GEN^2

Model OI-7010-X-X-X-X

12-Channel or 32-Channel

Operation Manual

Revision 2.2w

OOOOOTIS
INSTRUMENTS INC.
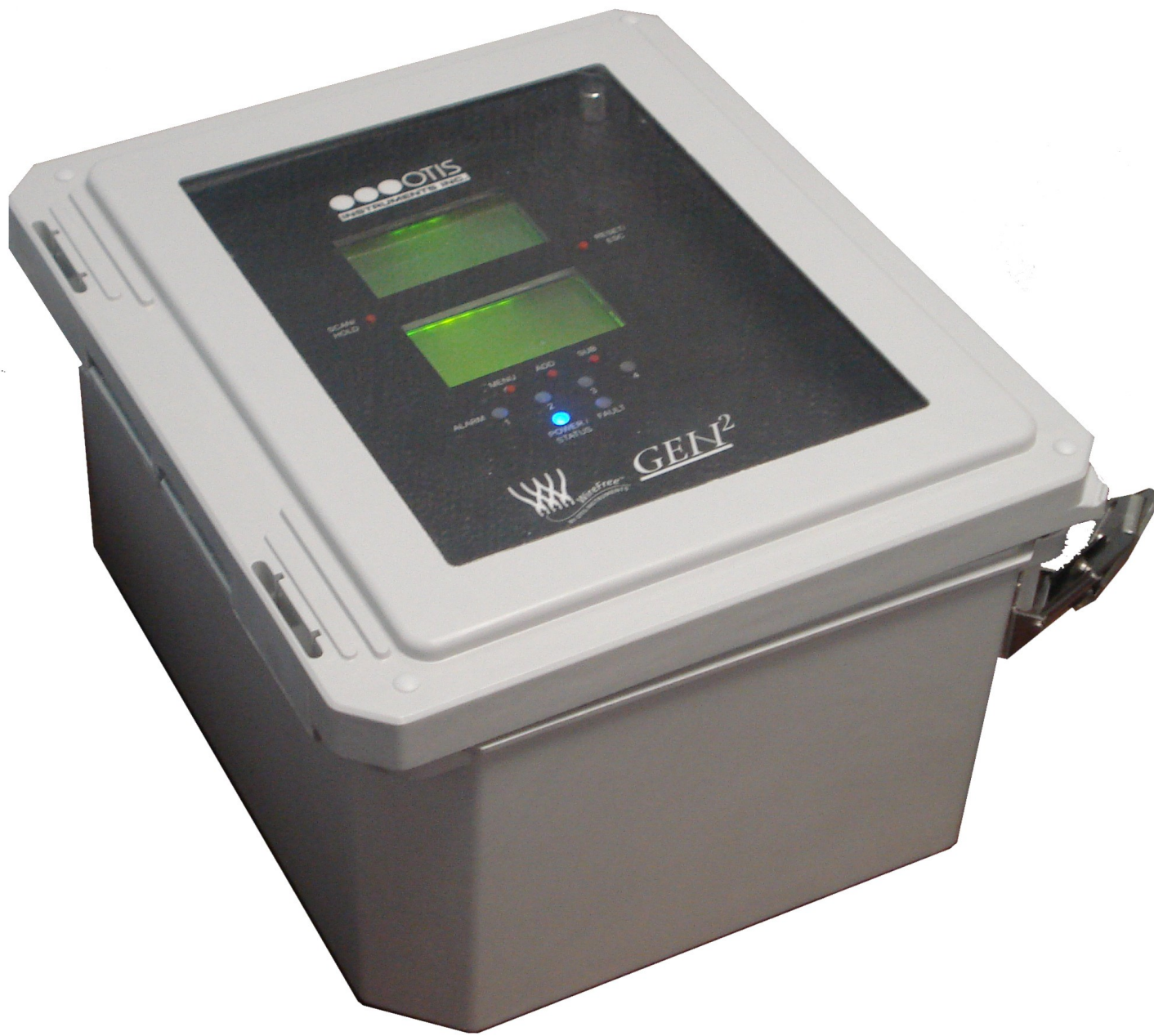
Product Overview

The Otis Instruments, Inc. GenII OI-7010-X-X-X-X is a Hybrid Monitor that supports up to 12 (or 32) WireFree sensor assemblies, and up to four wired (4-20mA) sensors (when only eight (or 28) channels are setup as WireFree).

The OI-7010-X-X-X-X is backward compatible with GenI WireFree sensor assemblies, and also supports GenII Wirefree sensor assemblies (configurable).

For additional information regarding this OI-7010-X-X-X-X, see the Appendices at the end of this Operation Manual.

Table of Contents

Introduction

This document is an Operation Manual containing diagrams and step-by-step instruction for proper operation of the Otis Instruments, Inc. GenII OI-7010-X-X-X-X. <u>This document should be read before initial operation of the product</u>.

Should a question arise during the use of the product, this document will serve as a first reference for consultation. If further questions arise, or if the device is not working properly, please contact the sales representative of this product.

Warnings

Even when the Power switch is in the off position, the AC and DC terminals are still hot—regardless of if the device is wired as DC.

Complete System Diagrams

The following diagrams should be consulted for identification of Panels, Boards, and any other system part that may be referred to in this Operation Manual.

Front Panel
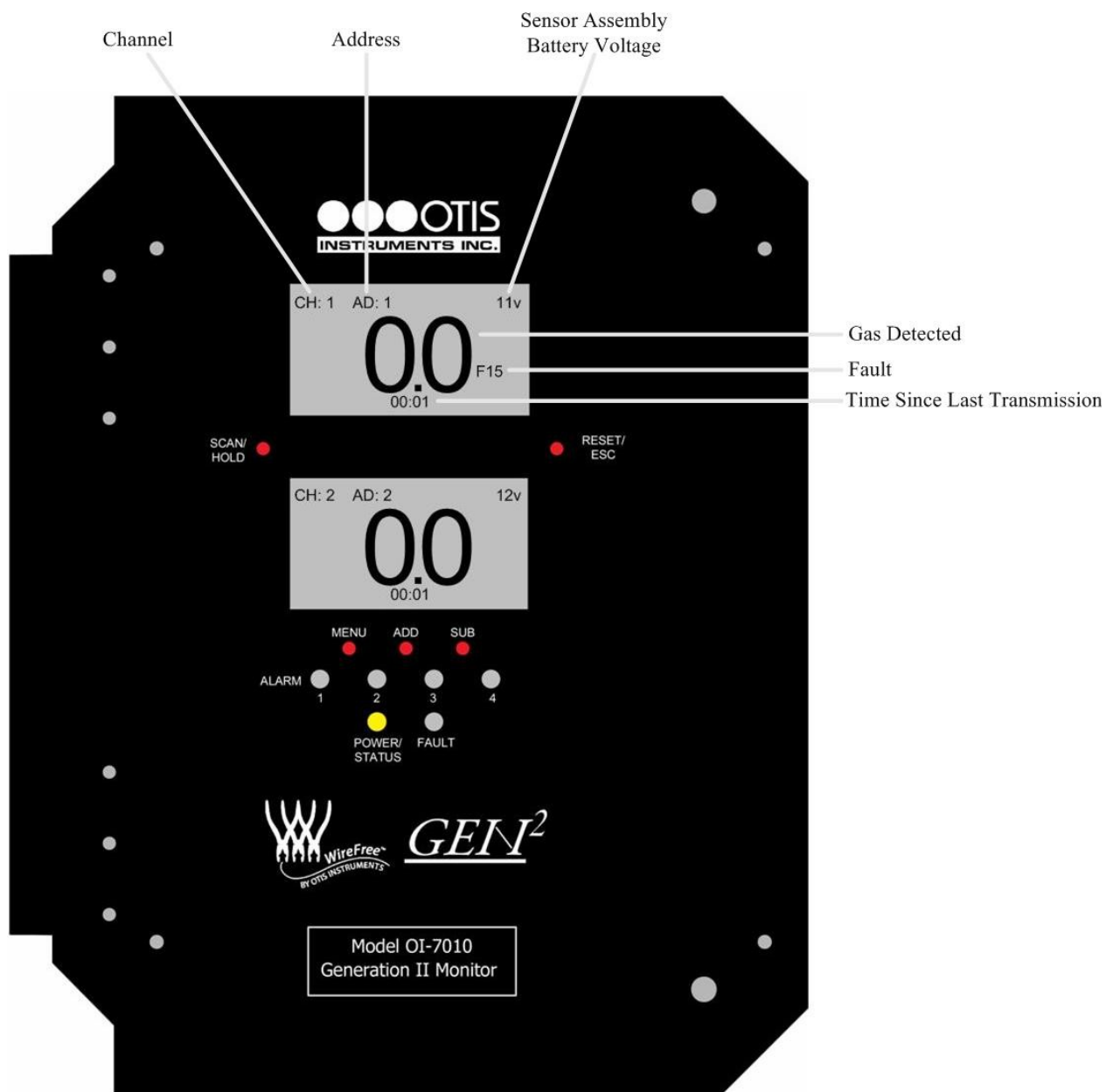
Terminal Board
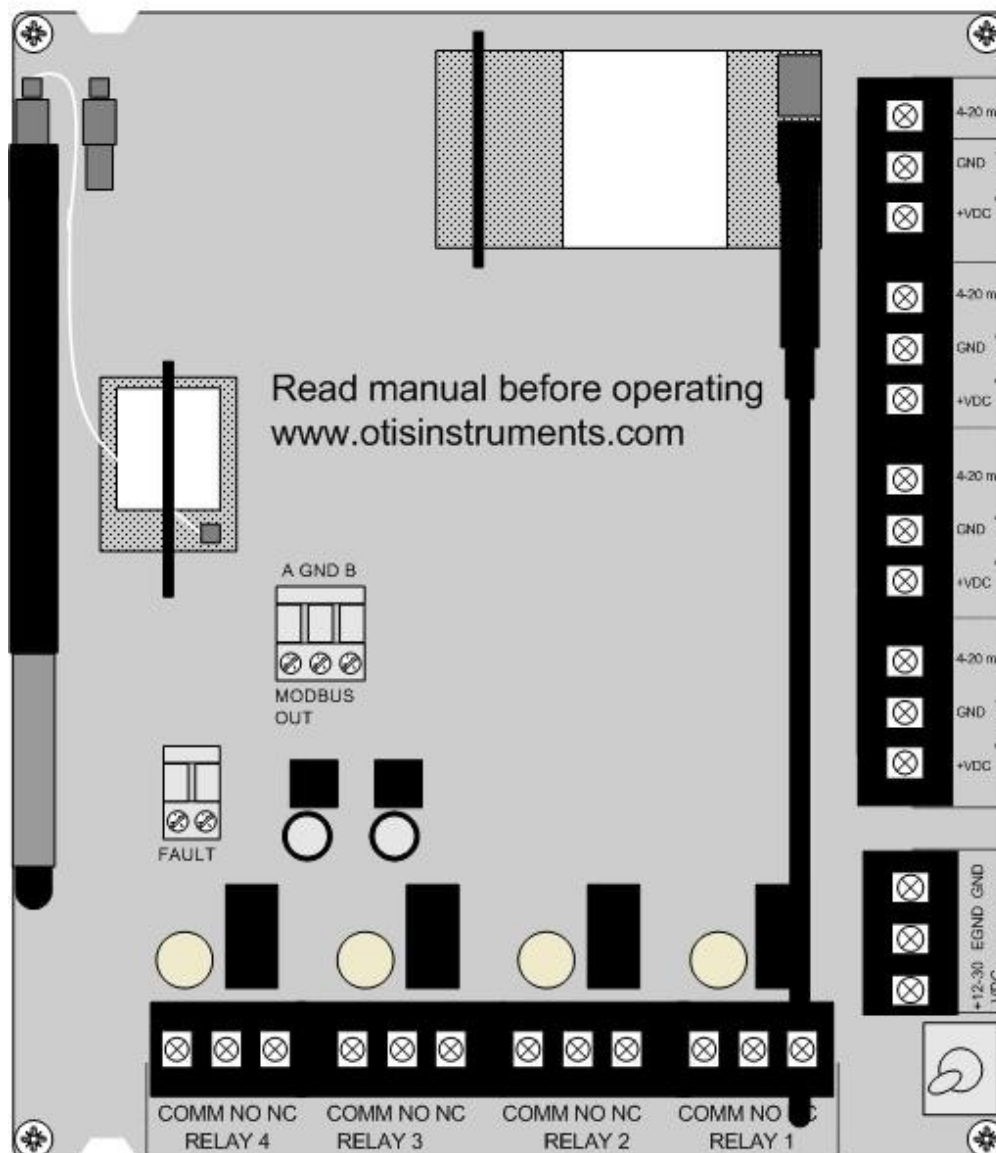
Internal Diagram
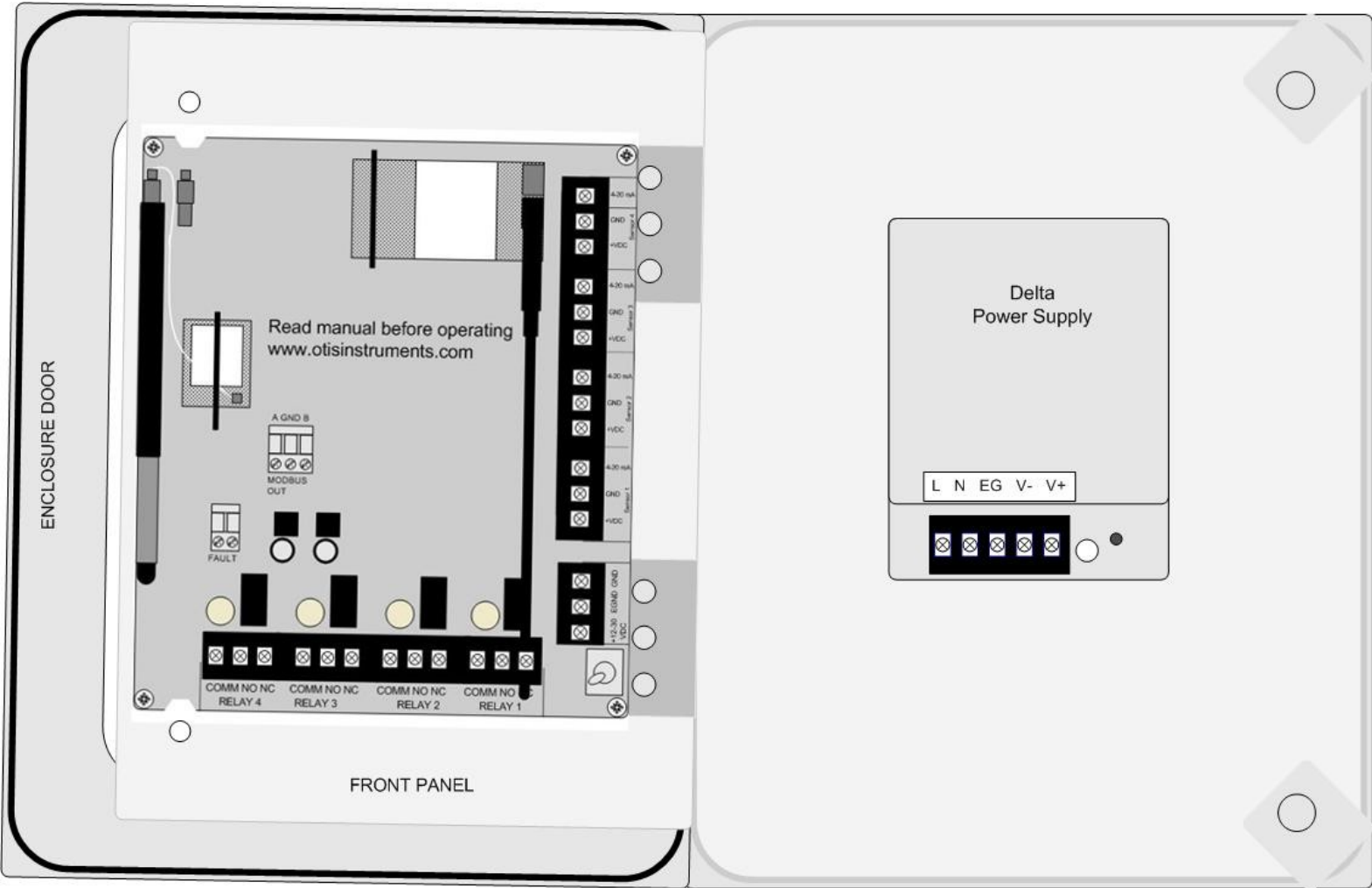
Wiring Configurations

The following Wiring Configurations must be completed before initial operation of the product.

DC Power-in (12-35 Volts DC)

NOTE: The unit will be wired for the power-type that is requested by the purchaser when shipped from Otis Instruments..

- Provide a clean and stable 12-35 Volts DC voltage. Failure to to do so may cause the unit (and any wired sensors that are connected to the unit) to not operate properly.
- Voltage spikes higher than 35 Volts may damage the unit.
- Solar Panel power (with battery backup): This options may be used to power the unit, however, care must be taken to ensure the proper voltage and wattage is used.

NOTE: The size that the solar panel should be (10, 30, 50, or 100 watts, for example) depends on several factors, including: geographical area, line-of-sight access to the sun, number of wired sensors connected, and weather conditions.

Please consult a solar panel manufacture for specific details.   Otis Instruments may also be contacted to provide guidance and recommendations.

1. Open the enclosure box to expose the Front Panel.
2. Unscrew the two thumb screws on the Front Panel.
3. Open the Front Panel so that the Terminal Board is exposed (reverse of Front Panel).
4. Locate the Power Terminal (on the lower right side of the Back Panel) and connect the DC-live wire (red) to the terminal marked "+12-35 VDC".
5. Connect the DC-ground wire (black) to the terminal marked "GND".
6. If desired, connect an Earth Ground wire (green) to the terminal marked "EGND" (required for surge suppression).
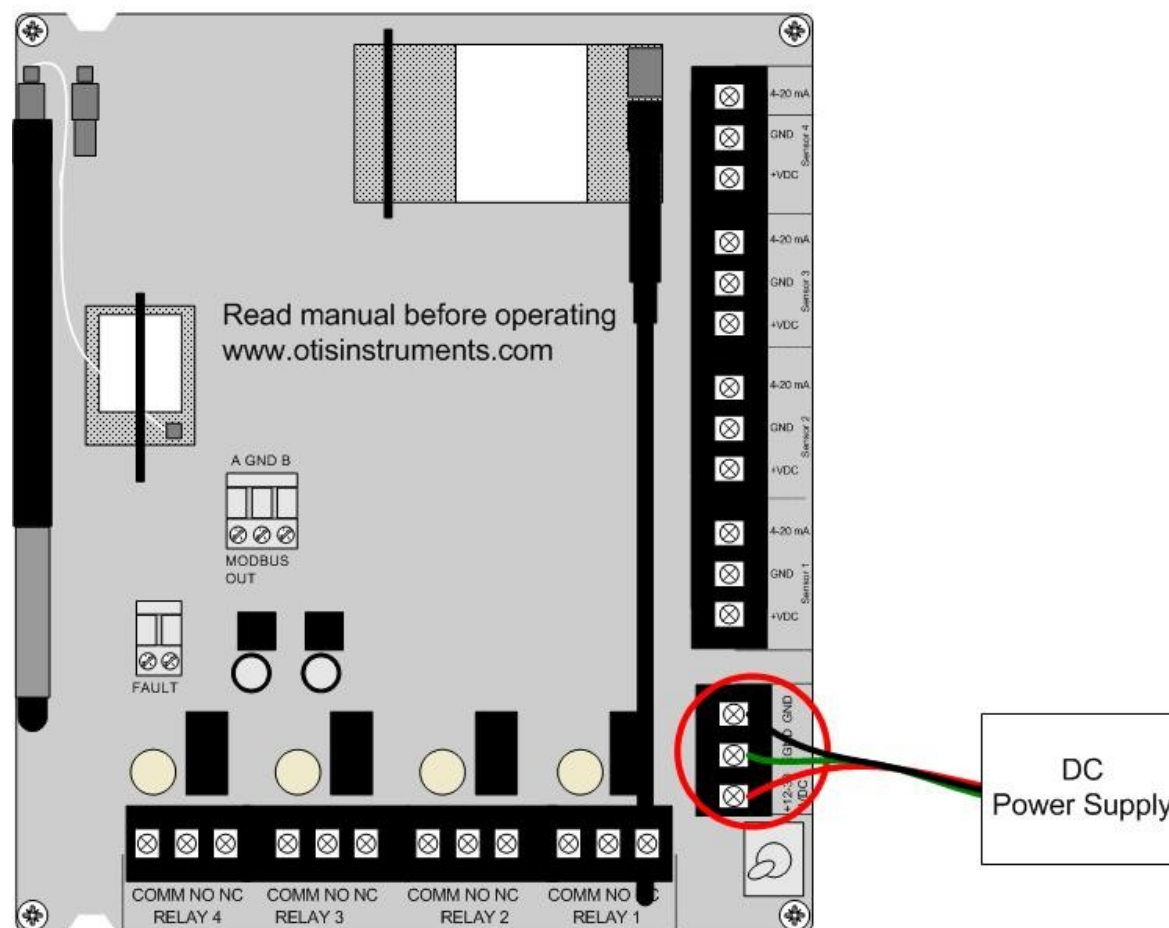
7. Close the Front Panel.
8. Screw in the thumb-screws.
9. Close the enclosure box.
10. Clamp down the enclosure latches.

AC Power Supply Connection

For AC Power applications, the Delta Power Supply (located inside the enclosure box) should be used.

NOTE: The unit will be wired for the power-type that is requested by the purchaser when shipped from Otis Instruments.

1. Open the enclosure box to expose the Front Panel.
2. Unscrew the two thumb-screws on the Front Panel.
3. Open the Front Panel so that the AC (Delta) Power Supply is exposed.
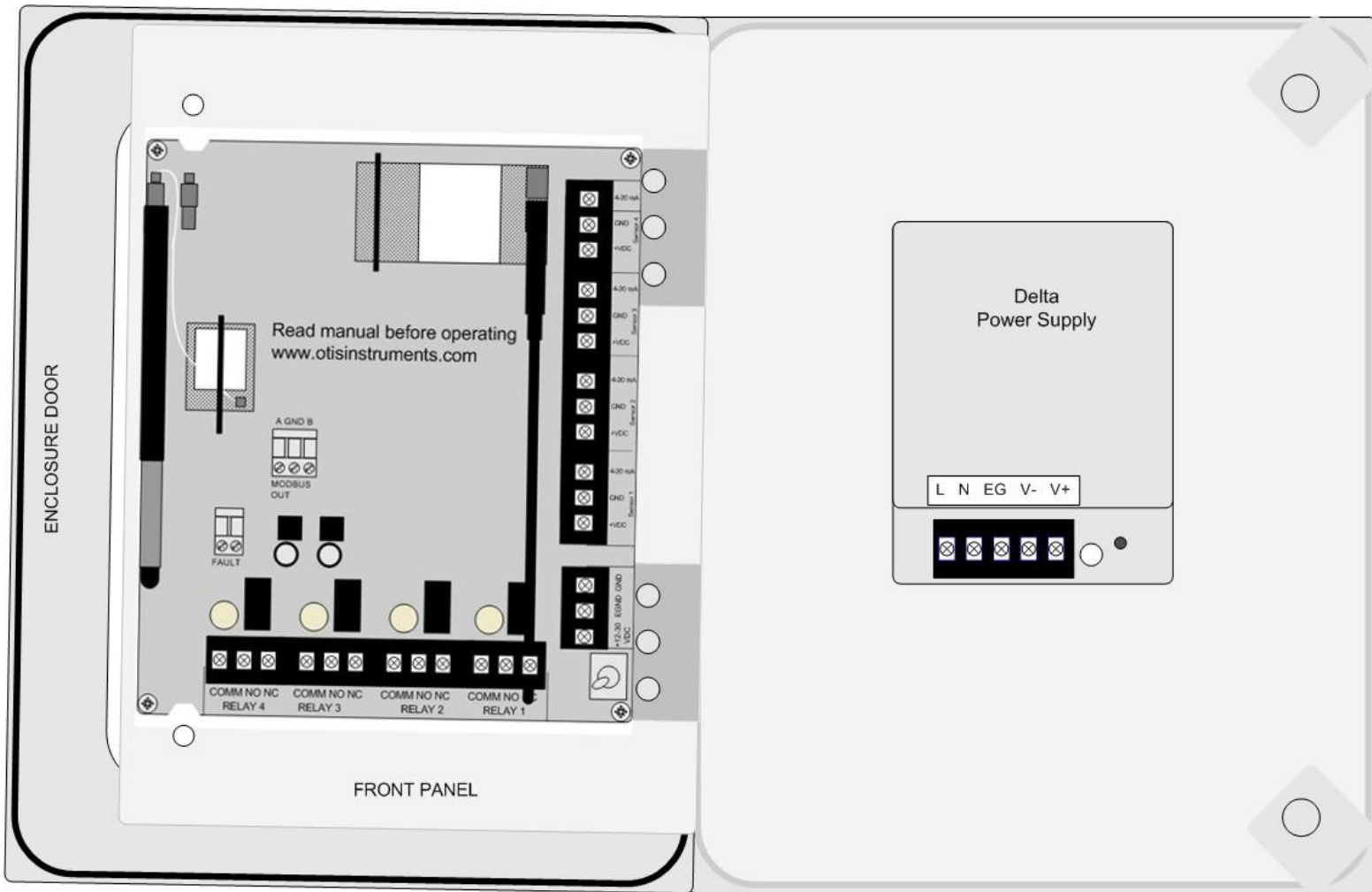
4. Connect a positive (red) wire to the Power Terminal terminal labeled "+12-35 VDC" on the Terminal Board.
5. Connect the other end of that same positive (red) wire from the Terminal Board to the terminal labeled "+V" on the Delta power supply.
6. Connect a negative (black) wire from the Power Terminal terminal labeled "GND" on the Terminal Board.
7. Connect the other end of that same negative (black) wire from the Terminal Board to the terminal labeled "-V" on the Delta power supply.
8. There will be three wires (black, white and green) pre-wired from the Delta power supply terminals "L" (AC Load IN), "N" (AC Neutral IN), and "EG" (Chassis GND or Earth GND). This set of wires will be used to plug into an AC power outlet ONCE ALL WIRING CONFIGURATIONS ARE COMPLETE.
9. Close the Front Panel.
10. Screw in the thumb-screws.
11. Close the enclosure box.
12. Clamp down the enclosure latches.
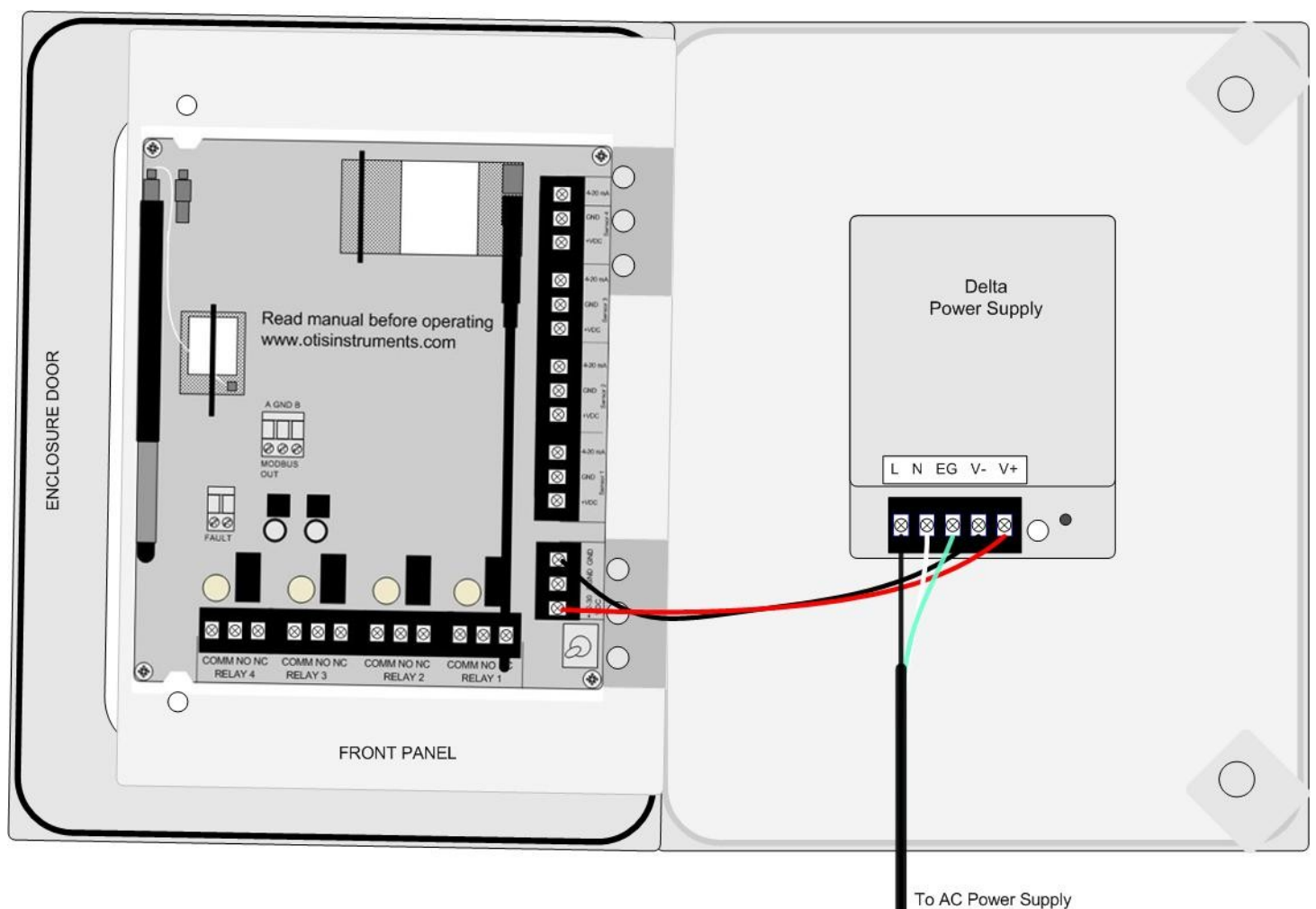
1. Open the enclosure box to expose the Front Panel.
2. Unscrew the two thumb-screws on the Front Panel.
3. Open the Front Panel so that the back of the Terminal Board is exposed.
4. Locate the Modbus Out Terminal Block.
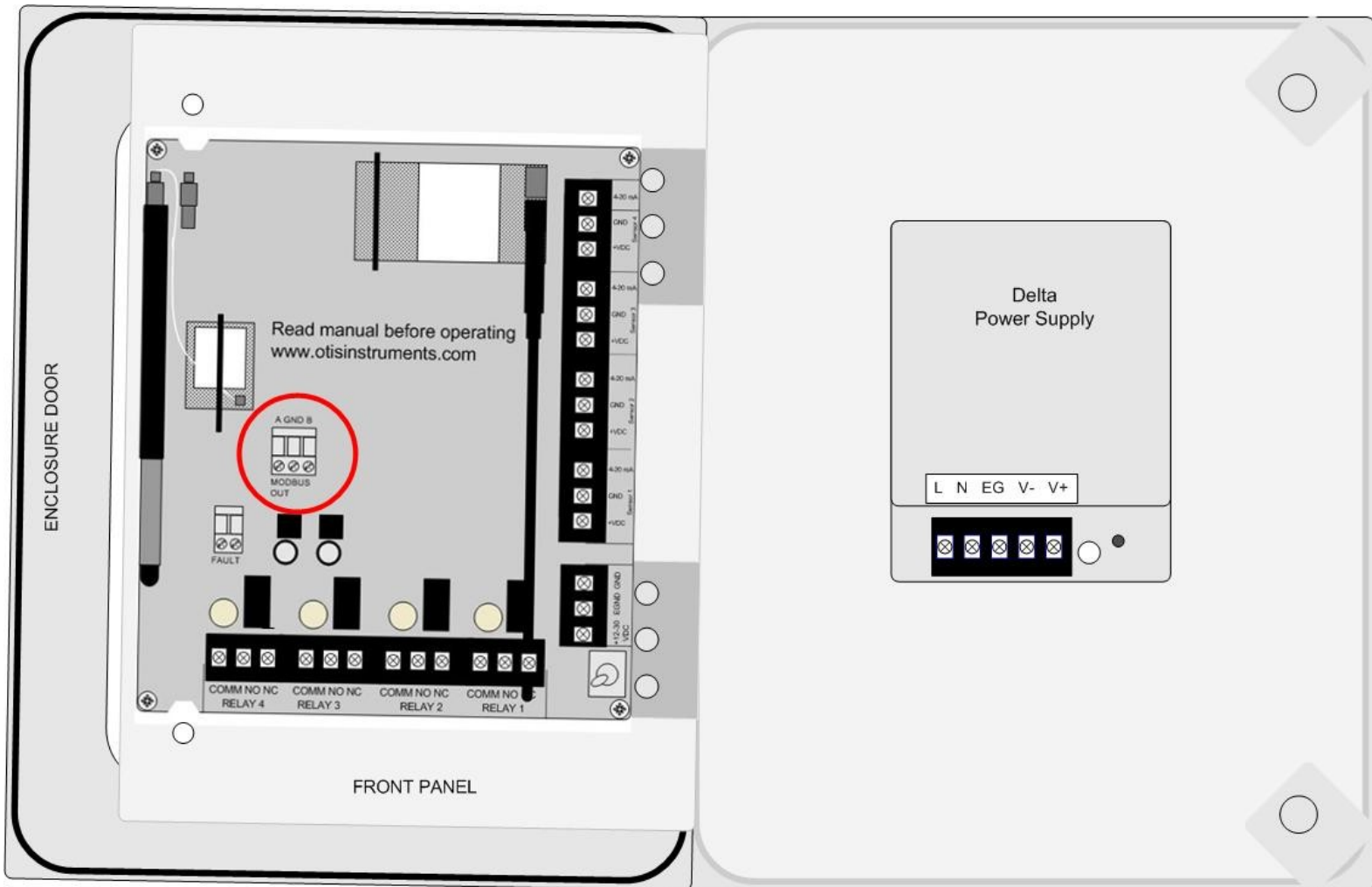
5. Connect the yellow wire from a DB-9 connector (or the connector-type that best suits your application) to the terminal labeled "A" on the Modbus Out Terminal Block.
6. Connect the white wire from a DB-9 connector to the terminal labeled "GND" on the Modbus Out Terminal Block.
7. Connect the brown wire from a DB-9 connector to the terminal labeled "B" on the Modbus Out Terminal Block.
8. Plug the DB-9 connector into a PLC.
9. Close the Front Panel.
10. Screw in the thumb-screws.
11. Close the enclosure box.
12. Clamp down the enclosure latches.
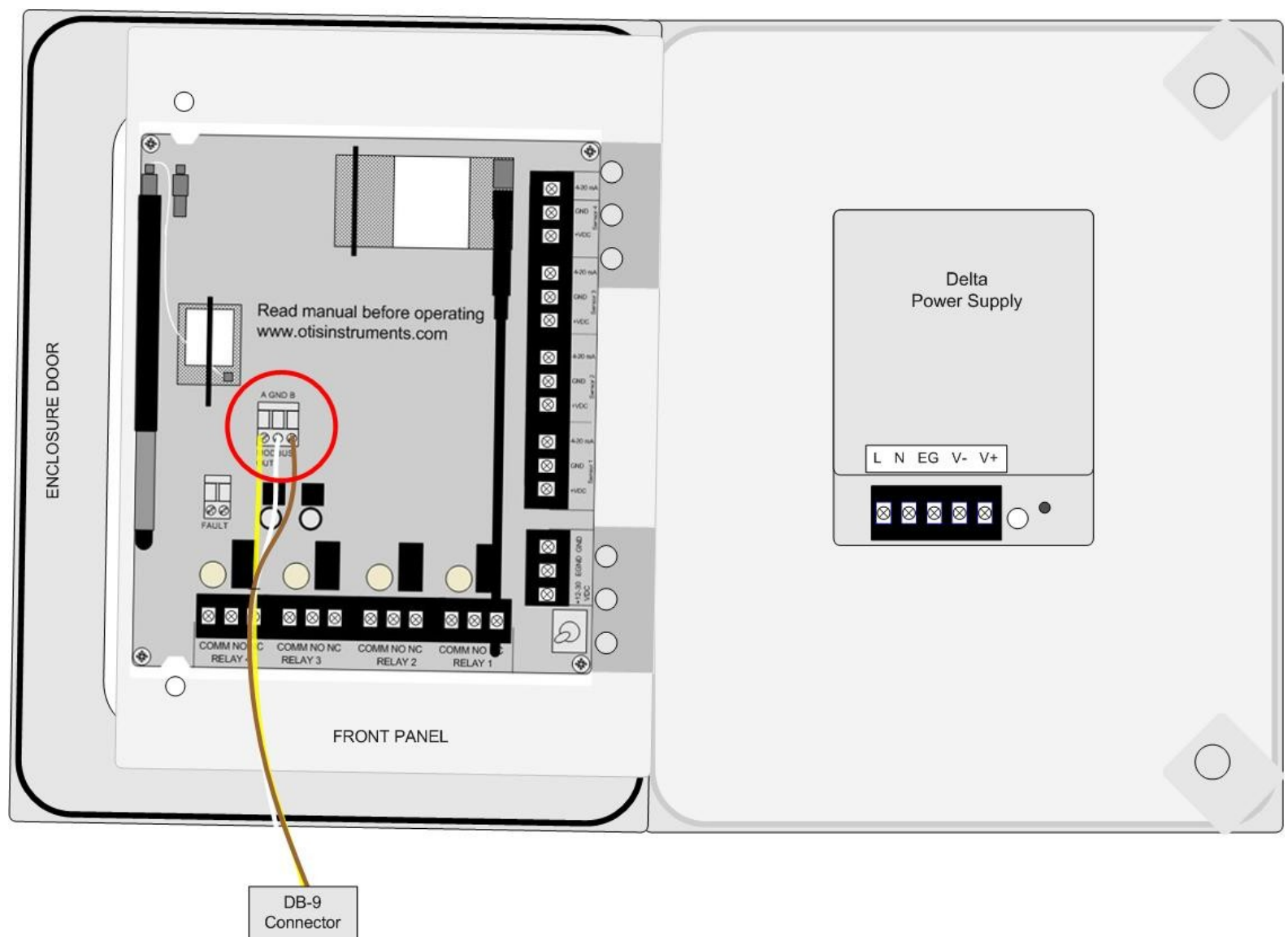
Connecting Sensors

The OI-7010-X-X-X-X allows up to four wired (4-20mA) sensors to be monitored.

