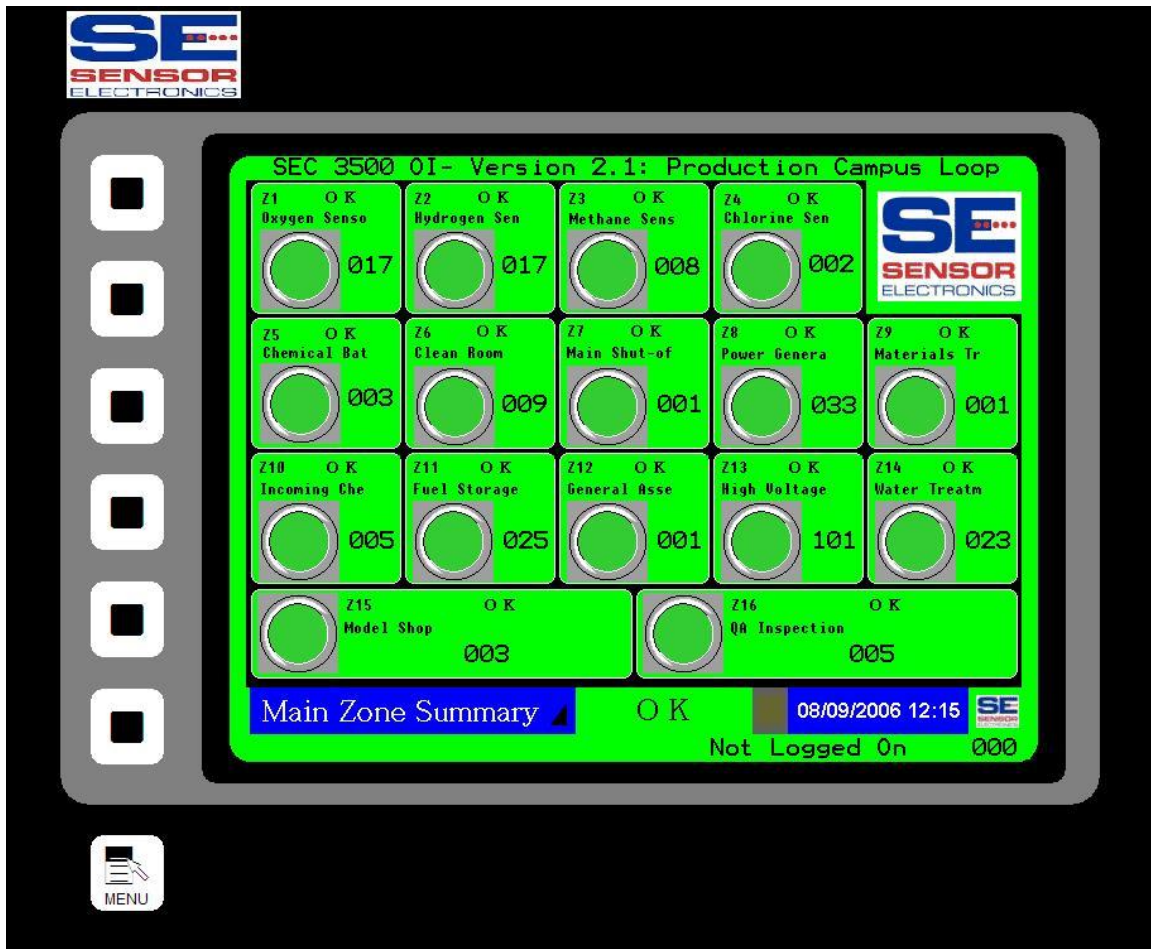


SEC 3500 OI Startup Basics Manual



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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.

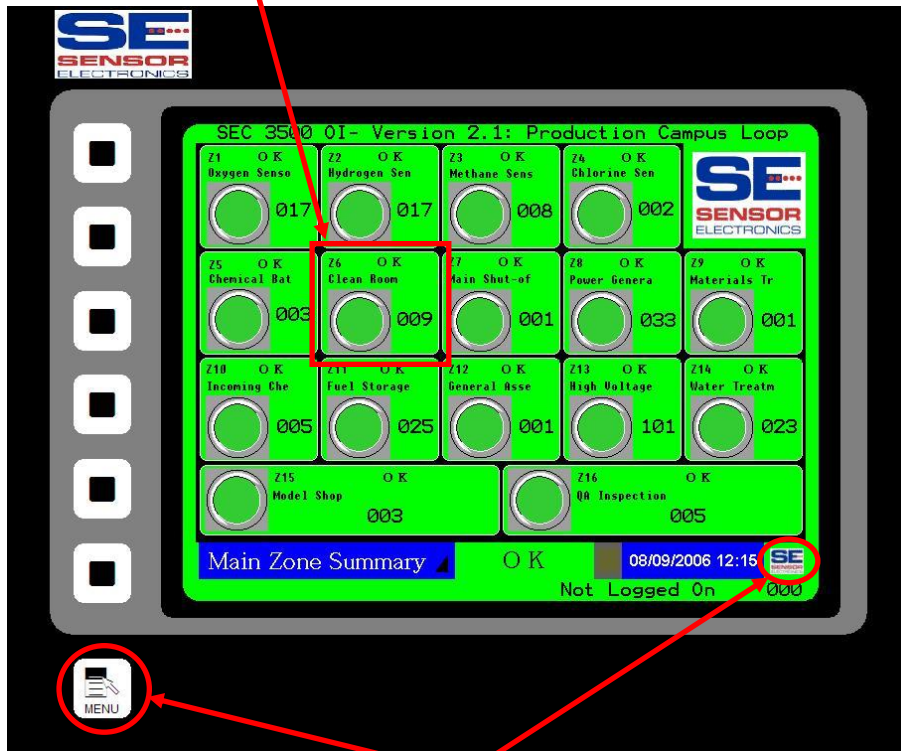
The SEC 3500 OI is a self-contained standalone intelligent touch-screen Human Machine Interface (Operator Interface Panel). It contains various communication ports for RS485 communications, RS232 Gas Status Text Dumps, and 10/100mb Ethernet for Web-based services. It also contains a compact flash card 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:



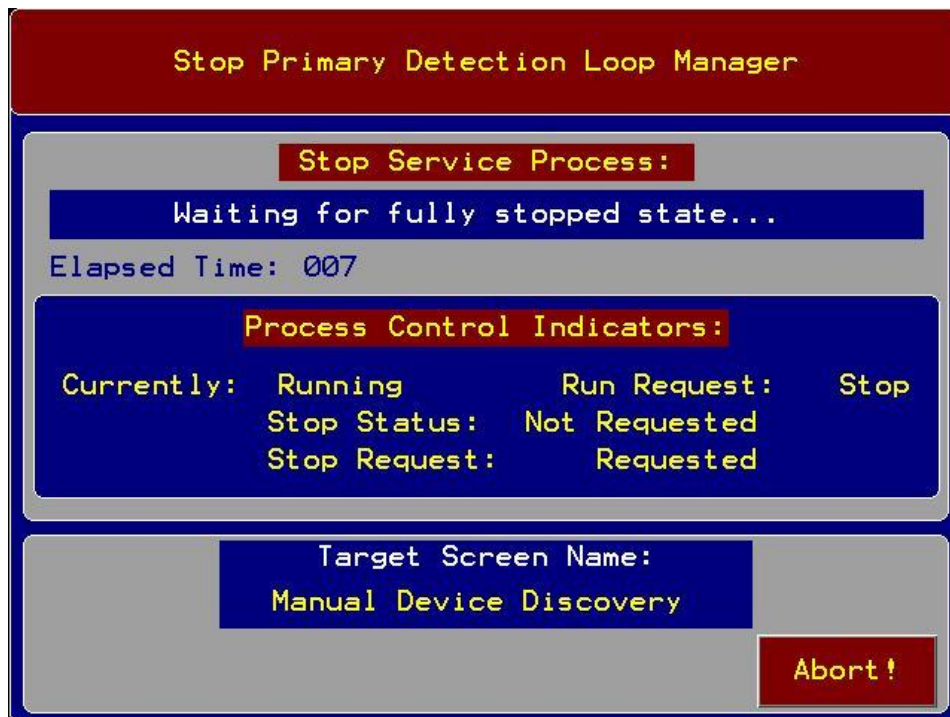
Then press the “Select Screen” button:



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”:

The screenshot shows the 'Manual Device Discovery' screen. The 'Search Parameters' section includes: Start ID: 001, Ending ID: 254, Search To End? Yes, Auto On-Line Yes, and # Times To Try Each Device: 10. The 'Search Progress' section shows: Currently Searching ID: 000, # Attempts (This Device) So Far: 0, # Searched: 000, # Found: 000, # Not Found: 000. At the bottom, there are buttons for 'Back To Main', 'Stopped...', 'Begin', 'Now!', and 'Abort'. Red circles highlight the 'Search To End?' and 'Auto On-Line' fields, and the 'Begin' button. Red arrows point from the text above to the 'Start ID', 'Ending ID', and 'Begin' button.

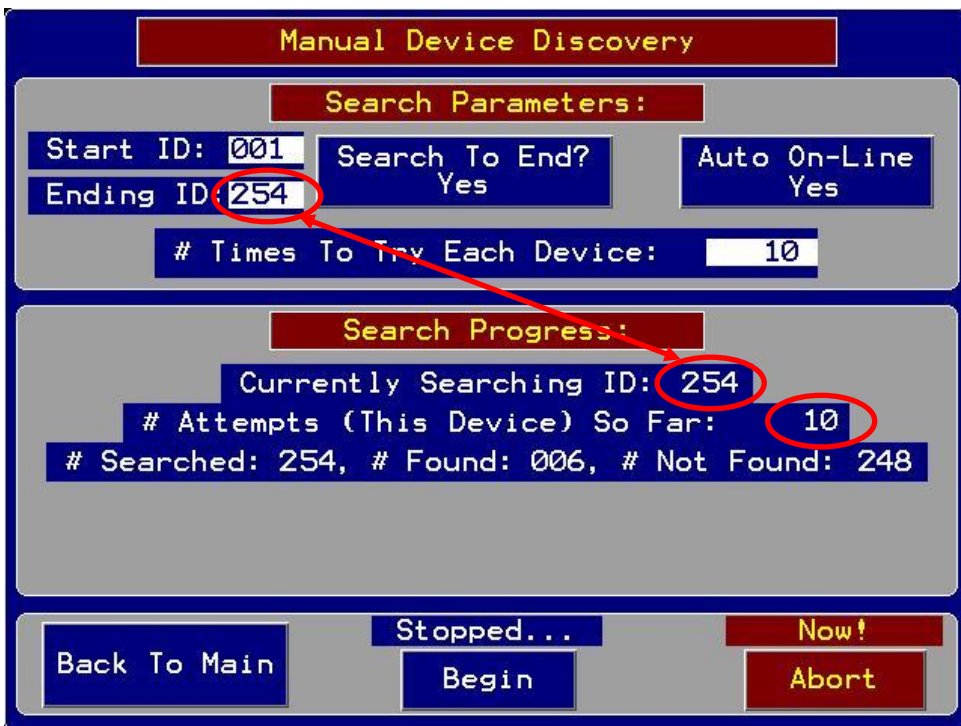
As the device discovery is in progress, the status is updated as below (circled):

The screenshot shows the 'Manual Device Discovery' screen with updated progress. The 'Search Parameters' section remains the same. The 'Search Progress' section is circled in red and shows: Currently Searching ID: 015, # Attempts (This Device) So Far: 2, # Searched: 015, # Found: 005, # Not Found: 010. A red arrow points from the text above to the circled progress section.

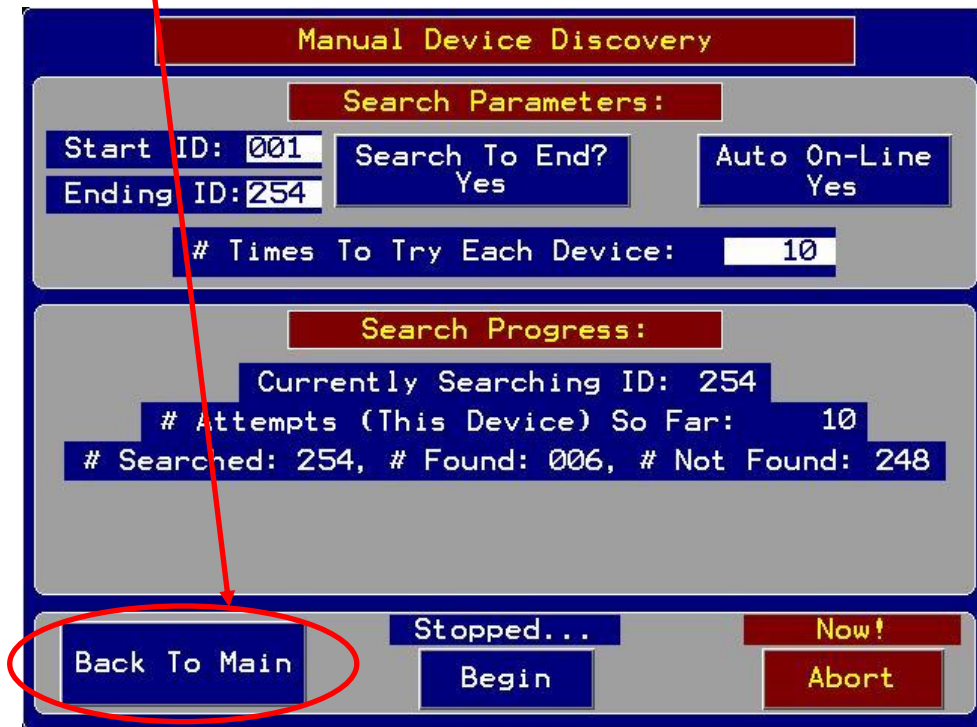
Found devices automatically are identified and brought on-line:



- 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:



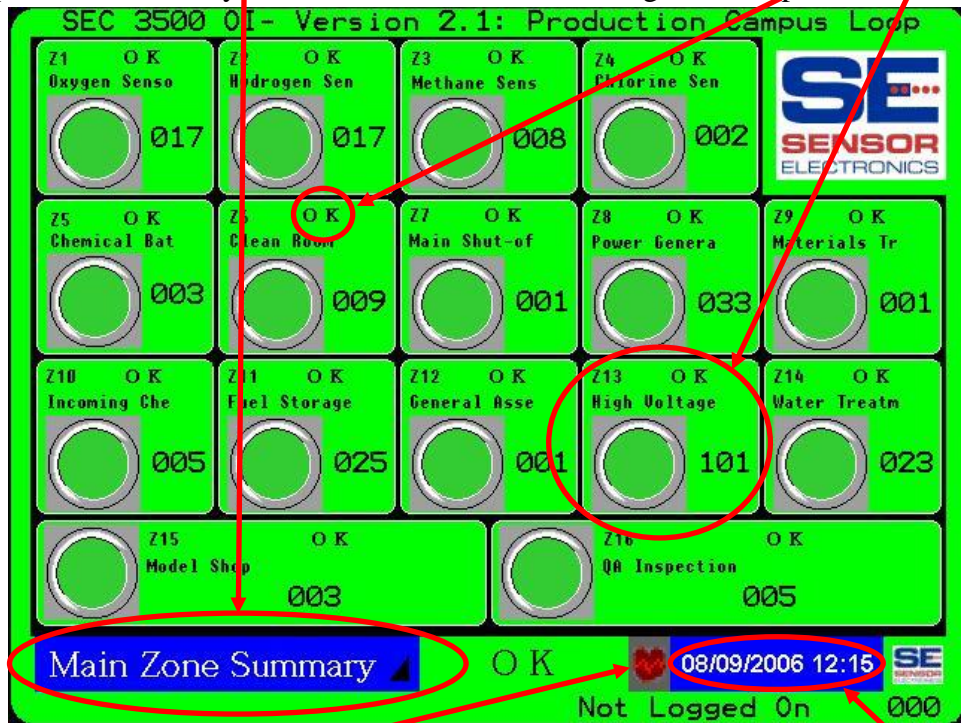
Press "Back To Main" next:



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

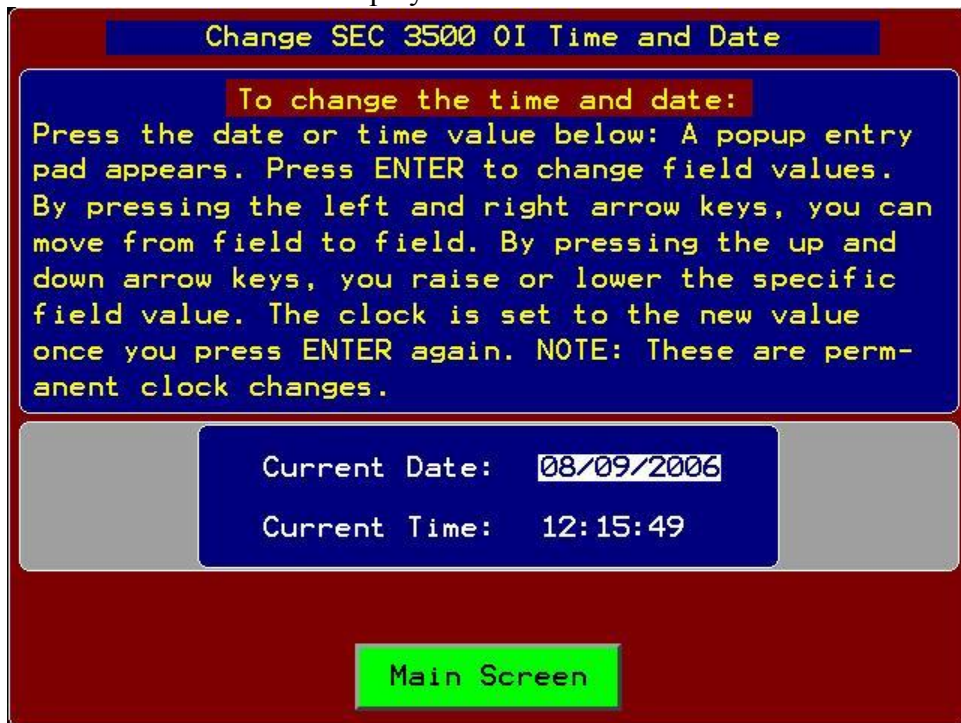


- 6) The “Main Zone Summary” screen is displayed, with the correct zone squares populated with newly discovered devices and showing normal operation:

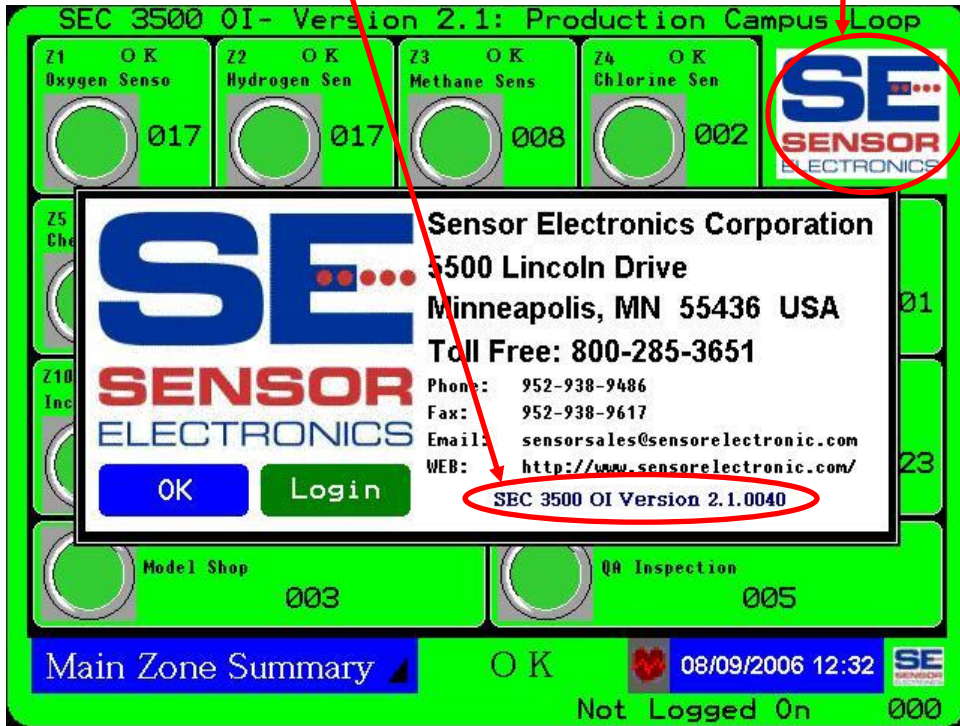


Periodic Flashing (Communication Functioning Properly)

- 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.

Manual Device Discovery

Search Parameters:

Start ID: 001 Search To End? Yes **Auto On-Line No**

Ending ID: 254

Times To Try Each Device: 2

Search Progress: Last Device ID Found: 143

Currently Searching ID: 254

Attempts (This Device) So Far: 2

Searched: 254, # Found: 002, # Not Found: 252

Back To Main Stopped... Begin **Now! Abort**

- 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

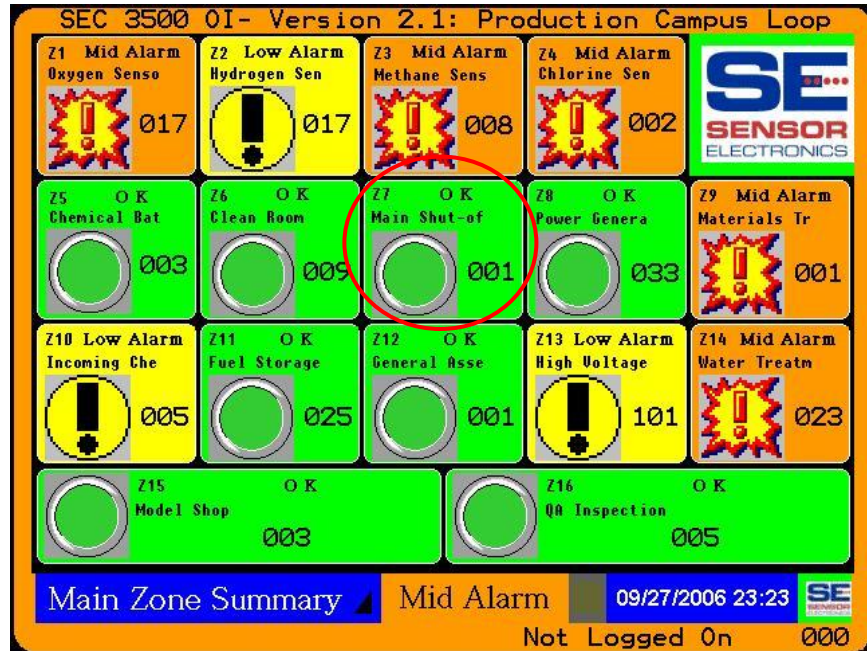
the next one could conflict with this one. The device ID should be set to a value well above the SEC 3100 device range- such as 200 – 254. Since some Relay Modules could arrive from the factory with values set to 254, it is a good idea to start setting them at 200 and incrementing each newly added Relay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

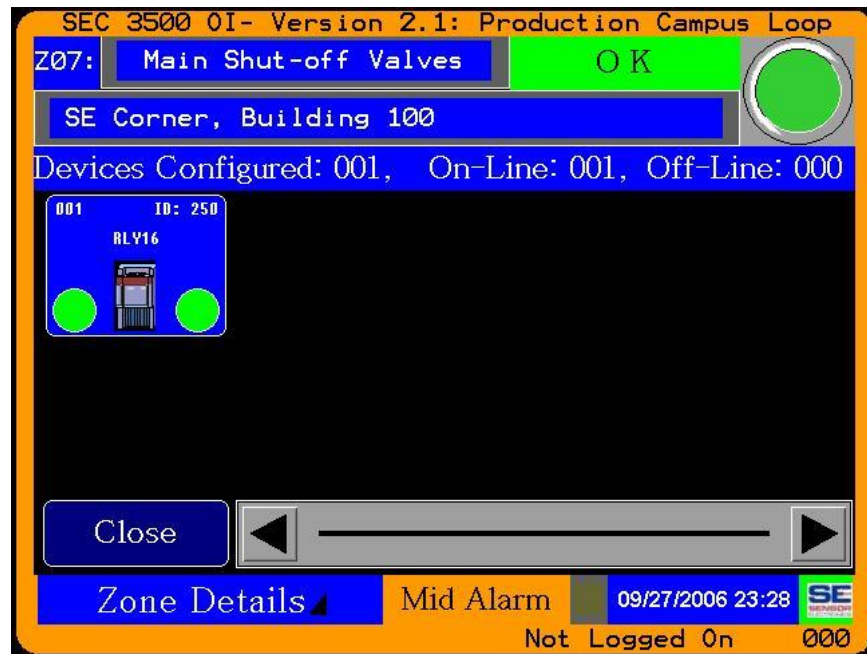


- 5) When all is done; attach all devices to the bus and restart the search as shown above. It should show exactly the expected “# Found” devices when you add the # found from step 2 to the accumulation in step 4 (in this example, only one was performed). The last Device ID Found should be equal to the 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:

SEC 3500 OI- Version 2.1: Production Campus Loop

Overall SEC Bus Summary

SE
SENSOR
ELECTRONICS

Devices Configured: 254, On-Line: 254, Off-Line: 000

247 0.00 ID: 247 Sensor	248 0.00 ID: 248 Sensor	249 0.00 ID: 249 Sensor	250 ID: 250 RLY16
251 0000 ID: 251 Sensor	252 ID: 252 RLY8	253 0.00 ID: 253 Sensor	254 0.00 ID: 254 Sensor

Close

Bus Summary Mid Alarm 09/27/2006 23:30 SE
Not Logged On 000

Device Summary for Relay Modules:

SEC 3500 0I- Version 2.1: Production Campus Loop

ID250: RLY16 #250 OK

Z07: Main Shut-off Valves On-Line

Dev Type: **RLY16** Block Name: Main Coils

Delete

SAVED

Close

Current Coil Values

01	02	03	04	05	06	07	08
Off	Off	Off	Off	Off	Off	Off	Off
Note: "On" = "Coil Energized"							
09	10	11	12	13	14	15	16
Off	Off	Off	Off	Off	Off	Off	Off

Press one above to assign

Reset Latched Relays
 Now... ID: 250

Device Summary Mid Alarm 09/28/2006 00:33

Not Logged On 000

SEC 3500 0I- Version 2.1: Production Campus Loop

ID252: RLY8 #252 OK

Z12: General Assembly On-Line

Dev Type: **RLY8** Block Name: Assy Coils

Delete

SAVED

Close

Current Coil Values

01	02	03	04	05	06	07	08
Off	Off	Off	Off	Off	Off	Off	Off
Note: "On" = "Coil Energized"							
Press one above to assign							

