

# Simple-function Type Digital Indicators ABS Digimatic Indicator ID-S Series

Catalog No. E12013



Simple, cost-effective and easy-to-use Digimatic indicators.  
Choose long-life battery or everlasting solar powered  
models.

# Product Based on Ease of Use, Emphasizing Cost Performance

## Two Versions: ID-SS, the World's First\* Solar-Powered Digimatic

\* Based on Mitutoyo's data valid as of August 2012.



The Nakatsugawa Plant, situated in an industrial park amid the lush greenery of Nakatsugawa city in Gifu prefecture, is a dedicated site covering work from development to production of measuring instruments such as dial indicators, test indicators, and Digimatic indicators. It was opened in 1997 as the twelfth Mitutoyo plant in Japan. Mitutoyo brand products, which are shipped with cutting-edge industrial technology and equipment, have been evaluated as first-class on a worldwide basis, and our customers know they can depend on their reliability.

The ID-S series of ABS Digimatic indicators is made up of single-function type digital indicators: the ID-SS, which is the world's first solar-powered Digimatic indicator, and the ID-SX, which is powered by a button-type battery.

These Digimatic indicators have a measuring range of 12.7 mm, and indicators that can display resolutions of 0.01 mm and 0.001 mm are included in the lineup. For the ID-SX, some of models are available and provide IP53\* dust/water protection level specifications.

All the Digimatic indicators in this series are compact, with approximately the same size as a standard dial indicator. They employ large liquid crystal displays with character heights of 9 mm, and the large buttons are easy to press and make all the functions easy to operate. Furthermore, even though these models are priced competitively, the Digimatic data output function makes it possible to use them in statistical process control, networked measurement, and other similar systems.

\*For more information about IP53 models, refer to page 6-7

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# ce with the Minimum of Functionality atic Indicator, and the SR44 Button Battery-Powered ID-SX

## Compact design

These compact Digimatic indicators are approximately the same size as a standard dial indicator, so they can easily be used to replace such indicators. The solar-powered ID-SS eliminates the need for battery replacement, so just as with dial indicators there is no fear of the instrument losing power at an inconvenient time.



Standard dial indicator

ID-SS

## Large liquid crystal display

These Digimatic indicators use large liquid crystal digital displays with a large character height (9 mm) for easy visibility.



## Large pushbuttons

These Digimatic indicators feature large, easy-to-use pushbuttons that provide the user with direct access to the minimal functionality set.



ID-SS

ID-SX

## ABS (absolute) sensor

These Digimatic indicators employ Mitutoyo's proprietary ABS (absolute) sensor, which makes it possible to restore the origin point even if the power is turned off. This eliminates the need to perform origin matching each time the power is turned on. Furthermore, this sensor ensures that overspeed errors do not occur, which improves reliability.

# ABSOLUTE™

## Plunger lifting and a rich variety of accessories

To take account of the wide application range of these indicators, we have provided three types of lifting accessories (options) to match different uses. Furthermore, we have provided a rich variety of contact points, stands, data processing-related parts, and other accessories.

### Optional accessories

Lifting lever

Lifting knob

Lifting cable



## Inspection certificate included as standard

- An inspection certificate on which the inspection data at the time of shipment is written is included as standard. (The inspection certificate cannot be used to acquire calibration certificates because the date of purchase cannot be specified on the inspection certificate.)
- For a fee, Mitutoyo can calibrate measuring equipment and issue a calibration certificate providing proof of traceability with the standard used during the calibration. Contact Mitutoyo for details.