Connecting Sensor 1

1. Locate the Sensor 1 Terminal Block on the Terminal Board.
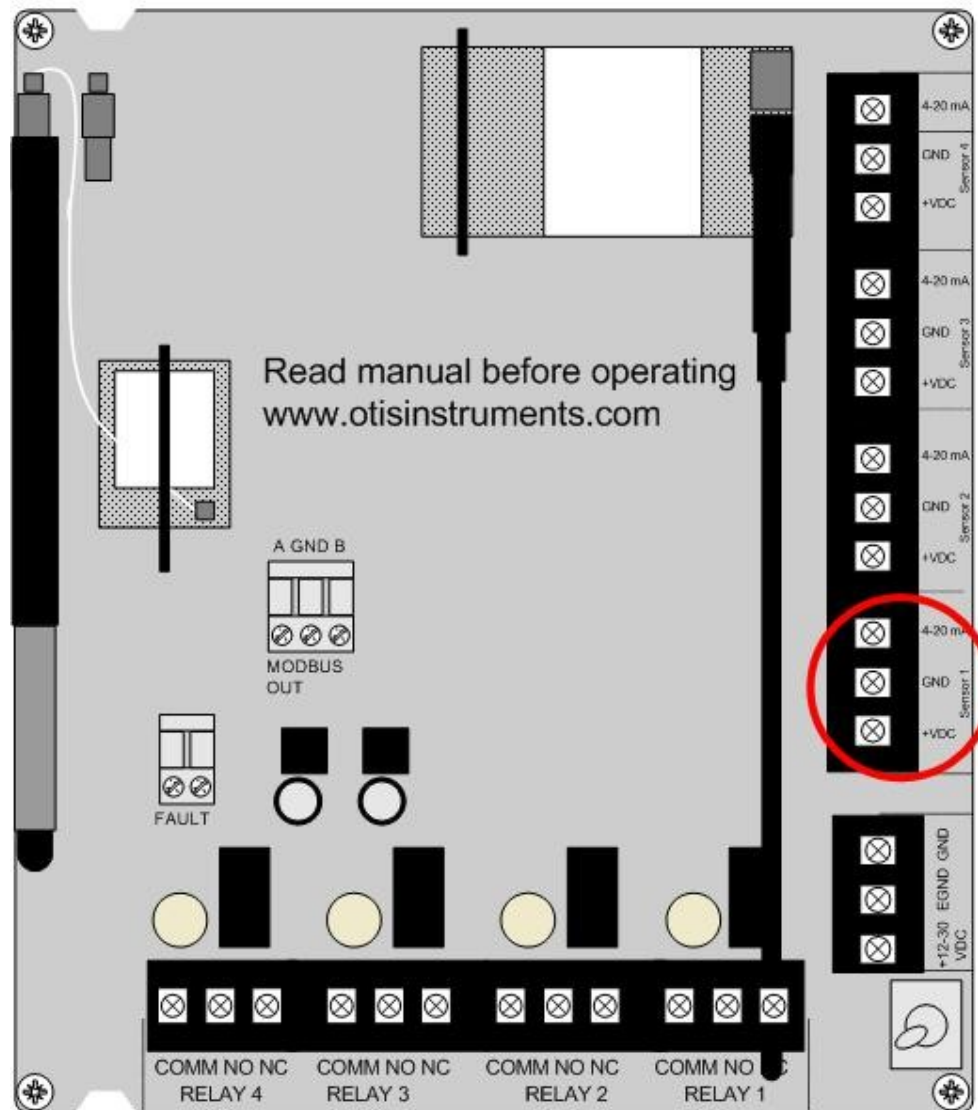
2. Connect the positive (red) wire to the terminal labeled "+VDC".
3. Connect the signal (green) wire to the terminal labeled "4-20mA".
4. Connect the neutral (black) wire to the terminal labeled "GND".
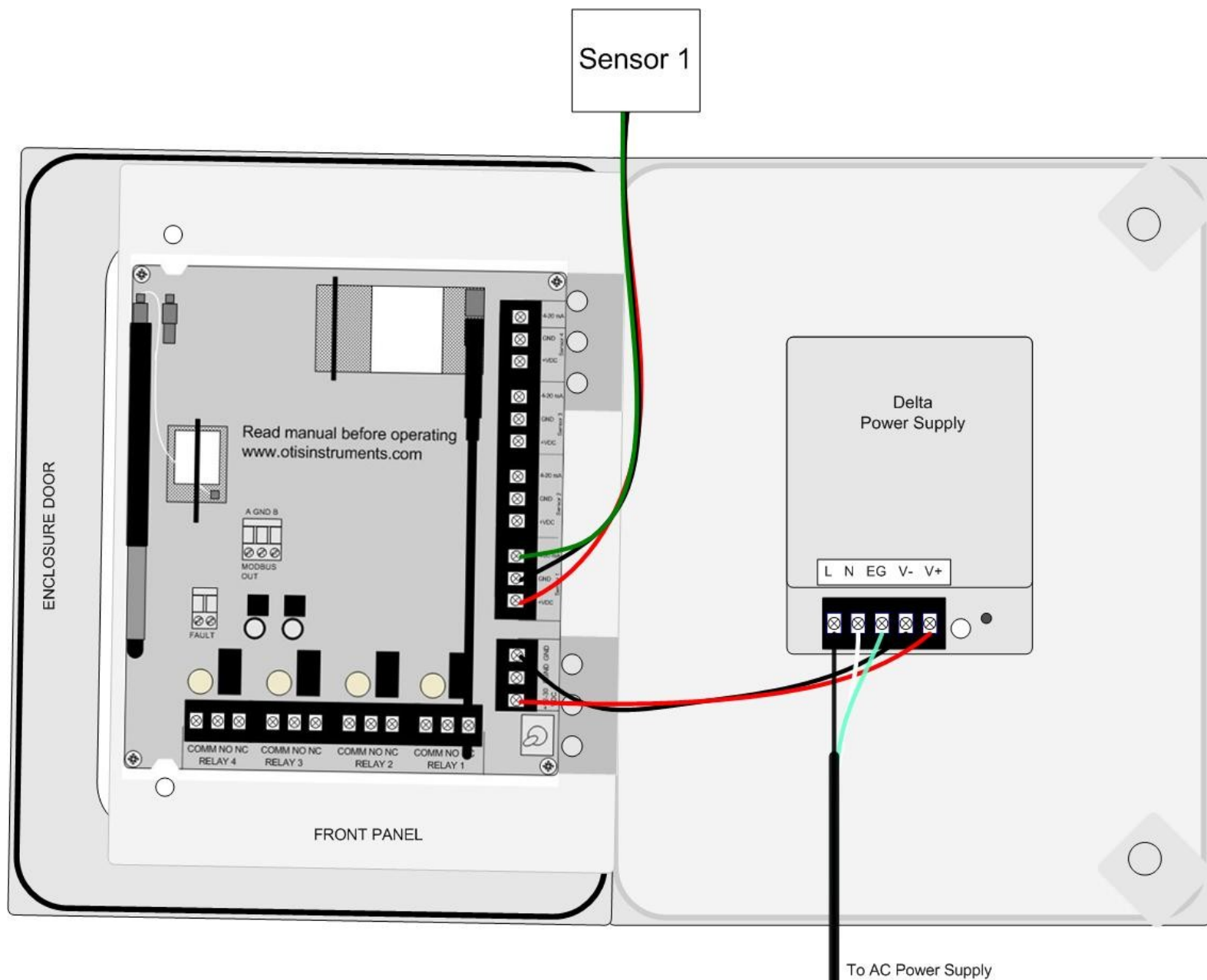
Connecting Sensor 2

1.   Locate the Sensor 2 Terminal Block on the Terminal Board.
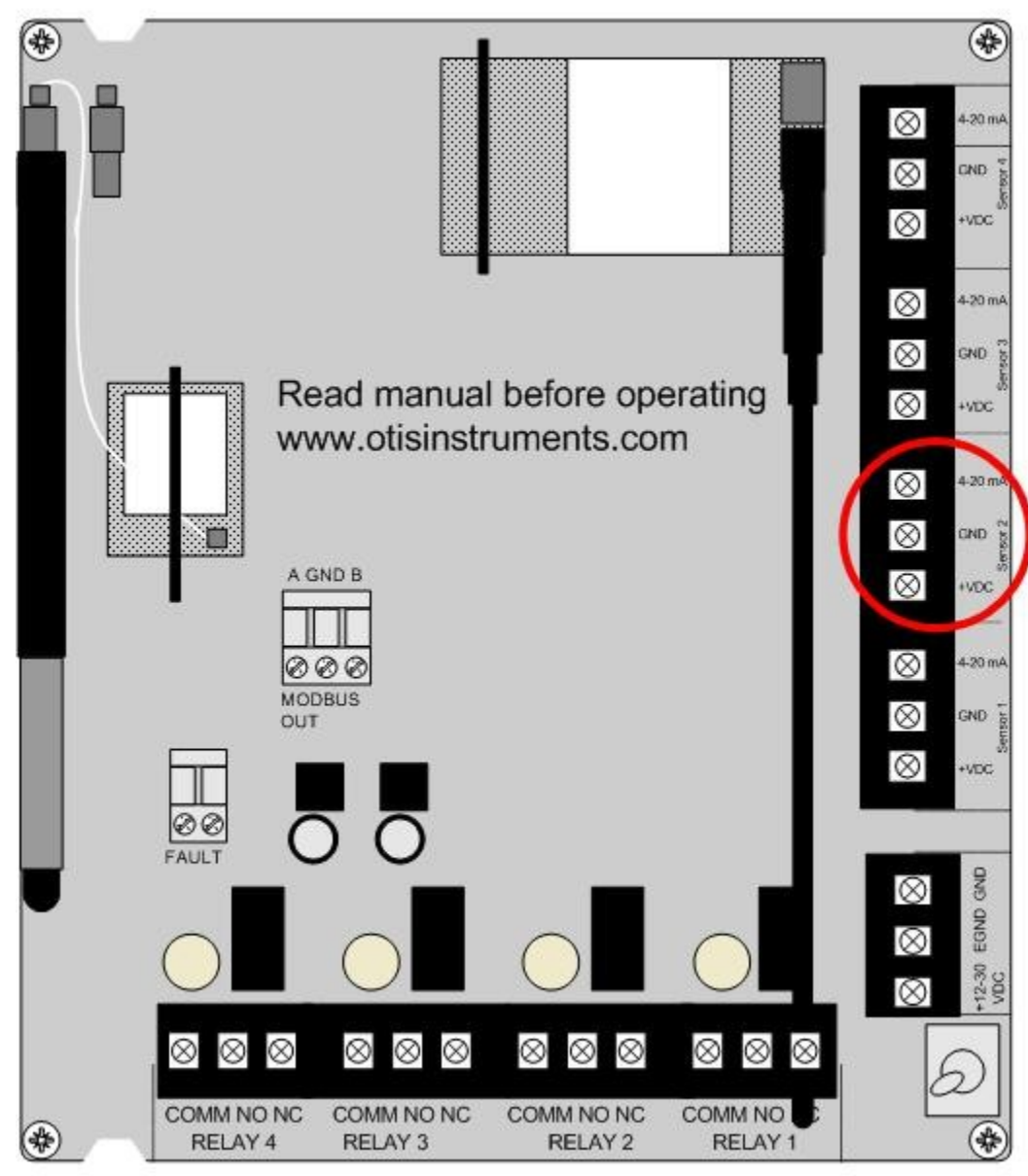
2.   Connect the positive (red) wire to the terminal labeled "+VDC".
3.   Connect the signal (green) wire to the terminal labeled "4-20mA".
4.   Connect the neutral (black) wire to the terminal labeled "GND".
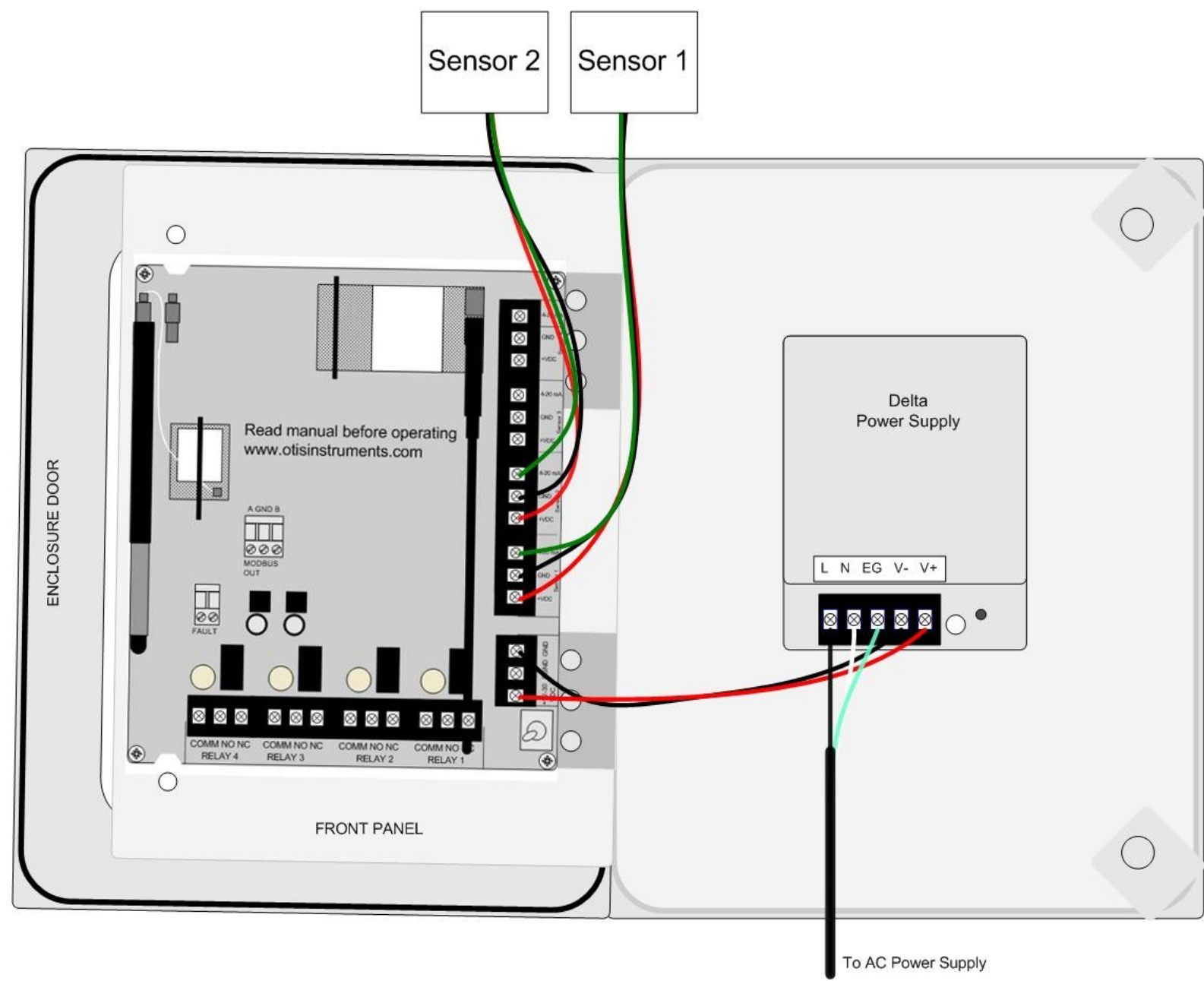
Connecting Sensor 3

1.   Locate the Sensor 3 Terminal Block on the Terminal Board.
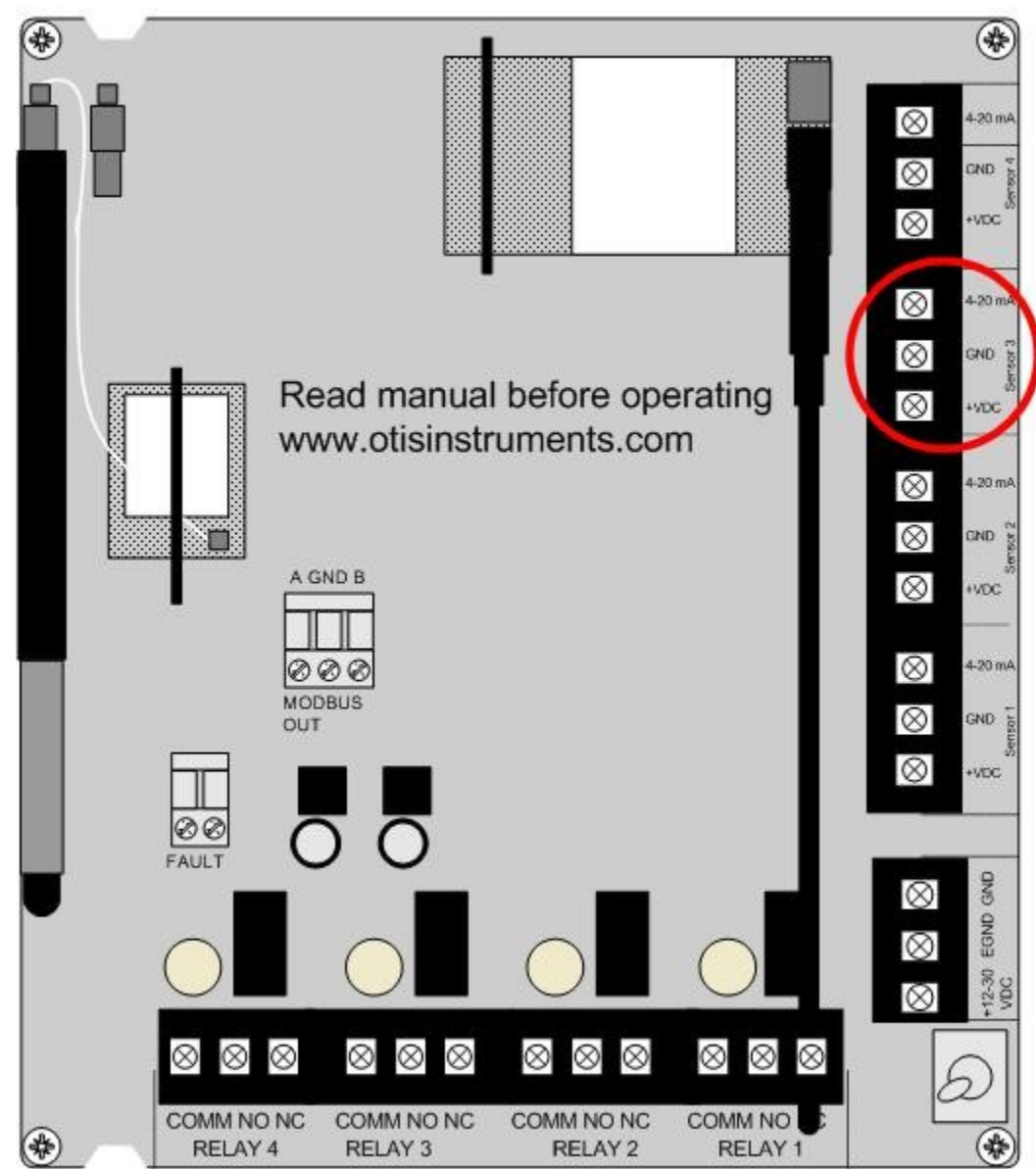
2.   Connect the positive (red) wire to the terminal labeled "+VDC".

3.   Connect the signal (green) wire to the terminal labeled "4-20mA".

4.   Connect the neutral (black) wire to the terminal labeled "GND".
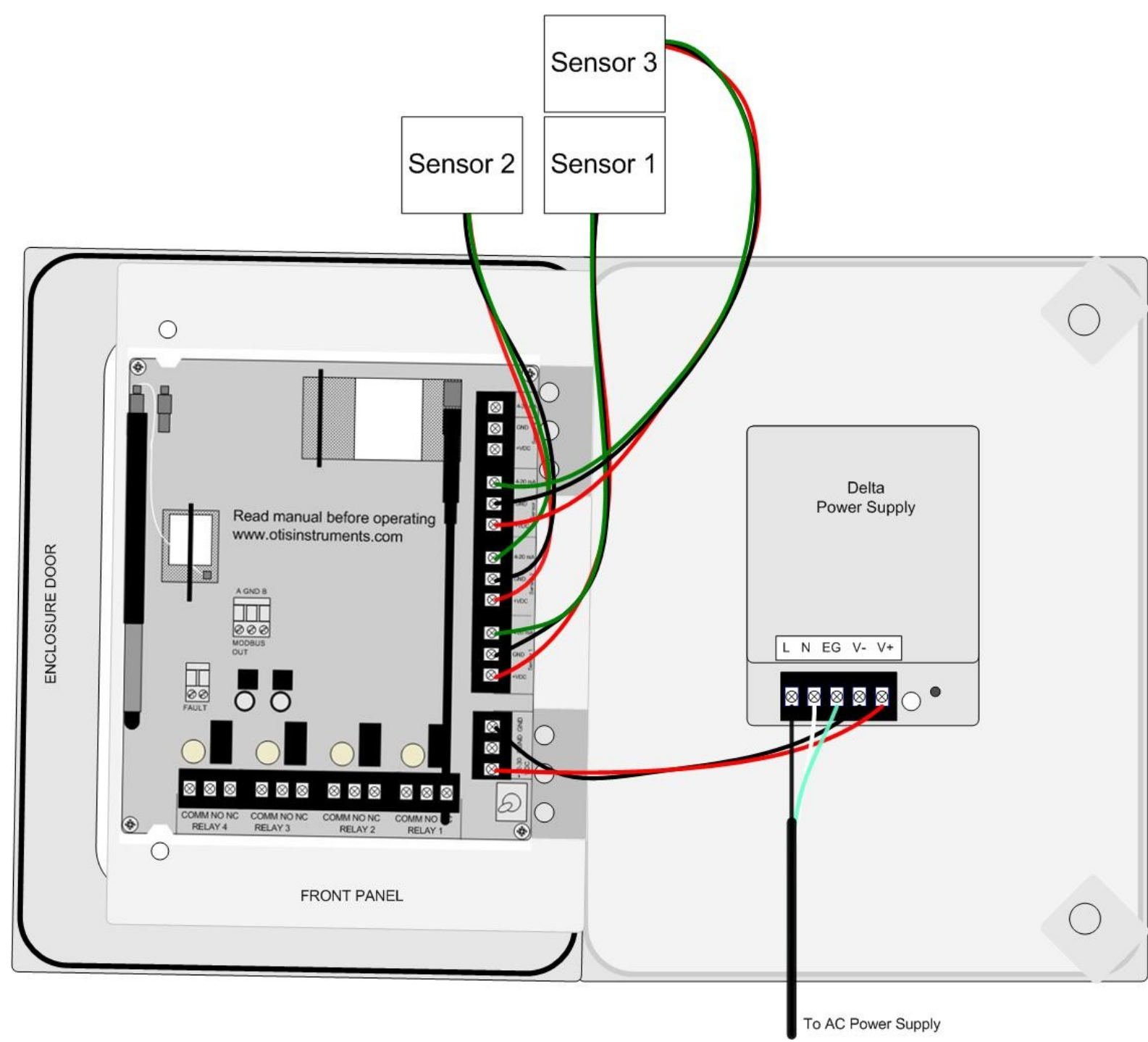
Connecting Sensor 4

1.   Locate the Sensor 4 Terminal Block on the Terminal Board.
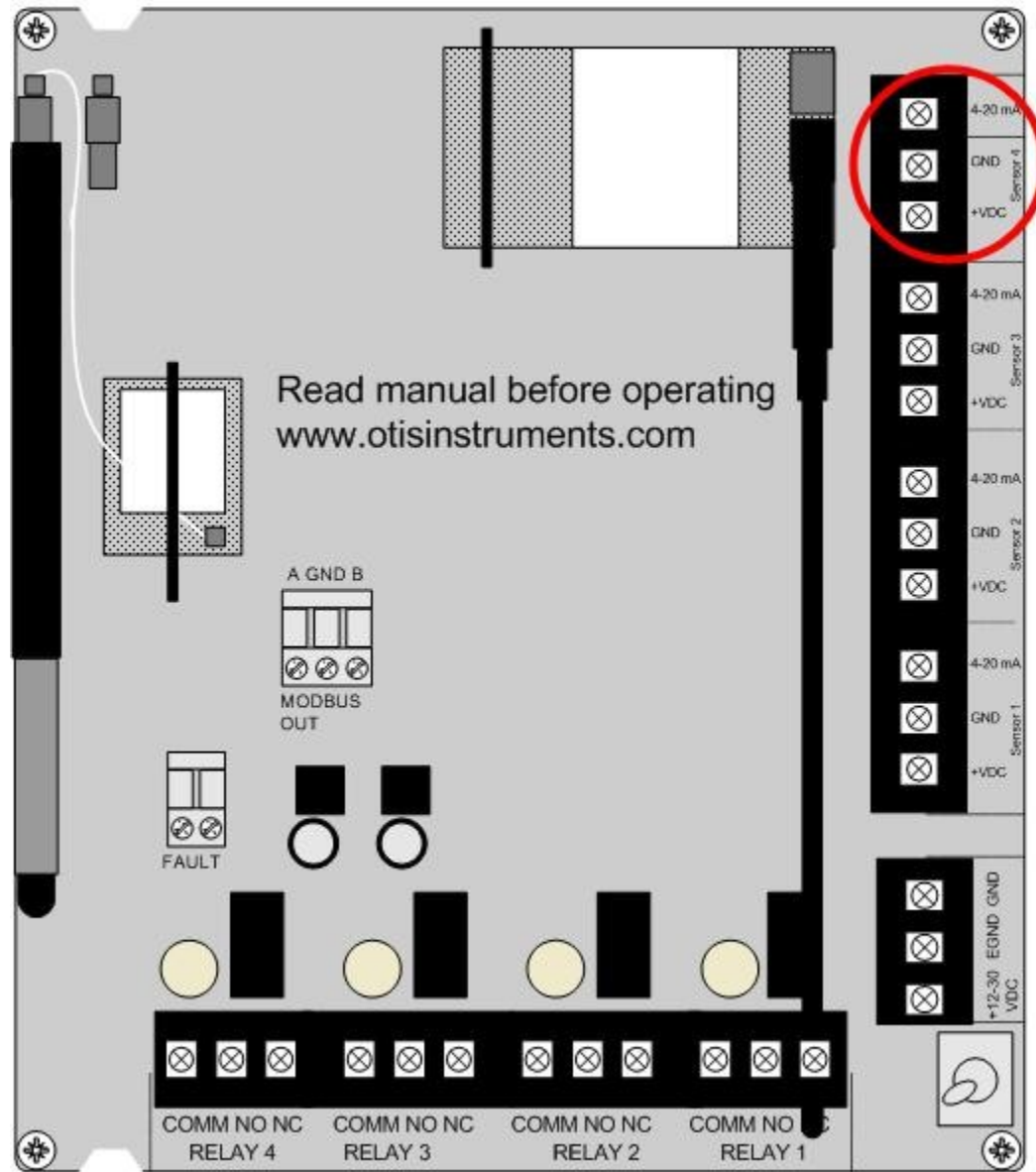
2.   Connect the positive (red) wire to the terminal labeled "+VDC".
3.   Connect the signal (green) wire to the terminal labeled "4-20mA".
4.   Connect the neutral (black) wire to the terminal labeled "GND".

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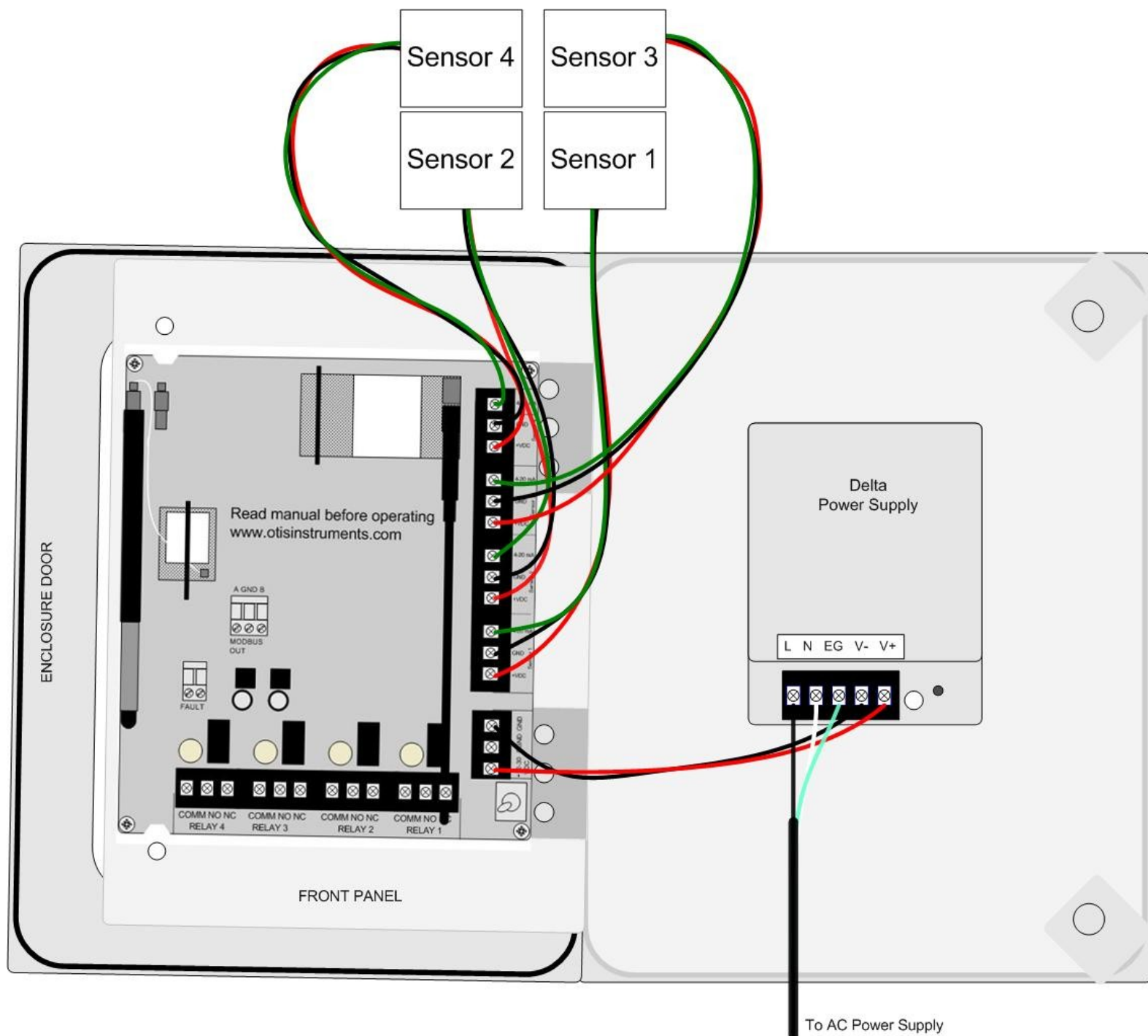
Relay Configurations

The OI-7010-X-X-X-X offers four relays to be setup. Each of the four relays may be setup as Normally Open (NO) or Normally Closed (NC).

Connecting Relay 1

1. Locate the Relay 1 Terminal Block on the Terminal Board.
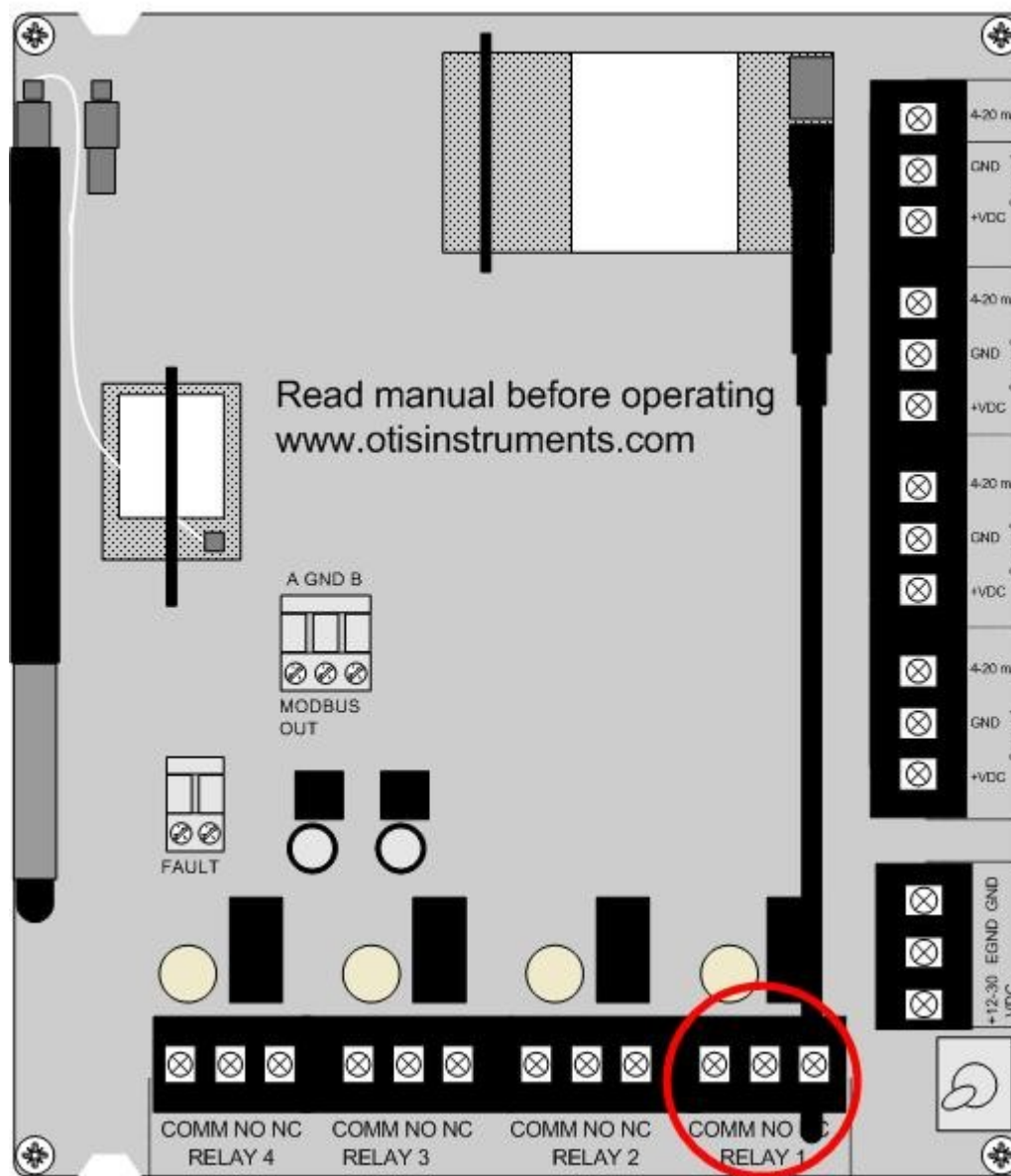
2. Connect the live wire (red) from the Relay 1 Alarm (light/horn) to the terminal labeled "NO" (or "NC") on the Relay 1 Terminal Block.

