IMPORTANT: Read Before Using	IMPORTANT : Lire avant usage	IMPORTANTE: Leer antes de usar

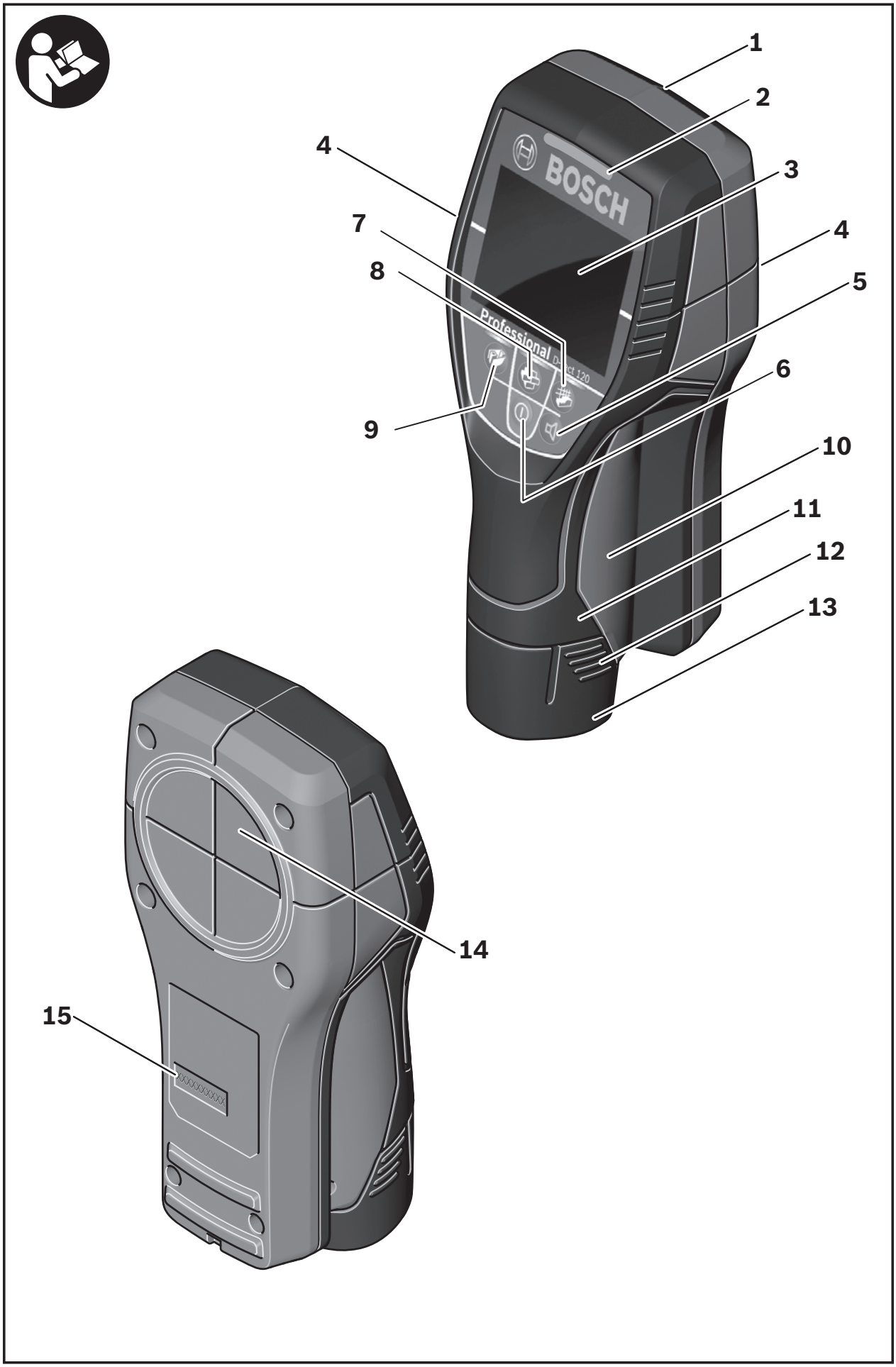
Operating/Safety Instructions
Consignes de fonctionnement/sécurité
Instructions de funcionamiento y seguridad

