

Inductive Digital Comparator μ Max μ m®



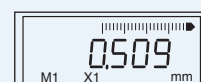
The most valuable electronic indicator for high production measurements.

Features

- Inch/Metric – operator selectable with switchable Inch resolution.
- Normal/Reverse Sensing
- Preset capabilities
- Optional Calibration Lockout feature.
- "Absolute" Transducer – no overspeed errors or constant re-zeroing. Federal's unique transducer always remembers its location – even when power is off.
- High resolution digital readout and analog bar graph – digital display shows deviation from zero or a preset value.
- Lightweight, contamination resistant – ruggedly built to withstand hard use – gasketed case, crystal and stem assemblies resist fluid contamination.
- Calibratable – if ever needed – values remembered even after battery change.
- Data output – 2 popular formats – 7-pin recessed connector
- Auto power down – provides extremely low battery consumption, assuring long life from readily available commercial batteries.
- Unilateral Tolerances.
- Go/NoGo Display Feature.
- Increased resolution (0.0005 mm / 20 μ inch) for today's demanding tolerances

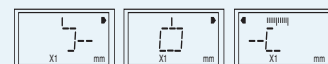
Mode A:

Actual value + graphic display of tolerance



Mode B:

Go- No Go display

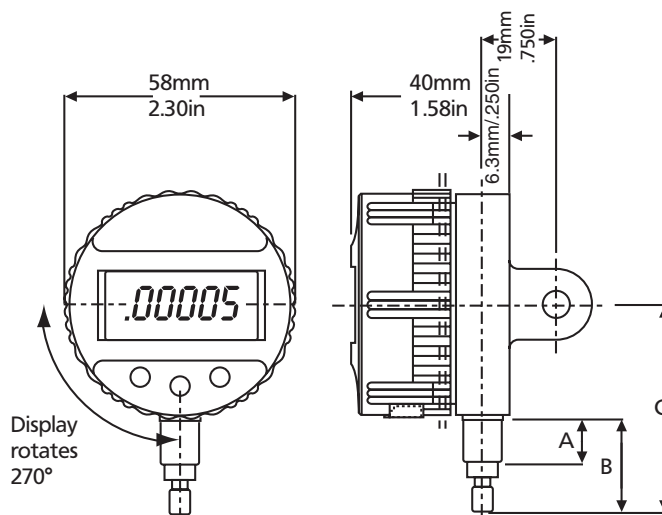


Technical Data

Dimensions

mm/inch	A	B	C
	11.7 / .46"	24.1 / .95"	53.6 / 2.11"
	38 / 1.50"	57.2 / 2.25"	86.6 / 3.41"

For Contact Points please refer to pages 5-22, 5-27, 5-52 & 5-53.



