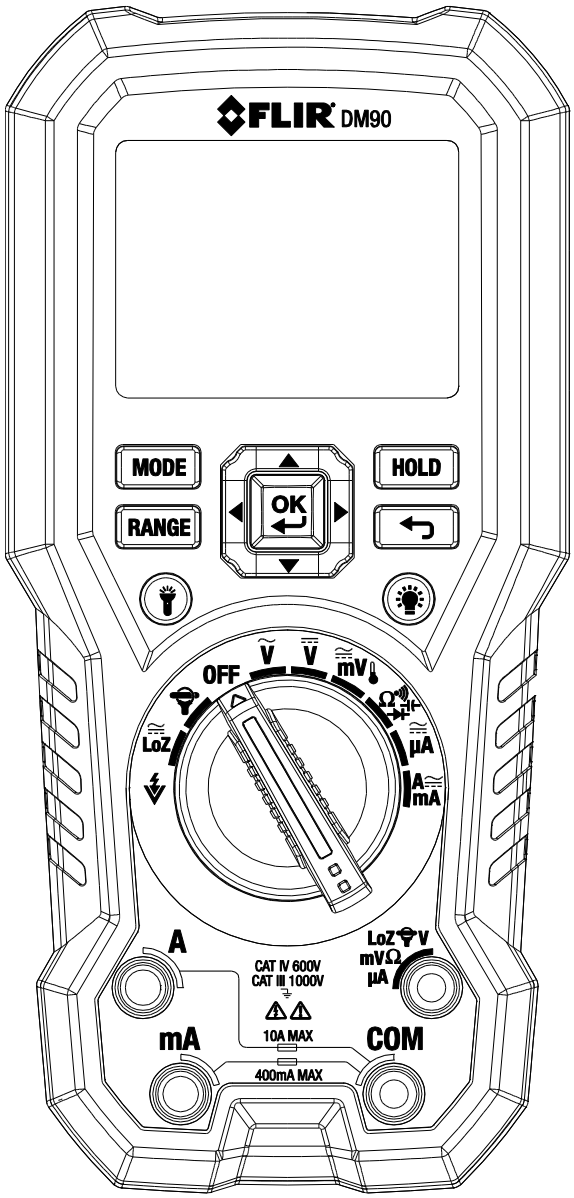
QUICK START GUIDE

FLIR MODEL DM90

True RMS Industrial MultiMeter



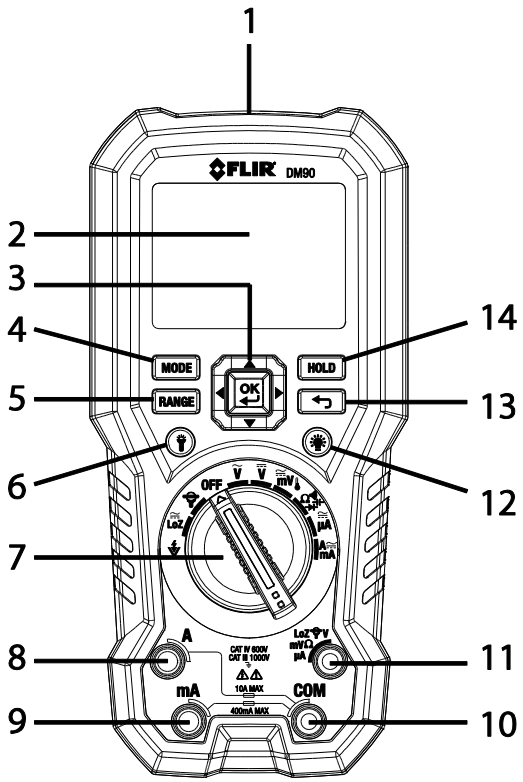
GETTING STARTED - EN

USER MANUAL LOCATION: The detailed User Manual is located on the **support.flir.com** web site (download tab). Translations of User Manual and Quick Start Guides are also available on the web site. Please read the entire User Manual to gain a thorough understanding of the meter before use. **Please Register for Extended Warranty and Product Updates at www.flir.com/testwarranty**

METER DESCRIPTION

1. Work Light and Non-Contact Voltage Detector areas
2. LCD Display
3. Navigation/Selector pad
4. MODE Button
5. RANGE Button
6. Work Light Button
7. Rotary Function Switch
8. Positive (+) Probe Input Jack for **A** (Current).
9. Positive (+) Probe Input Jack for **mA** (Current).
10. COM (-) Probe Input Jack
11. Positive (+) Probe Input Jack for all inputs except **A** and **mA**
12. Display Backlight Button
13. Cancel/Return Button
14. Display HOLD Button

Note: Battery compartment, tilt stand located on back of meter. Test lead holder attaches to back of meter as described in User Manual.



