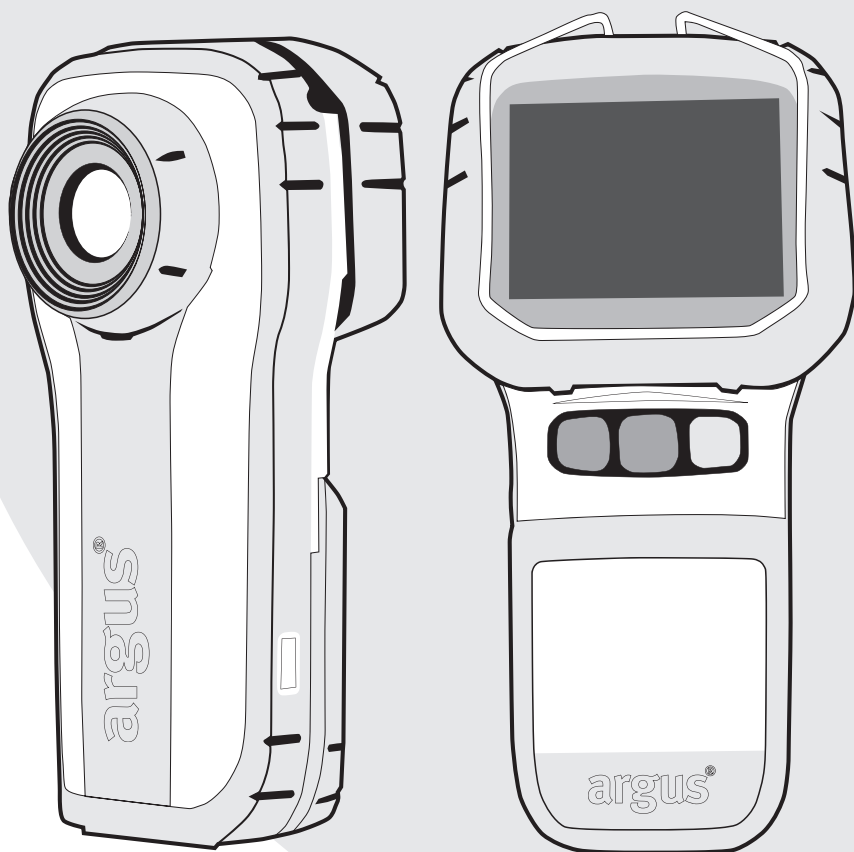




MI-TIC™

THE ARGUS RANGE OF THERMAL IMAGING CAMERAS

MI-TIC™ USER MANUAL



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1.0 SAFETY AND REGULATORY INFORMATION

Before using this product, the customer shall read and understand all the instructions and warnings. Avon Protection does not accept responsibility for damage or injury resulting from failure to follow the instructions provided.

Refer to the Product Safety Datasheet (P/N 604046) for safety and warning notes.

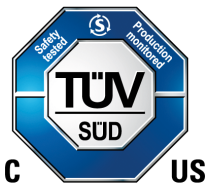
1.1 FCC Compliance Information (US)

When using the MI-TIC camera or charging the MI-TIC camera and battery in the Charger Station (charge mode), these modes have been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

When downloading data from the MI-TIC camera (data download mode), this mode has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Any modification not approved by Avon Protection could void the user’s authority to operate this equipment.

1.2 TUV Label



EU / UKCA and any additional regulatory compliance information can be found on the product label and within the Declaration of Conformity that accompanies this product.

1.3 NFPA 1930 (1801), 2025 ED.

The following camera models comply with the requirements of NFPA 1930 (1801), 2025 ED. standard on Fire and Emergency Service Use of Thermal Imagers 2025 edition and bear the appropriate product marking:

MI-TIC-E-1	MI-TIC-EL-1	MI-TIC-320-1	MI-TIC-S-1
MI-TIC-E-3	MI-TIC-EL-3	MI-TIC-320-3	MI-TIC-S-3

To maintain NFPA 1930 (1801), 2025 ED. / UL 121201 9th Ed. 2017 compliance, cameras must be used with ARG_MI_BLR, ARG_MI_BLY or ARG_MI_BLB batteries.

1.4 UL 121201 Class I, Division 2, Groups C and D; Class II, Division 2, Groups F and G; Class III, Division 1 and Division 2, Non-Incendive

All MI-TIC camera models, when marked, are suitable for use in Class I, Division 2, Groups C and D; Class II, Division 2, Groups F and G; Class III, Division 1 and Division 2, or Non-Hazardous Locations only.

MI-TIC Thermal Imaging Cameras with part numbers MI-TIC-E-1, MI-TIC-E-3, MI-TIC-320-1, MI-TIC-320-3, MI-TIC-S-1, MI-TIC-S-3, MI-TIC-EL-1 and MI-TIC-EL-3 powered by Lithium Iron Phosphate Battery Pack part number ARG_MI_BLR, ARG_MI_BLY, ARG_MI_BLB rated at 6.4 VDC, 1800 mAh. Ta: -25°C to + 40°C. Temperature Code: T4.

Connection or disconnection of the battery pack from the camera in hazardous locations shall be avoided.

Warning - explosion hazard - substitution of camera and/or battery pack components may impair suitability for Class I, Division 2 and/or Class II, Division 2 and/or Class III Division 1 and Division 2.

1.5 Camera Warnings/Cautions

- All users should familiarize themselves with the correct operation, functionality and features of the camera before use.
- The argus® range of MI-TIC cameras are safe when handled and used according to the guidelines included here, in the Product Safety Datasheet (P/N 604046), and within the environmental operating environment specified in the datasheet.
- The cameras are an aid to fire, search and rescue operations. They are not intended to provide a safety function or as a replacement for established safety procedures.
- The MI-TIC camera can only be serviced by authorized personnel.
- Where the camera is used at an ambient temperature greater than +40°C / 104°F, suitable protective gloves shall be worn to hold the camera; these should have a temperature rating at least 20°C / 68°F above the ambient temperature.
- If users wish to mark or apply identification labels to their cameras, they should ensure that their marking does not create a hazard (e.g. flammable) or obscure certification information. Avoid the use of solvents as these may degrade the camera housing. Users may prefer to use the custom splash screen as an alternative (see section 5.1).
- Laser Warning and Safety Measures.

When using the laser function of the MI-TIC S, observe all safety measures for the use of Class 3R laser equipment.

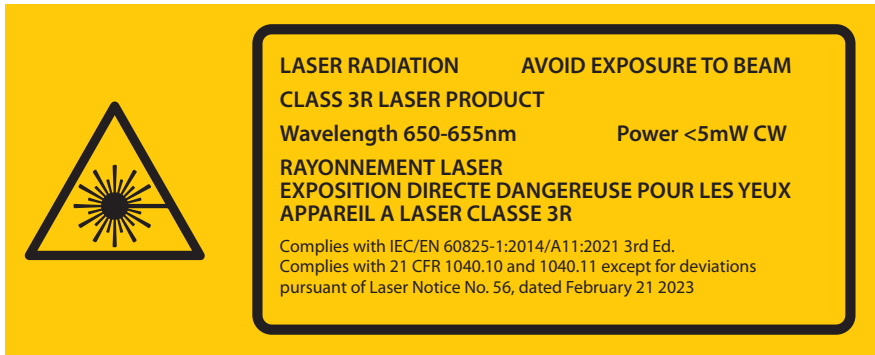
Never aim the laser at a person's eyes as this may cause permanent damage.

This laser must only be used by properly trained personnel.

Wavelength 650-655nm

Power <5mW CW

Complies with IEC/EN 60825-1:2014/A11:2021 3rd Ed and CFR 1040.10 & 1040.11 except for deviations pursuant of Laser Notice No. 56, dated February 21 2023.



- All battery packs should be shielded from extreme conditions.
- Do not replace a battery with an incorrect type that may defeat a safeguard (e.g. some lithium battery types).
- Do not dispose of a battery into a fire or a hot oven, or mechanically crush or cut the battery, this may result in an explosion.
- Do not leave a battery in an extremely high temperature surrounding environment. This may cause explosion, or the leak of flammable liquid or gas.
- Do not expose a battery to extremely low air pressure as this may result in explosion, or the leak of flammable liquid or gas.
- **Neglecting the above may result in injury or death.**

2.0 INTRODUCTION

The MI-TIC E, E L, 320 and S are the latest generation Thermal Imaging Cameras (TIC) from Avon Protection. With over 35 years experience providing thermal imaging to firefighters, Avon Protection continues to produce high quality, affordable systems designed for fire and heat detection for use with first responder rescue operations.

