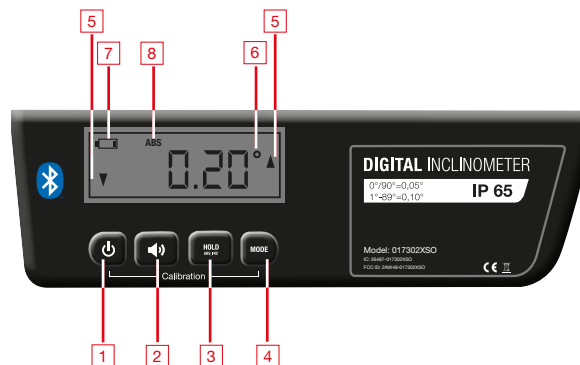
3.1 BIG RED(M) DIGITAL

- 1** Acrylic glass block vials
- 2** Inclination module
- 3** Battery compartment inclination module



3.2 Inclination module

- 1 On/off/display illumination
- 2 On/off acoustic signaling (signal at 0° and 90°)
- 3 HOLD:
Hold function (measurement is retained when pressed once) / switching between ABS (absolute) and INC (incremental)
- 4 MODE:
Display switching ° / mm/m / % / in/ft
- 5 Arrows indicate the direction in which the level is to be moved
- 6 Display ° / mm/m / % / in/ft
- 7 Low battery voltage display
- 8 ABS or INC display



Description



3.3 Intended use

The devices are designed to measure inclinations. Specified inclination ranges are reproduced acoustically. Measured values can be displayed in various units of measurement and transmitted to terminals via a Bluetooth interface.

In addition, the BIG REDM DIGITAL has built-in neodymium magnets on the side to fix it to metal surfaces.



4. Technical data

Inclination module

Max. measuring tolerance	0.05° at 0° and 90° 0,10° between 1° and 89°
Protection class	IP65
Power supply	3 × 1.5 V Micro (AAA) batteries
Operating time (at 68°F / 20°C)	30 h (approx. 80 h with display illumination switched off)
Operating temperature	14°F to 122°F (-10°C to +50°C)
Storage temperature	-4°F to 158°F (-20°C to +70°C)

5. Safety instructions

5.1 Area of responsibility

5.1.1 Manufacturer

- SOLA is responsible for the safe delivery condition of the product, including the operating instructions and the original accessories.

5.1.2 Operator

- The operator is responsible for using the product as intended, the deployment of personnel, their training, and the operational safety of the product.
- The operator understands the safety information which is stated on the product and the instructions in the operating instructions.
- The operator shall comply with the standard local regulations relating to safety and accident prevention regulations as well as worker protection laws and regulations.
- The operator shall immediately notify SOLA if safety-related issues should arise relating to the product or during its utilization.
- The operator shall ensure that the product is not utilized any further if defects become evident, and they will have the product repaired professionally.

5.2 Improper use

- Use of the device and the accessories without instruction.
- Use of third-party accessories or additional equipment.
- Use outside of the intended limits (see Chapter 4/Technical data).
- Use under extreme temperature fluctuations without adequate acclimatization.
- Disabling of safety devices and removal of hazard notices and labels.
- Unauthorized opening of the device.
- Performance of modifications or alterations to the device or the accessories.
- Deliberate blinding of third parties.
- Inadequate safeguarding at the installation site.

5.3 Utilization limitations

- The BIG RED(M) DIGITAL is suitable for continuous use in an atmosphere which can be inhabited by humans.

- Do not operate the product in explosion-prone or corrosive environments.
- Inform the local safety authorities and safety experts before working in hazardous environments, in close proximity to electrical installations or similar surroundings.

5.4 Usage hazards

5.4.1 General

WARNING ⚠

Missing or incomplete instructions may result in improper or incorrect use. This can cause accidents with serious damage to persons, property, assets, and the environment.

- Follow the manufacturer's and operator's safety instructions.
- Protect equipment and accessories from being accessed by children.

CAUTION ⚠

A fall, longer storage, transportation, or other mechanical effects can lead to erroneous measurement results. Check the unit for damage before use. Do not use damaged equipment.

- Repairs must only be performed by SOLA.
- Before using, check the accuracy of the device (see Chapter 8/ Calibration and adjustment).

