

Series 227 ABSOLUTE Digimatic Micrometers with Adjustable Measuring Force

SMALL TOOL INSTRUMENTS
AND DATA MANAGEMENT



Compact design equipped with constant and low measuring force mechanism in the thimble



ABSOLUTE Digimatic Micrometers with Adjustable Measuring Force

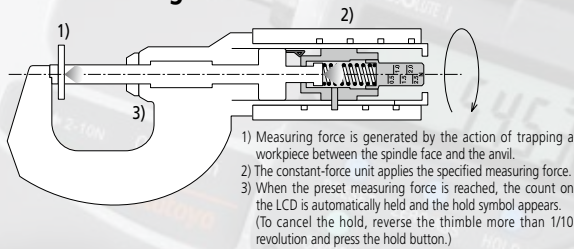
Compact design equipped with constant and low measuring force mechanism in the thimble

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



Above: 2 to 10 N type
Below: 0.5 to 2.5 N type

Constant-Measuring-Force Mechanism



Quick measurement

20 times faster feed rate ^{*1}

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

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

Function locking prevents misoperation!

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

Battery cap can be easily opened

The groove in the battery cap has been increased from 1.8 mm to 2.4 mm in width to enable the cap to be more easily opened.

Connectable to MeasurLink

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

Extended battery life

Low-power electronics have extended the battery life to 5 years in normal use*2.

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

Absolute scale

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

ABSOLUTE™





MeasurLink ENABLED

Data Management Software by Mitutoyo

Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink



227-201-20



227-205-20

SPECIFICATIONS

Digimatic micrometers with adjustable measuring force

| Metric | | | | | | | | |
|------------|------------|------------------------------------|------------|----------|----------------------------|--|------------------------------------|-------|
| Order No. | Range | Measuring force adjustable range*1 | Resolution | Accuracy | Measuring force graduation | Accuracy of the selected measuring force*2 | Repeatability of measuring force*2 | Mass |
| 227-201-20 | 0 - 15 mm | 0.5 - 2.5 N | 0.001 mm | ±2 µm | 0.5, 1.0, 1.5, 2.0, 2.5 N | ± (0.1+ the selected measuring force/10) N | within 0.1 N | 300 g |
| 227-203-20 | 15 - 30 mm | | | | 380 g | | | |
| 227-205-20 | 0 - 10 mm | 2 - 10 N | 0.001 mm | ±2 µm | 2, 4, 6, 8, 10 N | ± (0.4+ the selected measuring force/10) N | within 0.4 N | 345 g |
| 227-206-20 | 10 - 20 mm | | | | | | | 425 g |
| 227-207-20 | 20 - 30 mm | | | | | | | 415 g |

| Inch/Metric | | | | | | | | |
|-------------|--------------|------------------------------------|-----------------------|------------|---------------------------|--|------------------------------------|-------|
| Order No. | Range | Measuring force adjustable range*1 | Resolution | Accuracy | Measuring force | Accuracy of the selected measuring force*1 | Repeatability of measuring force*1 | Mass |
| 227-211-20 | 0 - 0.6 in | 0.5 - 2.5 N | 0.00005 in / 0.001 mm | ±0.0001 in | 0.5, 1.0, 1.5, 2.0, 2.5 N | ± (0.1+ the selected measuring force/10) N | within 0.1 N | 300 g |
| 227-213-20 | 0.6 - 1.2 in | | | | 380 g | | | |
| 227-215-20 | 0 - 0.4 in | 2 - 10 N | 0.001 mm | ±2 µm | 2, 4, 6, 8, 10 N | ± (0.4+ the selected measuring force/10) N | within 0.4 N | 345 g |
| 227-216-20 | 0.4 - 0.8 in | | | | | | | 425 g |
| 227-217-20 | 0.8 - 1.2 in | | | | | | | 415 g |

