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Mahr DK-D1 Dial Indicator

Permitted use

The digital indicators 1086 R(i) / 1087 R(i) are used to determine length measurements and can be employed in production, quality control and in the workshop. Permitted use is subject to compliance with all published information relating to this product. Any other use is not in accordance with the permitted use. The manufacturer accepts no liability for damages resulting from improper use. All statutory and other regulations and guidelines applicable to the area of use must be observed.

Before commissioning the device, we recommend you read these operating instructions carefully.

Scope of delivery

The basic equipment for digital indicators includes:

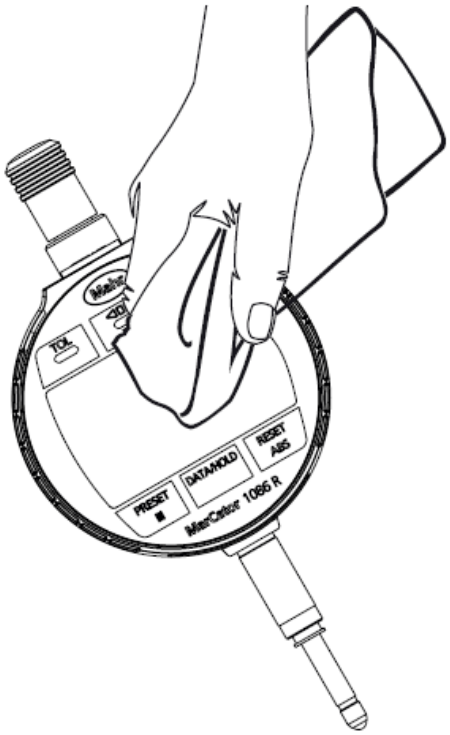
- Digital indicator
- Battery type CR 2450
- Screwdriver to open the battery compartment— Operation manual

Important information

- To guarantee the long-term use of the measuring instrument, any dirt on the outside micrometer must be removed with a dry cloth when no longer in use.
  Then preserve the metal parts with oil.

- A contaminated housing should be cleaned with a dry, soft cloth after use. Use a damp cloth if the contamination is severe. Vola-tile, organic solvents, such as diluting agents, should be avoided as these liquids can damage the housing.
- If necessary, clean the measuring pin with a cloth dampened with alcohol. Do not apply any oil to the measuring pin.
- Seal the data output if it is not being used.
- The measuring instrument should be operated in a dial indicator holder or corresponding device. A holder with a slotted mounting bore of 8 mm or 0.375” is recommended (see Fig. 7.1.a).
- All warranty claims will be void if the device is opened.
- Once the “ ▭ ” symbol is displayed, the intended function is no longer guaranteed.

We wish you every success when using your measuring instrument. If you have any questions, our technical consultants will be happy to assist you.

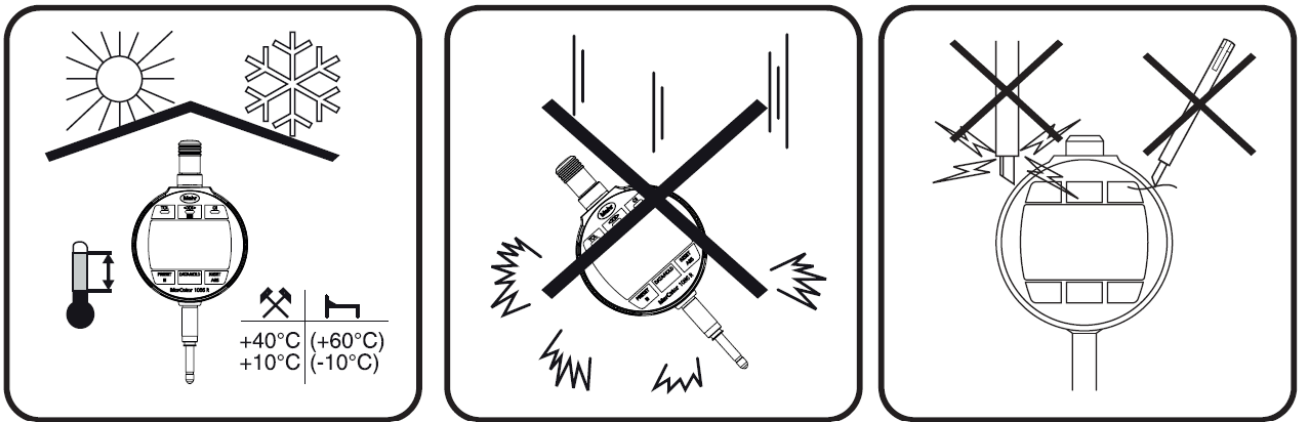


Safety instructions

Battery

- Not rechargeable.
- Do not incinerate.