FUNCTION SWITCH POSITIONS

	Detect AC voltage through the non-contact sensor at the top of the meter.
LoZ	Measure voltage through low impedance loaded probe inputs.
OFF	Meter is switched OFF and in full power-saving mode.
	FLEX Direct: Auxiliary channel for Flexible Current clamp meters or generic clamp adaptors.
V	Measure AC voltage (V) through the probe inputs.
V	Measure DC voltage (V) through the probe inputs.
mV	Measure low voltage (mV) through the probe inputs.
	Measure temperature with adaptor connected to probe inputs.
	Measure resistance, continuity, capacitance, diode through the probe inputs.
A mA	Measure current through the probe inputs (A or mA).
µA	Measure µA current through the probe inputs.

FUNCTION BUTTONS

MODE	Use to select a sub-function of the primary function.
RANGE	From Auto range mode, press to select Manual range mode. From Manual range mode, short press to change the range. Long press to activate Auto range mode.
HOLD	Press to toggle Hold and normal display mode. Use the Settings menu to select Data or Auto hold.
	Use the selector/navigation pad to navigate mode and advanced function menus.
	Press to cancel/exit a screen in the Settings menu (no function in the normal mode).
	Press to enable/disable display backlight. The display backlight is ON when the meter is powered up.
	Press to enable/disable the work light.

DISPLAY SYMBOLS

	Low Impedance mode		Auto power off function enabled
	Measured voltage is > 30 VAC/DC		AC current or voltage
	Non-Contact Voltage detector		DC current or voltage
	MAX (Maximum) reading		Flex Clamp Direct Input
	MIN (Minimum) reading		Continuity function
	AVG (Average) reading		Diode test function
	PEAK MAX value displayed		MENU BAR ICON: VFD mode
	PEAK MIN value displayed	P	MENU BAR ICON: Peak mode
	Auto range mode		MENU BAR ICON: MIN-MAX-AVG
	Data Hold mode	Hz	MENU BAR ICON: Frequency mode
	Primary display (large digits)		MENU BAR ICON: Relative mode
	Secondary display (smaller digits)		MENU BAR ICON: Settings mode
	Battery voltage status		Work light active
	Bar Graph Display		

MODE BUTTON OPERATION

Switch Position	MODE button sequence of operation
mV	AC → DC → °F or °C
Ω	Resistance → Continuity → Capacitance → Diode
µA	AC → DC
A mA	AC → DC

MENU BAR ICONS

There are (6) functions in the Menu Bar represented by the following icons:

VFD	VFD (low pass filter)		MAX-MIN-AVG memories	△	Relative mode
P	Peak Max and Peak Min (Auto Hold)	Hz	Frequency measurements		Settings mode

1. Only one icon flashes at a time to indicate the cursor position.
2. Use the Left / Right buttons to move the cursor.
3. Press **OK** to activate/deactivate the selected function. A frame appears around the activated function.
4. In the AC Voltage/AC mV/AC Current/Flex/LoZ modes, all icons shown above are available.
5. For DC Current/Voltage, Resistance, Continuity, Capacitance, Temperature, and Diode only the MAX-MIN-AVG, Relative, and Settings icons are available.

METER POWER

Set the function switch to any position to switch the meter ON. If the battery indicator shows that the battery voltage is low or if the meter does not power on, replace the batteries. The meter enters sleep mode after 20 minutes. The time can be set from 1 ~ 99 minutes (or OFF) in the Settings menu.

AUTO/MANUAL RANGE

In Auto range mode, the meter automatically selects the most appropriate measurement scale. In Manual range mode, the desired range (scale) can be adjusted by the user. Auto range mode is the default mode of operation. When a new function is selected with the function switch, the starting mode is Auto range and the AUTO indicator is displayed.

To enter Manual range mode, short press the RANGE button. To change the range, press the RANGE button repeatedly until the desired range is displayed. To return to the Auto range mode, long press the RANGE button until the Auto Range AUTO indicator is again displayed.

MIN-MAX-AVG RECORDING

The meter captures and displays the minimum, maximum, and average readings, updating only when a higher/lower value is registered. The meter also averages the total sum of all recorded values.

1. Navigate to the MIN-MAX AVG icon using the left/right arrow buttons and enable the mode by pressing **OK**.
2. Use the up/down buttons to cycle through the minimum, maximum, and average reading displays. The corresponding icons are displayed: , , or
3. Press HOLD to pause. Press again to continue.

