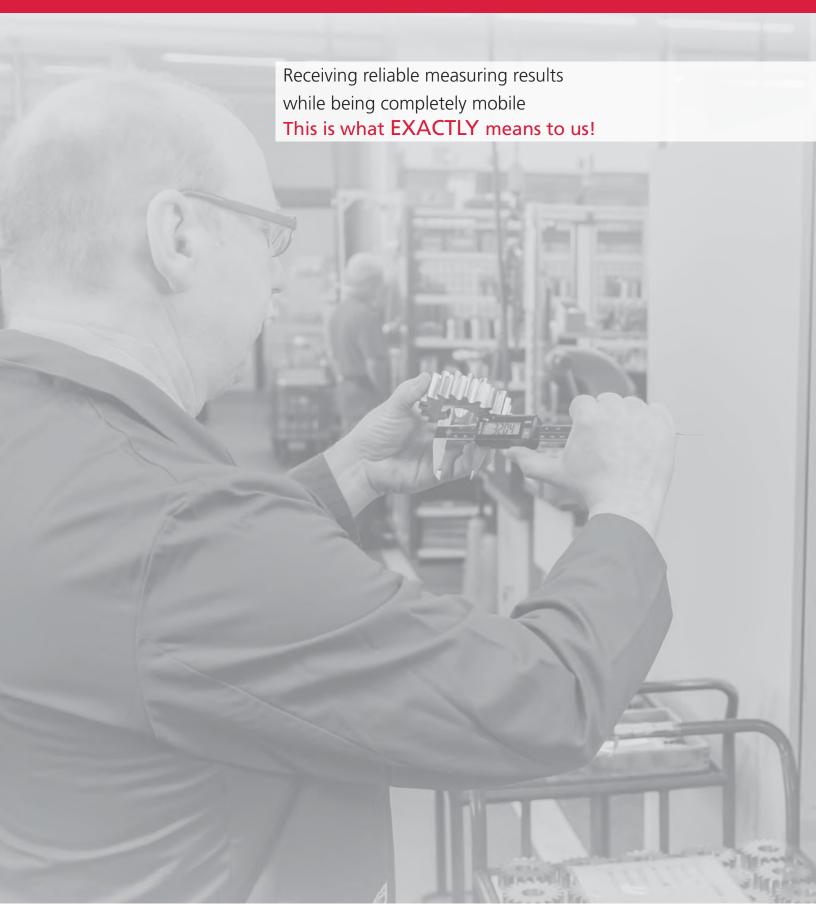


# **PRECISION GAGES**

Reliable wireless measuring results, while being completely mobile.

Mahr EXACTLY

This is what EXACTLY means to us!



With Mahr's new Integrated Wireless, you receive an Integrated Wireless data transmission system for the price of a cable. Data acquisition is now even simpler with the ability to transmit your measuring data directly into Microsoft® Excel or your CAQ/SPC Software package, without being tangled with excessive cables.

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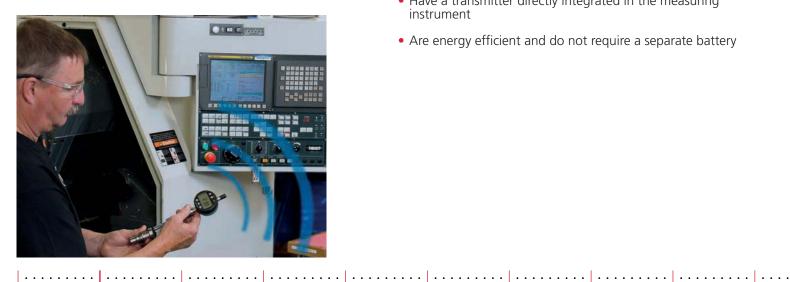
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# **SMAHRT METROLOGY**



# WIRELESS DEVICES FOR MORE MEASURING CONVENIENCE

Mahr's new devices with Integrated Wireless transmitters 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.

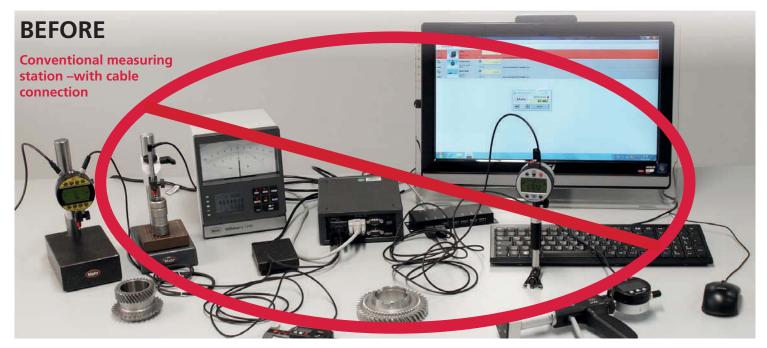


#### Mahr's caliper, micrometers and dial indicators herald a new era:

Mahr has enhanced its MarCal, Micromar and MarCator ranges with state-of-the-art patented technology.

#### These special measuring instruments:

- Have a transmitter directly integrated in the measuring instrument
- Are energy efficient and do not require a separate battery



#### **BENEFIT FROM THESE ADVANTAGES:**

Data Link	Integrated Wireless	Cable Monnection
Range	Max. <b>6 m</b>	Max. 2 m (without extension cable)
Freedom of Movement and Operation	Fully autonomous measuring without restrictions	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



# **SMAHRT CONNECTIVITY**



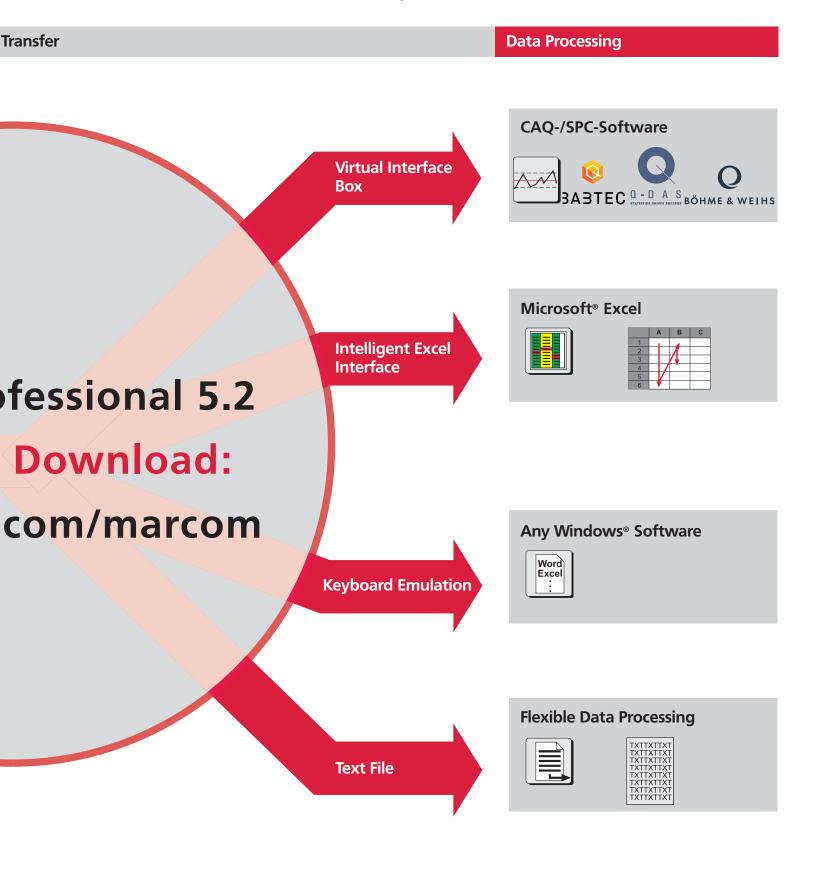
MarCom Pro
Free to
www.mahr.

