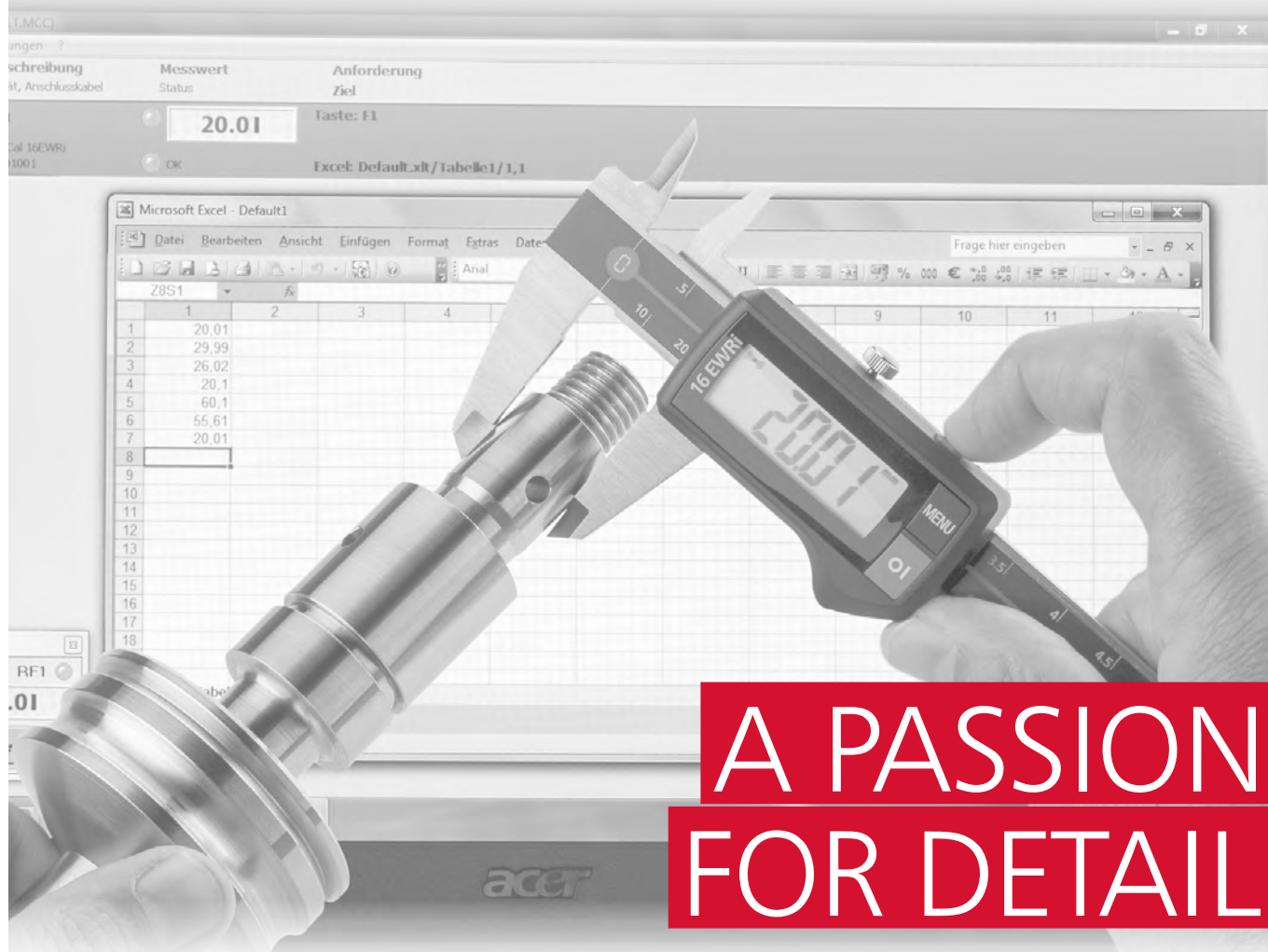- 0 +

Mahr

EXACTLY

MAHRLIGHTS

THE MAGAZINE DEVOTED TO DETAIL

1|2017

A PASSION FOR DETAIL

MARCOM PROFESSIONAL SOFTWARE – "SMAHRT METROLOGY" – SIMPLE, SMART AND NOW AVAILABLE TO DOWNLOAD FREE OF CHARGE

Our contribution to Industry 4.0. MarCom Professional software interface for connecting measuring instruments by cable or wireless. See page 6

INTEGRATED WIRELESS

Measuring instruments with integrated wireless transmitter. See from page 8

MILLIMAR C 1200

Now with dynamic measuring function. See page 23

MARSURF PS10 – "SMARTSURF"

Entry-level surface metrology with intuitive touch operation. See page 27

DIMENSIONAL METROLOGY:
EXPERIENCE, INNOVATION AND
DEDICATION.

A PASSION FOR DETAIL

MEASUREMENT AND EVALUATION: THE TWO BELONG TOGETHER

Measurement in production is one side of quality assurance – the other is the professional evaluation of measuring data. The two go hand in hand, and both determine success in production.

A lot has changed in recent years in both measuring and evaluation. Mahr offers innovative solutions, which will make your everyday work much easier and better.

Wireless devices: faster measurements without wires

Our new calipers and dial indicators with integrated wireless transmission mean that measured values can be transmitted to a PC wirelessly. This makes it much easier to record and document measuring data and thus also speeds up quality assurance processes.

MarCom Professional: the software for evaluating measurements

This is where the software comes in: the wirelessly transmitted measuring data can be processed using "MarCom Professional". The evaluation provides valuable and necessary information about production. This serves as the basis for reliably monitoring processes and increasing productivity.

Free download

We have a very special offer for our Mahrlights readers: You can now download the "MarCom Professional" software free of charge (see page 6/7)!

MAHR's combination of wireless devices and evaluation software brings you another major step closer to the benefits of the Industry 4.0 networked factory. Find out more in this latest issue of Mahrlights.

Enjoy!

ppa. Manuel Hüsken
General Sales Manager

ppa. Heiko Kern
Sales Manager for Trade

WWW.MAHR.COM

SMAHRT METROLOGY

MarConnect
integrated wireless

MARCONNECT
INTEGRATED INNOVATIVE WIRELESS TECHNOLOGY

WIRELESS DEVICES FOR MORE MEASURING CONVENIENCE

Mahr's new wireless devices with **integrated wireless transmitter** are designed for user-friendly, practical and cost-effective use in your factory. They will make your measurement recording processes much faster and more efficient.

Mahr's caliper and dial indicators herald a new era:

Mahr has enhanced its "MarCal" and "MarCator" ranges with state-of-the-art technology. These special measuring instruments

- feature **"Integrated Wireless"**,

- have a transmitter directly integrated in the measuring instrument,

- are **energy-efficient** and do not require a separate battery.

Conventional measuring station – with cable connection
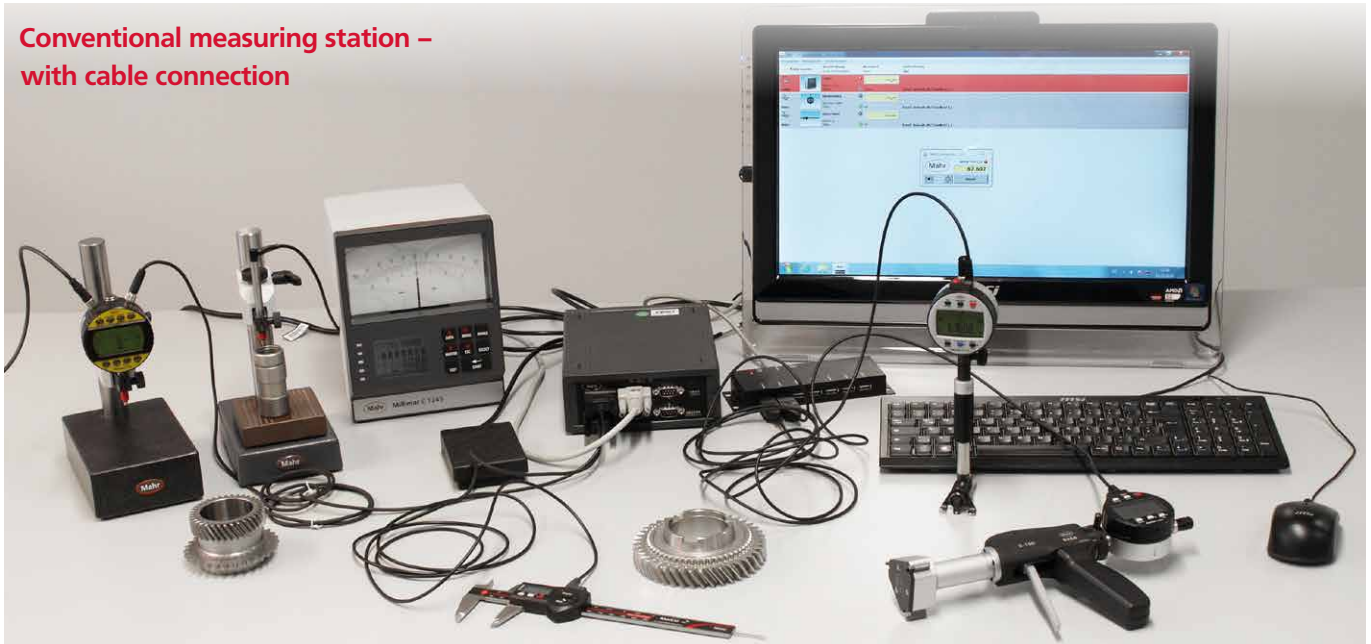
BENEFIT FROM THESE OUTSTANDING ADVANTAGES:

Data link	Integrated wireless	Cable connection
Range	Max. **6 m**	Max. **2 m** (without extension cable)
Freedom of movement and operation	**Fully autonomous measuring without limits**	**Limited freedom of movement,** especially at measuring stations with multiple measuring instruments
Wear	**No risk of damage or wear**	**Risk of:** - **cable breaks, cable kinks** - **embrittlement** from oil, etc.
Interface	1 **affordable i-Stick receiver** for 8 measuring instruments (maximum 4 i-Sticks per PC) **Free MarCom Professional software interface**	**One cable** is required for each measuring instrument Additional **hardware interface** must be purchased
Safety	Visual **feedback of successful transmission** on display of measuring instrument, or **error message**	**No feedback from transmission** Unplugged cables or cable breaks **are not identified**

Innovative measuring station – with integrated wireless

MarConnect
integrated wireless

SMAHRT CONNECTIVITY

Sending measuring results

Data

Integrated wireless technology

MarConnect
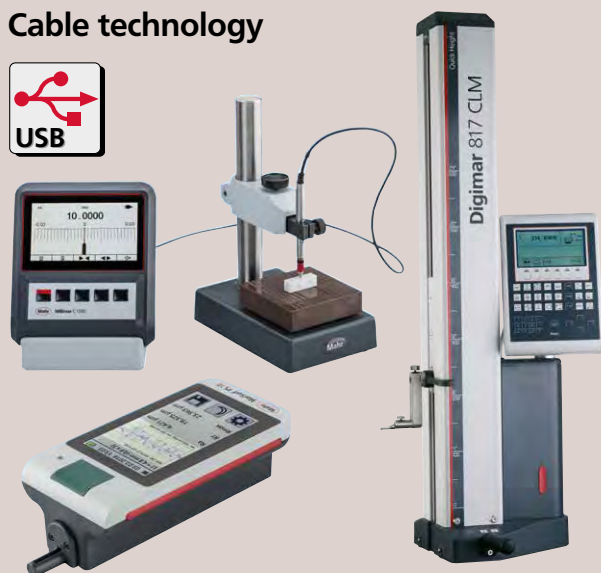integrated wireless

Retrofitted wireless technology

Cable technology

USB

MarCom Pro

Free to d

www.mahr.

Scan the QR code to watch simple and practical applications

HIGHLIGHT: Our contribution to Industry 4.0: You can now download MarCom Professional software free of charge!
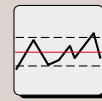
transfer	Data processing

Virtual interface box

CAQ/SPC software

BABTEC

Q-DAS
STATISTICS DRIVES SUCCESS

Intelligent Excel interface

Microsoft Office Excel®

	A	B	C
1			
2			
3			
4			
5			
6			

Keyboard emulation

Any Windows software

Word
Excel
:

Text file

Flexible data processing

TXTTXTTXT
TXTTXTTXT
TXTTXTTXT
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TXTTXTTXT
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TXTTXTTXT

fessional 5.1
ownload:
com/marcom

MARCAL. THE WIRELESS CALIPER

With the **MarConnect system** you will always have **the optimal connection to all evaluation systems** – either via integrated wireless or data cable. Mahr's **Reference System** makes the caliper **easier** to handle. Thanks to the high **degree of protection IP67**, the MarCal 16 EWR **is perfect for use in the harshest ambient conditions**.

MARCAL 16 EWRi Digital Caliper

With integrated wireless

REFERENCE · IP67 · MarConnect integrated wireless · DIN 862

Starter Pack
£ 206.72
Order no. 9105795

Starter Pack

16 EWRi incl. i-stick wireless receiver and MarCom Professional 5.1 see order no. 9105795 and 9105796

Features
Functions: ON/OFF, AUTO-ON/OFF, HOLD (storage of measured values), RESET (set display to zero), PRESET (enter a numerical value), mm/inch, Reference System, LOCK function (key lock), DATA (data transmission)
- **Integrated wireless transmitter**
- Immediate measurement thanks to the **Reference System**
- Excellent resistance to dust, coolants and lubricants: **Protection class IP67**
- Power supply: Battery life approx. 3 years (approx. 0.5 in wireless mode)
- Lapped guideways
- Slide and beam made of hardened stainless steel

Product	Measuring range		Resolution	Depth rod		Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch					£	£
16 EWRi	0 – 150	(6")	0.01 / 0.0005	•		**Starter Pack:** incl. i-stick wireless	**9105795**	258.40	**206.72**
16 EWRi	0 – 150	(6")	0.01 / 0.0005		•	receiver and MarCom Professional 5.1	**9105796**	258.40	**206.72**

MARCAL 16 EWRi Digital Caliper

With integrated wireless

Offer price
£ 136.43
Order no. 4103400

16 EWRi excluding i-Stick wireless receiver and MarCom Professional 5.1. Features as above.

Product	Measuring range		Resolution	Depth rod		Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch					£	£
16 EWRi	0 – 150	(6")	0.01 / 0.0005	•		**Data interface:**	**4103400**	181.90	**136.43**
16 EWRi	0 – 150	(6")	0.01 / 0.0005		•	Integrated wireless	**4103402**	181.90	**136.43**

All illustrations and technical data are without guarantee. All list prices are the recommended retail prices.
The net prices are shown in £, they exclude sales tax and are valid from April 1st, 2017 until May 31st, 2017

DIGITAL MEASUREMENT WITH MARCATOR

Our **innovative range of digital dial gauges contains high precision electronic measuring systems,** enabling a multitude of additional practical measuring functions. Simple to operate with a large, easy to read display, our digital dial gauges meet all the requirements of a modern measuring instrument. **Quick and simple data processing** ensures results are available when you need them.

MARCATOR 1086 Ri

Digital dial indicators

Resolution from 0.5 μm and tolerance display

MarConnect integrated wireless | ABS | 0 TOL | IP42 | MarConnect USB RS232C Digimatic | REFERENCE

Offer price
£ 251.81
Order no. 4337624

Features
Functions: ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), ABS (display can be set to zero, without losing the reference to the preset value), DATA (data transmission via connection cable), factor (adjustable), LOCK (lock individual keys)
• High contrast LCD
• Operating and display unit (bezel) can be rotated 280°
• Lifter protection cap on end of measuring pin
• Immediate measurement thanks to the **Reference System**
• Power supply: Battery life approx. 3 years

MARCATOR 1087 Ri

Digital dial indicators
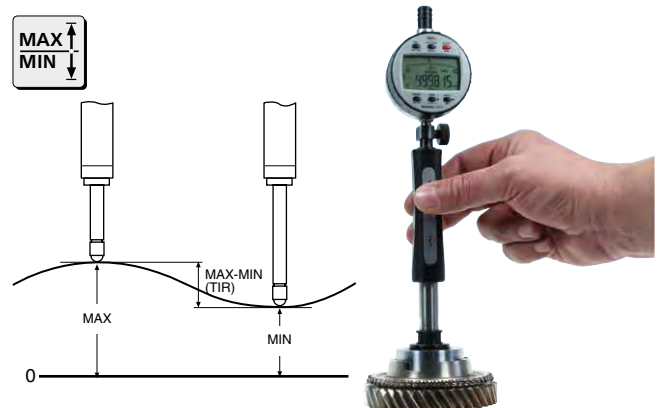
Resolution from 0.5 μm and dynamic max/min functions