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Technical Data

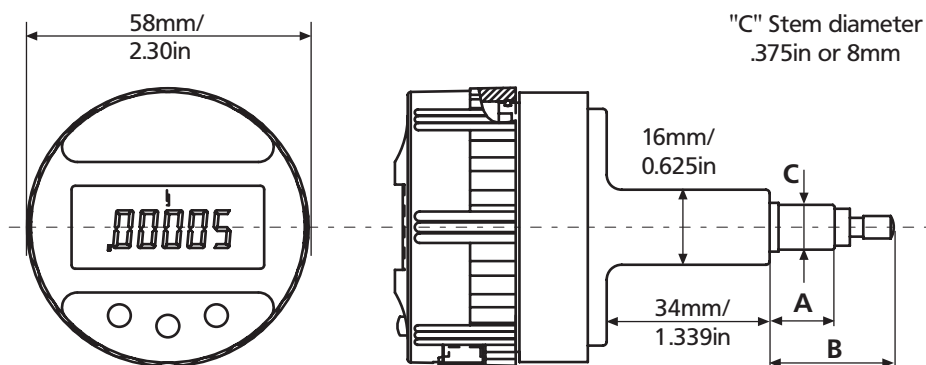
Range and Resolution

	Standard Units		High Resolution Units	
Display	Range	Resolution	Accuracy % of Digital Range	Resolution Accuracy % of Digital Range
Inch	$\pm .040''$	$.00005'' / .0001'' /$ $.0005'' / .0002'' / .001''$	$\pm .5\% \text{ over } \pm .040''$ $\pm .25\% \text{ over } \pm .020''$	$.00002''$ plus same as standard $\pm .5\% \text{ over } \pm .040''$ $\pm .25\% \text{ over } \pm .020''$
Metric	$\pm 1.0 \text{ mm}$	$0.001 / 0.002 / 0.005 /$ $0.010 / 0.020 \text{ mm}$	$\pm .5\% \text{ over } \pm 1.00 \text{ mm}$ $\pm .25\% \text{ over } \pm 0.50 \text{ mm}$	0.0005 mm plus same as standard $\pm .5\% \text{ over } \pm 1.00 \text{ mm}$ $\pm .25\% \text{ over } \pm 0.50 \text{ mm}$

Specifications

Spindle Range	- .050" to + .060" (-1.28 mm to + 1.5 mm)
Repeatability	± 1 digit
Contact Point	(Normally furnished — PT-223) for .375" dia. stem, .250" long, radiused tip, 4-48 thread; (EPT-1037-W1) for 8 mm dia. stem, 6 mm long, radiused tip, M2.5 mm thread
Gaging Force	85-112 g/3-4 oz. (at center of spindle travel) Other gaging forces available — call Technical Assistance
Power	3 volt lithium coin cell (2 per unit, consumer type, CR 2450) Mahr Federal Model Number: EBY-1018
Battery Life	nine months normal usage or 3000 hours
Weight	approx. 170 g / 6 oz.
Display	Rotates through 270°
Operating Temperature	4° ... 50°C / 50° ... 130° F

Perpendicular μ Max μ m



Dimensions mm/inch

A	B
11.7 / .46"	24.1 / .95"
38 / 1.50"	57.2 / 2.25"

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Ordering Information

μ Max μ m Model Number:

No Data Output

EDI-

5

X

X

0

X

Style	Standard	Range	Resolution	Code	Ratio	Code	Stem dia./L **	Code	Back	Code
"5" Series		± 1 mm / $\pm .040''$	.001 mm / 50 μ inch		1:1	0	.375" / .46"	1	Lug (EBK-1010)	1
					4/5	1	.375" / 1.5"	2	Flat (EBK-1018)	2
							8 mm / .46"	3		
							8 mm / 1.5"	4		

With Data Output

EDI-

X

X

X

0

X

Style	Range	Resolution	Code	Ratio	Code	Stem dia./L **	Code	Back	Code
High Resolution	± 1 mm / $\pm .040''$	.0005 mm / 20 μ inch	2	1:1	0	.375" / .46"	1	Perpendicular (no back)	0
Standard Perpendicular	± 1 mm / $\pm .040''$	.001 mm / 50 μ inch	3	4/5	1	.375" / 1.5"	2	Lug (EBK-1010)	1
High Resolution Perpendicular	± 1 mm / $\pm .040''$	.0005 mm / 20 μ inch	4	Calibration Lockout, 1:1	2*	8 mm / .46"	3	Flat (EBK-1018)	2
				Calibration Lockout, 4/5	3*	8 mm / 1.5"	4		

* Requires Calibration Access Key, EKY-1024 (sold separately)

** Diameter / Length

Note. Ask about our **EDS-X** models for special Setup Mode Lockout, MM/INCH Button Lockout, Calibration Lockout, Disable Sleep Mode and more

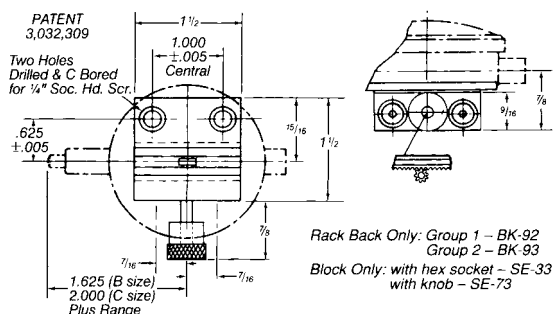
Accessories

	Order no.
Lug Back (Horizontal / Vertical)	EBK-1010
Flat Back	EBK-1018
Post Back	EBK-1012
Screw Back	EBK-1013
Back for Adjustable Mounting Brackets like AT-28 and AT-116 (slide sold separately)	EBK-1014
Adjustable Back (.5" slot x 1/4 - 20 thread)	EBK-1016
Mating Connector (7 pin)	ECN-1720
Output Cable to Digimatic	2001025
Serial output cable to DB-9 pin	SCB-4
Dust Cover	ECV-1307-W2
Calibration Access Key	EKY-1024
Spring — for lighter gaging force: 35 g / 1.2 oz.	SP-351

