

P/N: CM46

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<http://www.flir.com>

Customer support

<http://support.flir.com>

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General description	
Part number	CM46
Part name	Professional 400A TRMS AC/DC Clamp Meter + Type K
<p>The FLIR CM46 Clamp Meter is a professional and affordable true RMS meter designed for commercial and residential electricians. The FLIR CM46 offers both AC and DC measurement to meet your unique needs. The meter is equipped with a bright backlit display for ease of use inside electrical panels. Accu-Tip technology delivers amperage measurements on smaller-gauged wires more accurately—to a 10th of a digit. It offers MAX/MIN/AVG recording, frequency measurement, and electrical field detection to help you determine voltage presence and relative strength of the field. Made with an over-molded, easy-to-grip design, the FLIR CM46 clamp meter is durable enough to withstand a 2 m drop, and the slim form factor is convenient to carry in your toolbag anywhere you go.</p>	
<p>Professional performance at an affordable price:</p> <ul style="list-style-type: none"> Operates at -10 to 50°C (14–122°F). Built to accept up to a 30 mm conductor. True RMS measurements. 	
<p>Features: DC voltage, AC voltage (digital low-pass filter/VFD), AC + DC voltage (digital low-pass filter/VFD), clamp-on AC current, Accu-Tip clamp-on AC current, clamp-On DC current, Accu-Tip clamp-on DC current, frequency, resistance, capacitance, diode, DC μA, temperature.</p>	

Electrical measurement	
True RMS voltage and current	Yes
Auto-ranging	Yes
DC V range	600.0 V
DC V accuracy	$\pm 1.0\%$ + 5 digits
AC V range with digital low-pass filter	600.0 V
AC V range with digital low-pass filter: accuracy	$\pm 1.0\%$ + 5 digits (50–60 Hz)
DC + AC V with digital low-pass filter	600.0 V
DC + AC V with digital low-pass filter: accuracy	$\pm 1.2\%$ + 7 digits (50–60 Hz)
Peak RMS inrush current	
Response	80 ms to >90%
Resistance range	600.0 Ω , 6.000 k Ω , 60.00 k Ω
Resistance	$\pm 1.0\%$ + 5 digits
Continuity	600.0 Ω $\pm 1.0\%$ + 5 digits

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Electrical measurement	
Diode	2.000 V ± 1.5% + 5 digits
Capacitance	200.0 μF, 2500 μF ± 2.0% + 4 digits ¹
DC μA	200.0 μA, 2000 μA
DC μA accuracy (burden voltage)	±1.0% + 5 digits (3.5 mV/μA)
Temperature	
Range ² , accuracy ³	-40.0 to 99.9°C, ±1.0% + 1°C
Range ⁴ , accuracy ³	100-400°C, ±1.0% + 1°C
Range ² , accuracy ³	-40 to 99.9°F, ±1.0% + 2°F
Range ² , accuracy ⁵	100-752°F, ±1.0% + 2°F
Low-current Accu-Tip clamp-on AC A	
Range (50-60 Hz)	60.00 A
Accuracy ⁶⁷⁸⁹ (50-60 Hz)	±1.5% + 5 digits
Low-current Accu-Tip clamp-on DC A	
Range	60.00 A
Accuracy ⁶⁷¹⁰⁹ (50-60 Hz)	±2.0% + 5 digits
Low-current Accu-Tip clamp-on DC A + AC A	
Range (50-60 Hz)	60.00 A
Accuracy ⁶⁷⁸⁹ (50-60 Hz)	±2.0% + 7 digits
Standard clamp-on AC A	
Range (50-60 Hz)	60.00 A, 400.0mA
Accuracy 1, 2, 3 (50-60 Hz)	±1.8% + 5 digits
Range (100-400 Hz)	60.00 A, 400.0 A
Accuracy ⁶¹¹¹² (100-400 Hz)	±2.0% + 5 digits

1. Accuracy specified for film capacitors or better.
2. Supplied thermocouple is rated for -20 to 250°C (-4 to 482°F) only, and therefore not rated for the entire specified temperature range of the meter.
3. K-type thermocouple range and accuracy not included. Accuracies assume the meter interior has the same temperature as the ambient temperature for correct junction voltage compensation. Allow adequate time for stabilization for significant changes of ambient temperature. Up to an hour, for changes >5°C (9°F), may be required.
4. Supplied thermocouple is rated for -20 to 250°C (-4 to 482°F) only, and therefore not rated for the entire specified temperature range of the meter.
5. K-type thermocouple range and accuracy not included. Accuracies assume the meter interior has the same temperature as the ambient temperature for correct junction voltage compensation. Allow adequate time for stabilization for significant changes of ambient temperature. Up to an hour, for changes 5°C (9°F), may be required.
6. Induced error from adjacent current-carrying conductor <0.01 A/A.
7. Specified with relative/DC zero mode applied to offset non-zero residual readings.
8. Add 10 digits to the specified accuracy at <4 A.
9. Position the conductor at the center of the Accu-Tip area. Conductor size must not exceed 8.8 mm.
10. Add 10 digits to the specified accuracy @ < 4A.
11. Add 10 digits to the specified accuracy at <9 A.
12. Add 3% to the accuracy specification for a crest factor of between 1.0 and 2.0. If the crest factor is >2.0, the reading may not meet specified tolerances.

