

## A.W. Sperry Instruments INC.

### DIGI-THERMO™ DIGITAL THERMOMETER

#### MODELS DT-5A, DT-10A



#### Introduction:

Congratulations on your purchase. You have selected a high-quality AWS digital temperature meter. It is designed to be used for general purpose temperature measurements normally encountered in the Air Conditioning, Refrigeration and Appliance service type applications. Heating service (high temperature) applications can be covered by using an external optional K-type temperature probe available for use with model DT-10A only.

Both temperature meters models DT-5A and DT-10A are handy style pocket type temperature meter capable of reading temperatures from  $-58^{\circ}$  to  $302^{\circ}\text{F}$  ( $-50^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ ) using the general-purpose type of internal probe attached to the meter. This probe uses a semiconductor temperature sensor located in the probe tip. Extending the attached probe activates a small micro switch inside the meter which turns the power to the meter on as well as off. DT-5A can read in both  $^{\circ}\text{F}$  and  $^{\circ}\text{C}$  by switching the selector switch on the front face. Model DT-10A reads in  $^{\circ}\text{F}$  only. Model DT-10A incorporates a second K-type temperature probe input used for extending the temperature range past  $302^{\circ}\text{F}$ . It can measure from  $0^{\circ}$  to  $1500^{\circ}\text{F}$  using this second input. To use this input a K-type thermocouple probe is required. Model TP-800K thermocouple probe is available from AWS with specifications shown below. Using this external probe will also enable you to reach areas that might be inaccessible for temperature measurement using the internal attached probe.

#### Features:

- Simple Operation
- Retractable Probe
- Extendable General purpose type semiconductor temperature probe for temperature measurements from  $-58^{\circ}$  to  $302^{\circ}\text{F}$  ( $-50^{\circ}$  to  $150^{\circ}\text{C}$ )
- K-type thermocouple probe input measures ( $0$ - $1500^{\circ}\text{F}$ ) (Model DT-10A only)
- Auto on with internal probe extension
- Large LCD display
- Both Deg F/C (Model DT-5A only)

- 300 hours battery life
- Rugged ABS plastic housing
- Built-in Pocket Clip

### **Specifications:**

Display: 3.5 digits LCD, maximum reading 1999 with annunciators.

Resolution: 0.1°C, 1°F (DT-5A) 1°F (DT-10A)

Temperature probe: Internal Semiconductor Probe with general purpose type sheath. Sheath is 4" x 1/8" with semiconductor sensor located in the probe tip.

External probe is optional K-type thermocouple. (DT-10A)

Temperature range: F/C Switch Selectable (DT-10A) Internal Semiconductor Probe -58° to 302°F  
External K-type thermocouple probe input 0° to 1500°F

Temperature Measurement Accuracy: (DT-5A) -50° to 0°C ±3°C 0° to 100°C ± 1°C 100° to 150°C± 3°C  
-58° to 32°F ±6°F 32° to 212°F ±2°F 212° to 302°F ±6°F

Internal (DT-10A) -58° to 32°F ±6°F 32° to 212°F ±3°F 212° to 302°F ±6°F

External\* 0° to 800°F ± (0.5% of rdg + 4°F) 800° to 1500°F ± (2.0% of rdg + 4°F)

Input protection: Maximum thermocouple input of 60Vdc or 24Vac (DT-10A)

Accuracy Temp: 18° to 28°C ambient temperature (64° to 82°F)

Temperature Coefficient: 0.1 times the applicable accuracy specification per °C (°F) from 0° to 18°C (32° to 64.4°F) and 28° to 50°C (82.4° to 122°F)

Sampling Rate: 3 times per second

Operating Environment: Temperature: 0° to 50°C, 32° to 122°F Humidity: <90% (0° to 35°C), <70% (35° to 50°C)

Power Supply: One 9V Transistor Type Battery (NEDA # 1604), AWS Part # B-4

Battery Life: 300 hours typical with carbon zinc cells.

Dimensions: 5.6" (H) x 1.8" (W) x 1.1" (D) (142mm x 46mm x 28mm)

Weight: 4.6 oz (130 g)

\*Note: The basic accuracy specifications do not include the error of the external K type thermocouple probe. Please refer to the probe accuracy specification for additional details.

### **Packaging:**

Models DT-5A and DT-10A both come complete with one internal attached temperature probe, one 9V Transistor Type Battery and Form # 185 Operating Instructions, TP-800K K-type thermocouple temperature probe is not included.

Optional Accessories: TP-800K K-Type thermocouple temperature wire bead probe (DT-10A only)  
0° to 800°C (32° to 1472°F) range:  $\pm 2.2^{\circ}\text{C}$  ( $\pm 4^{\circ}\text{F}$ ) or 0.75% rdg (whichever is greater) Teflon insulated wire to max 260°C Wire length 4 feet with standard miniature K-type connector.

### **Operation:**

Model DT-5A and DT-10A

Extend the internal temperature probe all the way into the outermost position. When the probe clicks into the end position it will activate a micro switch and turn the power on. Model DT-10A must have the INT/EXT switch in the INT position and reads F only. The LCD display will then indicate a temperature reading. Using model DT-5A, select either °F or °C using the switch on the front face.

When taking temperature measurements always place the probe tip into the area that is to be monitored. If you can't use the probe tip for some reason, the metal sheath will conduct the heat to the tip is not placed in the central area, but some error may result. For this reason, the most accurate readings are taken by using the probe tip. Errors may also result if the object being measured is very small (small mass) compared to the probe size (probe mass). The probe may cause the object to cool down or heat up depending upon the temperature of the probe vs the object.

After taking a temperature reading never touch the probe since it may be extremely hot or cold and can cause extreme injury. Let the probe settle to a safe temperature (40° to 100°F) before touching.

Note: For accurate temperature measurements the meter housing must be within the specified operating temperature of 0° to 50°C. Do not expose the meter housing to the temperature being measured if outside of this range.

DT-10A only (External mode) For extended temperature measurements beyond 302°F, attach a K-Type TC probe to the EXT input on model DT-10A only. Place the INT/EXT switch to the EXT position. This will turn the power on, and temperature readings will be displayed for the external K-Type temperature probe. Be sure not to leave the DT-10A in the EXT position. The instrument will remain on, and the battery will drain. AWS Model TP-800K probe is recommended but any K-Type TC probe will do. It must have a standard K-Type mini connector to connect correctly with the DT-10A. Do not connect using any other type of connection since measurement errors will result.

Warning The Internal semiconductor temperature probe and/or the TP-800K is not approved for use on live electrical equipment or connections. Never touch a live electrical connection using the meter or probe since this may cause electrical shock, damage to the equipment under test and/or damage to the meter itself.

Battery Replacement: When the "BAT" symbol shows on the LCD or nothing shows on the LCD when extending the internal probe the battery needs to be replaced. Replace with a standard 9Vdc transistor type battery (NEDA # 1604) or AWS Part # B-4.

**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 purchaser provided the completed warranty card is returned within ten (10) days after purchase and 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 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 AND 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 REGISTRATION**

To validate warranty, please complete the warranty registration card enclosed with your instrument and return to A.W. Sperry Instruments INC., 245 Marcus Blvd., Hauppauge, N.Y. 11788 within 10 days of purchase. No postage required.

#### **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.

### **A.W. Sperry Instruments, Inc.**

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