Series 227
ABSOLUTE Digimatic Micrometers with Adjustable Measuring Force

Portable Micrometer with constant and low measuring force mechanism in the thimble
ABSOLUTE Digimatic Micrometers with Adjustable Measuring Force

**Constant and low measuring force mechanism in the thimble**

Digimatic micrometer dedicated to applications requiring a constant/low measuring force such as measuring wire, paper, and plastic/rubber parts.

*1: Compared to standard micrometers (0.5 mm per revolution).

**Extended battery life (5 Years)**

Low-power electronics have extended the battery life to 5 years in normal use.

*2: Typical, assuming average frequency of use and normal applications.

**Quick measurement** 20 times faster feed rate

Speedy spindle feed of 10 mm per thimble rotation that enables widely differently sized features to be measured quickly.

**Function lock**

Function lock enhances usability by preventing the origin from being accidentally changed during measurement.

**Connectable to MeasurLink**

Connected to MeasurLink, “visualization of quality” can be achieved by enabling real-time data collection, global control and statistical analysis.

*2: When using optional adapters

**Constant-Measuring-Force Mechanism**

1) Measuring force is generated by the action of trapping a workpiece between the spindle face and the anvil.
2) The constant-force unit applies the specified measuring force.
3) When the preset measuring force is reached, the count on the LCD is automatically held and the hold symbol appears.
   (To cancel the hold, reverse the thimble more than 1/10 revolution and press the hold button.)

**Absolute scale**

The ABS (absolute) linear scale eliminates the need for setting the origin point every time the micrometer is powered-on and achieves high reliability while being free from overspeed error.

**Connectable to spreadsheets**

Connected to spreadsheets, data can be exported and analyzed.
### SPECIFICATIONS

**Digimatic micrometers with adjustable measuring force**

#### Inch/Metric

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Range</th>
<th>Measuring force adjustable range</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Measuring force</th>
<th>Accuracy of the selected measuring force</th>
<th>Repeatability of measuring force</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>227-211-20</td>
<td>0 - 0.6 in</td>
<td>0.5 - 2.5 N</td>
<td>0.00005 in / 0.001 mm</td>
<td>±0.0001 in</td>
<td>0.5, 1.0, 1.5, 2.0, 2.5 N</td>
<td>± 0.1+ the selected measuring force/10 N</td>
<td>±1 N</td>
<td>300 g</td>
</tr>
<tr>
<td>227-213-20</td>
<td>0.6 - 1.2 in</td>
<td>0.5 - 2.5 N</td>
<td>0.00005 in / 0.001 mm</td>
<td>±0.0001 in</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>380 g</td>
</tr>
<tr>
<td>227-215-20</td>
<td>0 - 0.4 in</td>
<td>0.5 - 2.5 N</td>
<td>0.00005 in / 0.001 mm</td>
<td>±0.0001 in</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>345 g</td>
</tr>
<tr>
<td>227-216-20</td>
<td>0.4 - 0.8 in</td>
<td>2 - 10 N</td>
<td>±2 µm</td>
<td>±2 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>425 g</td>
</tr>
<tr>
<td>227-217-20</td>
<td>0.8 - 1.2 in</td>
<td>2 - 10 N</td>
<td>±2 µm</td>
<td>±2 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>315 g</td>
</tr>
</tbody>
</table>

#### Metric

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Range</th>
<th>Measuring force adjustable range</th>
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<th>Accuracy</th>
<th>Measuring force</th>
<th>Accuracy of the selected measuring force</th>
<th>Repeatability of measuring force</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>227-201-20</td>
<td>0 - 15 mm</td>
<td>0.5 - 2.5 N</td>
<td>0.001 mm</td>
<td>±0.4 µm</td>
<td>0.5, 1.0, 1.5, 2.0, 2.5 N</td>
<td>± 0.1+ the selected measuring force/10 N</td>
<td>±1 N</td>
<td>300 g</td>
</tr>
<tr>
<td>227-203-20</td>
<td>15 - 30 mm</td>
<td>0.5 - 2.5 N</td>
<td>0.001 mm</td>
<td>±0.4 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>345 g</td>
</tr>
<tr>
<td>227-205-20</td>
<td>0 - 10 mm</td>
<td>0.5 - 2.5 N</td>
<td>0.001 mm</td>
<td>±0.4 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>345 g</td>
</tr>
<tr>
<td>227-206-20</td>
<td>10 - 20 mm</td>
<td>0.5 - 2.5 N</td>
<td>0.001 mm</td>
<td>±0.4 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>345 g</td>
</tr>
<tr>
<td>227-207-20</td>
<td>20 - 30 mm</td>
<td>0.5 - 2.5 N</td>
<td>0.001 mm</td>
<td>±0.4 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>345 g</td>
</tr>
</tbody>
</table>

*1: Measuring force fixed type is also available to special order. *2: These values are guaranteed when used in a horizontal orientation (within ±3 degrees).

**Disk micrometers with adjustable measuring force**

<table>
<thead>
<tr>
<th>Order No.</th>
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<th>Repeatability of measuring force</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>227-221-20</td>
<td>0 - 15 mm</td>
<td>0.5 - 2.5 N</td>
<td>0.001 mm</td>
<td>±0.4 µm</td>
<td>0.5, 1.0, 1.5, 2.0, 2.5 N</td>
<td>± 0.1+ the selected measuring force/10 N</td>
<td>±1 N</td>
<td>300 g</td>
</tr>
<tr>
<td>227-223-20</td>
<td>0 - 10 mm</td>
<td>2 - 10 N</td>
<td>±2 µm</td>
<td>±2 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>345 g</td>
</tr>
<tr>
<td>227-225-20</td>
<td>10 - 20 mm</td>
<td>2 - 10 N</td>
<td>±2 µm</td>
<td>±2 µm</td>
<td>2, 4, 6, 8, 10 N</td>
<td>± 0.4+ the selected measuring force/10 N</td>
<td>±0.4 N</td>
<td>345 g</td>
</tr>
</tbody>
</table>

#### DIMENSIONS

![Diagram of micrometer dimensions](Image)

**Common specifications**
- Spindle feed: 10 mm per revolution
- Power supply: Silver oxide button cell battery SR44
- Battery life: Approx. 5 years under normal use
- Output: Displayed Measurement Data
- Operating temperature: 5 to 40°C
- Storage temperature: -10 to 60°C
- Standard accessories: Silver oxide button cell battery SR44 (938882), Setting standard (excluding 0 - 10/15 mm and 0 - 0.4/0.6 inch range models)
- Flat-head screwdriver (210183)

**Common functions**
- Adjustable measuring force
- Origin point setting
- Zero-setting
- Hold
- Function lock
- Auto power ON/OFF
- Data output
- Error alarm

**Optional accessories**
- Connecting cable to DP-1VA LOGGER: 264-505A
- Connection with PC (wired communication): USB Input Tool Direct
- Connection with PC (wireless communication): Connecting cable to U-WAVE-T (3 m): 06AMR308B

Note: Wireless transmitters & receiver sold separately
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 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 measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.