FLUKE®

931

Tachometer

Users Manual

English

PN 3409877

January 2009

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Fluke Corporation
P.O. Box 9090
Everett, WA
98206-9090
U.S.A.

Fluke Beijing Service Center
Rm. 401 SCITEC Tower
Jianguomenwai Dajie
Beijing 100004, PRC
Hot Line: 400.810.3435
Fax: (8610) 65286307

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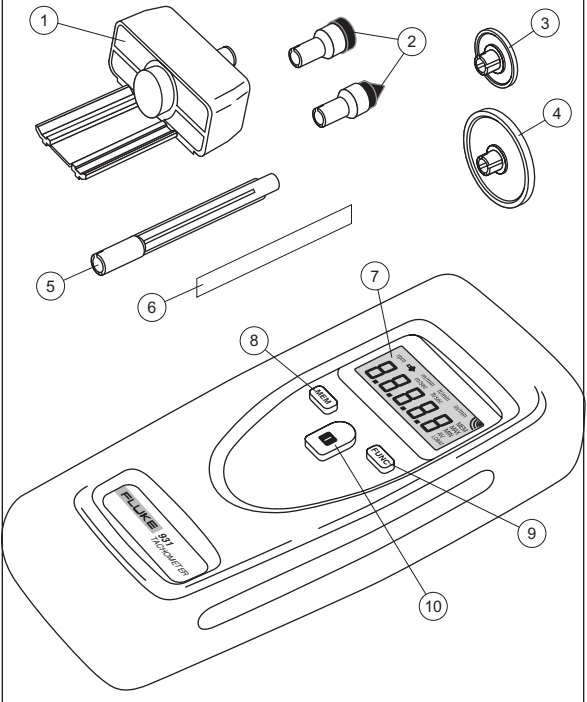


① Mechanical Adapter	⑥ Reflector Strip
② Shaft Contacts	⑦ Display
③ Contact wheel 0.1 m	⑧ Memory key
④ Contact wheel 6 inch	⑨ Function key
⑤ Shaft Extention	⑩ ON key

INTRODUCTION

The Fluke 931 Tachometer (the Tachometer) is a hand-held instrument that accurately measures rotational Revolutions Per Minute (RPM) or surface speed as well as length. Non-contact RPM measurements can be made using the Infrared Beam function, or contact RPM measurements using the mechanical adapter and selectable tip. The Memory function allows storing the maximum (MAX), minimum (MIN), average (AV), and last reading.

HOW TO CONTACT FLUKE

To contact Fluke, call one of the telephone numbers that follow:

- Technical Support USA: 1-800-99-FLUKE (1-800-993-5853)
- Calibration/Repair USA: 1-888-99-FLUKE (1-888-993-5853)
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31 402-675-200
- Japan: +81-3-3434-0181
- Singapore: +65-738-5655
- Anywhere in the world: +1-425-446-5500

Or, visit Fluke's website at http://www.fluke.com.cn.

To register your product, visit http://register.fluke.com.

INCLUDED ACCESSORIES

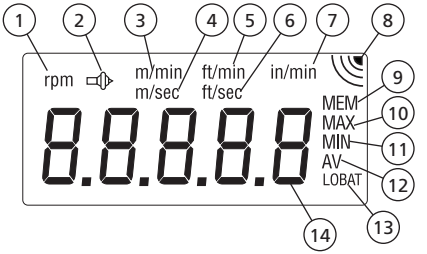
The following accessories are included with the Tachometer:

- 0.1 m Contact Wheel
- 6 in Contact Wheel
- Cone Shaft Contact
- Internal Cone Shaft Contact
- Shaft Extension
- 10 Reflective Strips

THE KEYPAD

Key	Description
MEM	Selects MAX, MIN, AV, and last reading
	Turns the Tachometer ON and makes selections. The Tachometer turns OFF after 30 seconds of inactivity.
FUNC	Selects the Measurement function

THE DISPLAY



Item	Description
①	Optical RPM measurement
②	Contact RPM measurement
③	Meters per minute
④	Meters per second
⑤	Feet per minute
⑥	Feet per second
⑦	Inches per minute
⑧	Trigger display
⑨	Memory, last stored reading
⑩	Memory, maximum reading
⑪	Memory, minimum reading
⑫	Memory, average reading
⑬	Low battery indicator
⑭	Numerical reading

OPERATION

Press ▮ to power up the Tachometer. The display test illuminates all LCD segments for 1 second and then shows the configured surface speed selection.

- The last selected mode appears at when the Tachometer is turned ON.
- The Tachometer automatically turns OFF after 30 seconds of inactivity.

CONFIGURATION

To configure the Tachometer for the correct contact wheel used for surface speed measurements:

1. Turn the Tachometer ON.
2. Press MEM and FUNC release.
3. Use FUNC to select 0.1 (0.1 m circumference small wheel) or 6" (6 inch circumference large wheel). A 12" wheel is not available.

OPTICAL (NON-CONTACT)

To measure RPM using the non-contact infrared beam, remove the mechanical adapter from the top of Tachometer. Pull the adapter straight out to remove. See Figure 2.

1. Stop the rotating device to measure.
2. Clean a spot for the reflective strip.
3. Place reflective strip on rotating device.
4. Turn the Tachometer ON and use FUNC to select RPM.
5. Aim Tachometer at rotating reflective strip keeping within 500 mm (20 inches).
6. Press ▮ to enable the infrared beam.
7. When the Tachometer is triggered by the reflective strip, the trigger symbol on the display flashes and RPM will be displayed.

CONTACT

To use the Tachometer for contact measurement, insert the mechanical adapter into top of the Tachometer, see Figure 1:

1. To measure, connect the cone or internal cone shaft contact to the end of the shaft.
2. Turn the Tachometer ON and use FUNC to select RPM ⊏◁▷.
3. Press ▮ to take measurements.
4. When the Tachometer is triggered, the trigger symbol flashes and the RPM is displayed.

SURFACE SPEED AND LENGTH

Surface speed and length can be measured using the mechanical adapter and contact wheel.

	Range	
	0.1 m	6 "
m/min	0.10 to 1999	0.10 to 1524
ft/min	0.40 to 6550	0.40 to 5000
in/min	4.0 to 78700	4.00 to 60000
m/sec	0.10 to 33.30	0.10 to 25.40
ft/sec	0.10 to 109	0.10 to 83.33
m	0 to 99999	
ft	0 to 99999	
in	0 to 99999	

CONTACT WHEEL USE

1. Insert mechanical adapter into the top of the Tachometer. See Figure 1.
2. Select either the 0.1 m or 6 inch contact wheel to use.
3. Set the Tachometer to 0.1 or 6 inch setting for the contact wheel in use.
4. Use FUNC to select units of measure.
5. Contact wheel to surface to measure and press to take measurements.
6. When the Tachometer is triggered, the trigger symbol flashes and the measurement is displayed.

MAX, MIN AND AV READINGS

Press MEM to enable MAX, MIN and AV readings stored in memory. Each time a new measurement is taken, the maximum, minimum, average and last value are stored. The last value is shown under MEM. The units of measure for the stored readings will also be displayed. Press to exit the memory display mode.

REPLACING THE BATTERIES

Replace the batteries when LOBAT appears on display. See Figure 3.

1. Remove the battery cover on back of the Tachometer.
2. Replace with 2 AA 1.5V LR6 (Alkaline) batteries.
3. Replace the battery cover.

SPECIFICATIONS

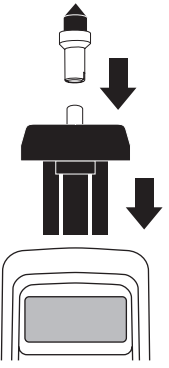
RPM

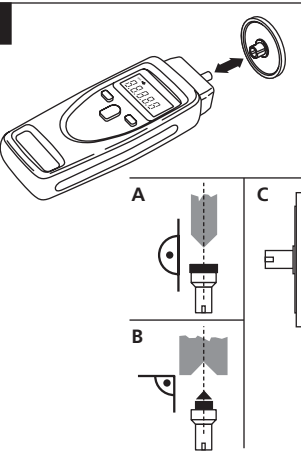
	Range
Optical (non-contact)	1 to 99999 RPM
Contact	1 to 19999 RPM

Accuracy	±0.02 % of reading + 1 digit
Sensing Distance (optical)	500 mm (20 inches)
Battery Type	(2) AA 1.5 V LR6 (Alkaline)
Battery Life	approximately 40 hours
Operating Temperature	0 to +50 °C (32 to 122 °F)
Storage Temperature	-20 to +70 °C (0 to 160 °F)
Weight	250 g (0.55 lbs)
Size	175 x 60 x 28 mm (7 x 2.5 x 1 inch)

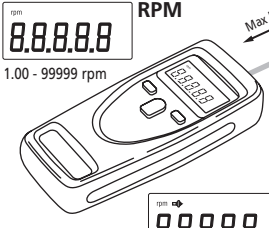
Note: Serial number of the Tachometer is located in battery compartment.

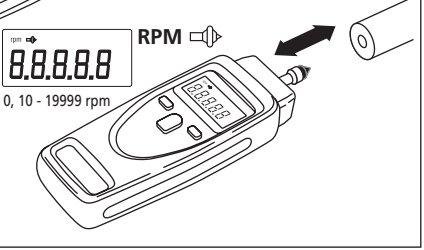
1 Handling





2 RPM /





3 / BATT