- Dispose of as prescribed.
- Do not use an electric marking tool.
- The measuring instrument must not be accessible to children.



Technical Data

Inductive measuring system

Lithium 3 V battery, type CR2450(N)

Operating time up to 3 years, approx. 6,000 operating hours without wireless operation

Reduced operating time with:

- wireless operation

Example: wireless transmission of 4 values/min => approx. 2,000 operating hours

- LED display

Sleep mode after 8 min. (factory setting)

Protection class according to DIN EN 60529 (depending on model used)

IP42:

- 4 = Solid particles > 1.0 mm
- 2 = Dripping water when tilted at 15°

IP64:

- 6 = Dustproof
- 4 = Splashing of water from any direction

Cable port (all models)

- Bidirectional data transfer plus external power supply via USB data cable of type DK-U1
- Unidirectional data transfer in Digimatic format with data cable of type DK-D1

Wireless interface – Integrated Wireless (models 108x Ri/WRi/Ri-HR/ZRi)

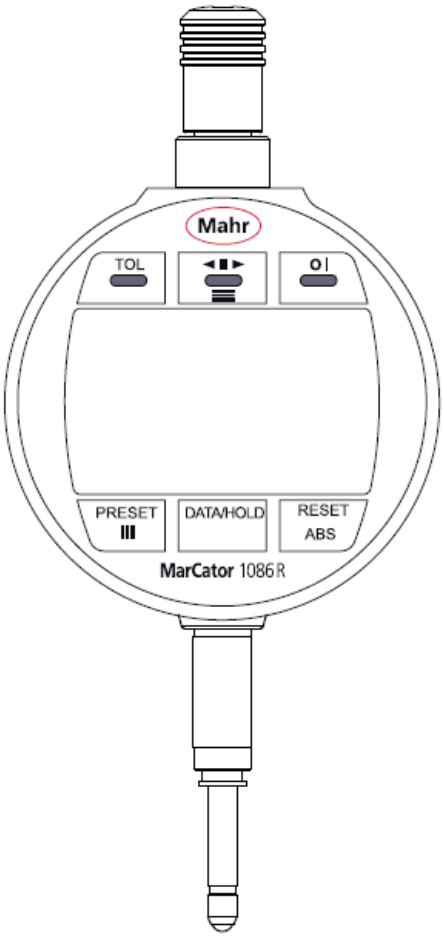
- Bidirectional wireless interface (Integrated Wireless)

