

RSE300, RSE600

Thermal Imagers

Users Manual

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Table of Contents

Title	Page
Introduction.....	1
How to Contact Fluke	1
Safety Information	1
Product Familiarization	3
Features.....	3
LED Indicator	4
Operation.....	4
SmartView Software	5
Download SmartView Software	5
Download Firmware	6
Enable the Radio	6
Accessories	7
Optional Lenses.....	7
Maintenance	8
Clean the Case	8
Lens Care	8
Radio Frequency Data.....	8
Specifications	8

Introduction

The RSE300 and RSE600 Thermal Imagers (the Product or Imager) are stationary, infrared imaging cameras for use in many applications. These applications include equipment troubleshooting, preventive and predictive maintenance, building diagnostics, and research and development.

The Imager can stream live infrared and IR-Fusion technology video to a PC that has SmartView® software installed or to the Fluke Connect app (where available). SmartView is a high-performance, professional software suite for quality analysis and reporting. The Imager also works with MATLAB® and LabVIEW®.

Safety Information

A **Warning** identifies hazardous conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that can cause damage to the Product or the equipment under test.

Warning

To prevent possible electrical shock, fire, or personal injury and for safe operation of the Product:

- Read all safety information before you use the Product.
- Carefully read all instructions.
- Do not alter the Product and use only as specified, or the protection supplied by the Product can be compromised.
- Do not use the Product if it operates incorrectly.
- Do not use the Product if it is altered or damaged.
- Disable the Product if it is damaged.

- See emissivity information for actual temperatures. Reflective objects result in lower than actual temperature measurements. These objects pose a burn hazard.
- Use only the external mains power supply included with the Product.
- Do not put metal objects into connectors.
- Use only specified replacement parts.
- Have an approved technician repair the Product.

⚠ Caution

Storage and/or continual operation of the Imager in extreme ambient temperature conditions can result in temporary interruption of operation. If this occurs, let the Imager stabilize (cool down or warm up) before you resume operation.

Table 1 is a list of symbols that can be used on the Product or in this manual.

