ERMENRICH SM90 Ping Stud Detector User Manual

ERMENRICH by levenhuk

Ermenrich Ping SM90
Stud Detector

User Manual

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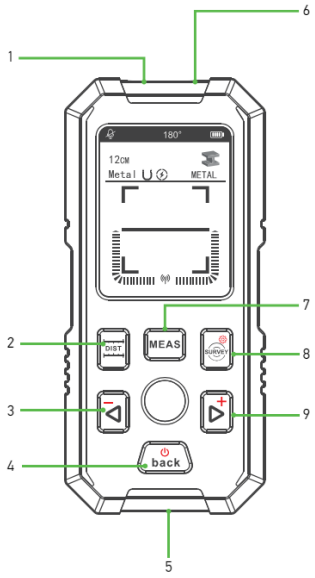
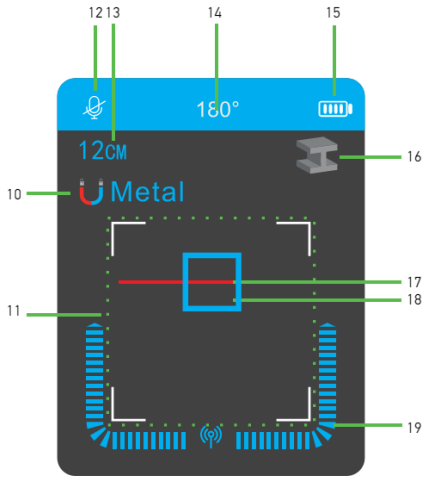
SM90 Ping Stud Detector





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Ermenrich Ping SM90 Stud Detector

Please carefully read the safety instructions and the user manual before using this product. Keep away from children. Use the device only as specified in the user manual.
The kit includes: stud detector, Type-C USB-cable, carry bag, user manual, and warranty.

Charging the device

This device uses a rechargeable lithium battery. Connect the power cable (included) to the device and the DC adapter (not included) via a USB plug and connect it to the AC power supply to charge the device.

Getting started

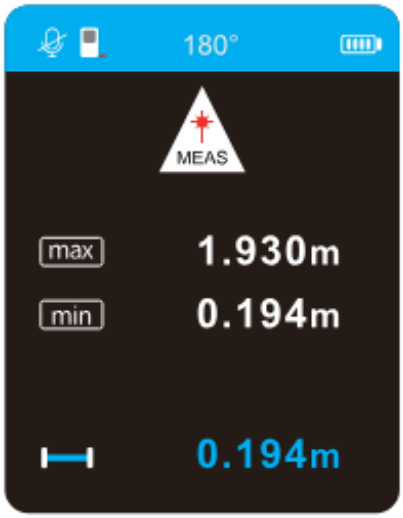
Press the Power/Back button (4) and hold it for 1s to turn the device on/off.
This multifunction device may be used as a laser meter, stud detector, or digital level.
The laser meter function is set by default. Press the SURVEY button (8) to switch to the stud detector function or press the DIST button (2) to switch to the laser meter function and digital level function. Press the Left/– button (3) or the Right/+ button (9) to scroll the menu to the digital level function.