RF frequency band

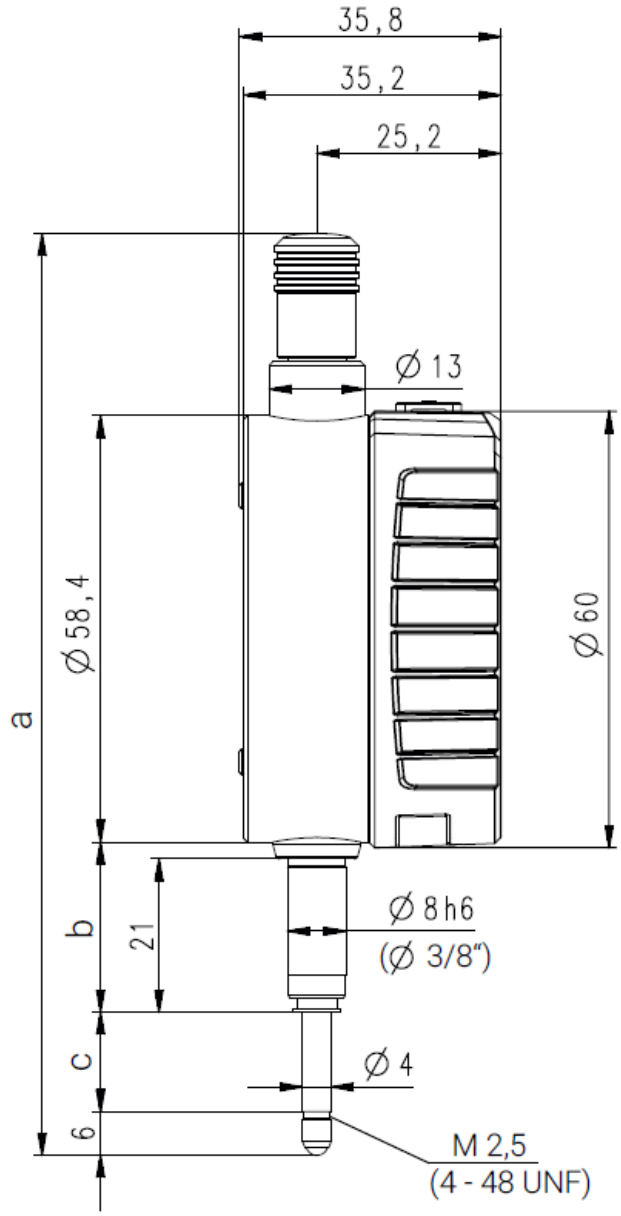
- Channel 1 2403 MHz
- Channel 2 2439 MHz
- Channel 3 2475 MHz
- Transmission path max. 6 m
- Max. transmission power (EIRP): 4 dBm

The quality of the connection is dependent on the operational environment.
On digital indicators with a wireless interface, the RS232C is only active if the wireless interface is deactivated.

- Operating temperature + 10°C … + 40°C
- Storage temperature – 10°C … + 60°C



1086/1087 R(i) / R(i)-HR / ZRi



Type	Measuring range m m	a mm	b mm	c mm
1086 R(i)(-HR) / ZRi	12,5	126,2	23,3	13,6
1086 R(i)(-HR) / ZRi	25	151,8	23,3	26,5
1086 R(i)	50	267,7	39,8	52,5
1086 R(i)	100	420,7	90,8	103,5
1086 WR(i)	12,5	144,2	21,3	28,1
1086 WR(i)	25	191,9	21,3	50,0

1087 R(i)(-HR) / ZRi	12,5	126,2	23,3	13,6
1087 R(i)(-HR) / ZRi	25	151,8	23,3	26,5
1087 WRi	12,5	144,2	21,3	28,1
µMax µm 1087 Ri	6,35	120,2	23,3	7,6

Type	Measuring range		Resolution value, switchable		Scale graduation value, switchable	Mar Connect interface	Radio interface	Measuring force	Error limit (measuring range)	Error limit (partial measuring range)	Error limit (hysteresis)	Repeatability	Degree of protection	Clamping shaft	Mounting thread	Order. no.
	mm	(inch)	mm	(inch)				MPL (N)	MPE (µm)	MPEP (µm)	MPEH (µm)	MPER (µm)		Ø		

1086R	12,5	(.5“)	0,00005…0,01	.00002″….0005″		=		0,65–0,90	4	2	2	1	IP42	8mm	M2,5	4337700
1086R	25	(1“)	0,00005…0,01	.00002″….0005″		=		0,65–1,15	4	2	2	1	IP42	8mm	M2,5	4337701
1086R	50	(2“)	0,00005…0,01	.00002″….0005″		=		1,25–2,70	7	2	3	1	IP42	8mm	M2,5	4337702
1086R	100	(4”)	0,00005…0,01	.00002″….0005″		=		1,80–3,50	8	2	3	1	IP42	8mm	M2,5	4337703

1086 Ri	12,5	no	0,00005 … 0,01	–		=	=	0,65 – 0,90	4	2	2	1	IP42	8 mm	M2,5	4337710
1086 Ri	25	no	0,00005 … 0,01	–		=	=	0,65 – 1,15	4	2	2	1	IP42	8 mm	M2,5	4337711
1086 Ri	12,5	(.5“)	0,00005 … 0,01	.00002″ … .00005″		=	=	0,65 – 0,90	4	2	2	1	IP42	8 mm	M2,5	4337720
1086 Ri	25	(1“)	0,00005 … 0,01	.00002″ … .00005″		=	=	0,65 – 1,15	4	2	2	1	IP42	8 mm	M2,5	4337721

1086Ri	50	(2“)	0,00005…0,01	.00002″….0005″		=	=	1,25–2,70	7	2	3	1	IP42	8mm	M2,5	4337722
1086Ri	100	(4”)	0,00005…0,01	.00002″….0005″		=	=	1,80–3,50	8	2	3	1	IP42	8mm	M2,5	4337723
1086Ri	25	(1“)	0,00005…0,01	.00002″….0005″		=	=	without spring	4	2	2	1	IP42	8mm	M2,5	4337731
1086ZRi	(12,5)	.5“	0,00005…0,01	.00002″….0005″		=	=	0,65–0,9	4	2	2	1	IP42	.375″	4-48UNF	4337910

1086ZRi	(25)	1“	0,00005…0,01	.00002″….0005″		=	=	0,65–1,15	4	2	2	1	IP42	.375″	4-48UNF	4337911
1086WR	12,5	(.5“)	0,00005…0,01	.00002″….0005″		=		0,65–1,40	4	2	2	1	IP64	8mm	M2,5	4337740
1086WR	25	(1“)	0,00005…0,01	.00002″….0005″		=		1,00–2,25	4	2	2	1	IP64	8mm	M2,5	4337741
1086WRi	12,5	(.5“)	0,00005…0,01	.00002″….0005″		=	=	0,65–1,40	4	2	2	1	IP64	8mm	M2,5	4337750

1086 WRi	25	(1“)	0,00005 … 0,01	.00002″ … .0005″		=	=	1,00 – 2,25	4	2	2	1	IP64	8 mm	M2,5	4337751
1086 Ri-HR	12,5	no	0,00001 … 0,01	–		=	=	0,65 – 0,9	1,8	0,5	0,6	0,5	IP42	8 mm	M2,5	4337760
1086 Ri-HR	12,5	(.5“)	0,00001 … 0,01	.00001″ … .0005″		=	=	0,65 – 0,9	1,8	0,5	0,6	0,5	IP42	8 mm	M2,5	4337770
1086 Ri-HR	25	(1“)	0,00001 … 0,01	.00001″ … .0005″		=	=	0,65 – 1,15	2,4	0,5	0,7	0,5	IP42	8 mm	M2,5	4337771

1086R	12,5	(.5“)	0,01	.0005″		=		0,65–0,90	20	20	20	10	IP42	8mm	M2,5	4337780
1086R	25	(1“)	0,01	.0005″		=		0,65–1,15	20	20	20	10	IP42	8mm	M2,5	4337781
1086R	50	(2“)	0,01	.0005″		=		1,25–2,70	20	20	20	10	IP42	8mm	M2,5	4337782
1086R	100	(4”)	0,01	.0005″		=		1,80–3,50	20	20	20	10	IP42	8mm	M2,5	4337783
1086Ri	12,5	(.5“)	0,01	.0005″		=	=	0,65–0,90	20	20	20	10	IP42	8mm	M2,5	4337790
1086Ri	25	(1“)	0,01	.0005″		=	=	0,65–1,15	20	20	20	10	IP42	8mm	M2,5	4337791

1087R	12,5	(.5“)	0,00005…0,01	.00002″….0005″	=	=		0,65–0,90	4	2	2	1	IP42	8mm	M2,5	4337800
1087R	25	(1“)	0,00005…0,01	.00002″….0005″	=	=		0,65–1,15	4	2	2	1	IP42	8mm	M2,5	4337801
1087Ri	12,5	no	0,00005…0,01	–	=	=	=	0,65–0,90	4	2	2	1	IP42	8mm	M2,5	4337810
1087Ri	25	no	0,00005…0,01	–	=	=	=	0,65–1,15	4	2	2	1	IP42	8mm	M2,5	4337811

