

## FEATURES

- 10000 Count digital display
- Active Backlit, Large-scale display
- VoltSense (None Contact Voltage)
- Analogue Bar graph
- True RMS reading on AC and AC+DC mode
- Torch lightening when clamping
- Auto AC-DC 600 Amps capability and selection
- AC Current via Flexible Current Probe
- Auto AC 1000 V capability and selection
- Auto Ohms/Continuity/Diode selection
- 100 K Ohms Resistance capability
- Continuity Beeper
- Frequency Counter
- Power and Power factor measurement
- Total Harmonics distortion and Harmonics 1 to 25
- Capacitance capability
- Inrush Current
- DCA Auto-Zeroing Key
- Peak Hold
- MIN/MAX HOLD
- Smart Data Hold
- Phase rotation indication
- Low pass Filter
- Auto Power Off

# RS PRO Clamp Meter - IPM243F Multifunction Clamp Meter

RS Stock No.: 1233257



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

## Product Description

### RS PRO IPM 243F Power Clamp Meter

From the trusted RS PRO brand, the IPM 243F Power clamp meter 1000 A AC-DC is a high performing solution for power and current measurement. It is ideal for extending the AC current measuring range of ISO-TECH and RS PRO clamp meters.

It functions as a multimeter and analyzer that can measure current and power, and has a CAT III and CAT IV safety rating.

Battery-powered for maximum portability, and with a large backlit screen, this power clamp meter is ideal for on-the-go applications in almost any environment.

It is also supplied in a carry case to keep the clampmeter safe and secure during transit.

## General Specifications

<b>Model Number</b>	IPM243F
<b>Clamp Meter Type</b>	Multifunction Clamp
<b>Functions Measured</b>	AC Current, AC Voltage, Capacitance, Continuity, DC Current, DC Voltage, Diode Test, Frequency, Harmonic, Power Factor, Resistance, Total Harmonic Distortion, Wattage
<b>Display Type</b>	LCD
<b>Number of Display Digits</b>	10000 count digital display
<b>Sampling Rate</b>	3 times/sec
<b>Overload Protection</b>	1000Vrms
<b>True RMS</b>	Yes
<b>Data Hold</b>	Yes
<b>Auto power OFF</b>	Yes Approx. 15 minutes after last operation
<b>Temperature coefficient</b>	0.2 x (Specified accuracy) / °C, < 18°C, > 28°C .
<b>Applications</b>	ideal for on-the-go applications in almost any environment.

## Measurement

Parameter	Range	Accuracy	Resolution
<b>Absolute Current (AC)</b>	600A ac	±(1.5% rdg + 5dgts)	100mA
<b>Absolute Current (DC)</b>	600A dc	±(1.5% rdg + 5dgts)	100mA
<b>Absolute Voltage (AC)</b>	1000V ac	±(1% rdg + 5dgts)	100mV
<b>Absolute Voltage (DC)</b>	1000V dc	±(0.7% rdg + 2dgts)	100mV
<b>Absolute Resistance</b>	100kΩ	± 1% + 3 Digits	10mΩ

### Electrical Specifications

<b>Power Source</b>	Battery
<b>Battery Type</b>	IEC 6LF22, NEDA 1604A, 9V
<b>Battery Life</b>	100 h
<b>Safety Category Level and Voltage</b>	CAT III 1000 V, CAT IV 600 V

### Mechanical Specifications

<b>Jaw Capacity (Busbars)</b>	37mm
<b>Maximum Conductor Size</b>	37 (Dia.)mm
<b>Dimensions</b>	87.5 x 50.5 x 242mm
<b>Width</b>	50.5mm
<b>Length</b>	87.5mm
<b>Height</b>	242mm
<b>Weight</b>	435g

### Operation Environment Specifications

<b>Altitude</b>	2000m (6562 ft)
<b>Relative Humidity</b>	0 °C ~ 10 °C 10 °C ~ 30 °C (≅ ≤80% RH) 30 °C ~ 40 °C (≅ 75% RH) 40 °C ~ 50 °C (≅ 45%RH)
<b>Operating Temperature Range</b>	0 °C ~ 10 °C 10 °C ~ 30 °C (≅ ≤80% RH) 30 °C ~ 40 °C (≅ 75% RH) 40 °C ~ 50 °C (≅ 45%RH)
<b>Storage Temperature Range</b>	-10 to 50 °C

### Approvals

<b>Compliance/Certifications</b>	IEC 61010-1
<b>Declarations</b>	RoHS Certificate of Compliance

### Accessories Includes

Item Name	Qty
Button cells (installed)	1
User Manual	1
Carrying case	1

### Similar Products

Stock No.	RS#1233228	RS#1233230	RS#1233252	RS#1233231
<b>Model Number</b>	ICM134	ICM20	ICM30R	ICM33II
<b>Clamp Meter Type</b>	Multifunction Clamp	Current Clamp	Multifunction Clamp	Multifunction Clamp
<b>Functions Measured</b>	AC Current, AC Voltage, Capacitance, Continuity, DC Current, DC Voltage, Diode Test, Resistance, Temperature	AC Current, Continuity, Diode Test		
<b>Display Type</b>	LCD	LCD	LCD	LCD
<b>Sampling Rate</b>	1.5 times/sec	2.5 times/sec	2.5 times/sec	4 times/sec
<b>Absolute Current (AC)</b>	600A ac	400A ac	300A ac	600A ac
<b>Absolute Current (DC)</b>	4mA dc		300A dc	
<b>Absolute Voltage (AC)</b>	750V ac		600V ac	600V ac
<b>Absolute Voltage (DC)</b>	1000V dc		600V dc	
<b>Temperature coefficient</b>	0.2×(spec. Acc'y)/°C 28°C	0° C ~ 30° C (≅ 80% RH) 30° C ~ 40° C (≅ 75% RH) 40° C ~ 50° C (≅ 45%RH)	0.2×(spec. Acc'y)/°C <18°C, >28°C	0° C ~30° C (≅ 80% R.H.), 30° C ~40° C (≅ 75% R.H.), 40° C ~50° C (≅ 45% R.H.)

