

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

- Water-proof type dial indicators having a bezel with an outside diameter of 57 mm.
- O-rings and rubber bellows are used to prevent water and oil penetration.
- The bezel clamp can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- The stem and spindle are made of high-strength quench-hardened stainless steel suitable for heavy-duty use.
- A carbide contact point is used.
- Application of an anti-reflective and hard surface coating improves scale visibility along with scratch and chemical resistance.



2046A-60

Continuous scale

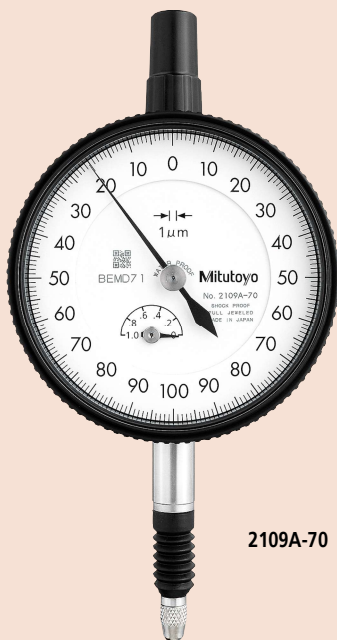


Graduation: 0.01 mm,  
Measuring range: 10 mm  
 **Waterproof**  
 **With damper at top rest point**

Continuous scale

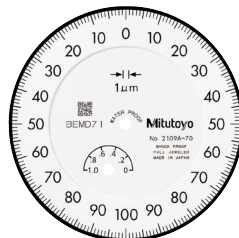


Graduation: 0.01 mm,  
Measuring range: 5 mm  
 **Waterproof**  
 **With damper at top rest point**



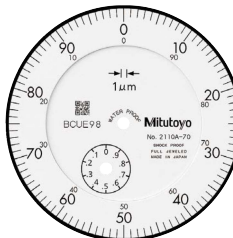
2109A-70

Balanced scale



Graduation: 0.001 mm,  
Measuring range: 1 mm  
 **Waterproof**  
 **Shockproof**  
 **Jeweled bearing**

Continuous scale



Graduation: 0.001 mm,  
Measuring range: 1 mm  
 **Waterproof**  
 **Double scale spacing**  
 **Shockproof**  
 **Jeweled bearing**

# Dial Indicators

## DIMENSIONS

ISO/JIS  
Type

Unit: mm

Order 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 F-57 to F-60 for details of contact points.

## Optional Accessories

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



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



**21AZB148**

## FEATURES

Metric								
Order No.								
w/lug	Flat-back							
<b>2046A-60</b>	<b>2046AB-60</b>	✓			✓	✓		
<b>2044A-60</b>	<b>2044AB-60</b>	✓			✓	✓		
<b>2109A-70</b>	<b>2109AB-70</b>		✓	✓	✓		✓	
<b>2110A-70</b>	<b>2110AB-70</b>	✓		✓	✓		✓	✓

## SPECIFICATIONS

Metric												ISO/JIS type
Order 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.