µMax µm 1087 Ri	6,35	(.25“)	0,00005 … 0,01	.00002″ … .0005″	=	=	=	0,55 – 0,70	2,5	2	2	1	IP42	8 mm	M2,5	4337969
1087 Ri	12,5	(.5“)	0,00005 … 0,01	.00002″ … .0005″	=	=	=	0,65 – 0,90	4	2	2	1	IP42	8 mm	M2,5	4337820
1087 Ri	25	(1“)	0,00005 … 0,01	.00002″ … .0005″	=	=	=	0,65 – 1,15	4	2	2	1	IP42	8 mm	M2,5	4337821
1087 Ri	50	(2“)	0,00005 … 0,01	.00002″ … .0005″	=	=	=	1,25 – 2,70	7	2	3	1	IP42	8 mm	M2,5	4337822

µMax µm 1087 Ri	(6,35)	.25“	0,00005 … 0,01	.00002″ … .0005″	=	=	=	0,55 – 0,70	2,5	2	2	1	IP42	.375″	4-48 UNF	4337969
1087 ZRi	(12,5)	.5“	0,00005 … 0,01	.00002″ … .0005″	=	=	=	0,65 – 0,90	4	2	2	1	IP42	.375″	4-48 UNF	4337970
1087 ZRi	(25)	1“	0,00005 … 0,01	.00002″ … .0005″	=	=	=	0,65 – 1,15	4	2	2	1	IP42	.375″	4-48 UNF	4337971
1087 WRi	12,5	(.5“)	0,00005 … 0,01	.00002″ … .0005″	=	=	=	0,65 – 0,90	4	2	2	1	IP64	8mm	M2,5	4337830

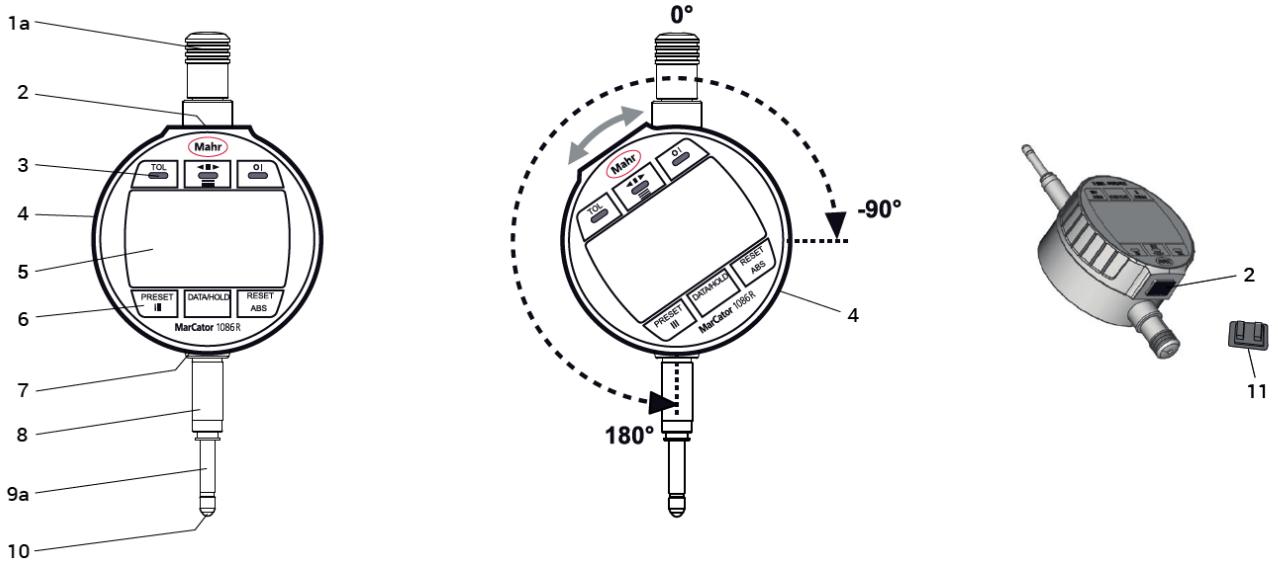
1087 Ri-HR	12,5	no	0,00001 … 0,01	–	=	=	=	0,65 – 0,9	1,8	0,5	0,6	0,5	IP 42	8 mm	M2,5	4337840
1087 Ri-HR	12,5	(.5“)	0,00001 … 0,01	.00001″ … .0005″	=	=	=	0,65 – 0,9	1,8	0,5	0,6	0,5	IP 42	8 mm	M2,5	4337850
1087 Ri-HR	25	(1“)	0,00001 … 0,01	.00001″ … .0005″	=	=	=	0,65 – 1,15	2,4	0,5	0,7	0,5	IP 42	8 mm	M2,5	4337851

Description

- 1a Dustproof protective cap across lifter
- 1b Protective cap
- 2 Data interface Duplex-Datenschnittstelle (for USB or Digimatic)
- 3 LEDs (red, green, yellow) for tolerance function
- 4 Rotatable control and display unit (-90° … +180°)
- 5 LCD display
- 6 Buttons for operation
- 7 Battery compartment
- 8 Clamping shaft

- 9a Measuring pin
- 9b Measuring pin with bellows
- 10 Measuring anvil
- 11 Cover across data interface

1086/1087 R(i) / R(i)-HR / ZRi



Inserting or changing the battery

Please use only “Renata” or “Varta” batteries.

The measuring instrument will turn on automatically after battery replacement.

Accessories

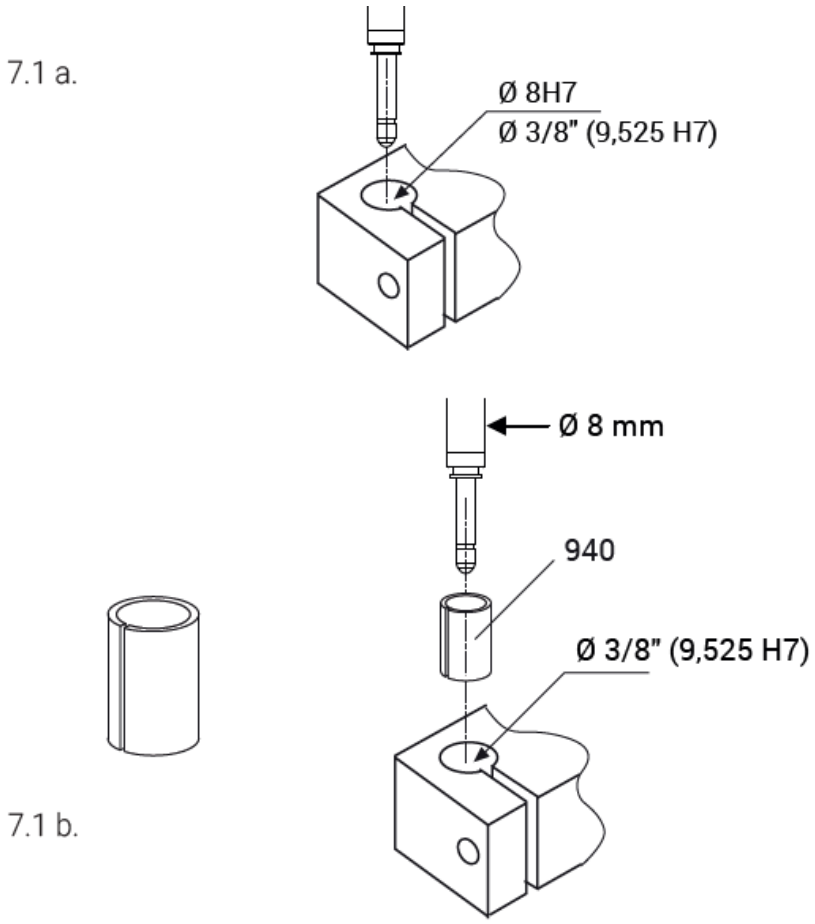
Holder for the digital dial indicator

A holder with a slot and 8 mm or 0.375“ mounting bore is recommended for holding the digital indicator (Fig. 7.1 a).

