

Digimatic Indicators

Comparison measuring instruments which ensure high quality, high accuracy and reliability.

ABSOLUTE Digimatic Indicator ID-CX SERIES 543 — Standard Type

MeasurLink[®] ENABLED
Data Management Software by Mitutoyo

- The ABS (absolute) scale restores the last origin position automatically when the indicator is turned on.
- Thanks to Mitutoyo's ABSOLUTE Linear Encoder, reliability has been increased due to elimination of over-speed errors.
- Tolerance judgment can be performed by setting upper and lower tolerance limits. The judgment result (GO/NO-GO) can be displayed in full-size characters.

- Battery life of approx. 7,000 hours in continuous use has been achieved with only one battery.
- Equipped with a data output port that enables incorporation into measurement networking and statistical process control systems. (Refer to page A-3)



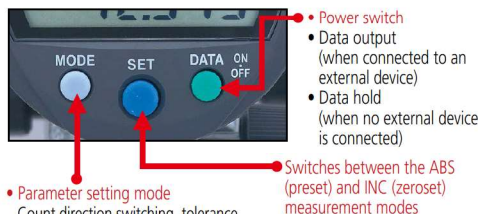
Large LCD

The large LCD incorporates 11 mm characters giving 1.5 times the character area of conventional products (which display 8.5 mm characters) making measurement values much easier to read.



Three large buttons

The popular three-large button design, which is used in products such as the ABS coolant proof Digimatic indicators ID-N/B, makes buttons easier to press and operations easier to perform.



- Parameter setting mode
Count direction switching, tolerance judgment setting, resolution switching, scale factor setting, and function lock setting
- inch/mm conversion
(inch/mm models)

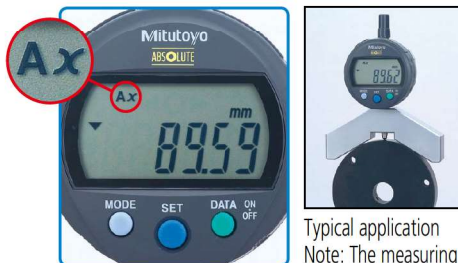
330° rotary display

The display can be rotated 330°, allowing use at a position where you can easily read the measurement value.



Calculation: $f(x) = Ax$

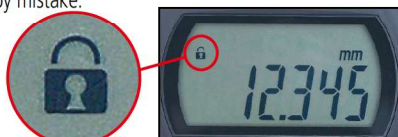
Mounting the ID-CX on a measuring jig and setting the multiplying factor (to any practical value) allows direct indication of size (see example below) without using a conversion table and so improves measurement efficiency.



Typical application
Note: The measuring jig is not supplied with the ID-CX.

Function Lock

Ensures reliability of measurement by locking the settings to prevent preset function settings from being changed by mistake.



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An inspection certificate is supplied as standard. Refer to page U-11 for details.

Technical Data

- Display: 6-digit LCD, sign
 - Battery: SR44 (1 pc.), **938882** for initial operational checks (standard accessory)
 - Battery life: Approx. 7,000 hours of continuous use. Approx. 1.2 years under normal use.
- Note: Depends on use of the indicator. The above values are reference values.
- Maximum response speed: No limit (except for scanning measurement)

Functions

- Zero-setting (INC system)
- Presetting (ABS system)
- Direction switching
- Tolerance judgment
- Resolution switching
(For 0.001 mm or 0.00005 inch resolution models)
- Calculation: $f(x) = Ax$
- Function Lock
- Data output
- Display value holding
(when no external device is connected)
- 330° rotary display
- Low battery/voltage alarm display
- Error alarm display

