BOSCH UniversalDetect 3603F813 Easy Handling Digital Detector User Manual

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BOSCH UniversalDetect 3603F813 Easy Handling Digital Detector

Safety Instructions

All instructions must be read and observed. The safeguards integrated into the measuring tool may be compromised if the measuring tool is not used by these instructions. STORE THESE INSTRUCTIONS IN A SAFE PLACE.

- Have the measuring tool serviced only by a qualified specialist using only original replacement parts? This will ensure that the safety of the measuring tool is maintained.
- Do not use the measuring tool in explosive atmospheres which contain flammable liquids, gases, or dust. Sparks may be produced inside the measuring tool, which can ignite dust or fumes.
- The measuring tool may not be 100 % accurate for technological reasons. To eliminate hazards, familiarise yourself with further sources of information, such as building plans and photographs taken during construction, etc. before carrying out any drilling, sawing, or routing work on walls, ceilings, or floors. Environmental influences, such as humidity, or proximity to devices that generate strong electric, magnetic, or electromagnetic fields, moisture, metallic building materials, foil-laminated insulation materials, or conductive wallpaper or tiles may impair the accuracy of the measuring tool. The number, type, size, and position of the objects may distort the measuring results.
- If there are gas pipes in the building, check to ensure that none of them have been damaged after completing any work on walls, ceilings, or floors.
- When attaching objects to dry walls, and in particular when attaching them to the substructure, check to ensure that both the wall and the fastening materials have a sufficient load-bearing capacity.

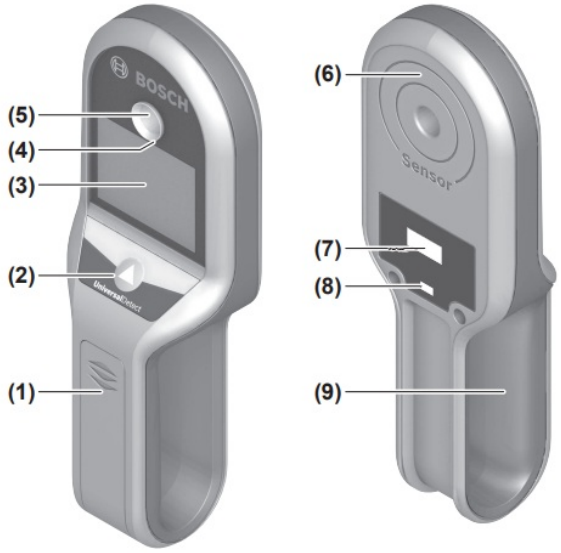
Product Description and Specifications

Please observe the illustrations at the beginning of this operating manual.

Intended Use
The measuring tool is intended for the detection of metal (ferrous and non-ferrous metals, e.g. reinforcing steel)

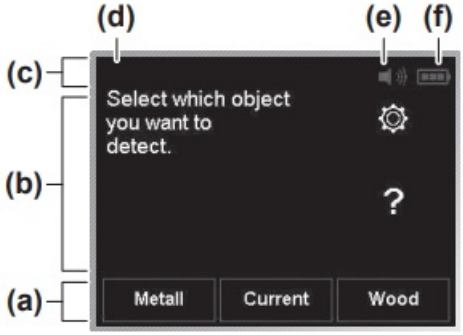
and live wires in walls, ceilings, and floors, and to detect wooden beams in dry walls. The measuring tool is suitable for indoor use.

Product Features
The numbering of the product features shown refers to the illustration of the measuring tool on the graphic page.