Setting

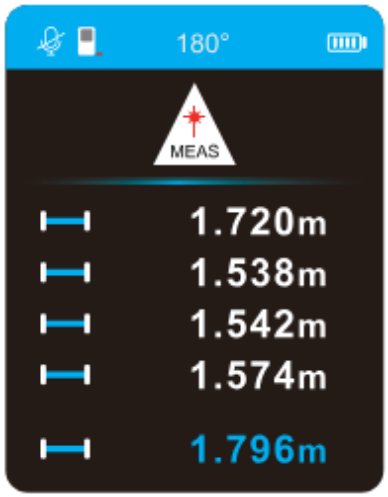
1. Press the SURVEY button (8) to enter the menu. You can select the history record, units of measurement, acoustic alert, sensitivity setting, and metal detection calibration.
2. Use the Left/– button (3) and the Right/+ button (9) to scroll the menu. Press the MEAS button (7) to confirm the selection, press the Power/Back button (4) to return.
3. Direct the laser beam at the target and then take a measurement. Press and hold the Right/+ button (9) to add the next measurement. Take the next measurement. To subtract the measurement, press and hold the Left/– button (3).
4. The default reference point is the bottom end of the device. Press and hold DIST button (2) to change the measurement point from the bottom to the top of the device.
5. Press the MEAS button (7) to record the current measurement. Press the SURVEY button to enter the menu. Select Memory to view the recorded values. To clear the record, press the Left/– button (3) and the Right/+ button (9) at the same time. The device can store up to 50 history slots and it automatically overwrites old records when new records are made.

Laser meter function

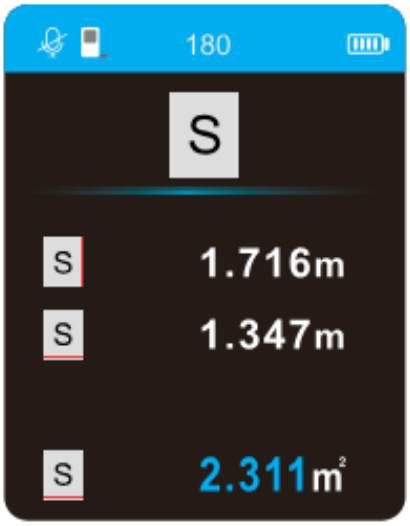
The laser meter function is set by default. Press the Left/– button (3) or the Right/+ button (9) to select one of the following options: Continuous measurement; Single distance measurement; Area measurement; Volume measurement; Calculations with 2 additional measurements (Pythagorean theorem); Calculations with 3 additional measurements (Pythagorean theorem), method 1; Calculations with 3 additional measurements (Pythagorean theorem), method 2; Triangle area measurements; Trapezium measurement; Horizontal line measurement; Vertical line measurement; Countdown; Digital level.



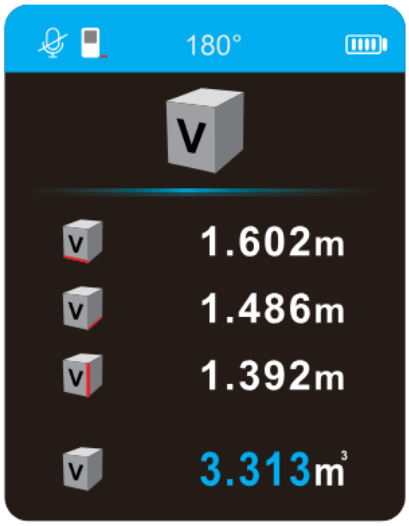
Continuous measurement
Aim the laser beam at the target. The device will keep taking measurements one after another. MAX, MIN, and the last measured values will be displayed on the screen. Press the Power/Back button (4) to exit the mode.



Single distance measurement
Aim the laser beam at the target and press the MEAS button (7). The value will be displayed on the screen.

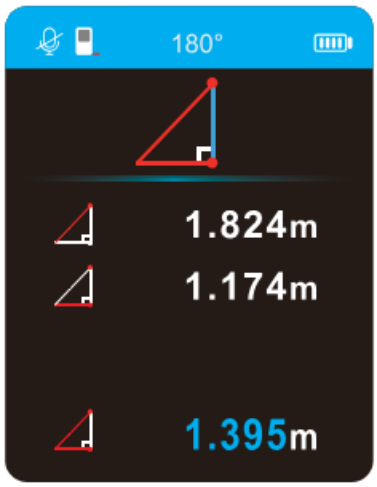


Area measurement
Aim the laser beam at the target and press the MEAS button (7) to measure 2 sides of the target. The area will be calculated automatically.