The MI-TIC E, E L, 320 and S have been designed with digital imaging technology for a sharper picture and feature the highly successful Amorphous Silicon (ASi) Microbolometer Detector that is in use by many of the world's fire departments and brigades.

Every MI-TIC E, E L, 320 and S is compatible with a unique dual use desktop / in-truck charger station which securely retains and charges both the thermal imager and a spare battery. The charger stations can be daisy-chained together up to a maximum of six units.

The MI-TIC E, E L, 320 and S are simple, small, lightweight but robust, self-contained camera systems, which have fully automatic operation; no control or adjustment is required in use. Through proper use, the user will be able to:

- See through dense smoke and in darkness.
- Detect and display the relative temperatures of objects within the scene.
- Locate the seat and spread of the fire.
- Move swiftly in search and rescue of casualties.
- Have the ability to see in zero visibility conditions.
- Significantly improve safety and mobility.
- Monitor temperatures for preventive maintenance and condition monitoring of equipment.

The MI-TIC E, E L, 320 and S are designed to withstand the high temperatures, knocks and driving spray often encountered in the firefighting environment and have many features that can be customized by the end user. These features include:

- Direct Temperature Measurement up to 1100°C / 2000°F (MI-TIC S and 320); 760°C / 1400°F (MI-TIC E and E L)
- Up to 7 application specific color modes (Fire, Fire Plus, Overhaul, Size-Up, Inspection, White Hot and Missing Persons)
- Image Capture/Playback and Video Capture/Playback with embedded storage of up to 1000 images and over 25 hours of video
- Customizable Start-Up Screen
- X2 and X4 Zoom
- Time and Date
- Configurable Function Buttons
- User Replaceable Protective Window
- Laser Pointer (MI-TIC S only)
- Electronic Compass (MI-TIC S only)
- Heat and Cold Seeker (MI-TIC 320 and S only)

All camera versions are subject to export controls.

An export license will be required if exported outside the EU.

3.0 OPERATION AND USE

3.1 MI-TIC E System Configuration (Front and Rear)

MI-TIC E™



- | | |
|--|--|
| 1. Replaceable Protective Window | 7. Function Button 2
(Application Mode, Image*) |
| 2. Window Release Latch | 8. Green ON/OFF Button |
| 3. Docking Latch | 9. Display Bumper |
| 4. Docking Connector | 10. 2.7" LCD Display |
| 5. Battery | 11. Pocket Clip (Removable) |
| 6. Function Button 1
(Zoom, Video*) | 12. Lanyard Loops |

*default settings

MI-TIC E L™

3.2 MI-TIC E L System Configuration (Front and Rear)



1. Lanyard Loops
2. Replaceable Protective Window
3. Window Release Latch
4. Docking Latch
5. Docking Connector
6. Battery
7. Function Button 1 (Zoom, Video*)
8. Function Button 2 (Application Mode, Image*)
9. Green ON/OFF Button
10. Display Bumper
11. 3.5" LCD Display
12. Pocket Clip (Removable)

*default settings

MI-TIC 320™

3.3 MI-TIC 320 System Configuration (Front and Rear)



1. Replaceable Protective Window
2. Window Release Latch
3. Docking Latch
4. Docking Connector
5. Battery
6. Function Button 1
(Zoom, Video*)

7. Function Button 2
(Application Mode, Image*)
8. Green ON/OFF Button
9. Display Bumper
10. 2.7" LCD Display
11. Pocket Clip (Removable)
12. Lanyard Loops

*default settings

MI-TIC S™

3.4 MI-TIC S System Configuration (Front and Rear)



- | | |
|----------------------------------|--|
| 1. Laser Aperture Warning Label | 9. Function Button 1 (Zoom, Video*) |
| 2. Laser Pointer Aperture | 10. Function Button 2 (Application Mode, Image*) |
| 3. Lanyard Loops | 11. Green ON/OFF Button |
| 4. Replaceable Protective Window | 12. Laser Warning Label |
| 5. Window Release Latch | 13. Display Bumper |
| 6. Docking Latch | 14. 3.5" LCD Display |
| 7. Docking Connector | 15. Pocket Clip (Removable) |
| 8. Battery | |

*default settings

3.5 Charger System Configuration (Front and Rear)



1. Docking Bay 2 (Spare Battery)
2. Camera Latching Mechanism
3. Docking Bay 1 (Camera with Battery)
4. Camera Eject Mechanism
5. USB Port (Front)
6. Charging Status LEDs
7. Camera Release Button
8. Front Cover (Removable)
9. USB Port (Rear)
10. Power Connector (Single Charger Only)

Up to six (6) chargers can be powered in a “daisy chain” configuration. Connections should be made via the green power connectors located underneath the removable front cover. The “daisy chain” power circuit contains a replaceable 10 A fuse. This is also located underneath the removable front cover. See section 4.3 for installation details.

3.6 Display



- | | |
|-------------------------------------|------------------------------------|
| 1. Color Reference Bar | 11. Image Capture |
| 2. Spot Temperature Target | 12. Heat Seeker Marker† |
| 3. Spot Temperature Reading | 13. Cold Seeker Marker† |
| 4. Battery Bar | 14. Video Capture |
| 5. Application Mode | 15. Zoom |
| 6. Operational Format | 16. Low Sensitivity Mode |
| 7. Compass* | 17. Time and Date |
| 8. Cold Seeker Temperature Reading† | 18. General System Failure Warning |
| 9. Heat Seeker Temperature Reading† | 19. Over-Temperature Warning |
| 10. Laser Pointer* | |

† MI-TIC 320 and S only

* MI-TIC S only

3.7 Getting Started

The packing case contains the following items (see Quick Start Guide):

- Camera with Pocket Clip Fitted
- Charger Station
- Quick Start Guide
- Two Rechargeable Battery Packs
- USB Lead
- Retractable Lanyard
- Power Supply Kit:
 - Mains Power Supply
 - Set of Interchangeable Plugs
 - Vehicle Power Lead (12 V)
- Universal Mounting Bracket for Charger with 2 Mounting Screws
- 3mm Hex Key (for attaching Charger to Universal Mounting Bracket)
- 2mm Hex Key (for attaching Pocket Clip and Lanyard Loop – MI-TIC 320 and MI-TIC E only)

Basic Operation

- Turn the camera on with a short press of the green button.
- After about 1 second, a start-up image will appear on the screen. (This image may be changed – see section 5.1). After a few more seconds, the display will show the thermal image.
- The time and date will be displayed for a further 5 seconds.
- Always check the battery indication to verify adequate power and check that a good thermal image is displayed before commencing operational use.
- While the camera is in operation, it will recalibrate to maintain its performance and image quality. During recalibration, an internal shutter closes and the image will briefly freeze while the internal electronics optimizes the performance of the sensor. This occurs more frequently when first turned on, then the calibration interval increases as the internal temperature of the camera stabilizes.
- To turn the camera off, press and hold the green button for 2 seconds until the camera turns off.

3.8 Camera Features

3.8.1 Application Modes

The MI-TIC E, E L, 320 and S have up to seven application modes:

FIRE



Used for attack and rescue in large, fully developed fires.

A white-hot gray and color scale, with the brightness expanded to cover the dynamic range of the scene. Colorization is added gradually at scene temperatures above 150°C / 300°F.



The color reference bar is marked with 4 graduations allowing the temperature to be quickly assessed.

The colorization is fixed and independent of camera sensitivity mode.

Image detail remains visible throughout the range by changes in brightness and color saturation.

Note: the camera always starts up in Fire mode. On 3-button cameras, to cycle through the application modes, press the function button assigned to application modes. By default, this is the center function button. Only Fire and Overhaul modes are enabled by default. See section 6.8 to enable additional application modes.

Note: a short press of the green button will always revert the camera back to Fire mode.

