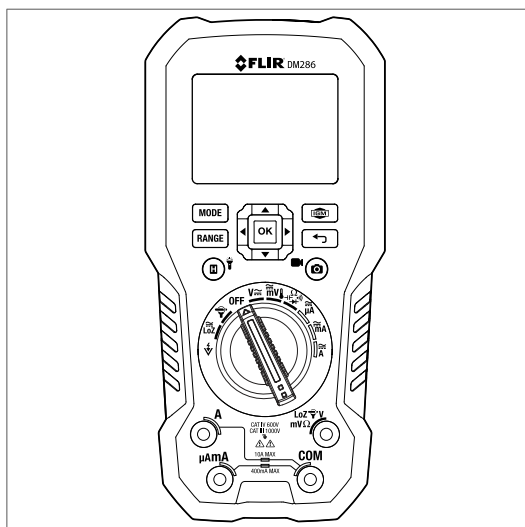




Quick Start

Imaging Multimeter with IGM™ and METERLiNK™

MODEL DM286



Quick Start (en)

INTRODUCTION

The DM286 is a top-of-the-line digital multimeter with all the benefits of a FLIR thermal imager. MSX allows you to determine if a surface is hot without physically touching it. To obtain the latest version of the comprehensive user manual, customer support, and additional product information, see the *Customer Support* section.

QUICK STEPS

1. Turn the rotary function switch from the OFF position to switch the meter on.
2. If the display does not switch on, replace the TA04 battery with a fully charged one.
3. Press the IGM button to switch the thermal imager on.
4. Target a surface and read its temperature on the upper left hand corner of the display.
5. Explore the menu options, control buttons, and display icons, as covered briefly in this Quick Start and in the comprehensive User Manual.
6. Press the IGM button to switch the imager off.
7. The last section of this Quick Start provides illustrated examples of multimeter electrical test configurations.
8. Turn the rotary switch to the OFF position to switch off the meter.

SAFETY

Before operating the device, you must read, understand, and follow all instructions, dangers, warnings, cautions, and notes in this Quick Start and in the User Manual, available on the support site (see *Customer Support* section).



WARNING

- Do not operate the device if you do not have the correct knowledge. Incorrect operation can cause damage, shock, injury, or death to persons.
- Do not start a measuring procedure before you have set the function switch to the correct position. Failure to do so can cause damage to the instrument and can cause injury to persons.
- Before each use, verify tester operation by measuring a known voltage.
- Do not measure the current on a circuit when the voltage increases to more than 1000 V. This can cause damage to the instrument and can cause injury to persons.



WARNING

- Do not make 10 A current measurements for longer than 10 seconds at a time; further, allow a buffer of 15 minutes between each measurement. 10 A current measurements which exceed 10 seconds may cause damage to the meter and/or test leads.
- Disconnect the test leads from the circuit under test before you change the range. Failure to observe this warning can damage the instrument and cause bodily injury.
- If the insulation on a test lead is damaged, replace with a new one that meets or exceeds the IEC 61010-031 standard.
- Do not replace the battery before you remove the test leads. This can cause damage to the instrument and can cause injury to persons.
- Use care when performing measurements if the voltages are > 25 VAC rms or 35 VDC. There is a risk of shock; Injury to persons can occur.
- Do not do diode, resistance, or continuity tests before removing power from capacitors and other devices. Injury to persons can occur.
- Use care when performing voltage checks on electrical outlets. These checks are difficult because of the uncertainty of the connection to the recessed electrical contacts. There is a risk of electrical shock. Injury or death to persons can occur.




METER DESCRIPTION

<p>The diagram shows the front panel of the FLIR IM286 meter. Callout 1 points to the top sensor area. Callout 2 points to the LCD display. Callout 3 points to the navigation/OK keypad. Callout 4 points to the MODE button. Callout 5 points to the RANGE button. Callout 6 points to the Data Hold/Worklight button. Callout 7 points to the Function switch. Callout 8 points to the positive (+) input for Amps. Callout 9 points to the positive (+) input for $\mu\text{A}/\text{mA}$. Callout 10 points to the negative (-) input. Callout 11 points to the positive (+) input for all other measurements. Callout 12 points to the Image and video capture button. Callout 13 points to the Exit menu button. Callout 14 points to the Thermal imager button.</p>	1. Worklight and Non-Contact Voltage Detector area.
	2. LCD display.
	3. Navigation/OK keypad.
	4. MODE button.
	5. RANGE button.
	6. Data Hold/Worklight button.
	7. Function switch.
	8. Positive (+) input for Amps.
	9. Positive (+) input for $\mu\text{A}/\text{mA}$.
	10. Negative (-) input.
	11. Positive (+) input for all other measurements.
	12. Image and video capture button.
	13. Exit menu button.
	14. Thermal imager button.