3. Connect the neutral wire (black) from the Relay 1 Alarm (light/horn) to the terminal labeled "GND" on the DC Power Supply Terminal Block.

4. Connect the jumper wire (blue) from the terminal labeled "+12-35 VDC" on the DC Power Supply Terminal Block to the terminal labeled "COM" on the Relay 1 Terminal Block.
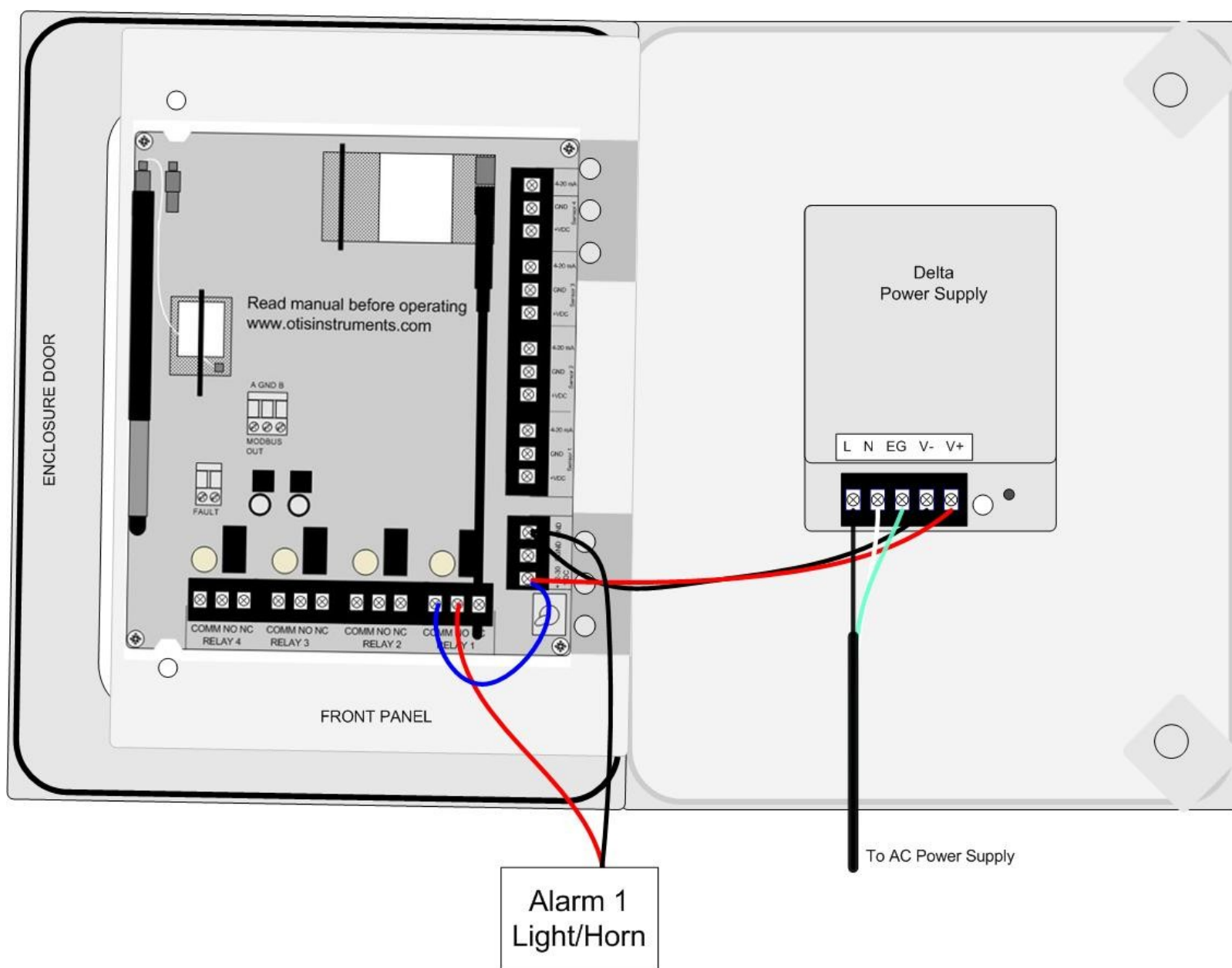
Connecting Relay 2

1. Locate the Relay 2 Terminal Block on the Terminal Board.
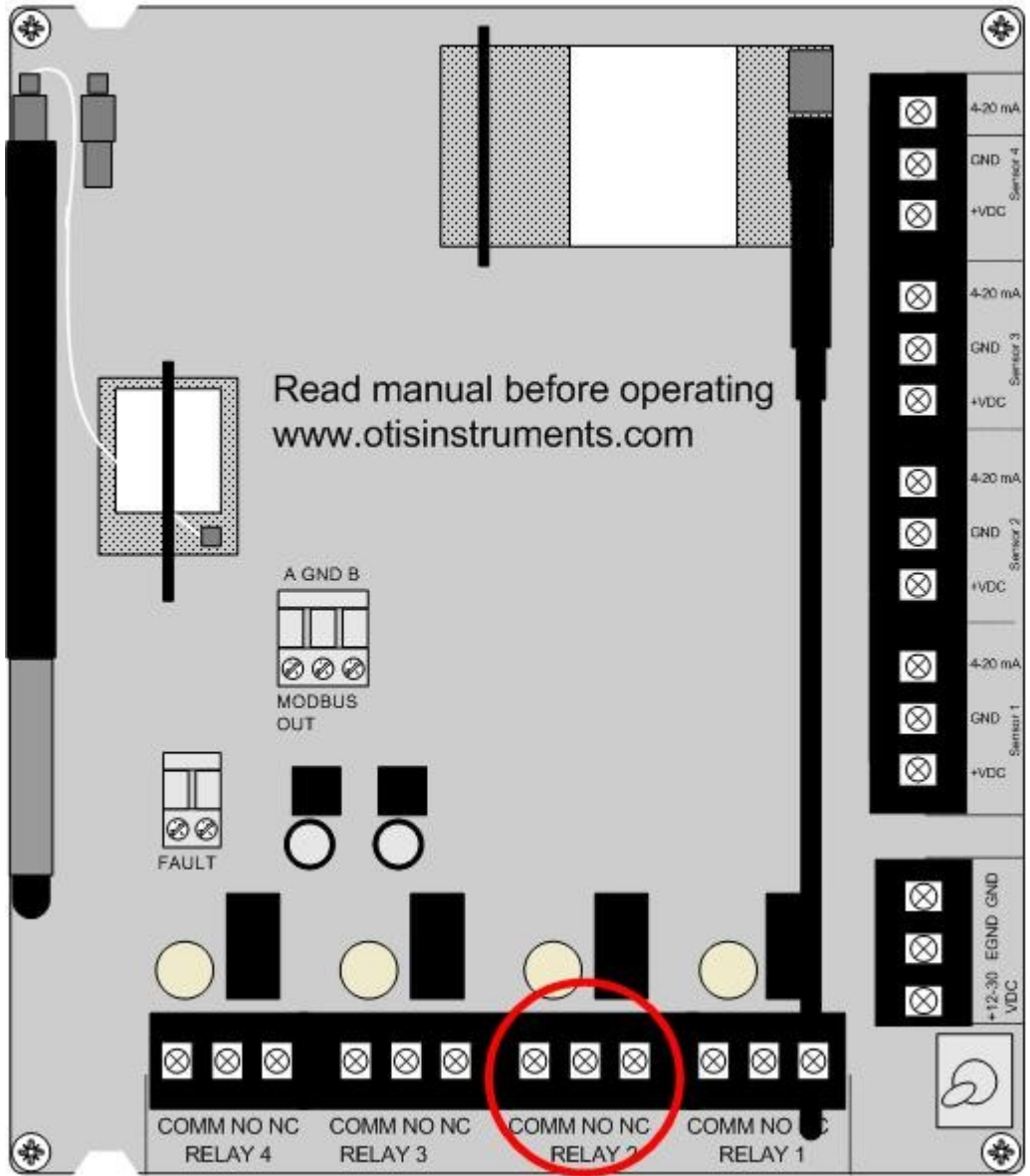
2. Connect the live wire (red) from the Relay 2 Alarm (light/horn) to the terminal labeled "NO" (or "NC") on the Relay 2 Terminal Block.

3. Connect the neutral wire (black) from the Relay 2 Alarm (light/horn) to the terminal labeled "GND" on the DC Power Supply Terminal Block.

4. Connect a jumper wire (blue) from the terminal labeled "COM" on the Relay 1 terminal block to the terminal labeled "COM" on the Relay 2 terminal block.
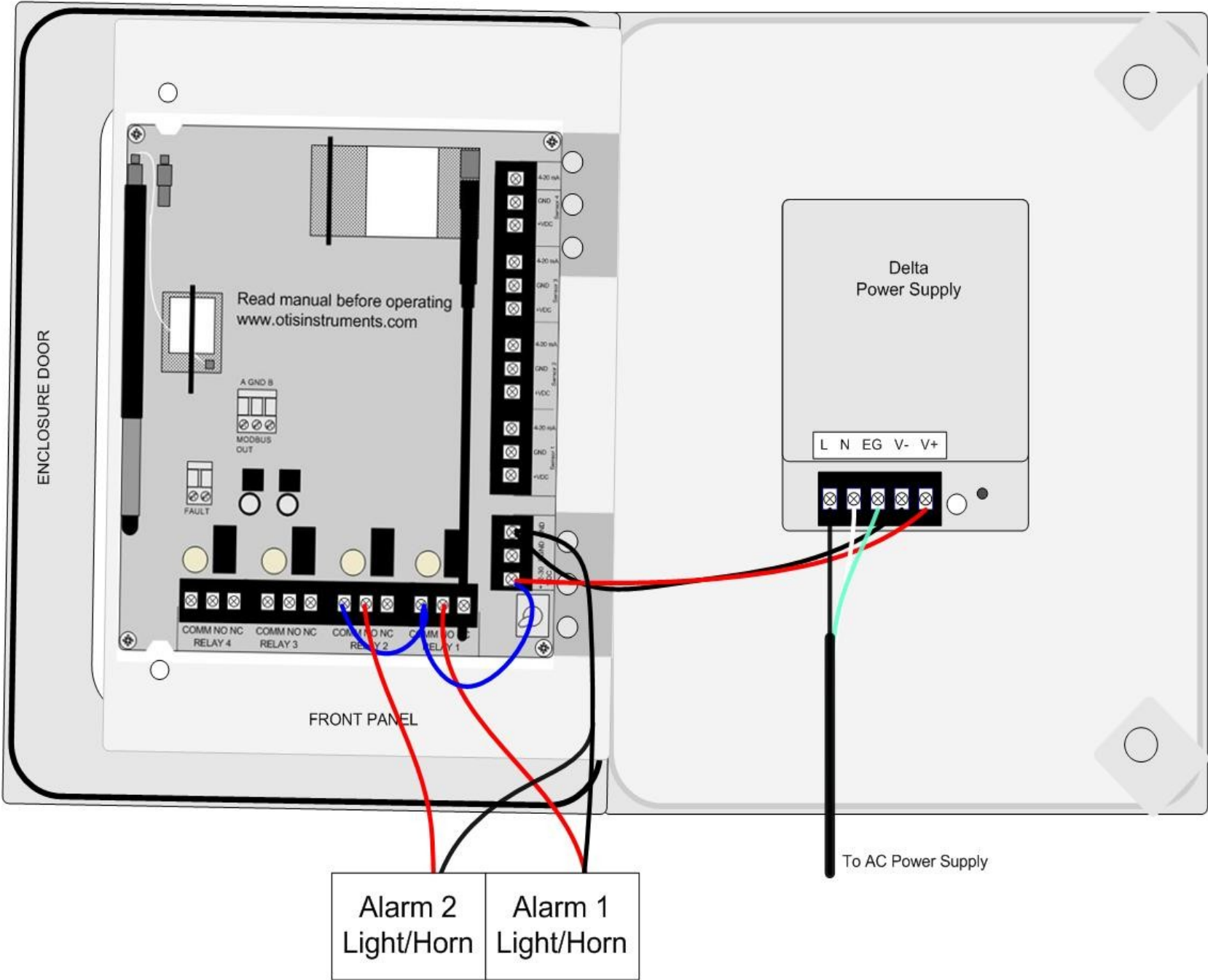
Connecting Relay 3

1. Locate the Relay 3 Terminal Block on the Terminal Board.
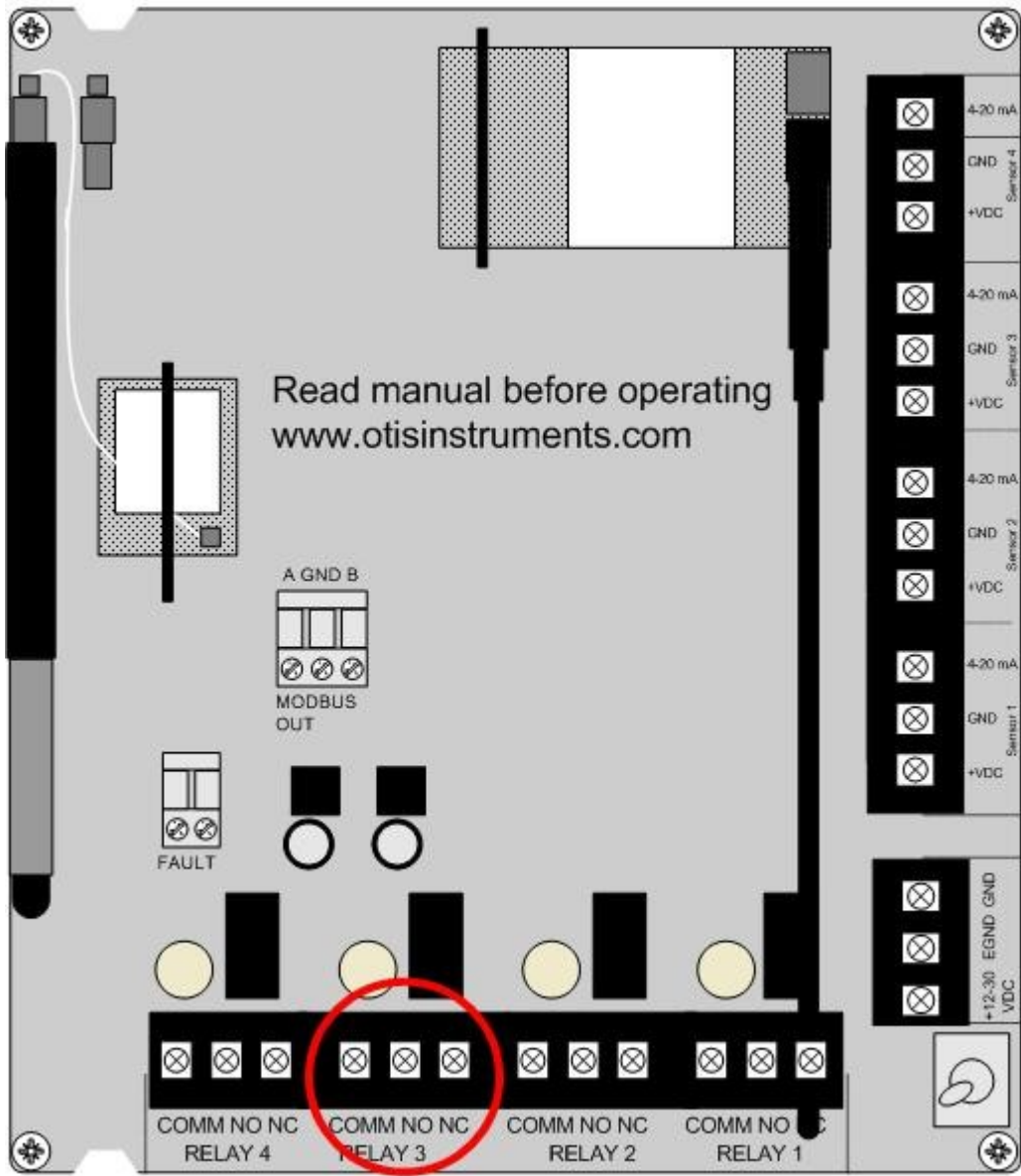
2. Connect the live wire (red) from the Relay 3 Alarm (light/horn) to the terminal labeled "NO" (or "NC") on the Relay 3 Terminal Block.

3. Connect the neutral wire (black) from the Relay 3 Alarm (light/horn) to the terminal labeled "GND" on the DC Power Supply Terminal Block.

4. Connect a jumper wire (blue) from the terminal labeled "COM" on the Relay 2 terminal block to the terminal labeled "COM" on the Relay 3 terminal block.
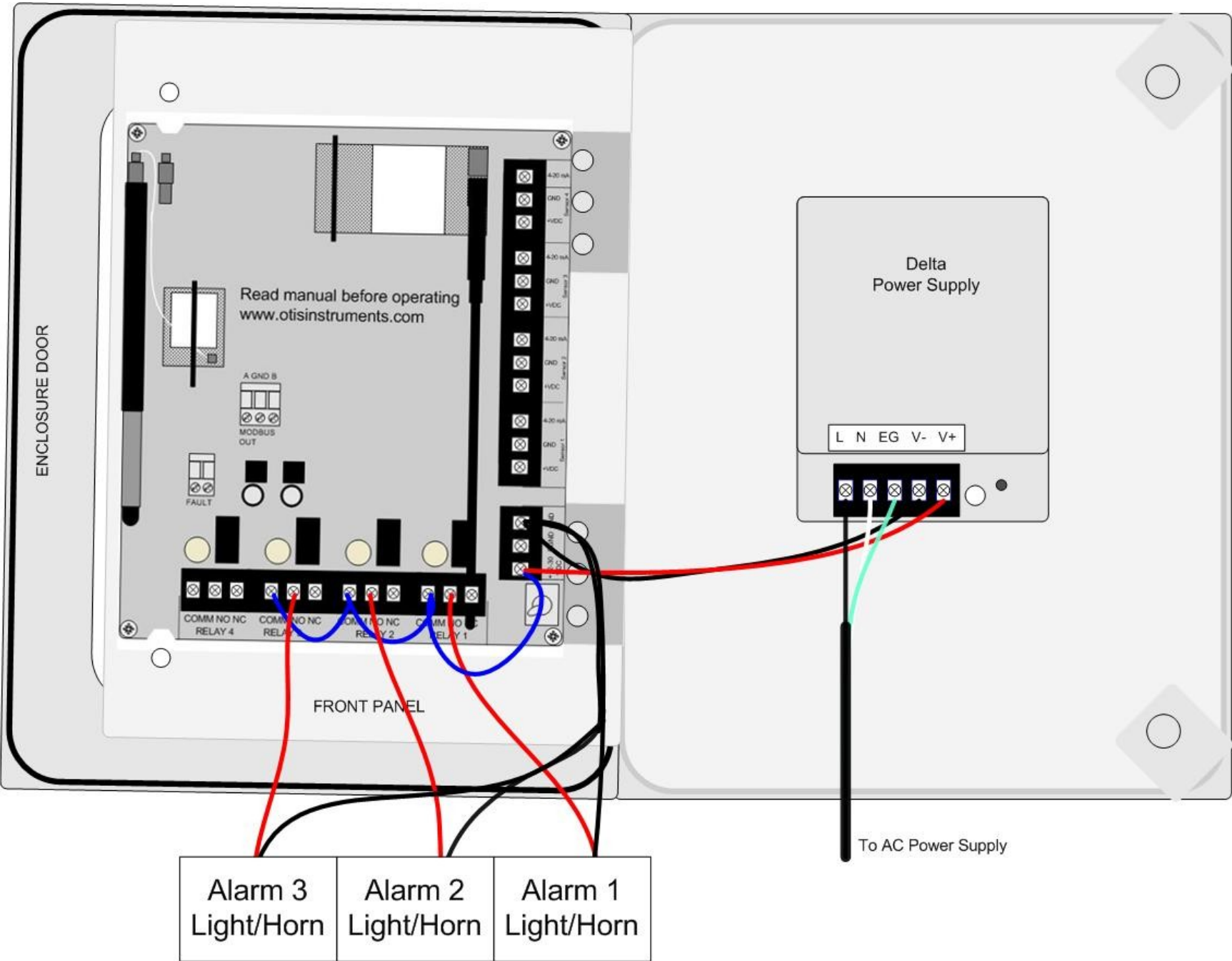
Connecting Relay 4

1. Locate the Relay 4 Terminal Block on the Terminal Board.
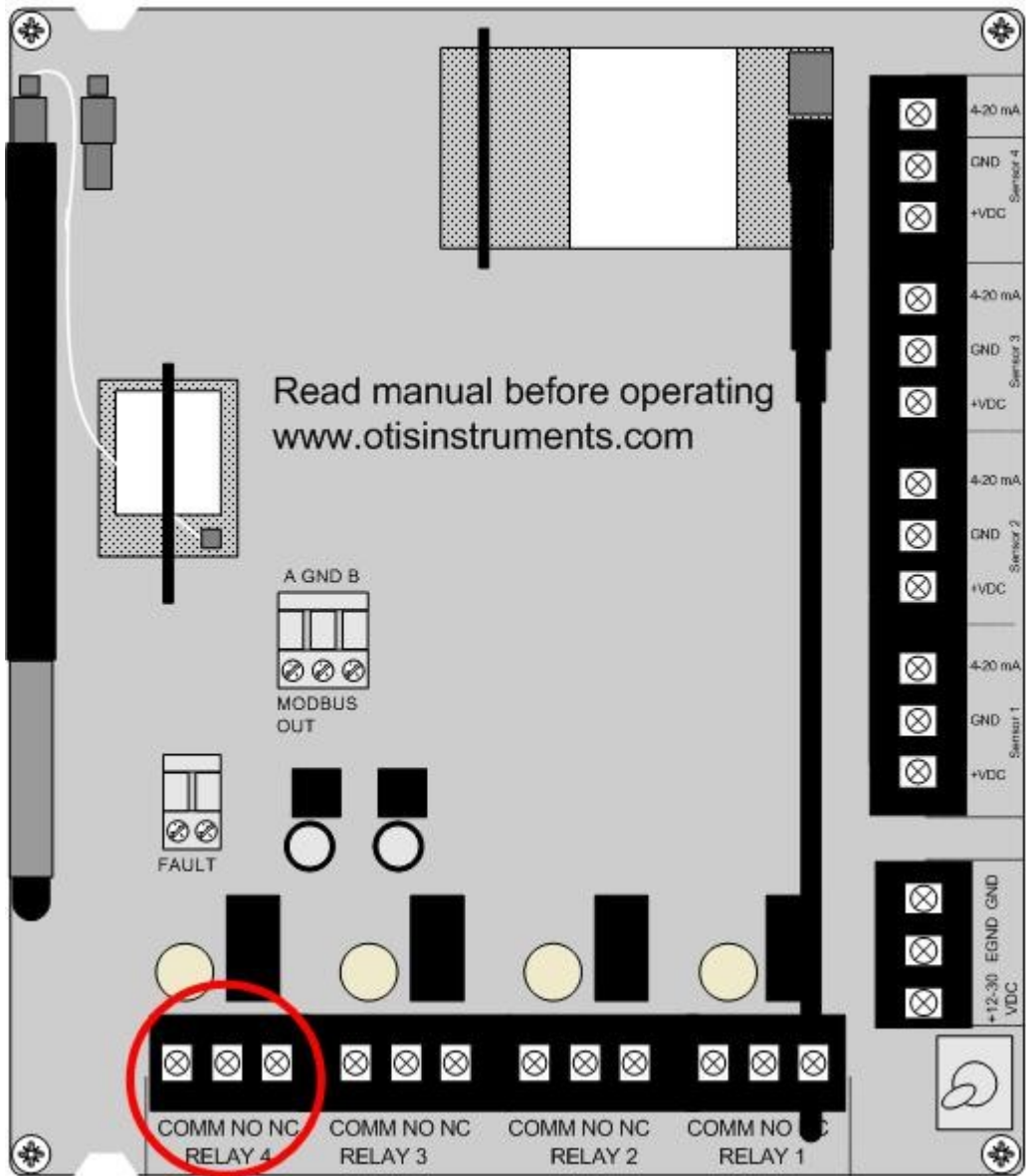
2. Connect the live wire (red) from the Relay 4 Alarm (light/horn) to the terminal labeled "NO" (or "NC") on the Relay 4 Terminal Block.

3. Connect the neutral wire (black) from the Relay 4 Alarm (light/horn) to the terminal labeled "GND" on the DC Power Supply Terminal Block.

4. Connect a jumper wire (blue) from the terminal labeled "COM" on the Relay 3 terminal block to the terminal labeled "COM" on the Relay 4 terminal block.
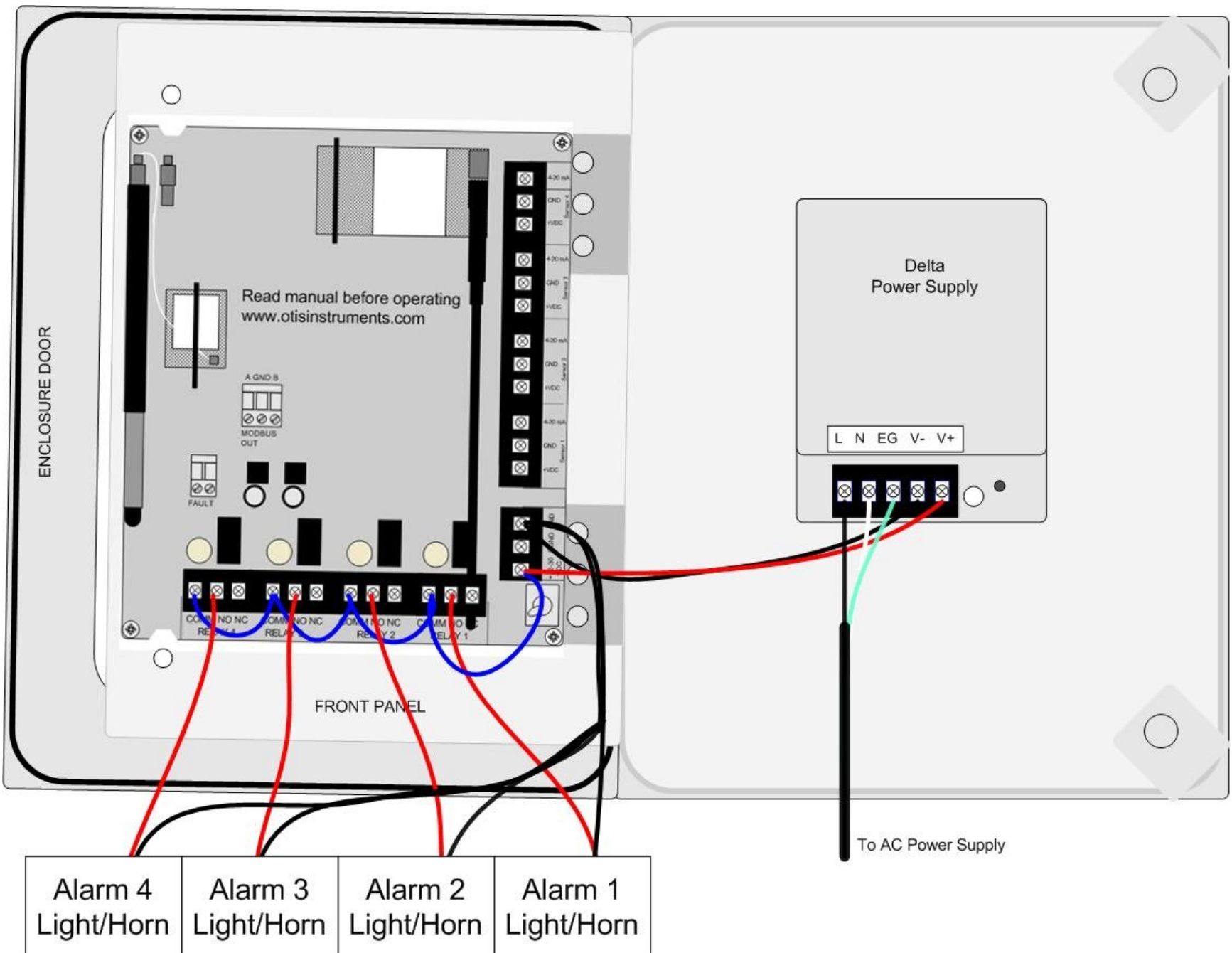
Connecting 4 Relays (AC Diagram)
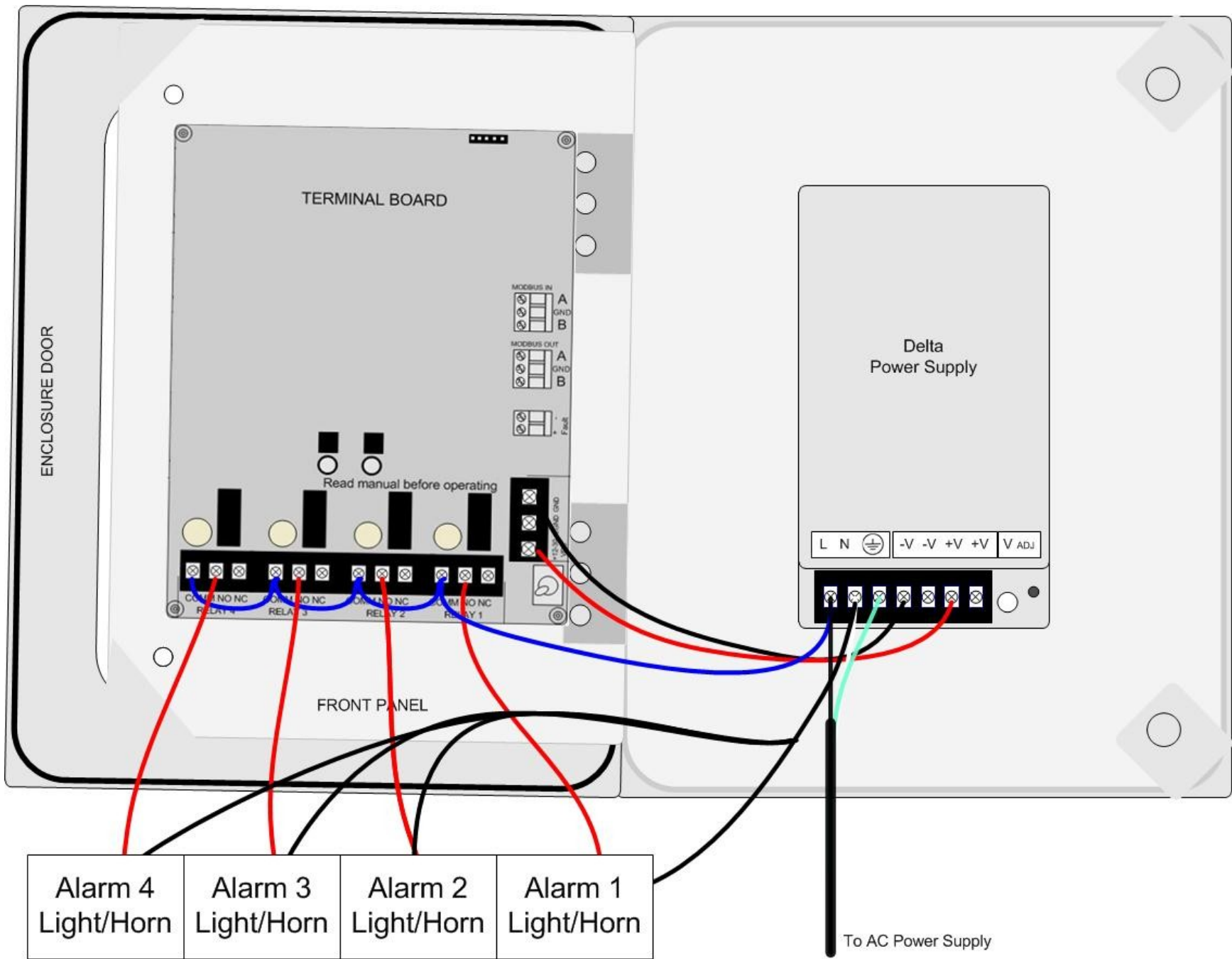
Power On/Off

Powering on the device activates its functions. When powered on, the device is fully functional and access to system and settings menus is allowed.

Once power is supplied to the OI-7010-X-X-X-X—by being plugged into an AC outlet or by being wired to a DC power supply—the display screens and LEDs will illuminate.