**Data** 

Scan the QR code to watch simple and practical applications



**HIGHLIGHT:** Our contribution to the 4th Industrial Revolution: You can now download MarCom Professional Software free of charge!



### MarCal | The New Generation

Waterproof Digital Calipers with the Reference System and Integrated Wireless

### **Reference Lock Protection**

- Zero position is secured
- Operating error is not possible

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



# 3 Year Battery Life

The new Reference System is just as energy efficient as when the caliper is in standby mode; almost no power is required, therefore extending the life of the battery up to 3 years\*.



\* When Integrated Wireless is deactivated

# **High Quality Guideways**

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



# **Guideway Surface**



# **MarConnect Integrated Wireless**



With Mahr's new Integrated Wireless, you receive an Integrated Wireless data transmission system for the price of a data cable. Data acquisition with digital calipers is now even simpler with the ability to transmit your measured data directly into Microsoft® Excel or via a keyboard code into any Windows program. Data transmission is now possible without the problems of being caught up between cables.

### **Secure Data Transmission**



With Integrated Wireless, your data will be transferred to the PC and is confirmed with a message on the digital tool's display confirming the sent data has been transferred correctly and/or whether the tool is within reception range of the i-Stick.





# **Ergonomic Design**

The nonslip thumb support of the MarCal16 EWRi ensures secure handling and reliable measuring results, even in contaminated working conditions.





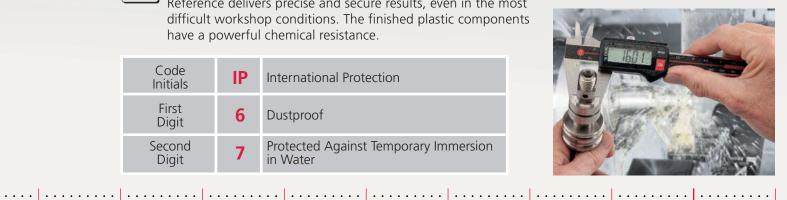
The high contrast display with 11 mm sized digits enables accurate and fatigue-free reading of the measurement results.

# Strong Resistance Against Dust, Coolant and Lubricants



Due to the outstanding protection against dust, water, coolant and lubricants, the digital caliper MarCal 16 EWRi Reference delivers precise and secure results, even in the most difficult workshop conditions. The finished plastic components have a powerful chemical resistance.

Code Initials	IP	International Protection
First Digit	6	Dustproof
Second Digit	7	Protected Against Temporary Immersion in Water



# MarCal 16 EWRi | Digital Caliper

#### **Functions**

- ON/OFF
- AUTO-ON / OFF
- HOLD (storage of measured values)
- RESET (set display to zero)
- PRESET (for entering a numerical value)
- · Reversal of counting direction
- mm/in
- LOCK function (key lock)
- DATA (data transmission)
- · High contrast digital display
- Locking thumbscrew
- Lapped guideway
- Measuring blade for inside measurements
- Slide and beam made of hardened stainless steel
- Step measuring function
- Immediate measurements due to the Reference System
- Raised guideways for protection of the scale
- Strong resistance against dust, coolants and lubricants
- Dirt wipers integrated in the slide
- MarCom Professional Software free download:

#### www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and

wireless systems with USB and RS232 interface)

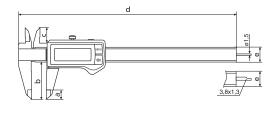
- Digit Height:11 mm
- Data Interface: Integrated Wireless
- Energy Supply: Battery life approximately 3 years (approximately ½ year in wireless mode)
- IP Protection Category: IP 67
- Package Contains: Battery, Instruction Manual, Case



#### **Technical Data**

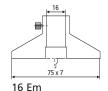
Order No.	Product Type	Measuring Range	Resolution	Error Limit	Standard	Depth Rod	Friction Wheel
4103400	16 EWRi	0 -150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	DIN 862	Round	
4103401	16 EWRi	0 -150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	DIN 862	Round	•
4103402	16 EWRi	0 -150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	DIN 862	Rectangular	
4103403	16 EWRi	0 -150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	DIN 862	Rectangular	•
4103404	16 EWRi	0 - 200 mm / 0 - 8 in	0,01 mm / 0.0005 in	0,03 mm	DIN 862	Rectangular	
4103405	16 EWRi	0 - 200 mm / 0 - 8 in	0,01 mm / 0.0005 in	0,03 mm	DIN 862	Rectangular	•
4103406	16 EWRi	0 - 300 mm / 0 -12 in	0,01 mm / 0.0005 in	0,04 mm	Factory Standard		
4103407	16 EWRi	0 - 300 mm / 0 -12 in	0,01 mm / 0.0005 in	0,04 mm	Factory Standard		•

Order No.	a	b	С	d	е
4103400	10 mm	40 mm	16 mm	235 mm	16 mm
4103401	10 mm	40 mm	16 mm	235 mm	16 mm
4103402	10 mm	40 mm	16 mm	235 mm	16 mm
4103403	10 mm	40 mm	16 mm	235 mm	16 mm
4103404	10 mm	50 mm	19 mm	285 mm	16 mm
4103405	10 mm	50 mm	19 mm	285 mm	16 mm
4103406	14 mm	64 mm	19 mm	388 mm	16 mm
4103407	14 mm	64 mm	19 mm	388 mm	16 mm



### Accessories

Order No.	Product Description	Product Type
4102020	Depth bridge (75 mm x 7 mm)	16 Em
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V. CR 2032	





i-Stick



# MarCal 16 EWRi-C / 16 EWRi-H Digital Caliper for Special Applications

#### **Functions**

- ON/OFF
- AUTO-ON / OFF
- HOLD (storage of measured values)
- RESET (set display to zero)
- PRESET (for entering a numerical value)
- Reversal of counting direction
- mm/in
- LOCK function (key lock)
- DATA (data transmission)
- · High contrast digital display
- Locking thumbscrew
- Lapped guideway
- Measuring blade for inside measurements
- Slide and beam made of hardened stainless steel
- Step measuring function
- Immediate measurements due to the Reference System
- Raised guideways for protection of the scale
- Strong resistance against dust, coolants and lubricants
- Dirt wipers integrated in the slide
- MarCom Professional Software free download:

#### www.mahr.com/marcom (only for Mahr data cables and

(only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height:11 mm
- Data Interface: Integrated Wireless
- Energy Supply: Battery life approximately 3 years (approximately ½ year in wireless mode)
- IP Protection Category: IP 67
- Package Contains: Battery, Instruction Manual, Case

