

## LIST OF PRODUCTS

- \* Digital Multimeter
- \* AC Clamp Adaptor
- \* Thermo Anemometer
- \* Distance Meter
- \* Network Cable Tester
- \* Earth Resistance Tester
- \* DC Power Supplies
- \* Calibrators
- \* Frequency Counter
- \* Phasing Sticks
- \* Waterproof Pen Testers
- \* EMF Detector
- \* Wood, Paper & Grain Moisture Meter
- \* Transistorised Electronic Analog & Digital Insulation Resistance Testers(upto 10 KV)
- \* Digital Sound Level Meter & Sound Level Calibrator
- \* Digital contact & Non-contact Type Tachometer
- \* Digital Non-contact (infrared) Thermometer
- \* Maximum Demand Controller/Digital Power Meter
- \* Digital Hand Held Temperature Indicators
- \* Digital AC & AC/DC Clampmeter
- \* AC/DC Current Adaptor
- \* Thermo Hygrometer
- \* Digital Lux Meter
- \* Power Factor Regulator
- \* Digital Panel Meters
- \* High Voltage Detector
- \* Gas Analysers
- \* Function Generator
- \* Battery Tester
- \* Solar Power Meter



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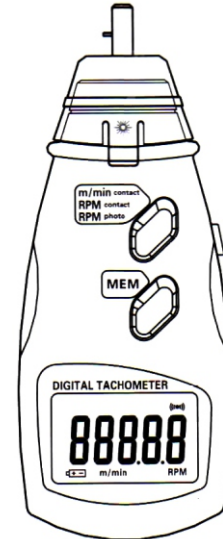
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AN ISO 9001:2015 COMPANY

## DIGITAL TACHOMETER OPERATION MANUAL KM 2241



As this device is an intellectual precise measurement apparatus, it is very important that you read through these instructions before using this device.

## TEST CERTIFICATE

This Test Certificate that warranty the product has been inspected and Tested in accordance with the published specifications. The instrument has been calibrated by using equipment which has already been calibrated to standards traceable to national standards.

MODEL NO. \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

DATE: \_\_\_\_\_

**ISO 9001  
REGISTERED**



### WARRANTY

Each "KUSAM-MECO" product is warranted to be free from defects in material and workmanship under normal use & service. The warranty period is one year (12 months) and begins from the date of despatch of goods. In case any defect occurs in functioning of the instrument, under proper use, within the warranty period, the same will be rectified by us free of charges, provided the to and fro freight charges are borne by you. This warranty extends only to the original buyer or end-user customer of a "KUSAM-MECO" authorized dealer. This warranty does not apply for damaged Ic's, fuses, disposable batteries, carrying case, test leads, or to any product which in "KUSAM-MECO's" opinion, has been misused, altered, neglected, contaminated or damaged by accident or abnormal conditions of operation or handling. "KUSAM-MECO" authorized dealer shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of "KUSAM-MECO". "KUSAM-MECO's" warranty obligation is limited, at option, free of charge repair, or replacement of a defective product which is returned to a "KUSAM-MECO" authorized service center within the warranty period.

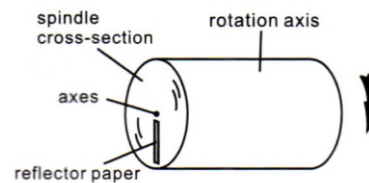
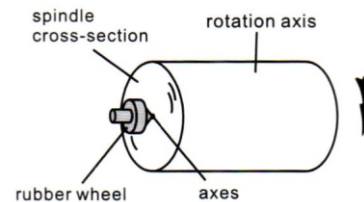


PHOTO MEASURING SCHEMATIC



CONTACT MEASURING SCHEMATIC

## WARNING

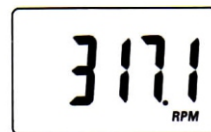
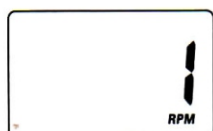
**Do not point light beam of the instrument at or have it reflected into the eyes of people and animals to avoid injury.**

## **I .FEATURES**

- 1.The tachometer uses microcomputer (CPU) technique, photoelectric technology, anti-jamming technique and junction laser technique for noncontact measurement of rotation speed (RPM) or contact measurement of rotation speed (RPM), surface speed (m/min) Wide measuring range and high resolution.
- 2.Wide measuring range and high resolution.
- 3.Large screen LCD display provides clear reading.
- 4.White back light guarantee reading in any light environment.
- 5.Automatically save Max, Min and last value, also save 96 set of continuous data. (The tachometer starts to store data after refreshing measuring data.)
- 6.Low battery voltage indication.
- 7.Easy switch between contact and photo mode.
- 8.Surface speed wheel with groove to test surface speed or length of wire, cable, or rope conveniently.
- 9.Smooth housing design, comfortable to hold and use.

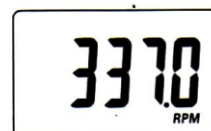
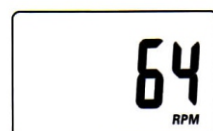
## **VII. REMARKS**

- 1.Usage of reflective mark: the length of reflective mark should not be too short, recommend cut 12mm reflective mark and stick on rotation axis. If rotation axis reflect light, paint it to black or cover with black tape, then stick reflective mark. The rotation axis should be smooth and clean.
- 2.When measure low speed rotation, more reflective mark is recommend for more precise results. Display value divide by the number of reflective mark could give you real value.
- 3.The Package comes with big cone, small cone and cylinder parts for rotation speed measurement. Big cone and cylinder rubber parts use for low RPM and small cone rubber part use for high RPM.
- 4.If meter is not going to use for a long time, please take out batteries to prevent leakage which damage the meter.




⋮

⋮



(Fig 7)

## VI. BATTERY REPLACEMENT

1. When battery voltage is too low, left side of LCD display “ ” symbol that indicate that battery replacement is needed.
2. Open battery cover and take out low voltage battery.
3. Enter new batteries as indicated.

10. The instrument is delicate and rugged. It uses the durable, long-lasting components and a strong, light weight ABS plastic housing.

## II. TECHNICAL SPECIFICATION

Display: 5digital, 18mm LCD

Range:

2.5~99999RPM photo mode

0.5~19999 RPM contact mode

0.05~1999.9 m/min contact mode

Resolution:

Photo rotation Speed:

0.1 RPM (0.5~999.9RPM)

1 RPM (over 1000RPM)

Contact rotation Speed:

0.1 RPM (0.5~999.9RPM)

1 RPM (above 1000RPM)

Surface Speed:

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

0.1m/min (above 100m/min)

Accuracy:  $\pm (0.05\% + 1 \text{ digital})$

Sampling Time: 0.8second (over 60RPM)

Range Select: Auto-switch

Time Base: 6MHz Quartz crystal

Detecting Distance: 50mm-500mm

(photo mode)



Dimension: 155×70×35mm  
(without contact tacho part)  
Power: 3×1.5V AA battery

### III. PANEL DISCRIPTION (Fig 1)

- 1.Surface speed wheel
- 2.Contact tacho part
- 3.Adapter
- 4.Measurement button
- 5.Function select switch
- 6.Memory button
- 7.LCD display
- 8.Battery cover

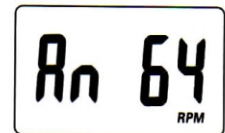
### IV. MEASUREMENT OPERATION

- 1.Measure RPM in photo mode
  - a.Take down adapter, and stick a reflective mark on the object, select function switch to RPM photo.
  - b.After install batteries, press and hold measurement button and point light beam at the reflective mark in a line to start measure.
  - c.After display data is stabled, release measurement button, and test result is automotive saved.

number and saved value is displayed on LCD in turns. After display all saved data (maximum 96), meter will switch back to Max, Min, and Last value display (when measured values vary too big, the maximum sets of store data decrease). For example, 64 sets of data is saved during a measurement, it will display "An 64" (Fig. 6).



(Fig 5)



(Fig 6)

Each time "MEM" is pressed, sets of data is displayed in order, such as first value is 350.3RPM, second value is 317.1RPM.... so on, and the 64<sup>th</sup> value is 337.0RMP (Fig. 7).

Remark: Contact length mode does not have Max, Min memory and data save function, only have shows the last test value. During memory mode, press measurement button anytime will lose all saved data and start new measurement and store data.

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35.17

RPM

UP

RPM

Max value

1895

RPM

dn

RPM

Min value

3370

RPM

LA

RPM

Last value

(Fig 3)

---20

RPM

---1

RPM

(Fig 4)

3. When countdown to "1", LCD display "An \*" (An is short for Anamnesis, \* means the total amount of data that is saved). When "\*" is zero, it mean there is not any data saved (Fig. 5). Each time "MEM" is pressed, queue

07

**KUSAM-MECO®**

(Fig 1)

04

## 2. Measure RPM in contact mode

- Install adapter and contact tacho part, select function switch to RPM contact.
- Bring rubber head in contact with test body, so it turns with the body at synchro-speed and coaxial rotation.
- Hold measurement button to start measure, and release measurement button after display data is stabled, test result is automotive saved.

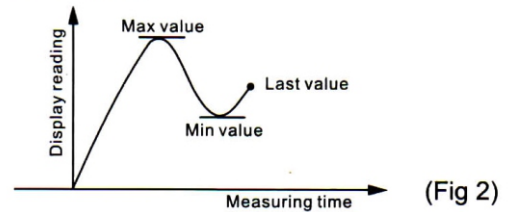
## 3. Measure surface speed in contact mode

- Install adapter and surface speed wheel, select function switch to m/min contact.
- Bring surface speed wheel in contact with test body, so it turns with the body at synchro-speed.
- Hold measurement button to start measure, and release measurement button after display data is stabled, test result is automotive saved.

Remark: Since surface speed wheel's outer and groove perimeters are different, real test result is  $0.9 \times$  display value when using groove for test, such as wire, cable, rope and linear materials.

## V. MEMERY FUNCTION

- After measurement, release measurement button, data is saved but nothing is displayed on LCD. Press "MEM" to display Max, Min, and last value. (Fig. 2)



Each time "MEM" is pressed, LCD display measuring value first, English symbol later in turns. "UP" is for Max, "dn" for Min, and "LA" for Last value. (Fig. 3)

- After display last value the fourth time to, press and hold "MEM" button, meter is turned into a mode indicate whether to get a series of saved data, where display a count down from 20 to 1. (Fig. 4) During this countdown, the meter still display Max, Min, and Last value if "MEM" button is released before countdown to "1", otherwise will enter a mode to display series of data.