D-tect 120

BOSCH

Call Toll Free for Consumer Information & Service Locations	Pour obtenir des informations et les adresses de nos centres de service après-vente, appelez ce numéro gratuit	Llame gratis para obtener información para el consumidor y ubicaciones de servicio

For English Version



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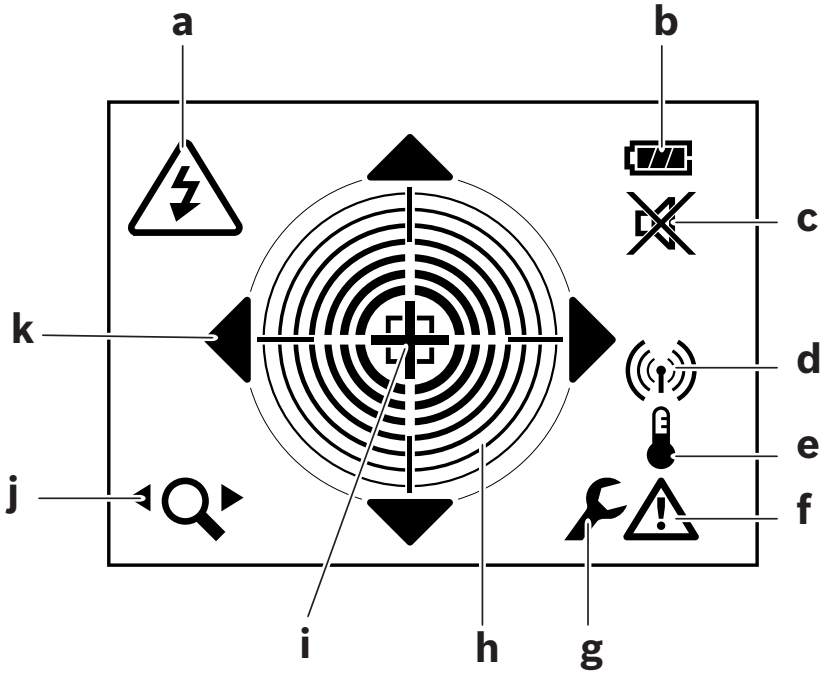

