SEC 3500 OI
Startup Basics
Manual

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Table Of Contents:

1.0 Purpose

This document describes how to get started with the SEC 3500 Operator Interface (OI) Panel. It describes the basics of discovering SEC Modbus 485 devices, and the basic startup configuration. This document is NOT a detailed all-encompassing Startup, Basic Operator, Supervisor or Technical User's Manual. This manual is part of a documentation pack that contains all necessary information for using, starting up, configuring and enabling higher-end functionality, and is the first manual in the pack necessary for getting started.

2.0 Overview

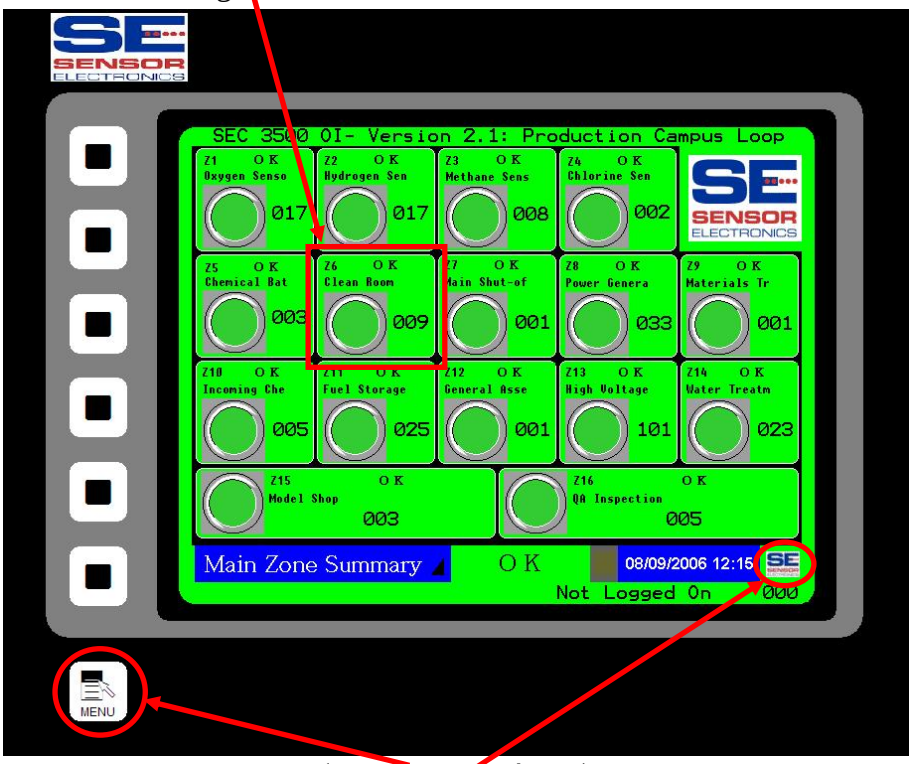
The SEC 3500 OI Panel drives and masters the SEC 3500 Modbus 485 Digital Gas Monitoring Loop, based on the loop-attached SEC 3100 Digital Gas Transmitter slaves. It draws information from all SEC 3100 Digital Gas Transmitters on the loop into a single location, where all information is accessible and configurable. In addition, it adds features for controlling separate SEC Modbus 485 Relay modules, allowing a central coordinated command and control center for a given loop.

The SEC 3500 OI is a self-contained standalone intelligent touch-screen Human Machine Interface (Operator Interface Panel). It contains various communication ports for RS485 communications, RS232 Gas Status Text Dumps, and 10/100mb Ethernet for Web-based services. It also contains a compact flash card socket for software updates and data logging. It operates on 24vdc, and permanently stores its program and non-volatile data in internal flash memory- There are NO disk drives.

3.0 First Time Setup/Updating Setup

The very first time you turn on the SEC 3500 with a SEC 3500 Modbus 485 Digital Gas Monitoring loop connected with SEC 3100 Digital Gas Transmitter slave(s) attached, you may have a blank main screen once it is powered up, such as this:

If so, then this is either the first time the 3500 has been powered on, or you do not have the Gas Monitoring loop setup/configured properly, or you have not detected any SEC 3500 compatible devices yet. Otherwise, if at least one compatible device is connected, online and had been setup previously, then at least one of the sixteen zone summary boxes would be green- see below:

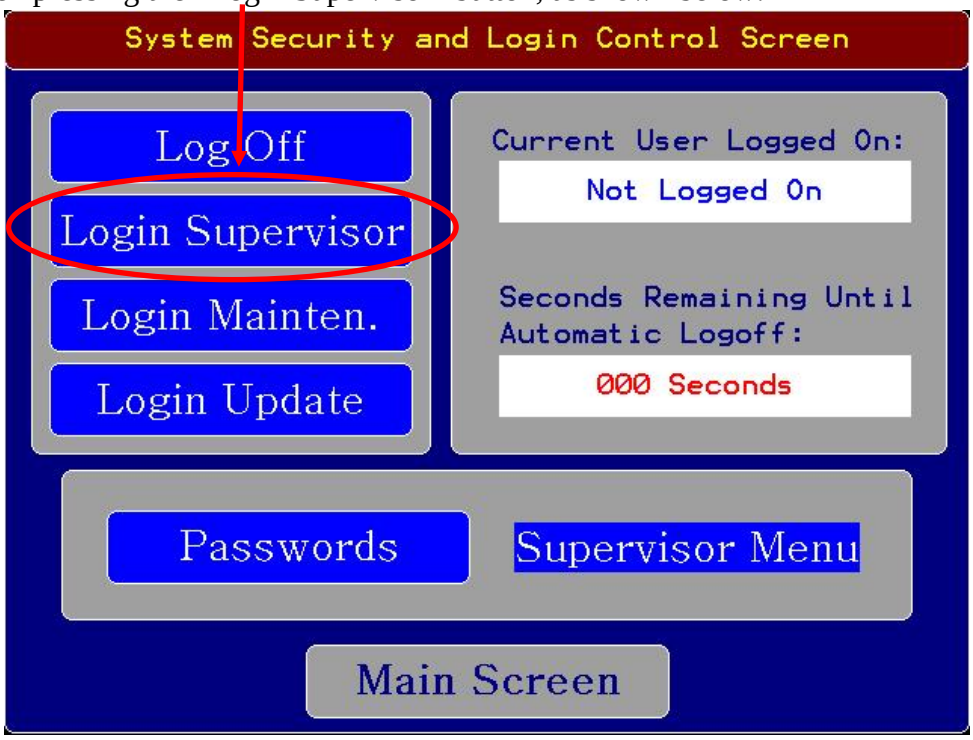


(Menu Button Areas)

