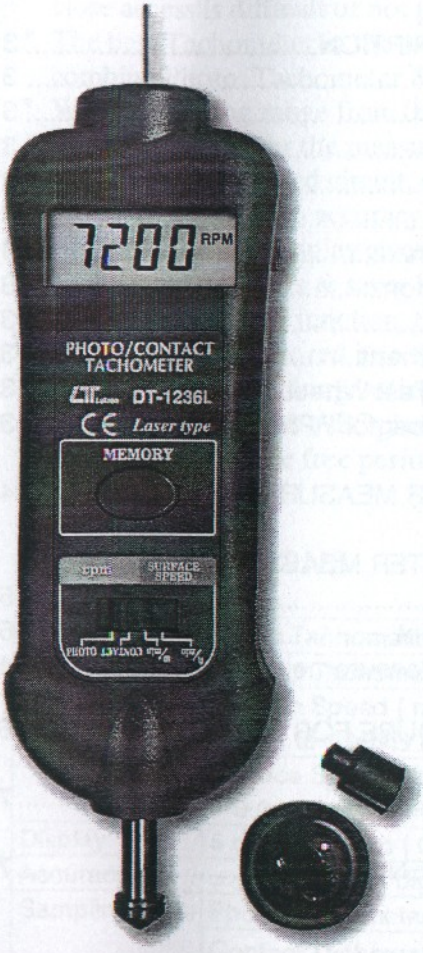
LASER

PHOTO/CONTACT TACHOMETER

Model : DT-1236L



Your purchase of this LASER PHOTO/CONTACT TACHOMETER marks a step forward for you into the field of precision measurement. Although this TACHOMETER is a complex and delicate instrument, its durable structure will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

QUALITY ASSURED FIRM ISO 9001 SGS

UKAS QUALITY MANAGEMENT 005

OPERATION MANUAL

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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. * *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.*	
Laser light source *Photo Tach.*	* 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° – 50° C (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

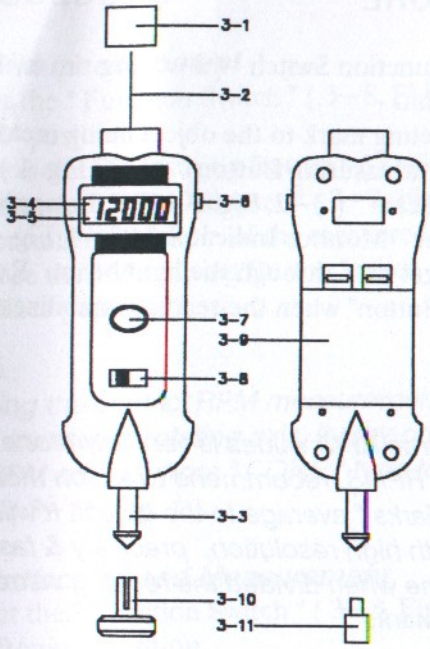


Fig. 1

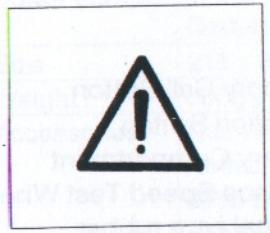
3-1 Reflecting Mark
3-2 Laser Light Beam
3-3 RPM Adapter
3-4 Monitor indicator
3-5 Display
3-6 Measuring Button
3-7 Memory Call Button
3-8 Function Switch
3-9 Battery Compartment
3-10 Surface Speed Test Wheel
3-11 Funnel type rubber for RPM adapter

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".

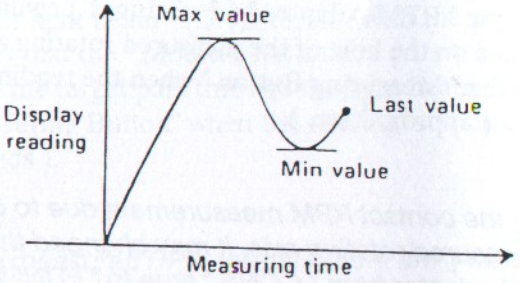


Fig. 2

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,