To cycle the Terminal Board power, flip the Power Switch (located on the lower right side of the Terminal Board) to the OFF (and then ON) position.
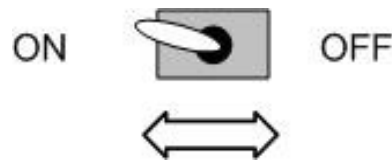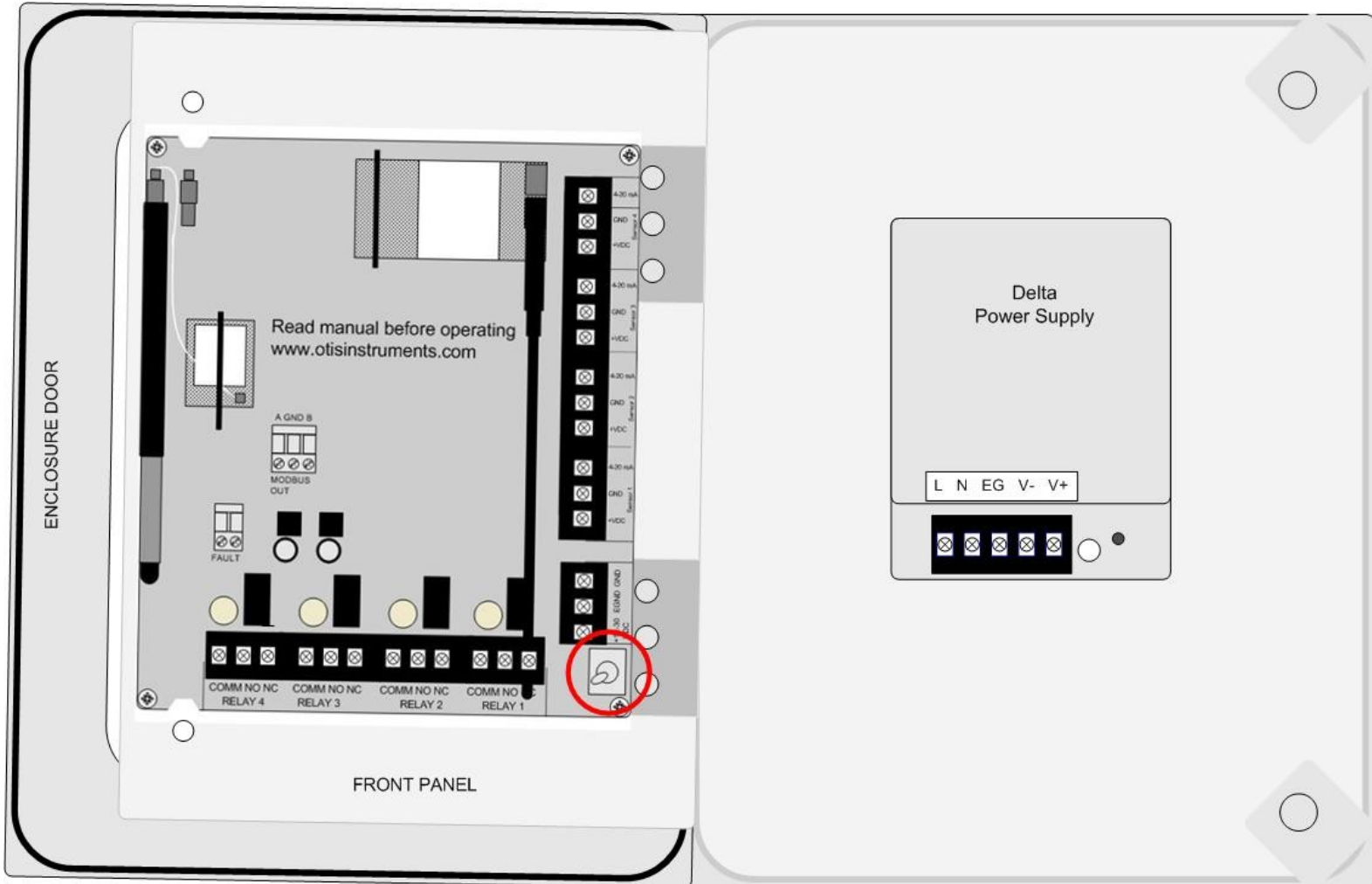
Normal Operating Mode

The OI-7010-X-X-X-X can receive a total of 12 (or 32) sensor assemblies: up to 12 (or 32) WireFree sensor assemblies and up to four wired (4-20mA) sensor assemblies. When in Normal Operating Mode, configured channels are scanned through every three seconds. When in Normal Operating Mode, the following items are displayed for each channel—two channels at a time, one channel per display screen:

- Channel
- Address
- Gas Reading
- Time Since Last Transmission
- Battery Voltage of the Displayed Sensor Assembly
- Fault (if any)
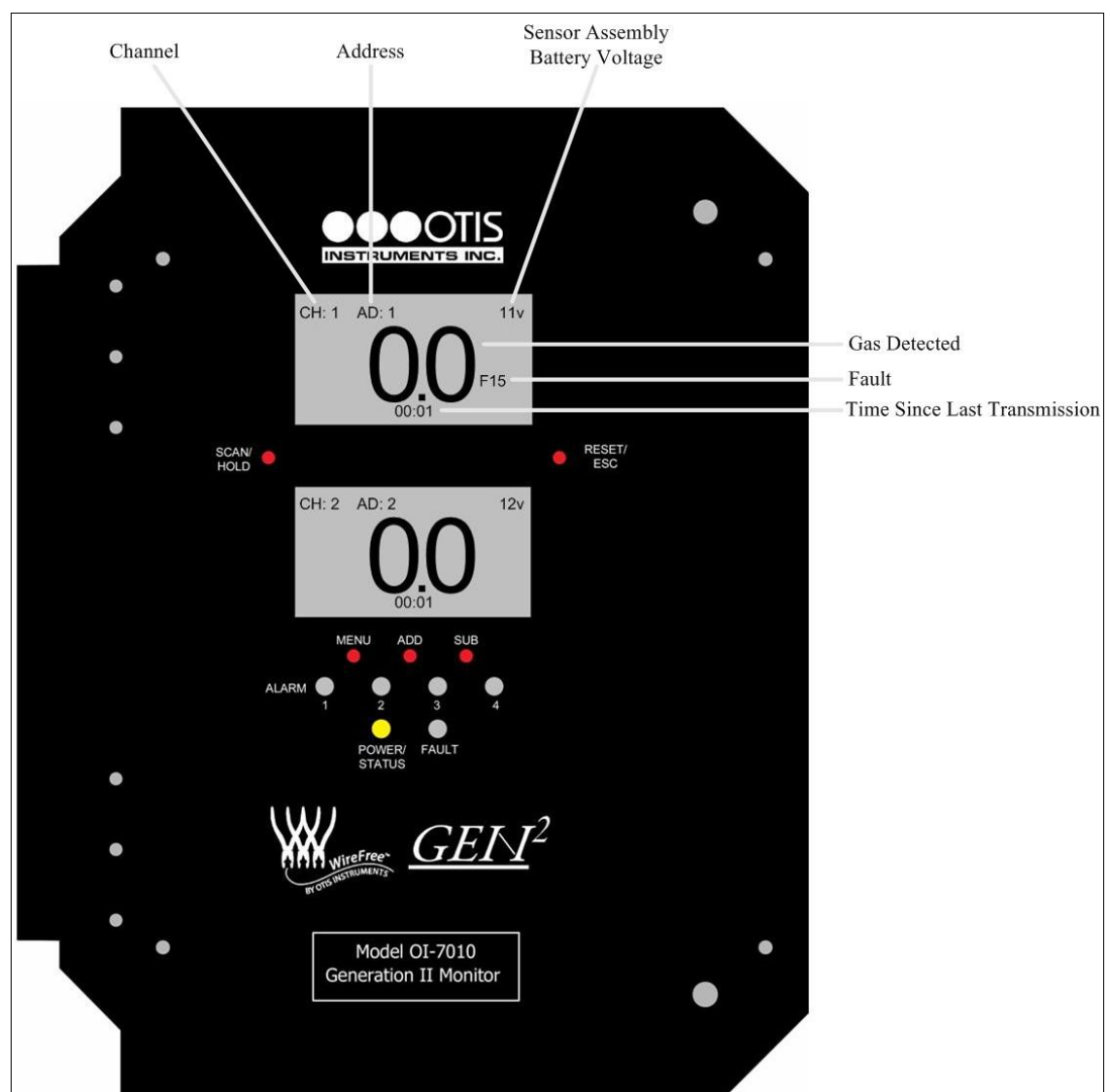
The following illustration shows the OI-7010-X-X-X-X in Normal Operating Mode. In this illustration, sensor assembly 1 is in Fault, sensor assembly 2 is not in Fault.

Channel Configuration Menu – Channel Setup

The Channel Configuration Menu is used to setup individual channels (per sensor).

Entering Channel Configuration Menu

1. Open the enclosure box to expose the Front Panel. The display screens will resemble the following illustration:
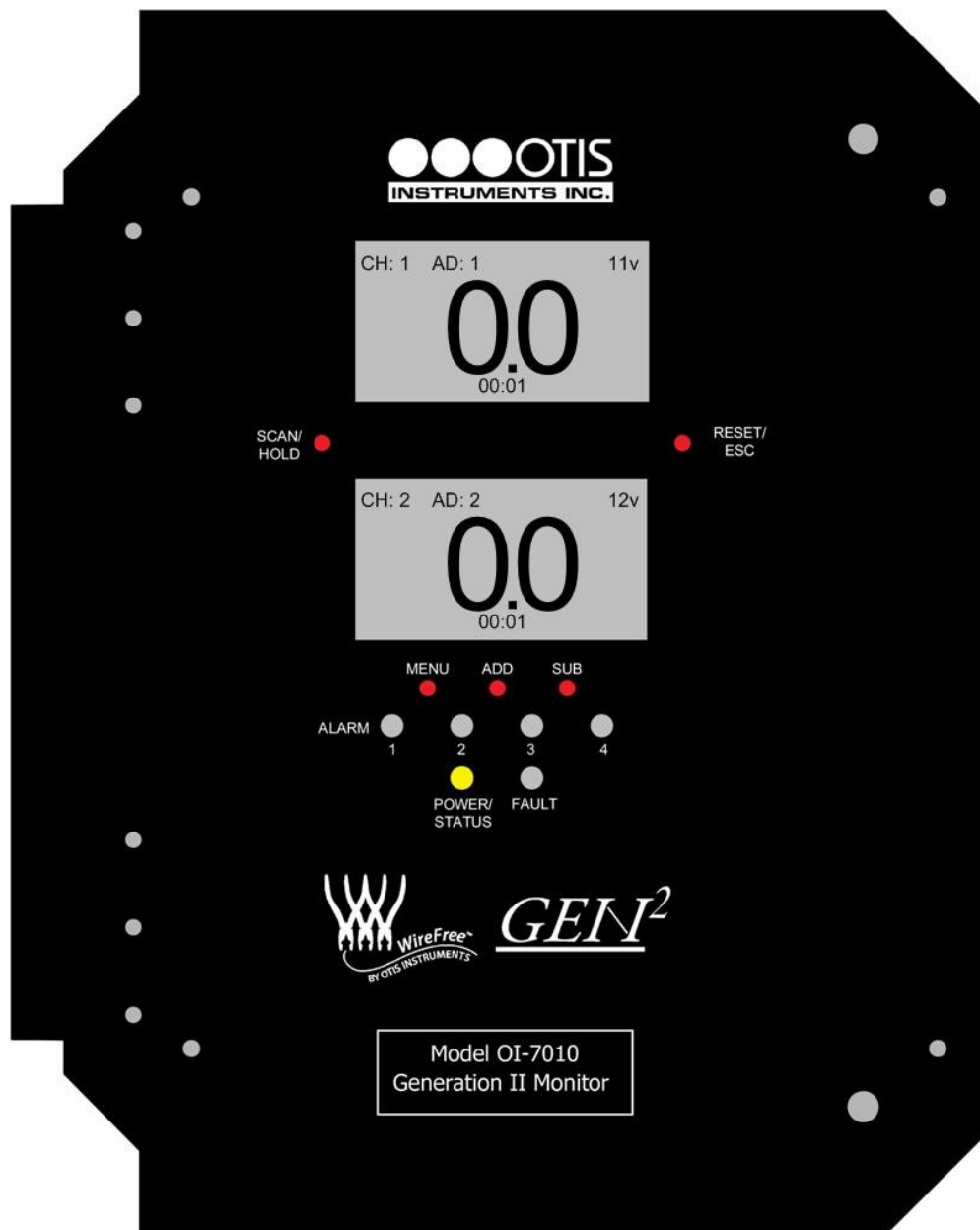
2. Press and hold *MENU, ADD* and *SUB* for five seconds.
3. Once in the Channel Configuration Menu, complete the next steps in this section. The user must complete the following tasks for EACH sensor (up to 12 WireFree; the last four channels (9-12) may be setup for wired sensors).

NOTE: Only one channel may be setup at a time; to setup additional channels, repeat the process (in its entirety) for each additional channel, or use the "Duplicate Settings" feature as explained in this section of the Operation Manual..
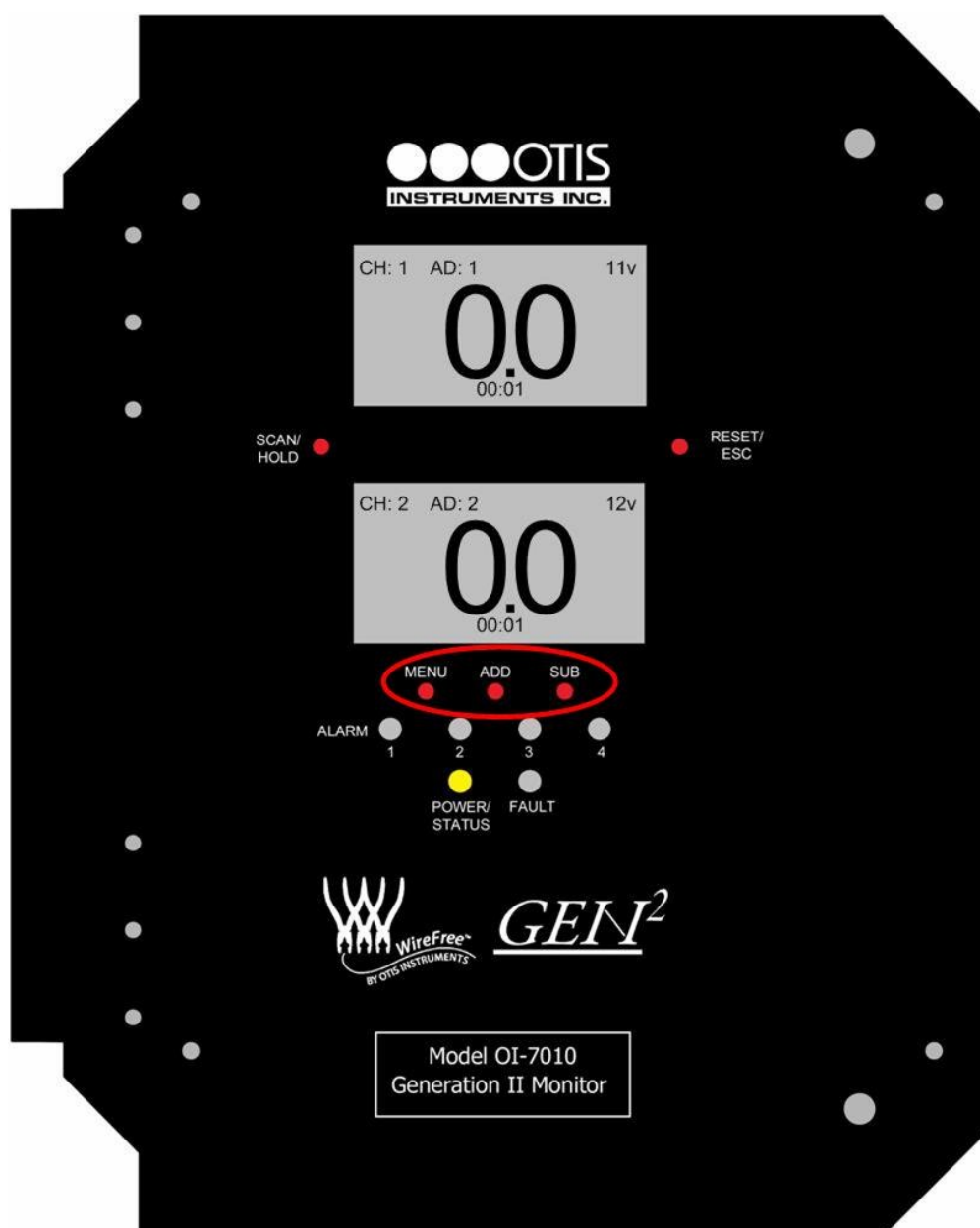
Channel Selection

1. Press *ADD* (increase) or *SUB* (decrease) to choose the channel to configured.
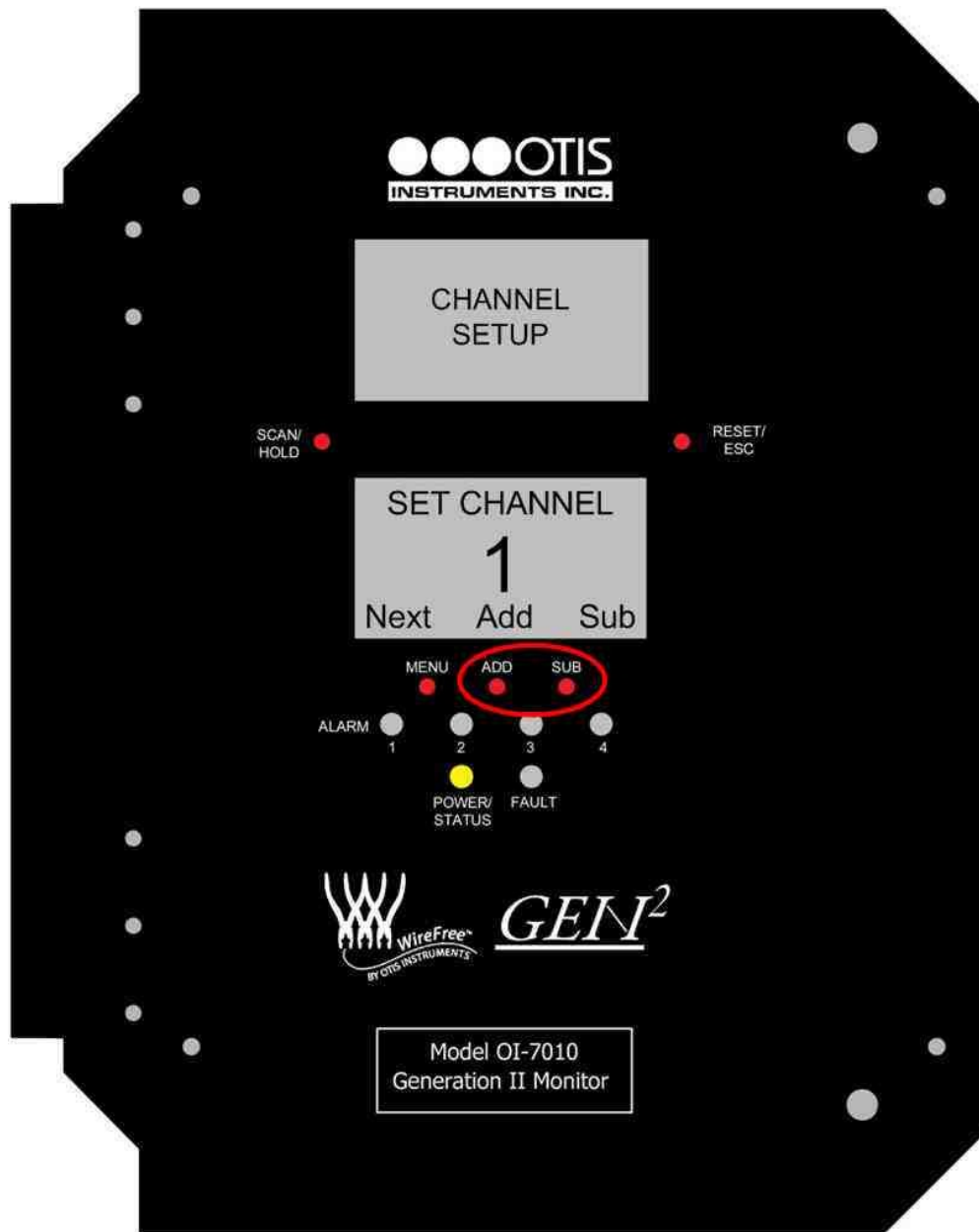
2. When the desired channel is displayed, press *MENU* (next) to continue to the next menu option.

Channel On/Off

1. Press *ADD* or *SUB* to manipulate the channel's On/Off status.
2. Press *MENU* (next) to continue to the next menu option.
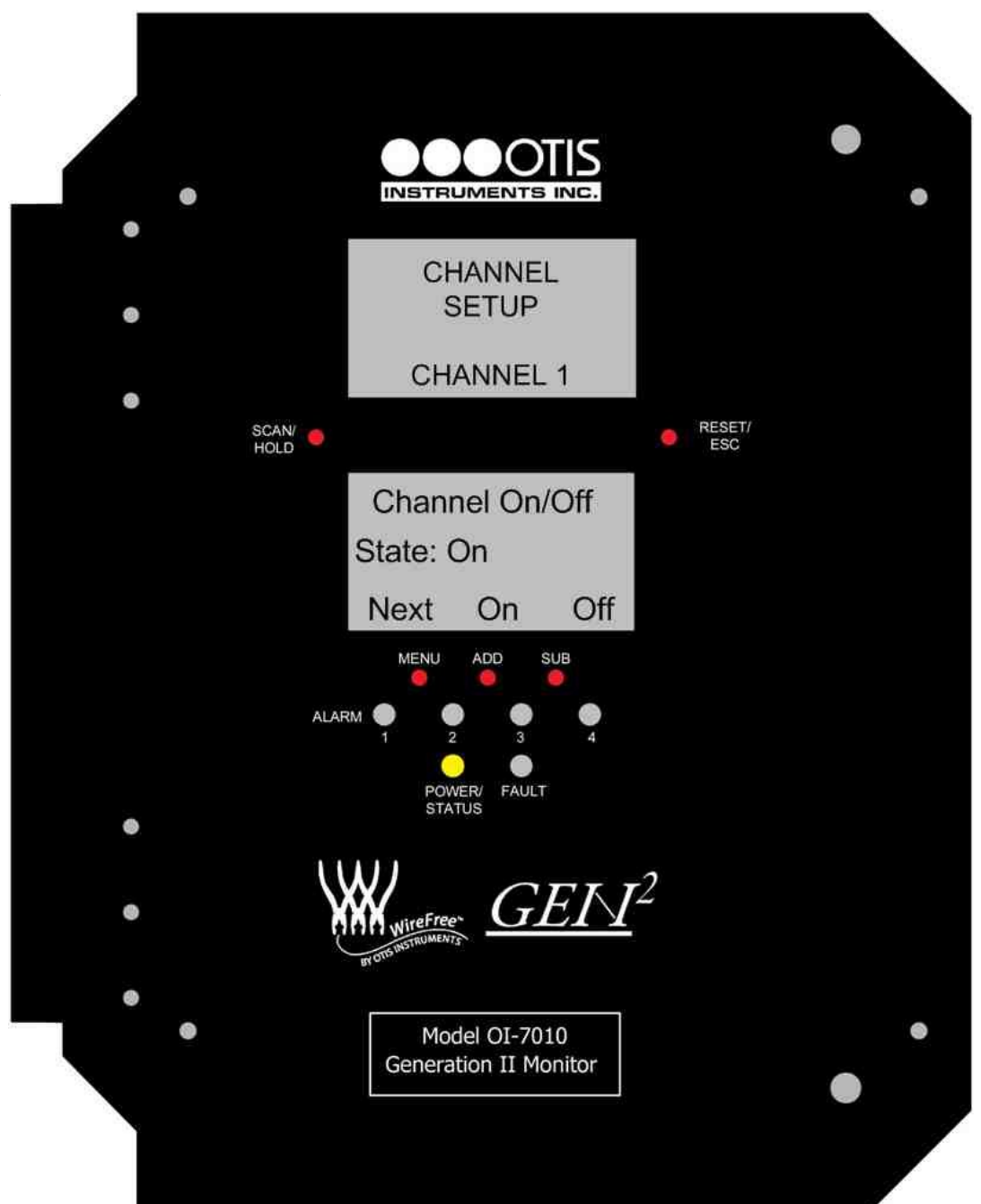
Channel Type: Wired or WireFree (Channels 9-12 Only)

NOTE: For WireFree settings, skip to page 44.

1. Press *ADD* or *SUB* to manipulate the channel type as "Wired (4-20mA)" or "WireFree".
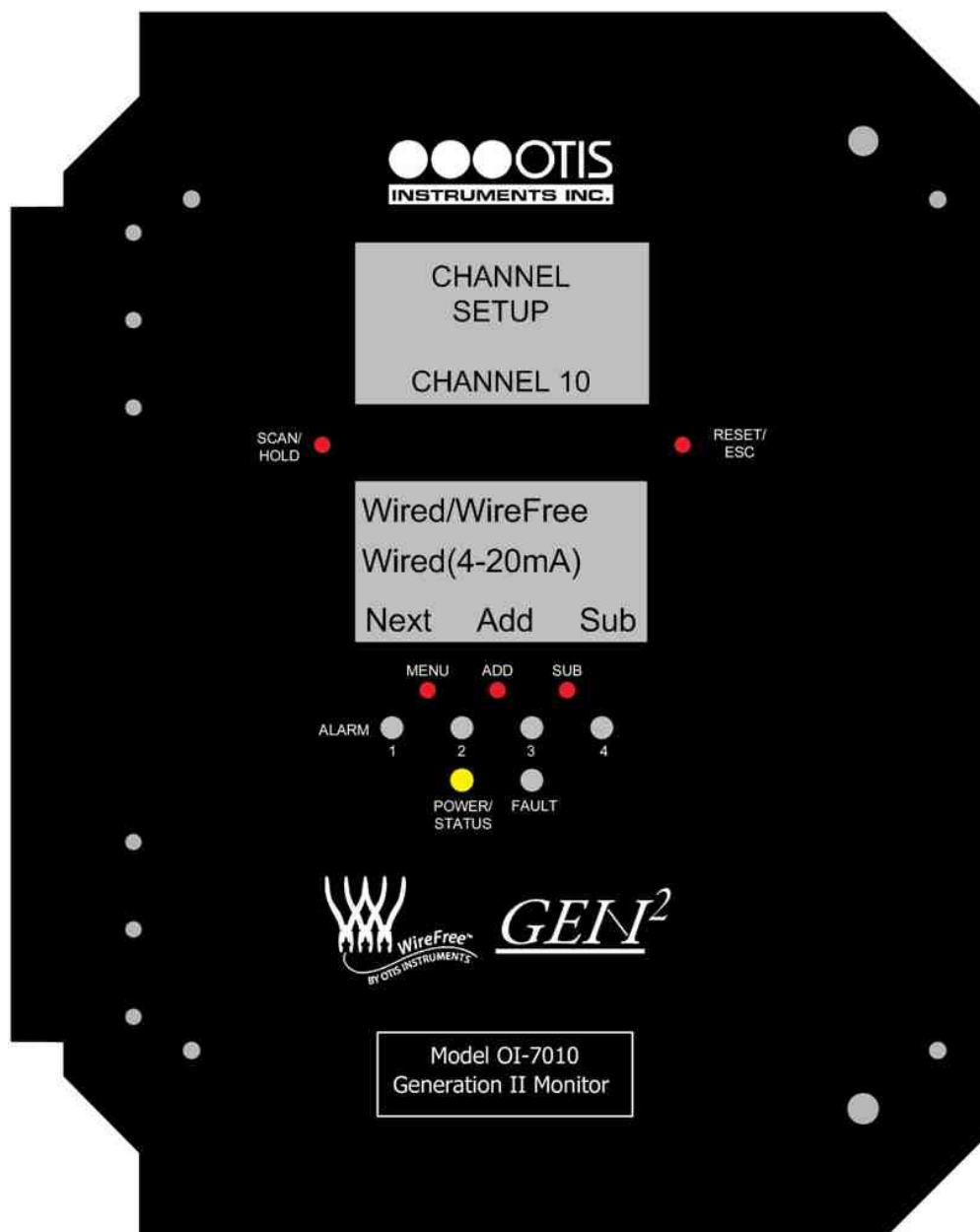
2. Press *MENU* (next) to continue to the next menu option.

Set Sensor Type (wired only)

1. Press *ADD* or *SUB* to specify what the sensor will see. Options include: H2S, SO2, O2, CO, Cl2, CO2, LEL, VOC, FEET, HCl, NH3, H2, or None.
2. Press *MENU* (next) to continue to the next menu option.
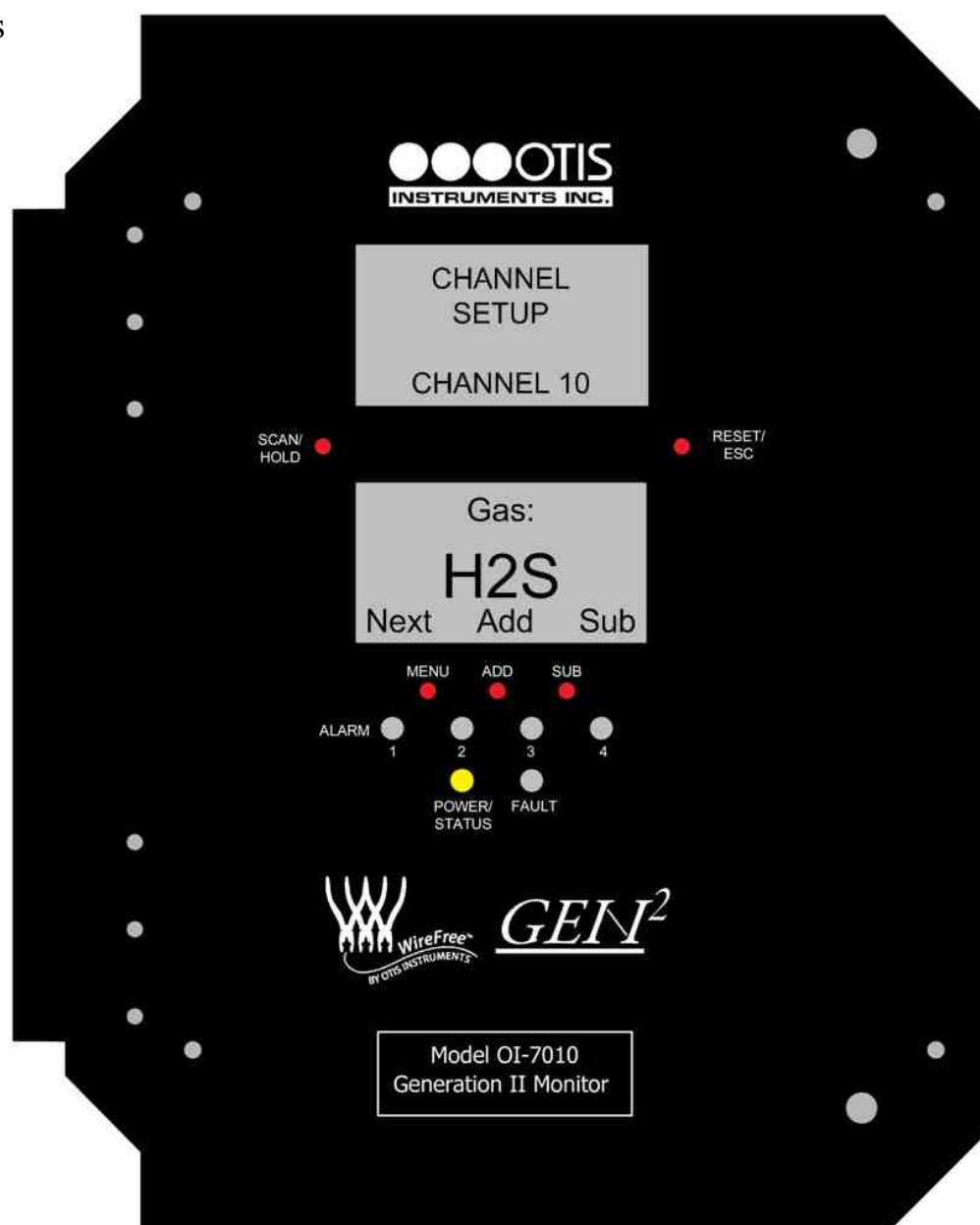
Set Scale (wired only)

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the wired sensor's scale (1-65,000).
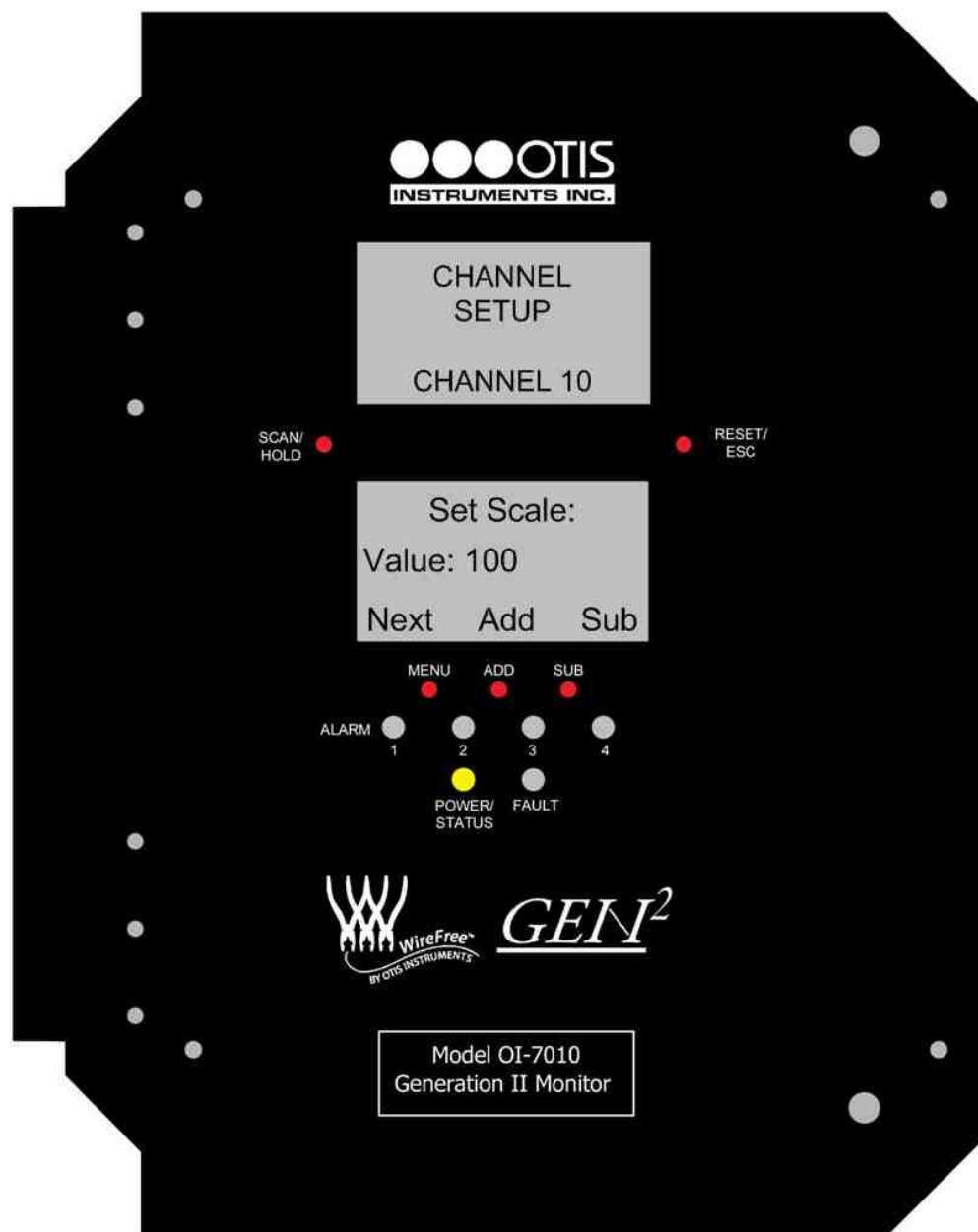
2. Press *MENU* (next) to continue to the next menu option.

Set # of Decimals (wired only)

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the display screen's number of decimals. The number of decimals available to be set will depend on the previously set scale.

- 3 decimals: Scale 1 or less
- 2 decimals: Scale 10 or less
- 1 decimal: Scale 100 or less
- 0 decimal: Scale greater than 100 (the Set # of Decimals option will not show up in this case)

2. Press *MENU* (next) to continue to the next menu option, then skip to the next section.
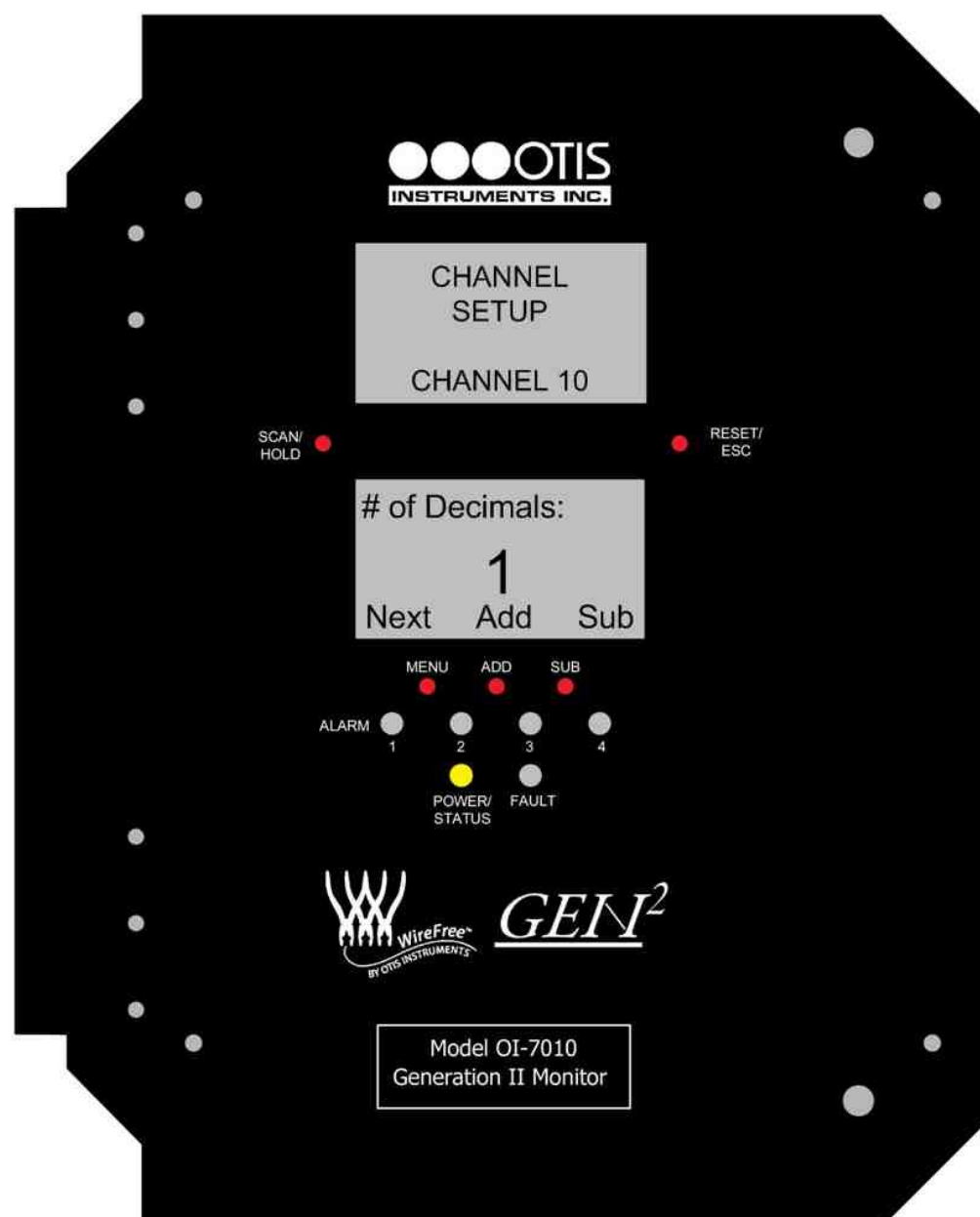
Set Radio Address (WireFree only)

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the Radio Address (1-255).
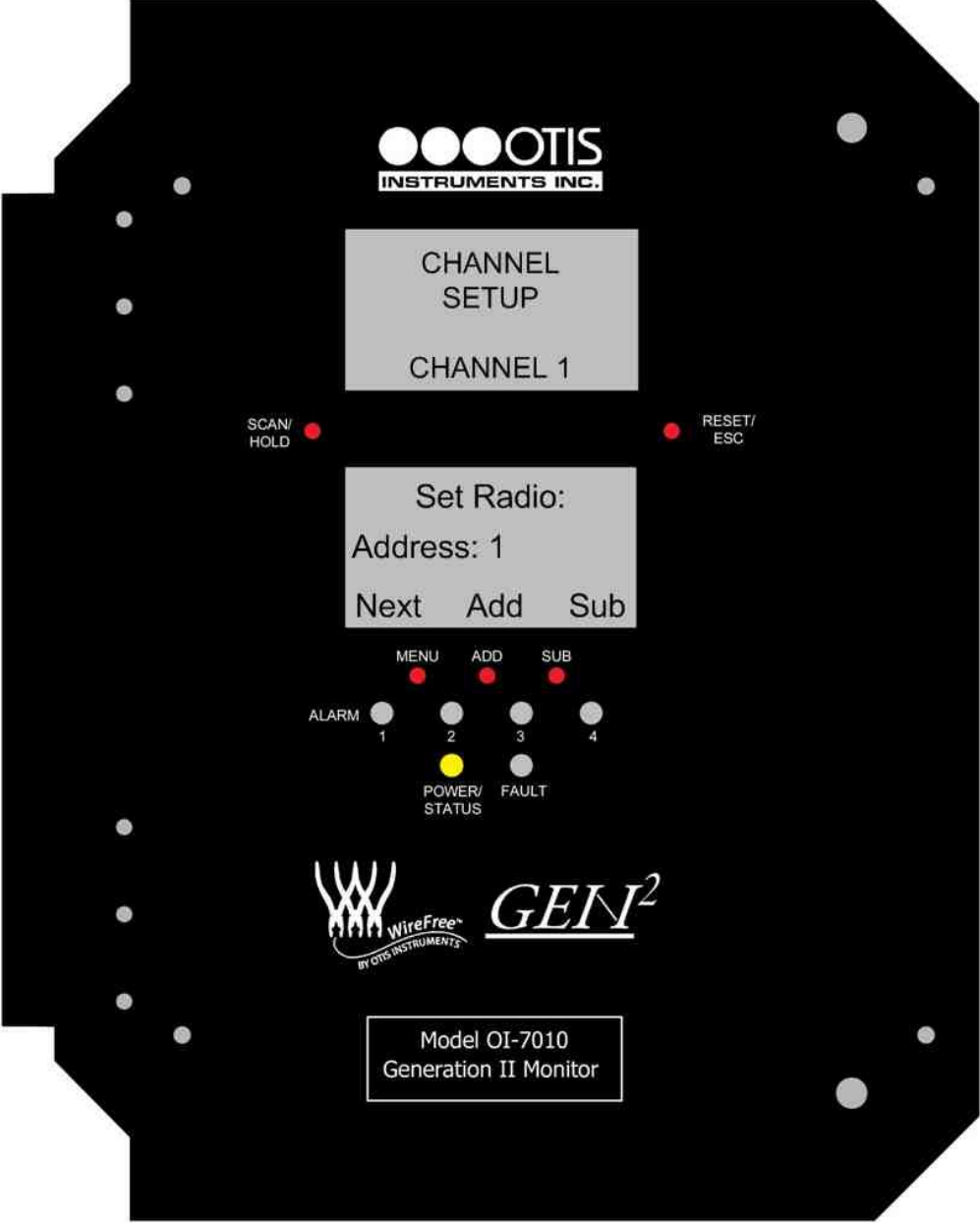
2. Press *MENU* (next) to continue to the next menu option.

