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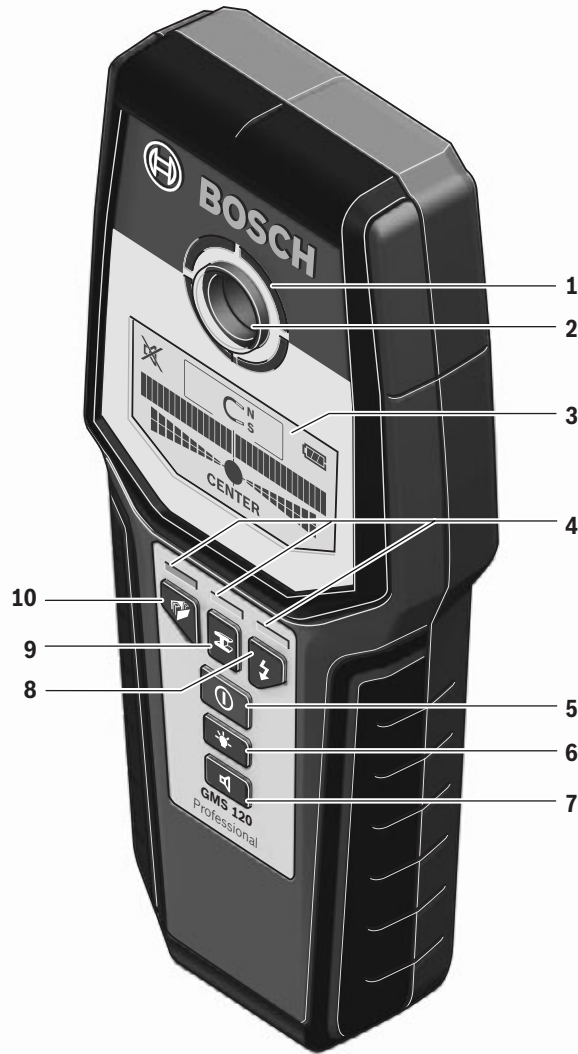
2 609 140 939

