JT2008
Digital Tachometer
Operating Manual

Overview

This Operating Manual covers safety information related to the Tachometer. Please read the relevant information carefully and observe all the Warnings and Notes strictly.
Model JT2008 is a stable, safe and reliable digital non-contact Tachometer. This Tachometer can measure RPM and counts. RPM range is 10 ~ 99999 while counts range is 0 ~ 99999.

Unpacking Inspection

Open the package case and take out the Meter. Check the following items carefully for any missing or damaged part:

Item	Description	Qty
1	English Operating Manual	1 piece
2	Reflecting Tape	10 pieces
3	1.5V Battery (LR6)	4 pieces

In the event there is any missing or damaged item, please contact your dealer immediately.

Safety Information

This Meter complies with IEC61010-031 and IEC61326 standards as well as Pollution Degree 2 requirement.

Use the Meter only as specified in this operating manual. Otherwise, the protection provided by the Meter may be impaired.

In this manual, a ⚠ **Warning** indicates conditions and actions that pose hazards to the user, or may damage the Meter or the equipment under test.

A **Note** indicates the information that user should pay attention to.

⚠ Warning:

- Before using the Meter, inspect the case. Do not use the Meter if it is damaged or the case (or part of the case) is removed. Look for cracks or missing plastic.
- Do not use or store the Meter in an environment of high temperature, humidity, explosive, inflammable and strong magnetic field. The performance of the Meter may be deteriorated after being dampened.
- Do not aim the laser directly at eye.
- Replace the battery as soon as the battery indicator 🔋 appears.
  When the battery is between 4.5V ~4.8V, the battery indicator 🔋 will appear.
  When the battery is between 4.3V ~ 4.5V, the battery indicator 🔋 will blink, the Meter will be turned off after 1 minute.
- When opening the battery door, make sure the Meter is powered off.
- When servicing the Meter, use only the replacement parts with the same model or identical electrical specifications.
- The internal circuit of the Meter shall not be altered at will to avoid damage of the Meter and any accident.
- Soft cloth and mild detergent should be used to clean the surface of the Meter when servicing. No abrasive and solvent should be used to prevent the surface of the Meter from corrosion, damage and accident.
- Turn the Meter off when it is not in use and take out the battery when it is not in use for a long time.
- Constantly check the battery as it may leak when it has been using for some time, replace the battery as soon as leak occurs. A leaking battery will damage the Meter.

International Electrical Symbols

⚠	Warning. Refer to the Operating Manual
🔋	Low Battery Indication
CE	Conforms to Standards of European Union

The Meter Structure (See Figure 1)

① Tachometer Light Source.

② LCD Display.

③ Housing

④ Functional Buttons

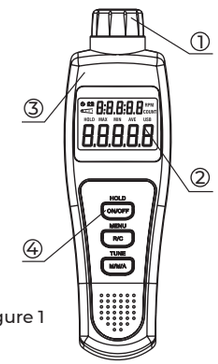

Figure 1

Functional Buttons

The table below offers information about the functional button operations.

Button	Operation Performed
ON/OFF	• Press once to turn the meter on. • Press and hold for 1 second to turn it off. • When measuring RPM and Counts, press once to enter the Hold mode. Press it again to exit the hold mode.
R/C	• When measuring RPM and Counts, press it to toggle between RPM and Counts feature. • Press and hold for 1 minute to enter the setup feature. After that, each time you press the button, it steps through LED / SR / AOFF / CLK / settings, then exits the setup and accesses RPM or Count. You could press ON/OFF button to exit the setup mode and return to normal measurement mode at any time.
M/M/A	• Press this button to choose Max./Min./Average/Zeroing/Setting options. • Under Tach measurement mode, press M/M/A button to select MAX/MIN/AVE and normal measurements. After entering LED/SR/AOFF/CLK mode, press this button to set to 0/ 1 and adjust the time.

Setup

A. LED

Press R/C button to select LED feature after turning on the Meter. Then press **M/M/A** button to set to 0 or 1. 0 represents disabling LED laser and 1 enabling the laser.

B. SR (Sampling Rate)

Press R/C button to select SR feature after turning on the Meter. Then press **M/M/A** button to adjust between 005 ~ 255. Press and hold **M/M/A** button to access quick setting.

C. AOFF

Press R/C button to select AOFF feature after turning on the Meter. Then press **M/M/A** button to set to 0 or 1. 0 represents disabling auto power off and 1 enabling the function.
With the function enabled, the meter will automatically be powered off if buttons are inactive for 10 minutes. Press ON/OFF again to turn on the meter.

D. CLK

Press R/C button to select CLK feature after turning on the Meter. Then press **M/M/A** button to set to 0 or 1. 0 is for h:m time format and 1 for m:s format.

Display Symbols (See Figure 2)

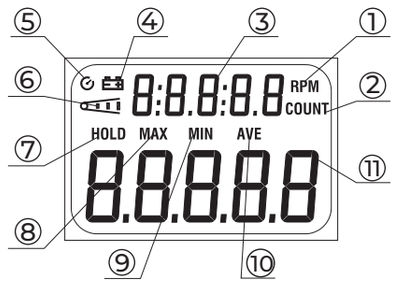

Figure 2

Number	Meaning
1	Unit of Tachometer
2	Unit of Counts
3	Time
4	The battery is low
5	Indicator of Sleep Mode
6	Measurement of RPM and Counts
7	Data Hold is on
8	Display of Maximum reading
9	Display of Minimum reading
10	Display of Average reading
11	Display of Measurement reading

Measurement Operation

⚠ Warning:

- The Time will be off after the HOLD feature is enabled. The time will be activated again after coming out the HOLD mode.

A. RPM Measurement (see Figure 3)

⚠ Warning:

- Do not aim the laser directly at eyes.
- To avoid the rotating object from touching the meter and cause any injury or damage to the meter during the measurement, please keep the meter more than 50mm away from the tested target.

To carry out RPM measurement, follow the following procedure:

1. Attach a piece of reflecting tape to the object under test.
2. Position the meter firmly on desired location. Hold the meter and keep its light source 50~200mm away from the object under test.
3. Press ON/OFF button, the Meter is default to enter the RPM measurement mode. Point the Tachometer light source to reflective tape, The deviation from the ideal right-angle should not be greater than 30.
4. The LCD displays the RPM reading

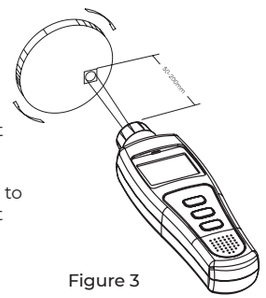

Figure 3

Note:

1. When measuring RPM, the LCD displays “0.0000” if there is no signal within 7 seconds.
2. When the RPM is greater than “99999” the LCD displays OL.

B. Counts

Self-lighted Counts (See Figure 4)

1. Position the meter firmly on desired location. Hold the meter and keep its light source 50~200mm away from the targets.
2. Press the ON/OFF button.
3. Press the R/C button to select Count mode.
4. Point he Tachometer light source to the objects under count. The deviation from the ideal right-angle should not be greater than 30.
5. The LED scans the objects under count, counts the number and displays the total value.

Note:

1. The object under count must be reflective. Otherwise Counts feature cannot be used.

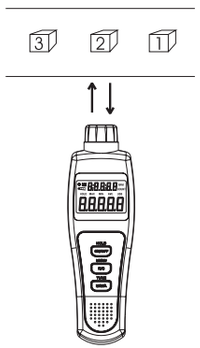

Figure 4

Receiving Light Source Outside (See Figure 5)

1. Position the meter firmly on desired location. Hold the meter and keep its light source 50~200mm away from the targets. The deviation from the ideal right-angle pointing should not be greater than 30.
2. Locate the Meter, objects under counts and light source as shown in Figure 5.
3. Press ON/OFF button.
4. Turn the LED off, refer to page 9 point B.
5. Then press R/C button to select Counts mode.
6. When the objects under count pass between the meter and light source, the meter counts the number and displays the total value.

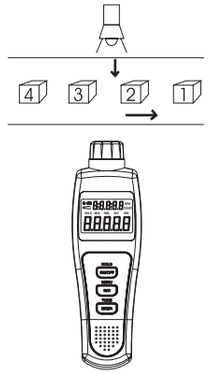

Figure 5

Note:

1. Under the count mode, when the count number is greater than “99999”, the Meter will display OL and hold the data.
2. Press M/M/A button to zero the counts.
3. Press ON/OFF to re-start counting.

Specifications

A. General Specifications

- Display: 5 digits LCD display. Maximum display: 99999.
- Overloading: Display OL.
- Low Battery Indication: Display .
- Sampling Rate: Adjustable from 5ms~255ms.
- Sensor Type: Photo diode and laser tube.
- Measurement Distance: 50mm ~ 200mm.
- Drop Test: one meter.
- Power: 4pcs x 1.5V batteries (AA).
- Dimensions: 184 x 56 x 34mm.
- Weight: Approximate 100g (excluding battery)

B. Environmental Requirements

- For indoor use only.
- Altitude: 2000m
- Temperature and humidity:
  Operating:
  0°C~30°C(≤85% R.H.)
  30°C~40°C(≤75% R.H.)
  40°C~50°C(≤45% R.H.)
  Storage:
  -20°C~60°C(≤85% R.H.)
- Safety/ Compliances: IEC61010-031, IEC61326, IEC61010-1 pollution degree 2.
- Certification: CE

Accuracy Specifications

Accuracy: ±(a% reading + b digits), calibration per year.
Operating temperature: 23°C ± 5°C
Operating humidity: ≤80% R.H.
Temperature Coefficient: 0.1 x (accuracy)/ °C

A. RPM

Range	Resolution	Accuracy
10~99.999 r/min	0.001 r/min	± (0.04%+2)
100~999.99 r/min	0.01 r/min	
1000~9999.9 r/min	0.1 r/min	
10000~99999 r/min	1 r/min	

A. RPM

Range	Resolution	Max. Input Frequency
0~99.999	1 digit	10kHz, Pulse Width 5%

MAINTENANCE

This section provides basic maintenance information including battery replacement instruction.

⚠ Warning:

Do not attempt to repair or service your Meter unless you are qualified to do so and have the relevant calibration, performance test, and service information.
Do not attempt to open the back housing to avoid damaging the Meter or affecting the accuracy.

A. General Service

- Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.
- Turn the Meter off when it is not in use.
- Take out the battery when it is not in use for a long time.
- Do not use or store the Meter in a place of humidity, high temperature, explosive, inflammable and strong magnetic field.

B. Replacing the Battery (See Figure 6)

1. Press ON/OFF to turn the Meter off.
2. Turn the Meter’s front case down.
3. Remove the screw from the battery door, and separate the battery door from the case bottom.
4. Take out the old batteries and replace with 4 x 1.5V battery (AA).
5. Insert again the case bottom to the battery door, and reinstall the screw.

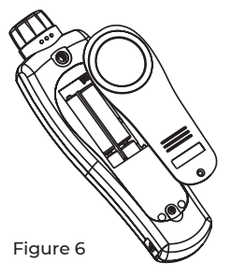
Figure 6

This operating manual is subject to change without notice.

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