Individual Relay Setup

NOTE: Repeat the Individual Relay Setup process for each relay—and each channel—to be setup.

Relay On/Off

1. Press *ADD* or *SUB* to manipulate the relay's On/Off status.
2. Press *MENU* (next) to continue to the next menu option.
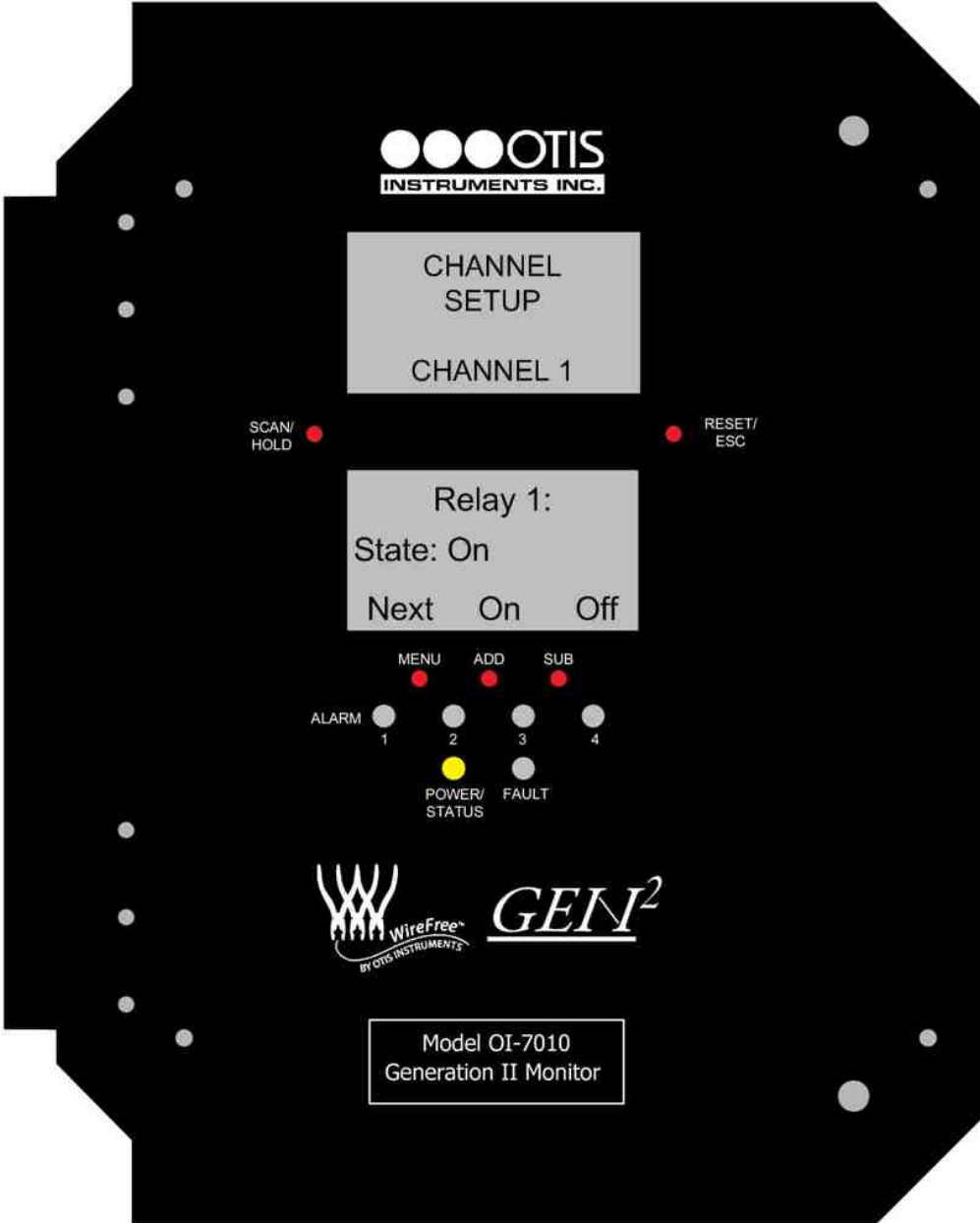
Relay Rise/Fall

1. Press *ADD* or *SUB* to manipulate the relay's Rise/Fall status.
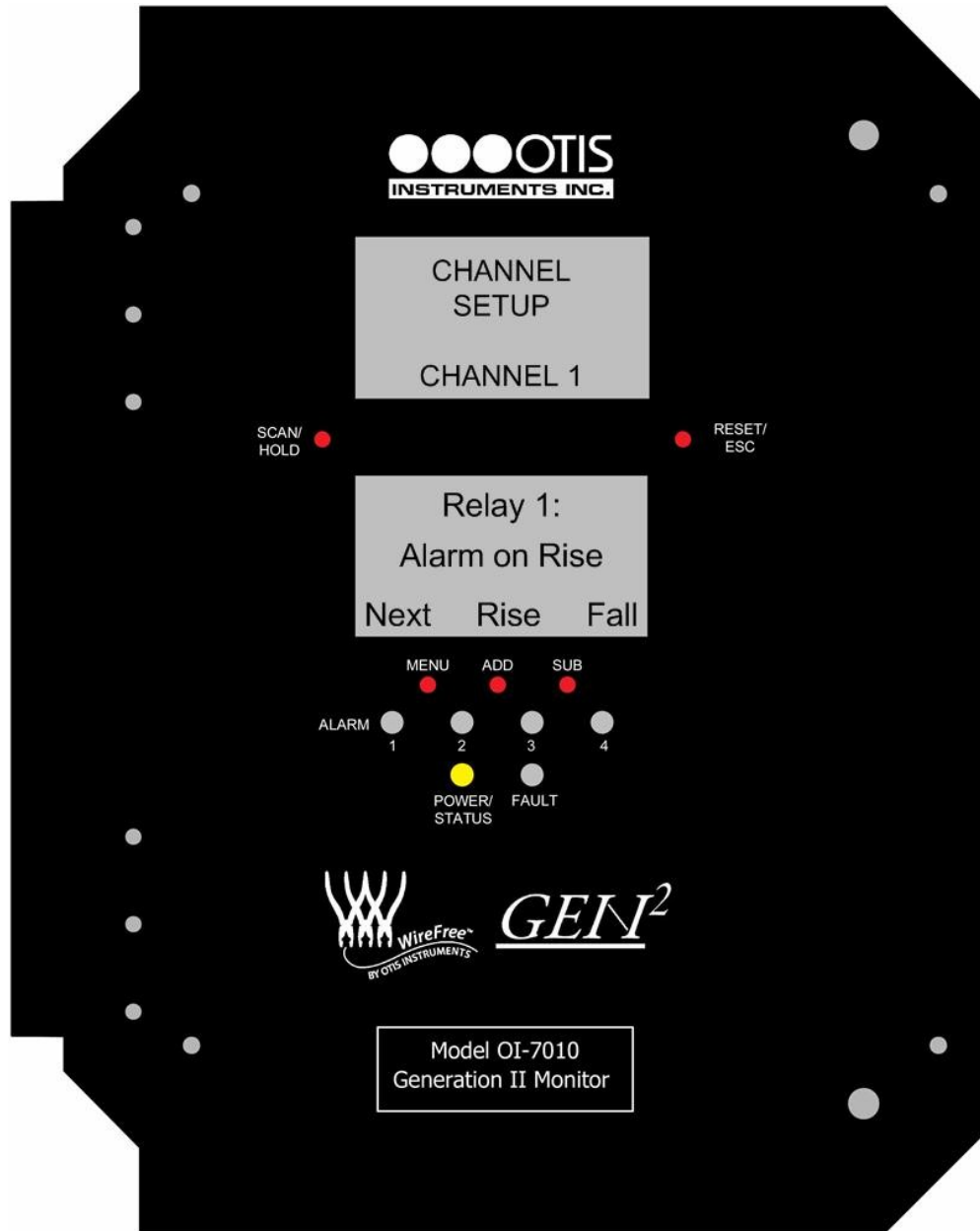
2. Press *MENU* (next) to continue to the next menu option.

Relay Value

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the relay threshold value (1-65,000).
2. Press *MENU* (next) to continue to the next menu option.
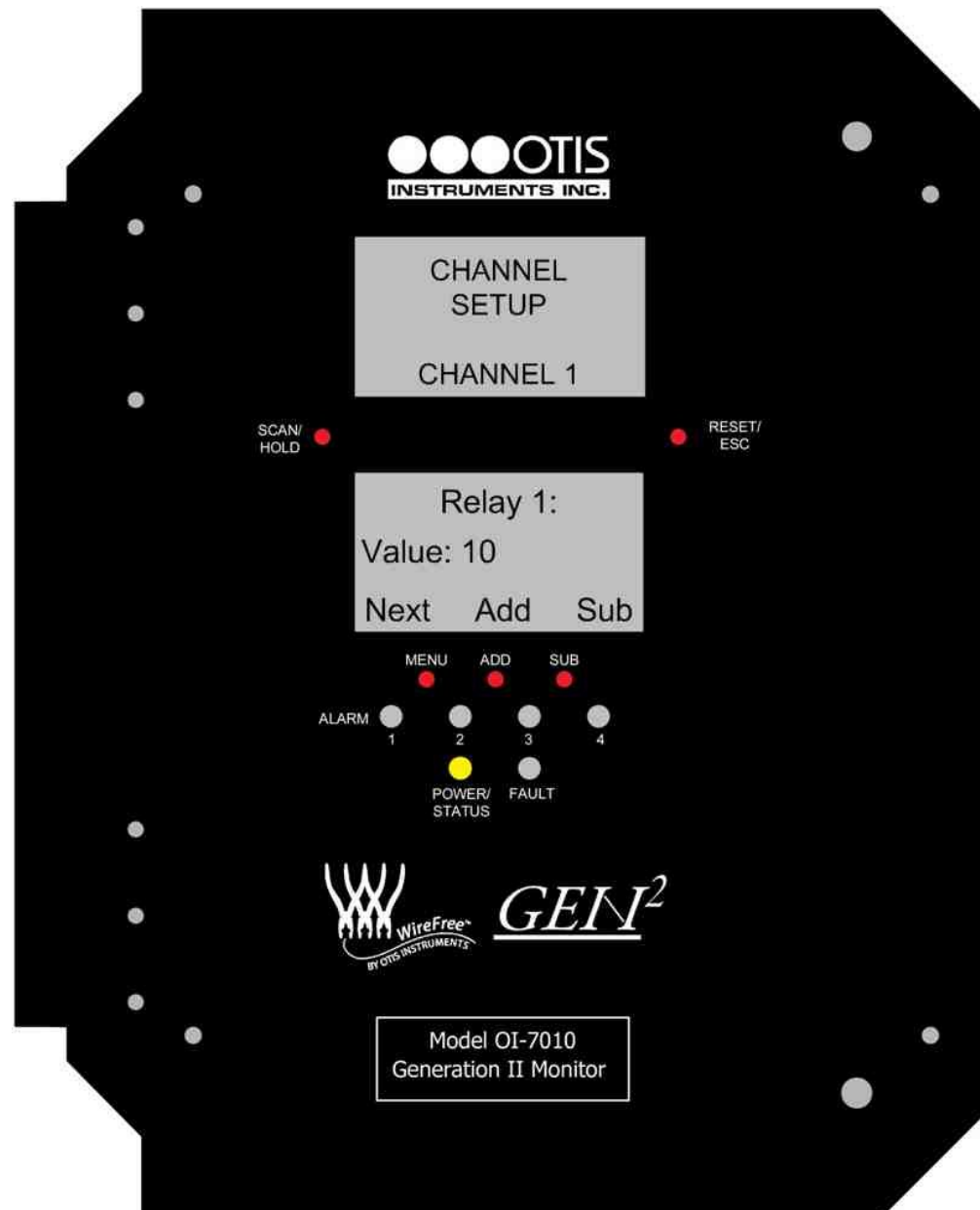
1. Press *ADD* or *SUB* to manipulate the relay's Latching/Unlatching status.
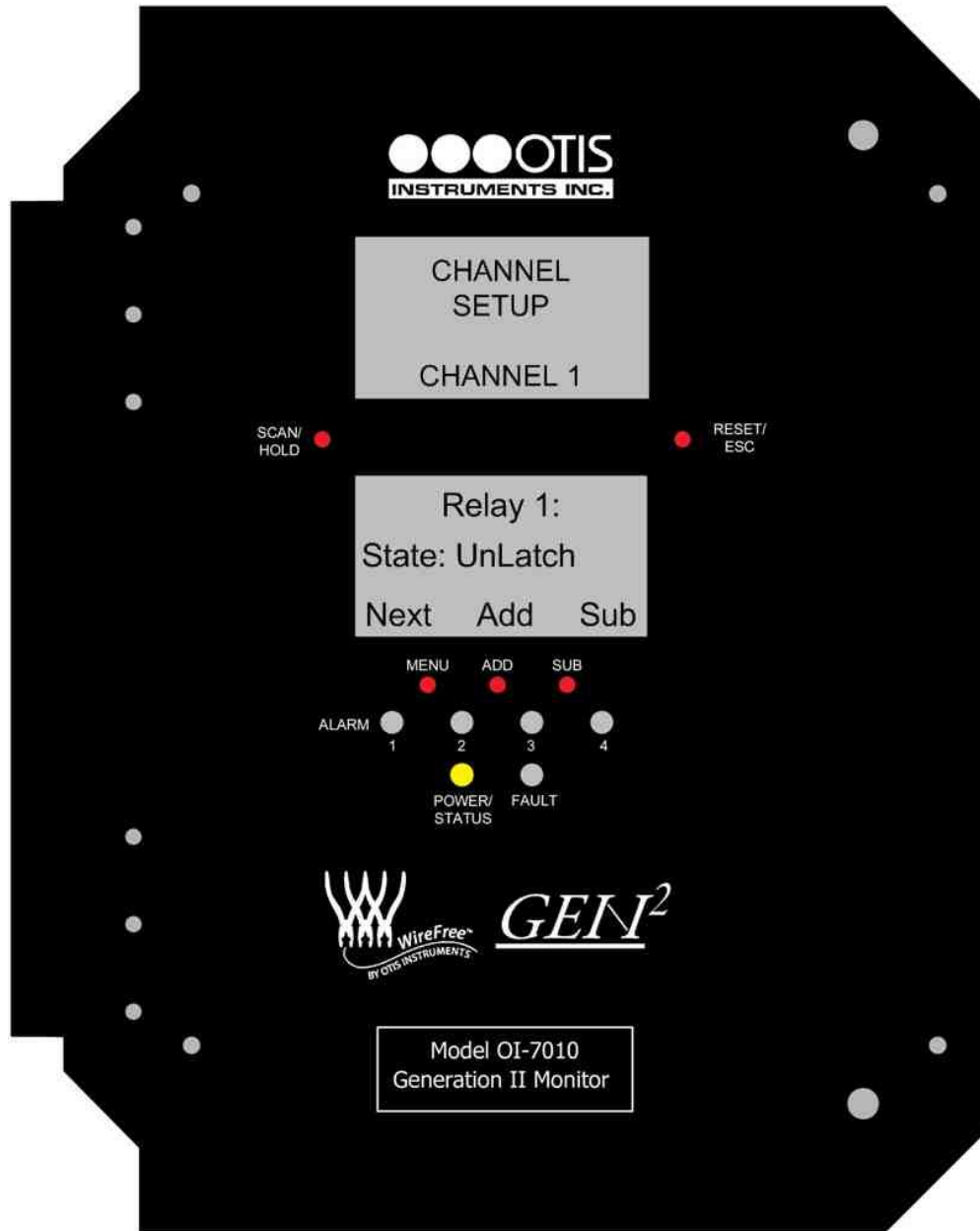
2. Press *MENU* (next) to continue to the next option—setting up the next consecutive relay.

Once all four relays have been setup, the display screen will show the following:

3. Press *MENU* (Next) to setup the next channel; Press *ADD* (Yes) to duplicate the settings to all consecutive channels; or, Continue to the next section for "Exiting the Basic Configuration Menu" instructions.
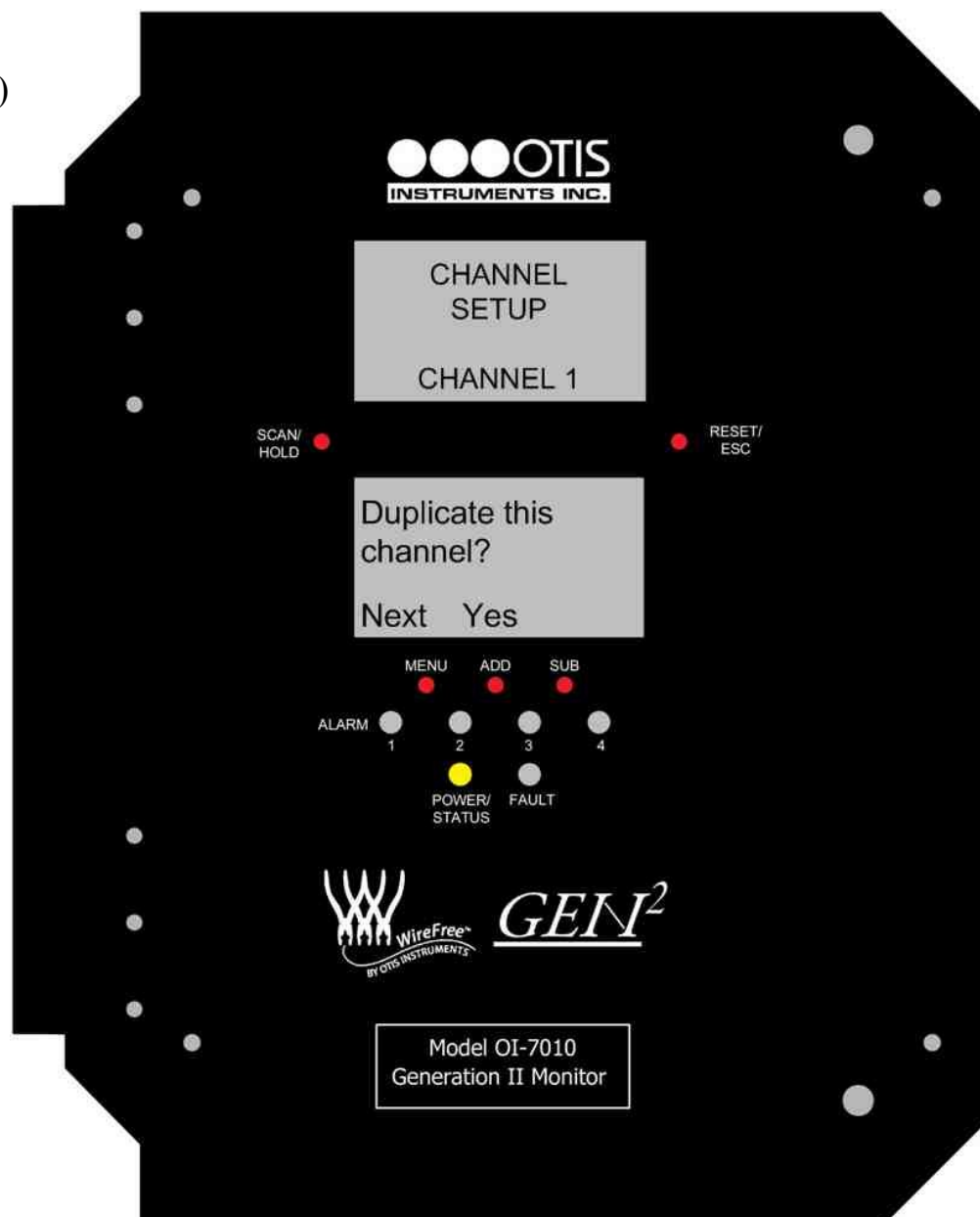
Viewing System Information

After the 12th channel is set, press *MENU* to view the system's information, including the:

- Build-date
- Serial number
- Radio (type)
- Radio error
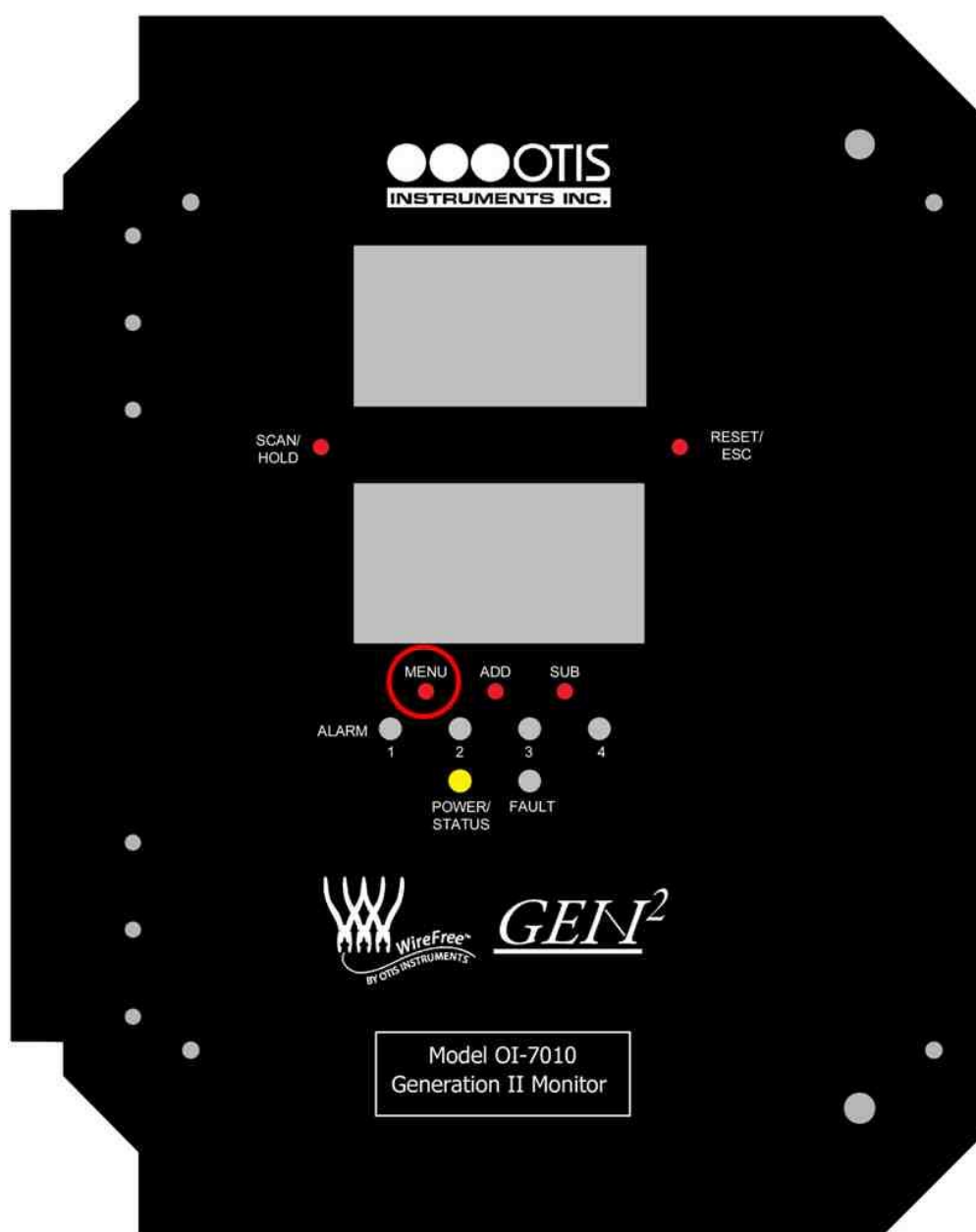
Exiting the Basic Configuration Menu

Complete the following steps to exit the Basic Configuration Menu at any time.

1. Press *ESC* to exit the Basic Configuration Menu.

   NOTE: After the 12th (or 32nd) channel is set—and if MENU is pressed instead of ESC—there is an information-update on the display screen indicating the build-date, serial number, radio (type), and radio error of the OI-7010-X-X-X-X.

2. Close the enclosure box.
3. Screw in the thumb-screws.
4. Clamp down the enclosure latches.

   NOTE: The monitor will automatically exit Chanel Setup after 15 minutes.

CHANNEL SETUP MUST BE COMPLETED INDIVIDUALLY FOR *EACH* CHANNEL.

REPEAT THE CHANNEL SETUP INSTRUCTIONS FOR EACH CHANNEL.
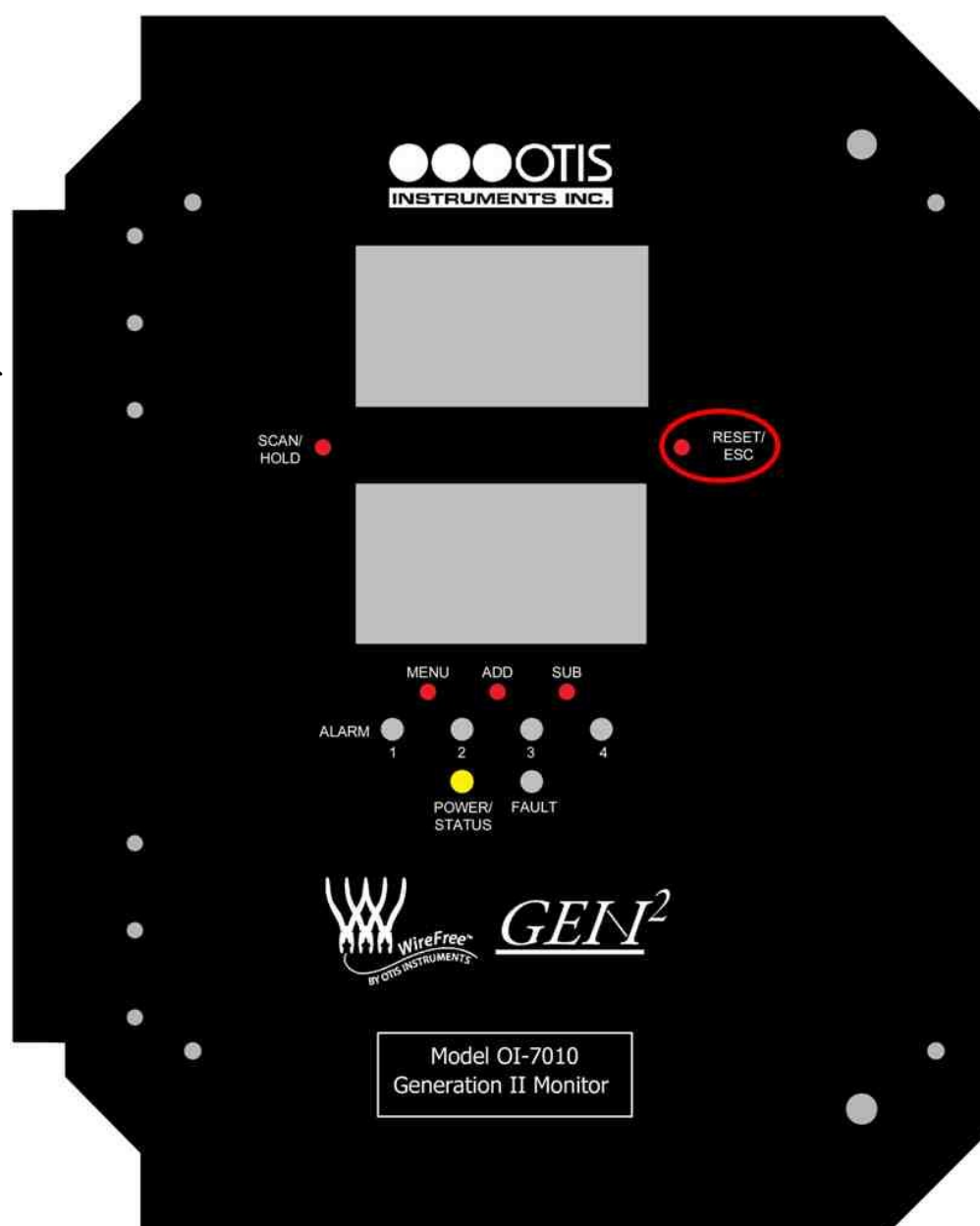
Advanced Configuration Menu (Global Settings)

The Advanced Configuration Menu is used to manipulate global settings. To setup individual channels, use the Channel Configuration Menu.

Entering Advanced Configuration Menu

1. Open the enclosure box to expose the Front Panel.
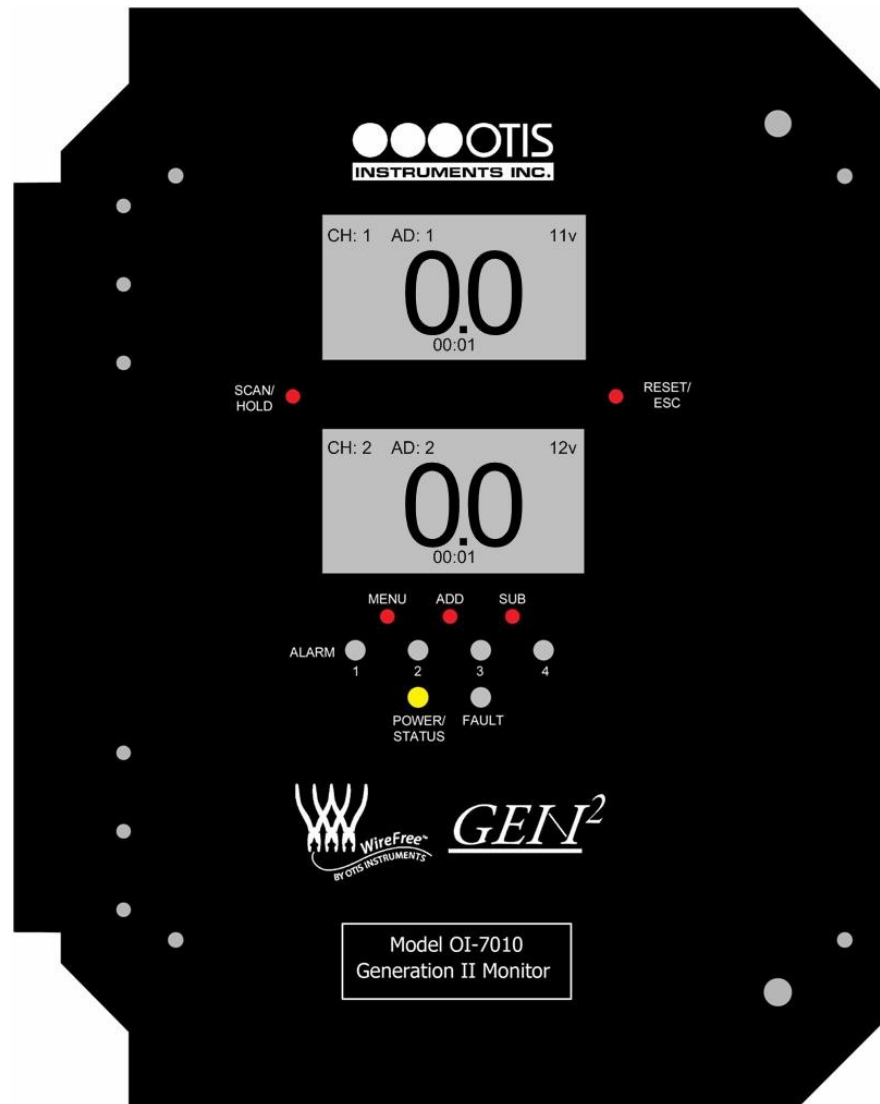
2. Cycle the unit's power (turn the Terminal Board Power Switch OFF, then ON). For more detailed instructions regarding how to cycle the unit's power, refer to the "Power On/Off" section of this Operation Manual.
3. When the Display Screens illuminate, press *MENU.*

    NOTE: Do not wait for the countdown to finish.

