

**DIGITAL
TACHOMETER**

**OPERATION
MANUAL**

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1. FEATURES

- ※ It is used the microcomputer (CPU) technique and junction laser technique for one instrument combine PHOTO TACH.(RPM) & CONTACT TACH (RPM,m/min).
- ※ Wide measuring range and High resolution.
- ※ Yellow green backlight makes sure that tachometer can work normally in any light circumstance.
- ※ The last displayed value/max. Value/min. Value may be automatically stored in memory and 96s of measured value continuously. So this makes customers collected and recorded data. (The tachometer starts to store the data measured after which is renovation for three times).
- ※ The tachometer can be connected 6V direct current stable voltage power in favor of using for long time.
- ※ Low battery voltage indication.
- ※ Contact part and photo part can be switched value at any time.
- ※ New surface speed sensor with flute vails to measure speed and length of wire, cable and rope conveniently.
- ※ The instrument is delicate and rugged. It uses the durable, long-lasting components and a strong, light weight ABC plastic housing. The housing has been carefully shaped to fit comfortably in either hand.

2. SPECIFICATION

- (1) Display: 5 digital, 18mm (0.7" yellow green backlight LCD) Accuracy: $\pm (0.05\% + 1\text{digital})$
Sampling Time: 0.8 sec (over 60 RPM)
Range Select: Auto-Range
Time Base : Quartz crystal
Detecting Distance: 50 mm---500 mm (photo)
Dimension: 210×74×37mm

Power: $4 \times 1.5\text{V}$ AA Size Battery or 6V direct current stable voltage power.

Power consumption: approx. 65mA

- (2) Memory call button operation A readout (the max value, min value, last value) obtained immediately before turning off the MEASURING BUTTON is automatically memorized. For example, please ref. following fig. 1. 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.

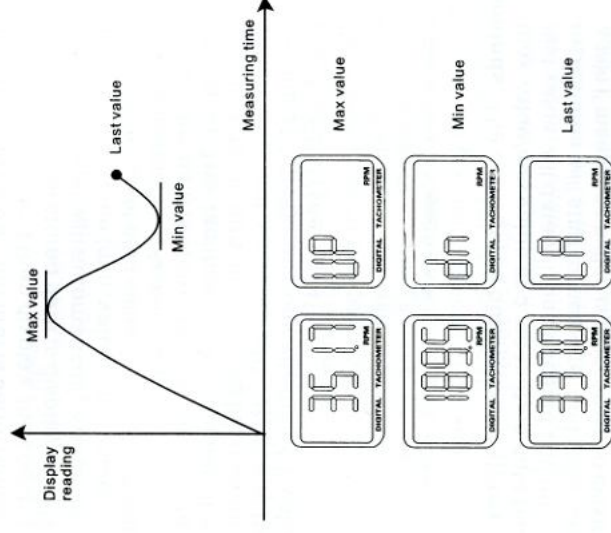


Fig. 1

(3) Data stored button operation

(3-1) Display last value and for the fourth time press memory button, the tachometer will indicate whether to switch to another display mode. During display value changing from 20 to 1, it is switched if you release memory button that haven't change to max value /min value / Last value will be displayed in turn by pressing memory button anytime.

(3-2) If the value changes from 20 to 1 (please ref. following fig. 2) and displaying "An**" (An is ab. of anamnesis). The display is switched successfully. So the memory button is pressed, stored data will be displayed in turn. Display format is as follow: the first is serial number of stored data and then display the concrete value. After all stored data is displayed (96s), the tachometer will automatically switch to display max value /min value /last value. (more difference of data value, less data stored eg.: the displaying is "An 64" when 64s of measuring data is stored in one measuring (see fig. 3). The tachometer will display the stored data in turn by pressing the memory button. The first value is 350.3 RPM and the second 317.1RPM, analogically the 64th value is 337.0 RPM (see fig. 4).

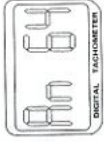
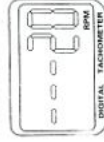
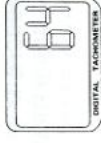
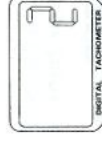
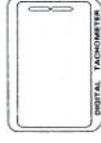


Fig. 2

Reminds: The contact line button don't stores max value/min value and measuring data but last value. All data will be canceled and the tachometer will start to measure and store data again if measuring button is pressed when looking over measured data.



Ordinal number

Diagram data

Fig. 4

(4) Battery replacement

- (4-1) When it is necessary to replace the battery (battery voltage less than approx. 4.5V), will appear on the display.
- (4-2) Slide the battery cover away from the instrument and remove the battery.
- (4-3) Install the batteries into the case. Permanent damage to the circuit may result from incorrect installation.

(5) Reminds

- (5-1) Reflective mark: cut and peel adhesive tape provided into approx. 12mm (0.5") squares and apply one square to each rotation shaft. The non-reflective area must always be greater than the reflective area. If the shaft is normally reflective, it must be covered with black tape or black paint before attaching reflective tape. Shaft surface must be clean and smooth before applying reflective tape.
- (5-2) Very low RPM measurement: as it is easy to get high resolution. 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" to get the real RPM.
(5-3) Contact tachometer parts include large taper, small taper and pillar. Large taper and pillar rubberpart is suitable to low speed and but the small high speed.

(5-4) If the instrument is not to be used for any extended period, remove batteries.

3. PHOTO TACHOMETER

Measuring Range: 2.5 to 99999RPM

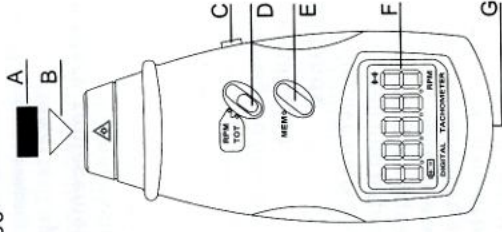
Resolution: 0.1RPM (2.5 to 999.9 RPM)

1RPM (over 1000 RPM)

Total Test Range: 1 to 99999

Panel description:

- A: Reflective mark
- B: Signal light beam
- C: Measure button
- D: Function switch
- E: Memory call button
- F: Display window
- G: Battery cover



Measuring procedure

(1) PHOTO RPM MEASUREMENT

- a. Apply a reflective mark to the object being measured. Slide the function switch to "RPM" position.
- b. Depress the MEASURE BUTTON and align the

visible light beam with the applied target. Verify that the MONITOR INDICATOR lights when the target aligns with the beam.

(2) TOTAL MEASUREMENT

- a. Apply a reflective mark to the object being measured. Slide the function switch to "TOT" position.

b. Install the batteries and press measuring button, then you see light beam in line with the target, start measuring. The value will add 1 as the object rotate a circle or passed one reflective mark, herein, the total value will stored in the meter until loosen the button.

- C. It will display total value as you press "MEM" button.

Accessories:

- Carrying case
- Reflecting tape marks
- Operation manual
- Dampproof accessories
- Bolt bag

1 pc
length 600mm
1 pc
1 pc
1 pc

4. CONTACT TACHOMETER

Measuring Range: CONTACT TACH 0.5 to 19999RPM

SURFACE SPEED(m/min): 0.05 to 1999.9m/min

SURFACE LONG(m): 0.05 to 99999m

Resolution:

CONTACT TACH: 0.1RPM (0.5 to 999.9RPM)

1RPM (over 1000RPM)

SURFACE SPEED: 0.01m/min (0.05 to 99.99m/min)

0.1m/min (over 100m/min)

SURFACE LONG: 0.02m (0.05 to 99999m)

Panel description:

- A: Surface speed wheel
- B: RPM adapter
- C: Shaft
- D: Measure button
- E: Function switch
- F: Memory call button
- G: Display window
- H: Battery cover

Measuring procedure

(1) CONTACT TACH MEASUREMENT

- Slide the FUNCTION SWITCH to "rpm" position. Install the proper RPM ADAPTER on the SHAFT.
- Depress the MEASURING BUTTON and lightly pressing the RPM ADAPTER against the center hole of rotating shaft. Be certain to keep alignment straight. Release the MEASURING BUTTON when the display reading stabilizes.

(2) SURFACE SPEED MEASUREMENT

- Slide the FUNCTION SWITCH to "m/min", install the SURFACE SPEED WHEEL on the SHAFT instead of the RPM ADAPTER.
- Depress the MEASURING BUTTON and simply attaching the SURFACE SPEED WHEEL to the detector. Release the MEASURING BUTTON when the display reading stabilizes.

(3) SURFACE LONG MEASUREMENT

- Slide the FUNCTION SWITCH to "m" and use the corresponding part. The other same as (2).

Note: Because of the difference between the girth of outer surface and inner flute of line speed sensor. For contact line speed or length measurement. 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.)

Accessories:

- Carrying case 1 pc
- Operation manual 1 pc
- Dampproof accessories 1 pc
- Bolt bag 1 pc
- Contact speed measurement fitting 1 pc
- Contact rotational speed measurement fitting 3 pc

5. PHOTO TACH/CONTACT TACH

Measuring Range: PHOTO TACH

2.5 to 9999RPM

CONTACT TACH

0.5 to 1999RPM

SURFACE SPEED(m/min)

0.05 to 1999.9m/min

Resolution: PHOTO TACH:

0.1RPM (2.5 to 999.9 RPM)

1RPM (over 1000 RPM)

CONTACT TACH

0.1RPM (0.5 to 999.9 RPM)

1RPM (over 1000 RPM)

SURFACE SPEED

0.01m/min (0.05 to 99.99m/min)

0.1m/min (over 100m/min)

Panel description:

A: Surface speed wheel

B: Contact test device

C: Contact measuring device

D: Measure button

E: Function switch

F: Memory call button

G: Display window

H: Battery cover

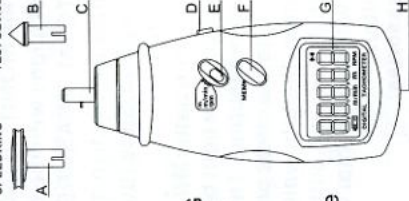
Measuring procedure

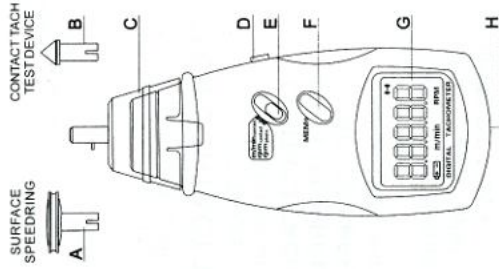
(1) PHOTO MEASUREMENT

- Apply a reflective mark to the object being measured. Slide the function switch to "rpm photo" position.
- Depress the MEASURE BUTTON and align the visible light beam with the applied target. Verify that the MONITOR INDICATOR lights when the target aligns with the beam.

CONTACT TACH
TEST DEVICE

SURFACE
SPEEDING





(2) CONTACT TACH MEASUREMENT

- a. Slide the FUNCTION SWITCH to " rpm contact " position. Install the proper RPM ADAPTER on the SHAFT.
- b. Depress the MEASURING BUTTON and lightly pressing the RPM ADAPTER against the center hole of rotating shaft. Be certain to keep alignm ent straight. Release the MEASURING BUTTON when the display reading stabilizes .

(3) SURFACE SPEED MEASUREMENT

- a. Slide the FUNCTION SWITCH to " m/min contact " position. Install the SURFACE SPEED WHEEL on the SHAFT instead of the RPM ADAPTER.
- b. Depress the MEASURING BUTTON and simply attaching the SURFACE SPEED WHEEL to the detector. Release the MEASURING BUTTON when the display reading stabilizes.

Note: Because of the difference between the girth of outer surface and inner flute of line speed sensor. For contact line speed or length measurement. 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.)

Accessories:

Carrying case	1 pc
Reflecting tape marks	length 600mm
Operation manual	1 pc
Dampproof accessories	1 pc
Bolt bag	1 pc
Contact speed measurement fitting	1 pc
Contact rotational speed measurement fitting	3 pc