VIRALERT 3

USER GUIDE

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HUMAN BODY **TEMPERATURE SCREENING** SYSTEM

LAND
AMETEK®

LANDVIRALERT.COM

IMPORTANT INFORMATION - PLEASE READ

AMETEK®
PROCESS & ANALYTICAL INSTRUMENTS

Health and Safety Information

Read all of the instructions in this booklet - including all the WARNINGS and CAUTIONS - *before* using this product. If there is any instruction which you do not understand, DO NOT USE THE PRODUCT.

Safety Signs

WARNING
Indicates a potentially hazardous situation which, if not avoided, could result in death or personal injury.

CAUTION
Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury to the user or users, or result in damage to the product or to property.

NOTE
Indicates a potentially hazardous situation which, if not avoided, could result in damage or loss of data.

Signs and Symbols used on equipment and Documentation


Caution, risk of electric shock.


Caution, attention to possibility of risk of damage to the product, process or surroundings. Refer to instruction manual.


Caution, hot surface.


Protective Conductor Terminal.


Observe precautions for handling electrostatic discharge sensitive devices.

Equipment Operation

Use of this instrument in a manner not specified by AMETEK Land may be hazardous. Read **and understand** the user documentation supplied **before** installing and operating the equipment.

The safety of any system incorporating this equipment is the responsibility of the assembler.

Protective Clothing, Face and Eye Protection

It is possible that this equipment is to be installed on, or near to, machinery or equipment operating at high temperatures and high pressures. Suitable protective clothing, along with face and eye protection must be worn. Refer to the health and safety guidelines for the machinery/equipment before installing this product. If in doubt, contact AMETEK Land.


Wear Protective Gloves


Wear Protective Clothing


Wear Eye Protection


Wear Ear Protection


Wear Safety Boots


Wear Face Protection

Electrical Power Supply

Before working on the electrical connections, all of the electrical power lines to the equipment must be isolated. All the electrical cables and signal cables must be connected exactly as indicated in these operating instructions. If in doubt, contact AMETEK Land.

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For further details on all AMETEK Land offices, distributors and representatives, please visit our website.

Storage

The instrument should be stored in its packaging, in a dry sheltered area.

The maximum storage temperature is 10 °C (18 °F) higher than the maximum operating temperature.

The minimum storage temperature is 10 °C (18 °F) lower than the minimum operating temperature.

Refer to the Technical Specification for details of the operating temperature limits.

Unpacking

Check all packages for external signs of damage. Check the contents against the packing note.

Lifting Instructions

Where items are too heavy to be lifted manually, use suitably rated lifting equipment. Refer to the Technical Specification for weights. All lifting should be carried out in accordance with local and national regulations.

Return of Damaged Goods

IMPORTANT If any item has been damaged in transit, this should be reported to the carrier and to the supplier immediately. Damage caused in transit is the responsibility of the carrier not the supplier.

DO NOT RETURN a damaged instrument to the sender as the carrier will not then consider a claim. Save the packing with the damaged article for inspection by the carrier.

Return of Goods for Repair

If you need to return goods for repair please contact our Customer Service Department for details of the correct returns procedure.

Any item returned to AMETEK Land should be adequately packaged to prevent damage during transit.

You must include a written report of the problem together with your own name and contact information, address, telephone number, email address etc.

Design and Manufacturing Standards

The Quality Management System of Land Instruments International is approved to BS EN ISO 9001 for the design, manufacture and on-site servicing of combustion, environmental monitoring and non-contact temperature measuring instrumentation.

Registered ISO 9001 Management System approvals apply in the USA.

UK Calibration Laboratory: UKAS 0034.

USA Calibration Laboratory: ANAB Accredited ISO/IEC 17025.

National Accreditation Board for Testing and Calibration Laboratories approvals apply in India.

Operation of radio transmitters, telephones or other electrical/electronic devices in close proximity to the equipment while the enclosure doors of the instrument or its peripherals are open, may cause interference and possible failure where the radiated emissions exceed the EMC directive.

The protection provided by this product may be invalidated if alterations or additions are made to the structural, electrical, mechanical, pneumatic, software or firmware components of this system. Such changes may also invalidate the standard terms of warranty.

Copyright

Contents

1 INTRODUCTION

This User Guide gives you information on how to install, set up and customise the AMETEK Land VIRALERT 3 Human Body Temperature Screening System.

1.1 About VIRALERT 3

VIRALERT 3 screens people for elevated temperatures that could indicate fever. The system is intended for use at business premises, hospitals, airports, schools, sporting and social gathering venues etc.

A high-resolution visual camera, with facial detection software identifies the part of the image containing the subject's face. VIRALERT 3 uses an infrared thermal imager to determine the highest temperature in the subject's face.

WARNING

VIRALERT 3 is a screening tool. It has **not** been cleared or approved by the FDA or any other regulatory agency. It should **not** be relied on solely or primarily to diagnose or exclude a diagnosis of COVID-19 or any other disease.

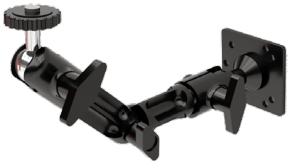
1.2 What's in the box?

	**VIRALERT 3 Camera and Blackbody Reference source** Pre-mounted on a bracket with tripod fixings
	**Camera Cable** Power and signal cable Connects the camera to the Laptop/PC Ethernet and USB connections to the Laptop/PC
	**Power Cable** For the Blackbody Reference Source International mains adaptors included

1.3 Optional Accessories

Laptop PC running VIRALERT3 software

VIRALERT3 software is available for download from **www.landviralert.com**



Surface Mount Bracket

Part Nº 814266

An adjustable mounting bracket that can be screwed to a wall, ceiling or any other suitable flat surface. Fixings included

Clamp Mount Bracket

Part Nº 814267

A mounting bracket with a clamp to connect to a desk or a table

Tripod

Part Nº 814268

A tripod for installation on a flat surface

2 SYSTEM OVERVIEW

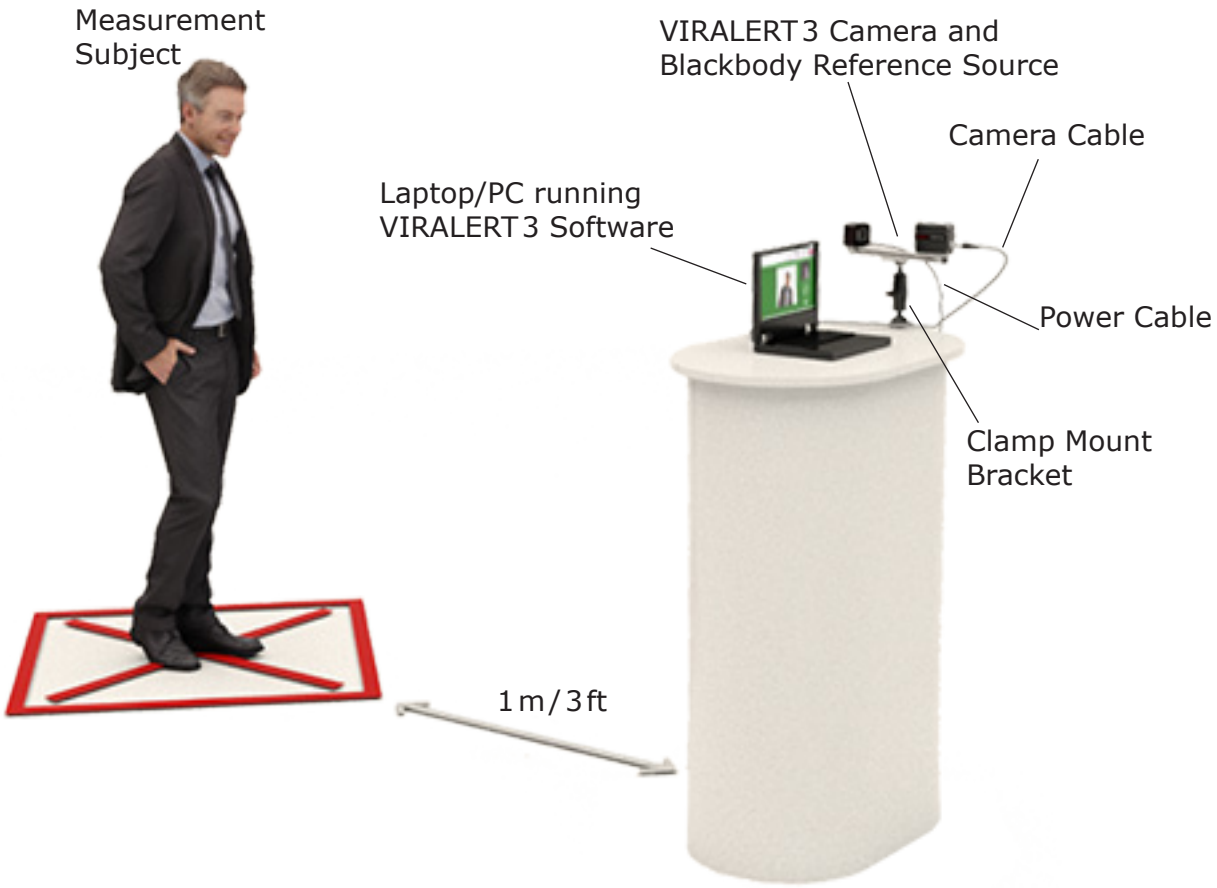


Fig. 2-1 VIRALERT 3 Typical System Overview

3 SYSTEM SETUP

3.1 Measurement Location

1) Choose a location near to the entrance of the area you want to protect.
2) There must be space to install the VIRALERT 3 so that the Measurement Subject can face the system from a distance of 1 m / 3 ft.
3) Avoid locations where there are possible heat sources e.g. electrical equipment, radiators etc. in the field of view of the camera.
4) Also avoid locations where the camera may pick up reflections from windows, mirrors etc.
5) VIRALERT 3 is designed to scan one person at a time. The measurement location should not be a high-traffic area where people other than the subject will be in the field of view.
6) During the temperature measurement process, the Subject will need to stand still in front of the camera for approximately 2 seconds. Make sure there is adequate provision for social distancing in your chosen measurement location.
7) The camera must have a clear, unobstructed view of the Subject's face, ideally with the camera at a height around eye level. If necessary, use one of the mounting accessories available from AMETEK Land (see Section 1.3).
8) The Blackbody Reference Source requires a mains voltage supply. You will also need to provide power to the Laptop/PC running the VIRALERT 3 software.
9) Once the system is installed and operating, use cable ties to secure the cables to suitable structures. This minimises the risk of the cables becoming dislodged and reduces the risk of tripping over the cables.
10) Posters which explain the screening process and provide instructions for your staff and visitors on how to use the system are available for download from:
    www.landviralert.com

    Detailed guidelines for deployment, implementation and operation of a screening system can be found in ISO/TR 13154:2017

3.2 System Connections

NOTE

If you have purchased a mounting accessory i.e. Surface Mount Bracket, Clamp Mount Bracket, or Tripod from AMETEK Land, then each accessory will come supplied with its own installation instructions.