Table 1. Symbols

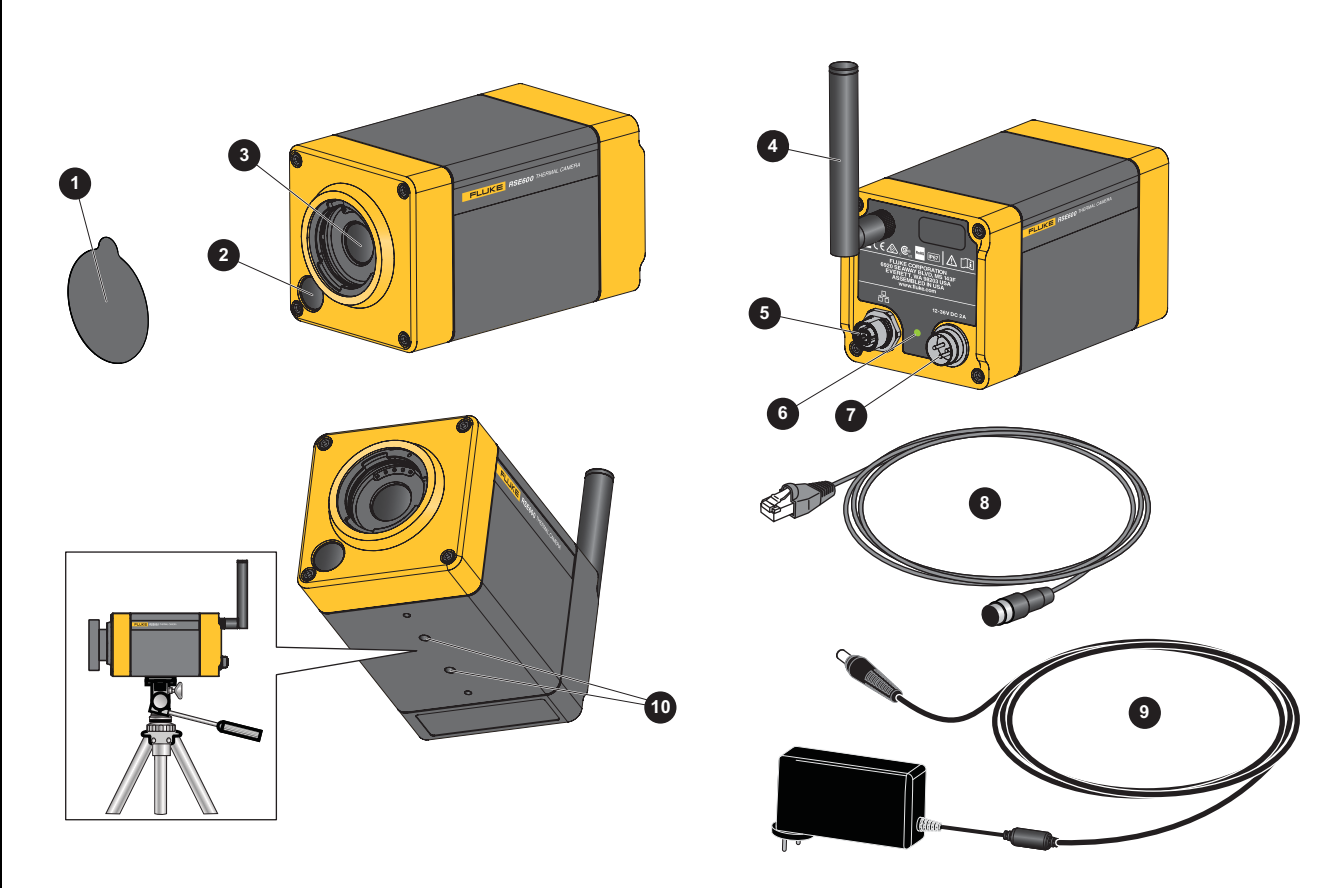
Symbol	Description
	Consult user documentation.
	WARNING. RISK OF DANGER.
	WARNING. HAZARDOUS VOLTAGE. Risk of electric shock.
	Conforms to European Union directives.
	Certified by CSA Group to North American safety standards.
	Conforms to relevant Australian Safety and EMC standards.
	Conforms to relevant South Korean EMC standards.
	This product complies with the WEEE Directive marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as category 9 "Monitoring and Control Instrumentation" product. Do not dispose of this product as unsorted municipal waste.

Product Familiarization

Features

Table 2 lists the features of the Product.

Table 2. Features



The diagram illustrates the Fluke i550 thermal imager and its accessories. Item 1 is a lens cover. Item 2 is the visual light lens. Item 3 is the infrared lens. Item 4 is the antenna. Item 5 is the M12 ethernet and power over ethernet jack. Item 6 is an LED indicator. Item 7 is the M16 DC power jack. Item 8 is the M12 ethernet and power over ethernet cable. Item 9 is the M16 DC power cable. Item 10 shows the tripod/Accessory mounting holes on the bottom of the imager, with an inset showing the imager mounted on a tripod.

Item	Description	Item	Description
1	Lens cover	6	LED indicator (See LED Indicator)
2	Visual light lens	7	M16 DC power jack
3	Infrared lens	8	M12 ethernet and power over ethernet cable
4	Antenna	9	M16 DC power cable
5	M12 ethernet and power over ethernet jack	10	Tripod/Accessory mounting holes

LED Indicator

Table 3 explains what the colors on the LED indicator means.