5.4.2 Batteries

DANGER ⚠

Mechanical damage can cause batteries and rechargeable batteries to leak, explode, or catch fire or trigger the release of toxic substances.

- Batteries and rechargeable batteries must not be opened or exposed to mechanical loads.
- Repairs must only be performed by SOLA.

WARNING ⚠

High ambient temperatures and immersion into liquids can cause batteries and rechargeable batteries to leak, explode, or catch fire or trigger the release of toxic substances.

- Protect batteries and rechargeable batteries from mechanical damage during transport.
- Do not overheat batteries and rechargeable batteries or expose them to fire.
- Avoid the ingress of moisture into batteries and rechargeable batteries.
- Do not use damaged batteries or rechargeable batteries. Perform a proper disposal (see Chapter 11/Disposal).

WARNING ⚠

Short-circuiting or improper use can cause batteries to overheat and create an injury or fire hazard.

- Do not transport or store batteries in the pockets of garments.
- Do not bring the battery contacts in contact with jewelry, keys, or other electrically conductive objects.
- Do not charge the batteries.
- Do not discharge the batteries through short-circuiting.
- Do not solder the batteries in the device.
- Do not mix old and new batteries, and do not mix batteries from different manufacturers or with a differing type designation.

WARNING ⚠

If disposed of improperly third parties may possibly be seriously injured and the environment polluted. Burning plastic components generate toxic fumes which may impair health. Batteries/rechargeable batteries may explode if they are damaged or heated excessively, and thereby cause poisoning, burning, corrosion, or environmental contamination. If disposed of negligently, unauthorized persons are able to use the product improperly.

- The product must not be disposed of together with household waste. Dispose of the device and accessories properly (see Chapter 11/Disposal).
- Protect the product against access by unauthorized persons at all times, especially children.

5.5 Electromagnetic compatibility (EMC)

- The electromagnetic compatibility is the ability of the product to function in an environment where electromagnetic radiation and electrostatic discharge are present, without causing electromagnetic interference to other devices.

5.5.3 FCC declaration

WARNING ⚠

The user is hereby informed that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device must not cause harmful radio interference.
2. This device must tolerate any radio interference received, including radio interference that may affect its operation.

NOTICE ⚠

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful radio interference in a residential environment.

NOTICE

This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that radio interference will not occur in a particular installation. If this device does cause harmful interference with radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the radio interference by one or more of the following measures:

- Reposition or relocate the receiving antenna.
- Move the device further away from the receiver.
- Connect the device to a socket in a different circuit to the one to which the receiver is connected.
- Seek advice from the dealer or a technical expert.

NOTICE

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device interferes with radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reposition or realign the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to a power outlet that is different from the circuit to which the receiver is connected.
- Consult the dealer, or a technical expert, for advice.

5.5.4 ISED declaration

This device contains license-exempt transmitter(s)/receiver(s) that comply with the RSS standard(s) of Innovation, Science and Economic Development Canada. Operation is subject to the following two conditions:

1. This device must not cause any radio interference.
2. This device must tolerate any radio interference received, including radio interference that may lead to the undesired operation of the device.

IC radiation exposure statement:

This device complies with the radiation exposure limit values specified for an uncontrolled environment in accordance with FCC standards and Canadian standards. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

5.5.5 Using the product with Bluetooth

WARNING ⚠

Electromagnetic radiation can cause interference in other devices, in technical equipment (e.g. medical devices such as pacemakers or hearing aids) and in aircraft. It can also negatively affect humans and animals. Precautions: Although this product complies with the strictest standards and regulations, the possibility of harm to humans and animals cannot be completely ruled out.

- Do not use the product near gas stations, chemical plants, in areas with an increased risk of explosion and in areas where blasting is taking place.
- Do not use the product near medical devices.
- Do not use the product in airplanes.
- Do not use the product near your body for long periods of time.

6. Getting started

Batteries

Before starting up for the first time, check that the batteries have been correctly inserted into the device.

Inserting the batteries

1. Open the battery compartment cover using a suitable screwdriver.
2. Insert batteries with the correct polarity.
3. Close the battery compartment cover using a suitable screwdriver.

Only use 1.5 V Micro (AAA) batteries! Remove the batteries if the device is not used for an extended period.

7. Operation

7.1 Switching on and off

Press the “On/off/display illumination” button to switch on the inclination module. Press “On/off/display illumination” for at least 2 seconds to switch off the inclination module.

7.2 Display

If the inclination level is used in the reversed position (upside down), the display rotates so that the measurement can be read easily. The display switches off automatically after 5 minutes as soon as the device is no longer moved.

7.3 Display illumination

1. Switch on the inclination module (display illumination is enabled).
2. Press “On/off/display illumination” to switch the illumination on or off.

7.4 Acoustic signal

Press “On/off acoustic signaling” to switch on the acoustic signaling. The closer the inclination level position is to the standard position, the faster the frequency of the signal tone. This function helps you with leveling work where you do not have the option of reading measured values from the display.

7.5 HOLD (hold function)

Press the “HOLD” button once to freeze the current value. This function can be used to “freeze” a previous measurement on the display. The measurement remains unchanged until the “HOLD” button is pressed again.

7.6 Switching between ABS and INC

You can switch between ABS (absolute) and INC (incremental) by pressing the “HOLD” button for more than 2 seconds. In “ABS” (absolute) mode, the measurement result is displayed based on the device calibration. In “INC” (incremental) mode, on the other hand, the measurement result is displayed based on a relative reference level.

For example, you can take a measurement on a plane inclined by 5° in “ABS” mode and then switch to the “INC” function. The measurement display is then set to 0° . You can now take further measurements based on this new zero value. To exit “INC” mode, press the button again for 2 seconds.

7.7 Changing the measurement display

Press “MODE” to switch between $^\circ$ / mm/m / % / in/ft.

7.8 Changing the display resolution

By simultaneously pressing the “HOLD” button and the “On/off/display illumination” button, you can choose between two resolutions: 0.00° or 0.0° .

7.9 Bluetooth

Fast and efficient data transfer of the measured values is possible via Bluetooth directly to your smartphone.

NOTICE

To connect to your smartphone, start the SOLA Measures app and establish a connection in the corresponding menu item using “Connect”.



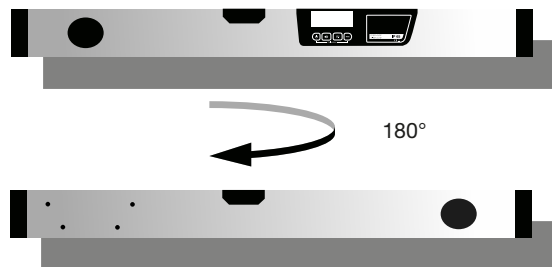
SOLA Measures App

8. Calibration and adjustment

Calibrating the inclination module

Calibration steps starting from the 0° position:

- Place the digital level with the measuring surface on a horizontal plane.
- Briefly press the “On/off/display illumination” and “MODE” buttons simultaneously.
- Display -1- appears on the display.
- Briefly press the “On/off/display illumination” button, display -1- flashes for approx. 5 seconds.
- Display -2- appears on the display.
- Rotate the digital level by 180°.
- Briefly press the “On/off/display illumination” button, display -2- flashes for approx. 5 seconds.
- Measurement icon appears on the display, calibration is complete.



NOTICE

Vertical calibration must only be carried out using a 90° touchstone or by SOLA.

9. Cleaning, storage, and transportation

9.1 Cleaning

- Wipe off the dirt with a soft damp cloth.
- Do not use aggressive cleaning agents or solvents.
- Do not immerse the device in water.
- Clean and dry wet equipment, accessories, and transport containers prior to packaging them. Only pack equipment again when it is completely dry.
- Keep plug connections clean and protected from moisture.

9.2 Storage

9.2.1 General

- The equipment may only be stored within the specified temperature limits (see Chapter 4/Technical data).
- After prolonged storage, check the accuracy of the measuring device before using it.

