

THEY POINT YOU IN THE RIGHT DIRECTION. MARCATOR DIAL INDICATORS.



The latest information on MARCATOR products can be found on our website:
www.mahr.com, WebCode 206

► | Dial indicators due to their versatility rank as the most frequently applied transducer, just like our MarCator series. Our mechanical dial indicators have precision gears and pinions for a maximum accuracy. They are also available in shock and waterproof versions. Our digital indicator range contains highly precise electronic measuring systems, which make measuring functions possible yet without the loss of an analog display. With the simple operation, the large display that can be read error free and the possibility of a rapid and simple transmission of all your measurement results thus meeting all requirements of a modern measuring instrument.

▶ | MarCator. Dial and Digital Indicators

Digital Indicators

Overview

5- 2

MarCator 1075 R

Standard versions with digital display

5- 4

MarCator 1086 R / 1086 WR

With tolerance function

5- 6

MarCator 1087 R

With combined digital and analog display

5-10

MarCator 1088 / 1088 W

With background lit display

5-12

MarCator 1087 BR

For 2-point inside measurement

5-14

Accessories for MarCator 1086 R / 1087 R / 1088

5-15

Dial Indicators

Overview

5-16

MarCator 803 A / 805 A / 803 S / 803 SW / 803 SB / 803 AZ

Small Dial Indicators

5-18

MarCator 810 A / 810 AT / 810 S / 810 SW / 810 SB / 810 SM / 810 SRM / 810 AZ

Standard versions

5-20

MarCator 810 AU / 810 AX / 810 SV / 810 AG

Special versions

5-22

Contact Points and Accessories for Dial / Digital Indicators, Mechanical / Digital Comparators & Probes

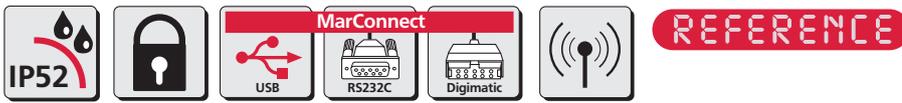
5-24

MarCator. Digital Indicators

OVERVIEW

Functions of Digital Indicators		1075 R	1075 R	1075 R	1086 R
					
Catalog page		5 - 4	5 - 4	5 - 4	5 - 6
Measuring ranges	mm / inch	12.5 / .5"	12.5 / .5"	12.5 / .5"	12.5 / .5" 25 / 1 50 / 2" 100 / 4"
Resolution	metric	0.01 mm	0.005 mm	0.001 mm	0.001 mm
	inch	.0005"	.0001"	.00005"	.00005"
	metric				0.01mm
	inch				.0005"
Mounting shank		8h6	8h6	8h6	8h6
Protection class	IP class acc. to IEC 60529				
Functions:					
ON/OFF		●	●	●	●
Set display to zero		●	●	●	●
Switch between mm/inch		●	●	●	●
Reversal of counting direction		●	●	●	●
Enter numerical value - PRESET		●	●	●	●
Data		●	●	●	●
ABS/REL-switchable					●
Tolerance display					●
Dynamic measuring functions	MIN. MAX MAX-MIN (TIR) 				
Search for reversal point	START/STOP				
Factor can be set / adjusted					●
Analog display					
Switch the analog value					
Key lock function LOC		●	●	●	●
Data output	USB 	●	●	●	●
	Digimatic 	●	●	●	●
	Opto RS232C 	●	●	●	●
Control output:					

Digital Indicators 1075 R



Features

- Functions:**
- ON/OFF
 - RESET (Set display to zero)
 - mm/inch
 - Reversal of counting direction
 - PRESET (for entering a numerical value)
 - DATA (data transmission with a data connection cable)
 - LOCK-Function: Individual buttons can be locked
 - Auto-OFF (selectable)
- Immediate measurement due to the Reference system
 - Operating time approx. 3 years (2000 work. h/year)
 - Max measuring speed 1.5 m/sec (60"/sec)
 - MarConnect Data output: choose either
 - USB
 - OPTO RS232C
 - Digimatic
 - High contrast Liquid Crystal Display with 12 mm high digits
 - Operating temperature 10-40°C
 - Class of protection IP52 according to IEC 60529
- Scope of supply:
 Battery,
 Operating instructions

Reference System - Just set once to zero

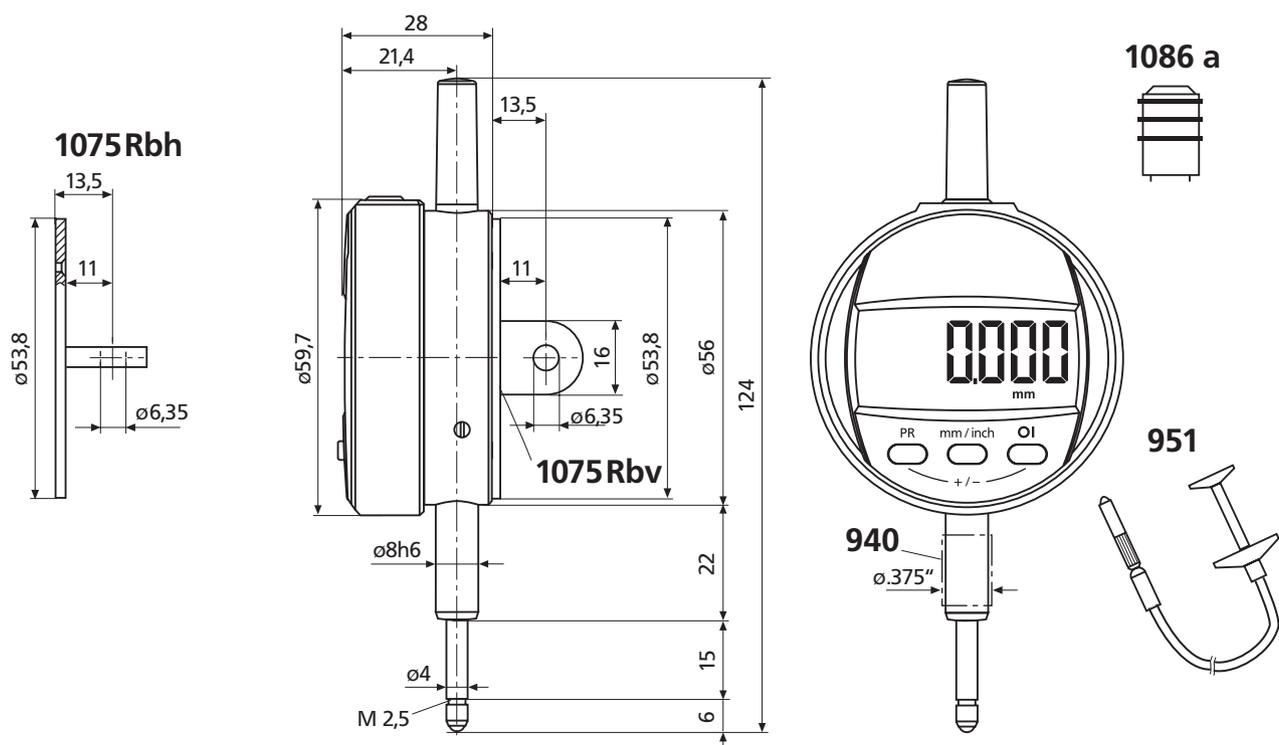
REFERENCE The new Digital Indicators 1075 R are equipped with the innovative Reference-System. The zero position only has to be set one time: once it is set, the zero remains stored for all further measurements. Therefore, when the indicator is switched ON or the measuring spindle is moved the indicator is immediately ready for measurement; thus the need to reset as with a conventional indicator is now obsolete.

Technical Data

Measuring range		Resolution		Span of error G *	Measuring force	Weight	Order no.
mm	(inch)	mm	inch	mm	N	g	
12.5	(.5")	0.01	/ .0005"	0.020	0.5 - 1	180	4336010
12.5	(.5")	0.005	/ .0001"	0.015	0.5 - 1	180	4336020
12.5	(.5")	0.001	/ .00005"	0.005	0.5 - 1	180	4336030

* in any zero point

Technical Data



Accessories

	Order no.	Additional Accessories	Page
Battery 3V , Type CR 2032	4102520	Contact Points 901-913	5-24
Data Connection Cable USB (2 m)	16 EXu 4102357	Special Holder 941	5-25
Data Connection Cable Opto RS232C (2 m), with SUB-D jack 9-pin	16 EXr 4102410	Sensor Lever 943	5-25
Data Connection Cable Digimatic (2 m), Flat plug 10-pin	16 EXd 4102411	Accessories for Data Processing see Chapter 11	
Adapter Bush for adapting mounting shank 8h6 mm to inch bore .375"	940 4310103		
Cable Release to raise the measuring spindle	951 4372000		
Lifter Protection Cap	1086 a 4337320		
Lug Back , horizontal	1075 Rbh 4336041		
Lug Back , vertical	1075 Rbv 4336042		

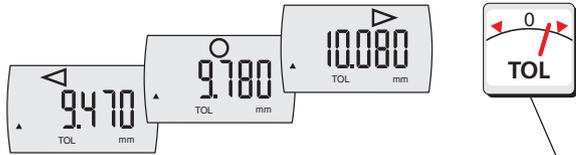
MarCator 1086 R

▶ | The new Digital Indicator **MarCator** 1086 R. With the large display and the integrated tolerance function, your measurement results are clearly visual. | ◀

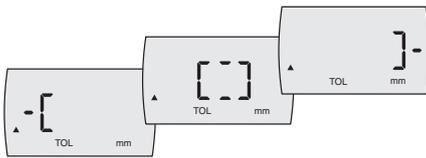
Clear display

Tolerance indication with the displayed 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.