1. Battery compartment cover
2. On/off button/measuring button
3. Display (touchscreen)
4. Light-up ring
5. Marking hole
6. Sensor area
7. Serial number
8. Wall sensor
9. Gripping surface

Display elements



- (a) Navigation area
- (b) Information area
- (c) Status bar
- (d) Number of pages symbol (only with multi-page menus)
- (e) Audio signal indicator

- (f) Battery indicator

Technical data

Digital detector	UniversalDetect
Article number	**3 603 F81 3..**
Max. detection depth[A)]	
– Metals	100 mm
– Single-phase live cables (110–240 V, 50–60 Hz, with voltage applied)[B)]	50 mm
– Wooden substructures in dry walls	25 mm[C)]
Operating temperature	–5 °C to +40 °C
Storage temperature	–20 °C to +70 °C

Bosch Power Tools	1 609 92A 85B	(03.02.2023)
Operating frequency range	48–52 kHz
Max. magnetic field strength (at 0.1 m)	106 dBµA/m
Max. altitude	2000 m
Relative air humidity	
– **<Metal>** and **<Wood>** operating mode	30–80 %
– **<Current>** operating mode	< 50 %
Pollution degree according to IEC 61010-1	2[D)]
Batteries	4 × 1.5 V LR03 (AAA)
Approx. operating time	4 h
Weight according to EPTA-Procedure 01:2014	0.34 kg
Dimensions (length × width × height)	255 × 90 × 56 mm

- A) Depends on the operating mode, material, and size of the objects, as well as the material and condition of the base material
- B) Lower detection depth with non-live wires
- C) equal to two plasterboard panels
- D) Only non-conductive deposits occur, whereby occasional temporary conductivity caused by condensation is expected. The serial number (7) on the type plate is used to identify your measuring tool.

The accuracy and detection depth of the measuring result may be negatively affected if the condition of the substrate is unfavorable.

Assembly

Inserting/changing the Batteries
It is recommended that you use alkaline manganese batteries to operate the measuring tool. Do not use disposable batteries that have a rated voltage of greater than 1.5 V. To open the battery compartment cover (1), push it away from the battery compartment in the direction of the arrow. Insert the batteries. When inserting the batteries, ensure that the polarity is correct according to the illustration on the inside of the battery compartment.

The battery symbol (f) in the display status bar shows the current state of charge of the batteries.

If the symbol opposite appears in the display status bar, the measuring tool can continue to be used for up to another 15 minutes. Change the batteries. Always replace all the batteries at the same time. Only use batteries from the same manufacturer and which have the same capacity.

- Take the batteries out of the measuring tool when you are not using it for a prolonged period. The batteries can corrode and self-discharge during prolonged storage in the measuring tool.

Operation

- Protect the measuring tool from moisture and direct sunlight.
- Do not expose the measuring tool to any extreme temperatures or variations in temperature. In case of large temperature variations, leave the measuring tool to adjust to the ambient temperature before switching it on. The accuracy of the measuring tool and the functionality of the display may be compromised if exposed to extreme temperatures or variations in temperature.
- Avoid hard knocks to the measuring tool or dropping it. After severe external influences and in the event of abnormalities in the functionality, you should have the measuring tool checked by an authorized Bosch after-sales service agent.
- Hold the measuring tool by the intended gripping surface (9) only, so as not to influence the measurement.
- Do not attach any stickers or labels to the sensor area (6) on the rear of the measuring tool. Metal labels in particular will affect measuring results. Do not wear gloves when taking measurements and make sure that you are properly earthed. If you are not properly earthed, the identification of live wires may be impaired. When taking measurements, avoid getting close to devices that emit strong electric, magnetic, or electromagnetic fields, such as mobile telephones, laptops, or tablets. If possible, deactivate all tools whose radiation could interfere with the measurement and switch off the corresponding functions or tools.

Using the touchscreen

- Do not use the measuring tool if the touchscreen is visibly damaged (e.g. cracks in the surface etc.). The display is divided into a status bar (c) and a touchscreen with an information area (b) and a navigation area (a).

The status bar (c) shows the current sound setting (e), the battery’s state of charge (f), and the number of pages (d) (in multi-page menus). The measuring tool can be controlled by touching the buttons on the touchscreen display.

- Use only your fingers to operate the touchscreen.
- Do not bring the touchscreen into contact with other electrical devices or water.
- To clean the touchscreen, switch the measuring tool off. Wipe off any dirt e.g. using a microfibre cloth.

