

Special Dial Indicators

SERIES 2



Adjustable hand



20485-10

Adjustable hand dial gage

The hand position can be adjusted independently of the vertical movement of the spindle by rotating the top knob.



Peak hold



20465-80

Peak hold dial gage

A mechanism that stops the pointer and the spindle at the depressed position where the spindle is depressed makes the pointer stop and display the maximum value.



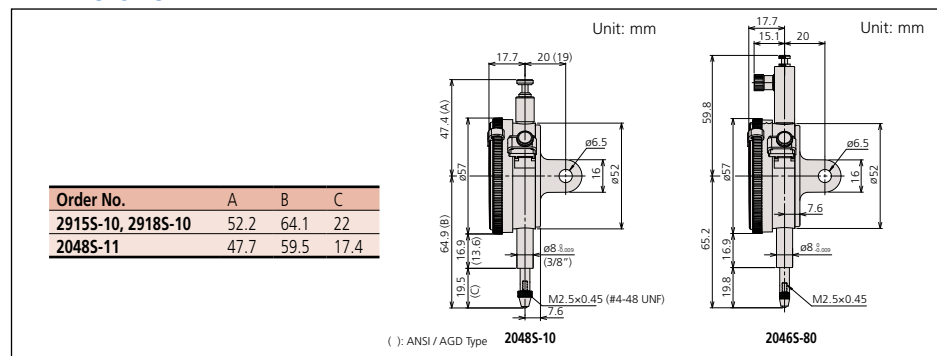
SPECIFICATIONS

Inch Stem dia. 3/8" #4-48 UNF Thread									
Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy		Measuring force	
				w/lug	Flat-back	First 2.5 Rev	Overall Accuracy		
.001"	.5"	.1"	0-100	29155-10	29155B-10	±.001"	±.001"	1.8N or less	✓
.001"	.5"	.1"	0-50-0	29185-10	29185B-10	±.001"	±.001"	1.8N or less	✓

Metric Stem dia. 3/8" #4-48 UNF Thread, Yellow Dial Face									
Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy		Measuring force	
				w/lug	Flat-back	First 2.5 Rev	Overall		
0.01mm	10mm	1mm	0-100	20485-11	20485B-11	±13μm	±0.013mm	1.4N or less	✓

Metric Stem ø 8mm, M2.5 x 0.45 Thread									
Graduation	Range	Range /rev	Dial reading	Order No.		Accuracy	Measuring force		
				w/lug	Flat-back				
0.01mm	10mm	1mm	0-100	20485-10	20485B-10	±0.015mm	1.4N or less	✓	✓
0.01mm	10mm	1mm	0-100	20465-80	20465B-80	±0.015mm	5.0N or less	✓	✓

DIMENSIONS





Dial Indicators

SERIES 2 — Standard Type, Inch Reading

Optional Accessories

- : Backs (See page F-33.)
- : Contact points (See page F-34.)



2416S



2803S-10

SPECIFICATIONS

Inch		Stem 3/8" dia. #4-48 UNF Thread						ANSI/AGD type				
Graduation	Range	Range /Rev	Dial Reading	Order No.		Accuracy		Measuring force				
				w/lug	Flat-back	First 2.5 Rev	Overall					
.0001"	.025"	.01"	0-10	2802S-10	2802SB-10	±.0001"	±.0001"	2.5N or less	✓			✓
.0001"	.025"	.01"	0-5-0	2803S-10	2803SB-10	±.0001"	±.0001"	2.5N or less	✓			✓
.0001"	.05"	.01"	0-10	2804S-10	2804SB-10	±.0001"	±.0002"	2.0N or less	✓			✓
.0001"	.05"	.01"	0-5-0	2805S-10	2805SB-10	±.0001"	±.0002"	2.0N or less	✓			✓
.0001"	.05"	.01"	10-0	2905S-10	2905SB-10	±.0001"	±.0002"	2.0N or less	✓	✓		✓
.0001"	.05"	.01"	0-5-0	2923S-10	2923SB-10	±.0001"	±.0002"	2.0N or less	✓	✓		✓
.0001"	.25"	.01"	0-10	2356S-10	2356SB-10	±.0001"	±.0005"	2.0N or less				✓
.0001"	.5"	.01"	0-10	2358S-10	2358SB-10	±.0001"	±.0008"	2.0N or less				✓
.0005"	.125"	.05"	0-50	2506S	2506SB	±.0005"	±.0005"	1.8N or less				
.0005"	.125"	.05"	0-25-0	2507S	2507SB	±.0005"	±.0005"	1.8N or less				
.0005"	.125"	.05"	0-25-0	2922S	2922SB	±.0005"	±.0005"	1.8N or less		✓		
.0005"	.5"	.05"	0-50	2514S	2514SB	±.0005"	±.0015"	1.8N or less				
.0005"	1"	.05"	0-50	2776S	2776SB	±.0005"	±.002"	2.5N or less				
.001"	.5"	.1"	0-100	2414S	2414SB	±.001"	±.001"	1.8N or less				
.001"	.5"	.1"	100-0	2914S	2914SB	±.001"	±.001"	0.4-1.8N		✓		
.001"	.5"	.1"	0-50-0	2415S	2415SB	±.001"	±.001"	1.8N or less				
.001"	1"	.1"	0-100	2416S	2416SB	±.001"	±.002"	1.8N or less				
.001"	1"	.1"	0-100	2416S-06*	2416SB-06*	±.001"	±.002"	1.8N or less				
.001"	1"	.1"	0-100	2416S-10	2416SB-10	±.001"	±.002"	1.8N or less				✓
.001"	1"	.1"	0-50-0	2417S	2417SB	±.001"	±.002"	1.8N or less				
.001"	1"	.1"	100-0	2904S	2904SB	±.001"	±.002"	1.8N or less		✓		
.001"	2"	1"	0-100	2424S-19	2424SB-19	±.001"	±.003"	2.5N or less	✓			✓