IP Protection class IP54 (optional)

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

Code Initial	IP	International Protection
First Numeral	5	Dust protected
Second Numeral	4	Protection against splash water in all directions



Error free operation



Lock function: This 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 "LOC" symbol will appear in the display.

Universal Data-Interface



• USB

No interface box is required! Simple and inexpensive way to set up a 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

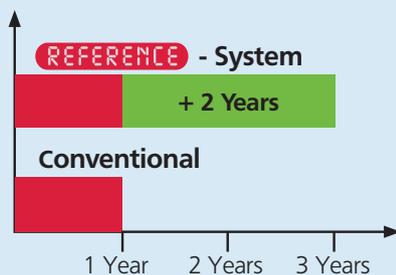


Absolute function:

Digital Indicator can be set in any position to 0.000 without losing the reference to the preset value.

Battery service life is 3 years

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 up to 3 years.**



Just set once to zero

REFERENCE

The new Digital Indicators 1086 R are equipped with the 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; thus the need to reset as with a conventional indicator is now obsolete.

Digital Indicators MarCator 1086 R / 1086 ZR, Resolution 0.01 mm / .0005"



REFERENCE



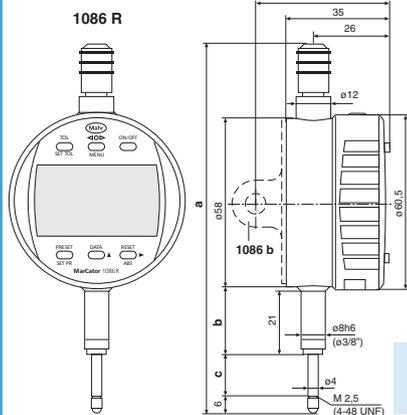
12,5 mm



25 mm



50 mm



Dimensions

Measuring range		a	b	c
mm	(inch)	mm	mm	mm
12.5	(.5")	126.3	23	13.5
25	(1")	153.4	26.8	26.5
50	(2")	267.3	40	52
100	(4")	420.3	91	103

Features

Functions:

- ON/OFF
- RESET (Set display to zero)
- mm/inch
- Reversal of the counting direction
- PRESET (Allows the entry of any value using set buttons)
- 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 (when connected with a data connection cable)
- Factor (adjustable)
- Immediate measurement due to the Reference system
- Individual buttons can be locked - Lock Function
- Operating and display unit (bezel) can be rotated 280°
- High contrast LCD with 11 mm high digits
- Operating time approx. 3 years (2000 work. h/year)
- Maximum measuring speed 1.5 m/s (60"/s)
- Lifter protection cap on the measuring spindle
- MarConnect data output: choose either USB, OPTO RS232C, Digimatic
- Operating temperature 10 - 40°C
- Class of protection IP42 in accordance to IEC 60529

Supplied with:
Battery, operating instructions

Technical Data

Measuring range		Resolution	Span of error*	Repeatability	Measuring force	Weight	Mounting shank	Order no.
mm	(inch)	mm/inch	mm	mm	N	g	dia.	
12.5	(.5")	0.01/ .0005"	0.02	0.01	0.65 - 0.90	130	8h6	4337130
25	(1")	0.01/ .0005"	0.02	0.01	0.65 - 1.15	140	8h6	4337131
50	(2")	0.01/ .0005"	0.02	0.01	1.25 - 2.70	190	8h6	4337132
100	(4")	0.01/ .0005"	0.02	0.01	1.60 - 3.50	235	8h6	4337133
12.5	(.5")	0.01/ .0005"	0.02	0.01	0.65 - 0.90	150	3/8"	4337155
25	(1")	0.01/ .0005"	0.02	0.01	0.65 - 1.15	160	3/8"	4337156

* in any zero point

Digital Indicators MarCator 1086 R / 1086 ZR, Resolution 0.001 mm / .00005"



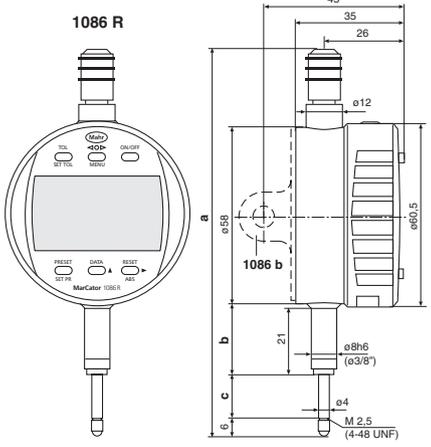
REFERENCE



25 mm



50 mm



Dimensions

Measuring range		a	b	c
mm	(inch)	mm	mm	mm
12.5	(.5")	126.3	23	13.5
25	(1")	153.4	26.8	26.5
50	(2")	267.3	40	52
100	(4")	420.3	91	103

Features

- Functions:**
- ON/OFF
 - RESET (Set display to zero)
 - mm/inch
 - Reversal of the counting direction
 - PRESET (Allows the entry of any value using set buttons)
 - 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 (when connected with a data connection cable)
 - Factor (adjustable)
 - Immediate measurement due to the Reference system
 - Individual buttons can be locked - Lock Function
 - Operating and display unit (bezel) can be rotated 280°
 - High contrast LCD with 11 mm high digits
 - Operating time approx. 3 years (2000 work. h/year)
 - Maximum measuring speed 1.5 m/s (60"/s)
 - Lifter protection cap on the measuring spindle
 - MarConnect data output: choose either USB, OPTO RS232C, Digimatic
 - Operating temperature 10 - 40°C
 - Class of protection IP42 in accordance to IEC 60529

Supplied with:
Battery, operating instructions

Technical Data

Measuring range		Resolution	Span of error*	Repeatability	Measuring force	Weight	Mounting shank	Order no.
mm	(inch)	mm/inch	mm	mm	N	g	dia.	
12.5	(.5")	0.001/ .00005"	0.005	0.002	0.65 - 0.90	130	8h6	4337120
25	(1")	0.001/ .00005"	0.005	0.002	0.65 - 1.15	140	8h6	4337121
50	(2")	0.001/ .00005"	0.008	0.002	1.25 - 2.70	190	8h6	4337122
100	(4")	0.001/ .00005"	0.009	0.002	1.60 - 3.50	235	8h6	4337123
12.5	(.5")	0.001/ .00005"	0.005	0.002	0.65 - 0.90	150	3/8"	4337150
25	(1")	0.001/ .00005"	0.005	0.002	0.65 - 1.15	160	3/8"	4337151

* in any zero point

Digital Indicators MarCator 1086 W, Waterproof version



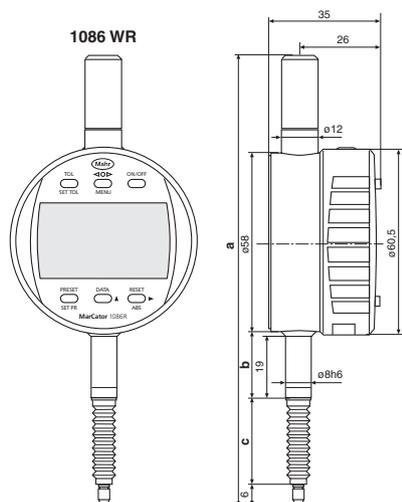
REFERENCE



12,5 mm



25 mm



Dimensions

Measuring range		a	b	c
mm	(inch)	mm	mm	mm
12.5	(.5")	144.3	23	28.6
25	(1")	193.2	26.8	50

Features

Functions:

- ON/OFF
- RESET (Set display to zero)
- mm/inch
- Reversal of the counting direction
- PRESET (Allows the entry of any value using set buttons)
- 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 (when connected with a data connection cable)
- Factor (adjustable)
- Immediate measurement due to the Reference system
- Individual buttons can be locked - Lock Function
- Operating and display unit (bezel) can be rotated 280°
- High contrast LCD with 11 mm high digits
- Operating time approx. 3 years (2000 work. h/year)
- Maximum measuring speed 1.5 m/s (60"/s)
- Sealed protection cap
- Measuring spindle is sealed with a rubber bellows, thus preventing contamination by liquids and impurities
- MarConnect data output: choose either
USB
OPTO RS232C
Digimatic
- Operating temperature 10 - 40°C
- Class of protection IP54 in accordance to IEC 60529