MarConnect integrated wireless | ABS | 0 TOL | IP42 | MarConnect USB RS232C Digimatic | REFERENCE

Offer price
£ 295.16
Order no. 4337663

Additional functions of MarCator 1087 Ri

MAX/MIN memory for reversing point search,
TIR (MAX-MIN) for radial runout and flatness test

MAX ↑
MIN ↓

MAX-MIN (TIR)

MAX   MIN

0

Product	Measuring range		Resolution, switchable	Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch			£	£
1086 Ri	12.5	(0.5")	0.0005 / 0.001 / 0.002 / 0.005 / 0.01 mm (0.00002" / 0.00005" / 0.0001" / 0.0002" / 0.0005")	Data interface: Integrated wireless	4337624	335.75	251.81
1086 Ri	25	(1")			4337625	379.95	284.96
1087 Ri	12.5	(0.5")		Data interface: Integrated wireless	4337663	393.55	295.16
1087 Ri	25	(1")			4337665	443.70	332.78

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MARCONNECT. THE NEW WIRELESS STANDARD

With **MarConnect Integrated Wireless** measuring instruments you're always guaranteed **optimal connection to all evaluation systems.** Being able to record measuring data without annoying data cables makes the measuring instrument much easier to handle and more efficient.
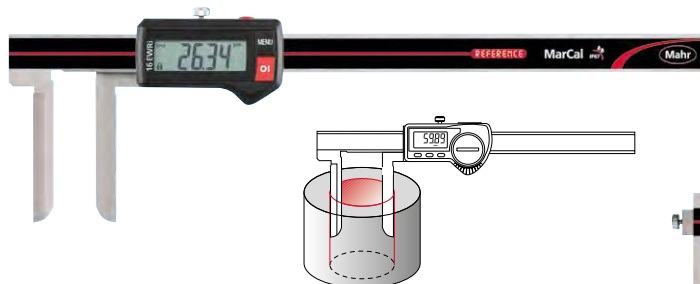
Digital calipers for special applications

Mahr offers a range of calipers for special applications featuring our state-of-the-art measuring system with integrated wireless. The range includes special calipers, universal calipers right through to depth gauges.

MarConnect
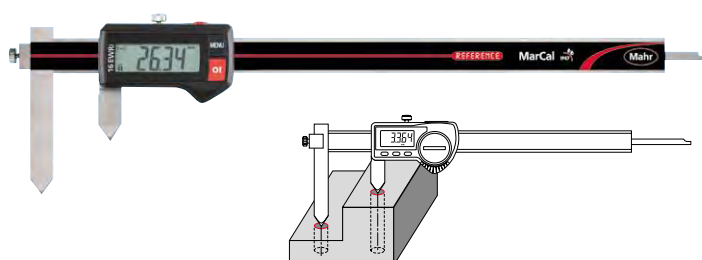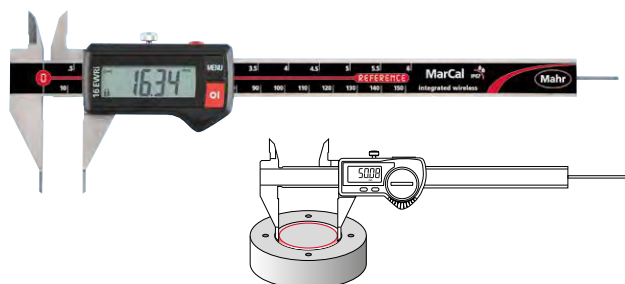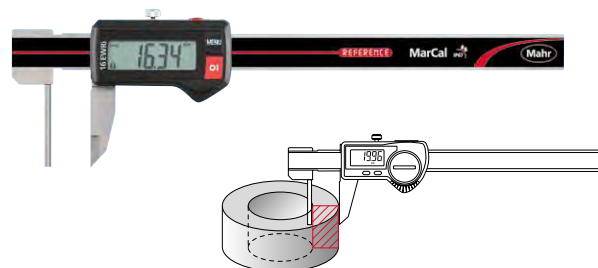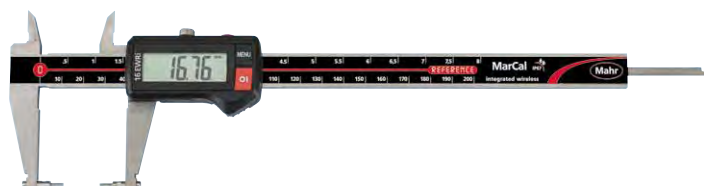integrated wireless

New

16 EWRi-Li

16 EWRi-BA

16 EWRi-SM

16 EWRi-RW

30 EWRi-D

16 EWRi-V

Find out more in our catalog or on our website:
www.mahr.com

Need some more information? Our technical advisers will be happy to answer any questions you may have.

THE CUTTING EDGE IN DATA TRANSMISSION

In modern production it is imperative that measuring results are recorded and evaluated accurately. These results are not only valuable benchmarks for assessing products, but they can also be used to evaluate and optimize production processes. Mahr sets high standards with its **up-to-date wireless data transmission solutions**. **Simple, Reliable and Professional.**

MARCONNECT i-Stick wireless receiver for measuring instruments with integrated wireless

Wireless receiver i-Stick incl. software interface

Offer price
£ 76.50
Order no. 4102220

Features

- Measurement without the nuisance of additional modules
- Large freedom of movement, up to 6 m wireless
- Secure and simple data transmission
- Long battery life span
- Inexpensive
- Comes with free MarCom Prof. 5.1 software

Product		i-Stick
Number of channels		3
Number of connectable measuring instruments with integrated wireless		8 per stick
Radio frequency	MHz	2400
For measuring instruments		**MarCal** 16 EWRi / 30 EWRi **MarCator** 1086 Ri / 1087 Ri / 1087 BRi
Order no.		**4102220**
Package contents		**i-Stick**
List price	£	~~76.50~~
Offer price	£	**61.20**

Product	Description	Order no.	List price £	Offer price £
MC-R	Remote control for MarCom	**4102221**	~~73.95~~	**59.16**

MARCOM PROFESSIONAL 5.1 software interface
Processing measuring data

For free
download
www.mahr.com/marcom

Features

- Integrated virtual interface boxes
- Possible to connect to SPC software via a virtual interface box
- Freely configure the desired data transmission (e-Stick, i-Stick, FM 2, USB, RS232)

Product	MarCom Professional 5.1
Number of connectable wireless receivers for i-stick	4
Number of connectable measuring instruments with integrated wireless	32
Number of connectable wireless receivers for e-stick	1
Number of connectable transmission modules for e-stick	8
Number of connectable wireless receivers for FM 2	1
Number of connectable sender modules for wireless receiver FM 2	100
Number of connectable measuring instruments with USB interface	128
Number of connectable USB foot switches	128
Number of connectable measuring instruments with RS232C interface	2
Number of virtual interface boxes (8 inputs)	4

MARCAL. THE REFERENCE CALIPER

Mahr's **Reference System** has made the caliper much **easier and more convenient** to handle as the zero position only has to be set once and the setting is stored for all further measurements. Due to the **high degree of IP67 protection**, the MarCal 16 EWR is protected against dust, coolants and lubricants and is therefore **ideal for use in the harshest ambient conditions**.