Color	Range °C	Range °F
Grayscale	-40°C – 150°C	-40°F – 300°F
Yellow	150°C – 500°C	300°F – 930°F
Orange	500°C – 600°C	930°F – 1100°F
Red	600°C – 760°C (MI-TIC E, E L) 600°C – 1100°C (MI-TIC 320, S)	1100°F – 1400°F (MI-TIC E, E L) 1100°F – 2000°F (MI-TIC 320, S)

This function makes up the TI BASIC format (see section 3.10).

FIRE PLUS



Used for attack and rescue in large, fully developed fires.

A white-hot gray and color scale, with the brightness expanded to cover the dynamic range of the scene. Colorization is added gradually at scene temperatures above 150°C / 300°F.



The color reference bar is marked with 4 graduations allowing the temperature to be quickly assessed.

The colorization is fixed and independent of camera sensitivity mode.

Image detail remains visible throughout the range by changes in brightness and color saturation.

Color	Range °C	Range °F
Grayscale	-40°C – 150°C	-40°F – 300°F
Yellow	150°C – 500°C	300°F – 930°F
Orange	500°C – 600°C	930°F – 1100°F
Red	600°C – 760°C (MI-TIC E, E L) 600°C – 1100°C (MI-TIC 320, S)	1100°F – 1400°F (MI-TIC E, E L) 1100°F – 2000°F (MI-TIC 320, S)

This function is part of the TI BASIC PLUS operational format (see section 3.10).

OVERHAUL



Used for checking for hot spots after the fire is out.

A white-hot grayscale, expanded to cover the dynamic range of the scene. Red colorization is added to the hottest 2% of the scene regardless of absolute temperature.



Yellow colorization is added to the next hottest 5% of the scene regardless of absolute temperature.

Where there is no significantly warmer area, no red or yellow shows.

The color reference bar has no temperature scale.

Color	Range °C	Range °F
Red	Hottest 2%	
Yellow	Next hottest 5%	
Dynamic Range	-40°C – 760°C (MI-TIC E, E L) -40°C – 1100°C (MI-TIC 320, S)	-40°F – 1400°F (MI-TIC E, E L) -40°F – 2000°F (MI-TIC 320, S)

This function is part of the TI BASIC PLUS operational format (see section 3.10).

SIZE-UP



Used to easily locate the fire from outside of a structure.

A white-hot grayscale, expanded to cover the dynamic range of the scene.
This mode features a limited dynamic range of 250°C / 480°F so that yellow colorization comes in earlier at 80°C / 180°F.



The color reference bar is marked with 4 graduations allowing the temperature to be quickly assessed.
The colorization is fixed and independent of camera sensitivity mode.
Image detail remains visible throughout the range by changes in brightness and color saturation.

Color	Range °C	Range °F
Grayscale	-40°C – 80°C	-40°F – 180°F
Yellow	80°C – 180°C	180°F – 360°F
Orange - Red	180°C – 250°C	360°F – 480°F

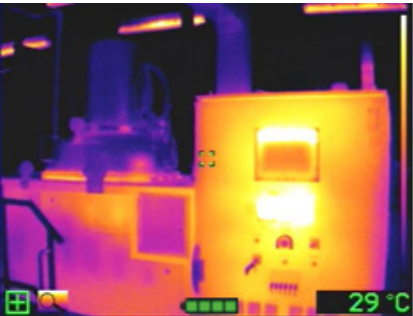
This function is part of the TI BASIC PLUS operational format (see section 3.10).

INSPECTION



Used for predictive maintenance to check equipment and buildings to help prevent fire.

A white hot, full color scale (black, blue, purple, orange, yellow through to white), expanded to cover the dynamic range of the scene.



The color reference bar has no temperature scale.

Image detail remains visible throughout the range by changes in brightness and color saturation.

Color	Range °C	Range °F
Dynamic Range	-40°C – 760°C (MI-TIC E, E L)	-40°F – 1400°F (MI-TIC E, E L)
	-40°C – 1100°C (MI-TIC 320, S)	-40°F – 2000°F (MI-TIC 320, S)

This function is part of the TI BASIC PLUS operational format (see section 3.10).

WHITE HOT



Used for general search, with no colorization.

A white-hot grayscale, expanded to cover the dynamic range of the scene.



The color reference bar has no temperature scale.
Image detail remains visible throughout the range by changes in brightness.

Color	Range °C	Range °F
Dynamic Range	-40°C – 760°C (MI-TIC E, E L)	-40°F – 1400°F (MI-TIC E, E L)
	-40°C – 1100°C (MI-TIC 320, S)	-40°F – 2000°F (MI-TIC 320, S)

This function is part of the TI BASIC PLUS operational format (see section 3.10).

MISSING PERSONS



Used to search for people in landscapes, buildings or traffic accident scenes.

A blue-hot grayscale, expanded to cover a limited dynamic of the scene between -40°C – 80°C (-40°F – 180°F).



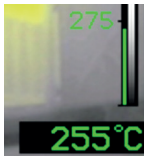
The color reference bar has no temperature scale.

Image detail remains visible throughout the range by changes in brightness and color saturation.

Color	Range °C	Range °F
Blue	Hottest 10%	
Dynamic Range	-40°C – 80°C	-40°F – 180°F

This function is part of the TI BASIC PLUS operational format (see section 3.10).

3.8.2 Direct Temperature Measurement



In “TI BASIC PLUS” the camera allows the operator to view the average temperature of the center spot of the scene (defined by the target markings). The temperature reading is shown in the bottom right-hand corner of the display. This system is intended to give the operator the ability to detect possible hazards such as hot gas bottles or tanks, heat signatures of people or objects, and to compare temperatures.

The temperature measurements feature can be changed between degrees Celsius or degrees Fahrenheit by using the MI-TIC Configuration Tool (see section 6.2).

In the Fire Plus application mode, a green column against the temperature reference scale also shows the spot temperature.

Notes:

- The camera can measure scene temperatures between -40°C and 1100°C / 2000°F (MI-TIC 320, S); -40°C and 760°C / 1400°F (MI-TIC E, E L).
- The object being measured must fully fill the target marks to get a good reading.
- If the temperature is higher than the maximum, the display will show **"760+C / 1400+F or 1100+C / 2012+F"** in red.
- If the temperature is lower than the minimum, the display will show "----".
- Different types of materials have different infrared emission characteristics. This will affect the accuracy of the temperature reading. Variations can also be caused by the distance from the object. This temperature measurement must be regarded as an indication and not a guaranteed reading.

3.8.3 Tri-Mode Sensitivity

The MI-TIC has three (3) levels of sensitivity: High, Low and Extended Low. These levels provide the user with a thermal image over the widest possible temperature range. The MI-TIC will switch to the optimum level of sensitivity automatically and will indicate when it is not in High Sensitivity mode by displaying a green colored solid triangle symbol at the top left of the display.

■ High Sensitivity Mode

The MI-TIC will operate in High Sensitivity mode under normal operating conditions. This mode produces a clear image with lots of detail and low levels of noise. The temperature range for this mode is between -40°C and 150°C (-40°F and 302°F).

■ Low Sensitivity Mode



The MI-TIC will automatically switch to Low Sensitivity mode when higher temperatures have been detected. A small green triangle symbol will be displayed in the top left corner to indicate this. The image produced will still be clear with lots of detail, although some additional noise will be visible in the cooler areas of the scene. The temperature range for this mode is up to 400°C (750°F).

■ Extended Low Sensitivity Mode



The MI-TIC will automatically switch to Extended Low Sensitivity mode when higher temperatures have been detected. A small green triangle symbol will be displayed in the top left corner to indicate this. The image produced will still be clear with lots of detail, although even more noise will be visible in the cooler areas of the scene. The temperature range for this mode is up to 1100°C / 2000°F (MI-TIC 320, S); 760°C / 1400°F (MI-TIC E, E L).

3.8.4 Zoom



A short press on the left-hand function button operates the Zoom feature. The Zoom symbol (a magnifying glass) will appear on the left-hand side of the display.

The temperature measurement sample window is also expanded to suit.

This function is part of the TI BASIC PLUS operational format (see section 3.10).

3.8.5 Time and Date



On start-up, the time and date are displayed at the top of the screen for 5 seconds.

The date format and time can be adjusted using the MI-TIC Configuration Tool (see section 6.3).

3.8.6 Image Capture



Up to 1,000 images can be captured. Images are stored in the camera's embedded storage. These images can then be viewed or deleted using the camera or by downloading on to a PC (see section 5).

