



**9225-405  
CONTACT/NON-CONTACT TACHOMETER  
OPERATION MANUAL**

## 1. General introduction

- ◆ Adopt microprocessor (mcu) chip, photoelectric technology, anti Interference technology, semiconductor laser and other advanced technologies to realize the [Non-contact measurement] and [Contact measurement].
- ◆ Wide measuring range and high resolution.
- ◆ Large-screen LCD display, clear reading, no parallax.
- ◆ Automatically store the maximum value UP, minimum value Dn and the last measurement Last, store about 500 measurement values at the same time, convenient for users to count and analyze the measurement data (The measurement data is automatically refreshed when you press [Measurement key]).
- ◆ When the battery voltage is too low, the meter displays the prompt symbol  .
- ◆ Contact measurement and non-contact measurement, one meter for two purposes.
- ◆ Streamlined ergonomic shape design, make the meter body fit users' palm perfectly to insure more convenient and comfortable using.
- ◆ The structure is sturdy and delicate, and the whole machine adopts the Sub-components, the shell is made of light and strong ABS plastic. Beautiful appearance and simple operation.
- ◆ The meter has an automatic shutdown function, it will automatically shut down without operating the meter for five minutes.

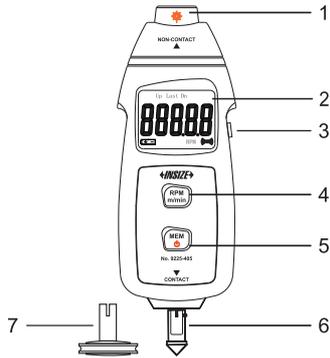
## Warning

- ◆ The device is categorized into Class 3R laser product. Please AVOID direct eye exposure when measuring or it will cause damage to eyes.
- ◆ The product is in accordance with strict standards and regulations through the development and manufacturing, but still can't entirely exclude the possibility of interference to other devices, may cause discomfort to human and animals.



- ◆ Please DO NOT use this product under explosive or corrosive environment.
- ◆ Please DO NOT use this product near medical devices.
- ◆ Please DO NOT use this product on the plane.

## 2. Panel description



1. Photoelectric window used in non-contact mode
2. LCD screen
3. Measurement key: Press the measurement, release to stop the measurement.
4. Switch key: switch between three modes: non-contact speed measurement/contact measurement speed/contact measurement surface speed
5. Power button/view button: long press to turn on/off; short press [view] to store data.
6. Contact shaft assembly in contact mode.
7. Contact type measuring surface speed accessories (surface speed wheel)

## 3. Operation instructions

### ◆ Power on/off

Press and hold the [Power button] for 2 seconds, the meter is turned on, and the screen display value is 0.

Long press [Power Key] for 2 seconds to shut down.

After power on, the default mode of the meter is [non-contact measurement mode], in this mode, press [measurement key] to emit red light (note: do not aim at human eyes)

### ◆ Mode switching

Long press [Switch key] once to switch from [non-contact speed mode] to [contact speed mode]. At this time, the characters displayed on the LCD screen will be reversed so that the characters seen during contact measurement are also positive.

If you press and hold this key once again, it will switch to [Contact Surface Speed Mode], and so on.

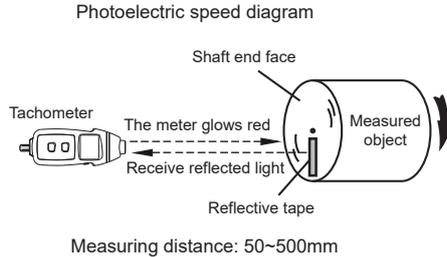
### ◆ Measure

#### 1. [Non-contact mode] Rotation speed measurement (default mode when power-on)

a. Install the battery and press the power button to turn on, and confirm it is [non-contact speed measurement mode], Then take out the reflective tape of the measuring accessory, paste a reflective mark on the object to be measured, and then turn it on.

b. Press the [Measuring key] on the right to make the

red light beam irradiate the measured target vertically (the part where the reflective paper is attached), the measurement starts, and the measured value is, displayed, As shown below.

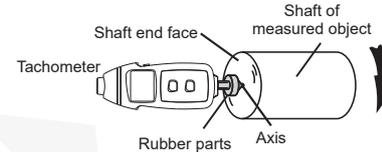


- c. After the displayed value is stable, release the [Measuring key]. The display now shows the last value and multiple measurement data has been automatically stored in the meter, and the measurement ends.

## 2. [Contact mode] Rotation speed measurement

- a. Install the contact measurement accessories and switch the meter mode to [Contact Mode]. At this time, the displayed characters are automatically turned over.
- b. Press the rubber head contacting the rotating shaft with the measured object and ensure that it rotates synchronously and coaxially with the measured object, As shown below.

