

Rosemount™ 975 Flame Detectors

With HART® Protocol

Contents

Chapter 1	Introduction.....	5
Chapter 2	Installation.....	7
	2.1 Download the HART® device driver (DD).....	7
	2.2 Load device driver (DD) on HART® hand-held communicator.....	7
Chapter 3	Operating the HART® hand-held communicator.....	9
	3.1 Overview screen.....	10
	3.2 Device information screen.....	11
	3.3 Service tools screen.....	15

1 Introduction

This manual describes how operators can use HART® handheld field communicators to configure the Rosemount 975 Flame Detectors to suit customer needs, perform firmware upgrades, and find troubleshooting information and functionality.

This manual also describes the HART hand-held communicator software and provides instructions on how to install, operate, and maintain the software.

2 Installation

2.1 Download the HART[®] device driver (DD)

To download the HART device driver:

Procedure

1. Go to [Emerson.com](https://www.emerson.com).
2. Navigate to the relevant product page.
3. Scroll down to *Documents and Drawings*.
4. Click *SOFTWARE DOWNLOADS & DRIVERS*.
5. Download the relevant file.

2.2 Load device driver (DD) on HART[®] hand-held communicator

Procedure

1. Load the DD on the HART hand-held communicator.
2. Select **Setup**.

3 Operating the HART® hand-held communicator

From the main screen, you have three options:

Figure 3-1: Main screen



- A. Overview: Opens **Overview** screen.
- B. Service Tools: Opens **Service Tools** screen.
- C. Configure: Opens **Configure** screen.

3.1 Overview screen

The **Overview** screen gives a summary of the device information.

Figure 3-2: Overview screen



- A. Device Status: Available options are Good, Failure, and Maintenance Required.
- B. Comm Status: Displays communication method. This is polled.
- C. Analog Output: Displays a value between 1 mA and 20 mA when the device is turned on.
- D. Fire Detection Status: Indicates whether the device has detected fire. Available options are None and Detected.
- E. Manual Built In Test: Click to perform built in test.
- F. Locate Device: Click here to make the device light-emitting diode (LED) blink to locate a connected device.
- G. Log: Shortcut to **Log** screen.
- H. Device Information: Displays **Device Information** screen. When you open the **Device Information** screen from the **Overview** screen, all fields are read only.

3.2 Device information screen

Figure 3-3: Device information screen



- A. Identification: Opens **Identification** screen.
- B. Revisions: Opens **Revisions** screen.
- C. Security: Opens **Security** screen.

3.2.1 Identification screen

The screenshot shows the Identification screen of the HART hand-held communicator. It features a list of fields labeled A through I on the left, with corresponding data or input fields on the right. The fields are: A. Tag, B. Long tag, C. Model (with value 975), D. Final assembly num (with value 0), E. Dev id (with value 2154599), F. Date (with value 04/20/2021), G. Descriptor, H. Message, and I. Model Number (with value 975D-UF-6). At the bottom, there is a navigation bar with four icons: Menu, Overview, Service Tools, and Configs.

Label	Field Name	Value
A	Tag	
B	Long tag	
C	Model	975
D	Final assembly num	0
E	Dev id	2154599
F	Date	04/20/2021
G	Descriptor	
H	Message	
I	Model Number	975D-UF-6

- A. Tag
- B. Long tag
- C. Model
- D. Final assembly num (Final assembly number)
- E. Dev id (Device identification)
- F. Date
- G. Descriptor
- H. Message
- I. Model Number

Note

When you access the **Identification** screen from the **Overview** screen, all fields are read only.

3.2.2 Revision numbers screen

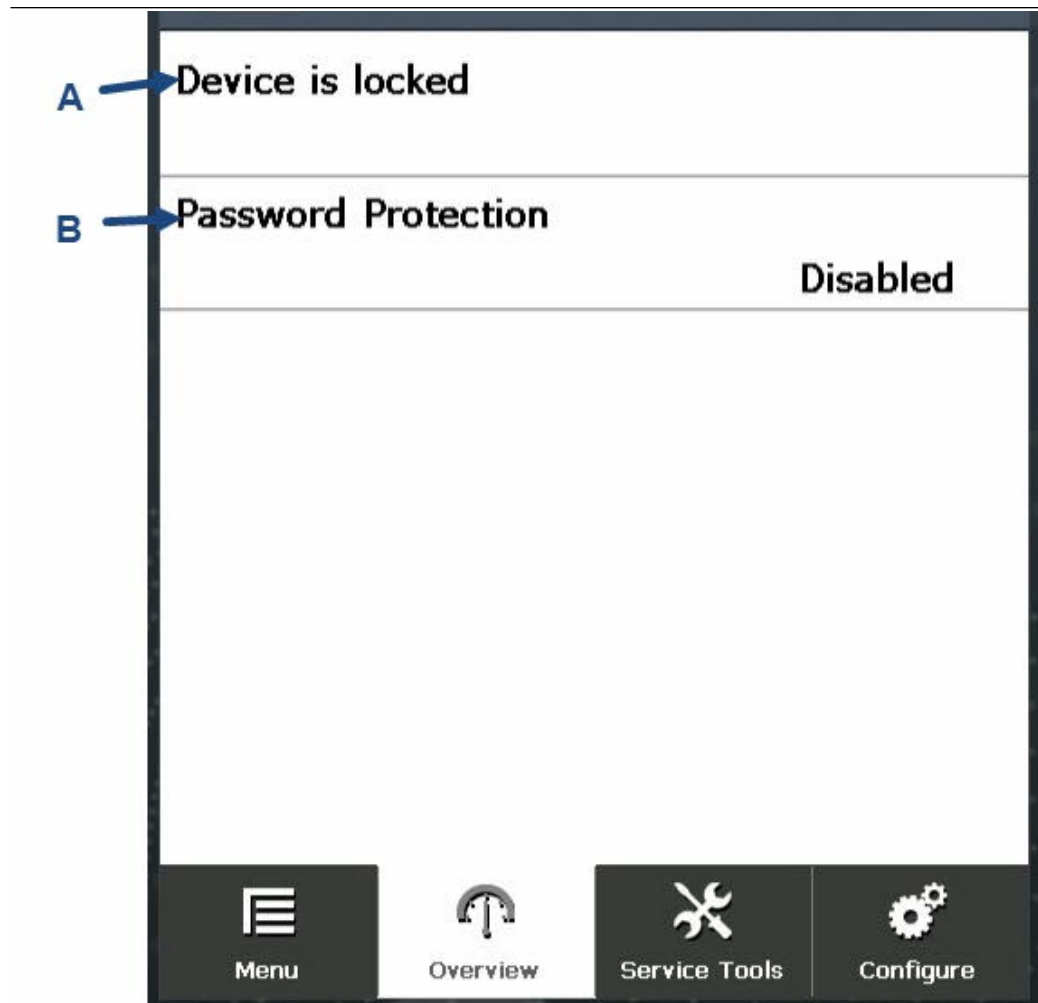


A →	Universal rev	7
B →	Fld dev rev	1
C →	Hardware rev	1
D →	Software rev	1
E →	DD Revision	1