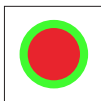
To capture an image, press the function button assigned to image capture (see section 6.9 for function button set-up).

The Image Capture symbol appears for a short time on the left-hand side of the LCD display. The number of images remaining will be indicated on the display.

Images are stored on the camera in compressed .jpg format.

This function is part of the TI BASIC PLUS operational format (see section 3.10).

3.8.7 Video Capture



Over 25 hours of video can be stored. Videos are stored in the camera's embedded storage in Motion JPEG format in an .avi file. The files have a maximum length of 10 minutes to simplify transfer to a computer. The camera will automatically start a new file every 10 minutes.

Video files can be copied to a computer using the USB lead; 10 minutes of video typically generates a 100 MB file.

To capture a video, press the function button assigned to Video Capture (see section 6.9 for function button set-up).

To enable Video Capture permanently, known as "Black Box" Video Recording, use the MI-TIC Configuration Tool (see section 6.5).

3.8.8 Image Freeze

Image Freeze allows the firefighter to pause the image on the screen to analyze in more detail. This can be assigned to both short and long button functions (see section 6.9 for function button set-up).

On a short press, the image is frozen until the button is pressed again, or a timeout of 15 seconds is reached.

On a long press, the image is frozen until the button is released.

This function is part of the TI BASIC PLUS operational format (see section 3.10).

3.8.9 Image Playback

Image Playback allows firefighters to review images at the scene.

Once in Image Playback mode, the following button functions will apply (see section 6.9 for function button set-up):

Left button press	Previous image
Left button hold	Skip backward 5 images
Center button press	Next image
Center button hold	Skip forward 5 images
Green button	Return to normal operation (TI BASIC mode)

This function is part of the TI BASIC PLUS operational format (see section 3.10).

3.8.10 Video Playback

Video Playback allows firefighters to review video at the scene.

Once in Video Playback mode, videos will play automatically and the following button functions will apply (see section 6.9 for function button set-up):

Left button short press	Restart current video
Left button double press (within 3 seconds)	Previous video
Left button hold	Skip backward 5 videos
Center button press	Next video
Center button hold	Skip forward 5 videos
Green button	Return to normal operation (TI BASIC mode)

This function is part of the TI BASIC PLUS operational format (see section 3.10).

3.8.11 Laser Pointer



A built-in laser pointer aids firefighters with communication when identifying hot spots (see section 6.9 for function button set-up).*

This function is part of the TI BASIC PLUS operational format (see section 3.10).

For safety reasons, the laser has a 10-second timeout.

*MI-TIC S only.

3.8.12 “Black Box” Video Recording



“Black Box” Video Recording allows the Video Capture feature (see section 3.8.7) to be set permanently on. When activated, the camera will constantly record and store over 25 hours of video. When storage is full, the oldest recordings are deleted, 30 minutes at a time, to allow recording to continue.

When using “Black Box” Video Recording, Image Capture, Video Capture, Image Playback and Video Playback functions are disabled.

3.8.13 Electronic Compass



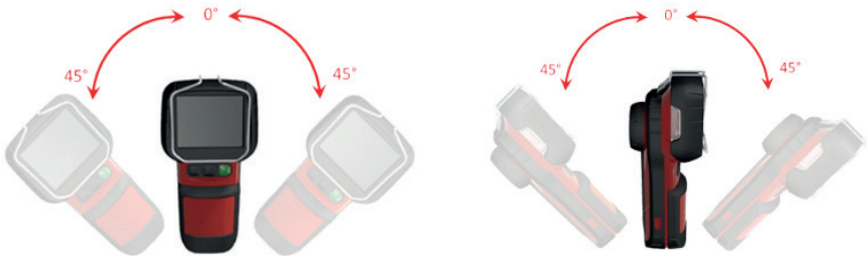
An Electronic Compass provides improved situational awareness by displaying N, NE, E, SE, S, SW, W or NW depending on which way the camera is pointing.*

*MI-TIC S only.

The Electronic Compass feature can be turned on using the MI-TIC Configuration Tool (see section 6.6).

Note: when the compass is enabled, it will appear in all “TI BASIC PLUS” color modes only. On power up, it will not be displayed in “TI BASIC”. However, if a “TI BASIC PLUS” color mode is selected, it will be displayed. The compass is removed from the display when either the green button is pressed or the “TI BASIC” color mode is selected.

The compass will work within 45 degrees from vertical in both axes.



When the camera is tilted past 45 degrees, the tilt symbol  is displayed instead of the heading.

The camera's compass must be calibrated with each battery to compensate for any magnetic offsets.

When a compass requires calibration, the calibrate symbol  is displayed.

The camera must then be rotated through all axes, as shown right.

When the calibration has been successful, the heading will be displayed in yellow for 10 seconds, and then turn back to the standard green heading.

These settings will be saved for future use. Therefore, when the camera is restarted the compass will be displayed immediately.

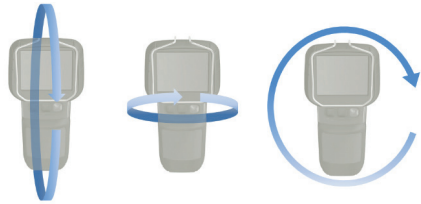
If during use the compass is rotated through all the axes and a completed calibration is performed, the compass will save the new calibration and turn yellow for 10 seconds.

If during use the compass appears inaccurate, this recalibration routine can be performed to ensure accuracy.

Warning:

The accuracy of the magnetic compass will depend on correct calibration and isolation from external magnetic interference. Interference can be caused by, but not limited to, soft iron structures and electrical equipment. The compass should be used as an aid only and not relied on as a primary means of navigation (see section 6.6 for function button set-up).

This function is part of the TI BASIC PLUS operational format (see section 3.10).



1025°C



20°C

3.8.14 Heat Seeker and Cold Seeker*

The red crosshair immediately indicates the hottest part of the scene. The temperature of the hottest part can be reported.

The blue crosshair immediately indicates the coldest part of the scene. The temperature of the coldest part can be reported.

*MI-TIC 320 and S only

The reported temperature can be configured to display either the tracker temperatures or the standard center spot temperature.

The camera can be configured to display the hot tracker, cold tracker, or both simultaneously. These can be set to scroll through on a button press using the MI-TIC Configuration Tool (see section 6.7).

This function is part of the TI BASIC PLUS operational format (see section 3.10).

3.9 Display Warning Graphics

The MI-TIC is equipped with an advanced microprocessor based control and user warning system. In addition to controlling the automatic operation of the camera to ensure the best possible picture at all times, the control system provides graphics on the display to alert the user to certain conditions as follows:

3.9.1 Over-Temperature Warning



The internal temperature of the camera is above the correct operating range. The camera must be turned off to cool down and prevent permanent damage.

If the user ignores this warning and continues to operate the camera in very high temperatures, the warning symbol will flash.

When the flashing temperature warning is present, the camera is very close to its absolute operating limit and the image will start to degrade considerably. The user must remove the unit from the high ambient temperature at this time; failure to comply may result in permanent damage to the unit. Failure to act upon this level of warning may result in serious damage to the system and may invalidate the warranty.

3.9.2 General System Failure Warning



The control system has detected an internal camera fault. Turn the camera off for 5 minutes and turn back on again. If the warning symbol is still present, or the symptoms return, contact your Avon Protection representative.

Failure to act upon this level of warning may result in serious damage to the system and may invalidate the warranty.

3.10 NFPA 1930 (1801), 2025 ED. "TI BASIC" and "TI BASIC PLUS" Operational Formats



When switched on, the MI-TIC camera starts in Fire mode and complies with the requirements of the NFPA "TI BASIC" operational format providing temperature related color imaging.

A short press of the green button will also always revert the camera back to this condition.

Certain features are beyond the scope of NFPA "TI BASIC" mode, and when activated the "+" symbol shown here can be seen in the bottom left of the screen. These features are activated by pressing one of the black function buttons on a 3-button camera.

