

DANOPLUS PD_55

DANOPLUS Digital Non-Contact Laser Tachometer User Manual

Model: PD_55

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1. INTRODUCTION

Thank you for choosing the DANOPPLUS Digital Non-Contact Laser Tachometer, Model PD_55. This device is designed for accurate measurement of rotational speed (RPM) without physical contact, utilizing a laser and reflective tape. It is suitable for various applications including fans, automobiles, motors, and paper production machinery. This manual provides detailed instructions for safe and effective use of your tachometer.



NON-CONTACT TACHOMETER

MEASURING RANGE: 2.5-99999RPM

-  Automatic/Manual measurement
-  Data HOLD Function
-  With backlight function
-  Data record and recall of 60 records
-  Auto/Manual power off
-  Handy and Portable

Figure 1: Key Features of the DANOPPLUS Digital Non-Contact Tachometer

This image highlights the main features of the tachometer, including automatic/manual measurement, data hold, backlight function, data record and recall, auto/manual power off, and its handy and portable design.

WIDE APPLICATION:



Figure 2: Wide Application Examples

This image demonstrates the versatility of the tachometer, showing its application in measuring RPM for fans, automobiles, motors, and paper production machinery.



Figure 3: DANOPPLUS Digital Non-Contact Laser Tachometer (Model PD_55)

This image displays the main unit of the DANOPPLUS Digital Non-Contact Laser Tachometer, showcasing its ergonomic design and digital display.

2. SAFETY INFORMATION

Please read and understand all safety warnings and operating instructions before using this instrument. Failure to do so may result in injury or damage to the device.

- **Laser Safety:** This device uses a Class II laser. Do not stare directly into the laser beam or point it at others. Avoid direct eye exposure.
- **Battery Safety:** Ensure correct battery polarity when installing. Remove batteries if the device will not be used for an extended period to prevent leakage.
- **Operating Environment:** Do not operate the device in environments with high humidity, extreme temperatures, or explosive gases.
- **Maintenance:** Do not attempt to disassemble or modify the device. Refer all servicing to qualified personnel.
- **Reflective Tape:** Always apply reflective tape securely to the rotating object before measurement.

3. PRODUCT OVERVIEW

Familiarize yourself with the components and controls of your tachometer.



Figure 4: Labeled Diagram of Tachometer Components

This diagram illustrates the front and top views of the tachometer, labeling key components such as the display, laser output, backlight button, power on/off button, REC button, Max/Min/AVG button, Auto button, measuring button, and battery cover.

- **Display:** Shows RPM readings, MAX/MIN/AVG indicators, battery status, and other operational icons.
- **Laser Output:** Emits the laser beam for non-contact measurement.
- **Backlight Button (↓):** Toggles the display backlight.
- **Power On/Off Button (⏻):** Powers the device on or off.
- **REC Button:** Activates data recording mode.
- **Max/Min/AVG Button:** Cycles through maximum, minimum, and average recorded values.
- **Auto Button:** Toggles between automatic and manual measurement modes.
- **Measuring Button (Trigger):** Initiates the measurement when pressed.
- **Battery Cover:** Located at the bottom of the handle for battery access.

4. SETUP

4.1. Battery Installation

1. Locate the battery cover at the bottom of the tachometer handle.
2. Slide the battery cover open.
3. Insert one 9V battery, ensuring correct polarity (+/-).
4. Close the battery cover securely.



Figure 5: Battery Compartment and 9V Battery

This image shows the open battery compartment of the tachometer and a 9V battery, illustrating how to install the power source.

4.2. Applying Reflective Tape

For accurate measurements, reflective tape must be applied to the rotating object.

- Cut a small piece of the provided reflective tape.
- Attach the tape to the rotating shaft or surface of the object you wish to measure. Ensure the tape is flat and securely adhered.

- The laser will detect the reflection from this tape to calculate RPM.



Figure 6: Tachometer and Accessories

This image displays the tachometer, a carrying pouch, the user manual, and a roll of reflective tape, which is essential for operation.

5. OPERATING INSTRUCTIONS

5.1. Powering On/Off

- Press the **Power On/Off** button () to turn the tachometer on.
- Press and hold the **Power On/Off** button () for a few seconds to turn the tachometer off. The device also features an auto-power-off function to conserve battery.

5.2. Taking a Measurement

1. Ensure reflective tape is applied to the rotating object.
2. Point the laser output towards the reflective tape on the rotating object. Maintain a measuring distance of 2 to 20 inches (50-500mm).
3. Press and hold the **Measuring Button** (trigger). The laser will activate, and the display will show the

RPM reading.

4. Release the **Measuring Button** to hold the last reading on the display.



Figure 7: Laser Beam Emitting from Tachometer

This image shows the tachometer in use, with its red laser beam actively projecting from the front, indicating it is ready for or in the process of taking a measurement.



Figure 8: Close-up of Tachometer Display

A detailed view of the tachometer's digital display, showing an RPM reading of "0.0" and the "AUTO" indicator, along with icons for signal strength and battery level.

5.3. Data Record Function (REC)

The tachometer can record up to 60 reading values.

1. Press the **REC** button to enter recording mode. The "REC" icon will appear on the display.
2. Take measurements as described in Section 5.2. Each measurement will be stored.
3. To exit recording mode, press the **REC** button again.
4. To view recorded data, press the **Max/Min/AVG** button. Each press will cycle through the maximum, minimum, and average values of the recorded data.

5.4. Automatic and Manual Measurement

- Press the **Auto** button to switch between automatic and manual measurement modes.
- In **Automatic Mode** (indicated by "AUTO" on display), the device continuously measures as long as the measuring button is held.
- In **Manual Mode**, the device takes a single measurement when the measuring button is pressed and

held, then holds the reading when released.

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. Remove batteries if storing for extended periods.
- **Laser Lens:** Keep the laser output lens clean and free from dust or debris to ensure accurate readings.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No display/Device won't turn on	Dead or incorrectly installed battery.	Replace battery or check polarity.
Inaccurate or erratic readings	<ul style="list-style-type: none">◦ Reflective tape not properly applied or too small.◦ Measuring distance too far or too close.◦ Laser lens is dirty.◦ Ambient light interference.	<ul style="list-style-type: none">◦ Ensure tape is flat and sufficient size.◦ Adjust distance to 2-20 inches (50-500mm).◦ Clean the laser lens.◦ Reduce ambient light if possible.
Laser not visible	Device not powered on or measuring button not pressed.	Turn on the device and press the measuring button.

8. SPECIFICATIONS

Parameter	Value
Measuring Range	2.5 - 99,999 RPM
Resolution	0.1 RPM (2.5-999.9 RPM), 1 RPM (1000-99,999 RPM)
Accuracy	$\pm(0.02\% + 1 \text{ digit})$
Measuring Distance	50 - 500 mm (2 - 20 inches)
Sampling Time	0.5 seconds (above 120 RPM)
Operating Temperature	0 - 50°C (32 - 122°F)
Operating Humidity	10 - 90% RH
Storage Temperature	-10 - 60°C (14 - 140°F)
Storage Humidity	10 - 75% RH
Dimensions	5.5 x 3 x 1.5 inches
Weight	115g (including battery)
Power Supply	1 x 9V battery

Parameter	Value
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Figure 9: Visual Summary of Product Specifications

This image provides a graphical representation of the tachometer's key specifications, including measuring range, resolution, accuracy, and environmental conditions.

9. WARRANTY AND SUPPORT

DANOPLUS products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please refer to the contact information provided with your purchase or visit the official DANOPLUS website. Please retain your proof of purchase for warranty claims.