## GMS 120 Professional



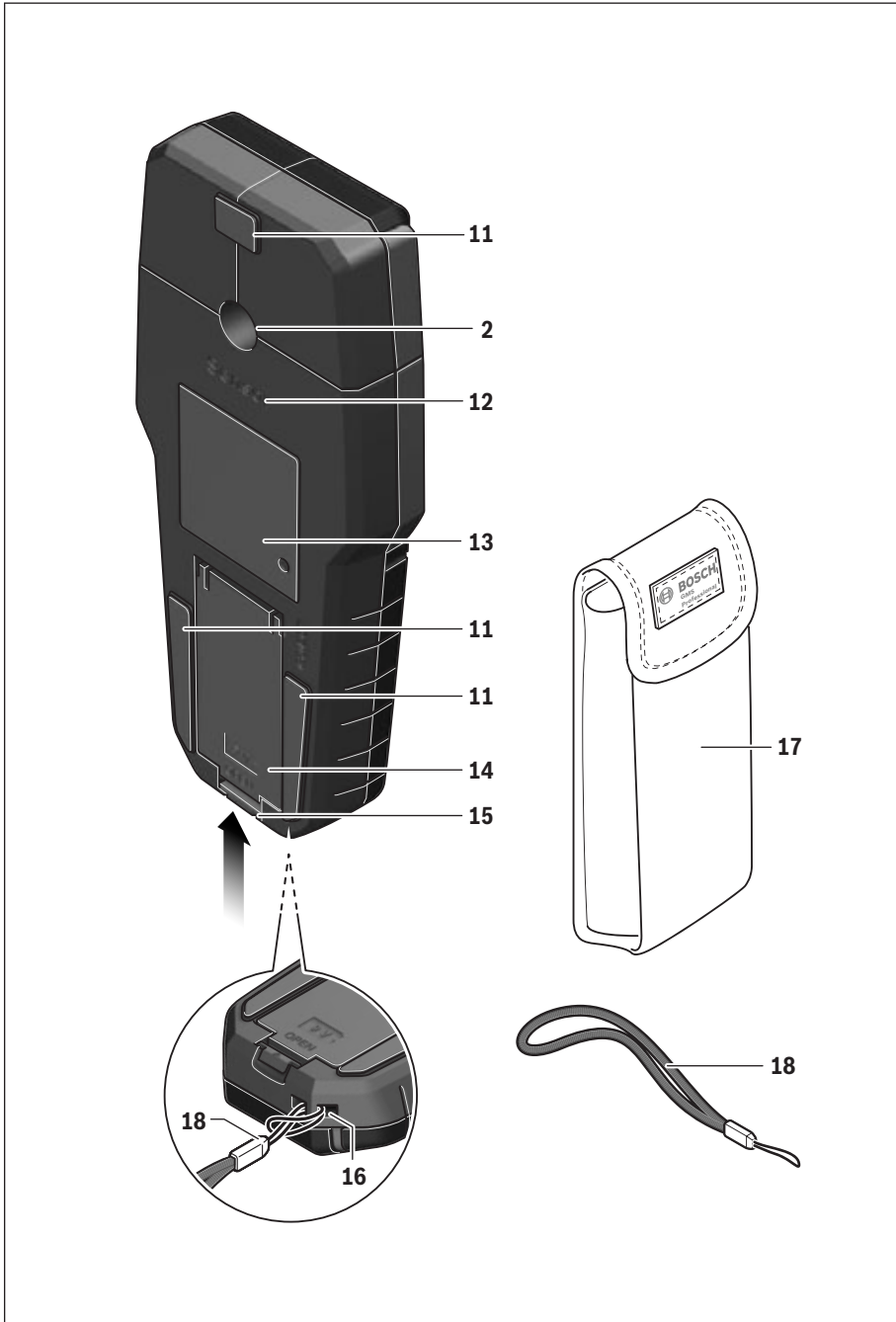
<b>de</b> Originalbetriebsanleitung	<b>cs</b> Původní návod k používání	<b>ja</b> オリジナル取扱説明書
<b>en</b> Original instructions	<b>sk</b> Pôvodný návod na použitie	<b>cn</b> 正本使用说明书
<b>fr</b> Notice originale	<b>hu</b> Eredeti használati utasítás	<b>tw</b> 正本使用說明書
<b>es</b> Manual original	<b>ru</b> Оригинальное руководство по эксплуатации	<b>ko</b> 사용 설명서 원본
<b>pt</b> Manual original	<b>uk</b> Оригінальна інструкція з експлуатації	<b>th</b> หนังสือคู่มือการใช้งานฉบับต้นแบบ
<b>it</b> Istruzioni originali	<b>ro</b> Instrucțiuni originale	<b>id</b> Petunjuk-Petunjuk untuk Penggunaan Orisinal
<b>nl</b> Oorspronkelijke gebruiksaanwijzing	<b>bg</b> Оригинална инструкция	<b>vi</b> Bảng hướng dẫn nguyên bản
<b>da</b> Original brugsanvisning	<b>sr</b> Originalno uputstvo za rad	<b>ar</b> تعليمات التشغيل الأصلية
<b>sv</b> Bruksanvisning i original	<b>sl</b> Izvirna navodila	<b>fa</b> راهنمای طرز کار اصلی
<b>no</b> Original driftsinstruks	<b>hr</b> Originalne upute za rad	
<b>fi</b> Alkuperäiset ohjeet	<b>et</b> Algupärane kasutusjuhend	
<b>el</b> Πρωτότυπο οδηγιών χρήσης	<b>lv</b> Instrukcijas oriģinālvalodā	
<b>tr</b> Orijinal işletme talimatı	<b>lt</b> Originali instrukcija	
<b>pl</b> Instrukcja oryginalna		