Table 3. LED Indicator Light Colors

Color	Description	Action
Blinking red	The Product is warming up. Or There is no ethernet connection.	Wait for the Product to warm up. Or Connect the RJ45 connector end of the ethernet cable to the ethernet switch and the M12 connector end to the Product.
Solid red	Indicates an error.	
Solid green	The Product is warmed-up.	Use the Product.
Solid yellow	The internal temperature of the Product is above the top threshold value.	Move the Product to a cool location.
Blinking yellow	The shutter is closed	NA

Operation

The Imager and SmartView need a stable network connection to work properly. Set up your network without interference from other systems. Do not connect the Imager to a Virtual Private Network (VPN). SmartView is a data-intensive application. Use of other data-intensive applications (streaming audio or video) on the PC or the same network system can cause loss of data.

Note

All thermal imagers need sufficient warm-up time for accurate temperature measurements and best image quality. Warm-up time can vary by model and environmental conditions. Although most imagers are fully warmed up in 3 minutes to 5 minutes, wait a minimum of 10 minutes for the most accurate temperature measurement. When you move an imager between environments with large differences in ambient temperature, allow for additional adjustment time.

To use the Product (See Figure 1):

1. Attach the antenna.
2. Stabilize the Product either on a flat surface or a tripod.
3. Connect the RJ45 connector end of the ethernet cable to the ethernet jack on the PC.
4. Connect the M12 connector end of the ethernet cable to the Product.
5. Connect the ac plug of the M16 DC power cable (15 V dc) to a power outlet and the M16 connector to the Product.
6. Wait for the Product to warm up and the LED indicator to show solid green.
7. Remove the lens cover.
8. Use SmartView to focus the image.

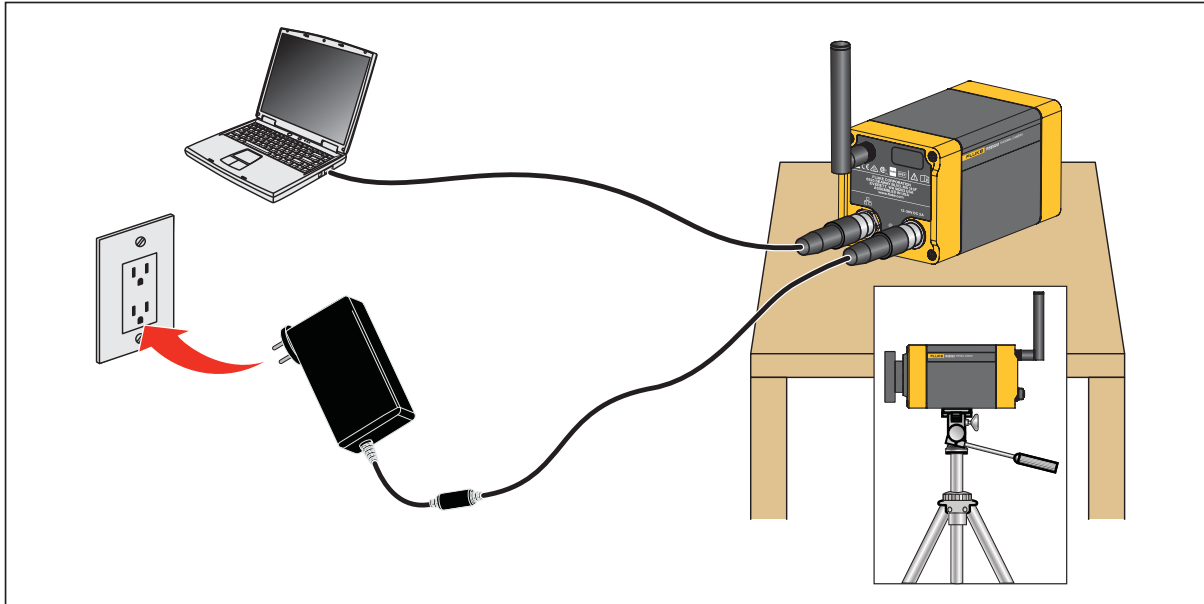


Figure 1. Product Setup

SmartView Software

SmartView software for a PC is available to use with the Imager and contains features to analyze images, organize data and information, and make professional reports.

