

THERMOCOUPLE SOURCE SERIES 22

- **Direct Temperature Output**
22 Precise Steps
- **0.1% Accuracy**
25, 50, or 100 Degree Resolution
- **Rugged Design**
Field, shop and control room use
- **Pocket Sized**
1 Year Battery Life
- **Models for Types B, E, J, K, R, S, T**
°C & °F Cold-Junction Compensated



GENERAL DESCRIPTION

ALTEK SERIES 22 Thermocouple Sources provide 22 precise temperatures for inputs to transmitters, recorders, controllers, alarms, data acquisition and computer systems. Model 22 provides thermocouple wire output and is cold-junction compensated for ambient temperature variations. Conformity to the particular thermocouple vs millivolt curve is in accordance with the latest ASTM and IPTS standards for exact temperature simulation. Linear millivolt models are also available.

Thermocouple types B, E, J, K, R, S and T are available in both degrees F and C. The table lists the standard ranges. Resolution is 25, 50 or 100 degrees, corresponding to full scale output of 500, 1000, 1700, 2100 and 3100 degrees respectively.

Dual ranges, with an individual "ON" position for each range, allow quick, easy settings for any output. Calibrated accuracy is $\pm 0.1\%$ of span ± 1 degree. Negative temperatures add ± 2 degrees.

Two built-in AA cells provide power for one year of everyday use. A front panel LED pulses every time the Model 22 is turned on to indicate proper battery voltage.

The low cost ALTEK MODEL 22 is a complete, compact source for checkout and calibration of all thermocouple instruments in the field, shop or control room.

OPERATING INSTRUCTIONS

Select the ALTEK MODEL 22 for the correct thermocouple type, the desired temperature scale (F or C), and range.

Connect the ALTEK Thermocouple Source to the input terminals of the instrument to be tested, the field mounted head or junction box terminals.

Cold-junction compensation and instantaneous automatic standardization is built into the Model 22.

Set the temperature selection switch to the desired temperature and slide the "ON" switch to the selected scale. The Battery Check LED will pulse once indicating proper battery voltage. If no pulse is seen, the batteries should be replaced with 2 "AA" cells. Alkaline cells are preferred for longest life and widest operating temperature range.

End point calibration temperatures of the instrument are then selected on the Model 22 and any required adjustments are made. Intermediate points may then be selected to verify instrument linearity or check critical points.

WARRANTY

Our equipment is guaranteed against defective material and workmanship (excluding batteries) for a period of three years from date of shipment. Claims under guarantee can be made by returning the equipment prepaid to our factory. The equipment will be replaced, repaired or adjusted at our option. The liability of Altek is restricted to that given under our guarantee. No responsibility is accepted for damage, loss or other expense incurred through sale or use of our equipment. Under no condition shall Altek be liable for any special, incidental or consequential damage.

ALTEK INDUSTRIES CORP
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SPECIFICATIONS

(Unless otherwise indicated, specifications are in $\pm\%$ of span @ 23°C)

Accuracy: Positive temperatures $\pm 0.1\%$ of span ± 1 degree. Negative temperatures $\pm 0.1\%$ of span ± 3 degrees

Cold Junction Compensation: Built-in for specified thermocouple type

Cold Junction Temperature Effect: Within ± 0.25 degree at 75°F (20°C) ± 0.025 degrees/degree change in ambient

Operating Ambient Temperature: -10 to +130°F (-25 to +55°C)

Ambient Temperature Effect: Zero: Included in cold junction effect

Span: $\pm 0.01\%$ of span/degree

Storage Temperature Limits: -40 to +160°F (-40 to +70°C)

Output Impedance: Fixed, 50 ohms nominal

Batteries: 2 AA alkaline cells provide 1 year of use at nominal 4 hours each workday. Batteries should be removed when storing the unit >3 months.

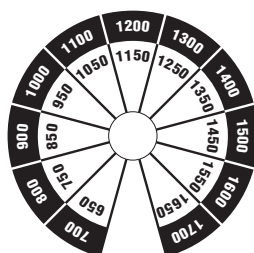
Battery Indicator: LED light pulse at turn-on in either range

Size: 2 1/8 x 4 x 2 1/4 inches (54 x 102 x 55 mm)

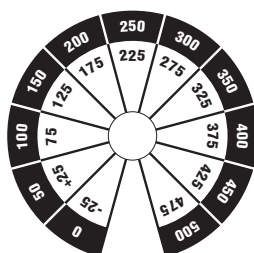
Weight: 6 oz. (0.15 kg)

Optional Carrying Case: Zippered, with belt loop

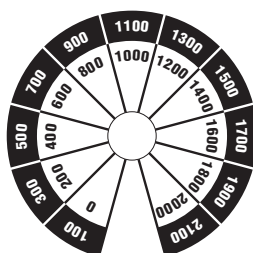
SERIES 22 STANDARD RANGES (FOR OTHER RANGES & TC TYPES CONSULT FACTORY)



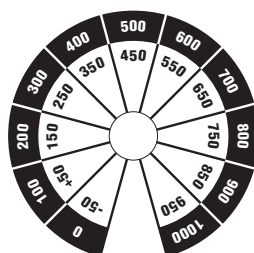
TYPE B,R,S DEG C



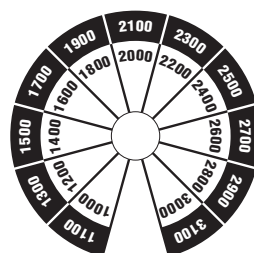
TYPE E,J,K,T DEG F
TYPE E,J,K,T DEG C



TYPE J,K DEG F



TYPE E,J,K DEG F
TYPE E,J,K DEG C



TYPE B,R,S DEG F

ORDERING INFORMATION

Specify thermocouple type, scale range and °F or °C to insure prompt delivery of all the above standard ranges. A 22J 1000F completely describes an Altek 22 position source providing a maximum output of 1000°F for a type J thermocouple

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B Pt 30% Rh - Pt 6% Rh
E Chromel® - Constantan
J Iron - Constantan
K Chromel® - Alumel®
R Pt - Pt 13% Rh
S Pt - Pt 10% Rh
T Copper - Constantan

500
1000
1700 Maximum
2100 Scale
3100 Reading

F - Degrees Fahrenheit
C - Degrees Celsius

AVAILABLE FROM

OTHER PRODUCTS

Altek designs and manufactures fast, accurate instruments for measurement, generation and simulation of virtually every process control signal. Consult our factory directly or contact your local stocking representative to order precise, low cost Milliamp Calibrators, Voltage Sources, Direct Thermocouple Sources, RTD Simulators and Frequency Sources. Altek also produces calibrators for custom ranges and unique applications. Additional models and ranges are frequently added to the Altek instrument family to meet all of your critical calibration requirements. Altek products are made in the USA.

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