VFD (ACV and ACA only)

High-frequency noise is eliminated from the voltage measurement through the use of a low-pass filter (for AC voltage/current). Navigate to the VFD icon VFD and enable/disable VFD mode by pressing the **OK** button.

RELATIVE MODE

The difference between the real-time reading and a stored reference value is displayed in the main display. The reference value is displayed in the secondary display (smaller digits above the larger, primary display). Navigate to △ using the arrow buttons and enable the mode by pressing **OK**. The value displayed at the time the **OK** button is pressed is the reference value.

PEAK MAX and PEAK MIN (ACV and ACA only)

The meter captures and displays the positive and negative peak values, and updates only when a higher/lower value is registered.

1. Navigate to P and enable Peak mode by pressing **OK**.
2. Use the up/down navigation buttons to toggle Peak Max and Peak Min.
3. In Peak Max mode, the ⤒ indicator is displayed. In Peak Min mode, the ⤓ indicator is displayed.
4. Press the HOLD button to pause the Peak mode. Press again to continue.

SETTINGS MENU

1. Navigate to the Settings icon ⚙ using the arrow buttons and access the menu by pressing the **OK** button.
2. Use the up/down buttons to step through the modes, use the left/right arrows to change a setting, and press **OK** to activate and save the changes. Refer to the list below:
   - Auto power off (*APO*): Use the left/right arrows to set the time period after which the meter enters sleep mode (1 ~ 99 minutes, or set to OFF to disable APO). The factory default is 20 minutes.
   - Auto backlight off (*BLit*): Use the left/right arrows to set the time period after which the backlight automatically turns off (1 ~ 99 minutes or set to OFF to disable). The factory default is 5 minutes.
   - Auto hold / Data hold (*hold*: A.H. or d.H.): Use the left/right arrows to select Auto hold or Data hold mode.
   - Use the left/right arrows to select the default (*dEF*) temperature unit of measure °C or °F.
   - Diode (*dio*) mode (Smart or Classic modes). Use the left/right buttons to select Classic (C.d.) or Smart mode (S.d.).
   - Coarse Resolution (*C.r.* ON/OFF). Use the arrow buttons to select ON (to limit the least significant display digits) or OFF (to display with maximum resolution).
   - Reset (*rSt*): Press **OK** to revert to the factory default settings.

DATA HOLD and AUTO HOLD

The meter has two HOLD modes: classic Data Hold and Auto Hold. To select Data Hold or Auto Hold as the default, please use the Settings menu. Refer to the paragraphs below for instructions on using the Hold modes.

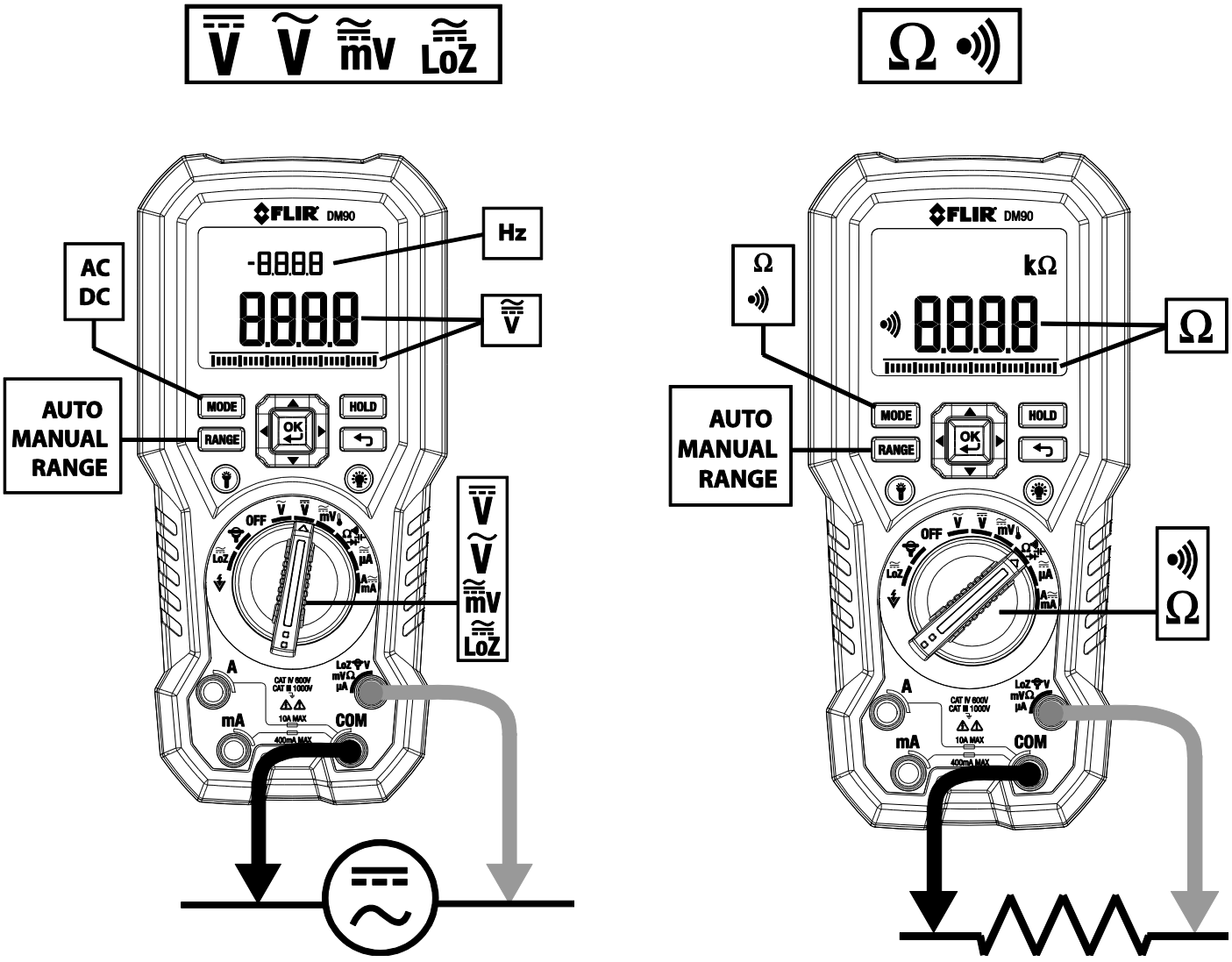
Data Hold: In Data Hold mode, the primary meter display freezes the last reading. To enter/exit Data Hold mode, press the HOLD button. In Hold mode, the H indicator is displayed.