Tilt stand, battery compartment, tripod mount, and three lenses (digital camera, thermal imager, laser pointer, left to right) located on back of meter.

FUNCTION SWITCH







	Detect AC Voltage through the non-contact sensor at the top of the meter.
	Measure AC/DC Voltage through the probe inputs with a low-impedance load positioned across input.
	Measure Current from external clamp adaptors.
OFF	Meter is powered OFF.
	Measure AC/DC Voltage through the probe inputs.














	Measure mV or Temperature (thermocouple) through the probe inputs.
	Measure Resistance, Continuity, Diode, and Capacitance through the probe inputs.
	Measure Current through the probe inputs.

CONTROL BUTTONS

	Several multimeter switch positions offer more than one option, press MODE to select the desired mode.
	From Auto range mode, short press to select Manual range (not available for all functions). From Manual mode, short press to change the range. Long press to return to Auto range.
	Short press to open/close the Thermal Imager.
	OK button with navigation arrows, used to confirm/change settings and to navigate menus.
	Press to exit menus.
	Short press to freeze/unfreeze displayed measurements (Data Hold). Long press: Worklight ON/OFF.
	Short press to capture an image. Long press to start/stop video recording.

DISPLAY ICONS

	FLEX Clamp		Data Logger
	Laser pointer		Data Hold
	Relative mode		Auto Range

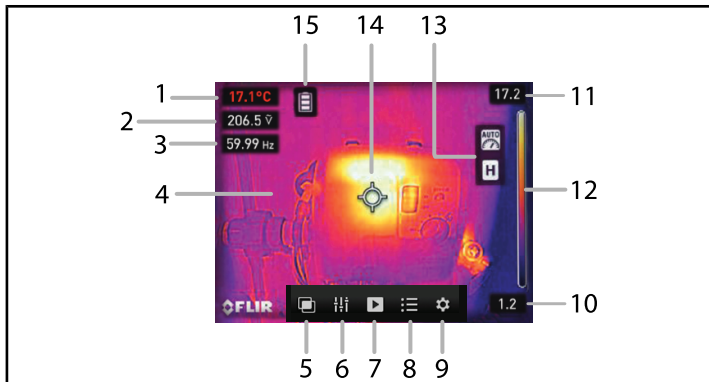
	Continuity mode		Sensed voltage > 30 V
	Diode mode		Non-contact Voltage Detector (NCV)
	Low pass filter		MAX, MIN, AVG readings
LoZ	Low impedance mode		Peak MAX/MIN readings
	Worklight	ϵ	Emissivity
	Bluetooth		AC signal
	Auto Power Off		DC signal
	Battery Status		

METER POWER

The meter is powered by the supplied TA04 rechargeable battery. Turn the rotary switch from the OFF position to turn the meter on. If the meter does not power on, or if a low battery alert appears, replace the battery with a fully charged one.

THERMAL IMAGER






Set the function switch to any position and short press the **IGM** button to switch the imager ON/OFF. If the imager does not switch on, the battery likely needs recharging. Refer to the thermal image description below.




1. Centre spot temperature measurement *	9. General settings menu.
2. DMM voltage measurement.	10. Lowest temperature reading.
3. DMM frequency measurement.	11. Highest temperature reading.
4. Thermal image.	12. Colour range.
5. Image mode menu.	13. Status icon examples.
6. Thermal settings menu.	14. Cross-hairs to target centre spot temperature.
7. Media gallery.	15. Battery status.
8. Advanced menu.	

* The imager must be fully initialized before accurate readings can be provided. Until then, the reading will include an approximation symbol (~100°C, for example).