Menu Overview Service Tools Configure

- A. Universal rev: Universal revision
- B. Fld dev rev: Field device revision
- C. Hardware rev: Hardware revision
- D. Software rev: Software revision
- E. DD Revision: Device driver revision

3.2.3 Security screen

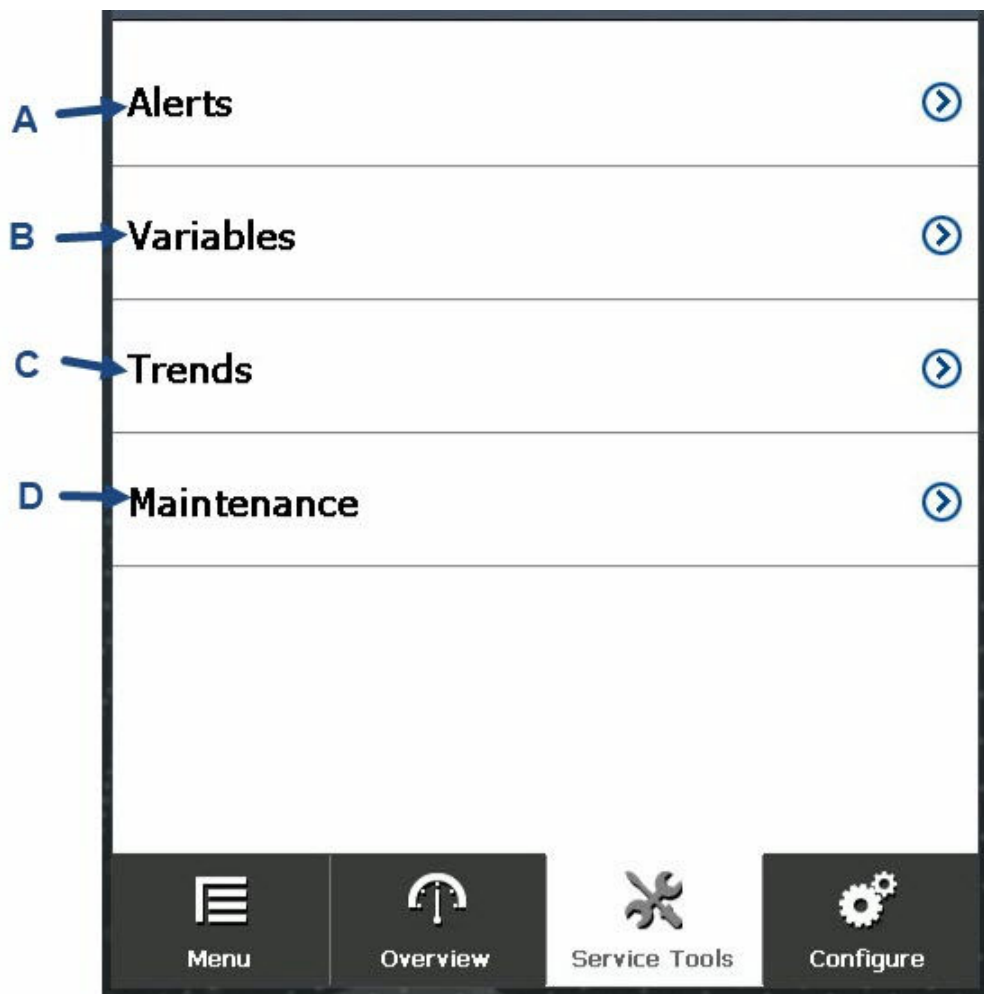


- A. Device lock status.
B. Password Protection: Enabled or Disabled.

3.3 Service tools screen

The **Service Tools** screen provides links to sub-screens, in which you can view and edit service-related device parameters.

Figure 3-4: Service tools screen

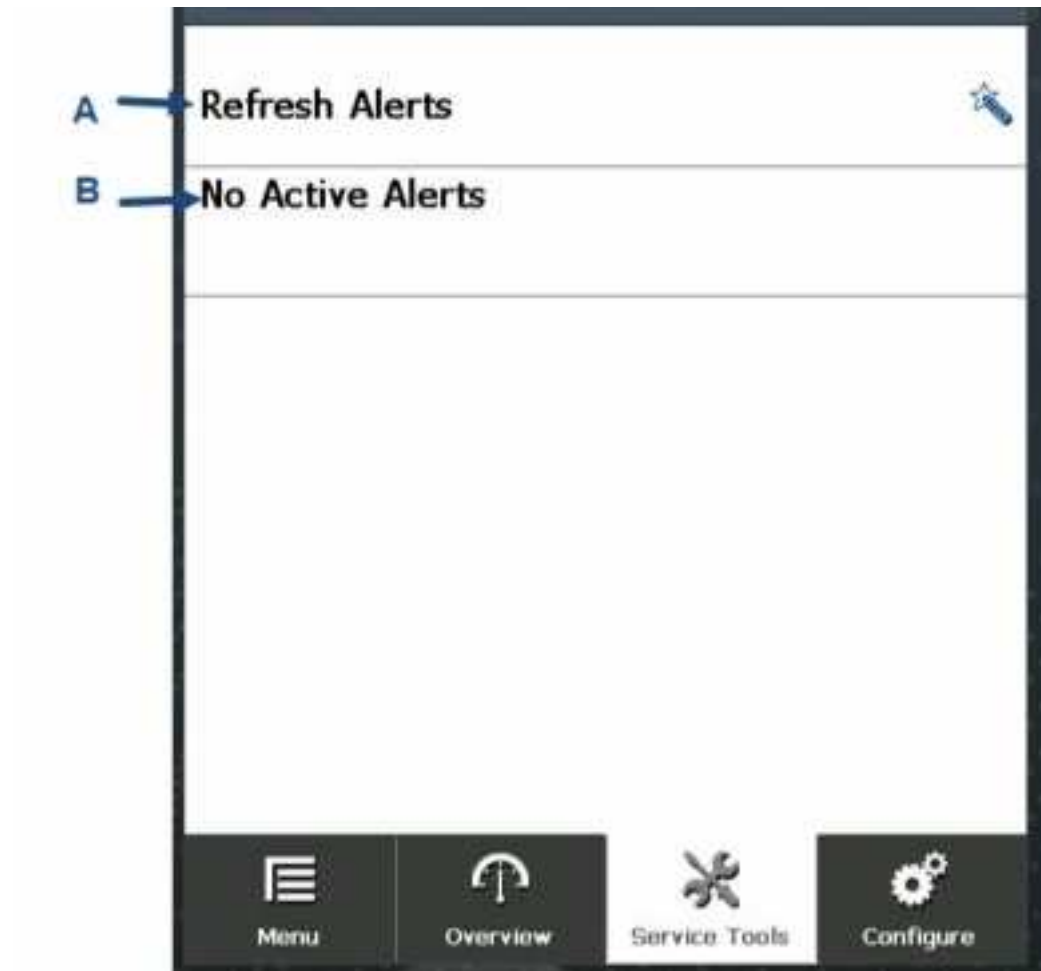


- A. Alerts
- B. Variables
- C. Trends
- D. Maintenance

3.3.1 Alerts screen

The **Alerts** screen provides information about device alerts and enables you to reset any active alerts.