Navigating through the menu
To control the measuring tool via the touchscreen, the following general buttons (in addition to buttons in the specific language) will appear:

Button	Action
◀	Go back to the previous page
▶	Go forward to the next page
↩	Go one menu level back/up
⚙	Open the **<Settings>** menu
?	Open the **<Help menu>** menu

Starting Operation

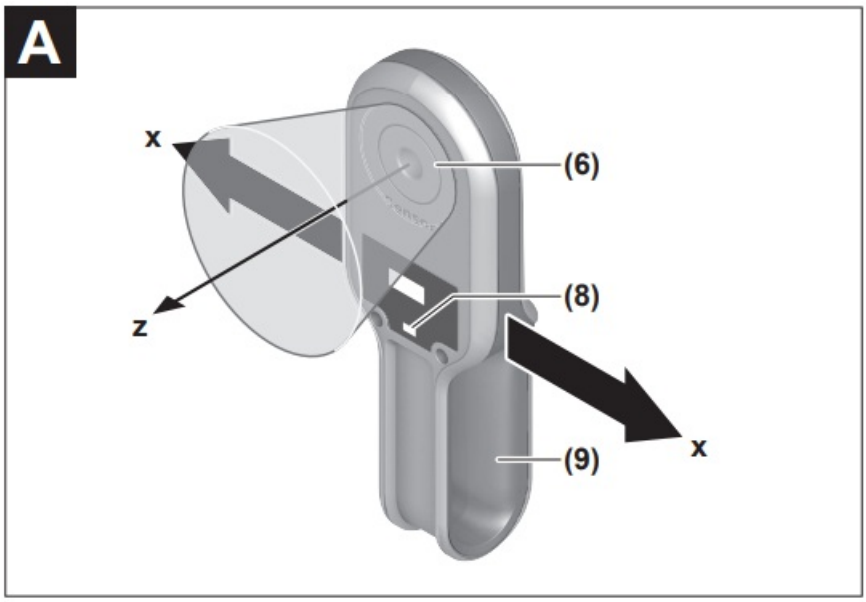
Switching on/off

- Before switching on the measuring tool, ensure that the sensor area (6) is dry. If necessary, use a cloth to dry the measuring tool.
- If the measuring tool has been exposed to a significant change in temperature, leave it to adjust to the ambient temperature before switching it on.

To switch on the measuring tool, press the on/off button (2). Follow the tips on using the measuring tool. You can choose to disable the function that shows these detailed instructions every time the tool is switched on in the submenu <Tips>. To switch off the measuring tool, press and hold the on/off button (2). If no measurement takes place and no button is pressed on the measuring tool for approx. After 5 minutes, the measuring tool will switch off automatically to save the batteries.

How it works

(see Figure A)



- The measuring tool checks the substrate of the sensor area (6) in the measurement direction z up to the maximum detection depth. Select the operating mode you require.
- Always move the measuring tool over the substrate in a straight line along the x-axis, applying light pressure, without lifting it off or changing the pressure. The wall sensor (8) must be in uniform contact with the substrate for the measurement to be correct.

- Hold the measuring tool by the gripping surface (9) with an even grip and do not touch the sensor area (6) while taking measurements.
- If the measuring tool receives a signal, this will be shown in the information area (b) and the light-up ring (4) will light up yellow. Follow the additional instructions in the information area. Note that moving over the substrate multiple times will detect objects more precisely. If an object has been detected, this will be shown in the information area. The light-up ring (4) will light up red and the tool will emit a sound.

