



# OPERATION INSTRUCTION

## Inductive Digital Comparator

Resolution:0.1 $\mu$ m/0.000005"

| Code   | Range     | Accuracy    | Hysteresis  | Repeatability | Measuring force |
|--------|-----------|-------------|-------------|---------------|-----------------|
| 2149-2 | 2mm/0.08" | 0.5 $\mu$ m | 0.2 $\mu$ m | 0.3 $\mu$ m   | 0.8-1N          |



- 1-Output and charging port (with protective cover)
- 2-Display
- 3-"MODE" button
- 4-"TOL" button
- 5-Stem
- 6-Spindle(with rubber cover)
- 7-Probe
- 8-sensor button
- 9-Indicator light
- 10-"ZERO" button
- 11

1. Built-in wireless transmission, IP54 dust/waterproof, display can be rotated by 320°.
2. Buttons(also refer to the button function table):  
Short press, <1 second; long press, >2 seconds or wait for the indicator to turn white.  
ZERO: short press, zero; long press, power on/off

DATA: Short press, transfer data (requires data cable or wireless receiver) and printer (requires printer connection);

Long press to enter the data browsing, you can view the previously transmitted data, short press the "MODE" button to page up, short press the "TOL" button to page down, short press the "ZERO" button to delete/confirm the deletion of data, long press the "MODE" button to exit the data browsing mode.

These data and information can be used for query and batch upload (with measurement software required). The comparator can save up to 999 pieces of data, and if the data exceeds 999 pieces, the first stored data will be squeezed out.

TOL:short press to enter the tolerance measurement mode,the display shows "TOL", when the measured value exceeds the set tolerance range,the indicator light turns red,and when the measurement value is within the tolerance range,the indicator light turns green; long press to enter the tolerance setting mode, at this time the display "TOL" and "▲" flash, "▲" means the upper tolerance, "▼" means the lower tolerance, press the "DATA" button to switch the flashing position,short press the "MODE"and "TOL"button switches the value of the flashing bit.After the tolerance setting is completed,long press the "MODE" button to exit and save the tolerance setting.

MODE:short press,data hold/release;long press,enter/exit parameter setting.

For the convenience of setting,all parameter items are divided into three groups.

Parameter group 1 contains:

- 1.1switch the resolution of the analog pointer and the range of the analog pointer (see fig 1);
- 1.2unit,switch between mm and in;
- 1.3measurement direction,switch measurement direction,▲ means the counting direction is positive when the measuring rod moves up, ▼ means the counting direction is negative when the measuring rod moves up.

| Resolution<br>$\mu$ m/mil           | 0.1/-     | 0.25/     | 0.5/      | 1/0.05         | 2.5/0.1        | 5/0.2           | 10/0.4          | 25/1             |
|-------------------------------------|-----------|-----------|-----------|----------------|----------------|-----------------|-----------------|------------------|
| Analog pointer range<br>$\mu$ m/mil | $\pm 2/-$ | $\pm 5/-$ | $\pm 10/$ | $\pm 20/\pm 1$ | $\pm 50/\pm 2$ | $\pm 100/\pm 4$ | $\pm 200/\pm 8$ | $\pm 500/\pm 20$ |

fig. 1

Parameter group 2 contains:

- 2.1tracking measurement mode, MAX represents the maximum value of the display measurement, MIN represents the minimum value of the display measurement, MAX MIN represents the difference between the maximum value and the minimum value of the display measurement;
- 2.2initial value setting mode,set the initial value of the comparator.

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Parameter group 3 contains:

- 3.1  sensor button,when the icon is displayed,it means sensor button is on; use of sensor keys is to avoid the deformation of the clamping parts of the comparator due to the key operation,which will affect the measurement results.
- 3.2  wireless data transmission,when this icon is displayed,it means that the wireless transmission function is enabled;
- 3.3  USB data transfer,when this icon is displayed,it means that the USB transfer function is enabled;
- 3.4  print,when this icon is displayed,it means that the print function is on. when one or more of the function icons    are turned on,a short press of the "DATA"button on the measurement interface will save the current displayed value and execute the function at the same time. if the  sensor button is also on,pressing the sensor button is equivalent to the operation function of pressing the "DATA"button.

\*retrieve input:

Comparator can save 10 groups of parameter values that have been input or used.

(with upper and lower deviation value including preset value and tolerance).

When using it again,you can enter the "search input"function to search and call directly.

After the 10 sets of parameter setting values are full,the first parameter value will be squeezed out when the new parameter is saved.