Supplied with:
Battery, operating instructions

Technical Data

Measuring range		Resolution	Span of error*	Repeatability	Measuring force	Weight	Order no.
mm	(inch)	mm/inch	mm	mm	N	g	
12.5	(.5")	0.001/ .00005"	0.005	0.002	0.65 - 1.40	135	4337140
25	(1")	0.001/ .00005"	0.005	0.002	1.00 - 2.25	145	4337141
12.5	(.5")	0.01/ .0005"	0.02	0.01	0.65 - 1.40	135	4337145
25	(1")	0.01/ .0005"	0.02	0.01	1.00 - 2.25	145	4337146

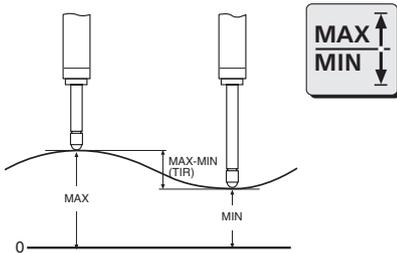
* in any zero point

MarCator 1087 R

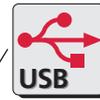
► | The new Digital Indicator **MarCator** 1087 R. The multi-functional Digital Indicator with a combined analog and digital display as well as tolerance and dynamic measuring functions. | ◀

Dynamic measuring functions

- **MAX-MIN**-Function ideal for testing flatness and concentricity
- **MAX** and / or **MIN** for searching the reversal point



Universal Data-Interface



- **USB**
No interface box is required! Simple and inexpensive way to set up a multiple measuring instruments via a USB hub



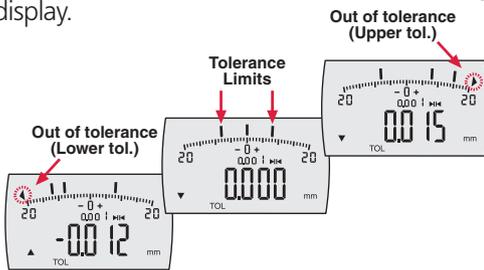
- **Digimatic**
To connect a Digimatic compatible evaluation instrument



- **Mahr Opto RS232C**
For direct connection to a COM port on a PC

Clear display Tolerance indication

The integrated bar graph visualizes the tolerance deviation. The out of tolerance; whether above the upper or below the lower tolerance limit is represented by arrows shown in the display.



- **Absolute function:**
Digital Indicator can be set in any position to 0.000 without losing the reference to the preset value.

Just set once to zero

REFERENCE

The new Digital Indicators 1087 R are equipped with the 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; thus the need to reset as with a conventional indicator is now obsolete.

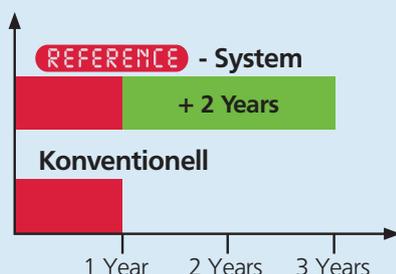
Error free operation



Lock function: This 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 "LOC" symbol will appear in the display.

Battery service life is 3 years

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 up to 3 years.**



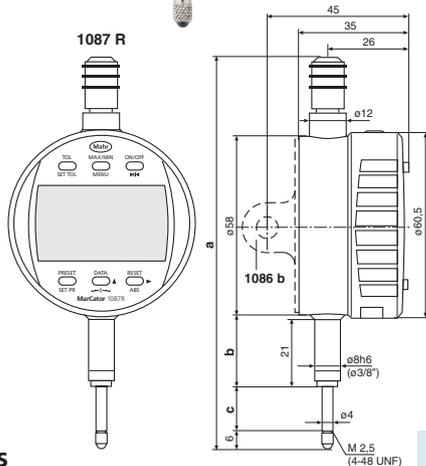
Digital Indicators MarCator 1087 R / 1087 ZR, with analog display



12,5 mm



25 mm



Dimensions

Measuring range	a	b	c
12.5 (,5")	126.3	23	13.5
25 (1")	153.4	26.8	26.5

Analog display

Readings	Display range
mm / inch	mm / inch
0.001 / .00005	± 0.02 / ± .001
0.002 / .0001	± 0.04 / ± .002
0.004 / .0005	± 0.08 / ± .01
0.01 / .001	± 0.2 / ± .02

Features

Functions:

- ON/OFF
- RESET (Set display to zero)
- mm/inch
- Reversal of the counting direction
- PRESET (Allows the entry of any value using set buttons)
- TOL (Enter tolerance limit values)
- Tolerance band max. 1.6 mm
- MAX/MIN memory, ideal for searching the reversal point
- TIR (MAX-MIN) ideal for testing concentricity and flatness
- ABS (Display can be set to zero, without losing the reference to the Preset value)
- 0 (Set analog display to zero)
- DATA (when connected with a data connection cable)
- Factor (adjustable)
- Immediate measurement due to the Reference system
- Individual buttons can be locked - Lock Function
- Operating and display unit (bezel) can be rotated 280°
- High contrast LCD with 8.5 mm high digits
- Operating time approx. 3 years (2000 work. h/year)
- Maximum measuring speed 1.5 m/s (60"/s)
- MarConnect data output: choose either
USB
OPTO RS232C
Digimatic
- Operating temperature 10 - 40°C
- Class of protection IP42 in accordance to IEC 60529

Supplied with:
Battery, operating instructions

Technical Data

Measuring range	Resolution	Span of error*	Repeatability	Measuring force	Weight	Mounting shank	Order no.
12.5 (,5")	0.001/ .00005"	0.005	0.002	0.65 - 0.90	140	8h6	4337160
25 (1")	0.001/ .00005"	0.005	0.002	0.65 - 1.15	150	8h6	4337161
12.5 (,5")	0.001/ .00005"	0.005	0.002	0.65 - 0.90	150	3/8"	4337170
25 (1")	0.001/ .00005"	0.005	0.002	0.65 - 1.15	160	3/8"	4337171

* in any zero point

MarCator 1088

► | The new Digital Indicator **MarCator 1088**. Tolerance monitoring is simplified with the changing of the color in the background lit display. | ◀

Dynamic measuring functions

- MAX-MIN memory: ideal for testing flatness and concentricity
- MAX-MIN memory: for searching the reversal point



Tolerance function:
clearly visual tolerance excess due to the change of color in the background lit display.



Universal Data-Interface



- **USB**
No interface box is required!
Simple and inexpensive way to set up a 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



Control output can be connected to a SPS



Absolute function:
Digital Indicator can be set in any position to 0.000 without losing the reference to the preset value.



Protection class IP54 according to IEC 60529. Especially suited for use in a manufacturing environment (excludes measuring range 50 mm)

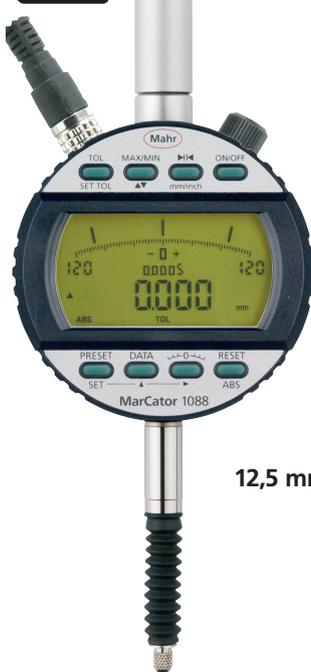


Code Initial	IP	International Protection
First Numeral	5	Dust protected
Second Numeral	4	Protection against splash water in all directions

Analog display

Readings (switchable) mm / inch	Display range mm / inch
0.001 / .00005"	± 0.030 / ± .0015"
0.002 / .0001"	± 0.060 / ± .0030"
0.005 / .0005"	± 0.150 / ± .0150"
0.01 / .001"	± 0.30 / ± .030"

Digital Indicators MarCator 1088 / 1088 W, with analog display



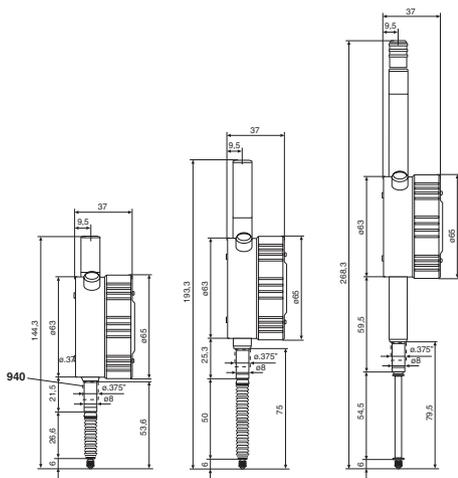
12,5 mm



25 mm



50 mm



Features

Functions:

- ON/OFF
- RESET (set digital and analog displays to zero)
- 0 - (set the analog display to zero)
- PRESET (enter any numerical values)
- DATA (data transmission)
- mm/inch-switchable
- Reversal of counting direction (switch value in digital display)
- MAX-MIN memory, ideal for searching the reversal point
- MAX-MIN memory, e.g. for testing flatness and concentricity
- TOL (Enter tolerance limit values)
- Tolerance band max. 1.6 mm
- LOCK: operating functions can be blocked via PC-Software
- Power supply via the main power adapter
- MarConnect data output: USB, OPTO RS232C, or Digimatic
- Can be remotely operated via the interface (Opto RS232C)
- Control output compatible to Dial Comparators with limit contacts
- Operating and display unit (bezel) can be rotated 280°
- Class of protection IP54 in accordance to IEC 60529
- Operating temperature 5 - 40°C
- High contrast backlit LCD with 6.5 mm high digits
- Analog display with 4 mm pointer ensures better visual recognition, ideal when checking concentricity or flatness as well as searching for the reversal point when measuring bores
- Supplied with: Mains adapter, rubber bellows, operating instructions

Technical Data

Measuring range		Resolution	Measuring force	Span of error*	Protection class	Order no. 230 V	Order no. 115 V
mm	(inch)	mm/inch	N	mm			
12.5	(.5")	0.001 / .00005"	0.65 - 1.40	0.005	IP54	4337000	4337010
25	(1")	0.001 / .00005"	1.00 - 2.25	0.005	IP54	4337001	4337011
50	(2")	0.001 / .00005"	1.25 - 2.7	0.008	IP42	4337002	4337012

* in any zero point

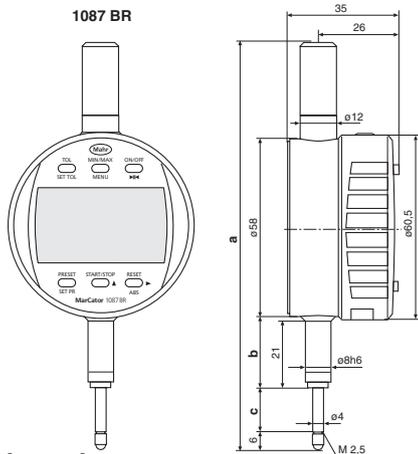
Digital Indicator MarCator 1087 BR for 2 point inside measurement



REFERENCE



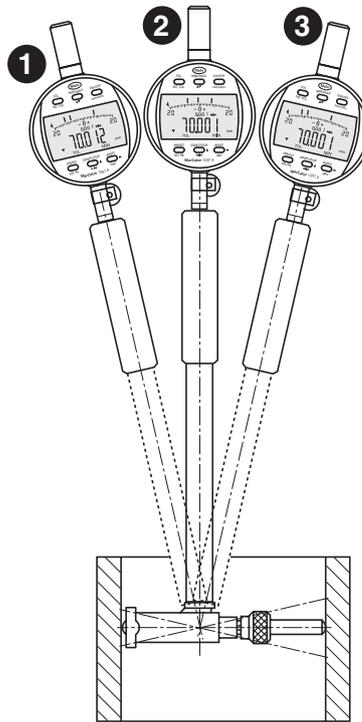
12,5 mm



Dimensions

Measuring range	a	b	c
mm (inch)	mm	mm	mm
12.5 (5")	131	23	13.5

Example of application



With a 2 point inside measuring instrument the point of reversal is automatically determined through rocking back and forth. The actual value is detected and stored by the MIN function and indicated in the display (3).

Features

Functions:

- ON/OFF
- RESET (Set the display to zero) mm/inch
- Reversal of the counting direction
- PRESET (Allows the entry of any value using set buttons)
- TOL (Enter tolerance limit values)
- Tolerance band max. 1.6 mm
- START/STOP for searching the reversal point
- MAX/MIN memory, ideal for searching the reversal point
- ABS (Display can be set to zero, without losing the reference to the Preset value)
- 0 (Set analog display to zero)
- DATA (when connected with a data connection cable)
- Factor (adjustable)
- Immediate measurement due to the Reference system
- Individual buttons can be locked - Lock Function
- Operating and display unit (bezel) can be rotated 280°
- High contrast LCD with 8.5 mm high digits
- Operating time approx. 3 years (2000 work. h/year)
- Maximum measuring speed 1.5 m/s (60"/s)
- Sealed protection cap
- MarConnect data output: choose USB, OPTO RS232C, Digimatic
- Operating temperature 10 - 40°C
- Class of protection IP42 in accordance to IEC 60529
- Supplied with: Battery, operating instructions

Analog display

Readings	Display range
mm / inch	mm / inch
0.001 / .00005	± 0.02 / ± .001
0.002 / .0001	± 0.04 / ± .002
0.004 / .0005	± 0.08 / ± .01
0.01 / .001	± 0.2 / ± .02

Technical Data

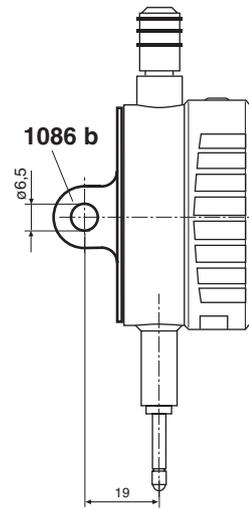
Measuring range	Resolution	Span of error*	Repeatability	Measuring force	Weight	Mounting shank	Order no.
mm (inch)	mm/inch	mm	mm	N	g	dia.	
12.5 (5")	0.001/ .00005"	0.005	0.002	0.65 - 0.90	140	8h6	4337162

* in any zero point

Accessories for MarCator 1086 R, 1087 R und 1088

Accessories for MarCator 1086 R and 1087 R

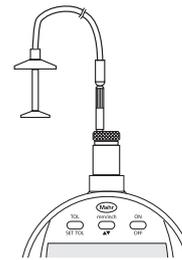
	Order no.
Battery 3V , Type CR 2450	4884464
Data Connection Cable USB (2 m)	16 EXu 4102357
Data Connection Cable Opto RS232C (2 m), with SUB-D jack 9-pin	16 EXr 4102410
Data Connection Cable Digimatic (2 m), Flat plug 10-pin	16 EXd 4102411
Mounting Lug	1086 b 4337421
Rubber bellows for 1086 W - 12.5 mm	4337472
Rubber bellows for 1086 W - 25 mm	4337474



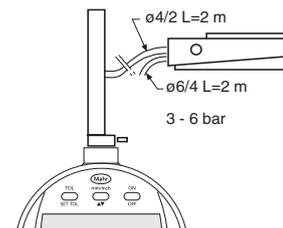
Accessories for MarCator 1088

	Order no.
Data Connection Cable USB (2 m)	2000 usb 4346023
Data Connection Cable Opto RS232C (2 m), with SUB-D jack 9-pin	2000 r 4346020
Data Connection Cable Digimatic (2 m), Flat plug 10-pin	2000 d 4346021
Cable to connect control output to an SPS	2000 sps 4346031
Mounting Lug	1085 b 4336310
Rubber bellows for 1088 W - 12.5 mm	4337472
Rubber bellows for 1088 W - 25 mm	4337474
Control Instrument for remote control operation	2000 sg 4346035

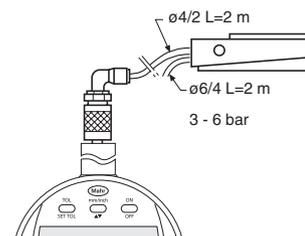
1085 a



1082 p (12,5/25)



1082 p (50/100)



Accessories for MarCator 1086 R, 1087 R and 1088

	Order no.	
Cable Release for measuring ranges 12.5 and 25 mm	1085 a 4336311	
Pneumatic Lifter for measuring ranges 12.5 and 25 mm	1082 p 4336237	
Pneumatic Lifter for measuring ranges 50 and 100 mm	1082 p 4336230	
Additional Accessories		Page
Contact Points	901-913	5-24
Special Holder	941	5-25
Sensor Lever	943	5-25

Accessories for Data Processing see Chapter 11

MarCator Dial Indicators (DIN Style)

