

Voltech Instruments Ltd

Farnell Electronic Components Ltd

Voltech PM100 FEC Part No: 7171238 & Voltech PM300 FEC Part No:7171330
Power Analyser Applications

AC/DC Motors and Motor Drives

- All basic RMS values i.e.: V,I,W,VA,VAR,pf,
- POWER: Real, Apparent, Input,
- Inrush current for motor start up conditions
- Crest Factor (V_{peak}/V_{rms} and I_{peak}/I_{rms})
- Efficiency electrical
- Frequency 50Hz/60Hz
- Harmonic analysis: Volts Amps and Power.
- Total Harmonic Distortion. THD

Power Electronics and Power Conversion

- All basic RMS values
- POWER: Real, Apparent, Input, Output, Fundamental, DC
- Power Factor, both fundamental and total
- Inrush current at switch on loads
- Crest Factor (V_{peak}/V_{rms} and I_{peak}/I_{rms})
- Frequency 50/60Hz
- Efficiency
- Harmonic Analysis: Volts, Amps, Power
- Total Harmonic Distortion

Conformance Testing to IEC 555/1000-3 European Standards.

- Steady State current analysis up to the 40th harmonic
- Peak Condition Analysis
- Pre-Compliance Compatible

Transformer Testing

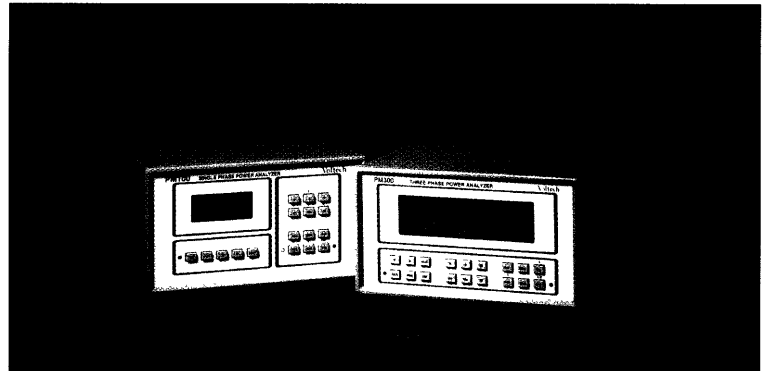
- All basic values
- Inrush current
- RMS measurement for loss analysis
- Harmonics analysis: Volts, Amps and Power
- Crest Factor (V_{peak}/V_{rms} and I_{peak}/I_{rms})

Electronic Lighting Ballast Design and Manufacture

- All basic RMS values
- Input, output and tube power
- Power Factor, both fundamental and total
- Inrush at switch on
- Frequency, fundamental
- Harmonic Analysis: Volts Amps and Power
- Crest Factor (V_{peak}/V_{rms} and I_{peak}/I_{rms})



PM100 and PM300 Power Analyzers



Using the proven technology of the world leading Voltech range, these analyzers allow precision bench-top measurements at the price of a portable meter. By connecting directly to the analyser's 20A rated internal shunts the errors of gain and phase found in external current transformers and transducers are eliminated. For measurements above 20A and a 1000V, a broad range of transformers, shunts and

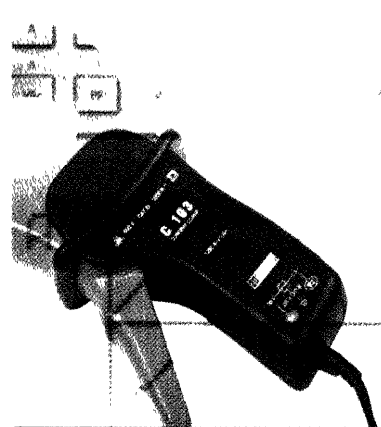
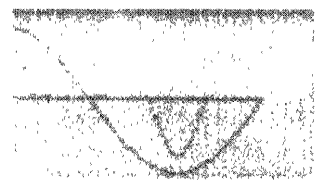
DC coupled transducers can be accommodated.

Ideal for general purpose measurements of Watts, Power Factor, harmonics and Volts and Amps in the design, development and production of electrical and electronic equipment, the PM100 and PM300 are supplied complete with test leads, user manual and certificate of calibration and conformance.

PM100 (Single Phase) and PM300 (Three Phase) Analyzers

- 0.1% Basic Accuracy
- DC to 250kHz bandwidth
- 1000Vpk/20A RMS direct inputs
- Graphics display of waveforms and harmonic bar-charts
- W, V, A, VA, Var, Power Factor, Cos ϕ , Vpk, Apk, Crest Factors and Frequency
- Channel 1, 2, 3, SUM(Σ) and Neutral quantities on the PM300 three-phase analyser
- Harmonics V, A, (incl. Phase) and W to the 50th. Total Harmonic Distortion
- Integrator for W-hr, VA-hr, A-hr, VA-hr, Average and target PF
- Easy to use menu structure available in different languages
- Accepts and scales for external current and voltage transducers. External shunt Inputs for current transducers with a voltage output.

