

# Micrometer

## High-Accuracy Digimatic Micrometer SERIES 293

- Enabling 0.1 μm 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 0.1 μm resolution ABS (absolute) rotary sensor and high-accuracy screw machining technology to reduce the Maximum permissible error to ±0.5 μm, delivering higher accuracy without sacrificing operability.
- A highly rigid frame and high-performance constant-force mechanism enable more stable measurement, while the clicks emitted while the workpiece is being measured assure the operator that measurement is proceeding normally.
- 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 also 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.
- Carbide-tipped measuring faces



293-100-10

### SPECIFICATIONS

	Metric	Inch/Metric
<b>Order No.</b>	<b>293-100-10</b>	<b>293-130-10</b>
Measuring range	0 – 25 mm	0 – 1 in
Resolution	0.0001 mm/0.0005 mm (switchable)	0.000005 in/0.00002 in 0.0001 mm/0.0005 mm (switchable)
Maximum permissible error <i>J<sub>MPE</sub></i>	±0.5 μm	±0.00002 in
Flatness/Parallelism	0.3 μm/0.6 μm	0.000012 in/0.000024 in
Measuring surface	ø3.2 mm	
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) x1	
Battery life	Approx. two years when used under normal conditions	

MeasurLink<sup>®</sup> ENABLED  
Data Management Software by Mitutoyo

ABSOLUTE<sup>™</sup>



### Measurement example



Recommended micrometer stand: 156-101-10

### 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The displayed value is held while the spindle is withdrawn and the micrometer moved so that the display can be read at the operator's convenience.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 μm measurement is not required, the resolution can be switched to 0.5 μm.

#### 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:

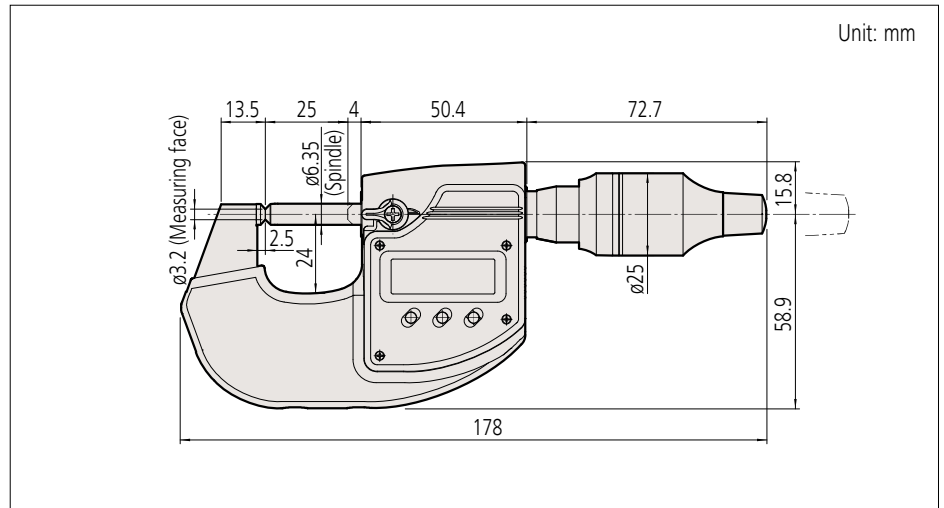
In the unlikely event of a display overflow or calculation error, an error message is displayed and measurement stops. Measurement cannot continue until the error is corrected.

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.

Optional Accessories

Order No.	Type	Description
05CZA662	B	Connecting cable (1 m)
05CZA663	B	Connecting cable (2 m)
06AFM380B	B	USB Input Tool Direct (2 m)
02AZD790B	B	Connecting cables for U-WAVE-T (160 mm)
02AZE140B	B	Connecting cables for U-WAVE-T For foot switch

DIMENSIONS



Standard Accessories

- Heat shield (04AAB969A: 293-100-10  
04AAB969B: 293-130-10) x1
- Lithium battery CR2032 (1 pc.), for initial operational checks (standard accessory)
- Spanner (200877) x1
- Screwdriver (04AAB985) x1
- Cleaning paper for measuring faces 1000 sheets
- Inspection certificate



Note: To install the heat shield, use the screws attached to the bottom of the micrometer frame.