Schematic diagram of contact measurement speed

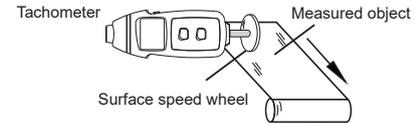


- c. Press [Measuring key] to start measurement, and release [Measuring key] after the displayed value is stable, the measured value is automatically stored, and the measurement ends.

## 3. [Contact mode] surface speed measurement

- a. Install the measuring surface speed wheel and switch the mode to [contact surface speed mode]
- b. Close the surface speed wheel to the measured object and ensure that it moves synchronously with the 'measured object, As shown below.

Schematic diagram of contact measurement surface speed



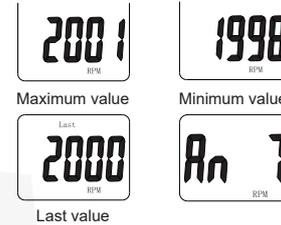
- c. Press [Measuring key] to start measurement, release it after the displayed value is stable, the measured value is automatically stored, and the measurement ends.

d. The meter automatically saves the measured value during the measurement process, about 25 data per minute. If more data needs to be stored, the measurement time is lengthened.

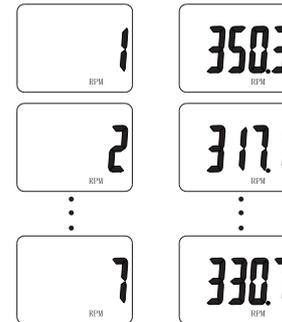
#### 4. Data store and view

1. After the measurement is completed, release the [measurement key], and the meter retains the display of the last value. And the maximum value, minimum value, last value and multiple instantaneous values during the measurement have been automatically stored in the instrument, at this time only need to short press the [Power] key again, the stored measurement values will be displayed separately.
2. [View stored data]: After finishing the measurement, short press the [Power key] several times to complete the cycle [View] operation.

- a. Short press [power button] once: display the max. value UP.
- b. Short press [Power button] once again: display the min. value DN.
- c. Short press [Power button] once again: display the last value Last.
- d. Short press [Power button] once again: Display the total number of stored instantaneous values. AN 7 means that there are 7 instantaneous values to view, (7 is an example number), as shown below.



- e. Press [Power Key] again: display the instantaneous value index number 1, and automatically jump to the corresponding instantaneous value after 1 second, so press [Power Key] several times until the last value, and then return to the display of starting point of above sequence as shown below.



3. Data clearing: press [Measurement key] once, all saved data are cleared to 0.

## 5. Specification

Measuring method		Non-contact	Contact
Measuring range	rotary speed	2.5~99999RPM	0.5~19999RPM
	line speed	—	0.05~500m/min
Resolution	rotary speed	0.1RPM (range 2.5~999.9RPM) 1RPM (range 1000~99999RPM)	0.1RPM (range 0.5~999.9RPM) 1RPM (range 1000~19999RPM)
	line speed	—	0.01m/min (range 0.05~99.99m/min) 0.1m/min (range 100~500m/min)
Accuracy	rotary speed	$\pm(0.05\%n+1d)$ RPM n is rotary speed, d is resolution	$\pm(0.4\%n+1d)$ RPM (n<300RPM) $\pm(0.05\%n+1d)$ RPM (n≥300RPM) n is rotary speed, d is resolution
	line speed	—	$\pm(1\%+1d)$ m/min d is resolution
Laser power		class 3R, 3mW~4mW	—
Sampling time		0.6s (above 100RPM)	
Measuring distance		50~500mm	—
Operation temperature		0~40°C	
Power supply		3×AA batteries	
Dimension		206×71×36mm	
Weight		170g	

## 6. Automatic shutdown and battery replacement

1. If the meter is not operated for five consecutive minutes, it will automatically shut down.
2. When the battery power is too low, the "  " symbol will appear on the left side of the display, indicating that the voltage is too low and the battery needs to be replaced.
3. Open the battery back cover and take out the old battery.
4. According to the positive and negative direction marked in the battery box, install the new battery correctly.
5. If the meter will not be used for along time, please remove the battery to avoid battery leakage and damage to the meter.

## 7. Precaution

1. Use of reflective marks: the area of reflective tape should not be too small, cut a square reflector with a width of about 12mm is attached to the rotating shaft end face. In case the shaft is obviously reflective, so it must be painted black or pasted a layer of black tape and reflective tape on it. When sticking reflective tape, the surface of the shaft should be smooth and clean.
2. When measuring at low speed, in order to improve the measurement accuracy, it is recommended that the user paste several reflective tapes evenly on the measured object, divide the displayed data by the number of reflective tapes to get the actual measurement value.
3. When reflective tape can not be attached to the shaft end face, cut the reflective tape into thin strips with a width of about 5mm, then stick it vertically on the shaft side surface. During the measurement, the red laser should be directly and perpendicular to the reflective tape.
4. The contact speed measurement accessories are divided into large cone, small cone and cylindrical three types, of which large conical and cylindrical rubber parts are suitable for low speed measurement. Small cone rubber fittings are suitable for high speed measurement.