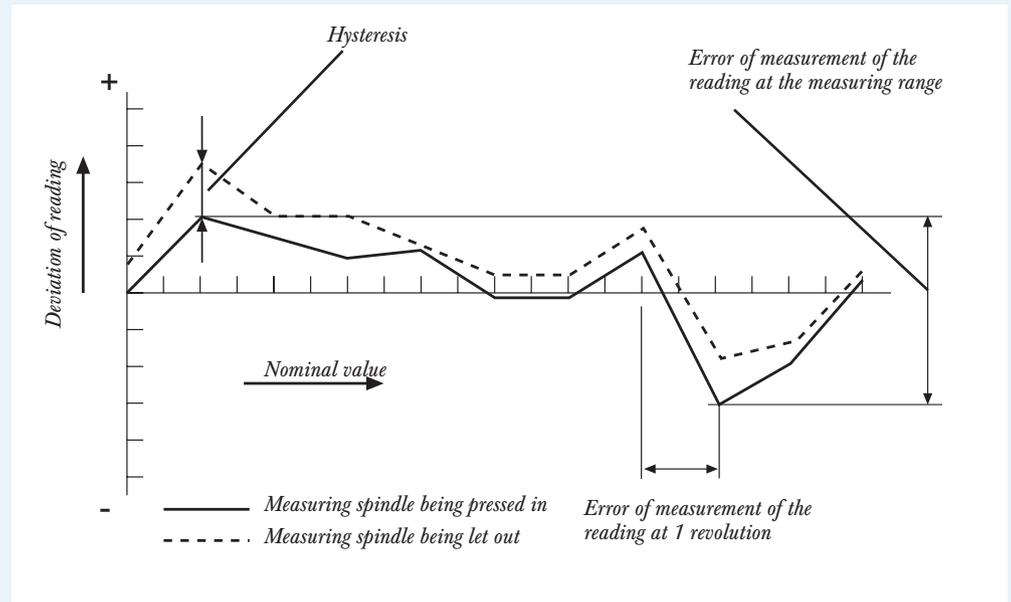
OVERVIEW

Precision Small Dial Indicators					
Model	803 A	805 A	803 S	803 SW	
					
Range	3 mm	5 mm	3 mm	3 mm	
Readings	0.01 mm	0.01 mm	0.01 mm	0.01 mm	
Dial style	0-50	0-100	0-50	0-50	
Standard for metrological characteristics	DIN 878	DIN 878	DIN 878	DIN 878	
<i>DIN EN ISO 463</i>					
Limit value for measurement error at the reading	<ul style="list-style-type: none"> Measuring range 1 revolution 1/2 revolution 1/10 revolution 	10 µm	12 µm	10 µm	10 µm
		9 µm	9 µm	9 µm	9 µm
		8 µm	8 µm	8 µm	8 µm
		5 µm	5 µm	5 µm	5 µm
Limit value for	Repeatability	3 µm	3 µm	3 µm	3 µm
Limit value for	Hysteresis	3 µm	3 µm	3 µm	3 µm
Shockproof			●	●	
Measuring force	0.7 - 1.1 N	0.7 - 1.1 N	0.7 - 1.1 N	0.7 - 1.7 N	
Order no.	4324050	4324060	4324000	4326000	

Precision Dial Indicators					
Model	810 A	810 AT	810 S	810 SW	
					
Range	10 mm	10 mm	10 mm	10 mm	
Readings	0.01	0.01	0.01	0.01	
Dial style	0-100	0-100	0-100	0-100	
Standard for metrological characteristics	DIN 878	DIN 878	DIN 878	DIN 878	
<i>DIN EN ISO 463</i>					
Limit value for measurement error at the reading	<ul style="list-style-type: none"> Measuring range 1 revolution 1/2 revolution 1/10 revolution 	15 µm	15 µm	15 µm	15 µm
		10 µm	10 µm	10 µm	10 µm
		9 µm	9 µm	9 µm	9 µm
		5 µm	5 µm	5 µm	5 µm
Limit value for	Repeatability	3 µm	3 µm	3 µm	3 µm
Limit value for	Hysteresis	3 µm	3 µm	3 µm	3 µm
Shockproof			●	●	
Measuring force	0.7 - 1.3 N	0.7 - 1.3 N	0.7 - 1.3 N	0.7 - 1.6 N	
Order no.	4311050	4311060	4311000	4315000	

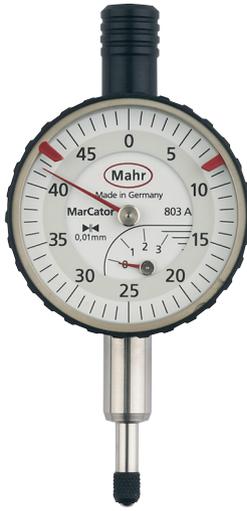
803 SB	803 AZ
	
0.4 mm (±0.2)	.120"
0.01 mm	.0005"
0-20-0	0-20
DIN 878	Factory standard
9 μm	.0004"
8 μm	
5 μm	.0002"
3 μm	.00012"
3 μm	.00012"
●	
0.9 - 1.1 N	0.7 - 1.1 N
4324250	4324900

Metrological characteristics



810 SB	810 SM	810 SRM	810 AZ	810 AU	810 AX	810 AG	810 SV
							
0.8 mm (±0.4)	1 mm	5 mm	.400"	10 mm	10 mm	10 mm	40 mm
0.01	0.001	0.001	.0005"	0.01	0.1	0.01	0.01
0-40-0	0-100	0-100	0-45	100-0	0-10	0-100	0-100
DIN 878	Factory standard	Factory standard	Factory standard				
7 μm	4 μm	10 μm	.0005"	15 μm	50 μm	17 μm	25 μm
6 μm	3 μm	7 μm		10 μm	50 μm	15 μm	15 μm
6 μm	2 μm	3 μm		9 μm	30 μm	10 μm	10 μm
5 μm	1 μm	2 μm	.0002"	5 μm	15 μm	5 μm	5 μm
3 μm	1.5 μm	3 μm	.00012"	5 μm	15 μm	3 μm	3 μm
3 μm	1.5 μm	3 μm	.00012"	5 μm	15 μm	5 μm	6 μm
●	●	●					●
0.7 - 1.1 N	1.3 - 1.8 N	1.2 - 1.7 N	0.9 - 1.5 N	1.0 - 1.8 N	0.7 - 1.3 N	1.3 - 2.2 N	0.8 - 1.8 N
4317000	4311070	4311080	4311900	4329050	4331000	4322000	4321000

Precision Small Dial Indicators 803 / 805



803 A



805 A



SHOCK
PROOF

803 S

Features

Small Dial Indicator 803 A

Standard version

- High precision gears and pinions
- Lifter protection cap on the upper end of the measuring spindle
- Adjustable tolerance markers
- Chrome-plated housing

Small Dial Indicator 805 A

Standard version

- High precision gears and pinions
- Lifter protection cap on the upper end of the measuring spindle
- Adjustable tolerance markers
- Chrome-plated housing

Small Dial Indicator 803 S

Shockproof version

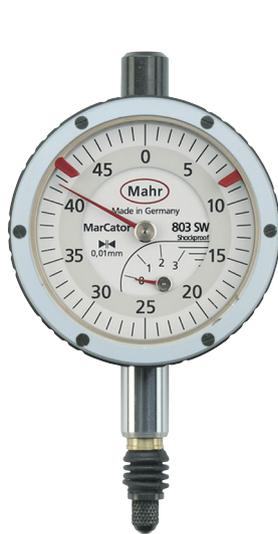
- High precision gears and pinions
- Lifter protection cap on the upper end of the measuring spindle
- Adjustable tolerance markers
- Chrome-plated housing

All indicators are delivered in plastic case

Technical Data

	Range	Readings	Dial face dia.	Overtravel	Mounting shank dia.	Measuring force	Accuracy	Order no.
	mm	mm	mm	mm	mm	N	DIN 878	
803 A	3	0.01	34	0.1	8h6	0.7 - 1.1	●	4324050
805 A	5	0.01	34	0.1	8h6	0.7 - 1.1	●	4324060
803 S	3	0.01	34	0.1	8h6	0.7 - 1.1	●	4324000
803 SW	3	0.01	34	0.1	8h6	0.7 - 1.7	●	4326000
803 SB	0.4 (±0.2)	0.01	34	4.5	8h6	0.9 - 1.1	●	4324250
803 AZ	.120"	.0005"	1.4"	.008"	8h6	0.7 - 1.1		4324900

Precision Small Dial Indicators 803 / 805



803 SW



803 SB



803 AZ

Features

Small Dial Indicator 803 SW

Waterproof and oil proof

Design features identical to 803 S, with the following exceptions:

- Hermetically sealed upper protective measuring spindle cap as well as bezel and transparent dial cover; sealed with O-rings
- Measuring spindle sealed with rubber sleeve, thus preventing contamination by liquids and impurities

Small Dial Indicator 803 SB

with limited measuring range

Design features identical to 803 S, with the following exceptions:

- Limited measuring range (0.4 mm) for error-free readings
- Large overtravel (ca. 4.5 mm), for easier insertion of test items in measuring devices
- Hermetically sealed upper protective measuring spindle cap

Small Dial Indicator 803 AZ

Inch version

Design features identical to 803 A, with the following exception:

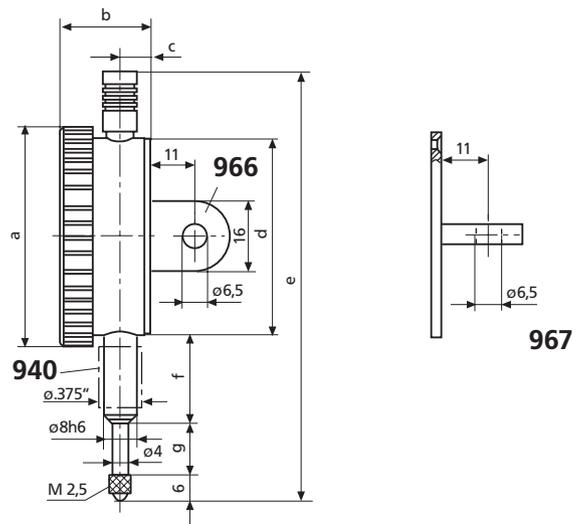
- The scope of supply includes an Adapter Bush 940 for adapting mounting shank 8h6 mm to inch bore .375"

Dimensions according to DIN EN ISO 463

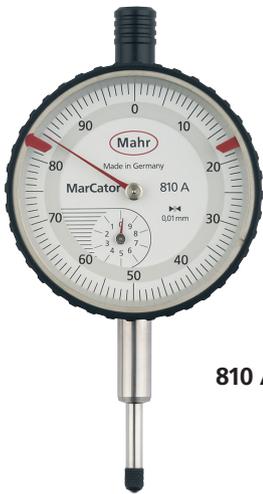
mm	a	b	c	d	e	f	g
803 A	ø 40	20.6	6.8	ø 37	83	15.5	8
805 A	ø 40	20.6	6.8	ø 37	83	15.5	8
803 S	ø 40	20.6	6.8	ø 37	80	15	5.5
803 SW	ø 44	21.6	7.1	ø 37	86	15	11
803 SB	ø 40	20.6	6.8	ø 37	83	15.5	8
803 AZ	ø 40	20.6	6.8	ø 37	83	15.5	8

Accessories

	Order no.	
Adapter Bush for adapting mounting shank 8h6 mm to inch bore .375"	940	4310103
Splash Guard Cover for bezel dia. 40 mm	956	4373021
Mounting Lugs Bore perpendicular to mounting shank	966	4375020
Bore parallel to mounting shank	967	4375021



Precision Dial Indicators 810



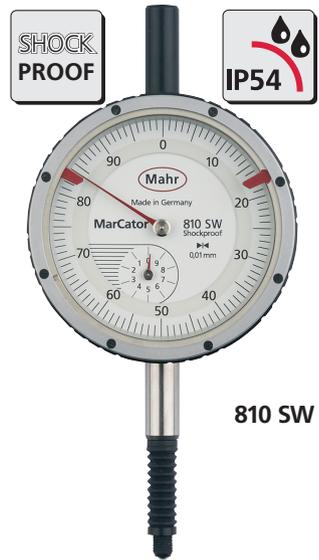
810 A



810 AT



810 S



810 SW

Features

Dial Indicator 810 A

Standard version

- High precision gears and pinions
- Lifter protection cap on the upper end of the measuring spindle
- Adjustable tolerance markers
- Chrome-plated housing

Dial Indicator 810 AT

for depth measurement

- Design features identical to 810 A, with the following exception:
- Scale of the dial face is counter-clockwise

Dial Indicator 810 S

Shockproof

- High precision gears and pinions
- Lifter protection cap on the upper end of the measuring spindle
- Adjustable tolerance markers
- Chrome-plated housing

Dial Indicator 810 SW

Waterproof and oil proof

- Design features identical to 810 S, with the following exceptions:
- Measuring spindle sealed with rubber sleeve, thus preventing contamination by liquids and impurities
 - Hermetically sealed protective measuring spindle cap

All indicators are delivered in plastic case

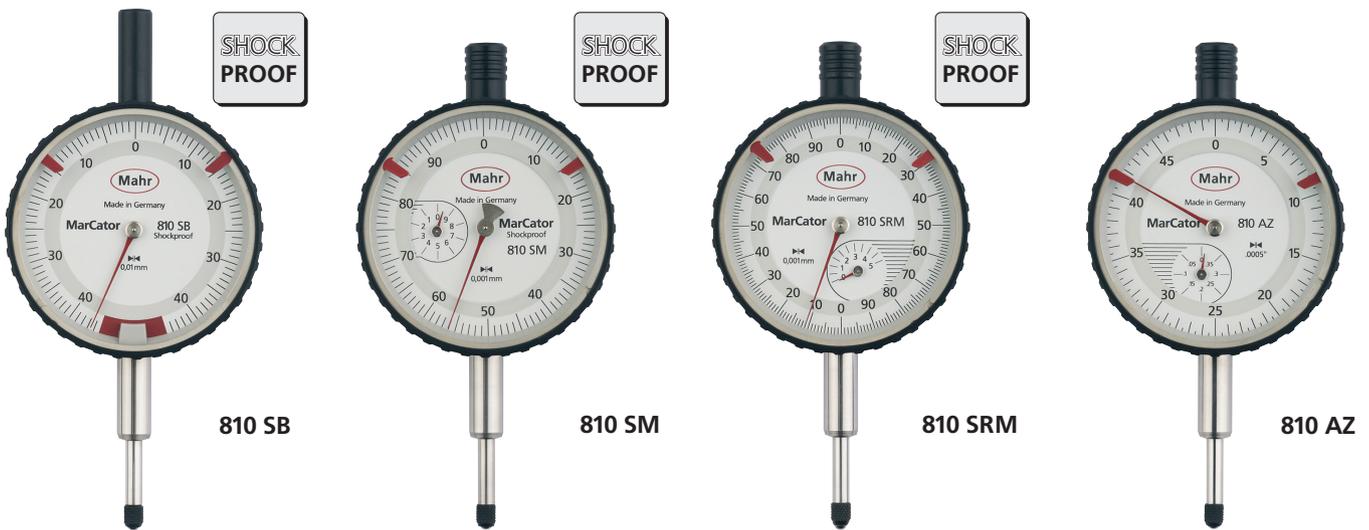
Technical Data

	Range	Readings	Dial face dia.	Overtravel	Mounting shank dia.	Measuring force	Accuracy	Order no.
	mm	mm	mm	mm	mm	N	DIN 878	
810 A	10	0.01	50	0.1	8h6	0.7 - 1.3	●	4311050
810 AT	10	0.01	50	0.1	8h6	0.7 - 1.3	●	4311060
810 S	10	0.01	50	0.1	8h6	0.7 - 1.3	●	4311000
810 SW	10	0.01	50	0.1	8h6	0.7 - 1.6	●	4315000
810 SB	0.8 (±0.4)	0.01	50	9	8h6	0.7 - 1.1	●	4317000
810 SM	1	0.001	50	4	8h6	1.3 - 1.8		4311070
810 SRM	5	0.001	50	0.1	8h6	1.2 - 1.7		4311080
810 AZ	.400"	.0005"	2"	.004"	8h6	0.9 - 1.5		4311900

Accessories

	Order no.		Order no.
Adapter Bush for adapting mounting shank 8h6 mm to inch bore .375"	940	Mounting Lug	
Splash Guard Cover for bezel dia. 58 mm	955	Bore perpendicular to mounting shank	961
	4310103	Bore parallel to mounting shank	962
	4373020		4375010
			4375011

Precision Dial Indicators 810



Features

Dial Indicator 810 SB

with limited measuring range

Design features identical to 810 S, with the following exceptions:

- Limited measuring range (0.8 mm) for error-free readings
- Large overtravel (ca. 9 mm) for easier insertion of test items in measuring devices
- Hermetically sealed protective measuring spindle cap

Dial Indicator 810 SM

Shockproof with reading 0.001 mm

- Precise mechanism with a combined gear lever transmission
- High accuracy with a minimum span of error
- Lifter protection cap on the upper end of the measuring spindle
- Adjustable tolerance markers
- Chrome-plated housing

Dial Indicator 810 SRM

Shockproof with reading 0.001 mm

- High precision gears and pinions
- Lifter protection cap on the upper end of the measuring spindle
- Adjustable tolerance markers
- Chrome-plated housing