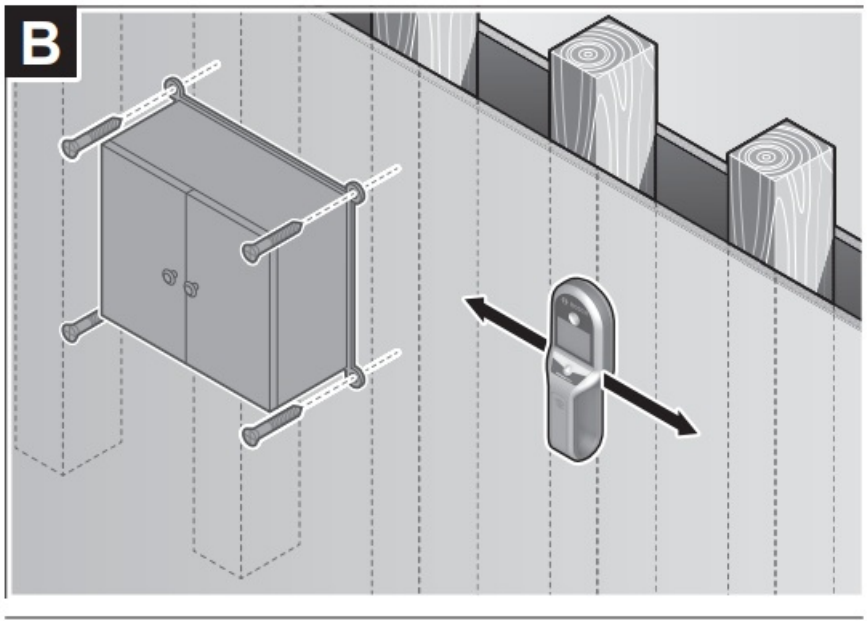
The type of object found (depending on the operating mode) will be shown on the display:

- Power cable,
- Metal object,
- Substructure.

If no objects are found, the light-up ring (4) will remain green and nothing will be shown on the display.

Operating Modes
When detecting, you can choose between three operating modes and can activate two modes simultaneously.

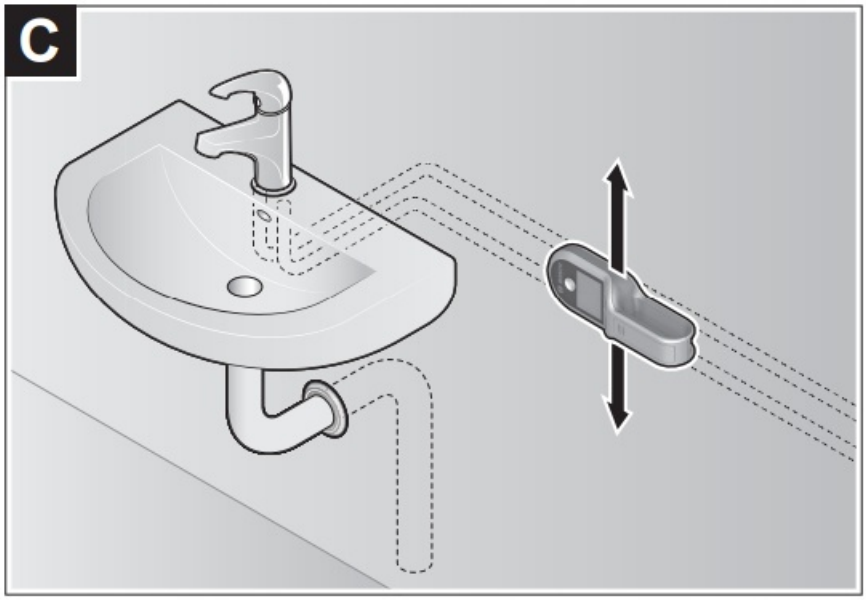
<Wood> operating mode (see figure B)
<Wood> operating mode is designed for finding wooden beams in dry walls.



When the measuring tool is placed on the wall, the light-up ring (4) lights up yellow until the signal can be assigned by moving the measuring tool around. Please note that when selecting this operating mode, all objects located in dry walls will be displayed. You can only rule out the presence of a metal object or electricity cable by combining this operating mode with the other two operating modes. This operating mode will also find plastic pipes, especially those that are filled with water. Before drilling, sawing, or milling, check to ensure that the object found is a wooden beam and not a plastic pipe.

