profometer

PM8000

Quick Reference

Keys - Overview

Left Side Key

Home, Measurement Screen	
Long push (2s)	Show pre-set screen (auto-disappear after 2s)
Short push	Save cover and rebar diameters values in spot scan manual mode
Menu	
Short push	Menu Navigation: left

Right Side Key

Home, Measurement Screen	
Short push	Measure Rebar Diameter
Long push (2s)	Calibrate
Menu	
Short push	Menu Navigation: right

Left Function Key

Device ON/OFF	
Long push (2s)	Power ON
Very Long push (5s)	Power OFF
Menu	
Short push	Return to previous menu level or to measurement screen
Home, Measurement Screen	
Short push	Enter Menu

Right Function Key

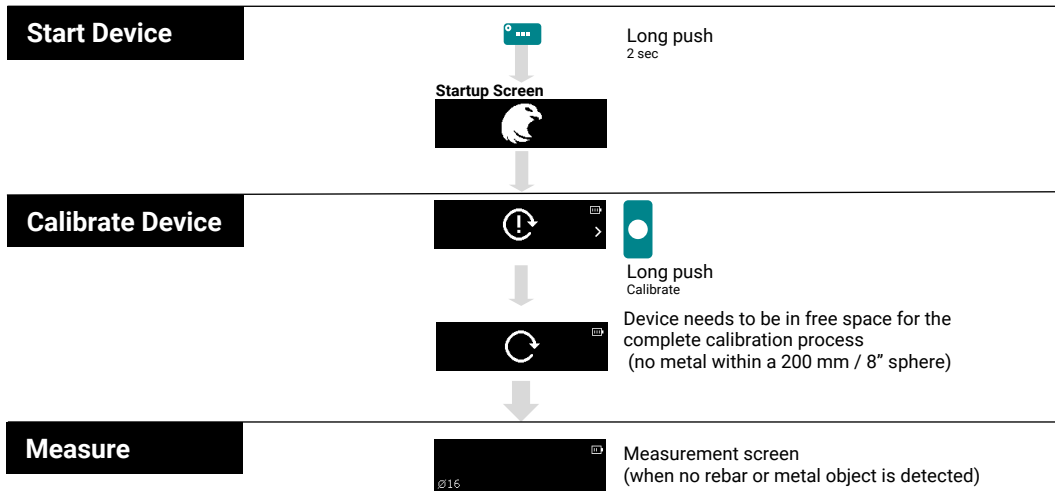| Home, Measurement Screen	
Short push	Toggle between 2 statistic views
Long push (2s)	Start new series with same parameters
Menu	
Short push	Confirm the indicated function and return after 1s to previous menu level

PROFOMETR PM 800 - Technologie-Pomiarowe.com

Measurement screen

Neighboring rebar correction

Number of measurements taken

Memory full

Calibration alert

Bluetooth active

Battery indicator

Concrete cover alert

Measuring range

Reference rebar diameter*

Measured bar diameter*

Measured concrete cover*
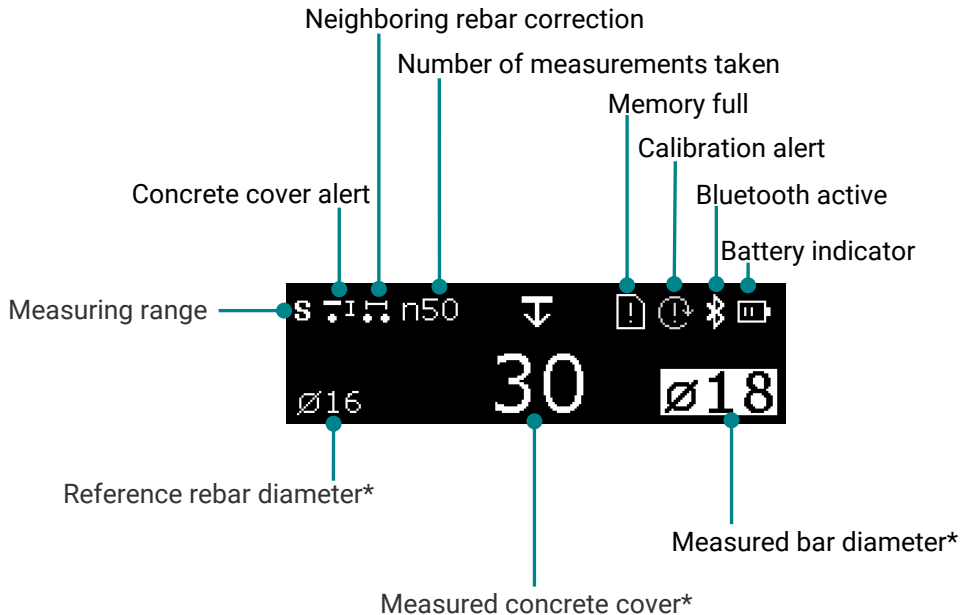
Further Information