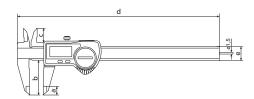




#### **Technical Data**

Order No.	Product Type	Measuring Range	Resolution	Error Limit	Standard	Depth Rod
4103372	16 EWRi-C ceramic	0 - 150 mm / 0 - 6 in	0,01 mm / .0005 in	0,03 mm	DIN 862	Round
4103373	16 EWRi-H carbide	0 - 150 mm / 0 - 6 in	0,01 mm / .0005 in	0,03 mm	DIN 862	Round

Order No.	а	b	С	d	е
4103372	10 mm	40 mm	16 mm	235 mm	16 mm
4103373	10 mm	40 mm	16 mm	235 mm	16 mm



#### Accessories

Order No.	Product Description	Product Type
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	

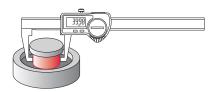


i-Stick

# MarCal Digital Caliper for Special Applications

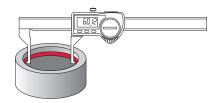


### MarCal 16 EWRi-AA



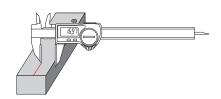
**Inward Offset Jaws** 

# MarCal 16 EWRi-Al



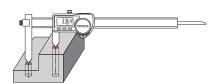
**Outward Pointed Jaw** 

# MarCal 16 EWRi-AR



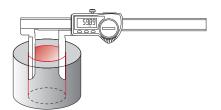
Scribing

### MarCal 16 EWRi-BA



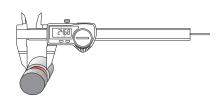
Adjustable Hole Center

### MarCal 16 EWRi-LI



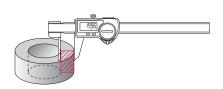
Long Measuring Jaw

# MarCal 16 EWRi-NA



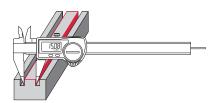
Key Seat

# MarCal 16 EWRi-RW



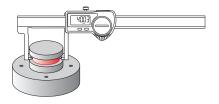
Well Thickness Jaws

# MarCal 16 EWRi-S



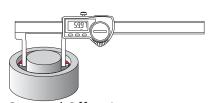
**Pointed** 

# MarCal 16 EWRi-SA



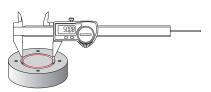
**Inward Pointed Jaws** 

### MarCal 16 EWRi-SI



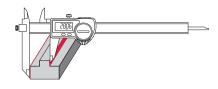
**Outward Offset Jaws** 

### MarCal 16 EWRi-SM



Narrow Jaws

### MarCal 16 EWRi-VS



Adjustable Jaws

# MarCal Digital Caliper for Special Applications

#### **Functions**

- ON/OFF
- AUTO-ON / OFF
- HOLD (storage of measured values)
- RESET (set display to zero)
- PRESET (for entering a numerical value)
- · Reversal of counting direction
- mm/in
- LOCK function (key lock)
- DATA (data transmission)
- High contrast digital display
- Locking thumbscrew
- Lapped guideway
- Measuring blade for inside measurements
- Slide and beam made of hardened stainless steel
- · Step measuring function
- Immediate measurements due to the Reference System
- Raised guideways for protection of the scale
- Strong resistance against dust, coolants and lubricants
- Dirt wipers integrated in the slide
- MarCom Professional Software free download:

# www.mahr.com/marcom

(only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height:11 mm
- Data Interface: Integrated Wireless
- Energy Supply: Battery life approximately 3 years (approximately ½ year in wireless mode)
- IP Protection Category: IP 67
- Package Contains: Battery, Instruction Manual, Case

#### **Technical Data**

Order No.	Product Type	Measuring Range	Resolution	Error Limit	Depth Rod
4103379	16 EWRi-AA	0 - 150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	None
4103380	16 EWRi-Al	10 mm -160 mm / 0.4 in - 6.3 in	0,01 mm / 0.0005 in	0,03 mm	None
4103382	16 EWRi-AR	0 - 200 mm / 0 - 8 in	0,01 mm / 0.0005 in	0,03 mm	Rectangular
4103384	16 EWRi-BA	10 mm – 210 mm / 0.4 in - 8.3 in	0,01 mm / 0.0005 in	0,04 mm	Rectangular
4103385	16 EWRi-LI	10 mm – 200 mm / 0.4 in - 8 in	0,01 mm / 0.0005 in	0,05 mm	None
4103374	16 EWRi-NA	0 - 150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	Round
4103381	16 EWRi-RW	0 - 150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,05 mm	None
4103375	16 EWRi-S	0 - 150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	Round
4103377	16 EWRi-SA	0 –140 mm / 0 - 5.5 in	0,01 mm / 0.0005 in	0,03 mm	None
4103378	16 EWRi-SI	20 mm –170 mm / 0.8 in - 6.7 in	0,01 mm / 0.0005 in	0,03 mm	None
4103376	16 EWRi-SM	0 - 150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm	Round
4103383	16 EWRi-VS	0 - 200 mm / 0 - 8 in	0,01 mm / 0.0005 in	0,04 mm	Rectangular

#### Accessories

Order No.	Product Description	Product Type
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	



i-Stick



For detailed information about the special caliper line, visit www.mahr.com

# MarCal 16 EWRi-V Digital Universal Caliper

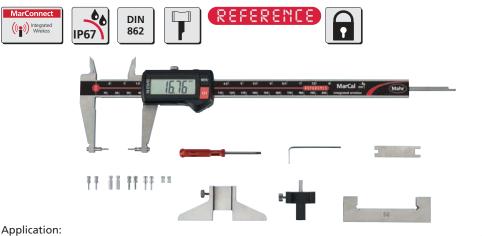
#### **Functions**

- AUTO-ON / OFF
- ON/OFF
- DATA (data transmission via connection cable)
- HOLD (storage of measured values)
- PRESET (for entering a numerical value)
- RESET (set display to zero)
- mm/in
- LOCK function (key lock)
- · High contrast digital display
- Locking thumbscrew
- Lapped guideway
- Measuring blade for inside measurements
- Slide and beam made of hardened stainless steel
- Step measuring function
- Immediate measurements due to the Reference System
- Raised guideways for protection of the scale
- Strong resistance against dust, coolants and lubricants
- Dirt wipers integrated in the slide
- MarCom Professional Software free download:

#### www.mahr.com/marcom

(only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height: 11 mm
- Data Interface: Integrated Wireless
- Energy Supply: Battery life approximately 3 years (approximately 1/2 year in wireless
- IP Protection Category: IP 67
- · Package Contains: Battery, Instruction Manual, Case, Setting Gage for Inside Measurement 16 Eel, Measuring Force Device 16 Ec, Depth Measuring Bridge 16 Em, Anvils for Outside Measurement 16 Eea 1-3, Anvils for Inside Measurement 16Eei 1-3



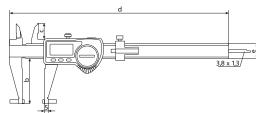
- Used as standard caliper (four measuring directions), with standard accessories for measuring recesses, grooves, etc.
- Used with special accessories for measuring threads, bores and gears



#### **Technical Data**

Order No.	Product Type	Measuring Range	Resolution	Error Limit	Standard	Depth Rod	Including Accessories
4118907	16 EWRi-V	0 - 200 mm / 0 - 8 in	0,01 mm / 0.0005 in	0,03 mm	DIN 862	Rectangular	•

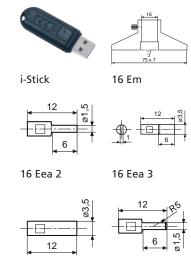
Order No.	b	С	d	е
4118907	48 mm	16,5 mm	285 mm	16 mm



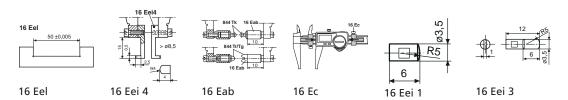
16 Eea 1

#### Accessories

Order No	Product Description	Product Type
4102020	Depth bridge (75 mm x 7 mm)	16 Em
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	
4118810	Anvil for outside measurement (3,5 x 12 mm)	16 Eea 1
4118811	Anvil for outside measurement (1,5 x 6 mm)	16 Eea 2
4118812	Anvil for outside measurement (3,5 x 6 mm)	16 Eea 3
4118813	Anvil for inside measurement (3,5 x 6 mm)	16 Eei 1
4118814	Anvil for inside measurement (1,5 x 6 mm)	16 Eei 2
4118815	Anvil for inside measurement (3,5 x 6 mm)	16 Eei 3
4118816	Anvil for inside measurement (4 x 2,5 mm)	16 Eei 4
4118817	Setting gage for inside measurement (50 mm)	16 Eel
4118818	Measuring force device	16 Ec
4118819	Mounting attachment for thread anvils 844 TG/844Tr and ball anvils 844 Tk	16 Eab
4879602	Screws M2x8	



16 Eei 2



# MarCal 30 EWRi|Digital Depth Gage

#### **Functions**

- ON/OFF
- AUTO-ON / OFF
- RESET (set display to zero)
- mm/in
- PRESET (for entering a numerical value)
- LOCK function (key lock)
- HOLD (storage of measured
- Reversal of counting direction
- DATA (data transmission)
- · High contrast digital display
- Locking thumbscrew
- Lapped guideway
- Measuring surfaces made of steel
- Slide and beam made of hardened stainless steel
- Immediate measurements due to the Reference System
- Raised guideways for protection of the scale
- Strong resistance against dust, coolants and lubricants
- Dirt wipers integrated in the slide
- Digit Height: 11 mm
- Data Interface: Integrated Wireless
- Energy Supply: Battery life approximately 3 years (approximately ½ year in wireless mode)
- IP Protection Category: IP 67
- Package Contains: Battery, Instruction Manual, Case







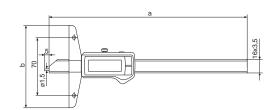




#### **Technical Data**

Order No.	Product Type	Measuring Range	Resolution	Error Limit
4126755	30 EWRi	0 -150 mm / 0 - 6 in	0,01 mm / 0.0005 in	0,03 mm
4126754	30 EWRi	0 –200 mm / 0 - 8 in	0,01 mm / 0.0005 in	0,03 mm
4126756	30 EWRi	0 –300 mm / 0 - 12 in	0,01 mm / 0.0005 in	0,04 mm
4126757	30 EWRi	0 –500 mm / 0 - 20 in	0,01 mm / 0.0005 in	0,05 mm

Order No.	а	b
4126755	234 mm	100 mm
4126754	284 mm	100 mm
4126756	384 mm	150 mm
4126757	584 mm	150 mm

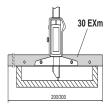


#### Accessories

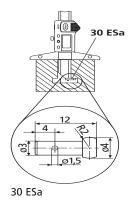
Order No.	Product Description	Product Type
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	
4125611	Anvil (4 mm)	30 ESa
4126510	Cross beam extension (300 mm)	30 EXm
4126511	Cross beam extension (200 mm)	30 EXm



i-Stick



30 EXm 30 EXm



# MarCal 30 EWRi-D | Digital Depth Gage

#### **Functions**

- ON/OFF
- AUTO-ON / OFF
- mm/in
- LOCK function (key lock)
- RESET (set display to zero)
- PRESET (for entering a numerical
- DATA (data transmission)
- HOLD (storage of measured values)
- · High contrast digital display
- · Locking thumbscrew
- Lapped guideway
- Measuring surfaces made of steel
- Slide and beam made of hardened stainless steel
- Immediate measurements due to the Reference System
- Raised guideways for protection of the scale
- Strong resistance against dust, coolants and lubricants
- Dirt wipers integrated in the slide
- Digit Height: 11 mm
- Data Interface: Integrated Wireless
- Energy Supply: Battery life approximately 3 years (approximately 1/2 year in wireless
- IP Protection Category: IP 67
- Package Contains: Battery, Instruction Manual, Case





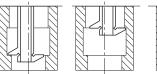






#### Application:

• Measuring groove widths and distances between grooves

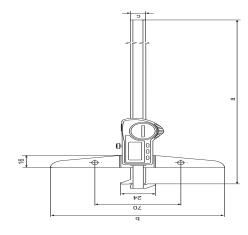




#### **Technical Data**

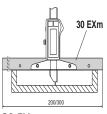
Order No.	Product Type	Measuring Range	Resolution	Error Limit
4126533	30 EWRi-D	0 - 200 mm / 0 - 8 in	0,01 mm / 0.0005 in	0,03 mm
4126534	30 EWRi-D	0 - 300 mm / 0 -12 in	0,01 mm / 0.0005 in	0,04 mm

Order No.	a	b	С
4126533	281 mm	100 mm	12 mm
4126534	381 mm	150 mm	12 mm



#### Accessories

Order No.	Product Description	Product Type
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	
4126510	Cross beam extension (300 mm)	30 EXm
4126511	Cross beam extension (200 mm)	30 EXm





30 EXm

i-Stick

# MarCal 30 EWRi-N | Digital Depth Gage

#### **Functions**

- ON/OFF
- AUTO-ON / OFF
- mm/inch
- LOCK function (key lock)
- RESET (set display to zero)
- PRESET (for entering a numerical
- DATA (data transmission)
- HOLD (storage of measured values)
- · High contrast digital display
- Locking thumbscrew
- Lapped guideway
- Measuring surfaces made of steel
- Slide and beam made of hardened stainless steel
- Immediate measurements due to the Reference System
- Raised guideways for protection of the scale
- Strong resistance against dust, coolants and lubricants
- Dirt wipers integrated in the slide
- Digit Height:11mm
- Data Interface: Integrated Wireless
- Energy Supply: Battery life approximately 3 years (approximately ½ year in wireless
- IP Protection Category: IP 67
- Package Contains: Battery, Instruction Manual, Anvils 30 Ent (1 mm), 902 (4 mm) and 903 (4 mm), Case





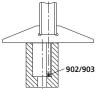






#### Application:

Measuring groove widths and distances between grooves

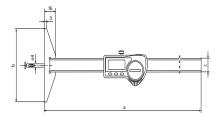




#### **Technical Data**

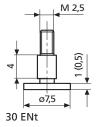
Order No.	Product Type	Measuring Range	Resolution	Error Limit
4126532	30 EWRi-N	0 –100 / 0 - 4 in	0,01 mm / 0.0005 in	0,03 mm

	a	b	С
4126532	268 mm	85 mm	16 mm



### Accessories

Order No.	Product Description	Product Type
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	
4126310	Disc type anvil (7,5 mm x 0,5 mm)	30 ENt
4882022	Disc type anvil (7,5 mm x 1 mm)	30 ENt





i-Stick

# Micromar | The Digital Micrometer Micromar 40 EWRi

Waterproof Micrometer with Integrated Wireless

### **Unconstrained Movement**



Integrated Wireless gives you unconstrained movement. For example, when using the digital micrometer or other wireless products, while measuring at the machine or on large parts, the user is not obstructed by cables.



# **Large Display**

The high contrast display with 10 mm sized digits enables accurate and fatigue-free reading of the measurement results.



### **Reference Lock Protection**

- Zero position is secured
- Operating error is not possible
- Lock prevents the pressing of buttons

The digital micrometer Micromar 40 EWRi Reference is equipped with a LOCK function. With this keylock, the zero position is secured and operating error is avoided.



# **IP Protection Category**



Strong resistance against dust, coolants and lubricants.

Code Initials	IP	International Protection
First Digit	6	Dustproof
Second Digit	5	Protected Against Powerful Water Jets



### **HOLD/DATA Function**

#### HOLD

Freezes the measured value after the measurement is taken in a difficult to access area where the display cannot be seen.

#### DATA

If data transmission is activated, the HOLD button acts as DATA button.



# **Tolerance Function with Warning Limits**

0

Measured value within tolerance limits



Warning limit: flashing arrow, if upper warning limit is reached

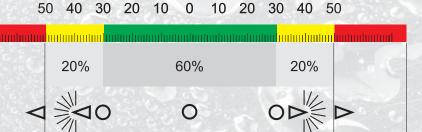


Warning limit: flashing arrow, if lower warning limit is reached



NO GO

Measured value out of tolerance



GO

NO GO

# Micromar 40 EWRi | Digital Micrometer

#### **Functions**

- RESET (set display to zero)
- ABS (display can be set to zero without losing reference to ORIGIN)
- mm/inch
- ORIGIN (for entering a numerical value)
- LOCK function (key lock)
- TOL (tolerance and warning limits)
- DATA (data transmission)
- HOLD (storage of measured values)
- High contrast digital display
- Hardened and ground stainless spindle
- Carbide tipped spindle and anvil
- · Rapid drive
- Ratchet integrated in the thimble
- Lacquered and heat insulated steel frame
- MarCom Professional Softwar free download:

www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height: 10 mm
- Data Interface: Integrated Wireless
- IP Protection Category: IP 65
- Package Contains: Instruction Manual, Battery, Setting Standard (from measuring range 25–50 mm), Case











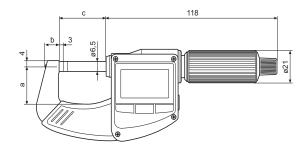




#### **Technical Data**

Order No.	Product Type	Measuring Range	Resolution	Error Limit	Spindle Thread Pitch	Measuring Force
4157100	40 EWRi	0 –25 mm / 0 - 1 in	0,001 mm / 0.00005 in	2 μm	0,5 mm	5 –10 N
4157101	40 EWRi	25 mm – 50 mm / 1 in - 2 in	0,001 mm / 0.00005 in	2 μm	0,5 mm	5 –10 N
4157102	40 EWRi	50 mm – 75 mm / 2 in - 3 in	0,001 mm / 0.00005 in	3 µm	0,5 mm	5 –10 N
4157103	40 EWRi	75 mm – 100 mm / 3 in - 4 in	0,001 mm / 0.00005 in	3 µm	0,5 mm	5 –10 N

Order No.	а	b	С
4157100	24 mm	9,5 mm	32 mm
4157101	36 mm	11 mm	57 mm
4157102	45 mm	13 mm	82 mm
4157103	57 mm	13 mm	107 mm



#### Accessories

Order no.	Product description	Product type
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	
4158000	Stand for holding outside micrometers	41 H



Scan the QR code to watch simple and practical applications





# Micromar 40 EWRi | Digital Micrometer Set

#### **Functions**

- RESET (set display to zero)
- ABS (display can be set to zero without losing reference to ORIGIN)
- mm/in
- ORIGIN (for entering a numerical value)
- LOCK function (key lock)
- TOL (tolerance and warning limits)
- DATA (data transmission)
- HOLD (storage of measured values)
- · High contrast digital display
- Hardened and ground stainless spindle
- Carbide tipped spindle and anvil
- Rapid drive
- Ratchet integrated in the thimble
- Lacquered and heat insulated steel frame
- MarCom Professional Software free download:

#### www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height: 10 mm
- Data Interface: Integrated Wireless
- IP Protection Category: IP 65
- Package contains: Instruction Manual, Battery, Setting Values, Case





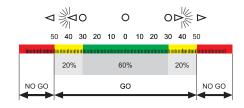






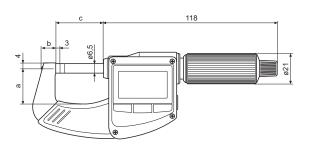






#### **Technical Data**

Order No.	Product Type	Measuring Range	Resolution	Spindle Thread Pitch	Measuring Force	Number of Micrometers
4157115	40 EWRi	0 mm - 100 mm / 0 - 4 in	0,001 mm / 0.00005 in	0,5 mm	5 –10 N	4



#### Accessories

Order No.	Product Description	Product Type
4102220	Receiver including MarCom Standard Software	i-Stick
4102520	Battery 3 V, CR 2032	
4158000	Stand for holding outside micrometers	41 H



# **MarCator** | **Digital Indicators**

### Digital Indicators with Tolerance Indication and Integrated Wireless

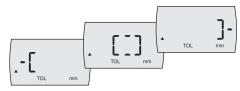
TOL

# **Clear Display**

Tolerance indication with the diplayed value. Displayed is the actual measured value and the tolerance zone position.



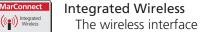
Tolerance indication without the value in the display. In and Out of tolerance will be indicated in the display as a symbol.



# **Error-free Operation**

Lock Function: Prevents unintentional activation of an operating button. Either all the operating buttons or only certain individual buttons can be locked. If a locked operating button is pressed, the LOCK symbol will appear in the display.

# Universal Data Interface



for the price of a cable.

#### USB

No interface box required; a simple and inexpensive way to set up multiple measuring instruments via a USB hub.



### Digimatic

To connect a Digimatic compatible evaluation instrument.



### Mahr Opto RS232C

For direct connection to a COM port on a PC.



#### Absolute Function:

Micrometer can be set in any position to 0,000 mm / 0.0000 in without losing reference to the preset value.

# **Protection Class**



Protection class IP54 (optional)

- Protection cap is sealed
- Rubber bellows for the measuring spindle
- Sealed battery compartment

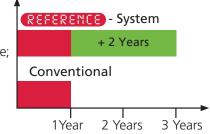
Code Initials	IP	International Protection
First Digit	5	Dust Protected
Second Digit	4	Protection Against Splash Water in All Directions

# 3 Year Battery Life

(((0)))

MarCator 1086R

The new Reference System is just as energy efficient as when the caliper is in standby mode; almost no power is required, therefore extending the life of the battery up to 3 years\*.