MAIN MENU

	(IMAGE MODE) Adjust MSX alignment and select MSX, thermal-only, or digital-only image mode.
	(THERMAL SETTINGS) Set colour palette, measurement mode, temperature scale, laser pointer, emissivity.
	(GALLERY) Access stored data logs, images, and video.
	(ADVANCED SETTINGS) Select MAX-MIN-AVG, Peak MAX-MIN, Relative mode, Data Logger.
	(GENERAL SETTINGS). Refer to next section.


GENERAL SETTINGS MENU










Press **OK** to open the main menu. Scroll to the Settings icon  and press **OK**. Press **OK** on a menu item. The table below provides a quick overview, see the User Manual for complete instructions.

Measurement parameters >	Set emissivity & reflected/atmospheric temperature.
Save option >	Select YES to save a digital image with each thermal image.
Device settings (below)	
Language	Select desired display language.
Date and Time	Set calendar clock.
Date Format	Set date format and 12/24 clock mode.
Temperature Units	Select degrees °C / °F.
Auto Power Off	Set meter and worklight APO time.
Bluetooth	Set ON/OFF.
Screen Brightness	Select low, medium, or high.
Log Sampling Rate	Set logging rate from 1 to 100 seconds.
Information (below)	


System	View serial number, battery status, and more.
Reset	Revert to factory default & format internal memory.





THERMAL SETTINGS MENU

Press **OK** to open the Main menu, scroll to the Thermal Settings icon , and press **OK**.

	(PALETTE) Select a thermal image colour option.
	<p>(MEASUREMENT MODE)</p> <p>1. Select  to measure surface temperature using cross-hairs targeting.</p> <p>2. Select  or  to automatically target the warmest or coldest spot.</p> <p>3. Select  to remove multimeter measurements from the thermal image.</p>
	(TEMPERATURE SCALE) Select AUTO to use the full thermal range. Select LOCK to limit the range.
	Press OK to toggle the laser pointer ON/OFF.
	Press OK and scroll to an Emissivity preset or set a custom value.

ADVANCED SETTINGS MENU

Press **OK** to open the Main Menu, scroll to the Advanced Settings icon , and press **OK**. Scroll to an icon, shown below, and press **OK** to activate.

	Press OK to enable/disable the MAX-MIN-AVG mode.
	Press OK to enable/disable PEAK MAX and PEAK MIN mode.
	(RELATIVE) Press OK to store a reading as a reference with which to compare subsequent measurements.
	Press OK to start/stop the Data Logger. Open the Gallery from the main menu to access data log files.

MULTIMETER MEASUREMENTS

The last section of this Quick Start provides examples of multimeter electrical test setups. Refer to the detailed user manual (link in the customer support section, below) for complete instructions.

METERLiNK DATA TRANSFER

Download the METERLiNK application for iOS and Android devices to begin transferring images, video, and data log files from the meter to mobile devices. Refer to the comprehensive DM286 user manual, and the separate METERLiNK user manual, for complete information. User Manuals are available on the support site (see *Customer Support* section, below).

Limited 10-Year Warranty

This product is protected by FLIR's Limited 10-Year Warranty. Visit www.flir.com/testwarranty to read the Limited 10-Year Warranty document.

Customer Support

Customer Support Telephone List:

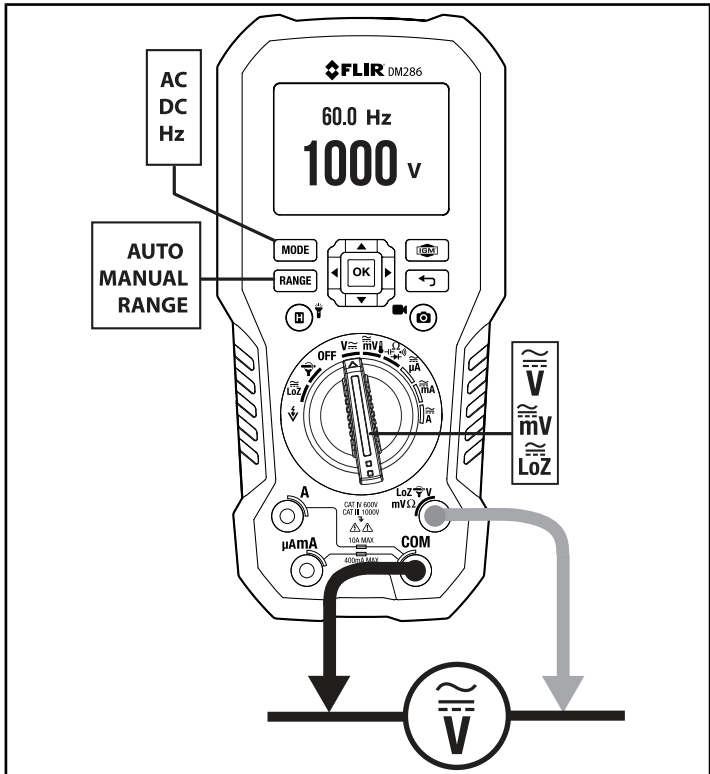
<https://support.flir.com/contact>

Repair, Technical Support, Registration, & Document downloads:

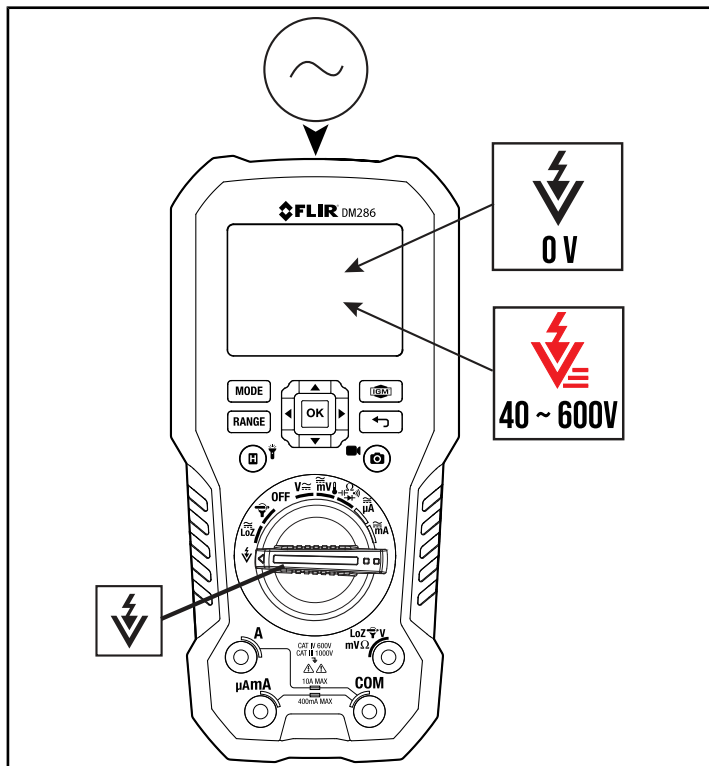
<https://support.flir.com>

Multimeter Electrical Test Examples

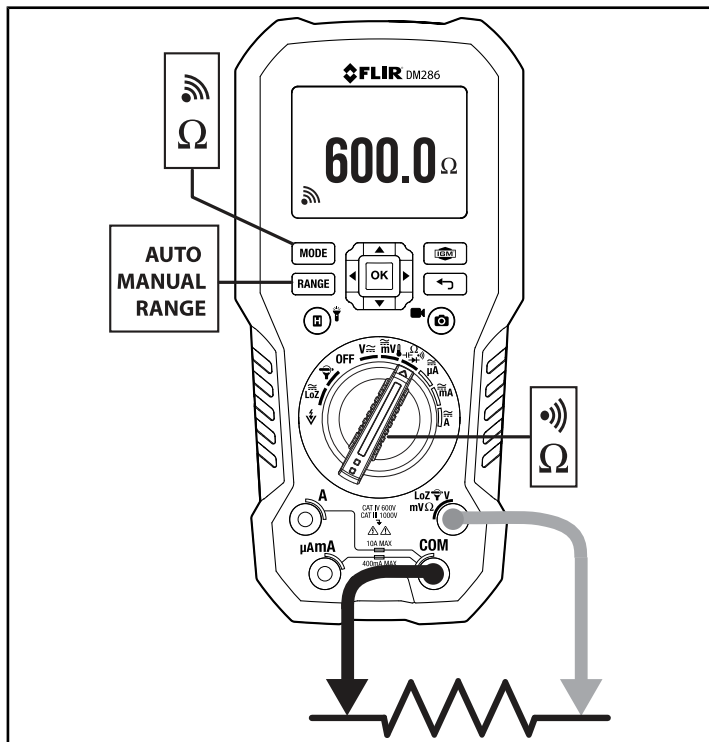
VOLTAGE MEASUREMENTS



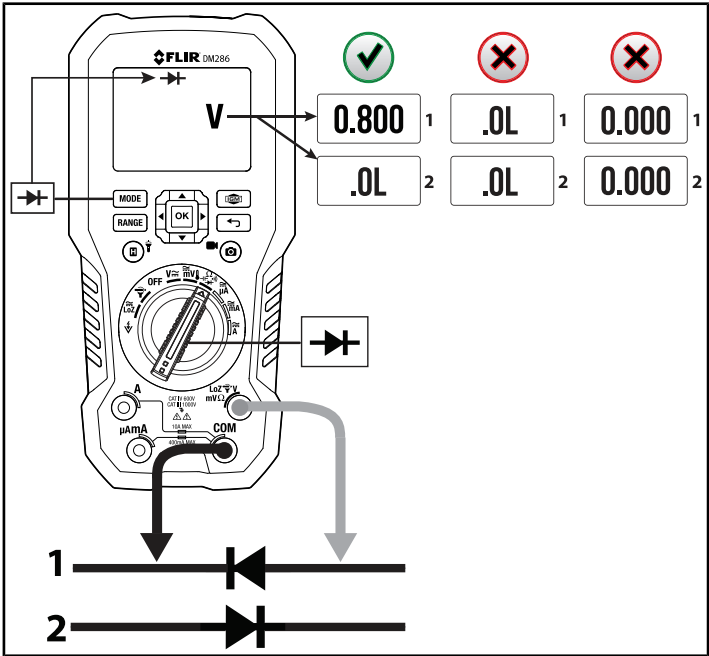
NON-CONTACT VOLTAGE DETECTOR



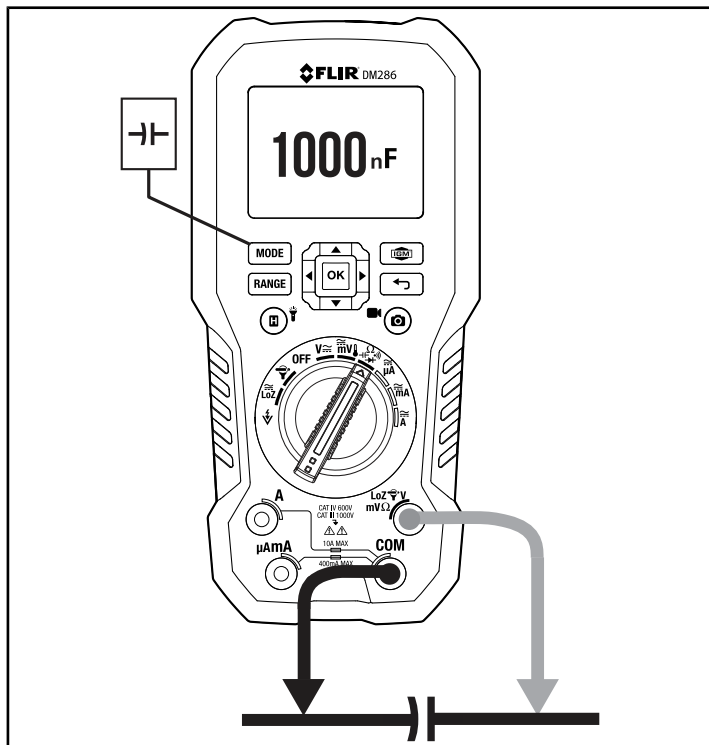