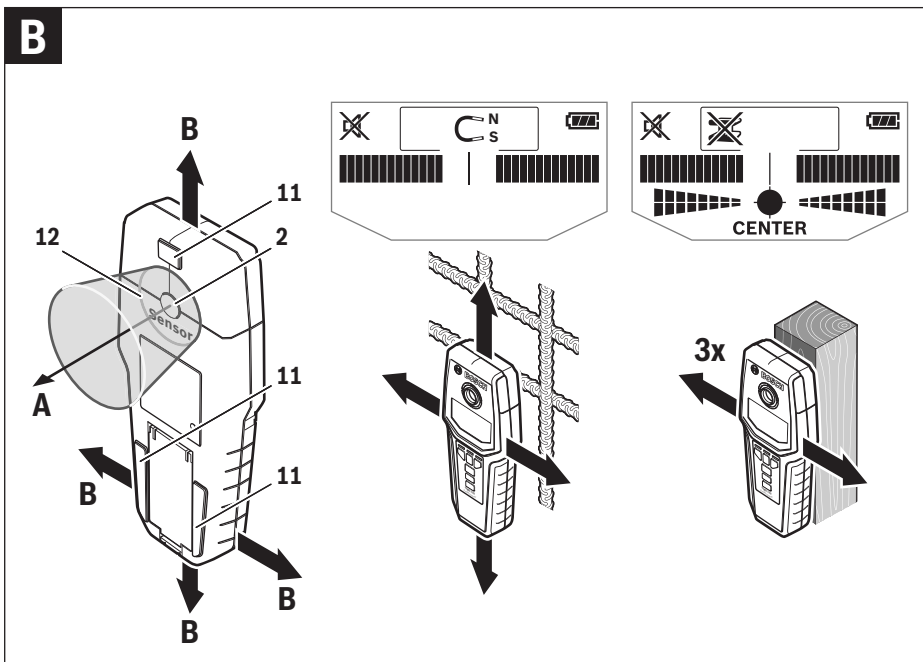
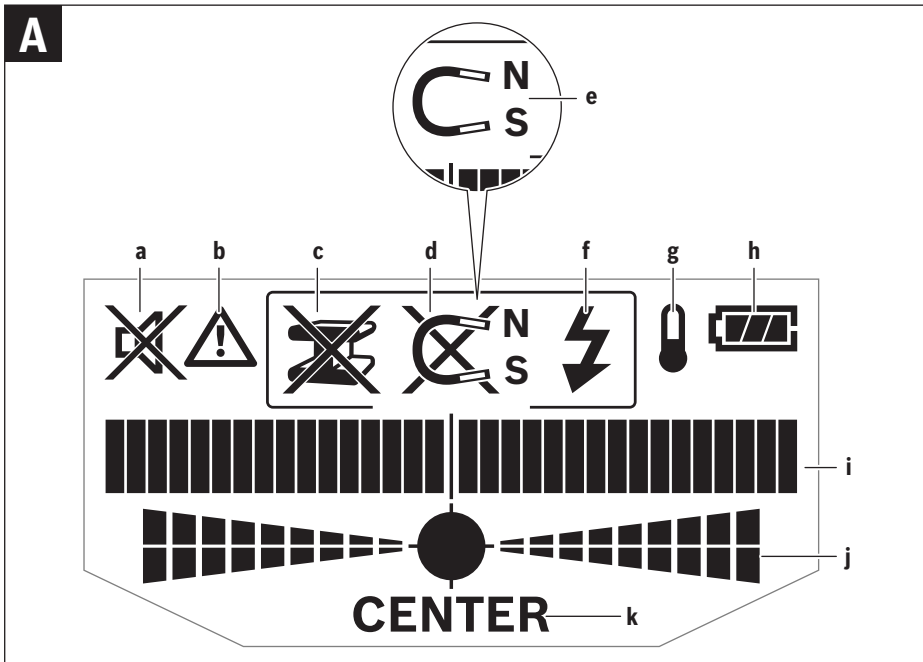




**GMS 120**







**10 | English**

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**Entsorgung**

Messwerkzeuge, Zubehör und Verpackungen sollen einer umweltgerechten Wiederverwertung zugeführt werden.

Werfen Sie Messwerkzeuge und Akkus/Batterien nicht in den Hausmüll!