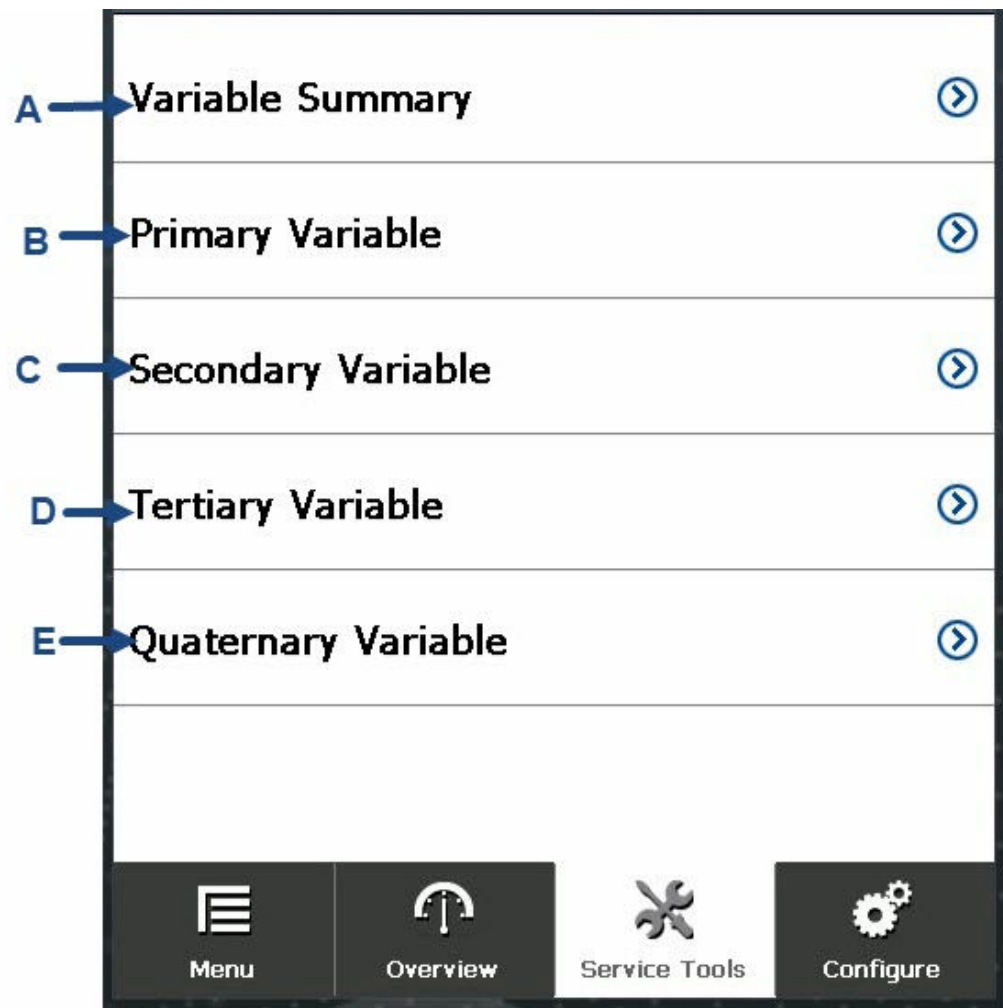
Figure 3-5: Alerts screen



- A. Refresh Alerts: Tap to refresh alert status.
- B. Displays alert status: No Active Alerts in this example.

3.3.2 Variables screen

Figure 3-6: Variables screen

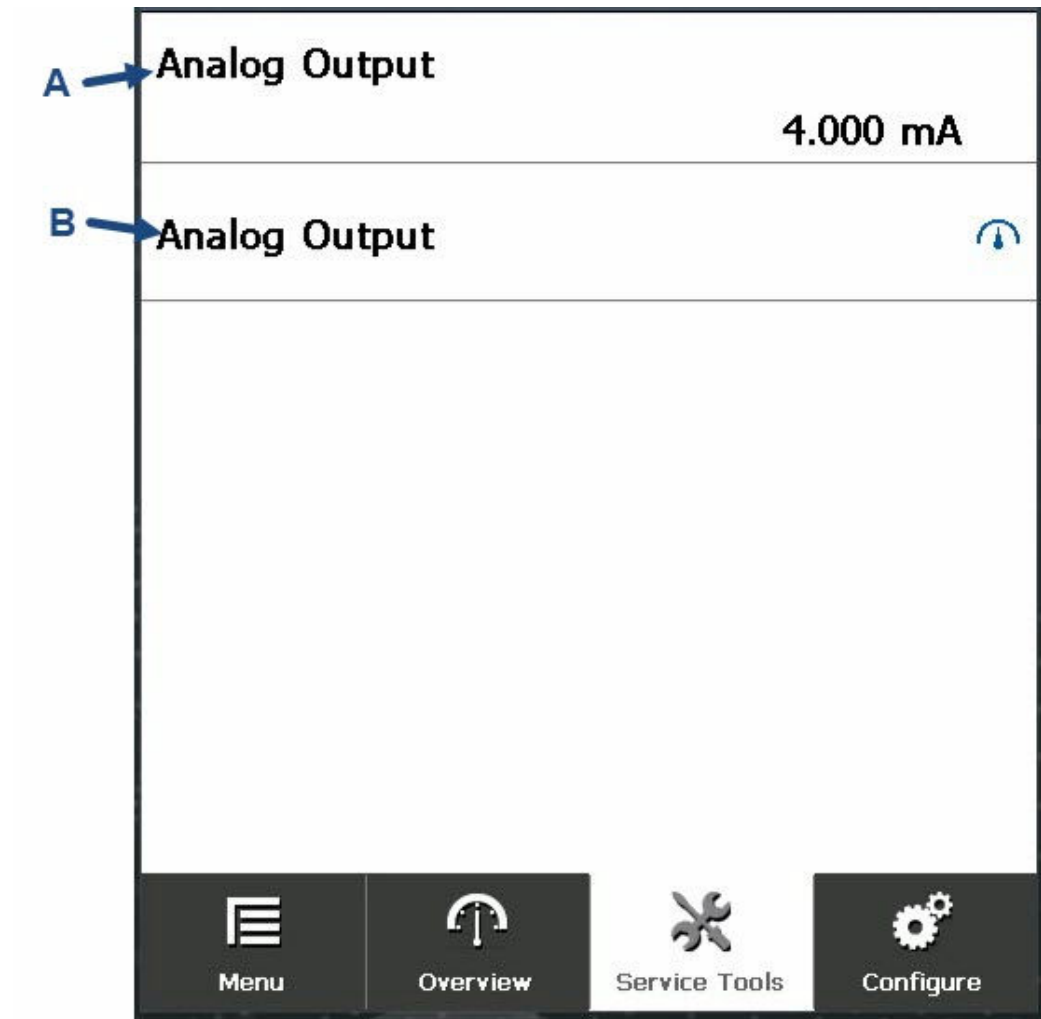


- A. *Variable Summary: Displays a summary of all variables.*
- Analog output
 - Electronic temperature
 - Supply voltage
- B. *Primary Variable: Opens screen where you can select analog output variables.*
- C. *Secondary Variable: Opens screen where you can select temperature-related variables.*
- D. *Tertiary Variable: Opens screen where you can select voltage-related variables.*
- E. *Quaternary Variable: Opens screen where you can select heater-related variables.*

Primary variable screen

The *Primary Variable* screen displays the analog output.

