



## LCR Meters 4255 & 4275

- Low cost component measurement
- Characterize components to 1 MHz
- Fast measurement speed
- 0.1% basic measurement accuracy
- Comprehensive measurement functions
- Large LCD display and intuitive user interface
- Unbeatable price

The 4255 and 4275 LCR Meters provide economical, thorough and accurate testing of any passive component at frequencies up to 1 MHz.

Users include designers of passive components, manufacturing test, designing and testing materials, goods inwards inspection as well as circuit designers evaluating component characteristics.

Both instruments in the range are designed for comprehensive testing of components, with a basic accuracy of 0.1%, at a low price. A wide range of measurement parameters can be selected.

The 4255 LCR Meter is the entry level instrument covering to 500 kHz whilst the 4275 covers to 1 MHz.

### External control

The optional GPIB interface is used to control the instrument and read back measured values for quality control or for archiving purposes.

### Measurement parameters

4255 and 4275 LCR Meters measure all of the following parameters: -

- Impedance (Z)
- Phase Angle ( $\phi$ )
- Inductance (L)
- Capacitance (C)
- AC Resistance ( $R_{ac}$ )
- Quality Factor (Q)
- Dissipation Factor (D)
- Admittance (Y)
- Conductance (G)
- Reactance (X)
- Susceptance (B)
- DC Resistance ( $R_{dc}$ ) - optional

### Protection against charged capacitors

High precision measuring instruments can be damaged by charged capacitors which can lead to costly repairs and unacceptable downtime. 4255 & 4275 incorporate protection from charged capacitors to minimise damage.

### Options

The basic low cost instrument incorporates all of the essential measurement facilities. Optional items, which provide additional facilities, include GPIB programmable control and a DC resistance measurement capability.

## Excellent performance and unbeatable price

As the market leader with over 50 years experience of developing and manufacturing component analyzers Wayne Kerr provides the best facilities in the industry with high performance and accuracy at very competitive prices.



*Accurate component analysis is simplified by many versatile accessories.*

*Top row left to right, Component Fixture and two different Kelvin Leads.*

*Bottom row left to right, 4 Terminal Lead Set, SMD Probe Leads and SMD Tweezers*



*Models 4255 (500 kHz) and 4275 (1 MHz) are versatile and easy to use LCR meters*

## Technical specifications, LCR Meters - 4255 & 4275

### Measurement parameters

Any of the following parameters can be measured and displayed:  
Inductance (L), impedance (Z), AC resistance (Rac) and capacitance (C).

Optional – DC Resistance (Rdc)

Series or Parallel Equivalent Circuit

C+R, C+D, C+Q, L+R, L+Q

Series equivalent circuit only

X+R, X+D, X+Q

Parallel equivalent circuit only

C+G, B+G, B+D, B+Q

Polar Form

Z + Phase Angle, Y + Phase Angle

### Test conditions

#### **Frequency range 4255**

20 Hz to 500 kHz >1000 steps

Accuracy of set frequency  $\pm 0.005\%$

#### **Frequency range 4275**

20 Hz to 1 MHz > 1200 steps

Accuracy of set frequency  $\pm 0.005\%$

#### **Pre-set frequencies**

20, 25, 30, 40, 50, 60, 80, 100, 120,

150 repeats for each decade

#### **Drive level (Rdc) - optional**

100 mV or 1 V with 100  $\Omega$  source impedance

#### **Drive level (AC measurements)**

Open circuit voltage 50 mV to 2 V rms

Signal source impedance 50  $\Omega$

Automatic Level Control (ALC) maintains constant voltage or current at device under test (DUT)

#### **DC bias voltage (internal)**

2V with rapid charge capacitor bias

#### **Measurement speeds**

Four selectable speeds for all measurement functions.

Up to 20 measurements per second for test frequencies  $\geq 100$  Hz

#### **Measurement ranges**

R, Z, X 0.01 m $\Omega$  to > 2 G $\Omega$

G, Y, B 1 nS to > 2 kS

L 0.1 nH to > 2 kH

C 1 fF to > 1 F

D 0.00001 to >1000

Q 0.00001 to >1000

Rdc 0.1 m $\Omega$  to > 10 M $\Omega$

### **Basic accuracy**

L/C  $\pm 0.1\%$

G/B  $\pm 0.1\%$

R/X  $\pm 0.1\%$

Q  $\pm 0.1\%$

D  $\pm 0.001$

Rdc  $\pm 0.25\%$

Accuracy varies with component range measurement speed and frequency

### Modes of operation

#### **Measurement**

Selection of any measurement parameter and test condition

Single level function menu controlled by keyboard and soft keys

Single and repetitive measurements displaying major and minor terms

#### **Deviation**

As measurement mode but relative or percentage deviation from nominal value displayed for major or minor term

#### **Measurement Connections**

4 front panel BNC sockets

### General

#### **Power requirements**

115 V or 230 V AC  $\pm 10\%$  (selectable)

150 VA Max

#### **Mains frequency**

50/60 Hz

#### **Mains fuse rating**

230 V operation - 1A 'T' type

115 V operation – 2A 'T' type

#### **Display**

High contrast black and white LCD module

Resolution 320 x 240 with back lighting visible area

115 x 86 mm

#### **Remote control - optional**

Designed to GPIB (IEEE-488.2) and

SCPI 1992.0

#### **Mechanical**

Height 150 mm (5.9")

Width 440 mm (17.37")

Depth 525 mm (20.5")

Weight 11 kg (24.25 lb)

## Environmental conditions

### Temperature range

Storage -40°C to +70°C  
Operating 0°C to 40°C  
Full Accuracy 15°C to 35°C

### Relative humidity

Up to 80% non-condensing

### Altitude

Up to 2000 m

### Installation category

II in accordance with IEC664

### Pollution degree

2 - mainly non-conductive  
This equipment is intended for indoor use only in a non-explosive and non-corrosive atmosphere

### Safety

Complies with the requirements of EN61010-1

### EMC

Complies with EN61326 for emissions and immunity

## Order codes

### Description

4255 LCR Meter  
(20 Hz to 500 kHz)

4275 LCR Meter  
(20 Hz to 1 MHz)

Both models supplied with:-  
User manual  
2m AC power cable

### Order code

1J4255

1J4275

## Optional accessories for 4255 & 4275

### Description

Overload Protection Unit (25 Joules)  
Kelvin Lead (large jaw)  
Kelvin Lead (fine jaw)  
4 Terminal Lead Set  
BNC-4 Term. Comp. Fixture  
BNC-4 Term. Comp. Fixture (>500 kHz)  
SMD Probe Lead  
SMD Tweezers  
Operating Manual  
Certificate of Calibration with results

### Order code

1J1100  
1EVA40180  
1EVA40100  
1EV1505  
1EV1005  
1EV1006  
1EV1905A  
1EVA40120  
9H (model no)  
1JCALRES



Wayne Kerr has a range of LCR meters including the lower cost 4230 LCR Meter

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