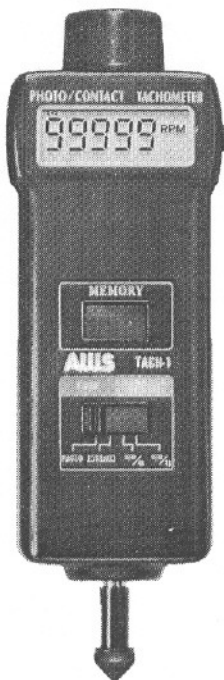


A.W. SPERRY INSTRUMENTS  
 PHOTO/CONTACT DIGITAL TACHOMETER  
 MODEL TACH-1



The TACH-1 is a digital photo/contact tachometer. This multifunction instrument combines 0.05% basic accuracy with the capability of RPM and Surface Speed measurements.

## 1. FEATURES

- Multi-functional... a single instrument both Photo tachometer (RPM), and Contact Tachometer (RPM, m/min., ft/min.)
- Wide measuring range 0.5 to 100,000 RPM.
- Memory call button...automatically displays last value, maximum value and minimum value.
- Highly visible LCD Display with insignificant zero suppression.
- Microcomputer LSI circuitry and crystal time base provides high accuracy and quick response.
- Rugged ABS plastic housing assures maintenance free performance for many years. The housing has been carefully shaped to fit comfortably in either hand.



## 2. SPECIFICATIONS

Display: 5 digit LCD with 10mm(0.4") high numerals and function annunciators.

### Measurement :

PHOTO TACH. 5 to 99,999 RPM.  
CONTACT TACH. 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.

### Resolution:

PHOTO TACH. 0.1 RPM (0.5 to 999.9 RPM).

1 RPM (over 1,000 RPM).

CONTACT TACH. 0.1 RPM (0.5 to 999.9 RPM).

1 RPM (over 1,000 RPM).

SURFACE SPEED (m/min.) 0.01 m/min. (0.05 - 99.99 m/min.)  
0.1 m/min. (over 100 m/min.).

SURFACE SPEED (ft/min.) 0.1 ft/min. (0.1 to 999.9 ft/min.)  
1 ft/min. (over 1,000 ft/min.)

Accuracy: (0.05% + 1 digit).

### Sampling Time:

PHOTO TACH. (1 sec. over 6 RPM).

CONTACT TACH. (1 sec. over 60 RPM).

Photo Tach. Detecting Distance: 50 to 150mm(2 to 6 inch.) (typical max. 300mm(12 inch), depending upon ambient light).

Range selection: Autoranging

Time base: Quartz crystal.

Circuit: Exclusive one-chip microcomputer LSI circuit.

Power: 4 x 1.5V AA (UM-3) battery.

Operation temp.: 0-50C (32-122F).

Dimensions: 215 x 65 x 38 mm (8.5 x 2.6 x 1.5 inch).

Weight: 300g (0.66 lb.)/including batteries.

Memory Last value(LA), Max. value(UP), Min. value(dn).

### Accessories (Included):

C-55 Carrying case .....1 pc.

T-1 Reflective tape (600 mm) .....1 pc.

W-1 RPM adapter (CONE) .....2 pcs.

W-2 RPM adapter (FUNNEL).....1 pc.

W-3 Surface speed test wheel ....1 pc.

Form # 189 Operation manual...1 pc.

## 3. PACKAGING

Packed complete with C-55 Carrying Case, four(4) "AA" Batteries AWS part # B-1, T-1 Reflecting Tape, W-1 RPM adaptor (cone), W-2 RPM adaptor (funnel), W-3 Surface Speed Test Wheel, Form# 189 Operating instructions and warranty card.



#### 4. CONTROLS AND INDICATORS

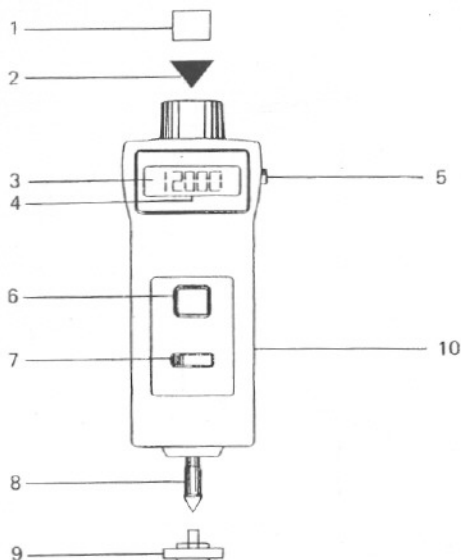


Figure 1

- 4-1 Reflective mark
- 4-2 Signal light beam
- 4-3 Monitor indicator
- 4-4 Display
- 4-5 Measure button
- 4-6 Memory call button
- 4-7 Function switch
- 4-8 Rotating ring
- 4-9 Circumferential speed ring
- 4-10 Battery Compartment

#### 5. PHOTO TACH. MEASURING PROCEDURE

- A. Slide the **FUNCTION SWITCH** to "RPM (PHOTO)" position.
  - B. Apply a reflective mark (3/8", 7 - 10 mm) to the object being measured.
- Depress the **MEASURING BUTTON** and align the visible light beam with the applied target. Verify that the **MONITOR INDICATOR** lights when the target passes through the light beam. Release the **MEASURING BUTTON** when the reading stabilizes (about 2 seconds). If the test RPM is less than 50 RPM, it is suggested to attach more "REFLECTING MARKS" averagely (Fig. 2). Then divide the reading shown by the number of "REFLECTING MARKS" to obtain the real RPM with greater resolution & stability on display reading.



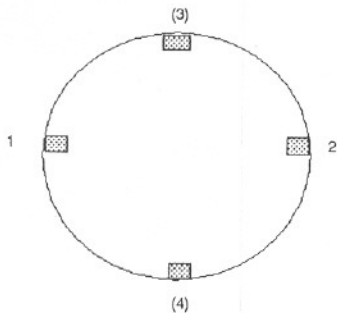


Figure 2

## 6. CONTACT TACH. MEASURING PROCEDURE

### 6-1 RPM Measurement

- A. Slide the FUNCTION SWITCH to "RPM (CONTACT)" position.
- B. Depress the MEASURING BUTTON and lightly pressing the rotating ring (4-8) against the center hole on the rotating hole. Release the MEASURING BUTTON when the reading stabilizes (approx. 2 seconds).

### 6-2 Surface Speed Measurement

- A. Slide the FUNCTION SWITCH to "M/min. (SURFACE SPEED)" OR "FT/MIN. (SURFACE SPEED)".
- B. Depress the MEASURING BUTTON and simply attaching the surface speed test wheel to the deflector. Release the MEASURING BUTTON when the reading stabilizes.

## 7. MEMORY CALL BUTTON OPERATION

7-1 A readout (the last value(LA), max. value(UP), min. value(dn)) obtained immediately before turning off the MEASURING BUTTON is automatically memorized. For example, please reference. following fig. 3.

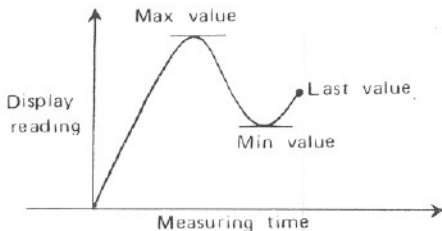


Figure 3



- 7-2 That Memorized value can be displayed on the indicator whenever
- A. First push - To display the last value: "LA" and "the last. value" will be displayed by turn.
  - B. Second push - To display the maximum value: "UP" and "the max. value" will be displayed by turn.
  - C. Third push - To display the minimum value: "dn" and "the min. value" will be displayed by turn.

## 8. BATTERY REPLACEMENT

- (1) When it is necessary to replace the battery (battery voltage less than approx. 4.5V), "LO" will appear on the display.
- (2) Loosen the screws of the battery cover 4-10 (fig. 1), remove cover and remove the batteries.
- (3) Install fresh batteries correctly into the case. Replace battery cover and screws.

**CAUTION:**

Permanent damage to the circuit may result with incorrect installation.

## 9. PATENT & PATENT PENDING

This exclusive Photo / Contact Digital Tachometer MODEL TACH-1 has patents in West Germany, Taiwan R.O.C., and patent pending in Japan, U.S.A., & other countries.



## ONE YEAR LIMITED WARRANTY

A.W. Sperry Instruments, Inc., warrants that this AWS instrument has been carefully tested, inspected, and warranted for one (1) year from the date of purchase by the original end user, provided the instrument has not been misused, damaged due to negligence, neglect or unauthorized repair, abused or used contrary to the operating instructions. Instruments and proof of purchase in the form of a legible copy or original of the sales receipt clearly identifying the distributor, model number and date of purchase must be returned to A.W. Sperry Instruments Inc., Attention: Customer Service Center, 245 Marcus Boulevard, Hauppauge, New York 11788, postage prepaid for examination and verification of manufacturing defect under warranty. A.W. Sperry Instruments Inc., shall be the sole judge of such defect. The liability of A.W. Sperry Instruments Inc., shall be limited to the repair or replacement at its sole option of any defective product.

THIS WARRANTY AND THE OBLIGATIONS AND LIABILITIES OF SELLER THEREUNDER ARE EXCLUSIVE AND IN LIEU OF AND BUYER HEREBY WAIVES ALL OTHER REMEDIES, EXPRESS WARRANTIES, GUARANTEES OR LIABILITIES, OF AND FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR WHETHER OR NOT OCCASIONED BY SELLER'S NEGLIGENCE. THIS WARRANTY SHALL NOT BE EXTENDED, ALTERED OR VARIED EXCEPT BY A WRITTEN INSTRUMENT SIGNED BY SELLER AND BUYER. SOME STATES ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIED LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

### WARRANTY RETURN

Refer to section "Return for Repairs" for complete instructions. All warranty returns must include a legible copy or original of the sales receipt clearly identifying the model number, serial number and date of purchase.

Before returning your multimeter for repair be sure to check that the failure to operate properly is not due to the following:

#### 1. Weak battery

If these conditions do not exist and the instrument fails to operate properly, return the instrument and accessories prepaid to:

A.W. Sperry Instruments, Inc.  
Customer Service Department  
245 Marcus Blvd.  
Hauppauge, N.Y. 11788

State in writing what is wrong with the instrument. All warranty repairs must include proof of purchase in the form of a legible or original copy of the sales receipt, clearly identifying the distributor, model number and date of purchase. See warranty statement for full warranty disclosure. Repair estimate will be furnished if requested for out of warranty instruments. Be sure to include all accessories which may be related to the problem, and a note describing the malfunction you observed.

A.W. Sperry Instruments, Inc.  
245 Marcus Blvd.  
Hauppauge, N.Y. 11788

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