

# ***Prüf- und Messtechnik***



***Spitzentechnologie, die überzeugt***



**Operation manual**

**Decade Box**

## 1. Safety Precautions

This product complies with the requirements of the following European Community Directives: 2004/108/EC (Electromagnetic Compatibility) and 2006/95/EC (Low Voltage) as 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.

Damages resulting from failure to observe these safety precautions are exempt from any legal claims whatever.

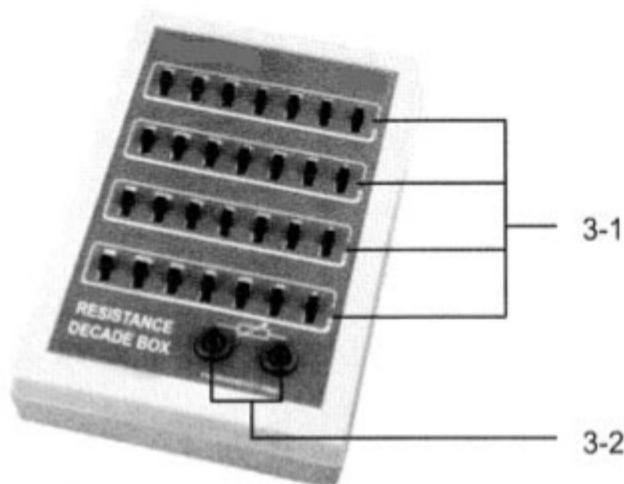
- \* Do not use this instrument for high-energy industrial installation measurement.
- \* Do not exceed the maximum permissible input ratings (danger of serious injury and/or destruction of the equipment).
- \* Check test leads and probes for faulty insulation or bare wires before connection to the equipment.
- \* To avoid electric shock, do not operate this product in wet or damp conditions. Conduct measuring works only in dry clothing and rubber shoes, i. e. on isolating mats.
- \* Comply with the warning labels and other info on the equipment.
- \* 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.
- \* Allow the equipment to stabilize at room temperature before taking up measurement (important for exact measurements).

- \* Periodically wipe the cabinet with a damp cloth and mild detergent. Do not use abrasives or solvents.
- \* The instrument is suitable for indoor use only
- \* Do not store the meter in a place of explosive, inflammable substances.
- \* Do not modify the equipment in any way
- \* Do not place the equipment face-down on any table or work bench to prevent damaging the controls at the front.
- \* 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. Features

- \* Applications:
- \* General applications Troubleshooting,
- \* Maintenance Education and Vocational training
- \* Production line testing
- \* Radio and TV services
- \* Working standards
- \* Research design and develop
- \* Physics laboratory work
- \* Offering accurate, reliable performance
- \* Slide switches that allow the user to simply add or subtract for desired value
- \* Terminals with multi way binding posts, one to switch shield case
- \* ABS plastic housing case, rugged components

### 3.1.1. Front Panel Description



3-1 Range Select Switch

3-2 Resistance Output Terminal

### 3.1.2. Testing Procedure

1. Start with all switches up (0) for 0 ohms.
2. Switch down (1) to add Resistance value.

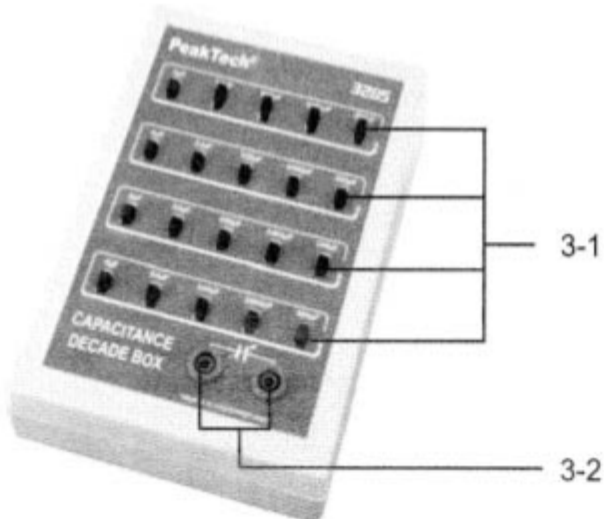
#### **WARNING!!**

- \* The Wattage of the "Output Resistor" is 0,3 W. Do not add the Wattage more than 0,3 W to the "Resistance Output Terminals" (3-2)
- \* Do not add the voltage over AC/DC 250 V to the "Output Resistance Terminals" even its stand Wattage is less than 0,3 W.

### 3.2. Specifications

Range	100 pF to 11,111 $\mu$ F (100 pF per step)
Accuracy	5 % capacitors used throughout < 1 $\mu$ F, 1 kHz test frequency > 1 $\mu$ F, 100 Hz test frequency
Voltage	50 V DC, non-polarized capacitors
Internal Residual Capacitance	50 pF max.
Operating Temperature	0°C to 50°C (32°F to 122°F) < 80% RH
Weight	350 g.
Dimensions (WxHxD)	140 x 190 x 80 mm
Accessories	Operation Manual

#### 3.2.1. Front Panel Description



3-1 Range Select Switch

3-2 Capacitance Output Terminal

### **3.2.2. Testing Procedure**

1. Start with all switches up (0) for min. capacitance.
2. Switch down (1) to add Capacitance value.

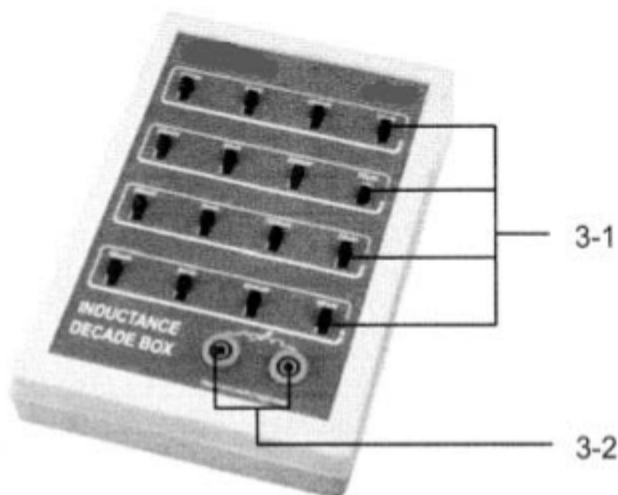
### **WARNING!!**

Do not add the voltage more than 50 V DC to the "Output Capacitor Terminals" (3-2)

### **3.3. Specifications**

Range	10 $\mu$ H to 111,1 mH (10 $\mu$ H per step)
Accuracy	5 % inductors used throughout at 23°C +/- 5°C at 1 kHz test frequency
Max. Rating Current	100 mA DC or AC
Internal Residual Inductance	Approx. 0,5 $\mu$ H
Operating Temperature	0°C to 50°C (32°F to 122°F) < 80 % RH
Weight	450 g.
Dimensions (WxHxD)	140 x 190 x 80 mm
Accessories	Operation Manual

### 3.3.1. Front Panel Description



3-1 Range Select Switch

3-2 Inductance Output Terminal

### 3.3.2. Testing Procedure

- 1) Start with all switches up (0) for min. inductance.
- 2) Switch down (1) to add Inductance value.

#### **WARNING!!**

Do not add the current more than 100 mA (AC or DC) into the "Output Inductor Terminals" (3-2)