Volume measurement

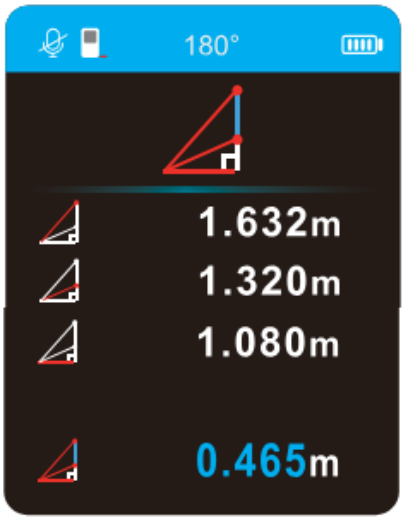
Aim the laser at the target press the MEAS button (7) to measure the length, width, and height of the three-dimensional target. The volume will be calculated automatically.



Calculations with 2 additional measurements (Pythagorean theorem)

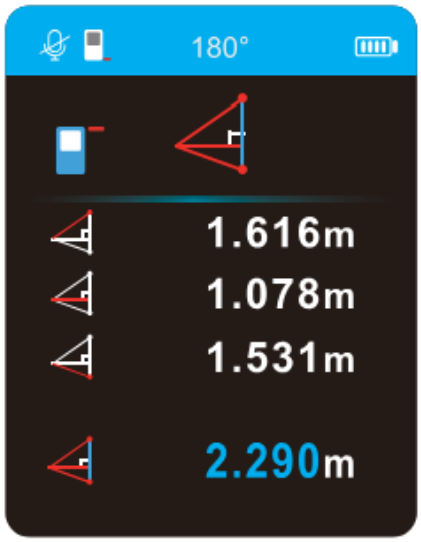
Aim the laser at the target. Press the MEAS button (7) to measure the horizontal line length and hypotenuse length.

The vertical line length will be calculated automatically.



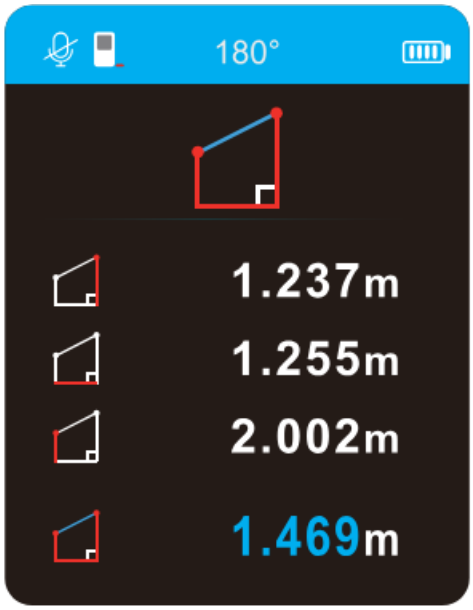
Calculations with 3 additional measurements (Pythagorean theorem), method 1

Aim the laser at the target. Press the MEAS button (7) to measure the horizontal line length and the lengths of two hypotenuses. The line between the two hypotenuses will be displayed on the screen, and its length will be calculated automatically.



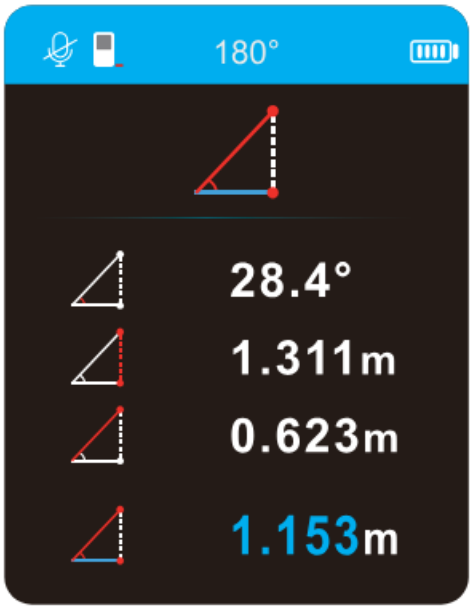
Calculations with 3 additional measurements (Pythagorean theorem), method 2
Aim the laser at the target. Press the MEAS button (7) to measure the horizontal line length and the lengths of two hypotenuses. The line between the two hypotenuses will be displayed on the screen.