File	Units	RMS Results
V	V	0.111
A	A	7.177
W	W	9.554
VA	VA	6.308
Var	Var	107.58
PF		88.80 m
F	Hz	0.751
V1	V	152.97
V2	V	-217.6 m
V3	V	1.4225
V4	V	2.467
V5	V	0.481 ^o
V6	V	65.67 ^o
V7	V	61.00
V8	V	1.2115K



Interfaces

(Option - one fitted at a time)

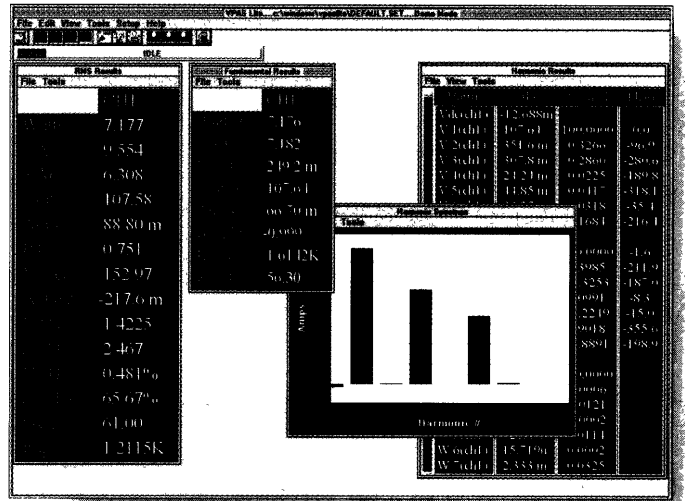
- IEEE488 for high speed control and data capture.
- RS232 and Parallel Printer. The RS232 serial port allows complete command and results handling as IEEE488. The parallel printer port may be connected directly to a standard printer with a parallel interface for printing displayed or selected numeric results.
- Chart Recorder and Alarm Interface. Twelve 0 to 5V DC outputs track any measurement parameter desired. Two free relay contacts can be programmed to toggle at any selected level for alarm or process control purposes. The twelve chart recorder outputs may also be configured as digital alarms.



Chan	Unit	Value	Phase
V 1ch1	107.64	100.0000	0.0
V 2ch1	351.6 m	0.3266	296.9
V 3ch1	307.8 m	0.2800	280.0
V 4ch1	24.24 m	0.0225	-189.8
V 5ch1	14.85 m	0.0117	-318.1
V 6ch1	34.27 m	0.0318	-35.1
V 7ch1	181.31 m	0.1681	-216.1
A 1ch1	66.70 m	100.0000	-1.6
A 2ch1	268.8 m	0.3985	-211.9
A 3ch1	46.24 m	69.3253	-187.0
A 4ch1	66.19 m	0.9991	8.3
A 5ch1	33.50 m	50.2249	-15.0
A 6ch1	601.5 m	0.9018	-355.6
A 7ch1	13.260 m	19.8891	-198.9
W 1ch1	19.115 u	100.0000	
W 2ch1	7.176	0.0000	
W 3ch1	39.75 m	0.0000	
W 4ch1	3879.5 m	0.0121	
W 5ch1	15.588 u	0.0002	
W 6ch1	821.6 m	0.0114	
W 7ch1	15.719 u	0.0002	
W 7ch1	2.333 m	0.0325	

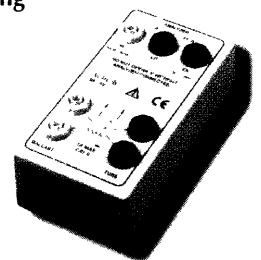
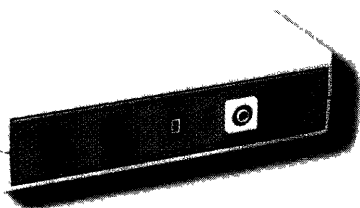
Software

- VPASLite Windows software for control and data handling features quick and easy set-up of parameters to analyse plus display of numeric data and harmonic bar-charts. Data may be exported to standard windows text and spreadsheet applications for further presentation and analysis.



Special Modes

- Amps Inrush, the Peak current at switch on. Continuous fast sampling captures the peak inrush current. See the Voltech PS1000 Inrush Power Switch data sheet.
- Ballast mode for testing the output of electronic lighting ballasts. Reliable measurements of tube current and power using the Voltech Ballast CT.

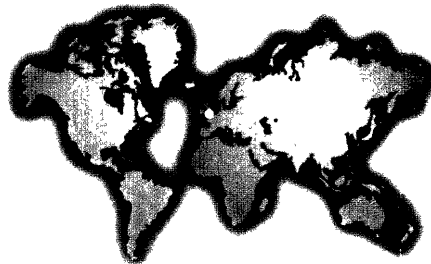


Specification

(23°C ±5°C Valid 1 year from calibration)

Basic Measurements	V, A, W, VA, Var, PF, Apk, Vpk, Acf, Vcf, Frequency
Harmonics	V and A including phase, plus W all to the 50th
Integrator	W-h, VA-h, Var-h, A-h, Average PF, Timer
Inrush	Displays peak current during switch on
Ballast mode	For measurements on electronic lighting ballasts. Ballast CT recommended.
Voltage range	2V rms to 1000Vpk (8 ranges)
Accuracy	±0.1% reading ±0.1% range ±0.1% per kHz ±10mV
overload withstand	1400Vpk for 1 sec
Amps range	20mA rms to 20A rms (200Apk)
Accuracy	±0.1% reading ±0.1% range ±0.2% per kHz ±1mA
overload withstand	60Arms for 1 sec.
W Accuracy	±0.2% reading ±0.2% range ±0.3% per kHz ±5mW
Bandwidth	DC and 5HZ to 250kHz
Safety and EMC	Designed to IEC1010, complies with CE directive.
Line Power Input	Dual range 90-120V, 195-265V. 48 to 65Hz
Interfaces available	IEEE488
(One fitted at a time)	RS232 I/O and Parallel Printer Chart Recorder and Alarms
Dimensions PM100 and 300	219 x123 x281
(w x h x l mm)	Suitable for rack mounting, 3U 1/2 width.

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VPN 86-019/02