Adjustable Mounting Brackets

Features

- Allows fast, positive indicator adjustments
- Ideal for permanent indicator mounting to fixtures
- Rack Back included with all Brackets
- Sizes for ANSI/AGD Groups 1 and 2



Rack Back Only: Group 1 – BK-92
Group 2 – BK-93
Block Only: with hex socket – SE-33
with knob – SE-73

Order Numbers

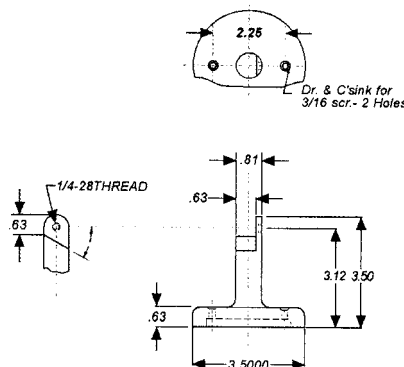
Mahr Federal Indicator	Used with	Order no.
Group 1	hex socket adjust	AT-27
Group 1	adjusting knob	AT-115
Group 2	hex socket adjust	AT-28
Group 2	adjusting knob	AT-116

Universal Mounting Base

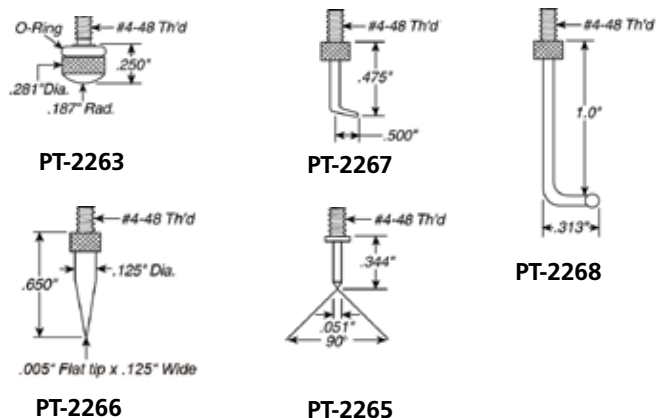
Features

- Allows mounting indicator to custom fixtures
- Uses lug back to mount indicator
- Accommodates all size indicators

Order no. **BA-1051**



Added flexibility for your Mahr Federal Dial Indicators



Description

Order no.

Shock Absorbing Contact. "O" ring over threads provides a barrier between metal surface and stem, minimizing damage if point is pushed in with excessive force.

PT-2263

Chisel Point Contact for checking small slots. Furnished with a small lock nut for positioning on the indicator.

PT-2266

Small Offset Point Contact. Small tip, .010" radius, permits checking narrow recesses. Furnished with a lock nut for indicator positioning.

PT-2267

Needle Contact for checking into small areas. Correct length for use as a replacement on Mahr Federal 65P-40 depth gage.

PT-2265

Right Angle Contact with a .093" diameter ball for checking hard-to-reach grooves. Right angle allows checking to bottom or to top of a groove when used with a push down action Indicator. Its 1" length makes it long enough to be used with Mahr Federal 75P-50 Series Depth Gages.

PT-2268

Contact Thread Adapter, Adapts M2.5 thread to 4-48 thread (.375" length)

AD-185

4-48 to M2.5 Threaded Adapter

2236519

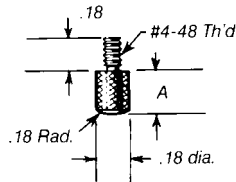
Features

- Innovative Contact Points make your indicators more versatile.
- Minimize point damage with a shock absorbing contact, without the need for a cushion gear.
- Needle point perfect for checking small areas – etchings, pits and more.
- Chisel point easily adapts to small slots or screw heads.
- Small offset point for narrow recesses – grooves, holes and under ledges.
- Right angle point makes hard to reach grooves easily accessible.

