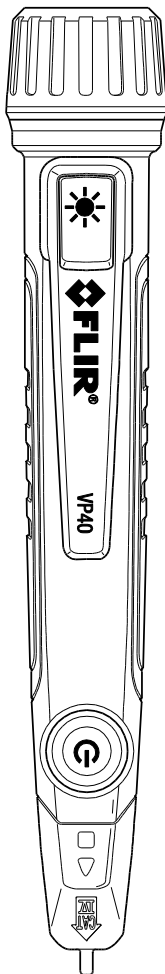


# FLIR Non-Contact Voltage Detectors + Flashlight

## Models VP40 and VP42



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# 1. Advisories

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## 1.1 Copyright

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Names and marks appearing on the products herein are either registered trademarks or trademarks of FLIR Systems and/or its subsidiaries. All other trademarks, trade names or company names referenced herein are used for identification only and are the property of their respective owners.

## 1.2 Quality Assurance

The Quality Management System under which these products are developed and manufactured has been certified in accordance with the ISO 9001 standard.

FLIR Systems is committed to a policy of continuous development; therefore, we reserve the right to make changes and improvements on any of the products without prior notice.

## 1.3 Documentation

To access the latest manuals and notifications, go to the 'Downloads' tab at: <http://support.flir.com>. It only takes a few minutes to register online. In the download area, you will also find the latest releases of manuals for our other products, as well as manuals for our historical and obsolete products.

## 1.4 Disposal of Electronic Waste



As with all electronic products, this equipment must be disposed of in an environmentally friendly way, and in accordance with existing regulations for electronic waste. Please contact your FLIR Systems representative for more details.

## 2. Introduction

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Thank you for selecting the FLIR VP40\_VP42 Non-Contact Voltage Detector + Flashlight. Proper use and care of this meter will provide many years of reliable service.

The VP40\_VP42 detects the presence of AC voltage at electrical outlets, junction strips, electrical circuits, and other devices without having to contact the device physically. The VP40 has a minimum excitation voltage of 90V AC; The VP42 has a minimum excitation voltage of 190V AC. Both models have a high sensitivity mode allowing detection down to 24V AC. Vibrating and visual cues alert the user when AC voltage is present.

The bright tip lights, near the sensor tip, permit operation in dimly lit areas. Note that when you switch ON the larger Flashlight, the detector will not operate.

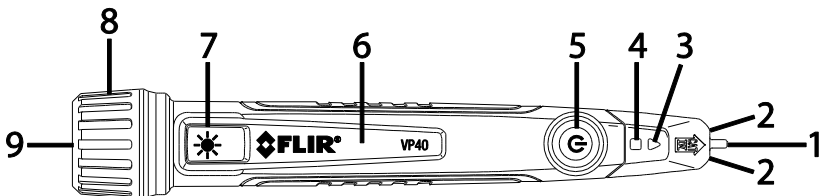
This device is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## 3. Description





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### 3.1 Meter Description

1. AC Voltage sensor
2. Tip lighting
3. Alarm indicator
4. Status indicator
5. Power button: ON (short press); OFF (long press); Low/high sensitivity toggle (short presses with meter ON)
6. Pocket clip
7. Flashlight ON/OFF button (long press)
8. Battery compartment access knob
9. Flashlight



## 3.2 Button and Indicator Descriptions

	<b>Power button</b> Short press to switch the meter ON; Long Press to switch OFF When meter is powered, short press to toggle high/low sensitivity
	<b>Flashlight button</b> Long press to switch the Flashlight ON/OFF (the detector does not operate when the Flashlight is ON)
	<b>Alarm indicator</b> When voltage is detected, the alarm indicator flashes red (low sensitivity mode) or flashes amber (high sensitivity mode)
	<b>Status indicator</b> When the meter is functioning normally and not in an alarm condition, the status indicator glows solid green (low sensitivity mode) or solid amber (high sensitivity mode) If the status indicator is flashing amber, please replace the batteries If the status indicator is flashing red, the meter is malfunctioning, please return the meter for service

## 4. Operation

**Note:** Do not attempt to repair this unit. There are no user-serviceable parts.



**WARNING:** Do not use this instrument before testing on a known live circuit.



**WARNING:** Keep hands and fingers on the probe body, away from the probe tip.



**WARNING:** Do not use this unit if it is wet or if it appears damaged.


### 4.1 High/Low Sensitivity Modes

The meter operates in one of two modes: Normal (Low-sensitivity mode) or High-sensitivity mode. The excitation voltage required to activate the meter alarm is much lower in High-sensitivity mode.

- In Normal mode, the minimum excitation voltage is 90V AC (VP40)/190V AC (VP42).
- In High-sensitivity mode, the minimum excitation voltage is 24V AC.

**Note:** Static electricity and other stray sources of energy can randomly trigger the VP40\_VP42 sensor. This is normal. Random triggering is more likely in high sensitivity mode but can also occur in the normal sensitivity mode.

## 4.2 Basic Operation

1. Short press the power button  to switch the meter ON. The meter vibrates briefly and the tip lights turn ON. The status indicator should be solid green, indicating a proper working condition. If the status indicator is flashing amber, replace the batteries. If the status indicator is flashing red, the meter is experiencing a malfunction - contact FLIR for service.
2. Once powered, short press the power button to toggle between High-sensitivity mode and Normal mode.
  - In Normal mode, the status indicator illuminates in a solid green color.
  - In High-sensitivity mode, the status indicator illuminates in a solid amber color.


### WARNING

Test on a known live circuit before testing on an uncertain circuit.

Varying electrical socket designs and insulation thickness/types can affect the meter's voltage detection performance; please use caution

3. Hold the AC voltage sensor very close to the voltage source. The maximum detection distance is 1 cm (0.4").
4. If voltage is present, the meter vibrates and the alarm indicator flashes.
  - In Normal mode, the alarm indicator flashes red.
  - In High-sensitivity mode, the alarm indicator flashes amber color.
5. To switch off the meter, long press the power button. The status LED and the tip lights turn off.

## 4.3 Flashlight

To turn the Flashlight (9) on or off, long press the Flashlight button . Note that the voltage detector **does not operate** while the Flashlight is ON.

## 4.4 Low Battery Indication

When the battery voltage falls too low, the status indicator flashes amber color. After 1 minute of flashing, the meter automatically turns off. See the Maintenance section for battery replacement details.

## 4.5 Auto Power OFF (APO)

When using the meter in Low (normal) or High sensitivity mode, the meter turns off after 3 minutes of inactivity. The Flashlight turns off after 30 minutes regardless of activity.

## 5. Maintenance

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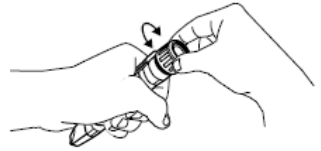
### 5.1 Cleaning and Storage

With the meter OFF, clean the meter with a damp cloth and mild detergent, do not use abrasives or solvents.

If you will not be using the meter for an extended period, remove the batteries and store them separately.

### 5.2 Battery Replacement

1. Switch off the meter before replacing the two 'AAA' batteries.
2. Unscrew the knob, as shown.
3. Replace the batteries, observing correct polarity.
4. Secure the compartment cover ensuring that the red plastic ring in the battery cap aligns with the battery, as shown.
5. Check that the device powers up correctly before attempting to make measurements.



Recycle used batteries; do not dispose in household trash. Follow all regulations with respect to the disposing of this device at the end of its lifecycle.

## 6. Safety

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### SAFETY SYMBOLS



Read, understand, and follow all safety information, warnings, and cautions before attempting to operate this device. Failure to do so can result in death or serious injury



Risk of electrical shock exists under normal use



Double insulation

### CAUTIONS

- Do not attempt to repair this device
- Do not expose this device to extremes in temperature or humidity

## WARNINGS

- Please read, understand and follow all warnings, cautions, safety information and instructions before operating this device. Failure to do so can result in death or serious injury
- Keep hands and fingers on the body of the probe when measuring, do not touch live circuits
- Risk of electric shock and burn. Contact with live circuits could result in death or serious injury
- Use caution with voltages > 30V AC
- If the device indicates that no voltage is present, voltage may still be present, use caution and double check your test results
- Before and after each use, verify proper operation by testing on a known 'live' circuit (within the stated range of this device)
- Never assume neutral or ground wires are de-energized. Neutrals in multi-wire branch circuits may be energized when disconnected and must be retested before handling
- This device will not detect DC voltage
- This device may not detect voltage if:
  - *The user is not holding the tester*
  - *The device is at too long a distance from the voltage source*
  - *The frequency is outside of the specified range*
- Voltage detection performance is affected by varying electrical socket designs and insulation thickness/type; use caution
- Static electricity can randomly trigger this device, this is normal
- In bright light conditions, the indicators will be less visible
- Do not use this device if it does not power up properly
- Do not use this device if it appears damaged or if does not function properly
- Do not attempt to detect voltages outside the specified range
- Always wear protective clothing and eye-ware
- Do not use this device for purposes that have not been outlined in the user documentation



## 7. Specifications

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FLIR VP40 excitation voltage	90 V AC minimum
FLIR VP42 excitation voltage	190 V AC minimum
Voltage ranges	90 ~ 1000 V AC (FLIR VP40) 190 ~ 1000 V AC (FLIR VP42) 24 ~ 1000 V AC in high sensitivity mode (FLIR VP40 and FLIR VP42)
Detection distance	0 ~ 1 cm (0 ~ 0.4")
Category rating	CAT IV-1000 V
Frequency range	45 ~ 65 Hz
Operating temperature	0°C ~ 60°C (-32°F ~ 140°F)
Storage temperature	-40°C ~ 90°C (-40°F ~ 194°F)
Dimensions	29 mm × 26 mm × 156 mm (1.1" × 1.0" × 6.1")
Weight	0.20 kg (0.44 lbs.) including batteries
Battery life	7 hours continuous with the Flashlight off
Battery type	2 × AAA (LR03)
APO	Device powers OFF after 3 minutes of inactivity For Flashlight: After 30 minutes
Drop-proof	To 3m (9.8 ft.)
Agency approvals	CE, UL/cUL, RCM



UL listing is not an indication or a verification of the accuracy of the meter

## 8. Technical Support

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Main Website	<a href="http://www.flir.com/test">http://www.flir.com/test</a>
Technical Support Website	<a href="http://support.flir.com">http://support.flir.com</a>
Technical support Email	TMSupport@flir.com
Service/Repair Support Email	Repair@flir.com
Support Telephone number	+1 855-499-3662 option 3 (toll-free)

## 9. Three-Year Limited Warranty

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This product is protected by FLIR's 3-Year Limited Warranty. Visit [www.flir.com/testwarranty](http://www.flir.com/testwarranty) to read the 3-Year Limited Warranty document. Register your product at the website to receive a free 1-year warranty extension.



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