The following MI-TIC features are “TI BASIC PLUS” features:

- Fire Plus application mode as detailed in section 3.8.1
- Overhaul application mode as detailed in section 3.8.1
- Size-Up application mode as detailed in section 3.8.1
- Inspection application mode as detailed in section 3.8.1
- White Hot application mode as detailed in section 3.8.1
- Missing Persons application mode as detailed in section 3.8.1
- Direct Temperature Measurement as detailed in section 3.8.2
- Tri-Mode Sensitivity as detailed in section 3.8.3
- Zoom as detailed in section 3.8.4
- Time and Date as detailed in section 3.8.5
- Image Capture as detailed in section 3.8.6
- Video Capture as detailed in section 3.8.7
- Image Freeze as detailed in section 3.8.8
- Image Playback as detailed in section 3.8.9
- Video Playback as detailed in section 3.8.10
- Laser Pointer as detailed in section 3.8.11
- “Black Box” Video Recording as detailed in section 3.8.12
- Electronic Compass as detailed in section 3.8.13
- Heat Seeker and Cold Seeker as detailed in 3.8.14

Button functions can be changed or removed using the MI-TIC Configuration Tool detailed in section 6.

3.11 Operating Notes

■ Interpreting The Image – Relative Temperatures

The image displayed is simply a black and white picture of the infrared energy entering the lens. The camera displays relative temperature differences between individual objects and their surroundings irrespective of overall ambient temperature.

The camera is set up to display objects at various shades between black for cooler items and white for hotter bodies, e.g. in a room at 20°C (68°F) a cold drink would appear black while a hot radiator would appear white. However, in a room at 250°C (482°F), it is possible that the same hot radiator may appear darker than, for example, burning materials. Depending upon the application mode selected, the image may be colored according to actual temperature (Fire, Fire Plus or Size-Up mode) or relative temperature (Overhaul, Inspection, White Hot or Missing Persons mode).

■ Identification of Fire and Hotspots

The camera will represent zones of very high temperature as white or red within the picture. When sufficient heat has been detected, e.g. a large area of fire, the camera will automatically enter Low Sensitivity mode. This will extend the dynamic range of the camera and allow the image of surrounding objects to remain clearly visible.

■ Hidden Fires

It is possible that fires may be burning or smouldering behind doors, in ducting or in wall or floor cavities. In such circumstances, the operator should look for areas that appear whiter when compared with the surroundings. Overhaul mode is particularly useful in this situation, as it would color the hottest areas red.

For example, a fire behind a door will cause the door to appear whiter against the background. Similarly, a white area on an otherwise dark wall could indicate an area of fire behind the masonry.

■ Search for Persons and Objects

The camera is not restricted to locating fires. In many cases, the firefighter will be using the camera to search for casualties, to seek out dangerous items such as fuel tanks or gas cylinders, and also as an aid to navigation through dark or smoke logged premises.

■ Image Clarity

The sharpness and clarity of the image provided is related to the temperature of the scene and objects in view. A cold room provides little infrared energy and less detail is detected than in a warm environment where objects give off significant energy. In general, the warmer the scene, the more thermal contrast and hence the greater detail in the picture.

■ Heat Layers in Closed Spaces

In a major fire, a layer of hot gases may build up in the upper region of the closed space. Attempting to use the camera in this hot layer will cause the image to become featureless. By bringing the camera down beneath this layer, the unit is able to provide the firefighter with a clearer picture of the scene ahead.

■ Windows and Polished Surfaces

Glass is not transparent to long wavelength infrared energy and it is not possible for the operator to use the camera to look through a window. A white window would indicate that the window itself is relatively warm and may be being heated by a fire behind it. Just as we see reflections in glass under normal circumstances, it is possible that the camera can detect infrared reflections in glass, mirrors and polished or painted surfaces. Care must be taken to ensure that the image seen is not simply a reflection. Experience will give the operator added confidence.

■ Control of Water Streams/Jets

When viewed through the camera, water streams from hose reels will appear black against the background scene. The control and direction of a water flow can be monitored by viewing its flow and effect on the fire through the camera. It may be necessary, if employing a water wall, to drop the wall momentarily to view the effects of the extinguishing stream.

■ Smoke Types

The camera will provide vision through all types of smoke and steam.

■ Lens Cleaning During Operation

The camera lens, like the breathing apparatus visor, may become obscured during use. The lens may be cleaned with a glove or cloth if necessary.

4.0 BATTERIES AND CHARGING

The MI-TIC camera is compatible with the MI-TIC Lithium Iron Phosphate Rechargeable Battery Packs and the “AA” Alkaline Battery Pack. These battery types power the camera for over 4 hours regardless of operating mode (e.g. video recording). Rechargeable batteries must be fully charged before first use.



Rechargeable Battery Packs

Typical battery run times are as follows:

Rechargeable Battery Packs	ARG_MI_BLR ARG_MI_BLY ARG_MI_BLB
Capacity	1800mAh
MI-TIC E L and S Run Time	Up to 4 hours
MI-TIC E and 320 Run Time	Over 4 hours
Safe in Hazardous Location (UL 121201)	YES

“AA” Alkaline Battery Packs	ARG_MI_BAA ARG_MI_YAA
Capacity	7 x LR6
MI-TIC E L and S Run Time	Up to 4 hours
MI-TIC E and 320 Run Time	Up to 4h 30m
Safe in Hazardous Location (UL 121201)	NO

Run times of a partially charged battery will be proportionally less. Always ensure adequate power before commencing operational use.

Run time using “AA” batteries will vary based upon the quality of batteries used.

Use at very low temperatures will also reduce battery run time.

Use of ARG_MI_BLR, ARG_MI_BLY and ARG_MI_BLB on earlier MI-TIC cameras may require a software update for proper battery recognition. The software is available from the Avon Protection website and is updated as shown on page 41.

4.1 Indications on Charger



No power applied
or no battery fitted



Charging



Battery fully
charged



Battery too warm/
cold for charging or
other fault

4.2 Battery Run-Time Indicator

Rechargeable Packs

MI-TIC E & MI-TIC 320	MI-TIC E L & MI-TIC S	
Full power (green) Approximate 4 Hours (in all available modes)	Full power (green) Approximate 4 Hours (in all available modes)	
<75% power (green) Approximate 2.5 Hours	<75% power (green) Approximate 2.5 Hours	
<50% power (amber) Approximate 1.65 Hours	<50% power (amber) Approximate 1.65 Hours	
<25% power (red) Approximate 0.85 Hours	<25% power (red) Approximate 0.85 Hours	
Low power (flashing red) 10 – 0 mins	Low power (flashing red) 10 – 0 mins	

“AA” Alkaline Battery Packs

MI-TIC E & MI-TIC 320	MI-TIC E L & MI-TIC S	
Full power (green) Approximate 4.5 Hours (in all available modes)	Full power (green) Approximate 4 Hours (in all available modes)	
75% power (green) Approximate 3 Hours (in all available modes)	75% power (green) Approximate 3 Hours (in all available modes)	
50% power (amber) Approximate 2 Hours (in all available modes)	50% power (amber) Approximate 2 Hours (in all available modes)	
25% power (red) Approximate 1 Hour (in all available modes)	25% power (red) Approximate 1 Hour (in all available modes)	
Low power (flashing red) 15 – 0 mins	Low power (flashing red) 15 – 0 mins	

4.3 MI-TIC Charger Station Fixed / Vehicle Installation

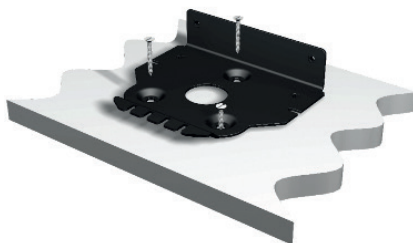
The MI-TIC Charger Station can be mounted on any surface either horizontal or vertically using the Universal Mounting Bracket and mounting screws supplied. Note: hardware for attaching the mounting plate to the surface is NOT supplied.

A hard-wired configuration of up to six (6) charger stations can be powered in a “daisy chain” configuration. In this case, particular care is required in specifying the power source, fusing and wiring to cope with the load connected (see section 4.3.3).

