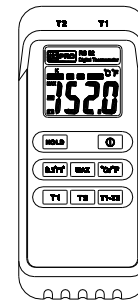
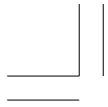




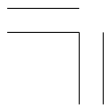
INSTRUCTION MANUAL
RS 51 & RS 52 DIGITAL THERMOMETER

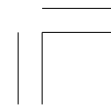
EN FR IT DE





RS 51 & RS 52
DIGITAL THERMOMETER
INSTRUCTION MANUAL







INTRODUCTION



1-1 Unpacking and Inspection

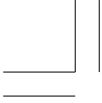

Upon removing your new Digital Thermometer from its packing, you should have the following items:

1. Digital Thermometer.
2. K-type Bead Thermocouple.
3. Operator's Manual.
4. Protective Holster.
5. Belt Clip.

1-2 Front Panel

Refer to Figure 1 and the following numbered steps to familiarise yourself with the meter's front panel controls and connectors.

1. **Digital Display** — The digital display has a 3-1/2 digit LCD readout (maximum reading 1999) auto polarity decimal point, "ε±", function symbol and unit annunciators.
 2. **Thermocouple Connectors** — Allows connections of miniature thermocouple plugs (2 for model 52).
- 
- 

- 
- 
- 3. Hold Switch** — Used to hold the numeric reading. When pressed the HOLD annunciator is displayed. Conversions are made but the reading is not updated. This switch is limited to use on a single temperature scale at a time.
 - 4. Power ON/OFF Switch** — Turns the thermometer on or off.
 - 5. Resolution Selector** — Selects either 0.1 or 1 degree resolution.
 - 6. °C °F Selector** — Used to select the °C and °F units.
 - 7. Max. Switch** — Press once to display the max. reading in measurements, press again to cancel. Disable this function before changing control keys to keep reading correctly. This switch is limited to use on a single temperature scale at a time.
 - 8. T1-T2 Switch** — Selects the **T1-T2** mode for measuring (52 only).
 - 9. T2 Switch** — Selects the **T2** mode for measuring (52 only).
 - 10. T1 Switch** — Selects the **T1** mode for measuring (52 only).

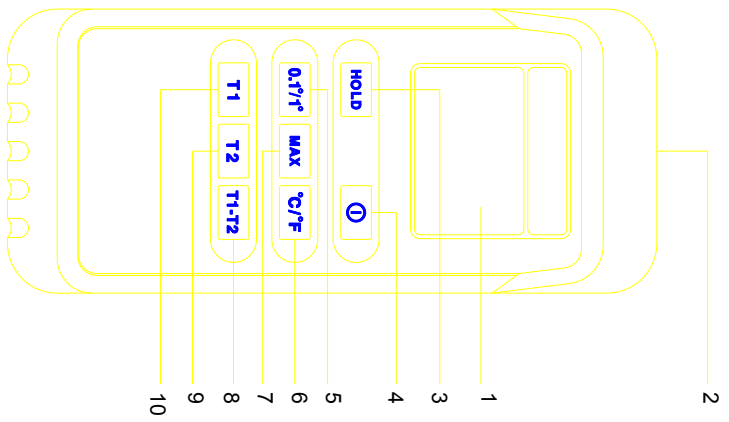


Figure 1



SPECIFICATIONS

2-1 General Specifications

This Thermometer conforms to the temperature / voltage tables of the National Bureau of Standards and to the IEC Standards for K-type.

Display : 3 1/2 digit Liquid Crystal Display (LCD) with a maximum reading of 1999.

Polarity Indication : Automatic, positive implied, negative indicated.

Overrange Indication : "OL" or "-OL".

Low Battery Indication : " ϵ " is displayed when the battery voltage drops below operating voltage.

Sampling Rate : 2.5 time / sec.

2-2 Environmental Conditions

Operating Temperature : 0°C to 50°C, 0 to 75% R.H.

Storage Temperature : -20°C to 60°C, 0 to 80% R.H with battery removed from meter.

Temperature Coefficient : $0.15 \times (\text{Specified accuracy}) / ^\circ\text{C}$, $< 18^\circ\text{C}$ or $> 28^\circ\text{C}$.

Power Requirements : 9V alkaline battery.

Battery Life : Alkaline 250 hours.

Dimensions (H x W x D) : 160mm x 64mm x 26mm without holster.
170mm x 74mm x 39mm with holster.

Weight (including battery) : 300 gms without holster.
430 gms with holster.

Accessories : 2 K-type bead thermocouples (52), 1 K-type bead thermocouple (51) battery (installed), operator's manual and protective holster.

2-3 Electrical Specifications

(1) Accuracy is \pm (% reading + number of digits) at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ less than 75% R.H for thermometer.


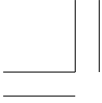
MODEL: 51

| Measurement Range | Resolution | Accuracy | Input Protection |
|-------------------|------------|----------------------------|------------------------|
| -50°C ~ 199.9°C | 0.1°C | \pm (0.2% reading + 1°C) | 60V d.c. or 24 Vr.m.s. |
| -58°F ~ 199.9°F | 0.1°F | \pm (0.2% reading + 2°F) | |
| -50°C ~ 200°C | 1°C | \pm (0.3% reading + 2°C) | |
| -58°F ~ 392°F | 1°F | \pm (0.3% reading + 4°F) | |
| 200°C ~ 1000°C | 1°C | \pm (0.4% reading + 2°C) | |
| 392°F ~ 1832°F | 1°F | \pm (0.4% reading + 4°F) | |
| 1000°C ~ 1300°C | 1°C | \pm (0.6% reading + 2°C) | |
| 1832°F ~ 1999°F | 1°F | \pm (0.6% reading + 4°F) | |

MODEL: 52

| Measurement Range | Resolution | Accuracy (T1 or T2) | Accuracy (T1 — T2) |
|--------------------------|-------------------|----------------------------|---------------------------|
| -50°C ~ 199.9°C | 0.1°C | ± (0.2% reading + 1°C) | ± (0.5% reading + 1°C) |
| -58°F ~ 199.9°F | 0.1°F | ± (0.2% reading + 2°F) | ± (0.5% reading + 4°F) |
| -50°C ~ 200°C | 1°C | ± (0.3% reading + 2°C) | ± (0.5% reading + 2°C) |
| -58°F ~ 392°F | 1°F | ± (0.3% reading + 4°F) | ± (0.5% reading + 4°F) |
| 200°C ~ 1000°C | 1°C | ± (0.4% reading + 2°C) | ± (0.5% reading + 2°C) |
| 392°F ~ 1832°F | 1°F | ± (0.4% reading + 4°F) | ± (0.5% reading + 4°F) |
| 1000°C ~ 1300°C | 1°C | ± (0.6% reading + 2°C) | ± (0.6% reading + 2°C) |
| 1832°F ~ 1999°F | 1°F | ± (0.6% reading + 4°F) | ± (0.6% reading + 4°F) |

Input protection: 9V DC or 6V rms.



(2) Thermocouple Characteristics: K-type thermocouple.

50BK bead thermocouple:

1. Temperature Range : -40°C to 204°C (-40°F to 399.2°F).
2. Tolerances : \pm (2.2°C or 0.75%) from 0°C to 204°C.
 \pm (2.2°C or 2.0%) from 0°C to -40°C.
3. Wire Length : 1m, with miniature plug.
Teflon tape insulated.

OPERATION

This instrument is designed to use external K-type thermocouple as temperature sensor. Temperature indication follows National Bureau of Standards and IEC 584 temperature / voltage tables for K-type thermocouple are supplied with thermometer.

⚠ WARNING

TO AVOID ELECTRICAL SHOCK, DO NOT USE THIS INSTRUMENT WHEN VOLTAGES AT THE MEASUREMENT SURFACE EXCEED 24V RMS OR AC OR 60V DC. (6Vrms AC OR 9VDC FOR 52) TO AVOID DAMAGE OR BURNS, DO NOT MAKE TEMPERATURE MEASUREMENTS IN MICROWAVE OVENS.

3-1 Preparation and Caution before Measurement

1. Before measurement, warm up for at least 30 seconds, after connecting the thermocouple to the thermometer.
2. If the instrument is used near noise generating equipment, be aware that the display may become unstable or indicate large errors.

3-2 Temperature Measurements

1. Connect the plug of the thermocouple to the connector of the thermometer.
2. Select the desired input mode, resolution and °C/°F.
3. Use the sensing point of the thermocouple to measure the surface to be measured.
4. Read the stable reading.
5. ⚠ "Warning: Do not measure the surface if the potential exceeds 60 Vd.c. or 24 Vr.m.s."



MAINTENANCE



To keep the instrument clean, wipe the case with a damp cloth and detergent, do not use abrasives or solvents. Any adjustment, maintenance and repair shall be made by a skilled person.

To maintain the thermocouple in good condition, observe the following precautions:

- Avoid excess bending.
- Do not overheat the thermocouple.
- Avoid chemical reactions that can damage the thermocouple.

BATTERY REPLACEMENT

The meter is powered by a single 9V battery. Refer to Figure 2 and use the following procedure to replace the battery:

1. Turn the meter off. Remove the thermocouple connector.
 2. Remove the holster.
 3. Position the meter face down. Remove the screw from the battery cover.
 4. Remove the battery cover.
 5. Lift the battery from case top, and carefully disconnect the battery from battery connector leads.
 6. Install a new battery.
 7. Replace the battery cover. Reinstall the screw and replace the holster.
- 
- 

BATTERY REPLACEMENT

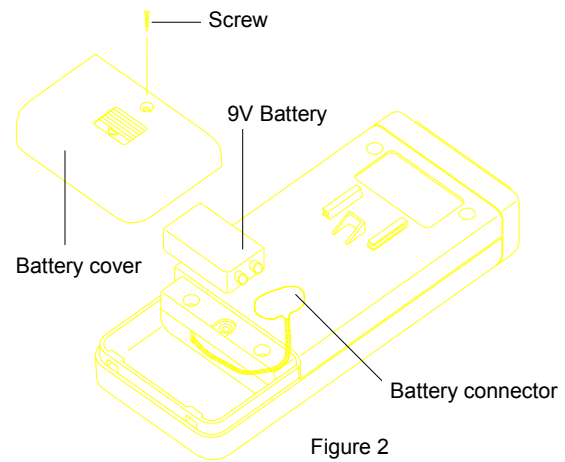
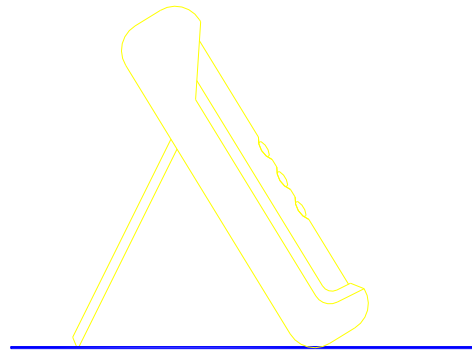


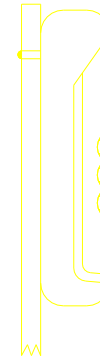
Figure 2



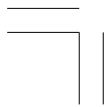
HOW TO USE THE TILT STAND AND HOLSTER



Swing the stand out for easier meter reading.



Hang on a nail at the workbench.



Africa

RS Components SA

P.O. Box 12182, Vorna Valley, 1686
20 Indianapolis Street, Kyalami Business Park,
Kyalami, Midrand
South Africa

www.rs-components.com

China

RS Components Ltd.

Suite 23 A-C , East Sea Business Centre
Phase 2 , No. 618 Yan'an Eastern Road
Shanghai, 200001
China

www.rs-components.com

Japan

RS Components Ltd.

West Tower (12th Floor),
Yokohama Business Park, 134 Godocho, Hodogaya,
Yokohama, Kanagawa 240-0005
Japan

www.rs-components.com

Asia

RS Components Pte Ltd.

31 Tech Park Crescent
Singapore 638040

www.rs-components.com

Europe

RS Components Ltd.

PO Box 99, Corby,
Northants. NN17 9RS
United Kingdom

www.rs-components.com

U.S.A

Allied Electronics

7151 Jack Newell Blvd. S.
Fort Worth, Texas 76118
U.S.A.

www.alliedelec.com

South America

RS Componentes Limitada

Av. Pdte. Eduardo Frei M. 6001-71
Centro Empresas El Cortijo
Conchali, Santiago, Chile

www.rs-components.com