

## P/N: DM166

### Revision

45664

### Last modified

2017-10-05 22:12 UTC+1

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### Website

<http://www.flir.com>

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Part number	DM166
Part name	Thermal Imaging TRMS Multimeter with IGM
<p>The FLIR DM166 is FLIR's most affordable multimeter with built-in thermal imaging to date—a must-have tool for commercial electricians and automation, electronics, and HVAC technicians. Featuring Infrared Guided Measurement (IGM) powered by an 80 × 60 FLIR thermal imager, the FLIR DM166 visually guides you to the precise location of temperature anomalies and potential problems fast, safely, and efficiently. The feature-packed multimeter is an ideal tool for troubleshooting and diagnosing complex issues in both high and low-voltage applications.</p>	
<p>Troubleshoot faster:</p> <ul style="list-style-type: none"> <li>• One tool gets the job done.</li> <li>• Equipped with IGM to quickly scan for overheating components.</li> <li>• Broad DMM test functions to troubleshoot and diagnose the fault.</li> <li>• The unique combination of onboard thermal imaging and traditional DMM test functions makes troubleshooting easier.</li> </ul>	
<p>Work safer:</p> <ul style="list-style-type: none"> <li>• Identify energized and potentially faulty equipment from a safe distance.</li> <li>• Non-contact temperature measurement.</li> <li>• Integrated non-contact voltage detection.</li> <li>• CAT III—600 V, CAT IV—300 V safety ratings.</li> </ul>	
<p>Diagnose problems more efficiently and effectively:</p> <ul style="list-style-type: none"> <li>• Rich feature set covers both high- and low-voltage applications.</li> <li>• 600 V AC/DC voltage measurements and 10 A AC/DC current measurements.</li> <li>• Variable-frequency drive (VFD) measurement function.</li> <li>• Measures resistance up to 60 MΩ, frequency up to 50 kHz, capacitance up to 10 000 μF, and continuity/diode.</li> </ul>	

Thermal imaging	
Detector type	FLIR Lepton; micro-bolometer focal plane array (FPA)
Infrared (IR) imaging resolution (V × H)	80 × 60 pixels
IR imaging field of view (V × H)	50° × 38°
IR imaging spectral response	8–14 μm
Thermal sensitivity	150 mK (0.15°C)
IR image capture frequency	9 Hz
IR image color palettes	Rainbow, Iron, Gray scale
Laser pointer type	Class I (red)
Laser pointer power	<0.4 mW
IR temperature measurement range	–10 to 150°C (14–302°F)
Over- and under-range indication	OL



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Thermal imaging	
Temperature reading stabilization	No startup delay
IR temperature resolution	0.1°C (0.1°F)
IR temperature accuracy	±3°C (5.4°F) or ± 3% of the reading (whichever is greater) for temperatures > 25°C (77°F), ±5°C for temperatures -10°C to 25°C (14–77°F)
Distance-to-spot (D:S) ratio	30:1
Emissivity adjustment	0.95 maximum, 4 presets plus a custom setting (0.10–0.99)
Targeting	Displayed cross-hairs pinpoint the center of the measurement spot
Hold	Image with measurement

Electrical measurement	
Display count	6000
AC/DC V	600 V AC RMS or 600 V DC ± 0.7%/0.5%
AC/DC mV	600.0 mV ± 1%/0.3%
VFD AC V	600 V AC RMS, 10–100Hz, ± 1%
AC/DC A	10.00 A AC RMS or 10.00 A DC ± 1.0%/0.7%
AC/DC mA range	600.0 mA ± 1.0%/0.7%
AC/DC µA range	6000 µA AC RMS or 6000 µA DC ± 1.5%/1.0%
Frequency counter	50 kHz ± 0.03%
Resistance	6.000 MΩ ± 0.9%, 60.00 MΩ ± 1.5%
Continuity check threshold	30–480 Ω
Diode test	3.000 V ± 0.9%
Capacitance	2.000 mF ± 2.0%, 10.00 mF ± 5.0%
Temperature, type K thermocouple	-40 to 400°C DMM ± (1.0% + 1.5°C) (-40 to 752°F DMM ± (1.0% + 3°F))
Measuring rate	5 samples per second
<i>Accuracy is given as ± (% of reading)</i>	

Meter data	
Category rating	CAT IV—300 V, CAT III—600 V
IP rating	IP40
Drop test	3 m (9.8 ft.)
Warranty	10-10 limited warranty
Calibration cycle	Once per year, recommended

Certifications	
Certifications	C-UL-US, CE, RCM
Safety standards compliance	IEC 61010-1 CAT IV—600 V, CAT III—1000 V

Power system	
Power requirements	3 × AA Energizer L91 lithium (Li/FeS <sub>2</sub> ) batteries or optional TA04 lithium polymer rechargeable battery system
Battery life, Energizer L91 Lithium batteries	Approximately 22 hours constant IGM



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Power system	
Battery life, TA04 lithium polymer batteries	Approximately 22 hours constant IGM
Auto power off	5 minutes (default), 10 minutes, 20 minutes, and off selectable

Environmental data	
Operating temperature	-10 to 50°C (14–122°F)
Operating Humidity	80% to 31°C; decreasing linearly to 50% at 31–50°C
Storage temperature and relative humidity (RH)	-20 to 60°C (-4 to 140°F), 0–80% RH (without batteries)
Temperature coefficient	Nominal 0.15 × (specified accuracy)/°C at -10°C to 18°C (14–64.4°F) or 28–50°C (82.4–122°F), or as otherwise specified
Operating altitude	2000 m (6560 ft.)
Pollution degree	2
EMC	EN61326-1

Meter physical data	
Weight	428.3 g (15.1 oz.)
Dimensions (L × W × H)	190 mm × 86.4 mm × 48.3 mm (7.5 in. × 3.4 in. × 1.9 in.)
Material	Polycarbonate/ABS
Color	Gray, black, and blue

Shipping information	
Packaging type	Color box with view of product in clamshell
Packaging contents	DM166, 3 × L91 lithium batteries (AA), high-quality silicone test leads, soft carrying case
Packaging weight	1.3 kg (2.9 lb.)
Packaging dimensions (H × W × L)	33 cm × 14 cm × 11 cm (12.6 in. × 5.5 in. × 4.3 in.)
Carton weight	16.5 kg (36.4 lb.)
Carton dimensions (H × W × L)	65 cm × 30 cm × 56 cm (25.6 in. × 11.8 in. × 22.0 in.)
Carton quantity	12
EAN-13	0793950391662
UPC-12	793950391662
Country of origin	Taiwan
Tariff code	9027504020

Technical support	
Website	<a href="http://support.flir.com">http://support.flir.com</a>
E-mail	<a href="mailto:TMsupport@flir.com">TMsupport@flir.com</a>
Phone	855-499-3662
Repairs	<a href="mailto:repair@flir.com">repair@flir.com</a>



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Included in the box	
DM166 Thermal Imaging TRMS Multimeter with IGM	
TA80 Premium Silicone Test Leads	
Soft carrying case	

Optional accessories	
TA72 Universal Flex Current Probe Accessory 10 in. (25 cm)	
TA74 Universal Flex Current Probe Accessory 18 in. (45 cm)	
TA04-KIT Lithium Polymer Rechargeable Battery Kit	
TA84 Test Lead Storage/Tripod Accessory	
TA10-F Protective Case for FLIR DMMs and TA7X	
TA50 Magnetic Hanging Strap	