(*) Depending on the unit setting,

Metric Units	mm
ASTM Units	# units of 1/8 inch
Japanese Units	mm

PROFOMETR PM 800 - Technologie-Pomiarowe.com

Start-up and operation

Start Device	[icon]	Long push 2 sec
	Startup Screen [eagle icon]	
Calibrate Device	[⚠ icon] ›	Long push Calibrate
	[↻ icon]	Device needs to be in free space for the complete calibration process (no metal within a 200 mm / 8" sphere)
Measure	[icon] ⌀16	Measurement screen (when no rebar or metal object is detected)

Measurement Process

Find Rebar

Move as indicated
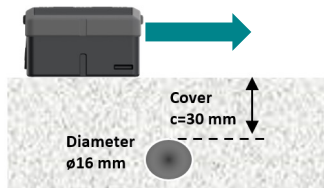
Cover
c=30 mm

Diameter
ø16 mm

Rebar Position
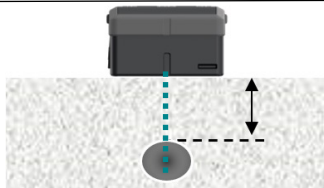
Rebar located

Diameter & Cover

Cover
c=30 mm

Diameter
ø16 mm

Short push
Measure

Note

PROFOMETR PM 800 - Technologie-Pomiarowe.com
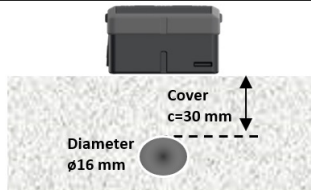
Remove all metallic objects such as rings and watches before you start measuring.

Main Menu – Overview and Navigation

Enter Menu

Home/Measurement Screen

#5

Main Menu Screen

‹ ⌀ ▪ ▫ ▫ ▫ I ›
RETURN   CONFIRM
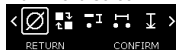
Navigation

Left Side Key
Navigate Left

Right Side Key
Navigate Right

‹ ⌀ ▪ ▫ ▫ ▫ I ›

RETURN   CONFIRM

Left Function Key
Return to previous menu level

Right Function Key
Choose indicated function

Main Menu – Menu Items

⌀	**Reference Rebar Diameter Settings**	Configuration of the diameter of the reference rebar
▦	**Operation Mode Settings**	Configuration of the operation mode Locate or Spot Scan (data collection)
▤	**Concrete Cover Alert Settings**	Configuration of Cover Alert value
▥	**Neighboring Rebar Correction Settings**	Configuration of spacing between rebars for neighboring rebar correction
↧	**Measuring Range**	Configuration of measuring range depending on metal object depth Standard, Deep or Auto
◁»	**Audio Settings**	Configuration of all audio signalling Rebar centered, Min cover alert or Key pressed
▤	**Units**	Configuration of measurement units In Metric, ASTM or Japanese Units
▣	**Memory**	Memory used information / clear
ⓘ	**Information**	Show Device Information

Menu Navigation – Reference rebar diameter

Main Menu Screen

Left Side Button
Navigate Left

Right Side Button
Navigate Right

Metric units

14 16 18 20   RETURN CONFIRM
22 25 28 32   RETURN CONFIRM
36 40 44 50   RETURN CONFIRM
5 6 7 8   RETURN CONFIRM
9 10 11 12   RETURN CONFIRM

ASTM units

#2 #3 #4 #5   RETURN CONFIRM
#6 #7 #8 #9   RETURN CONFIRM
#10 #11 #12 #13   RETURN CONFIRM
#14 #15 #16 #18   RETURN CONFIRM

Japanese

16 19 22 25   RETURN CONFIRM
29 32 35 38   RETURN CONFIRM
41 44 48 51   RETURN CONFIRM
57   RETURN CONFIRM
6 9 10 13   RETURN CONFIRM

Further Information

Before measuring be sure you set the right units system for your inspection

Units

Metric Units	mm
ASTM Units	# units of 1/8 inch
Japanese Units	mm

PROFOMETR PM 800 - Technologie-Pomiarowe.com

Menu Navigation – Operation mode

Main Menu Screen

RETURN   CONFIRM

Left Side Button
Navigate Left

Right Side Button
Navigate Right

LOCATE

RETURN   CONFIRM

SPOT SCAN AUTO

RETURN   CONFIRM

SPOT SCAN MANUAL

RETURN   CONFIRM
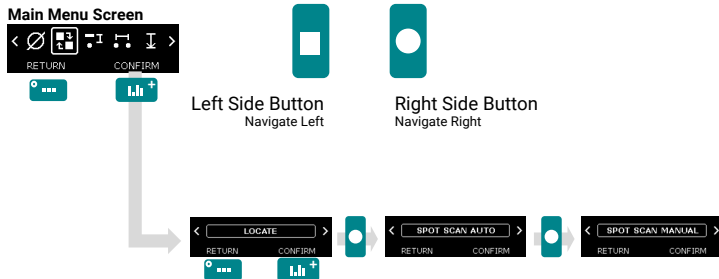
Further Information

LOCATE	Rebar location or Metal detection without data storage
SPOT SCAN AUTO	Automatic data collection of concrete cover when scanning over the rebar
SPOT SCAN MANUAL	Manual data collection of concrete cover and/or rebar diameter values with Left Side Key button

Menu Navigation – **Minimum** cover alert

Main Menu Screen

RETURN   CONFIRM

Left Side Button
Navigate Left

Right Side Button
Navigate Right

Metric & Japanese units

| OFF | 10 | 15 | 20 |
RETURN   CONFIRM

| 25 | 30 | 35 | 40 |
RETURN   CONFIRM

| 45 | 50 | 55 | 60 |
RETURN   CONFIRM

| 65 | 70 | 75 | 80 |
RETURN   CONFIRM

ASTM units

| OFF | 0.4 | 0.6 | 0.8 |
RETURN   CONFIRM

| 1.0 | 1.2 | 1.4 | 1.6 |
RETURN   CONFIRM

| 1.8 | 2.0 | 2.2 | 2.4 |
RETURN   CONFIRM

| 2.6 | 2.8 | 3.0 | 3.2 |
RETURN   CONFIRM

Further Information

If a minimum cover alert is selected, the LED is lit when the cover is below this limit. If audio is on, an audio signal is given. The minimum cover setting is possible with a cover up to 180 mm / 7.08".

PROFOMETR PM 800 - Technologie-Pomiarowe.com

Menu Navigation – Neighbouring rebar correction

Main Menu Screen

< Ø 🔧 🔧 🔲 ⏸ >
RETURN   CONFIRM

Left Side Button
Navigate Left

Right Side Button
Navigate Right

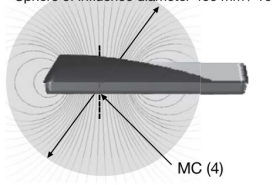**Metric & Japanese units**

< OFF 50 60 70 >   < 80 90 100 110 >   < 120 130 >
RETURN   CONFIRM   RETURN   CONFIRM   RETURN   CONFIRM

ASTM units

< OFF 2.0 2.4 2.8 >   < 3.2 3.6 4.0 4.4 >   < 4.8 5.2 >
RETURN   CONFIRM   RETURN   CONFIRM   RETURN   CONFIRM

Further Information

Sphere of influence diameter 400 mm / 16"