Triangle area measurement
Aim the laser at the target. Press the MEAS button (7) to measure the lengths of the three lines. The area will be calculated automatically.

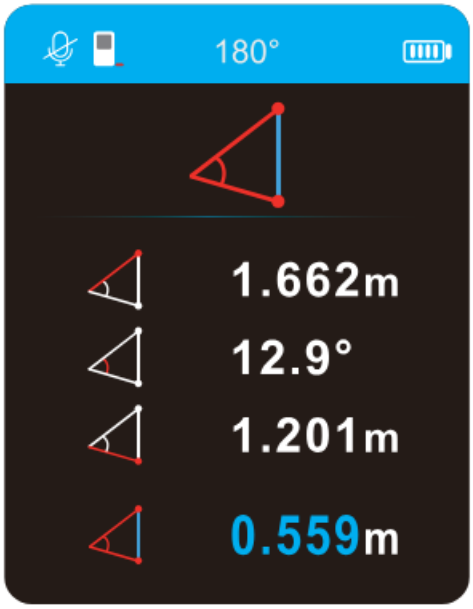


Trapezoid side measurement
Aim the laser at the target. Press the MEAS button (7) to measure the lengths of two vertical lines and one

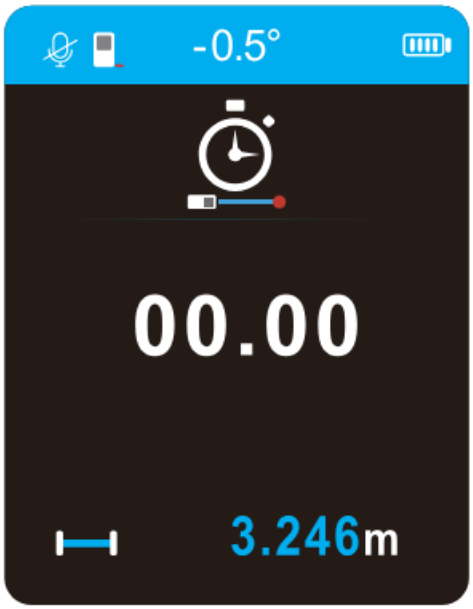
horizontal line. The fourth line length will be calculated automatically.



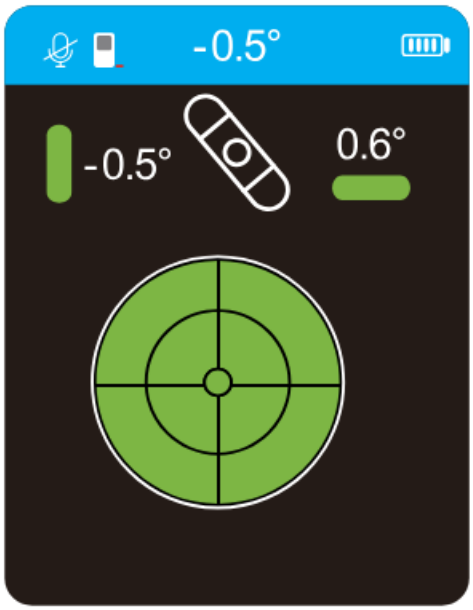
Horizontal line measurement
Aim the laser at the target. Press the MEAS button (7) to measure the hypotenuse length. The angle, horizontal line length, and vertical line length will be calculated automatically.



Vertical line measurement
Aim the laser at the target. Press the MEAS button (7) to measure the lengths of the two lines. The device will calculate the angle between these lines and the vertical line length between their ends.