* Black Face



Shockproof type



Reverse reading type



Jeweled bearing type

Dial Indicators

SERIES 2 — Standard Type, Inch Reading



2506S

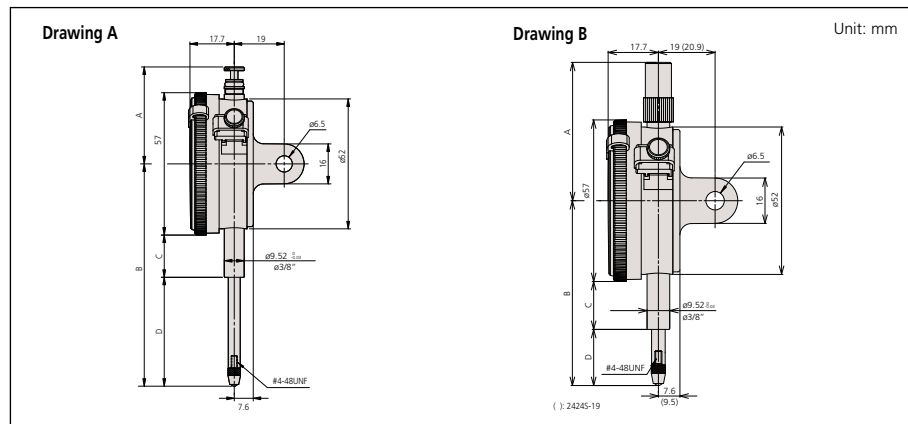


2923S-10



2424S-19

DIMENSIONS



2 Group Inch

Order No.	A	B	C	D	Drawing
2356S(B)-10	48.8	57.2	13.6	15.1	B
2358S(B)-10	38.9	63.6	13.6	21.5	A
2414S(B)	38.9	64.1	13.6	22	A
2415S(B)	38.9	64.1	13.6	22	A
2416S(B)	38.9	76.8	13.6	34.7	A
2416S(B)-06	38.9	76.8	13.6	34.7	A
2416S(B)-10	38.9	76.8	13.6	34.7	A
2417S(B)	38.9	76.8	13.6	34.7	A
2424S(B)-19	118.5	142.5	54.3	59.7	B
2506S(B)	48.8	54.3	13.6	12.2	B
2507S(B)	48.8	54.3	13.6	12.2	B
2514S(B)	38.9	64.1	13.6	22	A

Order No.	A	B	C	D	Drawing
2776S(B)	38.9	76.8	13.6	34.7	A
2802S(B)-10	48.8	51.4	13.6	9.3	B
2803S(B)-10	48.8	51.4	13.6	9.3	B
2804S(B)-10	48.8	51.7	13.6	9.6	B
2805S(B)-10	48.8	51.7	13.6	9.6	B
2904S(B)	38.9	76.8	13.6	34.7	A
2905S(B)-10	48.8	51.7	13.6	9.6	B
2914S(B)	38.9	64.1	13.6	22	A
2915S(B)-10	52.2	63.3	13.6	21.2	A
2918S(B)-10	52.2	63.3	13.6	21.2	A
2922S(B)	48.8	54.3	13.6	12.2	B
2923S(B)-10	48.8	51.7	13.6	9.6	B

Dial Indicators

SERIES 2 — Metric Standard Type

Series 2 dial indicators are Mitutoyo's most popular and have the widest application.

