DIGITAL TACHOMETER

OPERATION MANUAL

1.FEATURES

* Measuring RPM is safe & accurate without attachment to object.
* Wide measuring range & high resolution.
* Digital display gives exact RPM with no guessing or errors.
* Used the exclusive MICRO-COMPUTER LS-Icircuit and crystal time base to offer the high accuracy measurement & fast measuring time.
* The last value/max. value/min. value will be automatically stored in memory and can be displayed by turn anytime.
* The use of durable, long-lasting components, including a strong, light weight ABS-plastic housing assures maintenance free performance for many years. The housing has been carefully shaped to fit comfortably in either hand.

2. MEASURING CONSIDERATION

2-1 REFLECTIVE MARK

Cut and peel adhesive tape provided into approx. 12mm (0.5") squares and apply one square to each rotation shaft.

a. The non-reflective area must always be greater than the reflective area.

b. If the shaft is normally reflective, it must be covered with black tape or black paint before attaching reflective tape.

c. Shaft surface must be clean and smooth before applying reflective tape.

2-2 VERY LOW RPM MEASUREMENT

As it is easy to get high resolution and fast sampling time. If measuring the very low RPM values, suggest user to attach more "REFLECTIVE MARKS" averagely. Then divide the reading shown by the number of "REFLECTIVE MARKS" averagely. Then divide the reading shown by the number of "REFLECTIVE MARKS" to get the real RPM.

2-3 BATTERY REMOVEMENT

If the instrument is not be used for any extended period, remove batteries.

3. MEMORY

3-1 A readout (the last value, max.value, min.value) obtained immediately before turning off the MEASURE BUTTON is automatically memorized. For example, please ref. following fig. 1.

3-2 That Memorized value can be displayed on the indicator by turn once depressing the memory button. The Symbol "UP" represents the Max. Value and "dn", the Min Value; "LA", the last Value.

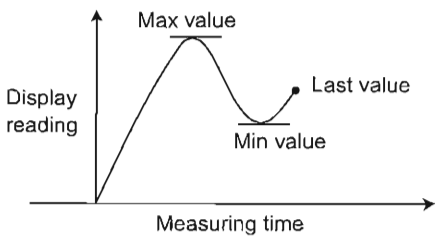


Fig.1

4.BATTERY REPLACEMENT

(1) When it is necessary to replace the battery (battery voltage less than approx. 4V), " ⊟+ " will appear on the display.

(2) Slide the battery cover (3-6) away from the instrument and remove the battery.

(3) Install the batteries 1.5V AAA (UM-4) correctly into the case.

5.PHOTO TACHOMETER

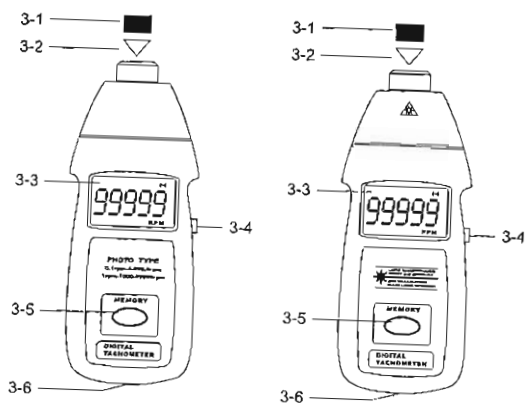
1). SPECIFICATIONS

Display:	5 digits, 18mm (0.7") LCD (Liquid Crystal Display), with function annunciation.
Test Range:	2.5 to 99,999 RPM (r/min).
Resolution:	0.1 RPM (2.5 to 999.9 RPM). 1 RPM (over 1,000 RPM).
Accuracy:	±(0。05%+1 digit).
Sampling Time:	0.8 sec. (over 60 RPM).
Test Range Select:	Automatic.
Memory:	Max. value, Min. value, Last value.
Detecting Distance:	50 to 250 mm/2 to 10 inch (LED) 50 to 500 mm/2 to 20 inch (Laser)
Time Base:	Quartz crystal.
Circuit:	Exclusive one-chip of microcomputer LSI circuit.
Battery:	3×1.5V AAA (UM-4)

Power Consumption:	Appro x 45mA (operation).(LED) Appro x 35mA (operation).(Laser)
Operation Temp.:	0 to 50° C (32 to 122° F).
Size:	184×76×30mm
Weight:	180g (including battery).

2). Accessories: Carrying case.....1 pc.
Reflecting tape marks (600mm).....2 pc.
Operation manual.....1 pc.

3). FRONT PANEL DESCRIPTIONS



3-1 Reflective mark
3-2 Signal light beam
3-3 Display
3-4 Measure button
3-5 Memory button
3-6 Battery Compartment/Cover

4). MEASURING PROCEDURE

Apply a reflective mark to the object being measured. Depress the MEASURE BUTTON (3-4) and align the visible light beam (3-2) with the applied target. Verify that the MONITOR INDICATOR lights when the target aligns with the beam (about 1 to 2 seconds).

6. PHOTO/CONTACT TACHOMETER

1).Specification

Display:	5 digits, 18mm (0.7") LCD (Liquid Crystal Display), with function annunciation.
Measuring Range:	PHOTO TACH 2.5 to 99,999RPM CONTACT TACH 0.5 to 19,999RPM SURFACE SPEED(m/min.) 0.05 to 1,999.9(m/min.)
Resolution:	PHOTO TACH 0.1 RPM(2.5 to 999.9RPM) 1RPM(over 1000RPM) CONTACT TACH 0.1RPM(0.5 to 999.9RPM) 1RPM(over 1000RPM) SURFACE SPEED (m/min) 0.01 m/min.(0.05 to 99.99m/min) 0.1 m/min(over 100m/min)
Accuracy:	±(0.05%+1 digit).
Sampling Time:	0.8 sec. (over 60 RPM).
Test Range Select:	Automatic.
Memory:	Max. value, Min. Value, Last value.
Detecting Distance:	50 to 500 mm/2 to 20 inch (PHOTO)
Time Base:	Quartz crystal.

Circuit:	Exclusive one-chip of microcomputer LSI circuit.
Battery:	3×1.5V AAA (UM -4)
Power Consumption:	Approx. 50mA (operation).
Operation Temp.:	0 to 50° C (32 to 122° F).
Size:	220×76×30mm
Weight:	200g (including battery).

Accessories:

Carrying Case	1PC
Reflecting tape	length 600mm
Operation manual	1PC
Contact speed measurement fitting	1PC
Contact rotational speed measurement fitting	3PCS

2). Front panel descriptions

A.Reflective mark

B.Signal light beam

C.Display window

D.Measure button

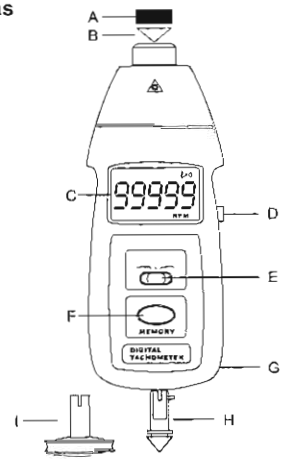
E.Function switch

F.Memory call button

G.Battery cover

H.Contact tach test device

I. Surface speedring



3). peration Manual

3-1. Photo rotational speed way

A. Apply a reflective mark to the object being measured, slide the function switch to"RPM photo" position.

B. Install the batteries first, then depress the measuring button and align the visible light beam with the applied target.

C. Release the measuring button when the display reading stabilizes. The Max value, MIN value and the last value of measurement results all store automatically in the indicator.

D. Press "MEM" . It will show the MAX. value. the MIN Value and the last value.

E. The measurement is finished.

3-2. Contact rotational speed way

A. Slide the function switch to RPM position, install the proper adapter.

B. Make the contact tach test device attach the maeasured object and rotate it in the same step.

C. Depress the measuring button, then release the measuring button when the display reading stabilizes. The value of measurement store automatically, the measurement is finished.

3-3.Contact speed way

A. Slide the function switch to "m / min", install the speed measurement fitting.

B. Make the speed measurement fitting attach the measured object,and rotate it in the same step.

C. Depress the measuring button, then release the measuring button when the display reading stabilizes, the value of measurement store automatically, the measurement is finished.

Note: Because of the difference between the girth of outer surface and inner flute of line speed sensor. For contact line speed or length meaurement. The displaying result is correct when outer surface of the sensor contacts with the measured object contact and but when inner flute of the sensor and the measured object, that the reading multiply 0.9 is the real result(eg.: measure wire, cable and rope etc.)