PeakTech®

Prüf- und Messtechnik

Spitzentechnologie, die überzeugt

PeakTech® 5110/5115

Digital-Thermometer

Bedienungsanleitung / Operation Manual

5110 1-Kanal/CH

5115 2-Kanal/CH

1. Safety Precautions

This product complies with the requirements of the following European Community Directives: 2004/108/EC (Electro-magnetic Compatibility) amended by 2004/22/EC (CE-Marking).
Pollution degree 2.

To ensure safe operation of the equipment and eliminate the danger of serious injury due to short-circuits (arcing), the following safety precautions must be observed.

* Do not operate the meter before the cabinet has been closed and screwed safely.
* Check test leads and probes for faulty insulation or bare wires before connection to the equipment.
* Comply with the warning labels and other info on the equipment.
* Keep the equipment dry.
* CAUTION! Repeated sharp flexing can break the thermocouple leads. To prolong lead life, avoid sharp bends in the leads, especially near the connector.
* Do not subject the equipment to direct sunlight or extreme temperatures, humidity or dampness.
* Do not subject the equipment to shocks or strong vibrations.

* Do not operate the equipment near strong magnetic fields (motors, transformers etc.).
* Keep hot soldering irons or guns away from the equipment.
* To avoid electrical shock, do not use this instrument when voltages at the measurement surface exceed 24V AC or DC.
* To avoid damage or burns, do not make temperature measurement in microwaves ovens.
* Allow the equipment to stabilize at room temperature before taking up measurement (important for exact measurements).
* Replace the battery as soon as the battery indicator “BAT” appears. With a low battery, the meter might produce false reading that can lead to personal injury.
* Fetch out the battery when the meter will not be used for long period.
* Periodically wipe the cabinet with a damp cloth and mid detergent. Do not use abrasives or solvents.
* The meter is suitable for indoor use only
* Do not store the meter in a place of explosive, inflammable substances.
* Do not place the equipment face-down on any table or work bench to prevent damaging the controls at the front
* Do not modify the equipment in any way
* Opening the equipment and service- and repair work must only be performed by qualified service personnel

* **Measuring instruments don’t belong to children hands**.

2. Introduction

These instruments are portable 3 ½ digit, compact-sized digital thermometer designed to use external K-type thermocouple as temperature sensor. Temperature indication follows Reference Temperature/ Voltage tables (N.I.S.T. Monograph 175 Revised to ITS-90) for K-type thermocouples.

3. Specifications

Display	3 ½-digit liquid crystal display (LCD) with maximum reading of 1999 and backlight
Overload-Display	LCD-Displays shows “1”
Temperature scale	°C, °F or K (only P 5110) user-selectable
Measurement range	-50° C....1300° C; -58° F....2000° F 223K … 2000 K (P 5110) -50° C....1300° C; -58° F....2000° F (P 5115)
Resolution	0,1°C / 1° C; 0.1°F / 1° F; 1 K (P 5110) 0,1°C / 1° C; 0.1°F / 1° F (P 5115)
Temperature Coefficient	0.1 times the applicable accuracy specification per °C from 0°C to 18°C and 28°C to 50°C (32°F to 64°F and 82°F to 122°F)
Input protection	24 V AC or 60 V DC maximum input voltage on any combination of input pins

Reading rate	2.5 times per second
Input Connector	Accepts standard miniature thermocouple connectors (flat blades spaced 7,9 mm, center to center).
Operating Temperature	0 ... +50°C (32°F ... 122°F) < 80 %
Storage Temperature	-20°C ... +60°C (-4°F ... 140°F) < 70 %
Probe	Type-K-thermocouple (teflon tape insulated; max. 260°C)
Probe accuracy	+/- 2,2°C or 0,75% rdg.
Battery	Standard 9 V battery (NEDA 1604, IEC 6F22, 006 P)
Battery Life	200 hours typical with carbon zinc battery
Dimensions	162 (H) x 76 (W) x 39 (D) mm
Weight	210 g

Accessories Holster, Battery, Type-K thermocouple (P 5115 2 St.)

3.1. Technische Daten

***PeakTech®* 5110:**

Range	Accuracy
-50 °C ... 0 °C 0 °C ... 1000 °C 1000 °C ... 1300 °C	± 2 °C ± 0,5% rdg. + 1 °C ± 0,8% rdg. + 1 °C
-58 °F ... +32 °F 32 °F ... 2000 °F	± 4 °F ± 0,5% rdg. + 2 °F
223K ... 273K 273K ... 2000 K	± 5 K ± 1,0% rdg.. + 2K

***PeakTech®* 5115:**

Range	Accuracy
-50 °C ... 0 °C 0 °C ... 1000 °C 1000 °C ... 1300 °C	± 2 °C ± 0,5% rdg. + 1 °C ± 0,8% rdg. + 1 °C
-58 °F ... +32 °F 32 °F ... 2000 °F	± 4 °F ± 0,5% rdg. + 2 °F

Accuracy is specified for operating temperatures over the range of 18 °C to 28 °C (64 °F to 82 °F), for 1 year, not including thermocouple errors.

4. Operating Instructions

4.1. Selecting the temperature scale

Readings are displayed in either degrees Celsius (°C) or degrees Fahrenheit (°F). When the thermometer is turned on, it is set to the temperature scale that was in use when the thermometer was last turned off. To change the temperature scale, press one of the following keys °C or °F (additional P 5110 is supplied with: K).

4.2. Selecting the display resolution

The thermometer allows two choices of resolution:

high resolution: 0.1 °C or 0.1 °F
low resolution: 1 °C / 1 °F (1 K: only P 5110)

To select the alternate display resolution, press the corresponding “0.1 °/1 °” key (P 5115) / (P 5110: 0,1 ° or 1 ° key).

4.3. MAX Mode

Pressing the Max key to enter the MAX mode. The thermometer then records and updates the maximum absolute value and the MAX annunciator appears on the display. Pressing the MAX key again to exit the MAX recording mode.

For breading the auto. updating of the saved value (new max-value shouldn’t be saved), press button "HOLD". For returning to auto. updating during a measuring of a new Max-value press "HOLD"-button again.

4.4 HOLD Mode

Pressing the HOLD key to enter the Data Hold mode, the “HOLD” annunciator is displayed. When HOLD mode is selected, the thermometer held the present readings and stops all further measurements.
Pressing the HOLD key again cancels HOLD mode, causing the thermometer to resume taking measurements.

4.5. Backlight Mode

Pressing the Backlight key to turn on the LCD-backlighting Function. Pressing the Backlight key again to turn off the LCD-backlighting function

4.6. Tc (Temperature Compensator) (only P 5110)

Checking Mode.
Pressing and hold the "Tc" key to enter the temperature compensator-checking mode. The thermometer will display the temperature inside.

4.7. Preparation

1. Ensure battery is in place, if LCD-display shows the battery symbol, the battery should be replaced.

2. Make sure all function keys are set properly. (HOLD) switch is on an "OFF" position, make sure no "DATA-HOLD" displayed on LCD.

3. Inspect whether temperature probe has been placed securely in the temperature outlet, (the "+" outlet of temperature probe should be connected to the "+" of the temperature outlet, the "-" outlet of the temperature probe should be connected to the "-" of temperature outlet).

4.8. Measurement

Temperature measuring:

1. Turn on the thermometer

2. Connect the outlet of test probe "K-Type" to the outlet of temperature outlet.

3. Measure environment temperature with temperature probe, the reading will appear on LCD.

4.9. Adjustment for T1-T2 measurement (only P 5115)

The choice of the input connectors with the correspond indicated buttons T1, T2 or T1-T2 at the unit. To measure the differential temperature connect the thermocouples to the inputs and press “T1-T2”. The indicated temperature value is the difference between T1 and T2.

Remark:

* For an accurate reading of T2, with liquid temperature probe (see Fig. 7)

* When the superficial temperature is taking, the top of temperature probe should have a close contact with the surface to be measured (see Fig. 8).

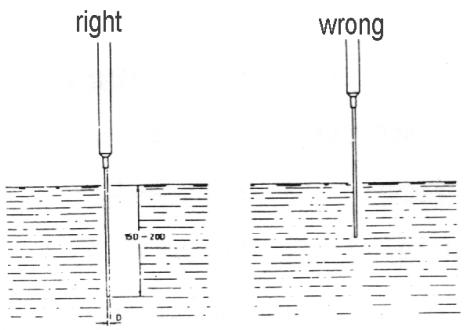

Fig. 7

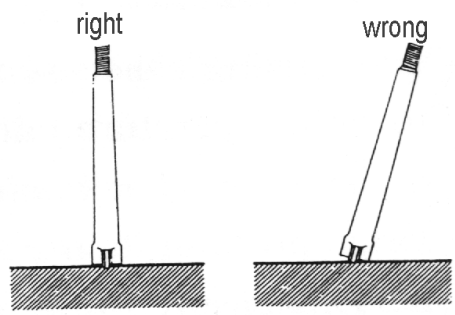

Fig.8

4.10. Battery Replacement

Power is supplied by a 9 V “transistor” battery (NEDA 1604, IEC 6F22). The battery sign appears on the LCD when replacement is needed.
To replace the battery, remove the screw from the back of the meter and lift off the battery cover. Remove the battery from its contacts.

Caution! Batteries, which are used up dispose duly. Used up batteries are hazardous and must be given in the for this being supposed collective container.

4.11. Statutory Notification about the Battery Regulations

The delivery of many devices includes batteries, which for example serve to operate the remote control. There also could be batteries or accumulators built into the device itself. In connection with the sale of these batteries or accumulators, we are obliged under the Battery Regulations to notify our customers of the following: