

Laser, Photo/Contact

TACHOMETER

Model : DT-1236L

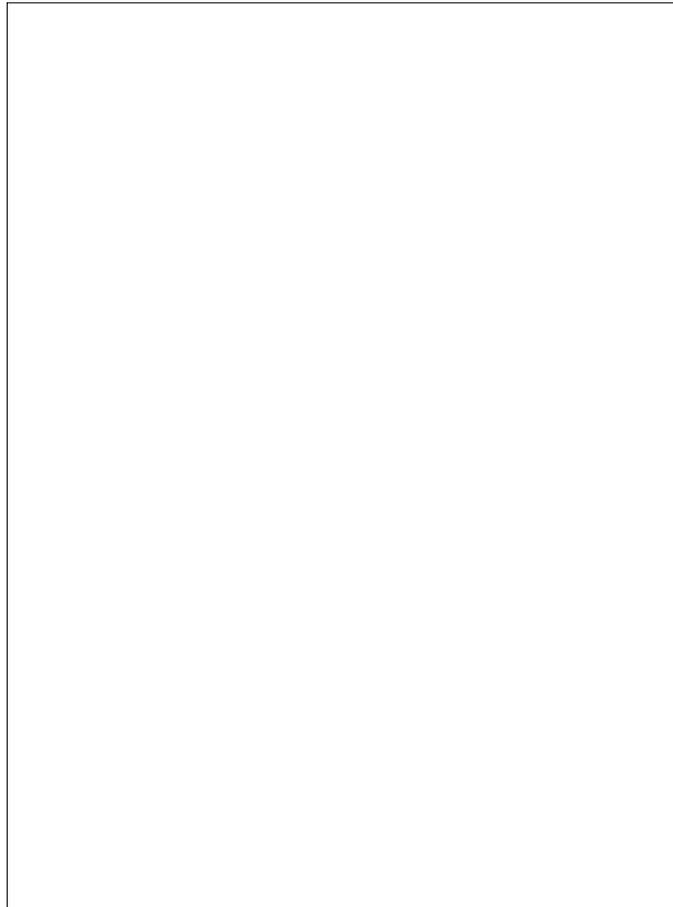


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1. FEATURES

- * Laser light detecting source, long measuring range up to 2 meters, it is useful in the RPM measurement application where the machine would be a risk to the operator or close access is difficult or not possible.
- * The best Tachometer in the world. 2 in 1, one instrument combine Photo Tachometer & Contact Tachometer.
- * Wide measuring range from 0.5 to 100,000 RPM, 0.1 RPM resolution for the measured value < 1000 RPM.
- * Microprocessor based circuit, crystal time base, high precision with 0.05% accuracy.
- * High visible LCD display gives RPM reading exactly with no guessing or errors & saves battery energy.
- * Memory with recall function, the last value, max., value, min. value will be stored into the memory automatically.
- * The use of durable, long lasting components, including a strong, light weight ABS plastic housing, assures almost maintenance free performance for many years.
- * Patent patented.

2. SPECIFICATIONS

Range	Photo Tachometer : 10 to 99,999 RPM
	Contact Tachometer : 0.5 to 19,999 RPM
	Surface Speed (m/min.) : 0.05 to 1,999.9 m/min.
	Surface Speed (ft/min.) : 0.2 to 6,560 ft/min.
Display	5 digits, 10 mm (0.4") LCD.
Accuracy	(0.05 % + 1 digit).
Sampling Time	Photo Tachometer - 1 sec. (60 RPM).
	Contact Tachometer - 1 sec. (6 RPM).

Resolution	0.1 RPM	< 1,000 RPM
	1 RPM	1,000 RPM
	0.01 m/min.	< 100 m/min.
	0.1 m/min.	> 100 m/min.
	0.1 ft/min.	< 1000 ft/min.
	1 ft/min.	1,000 ft/min.
Time base	Quartz crystal	
Photo Tachometer detecting distance	50 - 2,000 mm typically. * <i>Spec. of detecting distance are that under the size of reflecting tape is 10 mm square & the measuring RPM value is 1,800 PPM. The max. & min. detecting distance may change under different environment, different reflecting tape or the measuring RPM beyond 1800 PRM.</i>	
Laser light source <i>Photo Tach.</i>	* Less than 1 mW. * Class 2 laser diode. Red. Wave length is 645 nm approximately.	
Circuit	Exclusive one-chip of microcomputer circuit.	
Memory	Last value, Max. value, Min. value.	
Operating temp./humidity	0- 50C (32-122°F). Less than 80% RH.	
Battery	1.5 V AA (UM-3) battery x 4 PCs.	
Power current	Photo tachometer - Approx. DC 21 mA Contact tachometer - Approx. DC 7 mA	
Size	215 x 65 x 38 mm (8.5 x 2.6 x 1.5 inch).	
Weight	300g (0.62 LB)/including batteries.	
Accessories	Carrying case 1 PC. Reflecting tape marks (600 mm)..... 1 PC. RPM adapter (CONE)..... 1 PC. RPM adapter (FUNNEL)..... 1 PC. Surface speed test wheel..... 1 PC. Operation manual 1 PC.	

