

Digital Caliper 16 EWR with data output



REFERENCE




Features

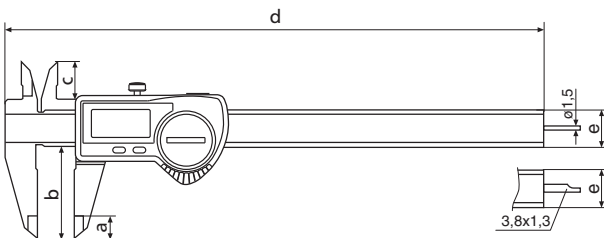
Functions:

ON/OFF
RESET (Set display to zero)
mm/inch
Reference Lock/Unlock
DATA (Data transmission via
connection cable)
Auto-ON/OFF

- Immediate measurement due to the Reference system
- Excellent resistance against dust, coolants and lubricants. protection class IP67
- MarConnect data output, choose alternatively: USB, OPTO RS232C or Digimatic
- Dirt wipers are integrated in the slide
- Life of the battery up to 3 years
- Max measuring speed 2.5 m/s (100"/s)
- High contrast LCD with 8.5 mm high digits
- Lapped guide way
- Slide and beam made of hardened stainless steel
- Measuring blades for inside measurement
- Step measuring function
- Locking screw
- Supplied with: Case, battery, operating instructions

Technical Data

Measuring range		Resolution	Error limit G		Depth rod		Friction wheel	Order no.
mm	(inch)	mm/inch	mm	DIN 862				
150	(6")	0.01/ .0005"	0.03	●	●			4103064
150	(6")	0.01/ .0005"	0.03	●		●		4103066
200	(8")	0.01/ .0005"	0.03	●				4103068
300	(12")	0.01/ .0005"	0.05					4103070
150	(6")	0.01/ .0005"	0.03	●	●		●	4103065
150	(6")	0.01/ .0005"	0.03	●		●	●	4103067
200	(8")	0.01/ .0005"	0.03	●			●	4103069
300	(12")	0.01/ .0005"	0.05				●	4103071



Dimensions

mm	a	b	c	d	e
150	10	40	16	235	16 x 3
200	10	50	19	285	16 x 3.5
300	14	64	19	388	16 x 4

Accessories

	Order no.
Depth Measuring Bridge	16 Em 4102020
Battery 3V, Type CR 2032	4102520
Data Connection Cable USB (2 m)	16 EXu 4102357
Data Connection Cable Opto RS232C (2 m), with SUB-D jack 9-pin	16 EXr 4102410
Data Connection Cable Digimatic (2 m), Flat plug 10-pin	16 EXd 4102411

Accessories for Data Processing see Dimensional Metrology catalog, Chapter 11

MarCal. The new Generation with the Reference-System

WATERPROOF CALIPERS

► | Mahr once again sets a new standard in the caliper product segment with the new generation of MarCal Reference calipers:

With the new Reference system from Mahr the handling of the caliper has become considerably simpler and more far comfortable, as the zero-position only has to be set once. For all further measurements this setting remains stored. With the high degree of protection, in accordance to IP67 the MarCal 16 EWR is protected against dust, coolants and lubricants and is therefore suitable to be used in the most difficult workshop conditions. Furthermore, if you need to document your measured data, the MarConnect interface offers you the optimal connection to your evaluation system. | ◀



1869

Vernier Caliper
No. 1



The **first caliper** from Mahr

1899

Vernier Caliper
Type Carl



Caliper in the present modern form **for inside, outside and depth measurements**

1951

Super Vernier Caliper
16 N



Caliper with a **recessed main scale for the protection of the graduation lines**, a Mahr-Patent

1985

Digital Caliper
16 E



Digital caliper digital **with a data output** for the acquisition of measured values

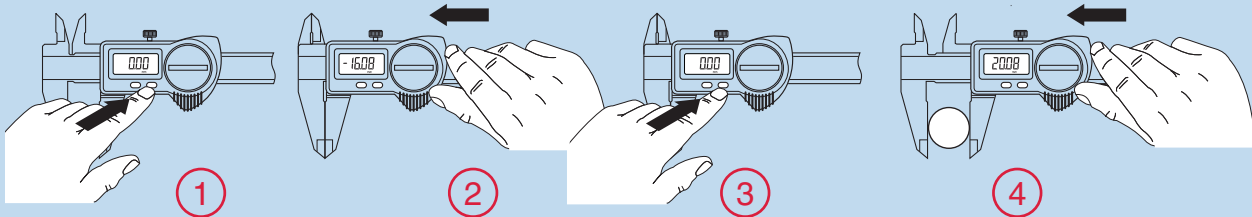
The innovative Reference-System

Just set once to zero

All Mahr digital calipers with this logo **REFERENCE** are equipped with the innovative Reference-System. The zero position just has to be set once: after setting the zero position, the zero remains stored for all further measurements. Therefore, once the caliper is switched ON or the slide is moved the caliper is immediately ready for measurement. The need to reset to zero with a conventional caliper once the caliper is switched on has now become obsolete.

- ① Switch ON ② Close the measuring jaws ③ Set to zero ④ Results of measurement

Conventional



REFERENCE - System



1999

Digital Caliper MarCal 16 EX



Caliper with a **MarConnect interface** for trouble-free connection to all commercial evaluation devices

2003

Digital Caliper MarCal 16 EW



Waterproof caliper with **IP67 protection class** and **Reference-Lock function** to secure the zero position

2009

Digital Caliper MarCal 16 EWR



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Always ready to measure thanks to the **Reference-System**

MarCal. The new Generation with the Reference-System

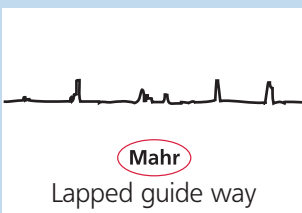
WATERPROOF CALIPERS

Superior quality of the guide ways

Only MarCal calipers have lapped guide way surfaces, these guarantee an even and sensitive run of the slide. Additionally, the service life of the caliper increases compared to a ground guide way due to the greater contact area on the guide way surface.

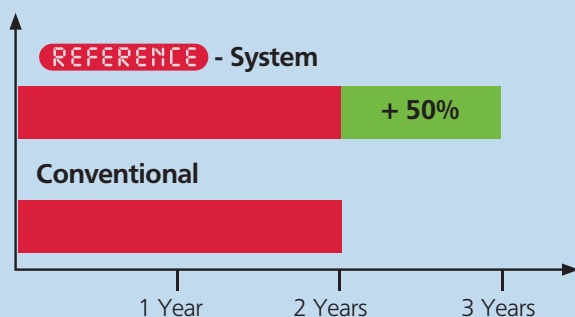


Surface of the guide way



50% longer battery lifetime

The new Reference system is extremely energy efficient as when the caliper is in standby mode; almost no power is required, thus extending the life of the battery to up to 50%.



Security due to the Reference Lock function

- Zero-position is secured
- Operating error is not possible

The digital caliper MarCal 16 EWR Reference is equipped with a LOCK function. With this key lock the zero position is secured and operating error is avoided.



The only one with a universal MarConnect interface

Regardless of which evaluation device you are using, with a MarConnect interface you always have the optimal connection.



USB ready: For direct connection to a PC. In conjunction with the MarCom software you can transfer your measured values directly into MS Excel or with keyboard code into any application



Digimatic: To connect to Digimatic compatible evaluation devices



Mahr Opto RS232: To connect to the COM interface on a PC

Ergonomic Design

The handy non-slip thumb support of the MarCal 16 EWR ensures even in unclean working conditions trouble-free handling and therefore reliable measuring results.



The high-contrast display with 8.5 mm high digits enables accurate, fatigue-free reading of the measurement results.

Excellent resistance against dust, coolant and lubricants



Due to the outstanding protection against dust and water the digital caliper MarCal 16 EWR Reference delivers precise and secure results even in the most difficult workshop conditions. The finished plastic components have an excellent outstanding chemical resistance.



Code Initials	IP	International Protection
First digit	6	Dust-tight
Second digit	7	Protected against temporary immersion in water

Degree of International Protection (IP)

WITH MAHR YOU ARE ON THE SAFE SIDE

MarCal. Digital Caliper **16 EWR**



Micromar. Digital Micrometer **40 EW**



MarCator. Digital Indicator **1086 W**



Millimes. Inductive Digital Comparator **2100**



IP-Protection classes

First digit is the degree of protection according to IEC 60529

Protection against particles, contaminants and dust

- | | | |
|----------|----------------|-----------|
| 0 | Not protected | |
| 1 | Particles | > 50.0 mm |
| 2 | Particles | > 12.5 mm |
| 3 | Particles | > 2.5 mm |
| 4 | Particles | > 1.0 mm |
| 5 | Dust protected | |
| 6 | Dust tight | |

Second digit is the degree of protection according to IEC 60529 (approximate)

Protection against wet conditions (fluids)

- | | |
|----------|-------------------------------------|
| 0 | Not protected |
| 1 | Falling water drops - vertical |
| 2 | Falling water drops - tilted < 15° |
| 3 | Spray water < 60° |
| 4 | Water splashing from all directions |
| 5 | Water jets from all directions |
| 6 | Powerful water jets |
| 7 | Temporary immersion in water |
| 8 | Continuous immersion in water |



Example:

IP67 means that the product is "Dust tight" and is protected against "Temporary immersion in water".