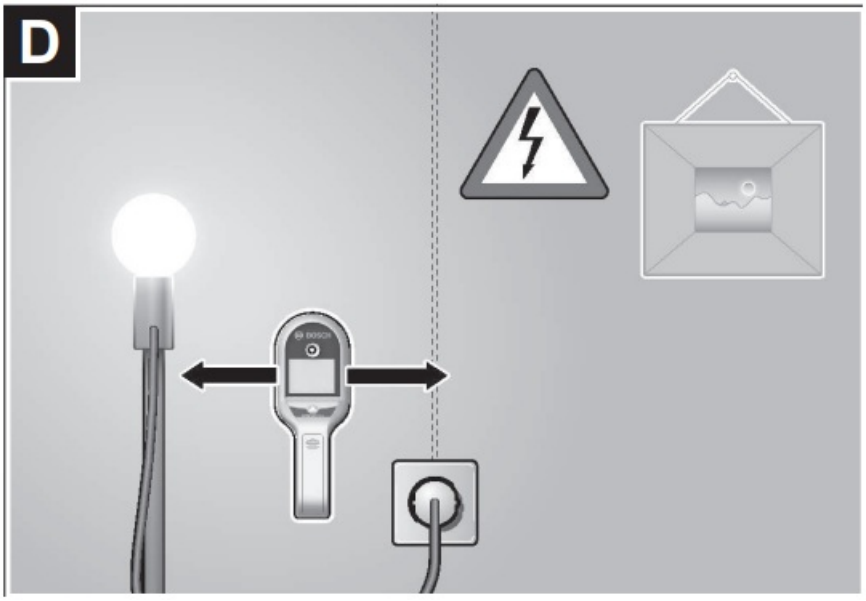
Only use <Wood> operating mode on dry walls.

<Metal> operating mode (see Figure C)
<Metal> operating mode is designed solely for finding objects made of metal (e.g. cop-per pipes or reinforcing steel), regardless of the nature of the wall.



In this operating mode, live cables are not displayed as power cables. To find power cables, you can also select the <Metal> and <Current> operating modes at the same time.

<Current> operating mode (see Figure D)
<Current> operating mode is designed solely for finding single-phase live cables (110–240 V, 50–60 Hz).



Preparing to take measurements and features of the measuring process:

- The cable must be live. You should therefore connect electricity consumers (e.g. lights, appliances) to the electricity cable you are trying to find. Switch on the electricity consumers to ensure that the electricity cable is live.
- The 50–60 Hz signal from the electricity cable must be able to reach the measuring tool. If the cable is in damp walls (e.g. > 50 % humidity), behind metallic foil (e.g. thermal insulation), or in an empty metal pipe, the signal will not reach the measuring tool and you will not be able to find the cable.
- The measuring tool must be sufficiently earthed. To do this, hold it firmly (without gloves) by the gripping surface (9). Make sure that you are in good contact with the floor. Insulating shoes, ladders or platforms may compromise your contact with the floor. The floor must also be earthed for live cables to be detected.
- The 50–60 Hz signal from the electricity cable must be stronger along the cable than in its immediate vicinity. If

the wall is very dry or poorly earthed, the signal will be the same strength throughout the wall. This will result in the measuring tool indicating that it has found a signal over a large area, but it will not be able to detect the exact location of the cable. In this instance, it may be helpful to place your free hand on the wall 20–30 cm from the measuring tool to conduct the signal away from the wall.

Switch off power consumers and make sure that live cables are de-energized before drilling, sawing, or milling into walls, ceilings, or floors. After performing any kind of work, check to ensure that objects placed on the substrate are not live.

If you are unable to detect the cable in <Current> operating mode, then you may be able to search for it as a metal object in <Metal> operating mode. Please be aware that the maximum detection depth is low (approximately 2–3 cm). While solid-wire cables can be detected in <Metal> operating mode, stranded-wire cables cannot.

Multi-phase (known as three-phase current or heavy current) electricity cables cannot be detected in <Current> operating mode because the signals from the different phases cancel each other out. You can, however, detect multi-phase electricity cables as metal objects in <Metal> operating mode. The maximum detection depth is somewhat higher than that for single-phase electricity cables.

Settings menu

To open the <Settings> menu, lift the measuring tool off the substrate and press the button with the symbol shown opposite. The sound and language settings will remain the same unless changed (i.e. they do not need to be set every time you switch on the tool).

