



# OPERATION INSTRUCTION

## Digital Indicator With Lifting Lever

**Caution: Prevent liquid from getting into indicator to damage electronics.**

Code	Range	Resolution	Accuracy(fges)	Hysteresis(fu)	Remark
2109-10	10mm/0.4"	0.01mm/0.0005"	20μm	10μm	flat back
2109-101	10mm/0.4"	0.001mm/0.00005"	5μm	2μm	flat back

- 1-Battery cover
- 2-"TOL" button
- 3-LCD display
- 4-"in/mm" button
- 5-"ABS" button
- 6-Stem(diameter Ø8mm)
- 7-Spindle
- 8-Contact point(thread M2.5X0.45)
- 9-Lifting lever
- 10-"M" button
- 11-USB data output
- 12-"ZERO" button



- Display
- 1-Analog pointer
  - 2-Tolerance sign
  - 3-Analog pointer resolution
  - 4-Metric mode
  - 5-Inch mode
  - 6-Preset mode
  - 7-Absolute measuring mode
  - 8-Tolerance measuring mode
  - 9-Measuring direction sign
  - 10-Difference between the max. and min. measuring value
  - 11-Minimum value track measurement
  - 12-Maximum value track measurement
  - 13-Set upper/lower limit

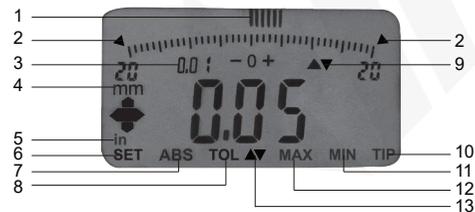


fig.1

1. Install and remove battery(CR2032), the negative side of battery should face out(fig.1).
2. Display can be rotated by 320°.
3. Buttons:  
Long press: longer than 2 seconds; short press: less than 2 seconds.

**TOL---** Short press to enter into tolerance measuring mode. Under this mode, "▶" at the upper right corner blinks if the reading is larger than the upper limit; "◀" at the top left corner blinks if the reading is less than the lower limit.  
Long press to enter into tolerance set mode. "▼" appears and the last digit blinks. Short press "ZERO" button to position the digit, the digit blinks when it is positioned. Short press "in/mm" button to change the digit from 0 to 9. After setting the lower limit, short press "TOL" button, "▲" appears and the last digit blinks. Set the upper limit as setting the lower limit way. Short press "TOL" button to finish set and enter into tolerance measuring mode.  
If the lower limit is larger than the upper limit, "EEE" will appear and the digital indicator enter into tolerance set mode again automatically.

**M---** Short press, "MAX" appears and enter into maximum reading tracking mode. Short press again, "MIN" appears and enter into minimum reading tracking mode. Short press for the third time, "TIR" appears and to get the difference between the maximum and minimum reading of one measurement.

--- Long press M button on 2109-101 digital indicator to change the analog pointer resolution between 0.001mm, 0.002mm, 0.004mm, 0.01mm in metric mode or 0.00005", 0.0001", 0.0002", 0.0005" in inch mode. (2109-10 has no this function)

**in/mm---** Short press for inch and metric reading conversion

--- Long press to change measuring direction. "▲" appears, the value increases if the spindle moves up. "▼" appears, the value decreases if the spindle moves up.

**ABS---** Short press for absolute and relative measuring mode conversion. The normal mode is absolute measuring mode("ABS" is on display). Short press the button to enter relative measuring mode at any point(this point is called "relative zero point"), "ABS" disappears and the reading is zero. In this mode, the reading is the distance to the "relative zero point". Press the button again to return back to absolute measuring mode.

--- Long press to enter into initial reading set mode. "SET" appears and the last digit blinks. Short press "ZERO" button to position the digit, the digit blinks when it is positioned. Short press "in/mm" button to change the digit from 0 to 9. Long press "ABS" button to exit set mode.

MN-2109-E

V3

ZERO--- When display is powered on: short press to get initial reading on absolute measuring mode("ABS" is on display); long press to turn off display.  
--- When display is powered off: short press to turn on display.

False shutdown function:

Long press the ZERO button to turn off the digital indicator or leave it without operation for about 2h to turn off the screen, this is a false shutdown state, in this state, after restarting, it still retains the initial value and preset tolerance.

High and low frequency switching setting:

After power off, press and hold in/mm button, press ZERO key to turn on the digital indicator, after displaying "-----", release the button to enter the high and low frequency switching setting mode, press in/mm button to adjust the switching mode.

When "Fr-on" is shown, it means the function of automatic frequency switching will be opened, and it will automatically switch to low frequency after 3 seconds of no button operation and Spindle operation, and it will automatically switch to high frequency if there is a button operation or Spindle operation. In this state, it is more power-saving and suitable for routine measurement.

When "Fr-oF" is shown, it means the the automatic frequency switching function is turned off and the sensor keeps the high frequency status unchanged. Short press ZERO key to confirm and save the setting of high and low frequency switching mode, and exit to the working state. In this state, the power consumption is higher, the battery life is reduced, applicable to the need for high-speed movement of the measuring rod.

Shutdown time setting:

After power off, press and hold ABS button, press ZERO button to turn on the power, display "----", release the button to enter the power off time setting, press ABS button to switch the value, long press ABS button to switch the single digit and ten digit, every 1 hour a step, the longest automatic power off time is 99 hours, displays '-99-'. Note: Display '-00-' means no auto power off, display '-06-' means auto power off time is 6 hours, and so on. Short press ZERO key to confirm and save the setting time, exit the current mode.

4. Digital indicator should be mounted on a rigid holder to use.
5. Clamping: clamping the stem for digital indicator. If the digital indicator is mounted by clamping the stem, please do not apply excessive clamping force, which will affect the movement of the spindle.
6. During measurement, the spindle should be vertical to the workpiece surface, otherwise, the measurement may not be correct. It's easy to make spindle up or down by lifting lever.  
Caution: please do not move the spindle quickly or apply lateral force on the spindle.
7. After measurement, please oil the contact point. The spindle should not be oiled, otherwise, the movement of the spindle will not be smooth.
8. If the digital indicator drops or be shocked, please inspect the measuring accuracy before using.
9. Optional accessories: SPC cable(7302-, 7305-, 7315-), backs(7330-L5/F5), contact points(series 6282).  
In order to get accurate measurement, it is necessary to choose contact point according to the shape of the workpiece. Measuring columned workpiece should choose knife edge point, measuring spherical workpiece should choose flat point, the needle point should be chosen when measuring concave or complex shape workpiece.
10. One battery can last for one year use. If there is nothing on display or digits blurring, battery voltage is too low, please replace battery. If the digits do not change when buttons are pressed or spindle is moved, take out battery and put it back after 1 minute.  
If the indicator is not be used for a long period of time, please remove the battery. Otherwise, liquid may leak from the battery and damage the indicator.
11. Working temperature is 0-40°C/32-104°F, relative humidity should not exceed 80%.