Dial Indicator 810 AZ

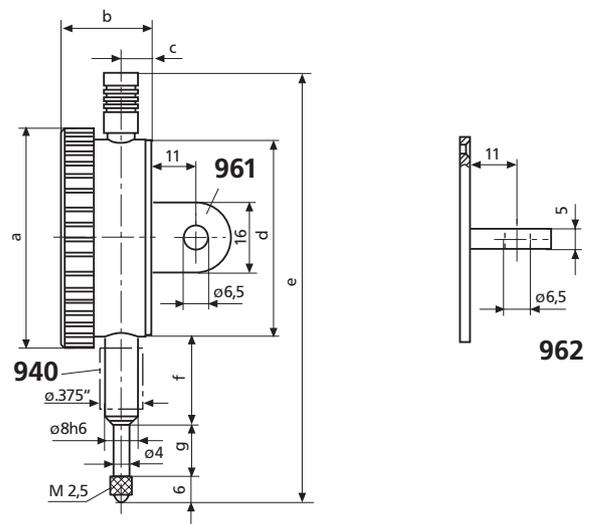
Inch version

Design features are identical to 810 A, with the following exception:

- The scope of supply includes an Adapter Bush 940 for adapting mounting shank 8h6 mm to inch bore .375"

Dimensions according to DIN EN ISO 463

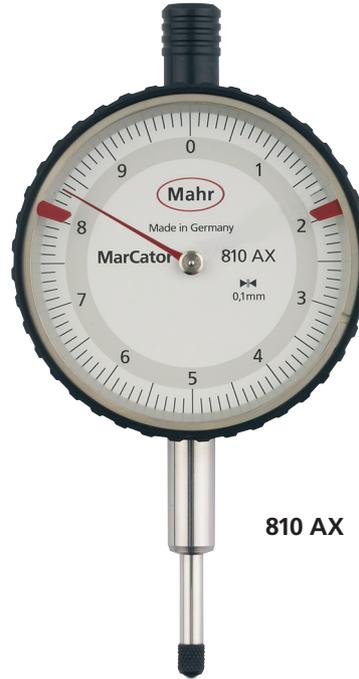
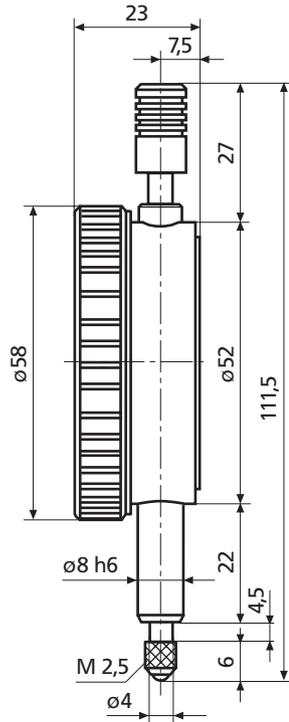
mm	a	b	c	d	e	f	g
810 A/AT	∅ 58	23	7.5	52	112	21	16
810 S	∅ 58	23	7.5	52	111.5	22	15
810 SW	∅ 61	24.15	7.9	52	127.6	22	22.1
810 SB	∅ 58	23	7.5	52	120	22	15
810 SM	∅ 58	25	8.5	52	111.5	22	15
810 SRM	∅ 58	23	7.5	52	111.5	22	15
810 AZ	∅ 58	23	7.5	52	111.5	22	15



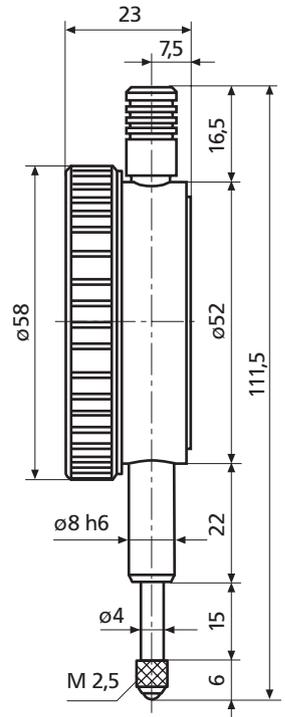
Precision Dial Indicators 810



810 AU



810 AX



Features

Dial Indicator 810 AU

with a reversed measuring force direction

- Chrome-plated housing
- Adjustable tolerance markers
- Scale on the dial increases counter clockwise (+ on left)
- Measuring force acting towards the top
- Delivered in plastic case

Dial Indicator 810 AX

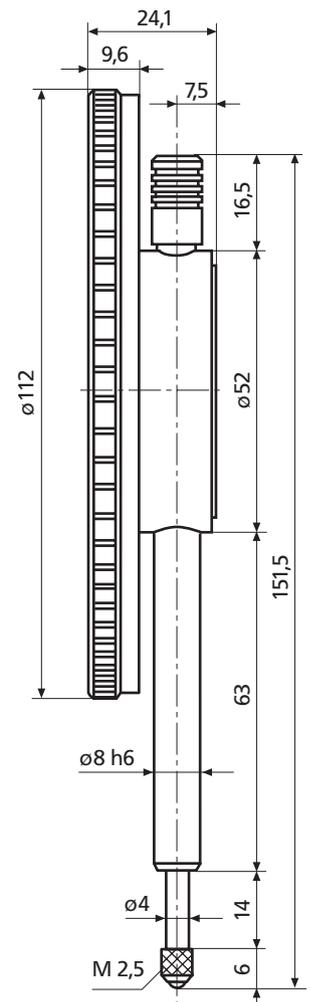
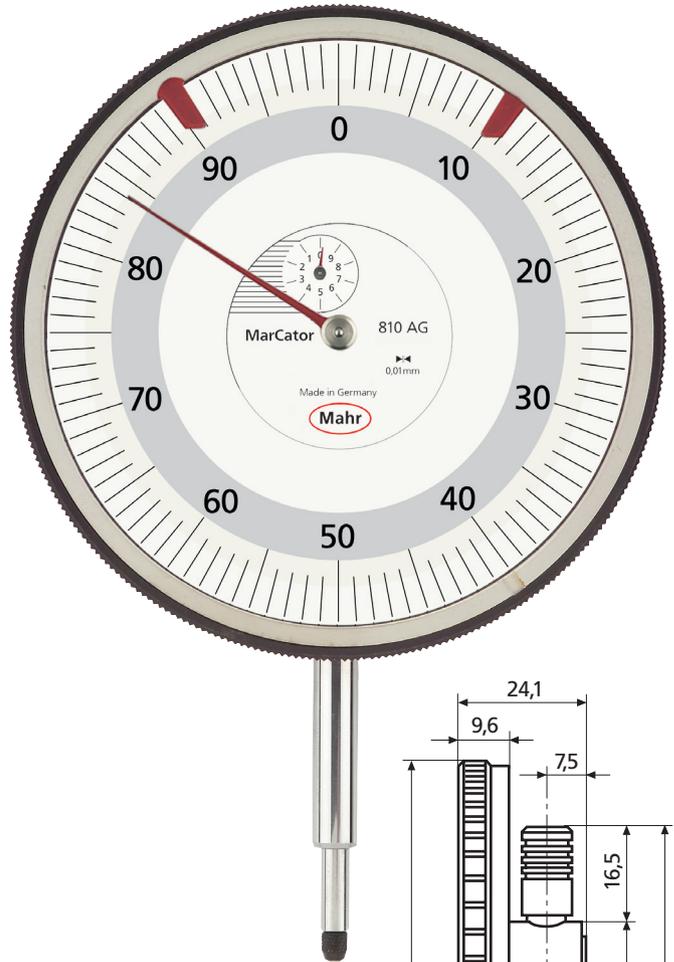
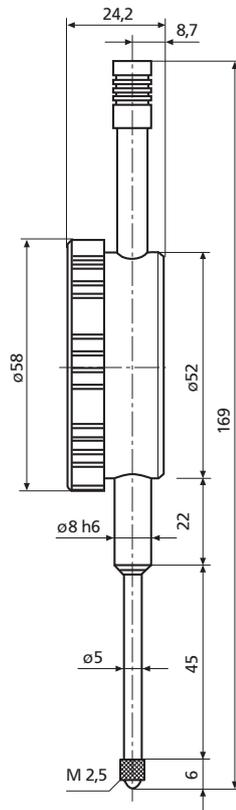
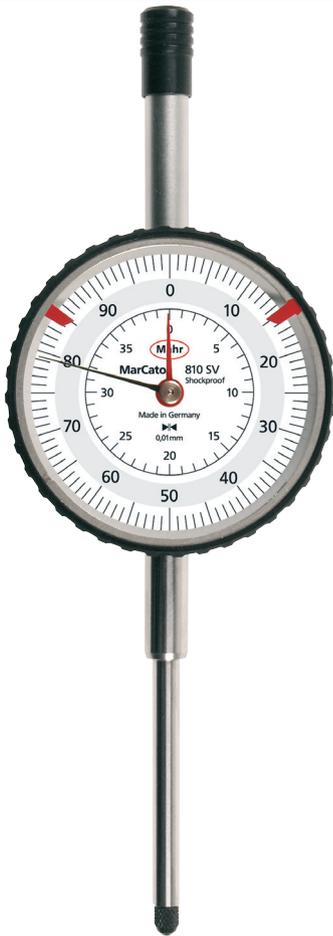
with reading 0.1 mm