<sup>\*</sup> When Integrated Wireless is deactivated



# MarCator 1086 Ri | Digital Indicator

#### **Functions**

- ON/OFF
- RESET (set display to zero)
- mm/ir
- Reversal of counting direction
- PRESET (for entering a numerical value)
- TOL (enter tolerance limit values)
- <0> (tolerance GO / NO GO display mode)
- ABS (display can be set to zero without losing reference to preset)
- DATA (data transmission via connection cable)
- Factor (adjustable)
- LOCK (individual button lock)
- Integrated Wireless transmitter
- · High contrast LCD display
- Operating and display unit (bezel) can be rotated through 280°
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Immediate measurements due to the Reference System
- MarCom Professional Software free download:

#### www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height: 11 mm
- Data Interface: Digimatic, Opto RS232C, USB, Integrated Wireless
- IP Protection Category: IP 42
- Package Contains: Instruction Manual, Battery









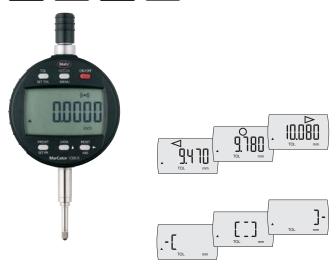








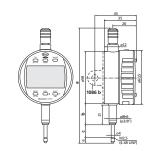




#### **Technical Data**

Order No.	4337624	4337625	4337626	4337627	4337628
Product Type			1086 Ri		
Measuring Span	12,5 mm / 0.5 in	25 mm / 1 in	50 mm / 2 in	100 mm / 4 in	25 mm / 1 in
Resolution	0,00	05 mm, 0,001	mm, 0,002 mn	n, 0,005 mm, 0,0	1 mm
Resolution	0.00	0002 in, 0.0000	5 in, 0.0001 in	n, 0.0002 in, 0.00	05 in
Error Limit	0,004 n	nm	0,008 mm	0,009 mm	0,004 mm
Error Limit Over 50 Graduations			0,002 mm		
Repeatability			0,001 mm		
Measuring Force	0,65 - 0,9 N	0,65 -1,15 N	1,25 - 2,7 N	1,8 - 3,5 N	0 - 0
Standard			Factory standa	ard	
Lifting Protection Cap			•		

Order No	a	b	С	Mounting Shaft
4337624	126,3 mm	23 mm	13,5 mm	8 mm
4337625	153,4 mm	26,8 mm	26,5 mm	8 mm
4337626	267,3 mm	40 mm	52 mm	8 mm
4337627	420,3 mm	91 mm	103 mm	8 mm
4337628	153,4 mm	26,8 mm	26,5 mm	8 mm



#### Accessories

Order No.	Product Description	Product Type
4884464	Battery 3 V, Type CR 2450	r roudet Type
4004404	, , , , ,	
4102357	Data connection cable USB (2 m) including MarCom Standard Software	16 EXu
4102915	Digimatic data cable (2 m)	16 EWd
4102410	Data connection cable RS232C (2 m)	16 EXr
4102220	Receiver including MarCom Standard Software	i-Stick
4375004	Protective cap for 1075 R / 1086 R / 1087 R	1086 s
4337421	Lug back	1086 b
4336311	Cable release (12,5 + 25 mm)	1085 a
4336237	Pneumatic lifting (12,5 + 25 mm)	1082 p
4310103	Adapter bush (.375" / 8 mm)	940
4336230	Pneumatic lifting (50 + 100 mm)	1082 p



# MarCator 1086 Ril Digital Indicator

#### **Functions**

- ON/OFF
- RESET (set display to zero)
- mm/ir
- Reversal of counting direction
- PRESET (for entering a numerical value)
- TOL (enter tolerance limit values)
- <0> (tolerance GO / NO GO display mode)
- ABS (display can be set to zero without losing reference to preset)
- DATA (data transmission via connection cable)
- Factor (adjustable)
- LOCK (individual button lock)
- Integrated Wireless transmitter
- · High contrast LCD display
- Operating and display unit (bezel) can be rotated through 280°
- Mounting shank and measuring spindle made of hardened stainless steel
- Immediate measurements due to the Reference System
- MarCom Professional Software free download:

#### www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height: 11 mm
- Data Interface: Digimatic, Opto RS232C, USB, Integrated Wireless
- IP Protection Category: IP 42
- Package Contains: Instruction Manual, Battery

















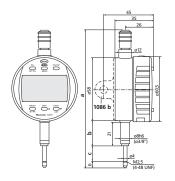
10.080



#### **Technical Data**

Order No.	4337134	4337135
Product Type	1086	5 Ri
Measuring Span	12,5 mm / 0.5 in	25 mm / 1 in
Resolution	0,01	mm
Resolution	0.000	05 in
Error Limit	0,02	mm
Error Limit Over 50 Graduations	0,02	mm
Repeatability	0,01	mm
Measuring Force	0,65 - 0,9 N	0,65 - 1,15 N
Standard	Factory s	tandard
Lifting Protection Cap	•	

Order No.	a	b	c	Mounting Shaft
4337134	126,3 mm	23 mm	13,5 mm	8 mm
4337135	153,4 mm	26,8 mm	26,5 mm	8 mm



#### Accessories

Order No.	Product Description	Product Type
4884464	Battery 3 V, Type CR 2450	
4102357	Data connection cable USB (2 m) including MarCom Professional Software	16 EXu
4102915	Digimatic data cable (2 m)	16 EWd
4102410	Data connection cable RS232C (2 m)	16 EXr
4102220	Receiver including MarCom Professional Software	i-Stick
4375004	Protective cap for 1075 R / 1086 R / 1087 R	1086 s
4337421	Lug back	1086 b
4310103	Adapter bush (.375" / 8 mm)	940
4336311	Cable release (12,5 + 25 mm)	1085 a
4336237	Pneumatic lifting (12,5 + 25 mm)	1082 p



i-Stick





2 p 1085 a



# MarCator 1086 WRi | Digital Indicator

#### **Functions**

- ON/OFF
- RESET (set display to zero)
- mm/ir
- Reversal of counting direction
- PRESET (for entering a numerical value)
- TOL (enter tolerance limit values)
- <0> (tolerance GO / NO GO display mode)
- ABS (display can be set to zero without losing reference to preset)
- DATA (data transmission via connection cable)
- Factor (adjustable)
- LOCK (individual button lock)
- Integrated Wireless transmitter
- · High contrast LCD display
- Operating and display unit (bezel) can be rotated through 280°
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Immediate measurements due to the Reference System
- MarCom Professional Softwarfree download:

#### www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit height: 11 mm
- Data interface: Digimatic, Opto RS232C, USB, Integrated Wireless
- IP protection category: IP 54
- Package Contains: Instruction Manual, Battery





















#### **Technical Data**

Order No.	4337142	4337143	
Product Type	1086	6 WRi	
Measuring Span	12,5 mm / 0.5 in 25 mm / 1 in		
Resolution	0,0005 mm, 0,001 mm, 0,0	02 mm, 0,005 mm, 0,01 mm	
Resolution	0.00002 in, 0.00005 in, 0.0001 in, 0.0002 in, 0.0005 in		
Error Limit	0,004 mm		
Error Limit over 50 Graduations	0,002 mm		
Repeatability	0,001 mm		
Measuring Force	0,65 - 1,4 N	1 - 2,25 N	
Standard	Factory standard		
Protective Measuring Spindle Cap		•	