Submenu <Sound>:
You can switch the sound indicating that an object has been found on and off. The selected setting appears with the symbol (e) in the status bar.

Submenu <Language>:
Select the language of the menu navigation.

Submenu <Reset>:
Here you can recalibrate the measuring tool manually. It is advisable to recalibrate the measuring tool if it starts to continuously detect a metal object without there being one nearby. Follow the instructions in the information area on the touchscreen when recalibrating. Only carry out the recalibration at room temperature.

Help menu menu
To open the <Help menu> menu, lift the measuring tool off the substrate and press the button with the symbol shown opposite.

Submenu Product information:
Here you will find information about your measuring tool.

Submenu <Tips>:
You can choose whether you want the instructions on using your measuring tool to be shown every time you switch it on. In this submenu, you can also choose to view the tips directly.

Submenu <FAQ>:
Here you will find information about the most common measuring errors.

Submenu <Online help>:

A website address is given here where you will find further information about your measuring tool.

Working Advice

Marking objects
If required, detected objects can be marked. Measure as usual. Once you have found an object, mark its position through the marking hole (5). The symbol shown on the measuring tool may change while you are making this mark as the marking hole is directly in the sensor area (6) and the pen you use may disturb the sensors. Always start a new measurement after marking a position. You can do this by lifting the measuring tool off the wall and then putting it down again. This will ensure that the marking process does not affect the measuring results that follow.

Errors Causes and Corrective Measures

Cause	Corrective measures
Measuring process does not start.	
Wall sensor **(8)** has not detected contact with the wall.	Briefly press the on/off button **(2)** to start the measuring process manually.
Measuring results inaccurate/implausible	
Interfering objects are within the sensor range **(6)**	Remove all interfering objects (e.g. watches, bracelets, rings, etc.) from within range of the sensor **(6)**. Do not hold the measuring tool close to the sensor.
Ambient temperature too high/too low	Only use the measuring tool in the operating temperature range.
Strong temperature variation	Allow the measuring tool to reach the correct temperature.

The measuring tool monitors the correct operation in every measurement. If a defect is detected, the display will indicate only the symbol shown opposite. In this case, or if you are unable to rectify an error using the other corrective measures mentioned, send the measuring tool to an authorized Bosch after-sales service center.

Error during measurement using <Wood> operating mode

Cause	Corrective measures
Light-up ring lights up red even though there are no wooden beams in the wall.	
Water-filled plastic pipe	Water-filled plastic pipes in dry walls are also displayed in **<Wood>** operating mode.

Wall is not a dry wall	**<Wood>** operating mode is only designed for dry walls.
Inhomogeneous dry wall	Dry walls made from coarse chipboard can be highly inhomogeneous and cause incorrect measurements. For this reason, start the measurement at a different place on the wall and measure at a different height. If this does not help, hold an additional plasterboard panel on the wall and perform the measurement on this.
Measuring tool placed onto the wall very slowly	Place the measuring tool onto the wall quickly.
Uneven contact with the wall	When taking measurements, always hold the measuring tool so that contact with the wall is as even as possible and do not tilt the measuring tool.
No wooden beams are found.	
Measured section too short	Start the measurement at a different place on the wall and move the measuring tool over a larger section.
Wooden beam too deep	The detection depth depends on the building material and may be less than the maximum detection depth.
Shielding building material or humidity too high	Detection will not be accurate in the presence of metallic building materials or building materials that are too damp (e.g. if the humidity is too high).

Error during measurement using <Metal> operating mode

Cause	Corrective measures
Light-up ring lights up yellow or red even though there is no metal nearby.	
Auto-calibration not successful	Start a recalibration via the **<Reset>** submenu.
Light-up ring lights up yellow or red over a large measuring range on the wall.	
Many metal objects spaced closely together	Metal objects spaced too closely together cannot be detected separately.
Building materials containing metal or reinforcing steel in concrete	In the presence of metallic building materials (e.g. foil-laminated insulation materials, heat conduction plates), reliable detection is not possible.
Solid metal objects on the back of the wall	In the presence of solid metal objects (e.g. radiators), reliable detection is not possible.
Auto-calibration not successful	Start a recalibration via the **<Reset>** submenu.
Metal object not found.	
Metal object is too deep or too small.	The detection depth depends on the building material and on the object and may be less than the maximum detection depth.