Adjust LCD Contrast (Upper Display Screen)

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the LCD contrast of the Upper Display Screen.
2. Press *MENU* (Next) to continue to the next Advanced Configuration Menu option.
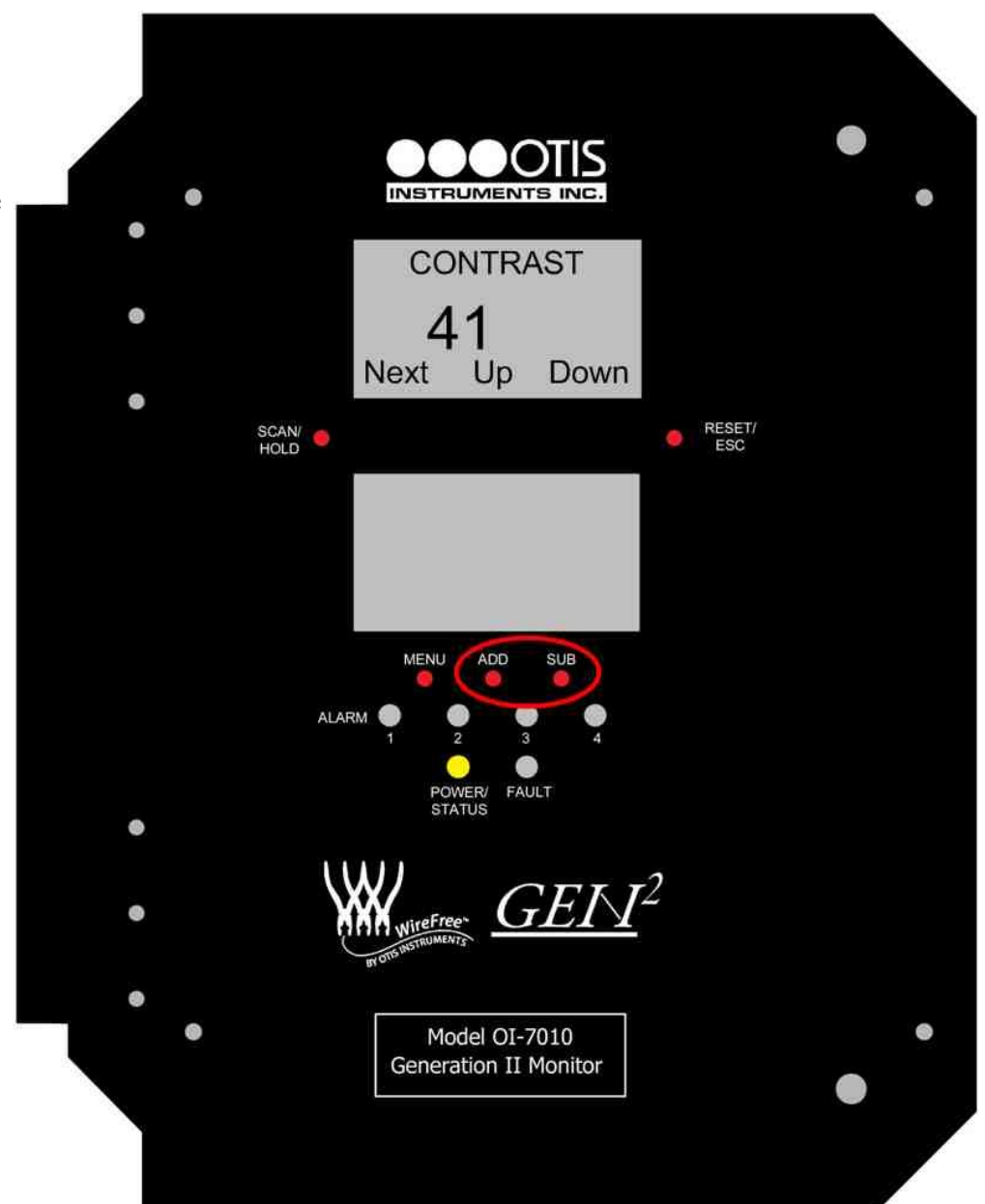
Adjust LCD Contrast (Lower Display Screen)

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the LCD contrast of the Lower Display Screen.
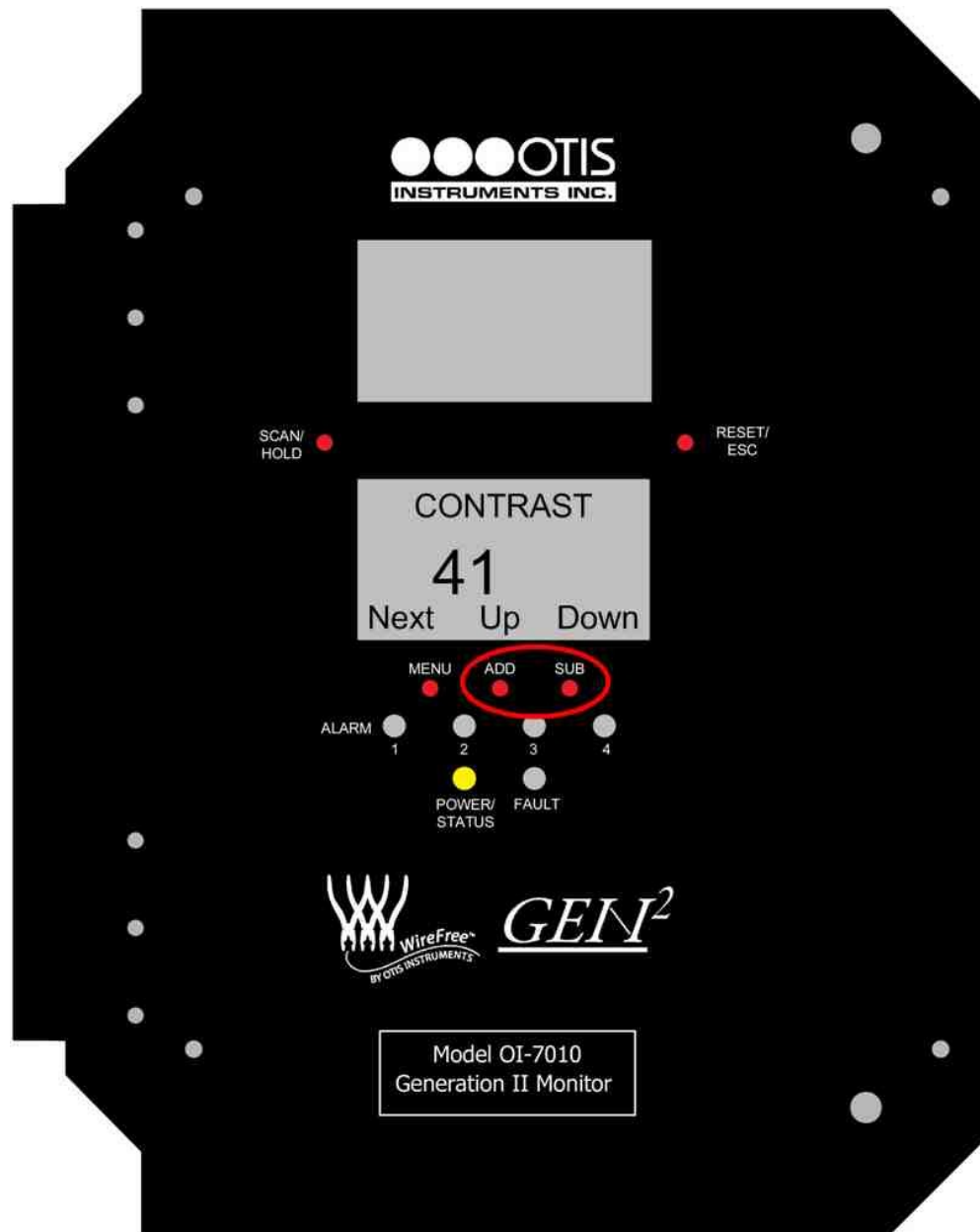
2. Press *MENU* (Next) to continue to the next Advanced Configuration Menu option.

Restore Factory Default Settings

Press *ADD* or *SUB* (Yes/No—as indicated on the display screen) to set the unit back to the factory's default settings. To leave the settings as they are, press *MENU* (Next).

Factory settings are:

- Channels 1-8 set to WireFree
- Channels 9-12 set to wired
- Relays set at "10, 15, 20 and 25"
- All relays set to "Unlatching"
- Baud set at 9600
- Radio Timeout set at 10 minutes
- Network ID set at 5 (GenII radio only)
- Set to Secondary Monitor (GenII radio only)
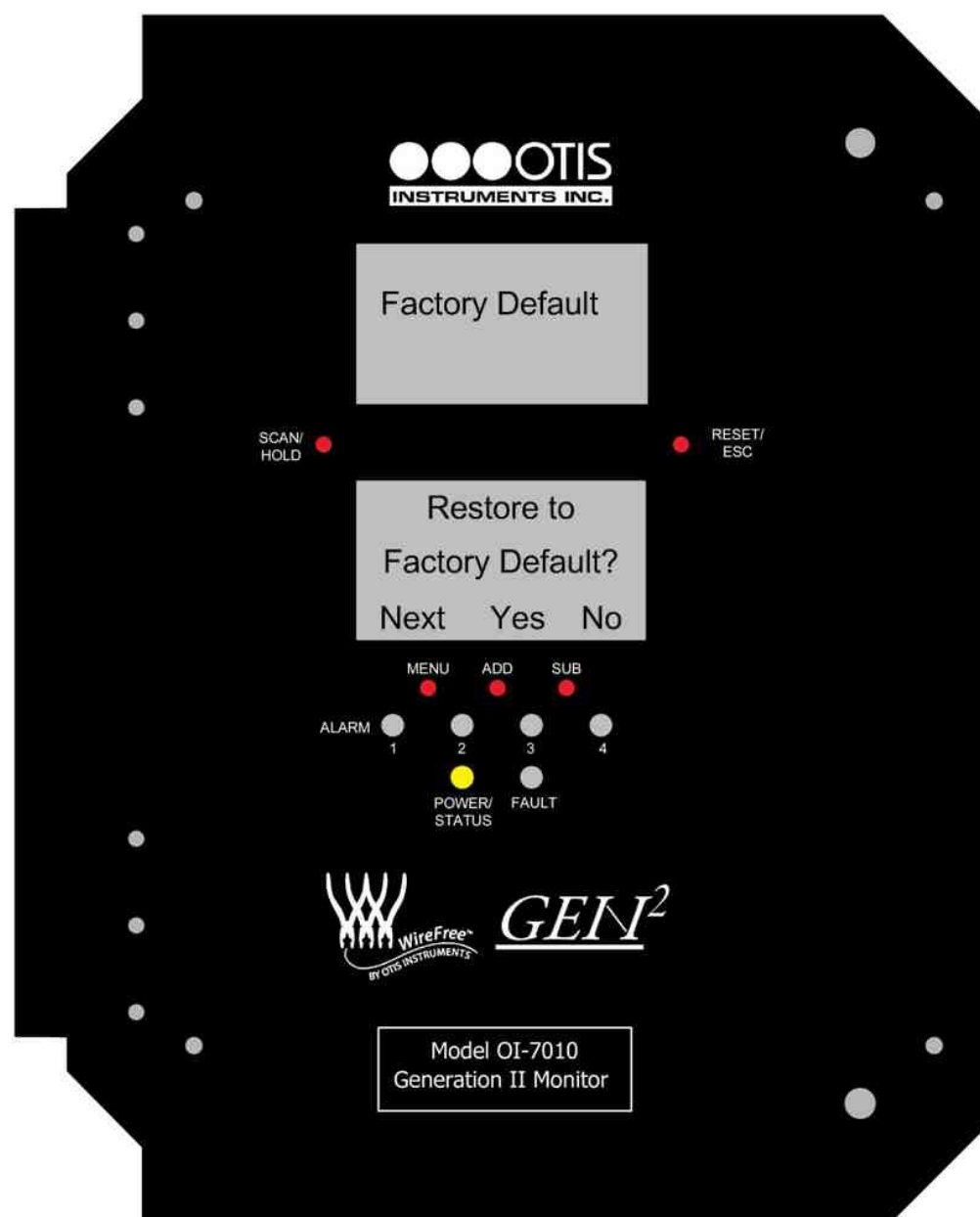
Fault Relay Setup: Relay 4 Fault Relay

Press *ADD* or *SUB* (Yes/No—as indicated on the display screen) to setup Relay 4 as the Fault Relay. To leave the setting as it is, press *MENU* (Next).

NOTE: With this feature enabled, if any Fault occurs (on any channel) the Fault Relay is engaged. In addition, Relay 4 is removed from all setup options.
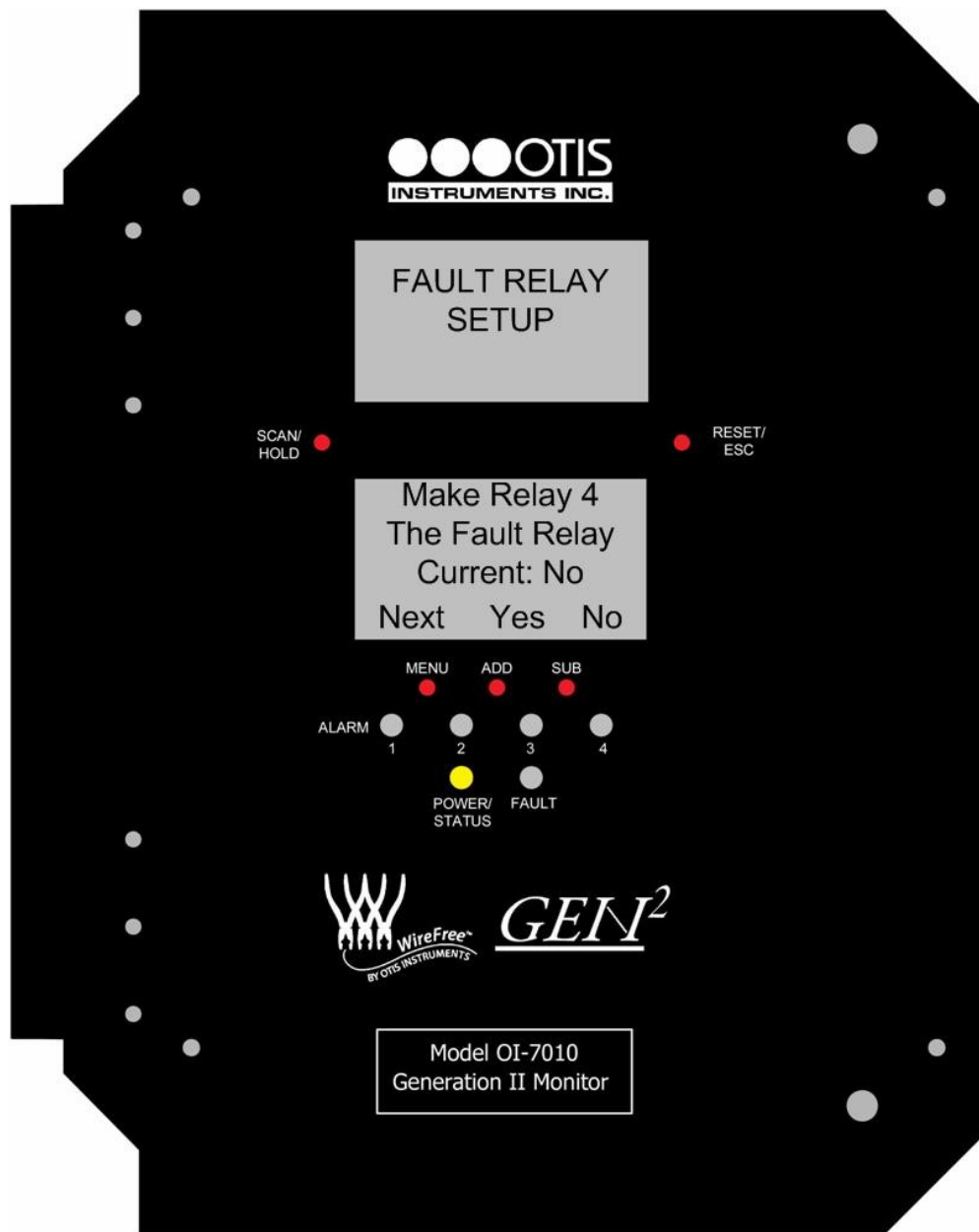
Fault Relay Setup: Relay Failsafe Setting

1. Press *ADD* or *SUB* (Yes/No—as indicated on the display screen) to setup Relay 1 as failsafe (or not failsafe). To leave the setting as it is, press *MENU* (Next).

2. Repeat the instructions in the previous step for Relays 2, 3, and 4.
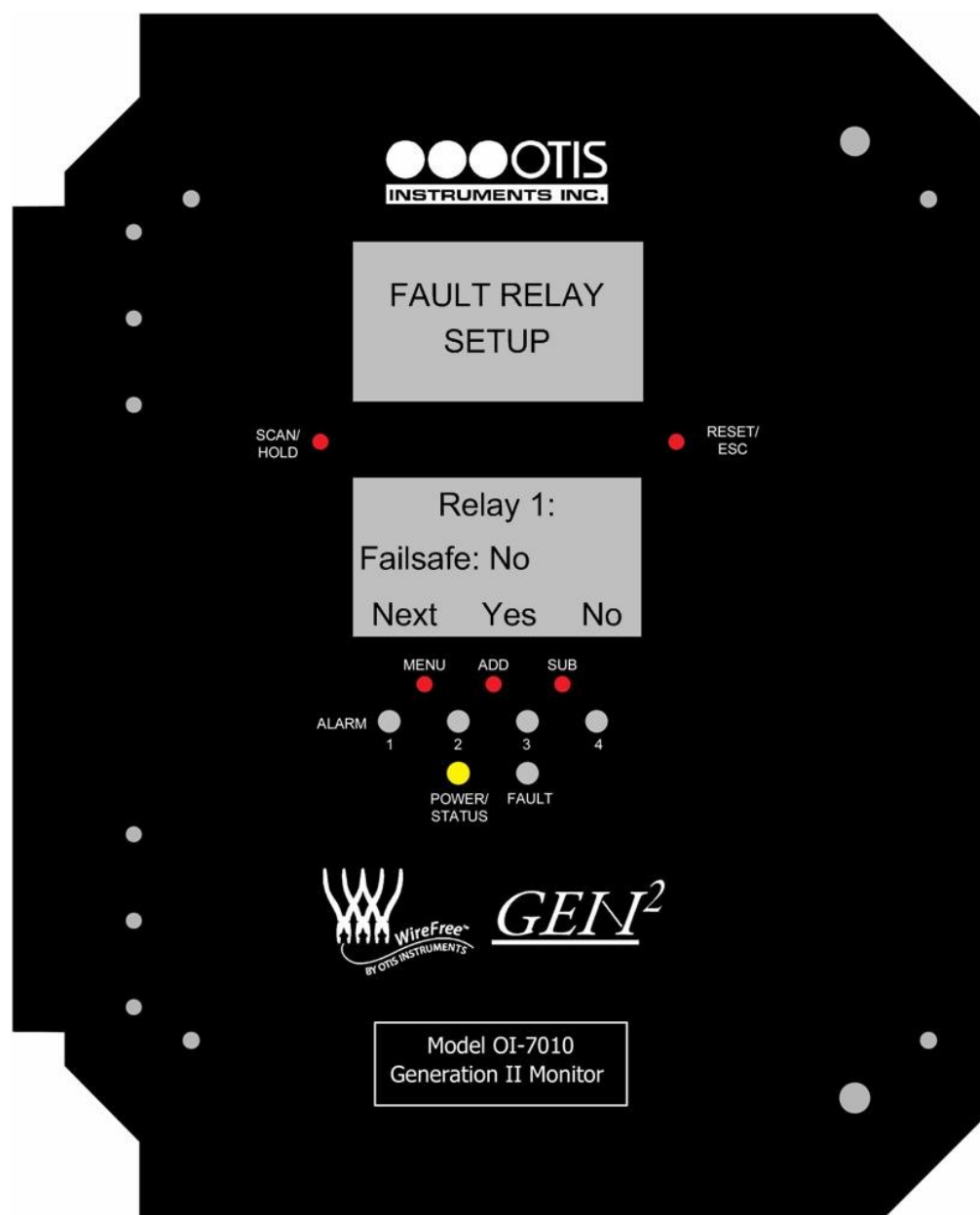
Fault Relay Setup: Fault Terminal Failsafe Setting

Press *ADD* or *SUB* (Yes/No—as indicated on the display screen) to setup the Fault terminal as failsafe (or not failsafe). To leave the setting as it is, press *MENU* (Next).
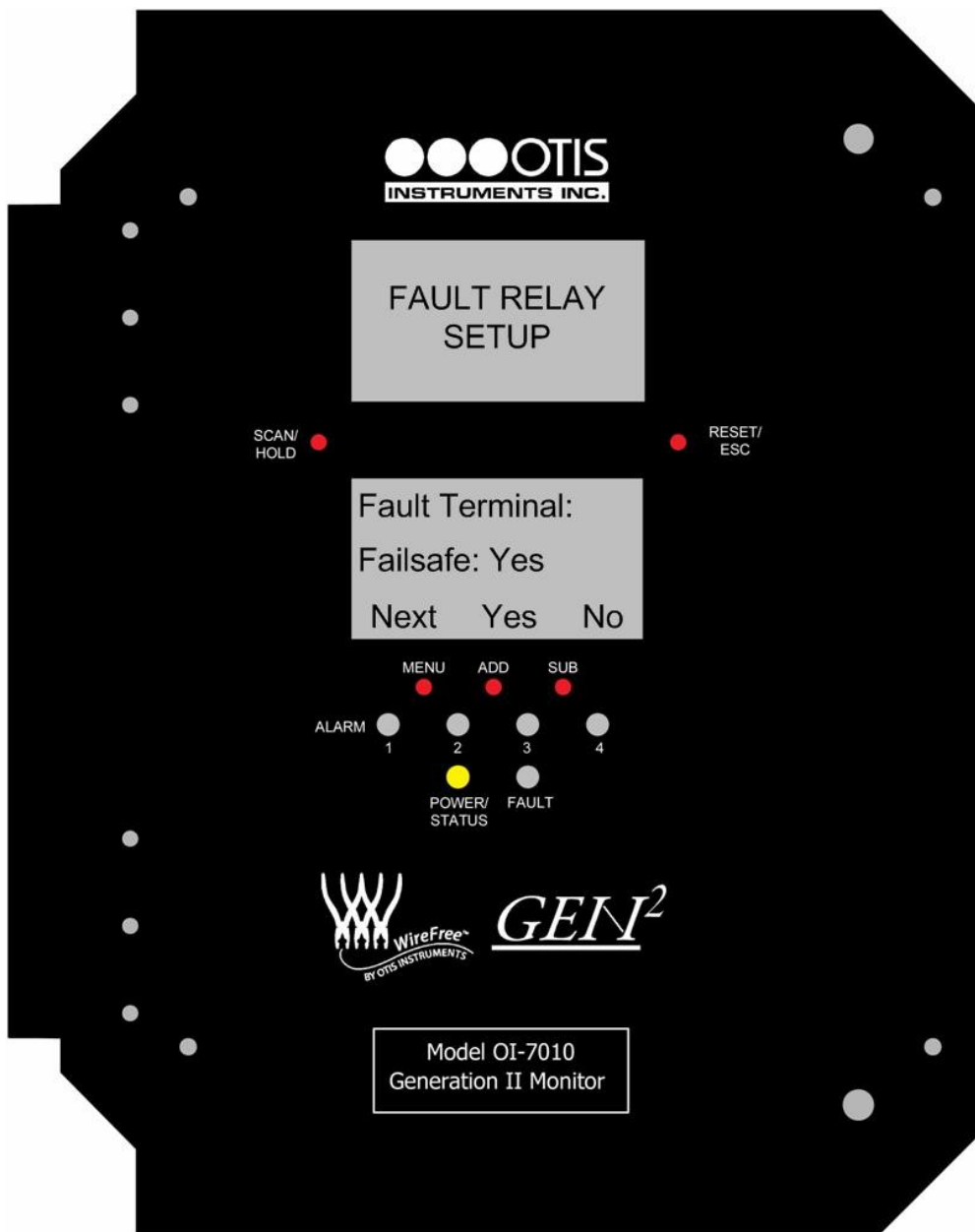
Modbus Setup: Modbus Address

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the global Modbus Address setting (between 1 and 247).
2. Press *MENU* (Next) to continue to the next Advanced Configuration Menu option.
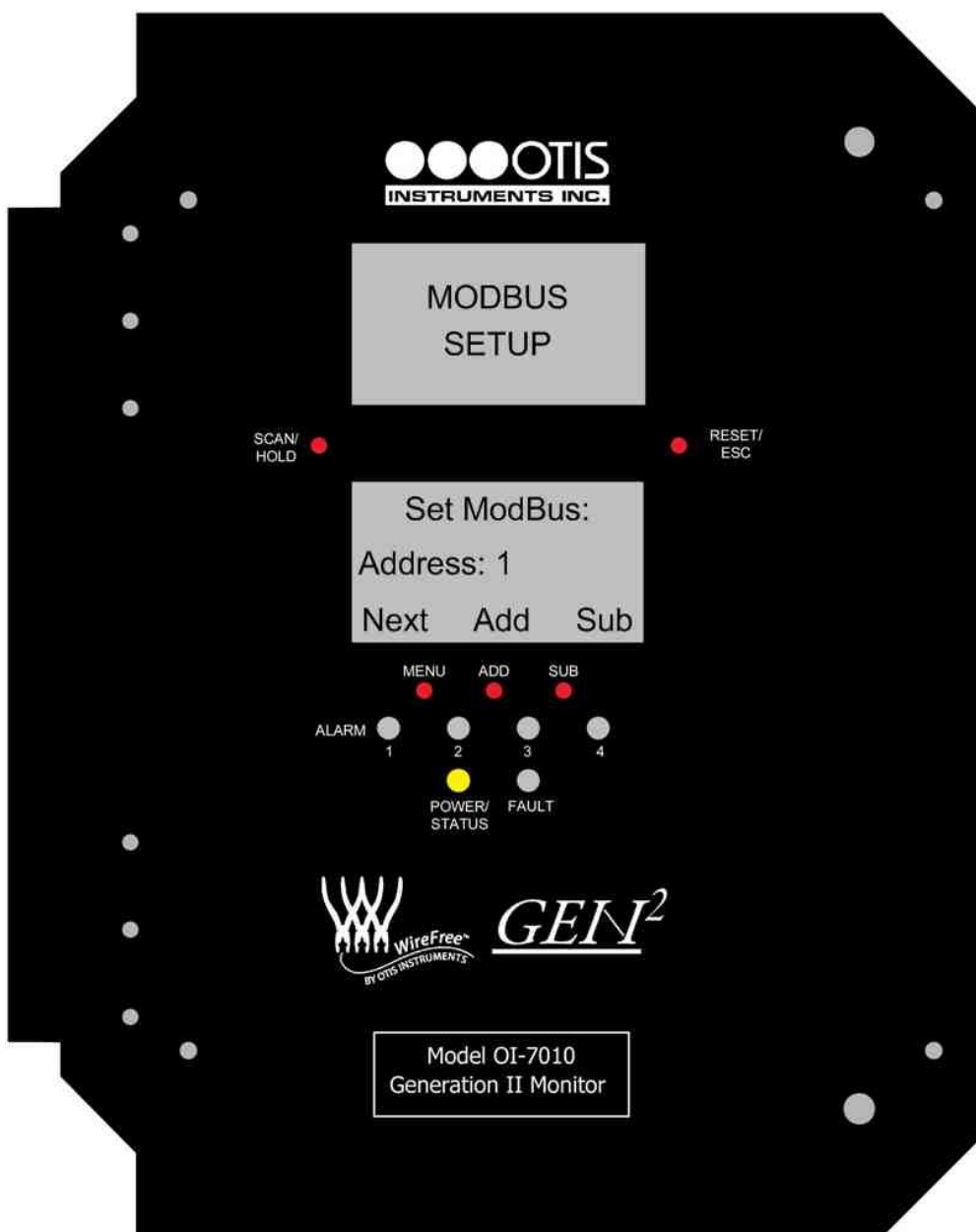
Modbus Setup: Baud Setting

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the global Baud setting to: 4800, 9600, or 19200.

    NOTE: Baud default is 9600.
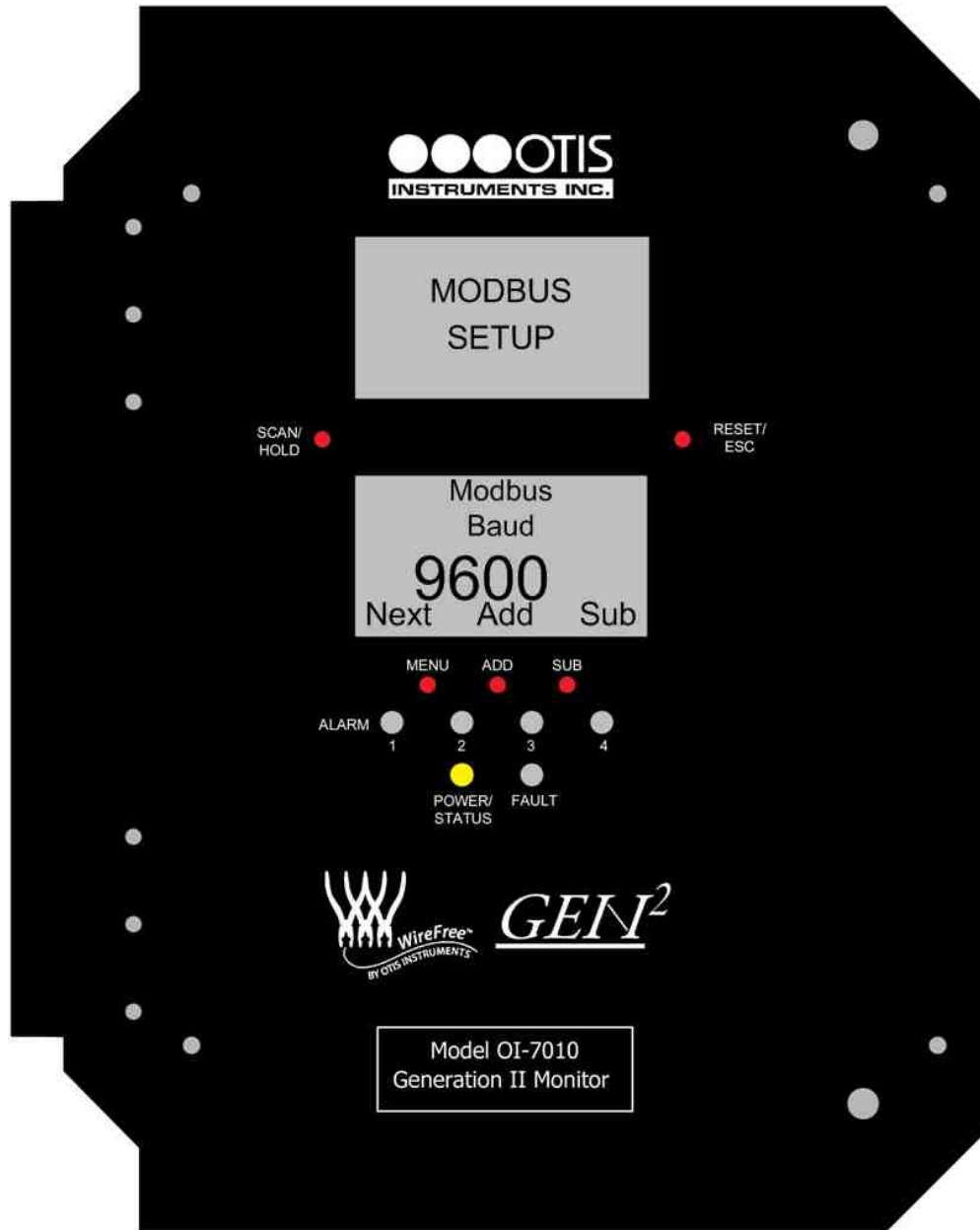
2. Press *MENU* (Next) to continue to the next Advanced Configuration Menu option.

Monitor Setup: Radio Timeout

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the Radio Timeout setting (between 6 and 255 minutes).

    NOTE: This feature gives a Fault if no signal is being received from a WireFree sensor assembly.

2. Press *MENU* (Next) to continue to the next Advanced Configuration Menu option.
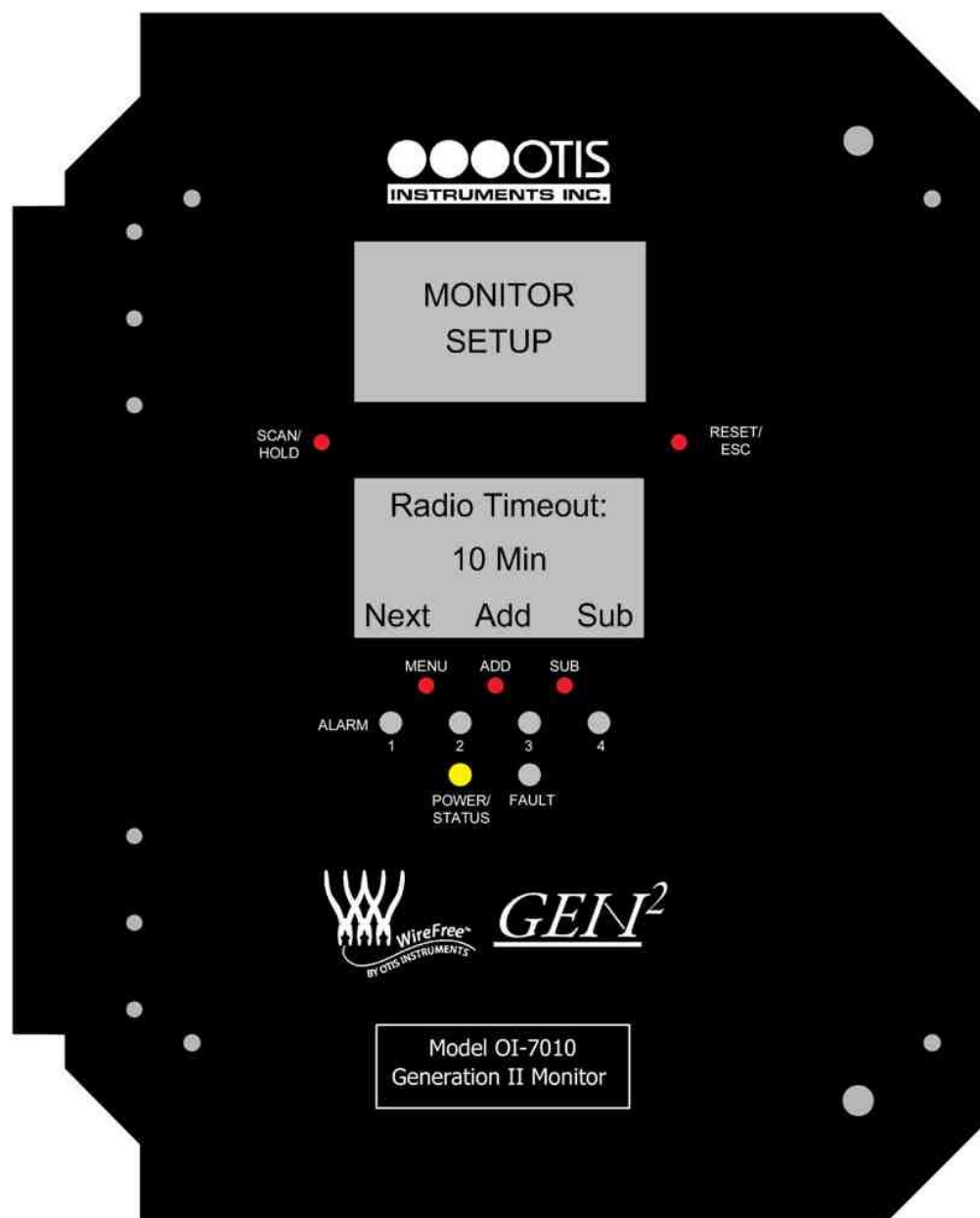
Monitor Setup: Network Channel

1. Press *ADD* (increase) or *SUB* (decrease) to manipulate the GenII Network Channel setting (between 1 and 78).

    NOTE: This feature only shows up if the monitor contains a GenII radio. All monitors and sensors on a GenII network MUST have the same Network Channel in order to communicate.
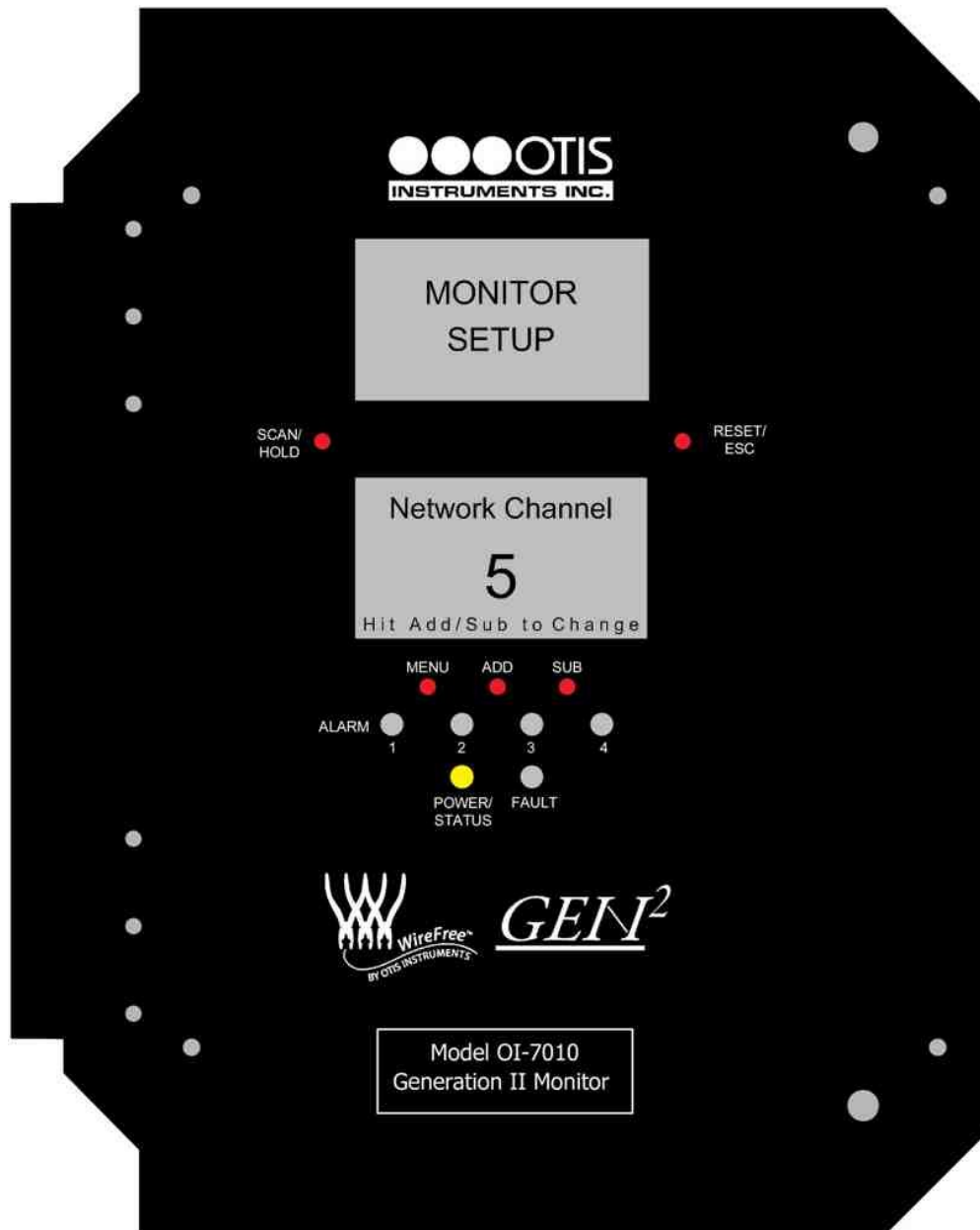
2. Press MENU (Next) to continue to the next Advanced Configuration Menu option.