Optional Accessories

- Lifting
Lifting lever:
21EZA198 (12.7 mm/0.5 inch ISO/JIS type)
21EZA199 (12.7 mm/0.5 inch ASME/ANSI/AGD type)
Lifting cable: **21JZA295**
(stroke 12.7 mm: 12.7 mm/0.5 in models)
(stroke 25.4 mm: 25.4 mm/1 in and 50.8 mm/2 in models)
Lifting knob:
21EZA105 (12.7 mm/0.5 inch ISO/JIS type)*1
21EZA150 (12.7 mm/0.5 inch ASME/ANSI/AGD type)*1
21EZA197 (25.4 mm/1 inch models)
21EZA200 (50.8 mm/2 inch models)
Lifting lever: **137693** (for measuring range: 25.4 and 50.8 mm)
(supplied with 25.4 mm and 50.8 mm models as standard.)
- *1 Not available for low measuring force models.
- Auxiliary spindle spring:
02ACA571 (25.4 mm/1 inch models)*2
02ACA773 (50.8 mm/2 inch models)*2
- *2 Required when orienting the indicator upside down.
- Lug-on-Center Back:
101040 (25.4 mm/1 in and 50.8 mm/2 in, ISO/JIS type)
101306 (25.4 mm/1 in and 50.8 mm/2 in, ASME/ANSI/AGD type)
- SPC Cable:
905338 (1 m)
905409 (2 m)
(Refer to pages A-27 to A-29 for details.)
- USB Input Tool Direct (2 m): **06AFM380F**
- Input Tool Series
IT-016U (USB Keyboard Signal Conversion Type):
264-016-10
IT-007R (RS-232C Communication Conversion Type):
264-007
(Refer to page A-14 for details.)
- Connecting Cables for **U-WAVE-T** (160 mm): **02AZD790F**
For foot switch: **02AZE140F**
(Refer to pages A-19 to A-21 for details.)
- Digimatic Mini-Processor **DP-1VA LOGGER**: **264-505**
- Contact points for Mitutoyo's dial indicators
(Refer to pages F-57 to F-60 for details.)
- Interchangeable backs for 2 series
(Refer to page F-61 for details.)
- Measuring stands (Refer to pages F-84 to F-91 for details.)

- Standard models with measuring range 12.7 mm:
Usable in all orientations.
- Models with measuring range 25.4 or 50.8 mm:
Usable between the contact point pointing downward and spindle in horizontal orientation. To use the contact point pointing upward, the auxiliary spindle spring (optional) is required.
- Low measuring force model: See "Setting measuring force on low measuring force models" below.

The measuring force of models with low measuring force can be set by combining standard accessory springs and weights.

- | Spindle orientation | Spring | Weight (approximately 0.1 N) | Maximum measuring force (N) |
|------------------------------|--------|------------------------------|-----------------------------|
| Pointing vertically downward | Yes | Yes | 0.5 or less |
| | Yes | No | 0.4 or less |
| | No | Yes | 0.3 or less |
| | No | No | 0.2 or less |
| Horizontal | Yes | No | 0.3 or less |

Spindle orientation	Spring	Weight (approximately 0.1 N)	Maximum measuring force (N)
Pointing vertically downward	Yes	Yes	0.7 or less
	Yes	No	0.6 or less
	No	Yes	0.4 or less
	No	No	Not guaranteed

Metric		<div> <div></div> ISO/JIS type <div></div> ASME/ANSI/AGD type </div>					
Order No. (w/lug, flat-back)		Range (mm)	Resolution (mm)	Maximum permissible error*1 (mm)			Measuring force MPL (N)
				MPE _E *3	Hysteresis MPE _H	Repeatability MPE _R	
543-390	543-390B	12.7	0.001/0.01 (selectable)	0.003	0.002	0.002	1.5 or less
543-394 *2	543-394B *2						0.4 to 0.7
—	543-470B	25.4	0.005	0.002	0.002	0.002	1.8 or less
—	543-490B	50.8					2.3 or less
543-400	543-400B	12.7	0.01	0.02	0.02	0.01	0.9 or less
543-404 *2	543-404B *2						0.2 to 0.5
—	543-474B	25.4	0.04	0.02	0.02	0.01	1.8 or less
—	543-494B	50.8					2.3 or less

Inch / Metric		Range (in)	Resolution	Maximum permissible error* ¹			Measuring force MPL (N)
Order No. (w/lug, flat-back)	MPE _E * ³			Hysteresis MPE _H	Repeatability MPE _R		
543-391	543-391B	0.5	0.0005 / 0.0001 / 0.00005 in	±0.0001 in /0.003 mm	0.0001 in /0.002 mm	0.0001 in /0.002 mm	1.5 or less
543-392	543-392B						1.5 or less
543-395* ²	543-395B* ²						0.4 to 0.7
543-396* ²	543-396B* ²						0.4 to 0.7
—	543-471B	1	0.01 / 0.001 mm (selectable)	±0.0002 in /0.005 mm	0.0001 in /0.002 mm	0.0001 in /0.002 mm	1.8 or less* ⁴
—	543-472B						1.8 or less* ⁴
—	543-491B						2.3 or less* ⁴
—	543-492B	2					2.3 or less* ⁴
543-401	543-401B	0.5	0.0005 in / 0.01 mm	±0.001 in /0.02 mm	0.001 in /0.02 mm	0.0005 in /0.01 mm	0.9 or less
543-402	543-402B						0.9 or less
543-405* ²	543-405B* ²						0.2 to 0.5
543-406* ²	543-406B* ²						0.2 to 0.5
—	543-475B	1					1.8 or less* ⁴
—	543-476B						1.8 or less* ⁴
—	543-495B	2					2.3 or less* ⁴
—	543-496B						2.3 or less* ⁴

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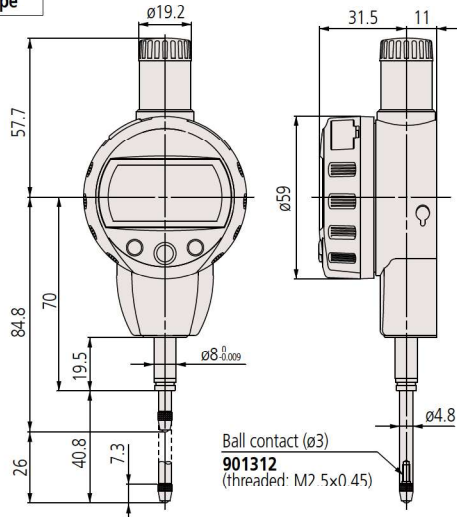
DIMENSIONS

25.4 mm range models

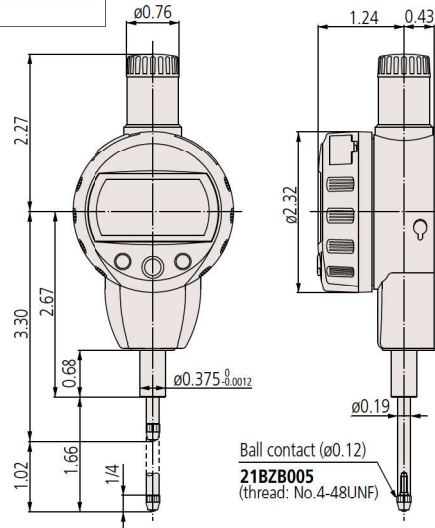
Unit: mm

Unit: in

ISO/JIS
Type



ASME/ANSI/AGD
Type

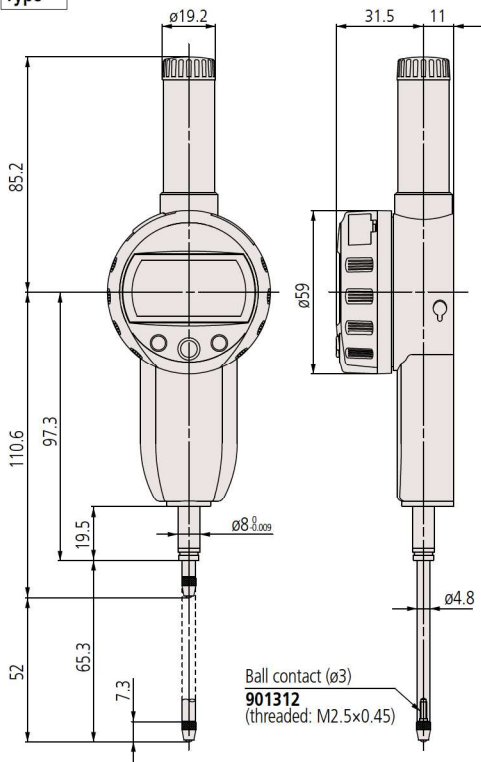


50.8 mm range models

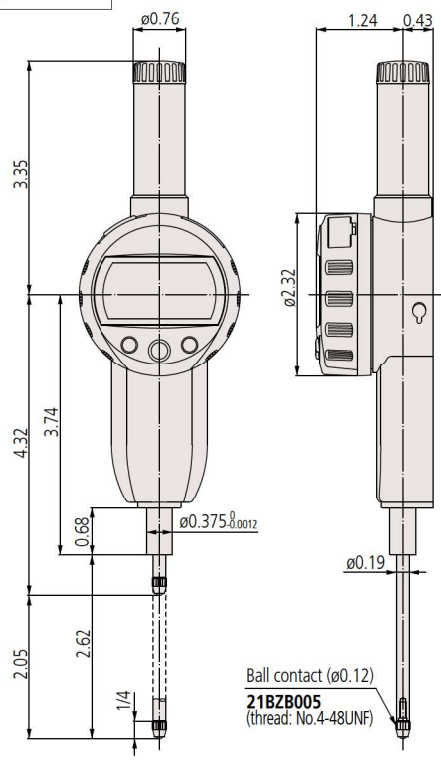
Unit: mm

Unit: in

ISO/JIS
Type



ASME/ANSI/AGD
Type



Note: Products with an Order No. suffixed "B" have a plain back, and other models have a center-lug back. Refer to page F-61 for details of the backs.