

High-Accuracy Digimatic Micrometer

Small Tool Instruments
and Data Management



High-Accuracy Digimatic Micrometer



The world's first 0.1µm micrometer

(Based on Mitutoyo's data valid as of June 2011)

- Enabling 0.1µm resolution measurement, this micrometer is ideal for customers who need to make highly accurate measurements with a hand-held tool.
- The High-Accuracy Digimatic Micrometer utilizes Mitutoyo's innovative 0.1µm resolution ABS (absolute) rotary sensor*¹ and high-accuracy screw machining technology to reduce the instrumental error to ±0.5µm, delivering higher accuracy without sacrificing operability.

*1: Patent registered in Japan, the United States of America, China, France, Germany, and United Kingdom)

- A highly rigid frame and high-performance constant-force mechanism*² enable more stable measurement, while the clicks emitted while the workpiece is being measured assure the operator that measurement is proceeding normally.

*2: Patent registered in Japan, the United States of America, China, Germany, and United Kingdom)

- The measuring faces are hard-wearing carbide.

- Body heat transferred to the instrument is reduced by a (removable) heat shield, minimizing the error caused by thermal expansion of the frame when performing handheld measurements.

- The ABS (absolute) rotary sensor*¹ eliminates the need to perform origin setting each time the power is turned on, letting you start measuring straight away. With no possibility of overspeed errors, the High-Accuracy Digimatic Micrometer also delivers a higher level of reliability.

ABSOLUTE™

- The High-Accuracy Digimatic Micrometer has a range of features to enable flexible measurement, including switchable resolution (0.0001mm/0.0005mm), function lock and preset.



Function lock

Specifications

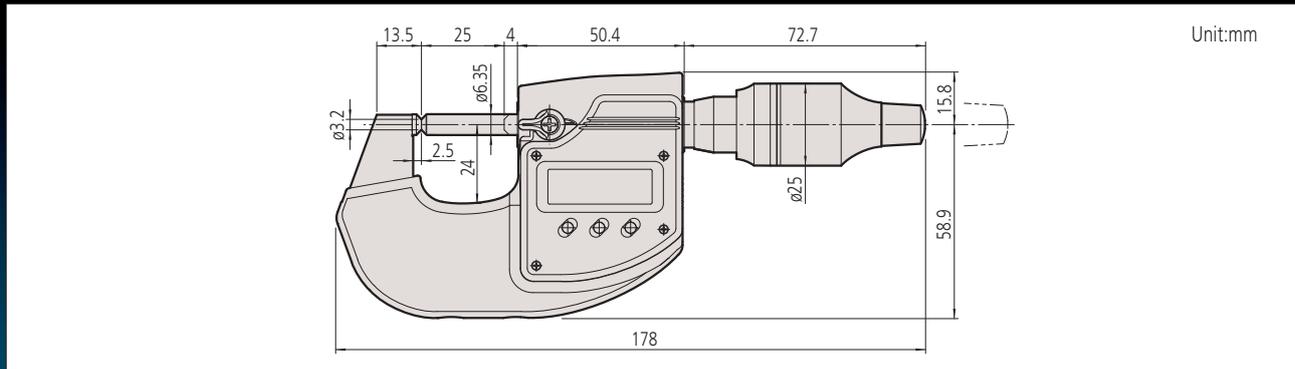
	Metric	Inch/Metric
Code No.	293-100	293-130
Measuring range	0 - 25mm	0 - 1"
Resolution	0.0001mm/0.0005mm (switchable)	.000005"/.00002" (switchable)
Instrumental error (20°C)* ³	±0.5µm	±.00002"
Measuring surface	ø3.2mm	
Measuring force	7 to 9 N	
Measuring system	Electromagnetic induction type ABS rotary sensor	
Mass	400 g (440 g with heat shield attached)	
Power supply	Lithium battery (CR2032) x 1	
Battery life	Approx. two years when used under normal conditions	

*3: Excludes quantization error of ±1 count.



293-100

Dimensions



Functions

Preset (ABS measurement system): The measurement origin can be preset to any value within the display range for convenience in measuring.

Zero-setting (INC measurement system): The display can be zeroed at any position of the spindle, making comparison measurement easier. Returning to the absolute-measurement mode is easily accomplished.

Hold: The displayed value is held while the spindle is withdrawn and the micrometer moved so that the display can be read at the operator's convenience. After cancelling the hold, the instrument returns to the previous measuring mode (absolute or incremental).

Resolution switching: The resolution of the display can be switched. If 0.1 μ m measurement is not required, the resolution can be switched to 0.5 μ m.

Function lock: Functions such as preset or zero-set can be locked to avoid inadvertently changing the origin position.

On/off: The power can be turned off after measurement is complete. Even after the power is turned off, the origin or last zero-set position remains in the memory.

Auto power off: Even if the power is left on, the power turns off automatically if the micrometer is not used within a 20-minute period.

Measurement data output: Measurement data can be output, allowing easy incorporation of this instrument into a statistical process control or measurement system.

Error alarm: In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected. Also, if the battery voltage drops below a certain point, the battery indicator will turn on before measurement becomes impossible, warning the user that the battery needs to be replaced.

Standard accessories

Heat shield (04AAB969A:293-100

04AAB969B:293-130) x 1

Lithium battery (CR2032: Battery supplied is for testing purpose only) x 1

Spanner (200877) x 1

Screwdriver (04AAB985) x 1

Lens paper

Inspection certificate



With heat shield*4

*4: Patent registered in Japan, the United States of America, China, and the United Kingdom. Design registered in Japan, the United States of America, China, and the European Union.

Optional accessory

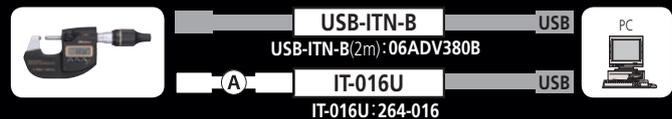
- Lens paper x 1,000 04AZB581



Measurement Data Recording Tools & Connecting Cable Options

These options are dedicated interfaces (wired or wireless) that allow simple entry of measurement data to a PC.

- Wired Connection to PC via USB Input Tool Series (Refer to Catalog E12007.)

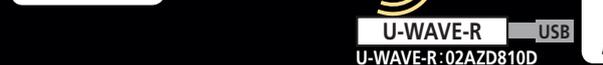
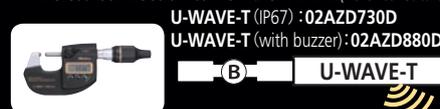


Connecting cables specific to output-function equipped models

- A 1m: 05CZA662
- 2m: 05CZA663



- Wireless Connection to PC via U-WAVE (Refer to Catalog E12000.)



- B For standard use (160mm): 02AZD790B
- For foot switch use: 02AZE140B

Coordinate Measuring Machines



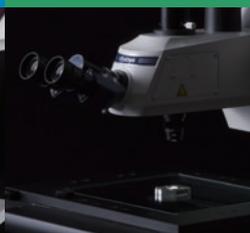
Vision Measuring Systems



Form Measurement



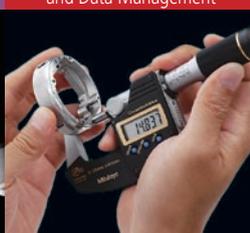
Optical Measuring



Sensor Systems

Test Equipment
and Seismometers

Digital Scale and DRO Systems

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Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver bespoke measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.



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