Monitor Setup: Primary or Secondary

1. Press *ADD* or *SUB* to switch the monitor setting to "Primary" or "Secondary".

    NOTE: This setting will only appear if your monitor contains a GenII radio. Setting the monitor to "Primary" or "Secondary" is only necessary when using a GenII radio. On each GenII network there can be only one "Primary" monitor—all other monitors must be setup as "Secondary" monitors.

    NOTE: If a OI-7010-X-X-X-X with a GenII radio is set as a "Secondary" monitor when there is no "Primary" monitor, the OI-7010-X-X-X-X will go into Fault 15 and the Power/Status LED will be green if the monitor becomes the "Primary" monitor; otherwise, the Power/Status LED will be blue.

2. Press *MENU* (Next) to exit the Advanced Configuration Menu and return to Normal Operating Mode.
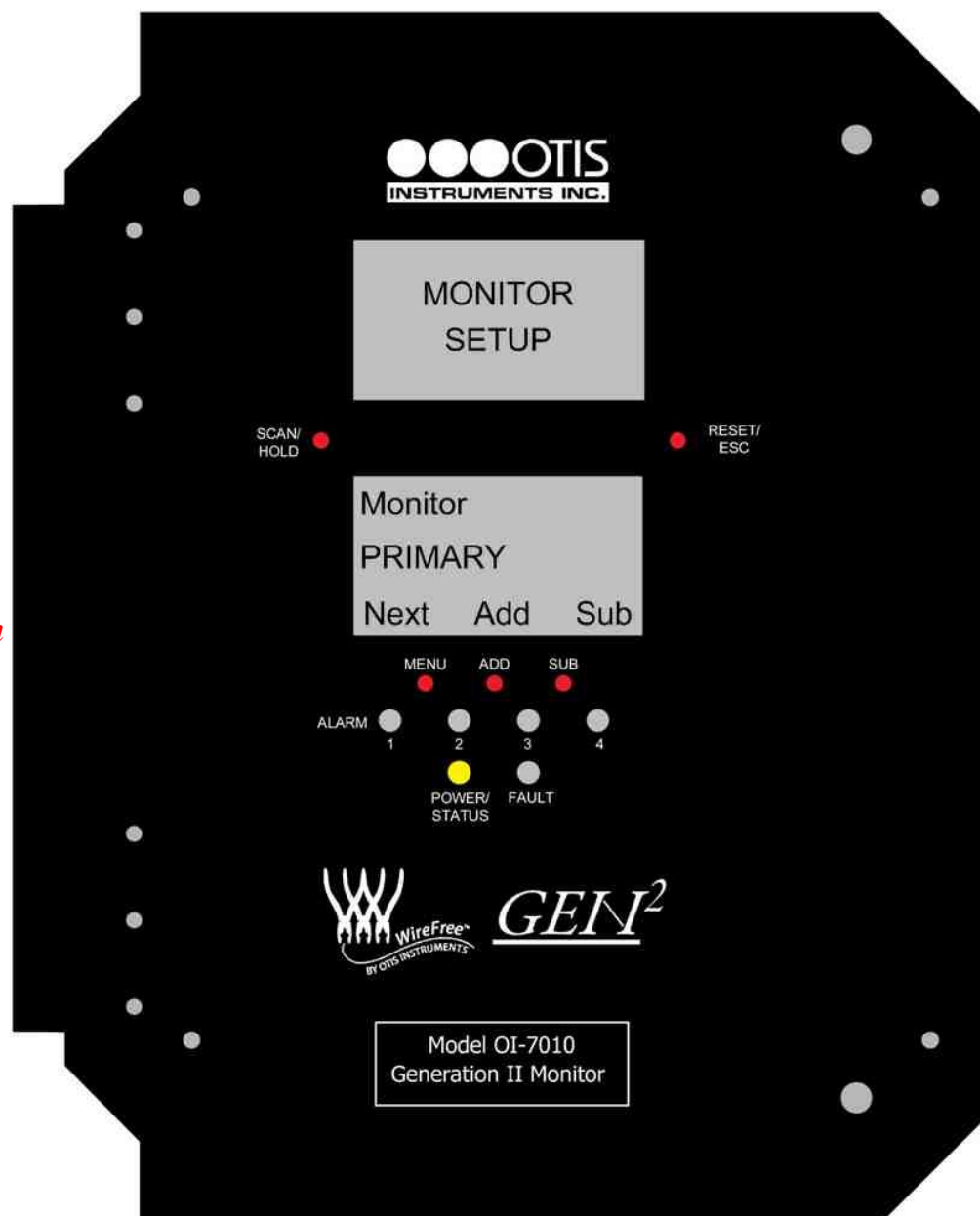
Exiting the Advanced Configuration Menu

Complete the following steps to exit the Advanced Configuration Menu at any time.

1. Press *ESC* to exit the Advanced Configuration Menu.
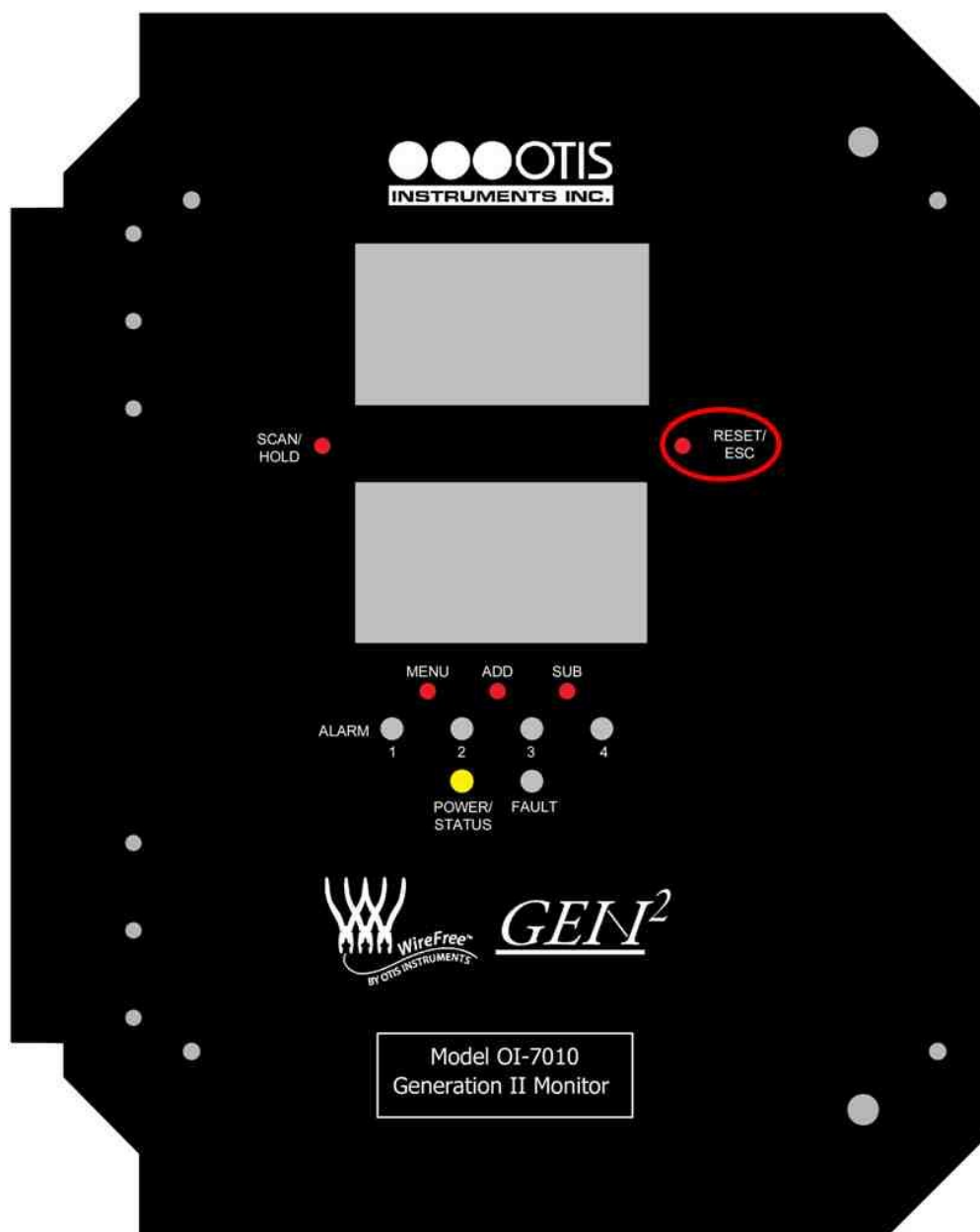
2. Close the enclosure box.
3. Clamp down the enclosure latches.

Calibration Mode

Entering Calibration Mode disables the relays and allows the sensors to be calibrated without triggering alarms. Once in Calibration Mode, the unit will remain in this state for two hours—unless *RESET/ESC* is pressed.

1. Open the enclosure box to expose the Front Panel.
2. To enter Calibration Mode, press and hold *MENU* for five seconds.
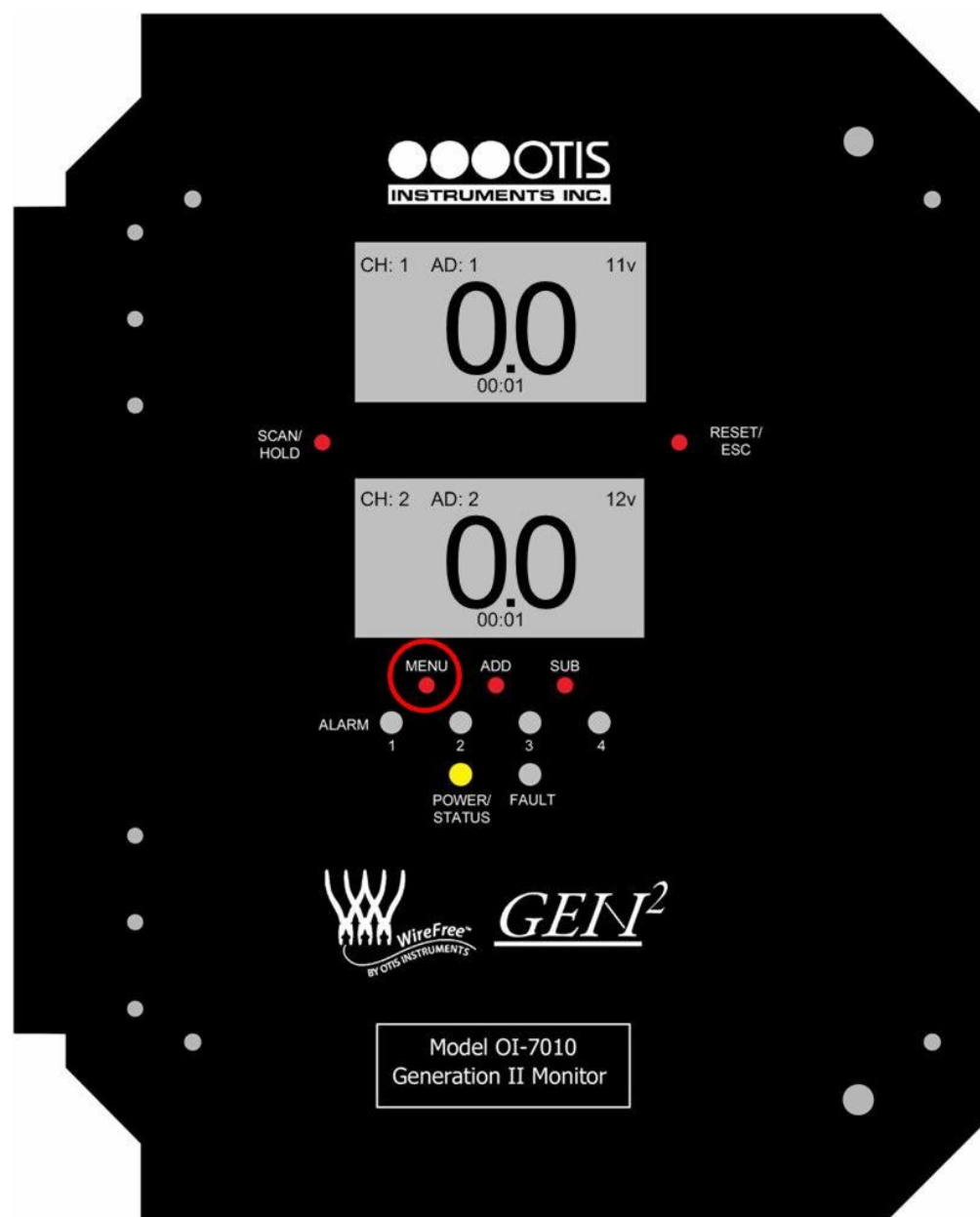
3. Once in Calibration Mode, the display screen will show "CAL" on the upper right side.

   The illustration below shows what the display screens will show if no sensor is detected for a channel while in Calibration Mode. In this illustration, there is no sensor detected for a wired channel (Channel 9), as well as no sensor detected for a WireFree channel (Channel 10) while in Calibration Mode.
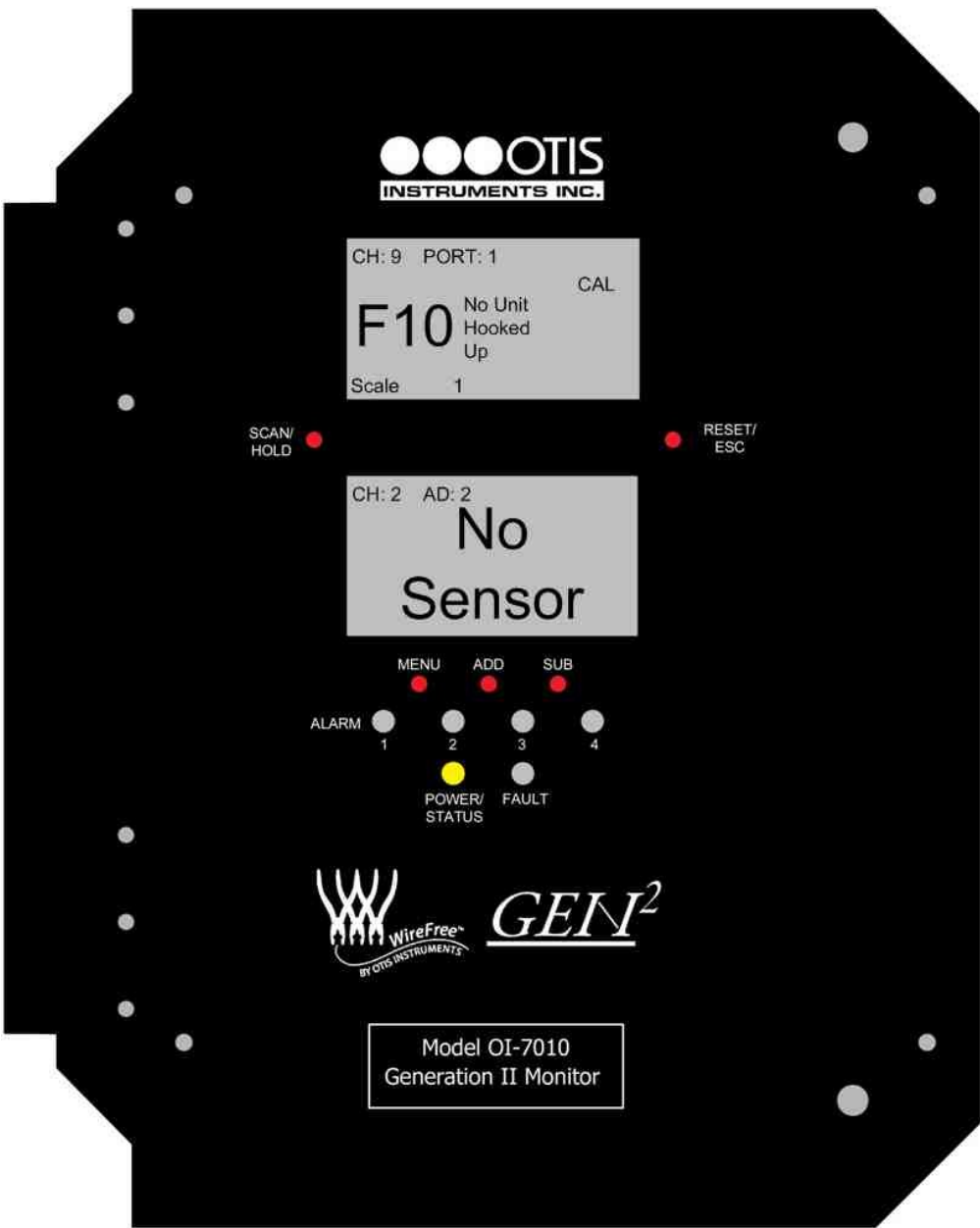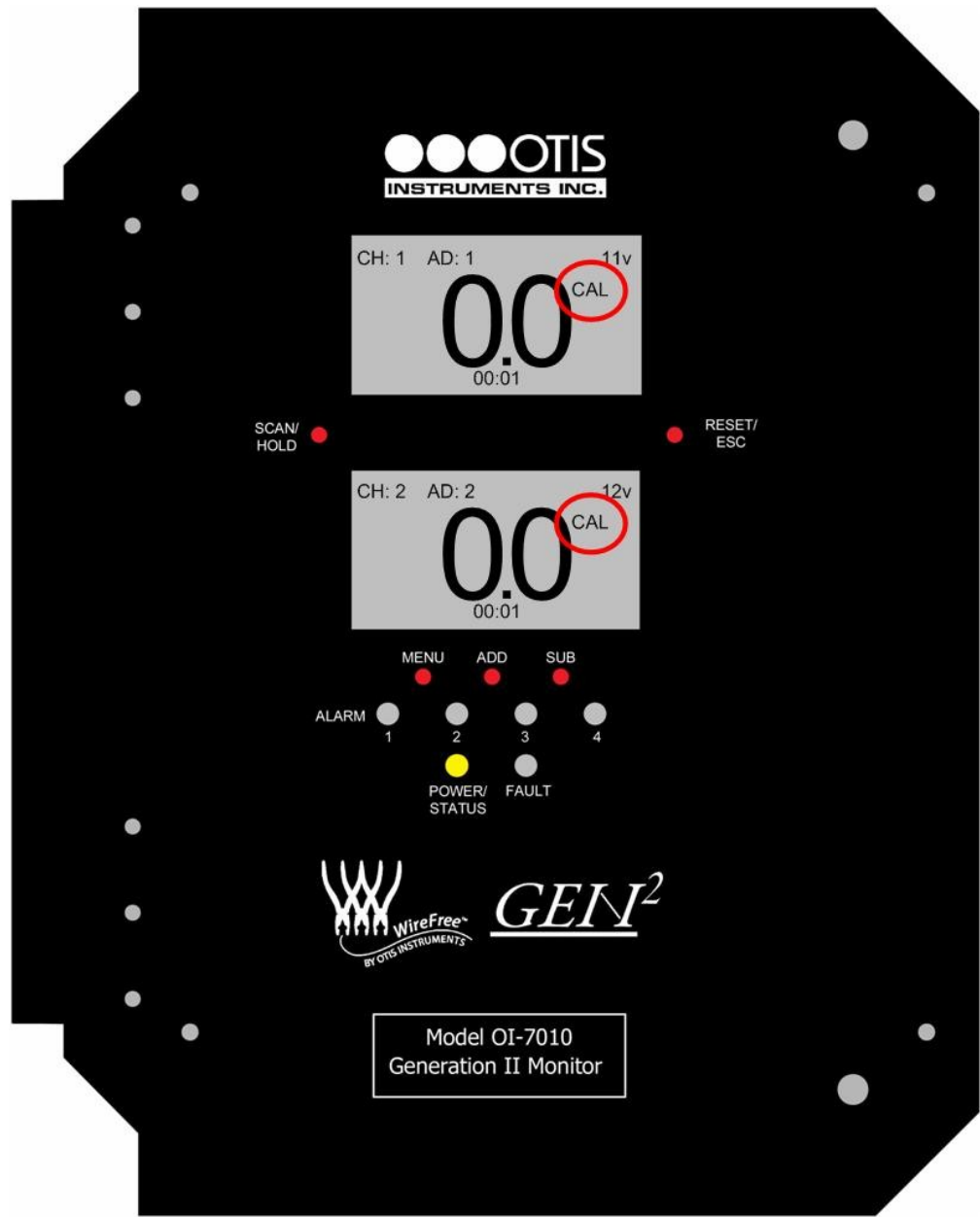
4. To return to Normal Operating Mode, press *RESET/ESC*.

5. Close the enclosure box.

6. Clamp down the enclosure latches.
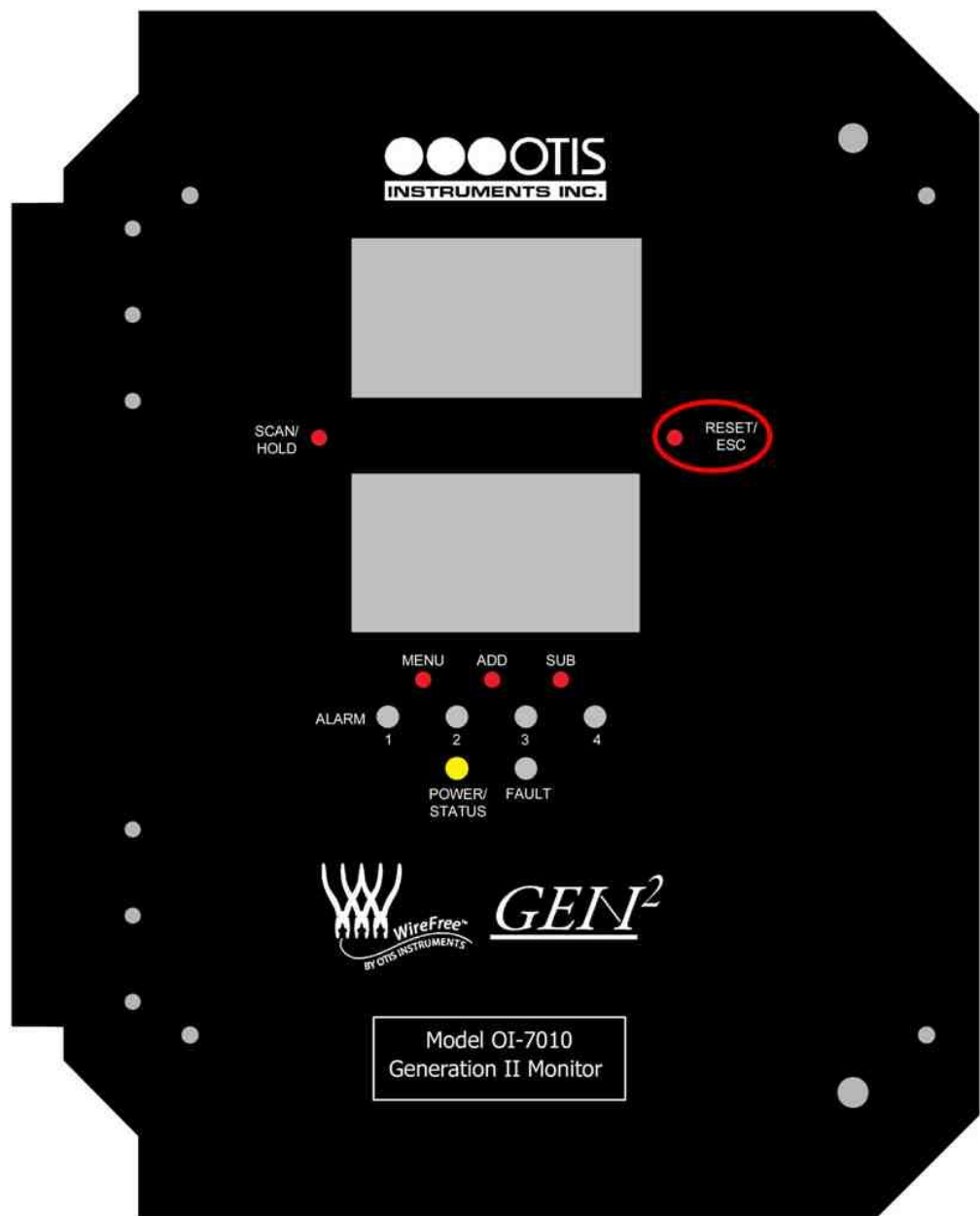
Relay Test Mode

Relay Test Mode activates each relay, and can be used to determine whether or not the relays and attached alarms are functioning properly.

1. Open the enclosure box to expose the Front Panel.
2. To enter Relay Test Mode, press and hold *RESET*.
3. Relay 1 will activate after five seconds, Relay 2 will activate after an additional five seconds, etc.
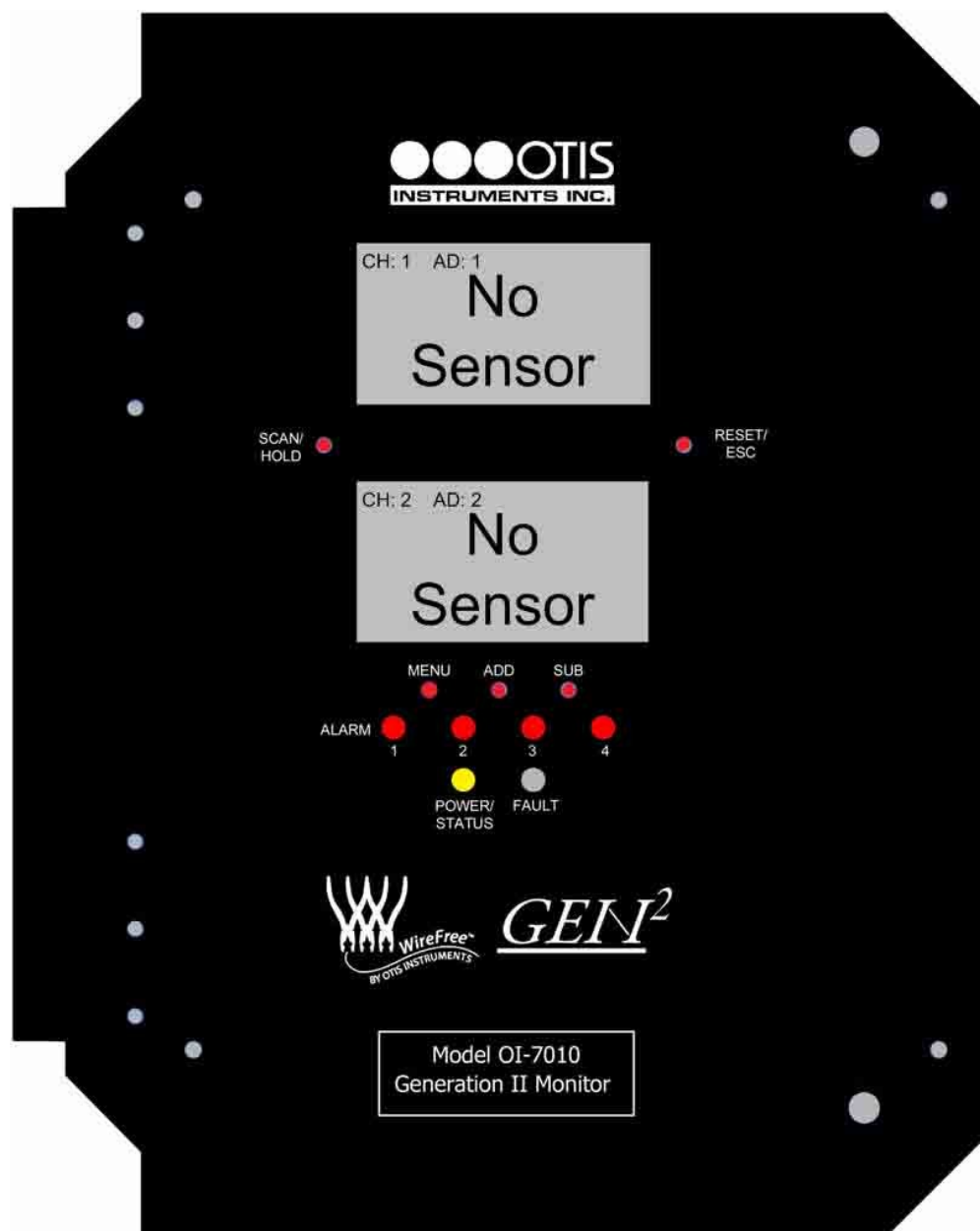
4. To return to Normal Operating Mode, continue holding—or release and press—*RESET/ESC*.
5. Close the enclosure box.
6. Clamp down the enclosure latches.

Theory of Operation

The OI-7010-X-X-X-X can receive up to 12 (or 32) WireFree sensors (depending on the radio's configurations) and up to four 4-20mA wired sensor assemblies. All configured channels are displayed every three seconds (scanned). When one channel indicates a gas reading, the monitor locks to that channel. If two or more channels are indicating a gas reading, the monitor scans those channels every three seconds. The user can manually scan channels by pressing *SCAN* to advance, *ADD* to advance, or *SUB* to descend. The scanned channel will stay at that channel for one minute and then go back to normal scanning.

All channels can be configured to detect WireFree gas sensor assemblies, or up to four wired (4-20mA) sensor assemblies. The last four channels (9-12 for 12-channel, 29-32 for 32-channel) can be configured to accept a 4-20mA signal. By default, the system comes with the first eight (or 28) channels configured for WireFree sensor assemblies and the last four channels configured for wired sensor assemblies. Any channel can be turned "off", and any channel can be configured to any valid WireFree address, 1-255.

Relays

There are four 5 Amp relays with 4 Amp fuses. The fourth relay may be configured as a Fault relay. This Fault relay will activate if any Fault is generated by the monitor or if any sensor that the monitor is configured to monitor goes into Fault. The Fault relay is removed from any further configurable options from Channel Setup—leaving only three relays for each channel. All relays can be configured to be either latching or unlatching. The relays can be configured with different set points for alarm conditions for each channel, allowing each channel to have their own gas level set points.

All relays have a 10% of value of hysteresis on the set points. This prevents the relays from rapidly switching on and off during a potentially jumpy gas sensor reading. Once the threshold value of a relay is reached, the relay is activated; When the gas reading decreases below the threshold value to deactivate, the relay must be 90% of the initial threshold value.

Alarm LEDs

The Alarm LEDs indicate the state of the relays—respectively, Alarm LED 1 = Relay 1, Alarm LED 2 = Relay 2, etc.... The alarm LEDs are always latching but can be reset by the operator press the *RESET/ESC* button. The alarm LEDs will blink if the alarm condition has stopped occurring but the operator has not pressed the *RESET/ESC* button--his gives the operator an indication that an alarm condition has occurred in the past but is no longer occurring.

LED Indication Key (Alarms, Faults, and Power/Status)

There are five red LEDs and one tricolor LED (red/green/blue).

LED	Color / Status	Description
ALARM 1	off	no alarm condition has occurred on relay 1 since the last reset or power up
	solid red	an alarm condition is currently happening on relay 1
	blinking red	an alarm condition has occurred on relay 1, but condition has now gone
ALARM 2	off	no alarm condition has occurred on relay 2 since the last reset or power up
	solid red	an alarm condition is currently happening on relay 2
	blinking red	an alarm condition has occurred on relay 2, but condition has now gone
ALARM 3	off	no alarm condition has occurred on relay 3 since the last reset or power up
	solid red	an alarm condition is currently happening on relay 3
	blinking red	an alarm condition has occurred on relay 3, but condition has now gone
ALARM 4	off	no alarm condition has occurred on relay 4 since the last reset or power up
	solid red	an alarm condition is currently happening on relay 4
	blinking red	an alarm condition has occurred on relay 4, but condition has now gone
Fault	off	no Fault condition has occurred on any sensor unit sense the last reset or power up
	solid orange	a Fault condition is currently happening on at least one sensor unit
POWER/STATUS	green	indicates that this monitor has become the Primary monitor (only occurs with GenII radios)
	red	a Fault condition is occurring on the monitor
	blue	Normal Operating Mode

OI-7010-X-X-X-X Troubleshooting Guide

- Fault 1
  Indication: Sensor Timeout
  Reason: OI-6000 digital sensor board problem
  Solution: Check connections; replace sensor housing if still in Fault
  Applies to: Setups that use a Gen II sensor assembly

- Fault 4
  Indication: ADC Not Responding
  Reason: OI-6000, OI-6900 or OI-6975 analog sensor board not responding
  Solution: Ensure that the analog board is properly connected; replace analog sensor board if still in Fault
  Applies to: Setups that use a GenII sensor assembly

- Fault 8
  Indication: Two Sensors Same Add
  Solution: Check addresses of all sensors until the duplicate is found, then change the duplicated address
  Applies to: GenI and GenII setups

- Fault 9
  Indication: Sensor Radio Timeout
  Solution: Ensure that all WireFree sensors are in range and transmitting
  Applies to: GenI and GenII setups

- Fault 10
  Reason: When the channel is setup to be a wired sensor, it means no sensor is connected
  Solution: Check that sensor is connected to the appropriate wired channel
  Applies to: Setups that use 4-20mA sensor assemblies

- Fault 13
  Reason: A channel that is configured as wired has a sensor connected but there is a fault on the sensor unit itself
  Solution: Check the sensor unit and take the appropriate action to correct the fault
  Applies to: Setups that use 4-20mA sensor assemblies

- Fault 15
  Indication: Monitor Fault
  Reason: No Primary Monitor
  Solution: Set the OI-7010-X-X-X-X to be the Primary Monitor
  Applies to: Setups that use a Gen II sensor assembly

4-20mA Current Loop Introduction

This appendix in only an introduction. The information should serve as a brief overview of 4-20mA, and should not be considered a complete reference for proper implementation or use.

Prior knowledge of industry standards pertaining to 4-20mA specifically, and other aspects of electronics, are assumed to be known by the technician. For proper connection to a monitor or PLC, refer to the manufacturer's specific Operation Manual or instructions for that particular piece of hardware.

Overview

4-20mA ("four to twenty"), is an analog electrical transmission standard used by Otis Instruments for some of its ambient gas sensors and monitors. The signal is a current loop where 4mA represents zero percent signal, and 20mA represents 100 percent signal (full scale of the sensor assembly). The relationship between the current loop and the gas value is linear.

The 4mA allows the receiving monitor/PLC to distinguish between a zero signal, a broken wire, or a dead instrument. Benefits of 4-20mA convention are that it is: an industry standard, low-cost to implement, can reject some forms of electrical noise, and the signal does not change value around the "loop" (as apposed to a voltage). Only one current level can be present at any time; each device which operates via 4-20mA must to wired directly to the monitoring device.

