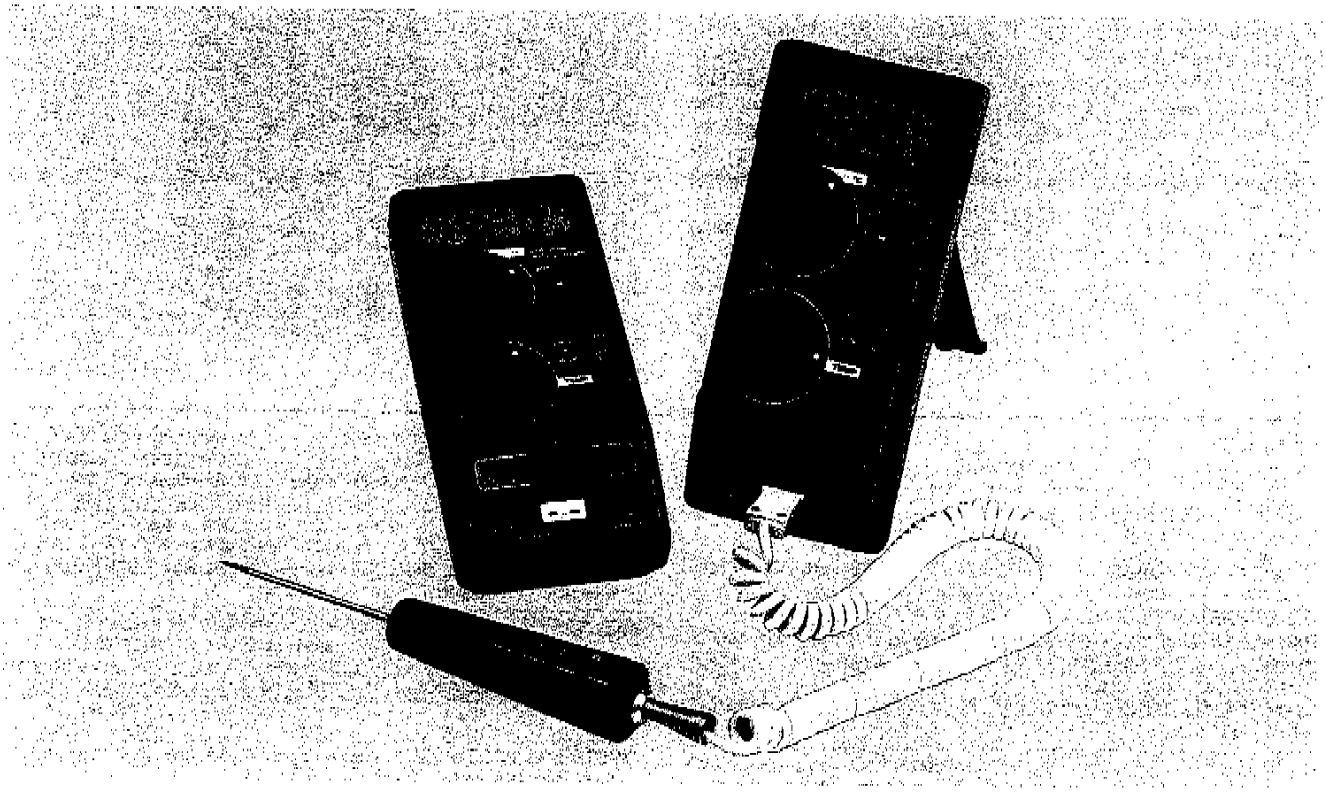
TRMS + Temperature

- **0.25% basic DC accuracy**
- **Temperature measurement (Type K TC) to 2000°F/1370°C**
- **°C or °F versions**



The Model 132 combines the rugged field service capabilities of Keithley's basic handheld DMMs with the most often required additional measurement capabilities: TRMS AC and temperature. Available in both a °F version (132F) and a °C version (132C), the 132 has complete DC voltage ranges from 200mV to 1000V with 0.25% accuracy, current ranges from 2mA to 2A and resistance ranges from 200Ω to 20MΩ. The 132C measures temperature from −20°C to 1370°C, the 132F from 0°F to 2000°F using optional Type K thermocouple sensors or probes.

Type K thermocouple

There are several advantages to employing a Type K (NiCr-NiAl) thermocouple input for temperature measurement:

—Wide use throughout industry
—Broad selection of probes and sensors available
—Low cost, versatile, durable

Standard TC connector

In order to fully realize all the advantages of a Type K thermocouple, the 132 provides a standard TC connector for sensor termination. This effectively eliminates stabilization time required with banana jack inputs for immediate, accurate readings. Cold junction electronic circuitry automatically compensates for ambient temperature changes. And the TC input is protected from overloads up to 300V.

TRMS

TRMS AC response is provided to make precision measurements of non-sinusoidal waveforms that averaging cannot handle. Examples include square waves, pulse trains and SCR waveforms. The Model 132's AC bandwidth is designed to capture the necessary spectral components for minimal error on 50Hz and 60Hz waveforms, where most measurements are made.

AC coupled

The Model 132 blocks out any DC signal combined with the AC information that you are really after. This allows you to measure the AC and DC components of a signal separately, as when measuring AC ripple on a DC voltage, for example.

Digital Multimeter/132C, 132F

TRMS + Temperature

DC VOLTS

RANGE	RESOLUTION	ACCURACY (1 YEAR) ±(%rdg + digits) 18°-28°C
200mV	100 µV	
2 V	1mV	
20 V	10mV	±(0.25% + 1d)
200 V	100mV	
1000 V	1 V	

MAXIMUM ALLOWABLE INPUT: 1000V DC or peak AC non-switched, 750V peak switched.

INPUT RESISTANCE: 10MΩ.

NORMAL MODE REJECTION RATIO: Greater than 46dB at 50Hz, 60Hz.

COMMON MODE REJECTION RATIO: Greater than 100dB at DC, 50Hz and 60Hz (1kΩ unbalance).

TRMS AC VOLTS

RANGE	RESOLUTION	ACCURACY (1 YEAR) ±(%rdg + digits) 18°-28°C	FREQUENCY RANGE
200mV	100 µV		
2 V	1mV		
20 V	10mV	±(1% + 9d)	45Hz-500Hz
200 V	100mV		
750 V	1 V		

MAXIMUM ALLOWABLE INPUT: 1000V peak non-switched, 750V peak switched; continuous except 200mV range: 15s max above 300V.

INPUT IMPEDANCE: 10MΩ shunted by less than 100pF.

RESPONSE: True root mean square; AC coupled.

CREST FACTOR: Up to 3:1 allowable. Less than 2% additional error, 50Hz or 60Hz rectangular pulse train with crest factor of 3:1.

DC AMPS

RANGE	RESOLUTION	ACCURACY (1 YEAR) ±(%rdg + digits) 18°-28°C	MAXIMUM FULL SCALE VOLTAGE BURDEN
2mA	1 µA	±(0.75% + 1d)	0.25V
20mA	10 µA	±(0.75% + 1d)	0.25V
200mA	100 µA	±(1 % + 1d)	0.25V
2000mA	1mA	±(2 % + 1d)	0.7 V

OVERLOAD PROTECTION: 2A fuse (250V), externally accessible.

TRMS AC AMPS

RANGE	RESOLUTION	ACCURACY (1 YEAR) ±(%rdg + digits) 18°-28°C (45Hz-500Hz)	MAXIMUM FULL SCALE VOLTAGE BURDEN
2mA	1 µA	±(2% + 9d)	0.25V
20mA	10 µA	±(2% + 9d)	0.25V
200mA	100 µA	±(2% + 9d)	0.25V
2000mA	1mA	±(3% + 9d)	0.7 V

OVERLOAD PROTECTION: 2A fuse (250V), externally accessible.

RESPONSE: True root mean square, AC coupled.

CREST FACTOR: Less than 1.5% additional error, 50Hz or 60Hz rectangular pulse train with crest factor of 3:1 at 40% of full scale.

OHMS

RANGE	RESOLUTION	ACCURACY (1 YEAR) ±(%rdg + digits) 18°-28°C	FULL SCALE VOLTAGE
200 Ω	100mΩ	±(0.5% + 4d)	< 0.5V
2 kΩ	1 Ω	±(0.2% + 1d)	< 0.7V
20 kΩ	10 Ω	±(0.2% + 1d)	> 0.7V
200 kΩ	100 Ω	±(0.2% + 1d)	> 0.7V
20MΩ	10 kΩ	±(2 % + 1d)	> 0.7V

MAXIMUM OPEN CIRCUIT VOLTAGE: 1.5V.

MAXIMUM ALLOWABLE INPUT: 300V DC or rms.

TEMPERATURE

MODEL	RANGE	RESOLUTION	ACCURACY (1 YEAR) 18°-28°C
132C	−20°C to 1370°C	1°C	±(3°+1d) up to 150°C ±3% of reading over 150°C Chart correctable to ±1.5% of reading over 350°C
132F	0°F to 2000°F	1°F	±(5°+2 digits) up to 225°F ±3% of reading over 225°F Chart correctable to ±1.5% of reading over 600°F

Accuracy includes NBS conformity, calibration stability, zero and reference junction, but not thermocouple errors.

SENSOR: Type K (NiCr-NiAl) (not included).

INPUT CONNECTIONS: Miniature TC connector.

OVERLOAD PROTECTION: 150V continuous, 300V momentary (10s).

GENERAL

DISPLAY: 0.6" LCD digits with decimal and polarity indications, low battery warning.

OVERRANGE INDICATION: 3 least significant digits blanked.

MAXIMUM COMMON MODE VOLTAGE: 500V peak.

OPERATING ENVIRONMENT: 0° to 50°C; less than 80% relative humidity up to 35°C. Linearly derate 3% RH/°C, 35°C to 50°C.

STORAGE ENVIRONMENT: −35° to 60°C; less than 90% relative humidity up to 35°C. Linearly derate 3% RH/°C, 35°C to 60°C.

TEMPERATURE COEFFICIENT: From 18° to 28°C; Included in accuracy specifications; from 0° to 18°C and 28° to 50°; Less than 0.1 × applicable accuracy specification per °C.

POWER: 9V alkaline or carbon-zinc battery (NEDA 1604).

BATTERY LIFE: 75 hours typical with carbon-zinc cells, 150 hours typical with alkaline cells.

BATTERY INDICATOR: Display indicates BAT when less than 10% of life remains.

DIMENSIONS, WEIGHT: 178mm long × 78mm wide × 42mm thick (7.0" × 3.1" × 1.6"). Net weight 370gm (13 oz.).

ACCESSORIES SUPPLIED: Battery, instruction manual, Model 1691 General Purpose Test Lead Set.

ACCESSORIES AVAILABLE:

Model 1304: Soft Carrying Case & Stand
Model 1306: Heavy Duty Carrying Case
Model 1600A: High Voltage Probe
Model 1651: 50-Ampere Current Shunt
Model 1681: Clip-On Test Lead Set
Model 1682A: RF Probe
Model 1683: Universal Test Lead Kit
Model 1685: Clamp-On AC Current Probe
Model 1691: General Purpose Test Lead Set
Model 8700: Carrying Case with Belt Clip and Holster
Model 8711A: Thermocouple Kit
Model 8712: Thermocouple Sensor
Model 8713: General Purpose Probe
Model 8714A: Penetration Probe with Coiled Cable
Model 8715: Surface Probe
Model 8716: Air/Gas Probe
Model 8717: Hypodermic Probe

For more information on this and other hand held DMM products once sold by Keithley, please contact:

Tegam

phone number : 800.666.1010

http://www.tegam.com