Camera Connection

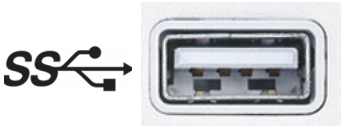
Connect the cylindrical connector on the power and signal cable to the Camera

Laptop/PC Connections

Connect the Laptop/PC to the mains power supply.

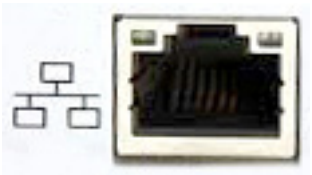
Connect the two connectors on the other end of the power and signal cable to the Laptop/PC.

The USB power and data connector on the cable looks like this.



Connect it to a USB 3.0 socket on the laptop which looks like this.
A USB 3.0 socket can be identified by the letters ***SS*** in the symbol next to the socket.

The Network signal connector on the cable looks like this.



Connect it to a Network socket on the laptop which looks like this.

Blackbody Reference Source Connection

Connect the smaller connector of the source power cable to the USB port on the Blackbody Reference Source.

Use the supplied mains adapter to connect the cable to the mains supply.

System connections are now complete

4 START THE SOFTWARE

NOTE

If you purchased a Laptop/PC from AMETEK Land with your VIRALERT 3 system, then the Network Adapter Settings will already be configured and the software installed on the computer.

4.1 Network Adapter Settings

If you are using your own Laptop/PC, the correct Network Adapter Settings must be specified so that your PC can communicate with the VIRALERT 3 Camera.

1) In the bottom left corner of your PC screen, there is a 'Windows' icon 

   Click on the icon so that it turns blue 

   The Windows **Start** menu is displayed.

2) On your keyboard, type **Ethernet Settings**.

   The **Ethernet** settings screen will be displayed, similar to the one shown in Fig. 4-1 below.

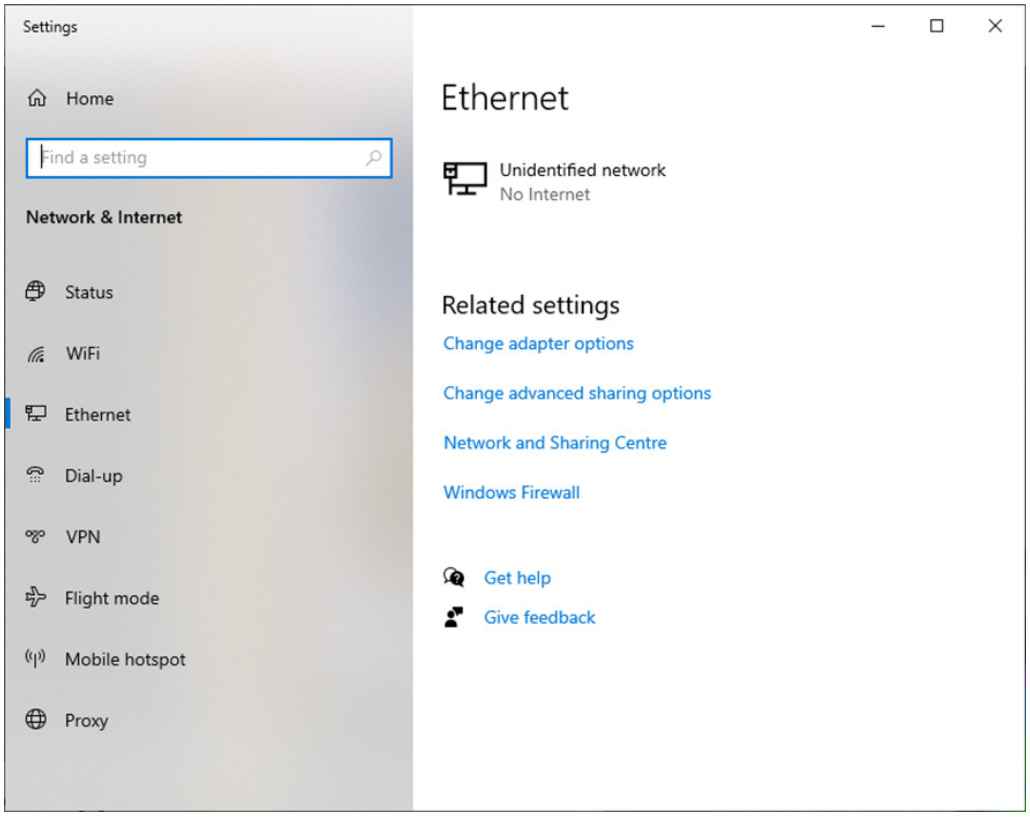


Fig. 4-1 Typical Ethernet settings screen

3) Click on the **Change adapter options** link (See Fig. 4-2).

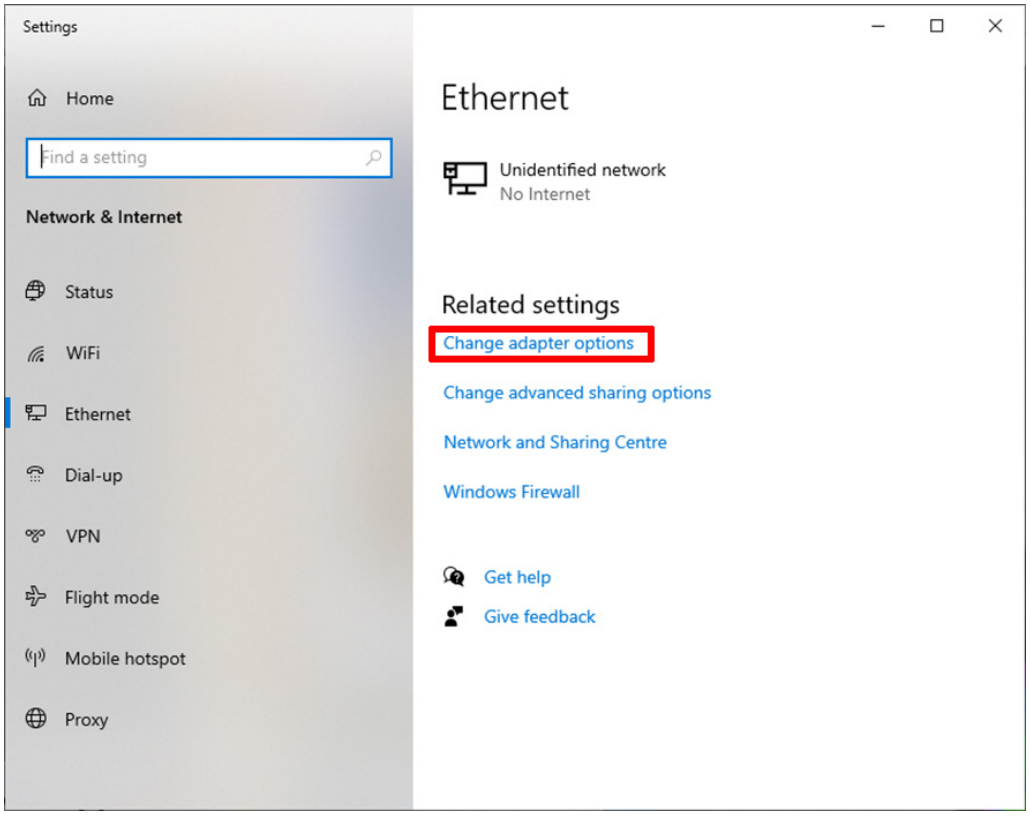


Fig. 4-2 Status screen

The **Network Connections** screen is displayed. See Fig. 4-3 below.

4) Move your mouse cursor over the icon for your Network (Ethernet in the example below).

5) Click the right-hand mouse button and select the Properties option.

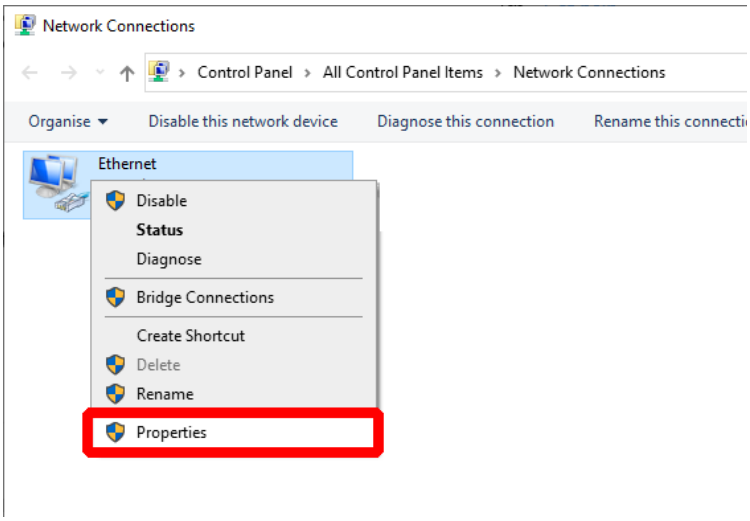


Fig. 4-3 Network Connections screen

The **Networking Properties** screen is displayed. See Fig. 4-4 overleaf.

6) Click to highlight the **Internet Protocol Version 4 (TCP/IPv4)** option and click the **Properties** button.

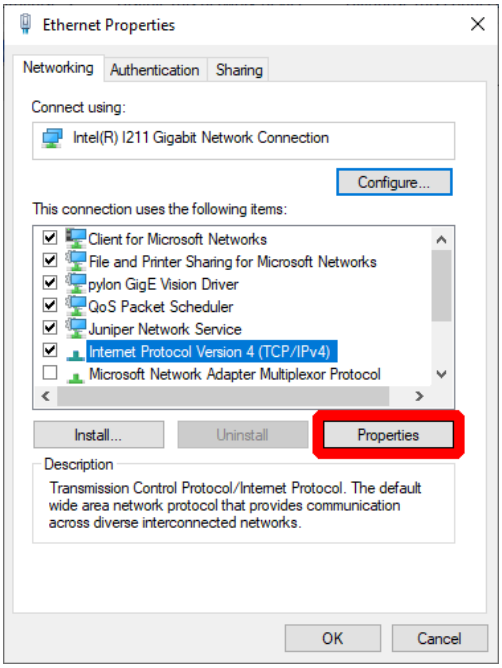


Fig. 4-4 Network status search

The **Internet Protocol Version 4 (TCP/IPv4) Properties** screen is displayed. See Fig. 4-5 below.

