

CHEOTIME DT6685

CHEOTIME DT6685 Handheld Digital Tachometer User Manual

Model: DT6685

1. PRODUCT OVERVIEW

The CHEOTIME DT6685 is an advanced and highly accurate photoelectric digital tachometer designed for non-contact measurement of motor speed (RPM). This device provides a safe and efficient method for testing high-speed motors and rotating machinery without physical contact.

Key Features:

- **Non-Contact Measurement:** Utilizes photoelectric technology for enhanced safety and accuracy, eliminating the need for physical contact with rotating parts.
- **Wide Measurement Range:** Capable of measuring speeds from 2.5 RPM to 99,999 RPM, suitable for diverse applications.
- **High Resolution:** Offers 0.1 RPM resolution for speeds between 2.5-999.9 RPM and 1 RPM for speeds between 1000-99,999 RPM.
- **Clear LCD Display:** Features a large LCD screen for easy and clear reading of measured RPM values, even in low-light conditions.
- **Data Storage and Recall:** Stores up to 60 groups of measurements, allowing for convenient review and tracking of data.
- **Auto Zero Function:** Automatically adjusts and calibrates for consistent and precise measurements.



The CHEOTIME DT6685 Handheld Digital Tachometer, presented alongside the three included reflective strips, ready for use.

2. SAFETY INFORMATION

Please read and understand all safety instructions before operating the device to prevent injury or damage.

- **Eye Safety:** Do not aim the photoelectric pointer directly at your eyes. Avoid directly observing the emitted beam or indirectly observing its reflection. It is recommended to wear safety glasses during operation.
- **Environmental Safety:** Do not use the tachometer near explosive gases or in other potentially explosive environments.
- **Battery Handling:** Ensure correct battery polarity when installing. Remove the battery if the device will not be used for an extended period.

3. PACKAGE CONTENTS

Verify that all items are present in the package upon unboxing:

- 1 x CHEOTIME DT6685 Digital Tachometer

- 3 x Reflective Strips
- 1 x User Manual

4. SETUP

4.1 Battery Installation

1. Locate the battery compartment cover on the handle of the tachometer.
2. Slide or unclip the cover to open the compartment.
3. Insert one 9V 6F22 square battery, ensuring correct polarity (+/-).
4. Close the battery compartment cover securely.



An image showing the battery compartment of the DT6685 tachometer, indicating the location for battery insertion.

4.2 Applying Reflective Strips

For accurate non-contact measurements, a reflective strip must be applied to the rotating object.

1. Clean the surface of the rotating object where the measurement will be taken. Ensure it is free of dust,

grease, or moisture.

2. Peel off a reflective strip from its backing.
3. Firmly attach the reflective strip to the rotating part. Ensure it is flat and smooth.
4. For best results, apply a single strip. If the object is highly reflective, cover the surrounding area with non-reflective tape to avoid false readings.



A close-up view of the three reflective strips provided with the tachometer, essential for accurate non-contact measurements.

5. OPERATING INSTRUCTIONS

5.1 Powering On and Off

- To power on the tachometer, press the trigger button. The LCD display will illuminate.
- Release the trigger button to power off the device. The device will automatically power off after a period of inactivity to conserve battery.

5.2 Taking a Measurement

1. Ensure a reflective strip is properly applied to the rotating object.

2. Hold the tachometer firmly and aim the photoelectric sensor towards the reflective strip on the rotating object.
3. Maintain a measuring distance between 50mm and 500mm (2 to 19.7 inches) from the target.
4. Press and hold the trigger button. The LCD will display the RPM reading.
5. Adjust the angle and distance slightly if the reading is unstable until a stable measurement is obtained.
6. Release the trigger button to stop measuring. The last reading will typically remain on the display for a short period.



A user holding the DT6685 tachometer, demonstrating its ergonomic design and the clear LCD display showing a measurement.



LCD digital display
It helps you to measure and record better.

The DT6685 tachometer in action, pointing towards a rotating motor assembly to measure its speed, highlighting its non-contact operation.

5.3 Data Storage and Recall

The DT6685 can store up to 60 groups of measurement data.

- While taking a measurement, the device automatically stores the maximum, minimum, and last measured values.
- To access stored data, refer to the device's specific button functions (e.g., a 'MEM' or 'REC' button, if present, as indicated by the 'REC' button on the device image). Pressing this button typically cycles through stored values.
- Consult the on-screen indicators for identifying MAX, MIN, and AVG readings.

5.4 Auto Zero Function

The auto-zero function ensures accurate calibration before each measurement.

- This function operates automatically upon powering on the device or initiating a new measurement.
- No manual intervention is typically required for this feature.

6. MAINTENANCE

- **Cleaning:** Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the tachometer in a cool, dry place away from direct sunlight and extreme temperatures. Remove the battery if storing for extended periods to prevent leakage.
- **Reflective Strips:** Replace reflective strips if they become dirty, damaged, or lose their adhesive properties.

7. TROUBLESHOOTING

- **No Display/Device Not Turning On:**
 - Check if the 9V battery is installed correctly with proper polarity.
 - Replace the battery with a new one if it is depleted.
- **Unstable or Inaccurate Readings:**
 - Ensure the reflective strip is clean, flat, and securely attached to the rotating object.
 - Verify that the measuring distance is within the specified range (50-500mm).
 - Adjust the angle of the tachometer relative to the reflective strip. The sensor should be aimed directly at the strip.
 - If the surrounding surface is highly reflective, cover it with non-reflective tape to isolate the reflective strip.
 - Ensure there are no obstructions between the tachometer and the reflective strip.
- **Error Message on Display:**
 - If an 'OVER' or 'UNDER' message appears, the measured speed is outside the device's range.
 - If other error codes appear, try restarting the device by removing and reinserting the battery. If the issue persists, contact customer support.

8. SPECIFICATIONS

Parameter	Value
Item Type	Tachometer
Material	ABS
Model	DT6685
Measuring Range	2.5-99999 RPM
Resolution (2.5~999.9 RPM)	0.1 RPM
Resolution (1000~99,999 RPM)	1 RPM
Accuracy	±0.02% + 1 digit
Measuring Distance	50-500mm / 2-19.7in

Parameter	Value
Response Time	0.5s (Above 120 RPM)
Operating Environment Temperature	0-50°C (32-122°F)
Operating Environment Humidity	10-90% RH
Storage Temperature	-10-60°C (14-140°F)
Storage Humidity	10-75% RH
Battery	9V 6F22 Square Battery (Not Included)
Package Dimensions	6.69 x 3.94 x 1.97 inches
Item Weight	4.52 ounces
Manufacturer	CHEOTIME
ASIN	B0DZP9561L