RESISTANCE AND CONTINUITY MEASUREMENTS



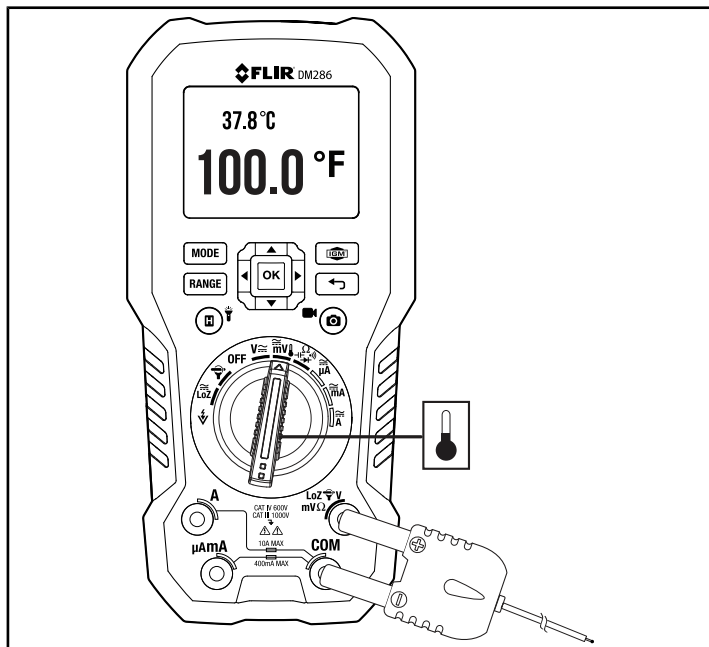
DIODE TEST



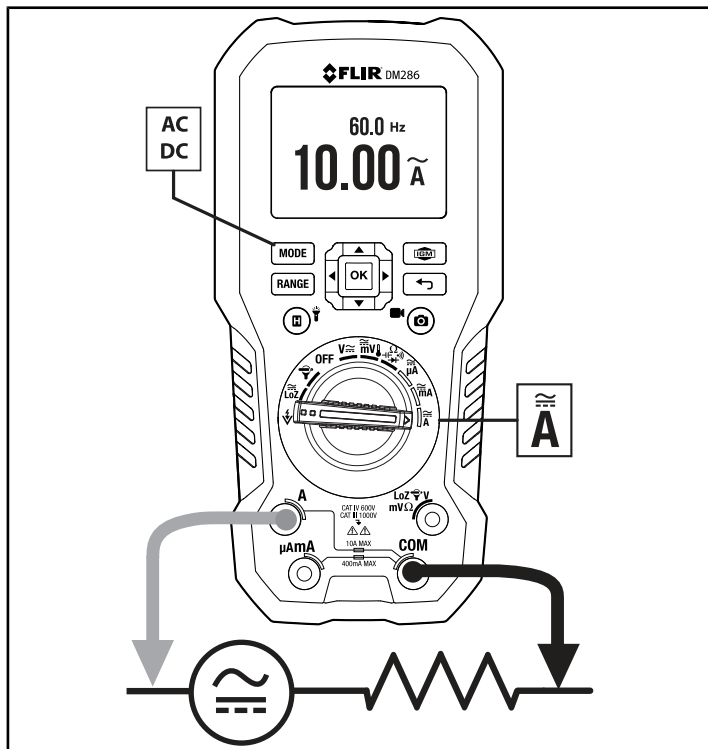
CAPACITANCE MEASUREMENTS



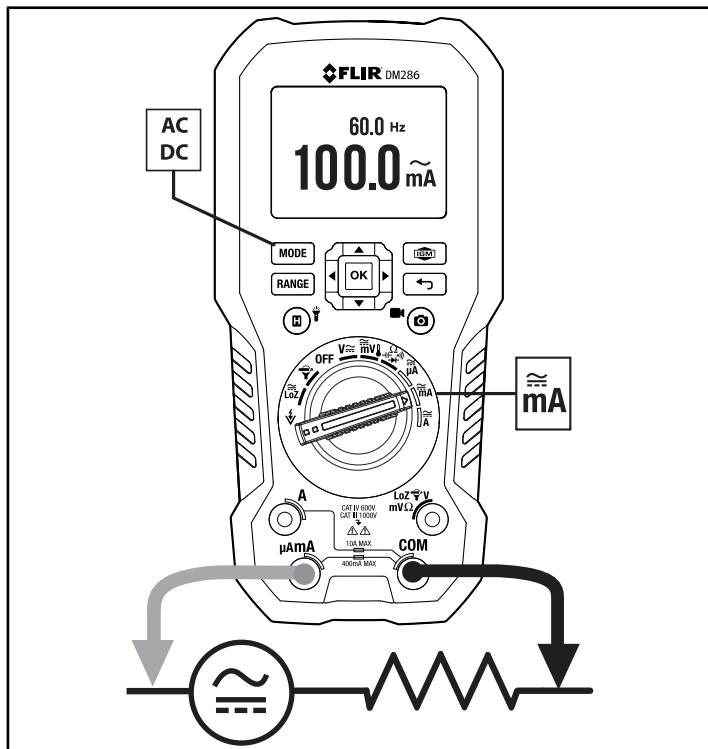
TEMPERATURE MEASUREMENTS



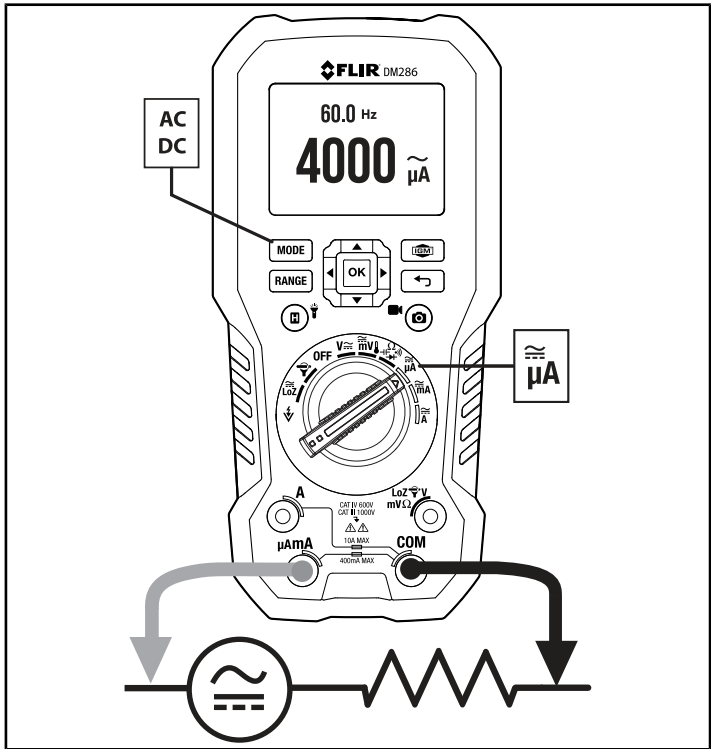