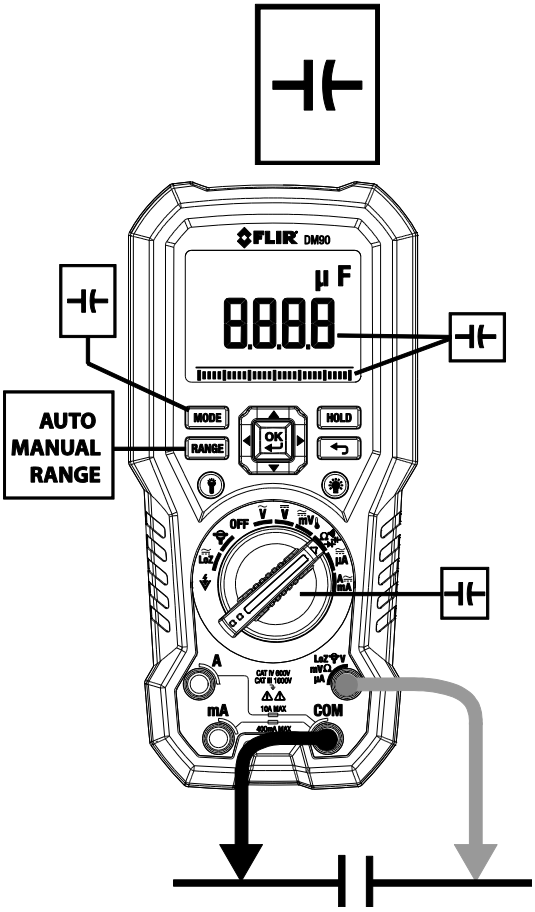
Auto Hold Mode: In Auto hold mode, the secondary display freezes the last reading and the H icon flashes. The real-time reading is displayed on the primary display. The held reading will not change unless the difference between the held reading and any new reading is > 50 digits. The Auto hold function will capture a reading if the reading is greater than the trigger level: > 1% of full scale range for Voltage/Current/Capacitance. For Resistance/Diode/Temperature the trigger is automatic as long as 'OL' is not displayed. To enter/exit Auto hold mode, press the HOLD button.

FREQUENCY MEASUREMENTS (ACV and ACA only)

The frequency is displayed in the upper display area and the ACV or ACA is displayed in the lower, main display. To display only the frequency, navigate to the Hz icon using the arrow buttons and enable the mode by pressing **OK**.

MEASUREMENT DIAGRAMS

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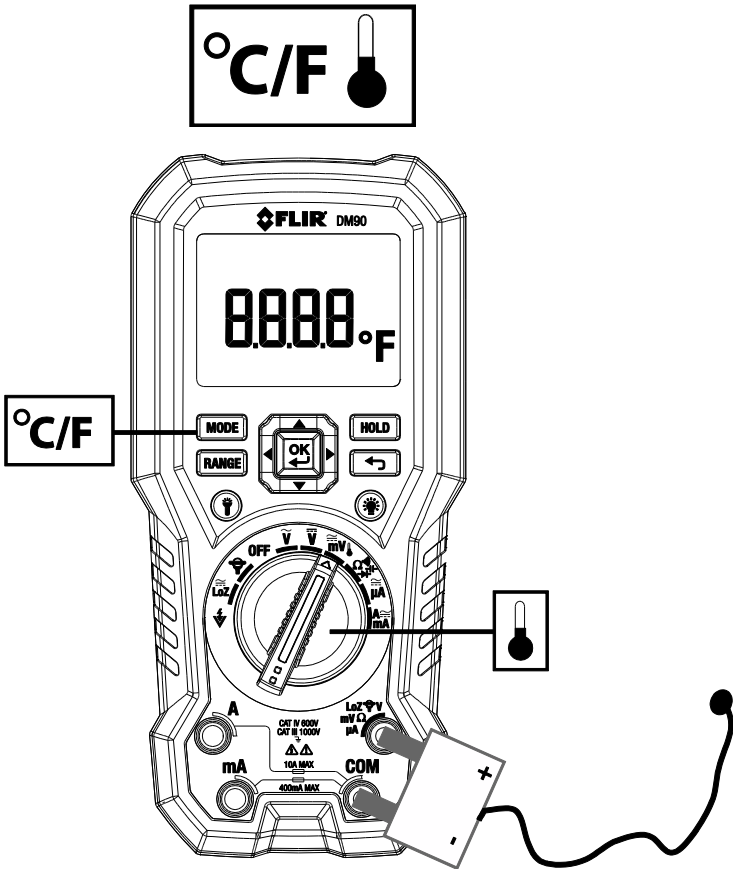
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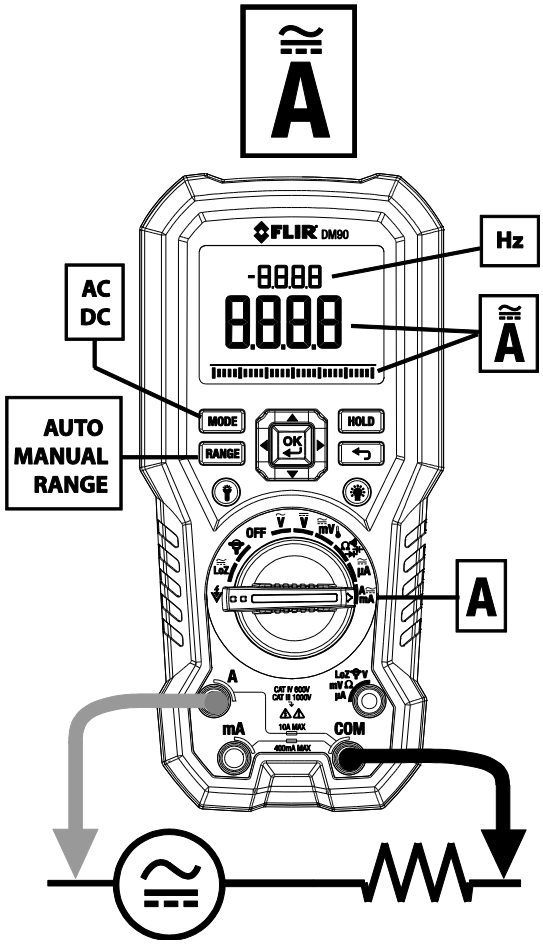
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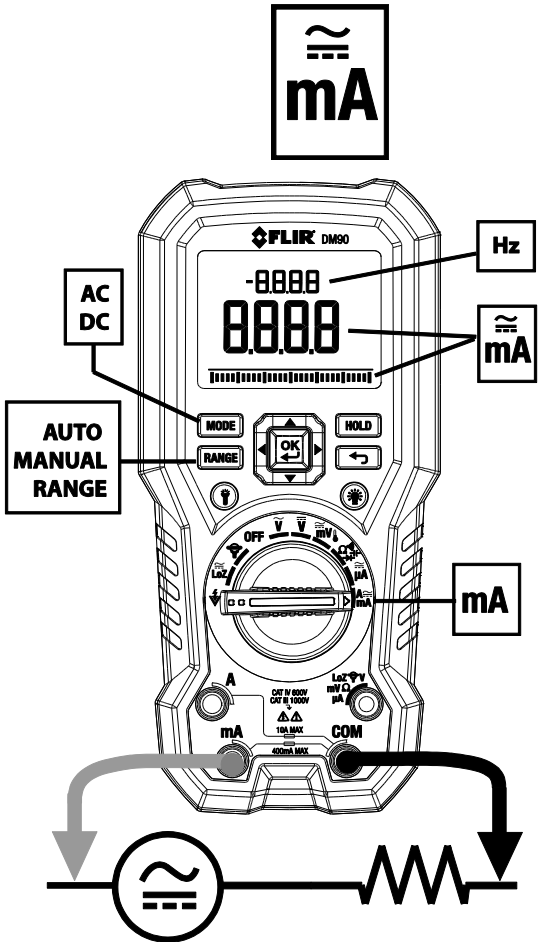
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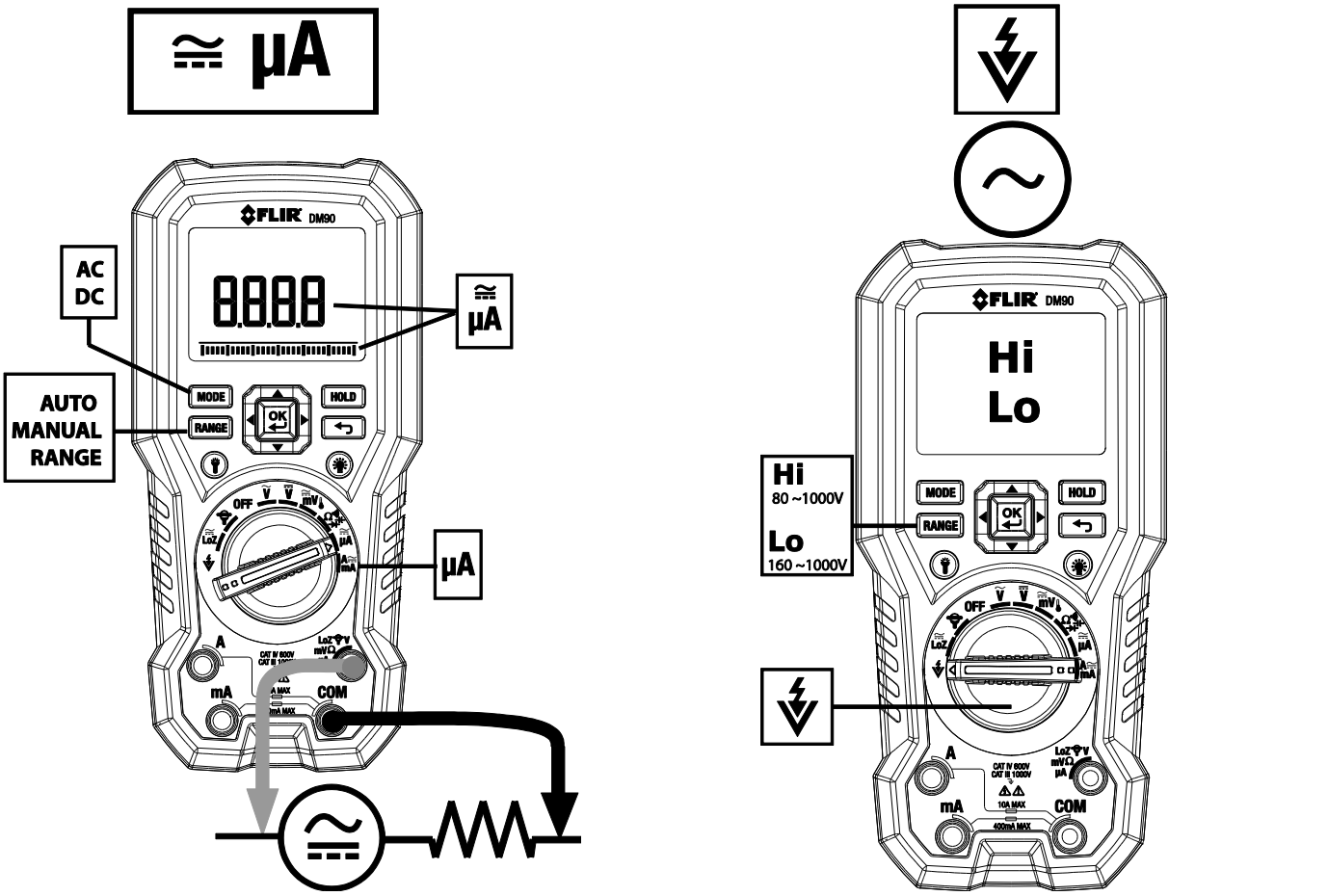
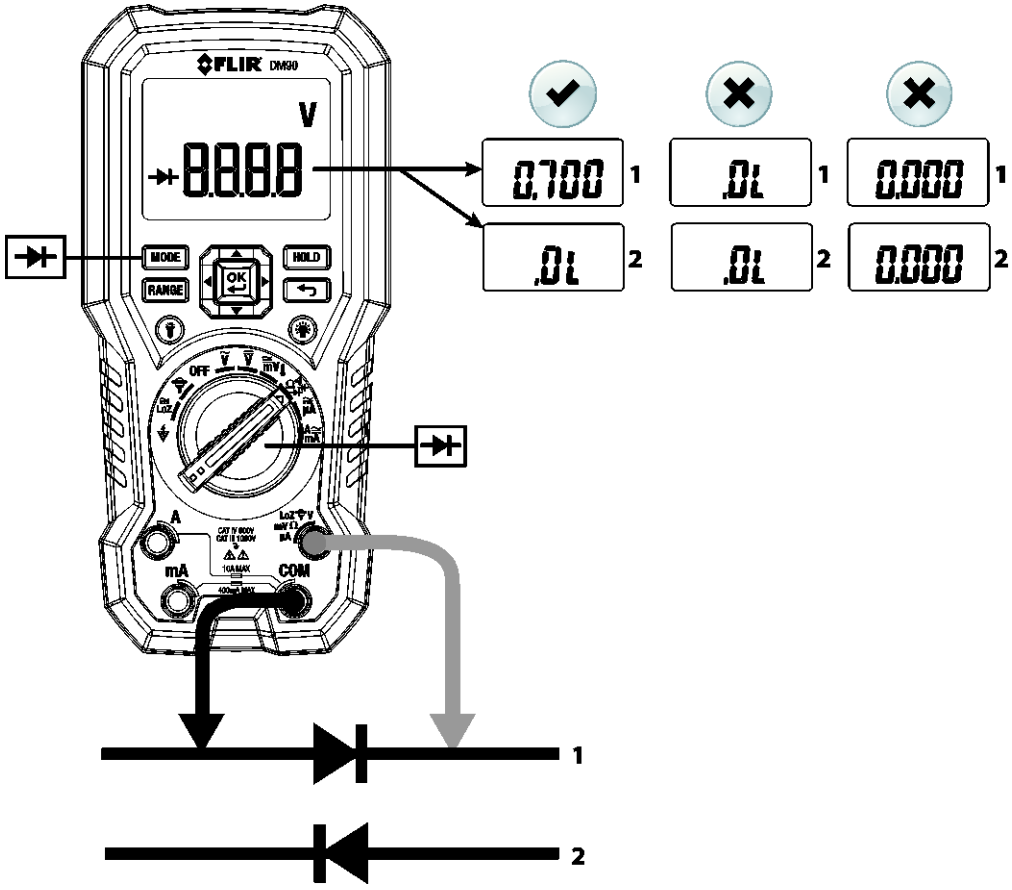