Use SmartView software to:

- Focus the Imager.
- Record IR and IR-Fusion image and video files.
- Review IR-PhotoNotes, audio, and text annotations.
- Export IR and visible images.
- Edit .is2 image files and .is3 video files.
- Update the firmware for new Imager features.

Download SmartView Software

To download SmartView Software:

The software automatically downloads to the PC.

2. On the PC, follow the instructions to install SmartView software. (Administrator privileges are required for the installation.)
3. Restart the PC when installation is complete.

Download Firmware

Download the latest version of the firmware to the Product to use with the SmartView.

1. Connect the PC to the ethernet jack.
2. On the PC, open SmartView software.
3. Connect the RJ45 connector end of the ethernet cable to the ethernet jack on the PC.
4. Connect the M12 connector end of the ethernet cable to the Product.

SmartView software recognizes the connection with the Imager and  appears on the SmartView software toolbar menu.

5. On the PC, select **Yes** if prompted to download a firmware update file onto the PC.

The Imager restarts and completes the firmware update.

Enable the Radio

In countries with laws and regulations that permit wireless communications, wireless communication protocols are available to expand the capabilities of the Imager. All Imagers ship from the factory with the radios disabled.

To enable the radio:

2. On the website:
 - a. Select a language from the drop down box.
 - b. Enter your information and the serial number of the Imager. The serial number is case sensitive.
 - c. Click **Submit**.

If the radio is authorized in your country, an authorization code appears on the web page.

Note

If the radio is not yet authorized in your country, Fluke will contact you when the radio is authorized for use in your country.

3. In SmartView:
 - a. Type in the authorization code from the website and select **Enter**. (The authorization code is not case sensitive.)

A message appears in SmartView that shows the wireless communication is enabled.

If a message appears that says the authorization code is invalid:

 - Make sure you entered the correct serial number from the Imager into the website.
 - Make sure you entered the correct authorization code from the website into SmartView.
 - b. Select **Ok**.

Accessories

Table 4 is a list of the accessories available for the Imager.

Table 4. Accessories

Model	Description	PN
	Tripod/Accessory Stand	
BOOK-ITP	Introduction to Thermography Principles	3413459
FLK-0.75X-WIDE-LENS	Wide-Angle Infrared Smart Lens	4961174
FLK-2X-LENS	2X Telephoto Infrared Smart Lens	4961163
FLK-4X-LENS	4X Telephoto Infrared Smart Lens	4961188
FLK-MACRO-LENS	Macro Infrared Smart Lens	4961195

Optional Lenses

Use optional telephoto and wide-angle lenses for more applications of infrared inspection work. Figure 2 shows how to install a lens.