Error during measurement using <Current> operating mode

Cause	Corrective measures
Light-up ring lights up red over a large measuring range on the wall.	
Insufficient earthing of the wall	Touch the wall with your free hand at a distance of 20–30 cm from the measuring tool in order to earth the wall.
Live cable not found.	
No/unusual voltage in the cable	Apply voltage to the cable, e.g. by turning on the corresponding light switches. It is not possible to reliably detect multi-phase electricity cables and cables with voltages outside the 110–240 V and 50–60 Hz range.
Cable is too deep.	The detection depth depends on the building material and may be less than the maximum detection depth.
Cable runs in an earthed metal pipe.	Select the **<Metal>** operating mode to detect metal pipes.
Measuring tool not earthed	Grip the measuring tool firmly without gloves. Do not stand on insulating ladders or scaffolds. Do not wear insulating footwear.
Shielding building material or humidity too low/too high	Detection will not be reliable in the presence of metallic building materials or building materials that are too dry or too damp (e.g. if the humidity is too low or too high).

Maintenance and Service

Maintenance and Cleaning

- Check the measuring tool before each use. If the measuring tool is visibly damaged or parts have become loose inside the measuring tool, the safe function can no longer be ensured.
- Always keep the measuring tool clean and dry to ensure optimum, safe operation. Never immerse the measuring tool in water or other liquids.
- Wipe off any dirt using a dry, soft cloth. Do not use any detergents or solvents.
- After-Sales Service and Application Service

Our after-sales service responds to your questions concerning the maintenance and repair of your product as well as spare parts. You can find explosion drawings and information on spare parts at: **www.bosch-pt.com** The Bosch product use advice team will be happy to help you with any questions about our products and their accessories. In all correspondence and spare parts orders, please always include the 10-digit article number given on the nameplate of the product. Great Britain Robert Bosch Ltd. (B.S.C.)P.O. Box 98 Broadwater Park North Orbital Road Denham Uxbridge UB 9 5HJ

At **www.bosch-pt.co.uk** you can order spare parts or arrange the collection of a product in need of servicing or repair.

Tel. Service: (0344) 7360109
E-Mail: **boschservicecentre@bosch.com**

You can find further service addresses at: **www.bosch-pt.com/serviceaddresses**

Disposal
Measuring tools, accessories, and packaging should be recycled in an environmentally friendly manner. Do not

dispose of measuring tools or batteries with household waste.

Only for EU countries:
According to Directive 2012/19/EU on waste electrical and electronic equipment and its transposition into national law, measuring tools that are no longer usable, and, according to Directive 2006/66/EC, defective or drained batteries must be collected separately and disposed of in an environmentally correct manner. If disposed of incorrectly, waste electrical and electronic equipment may have harmful effects on the environment and human health, due to the potential presence of hazardous substances.

Only for the United Kingdom:
According to The Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) and the Waste Batteries and Accumulators Regulations 2009 (SI 2009/890) (as amended), products that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

Hereby, Robert Bosch Power Tools GmbH declares that the radio equipment type UniversalDetect complies with Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at the following internet address:

Declaration of Conformity
Hereby, Robert Bosch Limited as authorized representative acting on behalf of Robert Bosch Power Tools GmbH declares that the radio equipment type UniversalDetect complies with the Radio Equipment Regulations 2017. The full text of the declaration of conformity is available at the following internet address:
https://gb-doc.bosch.com

Documents / Resources

	**BOSCH UniversalDetect 3603F813 Easy Handling Digital Detector** [pdf] User Manual UniversalDetect 3603F813 Easy Handling Digital Detector, UniversalDetect 3603F813, Easy Handling Digital Detector, Handling Digital Detector, Digital Detector, Detector

References

- **User Manual**