MC (4)

NOTE!
This effect can be reduced by the neighboring bar correction

Any ferromagnetic material within the sphere may have an influence on the signal value (e.g. during a reset)

It compensates the influence of 1st and 2nd layer neighbor rebars (AI) or 1st layer neighbor rebars only (NRC) on cover measurement of 1st layer rebars. If both a1 and a2 spacings are entered, Φ1 ≤ Φ2 and Standard Range is set, then the Artificial Intelligence is automatically applied. If only a1 spacing is entered or Φ1 > Φ2 or Large/Spot Range is set, then the Neighboring Rebar Correction (only taking into account 1st layer) is automatically applied.
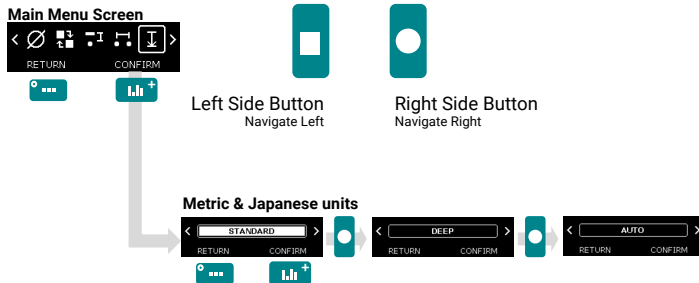
The user can enter the spacing value manually or choose the Auto function, which redirects to a Single-Line scan where the spacing is automatically measured and averaged.

The rebar size measurement is anyway only corrected with NRC.

PROFOMETR PM 800 - Technologie-Pomiarowe.com

Menu Navigation − Measuring range

Main Menu Screen

RETURN   CONFIRM

Left Side Button
Navigate Left

Right Side Button
Navigate Right

Metric & Japanese units

STANDARD   DEEP   AUTO

RETURN   CONFIRM   RETURN   CONFIRM   RETURN   CONFIRM

Further Information

Select between:

Mode	Rebar or metal object depth
Standard	< 80mm (Default)
Deep	from 80mm to 180mm
Auto	Switches automatically from Standard to Deep

The pulse induction principle used by PM8000 has defined operating ranges and accuracies. The measuring range is dependent on the bar size.
The expected accuracy of the cover measurement is indicated in the graphic below. (Complies with BS1881 part 204, for a single rebar with sufficient spacing and known diameter).

PROFOMETR PM 800 - Technologie-Pomiarowe.com
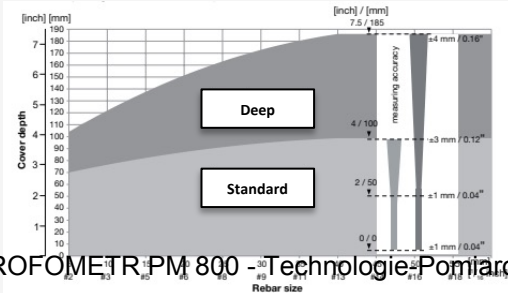
Menu Navigation – Audio

Main Menu Screen

RETURN   CONFIRM

Left Side Button
Navigate Left

Right Side Button
Navigate Right

OFF   ON
RETURN   CONFIRM

OFF   ON
RETURN   CONFIRM

REBAR CENTERED ✔
DONE   UNCHECK

MIN. COVER ALERT ✔
DONE   UNCHECK

KEY PRESSED ✔
DONE   UNCHECK

Further Information

Select/Deselect the sound settings for the following alerts (Default: all off)
- Rebar center detected
- Minimum Cover alert
- Key pressed

PROFOMETR PM 800 - Technologie-Pomiarowe.com

Menu Navigation – Units

Main Menu Screen

Left Side Button
Navigate Left

Right Side Button
Navigate Right

Menu Navigation – Memory

Main Menu Screen

RETURN   CONFIRM

Left Side Button
Navigate Left

Right Side Button
Navigate Right

Memory used:
37 / 50 series   CLEAR

RETURN   CONFIRM

Delete all series?