9.2.2 Batteries/rechargeable batteries

- Remove rechargeable batteries or batteries from the device or charging cradle for storage.
- If possible, store at room temperature and in a dry environment (see Chapter 4/Technical data).
- Protect from moisture and wetness. Dry damp rechargeable batteries or batteries completely before storage.
- For longer storage, charge rechargeable batteries to approx. 80% of their capacity (refer to operating instructions). Repeat the process every 6 months during storage.
- After storage, fully charge the rechargeable battery before use.
- Check rechargeable batteries or batteries for visible damage before use. Do not use the rechargeable batteries or batteries if damaged.

9.3 Transportation

9.3.1 General

- The device may be damaged if it falls or is subjected to strong vibrations.
- Never transport the product loose. Always use the original packaging or an equivalent transport container.
- Switch off the measuring device before transporting it.
- Check the unit for damage before use.

9.3.2 Batteries/rechargeable batteries

- Always remove rechargeable batteries or batteries from the device.
- Mask open contacts to avoid short circuits.
- Remove the rechargeable battery from the device and ship it in a storage condition (80% capacity).
- Pack rechargeable batteries or batteries in shockproof packaging to ensure that they do not move or are damaged by external factors.
- Comply with other national and international regulations and any additional requirements of the respective transportation company.
- When transporting or shipping the batteries and rechargeable batteries, the operator is responsible for complying with the applicable national and international laws and regulations.
- In principle, Li-ion rechargeable batteries are subject to the requirements for dangerous goods; nonetheless, they can be transported by the user by road without any further requirements. When shipping occurs by means of third parties (e.g. forwarding agents or air freight), specific requirements for packaging and labeling must be observed.

10. Troubleshooting

Error	Possible cause	Remedy
Device is switched on, no icon, display does not light up	<ul style="list-style-type: none"> • Battery flat • Battery incorrectly inserted • Device or switch defective 	<ul style="list-style-type: none"> • Replace battery • Insert the battery correctly • Contact your dealer and have the device repaired
Icon jumps or display “frozen”	<ul style="list-style-type: none"> • Program error 	<ul style="list-style-type: none"> • Remove batteries, wait one minute, reinsert batteries
Irregular display	<ul style="list-style-type: none"> • Low battery voltage 	<ul style="list-style-type: none"> • Replace battery
Device switches off immediately after start-up	<ul style="list-style-type: none"> • Battery flat 	<ul style="list-style-type: none"> • Replace battery

11. Disposal

- If disposed of improperly third parties may possibly be seriously injured and the environment polluted.
- Burning plastic components generate toxic fumes which may impair health.
- Batteries may explode if they are damaged or heated excessively, and thereby cause poisoning, burning, corrosion, or environmental contamination.
- If disposed of negligently, unauthorized persons are able to use the product improperly.

Measuring tools, accessories and packaging must be recycled in an environmentally friendly manner.

The product as well as the accessories – especially the batteries and rechargeable batteries – must not be disposed of with household waste.



Dispose of the device and the accessories properly.
Only dispose of rechargeable batteries when discharged.
Observe the country-specific disposal requirements.

Your SOLA dealership will accept returned batteries as well as old equipment, and will ensure proper disposal.

Only for EU countries

Electric tools must not be disposed of with household waste!



According to European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its transposition into national law, electrical and electronic equipment that is no longer usable must be collected separately and recycled in an environmentally friendly manner.

12. Manufacturer's guarantee

“The manufacturer warrants to the original purchaser stated on the guarantee card, freedom from defects of the device for a period of two years, with the exception of batteries, from such time as the device is handed over. The guarantee is limited to repairs and/or replacements at the manufacturer's discretion. Defects which are caused through improper handling by the purchaser or third parties, natural wear, and optical flaws that do not affect the usability of the equipment, are not covered by this guarantee. Claims under this guarantee can only be invoked if the device is submitted along with the guarantee card, completely filled out by the dealer, dated, and

provided with the company stamp. If the guarantee claim is justified, the manufacturer shall bear the transport costs. The duration of the guarantee will not be extended through repair or spare parts work which is carried out within the scope of the guarantee. Further claims are excluded, unless these are stipulated by the respective national legislation. In particular the manufacturer shall not be liable for any direct, indirect, incidental, or consequential damages, losses or expenses in connection with device's use or because of the inability to use the tool for any purpose whatsoever. Implied warranties for the usage or suitability for a particular purpose are expressly excluded.”

Passion for Precision