CERTIFICATE OF INSPECTION		検査成績書	
Product name: Digimatic Indicator	Code No.: 340-790B	Model: ID-SS120B	Serial No.: 12044447
Graduation: 0.001mm	Measuring span: 12.7mm	Temperature: 20°C (Standard Temperature)	QC Manager: M.Sato
Inspection Standard: Mitutoyo standard			
検出最大許容誤差 MPE of indication unit/mm	検出誤差	Maximum Permissible error (MPE) of indication unit/mm	検出誤差
全長検査精度 Overall	3	A Overall (%)	20
戻り精度 Hysteresis	2	B Hysteresis	2
検出精度 Repeatability	2	C Repeatability	2
Method of inspection: Mitutoyo (No sign)		(*) Overall magnification and linearity adjustment (検出倍率と直線性調整)	
Based on JIS B 7504, 1.1 (2001)		計測機器の検定は、検定機関の検定基準に基づき行われます。	
Traceable to NPL (NIST) by JIS B 7504, 1.1 (2001)		この検定結果は、検定機関の検定基準に基づき行われます。	
JIS B 7504, 1.1 (2001) による検定		The quantizing error (1 count) is included from the specification value.	
Mitutoyo Corporation			

# ABS Solar-Powered Digimatic Indicator ID-SS **New**

## SOLAR



\* Patent pending in Japan,  
the United States, the European Union, and China.  
\* Design registered in Japan,  
the United States, the European Union, and China.

### Solar power supply

An environmentally friendly measuring instrument that does not require batteries, eliminating the hassle and cost of battery replacement. Can operate under minimum light conditions of 40 lux-lower than the level needed inside a warehouse.

### Large reserve power capacity

A large reserve of power (when fully charged) enables you to use the indicator for long periods of time under light conditions below the minimum level.  
(Can be used for approx. 3.5 hours on a full charge. )

### Origin recorded even if display disappears

The indicator includes an ABS (absolute) sensor that allows the previously set origin to be restored even if the display disappears due to insufficient light, making it easy to resume measurement. This feature makes ID-SS ideal for extended measurement sessions.

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## Specifications

Metric		ISO/JIS/DIN Type				ASME/ANSI/AGD Type	
Order No.	Range	Resolution	Accuracy*1			Back type	Mass
			Overall*2	Hysteresis	Repeatability		
543-500	12.7 mm	0.001 mm	0.003 mm	0.002 mm	0.002 mm	With lug	150g
543-500B						Flat	140g
543-505		0.01 mm	0.02 mm	0.02 mm	0.01 mm	With lug	150g
543-505B						Flat	140g

Inch/Metric		ISO/JIS/DIN Type				ASME/ANSI/AGD Type	
Order No.	Range	Resolution	Accuracy*1			Back type	Mass
			Overall*2	Hysteresis	Repeatability		
543-501	.5"/12.7 mm	.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	150g
543-501B						Flat	140g
543-502		.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	165g
543-502B						Flat	140g
543-506		.0005"/0.01mm	±.0010"/0.02mm	.0010"/0.02mm	.005"/0.01mm	With lug	150g
543-506B						Flat	140g
543-507		.0005"/0.01mm	±.0010"/0.02mm	.0010"/0.02mm	.005"/0.01mm	With lug	165g
543-507B						Flat	140g

\*1 These values apply at 20°C, and do not include ±1 count allowance for quantization error.

\*2 Overall magnification and linearity

## Common specifications

Display: 6-digit LCD, sign

Contact point: Spherical tip SR = 1.5 mm (carbide tipped)

Part No. **901312** (for ISO/JIS/DIN Type)

Part No. **21BZB005** (for ASME/ANSI/AGD Type)

Measuring force: 1.5 N or lower

Usable orientation: All

Power supply: Solar cell (for indoor use)

Minimum operating light: 40lux

Reserve capacity allows a fully charged ID-SS to be used for about 3.5 hours under light conditions below the minimum level.

Charging time required depends on the environment, but it usually takes about 1.5 hours for a fully discharged ID-SS to fully recharge under light conditions of 500lux.

Maximum response speed: No limit (scan-type measurement is not supported)

Operating temperature range: 0 to 40°C

Storage temperature range: -10 to 60°C

## Features

Origin set (zero-set): The display can be zeroed at any chosen position.