Order No.	a	b	c	Mounting Shaft
4337142	144,3 mm	21 mm	28,5 mm	8 mm
4337143	193,2 mm	24,8 mm	50 mm	8 mm



#### Accessories

Order No.	Product Description	Product Type
4884464	Battery 3 V, Type CR 2450	
4102357	Data connection cable USB (2 m) including MarCom Professional Software	16 EXu
4102915	Digimatic data cable (2 m)	16 EWd
4102410	Data connection cable RS232C (2 m)	16 EXr
4102220	Receiver including MarCom Professional Software	i-Stick
4375004	Protective cap for 1075 R / 1086 R / 1087 R	1086 s
4337421	Lug back	1086 b
4336311	Cable release (12,5 + 25 mm)	1085 a
4310103	Adapter bush (.375" / 8 mm)	940
4336237	Pneumatic lifting (12,5 + 25 mm)	1082 p
4337472-Е	Rubber bellows (12,5 mm)	
4337474-Е	Rubber bellows (25 mm)	

...... ...





1082 p 1085 a

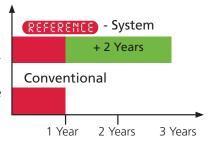
### MarCator 1087 Ri

# Digital Indicator with Integrated Wireless and Dynamic Measuring Functions

#### **Dynamic Measuring Functions** Universal Data Interface **Integrated Wireless** • MAX-MIN function ideal for testing MarConnect The wireless interface flatness and concentricity ( ))) Integrated Wireless for the price of a cable. • MAX and / or MIN for searching the reversal point No interface box required; a simple and inexpensive way USB to set up multiple measuring MIN instruments via a USB hub. Digimatic Mahr To connect a Digimatic **Digimatic** AX/MIN compatible evaluation instrument. Mahr Opto RS232C For direct connection to RS232C a COM port on a PC. **Clear Tolerance** Display TOL PRESET The integrated bar graph visualizes the **ABS** Absolute Function: tolerance deviation. Out of tolerance, above MarCator 1087 R Micrometer can be set in the upper or below the lower tolerance any position to 0,000 mm limit, is represented by arrows shown in the / 0.0000 in without losing display. reference to the preset value. Out of tolerance (Upper tol.) Tolerance Reference System 00 15 Out of tolerance The new uigital manage 1087 Ri are equipped with the (Lower tol.)

# 3 Year Battery Life

The new Reference System is just as energy efficient as when the caliper is in standby mode; almost no power is required, therefore extending the life of the battery up to 3 years\*.



<sup>\*</sup> When Integrated Wireless is deactivated

# Error-free Operation

conventional indicator.

Lock Function: Prevents unintentional

innovative Reference System. The zero position only has to be set one time: once it is set, the zero remains stored for all further measurements. Therefore, when the indicator is switched ON, or the measuring spindle

is moved, the indicator is immediately ready for measurement, eliminating the need to reset as with a



activation of an operating button. Either all the operating buttons or only certain individual buttons can be locked. If a locked operating button is pressed, the LOCK symbol will appear in the display.

# MarCator 1087 Ri | Digital Indicator

#### **Functions**

- 0 (set the analog display to zero)
- ABS (display can be set to zero without losing reference to preset)
- AUTO-ON / OFF
- DATA (data transmission via connection cable)
- Factor (adjustable)
- · LOCK (individual button lock)
- MAX/MIN memory for searching the reversal point
- ON/OFF
- PRESET (for entering a numerical value)
- RANGE (switch the measuring range and resolution)
- RESET (set display to zero)
- TIR (MAX-MIN) for testing flatness and concentricity
- TOL (enter tolerance limit values)
- Reversal of counting direction
- mm/in
- Integrated Wireless transmitter
- High contrast LCD display
- Operating and display unit (bezel) can be rotated through 280°
- Lifter protection cap on the measuring spindle
- Hardened stainless steel clamping shaft and measuring pin
- Immediate measurements due to the Reference System
- MarCom Professional Software free download: www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)
- Digit Height: 8,5 mm
- Data Interface: Digimatic, Opto RS232C, USB, Integrated Wireless
- Energy Supply: Battery operation
- IP Protection Category: IP 42
- Package Contains: Instruction Manual, Battery

















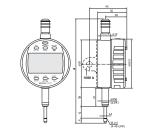




#### **Technical Data**

Order No.	4337663	4337665	4337667
Product Type	1087 Ri		
Measuring Range	12,5 mm / 0.5 in	25 mm / 1 in	50 mm / 2 in
Resolution		002 mm, 0,005 mm, 0,01 mr .0001 in, 0.0002 in, 0.0005 ii	
Readings	0,001 mm, 0,002	mm, 0,005 mm, 0,01 mm, 0,	,02 mm, 0,05 mm
Range of Analog Display	$\pm$ 0,01 mm, $\pm$ 0,02 mm, $\pm$ 0,04 mm, $\pm$ 0,1 mm, $\pm$ 0,2 mm		
Error Limit	0,004 mm 0,007 mm		
Error Limit Over 50 Graduations	0,002 mm		
Repeatability	0,001 mm		
Measuring Force	0,65 - 0,85 N		
Standard	Factory standard		
Lifting Protection Cap	•		

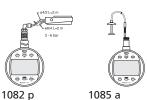
Order No.	а	b	С	Mounting Shaft
4337663	126,3 mm	23 mm	13,5 mm	8 mm
4337665	153,4 mm	26,8 mm	26,5 mm	8 mm
4337667	267,3 mm	40 mm	52 mm	8 mm



### Accessories

Order No.	Product Description	Product Type
4884464	Battery 3 V, Type CR 2450	
4102357	Data connection cable USB (2 m) including MarCom Standard Software	16 EXu
4102915	Digimatic data cable (2 m)	16 EWd
4102411	Digimatic data cable (2 m)	16 EXd
4102410	Data connection cable RS232C (2 m)	16 EXr
4102220	Receiver including MarCom Standard Software	i-Stick
4375004	Protective cap for 1075 R / 1086 R / 1087 R	1086 s
4337421	Lug back	1086 b
4336237	Pneumatic lifting (12,5 + 25 mm)	1082 p
4336311	Cable release (12,5 + 25 mm)	1085 a
4310103	Adapter bush (.375" / 8 mm)	940
4336230	Pneumatic lifting (50 + 100 mm)	1082 p





# MarCator 1087 BRi | Digital Indicator

#### **Functions**

- ON/OFF
- RESET (set display to zero)
- mm/ir
- PRESET (enter a numerical value)
- Reversal of counting direction
- TOL (enter tolerance limit values)
- START/STOP search for reversal point
- MAX/MIN memory for searching the reversal point
- ABS (display can be set to zero without losing reference to preset)
- 0 (set the analog display to zero)
- DATA (data transmission via connection cable)
- Factor (adjustable)
- LOCK (individual button lock)
- Integrated Wireless transmitter
- High contrast LCD display
- Operating and display unit (bezel) can be rotated through 280°
- Lifter protection cap on the measuring spindle
- Hardened stainless steel clamping shaft and measuring pin
- Immediate measurements due to the Reference System
- MarCom Professional Softwar free download:

#### www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)

- Digit Height: 8,5 mm
- Data Interface: Opto RS232C, Digimatic, USB, Integrated Wireless
- Energy Supply: Battery life approximately 3 years
- IP Protection Category: IP 42
- Package Contains: Instruction Manual, Battery













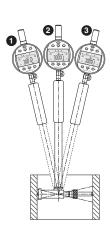




#### **Bore Gage Application**

When measuring with a 2-point bore gage, the reversing point will be calculated automatically during reversal. When used with the PRESET value, the ACTUAL measured value is shown on the display. The 1087 BRi can process 64 measurements per second for fast measurement certainty.