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

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

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

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

**Overload protection:** 1000V<sub>rms</sub>

**Input Impedance:** 3.5MΩ // <100pF

**AC Conversion Type:** AC Conversions are ac-coupled, true RMS responding, calibrated to the RMS value of a sine wave input. Accuracies are given for sine wave at full scale and non-sine wave below half scale. For non-sine wave (50/60Hz) add the following Crest Factor corrections:

For Crest Factor of 1.4 to 2.0, add 1.0% to accuracy.

For Crest Factor of 2.0 to 2.5, add 2.5% to accuracy.

For Crest Factor of 2.5 to 3.0, add 4.0% to accuracy.

CF 3 @ 460V, 280A

2 @ 690V, 420A

**AC+DC V<sub>rms</sub> Accuracy:** same as ACV spec. +DCV spec.

**Current:**

Function	Range	Accuracy
DCA	99.99A	± (1.5% + 0.2A)
	599.9A	± (1.5% + 5dgt) **
ACA	0.10A ~ 99.99A	50 ~ 60Hz ± (1.5% + 5dgt) **
	599.9A	>60 ~ 400Hz ± (2% + 5dgt) **
HFR	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:** 600A<sub>rms</sub>

**Position Error:** ±1% of reading.

AC Conversion Type and additional accuracy is same as AC Voltage.

**AC+DC A<sub>rms</sub> Accuracy:** Same as ACA spec + DCA spec.

– DCA affected by the temperature and the residual magnetism. Press HOLD key > 2sec to compensate it.

**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 V<sub>rms</sub>, 600 Arms

**Accuracy defined for:**

Sine wave, ACV>5V<sub>rms</sub> / ACA≥5Arms, Freq.50~400Hz.

– Only suitable for the repetitive events.

**Frequency:**

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

**Overload protection:** 1000 V<sub>rms</sub>, 600 A<sub>rms</sub>

**Sensitivity:**

10~100V<sub>rms</sub> for AC 100V range

10~100Arms for AC 100A range (>400Hz Unspecified)

100~1000V<sub>rms</sub> for AC 1000V range

100~600/1000Arms for AC 600A/1000A range (>400Hz Unspecified)

- Reading will be 0.0 for signals below 10.0 Hz.

**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 V<sub>rms</sub>, 600 A<sub>rms</sub>

– If ACV<10V<sub>rms</sub> or ACA<10Arms, it will display "rdy".

– If the fundamental frequency out of range 45 ~ 65Hz, it will display "out.F".

**Inrush Current:**

Function	Range	Accuracy
ACA	99.99A	$\pm (2.5\% + 0.2A)$
	599.9A	$\pm (2.5\% + 5dgt)$

**Overload protection:** 1000  $V_{rms}$ , 600  $A_{rms}$

**Accuracy defined for:**

Sine wave,  $ACA \geq 10A_{rms}$ , Freq. 50/60Hz

- Integration time about 100ms

**Active Power: Watt (DC/AC)**

Function	Range	Accuracy
ACW / DCW	9.999 kW**	$A_{error} \times V_{reading} + V_{error} \times A_{reading}$
	99.99 kW	
	599.9KW	

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

**Overload protection:** 1000  $V_{rms}$ , 600  $A_{rms}$

**Accuracy defined for:**

ACW: Sine wave ,  $ACV \geq 10 V_{rms}$ ,  $ACA \geq 5 A_{rms}$  Freq. 50~60Hz, PF=1.00

DCW: DCV  $\geq 10V$  , DCA  $\geq 5 A$

**Power Factor:**

Function	Range	Accuracy*
PF	1.00	$\pm 5dgt$

**Overload protection:** 1000  $V_{rms}$ , 600  $A_{rms}$

**Resistance & Continuity & Diode:**

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

**Overload protection:** 1000 $V_{rms}$

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

**Maximum Open Circuit Voltage for  $\Omega$ , Continuity:** Approximate 3V

**Maximum Open Circuit Voltage for diode:** Approximate  $\pm 1.8V$

**Continuity Threshold :** < 30 $\Omega$  Beep ON, > 100 $\Omega$  Beep OFF

**Continuity Indicator:** 2 KHz Tone Buzzer

**Continuity response time:** < 100ms

**Capacitance:**

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

**Overload protection :** 1000  $V_{\text{rms}}$

**Flex AC Current (voltage input):**

Function	Range(1mV/1A)	Accuracy*
ACA	300.0A/3000A	1%+5dgt (50~500Hz) **
HFR ACA	300.0A/3000A	1%+5dgt(50~60Hz) ** 5%+5dgt(61~400Hz) **
Peak	420.0A/4200A	3%+80dgt(50~500Hz)
INRUSH	300.0A/3000A	2%+10dgt(50/60Hz)
Frequency	99.99Hz/999.9Hz	0.5%+3dgt(<500Hz)
THD	99.9%	5%+10dgt
Harm H01-H12	99.9%	5%+10dgt

\*The accuracy of ICA 10T/18T is not included.

\*\*ACA <300dgt, add 3 dgt to the accuracy.

**Overload protection:** 1000 $V_{\text{rms}}$

**Trigger level of INRUSH:** 1% of current range