Disk micrometers with adjustable measuring force

| Metric | | | | | | | | |
|------------|-----------|------------------------------------|------------|----------|----------------------------|--|------------------------------------|--|
| Order No. | Range | Measuring force adjustable range*1 | Resolution | Accuracy | Measuring force graduation | Accuracy of the selected measuring force*2 | Repeatability of measuring force*2 | Mass |
| 227-221-20 | 0 - 15 mm | 0.5 - 2.5 N | 0.001 mm | ±4 µm | 0.5, 1.0, 1.5, 2.0, 2.5 N | ± (0.1+ the selected measuring force/10) N | within 0.1 N | 305 g |
| 227-223-20 | 0 - 10 mm | 2 - 10 N | | | 2, 4, 6, 8, 10 N | | | ± (0.4+ the selected measuring force/10) N |

*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).

DIMENSIONS

| Order No. | Range | L | a | b | c | d | e |
|------------|-------|----|-----|----|------|----|------|
| 227-201-20 | 0-15 | 0 | 6.2 | 25 | 2 | 15 | 17 |
| 227-203-20 | 15-30 | 15 | 8.5 | 36 | 12.8 | | |
| 227-205-20 | 0-10 | 0 | 6.2 | 25 | 2 | | |
| 227-206-20 | 10-20 | 10 | | | 17.8 | 10 | 22 |
| 227-207-20 | 20-30 | 20 | 8.5 | 36 | 7.8 | | |
| 227-221-20 | 0-15 | 0 | 6.2 | 25 | 5.2 | 15 | 13.8 |
| 227-223-20 | 0-10 | | | | | 10 | 18.8 |

Common specifications

- Spindle feed: 10 mm per revolution
- Quantizing error: ±1 count
- Power supply: Silver oxide button cell battery SR44
- Battery life: Approx. 5 years under normal use
- Output: Measurement Data
- Operating temperature: 5 to 40°C
- Storage temperature: -10 to 60°C
- Standard accessories: Silver oxide button cell battery SR44 (9038882), 1 pc. supplied for testing purposes only. 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 | When setting the measuring force to 0.5 to 2.5 N (2 to 10 N), the measuring force graduations are 0.5, 1.0, 1.5, 2.0, 2.5 N (2, 4, 6, 8, 10 N). |
| Origin point setting | (ABS measurement system): Resets the ABS origin at the current spindle position to the minimum value of the measuring range and switches to ABS mode. |
| Zero-setting | (INC measurement system): A brief press on the ZERO/ABS button sets display to zero at the current spindle position and switches to the incremental (INC) measuring mode. A longer press resets to the ABS measuring mode. |
| Hold | Pressing the HOLD button freezes the current value in the display. This function is useful for preserving a measurement in situations of poor visibility where the instrument must be moved away from the workpiece before the reading can be recorded. |
| Function lock | This function allows the PRESET (origin point setting) function and the ZERO (zero-setting) function to be locked to prevent these points being reset accidentally. |
| Auto power ON/OFF | The reading on the LCD disappears after this instrument is idle for about 20 minutes, but the reading and measurement mode are retained. Turning the spindle causes the reading to reappear. |
| Data output | Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system. |
| Error alarm | In case of an overflow on the LCD or a computing error, an error message appears on the LCD, and the measuring function stops. This prevents an instrument from giving an erroneous reading. Also, when the battery voltage drops to a certain level, the low-battery-voltage alarm annunciator appears well before the micrometer becomes unusable. |

Optional accessories

- Connecting cable to DP-1VA LOGGER
 - 1 m: **05CZA662**
 - 2 m: **05CZA663**
- Note: These micrometers use coolant-proof type cables which are not compatible with standard Digimatic micrometers.
- Digimatic mini processor DP-1VA LOGGER: **264-505**
- Connection with PC (wired communication): USB Input Tool Direct USB-ITN-B (2 m): **06AFM380B**
- Connection with PC (wireless communication): Connecting cable to U-WAVE-T (160 mm): **02AZD790B**
Cable for foot switch: **02AZE140B**



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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