CURRENT MEASUREMENTS (A)



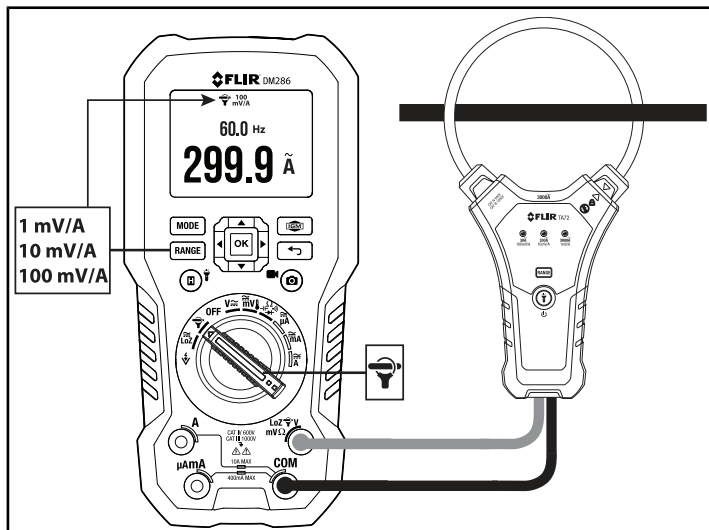
CURRENT MEASUREMENTS (mA)



CURRENT MEASUREMENTS (μA)



CLAMP ADAPTOR MEASUREMENTS





Quick Start

Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

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