4.3.1 Horizontal Mounting Single Charger

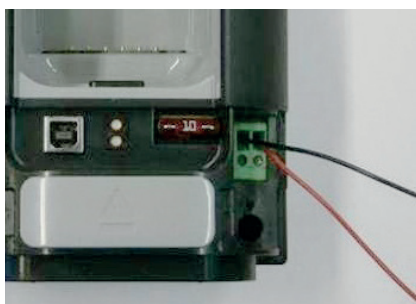
- Charger Station
- Universal Mounting Bracket
- 3mm Hex Key
- M4 x 30 Mounting Screws (2)
- Red and Black Wire 20AWG or Greater (for a single charger only) (not supplied)
- Small Flat Bladed Screwdriver (not supplied)
- Large Flat Bladed Screwdriver (not supplied)

1. Using the Universal Mounting Bracket as a template, mark out the drill-hole positions and drill holes.
2. Using suitable hardware, attach the Universal Mounting Bracket to the chosen horizontal surface.
3. Remove the front panel of the Charger Station using a small flat tool as shown e.g. small flat screwdriver.

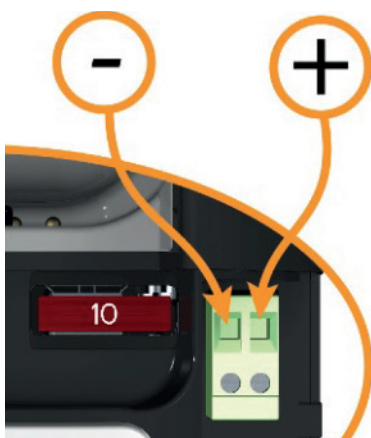




4. Hook the Charger Station on to the Universal Mounting Bracket.
5. Fasten the Charger Station to the Universal Mounting Bracket with the M4 x 30 mounting screws using the 3mm hex key as shown.



6. Connect to suitable 12V/24V 2A capable supply, fused to suit input wiring. Either connector may be used.



7. Replace the front panel on the Charger Station.

4.3.2 Vertical Mounting Single Charger

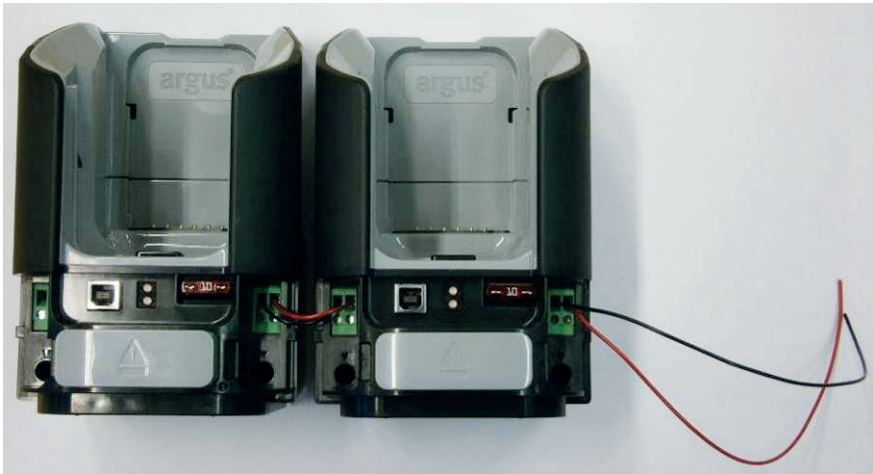
Follow the same procedure as for a horizontal mounting, but on a vertical surface.

4.3.3 “Daisy Chaining” Electrical Installation or Hard Wiring



Up to six (6) Charger Stations can be powered in a “daisy chain” configuration. The mounting plates are designed so they can be mounted next to each other as shown above.

Connections must only be made via the green power connectors located underneath the removable front cover. The “daisy chain” power circuit contains a replaceable 10A fuse. This is also located underneath the removable front cover.



1. Fit the Universal Mounting Brackets as required.
2. Remove the front panels of the Charger Stations to be connected.
3. Hook the Charger Stations on to the Universal Mounting Brackets.
4. Fasten the Charger Stations to the Universal Mounting Brackets with the M4 x 30 mounting screws using the 3mm Hex Key.



5. Using 16 AWG wire, connect the terminals as shown, ensuring that the positive (+ve) terminals are connected together and that the negative (-ve) terminals are connected together.
6. Replace the front panels on the Charger Stations.

Note: Do not use the rear power connector when in the “daisy chain” configuration. All power must be supplied through the front hard wiring connectors.

Suitable fusing or similar power limitation is required for the incoming power cabling and power source. For less than 6 chargers, allow 2A for each charger station in a 12V system.

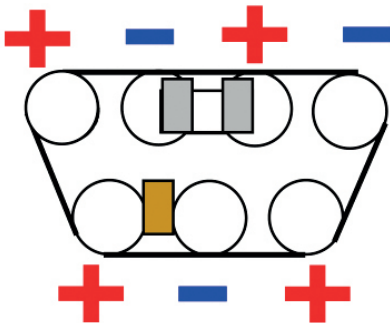
The incoming fuse should be removed before installing or working on the charger “daisy chain”.

All fixed installations should be performed by a qualified electrician and ensure that the wiring is appropriately secured and protected against mechanical damage.

4.4 “AA” Alkaline Battery Packs (ARG_MI_BAA and ARG_MI_YAA)

The MI-TIC “AA” battery pack accessories (ARG_MI_BAA and ARG_MI_YAA) allow the use of disposable “AA” batteries to power the camera.

“AA” Battery Pack
(Batteries Not Included)



Ensure batteries are fitted with correct polarity.

Only use the recommended battery type “AA” Alkaline (LR6), e.g. Panasonic LR6X.

WARNINGS:

- The ARG_MI_BAA and ARG_MI_YAA are not certified as intrinsically safe and therefore must not be operated in potentially flammable or explosive atmospheres.
- The ARG_MI_BAA and ARG_MI_YAA are not NFPA 1930 (1801), 2025 ED. approved accessories.
- Follow all user instructions for any batteries used in the ARG_MI_BAA or ARG_MI_YAA.
- Only use (Alkaline) LR6 type of cells.

	<5 °C / 40 °F	20 °C / 70 °F	>60 °C / 140 °F
LR6			

- Do not mix battery types. Replace all 7 batteries at once.
- Use of any other battery type will give inaccurate indications of remaining time.
- Battery life is reduced at low temperatures.
- Do not place camera into charging station with the ARG_MI_BAA or ARG_MI_YAA attached. It will not fit.
- **Neglecting the above may result in injury or death.**

5.0 CONNECTING THE CAMERA TO A PC

The camera has embedded storage which is used for:

- Changing the start-up image
- Storing images
- Storing videos
- Storing camera diagnostic information
- Updating the camera software
- Storing a copy of the MI-TIC Configuration Tool software (see section 6)
- Storing a copy of the manual

5.1 Changing the Start-Up Image

A custom start-up image can be loaded into the camera as follows.

1. Generate an image file on a computer in the following format:

Name:	Splash.bmp
File format:	Bitmap
Dimensions (HxV):	320 x 240 pixels
Bit depth	24 Bit
File size:	230,454 bytes

It is recommended to use MS Paint to create the image file.

2. Turn the camera on.
3. Connect the camera to the computer via the MI-TIC Charger Station and the supplied USB lead.
4. The computer should recognize the memory card as a "Mass Storage Device" and open a file explorer window.
5. Copy the image file from the computer to the top level "ARGUS TIC" directory.
6. Close the window.
7. On computers running MS Windows®, it is recommended to select "Safely Remove Hardware" before disconnecting the camera.
8. Remove the camera from the MI-TIC Charger Station.
9. Turn the camera off and back on. The camera will read the new image file when it turns on.
10. Wait until the displayed status message clears.
11. Turn the camera off and back on again. The new splash screen image will appear at start-up.

Keep a copy of the image file on your computer. The camera will rename the image file on the memory card to XSPLASH.BMP after it has been successfully loaded into the camera.