FEATURES

- Standard 0.01mm graduation dial gages having an outer frame with an outside diameter of 57mm. All types come with limit pins and an outer-frame clamp as standard.
- The outer clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.
- Secured adhesion between the outer frame and crystal, as well as the use of an O-ring, protect against water and oil permeation via the front face.
- The stem spindle is made of high-strength quench-hardened stainless steel for longevity.
- A carbide contact point is used.
- The grand gear uses stainless steel that is resistant to wear and deformation.
- Application of a hard coating on the surface of the crystal makes the gage highly scratch- and chemical-resistant.



SPECIFICATIONS

Metric Stem dia. ø8mm M2.5 x 0.45 Thread

ISO/JIS type



2046S
2046S-09



2046S-60



2047S

Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy	Measuring Force								
				w/ lug	Flat-back										
0.001mm	1mm	(0.1mm)	0-100	2110S-10	2110SB-10	±0.005mm	1.5N or less	✓			✓	✓			
0.001mm	1mm	(0.1mm)	0-100	2110S-70	2110SB-70	±0.005mm	2.0N or less	✓	✓		✓	✓			
0.001mm	1mm	(0.2mm)	0-100-0	2109S-10	2109SB-10	±0.005mm	1.5N or less	✓			✓				
0.001mm	1mm	(0.2mm)	0-100-0	2109S-70	2109SB-70	±0.005mm	2.0N or less	✓	✓		✓				
0.001mm	2mm	(0.2mm)	0-100-0	2113S-10	2113SB-10	±0.007mm	1.5N or less	✓			✓				
0.001mm	5mm	(0.2mm)	0-100-100	2118S-10	2118SB-10	±0.010mm	1.5N or less				✓				
0.001mm	5mm	(0.2mm)	0-100-0	2119S-10	2119SB-10	±0.010mm	1.5N or less				✓				
0.005mm	5mm	(0.5mm)	0-50	2124S-10	2124SB-10	±0.012mm	1.5N or less				✓				
0.01mm	5mm	(1mm)	0-100	2044S	2044SB	±0.012mm	1.4N or less								
0.01mm	5mm	(1mm)	0-100	2044S-09	2044SB-09	±0.013mm	1.4N or less	✓							
0.01mm	5mm	(1mm)	0-100	2044S-60	2044SB-60	±0.012mm	2.5N or less		✓						
0.01mm	5mm	(1mm)	0-50-0	2045S	2045SB	±0.012mm	1.4N or less							✓	
0.01mm	10mm	(1mm)	0-100	2046S	2046SB	±0.013mm	1.4N or less								
0.01mm	10mm	(1mm)	0-100	2046S-09	2046SB-09	±0.015mm	1.4N or less	✓							
0.01mm	10mm	(1mm)	0-100	2046S-60	2046SB-60	±0.013mm	2.5N or less		✓						
0.01mm	10mm	(1mm)	0-100	2310S-10	2310SB-10	±0.015mm	1.4N or less				✓		✓		
0.01mm	10mm	(1mm)	100-0	2902S	2902SB	±0.013mm	1.4N or less							✓	
0.01mm	10mm	(1mm)	0-50-0	2047S	2047SB	±0.013mm	1.4N or less								
0.01mm	20mm	(1mm)	0-100	2050S	2050SB	±0.020mm	2.0N or less								✓
0.01mm	20mm	(1mm)	0-100	2050S-60	2050SB-60	±0.020mm	2.5N or less		✓						
0.01mm	20mm	(1mm)	0-100	2050S-19	2050SB-19	±0.020mm	2.0N or less	✓			✓				✓
0.01mm	20mm	(1mm)	0-100	2320S-10	2320SB-10	±0.020mm	2.0N or less				✓		✓		✓
0.01mm	30mm	(1mm)	0-100	2052S	2052SB	±0.025mm	2.5N or less								✓
0.01mm	30mm	(1mm)	0-100	2052S-19	2052SB-19	±0.025mm	2.5N or less	✓			✓				✓
0.01mm	30mm	(1mm)	0-100	2330S-10	2330SB-10	±0.025mm	2.5N or less				✓		✓		✓
0.01mm	30mm	(1mm)	100-0	2952S	2952SB	±0.025mm	2.5N or less							✓	✓

*Use in a vertical position only (contact point downward).

