

## Measure wide range of electrical parameters with the CMP-40X series Clamp Meters

### Measurement functions

- AC current measurement up to 400 A
- DC current measurement up to 400 A (**CMP-401 only**)
- DC and AC voltage measurement up to 600 V
- resistance measurement
- continuity test with acoustic signalling (beeper) for resistance below 50  $\Omega$
- temperature measurement (Fahrenheit or Celsius)
- frequency measurement
- capacitance measurement (**CMP-401 only**)
- diode test

### Overview

Sonel CMP-401 and CMP-400 Clamp Meters are designed to hard work in arduous measuring conditions. A special housing, covered with an elastomer coating, provides protection against drops and mechanical damages. CMP-401 and CMP-400 are the first choice for those who expect the device to be reliable at work in industrial and residential environments.

### Designed for specialists

- industrial and commercial electricians
- plant maintenance
- facility maintenance
- electrical contractors
- utility technicians
- HVACR specialists



CAT III

600 V

CAT IV

300 V

IP40





## Special features

- non-contact neon lamp
- safe, insulated measurement clamp
- reinforced, impact resistant enclosure
- automatic selection of ranges with the capability of switching over to the manual selection mode
- HOLD function, allowing for freezing the result on the display
- large and easy to read LCD display with backlight
- relative measurement function
- indication of range overflow



## Facilitating the measurements

The AC-16 adapter expands the application of the clamp meter. With the ratio x1 and x10, 230 V AC of voltage and max 16 A of current, the adapter can be applied with any type of clamp meter.

### DC current measurement (CMP-401 only)

Range	Resolution	Accuracy
4.00 A	0.01 A	$\pm(2.5\% \text{ m.v.} + 5 \text{ digits})$
400.0 A	0.1 A	$\pm(2.8\% \text{ m.v.} + 5 \text{ digits})$

### AC current measurement

Range	Resolution	Accuracy	
		CMP-400	CMP-401
4.000 A	0.001 A	$\pm(2.5\% \text{ m.v.} + 12 \text{ digits})$	-
40.00 A	0.01 A	$\pm(2.8\% \text{ m.v.} + 8 \text{ digits})$	$\pm(2.5\% \text{ m.v.} + 8 \text{ digits})$
400.0 A	0.1 A	$\pm(2.8\% \text{ m.v.} + 8 \text{ digits})$	$\pm(2.8\% \text{ m.v.} + 5 \text{ digits})$

• frequency range: 50...60 Hz

### DC voltage measurement

Range	Resolution	Accuracy
400.00 mV	0.01 mV	$\pm(0.8\% \text{ m.v.} + 2 \text{ digits})$
4.000 V	0.001 V	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
40.00 V	0.01 V	
400.0 V	0.1 V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$
600 V	1 V	

### AC voltage measurement

Range	Resolution	Accuracy	
		CMP-400	CMP-401
400.00 mV	0.01 mV	$\pm(1.5\% \text{ m.v.} + 30 \text{ digits})$	$\pm(1.5\% \text{ m.v.} + 30 \text{ digits})$
4.000 V	0.001 V	$\pm(1.8\% \text{ m.v.} + 8 \text{ digits})$	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
40.00 V	0.01 V		
400.0 V	0.1 V	$\pm(2.5\% \text{ m.v.} + 8 \text{ digits})$	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$
600 V	1 V		

• frequency range: 50...60 Hz

### Resistance measurement

Range	Resolution	Accuracy
100.0 $\Omega$	0.1 $\Omega$	$\pm(1.0\% \text{ m.v.} + 4 \text{ digits})$
4.000 k $\Omega$	0.001 k $\Omega$	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$
40.00 k $\Omega$	0.01 k $\Omega$	
400.0 k $\Omega$	0.1 k $\Omega$	$\pm(2.5\% \text{ m.v.} + 3 \text{ digits})$
4.000 M $\Omega$	0.001 M $\Omega$	
40.00 M $\Omega$	0.01 M $\Omega$	$\pm(3.5\% \text{ m.v.} + 5 \text{ digits})$

### Frequency measurement

Range	Accuracy
10 Hz...10 kHz	$\pm(1.5\% \text{ m.v.} + 2 \text{ digits})$

### Temperature

Range	Resolution	Accuracy *
-20...+760°C	1°C	$\pm(3\% \text{ m.v.} + 5^\circ\text{C})$
-4...+1400°F	1°F	$\pm(3\% \text{ m.v.} + 9^\circ\text{F})$

\* probe accuracy not included

### Capacitance measurement (CMP-401 only)

Range	Resolution	Accuracy
40.00 nF	0.01 nF	$\pm(4\% \text{ m.v.} + 20 \text{ digits})$
400.0 nF	0.1 nF	$\pm(3\% \text{ m.v.} + 5 \text{ digits})$
4.000 $\mu\text{F}$	0.001 $\mu\text{F}$	
40.00 $\mu\text{F}$	0.01 $\mu\text{F}$	$\pm(4\% \text{ m.v.} + 10 \text{ digits})$
100.0 $\mu\text{F}$	0.1 $\mu\text{F}$	

Abbreviation „m.v.“ used in the specification of measurement means a measured value.

## Technical specification

power supply of the meter	9 V battery, type 6LR61
display	reading 4000, backlit LCD, 3¾ digits
continuity test	threshold 50 Ω, measurement current <0.5 mA
diode test	typical measurement current 0.3 mA typical voltage of open circuit 1.5 V DC
indication of low battery charge	'BAT' symbol is displayed
indication of range overflow	'OL' symbol is displayed
frequency of measurements	2 readings per second, nominal
temperature sensor	K-type temperature probe
interior clamp diameter	opening 1.2" (30 mm)
input impedance	10 MΩ (V DC and V AC)
AC bandwidth	50...400 Hz (A AC and V AC)
auto-off timeout	approx. 30 minutes
dimensions	197 mm x 70 mm x 40 mm
weight	183 g
compliance with standards	EN 61010-1, EN 61010-2-032

## Nominal operating conditions

operating temperature range	5...40°C
operating humidity	max. 80% up to 31°C decreasing linearly to 50% at 40°C
storage temperature	-20...+60°C at humidity <80%
operating altitude	max. 2000 m

## Standard accessories



test lead with probe  
for CMM/CMP (set)

WAPRZCMP1



Temperature  
measurement

type K probe  
WASONTEMK

adapter  
WAADATEMK



Standard carrying  
case



6LR61 9 V battery

## Optional accessories



AC-16 line splitter  
(faciliates current  
measurements)

WAADAAC16



S1 carrying case

WAFUTS1



Temperature  
measurement

probe (K-type, bayonet)  
WASONTEMP

probe (K-type, metal)  
WASONTEMK2



Set of test leads

CAT IV, S  
WAPRZCMM1

CAT IV, M  
WAPRZCMM2



Crocodile clip mini,  
1 kV 10 A (set)

WAKROKPL10MINI