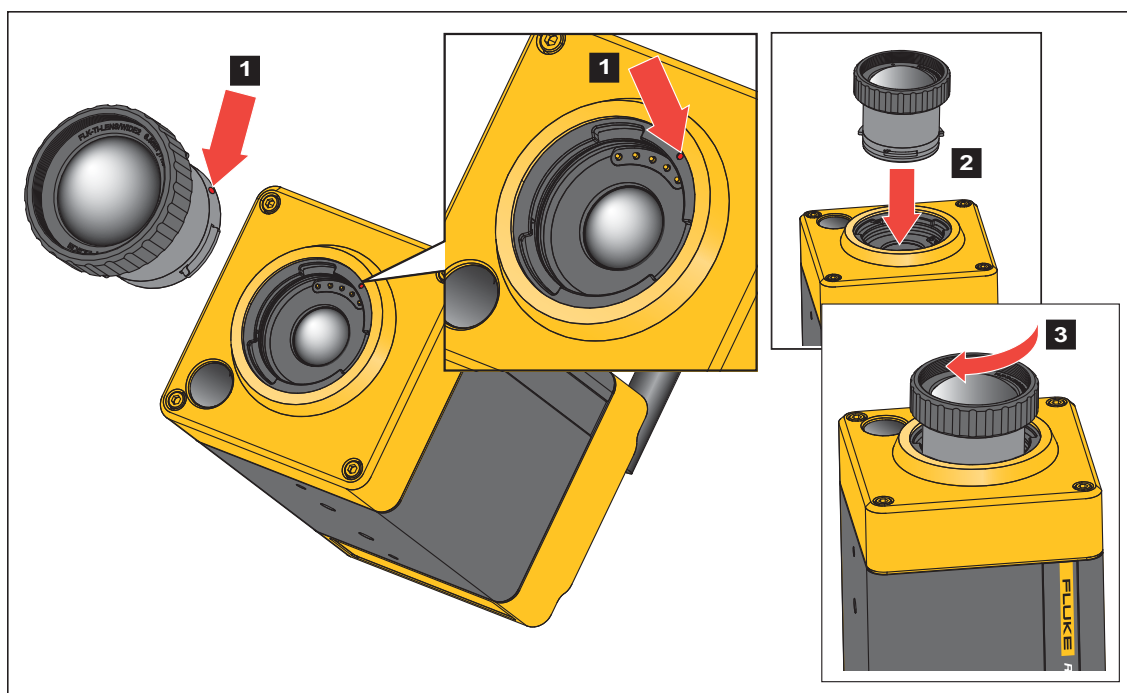


Figure 2. Optional Lens Installation

Maintenance

Cleaning and lens care are the only maintenance required to the Product.

Clean the Case

Clean the case with a damp cloth and a weak soap solution. Do not use abrasives, isopropyl alcohol, or solvents to clean the case.

Lens Care

⚠ Caution

To prevent damage to the infrared lens:

- Carefully clean the infrared lens. The lens has a delicate anti-reflective coating.
- Do not clean the lens too vigorously because this can damage the anti-reflective coating.

To clean the lens:

1. Use a pressurized can of air or a dry nitrogen-ion gun, if available, to blow off the particulates from the lens surface.
2. Soak a lint-free cloth in a commercial lens cleaning liquid that contains alcohol, ethyl alcohol, or isopropyl alcohol.

⚠ Caution

To prevent damage to the case, do not get the alcohol on the case.

3. Squeeze the cloth to remove excess liquid.
4. Wipe the lens surface in one circular motion and discard the cloth.
5. If needed, repeat with a new lint-free cloth.

Radio Frequency Data

Specifications

Temperature	
Operating	-10 °C to +50 °C (+14 °F to +122 °F)
Storage	-20 °C to +50 °C (-4 °F to +122 °F)
Relative Humidity	10 % to 95 % non-condensing
Altitude	
Operating	2000 m
Storage	12 000 m
Power	AC operation with included power supply: 110 V ac to 220 V ac, 50/60 Hz ac universal adapters included
Vibration	3 G, 11 Hz to 200 Hz, 3 axis, IEC 60068-2-26
Shock	50 G, 6 ms, 3 axis, IEC 60068-2-27
Size (H x W x L)	8.255 cm x 8.255 cm x 15.24 cm (3.25 in x 3.25 in x 6.0 in)

Weight1.04 kg (2.3 lb)

Enclosure RatingIP67

SafetyIEC 61010-1

Wireless Radio

Frequency.....2412 MHz to 2462 MHz

Output Power.....<100 mW

Electromagnetic Compatibility (EMC)

InternationalIEC 61326-1: Industrial Electromagnetic Environment

CISPR 11: Group 1, Class A

Group 1: Equipment has intentionally generated and/or uses conductively-coupled radio frequency energy that is necessary for the internal function of the equipment itself.

Class A: Equipment is suitable for use in all establishments other than domestic and those directly connected to a low-voltage power supply network that supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted and radiated disturbances.

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

Korea (KCC)Class A Equipment (Industrial Broadcasting & Communication Equipment)

Class A: Equipment meets requirements for industrial electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and not to be used in homes.

USA (FCC)47 CFR 15 Subpart C Sections 15.207, 15.209, 15.249.