

# Data sheet

## IPM 138N

### Power Clampmeter 1000A AC/DC

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#### Feature:

- 6000 Count digital display
- Backlit, Large scale display
- True RMS reading on AC+DC mode
- Auto AC/DC 600 Amps capability and selection
- Auto AC/DC 1000 Volts capability and selection
- Auto Ohms/Continuity/Diode selection
- Power 600K Watt capability
- 20K Ohms Resistance capability
- Continuity Beeper
- Frequency Counter
- Power and Power factor measurement
- Total Harmonics distortion measurement
- °C / °F Temperature Function
- Inrush Current measurement
- DCA Auto-Zeroing Key
- Peak Hold
- MIN/MAX Function
- Display Hold
- Phase rotation indication
- Auto Power Off
- 4 feet Drop Proof
- Deluxe Carrying Case
- Convenient Battery Door
- CAT III 600V / CAT II 1000V Safety Standard

#### Specifications:

- Accuracy is  $\pm$  (% reading + number of digits) at  $23^{\circ}\text{C} \pm 5^{\circ}\text{C} < 80\% \text{ R.H.}$



**ISO-TECH**

**Voltage:**

Function	Range	Accuracy*
DCV	60.00V 600.0V 1000V	$\pm(0.7\% + 5\text{dgt})$
ACV	60.00V 600.0V 1000V	$\pm(1.0\% + 5\text{dgt})$ 45 ~ 500Hz

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

**Input Impedance:** 3.5MΩ // <100pF

**AC Conversion Type:** AC/DC Coupled True RMS responding

**AC+DC V<sub>rms</sub> Accuracy:** same as ACV spec. +1% rdg. + 5dgt

**Current:**

Function	Range	Accuracy
DCA	600.0A	$\pm (1.5\% + 5\text{dgt})$
ACA	600.0A	$\pm (1.5\% + 5\text{dgt})$ 45 ~ 65Hz $\pm(2.5\% + 5\text{dgt})$ 66 Hz ~ 400 Hz

**Overload protection:** 600A<sub>rms</sub>

**Position Error:**  $\pm 1\%$  of reading.

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

**AC+DC A<sub>rms</sub> Accuracy:** Same as ACA spec +1.5% rdg. +5dgt.

—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	85.0V 1400V	$\pm (3.0\% + 15\text{dgt})$
ACA	85.0A 850A	$\pm (3.0\% + 15\text{dgt})$ (corrected DCA Zero)

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

**Accuracy defined for:**

Sine wave, ACV>5V<sub>rms</sub> / ACA $\geq$ 5A<sub>rms</sub>, Freq.50~400Hz.

—Only suitable for the repetitive events.

**Frequency:**

Function	Range	Accuracy
Frequency	20.0 ~ 399.99Hz 400 ~ 4000Hz	$\pm (0.1\% + 5\text{dgt})$

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

**Sensitivity:**

5V<sub>rms</sub> for ACV, 5A<sub>rms</sub> for ACA(>400Hz Unspecified)

- Reading will be 0.0 for signals below 10.0 Hz.

**Total Harmonic Distortion:**

Function	Range	Accuracy
ACA /ACV	100.0%	$\pm (3.0\% + 10\text{dgt})$

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

- 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:**

Function	Range	Accuracy
ACA	10.0 ~59.9A 60.0 ~ 600.0A	2.5% $\pm$ 0.2A 2.5% $\pm$ 5dgt

**Overload protection:** 600  $A_{\text{rms}}$

**Accuracy defined for:**

- Sine wave, ACA  $\geq$  10 $A_{\text{rms}}$ , Freq. 50/60Hz
- Integration time about 100ms

**Active Power: Watt**

Function	Range	Accuracy
W~	4.000 kW 40.00 kW 400.0 kW 600 kW	Add the errors of Voltage and current.

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

**Accuracy defined for:**

- Sine wave , ACV  $\geq$  10  $V_{\text{rms}}$ , ACA  $\geq$  5 Arms Freq. 45~65Hz, PF=1.00
- The reading of Active Power will be fluctuated apparently due to the current fluctuation in 4.000 kW range.

**Power Factor: PF = Watt  $\div$  (V $\times$ A)**

Function	Range	Accuracy
PF	-1.00 ~ 0.00 ~1.00	$\pm 3^\circ$

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

**Resistance & Continuity & Diode:**

Function	Range	Accuracy
Resistance	600.0 $\Omega$ 6.000 k $\Omega$ 20.00 k $\Omega$	$\pm (1.0\% + 5\text{dgt})$
Continuity	600.0 $\Omega$	$\pm (1.0\% + 5\text{dgt})$
Diode	2.00V	$\pm(1.5\% + 5\text{dgt})$ for 0.4V ~ 0.8V

**Overload protection:** 600  $V_{\text{rms}}$

**Maximum Open Circuit Voltage for  $\Omega$ , Continuity:** Approximate 2.4V

**Maximum Open Circuit Voltage for diode:** Approximate 3V

**Continuity check:**

Internal sounds activates if the resistance of the circuit under test is less than 30 $\Omega$  approximately.

**Max. display count:** 5400 counts.


**Temperature:**

Function	Range	Accuracy
°C	-50.0 °C ~ 399.9 °C	± (1% + 3°C)
	400 °C ~ 1000 °C	
°F	-58.0 °F ~ 751.9 °F	± (1% + 6°F)
	752 °F ~ 1832 °F	

**Overload protection:** 600 V<sub>rms</sub>

—The above specification is assumed at the ambient temperature stability within ±1°C. The meter needs 1 hour for stability for ambient temperature change more than ± 1°C.

**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. 10 minutes after last operation
<b>Operating Temperature:</b>	0 °C ~ 30 °C (≤80% RH) 30 °C ~ 40 °C (≤75% RH) 40 °C ~ 50 °C (≤45%RH)
<b>Storage Temperature:</b>	-10°C to 50°C, 0% RH 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 IV 600V, CAT III 1000V
<b>Maximum Conductor Size</b>	35mm
<b>Bus Bar Size</b>	40mm x 15mm
<b>Power Requirement:</b>	9V Battery x 1
<b>Battery Life: (Alkaline)</b>	50 hours (without Backlight)
<b>Size:</b>	87.5mm(W) x 257mm(L) x 50.5mm(D)
<b>Weight:</b>	Approx. 380g (with battery)
<b>Accessories:</b>	Battery (installed), Carrying case, Temperature socket, K-type sensor, User Manual