- Constant measuring force
- Chrome-plated housing
- Adjustable tolerance markers
- 1 pointer movement on 10 mm
- Delivered in plastic case

Technical Data

	Range	Readings	Dial face	Overtravel	Mounting	Measuring	Order no.
	mm	mm	dia.	mm	shank	force	
			mm		dia.	N	
810 AU	10	0.01	50	0.1	8h6	1 - 1.8	4329050
810 AX	10	0.1	50	0.5	8h6	0.7 - 1.3	4331000
810 SV	40	0.01	50	0.1	8h6	0.8 - 1.8	4321000
810 AG	10	0.01	108	0.1	8h6	1.3 - 2.2	4322000

Precision Dial Indicators 810



Features

Long Range Dial Indicator 810 SV

with larger measuring range

- Range 40 mm
- Strengthened measuring spindle (5 mm)
- Raising of measuring spindle via lifting cap
- Adjustable tolerance markers
- Shockproof movement
- Delivered in folded box

Extra large Dial Indicator 810 AG

with dial face dia. 108 mm

- Ideal for long reading distance and in bad light conditions
- Plastic outer ring
- Delivered in folded box

Accessories

Adapter Bush for adapting mounting shank 8h6 mm to inch bore .375"

940 4310103

Splash Guard Cover for dia. 58 mm

955 4373020

Mounting Lug to mount on mounting shank of all versions

963 4375002

Order no.

Contact Points and Accessories for Dial Indicators, Dial Comparators and Probes

Standard Contact Points 901

Ball dia. 3 mm

Catalog no.		Order no.
901	with steel ball	4360001
901 H	with carbide ball	4360002
901 R	with ruby ball	4360003

Spherical Contact Points 902 Flat Contact Points 903

902 Steel	902 H Carbide contact face	903 Steel	903 H Carbide tipped
Length mm	Order no.	Order no.	Order no.
4	4360007	—	4360070
6	4360009	—	4360071
8	4360010	4360040	4360072
10	4360011	4360041	4360073
12	4360012	4360042	4360074
15	4360013	4360043	4360075
20	4360014	4360044	4360076
25	4360015	4360045	4360077
30	4360016	4360046	4360300
35	4360017	4360047	4360078
40	4360019	4360049	4360310
45	4360026	4360050	4360303
50	4360018	4360048	4360079
55	4360031		4360109
65	4360035		
75	4360020		
85	4360036		
95	4360029		

Ball Contact Point 906 H

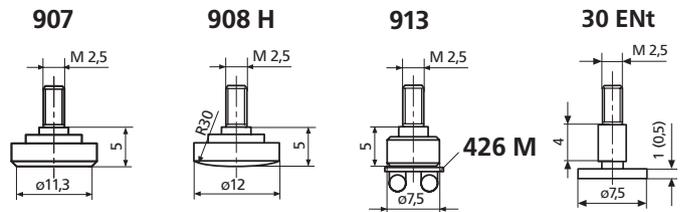
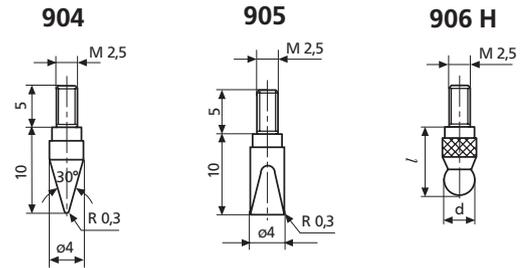
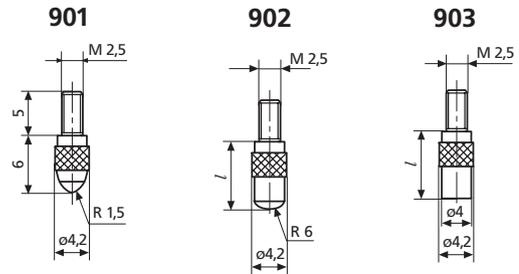
with carbide ball. accuracy ball dia. 0/-6µm

Ball dia. d mm	l mm	Order no.	Ball dia. d mm	l mm	Order no.
1	8.5	4360150	5.5	9	4360161
1.25	8.5	4360151	6	9	4360162
1.5	8.5	4360152	6.35 (1/4")	9	4360163
1.75	8.5	4360153	6.5	10	4360164
2	8.5	4360154	7	10	4360165
2.5	8.5	4360155	7.5	11	4360166
3	8.5	4360156	8	11	4360167
3.5	8.5	4360157	8.5	12	4360168
4	8.5	4360158	9	12	4360169
4.5	8.5	4360159	10	13	4360170
5	9	4360160			

Contact Rollers 909

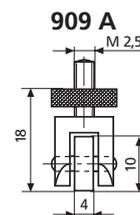
Concentricity error 3 µm

	Order no.
Cylindrical Roller	909 A 4360220
Radiused Roller, R = 5 mm	909 B 4360221



Special Contact Points

	Order no.
Conical Contact Points, Steel	904 4360130
Carbide tipped	904 H 4360131
Wedge Shaped Contact Points, Steel	905 4360140
Carbide tipped	905 H 4360141
Flat Contact Points, Steel, A = 1 cm²	907 4360200
Carbide tipped, dia. 7 mm	907 H 4360201
Spherical Contact Points, Steel	908 4360210
Carbide tipped	908 H 4360211
Flat Contact Point, for mounting Pin Gage Holder 426 M for measuring threads using three-wire method	913 4360400
Disc Type anvil thickness 0.5 mm, hardened	30 ENT 4126310
Disc Type anvil thickness 1 mm, hardened	30 ENT 4882022



Contact Points and Accessories for Dial Indicators, Dial Comparators and Probes

Measuring Attachment 910 H

	Order no.
with parallel adjustable carbide blades	910 H 4360230

Pin Contact Point 911

dia. 1.5 mm, flat

Length l mm	Order no.	Length l mm	Order no.
15	4360280	35	4360284
20	4360281	40	4360285
25	4360282	50	4360286
30	4360283		

Pin Contact Point 911 H

	Order no.
Carbide tipped, dia 1 mm, flat	911 H1 4360240
Carbide tipped, dia 1.5 mm, flat	911 H2 4360241

Measuring Spindle Extensions 912

Length l mm	Order no.	Length l mm	Order no.
10	4360250	35	4360254
15	4360251	50	4360255
20	4360252	75	4360256
25	4360253	100	4360257

Special Holder 941

For all types of measuring equipment
 For placing a dial indicator at a certain distance or angle
 Travel of the measuring spindle 3 mm
 Contact Point 901 (interchangeable)

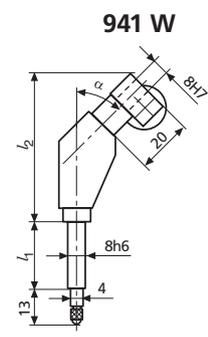
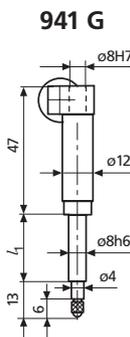
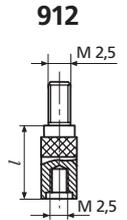
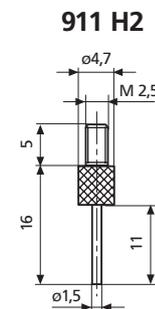
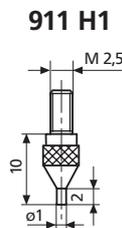
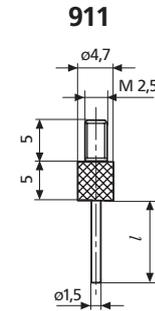
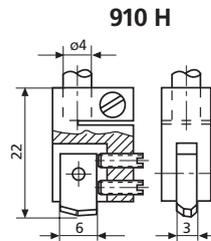
Straight Holder 941 G
 Mounting shank length l_1
 mm

Angular Holder 941 W

Order no.	l_2 mm	Order no.	l_2 mm	Order no.	l_2 mm
Angle $\alpha=45^\circ$		Angle $\alpha=60^\circ$		Angle $\alpha=90^\circ$	
25	4365000	53.7	4365010	49.3	4365030
50	4365001		4365011		4365031
75	4365002		4365012		4365032

Sensor Level 943

	Order no.
For testing concentricity in bore holes as well as difficult to reach outside diameters To be inserted in a measuring stand with a lifting device Contact Point 901 interchangeable Travel ± 1 mm	4367000



Transmission error with the 941 W
 max. 1%;
 for travel 3 mm = 0.03 mm