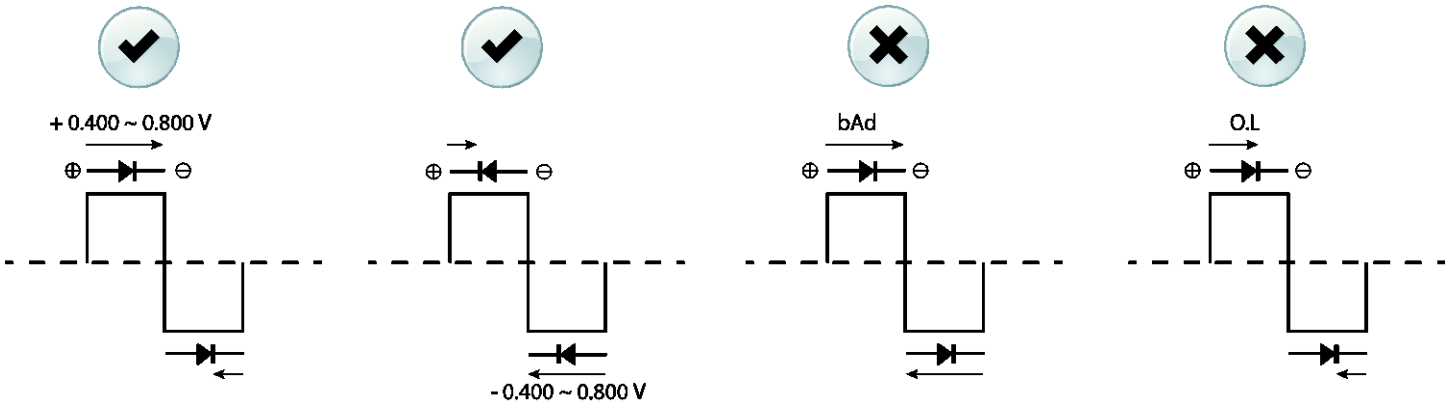
CLASSIC DIODE MODE

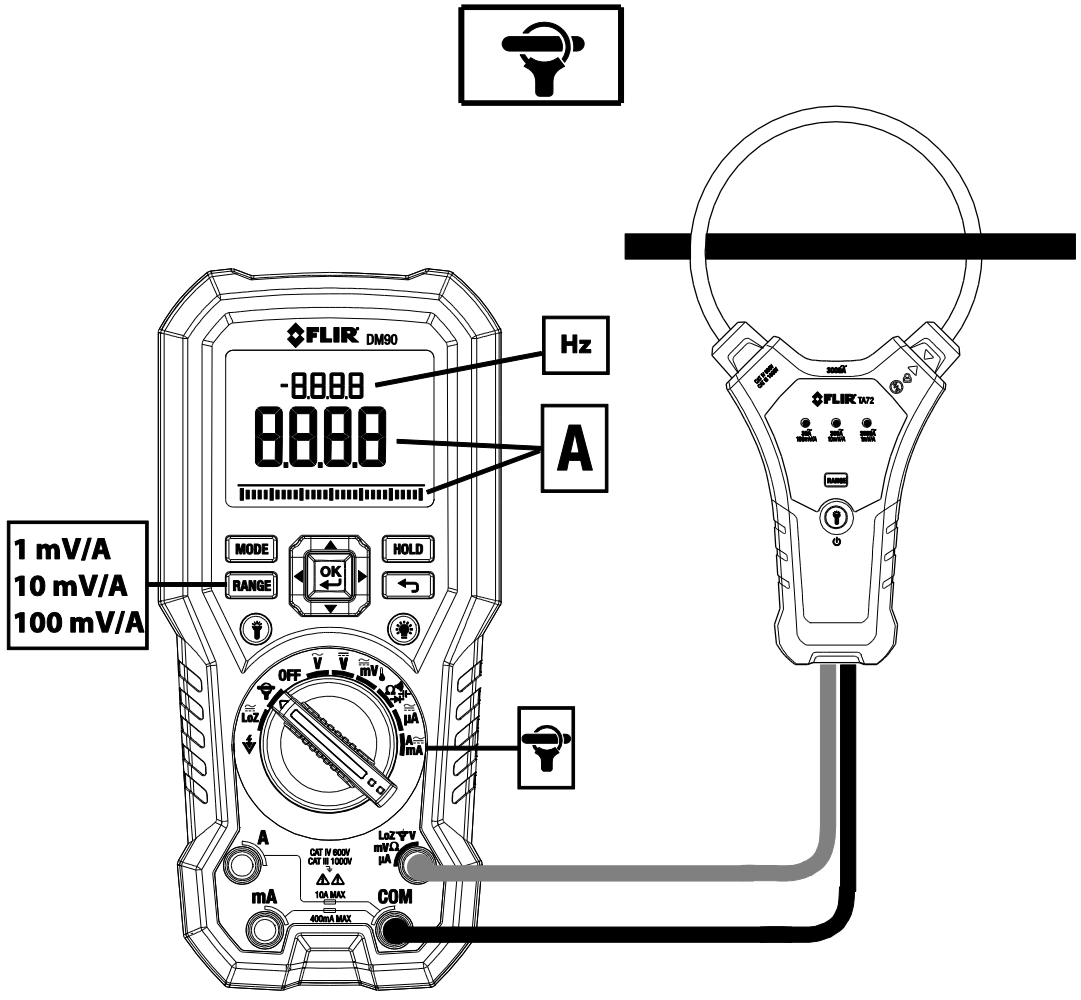


SMART DIODE TEST MODE

In SMART Diode mode the meter checks diodes using an alternating test signal sent through the diode in both directions. This allows the user to check the diode without having to reverse polarity manually. The meter display will show ± 0.400 ~ 0.800V for a good diode, 'bAd' for a shorted diode, and 'O.L' for an opened diode. To toggle the SMART and CLASSIC DIODE modes, please use the meter's Settings Menu. Only the Classic Diode mode is illustrated in the Measurement section of this Quick Start; for more details on SMART DIODE please refer to the more comprehensive User Manual available at www.support.flir.com web site (download tab) and to the illustration below:

SMART DIODE TEST RESULTS





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This instrument will provide years of reliable service when used in accordance with the instructions provided in the User Manual. To have this device certified please contact your local service center.

Quality Assurance Management

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