

## SERIES 2 — Water-proof Type, 0.01 mm & 0.001 mm Graduation

- Standard 0.01 mm and 0.001 mm graduation dial indicators have a highly water-resistant bezel with an outside diameter of 57 mm.
- O-rings and rubber bellows are used to prevent water and oil penetration.
- Excellent in accuracy and durability.
- The indicator is highly durable thanks to its oil- and water-tight design, quenched hardened stainless-steel, carbide contact point, and a grand gear made of wear- and deformation-resistant material.
- Application of an anti-reflective and hard surface coating improves scale visibility along with scratch and chemical resistance.



## SPECIFICATIONS

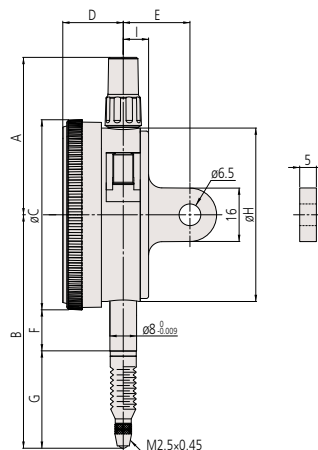
Metric										ISO/JIS type	
Code No.		Graduation (mm)	Range (range/rev) (mm)	Maximum permissible error (MPE) (μm)						Dial reading	Measuring force (N)
w/lug	Flat-back			Indication error				Hysteresis	Repeat-ability		
				1/10 Rev	1/2 Rev	1 Rev	Measuring range				
<b>2046A-60</b>	<b>2046AB-60</b>	0.01	10 (1)	5	9	10	13	3	3	±0-100	2.5 or less
<b>2044A-60</b>	<b>2044AB-60</b>	0.01	5 (1)	5	9	10	12	3	3	±0-100	2.5 or less
<b>2109A-70</b>	<b>2109AB-70</b>	0.001	1 (0.2)	2	3	4	5	2	0.5	±0-100-0	2.0 or less
<b>2110A-70</b>	<b>2110AB-70</b>	0.001	1 (0.1)	2	3	4	5	2	0.5	±0-100	2.0 or less

Note: Completed products inspection is performed in the vertical orientation (contact point downward) and the stated accuracy is guaranteed.

## DIMENSIONS

ISO / JIS  
Type

Unit: mm



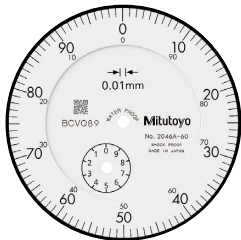
Code No.	A	B	C	D	E	F	G	H	I	Mass (g)	
										w/lug	Flat-back
<b>2046A-60</b>	47.2	74.7	57	18.1	20	12.3	33.9	52	7.6	147	138
<b>2044A-60</b>	47.2	70	57	18.1	20	12.3	29.2	52	7.6	147	138
<b>2109A-70</b>	47.2	65.3	57	18.1	20	12.3	24.5	52	7.6	149	140
<b>2110A-70</b>	47.2	67.5	57	18.1	20	12.3	26.7	52	7.6	150	141

Note: Refer to pages 07-63 to 07-68 for details of contact points.

Dial Indicators

SERIES 2 — Water-proof Type, 0.01 mm & 0.001 mm Graduation

Continuous scale



Graduation: 0.01 mm,  
Measuring range: 10 mm

**2046A-60**

- Waterproof
- With damper at top rest point

Continuous scale

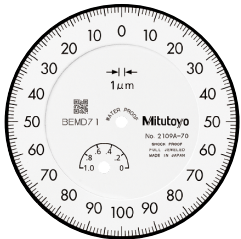


Graduation: 0.01 mm,  
Measuring range: 5 mm

**2044A-60**

- Waterproof
- With damper at top rest point

Balanced scale

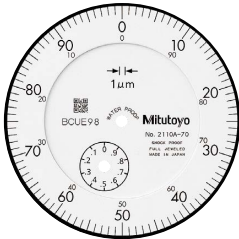


Graduation: 0.001 mm,  
Measuring range: 1 mm

**2109A-70**

- Waterproof
- Shockproof
- Jeweled bearing

Continuous scale



Graduation: 0.001 mm,  
Measuring range: 1 mm

**2110A-70**

- Waterproof
- Double scale spacing
- Shockproof
- Jeweled bearing

Optional Accessories

- Limit hand (2 pcs.): **21AZB195**



- Bezel clamp: **21AZB148** (for metric type)  
**21RZA065** (for inch type)



21AZB148

FEATURES

Metric		ISO/JIS type						
Code No.								
w/lug	Flat-back							
2046A-60	2046AB-60	✓			✓	✓		
2044A-60	2044AB-60	✓			✓	✓		
2109A-70	2109AB-70		✓	✓	✓		✓	
2110A-70	2110AB-70	✓		✓	✓		✓	✓