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Standard clamp-on DC A	
Range	60.00 A
Accuracy ¹³¹⁴¹⁵	±2.0% + 5 digits
Standard clamp-on DC A + AC A	
Range (50–100 Hz)	60.00 A, 400.0 A
Accuracy ¹³¹⁴¹⁶ (50–100 Hz)	± (2.2% + 7 digits)
Range (100–400 Hz)	60.00 A, 400.0A
Accuracy ¹³¹⁴¹⁶ (100–400 Hz)	±2.7% + 7 digits
Line level frequency	
Function (5.00–999.9 Hz)	600 V
Sensitivity ¹⁷ (Sine RMS) (5.00–999.9 Hz)	50 V
Function (50.00–400.0 Hz)	60 A (low-current mode)
Sensitivity ¹⁷ (Sine RMS) (50.00–400.0 Hz)	40 A
Function (50.00–400.0 Hz)	60 A, 400 A
Sensitivity ¹⁷ (Sine RMS) (50.00–400.0 Hz)	40 A
Accuracy	1% + 5 digits
Non-contact EF voltage detection	
Typical voltage (tolerance: 10–36 V)	20 V
Bar graph indication	-
Typical voltage (tolerance: 23–83 V)	55 V
Bar graph indication	--
Typical Voltage (tolerance: 59–165 V)	110 V
Bar graph indication	---
Typical voltage (tolerance: 124–330 V)	220 V
Bar graph indication	----
Typical voltage (tolerance: 250–600 V)	440 V
Bar graph indication	-----
Indication	Number of bar graph segments & audible beep tones proportional to the detected field strength
Detection frequency	50/60 Hz
Detector	Located Inside the top of the stationary jaw
Additional measurement functions	Data hold, MIN/MAX/AVG, backlit LCD, 80 ms peak RMS inrush current mode, relative/DC zero
General	
Jaw opening	30 mm (1.2 in.) maximum
Display counts	6000
Measuring rate	5 times per second nominal
Calibration cycle	1 year calibration cycle recommended

13. Induced error from adjacent current-carrying conductor <0.01 A/A.

14. Specified with relative/DC zero mode applied to offset non-zero residual readings.

15. Add 10 digits to the specified accuracy at <9 A.

16. Add 10 digits to the specified accuracy @ < 9A.

17. DC bias, if any, not more than 50% of sine RMS.

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General	
Auto power off	32 minutes of inactivity
Power source	2 x 1.5 V AAA alkaline batteries
Environmental Data	
Operational temperature	-10 to +50°C (14–122°F) (non-condensing) 10–30°C (50–86°F) (≤80% relative humidity (RH)) 30–40°C (86–104°F) (≤75% RH) 40–50°C (104–122°F) (≤45% RH)
Storage temperature	-20 to +60°C (4–140°F)
Relative humidity	80% maximum RH up to 31°C (88°F) decreasing linearly to 50% maximum RH at 50°C (122°F)
Temperature coefficient	0.15 x (specified accuracy)/°C, @ 0°C (32°F) to 18°C (64.4°F) or 28°C (82.4°F) to 50°C (122°F), or as otherwise specified
Operating altitude	2000 m (6562 ft.) maximum
Pollution degree	2
Physical data	
Dimensions (L x W x H)	223 mm x 76 mm x 37 mm (8.8 in. x 3.0 in. x 1.5 in.)
Weight:	243 g (8.3 oz.)
Warranty	
Warranty	https://www.flir.com/testwarranty
Certifications	
Certifications	CE, cULus
Safety category rating	EN 61010-1 CAT IV—300 V, CAT III—600 V, EN 61010-2-032
Shipping information	
Packaging type	Retail color box
Packaging contents	CM4x, 2 x AAA batteries, premium CAT IV silicone test leads, type-K thermocouple, FLIR carrying pouch, quick start guide, warranty registration card
Packaging weight	0.8 kg (1.8 lb.)
Packaging dimensions (H x W x L)	33 cm x 14 cm x 10.7 cm (13 in. x 5.5 in. x 4.3 in.)
Master carton weight	10.6 kg (23.4 lb.)
Master carton dimensions (H x W x L)	62.3 cm x 29.3 cm x 36.1 cm (24.6 in. x 11.6 in. x 14.3 in.)
Master carton quantity	12
UPC	793950370469
EAN	0793950370469
Country of origin	Taiwan
Tariff code	9030.31.0000
Technical support	
Website	http://support.flir.com

Supplies & accessories:

- TA03-KIT; NiMH Rechargeable Battery Kit



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- TA15; Universal Soft Sided Case
- TA55; AC Current Line splitter
- TA70; CAT IV Insulated Alligator Probes
- TA80; CAT IV Silicone Test Leads