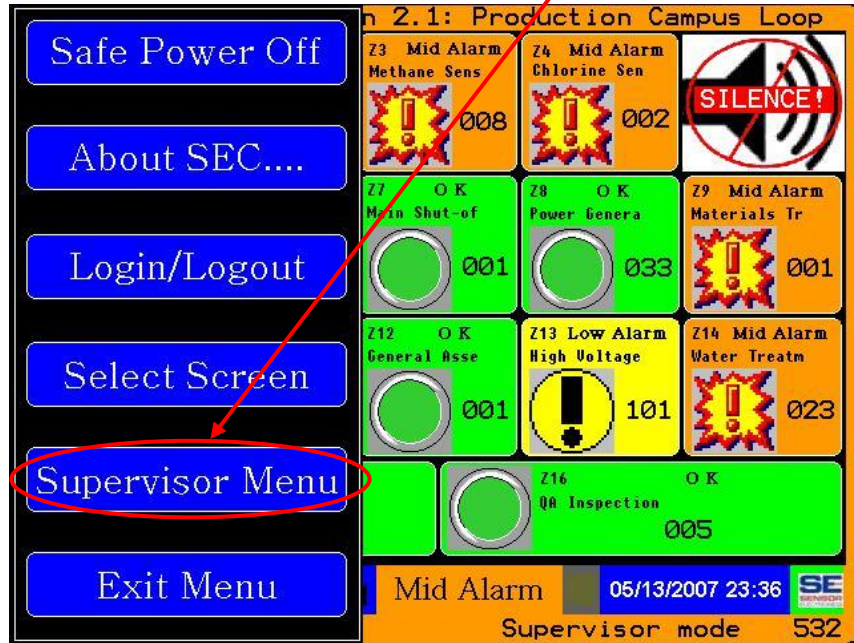
Reset Latched Relays
 Now... ID: 252

Device Summary Mid Alarm 09/28/2006 01:19

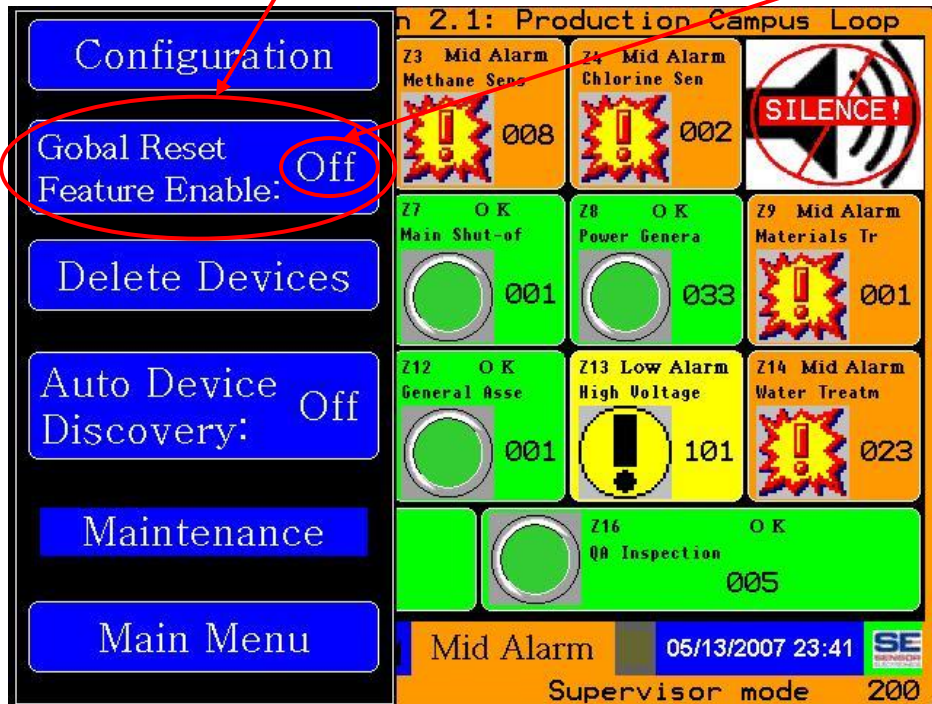
Not Logged On 000

5.0 Enabling the Global Latch Reset Feature

The “Global Latch Reset” features (see the Basic User’s Guide for a complete description) may be enabled or disabled by a Supervisor-level operator logged in to the SEC 3500 OI Panel (See Section 3.0, item 1 for details on logging in), by pressing the one of the menu buttons and selecting the “Supervisor Menu”:



Then press the “Global Reset Feature Enable”, which will toggle “On” and “Off”:



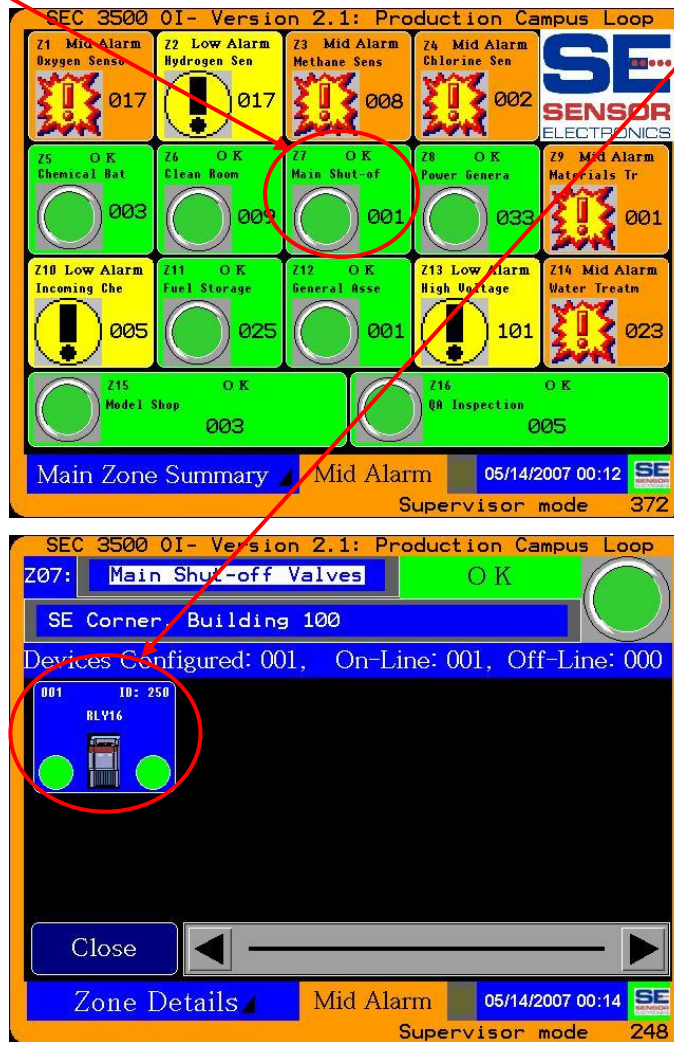
When the “Global Latch Reset” feature is enabled, then when Relay Module Latches are activated, a new Global described in the Basic Operator’s Guide, them by simply pressing the icon that corner of the “Home Zone” screen.



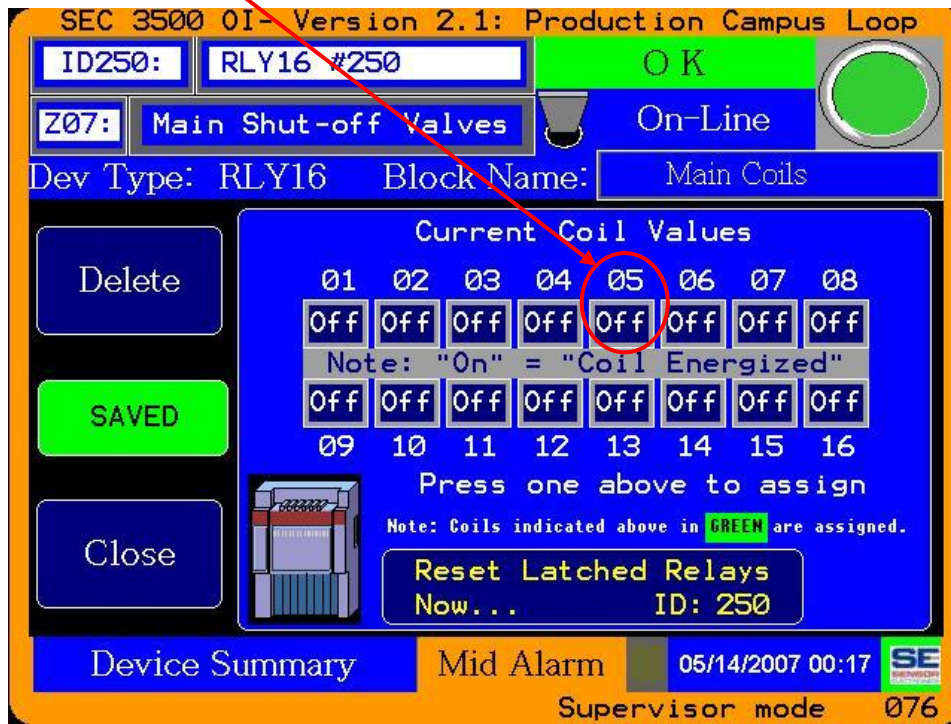
Latch Reset icon appears, as so that any operator may reset will appear at the top, right-hand

6.0 Configuring Global Latches

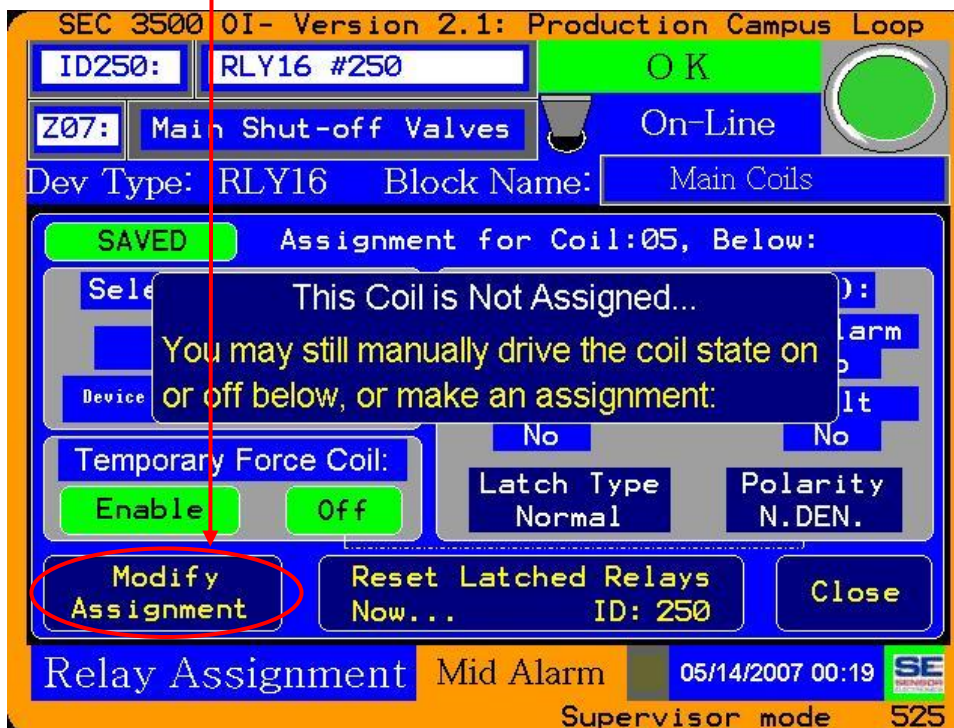
Once the “Global Latch Reset” feature is enabled, as previously described in section 5.0, established Relay Module Latches will now be able to be reset by the “Reset” icon described in section 5.0. There are many reasons for configuring latching global relay coils. Related to the SEC 3500 OI compatible Relay Modules, it is quite simple to setup. Once the hardware has been connected to a compatible SEC Relay Module, and the polarity and latching desires have been determined, then log into the panel as the “Supervisor” as previously described in this document. Select the Relay Module from the appropriate Zone:



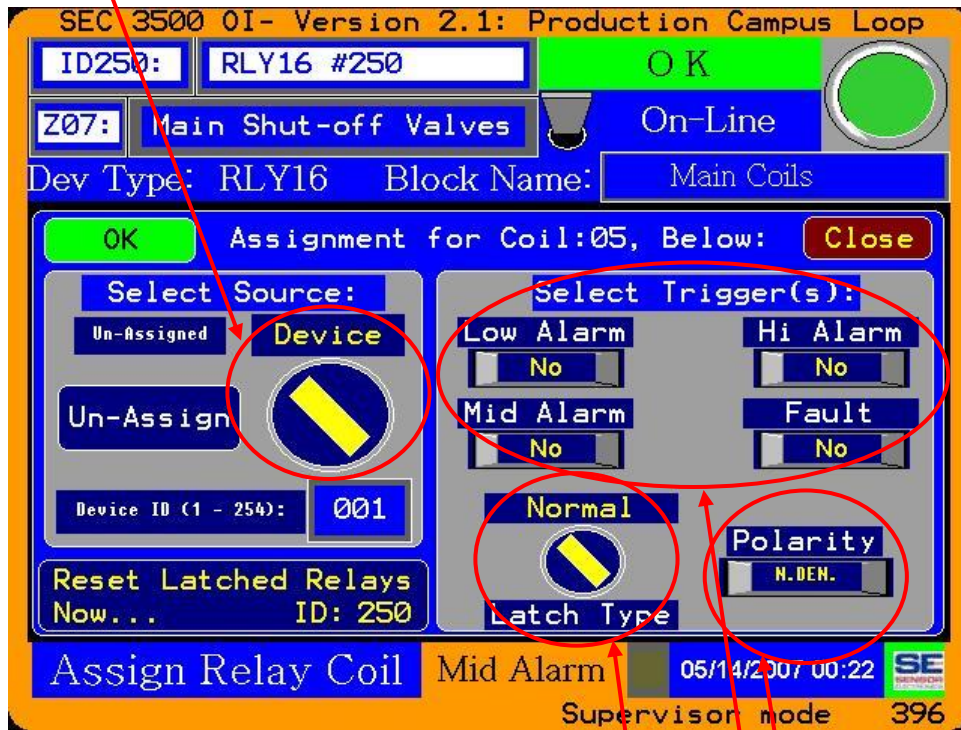
Then select the relay coil wired to the device:



Then choose to modify the coil assignment:



Select a source for this relay module coil to monitor:



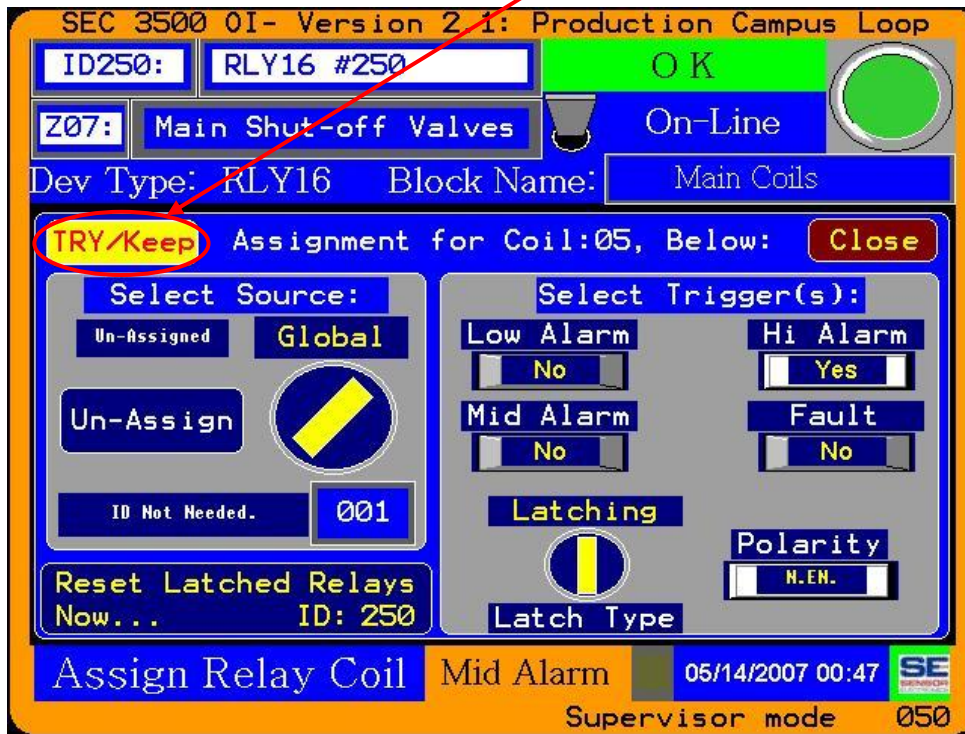
By rotating the source selection dial, you may choose from a specific SEC 3100 Device (then choose the Device ID in the box below it), a Zone (then choose the Zone ID in the box below it), or a Global source (a rollup of all devices and zones). Once a source is chosen, then it is time to select a Trigger Set, which may be any combination of the above.



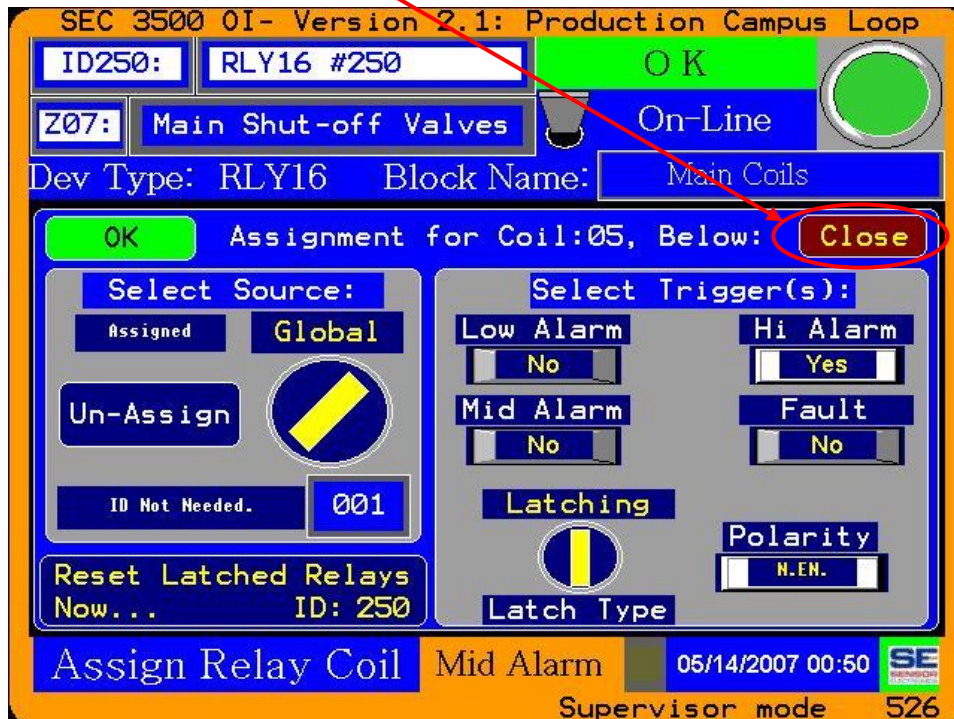
Following that is the selection of coil polarity to match how it is wired to its activating device (such as a valve), and finally choosing the Latch Type, which may be set to Normal as shown above (no latching- coil goes of when condition(s) go away, Latched (stays activated after condition(s) go away until reset manually, or audible (intended for audible notification devices, activation goes away when condition(s) go away OR when alarms are manually silenced (See section 7.0 for more configuration details).



Once all selections/mapping is complete, it is time to “Try” the settings and choose NOT to discard them by pressing the “Try” button:

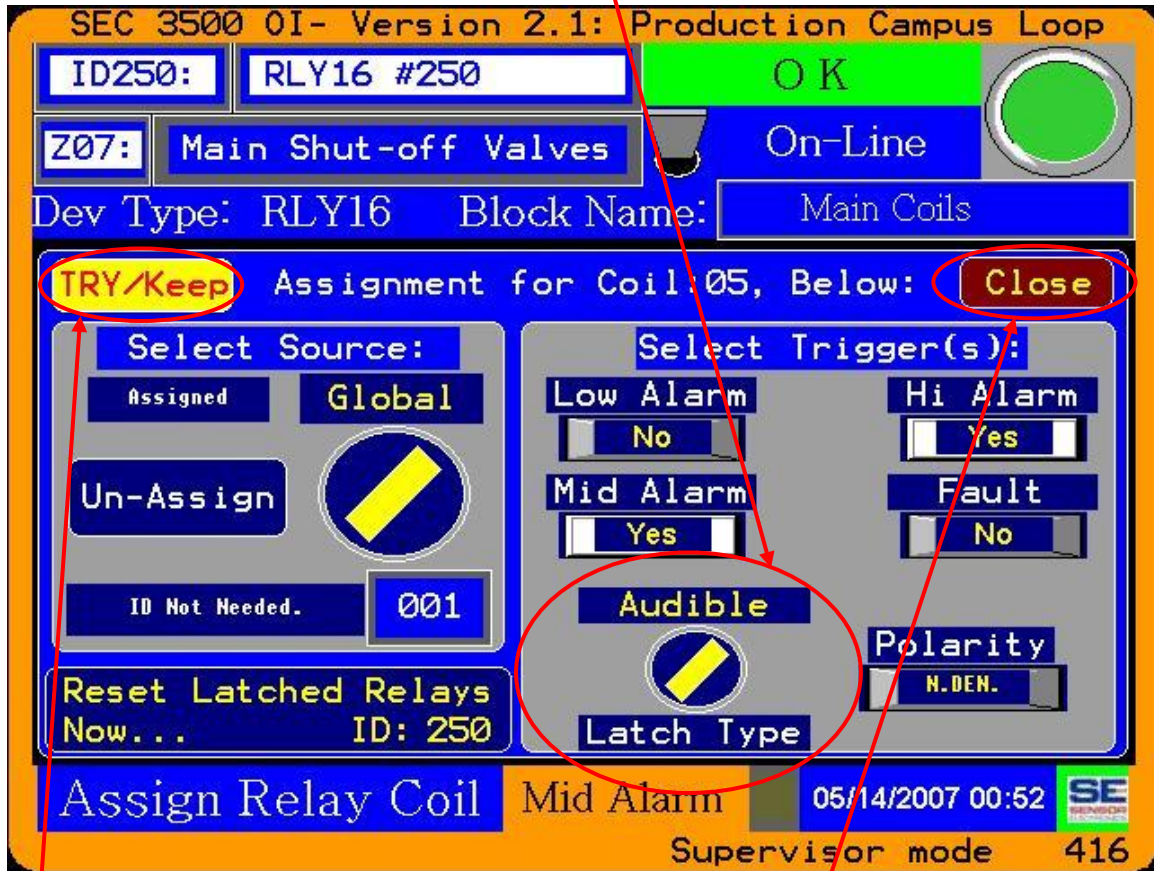


And if all is well, then press Close:

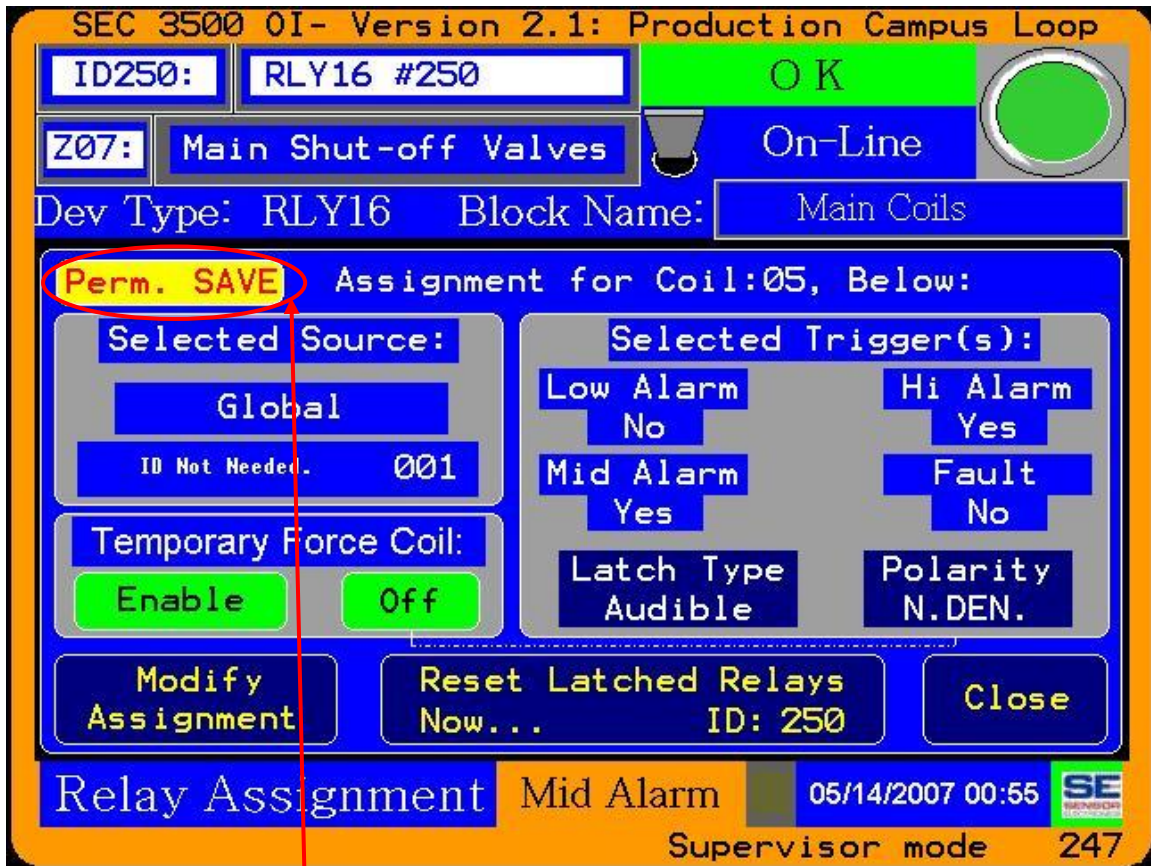


7.0 Setting a Global Alarm Latch Type


Setting a Global Alarm Latch type is identical in function and form to setting any other type of SEC 3500 OI Relay Module coil configuration. First follow the directions shown in section 6.0 previously for establishing the source, establish the triggers and coil polarity, then change the coil latch type to “Audible”:



This of course is done while logged in as the “Supervisor”, and then the “Try” button is pressed to save the settings, then the “Close” button, resulting in the coil review/coil assignments screen depicting the settings and warning that the changes have not yet been permanently committed to firmware (shown on the next page).



("Permanent Save Warning", and the temporarily saved/tested audible configuration)

Once changes are permanently saved (the 3500 OI panel saves to flash and resets), they become active at restart. Anytime the selected source meets the trigger conditions, in addition to the SEC 3500 OI built-in speaker and screen flasher for Global alert, the configured Audible coil(s) are also engaged. When alarms are silenced by the operator (by pressing the silence alarm icon  located at the top right-hand corner of the screen), so are the Audible coil(s). If the conditions fully go away and then return, the Audible coil(s) will again be re-activated automatically by the SEC 3500 OI.