

Millimes. Digital Comparator

► | The new Inductive Digital Comparator **Millimes 2100**. Tolerance monitoring is simplified with the color change in the background lit display. | ◀

Dynamic measuring functions:

- MAX / MIN for example, finding the reversal point
- MAX - MIN storing values for example when testing concentricity and flatness



Tolerance function:

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

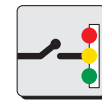


Universal SPS Interface

The choice is yours: **MarConnect** Data output, choose between USB, Digimatic or RS232C

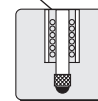
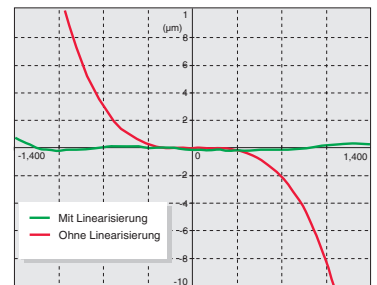


Control output can be connected to a SPS



ABS System

Linearized, inductive **absolute measuring system**. Reference point is not lost when the instrument is switched off.



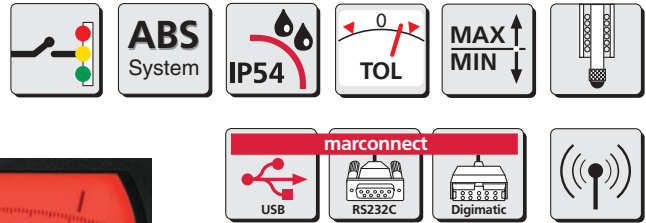
High precision rotary stroke bearings for a longer service life and higher capacity



Especially suited for use in a manufacturing environment. Waterproof **protection class IP54** according to IEC 60529

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

Inductive Digital Comparator Millimes 2100 with background lit display



Features

Functions:

ON/OFF
 RESET (zero setting the digital and analog displays)
 - 0 - (set the analog display to zero)
 PRESET (enter any numerical values)
 DATA (data transmission)
 mm/inch-switchable
 Reversal of counting direction
 RANGE (switch the meas. range and resolution)
 ABS (reference to elect. zero point)
 MAX / MIN memory, e.g. ideal to search for the reversal point
 MAX-MIN e.g. testing concentricity and flatness

TOL (entering tolerance)
 LOCK: operating functions can be blocked via PC-Software

- Linearized inductive absolute measuring system
- Measurement electronic is compensated for temperature
- Power supply via the main power adapter
- MarConnect data output: choose either USB, OPTO RS232C, Digimatic

- Dial Comparator 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 through 280°
- Measuring force spring is interchangeable
- Lower stop is adjustable
- Protection class IP54 according to IEC 60529

- Operating temperature 5 - 40°C
- High contrast background lit LCD with 6.5 mm high digits
- Analog display has a 4 mm long pointer which ensures better visual perception, ideal when checking concentricity and flatness and also to search for the reversal point when measuring bores
- Supplied with: Mains adapter, rubber bellows and spanner for preliminary stroke setting

Technical Data

Measuring ranges switchable mm (inch)	Resolution switchable mm/inch	Display range of the analog display mm (inch)	Span of error* G within		Over-travel mm	Meas. force N	Order no. 230 V	Order no. 115 V
			±0.8 mm	±1.4 mm				
±1.0 (.04")	0.0005 /.00002"	± 0.015 (.0006")						
±1.4 (.055")	0.001 /.00005" 0.005 /.0002" 0.01 /.0005"	± 0.030 (.0015") ± 0.150 (.0060") ± 0.300 (.0150")	1 µm	2 µm	1.8	0.7 - 0.9	4346200	4346201**

* 1 digit in any zero position
 ** Includes Adapter Bush 940

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	902 H	903	903 H
Steel	Carbide contact face	Steel	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		
65	4360035		
75	4360020		
85	4360036		
95	4360029		

Ball Contact Point 906 H

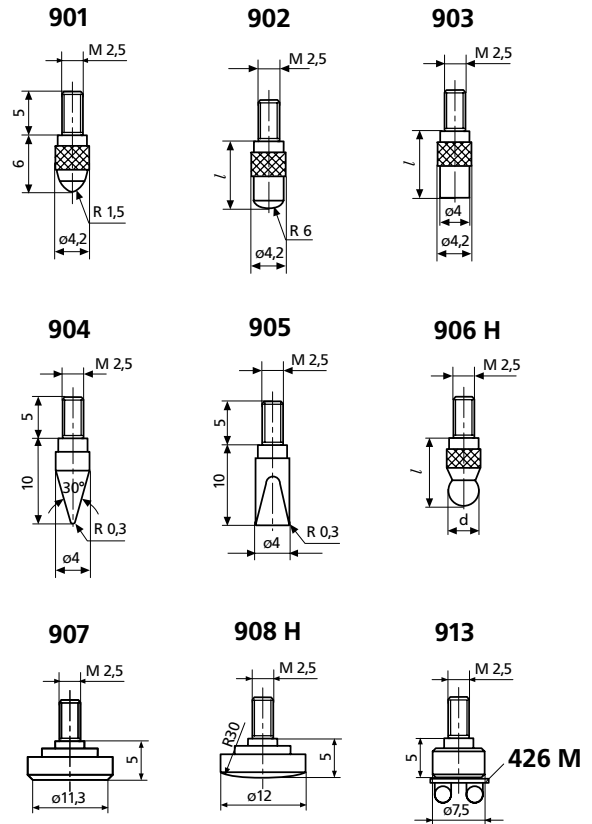
with carbide ball. accuracy ball dia. 0/-6µm

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

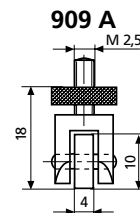
Concentricity error 3 µm

	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



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 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)

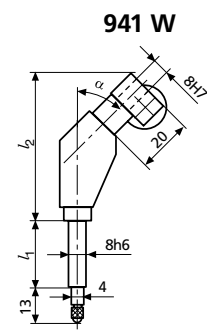
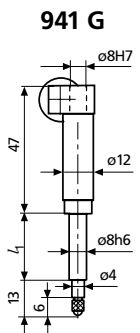
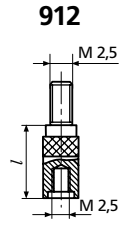
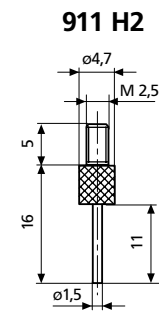
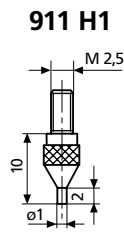
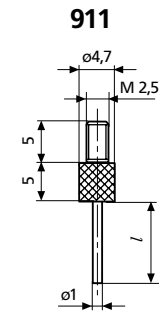
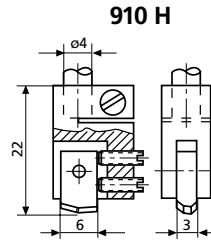
Straight Holder 941 G
 Mounting shank length l_1

Angular Holder 941 W

Order no.	Order no.	l_2	Order no.	l_2	Order no.	l_2		
Angle $\alpha=45^\circ$	Angle $\alpha=60^\circ$	mm	Angle $\alpha=60^\circ$	mm	Angle $\alpha=90^\circ$	mm		
25 4365000	} 53.7	53.7	} 49.3	49.3	} 34.5	34.5		
50 4365001								
75 4365002								
4365010	4365011	4365012	4365020	4365021	4365022	4365030	4365031	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