If a 0.375″ (9.52 mm) mounting hole is available and the dial indicator has a shaft diameter of 8 mm, the adapter socket 940 (order No. 4310103) must be used (Fig. 7.1

b).

The clamping screw must not apply pressure to the mounting shaft to ensure the free movement of the measuring pin.



Back panel with eyelets 1086 b (order no. 4337421)

- Release the four screws on the rear panel of the device.
- Remove the rear panel.
- Attach fastening eye.

Anvils with M 2.5 thread

If it cannot be released manually:

- Hold measuring pin with pliers. Use a piece of material to protect the surface of the measuring pin
- Remove the measuring anvil with a second pair of pliers.

Failure to observe this can damage the inside of the device or the measuring pin.

Operation

Key operation **Function**

Press briefly < 1 sec. upper row *

Press and hold > 1 sec. lower row

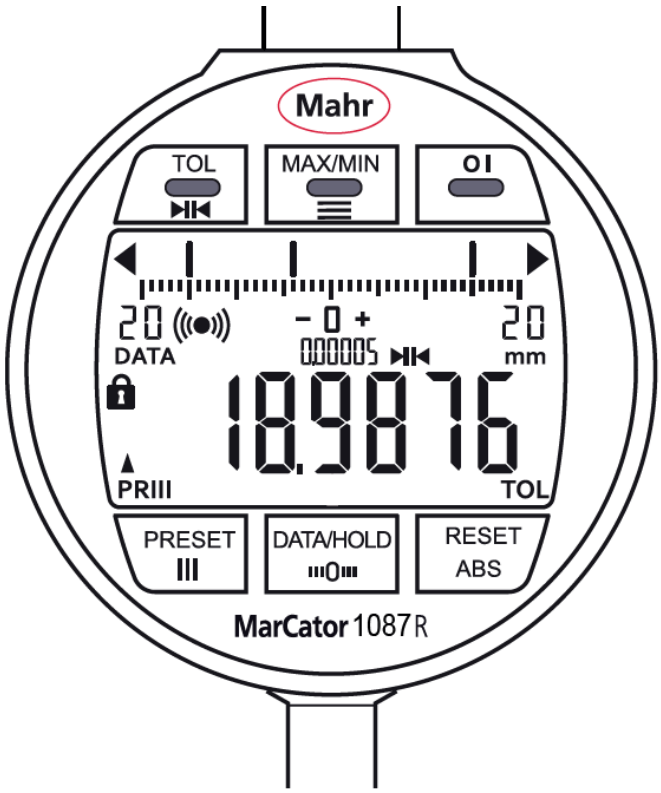
*Exception OI (ON/OFF >1 sec.)

Intuitive menu navigation

Clear key assignment with symbols ⇨ ⇧ ✓

Navigation:

- ⇨ ⇧ = < 1 sec. Next step
- ⇨ ⇧ => 1 sec. Previous step
- ✓ < 1 sec. Confirm entry, exit menu



Functions

Direct measuring and key function

Details				**Type 1086 R(i) / Ri-HR / WR(i) / ZRi**	**Type 1087 R(i) / Ri-HR / WRi / ZRi**	
	Functional Description	**For details see:**				**Key label**
	ON/OFF			●	●	IO
10.1	“Enable / disable tolerance function”	10.1	10.1	●	●	TOL
10.2	Enable / disable dynamic measuring functions (max, min, max-min)	10.2	10.2		●	MAX/MIN
	Set preset value			●	●	PRESET
10.3	Send measuring value / freeze measuring value	10.3	10.3	●	●	DATA/HOLD
	Set display to 0			●	●	RESET
	Set scale display, adjust measuring span and scale graduation value				●	>II<
	Settings menu			●	●	☰

	Set scale display to 0				●	IIIOIII
	Set PRESET(Selection of 3 PRESET values)				●	III
	Reference to absolute zero point of inductive measuring system			●	●	ABS

Measuring modes

RELATIVE measuring mode (Reset)

- Press the 0 ABS key briefly (< 1 sec.).
- Zero setting of the display at any position for step or comparative measurement.