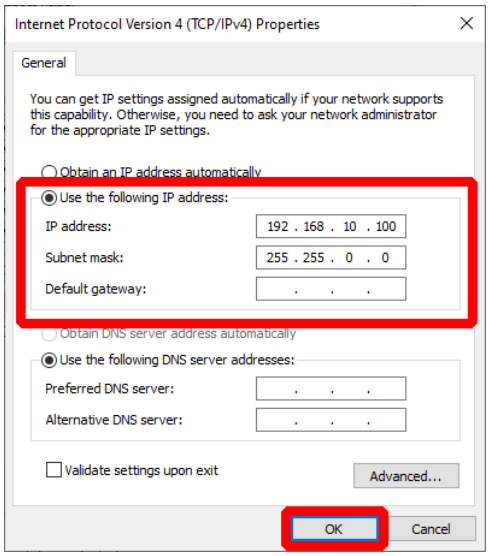


Fig. 4-5 Internet Protocol Version 4 (TCP/IPv4) Properties screen

7) Click the small round button next to **Use the following IP address** to select this option.
8) In the text boxes, enter the following values:
   - IP address: 192.168.10.100
   - Subnet mask: 255.255.0.0
9) Click on **OK** to save these settings.
10) Close the **Networking Properties** and **Network Connections** screens.
    The Network Adapter Settings are now complete.

4.2 Starting the Software

If you are using your own Laptop/PC, download and install the software from the AMETEK Land website.

VIRALERT 3 software is available for download from **www.landviralert.com**.

CAUTION

During installation of the VIRALERT 3 software, your computer may restart. Before installation, make sure to save and close any files in other programs that you may have open.

The minimum specifications for a computer running VIRALERT 3 are:

- I3 processor or equivalent
- 4 GB RAM
- Minimum 1 x RJ45 port and 1 x USB-A port
- 64 GB Hard disk
- Windows 10*

* *If your Laptop/PC is running Windows 10 in S mode, then VIRALERT 3 will not run on this machine. S mode runs only applications from the Microsoft Store, and requires Microsoft Edge for Internet browsing. To run VIRALERT 3 on your machine, it should be switched to standard Windows 10 mode. Simple instructions for this are available from support.microsoft.com*

1) On the Laptop/PC, click on the **VIRALERT 3** icon  or search for VIRALERT in the Windows search bar.

The software will start automatically in Measurement mode.

2) Wait for the LED next to the cable connector on the front panel of the Blackbody Reference Source to turn green.

WARNING

The warm-up rate of the Blackbody Reference Source is 13 °C / 23 °F per minute.

Therefore, from an ambient temperature of 25 °C / 77 °F it will take approximately 1 minute for the source to reach the factory default value of 38 °C / 100.4 °F.

From an ambient temperature of 0 °C / 32 °F, it will take approximately 3 minutes to reach the default temperature value.

3) Position a Subject in front of the Camera. The subject must:

- Remove glasses
- Remove any hat, hood or mask
- Have no hair covering the forehead

Posters which explain the screening process and provide instructions for your staff and visitors on how to use the system are available for download from:

www.landviralert.com

The software will automatically detect the presence of the subject and calculate their body temperature.

The default temperature unit is Celsius, but this can be changed to Fahrenheit. Refer to Section 5 of the VIRALERT 3 User Guide for further information.

During the measurement process, the screen background will turn yellow

4) Follow the instructions displayed on the software screen.

Subjects with a normal body temperature are indicated by a green screen, as shown in Fig. 4-6.

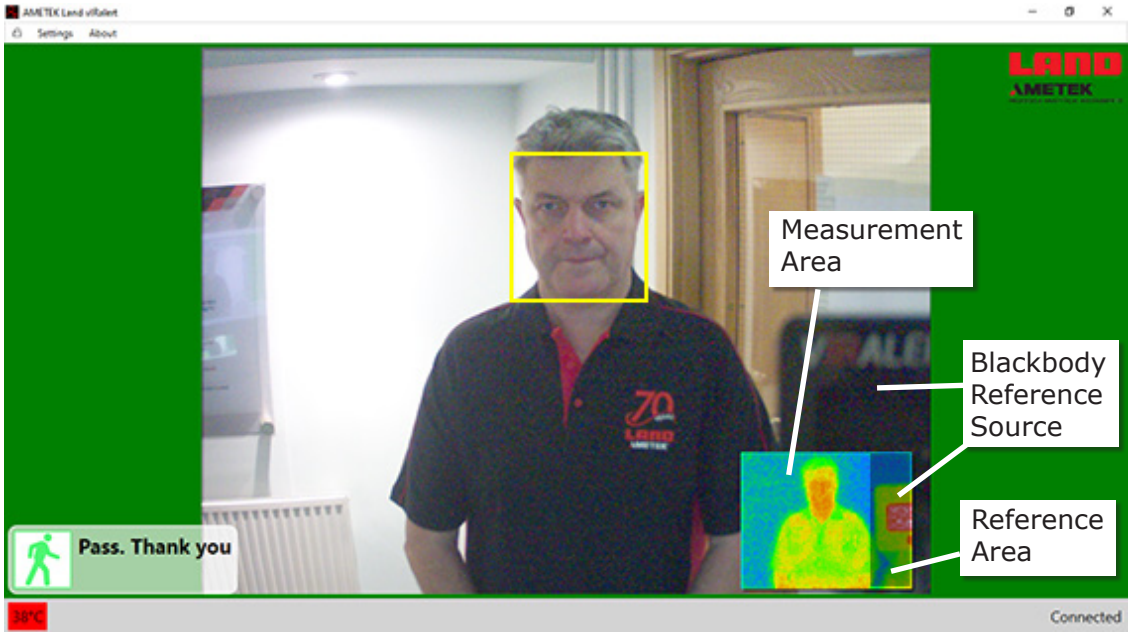


Fig. 4-6 VIRALERT 3 Software Normal Body Temperature display

Subjects with a high body temperature are indicated by a red screen, as shown in Fig. 4-7.

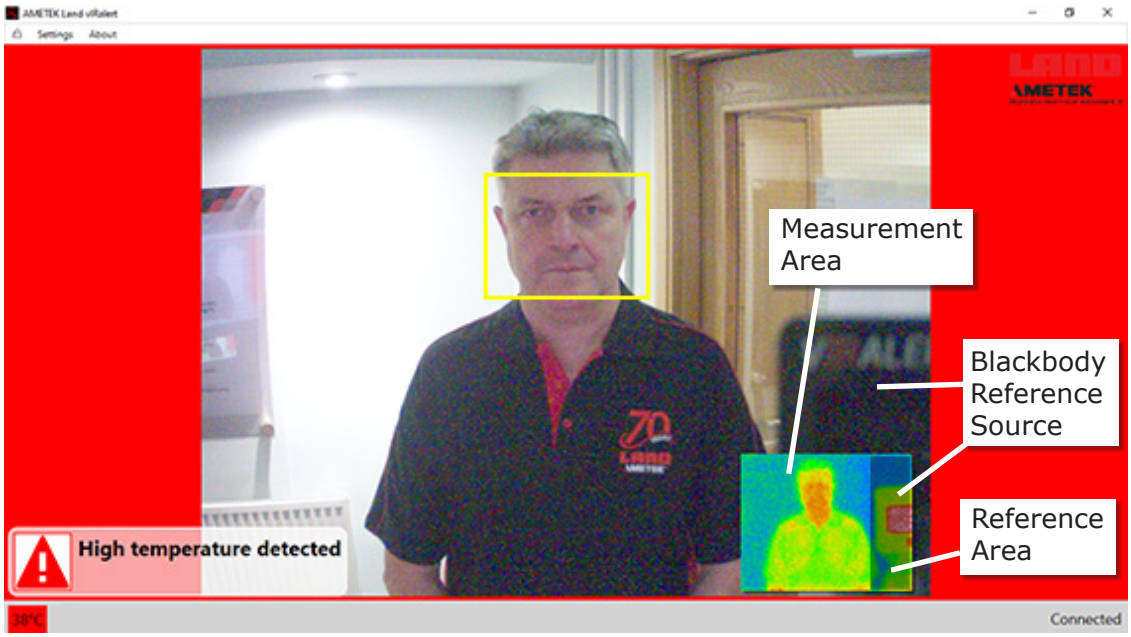


Fig. 4-7 VIRALERT 3 Software Elevated Body Temperature display

CAUTION

Refer to Figs. 4-6 and 4-7.

The VIRALERT 3 system is supplied with the Blackbody Reference Source installed so that it is visible in the right hand portion of the images from the camera and thermal imager.

In the thermal image, the Blackbody Reference Source must be visible within the grey **Reference Area** band on the right. It must not encroach into the **Measurement Area**.

If your Blackbody Reference Source moves out of position, you will need to adjust its mounting so that it is aligned correctly.

5) Access to the **Settings** menu, in which you can adjust the temperature alarm value and units of measurement, is password protected.
The default (factory-set) password is **0000**.

WARNING

The threshold for an elevated body temperature alarm is a critical parameter for use of VIRALERT 3.

You should consult a medical advisor for assistance in setting the appropriate alarm point. The factory default value is 38 °C (100.4 °F)

For more information on the Settings menu and other features of the software, refer to the Section 5 of this User Guide.

5 SOFTWARE SETTINGS

NOTE

Before changing any settings in your VIRALERT 3 system, make sure that you read **and understand** the information given in this section of the User Guide.

5.1 Accessing the Settings menu

1) To access the **Settings**, first unlock the settings menu by clicking on the padlock and entering your password.
   The default (factory-set) password is **0000**. Once unlocked, the system will remain unlocked for 5 minutes or until you press the padlock button again.
2) Click on the link in the top left corner of the screen. See Fig. 5-1.