**Nur für EU-Länder:**

Gemäß der europäischen Richtlinie 2002/96/EG müssen nicht mehr gebrauchsfähige Messwerkzeuge und gemäß der europäischen Richtlinie 2006/66/EG müssen defekte oder verbrauchte Akkus/Batterien getrennt gesammelt und einer umweltgerechten Wiederverwertung zugeführt werden.

Nicht mehr gebrauchsfähige Akkus/Batterien können direkt abgegeben werden bei:

**Deutschland**

Recyclingzentrum Elektrowerkzeuge  
 Osteroder Landstraße 3  
 37589 Kalefeld

**Schweiz**

Batrec AG  
 3752 Wimmis BE

**Änderungen vorbehalten.**

**English****Safety Notes**

**Read and observe all instructions. SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

- ▶ **Have the measuring tool repaired only through qualified specialists using original spare parts.** This ensures that the safety of the measuring tool is maintained.

▶ **Do not operate the measuring tool in explosive environments, such as in the presence of flammable liquids, gases or dusts.** Sparks can be created in the measuring tool which may ignite the dust or fumes.

▶ **For technological reasons, the measuring tool cannot ensure 100 % certainty. To rule out hazards, safeguard yourself each time before drilling, sawing or routing in walls, ceilings or floors by means of other information sources, such as building plans, pictures from the construction phase, etc.** Environmental influences, such as humidity or closeness to electrical devices, can influence the accuracy of the measuring tool. Surface quality and condition of the walls (e.g., moisture, metallic building materials, conductive wallpaper, insulation materials, tiles) as well as the amount, type, size and position of the objects can lead to faulty measuring results.

**Product Description and Specifications**

Please unfold the fold-out page with the representation of the measuring tool and leave it unfolded while reading the operating instructions.

**Intended Use**

The measuring tool is intended for the detection of metals (ferrous and non-ferrous metals, e.g., rebar), joists and "live" wires/conductors in walls, ceilings and floors.

**Product Features**

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

- 1 Illuminated ring
- 2 Marking hole
- 3 Display
- 4 Operating-mode indication
- 5 On/Off button
- 6 Display-illumination button
- 7 Audio signal button
- 8 Button for detecting "live" conductors/Operating mode "Power cable"
- 9 Button for metal detection/Operating mode "Metal"
- 10 Button for detecting wood and metal beams/Operating mode "Drywall"
- 11 Contact pads
- 12 Sensor area
- 13 Type plate
- 14 Battery lid
- 15 Latch of battery lid
- 16 Fixture for carrying strap
- 17 Protective pouch
- 18 Carrying strap

**The accessories illustrated or described are not included as standard delivery.**

**Display Elements (see figure A)**

- a Switched-off audio signal indicator
- b Warning-function indicator
- c Indication of the object type "Non-metal object"
- d Indication of the object type "Non-magnetic metal"
- e Indication of the object type "Magnetic metal"
- f Indication of the object type "Live conductor"
- g Temperature control indicator
- h Battery indicator
- i Measuring indicator
- j Fine scale
- k Indication "CENTER"

**Technical Data**

Digital Detector	GMS 120
Article number	3 601 K81 0..
Maximum scanning depth*	
– Ferrous metals	120 mm
– Non-ferrous metals (copper)	80 mm
– Live conductors 110–230 V (voltage applied)**	50 mm
– Wood	38 mm
Automatic switch-off after approx.	5 min
Operating temperature	–10 °C...+50 °C
Storage temperature	–20 °C...+70 °C
Battery	1 x 9 V 6LR61
Operating life time, approx.	5 h
Weight according to EPTA-Procedure 01/2003	270 g
Degree of protection	IP 54 (dust and splash water protected)

\*depending on operating mode, material and size of the objects, as well as material and condition of the base material



\*\*less scanning depth for wires/conductors that are not "live"

- ▶ **In terms of accuracy, the measuring result can be inferior in case of unfavourable surface quality of the base material.**

**Declaration of Conformity** 

We declare under our sole responsibility that the product described under "Technical Data" is in conformity with the following standards or standardization documents: EN 61010-1:2010-10, EN 61326-1:2006-05, EN 301489-3:2002-08, EN 301489-1:2008-04, EN 300330-1:2010-02, EN 300330-2:2010-02 according to the provisions of the directives 2011/65/EU, 2004/108/EC, 1999/5/EC.