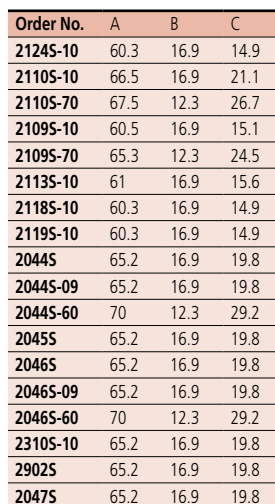
SERIES 2 — Metric Standard Type

Mitutoyo guarantees the product quality.

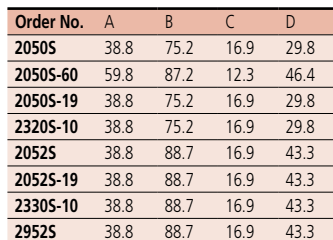
**PROPRIETARY
INSPECTION
CERTIFICATE**

Mitutoyo guarantees the product quality.

Unit: mm



Unit: mm



—: Backs (See page F-33.)
—: Contact points (See page F-34.)

SERIES 2 — ANSI / AGD Type Metric Dial Indicator

Metric Stem dia. 3/8", #4-48 UNF Thread Yellow Dial Face

Graduation	Range	Range / Rev	Dial reading	Order No.		Accuracy		Measuring force		
				w/ lug	Flat-back	First 2.5 Rev	Overall			
0.001mm	1mm	0.2mm	0-100-0	2109S-11	2109SB-11	±0.003mm	±0.004mm	1.5N or less	✓	✓
0.001mm	5mm	0.2mm	0-100-0	2119S-11	2119SB-11	±0.007mm	±0.01mm	1.5N or less	✓	✓
0.01mm	2.5mm	1mm	0-100	2230S-01	2230SB-01	±0.01mm	±0.01mm	1.4N or less		
0.01mm	2.5mm	1mm	0-50-0	2231S-01	2231SB-01	±0.01mm	±0.01mm	1.4N or less		
0.01mm	10mm	1mm	0-100	2046S-01	2046SB-01	±0.01mm	±0.013mm	1.4N or less		
0.01mm	10mm	1mm	0-100	2046S-11	2046SB-11	±0.01mm	±0.013mm	1.4N or less	✓	
0.01mm	10mm	1mm	0-50-0	2047S-01	2047SB-01	±0.01mm	±0.013mm	1.4N or less		
0.01mm	10mm	1mm	0-50-0	2047S-11	2047SB-11	±0.01mm	±0.013mm	1.4N or less	✓	
0.01mm	10mm	1mm	100-0	2902S-01	2902SB-01	±0.01mm	±0.013mm	1.4N or less		
0.01mm	20mm	1mm	0-100	2050S-01	2050SB-01	±0.01mm	±0.02mm	2.0N or less		
0.01mm	20mm	1mm	0-100	2050S-11	2050SB-11	±0.01mm	±0.02mm	2.0N or less	✓	
0.01mm	25mm	1mm	0-100	2056S-01	2056SB-01	±0.01mm	±0.025mm	2.5N or less		

Unit: mm

Technical drawing of a water meter assembly, showing side and top views with dimensions in mm.

Side View Dimensions:

- Overall height: A
- Overall width: B
- Top flange diameter: $\phi 57$
- Top flange thickness: 17.7
- Top flange to center distance: 19
- Bottom flange diameter: $\phi 52$
- Bottom flange thickness: 16
- Bottom flange to center distance: 13.6 (10.6)
- Bottom flange to bottom of meter body: C
- Bottom flange to bottom of meter body: 7.6
- Bottom flange thread: #4-48UNF
- Bottom flange diameter: $\phi 9.52^{+0.03}_{-0}$ (3/8")
- Bottom flange to center distance: 16
- Bottom flange to center distance: $\phi 6.5$

Top View Dimensions:

- Top flange diameter: $\phi 57$
- Top flange thickness: 10
- Top flange to center distance: 12.5
- Top flange to center distance: 6.35
- Top flange to center distance: 1.65
- Top flange to center distance: 30°

(): water proof type

Order No.	A	B	C
2109S-11	48.8	51.4	9.3
2119S-11	48.8	55.8	13.7
2230S-01	48.8	53.6	11.5
2231S-01	48.8	53.6	11.5
2046S-01	48.8	61.1	19.0
2046S-11	48.8	61.1	19.0
2047S-01	48.8	61.1	19.0
2902S-01	48.8	61.1	19.0
2050S-01	38.8	71.1	29.0
2050S-11	38.8	71.1	29.0
2056S-01	38.8	76.1	34.0

—: Backs (See page F-33.)
—: Contact points (See page F-34.)