

**GENERAL SPECIFICATIONS :**

- **Sensing:** AC & AC+DC True RMS
- **Jaw Opening & Conductor Diameter:** 51mm MAX
- **Altitude:** Operating below 2000m
- **Operating Temperature:** -10°C to 50°C
- **Relative Humidity:** Maximum relative humidity 80% for temperature up to 31°C decreasing linearly to 50% relative humidity at 50°C
- **Storage Temperature:** -20°C to 60°C, < 80% R.H. (with battery removed)
- **Temperature Coefficient:** nominal 0.15 x (specified accuracy)/ °C @ (-10°C -- 18°C or 28°C -- 50°C), or otherwise specified
- **Low Battery:** Below approx. 2.5V
- **APO Timing:** Idle for 30 minutes
- **APO Consumption:** 25uA typical
- **Power Supply:** 1.5V AA Size (IEC LR6) battery X 2
- **Power Consumption:** Typical 33mA for Current & Power functions, and 22mA for others
- **Dimension:** Approx. 258(L) X 94(W) X 44(H)mm
- **Weight:** Approx. 394 gm
- **Accessories :** Test leads (pair), Battery, User's manual & Carrying case.



Preliminary Data

**SAFETY :**

- **Safety:** Double insulation per IEC/UL/EN/BSEN 61010-1 Ed. 3.1, IEC/UL/EN/BSEN 61010-2-032 Ed. 4.0, IEC/UL/EN/BSEN 61010-031 Ed. 2.0 and the corresponding CAN/CSA-C22.2 regulations to Measurement Categories III 1000V AC & DC and Category IV 600V AC & DC
- **Transient Protection:** 8.0kV (1.2/50µs surge)
- **Overload Protection:** Current via Clamp-on Jaws: 1000A rms at <400Hz  
Voltage via terminals: 1100V rms  
Other functions via terminals: 1000V rms
- **E.M.C.:** Meets EN61326-1:2013
- **Pollution degree:** 2

**ELECTRICAL SPECIFICATION KM 099**

Accuracy is ±(% reading digits + number of digits) or otherwise specified, at 23°C ± 5°C & less than 75% relative humidity. Maximum Crest Factor < 1.56 : 1 at full scale & < 3.12 : 1 at half scale, and with frequency components within the specified frequency bandwidth for non-sinusoidal waveforms.

**DC VOLTAGE**

RANGE	Accuracy
60.00V, 999.9	0.5% + 5d

NMRR: >70dB  
CMRR: >110dB; @ DC to 60Hz, Rs=1kΩ  
Input Impedance: 2MΩ, 50pF nominal

**AC+DC VOLTAGE**

RANGE	Accuracy		
	@ DC, 50Hz / 60Hz	@ 45Hz ~ 400Hz	@ 500Hz ~ 3kHz
999.9V	0.5%+5d	2.5%+5d	3.5%+5d

CMRR: >85dB @ DC to 60Hz, Rs=1kΩ  
Input Impedance: 2MΩ, 50pF nominal

**AC VOLTAGE (with Low-Pass Filter)**

RANGE	Accuracy		
	@ 50Hz / 60Hz	@ 10Hz ~ 200Hz	@ 200Hz ~ 400Hz
60.00V <sup>1)</sup> , 999.9V	0.5%+5d	4.0%+5d	12%+5d <sup>2)</sup>

CMRR: >85dB @ DC to 60Hz, Rs=1kΩ  
Input Impedance: 2MΩ, 50pF nominal  
<sup>1)</sup>Specified accuracy adds 40d @ <20V  
<sup>2)</sup>Accuracy linearly decreases from 4%+5d @ 200Hz to 12%+5d @ 400Hz

**Total Harmonic Distortion-THD% of ACV<sup>3)</sup> or DC+ACV**

Total Harmonic Distortion	RANGE	Accuracy	
ACV, DC+ACV	60.00V <sup>1)</sup> , 999.9V	@ 50Hz / 60Hz	0.5%+5d
		@ 45Hz ~ 500Hz	2.5%+5d
		@ 500Hz ~ 3kHz	3.5%+5d
THD% <sup>2) 3) 4)</sup>	2.0% ~ 600.0%	1.0%+5d	

CMRR: >85dB @ DC to 60Hz, Rs=1kΩ  
Input Impedance: 2MΩ, 50pF nominal  
<sup>1)</sup>Range available only for ACV & specified accuracy adds 40d @ <20V  
<sup>2)</sup>Total Harmonic Distortion-THD% is defined as: (Total Harmonic RMS / Fundamental RMS) x 100%  
<sup>3)</sup>Fundamental frequency range: 45Hz ~ 70Hz  
<sup>4)</sup>Accuracy specified @ Total RMS ≥ 70V  
<sup>5)</sup>While Harmonic or Distortion Factor measurement is activated, the Low Pass Filter of ACV turns off to avoid affecting the Harmonic magnitude sensed.