Figure 3-7: Primary variable screen

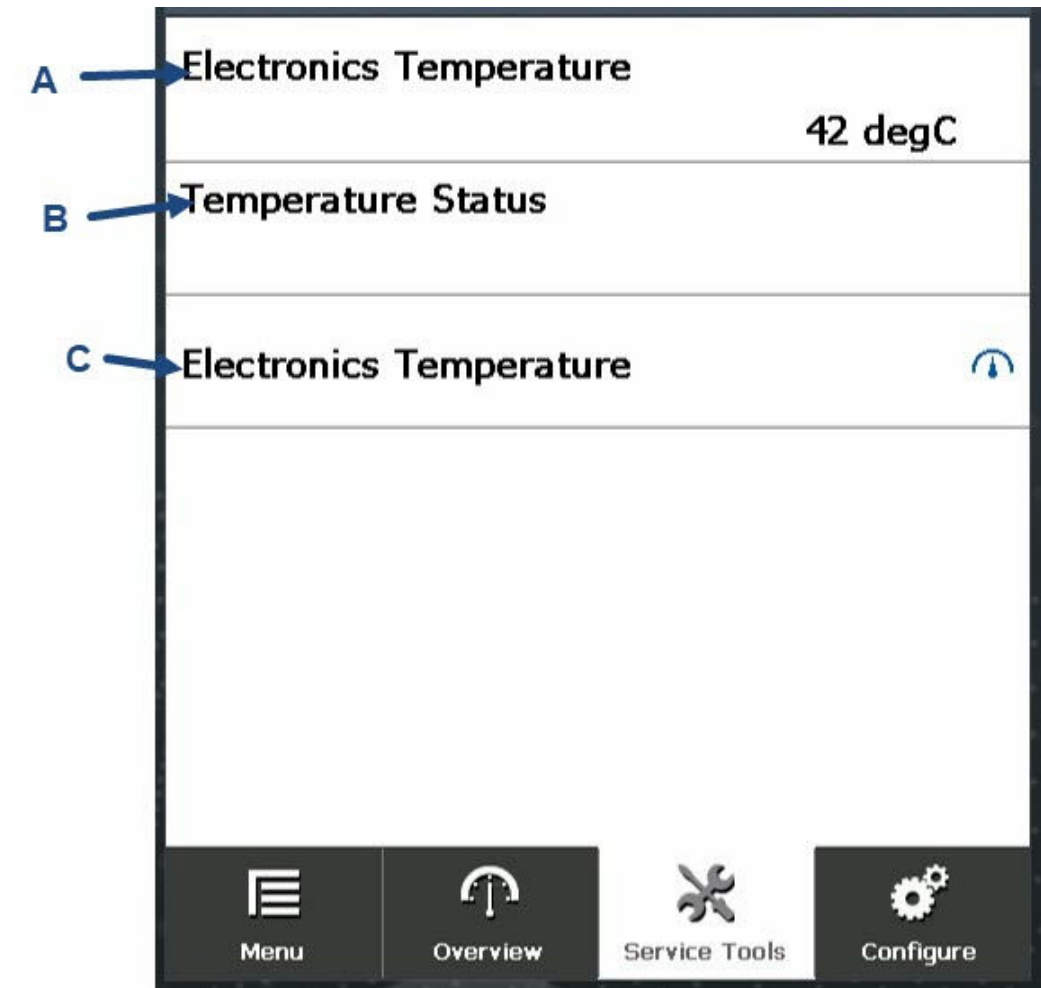


- A. Analog Output: Displays analog output.
- B. Analog Output gauge: Tap to display *Analog Output Gauge* screen.

Secondary variable screen

The *Secondary Variable* screen displays electronics information.

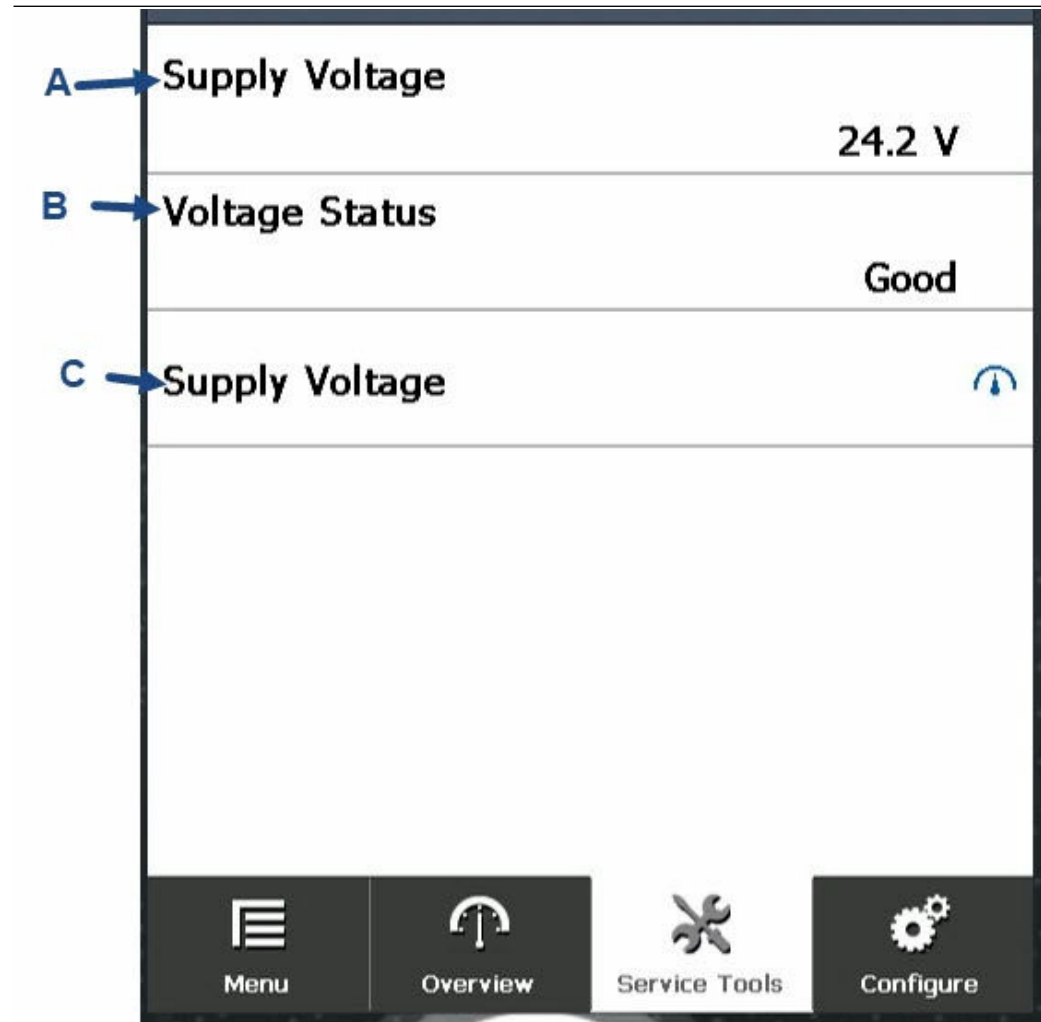
Figure 3-8: Secondary variable screen



- A. *Electronics Temperature*: Displays electronics temperature.
- B. *Temperature Status*: Displays how well the temperature is being read.
- C. *Electronics Temperature gauge*: Tap to display **Electronics Temperature gauge** screen.