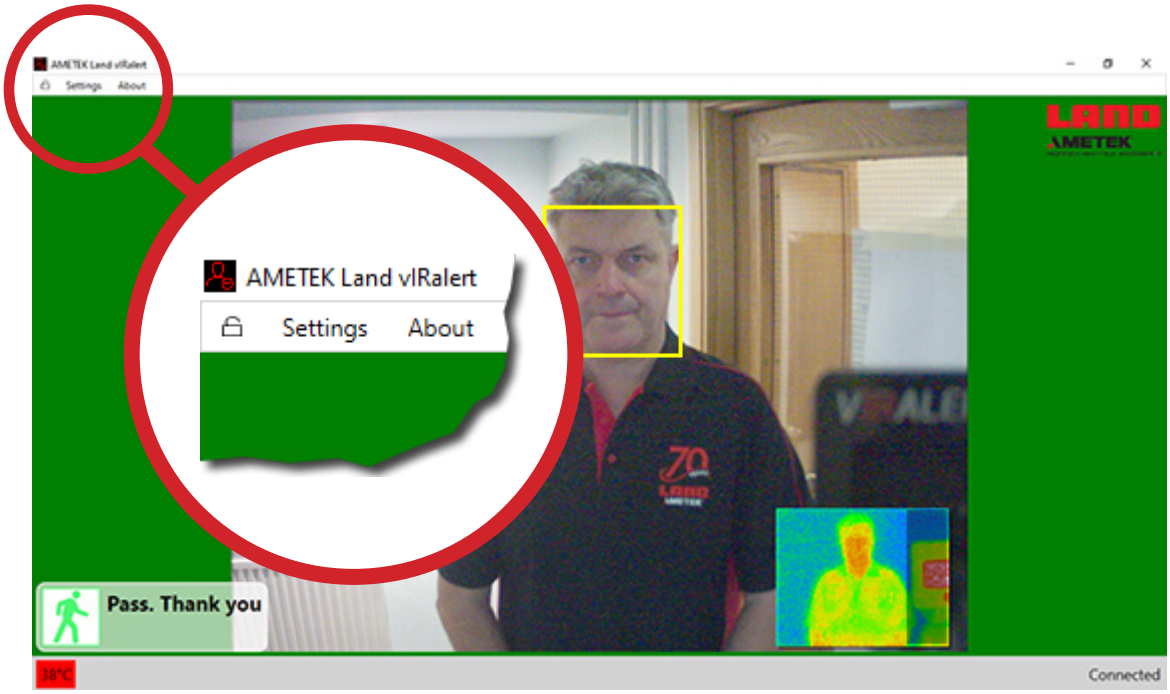
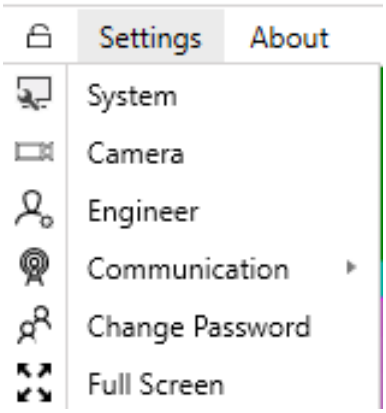


Fig. 5-1 VIRALERT 3 Settings Menu location

If the menu is not visible, this is due to the software being in **Full Screen** Mode.

2) To exit Full Screen mode, click on this button in the top right hand corner of the screen.
   The **Settings** menu option will now be displayed.
   The menus will remain unlocked for 5 minutes or until you press the padlock button again.
   You can change the password via an option in the **Settings** menu (See Section 5.5).
   The options available in the Settings menu are described in the following pages.



5.2 System Settings

1) To access the **System Settings** screen, select the **System** option from the **Settings** menu.

The System Settings screen contains four 'Tabs'. These are:

- General
- Alarm
- Workflow
- Logging

5.2.1 General (System Settings)

The **General** tab is shown in Fig. 5-2.

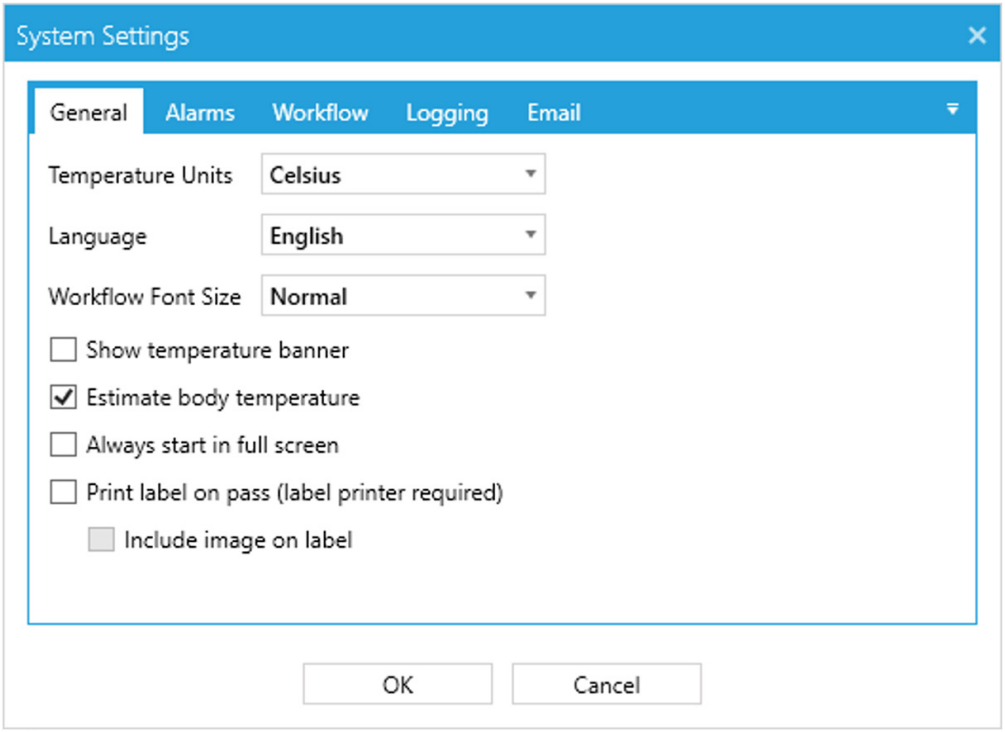


Fig. 5-2 System Settings - General options

The options available in the General tab are explained in the table below. The default (factory-set) vales are shown in **bold text**.

Option	Description
Temperature Units	Select the required temperature units from either: • **Celsius** • Fahrenheit
Language	VIRALERT 3 screens can be displayed in the following languages. Select from: • **English** • French • German • Italian • Spanish • Chinese (simplified) • Japanese • Korean • Portuguese • Russian
Workflow Font Size	Allows you to adjust the size of the notification text to users on the main screen.
Show Temperature Banner	Use this tick-box to choose whether or not the measured temperature is displayed at the top of the VIRALERT 3 software screen. The default is **OFF**.
Estimate Body Temperature	Use this tick-box to choose whether or not the system estimates a person's body temperature based upon the measured skin temperature. The default is **ON**.
Always start in full screen	If this option is ticked, the system will always start up in full screen mode.
Print label on pass (label printer required)	**Note:** to use this option, you will need a **Brother QL-700** Label Printer. See **Label Printing** (below). This option allows you to print a label for each person who is screened by VIRALERT 3 and whose temperature is below the alarm level. The label can be attached to the person as an aid to confirming that he or she has been screened by the VIRALERT 3. The label shows the date and time of the measurement.
Include image on label	In addition to the date and time, you can select this option to add the visual image taken at the time of measurement to each person's label.

Click **OK** to close this window and save any changes. Click **Cancel** to close it without saving your changes.

5.2.1.1 Label Printing

Supported Label Printer: **Brother QL-700**

VIRALERT 3, when used in conjunction with a **Brother QL-700** Label Printer, allows you to print a label for each person who is screened by VIRALERT 3 and whose temperature is below the alarm level.

1) To set up the printer, follow the Quick Start Guide supplied with the Brother QL-700 label printer.
2) Download and install the required printer driver from the Brother web site:
   https://www.brother.co.uk/support/ql700/downloads
   Once installed, the printer will by default turn itself off after 60 minutes of inactivity.
   To change this:
3) Type **Printers and Scanners** into the Windows search bar and open the **Printers and Scanners** settings window.
4) Select the Brother QL-700 and click on the **Manage** button.
5) Click on the **Printer Properties** link.
   The **Brother QL-700 Properties** window is displayed, as shown in Fig. 5-3.

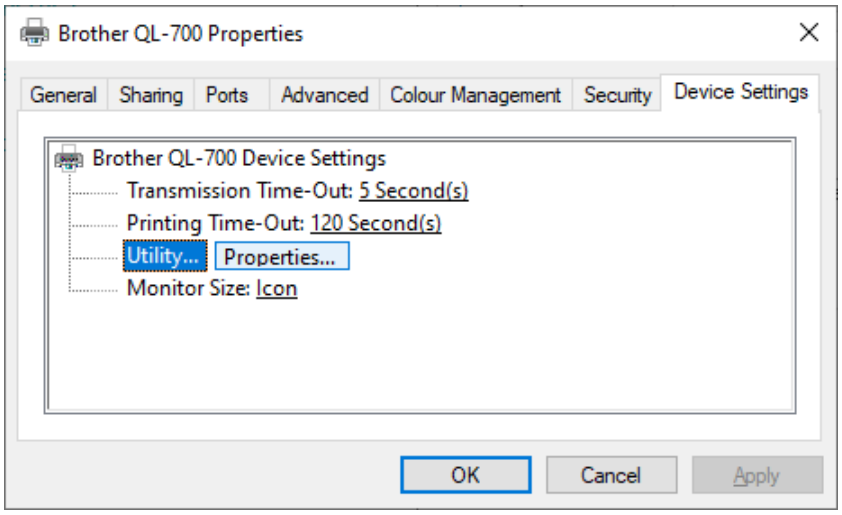


Fig. 5-3 Typical Brother QL-700 Properties window

6) Go to the **Device Settings** tab, select **Utility...** and then click on the **Properties** button.
   The **Brother QL-700 Utility** window is displayed, as shown in Fig. 5-4 (overleaf).

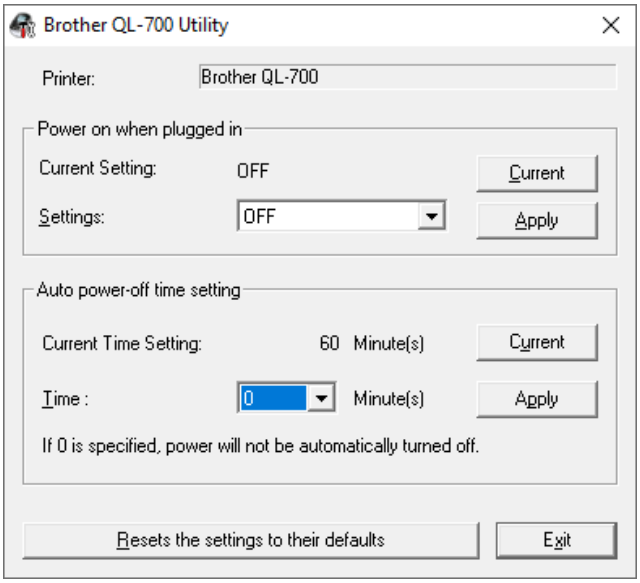


Fig. 5-4 Typical Brother QL-700 Utility window

7) In the **Auto power-off time setting** area change the **Time** field to **0** and click **Apply**.

8) Exit all the printer properties screens.

Your label printer is now configured to work with VIRALERT 3. You may need to restart VIRALERT 3 for these settings to take effect.

5.2.2 Alarms

The **Alarms** tab is shown in Fig. 5-5.

Fig. 5-5 System Settings - Alarms options

WARNING

The threshold for an elevated body temperature alarm is a critical parameter for use of VIRALERT 3.

You should consult a medical advisor for assistance in setting the appropriate alarm point.

The factory default value is 38 °C (100.4 °F)

The options available in the Alarms tab are explained in the table below.

Option	Description
Alarm Temperature	Use this text input to enter the temperature at which you want the system to indicate an alarm. The default value is **38 °C** or **100 °F**.
Temperature Trend	This section of the screen displays a graphical representation of ten most recent temperature readings, plotted against the time of the reading. You can use this graph to help you select an Alarm Temperature just above the average for your particular application.

Trend Warning

The trend warning can be activated to trigger a warning when a temperature is recorded which is significantly higher than the average of the previous readings taken.

To enable this feature go to **Settings > System** and click on the **Alarms** tab. Then enable **Show warning when temperature is 2C above average**.

By default, the system will track the last 10 scans to take as an average, this can be increased if required.

The default warning trigger is when a new temperature reads 2 °C/3.6 °F or higher than the average.

When this feature is enabled you will see the **Recent Scans** history graph appear in the bottom left of the screen. This shows the previous scan results in relation to the warning and alarm temperatures:

5.2.3 Workflow

The **Workflow** tab allows you to customise the messages that are displayed during the temperature monitoring process.

The **Workflow** tab is shown in Fig. 5-6. The standard messages are displayed above each text input box.

All Workflow messages can be customised. Entering your own custom message here will completely replace the default message for that system state.

For instance, you could add emergency contact instructions to be displayed in the event of a high temperature being detected.

Click **OK** to close this window and save any changes. Click **Cancel** to close it without saving your changes.

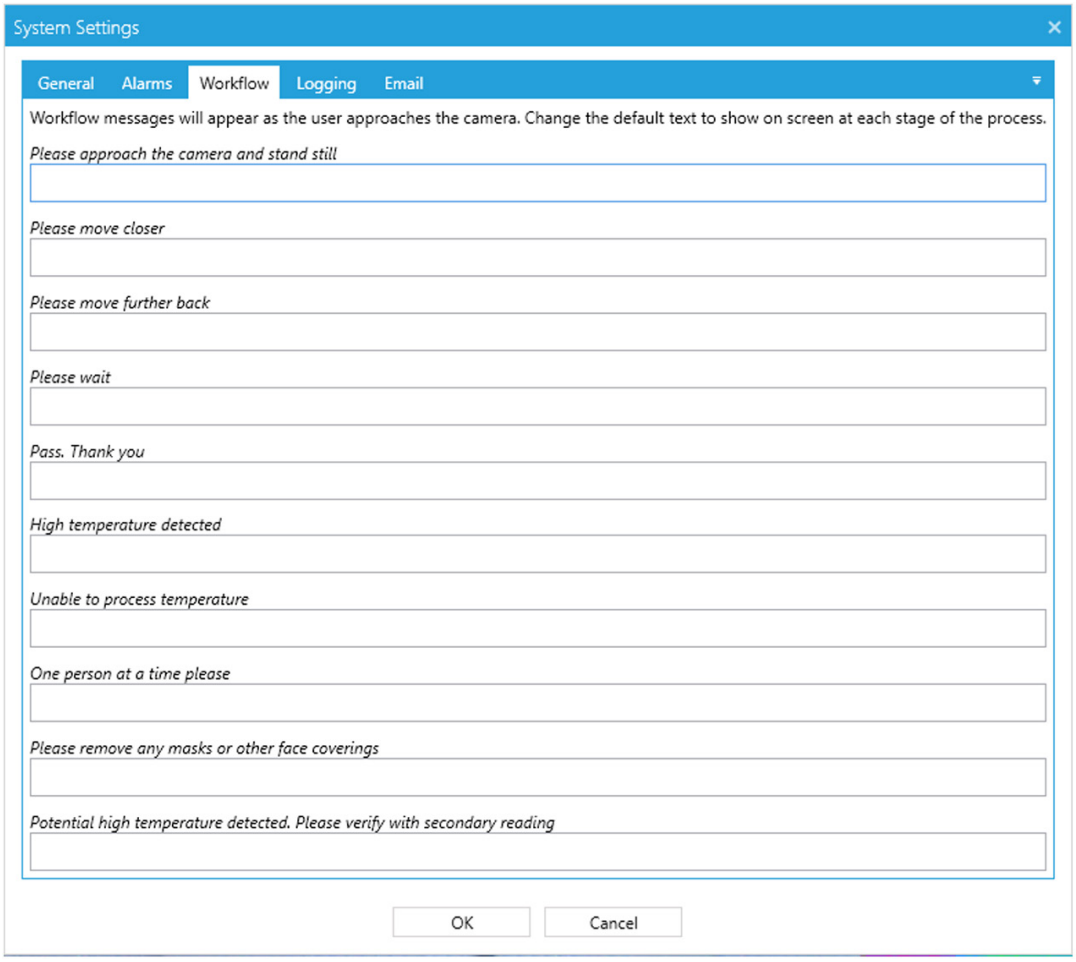


Fig. 5-6 System Settings - Workflow options

5.2.4 Logging

The **Logging** tab allows you to select whether or not images and data (such as temperature readings) are saved from the VIRALERT 3 system to your computer/ network.

The logging tab is shown in Fig. 5-7.

Logging images is useful for identifying which person triggered an alarm, and logging data is useful for recording temperature value trends.

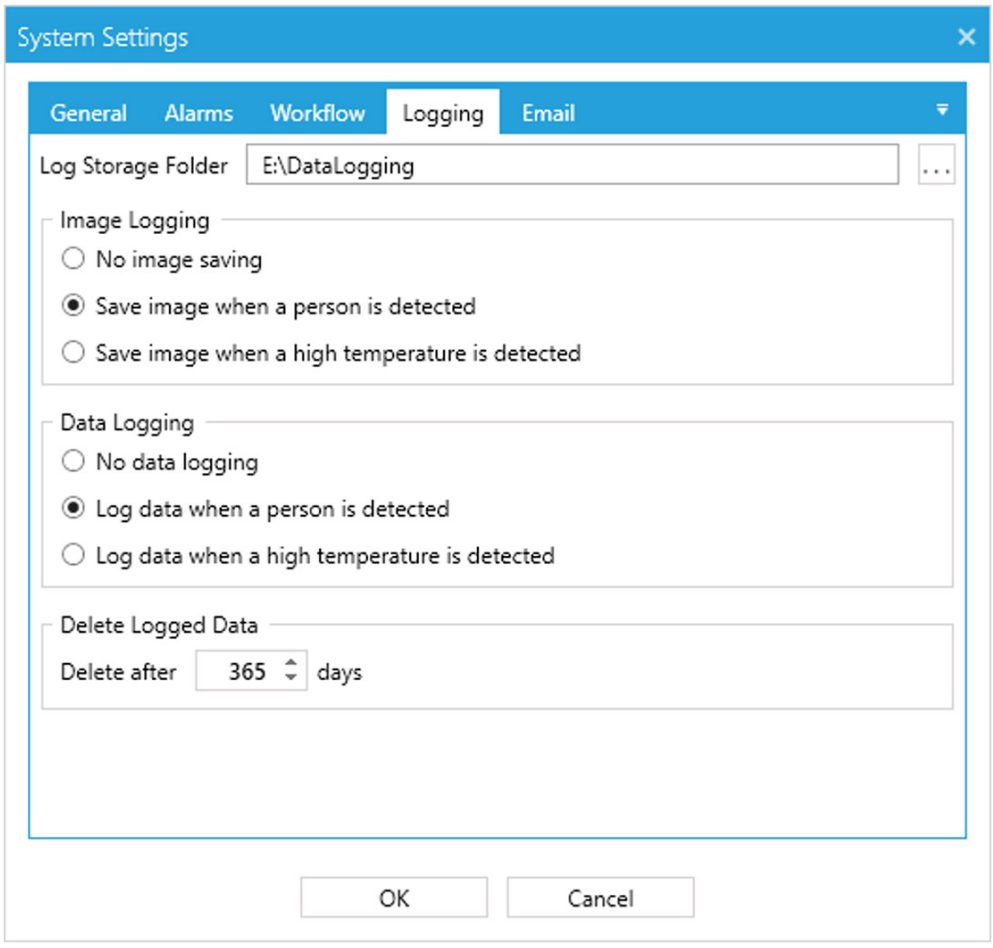


Fig. 5-7 System Settings - Logging options

The options available in the Logging tab are explained in the table overleaf.

Option	Description
Log Storage Folder	This is the folder on your computer/network where the logged images and data will be stored. A default folder is set up automatically during the installation process, but you can change this if required.
Image Logging	• **No image saving** No images are saved by the system. • **Save image when a person is detected** This option saves an image each time a person is detected in front of the camera, irrespective of their temperature reading. This option will take up the most storage space on your computer system. • **Save image when a high temperature is detected** This option saves an image each time a person with a temperature reading above the alarm value is detected in front of the camera.
Data Logging	• **No data logging** No data is saved by the system. • **Log data when a person is detected** This option logs data each time a person is detected in front of the camera, irrespective of their temperature reading. This option will take up the most storage space on your computer system. • **Log data when a high temperature is detected** This option logs data each time a person with a temperature reading above the alarm value is detected in front of the camera.
Delete Logged Data	This option specifies the number of days after which logged images and data will be deleted from the Log Storage Folder. You can adjust the number of days to **Delete after** to allow for the number of people the system is likely to measure and the space available on your computer.

5.2.5 Email Notifications

The system can be configured to send an email notification when a high temperature is detected (either warning or alarm).

This can be configured in the Email tab under System Settings (See Fig. 5-8).

You can select either a predefined email provider to use their standard settings or select **Custom** to enter your own SMTP server and port details.

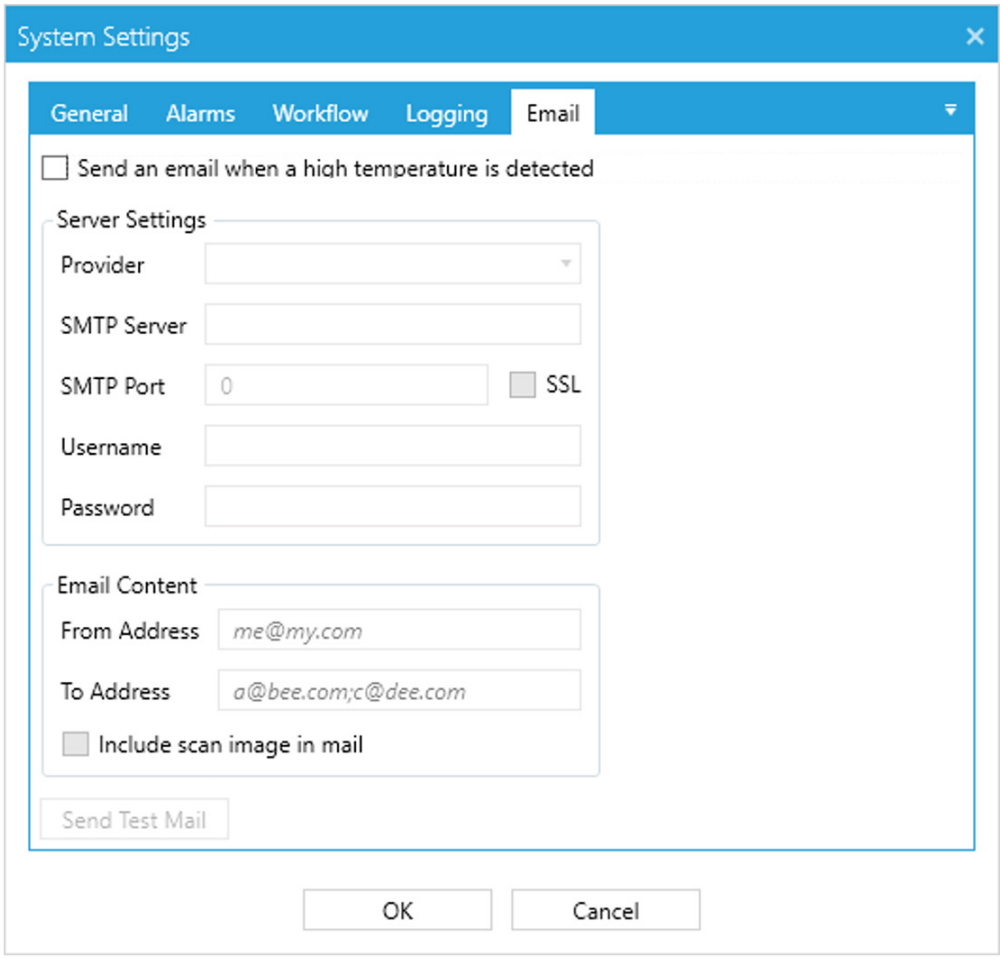


Fig. 5-8 System Settings - Email options

Configuring Gmail

If you want to use a Gmail account, the recommended approach to this is to set up a separate App password:

1) In Gmail, click on your account icon (top right) and go to **Manage your Google Account**.
2) Go to **Security > Signing in to Google > App Passwords**.
3) Select app as **Mail** and device as **Windows Computer**.
4) Copy the generated password and use this for VIRALERT 3.

5.3 Camera Settings

1) To access the **Camera Settings** screen, select the **Camera** option from the **Settings** menu.

The Camera Settings screen contains two 'Tabs'. These are:

- General
- IP Address

5.3.1 **General** (Camera Settings)

The **General** tab is shown in Fig. 5-9.

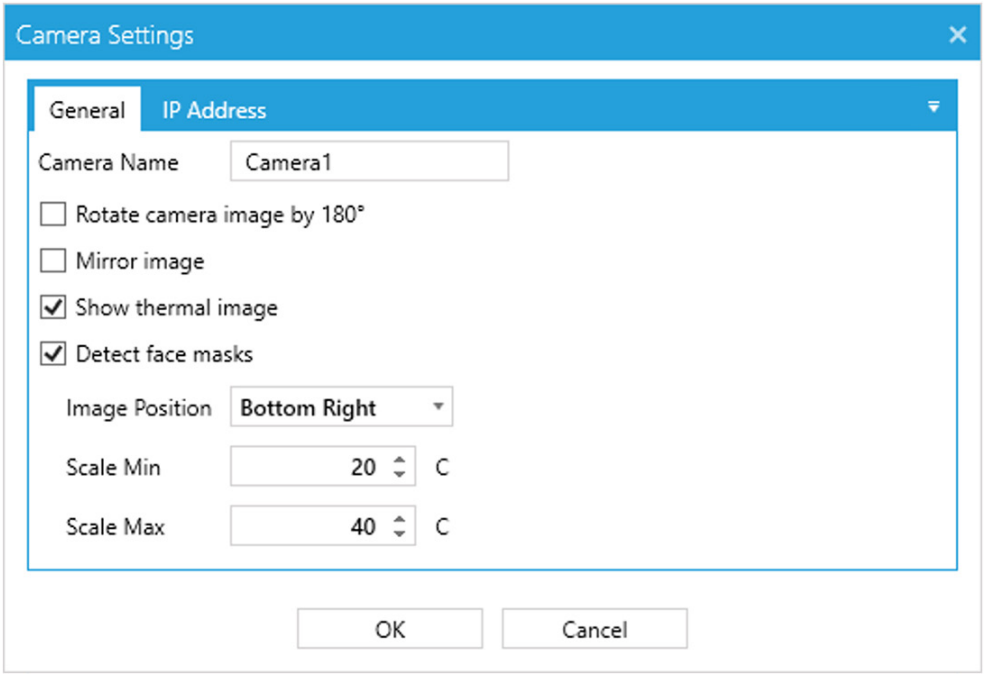


Fig. 5-9 Camera Settings - General options

The options available in the Camera Settings tab are explained in the table below.

Option	Description
Camera Name	Enter a name for the camera. This is useful if you have multiple cameras and want to, for example, set up email notifications. The name of the camera will be displayed as part of the notification message.
Rotate camera image by 180°	Select this option if the image appears upside down in the camera.
Show thermal image	Select this option if you want to display a small thermal image of the person being measured inset into the visual camera image. Areas in the thermal image above the alarm temperature will be shown in red.
Detect face masks	Select this option to enable mask detection. This will ask users to remove face masks before scanning their temperature.

Option	Description
Image position	Use this drop-down list to select the are of the visual camera image in which you want the thermal image to appear.
Scale Min and Scale Max	These values define the upper and lower limits of the temperature range being measured by the system. As the VIRALERT 3 is designed to measure human body temperature, the factory-set scale of 20 to 40 °C / 68 to 104 °F should be adequate for your system.

5.3.2 IP Address

NOTE

In the majority of systems, it should not be necessary to change the IP Address of the camera.

You should **only** change the IP Address if you have knowledge of how IP Addresses work and your system installation requires the IP Address to be in a certain format.

The **IP Address** tab is shown in Fig. 5-10.

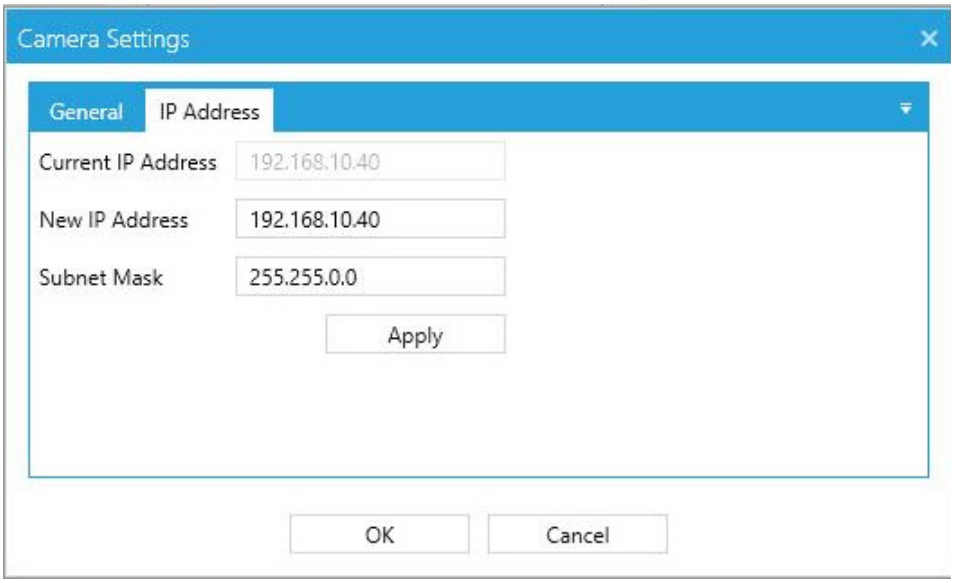


Fig. 5-10 Camera Settings - IP Address

If you need to change the IP Address and/or Subnet Mask, enter the required details in the appropriate fields and press **OK** to confirm the changes.

5.4 Communication

NOTE

You should **only** need to access the Communications menu if you are familiar with the process of setting up IO Modules and/or creating Data Pairs via Modbus.

The Communication menu contains two options:

- **Modules** - this screen allows you to configure IO Modules to work with your VIRALERT 3 system
- **Pairs** - this screen provides an interface for creating Modbus data pairs.

5.4.1 Modules

The I/O modules supported by vIRalert are listed below:

- MOXA ioLogik E1214 - 6 relay outputs
- MOXA ioLogik E1241 - 4 analogue outputs (0 to 10 V or 4 to 20 mA via software configuration)
- EL4014 - 4 Analogue Outputs (0 to 20 mA or 4 to 20 mA via software configuration)
- EL2624 - 4 Relay Outputs

A total of 16 modules, comprising any combination of the above modules can be added. For more information on the MOXA ioLogik modules, refer to the user documentation supplied with each MOXA unit.

5.4.2 Adding I/O Modules

1) From the **Settings** menu, select **Communication** then **Modules**.

   Any modules detected on your system will be displayed on the left-hand column of the **IO Modules** screen, as shown in Fig. 5-11.

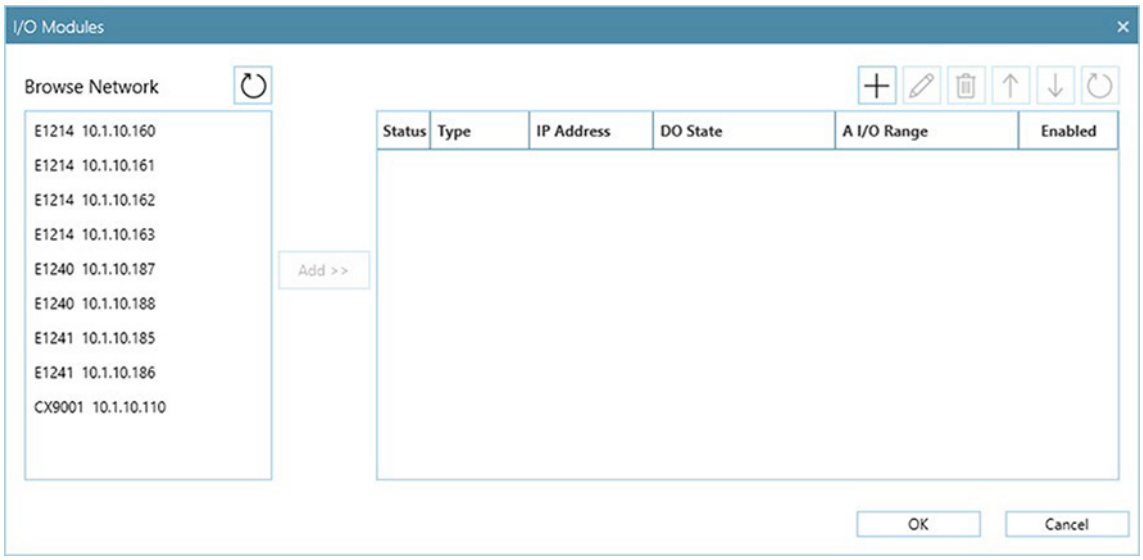


Fig. 5-11 Typical IO Modules screen

2) To add an individual module, click on the required module in the list then click the **Add** button to add it.
3) You can change the order of the modules in the list, for example, to reflect the order in which your modules are fitted on a DIN rail. Click on a module and use the Move Up or Move Down buttons to arrange the modules in the required order.
4) The **Remove** button allows you to select a module and delete it from the list. Multiple modules can be selected for removal.
5) If a module you require is not listed, you can use the **Add New...** button to enter the details of the required module.
6) When you have listed all the required modules, click on **OK**.
   The **IO Modules** screen now displays a list of the modules connected.

5.4.3 **Pairs** (IO Module Data Pairing)

When you have configured your Modules, you can then assign a data source in VIRALERT 3 to the output of a module. This is called 'configuring pairs'.

1) From the **Settings** menu, select **Communication** then **Pairs**.
   The **Data Pairs** screen displays a list of Available Data Sources and a list of Available Outputs, as shown in Fig. 5-12.

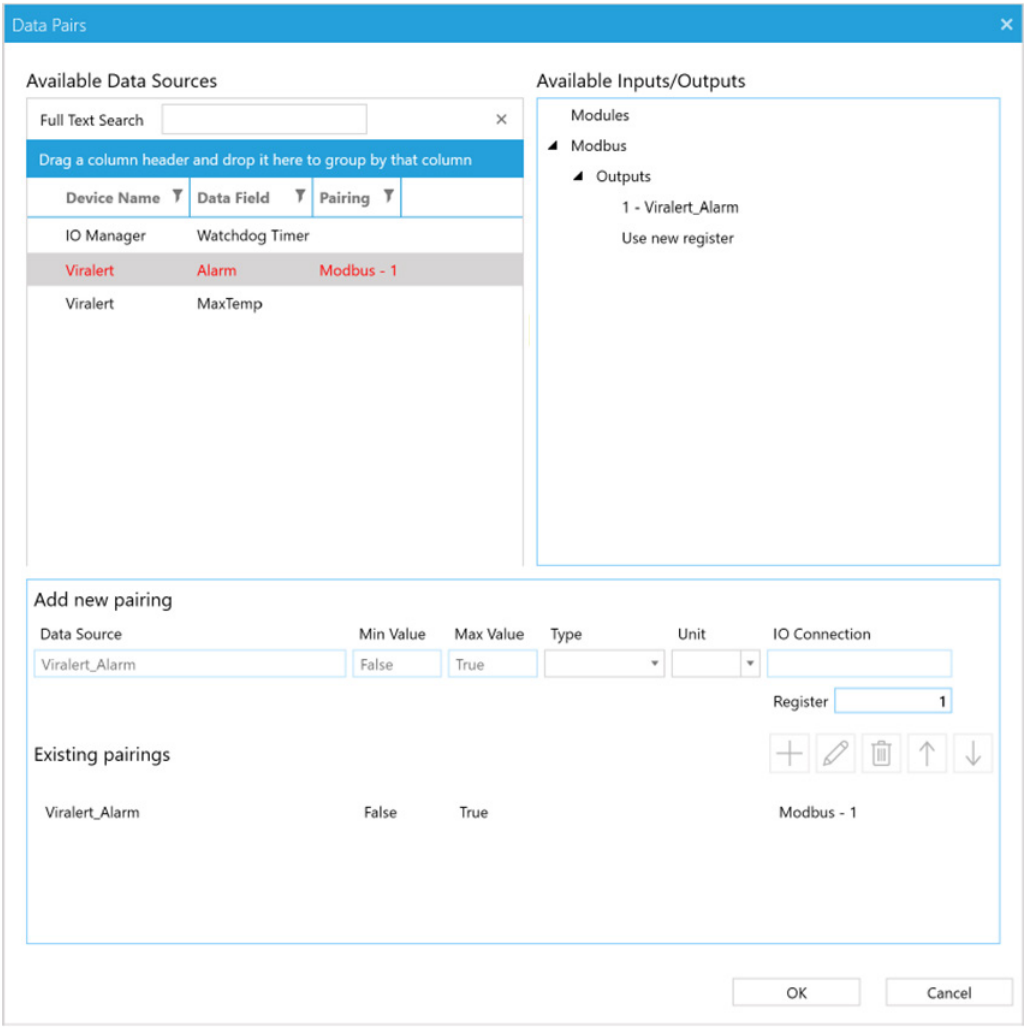


Fig. 5-12 Typical Data Pairs screen

The following outputs are available from VIRALERT 3:

- The Watchdog Timer is a signal which is transmitted at a user-defined interval to check that the system is functioning correctly. The loss of the Watchdog Timer could indicate a problem with the system.
- The Alarm signal is active whenever the alarm temperature threshold is triggered within VIRALERT 3.
- The MaxTemp signal sends the maximum temperature value registered within the detection area. This is the same temperature as that which can be displayed at the top of the screen in VIRALERT 3.

To configure a data pair:

1) Select the required output from the Available Data Sources table (for example "Alarm").
2) The list of Available Inputs/Outputs is expanded to show the corresponding available Digital Outputs that can be paired to the highlighted data source.
3) Click on the required output to highlight it e.g. E1214-1 D0 0.
   The details of the **New Pairing** will be displayed.
4) Check that this pairing is correct, then press the Add Pair button .
   The new pairing is added to the Existing Pairings list.
5) When you have configured the pairings, click **OK**.

5.5 Changing the Password

Each time you access the **Settings** menu, you will be asked for the Password. Enter the default password, which is **0000** (i.e. four zeroes).

You can change the Password via an option in the **Settings** menu.

1) From the **Settings** menu, select **Change Password**.
   The **Change Password** screen is displayed, as shown in Fig. 5-13.

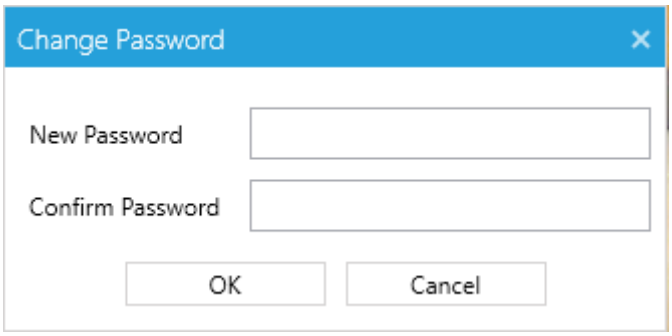


Fig. 5-13 Change Password screen

2) Enter the **New Password** and repeat it exactly the same in the **Confirm Password** text box.
3) Click **OK** to save the new password, or click **Cancel** to close it without saving your changes.