Countdown
Use the Left/– button (3) or the Right/+ button (9) to adjust the countdown time. Press the MEAS button (7) to measure the length. When the countdown time is over, a measured length value will be displayed on the screen.



Digital level function
Press the DIST button (2). Press the Left/– button (3) or the Right/+ button (9) to scroll to the Digital level mode. The inclination angle value will be displayed on the screen.

Stud detector function

Calibration must be done each time a new mode is selected.
Do not touch the sensing area of the device during measurement in order to avoid mistakes, because the human body has conducting properties.

	Display icons	Detection result
1		Non-ferrous metal
2		Ferrous metal
3		AC wire
4		Wooden/metal stud

Display information

	Display icons	Mode
1		Stud detection
2		Metal detection
3		AC wire detection

Metal detection mode

The metal detection mode is used for the detection of hidden objects made of ferrous and non-ferrous metals. Press the SURVEY button (8) to switch to the stud detector function. The metal detection mode is set by default.
Calibration

1. Press the SURVEY button (8) to enter the menu. Select the Metal calibration (Metal detection calibration).
2. Place the device flat against the target surface. Make sure that there are no metal objects around.
3. Press the MEAS button (7) to start the calibration. The calibration will be carried out automatically. When the white part of the display becomes dark, the calibration is completed.
4. Remove the device from the surface and press Power/Back button (4) to exit the calibration mode.

Usage

1. Complete the calibration and place the device flat against the surface to be tested. When a red line appears on the screen, the device is ready to scan.
2. Slowly move the detector across the surface in the direction you want to scan.
3. When the device detects a metal object, the screen will display the icon (non-ferrous metal) or (ferrous metal), the value of the distance to the target, and the signal strength indication. The device will emit a sound. The closer the device is to the object, the stronger the signal will be.
4. When the signal is the strongest, the center mark (18) lights up. Move the device to locate the object according to the signal intensity. !

   ! If you’re receiving erratic scanning results, it may be a result of humidity, moisture within the wall cavity or drywall, or recently applied paint or wallpaper that isn’t fully dried.

Stud detection mode

The device can scan the surface for wooden and/or metal studs.
Calibration
Automatic calibration

1. Press the SURVEY button (8) to enter the menu. Press the Right/+ button (9) to select the stud detection mode.
2. Place the device flat against the target surface.
3. Press the MEAS button (7) to start calibration. The calibration will be carried out automatically. When the white part of the display becomes dark, the calibration is completed.
4. Remove the device from the surface and press Power/Back button (4) to exit the calibration mode.
   If the device does not search for wooden/metal objects after automatic calibration, you need to calibrate the device manually.

Manual calibration

1. Press the SURVEY button (8) to enter the menu. Press the Right/+ button (9) to select the stud detection mode.
2. Place the device flat against the target surface. When the display becomes dark, press the MEAS button (7) to force the device to calibrate.
3. Slowly move the detector across the surface in the direction you want to scan. When the signal is the strongest, the center mark (18) lights up.
4. Remove the device from the surface and press Power/Back button (4) to exit the calibration mode.

Usage

1. Complete the calibration and place the device flat against the surface to be tested.
2. Slowly move the detector across the surface in the direction you want to scan.
3. If a stud is detected, the screen will display the wooden/metal stud icon  , the value of the distance to the target, and the signal strength indication. The device emits a sound. The closer the device to the object, the stronger the signal.

AC detection mode

This mode is used only to detect live wires.
Calibration

1. Press the SURVEY button (8) to enter the menu. Press the Right/+ button (9) twice to select the AC detection mode.
2. Place the device flat against the target surface.
3. Press the MEAS button (7) to start calibration. The calibration will be carried out automatically. When the white part of the display becomes dark, the calibration is completed.
4. Remove the device from the surface and press Power/Back button (4) to exit the calibration mode.

