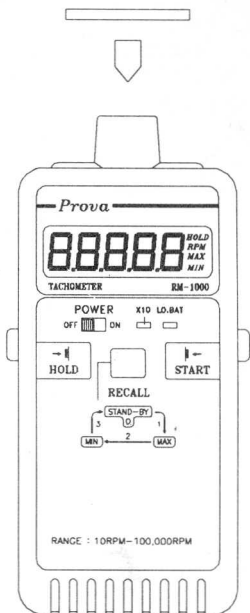


PROVA DIGITAL TACHOMETER

MODEL: RM-1000

INSTRUCTION MANUAL



PROVA INSTRUMENTS INC.

Thank you very much for your purchasing this new digital tachometer. In order to enjoy a long and correct usage of the tachometer, please read this instruction manual carefully. Then you shall understand its operation, appreciate all its features and get the most accurate results.

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1. SPECIFICATIONS

Display:	5 digits, 16mm (0.63") LCD (Liquid Crystal Display) with function annunciators.
Range:	10.0 to 100,000 rpm
Resolution:	0.1rpm (10.0 to 9999.9 rpm) 1rpm (10,000 to 99,999 rpm) 10rpm (over 100,000 rpm)
Accuracy:	$\pm 0.01\% \pm 1$ digit 10.0 to 6,000.0 rpm $\pm 0.02\% \pm 1$ digit 6,000.0 to 12,000 rpm $\pm 0.05\% \pm 1$ digit 12,000 to 30,000 rpm $\pm 0.1\% \pm 1$ digit over 30,000 rpm
Sampling Rate:	1 second (> 60 rpm) > 1 second (10 to 60 rpm)
Measuring Distance:	50 to 300 mm
Memory/Recall:	Max. and Min. values
Data Hold:	Stop measurement and hold data
Processor:	High speed microprocessor
Time Base:	12.0 MHz Quartz Crystal
Range Selection:	Automatic
Battery:	Four 1.5V batteries (AA, UM-3)
Low Battery:	Red LED display
Operating Temp.:	0 to 50°C (32 to 122 °F)
Size:	192 mm x 96 mm x 38 mm (7.6" x 3.8" x 1.5")
Weight:	300 g (including battery)
Accessories:	Carrying case x 1 Reflective tape x 1 Instruction manual x 1

2. PANEL FUNCTIONS

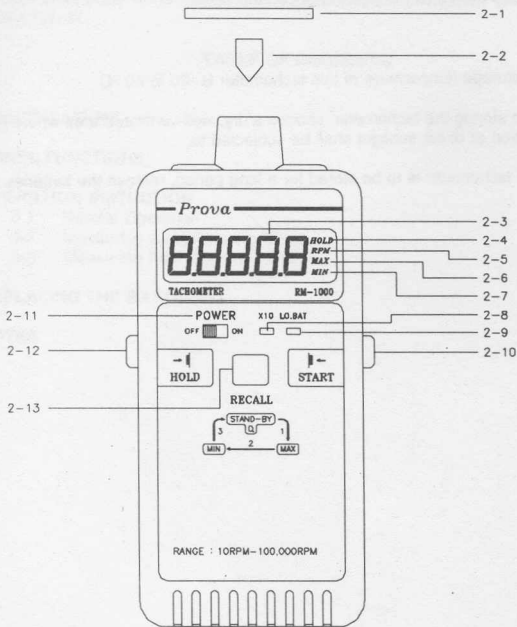


Figure 1

- | | | | |
|-----|------------------------------|------|------------------------------------|
| 2-1 | Reflecting tape | 2-8 | Display value x 10 |
| 2-2 | Reflecting signal light beam | 2-9 | Low battery warning |
| 2-3 | Five digits LCD display | 2-10 | Measuring switch |
| 2-4 | Hold function symbol | 2-11 | Power on/off switch |
| 2-5 | RPM symbol | 2-12 | Data hold switch |
| 2-6 | Max. value symbol | 2-13 | Recall Switch |
| 2-7 | Min. value symbol | | (Display -> Max -> Min -> Display) |

3. OPERATION INSTUCTION

3.1 Normal Operation

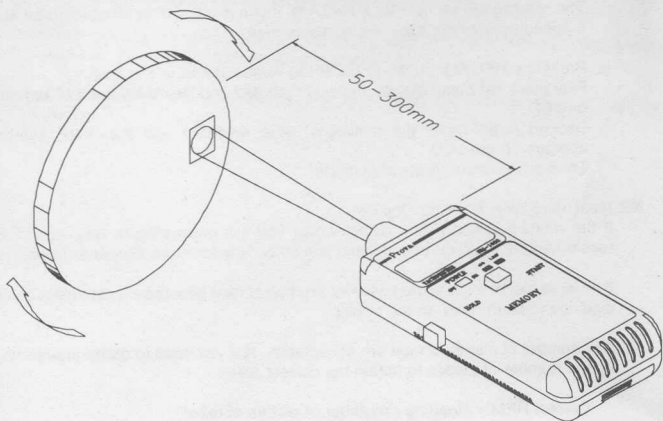


Figure 2

- Flip open the battery compartment cover and install four 1.5V AA size batteries.
- Cut off a piece of reflective tape of size 1.0 cm x 1.4 cm (optimal size)
- Wipe off oil or stains from the surface where reflective tape shall be adhered.
- Stick the self-adhesive reflective tape on the object whose rotational speed is to be measured. The reflective tape should be sticked as close to the outer edge of the object to be measured as possible.
- Hold the tachometer in your hand, and slide the POWER switch to the ON position.

- f. Point the photoelectric probe at the object as Figure 2. Press the START button and confirm that the red emitting LED lamp lights up. Then read the rotational speed on the LCD display.

If the rotational speed is less than 60 rpm, it may take about 1 to 6 seconds to measure (60 rpm takes 1 second, and 10 rpm takes 6 seconds).

The reading will be held for 6 seconds, if you aim the photoelectric probe at a 0 speed object right after one measurement.

- g. Press the RECALL button to recall the values stored in the memory.
First push: recall the maximum value recorded and the "MAX" symbol appears on LCD.
Second push: recall the minimum value recorded and the "MIN" symbol appears on the LCD.
Third push: return to standby mode.

3-2 Measuring Slow Rotating Objects

If the rotating speed of the object which you are measuring is very slow, it is recommended that you use multiple pieces of tape for more accurate result.

If multiple pieces of tape are used, each piece of tape should be located at a equal distance to each other on the object.

Any number of pieces of tape are acceptable. But you need to divide the reading by the number of pieces to obtain the correct result.

$$\text{Correct RPM} = \text{Reading} / (\text{number of pieces of tape})$$

Example: 4 pieces of tape and reading is 12 RPM.

$$\text{Correct Speed} = 12 / 4 = 3 \text{ rpm}$$

3-3 Measuring Fast Rotating Objects

If the rotating speed is higher than 99,999 rpm, the "x10" green LED shall lights up. Then the reading should be multiplied by 10 to obtain the correct result.

4. REPLACING THE BATTERIES

- a. When the "LO. BAT" red LED lights up on the front panel, it is time to replace the batteries.
- b. Remove the screw of the battery cover and remove the battery cover.
- c. Replace the old batteries with 4 new batteries. Do not mix different type of

batteries together.

- d. Replace the battery cover and fasten the screw.

5. NOTES

- a. The storage temperature of this tachometer is -20 to 60 °C
- b. When storing the tachometer, choose a dry, well-ventilated area where no strong vibration or direct sunlight shall be subjected to.
- c. If the tachometer is to be stored for a long period, remove the batteries from the unit.