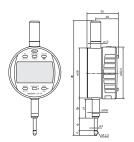




#### **Technical Data**

Order No.	4337664
Product Type	1087 BRi
Measuring Range	12,5 mm / 0.5 in
Resolution	0,0005, 0,001, 0,002, 0,005, 0,01
Resolution	0.00002 in, 0.00005 in, 0.0001 in, 0.0002 in, 0.0005 in
Readings	0,001 mm, 0,002 mm, 0,005 mm, 0,01 mm, 0,02 mm, 0,05 mm
Range of Analog Display	$\pm$ 0,01 mm, $\pm$ 0,02 mm, $\pm$ 0,04 mm, $\pm$ 0,1 mm, $\pm$ 0,2 mm
Error Limit	0,004 mm
Error Limit Over 50 Graduations	0,002 mm
Repeatability	0,001 mm
Measuring Force	0,65 - 0,9 N
Standard	Factory standard
Protective Measuring Spindle Cap	•

Order No.	a	b	С	Mounting Shaft
4337664	126,3 mm	23 mm	13,5 mm	8 mm



#### Accessories

Order No.	Product Description	Product Type
4884464	Battery 3 V, Type CR 2450	
4102357	Data connection cable USB (2 m) including MarCom Professional Software	16 EXu
4102915	Digimatic data cable (2 m)	16 EWd
4102410	Data connection cable RS232C (2 m)	16 EXr
4102220	Receiver including MarCom Professional Software	i-Stick
4375004	Protective cap for 1075 R / 1086 R / 1087 R	1086 s
4310103	Adapter bush (0.375 in / 8 mm)	940



i-Stick

# **MarConnect Integrated Wireless**

Transmit your measuring data, directly into Microsoft® Excel or via a virtual interface box to your PC software, without being tangled with cables.



### MarConnect e-Stick | Receiver

- Retrofits all Mahr hand measuring instruments that have a data interface
- Wireless data transmission from a measuring instrument to a PC
- Secure data transmission due to the acknowledgement dialog of the received data from the PC to the measuring instrument
- Optical confirmation of received data
- Compact transmitter without an external antenna
- Bi-directional radio link (remote control from measuring instruments)
- Radio frequency is 2400 MHz
- Package Contains: e-Stick, Wireless Receiver, Driver
- MarCom Professional Software free download:

www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)







#### **Technical Data**

Order No.	4102230
Frequency Band	2400 MHz
Radio Range	up to 6 m
Product Type	e-Stick
Number of Connectable Wireless Receivers for e-Stick	1
Number of Connectable Transmission Modules for e-Stick	8
For Measuring Instrument	Transmission modules 16 EWe, 2000 e, RS232 e

### MarConnect 16 EWe / 2000 e / RS232 e / 1082 e | Transmitter

- Retrofits on all Mahr hand measuring instruments that have a data interface
- Wireless data transmission from a measuring instrument to a PC
- Secure data transmission due to the acknowledgement dialog of the received data from the PC to the measuring instrument
- Optical confirmation of received data
- Compact transmitter without an external antenna
- Bi-directional radio link (remote control from measuring instruments)
- Radio frequency is 2400 MHz
- MarCom Professional Software free download:

www.mahr.com/marcom (only for Mahr data cables and wireless systems with USB and RS232 interface)







#### **Technical Data**

Order No.	4102231	4102232	4102233	4102235
Frequency Band	2400 MHz			
Radio Range			up to 6 m (20 ft)	
Product Type	16 EWe	2000 e	RS232 e	1082 e
For Measuring Instrument	MarCal 16 ER, 16 EWR, 16 EWV, 30 EWR, 30 EWN Digimar 814 SR Micromar 40 EWR, 40 EWS, 40 EWV, 44 EWR, 46 EWR MarCator 1075 R, 1086 R, 1087 R, 1087 BR MarSurf PS1, PS10	1088W Millimess 2000, 2001, 2100, μΜαχμm ΙΙ	Millimar C1208, C1216, C1245, S1840 Digimar 817 CLM	Digimar M814 N/G Multimar 25 ES MarTool 106 ES



# MarCom Professional 5.2 | Software-Interface

- Directly transfer measured values into Microsoft® Excel, SPC Software using virtual interface box (MUX50 format), a text file or key code
- The measured values for each connected measuring instrument can be copied into a separate column, table or folder in Microsoft® Excel
- USB hubs can also be connected as a measuring instrument interface
- Clear depiction of the selected measuring devices by means of icons
- Freely definable and configurable measurement cycles
- Flexible, user-friendly data transmission via the data button on the measuring device or data cable or via a PC keyboard, timer, remote control or foot switch connected to a USB interface





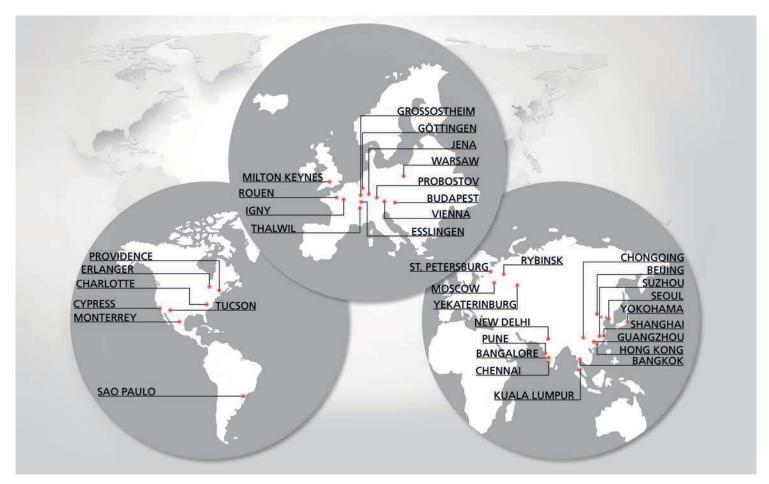








Order No.	4102212
Connected Wireless Receivers for the i-Stick	4
Connectable Devices with Integrated Wireless	32
Connected Wireless Receivers for the e-Stick	1
Connectable Sender Modules for the e-Stick	8
Connected Wireless Receivers FM 2	1
Connectable Sender Modules for the Wireless Receivers FM 2	100
Devices to be Connected with a USB Interface	128
Connectable USB Foot Switches	128
Devices to be Connected with an RS232C Interface	2
Virtual Interface Boxes (8 Inputs)	4



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