



# FLIR CM85: 1000 Amp Power Clamp Meter with VFD Mode and METERLiNK™

## P/N: CM85

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### Website

<http://www.flir.com>

### Customer support

<http://support.flir.com>

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Part Number	CM85
Part Name	1000 Amp Power Clamp Meter with VFD Mode and METERLiNK™
<p>The FLIR CM85 is an industrial-grade High Capacity Power Clamp Meter with the advanced power analysis and VFD filtering functions desired by electrical troubleshooters. It's Versatility is engineered to Help You Manage Power Analysis &amp; VFD Troubleshooting for full scale equipment. The CM85 incorporates numerous features, VFD, Harmonics, Inrush Current and Phase Rotation – that are designed to enable users to accurately analyze voltage, current and frequency going into and out of complex machinery. The rugged CM85 also has an extremely bright dual LED worklight to illuminate work areas.</p>	
<ul style="list-style-type: none"> <li>• 1,000 Amp clamp capacity for large electrical equipment</li> <li>• VFD Mode provides superior accuracy for working on Variable Frequency Drive controlled equipment</li> <li>• Advanced power efficiency and harmonics measurements for system level performance analysis</li> <li>• Inrush mode captures fast AC Current spikes during appliance start-up</li> <li>• Phase Rotation testing ensures the motor and power source are aligned</li> <li>• True RMS DMM functionality features reliable performance and expansive ranges</li> <li>• Powerful worklights are bright enough to serve as a primary worklight</li> <li>• FLIR tools mobile connects the FLIR CM85 to your compatible smart phone and tablet via Bluetooth</li> <li>• METERLiNK™ technology wirelessly integrates electrical readings on your infrared image with FLIR Thermal Cameras See <a href="http://flir.com/test">flir.com/test</a> for more info</li> </ul>	
Measurement Ranges and Accuracy	
Voltage DC	99.99 V, ±(0.7% + 2 dgt) 999.9 V, ±(0.7% + 2 dgt)
Voltage AC	0.05–99.99 V, ±(1.0% + 5 dgt) 999.9 V, 50–500 Hz
VFD, ACV	0.05–99.99 V, 50–60 Hz ± (1% + 5 dgt) 999.9 V, 50–60 Hz ± (1% + 5 dgt)
Current DC	99.99 A, ±(2% + 0.5 A) 999.9 A, ±(2% + 5 dgt)*
Current AC	0.10–99.99 A, 50–60 Hz ± (2% + 5 dgt)* 999.9 A, >60–400 Hz ± (2.5% + 5 dgt)*
VFD, ACA	0.10–99.99 A, 50–60 Hz ± (2% + 5 dgt)* 999.9 A, 50–60 Hz ± (2% + 5 dgt)*