6 SPECIFICATIONS

6.1 System Specifications

Item	Description
Contents	VIRALERT 3 Combined thermal and visual imaging camera with 4 m connection cable. VIRALERT 3 Blackbody temperature reference source with power adaptor and 3 m connection cable. Preinstalled single point mounting bracket. Certificate of conformity. Quick Start Guide. Software available for free download from: **www.ametek-land.com**
Temperature accuracy	± 0.5 °C / 0.9 °F (at a distance of 1 m / 39 inches)
Mounting	Integrated single point system mounting
System weight	0.75 kg / 1.65 lb (without cables)
System dimensions (mm)	System 350 x 110 x 90 (Blackbody Source: 65 x 60 x 35; Camera 100 x 80 x 45)
System dimensions (inches)	System 14 x 4.4 x 3.6 (Blackbody Source: 2.6 x 2.4 x 1.4; Camera 4 x 3.2 x 1.8)
Imager	
Interface	Wired Ethernet - Local PC
Power supply requirement interfaces	5 VDC (USB*) - Local PC **USB 3.0 required*
Operating Temperature range	10 to 50 °C / 50 to 122 °F
Imager Thermal	
Measurement range	30 to 45 °C / 86 to 113 °F
Detector array format	80 x 64 pixels
Detector	8 to 14 µm, Uncooled Thermopile Array
Frame rate	<9 Hz
Temperature resolution	0.1 °C / 0.2 °F
Field of view	39 x 31°
Focus	Fixed focus, minimum 300 mm / 12 inches
Imager Visual	
Image resolution	1.2 MP (1280 x 960)
Sensor type	CMOS
Frame rate	12 fps
Image type	Colour

Item	Description
Blackbody Temperature Reference Source	
Temperature	38 °C / 100.4 °F
Target size	25 x 45 mm / 1 x 1.8 inches
Combined accuracy/stability	±0.2 °C (±0.3 °F)
Power supply requirement	5 VDC (USB Mini B) power adaptor (supplied). US/JAPAN, EURO and UK plug compatible
Operating temperature range	0 to 35 °C / 32 to 95 °F
Warm-up rate	13 °C / 23 °F per minute
Software	
Features	**VIRALERT 3 Software:** Continuous live picture in thermal and visual image. On-screen and audible alarm status. Simple traffic light display. Automatic face detection. Customisable prompts, alarms and messaging tailored to user workflow. Body mode enabling calculated core temperature from measured skin temperature.
Operating system	Windows 10
Recommended minimum PC specification	I3 processor or equivalent. 4 GB RAM. Minimum 1 x RJ45 port and 1 x USB* port. 64 GB Hard disk. **USB 3.0 required*
Languages supported	English, French, German, Italian, Spanish, Chinese (simplified), Japanese, Korean, Portuguese, Russian

6.2 Dimensional Information

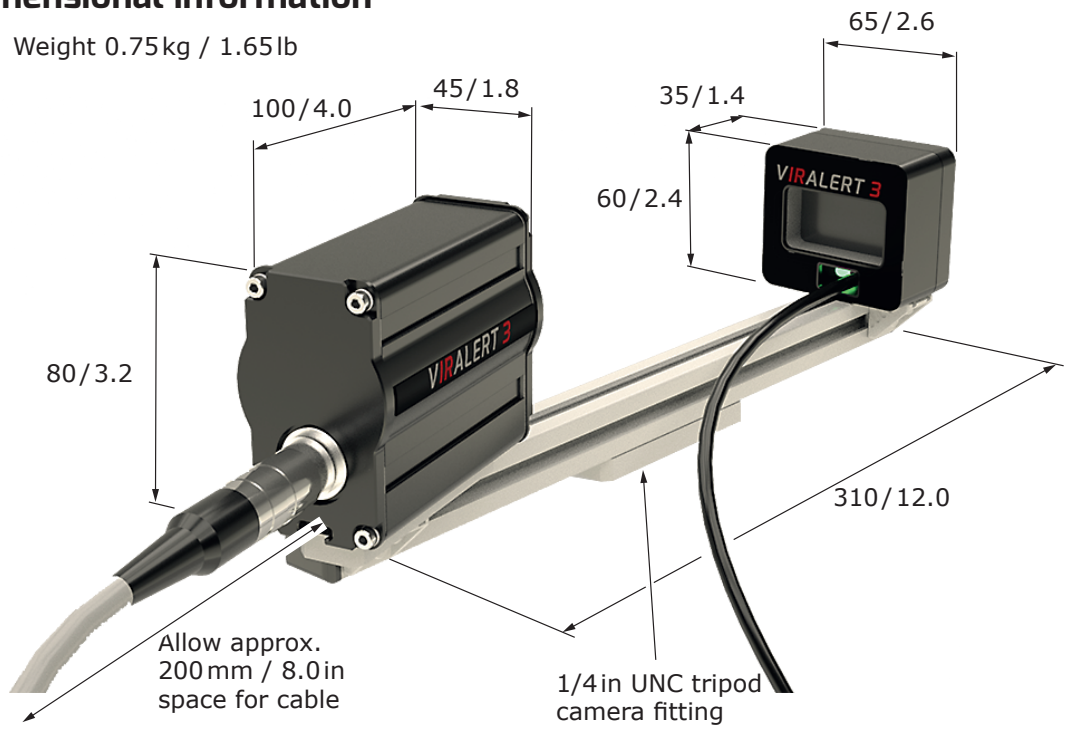


Fig. 6-1 Dimensional information in millimetres / inches

7 TROUBLESHOOTING

7.1 Computer cannot detect VIRALERT 3

Diagnosis	Remedy
Cable unplugged	Check connections.
Computer IP address incorrect	Refer to section 4.1 of this User Guide.
Computer requires reboot	It may be necessary to reboot the computer after changing the IP address.
USB port does not provide enough current	VIRALERT 3 is guaranteed to work with USB 3. It will also work with USB 2 provided the port can deliver a minimum current of 500 mA. An externally powered USB 3 hub will allow you to connect to any USB 2 port.
VIRALERT 3 is connected via an extension cable.	VIRALERT 3 USB connector should connect directly to a computer's USB 3 port or a powered USB 3 hub because an extension cable can cause excessive voltage drop. If an extension cable is unavoidable, an externally powered USB 3 cable should be used.
Application software conflicts with VIRALERT 3	We recommend you disable all other applications when running VIRALERT 3. Applications which require intensive graphics processing or which control communications are especially likely to interfere with VIRALERT 3.
Subnet address conflict	If your computer has both Ethernet and WiFi connections, it is important to ensure the IP addresses of any WiFi connections do not conflict with VIRALERT 3. You can change the IP address of the VIRALERT 3 camera using Settings: Camera and choosing the IP Address tab. You will also need to change the IP address of the computer's Ethernet adaptor so it matches the camera's new address.

7.2 VIRALERT 3 disconnects unexpectedly

Diagnosis	Remedy
Computer power management is shutting down the USB port	Windows 10: Choose Settings: Power & sleep: Additional Power Settings: Change Plan Settings: Change Advanced Power Settings. The Advanced Settings window will open. Click the "+" next to USB settings then the "+" next to USB selective suspend setting. Ensure both settings are disabled.
Computer shuts down unexpectedly	Computer power management settings are incorrect. In Windows 10: Click windows icon – search for 'Power & Sleep Settings': Change Screen turn off to 'Never' Change Sleep to 'Never'

7.3 VIRALERT 3 readings are consistently high

Diagnosis	Remedy
Blackbody Source is disconnected or malfunctioning	Ensure source is plugged in and green LED indicator is lit
Blackbody Source is not in the expected position	VIRALERT 3 uses the Blackbody Source to calibrate the imager and maintain stable temperature measurements. The acceptable region for the Blackbody Source is marked in grey on the logged .jpg images. On older VIRALERT 3 instruments, you should turn the imager so the Blackbody Source position is as shown in Fig 4-6 and then tighten the imager mounting screw using a 3 mm hex key. Newer VIRALERT 3 imagers are locked in position so this problem is unlikely to occur.
A hot object is close to the position of the person's face	Ensure there are no hot objects within the field of view of the VIRALERT 3 camera. This includes heaters, coffee makers and any object which could be heated by sunlight.
Blackbody Source is close to the position of the person's face	The Blackbody Source must be positioned so that there is a gap between the person being screened and the edge of the Blackbody Source – see Fig 4-6.
Person is coming from a hot environment	Waiting a minute or so in a temperature-controlled environment will allow facial temperature to reach equilibrium with core temperature.
Person has mouth open	VIRALERT 3 will read high if the person's mouth is open. Ensure mouth is closed during the measurement.
Background temperature is hotter than the person	The background in the image should be no higher than the VIRALERT 3 maximum temperature of 35 °C (95 °F)

7.4 VIRALERT 3 readings are consistently low

Diagnosis	Remedy
Person is too far from the camera	Person must be 1 m (40 in) from the camera. Place a marker on the floor to make it easy to see the correct position
Person is not looking at the camera	Many people look at the computer screen, not the camera. Where possible mount the imager directly above the screen.
Person is coming from a cold environment	Waiting a few minutes in a temperature-controlled environment will allow facial temperature to reach equilibrium with core temperature.
Person is wearing eyewear, hats or mask	VIRALERT 3 requires a clear view of the person's face. Ensure instructions are clearly visible. A suitable poster is available on the LandViralert.com website.
Person's head is outside the thermal image	Ensure the whole face can be seen in the thermal image, visible in the bottom corner of the logged .jpg file.

7.5 VIRALERT 3 readings differ from clinical thermometer

Diagnosis	Remedy
Thermometer is calibrated for body core temperature	Enable "Estimate body core temperature" in VIRALERT 3 software. This applies a 2 °C (3.6 °F) offset to the measured facial temperature to give an estimate of core temperature.
Thermometer is incorrectly calibrated	Check calibration by measuring the temperature of the VIRALERT 3 Blackbody Source which is controlled at 38 °C (100.4 °F). You should hold the thermometer approximately 25 mm (1") from the surface of the source.
VIRALERT3 is reading high or low	See previous sections.

7.6 VIRALERT 3 settings are incorrect

Diagnosis	Remedy
Text is in a foreign language Lost password	Start VIRALERT 3 software whilst holding the SHIFT key. This will reset the parameters to factory values. Close and restart the software to see English menus. Check all settings, including alarms, after performing a factory reset.
Audible alarm is not functioning	Computer sound is muted. Unmute using Windows settings
Audible alarm is too loud or too quiet	Adjust volume using Windows settings
Image is upside down	Tick the "Rotate camera image by 180° " box in the Settings: Camera menu.
Screen shows a mirror image	Use the "Mirror camera image" box in the Settings: Camera menu to select whether the image is mirrored.

7.7 Relay Module Problems

Diagnosis	Remedy
VIRALERT 3 software does not detect the relay module	Check relay module power indication is on. Check cables are connected correctly. In particular, check the relay module's Ethernet cable is connected to the computer's Ethernet socket. If the module is recognized, there will be a green dot in the "Status" column of the Communication: Modules menu.
Relays do not activate	Ensure relay module is recognized by VIRALERT 3 software – see previous entry. Ensure the required function has been paired with a relay in the Communication: Pairs menu.

DISCLAIMER

Human skin temperature is affected by a wide number of environmental and physiological factors. Elevated facial skin temperature may signify a raised body core temperature; correspondingly, an elevated core temperature may not be accompanied by a raised facial skin temperature. VIRALERT systems are accurate scientific systems that must be operated strictly in accordance with the manufacturer's operating manual. VIRALERT systems are not intended, nor designed, to diagnose or detect medical conditions including, but not limited to, viruses or other illnesses. AMETEK Land thermal imaging products should only be used to detect variations of surface temperature. If elevated skin temperature is detected, the finding should be confirmed by other means, for example, an approved medical thermometer. The absence of an elevated skin temperature does not exclude a fever.

Images shown in this document are for illustrative purposes only.

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