Note: All Specification are Subject to change without prior notice.

**Total Distortion Factor-DF% of ACV<sup>5)</sup> or DC+ACV**

Total Distortion Factor	RANGE	Accuracy	
ACV, DC+ACV	60.00V <sup>1)</sup> , 999.9V	@ 50Hz / 60Hz	0.5%/±5d
		@ 45Hz~500Hz	2.5%/±5d
		@ 500Hz ~3kHz	3.5%/±5d
DF% <sup>2)3)4)</sup>	2.0% ~ 100.0%	1.0%/±5d	

**Individual Harmonic orders of ACV<sup>7)</sup> or DC+ACV**

Parameter	RANGE	Accuracy <sup>1)2)3)</sup>
<b>Individual Harmonic order: Hdc, H01 ~ H10</b>		
Vrms	999.9V	2.0%/±5d <sup>4)</sup>
THD% <sup>5)</sup>	0.0% ~ 600.0%	15d
DF% <sup>6)</sup>	0.0% ~ 100.0%	15d
<b>Individual Harmonic order: H10 ~ H25</b>		
Vrms	999.9V	3.0%/±5d <sup>4)</sup>
THD% <sup>5)</sup>	0.0% ~ 600.0%	20d
DF% <sup>6)</sup>	0.0% ~ 100.0%	20d

**AmpTip™ Clamp-on DCA**

RANGE	Accuracy <sup>1)2)3)</sup>
40.00A	2.0%±5d

**AmpTip™ Clamp-on ACA**

RANGE	Accuracy <sup>2)</sup>
50Hz / 60Hz	
40.00A	1.5% + 5d
45Hz ~ 400Hz	
40.00A	2.0% + 5d

**AmpTip™ Clamp-on AC+DCA**

RANGE	Accuracy <sup>2)3)</sup>
DC	
40.00A	2.0% + 5d
50Hz / 60Hz	
40.00A	1.5% + 5d
45Hz ~ 400Hz	
40.00A	2.0% ±5d

**OHM**

RANGE	Accuracy
600.0Ω, 6.00kΩ	1.0%±5d

**Regular Clamp-on DCA**

RANGE	Accuracy <sup>2)</sup>
999.9A	2.0% ±5d

**Regular Clamp-on AC+DCA**

RANGE	Accuracy <sup>2)</sup>
DC	
999.9A	2.0% + 5d
50Hz / 60Hz	
999.9A	1.5% + 5d
45Hz ~ 400Hz	
999.9A	2.0% + 5d

**Regular Clamp-on ACA**

RANGE	Accuracy
50Hz / 60Hz	
999.9A	2.0% + 5d
45Hz ~ 400Hz	
999.9A	2.5% + 5d

**Total Harmonic Distortion-THD%<sup>1)</sup> of Regular Clamp-on ACA or DC+ACA**

RANGE	Accuracy <sup>3)</sup>
2.0% ~ 600.0	1.0% ±5d

**Total Distortion Factor-DF%<sup>1)</sup> of Regular Clamp-on ACA or DC+ACA**

RANGE	Accuracy <sup>3)</sup>
2.0% ~ 100.0	1.0% ±5d

**Individual Harmonic Orders Of Regular Clamp-on ACA Or DC+ACA**

Parameter	RANGE	Accuracy <sup>1)2)3)4)5)</sup>
<b>Individual Harmonic order: Hdc, H01 ~ H10</b>		
Current RMS	999.9A	2.0%±5d <sup>6)</sup>
THD% <sup>7)</sup>	0.0% ~ 600.0%	+/- 15d
DF% <sup>8)</sup>	0.0% ~ 100.0%	+/- 15d
<b>Individual Harmonic order: H10 ~ H25</b>		
Current RMS	999.9A	5.0%±5d <sup>6)</sup>
THD% <sup>7)</sup>	0.0% ~ 600.0%	+/- 20d
DF% <sup>8)</sup>	0.0% ~ 100.0%	+/- 20d

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