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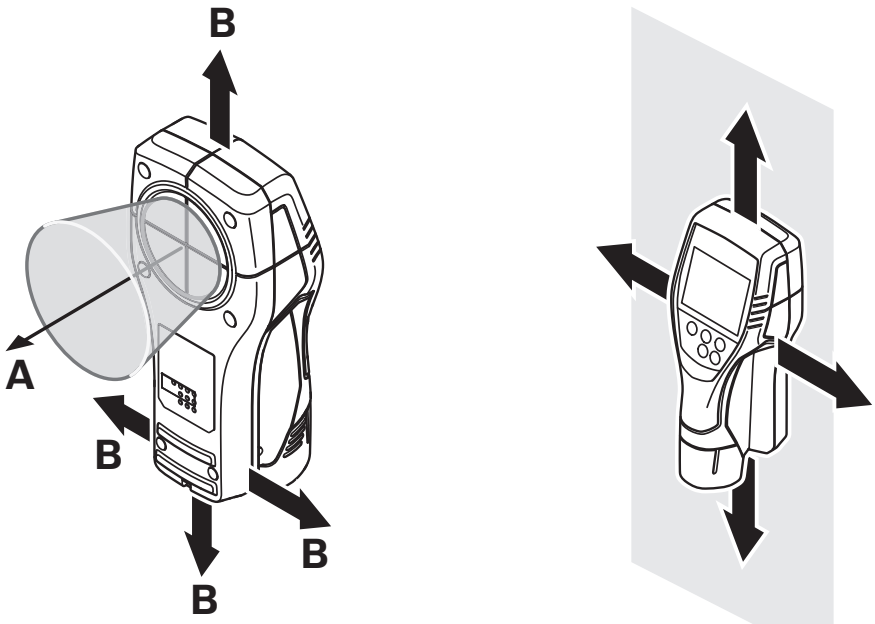
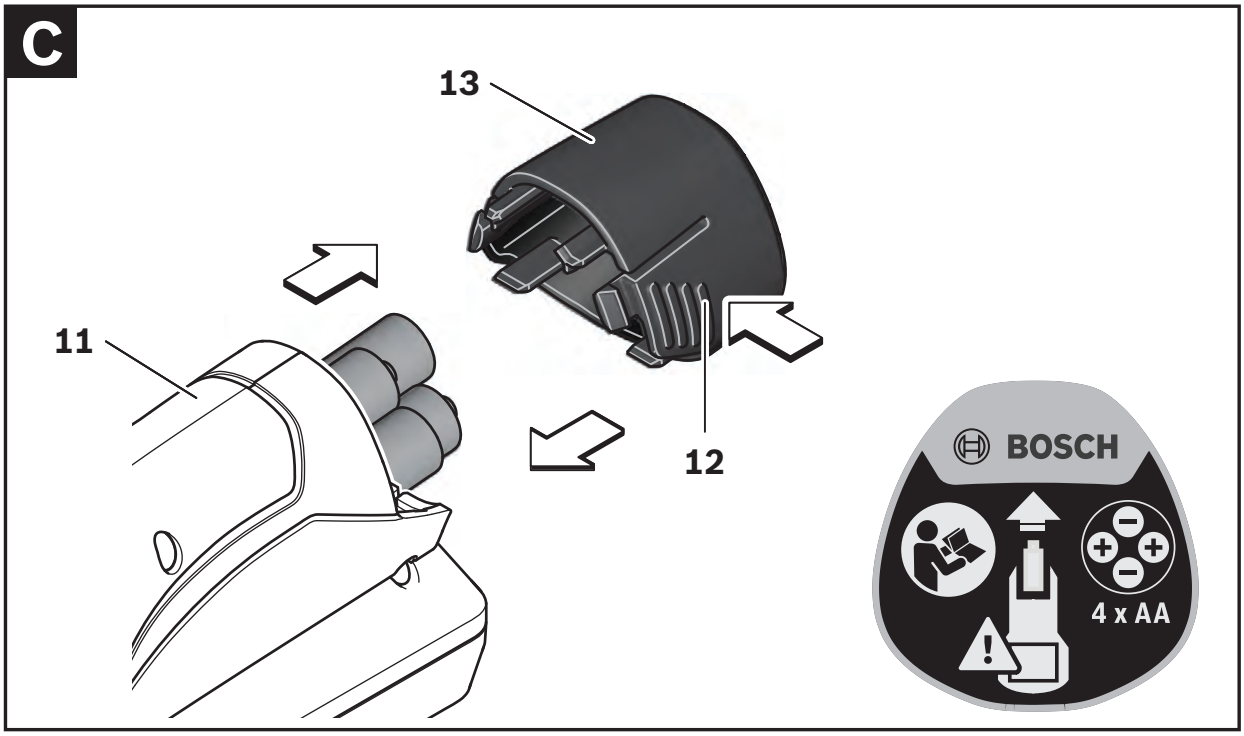




General Safety Rules

⚠ WARNING Working safely with the measuring tool is possible only when the operating and safety information are read completely and the instructions contained therein are strictly followed.

⚠ WARNING Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

SAVE THESE INSTRUCTIONS

⚠ WARNING The detector's ability to detect objects is affected by the proximity of other equipment that produce strong magnetic or electromagnetic fields, and by moisture, metallic building materials, foil-laminated insulation materials and/or conductive wallpaper.

⚠ WARNING The detector's ability to detect wood substructures (studs) is also affected by inconsistency on the thickness of the surface material, such as plaster and lath.

⚠ WARNING It is possible that there may be metal, wood or wiring or something else, such as plastic pipes, beneath the scanned surface that is not detected.

⚠ WARNING The detector alone should not be relied on exclusively to locate items below the scanned surface. Use other information sources to help locate items before penetrating the surface. Such additional sources include construction plans, visible points of entry of pipes and wiring into walls, such as in a basement, and standard 16" and 24" stud spacing practices.

⚠ WARNING Before penetrating a surface (such as with a drill, router, saw or nail), always shut off the electrical power, gas and water supplies. Cutting, drilling, etc… into these items when operational can result in personal injury.

⚠ WARNING 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.

⚠ WARNING 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.

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

FCC Statement

⚠ WARNING Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for industrial and commercial ISM equipment, persuant to part 18 of the FCC rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Electrical Safety

⚠ WARNING Batteries can explode or leak, and can cause injury or fire.

To reduce this risk:

ALWAYS follow all instructions and warnings on the battery label and package.

DO NOT short any battery terminals.

DO NOT charge alkaline batteries.

DO NOT mix old and new batteries. Replace all of them at the same time with new batteries of the same brand and type.

DO NOT mix battery chemistries.

DISPOSE of batteries per local code.

DO NOT dispose of batteries in fire.

KEEP batteries out of reach of children.

REMOVE batteries if the device will not be used for several months.

Symbols

IMPORTANT: Some of the following symbols may be used on your tool. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

Warning Symbol

Alerts user to warning messages

Read Manual Symbol

Alerts user to read manual

Functional Description

Optimal operation of the detection tool is possible only when the operating instructions and information are read completely, and the instructions contained therein are strictly followed.

Intended Use

The measuring tool is intended for the detection of objects in walls, ceilings and floors. Depending on the material and condition of the base material, it is possible to detect metal objects, joists, water-filled plastic pipes, conductors and cables.

Features

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

1 Marking aid, top
2 LED
3 Display
4 Marking aid, left and right
5 Audio signal button
6 On/Off button
7 Button for operating mode Concrete
8 Button for operating mode Universal
9 Button for operating mode Drywall
10 Grip area
11 AA battery adapter
12 Unlocking button for AA battery adapter sealing cap
13 AA battery adapter sealing cap
14 Sensor area
15 Serial number

Display Elements

a Indication of the object type “Live conductor”
b Battery indicator
c Switched-off audio signal indicator
d “Interference by radio waves” indicator
e Battery temperature control indicator
f Warning-function indicator
g “Service required” indicator
h Measuring indicator
i “Center cross” indicator of the object’s center
j Movement indicator
k Orientation arrows to determine the object’s center

Technical Data

Article number. **3 601 K81 310**

Maximum scanning depth*

– Operating Mode Concrete . .4.75-in (3.9-in typ.)
120 mm (100 mm typ.)

– Metal objects . . . . . .4.75-in (3.9-in typ.)
120 mm (100 mm typ.)

– Cables and water-filled . . 2.36-in (60 mm)
plastic pipes

– Operating Mode Universal . . . . 2.36-in (60 mm)

– Operating Mode Drywall. . . . . 2.36-in (60 mm)

Measuring accuracy to the object's center*. . . . . ±0.39-in (± 10 mm)

Minimum distance between two adjacent objects* . . . . . 1.97-in (50 mm)

Operating temperature . . . . . .14° F to 104° F
(–10° to +40° C)

Storage temperature . . . . . -4° F to 158° F
(-20° C to +70° C)

Automatic switch-off after approx. . . . . .5 min

Batteries . . . . . 4 x AA 1.5V

Max. humidity for the . . . . . 90% relative humidity
detection of objects. (non-condensing)

Max. humidity for the . . . . . 50% relative humidity
classification of power cables

Weight. . . . . 1.1 lb (0.5kg)

* Depending on size and type of object as well as material and condition of the base material

The measuring tool can be clearly identified with the serial number **15** on the type plate.

In terms of accuracy and scanning depth, the measurement result can be inferior in case of unfavorable surface quality of the base material.

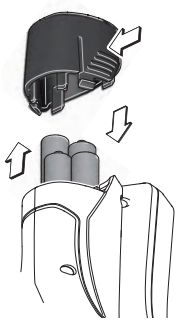
Preparation

Inserting/Removing the Batteries (see figure C)

The measuring tool operates with AA batteries. Use only alkaline batteries.

Inserting AA Batteries

Invert measuring tool and place batteries into slot **11** as per the illustration. Next, slide the sealing cap **13** over the batteries until you feel it engage and it is flush with the handle.



Removing AA Batteries

Invert measuring tool and press the unlocking buttons **12** of the sealing cap **13**. Pull off the sealing cap. Make sure the batteries do not fall out in the process. Remove the batteries.

Battery Indicator

The battery indicator **b** always displays 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
- Battery has 10% capacity or less
- Change battery

Always replace all batteries at the same time. Only use batteries from one brand and with the identical capacity.

⚠ WARNING **Remove the batteries from the tool when not using it for extended periods.** When storing for extended periods, the batteries can corrode and discharge themselves.

Operation

Protect the measuring tool against moisture and direct sun light.

Do not subject the measuring tool to extreme temperatures or variations in temperature. As an example, do not leave it in vehicles for longer periods. In case of large variations in temperature, allow the measuring tool to adjust to the ambient temperature before putting it into operation.

Hold the measuring tool only at the intended grip area 10, so as not to influence the measurement.

Use or operation of transmitting systems, such as WLAN, UMTS, radar, transmitter masts or microwaves, in the close proximity can influence the measuring function.

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

Switching On and Off

Check the measuring tool before each use. In the following cases, safe function can no longer be ensured:

- The measuring indicator **h** constantly deflects, even though you hold the device in the air.
- The measuring indicator does not deflect, even though you keep a finger in the sensor area.
- The device has visible damage or loose components inside the measuring tool.

Before switching the measuring tool on, make sure that the sensor area 14 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 **6** .

To switch off the measuring tool, press the On/Off button **6** 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 Audio Signal On/Off

The audio signal can be switched on/off with the audio signal button **5** . When the audio signal is switched off, the display **3** indicates the information **c**.

Method of Operation (see figure B)

The measuring tool checks the base material of the sensor area **14** in measurement direction **A**. Objects are detected that differ from the material of the wall.

Always move the measuring tool over the base material applying light pressure, without lifting it off or changing the pressure.

The measuring tool can be moved in any direction **B**.

Operation Modes

As soon as the measuring tool is switched on, you can switch between different operating modes.

By selecting the operating modes, you can adjust the measuring tool to different wall materials and, if required, suppress unwanted objects.

If the wall material is not known, you should begin with the Universal mode.

The selected operating mode is indicated by the illuminated button.

Drywall (default mode)

The operating mode “Drywall” is suitable for detecting joists, metal supports, electrical lines and cables in drywalls (wood, plasterboard, etc.). Water-filled plastic pipes are also indicated. Empty plastic pipes are normally not detected. The maximum measuring depth is 2.36-in (6 cm).

Universal

The operating mode “Universal” is suitable for most applications in masonry. Metal objects, water-filled plastic pipes, electrical lines and cables are indicated. Cavities in building brick or empty

plastic pipes with a diameter of less than 0.75-in (2 cm) may not be displayed. The maximum measuring depth is 2.36-in (6 cm).

Concrete

The operating mode “Concrete” is especially suitable for applications in reinforced concrete. Rebars, metal pipes, water-filled plastic pipes, electrical lines and cables are indicated. The maximum measuring depth is 4.75-in (12 cm).

Measuring Procedure

Locating objects

⚠ WARNING 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 LED **2** lit green).

Position the measuring tool on/against the surface being inspected.

If there is already an object below the measuring tool when it is placed down, the LED **2** lights up red if there is sufficient signal strength, the measuring indicator **h** deflects and a signal sounds.

If an object has not yet been detected when the tool is placed down, the movement indicator **j** ◂Q▸ is displayed and the LED **2** lights up yellow. Move the measuring tool over the surface without lifting it off, until the movement indicator **j** disappears. Then the LED **2** lights up green at places where the measuring device has not detected an object.

When the measuring tool approaches an object, the deflection in the measuring indicator **h** increases and the LED **2** lights up red. The deflection decreases when the measuring tool moves away from an object.

With small or low-lying objects the LED **2** can continue to light up yellow and the signal does not sound.

Determining the Object’s Center

If an object is detected, the LED **2** lights up red and with sufficient signal strength, the orientation arrows **k** are displayed to determine the object’s center. To specifically locate the object’s center, move the measuring tool in the direction of the orientation arrows **k**. If the orientation arrows are not displayed, an object may nevertheless be located in the immediate vicinity.

The measuring indicator **h** indicates the maximum deflection when it is situated over the center of an object, the LED **2** lights up red and if there is sufficient signal strength, the center cross **i** is displayed. For a more accurate determination of the object’s center, pay attention to the square which if there is sufficient signal strength is shown in the immediate vicinity of the object’s center in addition to the center cross **i**.

Wider objects in the base material can be identified by a continuous, high deflection of the measuring indicator **h**. The LED **2** lights up red.

Always pay attention to all the signals of the measuring tool (LED, measuring indicator, orientation arrows).