Dr. Egbert Schneider      Helmut Heinzelmann  
Senior Vice President      Head of Product Certification  
Engineering                      PT/ETM9





Robert Bosch GmbH, Power Tools Division  
D-70745 Leinfelden-Echterdingen  
Leinfelden, 02.03.2012

**Assembly****Inserting/Replacing the Battery**

Alkali-manganese batteries are recommended for the measuring tool.

To open the battery lid **14**, press the latch **15** in the direction of the arrow and fold up the battery lid. Insert the supplied battery. Pay attention that the polarity is correct, according to the representation on the inside of the battery lid.

The battery indicator **h** always indicates the current battery status:

-  Battery fully charged
-  Battery has 2/3 of its capacity or less
-  Battery has 1/3 of its capacity or less
-  Please change battery

- ▶ **If the measuring tool is not used for a long period of time, the battery must be removed.** The battery can corrode or discharge itself over long periods.

**Operation**

- ▶ **Protect the measuring tool against moisture and direct sun light.**
- ▶ **Do not subject the measuring tool to extreme temperatures or variations in temperature. In case of large variations in temperature, allow the measuring tool to adjust to the ambient temperature before switching it on.** In case of extreme temperatures or variations in temperature, the accuracy of the measuring tool and the display indication can be impaired.
- ▶ **Use or operation of transmitting systems, such as WLAN, UMTS, radar, transmitter masts or microwaves, in the close proximity can influence the measuring function.**

**Initial Operation****Switching On and Off**

- ▶ **Before switching the measuring tool on, make sure that the sensor area **12** is not moist.** If required, dry the measuring tool using a soft cloth.
- ▶ **If the measuring tool was subject to an extreme temperature change, allow it to adjust to the ambient temperature before switching on.**

To **switch on** the measuring tool, press the On/Off button **5**. To **switch off** the measuring tool, press the On/Off button **5** again.

When no button on the measuring tool is pressed for approx. 5 minutes and when no objects are detected, the measuring tool automatically switches off to save the battery.

**Switching the Display Illumination On/Off**

The display illumination can be switched on/off with display-illumination button **6**.

**Switching the Audio Signal On/Off**

The audio signal can be switched on/off with the audio signal button **7**. When the audio signal is switched off, indication **a** appears on the display.

## 12 | English

**Method of Operation (see figures A – B)**

The measuring tool checks the base material of sensor area **12** in measurement direction **A** to the max. detection depth (see "Technical Data"). Objects are detected that differ from the material of the wall.

Always move the measuring tool in a straight line over the surface applying slight pressure, without lifting it off or changing the pressure. During measurement, the contact pads **11** must always have contact to the surface.

**Measuring Procedure**

Position the measuring tool on/against the surface being detected, and move it in direction **B**. When the measuring tool comes closer to an object, the amplitude in measuring indicator **i** increases and ring **1** lights up yellow; when it is moved away from the object, the amplitude decreases. Measuring indicator **i** indicates the maximal amplitude above the centre of the object; ring **1** lights up red and an audio signal sounds. For small or deeply embedded objects, ring **1** can continue to light up yellow, while there is no audio signal.

► **Wide objects are not indicated by the illuminated ring or the audio signal throughout their complete width.**

To localise the object more precisely, move the measuring tool repeatedly (3x) back and forth over the object. The fine scale **j** is automatically activated in all operating modes. Fine scale **j** indicates a full amplitude when the object is below the centre of the sensor or when the maximum amplitude of measuring indicator **i** is reached. In the operating modes "Drywall" and "Metal", the indication "CENTER" **k** lights up additionally.

Wider objects in the base material are detected through a continuous, high amplitude of measuring indicators **i** and **j**. Ring **1** lights up yellow. The duration of the high amplitude corresponds approximately with the object width.

When very small or deeply embedded objects are being sought and measuring indicator **i** reacts only slightly, move the measuring tool repeatedly over the object in horizontal and vertical direction. Pay attention to the amplitude of fine scale **j**, and when in operating mode "Drywall" and "Metal", additionally to the "CENTER" **k** indication, which will then allow for precise detection.

► **Before drilling, sawing or routing into a wall, protect yourself against hazards by using other information sources.** As the measuring results can be influenced through ambient conditions or the wall material, there may be a hazard even though the indicator does not indicate an object in the sensor range (no audio signal or beep and the illuminated ring **1** lit green).

**Operating Modes**





The best measuring results are achieved through selection of the operating modes. The maximal detection depth for metal objects is achieved in the operating mode "Metal". The maximal detection depth for "live" conductors is achieved in the operating mode "Power cable". The selected operating mode can be recognized at any time via the green illuminated operating-mode indication **4**.

**Drywall**

The operating mode "Drywall" is suitable for detecting wood or metal objects in drywalls.

Press button **10** to activate the operating mode "Drywall". The operating-mode indication **4** above button **10** lights up green. As soon as the measuring tool is positioned against the base material to be detected, ring **1** lights up green and signals operational readiness.

In the operating mode "Drywall" all object types are detected and indicated:

-  Non-metal, e.g. a wood beam
-  Magnetic, e.g. reinforcing steel
-  Non-magnetic, but metal, e.g. copper pipe
-  "Live", e.g. a "live" conductor

**Notes:** In the operating mode "Drywall", other objects, apart from wood and metal objects and "live" conductors are also detected, such as plastic tubing filled with water. For such objects, the indication **c** for non-metal objects is indicated in display **3**.

Nails and screws in the base material may cause a wooden beam to be indicated as a metal object on the display.

When display **3** indicates a continuously high amplitude of measuring indicator **i** and fine scale **j**, restart the measuring procedure again by positioning the measuring tool at a different location on the base material.

When the illuminated ring **1** does not signal operational readiness when positioning the measuring tool on the base material being detected, the measuring tool cannot properly detect the base material.

- Press and hold button **10** until the illuminated ring lights up green.
- When starting a new measuring procedure afterwards and positioning the measuring tool onto a different wall or surface, you must briefly press button **10**.
- In rare cases, the measuring tool may not be able to detect the base material because the side with the sensor area **12** and the type plate **13** is soiled or dirty. Clean the measuring tool with a dry, soft cloth and restart the measuring procedure.

**Metal**

The operating mode "Metal" is suitable for detecting magnetic and non-magnetic objects independent of the wall material. Press button **9** to activate the operating mode "Metal". The illuminated ring **1** and indication **4** above button **9** light up green.

When the detected metal object is of magnetic metal (e.g. iron), the symbol **e** is indicated on display **3**. For non-magnetic metals, the symbol **d** is indicated. In order to differentiate between metal types, the measuring tool must be positioned above the detected metal object (ring **1** is lit red).

**Note:** For reinforcement steel mesh and steel in the examined base material, an amplitude is indicated over the complete surface of measuring indicator **i**. For reinforcement steel mesh, it is typical that the symbol **e** for magnetic metal is indicated on the display directly above the iron rods, whereas between the iron rods, the symbol **d** for non-magnetic metal will appear.

### Power Cable

The operating mode **"Power cable"** is suitable only for detecting "live" conductors (110 – 230 V).

Press button **8** to activate the operating mode **"Power cable"**. The illuminated ring **1** and indication **4** above button **8** light up green.

When a "live" conductor is detected, indication **f** appears on the display **3**. Move the measuring tool repeatedly over the area to localise the "live" conductor more precisely. After moving over the "live" conductor several times, it can be indicated very accurately. When the measuring tool is very close to the conductor, the illuminated ring **1** flashes red and the audio signal beeps swiftly.