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<b>Measurement Ranges and Accuracy</b>	
Peak Hold ACV	140.0 V, $\pm(3.0\% + 15 \text{ dgt})$ 1400 V, $\pm(3.0\% + 15 \text{ dgt})$
Peak Hold ACA	140.0 A, $\pm(3.5\% + 15 \text{ dgt})$ 1400 A, $\pm(3.5\% + 15 \text{ dgt})$
Frequency	20.00–99.99 Hz, $\pm(0.5\% + 3 \text{ dgt})$ 20.0–999.9 Hz, $\pm(0.5\% + 3 \text{ dgt})$ 0.020–9.999 kHz, $\pm(0.5\% + 3 \text{ dgt})$
Total harmonic distortion ACA/ACV	99.9%, $\pm(3.0\% + 10 \text{ dgt})$
Harmonic distortion H01–H12	99.9%, $\pm(5\% + 10 \text{ dgt})$
Harmonic distortion H13–H25	99.9%, $\pm(10\% + 10 \text{ dgt})$
Inrush current ACA	99.99 A, $\pm(3\% + 0.3 \text{ A})$ 999.9 A, $\pm(3\% + 5 \text{ dgt})^*$
Watts DC	9.999 kW (10 V, 5 A min), $\pm(3\% + 0.05 \text{ kW})$ 99.99 kW (10 V, 5 A min), $\pm(3\% + 0.5 \text{ kW})$ 999.9 kW (10 V, 5 A min), $\pm(3\% + 10 \text{ dgt})$
Watts AC	9.999 kW (10 V, 5 A min), $\pm(3\% + 10 \text{ dgt})$ 99.99 kW (10 V, 5 A min), $\pm(3\% + 10 \text{ dgt})$ 999.9 kW (10 V, 5 A min), $\pm(3\% + 10 \text{ dgt})$
Power factor	–1.00 to 0.00 to +1.00, $\pm 3^\circ \pm 1 \text{ dgt}$
Resistance	999.9 $\Omega$ , $\pm(1.0\% + 5 \text{ dgt})$ 9.999 k $\Omega$ , $\pm(1.0\% + 3 \text{ dgt})$ 99.99 k $\Omega$ , $\pm(1.0\% + 3 \text{ dgt})$
Continuity	999.9 $\Omega$ , $\pm(1.0\% + 5 \text{ dgt})$
Diode	0.40–0.80 V, $\pm 0.1 \text{ V}$
Capacitance	3.999 $\mu\text{F}$ , $\pm(1.9\% + 8 \text{ dgt})$ 39.99 $\mu\text{F}$ , $\pm(1.9\% + 8 \text{ dgt})$ 399.9 $\mu\text{F}$ , $\pm(1.9\% + 8 \text{ dgt})$ 3.999 mF, $\pm(1.9\% + 8 \text{ dgt})$
Measuring rate:	3 times per second
<b>Meter Data</b>	
Jaw Opening	45 mm (1.77 in.).
Bluetooth Range Max	10 m (32 ft.) maximum.
Category Rating	CAT IV-600 V, CAT III-1000 V
Data Recording	N/A
Warranty	<a href="https://www.flir.com/testwarranty">https://www.flir.com/testwarranty</a>
Calibration cycle:	Once per year
<b>Certifications</b>	
Certifications	UL, CE, FCC Class B
Complies with Safety Standards:	IEC 61010-1 CAT IV-600 V, CAT III-1000 V, IEC 61010-2-033.



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<b>Power System</b>	
Power requirements:	6 × 1.5 V AAA alkaline batteries.
Battery life:	50 hours with alkaline batteries (backlight, work light, and Bluetooth are off).
Auto power off:	Approx. 30 minutes.
<b>Environmental Data</b>	
Operating ambient temperatures and relative humidity:	0 to 10oC (32 to 50 oF)(non-condensing) 10 to 30 oC (50 to 86 oF) (≤ 80% RH) 30 to 40 oC (86 to 104 oF) (≤ 75% RH) 40 to 50 oC (104 to 122 oF) (≤ 45%RH)
Storage temperature and relative humidity:	-10 to 50 oC (14 to 122 oF). 0-80% RH (batteries not fitted).
Temperature coefficient:	0.2 × (specified accuracy)/oC, <18 oC, >28 oC.
Operating altitude:	2000 m (6562')
Pollution degree:	2
EMC:	EN 61326-1
Shock vibration:	Random vibration per MIL-PRF-28800f Class 2 (5-55 Hz, 3g maximum)
<b>Meter Physical Data</b>	
Weight:	0.59 kg (1.29 lb.), including batteries.
Dimensions (H × W × L):	49 mm × 100 mm × 262 mm (1.9" × 3.9" × 10.3").
Material	Polycarbonate + acrylonitrile butadiene styrene (PC-ABS) Thermoplastic elastomer (TPE)
Color	Grey, Black
<b>Shipping Information</b>	
Packaging, type	Color box with view of product in clamshell
Packaging, Contents:	<ul style="list-style-type: none"> <li>• CM85 FLIR meter</li> <li>• TA80 CAT IV silicon test leads</li> <li>• 6 × AAA Energizer batteries</li> <li>• User manual (English), CD (translations)</li> </ul>
Packaging weight	1.02 kg (2.25 lb.)
Packaging dimensions (H × W × L)	32 cm × 14 cm × 11 cm (12.6" × 5.5" × 4.3")
Carton weight	13.6 kg (30 lb)
Carton dimensions (H × W × L)	13-7/8 × 11-1/2 × 24-1/8"
Carton Quantity	12
EAN-13	0793950370858
UPC-12	793950370858
Country of Origin	Taiwan
Tariff Code	9030310000
<b>Technical support</b>	
Website	<a href="http://support.flir.com">http://support.flir.com</a>

### Supplies & accessories:

- TA03-KIT; NiMH Rechargeable Battery Kit
- TA11; Protective case for CM7x and CM8x Series
- TA15; Universal Soft Sided Case



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- TA55; AC Current Line splitter
- TA70; CAT IV Insulated Alligator Probes
- TA80; CAT IV Silicone Test Leads