To rule out hazards, safeguard yourself before you drill, saw or rout in walls, by means of other information sources. As the measuring results can be influenced by ambient conditions or the wall material, there may be a hazard even though the indicator does not indicate an object in the sensor area (there is no signal sound and the LED **2** lights up green).

Power Cable ⚠

When a live conductor is detected, the display **3** also indicates **a** ⚠. The LED **2** flashes red and the signal sounds with a quick tone sequence.

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.

“Live” Wire Detection

⚠ WARNING Read all instructions. Failure to follow all instructions listed below may result in property damage, electric shock, fire and/or serious injury.

Under certain conditions (such as when behind metalized or conductive surfaces, shielded in metal conduit or behind surfaces with high water content/moisture), “live” wires/conductors cannot be detected with certainty. These ranges may be recognized as metal objects. The signal strength of a “live” wire/conductor depends on the position of the cable. Therefore, apply further mea-

surements in close proximity or use other information sources to check if a “live” wire/conductor exists.

- Three-phase wiring is possibly not detected as “live” conductor.
- Wires that are not “live” may be detected as metal objects or may not be detected. This includes solid copper cables, however stranded copper cables are not detectable.
- Static electricity can lead to inaccurate detection of electrical wires, especially, over a large range. It may help to put a hand on the wall next to the detector and measure again in order to help remove the static electricity.

Detection values can be impaired through certain ambient conditions. These include, but are not limited to, the proximity of other equipment that produces strong magnetic or electromagnetic fields, moisture, metallic building materials, foil-laminated insulation materials or conductive wallpaper or tiles. Therefore, please also consult other information sources (e.g. construction plans) before drilling, sawing or routing into walls, ceilings or floors.

Before penetrating surface (such as with a drill, router, saw or nail), always shut off the electrical power, gas and water supplies. Cutting, drilling, etc. into these items when operational can result in personal injury.

Marking Objects

If required, detected objects can be marked. Perform measurement as described. Once you have found the boundaries or the center of an object, mark the sought location at the top marking aid **1** and the side marking aid **4**. Connect both points with a vertical and horizontal line. The object is located at the intersection of the lines.

Working Advice

Temperature Control

Note: If the device is lifted off the wall, a signal may be shown temporarily.

When the temperature control indicator **e** lights up, the battery of the measuring tool is not within the operating temperature range or was subject to large variations in temperature.

Change the batteries or wait until it has once again reached the operating temperature range.

Warning Function

When the display **3** indicates **f** and **g** send the measuring tool to an authorized customer service agent. The measuring tool is no longer functional.

Troubleshooting – Causes and Corrective Measures

Error	Cause	Corrective Measure
Measuring tool cannot be switched on	Batteries empty	Replace batteries
Measuring tool switched on but does not react		Remove and reinsert batteries
 **“Service required”**	Measuring tool has a fault	Send measuring tool to customer service agent
 **“Battery temperature has fallen short of/exceeded battery temperature range”**		Wait until the permitted temperature range of the battery has been reached or change the batteries
 **“Strong radio signal detected”**		If possible, remove the interfering radio waves, e.g. WLAN, UMTS, radar, transmitter masts or microwaves.

Maintenance and Service

⚠ WARNING 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 tool clean at all times.

Do not immerse the tool into water or other fluids.

Wipe off debris using a moist and soft cloth. Do not use any cleaning agents or solvents.

Do not attach any stickers or labels to the sensor area **14** on the back of the detection tool. Metal nameplates can affect the detection results.

If the tool should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorized after-sales service center 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 tool.

ENVIRONMENT PROTECTION

Recycle raw materials & batteries instead of disposing of waste. The unit, accessories, packaging & used batteries should be sorted for environmentally friendly recycling in accordance with the latest regulations.

LIMITED WARRANTY OF BOSCH LASER AND MEASURING TOOL PRODUCTS

Robert Bosch Tool Corporation ("Seller") warrants to the original purchaser only, that all Bosch lasers and measuring tools will be free from defects in material or workmanship for a period of one (1) year from date of purchase. Bosch will extend warranty coverage to two (2) years when you register your product within eight (8) weeks after date of purchase. Product registration card must be complete and mailed to Bosch (postmarked within eight weeks after date of purchase), or you may register on-line. If you choose not to register your product, a one (1) year limited warranty will apply to your product.

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