#### Notes:

- "Live" conductors are indicated in any operating mode.
- "Live" conductors can be detected easier when power consumers (e.g. lamps, machines) are connected to the sought conductor and switched on.
- **Under certain conditions (such as below metal surfaces or behind surfaces with high water content), "live" conductors cannot be securely detected.** The signal strength of a "live" conductor depends on the position of the cable. Therefore, apply further measurements in close proximity or use other information sources to check if a "live" conductor exists.
- Voltage-free conductors can be detected as metal objects in the operation mode **"Metal"**. This does not apply for stranded conductors (contrary to solid conductors or cable).
- Static electricity can lead to inaccurate indication of electric lines, e.g., over a large range. To improve the indication, place your free hand flat on the wall next to the measuring tool, in order to remove the static electricity.

### Working Advice

- ▶ **Measuring values can be impaired through certain ambient conditions. These include, e.g., the proximity of other equipment that produce strong magnetic or electromagnetic fields, moisture, metallic building materials, foil-laminated insulation materials or conductive wallpaper or tiles.** Therefore, please also observe other information sources (e.g. construction plans) before drilling, sawing or routing into walls, ceilings or floors.

### Marking Objects

If required, detected objects can be marked. Perform a measurement as usual. Once you have found the boundaries or the centre of an object, mark the sought location through the marking hole **2**.

### Temperature Control

The measuring tool is equipped with a temperature control indicator, as accurate measurements are only possible as long as the temperature within the measuring tool remains constant.

When the temperature control indicator **g** lights up, the measuring tool is not within the operating temperature range or was subject to large variations in temperature. **Switch the measuring tool off and allow it to adjust to the ambient temperature before switching it on again.**


### Warning Function

When indicator **b** lights up on display **3** and indication **4** flashes above button **10**, the measurement must be restarted. Remove the measuring tool from the wall and place it on the base material at a different location.

When indicator **b** flashes on display **3**, send the measuring tool in the provided protective pouch to an authorised customer services agent.

### Recalibration

When measuring indicator **i** indicates a continuously high amplitude in the operating mode **"Metal"**, even though there is no metal object near the measuring tool, the measuring tool can be manually recalibrated.

- Switch the measuring tool off.
- Remove all objects near the measuring tool that could be detected, including your wrist watch or rings made of metal, and hold the measuring tool up. Pay attention that battery indicator **h** indicates at least 1/3 capacity:  Hold the measuring tool in such a manner that the type plate **13** faces toward the ground. Avoid bright light sources or direct sunlight from shining on the area **12** and **13**, without covering off this area.
- Press and hold buttons **5** and **7** until the illuminated ring **1** lights up red. Then release both buttons.
- When the calibration was successful, the measuring tool will automatically start after a few seconds, and will be ready for operation again.

**Note:** If the measuring tool does not automatically start, repeat the recalibration. If the measuring tool still does not start, send it in the provided protective pouch to an authorised customer services agent.

## Maintenance and Service

### Maintenance and Cleaning

- ▶ **Check the measuring tool each time before use.** In case of visible damage or loose components inside the measuring tool, safe function can no longer be ensured.

Keep the measuring tool clean and dry at all times to ensure proper and safe working.

Do not immerse the measuring tool in water or other fluids.

Wipe away debris or contamination with a dry, soft cloth. Do not use cleaning agents or solvents.

In order not to affect the measuring function, decals/stickers or name plates, especially metal ones, may not be attached in the sensor area **12** on the front or back side of the measuring tool.

Do not remove the contact pads **11** on the backside of the measuring tool.

If the measuring tool should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorised after-sales service centre for Bosch power tools. Do not open the measuring tool yourself.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the type plate of the measuring tool.



**14 | English**

Store and transport the measuring tool only in the supplied protective pouch.

In case of repairs, send in the measuring tool packed in its protective pouch **17**.

**After-sales Service and Customer Assistance**

Our after-sales service responds to your questions concerning maintenance and repair of your product as well as spare parts. Exploded views and information on spare parts can also be found under:

**www.bosch-pt.com**

Our customer service representatives can answer your questions concerning possible applications and adjustment of products and accessories.

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