CANCEL   CONFIRM

All series deleted.
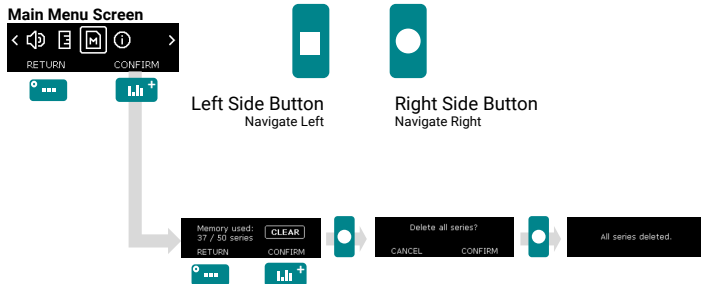
Menu Navigation – Info

Main Menu Screen

RETURN   CONFIRM

Left Side Button
Navigate Left

Right Side Button
Navigate Right

SN: PM80-007-5082
FW VERSION: 1.0.27
BT ID: DE233D151C182B00
CONTAINS FCC ID: WAP2005

Measurement - Accuracy

Measuring Range

The pulse induction principle used by PM8000 has defined operating ranges and accuracies. The measuring range is dependent on the bar size. The expected accuracy of the cover measurement is indicated in the graphic below. (Complies with BS1881 part 204, for a single rebar with sufficient spacing and known diameter).
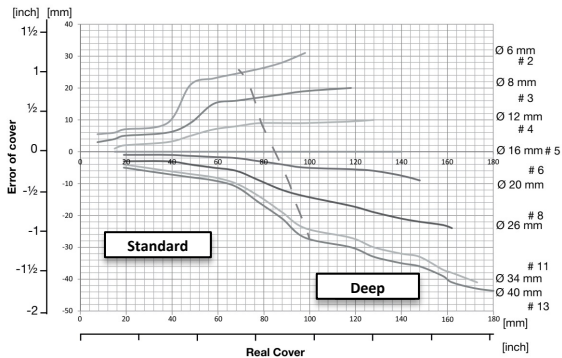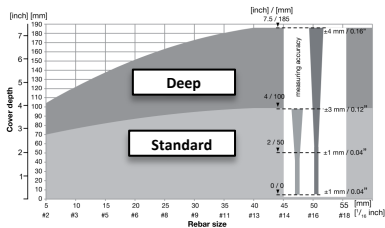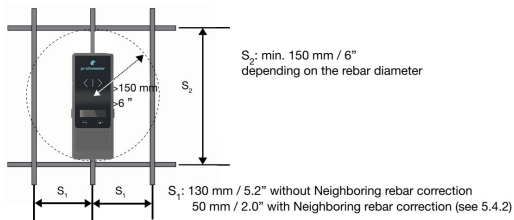
Measurement – Rebar Diameter

Factors Affecting Diameter Determination

Two factors affect the determination of the rebar diameter:
1. Cover depth.
   Diameter can be determined for rebars with cover not exceeding 80% of the Standard range. 64 mm / 2.5".
2. Spacing between neighboring bars.
   For accurate determination of the diameter, the spacing between the rebars must be greater than the limits shown in the drawing below with reference to the center point of the device.

S_2: min. 150 mm / 6" depending on the rebar diameter

S_1: 130 mm / 5.2" without Neighboring rebar correction
50 mm / 2.0" with Neighboring rebar correction (see 5.4.2)

Diameter Measurement on Areas with sufficient Spacing of the Rebars
Method 1

Map out a rebar grid on a test surface and then select one rebar from the grid that has sufficient spacing from other rebars. Step 1 Create a rebar grid by locating rebars. Step 2 Select one rebar that has the largest spacing from neighboring rebars. Step 3 Use a ruler and confirm that the spacing is larger than the limits of the circle defined above. If not, redo Steps 1 and 2 until a rebar is located with the required spacing to a neighbor rebar. Step 4 Place the center of point of the device of the PM8000 over the rebar at the midpoint line of the rebars running crosswise to the rebar under test and click the right side key (short push) for measuring rebar diameter.

Midpoint line
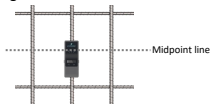
Diameter Measurement on Areas with insufficient Spacing of the Rebars (Neighboring Rebar Correction)

Method 2

Neighboring rebars that are within the sphere of influence will be detected by the PM8000 and will affect cover depth and diameter estimation results. An insufficient spacing is smaller as the minimum spacing defined in *Menu Navigation – Neighboring Rebar Correction*. The effects of neighboring rebars can be mitigated by keying-in a correction value. NOTE! This works only for rebars of the same layer running in parallel to the rebar under test. Step 1 Create a rebar as grid by locating rebars. Step 2 Select one rebar that has the largest spacing from neighboring rebars. Step 3 Use a ruler to measure the spacing. In case the spacing from the rebar under test to a neighboring rebar is equal or less than 130 mm / 5.2" go to the main menu, select the icon and input the measured spacing. Verify that neighboring rebar correction symbol is active in the status line at the top of the display as shown in *Menu Navigation – Neighboring Rebar Correction*. Step 4 Place the center of the PM8000 over the rebar at the midpoint line of the rebars running crosswise to the rebar under test and click the right side key (short push) for measuring rebar diameter.

## Diameter Measurements on Welded or bound (wires) reinforcement Meshes

In most cases a diameter can be measured but the displayed value is far too high and cannot be used. The only way to determine the diameter is by an inspection hole.

PROFOMETR PM 800 - Technologie-Pomiarowe.com

SWISS ✚ MADE

For more information on the product use of the product & firmware update with PqUpgrade software please refer to the Product Name PM8000 documentation

It is available for download on
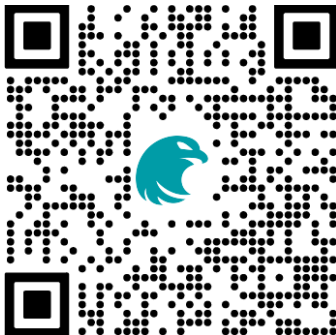
www.screeningeagle.com/en/products/profometer-pm8000

PROFOMETR PM 800 Technologie-Pomiarowe.com

ASIA-PACIFIC
Proceq Asia Pte Ltd.
1 Fusionopolis Way
Connexis South Tower #20-02
Singapore 138632
T +65 6382 3966

CHINA
Proceq Trading Shanghai Co., Limited
Room 701, 7th Floor, Golden Block
407-1 Yishan Road, Xuhui District
200032 Shanghai | China
T +86 21 6317 7479

EUROPE
Proceq AG
Ringstrasse 2
8603 Schwerzenbach
Zurich | Switzerland
T +41 43 355 38 00

UK
Screening Eagle UK Limited
Bedford i-lab, Stannard Way
Priory Business Park
MK44 3RZ Bedford
London | United Kingdom
T +44 12 3483 4645

MIDDLE EAST AND AFRICA
Proceq Middle East and Africa
Sharjah Airport International
Free Zone | P.O.Box: 8365
United Arab Emirates
T +971 6 5578505

USA, CANADA & CENTRAL AMERICA
Screening Eagle USA Inc.
14205 N Mopac Expressway Suite 533
Austin, TX 78728 | United States

Screening Eagle USA Inc.
117 Corporation Drive
Aliquippa, PA 15001 | United States
T +1 724 512 0330

SOUTH AMERICA
Proceq SAO Equipamentos
de Mediҫao Ltda.
Rua Paes Leme 136
Pinheiros, Sao Paulo
SP 05424-010 | Brasil
T +55 11 3083 3889