

Data sheet

IPM 242

Power Clampmeter 600A AC

FEATURE:

- 10000 Count digital display
- Active Backlit, Large scale display
- Analog Bar graph
- True RMS reading on AC and AC+DC mode
- Torch lightening when clamping
- AC 600 Amps capability
- Auto AC/DC 1000 Volts capability and selection
- Auto Ohms/Continuity/Diode selection
- Power and Power factor Measurement
- Total Harmonics Distortion and Harmonics 1 to 25
- Phase Rotation Indication
- 100K Ohms Resistance capability
- VoltSense (None Contact Voltage)
- Frequency Counter
- Capacitance capability
- °C / °F Temperature Function
- DC A for flame rod testing
- Smart Data Hold
- Peak Hold
- Inrush Current
- Min/Max Hold
- Low Pass Filter
- Auto Power Off
- Up to 37mm dia. (750MCM) Conductor
- 4 feet Drop Proof
- Temp. probe included
- Deluxe Carrying Case
- Convenient Battery Door
- CAT. IV 600V /CAT. III 1000V Safety Standard

SPECIFICATION:(All at 23°C±5°C, ≤80% R.H.)

DC/AC Voltage

DC/AC Voltage		
Function	Range	Accuracy*
DCV	99.99V	± (0.7% + 2dgt)
	999.9V	
ACV	99.99V	± (1.0% + 5dgt) 50 ~ 500Hz
	999.9V	
LPF ACV	99.99V	50 ~ 60Hz ± (1% + 5dgt) >60 ~ 400Hz ± (5% + 5dgt)
	999.9V	

* DCV <1000dgt, add 6 dgt to the accuracy.

ACV <1000dgt, add 3 dgt to the accuracy.

Overload Protection: 1000Vrms

Input Impedance: 3.5MΩ // < 100pF

AC+DC Vrms Accuracy : same as ACV spec.+DCV spec.

AC Current

AC Current		
Function	Range	Accuracy
ACA	99.99A	50 ~ 60Hz ± (1.5% + 5dgt) **
	599.9A	>60 ~ 400Hz ± (2% + 5dgt) **
LPF ACA	0.10A ~ 99.99A	50 ~ 60Hz ± (1.5% + 5dgt) **
	599.9A	>60 ~ 400Hz ± (5% + 5dgt) **

** The measured value <1000dgt, add 5 dgt to the accuracy.

Overload Protection: 600Arms

Peak Hold (Peak MAX / Peak MIN)

Peak Hold : Peak MAX / Peak MIN		
Function	Range	Accuracy
ACV	140.0V	± (3.0% + 15dgt)
	1400V	
ACA	140.0A	± (3.0% + 15dgt)
	850A	

Overload protection : 1000 Vrms,600 Arms

Frequency

Frequency

Function	Range	Accuracy
Frequency	20.00 ~ 99.99Hz	± (0.5% + 3dgt)
	20.0 ~ 999.9Hz	
	0.020 ~ 9.999KHz	

Overload protection : 1000 Vrms,600 Arms

Harmonic Distortion

Total Harmonic Distortion		
Function	Range	Accuracy
ACA /ACV	99.9%	± (3.0% + 10dgt)

Harmonic distortion measurement		
Harmonic order	Range	Accuracy
H01 ~ H12	99.9%	± (5% + 10dgt)
H13 ~ H25		± (10% + 10dgt)

Overload protection : 1000 Vrms,600 Arms

- If ACV<10Vrms or ACA <10Arms, it will display “rdy”.
- If the fundamental frequency out of range 45 ~ 65Hz, it will display “out.F”.

Inrush Current

Inrush Current :		
Function	Range	Accuracy
ACA	99.99A	± (2.5% + 0.2A)
	599.9A	± (2.5% + 5dgt)

Overload protection : 1000 Vrms,600 Arms

Accuracy defined for :

Sine wave, ACA ≥ 10Arms, Freq. 50/60Hz

- Integration time about 100m sec

Active Power (AC)

Active Power (AC)		
Function	Range	Accuracy
ACW	9.999 kW**	A,error×V,reading+
	99.99 kW	V,error×A,reading

	599.9KW	
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** The measured value<1.000kW, add 10 dgt to the accuracy.

Overload protection : 1000 Vrms,600 Arms

Accuracy defined for :

ACW : Sine wave , ACV \geq 10 Vrms, ACA \geq 5 Arms

Freq. 50~60Hz, PF=1.00

Power Factor

Power Factor		
Function	Range	Accuracy*
PF	-1.00 ~ 0.00 ~1.00	$\pm 3^\circ \pm 1 \text{dgt}$

* ACA<100A, add $\pm 2^\circ$ to the accuracy

Overload protection : 1000 Vrms,600 Arms

Resistance & Continuity & Diode

Resistance & Continuity & Diode		
Function	Range	Accuracy
Resistance	999.9 Ω	$\pm (1.0\% + 5 \text{dgt})$
	9.999 k Ω	$\pm (1.0\% + 3 \text{dgt})$
	99.99 k Ω	
Continuity	999.9 Ω	$\pm (1.0\% + 5 \text{dgt})$
Diode	0.40~ 0.80V	$\pm 0.1 \text{V}$

Overload protection : 1000Vrms

Max. Test Current : Approx. 0.5mA.

Continuity check : <30 Ω Beep On.

>100 Ω Beep OFF.

Continuity Indicator : 2 KHz Tone Buzzer

Continuity response time : < 100ms.

Capacitance

Capacitance		
Function	Range	Accuracy
Capacitance	3.999 μF	$\pm (1.9\% + 8 \text{dgt})$
	39.99 μF	
	399.9 μF	
	3999 μF	

Overload protection : 1000 Vrms

Temperature

Temperature		
Function	Range	Accuracy
°C	-50 °C ~ 99.9 °C	± (1% + 2°C)
	100 °C ~ 399.9 °C	± (1% + 1°C)
	400 °C ~ 1000 °C	
°F	-58 °F ~ 211.9 °F	± (1% + 4°F)
	212.0 °F ~ 751.9 °F	± (1% + 2°F)
	752 °F ~ 1832 °F	

Overload protection : 1000 Vrms

DC µA

DC µA		
Function	Range	Accuracy
DCµA	999.9 µADC	± (1.7% + 2dgt)*

*<1000dgt, add 3 dgt to the accuracy.

Overload protection : 1000Vrms

General

Sampling Rate:	3 times/sec
Overload Indication:	“OL” or “-OL”
Low Battery Indication:	
Auto Power Off:	Approx. 15 minutes after last operation
Operating Temperature:	0 °C~ 10 °C 10 °C ~ 30 °C (≤80% RH) 30 °C ~ 40 °C (≤75% RH) 40 °C ~ 50 °C (≅45%RH)
Storage Temperature:	-10 to 50 °C for current, -20 to 60 °C for other function, 0 to 80% RH (batteries not fitted).
Temperature Coefficient:	0.2 x (Specified accuracy) / °C, < 18°C, > 28°C .
Safety:	IEC 61010-1: CAT.III 600V, CAT.II 1000V.
Power Requirement:	9V Alkaline type 1604A battery
Battery Life:	ALKALINE 9V 50 hours (without Backlight).
Size:	87.5mm(W) x 242mm(L) x 50.5mm(D)
Weight:	approx. 435g (with battery)
Accessories:	Battery (installed), Test Leads, User Manual, Temperature Probe, Carrying case.