Tertiary variable screen

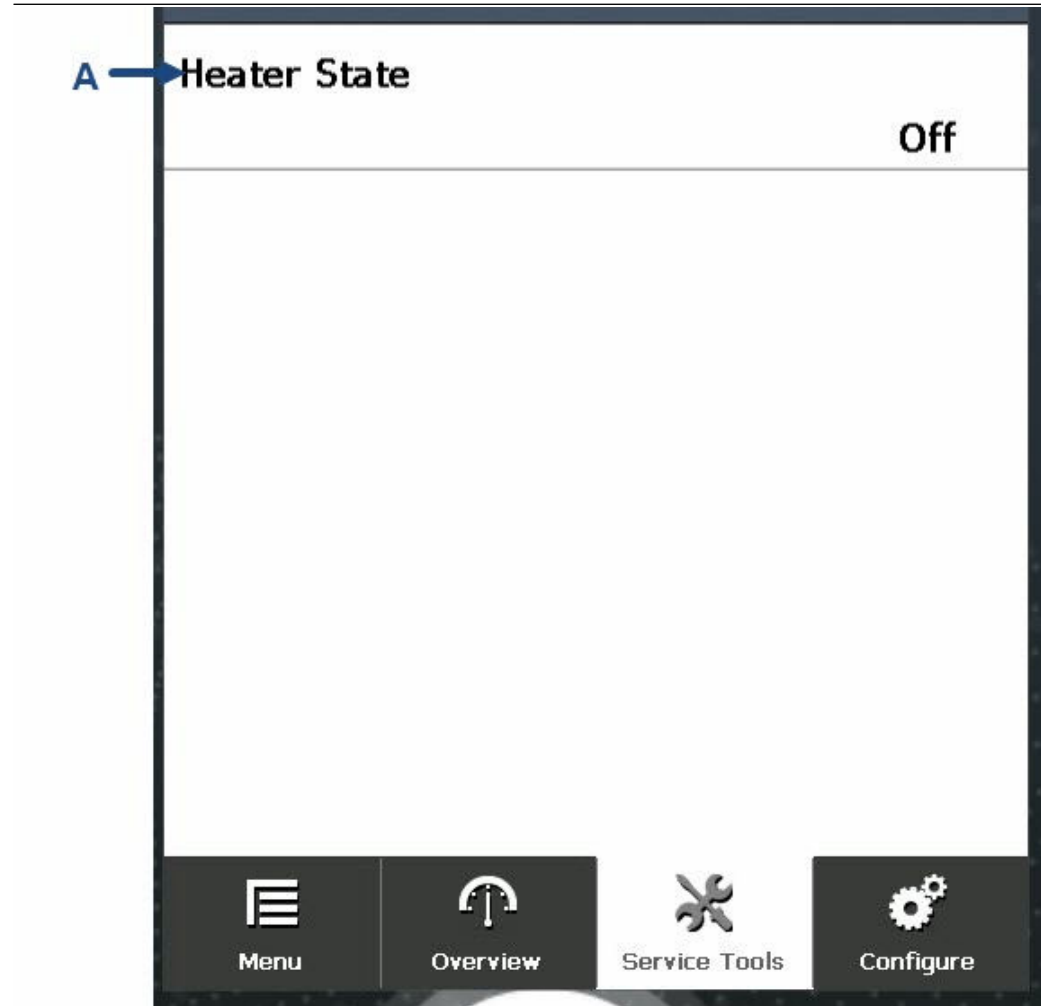
The *Tertiary Variable* screen displays voltage information.



- A. Supply Voltage: Displays current supply voltage.
- B. Voltage Status: Displays how well the voltage is being read.
- C. Supply Voltage gauge: Tap to display the **Supply Voltage Gauge** screen.

Quaternary variable screen

The *Quaternary Variable* screen displays heater information.

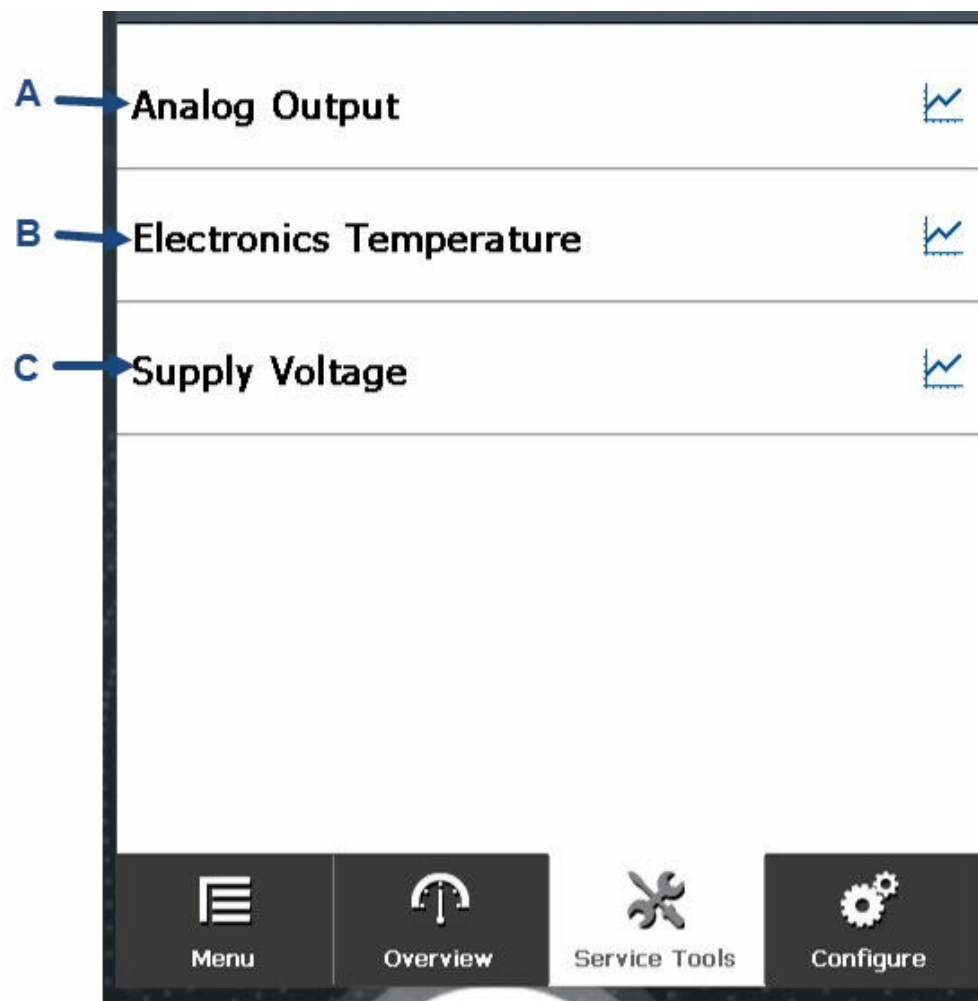


A. Heater State: Displays heater state - On or Off.

3.3.3 Trends screen

From the **Trends** screen, you can view the variables listed on a graph.

