

# Data sheet

## IPM 245

### Power Clampmeter 1000A AC/DC

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#### 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
- Auto AC/DC 1000 Amps capability and selection
- 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
- Smart Data Hold
- Peak Hold
- Inrush Current
- DCA Auto-Zeroing Key
- Min/Max Hold
- Low Pass Filter
- Auto Power Off
- Up to 42mm dia. (1000MCM) Conductor
- Bus bar size 62mm x 12mm
- 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/DC Current**

AC/DC Current		
Function	Range	Accuracy
DCA	99.99A	± (1.5% + 0.2A)
	999.9A	± (1.5% + 5dgt) **
ACA	0.10A ~ 99.99A	50 ~ 60Hz ± (1.5% + 5dgt) **
	999.9A	>60 ~ 400Hz ± (2% + 5dgt) **
LPF ACA	0.10A ~ 99.99A	50 ~ 60Hz ± (1.5% + 5dgt) **
	999.9A	>60 ~ 400Hz ± (5% + 5dgt) **

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

**Overload Protection:** 1000Arms

**AC+DC Arms Accuracy :** Same as ACA spec + DCA spec.

**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)
	1400A	

**Overload protection :** 1000 Vrms,1000 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,1000 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,1000 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)
	999.9A	± (2.5% + 5dgt)

Overload protection : 1000 Vrms,1000 Arms

Accuracy defined for :

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

- Integration time about 100m sec

**Active Power (AC/DC)**

Active Power (AC/DC)		
Function	Range	Accuracy
ACW / DCW	9.999 kW**	A,error×V,reading+ V,error×A,reading
	99.99 kW	
	999.9KW	

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

**Overload protection :** 1000 Vrms,1000 Arms

**Accuracy defined for :**

ACW : Sine wave , ACV ≥ 10 Vrms, ACA ≥ 5 Arms

Freq. 50~60Hz, PF=1.00

### Power Factor

Power Factor		
Function	Range	Accuracy*
PF	-1.00 ~ 0.00 ~1.00	±3°±1dgt

\* ACA<100A, add ±2° to the accuracy

**Overload protection :** 1000 Vrms,1000 Arms

### Resistance & Continuity & Diode

Resistance & Continuity & Diode		
Function	Range	Accuracy
Resistance	999.9 Ω	± (1.0% + 5dgt)
	9.999 kΩ	± (1.0% + 3dgt)
	99.99 kΩ	
Continuity	999.9 Ω	± (1.0% + 5dgt)
Diode	0.40~ 0.80V	± 0.1V

**Overload protection :** 1000Vrms

**Max. Test Current :** Approx. 0.5mA.

**Continuity check :** <30Ω Beep On.

>100Ω Beep OFF.

**Continuity Indicator :** 2 KHz Tone Buzzer

**Continuity response time :** < 100ms.

### Capacitance

Capacitance		
Function	Range	Accuracy
Capacitance	3.999 μF	± (1.9% + 8dgt)

	39.99 $\mu$ F	
	399.9 $\mu$ F	
	3999 $\mu$ F	

Overload protection : 1000 Vrms

## Temperature

Temperature		
Function	Range	Accuracy
°C	-50 °C ~ 99.9 °C	$\pm (1\% + 2^\circ\text{C})$
	100 °C ~ 399.9 °C	$\pm (1\% + 1^\circ\text{C})$
	400 °C ~ 1000 °C	
°F	-58 °F ~ 211.9 °F	$\pm (1\% + 4^\circ\text{F})$
	212.0 °F ~ 751.9 °F	$\pm (1\% + 2^\circ\text{F})$
	752 °F ~ 1832 °F	

Overload protection : 1000 Vrms

## General

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