MARCAL 16 ER Digital Caliper

Large display

REFERENCE   DIN 862

Offer price
£ 69.81
Order no. 4103010

Features
Functions: ON/OFF, AUTO-ON/OFF, RESET (set display to zero), mm/inch, Reference System, LOCK function (key lock)
- Immediate measurement thanks to the **Reference System**
- Power supply: Battery life approx. 3 years
- Lapped guideways
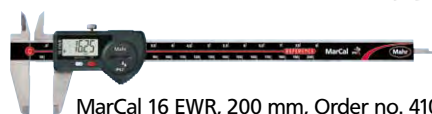- Slide and beam made of hardened stainless steel

MarCal 16 ER, 200 mm, Order no. 4103018

Product	Measuring range mm	(inch)	Resolution mm/inch	Depth rod		Data output	Height of digits mm	Order no.	List price £	Offer price £
16 ER	0 – 150	(6")	0.01 / 0.0005	•			11	4103010	93.08	69.81
16 ER	0 – 150	(6")	0.01 / 0.0005		•		11	4103012	93.08	69.81
16 ER	0 – 200	(8")	0.01 / 0.0005		•	•	8.5	4103018	159.80	119.85
16 ER	0 – 300	(12")	0.01 / 0.0005			•	8.5	4103020	203.15	152.36

MARCAL 16 EWR Digital Caliper

Excellent protection against dust, coolants and lubricants

REFERENCE   IP67   DIN 862

Offer price
£ 104.55
Order no. 4103300

Features
Functions: ON/OFF, AUTO-ON/OFF, RESET (set display to zero), mm/inch, Reference System, LOCK function (key lock)
- Immediate measurement thanks to the **Reference System**
- Excellent resistance to dust, coolants and lubricants: **Protection class IP67**
- Power supply: Battery life approx. 3 years
- Lapped guideways
- Slide and beam made of hardened stainless steel

MarCal 16 EWR, 200 mm, Order no. 4103068

Product	Measuring range mm	(inch)	Resolution mm/inch	Depth rod		Data output	Height of digits mm	Order no.	List price £	Offer price £
16 EWR	0 – 150	(6")	0.01 / 0.0005	•			11	4103300	139.40	104.55
16 EWR	0 – 150	(6")	0.01 / 0.0005		•		11	4103302	139.40	104.55
16 EWR	0 – 200	(8")	0.01 / 0.0005		•	•	8.5	4103068	199.75	149.81
16 EWR	0 – 300	(12")	0.01 / 0.0005			•	8.5	4103070	267.75	200.81

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MARCAL 30 EWR Digital Depth Gauge

For measuring deep down

REFERENCE IP67 USB MarConnect RS232C Digimatic

Offer price
£ 214.20
Order no. 4126700

Features
Functions: ON/OFF, AUTO-ON/OFF, RESET (set display to zero), PRESET (enter a numerical value), mm/inch, Reference System, LOCK function (key lock), DATA (in conjunction with data cable)
- Immediate measurement thanks to the **Reference System**
- Excellent resistance to dust, coolants and lubricants: **Protection class IP67**
- Power supply: Battery life approx. 3 years
- Lapped guideways
- Slide and beam made of hardened stainless steel

MARCAL 30 EWR-D Digital Depth Gauge

For your special applications

REFERENCE IP67 USB MarConnect RS232C Digimatic

Features
same as MarCal 30 EWR

Offer price
£ 327.04
Order no. 4126523

Measuring groove widths and distances between grooves
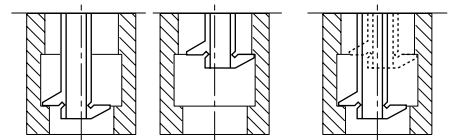
Product	Measuring range mm	(inch)	Resolution mm/inch	Data output	Order no.	List price £	Offer price £
30 EWR	0 – 150	(6")	0.01 / 0.0005	•	4126700	285.60	214.20
30 EWR	0 – 300	(12")	0.01 / 0.0005	•	4126701	374.85	281.14
30 EWR	0 – 500	(20")	0.01 / 0.0005	•	4126702	453.90	340.43
30 EWR-D	0 – 200	(8")	0.01 / 0.0005	•	4126523	436.05	327.04
30 EWR-D	0 – 300	(12")	0.01 / 0.0005	•	4126524	555.90	416.93

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MARCAL. THE LIGHTWEIGHT DIGITAL CALIPER

Our **18 EWR Digital Caliper** has a **lightweight design,** due to its narrow cross-section. And with additional weight-reducing holes in the measuring jaws from 500 mm, it makes for optimum handling during measurement.

MARCAL 18 EWR Digital Caliper

Lightweight steel design

REFERENCE IP65 USB MarConnect RS232C Digimatic

Offer price
£ 270.30
Order no. 4112704

MarCal 18 EWR, 300 mm, Order no. 4112705

Features

Functions: AUTO-ON/OFF, DATA (data transmission via connection cable), ON/OFF, PRESET (enter a numerical value), RESET (set display to zero), Reference System, LOCK function (key lock), mm/inch

- Immediate measurement thanks to the **Reference System**
- Excellent resistance to dust, coolants and lubricants: **Protection class IP65**
- Power supply: Battery life approx. 3 years
- Digit height: 10 mm (300 mm), 12.5 mm (500 mm)

Product	Measuring range		Resolution	Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch			£	£
18 EWR	300	(12")	0.01 / 0.0005	with measuring blades for external dimensions	**4112704**	360.40	**270.30**
18 EWR	500	(20")	0.01 / 0.0005		**4112712**	688.50	**516.38**
18 EWR	300	(12")	0.01 / 0.0005	without measuring blades for external dimensions	**4112705**	332.35	**249.26**
18 EWR	500	(20")	0.01 / 0.0005		**4112713**	612.00	**459.00**

MARCAL 16 FN Caliper with Scale Reading

The classic precision vernier caliper

Offer price
£ 18.17
Order no. 4100400

Features

- All reading parts have a glare free, satin chrome finish
- Slide and beam made of hardened stainless steel
- Measuring surfaces are made of hardened stainless steel
- Measuring blades for inside measurement
- Step measuring function
- Raised guideways for the protection of the scale

Product	Measuring range	Vernier value	Vernier value	Error limit	Order no.	List price	Offer price
	mm	mm	inch	mm		£	£
16 FN	0 – 150	0.05	1/28	0.05	**4100400**	24.23	**18.17**
16 FN	0 – 200	0.05	1/28	0.05	**4100401**	65.45	**49.09**
16 FN	0 -300	0.05	1/28	0.05	**4100402**	157.68	**118.26**

MARCAL. THE TROUBLESHOOTER

16 EWR-V - The universal caliper for difficult to reach measuring points such as recesses and grooves. Use in conjunction with special anvils to solve every measuring problem.

## MARCAL 16 EWR-V Digital Universal Caliper
The trouble shooter

REFERENCE   IP67   MarConnect   USB   RS232C   Digimatic
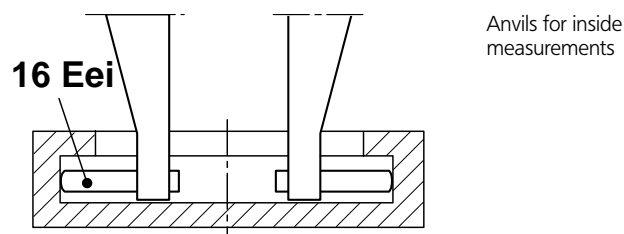

Offer price
£ 327.04
Order no. 4118807

Features
Functions: AUTO-ON/OFF, DATA (data transmission via connection cable), HOLD (storage of measured values), ON/OFF, PRESET (enter a numerical value), RESET (set display to zero), Reference System, LOCK function (key lock), mm/inch
- Immediate measurement thanks to the **Reference System**
- Excellent resistance to dust, coolants and lubricants: **Protection class IP67**
- Power supply: Battery life approx. 3 years
- Lapped guideways
- Slide and beam made of hardened stainless steel
- Package contents: Includes standard accessories
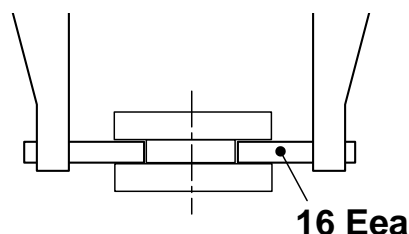
Anvils for outside measurements

16 Eea

Anvils for inside measurements

16 Eei

Product	Measuring range		Resolution	Depth rod		Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch					£	£
16 EWR-V	0 –200	(8")	0.01 / 0.0005		•	**Digit height:** 8.5 mm	**4118807**	~~436.05~~	**327.04**

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MICROMAR. EVERYTHING REVOLVES AROUND PRECISION

Besides calipers, micrometers are the most frequently used hand measuring instruments. With precision ground spindles, carbide tipped measuring faces and a robust frame construction; the modern micrometer from the **Mahr Micromar series ensures maximum precision** and a **long working life**.

MICROMAR 40 ER / 40 EWR Digital Micrometer

With simple one handed operation

REFERENCE ABS

Offer price from £ 96.26

Set of 4 Micromars 40 EWR with 4 micrometers, Order no. 4151709

Features
Functions: RESET (set display to zero), ABS (set display to zero without the reference to the preset being lost), mm/inch, PRESET (enter a numerical value), Reference System, LOCK function (key lock), DATA (data transmission via connection cable)
- Immediate measurement thanks to the **Reference System**
- High contrast display
- Spindle and anvil are carbide tipped
- Rapid drive
- Hard lacquered steel frame, heat insulated
- Power supply: Battery life approx. 2 years

Product	Measuring range		Resolution	Spindle thread pitch		IP40	IP65	Order no.	List price	Offer price
	mm	(inch)	mm/inch	mm					£	£
40 ER	0 –25	(0 –1")	0.001 / 0.00005	0.635			•	4151601	128.35	96.26
40 EWR	0 –25	(0 –1")	0.001 / 0.00005	0.635			•	4151721	172.13	129.09
40 EWR	0 –25	(0 –1")	0.001 / 0.00005	0.635	•		•	4151705	220.15	165.11
40 EWR Set	0 –100	(0 –4")	0.001 / 0.00005	0.635	•		•	4151709	1,160.25	870.19

While stocks last!

MICROMAR 40 EWR Digital micrometer screws (special models).

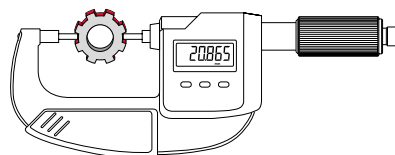### Special measuring surfaces for special measuring tasks

4 models for special applications, for measuring

– grooves and spline shafts
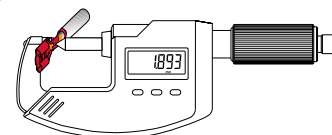– crimp heights
– recesses
– pipe wall thickness

40 EWR-B

40 EWR-K

40 EWR-S

40 EWR-R

Find out more on our website:
www.mahr.com

Need some more information? Our technical advisers will be happy to answer any questions you may have.

MICROMAR 40 A Micrometer screw
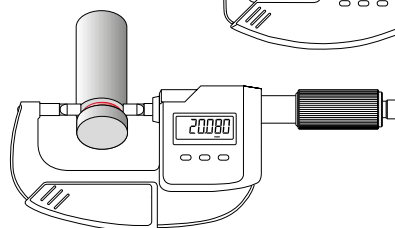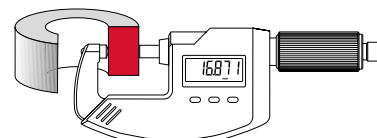
DIN 863-1

The classic micrometer

Offer price
£ 31.24
Order no. 4134000

Features
- Operating and display units have a glare free, satin chrome finish
- Spindle and anvil are made of hardened steel, carbide tipped
- Heat insulators
- Rapid drive with integrated ratchet
- Locking device

Product	Measuring range mm	Reading mm	Spindle thread pitch mm	Details	Order no.	List price £	Offer price £
40 A	0 –25	0.01	0.5	Hard lacquered steel frame	4134000	41.65	31.24

MICROMAR 44 AS Set of Self-Centering Inside Micrometers

DIN 863-4

For measurements to the bottom of the bore hole

Offer price from
£ 502.99

Features
- Operating and display units have a satin chrome finish
- Spindle is made of stainless steel, hardened and ground
- Rapid drive with integrated ratchet
- Self-centering measuring head consists of three laterally positioned probes, each are offset at intervals of 120°
- Probes from 12 mm are carbide tipped
- From 12 mm the probes can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made of aluminum to reduce weight

Product	Measuring range mm	Reading mm	Error limit µm	Number of Micrometers	Setting rings mm	Order no.	List price £	Offer price £
44 AS	6 –12	0.001	4	3	8, 10	4190350	862.75	647.06
44 AS	12 –20	0.001	4	2	16	4190351	670.65	502.99
44 AS	20 –50	0.005	4	4	25, 40	4190352	1,521.50	1,141.13
44 AS	50 –100	0.005	5	4	60, 85	4190353	1,806.25	1,354.69

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MICROMAR INNER MICROMETERS

Micromar 3-Point inner micrometers - for rapid bore hole measurement in any production plant. Three laterally positioned measuring heads, together with the mechanically reproducible measuring force for self-centering the measuring instrument in the bore hole, ensures **reliable and accurate measuring results**.

MICROMAR 44 EWR Self-centering
Digital Micrometer Sets

Immediate measurement thanks to the Reference System

Offer price from £ 940.31

DIN 863-4 | MarConnect USB RS232C Digimatic | IP52 | ABS | REFERENCE

Features
Functions: RESET (set display to zero), ABS (set display to zero without the reference to the preset being lost), mm/inch, PRESET (enter a numerical value), Reference System, LOCK function (key lock), DATA (data transmission via connection cable)
- Threaded connection for changing the measuring heads
- Self-centering measuring head consists of three laterally positioned probes, each are offset at intervals of 120°
- Probes from 12 mm are carbide tipped
- From 12 mm the probes can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made of aluminum to reduce weight

Product	Measuring range mm	Reading mm/inch	Error limit µm	Number of Micrometers	Setting rings mm	Order no.	List price £	Offer price £
44 EWR	6 – 12	0.001 / 0.00005	4	3	8, 10	**4191160**	1,436.50	**1,077.38**
44 EWR	12 – 20	0.001 / 0.00005	4	2	16	**4191161**	1,253.75	**940.31**
44 EWR	20 – 50	0.001 / 0.00005	4	4	25, 40	**4191162**	1,946.50	**1,459.88**
44 EWR	50 – 100	0.001 / 0.00005	5	4	60, 85	**4191163**	2,341.75	**1,756.31**

MICROMAR 844 AS Self-centering
Measuring Pistol Set, incl. MarCator 1086 R

For rapid measurements

Offer price from £ 1,088.00

MarConnect USB RS232C Digimatic | ABS | TOL | IP42 | REFERENCE

Features
- Threaded connection for changing the measuring heads
- Self-centering measuring head consists of three laterally positioned probes, each are offset at intervals of 120°
- Probes from 12 mm are carbide tipped
- From 12 mm the probes can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made of aluminum to reduce weight
- Digital indicator can be rotated to any desired measuring position

Product	Measuring range mm	Number of 44 Ak measuring heads	Setting rings mm	Indicating instrument included	Resolution mm/inch	Order no.	List price £	Offer price £
844 AS	6 – 12	3	8, 10		0.0005 / 0.00002	4487760	1,525.75	1,220.60
844 AS	12 – 20	2	16	MarCator 1086 R	0.0005 / 0.00002	4487761	1,360.00	1,088.00
844 AS	20 – 50	4	25, 40		0.0005 / 0.00002	4487762	2,006.00	1,604.80
844 AS	50 – 100	4	60, 85		0.0005 / 0.00002	4487763	2,435.25	1,948.20

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MARCATOR POINTS YOU IN THE RIGHT DIRECTION

Due to their versatility, dial indicators rank as some of the most commonly used transducers. That is certainly the case with our MarCator series. Our mechanical dial indicators have **precision gears and pinions for maximum accuracy.**

Also available in shockproof and waterproof versions.

MARCATOR 810 A Precision Dial Indicator

DIN 878

The classic indicator with a lifter protection cap

Offer price
£ 27.20
Order no. 4311050

Features
• High contrast dial face
• Adjustable colored tolerance markers for optimum contrast
• Chrome plated metal housing
• Lifter protection cap with dust protection function
• High precision gears and pinions

| Product | Measuring range | Reading | Dial diameter | Details | Order no. | List price | Offer price |
	mm	mm	mm			£	£
810 A	10	0.01	50	**Measuring force:** 0.7 - 1.3 N	4311050	~~34.00~~	**27.20**

MARSTAND 815 MG Measuring Stand with Magnetic Base
Simple one handle positioning

Offer price from
£ 122.06

Features
• 3D measuring stand, can reach any position within the operating range
• Easy to position, all three joints can been fixed into position with just one handle
• Maintenance-free mechanical clamping system
• Arm components are made of black anodized high quality aluminum
• Dial indicator holder with 8 mm mount diameter and dovetail for dial test indicator measuring devices
• Equipped with microfine adjustment, free of backlash
• Very powerful ON/OFF magnet
• Package contents: Excludes dial gauge

| Product | Fine adjustment range | Total height | Projection (max.) | Vee-block for shaft diameter | Magnetic force of vee-block | Order no. | List price | Offer price |
	mm	mm	mm	mm	N		£	£
815 MG		224	130		300	4420350	~~152.58~~	**122.06**
815 MG	5	316	200		800	4420360	~~170.85~~	**136.68**
815 MG		401	280	6 - 120		4420370	~~207.40~~	**165.92**
815 MG	2	444	330		1000	4420380*	~~391.85~~	**313.48**

Specifically designed for measuring instruments with µm resolution

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DIGITAL MEASUREMENT WITH MARCATOR

Our **innovative range of digital dial gauges contains high precision electronic measuring systems,** enabling a multitude of additional practical measuring functions. Simple to operate with a large, easy to read display, our digital dial gauges meet all the requirements of a modern measuring instrument. **Quick and simple data processing** ensures results are available when you need them.

MARCATOR 1075 R Digital Dial Gauge

With large display

IP52 USB MarConnect RS232C Digimatic

REFERENCE

Offer price
£ 100.98
Order no. 4336010

Features
Functions: ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), DATA (data transmission via connection cable), LOCK function (key lock), AUTO-ON/OFF
• High contrast LCD
• Protection cap on end of measuring pin
• Power supply: Battery life approx. 3 years

Product	Measuring range		Resolution	Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch			£	£
1075 R	12.5	(0.5")	0.01 / 0.0005"		4336010	126.23	100.98
1075 R	12.5	(0.5")	0.005 / 0.0001"	**Digit height:** 12 mm	4336020	167.03	133.62
1075 R	12.5	(0.5")	0.001 / 0.00005"		4336030	256.70	205.36

MARCATOR 1086 R

Digital Dial Indicators

Resolution from 0.5 µm and tolerance display

ABS TOL IP42 USB MarConnect RS232C Digimatic

REFERENCE

Offer price from
£ 189.04

Features
Functions: ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), ABS (display can be set to zero, without losing the reference to the preset value), <0> (tolerance GO / NO GO display mode), DATA (data transmission via connection cable), factor (adjustable), LOCK (lock individual keys)
• High contrast LCD
• Operating and display unit (bezel) can be rotated 280°
• Lifter protection cap on end of measuring pin
• Immediate measurement thanks to the **Reference System**
• Power supply: Battery life approx. 3 years

Product	Measuring range		Resolution, switchable	Details	Order no.	List price	Offer price
	mm	(inch)	mm (inch)			£	£
1086 R	12.5	(0.5")	0.01 / 0.0005"		4337130	236.30	189.04
1086 R	12.5	(0.5")	0.0005 / 0.001 / 0.002 / 0.005 / 0.01 mm		4337620	291.55	233.24
1086 R	25	(1")	(0.00002" / 0.00005" / 0.0001" / 0.0002" / 0.0005")		4337621	347.65	278.12

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MARCATOR 1087 R
Digital Dial Indicators

Resolution from 0.5 µm and dynamic max/min functions

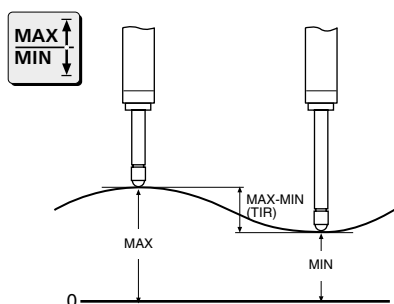ABS | MAX/MIN | TOL | IP42 | USB | MarConnect RS232C | Digimatic |

REFERENCE

Offer price
£ 293.08
Order no. 4337660

Features
Functions: ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), MAX/MIN (store the search for the reversal point), TIR (MAX-MIN) for testing radial runout and flatness, ABS (display can be set to zero, without losing the reference to the preset value), DATA (data transmission via connection cable), factor (adjustable), LOCK (lock individual keys)
- High contrast LCD
- Operating and display unit (bezel) can be rotated 280°
- Lifter protection cap on end of measuring pin
- Immediate measurement thanks to the **Reference System**
- Power supply: Battery life approx. 3 years

Product	Measuring range		Resolution, switchable	Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch			£	£
1087 R	12.5	(0.5")	0.0005 / 0.001 / 0.002 / 0.005 / 0.01 mm (0.00002" / 0.00005" / 0.0001" / 0.0002" / 0.0005")		4337660	366.35	293.08
1087 R	25	(1")			4337661	415.65	332.52

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MARTEST. HIGHLY SENSITIVE MEASUREMENT

Since 1936 Mahr has been one of the world's leading suppliers of dial test indicator measuring devices. **Sensitive, computer-optimized mechanisms ensure maximum**

reliability and precision. MarTest instruments are ideal for use in workshop conditions, with sealed dials ensuring **liquid resistance.**

MARTEST 800 S / SG
Dial Test Indicator Measuring Device - standard version

| DIN 2270 | | | SHOCK PROOF |

Features
- High contrast dial face, sealed with an O-Ring
- Satin chrome finished housing with 3 integrated dovetail guideways
- Shockproof mechanism
- Anti-magnetic model
- Automatic adjustment to the contacting direction ensuring infallible readings
- Ball-bearing mounted double lever, overload protection thanks to friction clutch
- Measuring anvil with carbide ball ø 2 mm

Offer price
£ 57.46
Order no. 4305200

With hardened mineral glass, resistant to breakage and scratching

Product	Measuring range	Reading	Dial diameter	Measuring anvil length	Order no.	List price	Offer price
	mm	mm	mm	mm		£	£
800 S	± 0.4	0.01	28	14.5	4305200	71.83	57.46
800 SG			38		4307200	72.68	58.14

MARTEST 800 SGM / SL
Dial Test Indicator Measuring Device - for special measurements

| DIN 2270 | | | SHOCK PROOF |

Features
- High contrast dial face, sealed with an O-Ring
- Satin chrome finished housing with 3 integrated dovetail guideways
- Shockproof mechanism
- Anti-magnetic model
- Automatic adjustment to the contacting direction ensuring infallible readings
- Ball-bearing mounted double lever, overload protection thanks to friction clutch
- Measuring anvil with carbide ball ø 2 mm

Offer price
£ 81.26
Order no. 4308200

With hardened mineral glass, resistant to breakage and scratching

Product	Measuring range	Reading	Dial diameter	Measuring anvil length	Order no.	List price	Offer price
	mm	mm	mm	mm		£	£
800 SGM	± 0.1	0.002	38	14.5	4308200	101.58	81.26
800 SL	± 0.25	0.01	28	41.24	4306200	114.75	91.80

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MILLIMAR. MADE FOR PRECISION

Mahr provides a whole world of dimensional metrology excellence. The Millimar range of products comprises perfectly matched probes and evaluation units, as well as highly precise mechanical components and customer solutions. For every measuring task in length metrology we have the solution: Millimar by Mahr.

MILLIMAR C 1200 Compact Length Measuring Instrument

Now with added functions

Offer price
£ 648.08
Order no. 5312010

Features
Functions: ON/OFF, mm/inch, reversal of counting direction, measuring range switching, TOL (enter tolerance limit values), PRESET (enter a numerical value), factor (adjustable), DATA (data transmission), MAX/MIN memory for reversing point search, TIR (MAX-MIN) for testing radial runout and flatness
- High resolution and high contrast TFT color display
- Fully adjustable display for ideal viewing angle
- Extremely easy to operate
- Suitable for mains or battery operation
- With battery operation also suitable for mobile use
- Compact housing

New features
- Dynamic measuring functions (max, min, max-min)
- Key lock
- Asymmetric tolerance display

Product	Indication range		Resolution	Reading	Order no.	List price	Offer price
	Digital display	Analog display					
	µm	µm	µm	µm		£	£
C1200	± 5000	± 5000, ± 2000, ± 1000, ± 300, ± 100, ± 30, ± 10, ± 3	0.1	500, 200, 100, 20, 10, 2, 1, 0.2	5312010	762.45	648.08

MILLIMAR P2004 M Inductive Probe

The Standard Probe

Offer price
£ 167.28
Order no. 5323010

Features
- Measuring pin mounted in ball-bearing guide
- High linearity over the entire measuring range
- Excellent electromagnetic shielding (EMC)
- All probes can be easily converted from axial to radial by mounting a slip-on cap (included in package)
- Further standard probes are also available upon request, for example: probes with a compressed air (pneumatic) lifter or with vacuum retraction as well as larger measuring ranges

Product	Measuring range	Measuring force	Repeatability f_w	Measuring value hysteresis f_u	Order no.	List price	Offer price
	mm	N	µm	µm		£	£
P2004 M	± 2	0.75	0.1	0.5	5323010	215.05	182.79

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AIM HIGH

Digimar height measuring instruments guarantee the ultimate in flexibility and quality control. Our motorised Digimar height measuring instruments are **simple to operate**; all the basic functions **can be executed** with a single key, offering **ease of use and accuracy.**

DIGIMAR 817 CLM Height Measuring Instrument
With Quick Mode. Rapid measurement with the highest accuracy
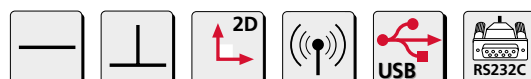
Offer price from £ 3,787.60

Features
Functions:
- Contacting from below and above
- Reversal point of a bore hole / shaft (above and/or below)
- Calculate distances and/or symmetry
- Dynamic measuring functions
- Measure perpendicularity and straightness
- Measure in 2D mode
- Measuring programs
- Statistics
- Process measured data etc.