Contact Points

Used with ANSI/AGD Groups 1,2,3,4 Long Range Wetproof Perpendicular and Maxµm® Indicators. Points for ANSI Group 0 Indicators - see page 5-8. For Special Points - call Mahr Federal. See pages 5-52 & 5-53 for additional Metric Contact Points.

Regular



Hardened Steel (inch)

Dimension A	Order no.	Dimension A	Order no.
1/8"	PT-225	1-5/8"	PT-235
1/4"	PT-223*	1-3/4"	PT-241
3/8"	PT-563	1-7/8"	PT-100
1/2"	PT-14	2"	PT-51
5/8"	PT-564**	2-1/8"	PT-243
3/4"	PT-31	2-1/4"	PT-696
7/8"	PT-201	2-3/8"	PT-101
1"	PT-232	2-1/2"	PT-245
1-1/8"	PT-305	2-5/8"	PT-102
1-1/4"	PT-565	2-3/4"	PT-566
1-3/8"	PT-239	2-7/8"	PT-247
1-1/2"	PT-50	3"	PT-155

Hardened Steel (Metric***)

Dimension A	Order no.	Dimension A	Order no.
6 mm	EPT-1037-W1	15 mm	EPT-1037-W3
10 mm	EPT-1037-W2	20 mm	EPT-1037-W4
12 mm	EPT-1037-W6	25 mm	EPT-1037-W5

Tungsten Carbide

1/4" PT-35 Set of 8 Steel 1/8" to 1" PT-116

Diamond

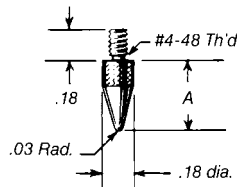
1/4" PT-317 Set of 24 Steel 1/8" to 3" PT-115

* PT-223 normally furnished with all Indicators

** PT-564 normally furnished with all Wetproof Indicators

*** All Metric Points have M2.5 thread

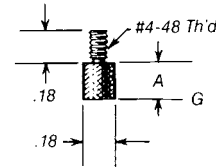
Tapered



Hardened Steel (inch)

Dimension A	Order no.	Dimension A	Order no.
3/16"	PT-233	7/16"	PT-181
7/16"	PT-229	3/4"	PT-182
1"	PT-253	1"	PT-183
1-7/16"	PT-230		
2"	PT-231		

Flat End



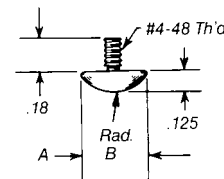
Hardened Steel (inch)

Dimension A	Order no.	Dimension A	Order no.
1/8"	AL-19	6 mm	EAL-1016-W1
1/4"	AL-673	10 mm	EAL-1016-W2
3/8"	AL-20	15 mm	EAL-1016-W3
1/2"	AL-21	20 mm	EAL-1016-W4
5/8"	AL-22	25 mm	EAL-1016-W5
3/4"	AL-23		
7/8"	AL-24		
1"	AL-25		

Tungsten Carbide

1/4" AL-51
Set of 8 Steel
1/8" to 1" AL-55

Button

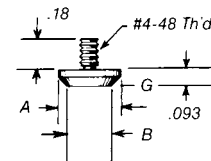


Hardened Steel (inch)

Dim. A	Dim. B	Order no.	Dim. A	Dim. B	Order no.
.375"	.250"	PT-227	.375"	.250"	PT-120
.500"	.375"	PT-619			

Tungsten Carbide

Wide Face



Hardened Steel (inch)

Dim. A	Dim. B	Order no.	Dim. A	Dim. B	Order no.
.356"	.250"	AL-502	9.04	6.35	EAL-1020-W1
.500"	.375"	AL-1510	12.7	9.5	EAL-1020-W2
.615"	.500"	AL-520	15.6	12.7	EAL-1020-W3
.731"	.625"	AL-44	18.6	15.9	EAL-1020-W4

Tungsten Carbide (inch)

