

Easy-to-read LCD display

Extremely fast automatic operation

Displays component value, measurement units and equivalent circuit

All displays appear simultaneously

One or two push-button selection of nine different parameters

Two- or four-wire connection or via optional test attachment

Fast operation, clear display

The PM 6303 automatic RCL meter will rapidly determine the value, electric dimension and equivalent – circuit of passive components to a very high order of accuracy, and over a wide range. The measured value, together with the appropriate unit of measurement and the equivalent circuit-graphics, are easily read on a large 4-digit liquid-crystal display.

Rapid connection

Connection of a component to be tested is effected easily and rapidly, using either a two- or four-wire connector or an optional test attachment. Less than one second after connection, the dominant component's measured value, its effective dimension and its equivalent circuit, will be clearly displayed. For example: when measuring a coil having a Q-factor of 1, both the series inductance and resistance and the equivalent circuit-graphics will be displayed almost instantly. Apart from using the auto mode of the PM 6303, it is possible to select from a maximum of nine differing parameters (D, Q, Rp, Rs, Z, Ls or Lp, Cs or Cp and Cs 2V bias), using only two push-buttons.

Universal capability

Features like these make the PM 6303 an ideal instrument for a very wide range of applications; educational-institutes laboratories specialized service centers, and in general-purpose workshops. Its automatic operation, coupled with a direct digital readout, also makes the PM 6303 a most attractive proposition for use in research, development, and in quality-control; setmakers too, will find the PM 6303 a most useful aid in batch-sampling techniques.

Connection facilities

- 2 sockets for measuring voltage (HI) Drive and Sense connection
- 2 sockets for measuring current (LO) Drive and Sense connection
- 1 socket guard connection

Parameter Selection

- 2 push-buttons for stepping from item to item in the parameter menu.

- 1 push-button to reset to RCL AUTO mode in which the dominant component is measured.

Parameters

- Dominating component R, C or L (autoselection)
- Q
- D
- Rp
- Rs
- Z
- Cp, Lp
- Cs, Ls
- Cp Biased (internally generated DC voltage)

Optional accessories

When making measurements of already mounted components, connection between the PM 6303 and the component to be tested can be difficult. The problem is easily overcome by the use of the 4-wire test cable PM 9541. This consists of a cable fitted at one end with Kelvin clips, the other end fitted with a Kelvin connector which plugs into the front panel socket on the PM 6303.



In addition, and especially useful for testing batches of individual components of all different physical sizes, there is the 4-wire RCL adapter, PM 9542. This is a box-mounted set of 'slide-in' connectors having a similar cable end to PM 9541. Both accessories are illustrated overleaf.

TECHNICAL SPECIFICATION

GENERAL

Display

Large 18 mm, 4-digits LCD

Dimension Indications

– Ω , k Ω , M Ω , pF, nF, μ F, mF, μ H, mH, H, kH

Out of Range Indication

– 4 middle digit segments flashing

Measuring Ranges








– Resistance Rp, Rs, Z 0.000 Ω ...200M Ω
 – Capacitance Cp, Cs 0.0pF...100mF
 – Inductance Lp, Ls 0.0 μ H...32kH
 – Quality Factor Q 0.002...500
 – Dissipation Factor D 0.002...500

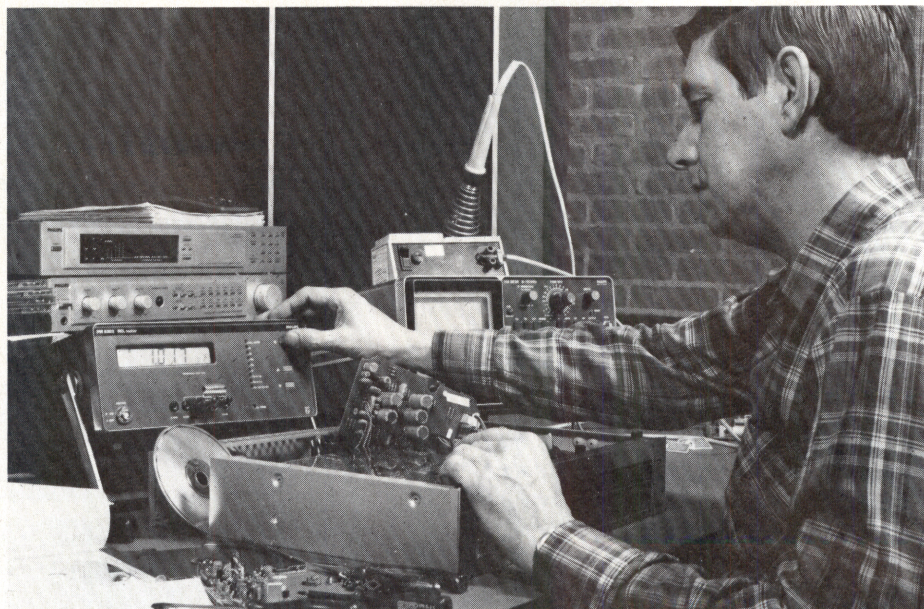
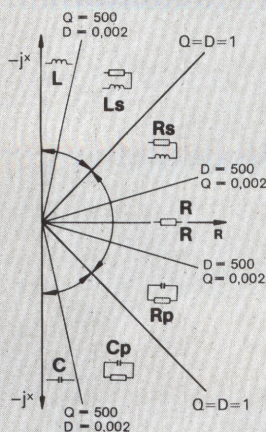
Maximum Resolution per Range

– Resistance 1m Ω
 – Capacitance 0.1pF
 – Inductance 0.1 μ H
 – Quality/Dissipation Factor 0.001

Equivalent circuits

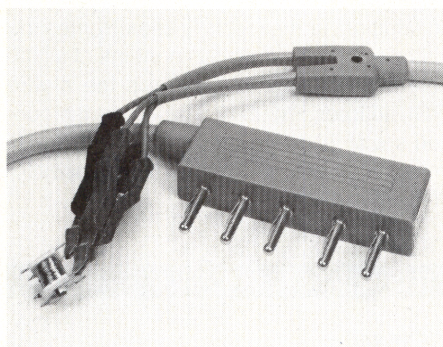
– 7 Equivalent circuits

	$D > 500$	
	$D < 0.002, Q > 500$	
	$Q > 500$, no display of the secondary parameter	
	D or Q Q=D=1	parameter selection
	≤ 500	RCL AUTO, Cp, Rp, D, Z
	≤ 500	Cs, Rs
	≤ 500	RCL AUTO, Ls, Rs, Q, D, Z
	≤ 500	Lp, Rp

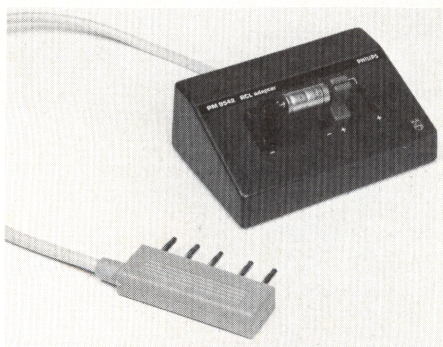


PM 6303 is extremely versatile making it a valuable measurent tool in industry, service workshop or education.

	PM 9541	PM 9542
Performance characteristics:		
DUT-connection	by two Kelvin clips	by Kelvin contacts in the test pods
Short-circuit inductance	0.1 μ H typical $\leq 0.3 \mu$ H max.	$< 0.1 \mu$ H max.
Mechanical specifications:		
Cable length	600mm	600mm
Case dimension	—	50 x 145 x 95mm
Weight	0.2kg	0.6kg



4-wire test cable PM 9541 (optional)



4-wire RCL adapter PM 9542 (optional)

Measuring Accuracy

Basic Error $\pm 0.25\% \pm 1$ digit

Measuring Frequency

1 kHz $\pm 0.025\%$

DUT Stress

≤ 5 mA, ≤ 2 V
(linked to a 2V_{RMS} source with an internal resistance of 400 Ω)

Type of Connectors

- 4 mm sockets
- 2 sockets for measuring voltage (HI)
Drive and Sense connection
- 2 sockets for measuring current (LO)
Drive and Sense connection
- 1 socket guard connection

Measurement update rate

approx. 2 measurements per second

Zero Capacitance Adjustment

Co trim by means of screwdriver adjustment on front panel. Maximum adjustable capacitance: 5pF

POWER REQUIREMENTS

Voltage: 110, 128, 220, 238V $\pm 10\%$
Frequency: 50...100Hz $\pm 5\%$
Power consumption: 13W

ENVIRONMENTAL CAPABILITIES

Ambient Temperatures

Reference Value: $+23^\circ\text{C} \pm 1^\circ\text{C}$
Operation: $+5^\circ\text{C} + 40^\circ\text{C}$
Storage and Transport: $-40^\circ\text{C} \dots + 70^\circ\text{C}$

Dimensions and weight

(wxhxd) 310 x 140 x 310mm
(12.2 x 5.15 x 12.2-in)
4.8kg (10.6lb)

ACCESSORIES SUPPLIED

Two-terminal fixture
Operating manual
Fuse 250mA

ORDERING INFORMATION

PM 6303 Automatic RCL meter

OPTIONAL ACCESSORIES

PM 9541 Four-wire test cable

PM 9542 RCL test adapter

Service manual