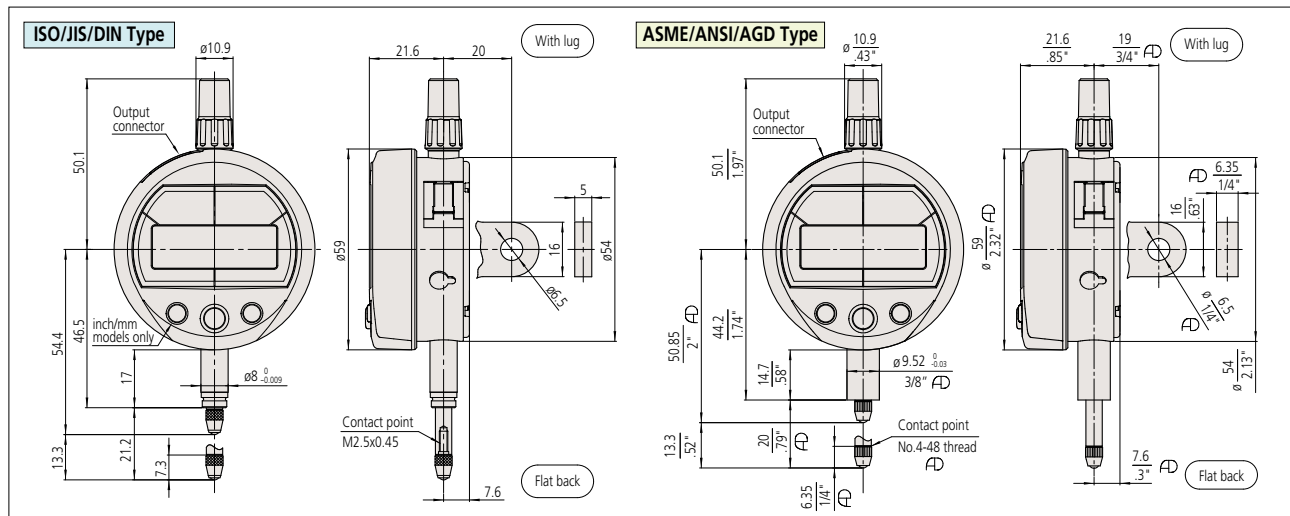
Direction switching: The measuring direction can be switched.

in/mm reading (inch/mm models only)

Measurement data output: These indicators have a measurement data output socket, which makes it possible to output Digimatic data to the DP-1VR mini processor or to a PC through an input tool. Furthermore, the U-WAVE measurement data wireless communication system can be used to wirelessly input measurement data to a PC.

Error warning

## Dimensions



## Optional accessories

### • Lifting

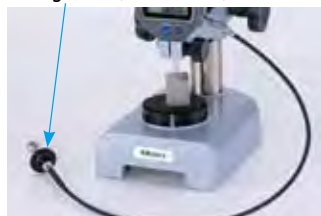
Lifting lever

No.21EZA198 (ISO/JIS/DIN Type)

No.21EZA199 (ASME/ANSI/AGD Type)



Lifting cable (No. 540774)



Lifting knob

No.21EZA105 (ISO/JIS/DIN Type)

No.21EZA150 (ASME/ANSI/AGD Type)



• SPC connecting cables

1m (No. 905338)

2m (No. 905409)

• Data processing products

• Contact points for Mitutoyo dial indicators

• Backs for Mitutoyo standard (2 series) dial indicators

• ID-SS can be used in standard work environments.

The following is excerpted from JIS Z9110:2010 General rules of recommended lighting levels; 5.4 Factories:

Luminance (lux)	Location (permissible work)
1500	Very detailed visual work
750	Detailed visual work; design and drawing work
500	Regular visual work such as work carried out in a factory; monitoring work such as using instrument panels and control panels
300	Administrative work carried out in a warehouse
200	Control rooms, bathrooms, and places where light manual work is carried out
150	Work such as loading, unloading, and shifting loads
100	Hallways, corridors, entrances and exits, and warehouses
50	Indoor emergency staircases

# Digital Indicator with Simplified Key Functions and Reasonable price

## ABS Digimatic Indicator ID-SX



### Type emphasizing cost performance

This indicator uses a button-type battery (SR44), stresses ease of use, and comes with the minimum of functionality. Indicators that can display measurements at resolutions of 0.01 mm and 0.001 mm are included in the lineup.

### IP53 dust/water protection level

Some of models are also available and provides IP53 dust/water protection level specifications. See below:

543-794, 543-794B  
543-795, 543-795B  
543-796, 543-796B

### ABS (absolute) sensor

These Digimatic indicators employ Mitutoyo's proprietary ABS (absolute) sensor, which makes it possible to restore the origin point even if the power is turned off. This eliminates the need to perform origin matching each time the power is turned on. Furthermore, this sensor ensures that overspeed errors do not occur, which improves reliability.

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### Long battery life

One button battery (SR44) provides approximately 20,000 hours of continuous use for resolution .0005"/0.01mm models.

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## Specifications

Metric		ISO/JIS/DIN Type		ASME/ANSI/AGD Type						
Order No.	Range	Resolution	Accuracy* <sup>1</sup>			Back type	Measuring force	Battery life* <sup>3</sup>	Dust/Water protection level* <sup>4</sup>	Mass
			Overall* <sup>2</sup>	Hysteresis	Repeatability					
543-790	12.7 mm	0.001 mm	0.003 mm	0.002 mm	0.002 mm	With lug	1.5N or less	18,000 hours under normal use	IP42	150g
543-790B						Flat				140g
543-794		0.001 mm	0.003 mm	0.002 mm	0.002 mm	With lug	2.5N or less		IP53	155g
543-794B						Flat				155g
543-781		0.01 mm	0.02 mm	0.02 mm	0.01 mm	With lug	1.5N or less	20,000 hours under normal use	IP42	150g
543-781B						Flat				140g

Inch/Metric		ISO/JIS/DIN Type		ASME/ANSI/AGD Type						
Order No.	Range	Resolution	Accuracy* <sup>1</sup>			Back type	Measuring force	Battery life* <sup>3</sup>	Dust/Water protection level* <sup>4</sup>	Mass
			Overall* <sup>2</sup>	Hysteresis	Repeatability					
543-791	.5"/12.7 mm	.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	1.5N or less	18,000 hours under normal use	IP42	150g
543-791B						Flat				140g
543-792		.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	1.5N or less	18,000 hours under normal use	IP42	165g
543-792B						Flat				140g
543-793		.0001"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	1.5N or less	18,000 hours under normal use	IP42	165g
543-793B						Flat				140g
543-795		.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	2.5N or less	18,000 hours under normal use	IP53	155g
543-795B						Flat				155g
543-796		.00005"/0.001mm	±.0001"/0.003mm	.0001"/0.002mm	.0001"/0.002mm	With lug	2.5N or less	18,000 hours under normal use	IP53	155g
543-796B						Flat				155g
543-782		.0005"/0.01mm	±.0010"/0.02mm	.0010"/0.02mm	.0005"/0.01mm	With lug	1.5N or less	20,000 hours under normal use	IP42	150g
543-782B						Flat				140g
543-783		.0005"/0.01mm	±.0010"/0.02mm	.0010"/0.02mm	.0005"/0.01mm	With lug	1.5N or less	20,000 hours under normal use	IP42	165g
543-783B						Flat				140g

\*1 These values apply at 20°C, and do not include ±1 count allowance for quantization error.

\*2 Overall magnification and linearity

\*3 The battery life varies, depending on the number of times the Digimatic indicator is used as well as the way it is used. The values listed above are approximations.

\*4 This is only valid when the data socket cover is in place. Does not apply if the cover is removed, a lifting accessory is attached, or a connecting cable is attached.

## Common specifications

Display: 6-digit LCD, sign

Contact point: Spherical tip SR = 1.5 mm (carbide tipped)

part No. **901312** (for ISO/JIS/DIN Type), part No. **21BZB005** (for ASME/ANSI/AGD Type)

Usable orientation: All

Power supply: SR44, part No. **938882**

Maximum response speed: No limit (scan-type measurement is not supported)

Operating temperature range: 0 to 40°C

Storage temperature range: -10 to 60°C

## Features

Origin set (zero-set): The display can be zeroed at any chosen position.

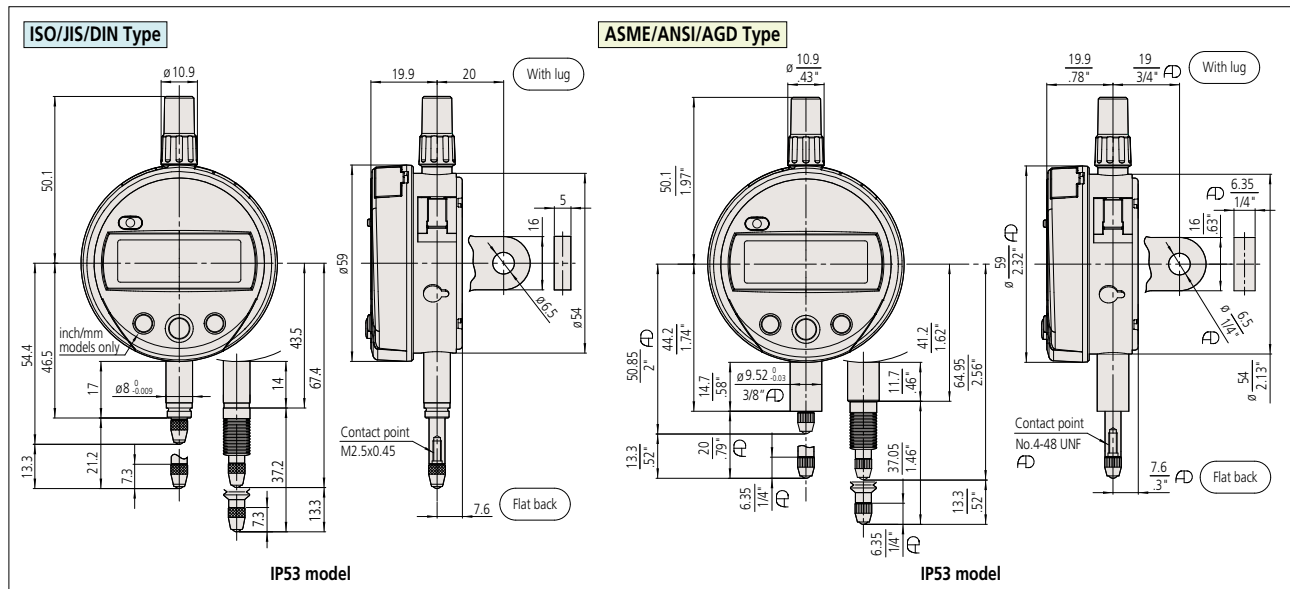
Direction switching: The measuring direction can be switched.

in/mm reading (inch/mm models only)

Measurement data output: These indicators have a measurement data output socket, which makes it possible to output measurement to the DP-1VR mini processor or to a PC through an input tool. Furthermore, the U-WAVE measurement data wireless communication system can be used to wirelessly input measurement data to a PC.

Error warning

## Dimensions



## Optional accessories

### • Lifting

Lifting lever No. **21EZA198** (ISO/JIS/DIN Type), No. **21EZA199** (ASME/ANSI/AGD Type)

Lifting knob No. **21EZA105** (ISO/JIS/DIN Type), No. **21EZA150** (ASME/ANSI/AGD Type)

Lifting cable (No. **540774**)

• SPC connecting cables 1m (No. **905338**) 2m (No. **905409**)

• Data processing products

• Contact points for Mitutoyo dial indicators

• Backs for Mitutoyo standard (2 series) dial indicators

• Stands

## IP53 dust/water protection level

### Level 5: Dust protection

While complete protection against invasion of dust is not provided, protection is adequate to prevent dust amounts that would inhibit the prescribed operations and safety of the electronic equipment.

### Level 3: Protection against spraying water

The product suffers no harmful effects when subjected to water sprayed at an angle of up to 60 degrees on both sides.

For details on the dust/water protection level test conditions, please refer to IEC 60529:2001 and JIS C 0920:2003.

IP code is the degree of protection against solid foreign objects and water.

Mitutoyo offers a lineup of Coolant proof type, ID-N/B series, which is Excellent resistance against oil, water, and dust in the situations that include splashing cutting fluid.