If this is the first time startup, or scanning the loop for new devices, the following must be performed (***do not follow this for loops that will contain SEC Relay Modules***- See Section 4.0 and in depth look at configuration in the Supervisor's Manual):

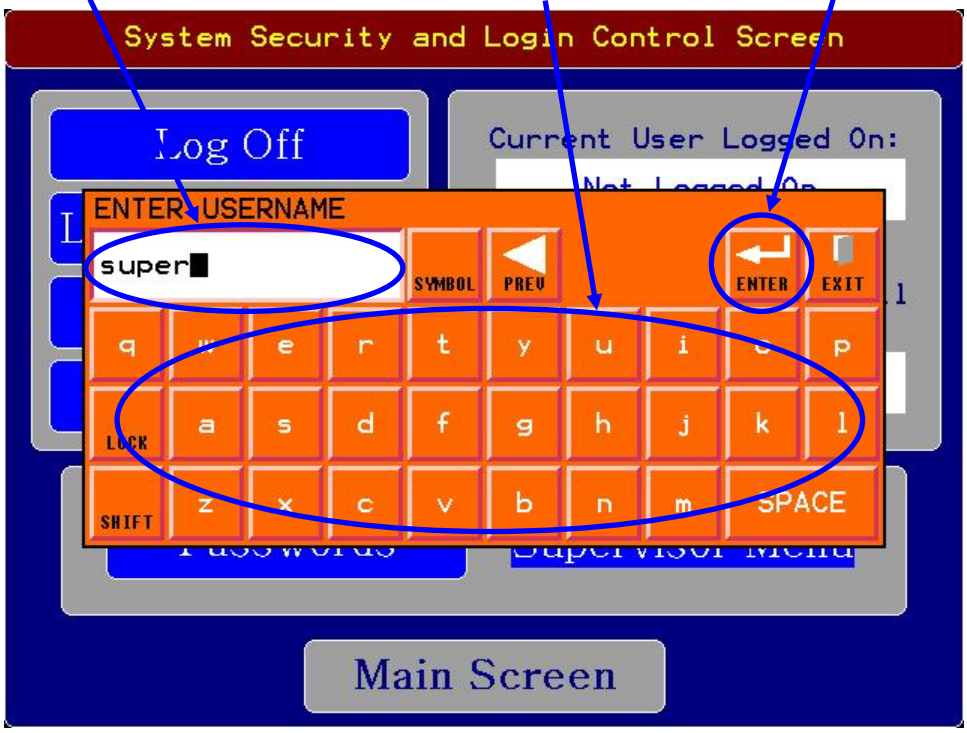
1) The supervisor must login to the 3500, by either pressing the Menu button or touching the SEC logo at the bottom-right of the screen, as circled in red above, selecting the "Login/Logout" menu option shown below:

Then pressing the “Login Supervisor” button, as shown below:

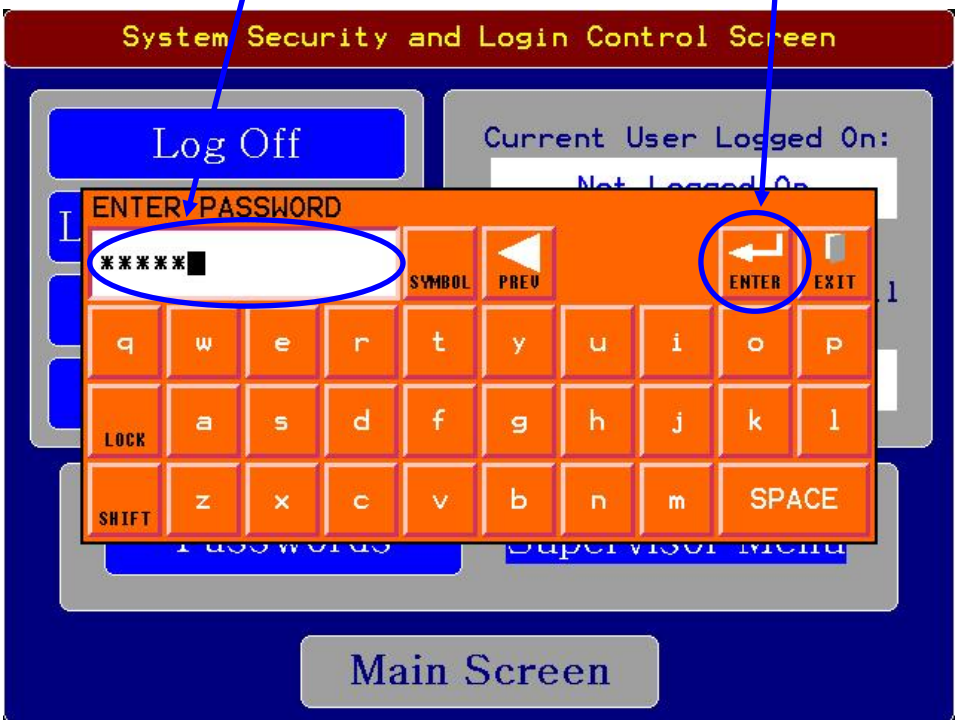


Then entering the Supervisor Name (after pressing LOGON):

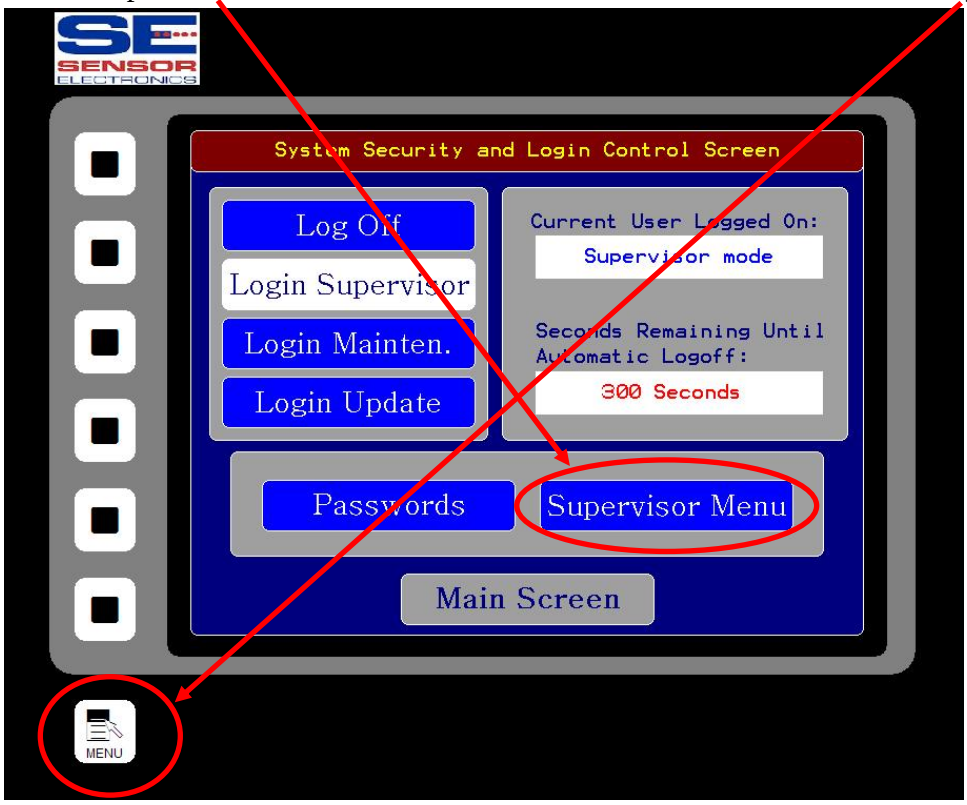
Enter the Supervisor Name using the popup keypad, then press “ENTER”:



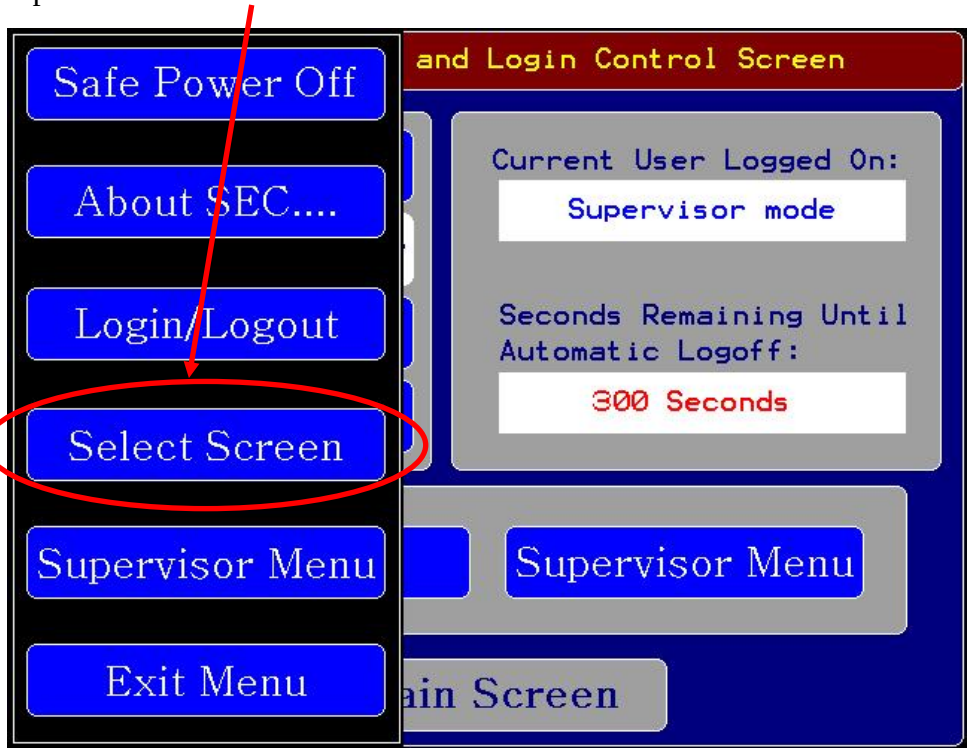
Then enter the password on the popup keypad, and press “ENTER”:



2) Press the “Supervisor Menu” then “Main Menu” buttons or the Main Menu Key:

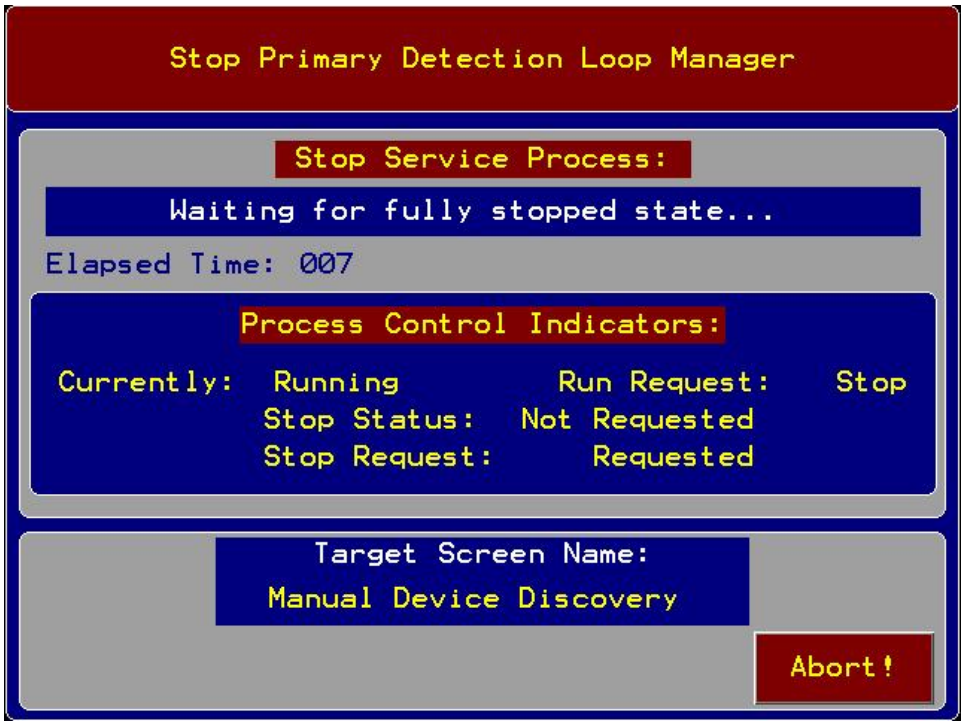


Then press the “Select Screen” button:

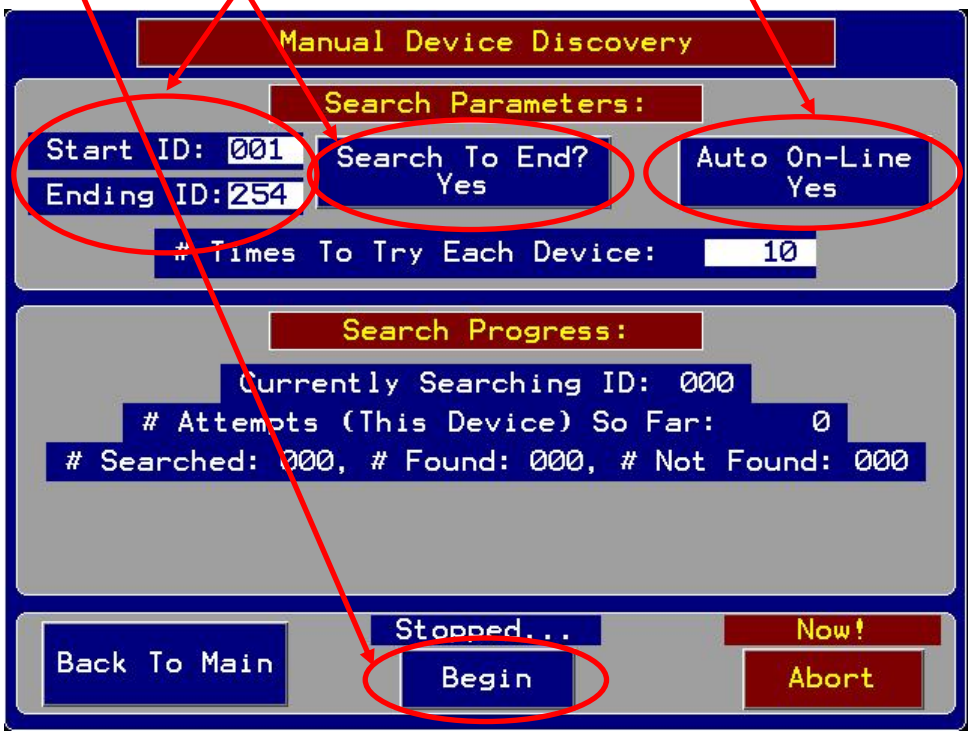


Then press the “Manual Device Discovery” button:

Which then transitions through the Primary Detection Loop Stop Screen:



3) Then enter the start and ending device ID (search range) to search, insure that “Search To End” is set to “Yes”, and “Auto On-Line” is set to “Yes”, as shown below, and press “Begin”:

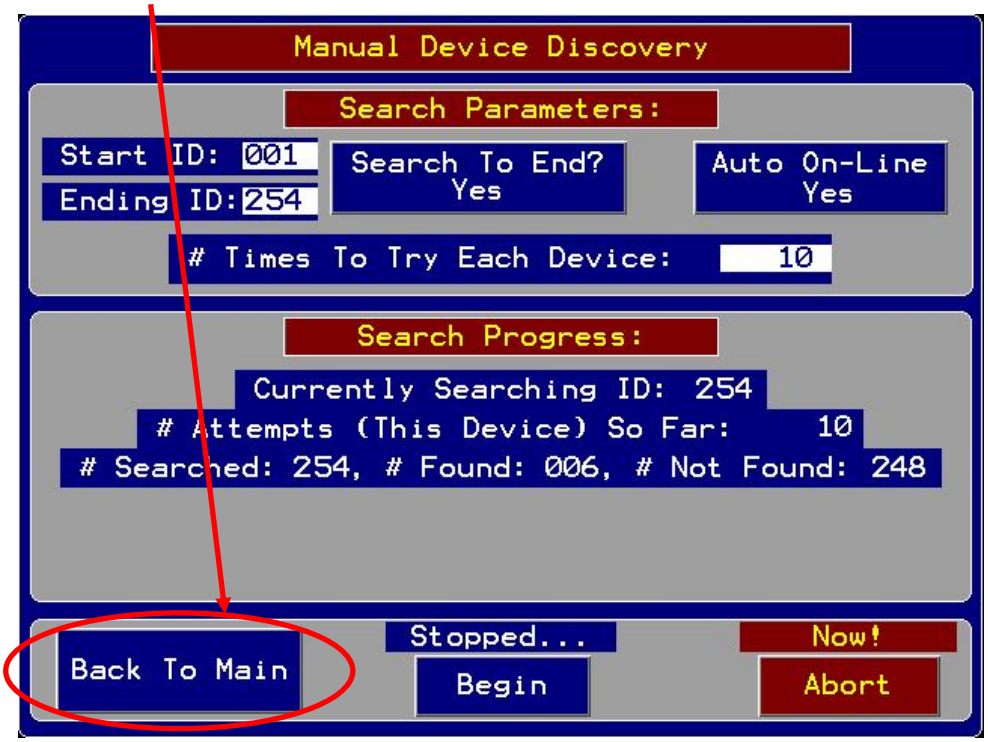


As the device discovery is in progress, the status is updated as below (circled):

Found devices automatically are identified and brought on-line:

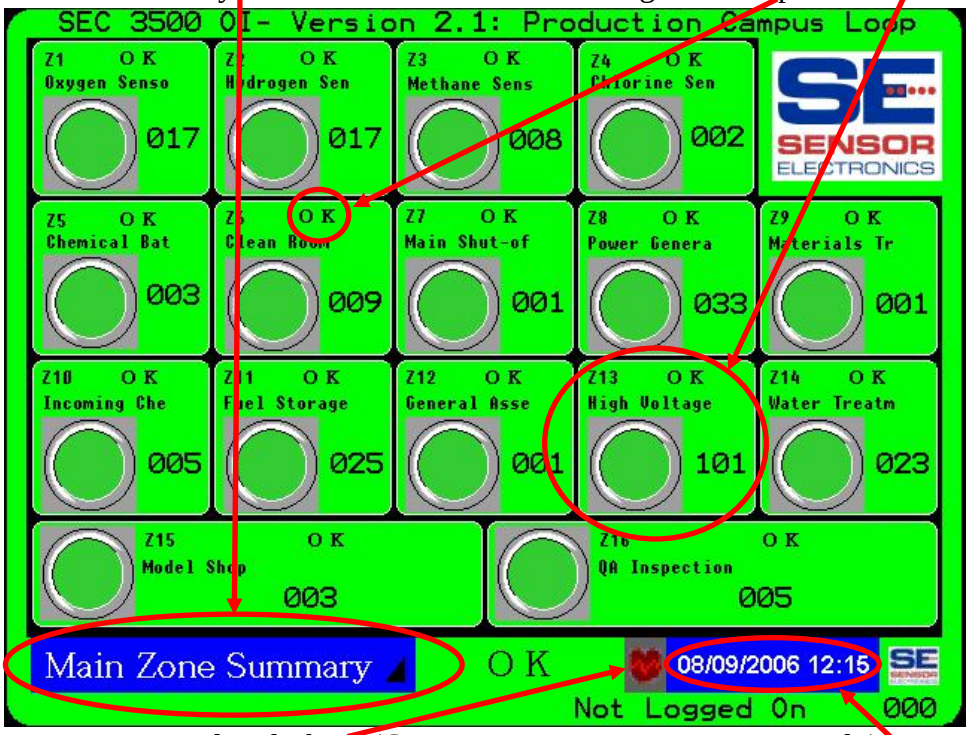
4) When discovery is complete, the "Currently Searching ID" will show the "Ending ID", the "# Attempts…" will have stopped counting, and the popup "Reading…" box will have disappeared, as shown below:

Press “Back To Main” next:



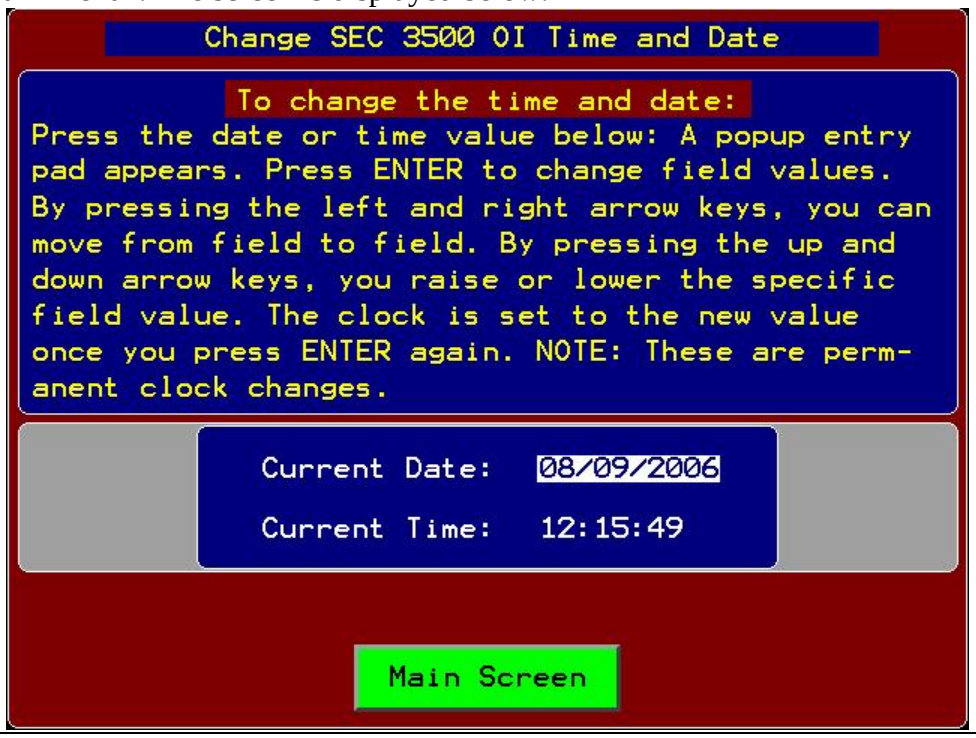
5) Then the “Start Primary Loop” screen transitions to the Main Screen:

6) The "Main Zone Summary" screen is displayed, with the correct zone squares populated with newly discovered devices and showing normal operation:

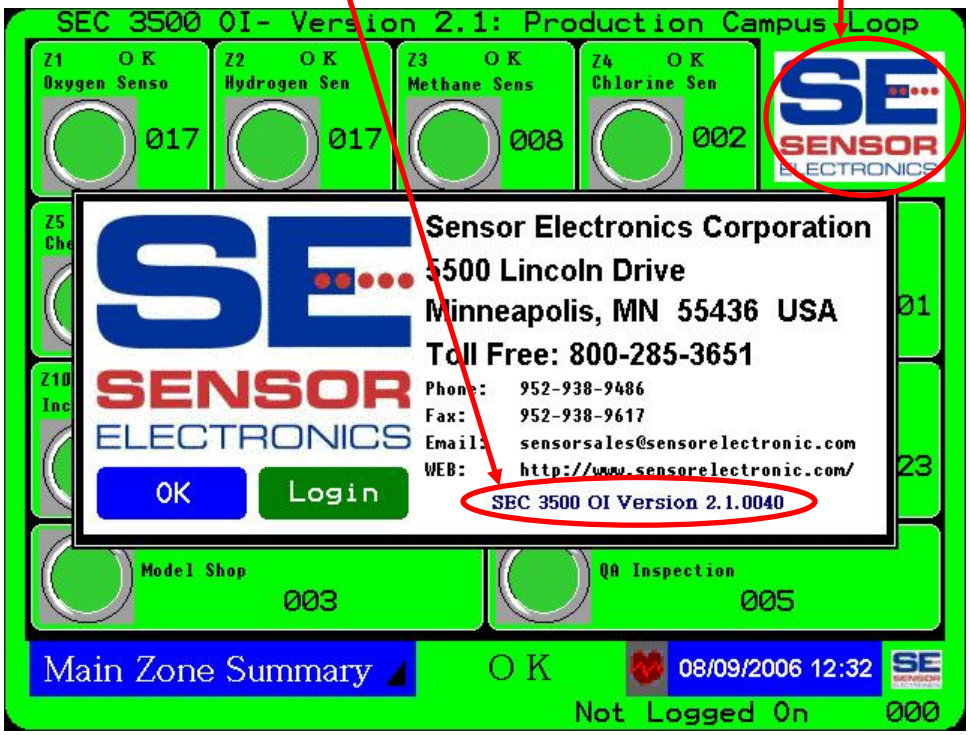


Periodic Flashing (Communication Functioning Properly)

7) Set the time and date- press either the clock display at the bottom/right corner of the screen or select "Set HMI Clock" from the "Select Screen" menu item from the "Main Menu". The screen is displayed below:



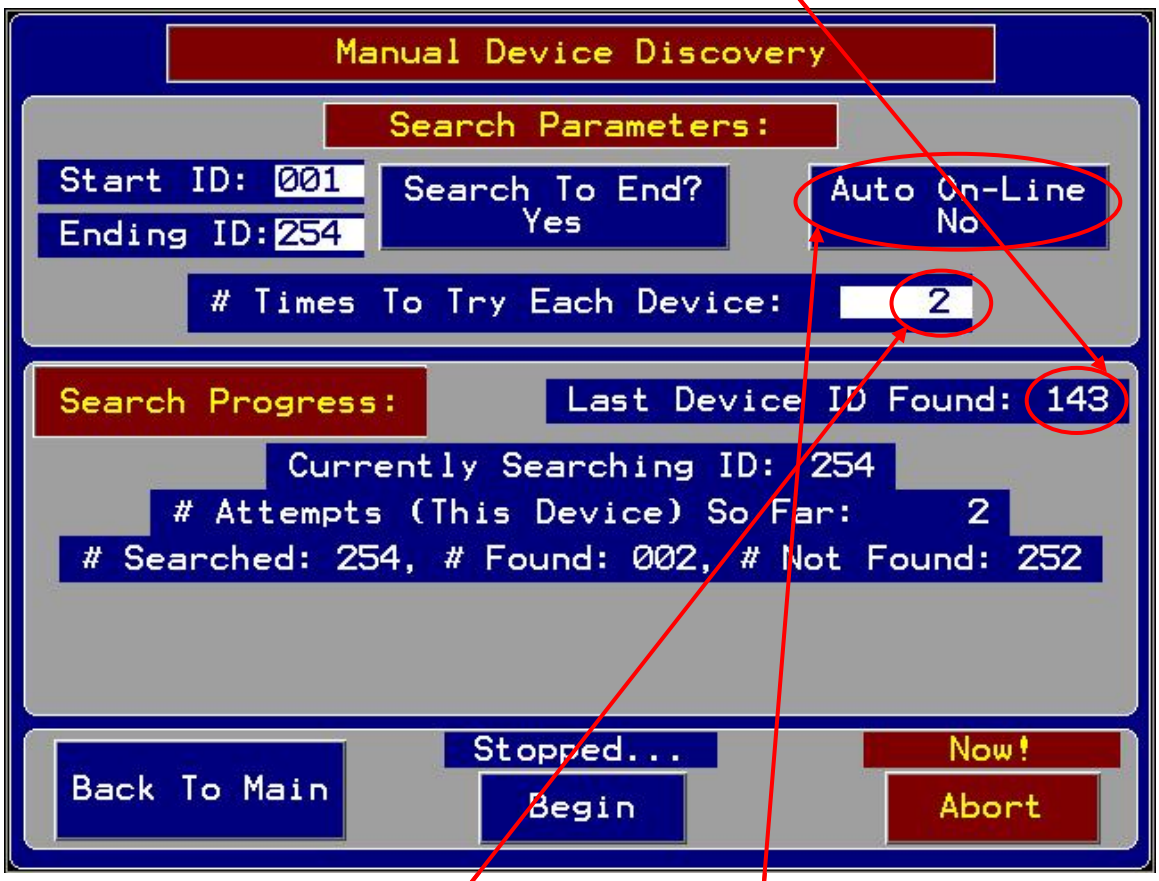
8) To verify the 3500 Firmware Version, press the SEC Logo at the top/right corner of the "Main Zone Summary" screen, or select the "About SEC…" option from the "Main Menu": a popup appears displays such as this:



4.0 Basic SEC Relay Module Setup

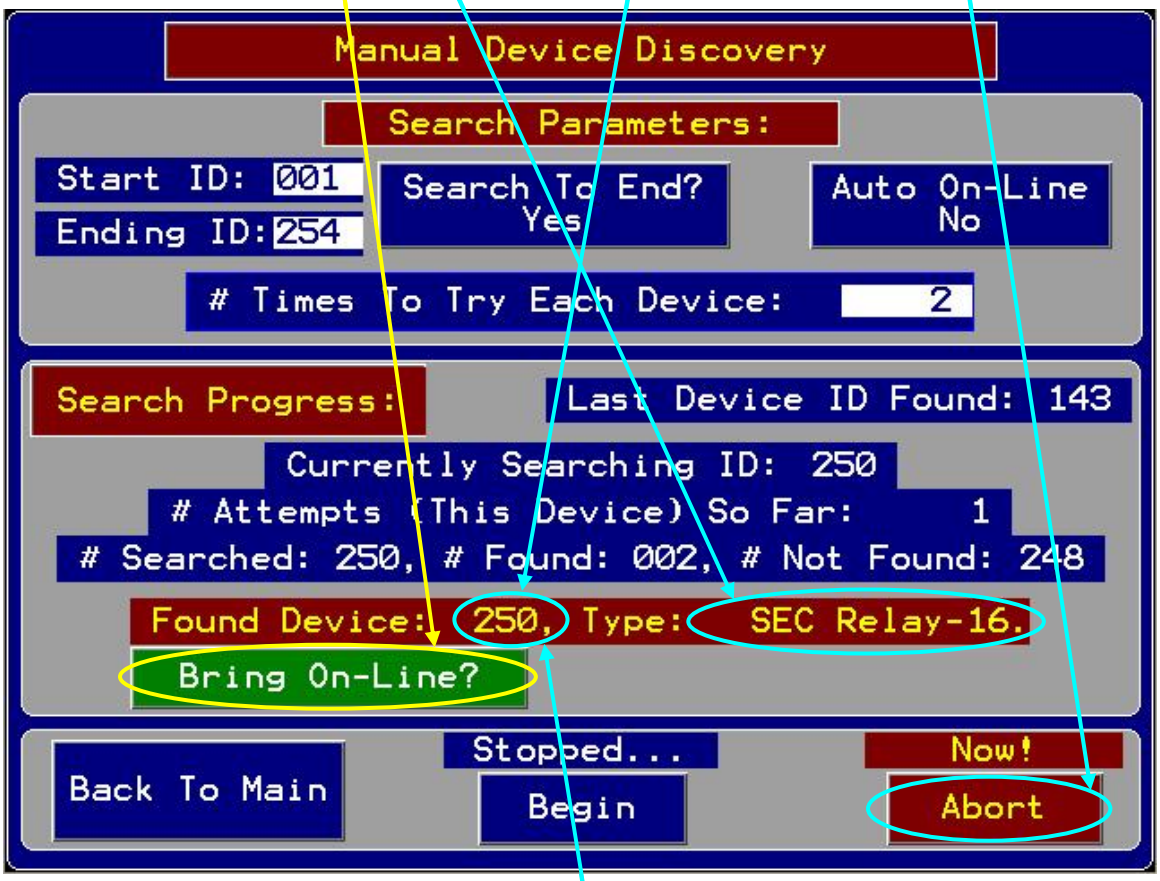
As mentioned in quick setup section 3.0, establishing an SEC 3500 Modbus 485 Loop bus network for the first time including the Relay Modules is a bit different. The very first thing that needs to be accomplished in a mixed SEC 3100 & SEC Relay module network is to first isolate each Relay module to be added, without the interference (and potential collision with) other SEC devices. As follows;

1) Disconnect ALL SEC Relay Module devices from the bus.
2) Perform all the steps in section 3.0, and note the number of devices found and the highest device ID (this is the "Last Device ID Found" displayed when the scan is complete), but do NOT leave the "Manual Device Discovery" screen.



3) If possible, disconnect all SEC 3100 devices now.
4) For each Relay module desired to be added to the bus, do the following, one at a time:
   a) Add one SEC Relay module to the bus.
   b) Scan the entire network from ID 1 to 254, with "Auto On-Line" turned off, and "# Times To Try Each Device" set to 2.

It should pause when it finds a new device, which should show either "SEC Relay-8" or "SEC Relay-16". Note the device ID at this time. If this is the proper device, press "Bring On-Line" when it appears, if not, press "Abort" to terminate the search. If this process completes and it never pauses indicating a new device, then either the device is not connected properly, or it is conflicting with another device online.



i) If it conflicts with another device on the bus (such as an SEC 3100 that you left attached to the bus during this time), notice that the "# Found" counter is identical to what it was in step 2. Identifying this device can only be done by disconnecting all devices from the bus, and deleting all devices from the database, and changing the device ID. This is beyond the scope of this document, if you are a "supervisor operator", refer to the Supervisor's Manual for more advanced diagnostics and setup detail for this condition. At this point then you must stop in this manual, and continue in the Supervisor's Manual.

c) If it was brought on-line, recall the device ID when it paused to be brought on-line (in step 4b above). Make sure this ID is NOT at all in the range of the SEC 3100 devices noted in step 2 above (above the highest device ID). If it is conflicting, or in that range, follow the Supervisor's Manual to change the device ID. Either way, the Device ID should be changed since only the SEC 3500 can assign its network ID. This should be done before proceeding to the next Relay Module device, since

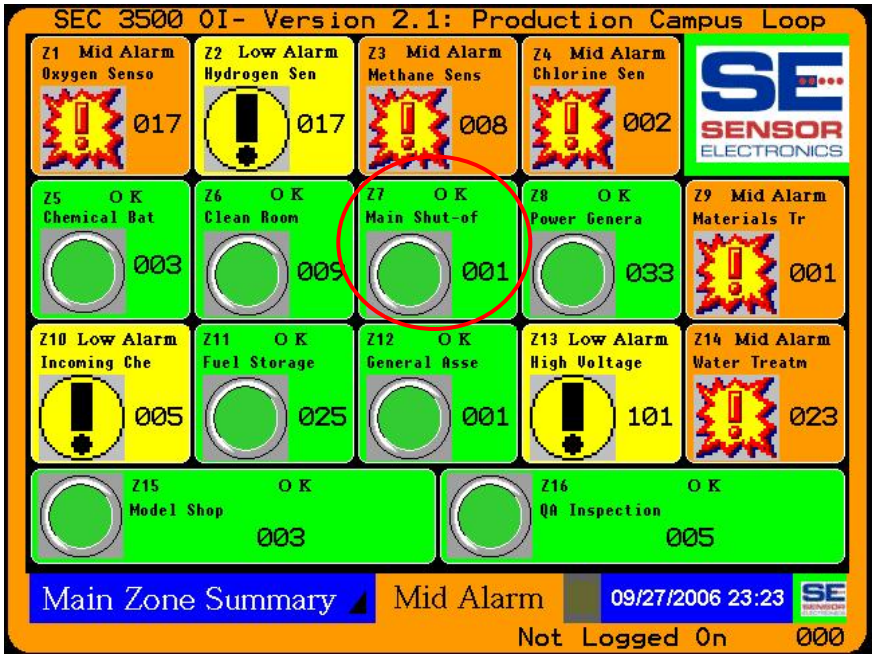
the next one could conflict with this one. The device ID should be set to a value well above the SEC 3100 device range- such as 200 – 254. Since some Relay Modules could arrive from the factory with values set to 254, it is a good idea to start setting them at 200 and incrementing each newly added Relay Module.

d) Once the Device ID is changed, take it off-line. Record the device ID, and type.

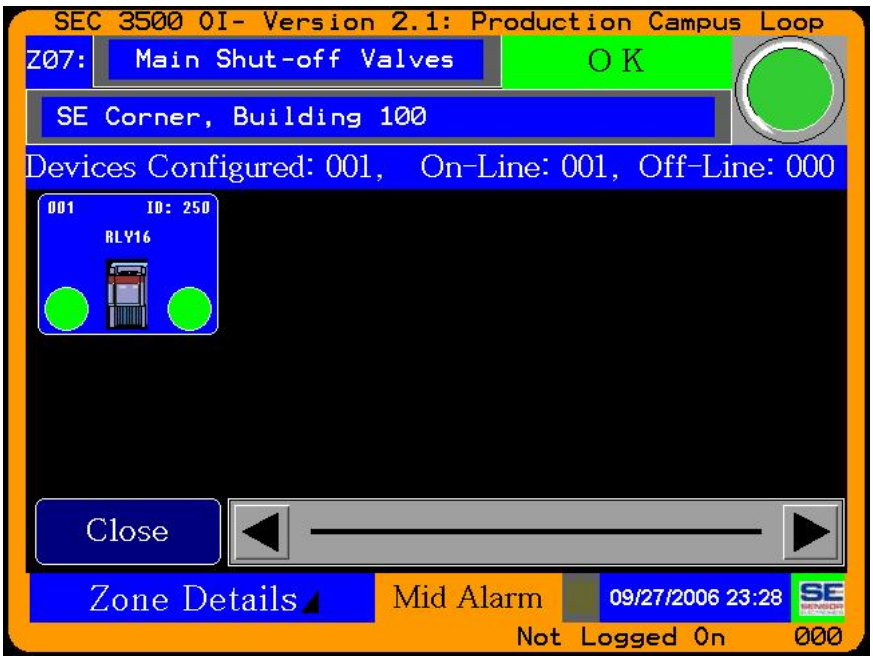
e) If you brought this device online, then the total "# Found" will increment by one in step 4b when you repeat it again for the next Relay Module to add (which refers to the number in step 2 above). Repeat step 4 until complete.

5) When all is done; attach all devices to the bus and restart the search as shown above. It should show exactly the expected "# Found" devices when you add the # found from step 2 to the accumulation in step 4 (in this example, only one was performed). The last Device ID Found should be equal to the last Relay Module device found. If all looks proper, then it is OK to return to normal operation. Press the "Back To Main" button, transitioning through the Primary Loop Start screen, returning to the Main Zone Summary screen. All expected devices should now show up in the zone tallies, including the SEC Relay Modules added.

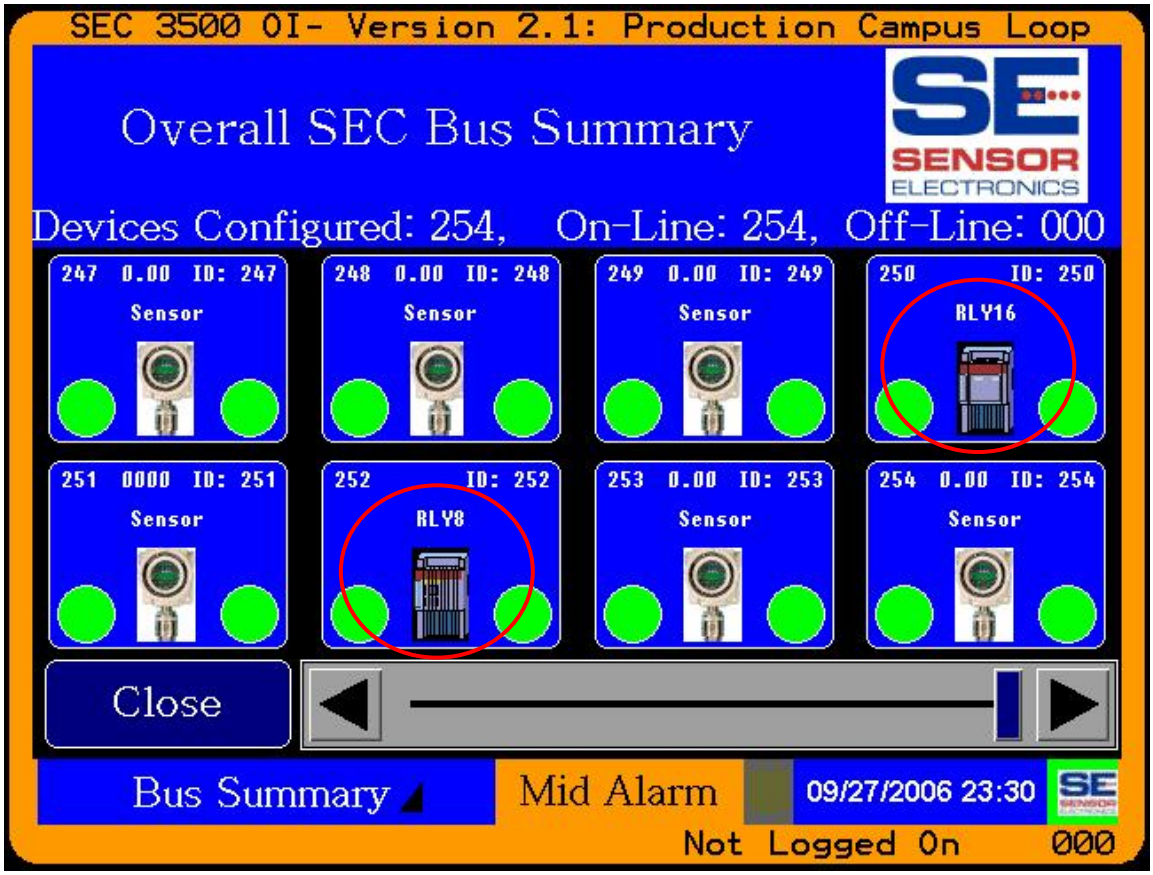
SEC Relay Modules within a Zone:



Zone Details Screen Showing Relay Module:



Bus Summary Screen Showing Relay Modules:



Device Summary for Relay Modules: