

PM 6306

A versatile 1 MHz component measurement system

Technical Data



- Easy to use, at-a-glance display of relevant information
- Test frequencies, from 50 Hz to 1 MHz
- 0.1 % basic accuracy
- RS-232 or IEEE-488 interface
- Variable AC test voltage from 50 mVrms up to 2 Vrms
- Internal (between 0 and 10V) or external bias
- Optional DC test measurement, voltage is variable between 50 mV and 2V
- Contact check to ensure proper connections
- Deviation mode for quick reference

The PM 6306 RCL meter combines excellent component measurement power and versatility with remote programmability. Operation is as simple as ever - just connect the component to the test posts or fixture, and you can instantly read the dominant and secondary values and see the equivalent circuit diagram on the large LCD display. The basic capabilities of this instrument, with its wide range of test frequencies, test voltage levels, IEEE-488 or RS232 interface, and measurement rates make it one of the best RCL meter values in the business. The available options from DC test measurement, component handler interface and Windows® test software, add up to a very powerful component measurement and testing facility - from development lab right through to production line.

The PM 6306 has the test frequencies you need with a wider choice of test frequencies than any other instrument in this class. For testing primary power components such as transformers and filter capacitors, the PM 6306 has 50 and 60 Hz test frequencies together with the 100 and 120 Hz ripple frequencies. In the 100 Hz to 100 kHz range, the PM 6306 provides 100 Hz resolution for precision frequency characterization. For testing small value capacitors, the test frequency of the PM 6306 is also continuously adjustable up to 1 MHz.

Component test voltage levels are variable from 2V for standard component testing right down to only 50 mV to keep sensitive semiconductor junctions below their voltage thresholds. DC bias can be added, either from

the built-in source or from an external source up to 40V DC. Measuring the DC resistance of a component can be done with the optional DC test measurement capability.

The PM 6306 RCL meter is also able to check the component connection by measuring the impedances over the connections. Operation is easy, just press the appropriate key, the connection result will be displayed and you are sure about a proper 4-wire component connection.

With all these built-in capabilities, this Fluke RCL meter is a compact and versatile instrument that you can use wherever it is needed. And with the best measurement versatility and value in its class.

Technical specifications

AC Test mode

Test frequency	50, 60, 100, 120 Hz 200 Hz to 100 kHz (100 Hz steps) 100 kHz to 1 MHz (1 kHz steps)
Test frequency accuracy	0.01%
Test signal levels	50 mV to 2V (10 mV steps) via 100
Basic measurement accuracy	0.1% ± 1 digit (for ≥ 0.25V, " 50 kHz) 0.1% * (f/50 kHz) ± 1 digit (for ≥ 0.25V, > 50 kHz) 0.1% * (0.25V/V _r) ± 1 digit (for < 0.25V, " 50 kHz)

DC bias

Internal	0 to 10V (0.1V steps)
External	0 to 40V

DC Test mode (Optional)

Test signal levels	50 mV to 2V (10 mV steps) via 100
Basic measurement accuracy	0.1% ± 1 digit

Contact check

Pass	< 3
Fail	≥ 3 (with indication of failed connection lead)

Maximum measuring ranges

Impedance/Resistance AC	Z/RAC 0.0000 to 200 M
Resistance DC	RDC 0.0000 to 50 M
Capacitance	C 0.00 pF to 31.8 F
Inductance	L 0.00 μH to 637 kH
Quality factor	Q 0.000 to 1000
Dissipation factor	D 0.000 to 1000
Phase angle	φ -179 to +180 deg
Voltage monitor	VX 0.1 μV to 2.00V
Current monitor	IX 0.005 μA to 10.0 mA

Average function

Function	Exponential averaging in continuous mode
Levels	3 (and off)

Deviation mode

Relative range in respect to reference value	-100% to +100%
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Measuring modes

<u>Normal</u>	
Continuous	2 meas./sec.
Single	Triggered via "TRIG" key, Triggered via handler interface
Test frequency	Triggered via IEEE-488 or RS 232 50, 60, 100, 120 Hz 200 Hz to 100 kHz (100 Hz steps) 100 kHz to 1 MHz (1 kHz steps) DC (optional)
Read-out	Display or via IEEE-488 or RS 232 interface
<u>Fast</u>	
Max. speed	10 meas./sec.
Test frequency	200 Hz to 100 kHz (200 Hz steps) 100 kHz to 1 MHz (1 kHz steps) DC (optional)
Single	Triggered via handler interface Triggered via IEEE-488 or RS-232
Read-out	Via IEEE or RS-232 interface (Display blanked)

Calibration

Calibration interval	1 year
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Environmental conditions

Operating temperature	0..50°C
Storage temperature	-40°C to 70°C
Power requirements	100/120/220/240V (10%)
Line frequency	50/60Hz
Power consumption	44 VA
EMC	According to CE regulation 89/336: Emmission according to EN 55011-1, EN 55011 Immunity according to EN 50082-1, inclusive IEC 801-2,-3,-4
Safety	According to CE-regulation 73/23 EN61010 CAT II, Pollution Degree 2, CSA C22.2 No. 231
Warm-up time	30 minutes

Dimensions and weight

WxHxD	315 x 105 x 405 mm (12.4" x 4.13" x 15.9")
Weight	5.3 kg / 11.7 lb

Ordering Information

Typenumber	IEEE interface	RS-232 interface	DC test	Handler interface
PM 6306/02n	●			
PM 6306/03n		●		
PM 6306/06n	●	●		
PM 6306/07n		●	●	
PM 6306/52n	●	●		
PM 6306/53n		●	●	
PM 6306/56n	●		●	●
PM 6306/57n		●	●	●

Accessories

PM 9540/BAN	4-wire test cable set with Banana plugs
PM 9540/TWE	SMD Tweezers
PM 9541A	4-wire test cable set with Kelvin clips
PM 9542A	Universal test adapter
PM 9542SMD	Test fixture for SMDs (in combination with PM 9542A)
PM 9564	Rack mount kit

Windows® Test Software

SW63W	ComponentView test software
Y8021	Shielded IEEE-488 Cable, 1m
Y8022	Shielded IEEE-488 Cable, 2m
PM 9536/041	RS-232 cable 3 m, 9 pin female / 9 pin female

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