Reference Manual
00809-1300-4975, Rev AB
April 2022

Rosemount™ 975 Flame Detectors

With HART® Protocol

ROSEMOUNT™

EMERSON™

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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.
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

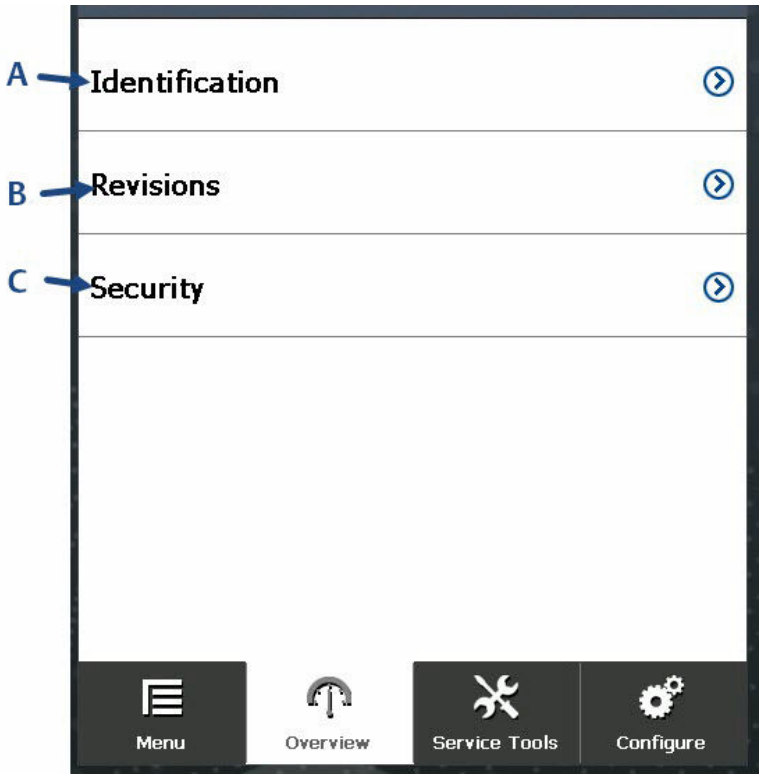
The ***Overview*** screen gives a summary of the device information.

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.*

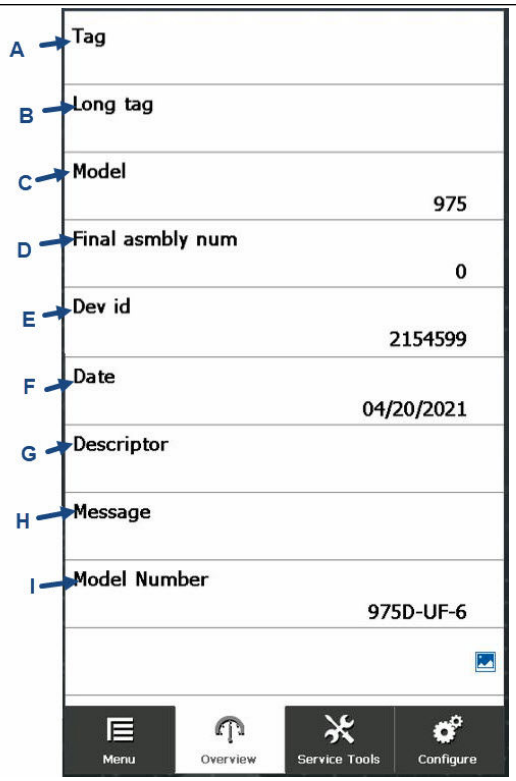
3.2 Device information screen

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



A. *Tag*
B. *Long tag*
C. *Model*
D. *Final asmbly 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: 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*

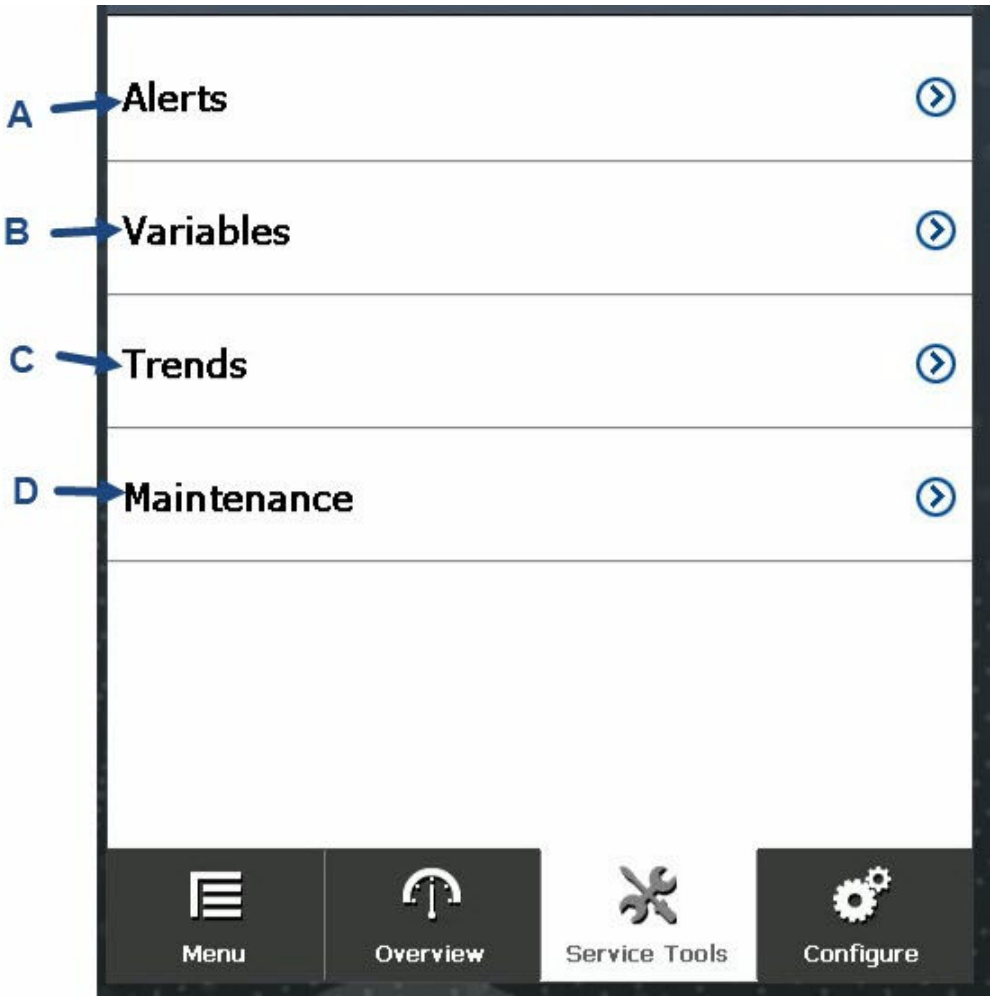
3.2.3 Security screen

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

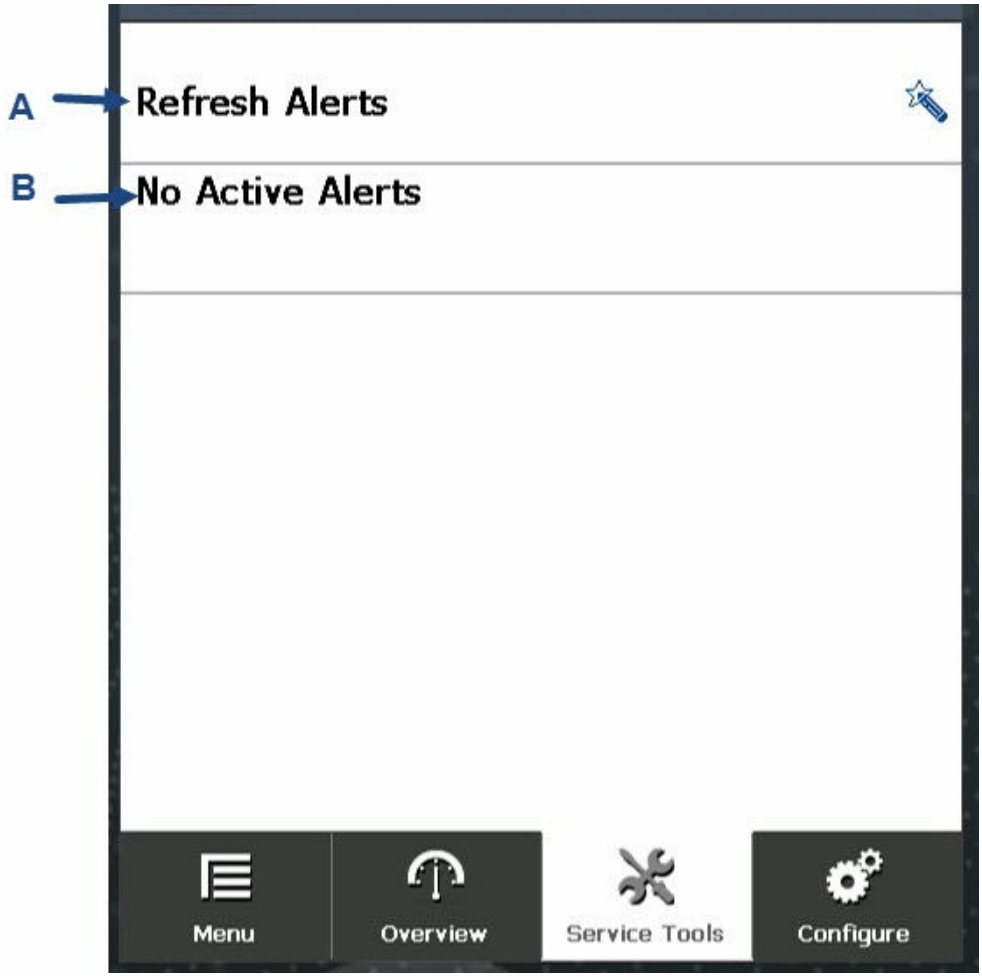


A. Alerts
B. Variables
C. Trends
D. Maintenance

3.3.1 Alerts screen

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

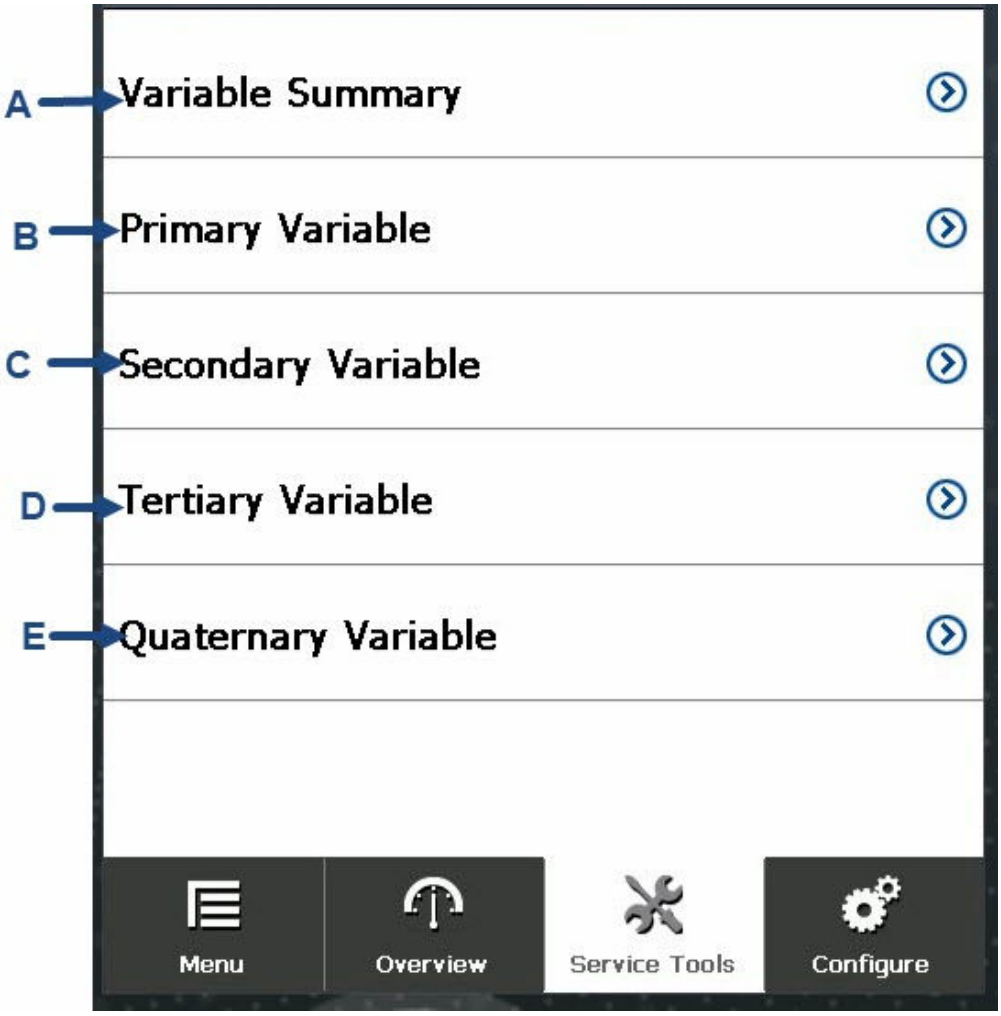
Figure 3-5: Alerts screen



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



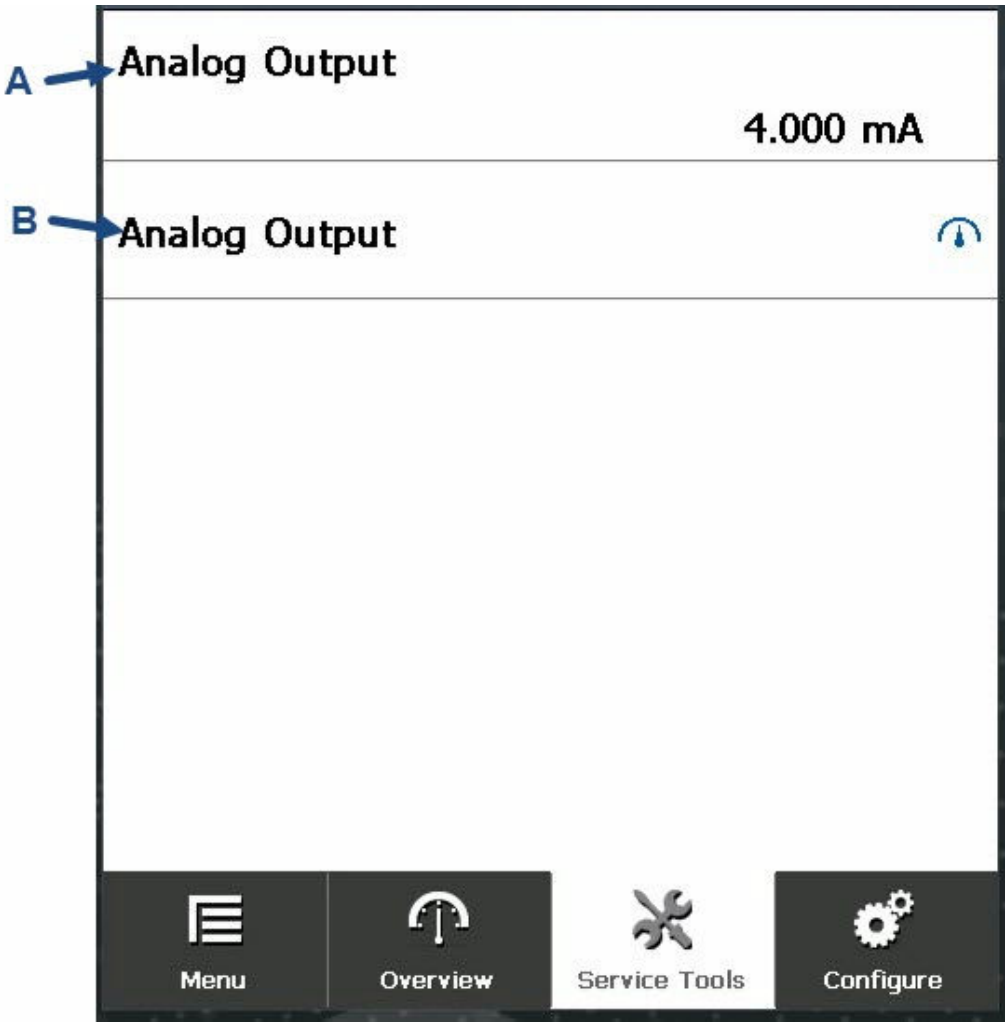
A. *Variable Summary: Displays a summary of all variables.*
   - *Analog output*
   - *Electronic temperature*
   - *Supply voltage*

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

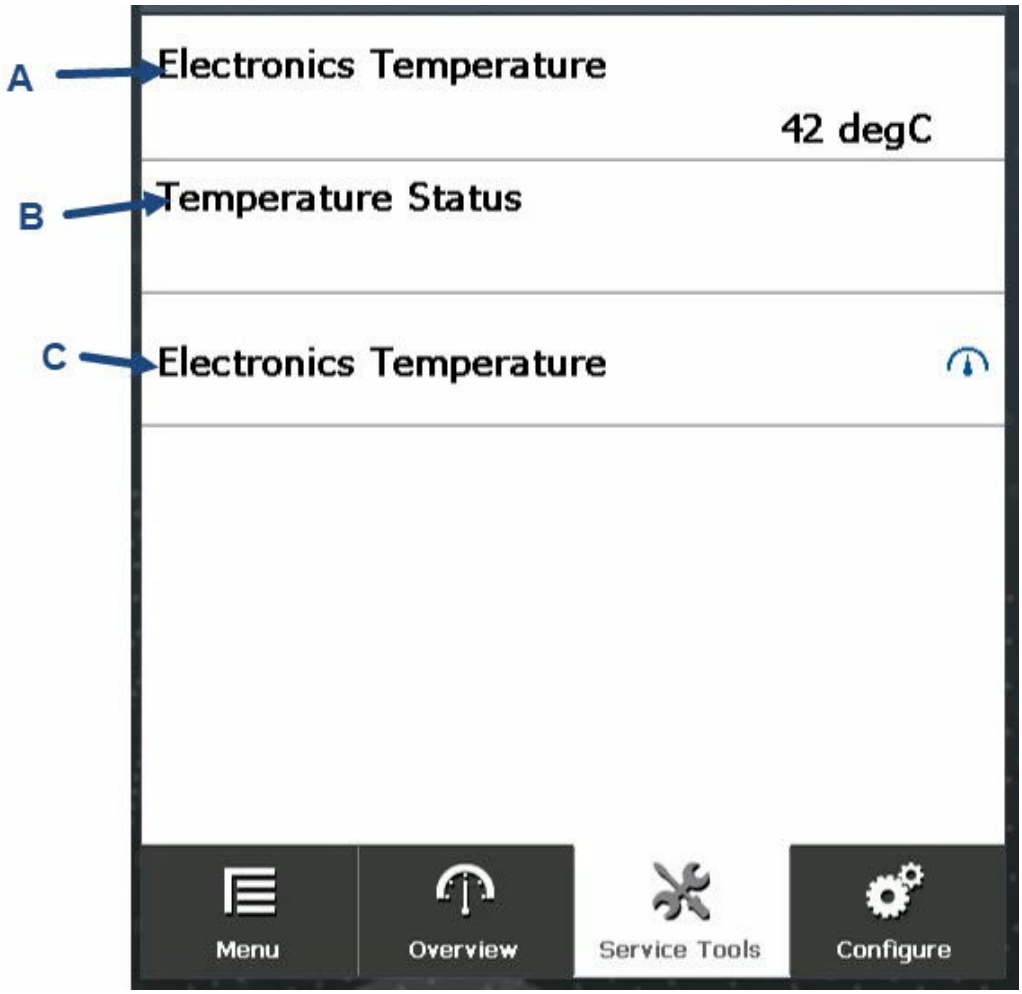


A. Analog Output: Displays analog output.
*B. Analog Output gauge: Tap to display **Analog Output Gauge** screen.*

Secondary variable screen

The ***Secondary Variable*** screen displays electronics information.

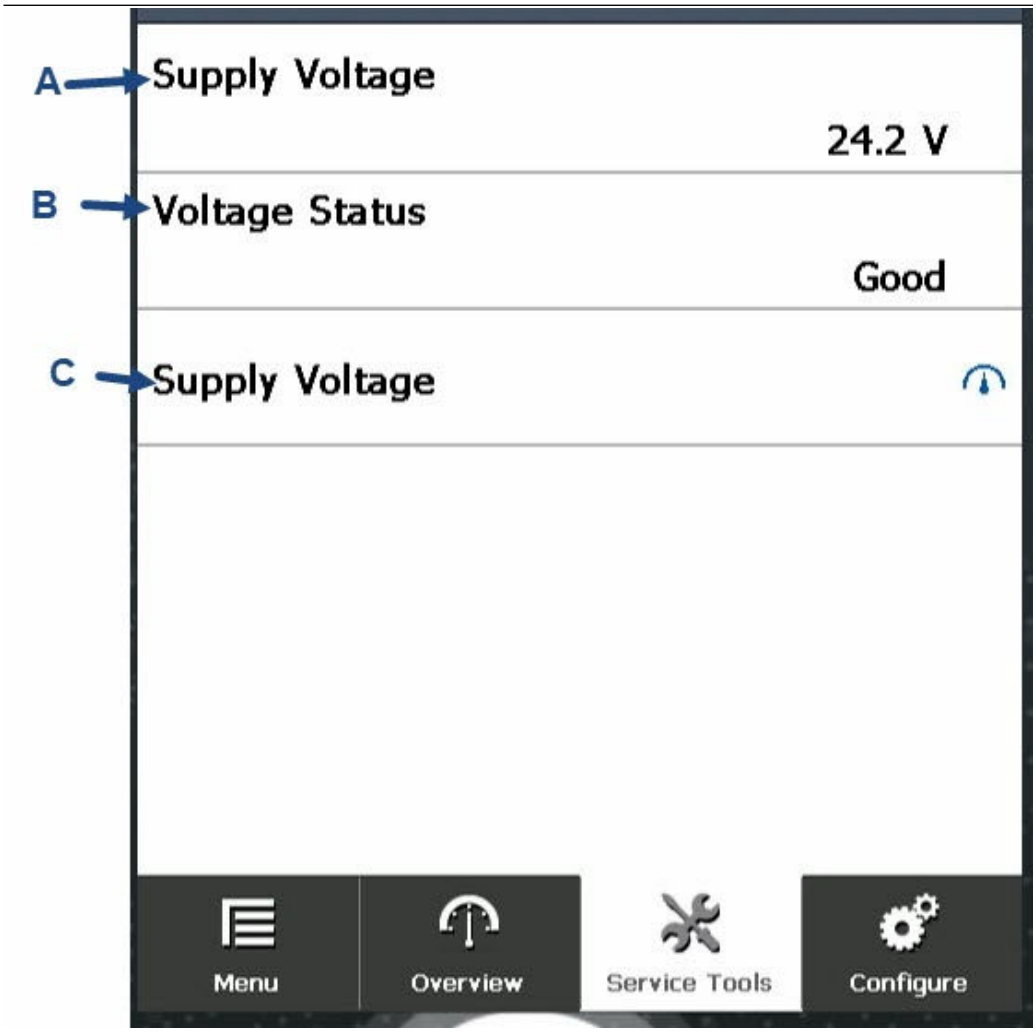
Figure 3-8: Secondary variable screen



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

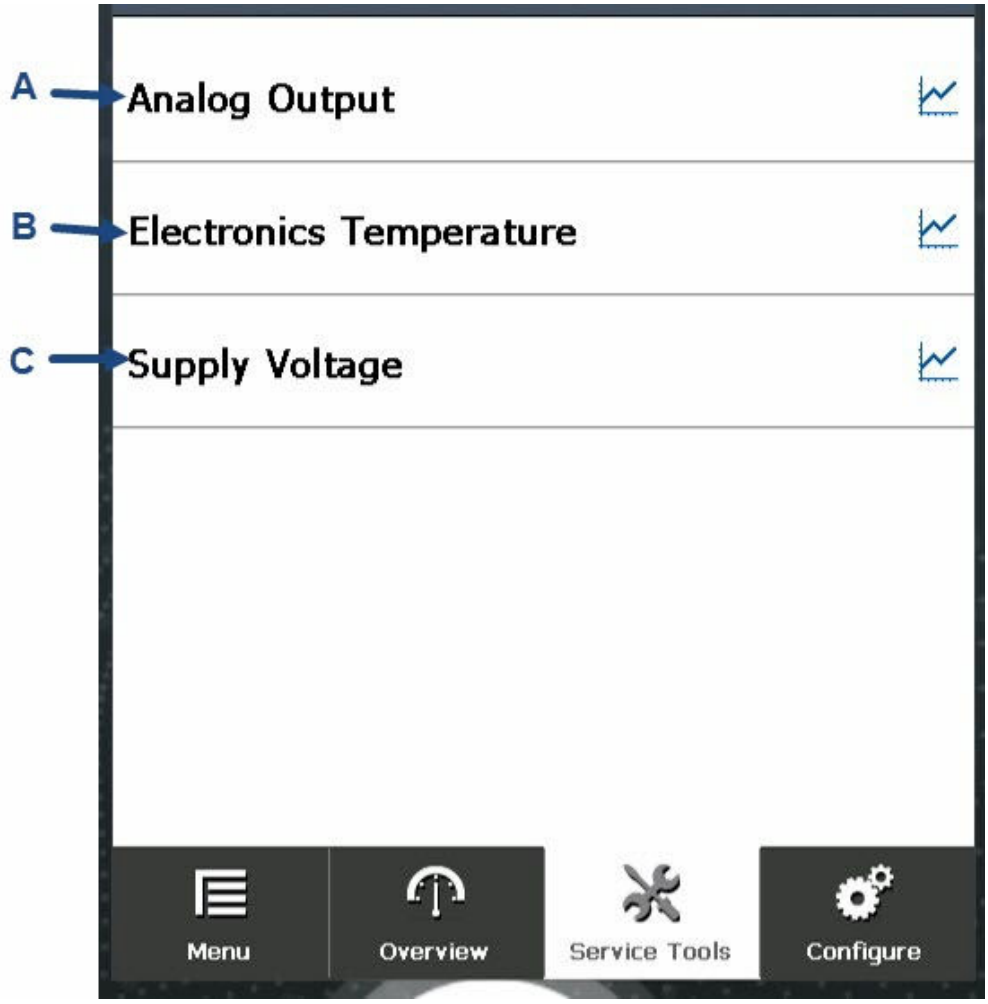
The ***Quaternary Variable*** screen displays heater information.

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.

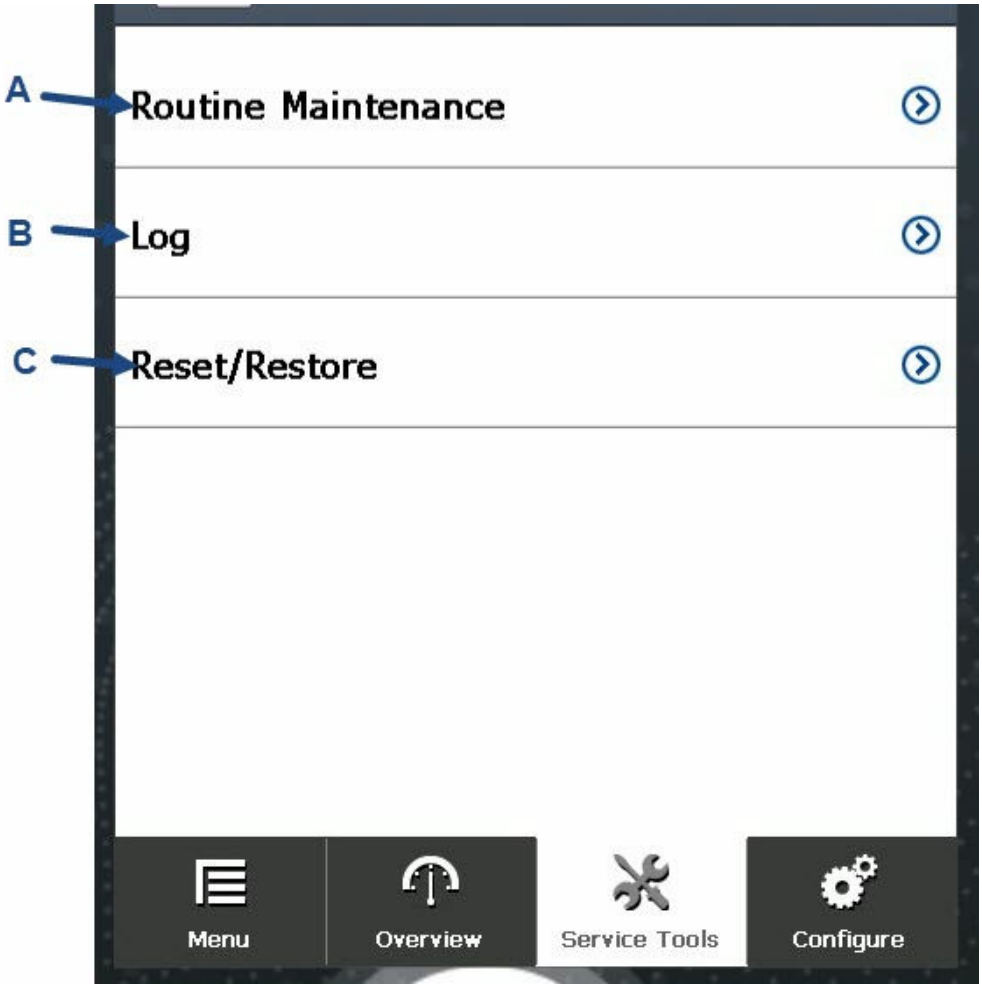
Figure 3-9: Trends screen



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.*

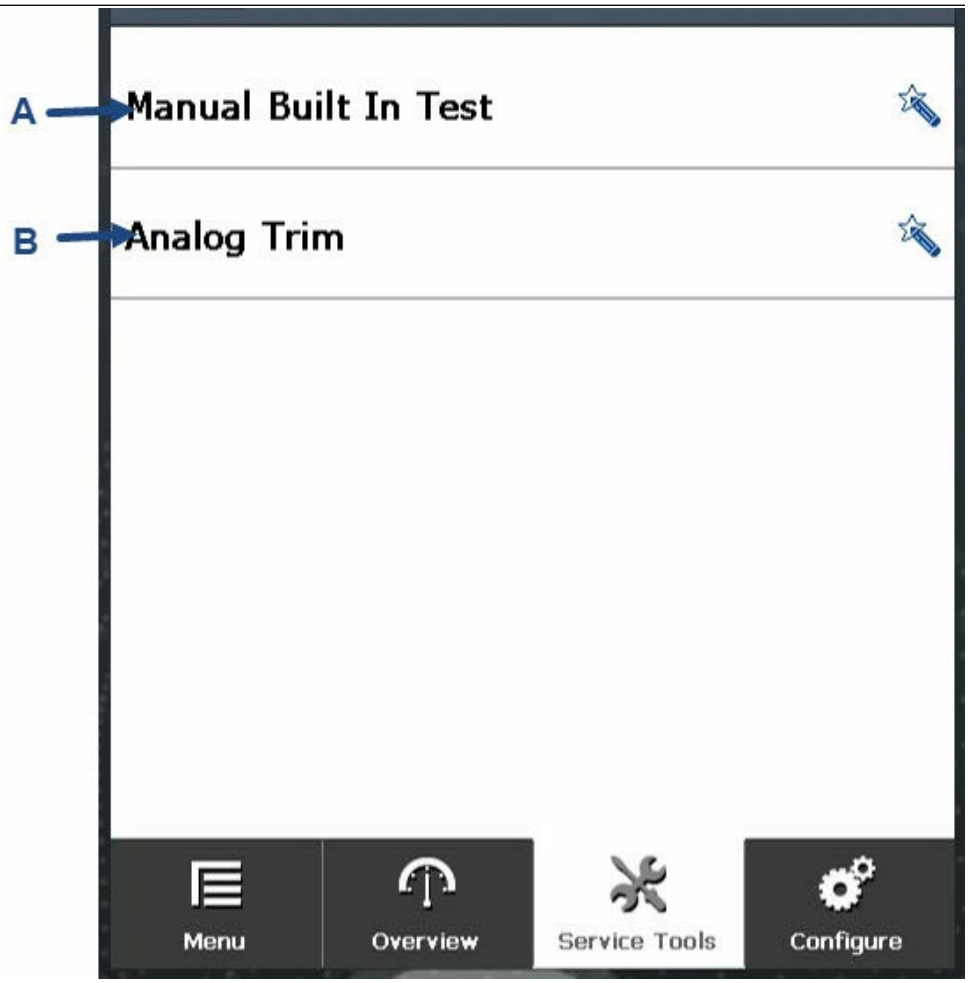
3.3.4 Maintenance screen

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



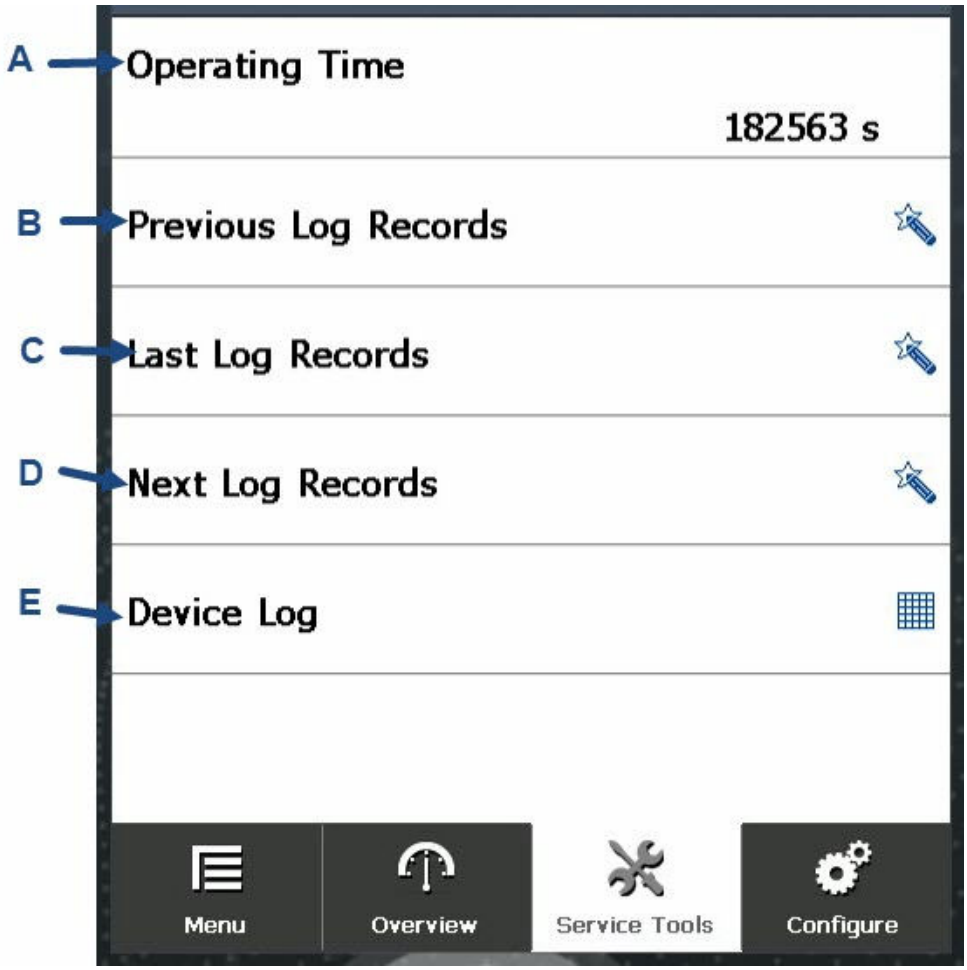
A. *Manual Built In Test: Performs manual built-in test.*
B. *Analog Trim. Calibrates 4-20 mA.*(1)

(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

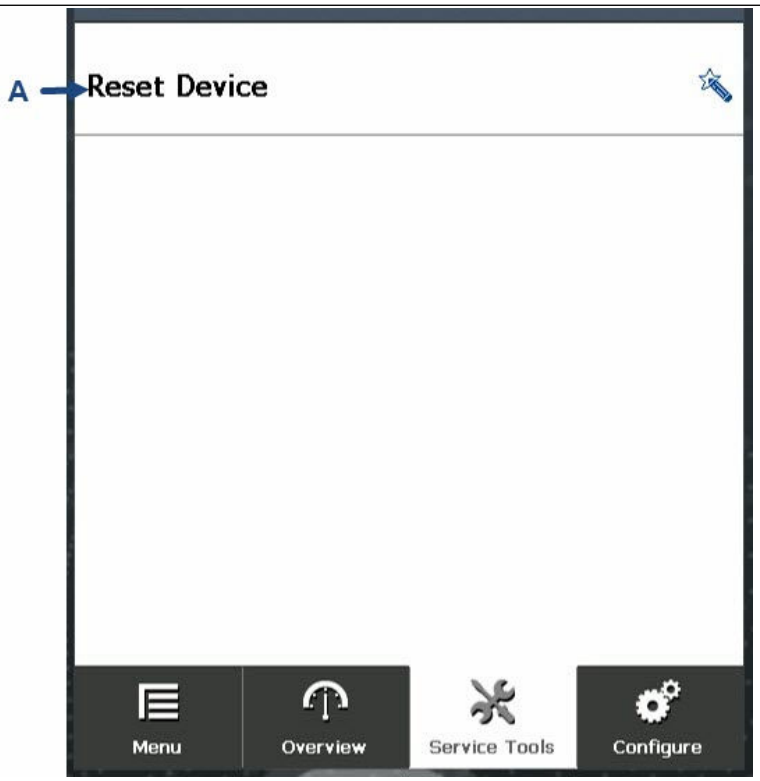
The ***Log*** screen provides information about the logs and navigation options.

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

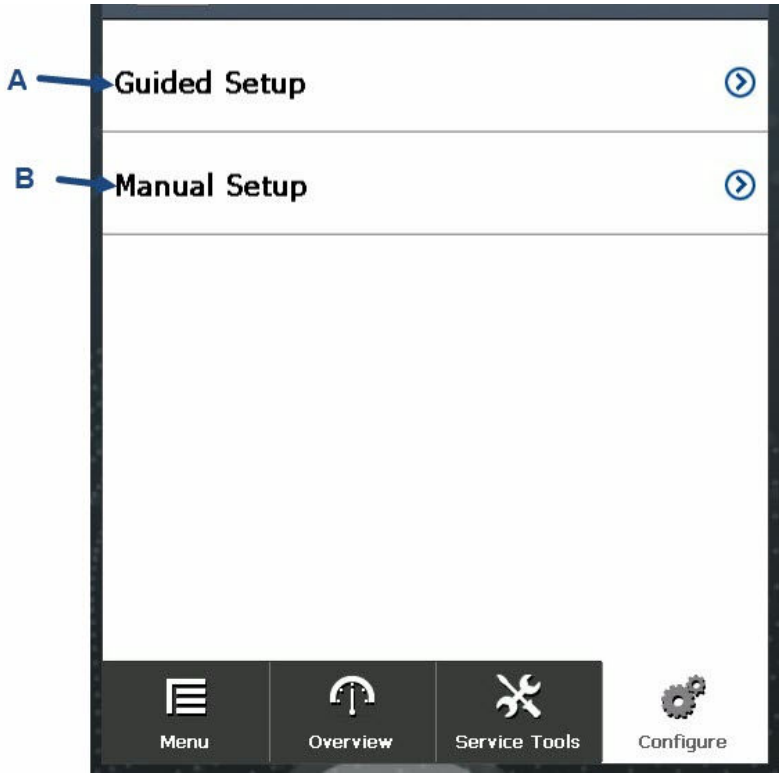


A. Reset Device: Performs soft reset.

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

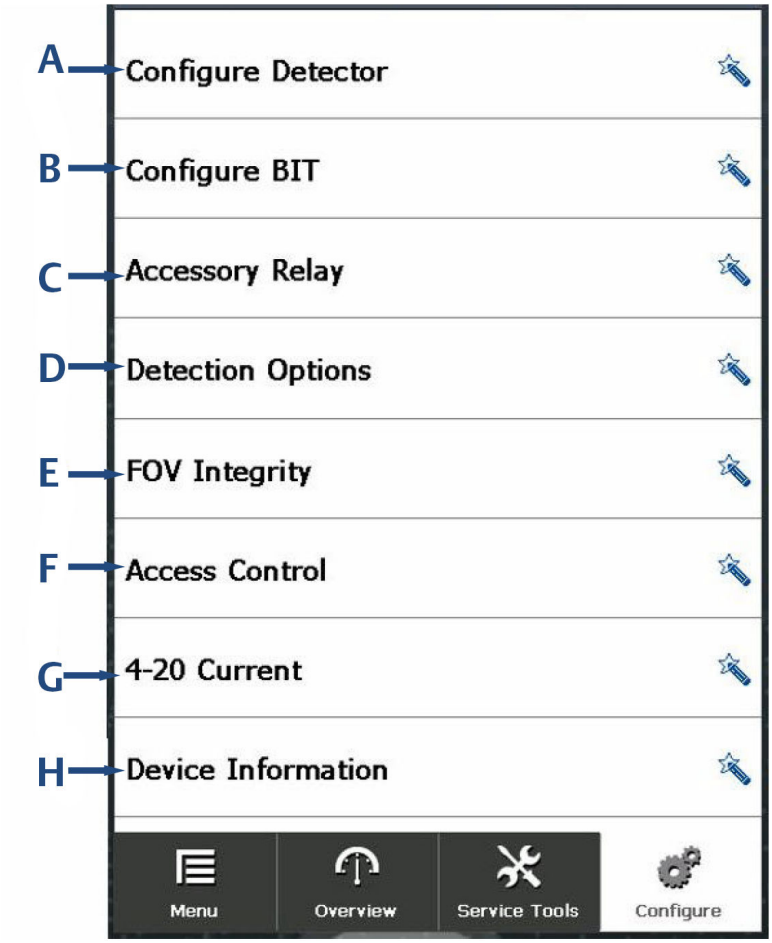


A. Guided Setup: Opens screen from which you can configure parameters using the wizard.
B. Manual Setup: Opens screen from which you can manually configure parameters.

Guided setup screen

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

Figure 3-13: Guided setup screen

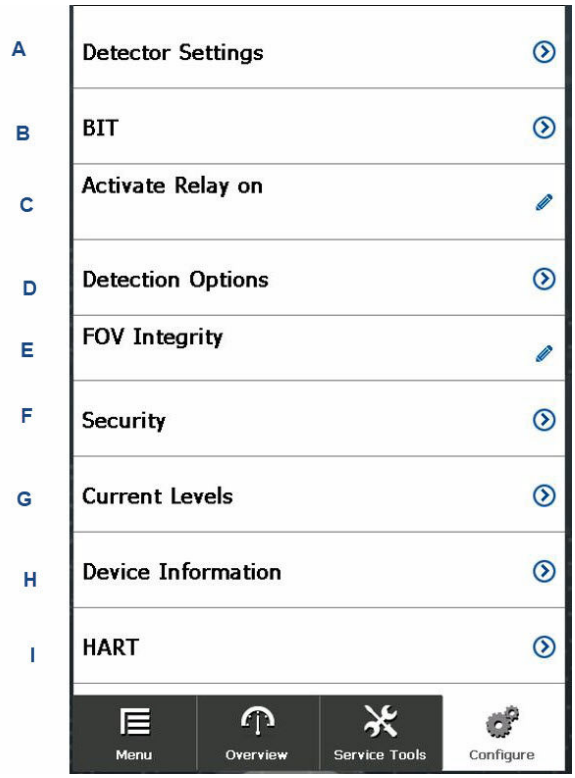


A. *Configure Detector: Guides you through detector configuration.*
B. *Configure BIT: Guides you through the built-in test (BIT) configuration.*
C. *Accessory Relay: Guides you through accessory relay configuration.*
D. *Detection Option: Guides you through detector options configuration.*
E. *FOV Integrity: 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.

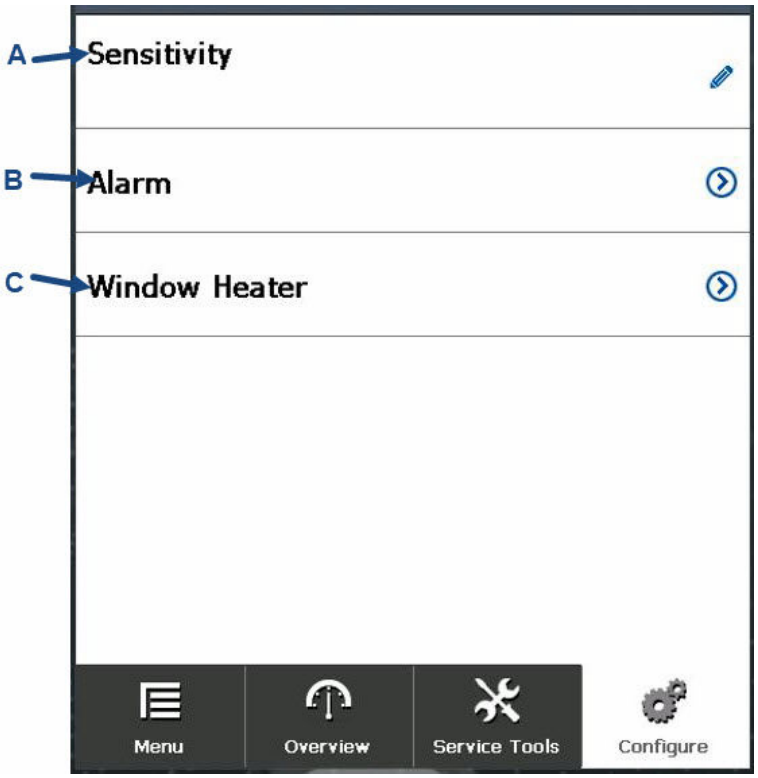
Figure 3-14: Manual setup screen



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

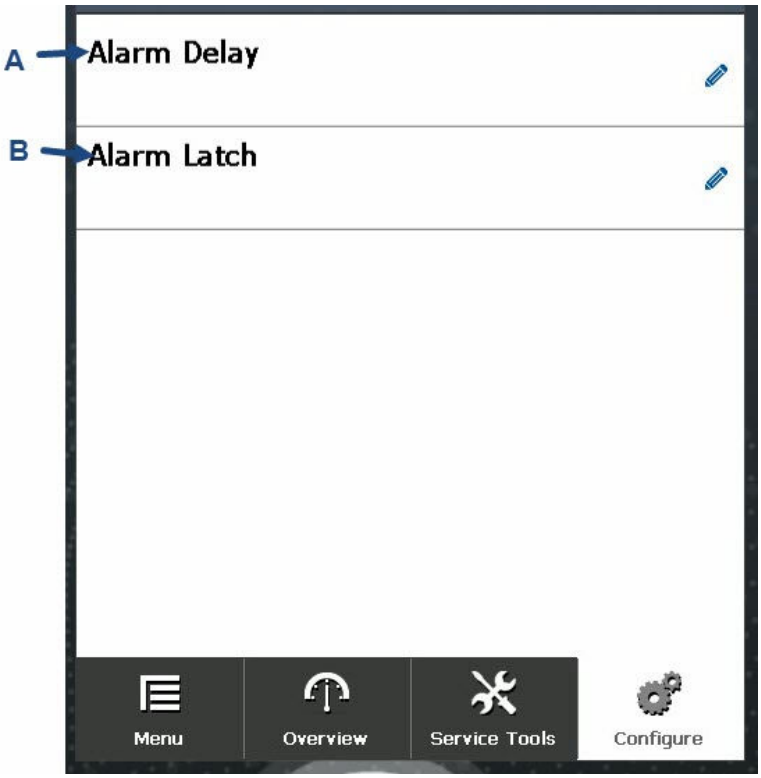
Figure 3-15: Detector settings screen



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

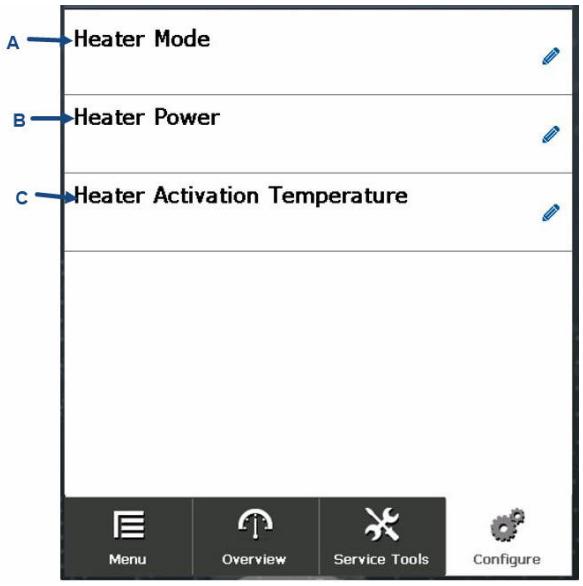


A. *Alarm Delay: Select alarm delay.*
Options are:
   - *0 sec*
   - *Antiflare*
   - *3 sec*
   - *5 sec*
   - *10 sec*
   - *15 sec*
   - *20 sec*
   - *30 sec*

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.*

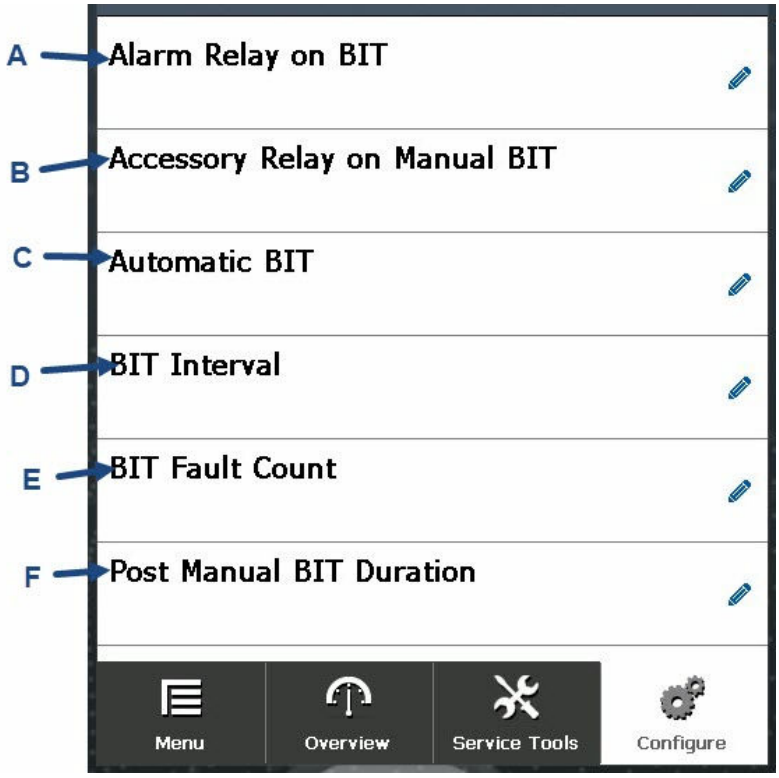
C. *Heater Activation Temperature: Heater activation temperature in degrees Celsius. Options are:*

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

BIT screen

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

Figure 3-18: BIT screen

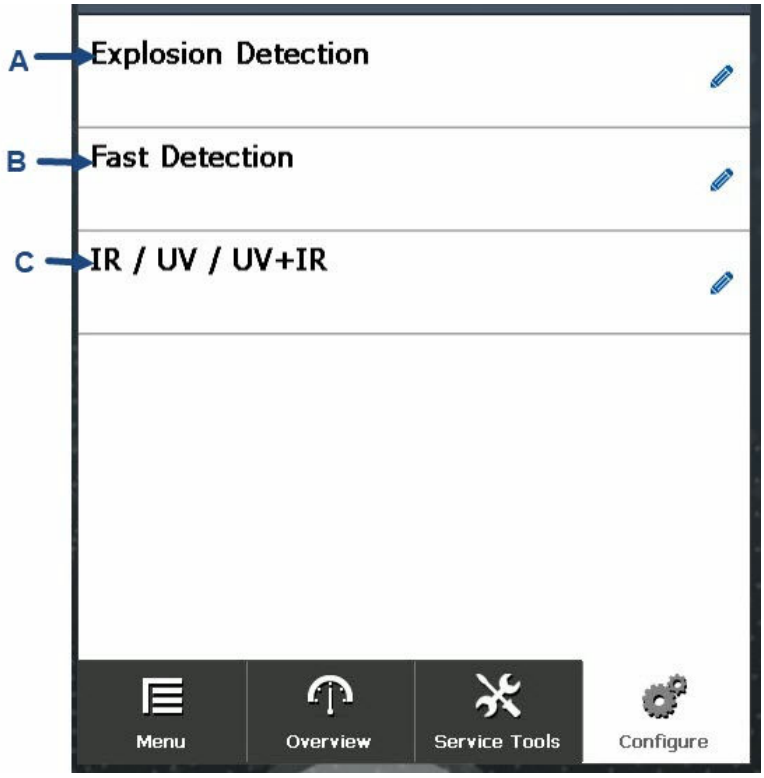


A. Alarm Relay on BIT: Activate or deactivate alarm relay on BIT.
B. Accessory Relay on Manual BIT: Activate or deactivate accessory relay on BIT.
C. Automatic BIT: Activate or deactivate automatic BIT.
D. BIT Interval: Manually select BIT interval.
E. BIT Fault Count: Manually select BIT fault count.
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

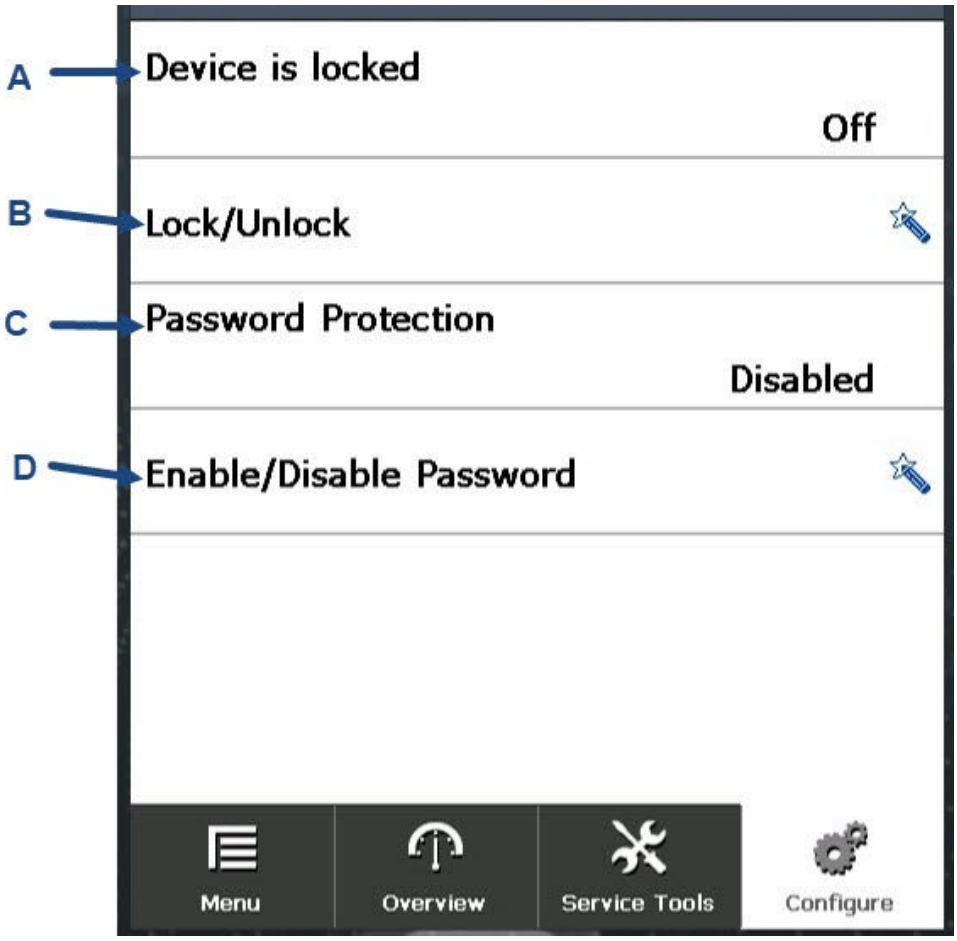


A. *Explosion Detection: Enable or disable explosion detection.*
B. *Fast Detection: Enable or disable fast detection.*
C. *IR/UV/UV+IR: Select single infrared (IR), single ultraviolet (UV), or both UV and IR channels.*[(2)]

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

Security settings screen

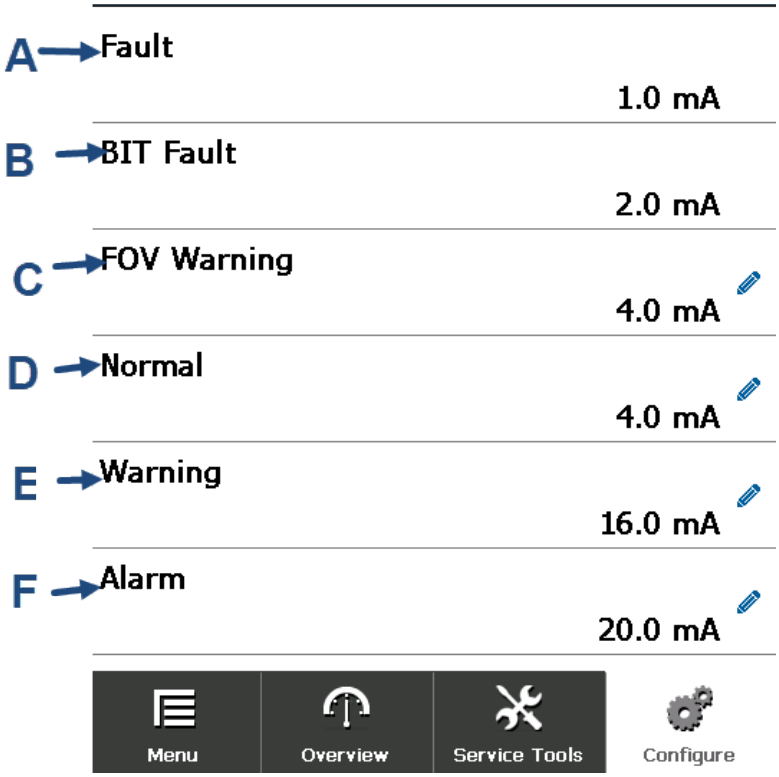
Figure 3-20: Security settings screen



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

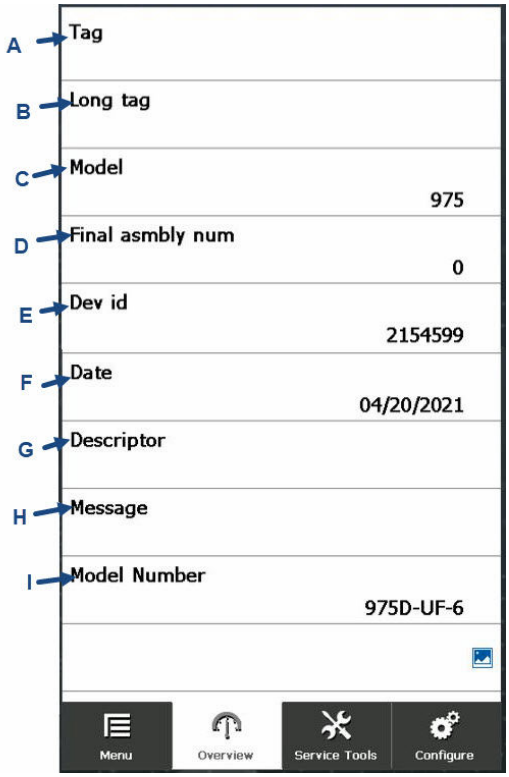


A. *Fault: Current displayed during fault. This cannot be changed (1 mA).*
B. *BIT Fault: Current displayed during built-in test (BIT) fault. This cannot be changed.*
C. *FOV Warning: Current displayed during FOV warning. 3 - 5 mA (should always be ≤ the normal value. Default: 4 mA.*
D. *Normal: Current displayed during normal function. 4 or 5 mA (should always be ≥ 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

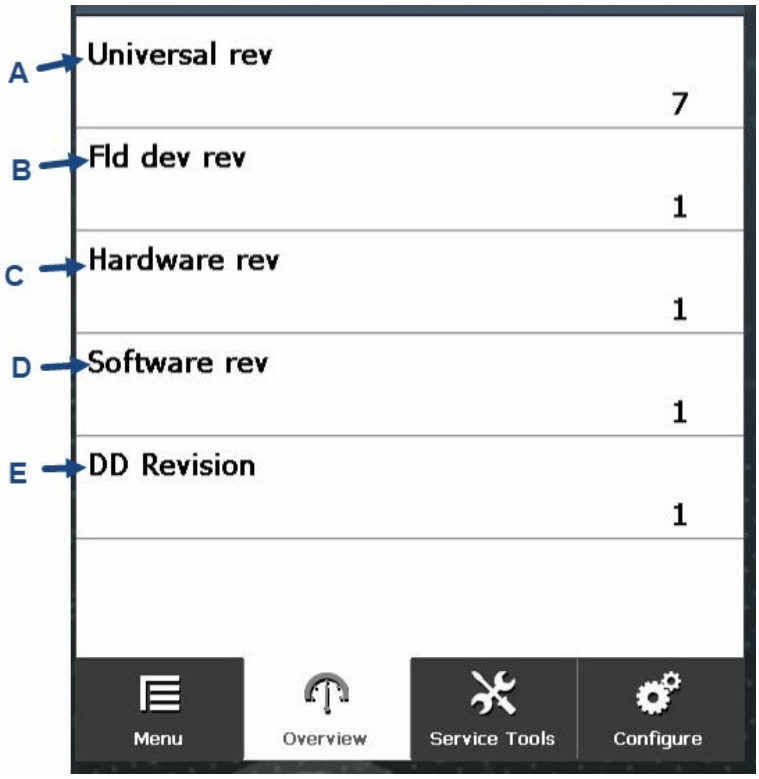
See Device information screen for information on the ***Device Information*** screen.

Figure 3-22: Identification screen



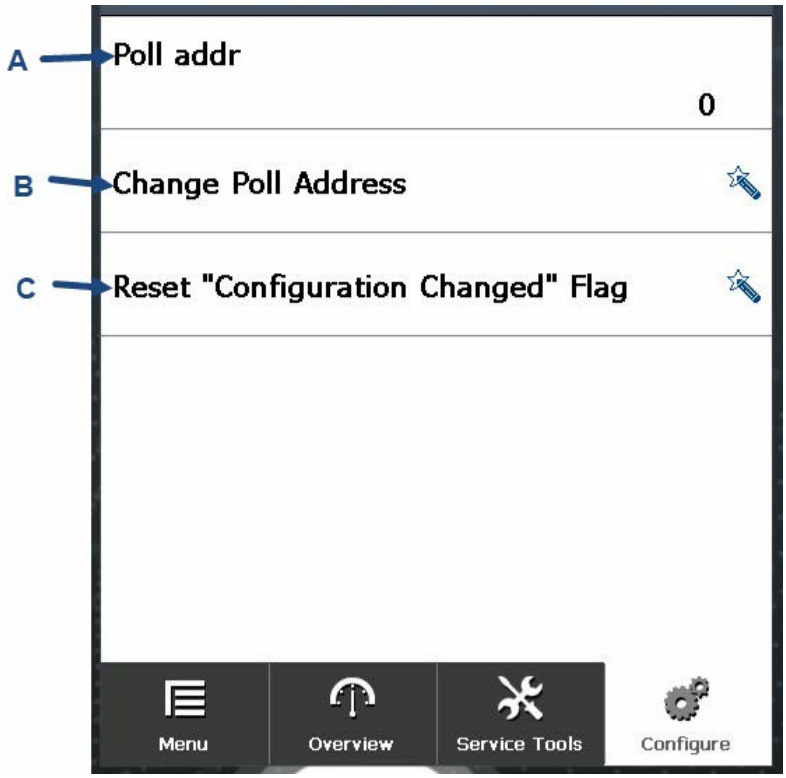
A. *Tag: Displays detector tag. This is editable.*
B. *Long tag: Displays detector long tag. This is editable.*
C. *Model: Displays detector model.*
D. *Final asmbly num: Displays final assembly number. This is editable.*
E. *Dev id: Displays device identification number.*
F. *Date: Displays current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

Figure 3-23: Revision numbers screen



A. Universal rev: 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.

00809-1300-4975
Rev. AB
2022

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