3. FRONT PANEL DESCRIPTION

Fig. 1

- | | |
|-----------------------|-------------------------------|
| 3-1 Reflecting Mark | 3-7 Memory Call Button |
| 3-2 Laser Light Beam | 3-8 Function Switch |
| 3-3 RPM Adapter | 3-9 Battery Compartment |
| 3-4 Monitor indicator | 3-10 Surface Speed Test Wheel |
| 3-5 Display | 3-11 Funnel type rubber |
| 3-6 Measuring Button | for RPM adapter |

4. PHOTO TACHOMETER MEASURING PROCEDURE

- 1) Select the " Function Switch " (3-8, Fig. 1) to the " Photo RPM " position.
- 2) Apply a reflecting mark to the object being measured. Depress the " Measuring Button " (3-6, Fig. 1) & align the " Laser light beam " (3-2, Fig. 1) with the applied target. Verify that the " Monitor Indicator " (3-4, Fig. 1) lights when the target pass through the light beam. Release the "Measuring Button" when the reading stabilizes (about 2 seconds).

Note :

If the measured RPM values is very low (for example less than 50 RPM), recommend to attach more " Reflecting Marks " average to the object. It will get the real RPM with high resolution, precisely & fast sampling time when divided the reading values by the no. of the " Marks " .

CAUTION :



LASER RADIATION -

**DO NOT STARE INTO
LASER BEAM**

* Class II laser products.

5. CONTACT TACHOMETER MEASURING PROCEDURE

5-1 RPM measurement

- 1) Select the " Function Switch " (3-8, Fig. 1) to the " Contact RPM " position.
- 2) Depress the " Measuring Button " (3-6, Fig. 1) & lightly pressing the " RPM Adapter " (3-3, Fig. 1) against the center hole on the hole of the measured rotating axis. Release the " Measuring Button " when the reading stabilizes (approx. 2 sec.).

Note :

Making the contact RPM measurement due to different kind measured rotating axis, it may changed the rubber for RPM adapter from " CONE " type to " FUNNEL " type (3-11, Fig. 1).

5-2 Surface Speed Measurement

- 1) Select the " Function Switch " (3-8, Fig. 1) to the " m/min. " or " ft/min. " position.
- 2) Change the " RPM Adapter " instead of the " Surface Speed Test Wheel " (3-11, Fig. 1)
- 3) Depress the " Measuring Button " (3-6, Fig. 1) & simply attaching the surface speed test wheel to the detector. Release the " Measuring Button " when the reading stabilizes (approx. 2 sec.).

6. OPERATION PROCEDURE FOR MEMORY RECALL

1) The readout of " last value ", " max. value " & " min. value " can be obtained immediately & memorized into the circuit automatically after turning off the "Measuring Button".

Fig. 2

2) When finish the measuring procedures (after release the measuring button), the memorized values can be displayed on the LCD display whenever :

- a. First push the " Memory Call Button " (3-7, Fig. 1) - To display the last value(" LA " and " the last value " will be displayed alternately).
- b. Second, push the " Memory Call Button " again - To display the maximum value (" UP " and " the max. value " will be displayed alternately).
- c. Third, push the "Memory Call Button" again - To display the minimum value (" dn " and " the min. value " will be displayed alternately).

7. BATTERY REPLACEMENT

- 1) When the LCD display appear " LO ", it is necessary to replace the battery, However in-spec measurement may still be made for several hours after low battery indicator appears before the instrument become inaccurate.
- 2) Open the Battery Cover (3-9. Fig 1), use the " - " type screwdriver or small coin to open the battery cover and remove the battery.
- 3) Replace with new batteries correctly into the battery compartment and reinstate the cover.

8. PATENT PATENTED

This photo/contact combination tachometer had the patent & patent pending in following countries :

USA - 4,823,080,
GERMANY - G9015492.4 G8708922.0,
TAIWAN - 45478,