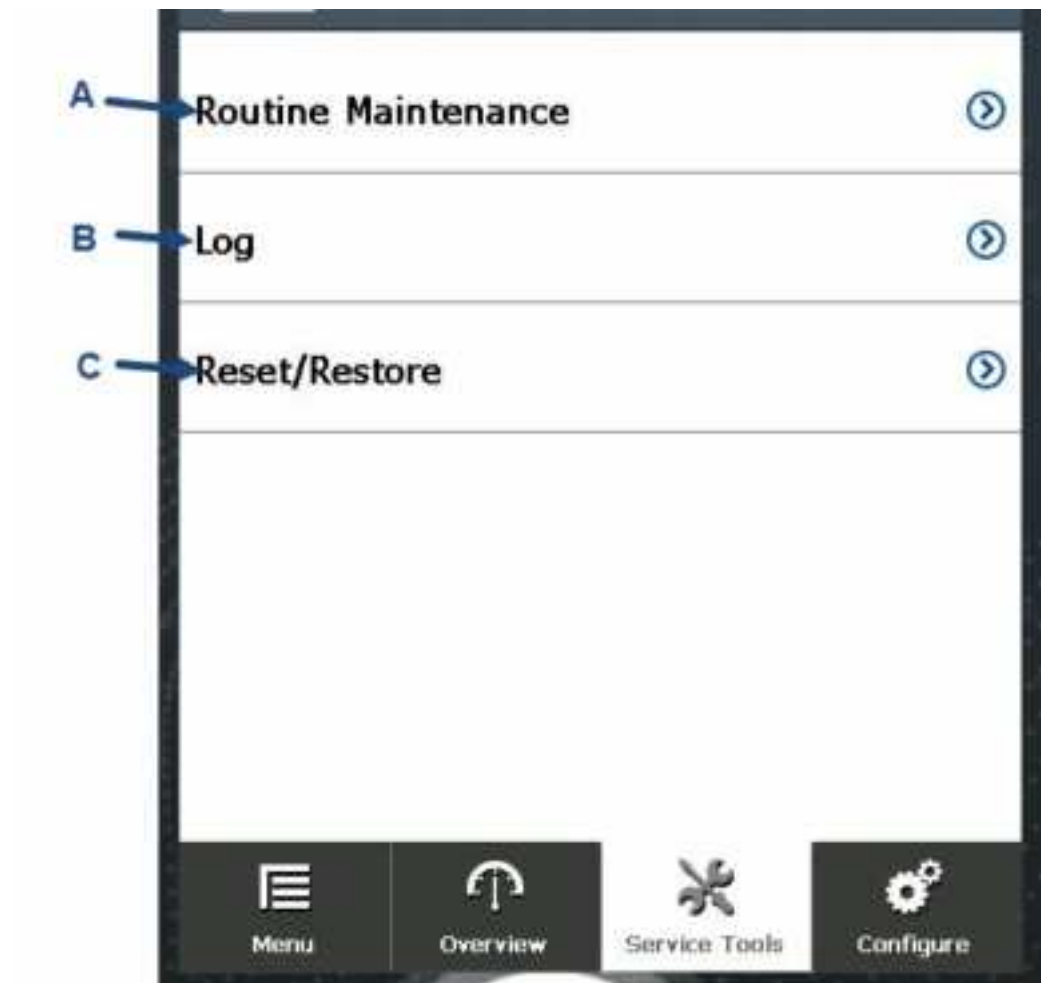
Figure 3-9: Trends screen



- A. Analog Output: Displays the analog output on a graph.
- B. Electronics Temperature: Displays the electronics temperature on a graph.
- C. Supply Voltage: Displays the supply voltage on a graph.

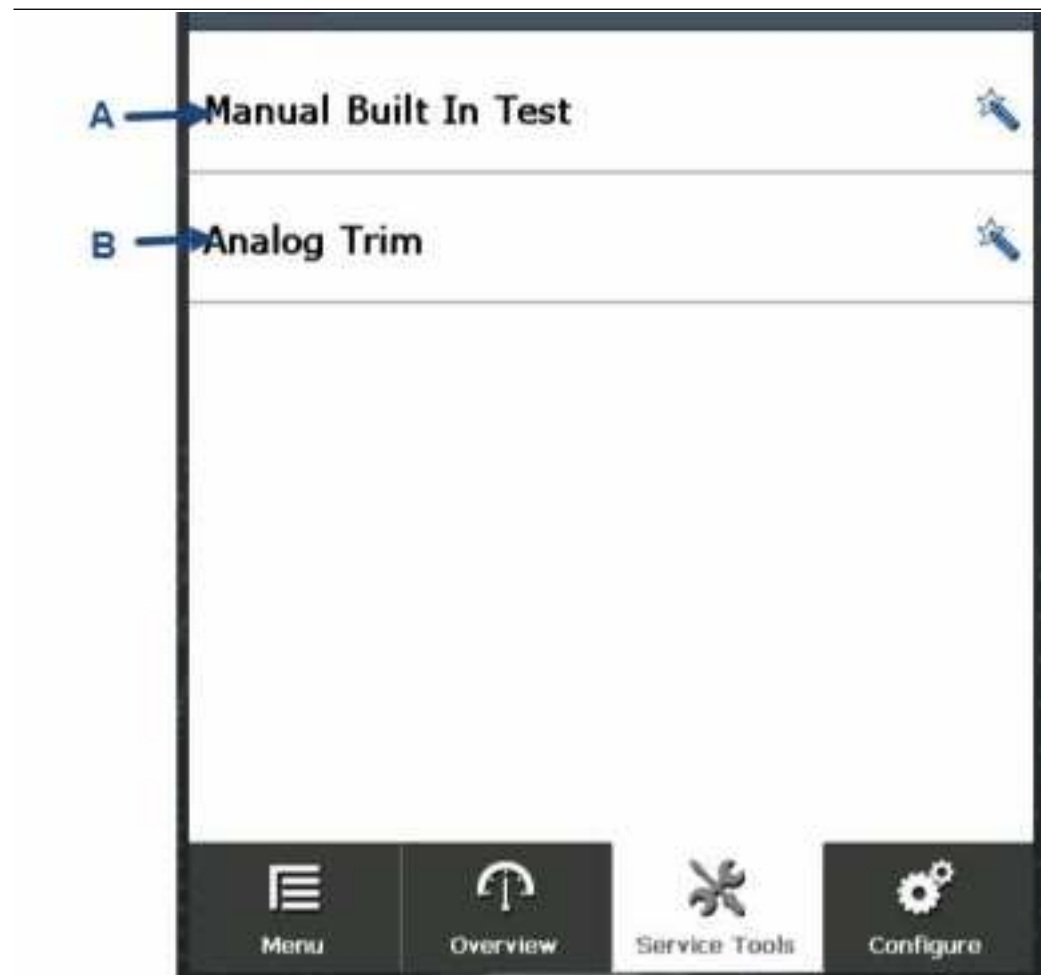
3.3.4 Maintenance screen

Figure 3-10: Maintenance screen



- A. Routine Maintenance: Opens screen with routine maintenance functions.
- B. Log: Opens screen with event logs.
- C. Reset/Restore: Opens a screen from which you can reset the detector.

Routine maintenance screen



- A. Manual Built In Test: Performs manual built-in test.
B. Analog Trim. Calibrates 4-20 mA.⁽¹⁾

⁽¹⁾ With the analog trim function, you can round multimeter values to a 4-mA fixed value. Tap Analog Trim and then enter and confirm the multimeter reading.

Log screen

The **Log** screen provides information about the logs and navigation options.

Figure 3-11: Log screen



- A. Operating Time: Amount of time device has been powered up.
- B. Previous Log Records: Displays previous log records.
- C. Last Log Records: Displays the latest **Log Record** screen.
- D. Next Log Records: Displays the next **Log Record** screen.
- E. Device Log: Displays the log in a table.

Reset/Restore screen

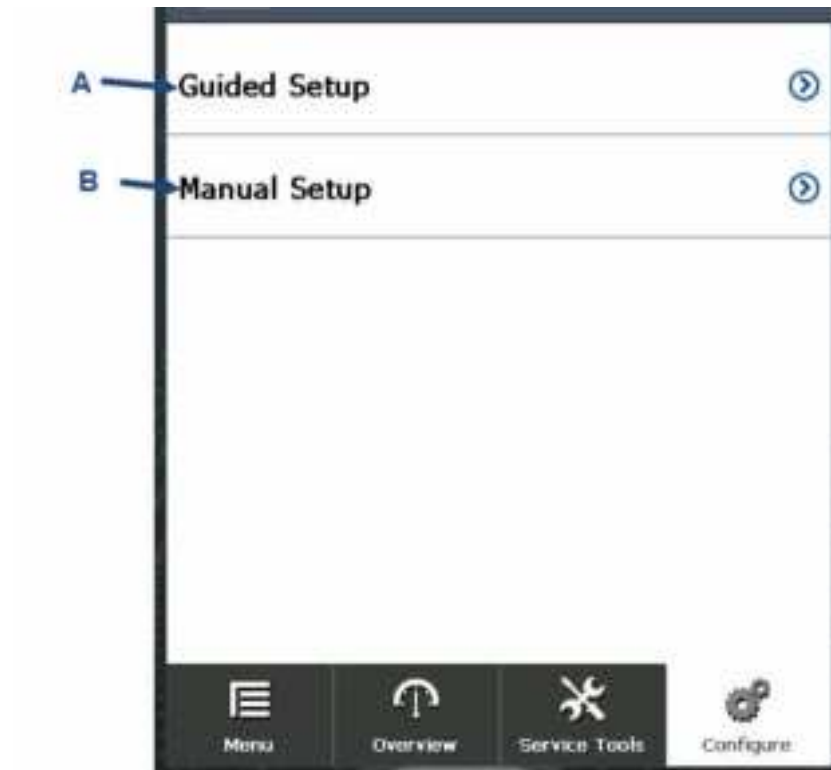


A. *Reset Device: Performs soft reset.*

3.3.5 Configure screen

From the **Configure** screen, you can configure the detector's parameters manually or using the wizard.

Figure 3-12: Configure screen



- A. *Guided Setup: Opens screen from which you can configure parameters using the wizard.*
- B. *Manual Setup: Opens screen from which you can manually configure parameters.*

Guided setup screen

Use the *Guided Setup* screen to configure the device parameters using a wizard.

Figure 3-13: Guided setup screen



- A. *Configure Detector*: Guides you through detector configuration.
- B. *Configure BIT*: Guides you through the built-in test (BIT) configuration.
- C. *Accessory Relay*: Guides you through accessory relay configuration.
- D. *Detection Option*: Guides you through detector options configuration.
- E. *FOV Integrity*: Guides you through FOV integrity configuration.
- F. *Access Control*: Guides you through access control configuration.
- G. *4-20 Current*: Guides you through the 4-20 mA current configuration.
- H. *Device Information*: Guides you through detector information configuration.

Manual setup screen

Use the **Manual Setup** screen to manually configure each of the detector's parameters.

Figure 3-14: Manual setup screen



- A. *Detector Settings*: Opens **Settings** screen.
- B. *BIT*: Opens **BIT Settings** screen.
- C. *Activate Relay on*: Activates or deactivates relay.
- D. *Detection Options*: Opens **Detection Options** screen.
- E. *FOV Integrity*: Enables or disables FOV integrity.
- F. *Security*: Opens **Security** screen.
- G. *Current Levels*: Displays levels.
- H. *Device Information*: Displays the **Device Information** screen. See [Device information screen](#).
- I. *HART*: Opens **HART Settings** screen.

Detector settings screen

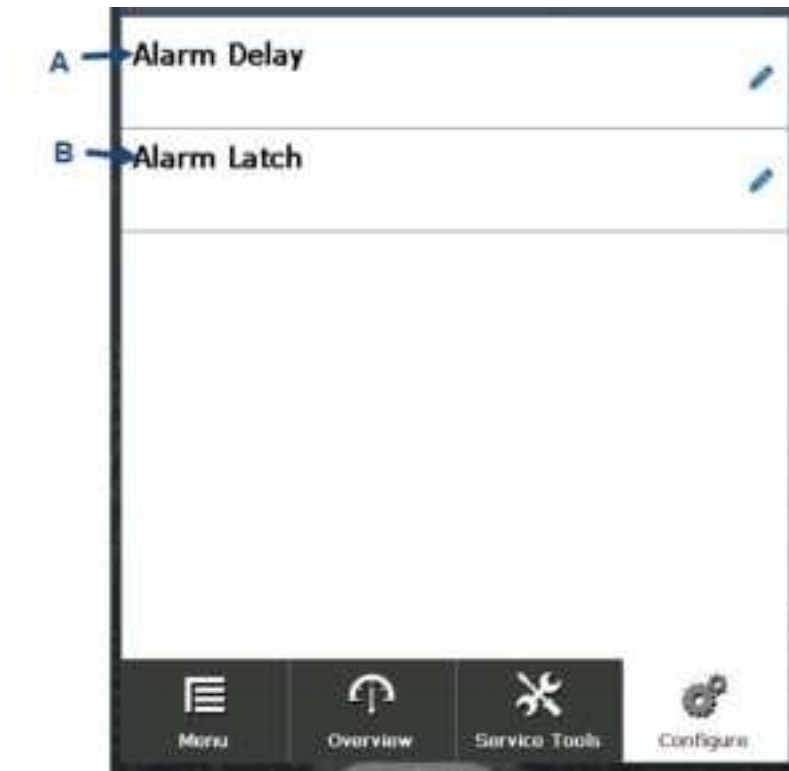
Figure 3-15: Detector settings screen



- A. Sensitivity: Selects the sensitivity.
See the options displayed in the [Rosemount 975 Quick Start Guide](#).
- B. Alarm: Opens the **Alarm** screen.
- C. Window Heater: Opens **Window Heater Settings** screen.

Alarm screen

Figure 3-16: Alarm screen



A. Alarm Delay: Select alarm delay.

Options are:

- 0 sec
- Antiflare
- 3 sec
- 5 sec
- 10 sec
- 15 sec
- 20 sec
- 30 sec

B. Alarm Latch: Activate or deactivate alarm latch.

Window heater screen

Figure 3-17: Window heater screen



A. *Heater Mode: Select window heater mode from the following options:*

Off Window heater is off all the time.

Auto Window heater turns on when the environment reaches the activation temperature.

On Window heater is on all the time.

B. *Heater Power: Select power mode: low or high.*

C. *Heater Activation Temperature: Heater activation temperature in degrees Celsius.*

Options are:

- 0
- 5
- 10
- 15
- 20
- 25
- 30

BIT screen

Use this screen to define built-in test (BIT) settings.

Figure 3-18: BIT screen

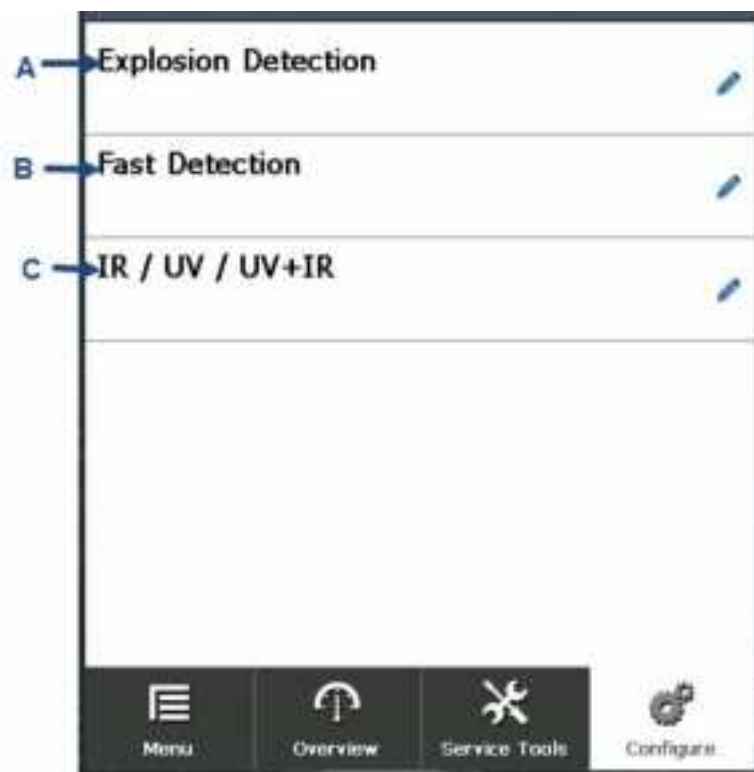


- A. Alarm Relay on BIT: Activate or deactivate alarm relay on BIT.
- B. Accessory Relay on Manual BIT: Activate or deactivate accessory relay on BIT.
- C. Automatic BIT: Activate or deactivate automatic BIT.
- D. BIT Interval: Manually select BIT interval.
- E. BIT Fault Count: Manually select BIT fault count.
- F. Post Manual BIT Duration: Set post manual BIT duration in seconds.

Detection options screen

Use this screen to define the detection options.

Figure 3-19: Detection options screen



- A. Explosion Detection: Enable or disable explosion detection.
- B. Fast Detection: Enable or disable fast detection.
- C. IR/UV/UV+IR: Select single infrared (IR), single ultraviolet (UV), or both UV and IR channels.⁽²⁾

⁽²⁾ This is available for UV/IR models only.

Security settings screen

Figure 3-20: Security settings screen



- A. *Device Lock Status: Displays device lock status.*
- B. *Lock/Unlock: Lock or unlock the detector for maintenance. No other device can configure the detector while it is locked.*
- C. *Password Protection: Displays password protection status.*
- D. *Enable/Disable Password: Enable password protection to prevent unauthorized access.*

Current levels screen

Figure 3-21: Current levels screen



- A. Fault: Current displayed during fault. This cannot be changed (1 mA).
- B. BIT Fault: Current displayed during built-in test (BIT) fault. This cannot be changed.
- C. FOV Warning: Current displayed during FOV warning. 3 - 5 mA (should always be $\leq$ the normal value. Default: 4 mA).
- D. Normal: Current displayed during normal function. 4 or 5 mA (should always be $\geq$ the FOV value). Default: 4 mA.
- E. Warning: Current displayed during warning. 13 - 16 mA (should always be lower than alarm value). Default: 16 mA.
- F. Alarm: Current displayed during alarm. 15 - 20 mA (should always be higher than warning). Default: 20 mA.

Device information screen

See [Device information screen](#) for information on the *Device Information* screen.

Figure 3-22: Identification screen

The screenshot shows a vertical list of fields on a handheld device screen. Each field is labeled with a letter (A through I) and an arrow pointing to it. The fields are: A. Tag, B. Long tag, C. Model, D. Final assembly num, E. Dev id, F. Date, G. Descriptor, H. Message, and I. Model Number. The values for some fields are: Model (975), Final assembly num (0), Dev id (2154599), Date (04/20/2021), and Model Number (975D-UF-6). At the bottom of the screen is a navigation bar with four icons: Menu, Over time, Service Tools, and Configure.

Label	Value
A. Tag	
B. Long tag	
C. Model	975
D. Final assembly num	0
E. Dev id	2154599
F. Date	04/20/2021
G. Descriptor	
H. Message	
I. Model Number	975D-UF-6

- A. Tag: Displays detector tag. This is editable.
- B. Long tag: Displays detector long tag. This is editable.
- C. Model: Displays detector model.
- D. Final assembly num: Displays final assembly number. This is editable.
- E. Dev id: Displays device identification number.
- F. Date: Displays current date.
- G. Descriptor.
- H. Message.
- I. Model Number.

Figure 3-23: Revision numbers screen

A	Universal rev	7
B	Fld dev rev	1
C	Hardware rev	1
D	Software rev	1
E	DD Revision	1

Menu Overview Service Tools Configure

- A. Universal rev: Displays HART® revision number.
- B. Fld dev rev: Displays device revision number.
- C. Hardware rev: Displays hardware revision number.
- D. Software rev: Displays software revision number.
- E. DD Revision: Displays device driver revision number.

Figure 3-24: HART® screen



- A. Poll addr: Displays polling address.
- B. Change Poll Address: Tap to change polling address.
- C. Reset "Configuration Changed" flag: Tap to reset configuration change count.

For more information: [Emerson.com](https://www.emerson.com)

©2022 Emerson. All rights reserved.

Emerson Terms and Conditions of Sale are available upon request. The Emerson logo is a trademark and service mark of Emerson Electric Co. Rosemount is a mark of one of the Emerson family of companies. All other marks are the property of their respective owners.

ROSEMOUNT™