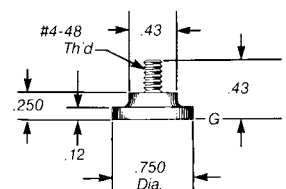
.356" .250" AL-1730 Set of 8 Steel (Metric***)

9.04 6.35 EAL-1021

Extra Wide Face

Hardened Steel

Order no. AL-291



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	—	—
6	4360009	—	—
8	4360010	4360040	—
10	4360011	4360041	4360101
12	4360012	4360042	4360102
15	4360013	4360043	4360103
20	4360014	4360044	4360104
25	4360015	4360045	4360105
30	4360016	4360046	4360106
35	4360017	4360047	4360107
40	4360019	4360049	4360110
45	4360026	4360050	4360108
50	4360018	4360048	4360111
55	4360031	—	—
65	4360035	4360079	4360109
75	4360020		
85	4360036		
95	4360029		

Ball Contact Point 906 H

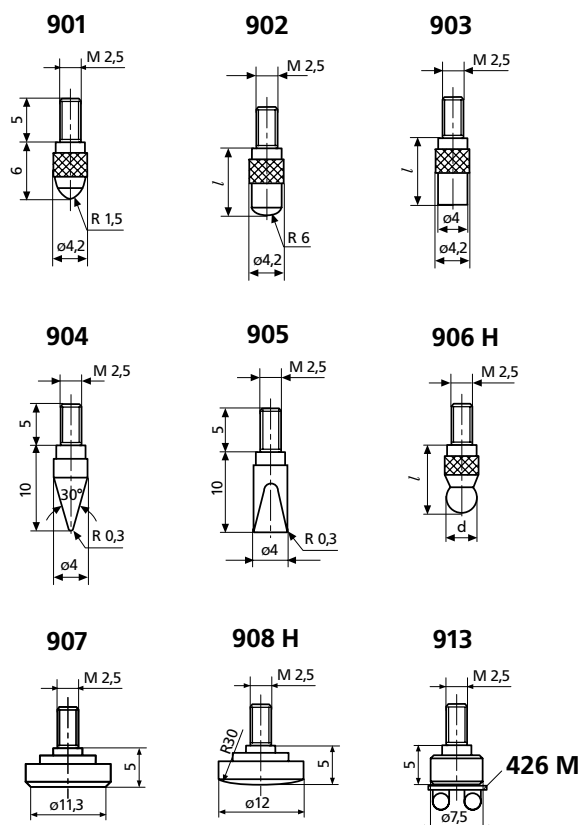
with carbide ball. accuracy ball dia. 0/-6µm

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

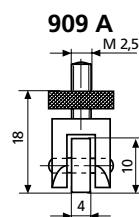
Concentricity error 3 µm

	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

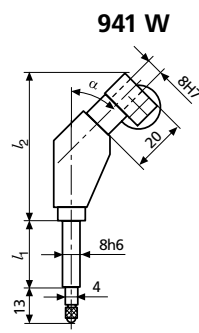
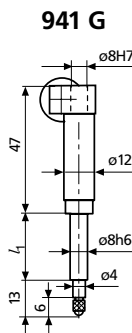
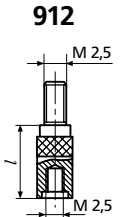
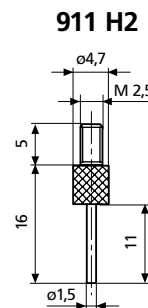
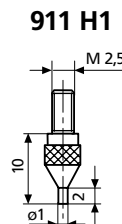
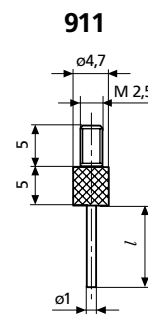
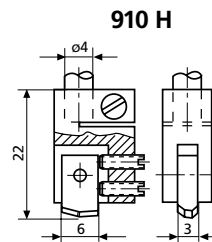
Mounting shank length l_1 mm	Order no.
25	4365000
50	4365001
75	4365002

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 $\alpha=90^\circ$	
4365010	53.7	4365020	49.3	4365030	34.5
4365011		4365021		4365031	
4365012		4365022		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