Usage

1. Complete the calibration and place the device flat against the surface to be tested.
2. Slowly move the detector across the surface in the direction you want to scan.
3. When the device detects a live wire, the screen will display the live wire icon , the value of the distance to the target, and the signal strength indication. The device emits a sound. The closer the device is to the object, the stronger the signal will be. You can reduce the sensitivity of the device multiple times to narrow the search area even more and locate the live wire with greater accuracy.

Specifications

Laser class	class II, 630–670nm, <1mW
Units of measurement	m/ft/in/ ft + in
Measurement range	0.2–40m
Measuring accuracy	±1.5mm
Pythagoras function	+
Area measurement	+
Volume measurement	+
Triangle area measurement	+
Trapezoid measurement	+
Horizontal line measurement	+
Vertical line measurement	+
Countdown measurement	+
Digital level scanning angle	±90°
Max. detection depth	live wiring: 50mm ferrous metals: 120mm / non-ferrous metals: 10 0mm wood/metal studs: 38mm
Display	2.4″ HD color screen, 240x320px resolution
Sound alert	+
Auto-off	3 min.
History records	50 groups
Operating temperature range	0…+40°C (operating), –10…+60°C (storage) / +32… +104°F (op erating), +32… +104°F (storage)
Power source	rechargeable lithium battery 500mA·h
Dimensions	63x25x139mm
Weight	146g

The manufacturer reserves the right to make changes to the product range and specifications without prior notice.

Care and maintenance

Do not touch the sensing area of the device during measurement in order to avoid mistakes, because the human body has conducting properties. Do not exclusively rely on the detector to locate items behind scanned surfaces. Do not assume that there is no live cabling inside a wall. Always use caution when nailing, cutting, or drilling in walls, floors, and ceilings that may contain live cabling. Calibrate the device regularly following a routine schedule. This is a class II laser product. Please DO NOT stare into the beam, with unprotected eyes or through an optical device, at any time or direct it towards other people. Do not remove any safety labels. Do not aim the device directly at the sun. Do not try to disassemble the device on your own for any reason. For repairs and cleaning of any kind, please contact your local specialized service center. Protect the device from sudden impact and excessive mechanical force. Do not use the product in explosive environment, close to flammable materials. Store the device in a dry cool place. Only use accessories and spare parts for this device that comply with the technical specifications. Never attempt to operate a damaged device or a device with damaged electrical parts! If a part of the device or battery is swallowed, seek medical attention immediately.

Battery safety instructions

Always purchase the correct size and grade of battery most suitable for the intended use. Always replace the whole set of batteries at one time; taking care not to mix old and new ones, or batteries of different types. Clean the battery contacts and also those of the device prior to battery installation. Make sure the batteries are installed correctly with regard to polarity (+ and –). Remove batteries from equipment that is not to be used for an extended period of time. Remove used batteries promptly. Never short-circuit batteries as this may lead to high temperatures, leakage, or explosion. Never heat batteries in order to revive them. Do not disassemble batteries. Remember to switch off devices after use. Keep batteries out of the reach of children, to avoid risk of ingestion, suffocation, or poisoning. Utilize used batteries as prescribed by your country's laws.

Levenhuk International Warranty

Levenhuk products, except for their accessories, carry a 5-year warranty against defects in materials and workmanship. All Levenhuk accessories are warranted to be free of defects in materials and workmanship for six months from the purchase date. The warranty entitles you to the free repair or replacement of the Levenhuk product in any country where a Levenhuk office is located if all the warranty conditions are met.
For further details, please visit: **levenhuk.com/warranty**
If warranty problems arise, or if you need assistance in using your product, contact the local Levenhuk branch.

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Documents / Resources

	**ERMENRICH SM90 Ping Stud Detector** [pdf] User Manual SM90 Ping Stud Detector, SM90, Ping Stud Detector, Stud Detector, Detector

References

- **User Manual**