Operating and display unit:
- Large and clearly defined function keys
- Easy to read backlit graphic LCD
- Operator guidance with self-explanatory icons / pictograms
- Future-proof thanks to software updates
- Selectable auto-off function, without loss of measured values

Measuring system:
- Excellent accuracy and reliability due to the optical incremental measurement system with the double reader head
- Dynamic probe system enabling high repeatability
- Air bearings system for light and smooth movement
- Precise measuring head guidance on stainless steel guideways
- Motorised measuring slide simplifies measurement runs
- Probe constant remains after the instrument is switched off
- Integrated rechargeable battery with a long operating life for mains-independent measurement
- Temperature compensation via internal temperature sensor

Product		817 CLM		
Measuring range	mm	0 –350	0 –600	0 –1000
Range of application from . . . to	mm	170 . . . 520	170 . . . 770	170 . . . 1170
Resolution	mm	0.01, 0.005, 0.001, 0.0005, 0.0001		
Error limit		(1.8 + L/600) L in mm		
Repeatability: Bore	μm	1		
Repeatability: Plane	μm	0.5		
Perpendicularity error in μm	μm	5	6	10
Operating time max.	h	10		
Measuring force	N	1.0 +/−0.2 N		
Rel. humidity, non-condensing	%	65		
Working temperature	°C	20		
Operating temperature	°C	10 –40		
Order no.		4429010	4429011	4429012
List price	£	4,734.50	5,219.00	8,767.75
Offer price	£	3,787.60	4,175.20	7,014.20

DIGIMAR 816 CL Height Measuring Instrument

Perfect for accurate measurements in the production environment

Offer price from
£ 2,856.00

Features
Functions:
- Contacting from below and above
- Width between ledge and/or distance between a groove incl. center of the ledge and/or groove
- Diameter of a bore hole and/or shaft incl. center of the bore hole and/or shaft
- Reversal point of a bore hole / shaft (above and/or below)
- Calculate distances and/or symmetry
- Dynamic measuring functions
- Measuring program
- Process measured data

Operating and display unit:
- Easy to read backlit graphic LCD
- Clear function keys
- Language-neutral operator guidance with self-explanatory icons / pictograms
- Possible to set additional zero points on a workpiece
- Memory can store up to 99 measured values

Measuring system:
- Excellent accuracy and reliability due to the optical incremental measurement system with the double reader head
- Dynamic probe system enabling high repeatability
- Air bearings system for light and smooth movement
- Precise measuring head guidance on stainless steel guideways
- Motorised measuring slide simplifies measurement runs
- Probe constant remains after the instrument is switched off
- Integrated rechargeable battery with a long operating life for mains-independent measurement
- Temperature compensation via internal temperature sensor

Product		816 CL	
Measuring range	mm	0 –350	0 –600
Range of application from . . . to	mm	170 . . . 520	170 . . . 770
Resolution	mm	0.01, 0.001	
Error limit		(2.8 + L/300) L in mm	
Repeatability: Bore	μm	3	
Repeatability: Plane	μm	2	
Perpendicularity error in μm	μm	15	20
Operating time max.	h	10	
Measuring force	N	1.0 +/–0.2 N	
Rel. humidity, non-condensing	%	65	
Working temperature	°C	20	
Operating temperature	°C	10 –40	
Order no.		4429030	4429031
List price	£	3,570.00	4,046.00
Offer price	£	2,856.00	3,236.80

SPECIAL OFFER PRICES

IDEAL FOR THE WORKSHOP

When you need to measure and check workpieces quickly in the workshop, trust Mahr's height measuring and scribing instruments.

DIGIMAR 814 SR Height Measuring and Scribing Instrument
Exact positioning by handwheel

MarConnect
USB RS232C Digimatic

ABS System

REFERENCE

Offer price
£ 418.20
Order no. 4426100

Features
Functions: RESET (set display to zero), mm/inch, ABS (switch between relative and absolute measurement), reference lock/unlock, PRESET (enter a numerical value), DATA (data transmission via connection cable), AUTO-ON/OFF
- Life of battery up to 3 years
- Travel speed 1.5 m/s (60"/s)
- Ergonomic, sturdy base
- Hardened and lapped contact surface which produces both a smooth and even movement
- Slide and rail are made of hardened stainless steel
- Handwheel for positioning and measuring
- Fine adjustment
- Locking screw
- Interchangeable measuring and scriber tips, carbide tipped

Extra stable and torsionally rigid columns with strong cross-section for precise marking and measuring tasks

Clamping lever for quickly fixing the slide unit

Handwheel for easy positioning and measuring

Sturdy heavy-duty base, easy to handle

Product	Measuring range		Resolution	Details	Order no.	List price	Offer price
	mm	(inch)	mm/inch			£	£
814 SR	0 –350	(0 –14")	0.01 / 0.0005"	Digit height: 12 mm	4426100	~~522.75~~	418.20
814 SR	0 –600	(0 –24")	0.01 / 0.0005"		4426101	~~918.00~~	734.40

ROUGHNESS WITH PRECISION

Careful testing is paramount wherever surface structures affect the functioning, processing or appearance of components or products.

MarSurf brings Mahr expertise and knowhow as the top quality solution for all your surface metrology requirements.

MARSURF PS 10 SET Mobile Roughness Measuring Instrument
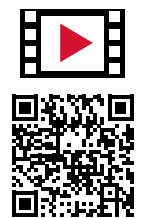### Intuitive and simple to use

RS232C   USB   MicroSD

Features

- Simple and intuitive to use: As easy to use as a smart phone
- Large, illuminated 4.3" TFT touch display
- Create complete PDF measuring records directly in the measuring instrument
- Customer-specific comments can be entered directly into the MarSurf PS 10 for the PDF measuring record
- Data backup as TXT, X3P, CSV or PDF file
- Instrument flexibility: Removable drive unit
- 31 surface parameters offer the same range of functions as a laboratory instrument.

Package contents:

- Drive unit (detachable)
- 1 standard probe conforming to standards
- Built-in rechargeable battery, charger / 3 adapters, USB cable
- Roughness standard integrated into housing (detachable), including Mahr calibration certificate
- Probe protection, carry case with shoulder strap
- Extension cable for drive unit
- Operating instructions

Offer price
£ 1,668.98
Order no. 6910230

Product		PS 10
Measuring range	µm	350
Parameters		Ra, Rq, Rz (Ry (JIS) equivalent to Rz), Rz (JIS), Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, RPc, Rmr (tp (JIS, ASME) equivalent to Rmr), RSm, RSk, S, CR, CF, CL, R, Ar, Rx
Stylus tip	µm	2
Calibration function		Dynamic; Ra, Rz, Rsm
Memory		min. 3900 profiles, min. 500,000 results, min. 1500 PDF measuring records, expandable to 32 GB with microSD card (320x memory capacity)
Data interface		USB, MarConnect (RS232), microSD slot for SD / SDHC cards up to 32 GB
Battery		Lithium-ion battery, 3.7 V, nominal capacity 11.6 Wh, min. 1200 measurements
Measuring principle		Stylus method
Probe		Inductive skidded probe
Measuring force	N	0.75 mN
Order no.		**6910230**
List price	£	~~1,963.50~~
Offer price	£	**1,668.98**

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MARSURF M 300 SET Mobile Roughness Measuring Instrument

Perfect for accurate measurements in the production environment

USB

Features
- Automatic profile detection and corresponding selection of filters and traversing length conforming to standards
- Individual sampling lengths and short cutoff can be selected
- Printing of R-profile (ISO/ASME/JIS), P-profile (MOTIF), material ratio curve, measuring record
- Measuring units (µm/µinch) and standards (ISO/JIS/ASME/MOTIF) are selectable

M 300 SET contents:
- M 300 evaluation instrument
- RD 18 drive unit with integrated standard
- PHT 6-350 / 2 µm default probe (conforming to standards)
- Height adjustment, probe protection, 2x USB cable, carrying case, etc.
- Includes Mahr Calibration certificate

M 300

Offer price
£ 2,805.00
Order no. 6910401

Product		M 300
Measuring range	µm	350
Parameters		Ra, Rz (Ry (JIS) equivalent to Rz), Rz (JIS), Rq, Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, R3z, RPc, Rmr (tp (JIS, ASME) equivalent to Rmr), RSm, RSk, S, CR, CF, CL, R, Ar, Rx, Rv
Stylus tip	µm	2 µm
Calibration function		Dynamic
Memory		Store up to 40,000 results and up to 30 profiles
Dimensions (L x W x H) of the drive unit	mm	130 x 70 x 50
Dimensions (L x W x H) of the evaluation instrument	mm	190 x 140 x 75
Weight of the drive unit	g	approx. 300
Weight of the evaluation unit	kg	approx. 1
Measuring principle		Stylus method
Probe		Inductive skidded probe
Measuring force	N	0.75 mN
Order no.		**6910401**
List price	£	3,740.00
Offer price	£	2,805.00

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The net prices are shown in £, they exclude sales tax and are valid from April 1st, 2017 until May 31st, 2017

MARSURF M 300 C SET Mobile Roughness Measuring Instrument

Perfect for accurate measurements in the production environment

USB

Features
- Automatic profile detection and corresponding selection of filters and traversing length conforming to standards
- Individual sampling lengths and short cutoff can be selected
- Printing of R-profile (ISO/ASME/JIS), P-profile (MOTIF), material ratio curve, measuring record
- Measuring units (μm/μinch) and standards (ISO/JIS/ASME/MOTIF) are selectable

M 300 C SET contents:
- M 300 or M 300 C evaluation instrument
- Cylindrical drive unit RD 18 C
- PHT 6-350 / 2 μm default probe (conforming to standards)
- Roughness standard PRN 10 with a Mahr calibration certificate
- Height adjustment, probe protection, 1x USB cable (for connection to a PC), carrying case, etc.

M 300 C

Note: An additional separate MarSurf RD 18 C2 drive unit for transverse tracing for M 300 C is also available!

Offer price
£ 2,805.00
Order no. 6910431

Product		M 300 C
Measuring range	μm	350
Parameters		Ra, Rz (Ry (JIS) equivalent to Rz), Rz (JIS), Rq, Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, R3z, RPc, Rmr (tp (JIS, ASME) equivalent to Rmr), RSm, RSk, S, CR, CF, CL, R, Ar, Rx, Rv
Stylus tip	μm	2 μm
Calibration function		Dynamic
Memory		Store up to 40,000 results and up to 30 profiles
Dimensions (L x W x H) of the drive unit	mm	139 x 26
Dimensions (L x W x H) of the evaluation instrument	mm	190 x 140 x 75
Weight of the drive unit	g	approx. 300
Weight of the evaluation unit	kg	approx. 1
Measuring principle		Stylus method
Probe		Inductive skidded probe
Measuring force	N	0.75 mN
Order no.		**6910431**
List price	£	~~3,740.00~~
Offer price	£	2,805.00

All illustrations and technical data are without guarantee. All list prices are the recommended retail prices.
The net prices are shown in £, they exclude sales tax and are valid from April 1st, 2017 until May 31st, 2017

THE SECOND DIMENSION IN METROLOGY

With MarVision optical measuring instruments, Mahr offers you a **quick and reliable solution to many different 2D measurement tasks** – from precision products for the manufacturing industry to medical technology and miniaturized electronic components. **Precise measuring instruments** and **efficient operating and evaluation units** meet the highest demands.

MARVISION SM 150 / SM 160 Stereo-Zoom Microscopes

Inspection of workpieces on the shop floor or in the quality control laboratory

Offer price
£ 690.80
Order no. 4245001

Features
- High quality optics for light intensive and sharp 3D images
- Continuously variable magnification due to the adjustable zoom lens
- Focusing with an ergonomic handwheel, mounted either side, ideal for either a left or right handed operator
- Vee-block head tilted to 45° and rotatable through 360°; with dioptric adjustment (54 – 76 mm)
- Illumination 12 V /15 W, integrated incident and transmitted light, continuously variable (SM 150 only)

Product	Magnifiation	Field of view diameter	Observation tube angle	Optical tube	Working distance	Max. height of test piece	Order no.	List price £	Offer price £
SM 150	Variable 7x – 45x	28 – 5 mm	45 °	Binocular	105 mm	75 mm	4245001	~~767.55~~	690.80
SM 160							4245003	~~1,092.25~~	983.03

MARVISION SM 151 Stereo-Zoom Microscope incl. CamSet

Powerful stereo microscope for documentation with first class optics

Offer price
£ 1,403.01
Order no. 9104848

Features
- High quality optics for light intensive and sharp 3D images
- Continuously variable magnification due to the adjustable zoom lens
- Focusing with an ergonomic handwheel, mounted either side, ideal for either a left or right handed operator
- Vee-block head tilted to 45° and rotatable through 360°; with dioptric adjustment (54 – 76 mm)
- Illumination 12 V /15 W, integrated incident and transmitted light, continuously variable

Product	Magnifiation	Field of view diameter	Observation tube angle	Optical tube	Working distance	Max. height of test piece	Order no.	List price £	Offer price £
SM 151	Variable 7x – 45x	28 – 5 mm	45 °	Trinocular	105 mm	75 mm	9104848	~~1,558.90~~	1,403.01

All illustrations and technical data are without guarantee. All list prices are the recommended retail prices.
The net prices are shown in £, they exclude sales tax and are valid from April 1st, 2017 until May 31st, 2017

MARVISION MM 420 / MM 420 CNC Workshop Measuring Microscope with Image Processing

Simple, but powerful, measuring functions

Offer price
£ 14,951.93
Order no. 9106534

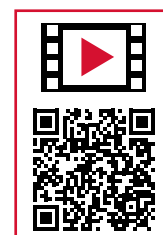**M3 software with touchscreen PC**

MM 420

Applications:

- Measurement or determination of geometric elements (point, straight line, circle, distance, intersection point, etc.) by automatic edge detection, e.g. on punched and bent components, plastic components, and circuit boards.

Features

- Integrated color camera
- Zoom lens, optionally motorized
- LED ring light: 1 ring and 4 segments, individually switchable and dimmable
- LED transmitted light: dimmable
- Solid granite base
- Sturdy steel XY table, precision-mounted
- Quick and fine adjustment of axes
- Optical incremental measuring system for outstanding accuracy and reliability
- Laser pointer for position finding

Operating and display unit M3 software with touchscreen PC

- 23" touchscreen with keyboard and mouse
- Based on Windows 10; therefore possible to install further software
- Operation via the Multi-Touch screen or with a mouse/keyboard
- Large video image
- Reference/actual evaluation with tolerances
- Measuring record output with company logo
- Represented graphically with dimensions
- Automatic edge detection, even on low-contrast parts
- Statistics (minimum, maximum, range, standard deviation, 6-sigma etc.)
- Stitching (stitching of several individual pictures to create one big picture (rectangular stitching, open stitching))

Product		MM 420	MM 420	MM 420 CNC
Lens		Fixed	Zoom	Motorized Zoom
Magnification	mm	select either 40x, 60x, 100x	0.7x - 4.5x	6.5:1
Measuring range X/Y	mm		200 / 100	
200 extension in Z	mm		315 / 220	
Size of table	mm		370 x 210	
Maximum table load	kg		20	
Measuring system			Built-in incremental scale	
Measuring system - resolution	µm		0.001	
Measuring system - E1 X/Y in µm			1.9 + (L/100)	
Measuring system - E2 XY in µm			2.9 + (L/100)	
Working distance	mm		115	
Max. workpiece height 0.5x	mm		20	
Lighting			LED incident and transmitted light, adjustable	
Dimensions H x W x D	mm	700 x 480 x 430	700 x 650 x 550	700 x 650 x 550
Order no.		9106534	4247601	4247701
List price	£	16,613.25	17,425.00	26,966.25
Offer price	£	14,951.93	15,682.50	24,269.63

Accessories for microscopes: see general catalog, MarVision - Chapter 18

Handheld gauges	Millimar	Digimar	MarVision	MarSurf
MarSurf	MarSurf	MarSurf	MarSurf	MarForm
MarForm	Precimar	Precimar	Precimar	MarShaft
MarGear	MarSolution	MarSolution	MarSolution	Services
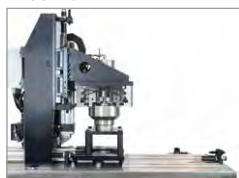
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