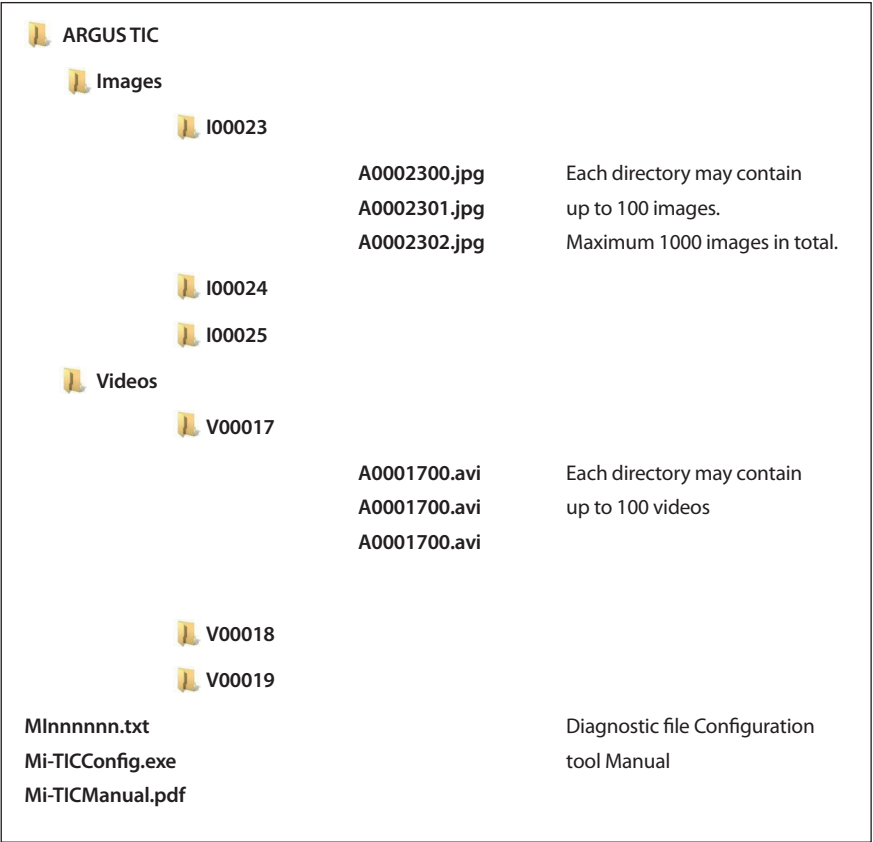
In the event that the splash screen fails to load into the camera, the camera will rename the image to ERRSPLASH.BMP. Providing the settings described above are adhered to, the custom start-up image can be loaded into the camera.

5.2 How to Copy the Memory Card Contents to a PC

Images and videos can be copied to a PC as follows:

- 1. Turn the camera on.
- 2. Connect the camera to the computer via the MI-TIC Charger Station and the supplied USB lead.
- 3. The computer should recognize the memory card as a “Mass Storage Device”. If an explorer window does not open automatically, select “My Computer” to locate the memory card.
- 4. Files can be copied from this window to directories on the computer.
- 5. Close the window.
- 6. Remove the camera from the MI-TIC Charger Station.

Directory Structure of Camera Memory



5.3 Diagnostic File

The diagnostic file can be found in the top level "ARGUS TIC" directory on the memory card. The name of the file is:

MIInnnnnn.txt

(nnnnnn is the camera serial number)

The diagnostic file contains information about the camera which may be useful to Avon Protection in diagnosing any camera faults. Avon Protection may ask you to copy this file from the memory card to a computer and send it by email to Avon Protection for fault finding.

5.4 Updating Camera Software

1. Ensure your MI-TIC shows at least 2 bars on the battery indicator.
2. Connect your MI-TIC via the Charger Station and USB to your computer.
3. Open the the downloaded zip file in Windows Explorer.
4. Your MI-TIC should have appeared on the left hand side of Windows Explorer as "ARGUS TIC".
5. Drag and drop the contents of the downloaded zip file into "ARGUS TIC".
6. Eject your MI-TIC from the Charger Station and restart. The updates should have taken place during the reboot.
7. To check your software update has been successful, place your MI-TIC in the Charger Station and connect it to your PC via the provided USB cable. Once connected, an information screen will display on your MI-TIC with latest "DSP" and "ARM" versions.

6.0 CONFIGURATION SOFTWARE

The MI-TIC Configuration Tool is supplied on the camera's embedded storage.

The Configuration Tool runs on a PC with Windows XP / Windows Vista / Windows 7 / Windows 8 / Windows 10. This allows the user to perform the following tasks:

- Set the temperature units to either °C or °F.
- Set the time and date format, and synchronize the time and date with the PC.
- Enable "Black Box" Video Recording.
- Enable Electronic Compass (MI-TIC S only).
- Enable Heat Seeker and Cold Seeker (MI-TIC S and MI-TIC 320 only).
- Customize the operation of the camera's function buttons to control:
 - Zoom
 - Fire Plus, Overhaul, Size-Up, Inspection, White Hot or Missing Persons Application Modes
 - Image Freeze
 - Image Capture
 - Video Capture
 - Image Playback
 - Video Playback
 - Laser Pointer (MI-TIC S only)
 - Heat Seeker (MI-TIC S and MI-TIC 320 only)
 - Cold Seeker (MI-TIC S and MI-TIC 320 only)

6.1 Running the Configuration Tool

To run the software, connect the MI-TIC to your computer using the MI-TIC Charger Station and the supplied USB cable. The camera is recognized as a removable disk. Navigate to the removable disk and open it.

Note: if the camera is not recognized as a removable disk, check that the camera is connected to the PC and correctly docked in the Charger Station, and switch the camera off and back on again.

Run “MI-TICConfig.exe”. The camera type is automatically recognized.

The “MI-TICConfig.exe” utility must always be executed from the camera.

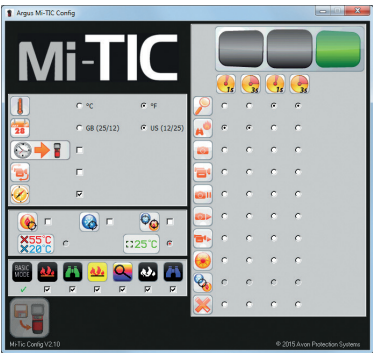
Do not copy to your computer!
The host computer must allow data to be written back to USB devices i.e. the camera.



One button cameras



MI-TIC E and E L three button cameras



MI-TIC S and 320 cameras

6.2 Setting the Temperature Units

Select either “°C” or “°F”, then click the “Save Changes” button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.



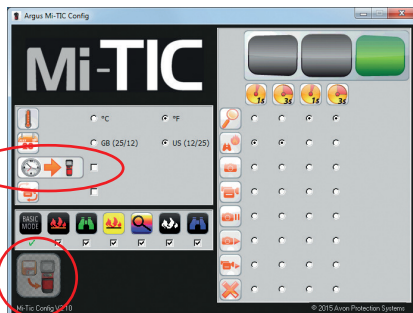
6.3 Setting the Time and Date Format

Select either “GB” or “US”, then click the “Save Changes” button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.



6.4 Synchronizing the Time and Date with the PC

Check the “Synchronize Time and Date” box, then click the “Save Changes” button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.



6.5 “Black Box” Video Recording

Check the “Black Box Video Recording” box, then click the “Save Changes” button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.

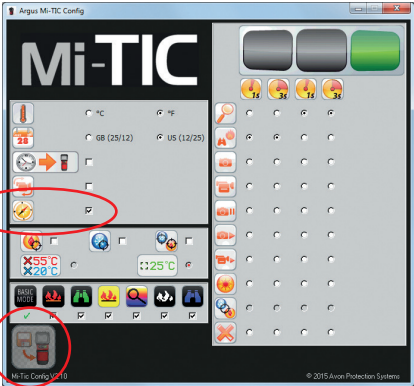
Note: when “Black Box” Video Recording is enabled, Image Capture, Video Capture, Image Playback and Video Playback functions are disabled.



6.6 Electronic Compass

Check the “Electronic Compass” box, then click the “Save Changes” button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.

Note: when the compass is enabled, it will appear in all “TI BASIC PLUS” color modes only. On power up, it will not be displayed in “TI BASIC”. However, if a “TI BASIC PLUS” color mode is selected it will be displayed. The compass is removed from the display when either the green button is pressed or the “TI BASIC” color mode is selected.



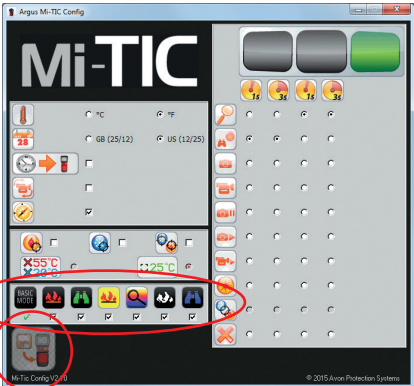
6.7 Heat Seeker and Cold Seeker

Check the “Heat Seeker” box, “Cold Seeker” box, or “Heat and Cold Seeker” box to enable trackers. Allocate the feature to one of the button operations. Check the “Tracker Temperature” box or “Spot Temperature” box, then click the “Save Changes” button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.



