

Ziegler

Redefine Innovative Metering

Technical Datasheet

ZCM 4AE/10AE

AC ECONOMIC SERIES CLAMP METER

Z

www.ziegler-instrument.com

ZCM 4AE/10AE

DIGITAL MULTIMETER

ZCM 4AE/10AE measures Important parameters like AC current & voltage, DC voltage, Capacitance, Ohm & continuity, Frequency and duty cycle and temperature measurement. It offers distinctive features which helps user to take easy and reliable measurement, in remote areas of applications.

Product Features

- AC Current measurement upto 400A for ZCM 4AE & 1000 A for ZCM 10AE
- Large jaw opening of 41mm for ZCM 4AE & 51 mm for ZCM 10AE
- For user safety, Trigger is located at back side, as it increases distance from load
- Unique rotatable jaw facility to take measurements in difficult to access places
- Double mould casing for firm grip
- Auto Power OFF, Data hold & Min-Max function
- Null zero correction for resistance & Low Batt indication
- Voltage measurement upto 1000V AC/DC
- CAT II 1000V & CAT III 600V protection
- Non-Contact Voltage detection function >75V AC 50/60Hz
- Temperature measurement facility
- Relative measurement facility for zero correction
- Diode and continuity testing, generates beep sound if resistance is less than 75 Ω



Fact Sheet

Display	
Display	7 segment
Character height	13mm
Number of Places	3 (¾)places, 3999 steps
Overflow display	“OL” is displayed.
Polarity display	“-” sign is displayed when positive pole at “⊥”
Measuring rate	3 measurements/sec
Applicable Standards	
EMC Immunity	IEC613261:2012, TableA.1 IEC 61000-4-2 8 KV atmosphere discharge, 4 KV contact discharge IEC 61000-4-3 : 3 V/m
Note	Short-term measured value deviation may occur during electromagnetic interface thus reducing the specified operating quality
Safety	IEC 61010-1-2010
IP for water & dust	IEC 60529
Pollution degree	2
Installation category:	CATIII 600 V, CATII 1000 V
High Voltage Test	4.4 kV AC,50 Hz for 1 min between housing and input

ZCM 4AE/10AE

DIGITAL MULTIMETER

Technical Specifications

Meas. Function	Measuring Range	Resolution	Input Impedance	Intrinsic error of digital display at reference conditions + (...% of rdg + ...digits)	Overload capacity ¹⁾	
			V(AC) / V(DC)		Overload value	Overload duration
V	400.0mV	100µV	>20GΩ	0.75+2	1050V(DC)	Continuous
	4.000V	1mV	11MΩ			
	40.00V	10mV	10MΩ			
	400.0V	100mV	10MΩ			
	1000V	1V	10MΩ			
V	400.0mV	100mV	11MΩ	1.5+5 (>400 digits)	1050V(AC) rms	Continuous
	4.000V	1mV	11MΩ	1+5		
	40.00V	10mV	10MΩ	1+10		
	400.0V	100mV	10MΩ			
	1000V	1V	10MΩ			
A	40.00A	10mA	Open-circuit voltage	1.5 % of range +5 digits	480 A	Continuous
	Clamp meter 400A	400.0A				
A	400.0A	100mA		1.5 % of range +5 digits	1100A	Continuous
	Clamp meter 1000A	1000A				
Ω	400.0Ω	100mΩ	Approx.0.45V	0.8+5	500V DC/AC rms	10 min
	4.000kΩ	1Ω		0.8+2		
	40.00kΩ	10Ω		1+5		
	400.0kΩ	100Ω		2+5		
	4.000MΩ	1kΩ				
	40.00MΩ	10kΩ				
	400.0Ω	100mΩ		Acoustic signal for ...<75Ω(approx.)		
	1.000V	1mV	Approx. 1V	2+10		
F	5.000nF	1pF	Fmin	3+40 ²⁾	500V DC/AC rms	10 min
	50.00nF	10pF		2+10 ²⁾		
	500.0nF	100pF		0.5+3		
	5.000µF	1nF		1+2		
	50.00µF	10nF		1.5+2		
	200.0µF	100nF		5+10 ⁴⁾		
Hz ³⁾	10.000Hz	0.001Hz	1Hz	0.2+2	<1kHz: 1000V <10kHz: 400V <500kHz: 40V except 400mV	Continuous
	100.00Hz	0.01Hz	1Hz			
	1.0000kHz	0.1Hz	1Hz			
	10.000kHz	1Hz	1Hz			
	100.00kHz	10Hz	1Hz			
	500.0kHz	100Hz	1Hz			
%	2.0...98.0%	0.1%	---	10Hz...1kHz: ±5D 1kHz...10kHz : ±5D/kHz		
°C	0...+1300 °C	1 °C	Sensor K-type NiCr-Ni	2+3 ⁵⁾	500V DC/AC rms	10 min

1. At 0° + 40 °C
2. With zero adjustment, using REL key
3. Indication of frequency measurement expanded to 9999 Digits
4. Time required for measurement approximately 60 secs
5. Without sensor

ZCM 4AE/10AE

DIGITAL MULTIMETER

Mechanical design	
Protection	Instruments: IP 50 Connector sockets: IP 20
Dimensions	90mm (W) x 270mm (L) x 70mm (H)
Weight	Approx. 0.6 Kg with battery
Reference conditions for accuracy	
Reference Temperature	23°C ± 2K
Relative Humidity	45%...55% RH
Waveform of measured quantity	Sinusoidal
Input frequency	50 or 60 Hz ±2%
Battery Voltage	3 V ± 0.1 V
Environmental conditions	
Operating temperature	-10 to +50°C
Storage temperature	- 25 to +70°C
Relative humidity	45.....75% non-condensing
Terminal Protection	IP 50 for housing and IP20 for terminals.
Battery	
Battery Voltage	1.5 x 2V AAA size batteries
Battery type	Zinc carbon cell or Alkaline manganese cell as per IEC 6LR 03
Battery Life	With zinc carbon cell: Approx. 200hrs With alkaline manganese cell: Approx. 400hrs

Influence Quantities

Influence Variable	Influence Range	Meas. Magnitude/ Measuring Range	Influence Effect
Temperature	0°C...+21°C And +25°C...+50°C	V \equiv	0.1 X intrinsic error/K
		V \sim	
		A \sim	
		Ω	
		F	
		Hz	
		Duty(%) °C	


Influence of frequency on	Influence Range (max. resolution)	Frequency	Intrinsic Error at Ref.
VAC	4V, 40V, 400V	20Hz...<50Hz > 60Hz...1kHz	2 + 3
	400 mV,1000V	20Hz...<50Hz >60Hz...500Hz	2 + 3

ZCM 4AE/10AE

DIGITAL MULTIMETER

Influence Variable	Influence Range	Measurement magnitude/meas. range	Influence Effect
Relative Humidity	55....75% Rh	V \approx A \sim Ω F Hz (%) °C	1 X intrinsic error

Battery voltage influence:

(Without  display) - all ranges except capacitance: ± 8 Digits

- For capacitance ± 60 D at battery voltage 2.6V

Standard Scope of Supply

1 Clamp Meter

1 Cable set

1 Copy Operating Instructions

2 Battery 1.5V

Ziegler

Redefine Innovative Metering

Ziegler Instrumentation UK Ltd.

Central Buildings, Woodland close old woods Trading Estate, Torquay Devon, TQ2 7BB, United Kingdom
+441803 616 800 | info@ziegler-instrument.com | ziegler-instrument.com