Each time a parameter is used,it is reordered by frequency of use to ensure that the most commonly used settings are not easily squeezed out.

button function table

|               | measurement interface |                                  | parameter settings                                     | data browsing         | tolerance settings         |
|---------------|-----------------------|----------------------------------|--------------------------------------------------------|-----------------------|----------------------------|
| ZERO button   | long press            | On/Off                           |                                                        |                       |                            |
|               | short press           | zero                             | select parameter group                                 | delete/confirm delete |                            |
| MODE button   | long press            | enter parameter setting          | exit parameter setting                                 | exit data browsing    | exit tolerance settings    |
|               | short press           | keep/unlock data                 | up/increase                                            | page up               | up/increase                |
| TOL button    | long press            | enter tolerance settings         | enter/exit *retrieve input                             |                       | enter/exit *retrieve input |
|               | short press           | open/close tolerance measurement | down/decrease                                          | page down             | down/decrease              |
| DATA button   | long press            | enter data browsing              |                                                        |                       |                            |
|               | short press           | save/upload/print                | move to next item                                      |                       | move to next item          |
| sensor button | long press            | zero                             | needs to be set to "On/Off " in the parameter settings |                       |                            |
|               | short press           | save/upload/print                |                                                        |                       |                            |

3.Data transmission:two types of data transfer,USB transmission and wireless transmission.

#### 3.1 USB transmission

Turn on the USB transfer function of the comparator,and connect the comparator to the USB port of the computer through a data cable (charging cable).

#### 3.2 wireless transmission

Turn on the wireless transmission function of the comparator,and insert the wireless receiver (optional)into the USB port of the computer.

Run the data transfer software and make the necessary port settings to upload the memory data or real-time measurement data to the computer.

Note 1:the maximum distance of wireless transmission is about 2m.

Note 2:data transmission from multiple comparators to one computer can be performed by wireless transmission (up to 24 sets).

Note 3:During wireless transmission,the interval of button transmission is about 3s.

When data is transmitted at a faster transmission frequency,there may be omissions.

#### 4.Print:

Comparator turns on the printing function,at the same time turns on the power of the printer (optional),short press the "DATA"button to print the data report.

5.Power:rechargeable battery,for 12 hours continuous working.use a dedicated charger.

The power of the battery will be displayed on the boot interface.When the battery power is too low during use,the indicator light will flash red to indicate.

6.Optional accessory:wireless receiver (code 2149-RE),printer (code ISF-DF-PRINTER)

7.Transmission software:our company's standard CD-ROM contains data transfer software.

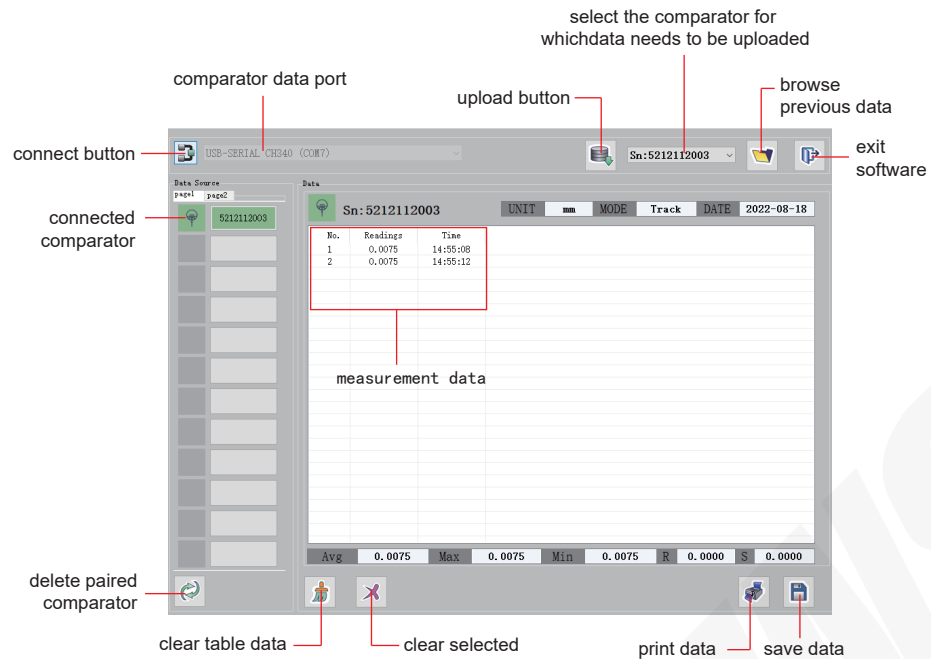
When transferring data by wire or wirelessly

7.1 Connect comparator to the computer with a USB cable or a wireless receiver (optional).

7.2 Open transfer software,after selecting correct data port,press connect button to match.

7.3 Short press "DATA"button to transfer data,wait for connected comparator to appear on the left side of the software,and the connection is complete.

7.4 transmitted data will appear on the table in the middle position,and the other button functions are shown in the software icon below.



8.Prevent impact and water immersion.

9.During measurement,the spindle should be vertical to the workpiece surface,otherwise, the measurement may not be correct.