6.8 Application Modes

Check the application modes to be enabled, then click the “Save Changes” button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.



6.9 Camera Function Button Set-up

The following camera functions can be assigned to either of the two black function buttons. Functions can be activated by either a short press (less than 1 second) or a long press (3 seconds).

- Zoom
- Cycle through selected Application Modes (Fire Plus, Overhaul, Size-Up, Inspection, White Hot or Missing Persons)
- Image Freeze
- Image Capture
- Video Capture
- Image Playback
- Video Playback
- Laser Pointer*
- Heat Seeker / Cold Seeker†

† MI-TIC 320 and S only

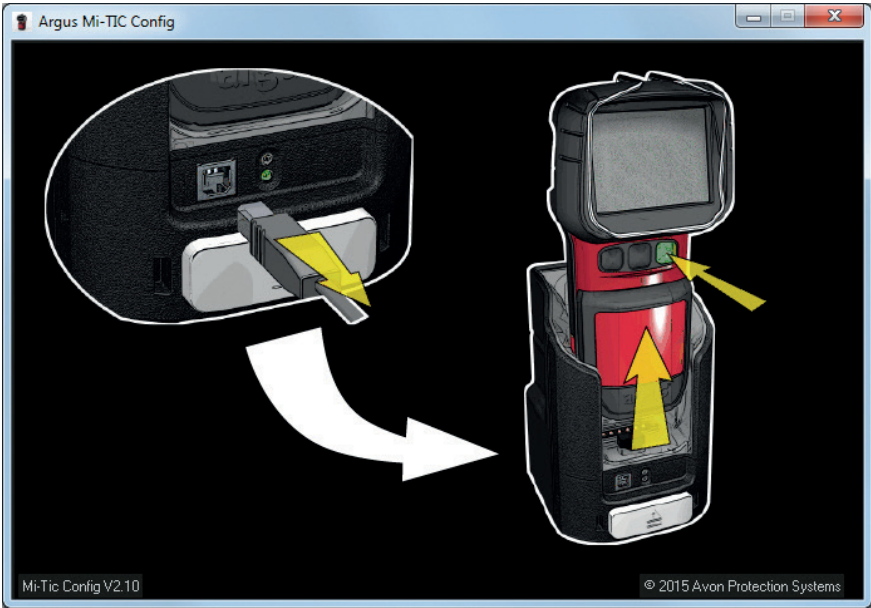
* MI-TIC S only



To assign functions to buttons, select the desired combinations and then click the "Save Changes" button. Eject the camera from the Charger Station. Allow 10 seconds for the new settings to be saved. The new settings will be enabled.

6.10 Restart

If the Configuration Tool cannot identify the camera, remove the camera from the Charger Station and restart the camera. This will update the camera identification.



7.0 CLEANING, MAINTENANCE AND FIELD REPLACEABLE COMPONENTS

7.1 Cleaning / Inspection After Use

After use and prior to stowing, the camera should be cleaned. This is best carried out using a cloth soaked with warm soapy water. For sanitization purposes, an IPA solution (>70%) may be used.

Check the camera for any signs of damage that may have occurred during the preceding use. For example, front/rear window damage or case cracking due to extreme impacts or case damage due to extreme heat.

Do not use coarse abrasives on the window surfaces, and ensure that any grit is removed before rubbing to dry.

In cases of contamination or infection risk, seek expert advice in accordance with the hazard encountered (e.g. foul water, Hazchem).

Solvents should not be used. If in doubt, contact your supplier.

7.2 Maintenance

No routine maintenance is required for the camera. If it is not in regular use, it should be switched on for a period of 10 minutes every month to check correct operation.

Batteries should be recharged every 6 months if not used.

Battery capacity can be expected to reduce over time. The MI-TIC rechargeable batteries use LiFePO4 cells which age to approximately 70% of original capacity after 2000 cycles under test conditions. Users should therefore expect to replace the batteries during the camera lifecycle.

There are very few other “lifed” components in the MI-TIC camera and repair or replacement of these will be offered via Avon Protection or an Authorized Repair Center subject to component availability.

7.3 Field Replaceable Components

The following items may be substituted by the user:

Item	Description
USB Lead	USB cable with Type B connector (1 meter).
Vehicle Charger Lead Fuse	250 V 2 A Fast Acting Fuse, UL Certified. 1.25 x 0.25 inch (32 x 6 mm). Do not use any other fuse type or rating.

The following items are available as spares and accessories from Avon Protection:

Part No.	Description
ARG_MI_BAA	MI-TIC "AA" Alkaline Battery Red
ARG_MI_YAA	MI-TIC "AA" Alkaline Battery Yellow
ARG_MI_BHC	MI-TIC Black Hard Carry Case
ARG_MI_YHC	MI-TIC Yellow Hard Carry Case
ARG_MI_CS	MI-TIC Charger Station
ARG_MI_DB	MI-TIC 2.7" Display Bumper
ARG_MI_DB_S	MI-TIC 3.5" Display Bumper
ARG_MI_LL	MI-TIC Double Lanyard Loop
ARG_MI_MB	MI-TIC Universal Mounting Bracket
ARG_MI_PSU	MI-TIC Power Supply
ARG_MI_RL	MI-TIC Retractable Lanyard
ARG_MI_RWS	MI-TIC Replacement Protective Window
ARG_MI_PCLIP	MI-TIC Pocket Clip, E and 320
ARG_MI_PCLIP_S	MI-TIC Pocket Clip, E L and S
ARG_MI_USB	MI-TIC USB Lead
P7030NS	argus Neck Strap
P7030SC	argus Soft Carry Case
ARG_MI_BLR	MI-TIC Rechargeable Battery Red
ARG_MI_BLY	MI-TIC Rechargeable Battery Yellow
ARG_MI_BLB	MI-TIC Rechargeable Battery Black

THERE ARE NO OTHER USER SERVICEABLE PARTS. If any damage beyond these parts occurs, return the camera to Avon Protection or an Authorized Repair Center. Any attempt at repair by unauthorized personnel may cause serious damage and will invalidate the warranty.

7.4 Replacing the Protective Window Assembly

7.4.1 Removal



Using a small flat tool, e.g. a small flat head screwdriver, depress the window release latch and turn the Protective window assembly clockwise. Note the Protective window assembly contains a reverse bayonet coupling.



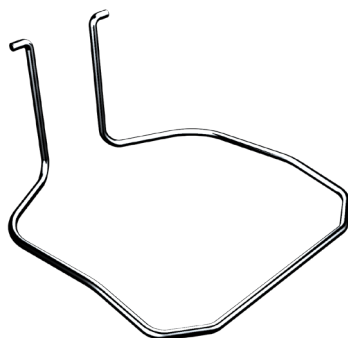
7.4.2 Refitting



Locate the window assembly on the front of the camera and turn the window assembly counter-clockwise until a “click” is heard.

7.5 Replacing the Pocket Clip

7.5.1 Removal



Using a T10 Torx driver (not supplied), unscrew the two torque screws holding the Pocket Clip in place. Once the screws are loosened, the black plastic retaining piece can be removed. Place this to one side but keep as it will be required for refitting. Remove the Pocket Clip from the camera.

7.5.2 Refitting



Use the appropriate sized Pocket Clip based on the size of the camera display (2.7" or 3.5"). Place the Pocket Clip in the correct location on the front of the camera so that the edges of the clip sit on the edges of the Display Bumper. Refit the black plastic retaining piece and insert and tighten the two torque screws.

Warning: DO NOT overtighten.

7.6 Replacing the Display Bumper

7.6.1 Removal



If a Pocket Clip is fitted, remove prior to proceeding (see section 7.5.1). Grasp the edges on both sides of the Display Bumper firmly and pull away from the display of the camera.

7.6.2 Refitting



Use the appropriate sized Display Bumper based on the size of the camera display (2.7" or 3.5"). Align the Display Bumper with the corners of the display and push firmly to refit. Refit the Pocket Clip if required (see section 7.5.2).



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