In the relative measuring mode, the tolerance function (TOL) is not allowed. If the tolerance function (TOL) is selected, the most recent PRESET value will be displayed. Back from RELATIVE measuring mode to the ABSOLUTE (PRESET) mode

- Press and hold the 0 ABS key (> 1 sec.).
- At any point, the system switches from the relative measuring mode (REL) to the active PRESET value (PRI – PRIII) for ABSOLUTE measurement.

=> The display shows „PRI“, „PRII“ or „PRIII“ and ABS.

ABSOLUTE (PRESET) measuring mode (PRI – PRIII)

- Three different PRESET values can be set (shown on display as „PRI“ – „PRIII“).
- The displayed measured value corresponds to the actual diameter (absolute dimension).
- The exact diameter of the respective setting ring, for example, is stored as the PRESET value.

- Calibration in the setting ring: Press the PR key briefly (< 1 sec.).

=> The display shows the designation of the active PRESET („PRI“, „PRII“ or „PRIII“)

Switching between PRI, PRII and PRIII

- Press and hold the PRESET III key (> 1 sec.):
- PREST The PRESET value switches between „PRI“, „PRII“ and „PRIII“.

=> „PR 1“, „PR 2“ or „PR 3“ is briefly shown on the display as confirmation.

EU/UK Declaration of Conformity

This measuring instrument complies with the applicable EU/UK directives..
A copy of the current Declaration of Conformity is available to download at www.mahr.com/products on the page for the relevant product and can be requested from the following address:
Mahr GmbH, Carl-Mahr-Straße 1, D-37073 Göttingen

Disposal information

Dear customer,

This device contains a non-rechargeable lithium battery. Batteries and rechargeable batteries (including damaged ones) must not be disposed of in household waste.
Used batteries and rechargeable batteries may contain contaminants that can be harmful to the environment and health. Please return the batteries/rechargeable batteries to your retailer or hand them in at your local recycling center. Return is free of charge and stipulated by law. Please only throw discharged batteries into the containers provided and cover the poles on lithium type batteries.
All batteries / rechargeable batteries are recycled. Valuable raw materials such as nickel, cobalt, lithium and manganese can thus be reused. Battery recycling is designed to protect the environment.
Old electronic equipment which was purchased from Mahr after March 23, 2006 can be

returned to us. We will dispose of this equipment in an environmentally-friendly way. The valid EU directives (WEEE, ElektroG) apply.

Confirmation of traceability

We declare, with sole responsibility, that this product conforms with standards and technical data as specified in our sales documents (operating instructions, leaflet, catalog).

We certify that the testing equipment used to check this product, and guaranteed by our Quality Assurance, is traceable to national standards.

Thank you for placing your trust in us by purchasing this product.

Digital indicator

MarCator

1086R(i)/WR(i)/Ri-HR/ZRi

1087R(i)/WRi/Ri-HR/ZRi

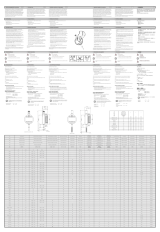
Mahr GmbH

- Carl-Mahr-Straße 1
- D-37073 Göttingen
- Tel.: +49 551 7073 0
- info@mahr.com , www.mahr.com

FAQ

- **Q: How long does the battery last in wireless operation mode?**
  A: The battery life will be reduced based on the frequency of wireless transmissions. For example, transmitting 4 values per minute will yield approximately 2,000 operating hours.
- **Q: What does the IP64 protection rating mean?**
  A: An IP64 rating indicates that the device is dustproof and protected against splashing water from any direction.

Documents / Resources

	Mahr DK-D1 Dial Indicator [pdf] Owner's Manual N33MCT8687RI, 1086 R i, 1087 R i, DK-D1 Dial Indicator, Dial Indicator, Indicator

References

- User Manual

1086 R i, 1087 R i, Dial Indicator, DK-D1 Dial Indicator, Indicator, Mahr, N33MCT8687RI

Mahr

—Previous Post
Mahr MarCal 16 EWR Digital Caliper Owner's Manual
Next Post—
Mahr 1086R-i Digital Indicator Instruction Manual

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Email

Website

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Search:

e.g. whirlpool wrf535swhz

Search

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