Calculations

$$I_{(4-20)} = \left(\frac{\lfloor 16 \cdot value \rfloor}{scale} \right) + 4$$

$I_{(4-20)}$: current of loop, measured in mA
value : PPM or %, of gas concentration
scale : full scale of sensor (see below for usual ranges)

Target Gas		Range	Temp.
H2S =	Hydrogen Sulphide	0-100 ppm	-20 to 50C
O2 =	Oxygen	0-25 %	-30 to 55C
SO2 =	Sulfur Dioxide	0-20 ppm	-20 to 50C
CL2 =	Chlorine	0-10 ppm	-20 to 50C
H2 =	Hydrogen	0-4 %	-20 to 40C
NH3 =	Ammonia	0-100 ppm	-40 to 40C
CO =	Carbon Monoxide	0-999 ppm	-20 to 50C
F2 =	Florine	0-1 ppm	-10 to 40C
HF =	Hydrogen Fluoride	0-10 ppm	-10 to 40C
H2S-2 =	Hydrogen Sulphide (extended temp)	0-100 ppm	-40 to 50C

Table – Gas Sensor Details

Actual ranges may vary with our product. If unsure, confirm with the actual gas sensor assembly distributor, Otis Instruments sales representative, or call the main Otis Instruments office for more details.

Measuring Current

If the value measured is 0mA, then: the loop wires are broken, the sensor assembly is not powered up, the sensor assembly is malfunctioning, or the monitor is malfunctioning. A DMM (digital multi meter) or Current Meter may be used to test a 4-20mA signal. Place the DMM or Current Meter in line with the loop and measure current. The DMM/Current Meter may be used in conjunction with the normal monitoring device.

OI-7010-12 Modbus Register Map

Register Address (Hexadecimal)	Register Address (Decimal)	Data Description	R/W	Length	Units	Valid Response
					Radio Data	
1	1	Channel 1 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
2	2	Channel 2 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
3	3	Channel 3 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
4	4	Channel 4 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
5	5	Channel 5 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
6	6	Channel 6 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
7	7	Channel 7 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
8	8	Channel 8 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
9	9	Channel 9 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
A	10	Channel 10 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
B	11	Channel 11 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
C	12	Channel 12 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
D	13	Channel 1 Reading	R	2	FLOAT	Any valid sensor reading
F	15	Channel 2 Reading	R	2	FLOAT	Any valid sensor reading
11	17	Channel 3 Reading	R	2	FLOAT	Any valid sensor reading
13	19	Channel 4 Reading	R	2	FLOAT	Any valid sensor reading
15	21	Channel 5 Reading	R	2	FLOAT	Any valid sensor reading
17	23	Channel 6 Reading	R	2	FLOAT	Any valid sensor reading
19	25	Channel 7 Reading	R	2	FLOAT	Any valid sensor reading
1B	27	Channel 8 Reading	R	2	FLOAT	Any valid sensor reading
1D	29	Channel 9 Reading	R	2	FLOAT	Any valid sensor reading
1F	31	Channel 10 Reading	R	2	FLOAT	Any valid sensor reading
21	33	Channel 11 Reading	R	2	FLOAT	Any valid sensor reading
23	35	Channel 12 Reading	R	2	FLOAT	Any valid sensor reading
25	37	Channel 1 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
26	38	Channel 2 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
27	39	Channel 3 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
28	40	Channel 4 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
29	41	Channel 5 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
2A	42	Channel 6 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
2B	43	Channel 7 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
2C	44	Channel 8 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
2D	45	Channel 9 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
2E	46	Channel 10 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
2F	47	Channel 11 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
30	48	Channel 12 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
31	49	Channel 1 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
33	51	Channel 2 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
35	53	Channel 3 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
37	55	Channel 4 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
39	57	Channel 5 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
3B	59	Channel 6 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
3D	61	Channel 7 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
3F	63	Channel 8 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
41	65	Channel 9 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
43	67	Channel 10 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
45	69	Channel 11 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
47	71	Channel 12 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
49	73	Channel 1 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
4A	74	Channel 2 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
4B	75	Channel 3 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
4C	76	Channel 4 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
4D	77	Channel 5 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
4E	78	Channel 6 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
4F	79	Channel 7 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
50	80	Channel 8 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
51	81	Channel 9 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
52	82	Channel 10 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
53	83	Channel 11 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
54	84	Channel 12 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
55	85	Channel 1 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
56	86	Channel 2 Sensor Type	R/W	1	ENUMERATION	0-31 See Sensor Type Enumeration Below

57	87	Channel 3 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
58	88	Channel 4 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
59	89	Channel 5 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
5A	90	Channel 6 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
5B	91	Channel 7 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
5C	92	Channel 8 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
5D	93	Channel 9 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
5E	94	Channel 10 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
5F	95	Channel 11 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
60	96	Channel 12 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
61	97	Channel 1 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
62	98	Channel 2 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
63	99	Channel 3 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
64	100	Channel 4 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
65	101	Channel 5 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
66	102	Channel 6 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
67	103	Channel 7 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
68	104	Channel 8 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
69	105	Channel 9 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
6A	106	Channel 10 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
6B	107	Channel 11 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
6C	108	Channel 12 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
6D	109	Channel 1 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
6E	110	Channel 2 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
6F	111	Channel 3 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
70	112	Channel 4 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
71	113	Channel 5 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
72	114	Channel 6 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
73	115	Channel 7 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
74	116	Channel 8 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
75	117	Channel 9 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
76	118	Channel 10 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
77	119	Channel 11 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
78	120	Channel 12 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
79	121	Channel 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
7A	122	Channel 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
7B	123	Channel 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
7C	124	Channel 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
7D	125	Channel 5 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
7E	126	Channel 6 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
7F	127	Channel 7 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
80	128	Channel 8 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
81	129	Channel 9 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
82	130	Channel 10 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
83	131	Channel 11 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
84	132	Channel 12 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
85	133	Channel 1 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
86	134	Channel 2 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
87	135	Channel 3 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
88	136	Channel 4 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
89	137	Channel 5 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
8A	138	Channel 6 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
8B	139	Channel 7 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
8C	140	Channel 8 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
8D	141	Channel 9 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
8E	142	Channel 10 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
8F	143	Channel 11 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
90	144	Channel 12 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
91	145	Channel 1 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
92	146	Channel 2 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
93	147	Channel 3 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
94	148	Channel 4 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
95	149	Channel 5 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
96	150	Channel 6 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
97	151	Channel 7 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
98	152	Channel 8 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
99	153	Channel 9 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
9A	154	Channel 10 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
9B	155	Channel 11 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
9C	156	Channel 12 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
9D	157	Channel 1 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
9F	159	Channel 2 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
A1	161	Channel 3 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
A3	163	Channel 4 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
A5	165	Channel 5 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0

A7	167	Channel 6 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
A9	169	Channel 7 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
AB	171	Channel 8 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
AD	173	Channel 9 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
AF	175	Channel 10 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
B1	177	Channel 11 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
B3	179	Channel 12 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
B5	181	Channel 1 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
B6	182	Channel 2 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
B7	183	Channel 3 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
B8	184	Channel 4 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
B9	185	Channel 5 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
BA	186	Channel 6 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
BB	187	Channel 7 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
BC	188	Channel 8 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
BD	189	Channel 9 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
BE	190	Channel 10 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
BF	191	Channel 11 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
C0	192	Channel 12 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
C1	193	Channel 1 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C2	194	Channel 2 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C3	195	Channel 3 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C4	196	Channel 4 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C5	197	Channel 5 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C6	198	Channel 6 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C7	199	Channel 7 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C8	200	Channel 8 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
C9	201	Channel 9 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
CA	202	Channel 10 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
CB	203	Channel 11 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
CC	204	Channel 12 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
CD	205	Channel 1 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
CE	206	Channel 2 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
CF	207	Channel 3 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D0	208	Channel 4 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D1	209	Channel 5 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D2	210	Channel 6 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D3	211	Channel 7 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D4	212	Channel 8 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D5	213	Channel 9 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D6	214	Channel 10 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D7	215	Channel 11 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D8	216	Channel 12 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
D9	217	Channel 1 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
DB	219	Channel 2 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
DD	221	Channel 3 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
DF	223	Channel 4 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
E1	225	Channel 5 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
E3	227	Channel 6 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
E5	229	Channel 7 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
E7	231	Channel 8 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
E9	233	Channel 9 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
EB	235	Channel 10 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
ED	237	Channel 11 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
EF	239	Channel 12 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
F1	241	Channel 1 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F2	242	Channel 2 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F3	243	Channel 3 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F4	244	Channel 4 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F5	245	Channel 5 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F6	246	Channel 6 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F7	247	Channel 7 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F8	248	Channel 8 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
F9	249	Channel 9 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
FA	250	Channel 10 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
FB	251	Channel 11 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
FC	252	Channel 12 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
FD	253	Channel 1 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
FE	254	Channel 2 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
FF	255	Channel 3 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
100	256	Channel 4 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
101	257	Channel 5 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
102	258	Channel 6 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
103	259	Channel 7 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
104	260	Channel 8 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on

105	261	Channel 9 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
106	262	Channel 10 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
107	263	Channel 11 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
108	264	Channel 12 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
109	265	Channel 1 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
10A	266	Channel 2 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
10B	267	Channel 3 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
10C	268	Channel 4 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
10D	269	Channel 5 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
10E	270	Channel 6 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
10F	271	Channel 7 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
110	272	Channel 8 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
111	273	Channel 9 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
112	274	Channel 10 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
113	275	Channel 11 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
114	276	Channel 12 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
115	277	Channel 1 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
117	279	Channel 2 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
119	281	Channel 3 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
11B	283	Channel 4 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
11D	285	Channel 5 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
11F	287	Channel 6 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
121	289	Channel 7 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
123	291	Channel 8 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
125	293	Channel 9 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
127	295	Channel 10 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
129	297	Channel 11 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
12B	299	Channel 12 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
12D	301	Channel 1 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
12E	302	Channel 2 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
12F	303	Channel 3 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
130	304	Channel 4 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
131	305	Channel 5 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
132	306	Channel 6 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
133	307	Channel 7 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
134	308	Channel 8 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
135	309	Channel 9 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
136	310	Channel 10 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
137	311	Channel 11 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
138	312	Channel 12 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
139	313	Channel 1 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
13A	314	Channel 2 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
13B	315	Channel 3 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
13C	316	Channel 4 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
13D	317	Channel 5 Relay 4 On/4ff	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
13E	318	Channel 6 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
13F	319	Channel 7 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
140	320	Channel 8 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
141	321	Channel 9 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
142	322	Channel 10 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
143	323	Channel 11 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
144	324	Channel 12 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
145	325	Channel 1 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
146	326	Channel 2 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
147	327	Channel 3 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
148	328	Channel 4 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
149	329	Channel 5 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
14A	330	Channel 6 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
14B	331	Channel 7 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
14C	332	Channel 8 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
14D	333	Channel 9 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
14E	334	Channel 10 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
14F	335	Channel 11 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
150	336	Channel 12 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
151	337	Channel 1 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
153	339	Channel 2 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
155	341	Channel 3 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
157	343	Channel 4 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
159	345	Channel 5 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
15B	347	Channel 6 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
15D	349	Channel 7 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
15F	351	Channel 8 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
161	353	Channel 9 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
163	355	Channel 10 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
165	357	Channel 11 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0

167	359	Channel 12 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
169	361	Channel 1 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
16A	362	Channel 2 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
16B	363	Channel 3 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
16C	364	Channel 4 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
16D	365	Channel 5 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
16E	366	Channel 6 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
16F	367	Channel 7 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
170	368	Channel 8 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
171	369	Channel 9 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
172	370	Channel 10 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
173	371	Channel 11 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
174	372	Channel 12 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
175	373	Channel 9 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
176	374	Channel 10 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
177	375	Channel 11 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
178	376	Channel 12 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
179	377	Channel 9 Scale	R/W	1	INTEGER	1—65000
17A	378	Channel 10 Scale	R/W	1	INTEGER	1—65000
17B	379	Channel 11 Scale	R/W	1	INTEGER	1—65000
17C	380	Channel 12 Scale	R/W	1	INTEGER	1—65000

Modbus and Build Data

1771	6001	Modbus Address	R/W	1	INTEGER	1 – 247
1772	6002	Modbus Baud Rate	R/W	1	INTEGER	Any Valid Baud Rate. See Below.
1773	6003	Month	R	1	INTEGER	1 – 12
1774	6004	Day	R	1	INTEGER	1 – 31
1775	6005	Year	R	1	INTEGER	2009 –
1776	6006	Serial Number Character	R	1	ENUMERATION	0 – 26 See Serial Number below
1777	6007	Serial Number	R	2	LONG INT	1 – 99999

Settings in Startup Menu

177A	6010	Can Change Startup Menu Options	R	1	ENUMERATION	0 – 1, 1 can change startup menu items. 0 cannot change.
177B	6011	Restore to Factory Default	R/W	1	ENUMERATION	When read will be 0. When you want to restore write a 1.
177C	6012	Relay 4 as Fault Relay	R/W	1	ENUMERATION	0 – 1, 0 means normal relay, 1 means Fault Relay
177D	6013	Relay 1 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
177E	6014	Relay 2 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
177F	6015	Relay 3 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1780	6016	Relay 4 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1781	6017	Fault Terminal Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1782	6018	Radio Timeout	R/W	1	INTEGER	6-255. This is the timeout in minutes.
1783	6019	Network Channel	R/W	1	INTEGER	1—78
1784	6020	Primary Secondary	R/W	1	ENUMERATION	0 – 1, 0 means Primary, 1 means Secondary.

Relays in Alarm State

1785	6021	Relay 1 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1786	6022	Relay 2 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1787	6023	Relay 3 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1788	6024	Relay 4 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1789	6025	Fault Relay is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
178A	6026	Channels 1-12 in Alarm	R	2	ENUMERATION	Each bit corresponds to a Channel. 1 means in Alarm
178C	6028	Not used on 12 Channel 7010		2		
178E	6030	Reset Relays	R/W	1	ENUMERATION	Reads always a 0. Write 1 to reset the relays.

Diagnostics Data

2704	9988	Reset	R/W	1	INTEGER	Read 0. If user sets to 1, resets the unit.
2705	9989	Serial Receive Good Count	R	1	UINT	0 – 65535
2706	9990	Serial Receive Error Count	R	1	UINT	0 – 65535
2707	9991	Serial Transmit Good Count	R	1	UINT	0 – 65535
2708	9992	Serial Transmit Error Count	R	1	UINT	0 – 65535
2709	9993	Radio Receive Good Count	R	1	UINT	0 – 65535
270A	9994	Radio Receive Error Count	R	1	UINT	0 – 65535
270B	9995	Radio Transmit Good Count	R	1	UINT	0 – 65535
270C	9996	Radio Transmit Error Count	R	1	UINT	0 – 65535
270D	9997	Uptime Days	R	1	UINT	0 – 65535
270E	9998	Uptime Hours	R	1	UINT	0 – 65535
270F	9999	Uptime Minutes	R	1	UINT	0 – 65535

MODE SENSOR	MODE
0	NORMAL
1	NULL
2	CALIBRATION
3	RELAY
4	Radio ADD
5	Diagnostic/ Batt
6	Advanced Menu
7	Admin Menu

Valid Baud Rates
4800
9600
19200

GAS TYPE NUM	GAS
0	H2S
1	SO2
2	O2
3	CO
4	CL2
5	CO2
6	LEL
7	VOC
8	Ft. for tank
9	HCl
10	NH3
11	H2
12	ClO2
13	F2
14	HCN
15	HF
16..N	Future Gases

Sensor TYPE NUM	SENSOR
0	EC
1	IR
2	CB
3	MOS
4	PID
5..N	Future Sensors

FAULT	FAULT
0	NONE
1	Sensor Timeout
2	Future Error
3	Future Error
4	ADC not responding
5	Future Error
6	Future Error
7	Future Error
8	Two Sensors Same Add
9	Sensor Radio Timeout
10	When Sensor is wired, it means no sensor is connected
11...12	Future Error
13	Unspecified Error on sensor unit. Shown only on Monitor
14	No Primary Monitor at Sensor Head
15	Monitor Fault

Serial Number Char	Char
1	A
2	B
3	C
4	D
5	E
6	F
7	G
8	H
9	I
10	J
11	K
12	L
13	M
14	N
15	O
16	P
17	Q
18	R
19	S
20	T
21	U
22	V
23	W
24	X
25	Y
26	Z

APPENDIX D: 32-Channel Modbus Register Map

OI-7010-32 Modbus Register Map

Register Address (Hexadecimal)	Register Address (Decimal)	Data Description	R/W	Length	Units	Valid Response
		Radio Data				
1	1	Channel 1 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
2	2	Channel 2 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
3	3	Channel 3 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
4	4	Channel 4 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
5	5	Channel 5 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
6	6	Channel 6 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
7	7	Channel 7 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
8	8	Channel 8 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
9	9	Channel 9 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
A	10	Channel 10 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
B	11	Channel 11 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
C	12	Channel 12 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
D	13	Channel 13 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
E	14	Channel 14 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
F	15	Channel 15 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
10	16	Channel 16 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
11	17	Channel 17 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
12	18	Channel 18 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
13	19	Channel 19 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
14	20	Channel 20 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
15	21	Channel 21 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
16	22	Channel 22 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
17	23	Channel 23 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
18	24	Channel 24 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
19	25	Channel 25 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
1A	26	Channel 26 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
1B	27	Channel 27 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
1C	28	Channel 28 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
1D	29	Channel 29 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
1E	30	Channel 30 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
1F	31	Channel 31 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
20	32	Channel 32 Radio Address	R/W	1	INTEGER	Radio Address (1-255)
21	33	Channel 1 Reading	R	2	FLOAT	Any valid sensor reading
23	35	Channel 2 Reading	R	2	FLOAT	Any valid sensor reading
25	37	Channel 3 Reading	R	2	FLOAT	Any valid sensor reading
27	39	Channel 4 Reading	R	2	FLOAT	Any valid sensor reading
29	41	Channel 5 Reading	R	2	FLOAT	Any valid sensor reading
2B	43	Channel 6 Reading	R	2	FLOAT	Any valid sensor reading
2D	45	Channel 7 Reading	R	2	FLOAT	Any valid sensor reading
2F	47	Channel 8 Reading	R	2	FLOAT	Any valid sensor reading
31	49	Channel 9 Reading	R	2	FLOAT	Any valid sensor reading
33	51	Channel 10 Reading	R	2	FLOAT	Any valid sensor reading
35	53	Channel 11 Reading	R	2	FLOAT	Any valid sensor reading
37	55	Channel 12 Reading	R	2	FLOAT	Any valid sensor reading
39	57	Channel 13 Reading	R	2	FLOAT	Any valid sensor reading
3B	59	Channel 14 Reading	R	2	FLOAT	Any valid sensor reading
3D	61	Channel 15 Reading	R	2	FLOAT	Any valid sensor reading
3F	63	Channel 16 Reading	R	2	FLOAT	Any valid sensor reading
41	65	Channel 17 Reading	R	2	FLOAT	Any valid sensor reading
43	67	Channel 18 Reading	R	2	FLOAT	Any valid sensor reading
45	69	Channel 19 Reading	R	2	FLOAT	Any valid sensor reading
47	71	Channel 20 Reading	R	2	FLOAT	Any valid sensor reading
49	73	Channel 21 Reading	R	2	FLOAT	Any valid sensor reading
4B	75	Channel 22 Reading	R	2	FLOAT	Any valid sensor reading
4D	77	Channel 23 Reading	R	2	FLOAT	Any valid sensor reading
4F	79	Channel 24 Reading	R	2	FLOAT	Any valid sensor reading
51	81	Channel 25 Reading	R	2	FLOAT	Any valid sensor reading
53	83	Channel 26 Reading	R	2	FLOAT	Any valid sensor reading
55	85	Channel 27 Reading	R	2	FLOAT	Any valid sensor reading
57	87	Channel 28 Reading	R	2	FLOAT	Any valid sensor reading
59	89	Channel 29 Reading	R	2	FLOAT	Any valid sensor reading
5B	91	Channel 30 Reading	R	2	FLOAT	Any valid sensor reading

5D	93	Channel 31 Reading	R	2	FLOAT	Any valid sensor reading
5F	95	Channel 32 Reading	R	2	FLOAT	Any valid sensor reading
61	97	Channel 1 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
62	98	Channel 2 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
63	99	Channel 3 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
64	100	Channel 4 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
65	101	Channel 5 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
66	102	Channel 6 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
67	103	Channel 7 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
68	104	Channel 8 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
69	105	Channel 9 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
6A	106	Channel 10 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
6B	107	Channel 11 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
6C	108	Channel 12 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
6D	109	Channel 13 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
6E	110	Channel 14 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
6F	111	Channel 15 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
70	112	Channel 16 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
71	113	Channel 17 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
72	114	Channel 18 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
73	115	Channel 19 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
74	116	Channel 20 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
75	117	Channel 21 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
76	118	Channel 22 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
77	119	Channel 23 Mode	R	2	ENUMERATION	0-7 See Mode Enumeration Below
78	120	Channel 24 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
79	121	Channel 25 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
7A	122	Channel 26 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
7B	123	Channel 27 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
7C	124	Channel 28 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
7D	125	Channel 29 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
7E	126	Channel 30 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
7F	127	Channel 31 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
80	128	Channel 32 Mode	R	1	ENUMERATION	0-7 See Mode Enumeration Below
81	129	Channel 1 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
83	131	Channel 2 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
85	133	Channel 3 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
87	135	Channel 4 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
89	137	Channel 5 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
8B	139	Channel 6 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
8D	141	Channel 7 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
8F	143	Channel 8 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
91	145	Channel 9 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
93	147	Channel 10 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
95	149	Channel 11 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
97	151	Channel 12 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
99	153	Channel 13 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
9B	155	Channel 14 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
9D	157	Channel 15 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
9F	159	Channel 16 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
A1	161	Channel 17 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
A3	163	Channel 18 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
A5	165	Channel 19 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
A7	167	Channel 20 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
A9	169	Channel 21 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
AB	171	Channel 22 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
AD	173	Channel 23 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
AF	175	Channel 24 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
B1	177	Channel 25 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
B3	179	Channel 26 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
B5	181	Channel 27 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
B7	183	Channel 28 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
B9	185	Channel 29 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
BB	187	Channel 30 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
BD	189	Channel 31 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
BF	191	Channel 32 Battery	R	2	FLOAT	Sensor Input Voltage(>= 0.0)
C1	193	Channel 1 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C2	194	Channel 2 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C3	195	Channel 3 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C4	196	Channel 4 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C5	197	Channel 5 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C6	198	Channel 6 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C7	199	Channel 7 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C8	200	Channel 8 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
C9	201	Channel 9 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout

CA	202	Channel 10 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
CB	203	Channel 11 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
CC	204	Channel 12 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
CD	205	Channel 13 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
CE	206	Channel 14 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
CF	207	Channel 15 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D0	208	Channel 16 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D1	209	Channel 17 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D2	210	Channel 18 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D3	211	Channel 19 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D4	212	Channel 20 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D5	213	Channel 21 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D6	214	Channel 22 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D7	215	Channel 23 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D8	216	Channel 24 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
D9	217	Channel 25 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
DA	218	Channel 26 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
DB	219	Channel 27 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
DC	220	Channel 28 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
DD	221	Channel 29 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
DE	222	Channel 30 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
DF	223	Channel 31 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
E0	224	Channel 32 Sec Since Last Message	R	1	INTEGER	-1-32768 Seconds, -1 = no transmissions. Staying 0 = timeout
E1	225	Channel 1 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E2	226	Channel 2 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E3	227	Channel 3 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E4	228	Channel 4 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E5	229	Channel 5 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E6	230	Channel 6 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E7	231	Channel 7 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E8	232	Channel 8 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
E9	233	Channel 9 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
EA	234	Channel 10 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
EB	235	Channel 11 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
EC	236	Channel 12 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
ED	237	Channel 13 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
EE	238	Channel 14 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
EF	239	Channel 15 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F0	240	Channel 16 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F1	241	Channel 17 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F2	242	Channel 18 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F3	243	Channel 19 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F4	244	Channel 20 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F5	245	Channel 21 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F6	246	Channel 22 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F7	247	Channel 23 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F8	248	Channel 24 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
F9	249	Channel 25 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
FA	250	Channel 26 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
FB	251	Channel 27 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
FC	252	Channel 28 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
FD	253	Channel 29 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
FE	254	Channel 30 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
FF	255	Channel 31 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
100	256	Channel 32 Sensor Type	R	1	ENUMERATION	0-31 See Sensor Type Enumeration Below
101	257	Channel 1 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
102	258	Channel 2 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
103	259	Channel 3 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
104	260	Channel 4 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
105	261	Channel 5 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
106	262	Channel 6 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
107	263	Channel 7 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
108	264	Channel 8 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
109	265	Channel 9 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
10A	266	Channel 10 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
10B	267	Channel 11 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
10C	268	Channel 12 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
10D	269	Channel 13 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
10E	270	Channel 14 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
10F	271	Channel 15 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
110	272	Channel 16 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
111	273	Channel 17 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
112	274	Channel 18 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
113	275	Channel 19 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
114	276	Channel 20 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below

115	277	Channel 21 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
116	278	Channel 22 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
117	279	Channel 23 Gas type	R	1	ENUMERATION	0-127 See Gas Enumeration below
118	280	Channel 24 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
119	281	Channel 25 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
11A	282	Channel 26 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
11B	283	Channel 27 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
11C	284	Channel 28 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
11D	285	Channel 29 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
11E	286	Channel 30 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
11F	287	Channel 31 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
120	288	Channel 32 Gas Type	R	1	ENUMERATION	0-127 See Gas Enumeration below
121	289	Channel 1 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
122	290	Channel 2 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
123	291	Channel 3 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
124	292	Channel 4 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
125	293	Channel 5 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
126	294	Channel 6 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
127	295	Channel 7 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
128	296	Channel 8 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
129	297	Channel 9 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
12A	298	Channel 10 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
12B	299	Channel 11 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
12C	300	Channel 12 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
12D	301	Channel 13 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
12E	302	Channel 14 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
12F	303	Channel 15 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
130	304	Channel 16 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
131	305	Channel 17 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
132	306	Channel 18 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
133	307	Channel 19 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
134	308	Channel 20 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
135	309	Channel 21 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
136	310	Channel 22 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
137	311	Channel 23 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
138	312	Channel 24 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
139	313	Channel 25 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
13A	314	Channel 26 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
13B	315	Channel 27 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
13C	316	Channel 28 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
13D	317	Channel 29 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
13E	318	Channel 30 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
13F	319	Channel 31 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
140	320	Channel 32 Fault	R	1	ENUMERATION	0-15 See Fault Enumeration below
141	321	Channel 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
142	322	Channel 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
143	323	Channel 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
144	324	Channel 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
145	325	Channel 5 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
146	326	Channel 6 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
147	327	Channel 7 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
148	328	Channel 8 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
149	329	Channel 9 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
14A	330	Channel 10 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
14B	331	Channel 11 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
14C	332	Channel 12 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
14D	333	Channel 13 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
14E	334	Channel 14 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
14F	335	Channel 15 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
150	336	Channel 16 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
151	337	Channel 17 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
152	338	Channel 18 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
153	339	Channel 19 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
154	340	Channel 20 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
155	341	Channel 21 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
156	342	Channel 22 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
157	343	Channel 23 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
158	344	Channel 24 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
159	345	Channel 25 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
15A	346	Channel 26 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
15B	347	Channel 27 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
15C	348	Channel 28 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
15D	349	Channel 29 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
15E	350	Channel 30 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
15F	351	Channel 31 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on

160	352	Channel 32 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
161	353	Channel 1 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
162	354	Channel 2 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
163	355	Channel 3 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
164	356	Channel 4 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
165	357	Channel 5 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
166	358	Channel 6 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
167	359	Channel 7 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
168	360	Channel 8 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
169	361	Channel 9 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
16A	362	Channel 10 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
16B	363	Channel 11 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
16C	364	Channel 12 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
16D	365	Channel 13 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
16E	366	Channel 14 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
16F	367	Channel 15 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
170	368	Channel 16 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
171	369	Channel 17 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
172	370	Channel 18 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
173	371	Channel 19 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
174	372	Channel 20 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
175	373	Channel 21 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
176	374	Channel 22 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
177	375	Channel 23 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
178	376	Channel 24 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
179	377	Channel 25 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
17A	378	Channel 26 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
17B	379	Channel 27 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
17C	380	Channel 28 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
17D	381	Channel 29 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
17E	382	Channel 30 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
17F	383	Channel 31 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
180	384	Channel 32 Relay 1 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
181	385	Channel 1 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
182	386	Channel 2 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
183	387	Channel 3 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
184	388	Channel 4 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
185	389	Channel 5 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
186	390	Channel 6 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
187	391	Channel 7 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
188	392	Channel 8 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
189	393	Channel 9 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
18A	394	Channel 10 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
18B	395	Channel 11 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
18C	396	Channel 12 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
18D	397	Channel 13 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
18E	398	Channel 14 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
18F	399	Channel 15 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
190	400	Channel 16 Relay 1High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
191	401	Channel 17 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
192	402	Channel 18 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
193	403	Channel 19 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
194	404	Channel 20 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
195	405	Channel 21 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
196	406	Channel 22 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
197	407	Channel 23 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
198	408	Channel 24 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
199	409	Channel 25 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
19A	410	Channel 26 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
19B	411	Channel 27 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
19C	412	Channel 28 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
19D	413	Channel 29 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
19E	414	Channel 30 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
19F	415	Channel 31 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
1A0	416	Channel 32 Relay 1 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
1A1	417	Channel 1 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1A3	419	Channel 2 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1A5	421	Channel 3 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1A7	423	Channel 4 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1A9	425	Channel 5 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1AB	427	Channel 6 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1AD	429	Channel 7 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1AF	431	Channel 8 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1B1	433	Channel 9 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1B3	435	Channel 10 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0

1B5	437	Channel 11 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1B7	439	Channel 12 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1B9	441	Channel 13 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1BB	443	Channel 14 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1BD	445	Channel 15 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1BF	447	Channel 16 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1C1	449	Channel 17 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1C3	451	Channel 18 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1C5	453	Channel 19 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1C7	455	Channel 20 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1C9	457	Channel 21 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1CB	459	Channel 22 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1CD	461	Channel 23 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1CF	463	Channel 24 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1D1	465	Channel 25 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1D3	467	Channel 26 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1D5	469	Channel 27 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1D7	471	Channel 28 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1D9	473	Channel 29 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1DB	475	Channel 30 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1DD	477	Channel 31 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1DF	479	Channel 32 Relay 1 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
1E1	481	Channel 1 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E2	482	Channel 2 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E3	483	Channel 3 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E4	484	Channel 4 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E5	485	Channel 5 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E6	486	Channel 6 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E7	487	Channel 7 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E8	488	Channel 8 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1E9	489	Channel 9 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1EA	490	Channel 10 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1EB	491	Channel 11 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1EC	492	Channel 12 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1ED	493	Channel 13 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1EE	494	Channel 14 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1EF	495	Channel 15 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F0	496	Channel 16 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F1	497	Channel 17 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F2	498	Channel 18 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F3	499	Channel 19 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F4	500	Channel 20 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F5	501	Channel 21 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F6	502	Channel 22 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F7	503	Channel 23 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F8	504	Channel 24 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1F9	505	Channel 25 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1FA	506	Channel 26 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1FB	507	Channel 27 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1FC	508	Channel 28 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1FD	509	Channel 29 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1FE	510	Channel 30 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
1FF	511	Channel 31 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
200	512	Channel 32 Relay 1 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
201	513	Channel 1 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
202	514	Channel 2 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
203	515	Channel 3 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
204	516	Channel 4 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
205	517	Channel 5 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
206	518	Channel 6 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
207	519	Channel 7 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
208	520	Channel 8 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
209	521	Channel 9 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
20A	522	Channel 10 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
20B	523	Channel 11 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
20C	524	Channel 12 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
20D	525	Channel 13 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
20E	526	Channel 14 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
20F	527	Channel 15 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
210	528	Channel 16 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
211	529	Channel 17 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
212	530	Channel 18 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
213	531	Channel 19 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
214	532	Channel 20 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
215	533	Channel 21 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on

216	534	Channel 22 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
217	535	Channel 23 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
218	536	Channel 24 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
219	537	Channel 25 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
21A	538	Channel 26 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
21B	539	Channel 27 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
21C	540	Channel 28 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
21D	541	Channel 29 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
21E	542	Channel 30 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
21F	543	Channel 31 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
220	544	Channel 32 Relay 2 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
221	545	Channel 1 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
222	546	Channel 2 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
223	547	Channel 3 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
224	548	Channel 4 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
225	549	Channel 5 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
226	550	Channel 6 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
227	551	Channel 7 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
228	552	Channel 8 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
229	553	Channel 9 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
22A	554	Channel 10 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
22B	555	Channel 11 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
22C	556	Channel 12 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
22D	557	Channel 13 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
22E	558	Channel 14 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
22F	559	Channel 15 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
230	560	Channel 16 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
231	561	Channel 17 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
232	562	Channel 18 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
233	563	Channel 19 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
234	564	Channel 20 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
235	565	Channel 21 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
236	566	Channel 22 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
237	567	Channel 23 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
238	568	Channel 24 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
239	569	Channel 25 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
23A	570	Channel 26 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
23B	571	Channel 27 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
23C	572	Channel 28 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
23D	573	Channel 29 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
23E	574	Channel 30 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
23F	575	Channel 31 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
240	576	Channel 32 Relay 2 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
241	577	Channel 1 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
243	579	Channel 2 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
245	581	Channel 3 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
247	583	Channel 4 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
249	585	Channel 5 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
24B	587	Channel 6 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
24D	589	Channel 7 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
24F	591	Channel 8 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
251	593	Channel 9 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
253	595	Channel 10 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
255	597	Channel 11 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
257	599	Channel 12 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
259	601	Channel 13 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
25B	603	Channel 14 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
25D	605	Channel 15 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
25F	607	Channel 16 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
261	609	Channel 17 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
263	611	Channel 18 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
265	613	Channel 19 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
267	615	Channel 20 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
269	617	Channel 21 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
26B	619	Channel 22 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
26D	621	Channel 23 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
26F	623	Channel 24 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
271	625	Channel 25 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
273	627	Channel 26 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
275	629	Channel 27 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
277	631	Channel 28 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
279	633	Channel 29 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
27B	635	Channel 30 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
27D	637	Channel 31 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
27F	639	Channel 32 Relay 2 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0

281	641	Channel 1 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
282	642	Channel 2 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
283	643	Channel 3 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
284	644	Channel 4 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
285	645	Channel 5 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
286	646	Channel 6 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
287	647	Channel 7 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
288	648	Channel 8 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
289	649	Channel 9 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
28A	650	Channel 10 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
28B	651	Channel 11 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
28C	652	Channel 12 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
28D	653	Channel 13 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
28E	654	Channel 14 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
28F	655	Channel 15 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
290	656	Channel 16 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
291	657	Channel 17 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
292	658	Channel 18 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
293	659	Channel 19 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
294	660	Channel 20 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
295	661	Channel 21 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
296	662	Channel 22 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
297	663	Channel 23 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
298	664	Channel 24 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
299	665	Channel 25 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
29A	666	Channel 26 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
29B	667	Channel 27 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
29C	668	Channel 28 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
29D	669	Channel 29 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
29E	670	Channel 30 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
29F	671	Channel 31 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
2A0	672	Channel 32 Relay 2 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
2A1	673	Channel 1 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A2	674	Channel 2 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A3	675	Channel 3 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A4	676	Channel 4 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A5	677	Channel 5 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A6	678	Channel 6 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A7	679	Channel 7 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A8	680	Channel 8 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2A9	681	Channel 9 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2AA	682	Channel 10 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2AB	683	Channel 11 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2AC	684	Channel 12 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2AD	685	Channel 13 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2AE	686	Channel 14 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2AF	687	Channel 15 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B0	688	Channel 16 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B1	689	Channel 17 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B2	690	Channel 18 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B3	691	Channel 19 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B4	692	Channel 20 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B5	693	Channel 21 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B6	694	Channel 22 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B7	695	Channel 23 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B8	696	Channel 24 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2B9	697	Channel 25 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2BA	698	Channel 26 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2BB	699	Channel 27 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2BC	700	Channel 28 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2BD	701	Channel 29 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2BE	702	Channel 30 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2BF	703	Channel 31 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2C0	704	Channel 32 Relay 3 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
2C1	705	Channel 1 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C2	706	Channel 2 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C3	707	Channel 3 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C4	708	Channel 4 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C5	709	Channel 5 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C6	710	Channel 6 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C7	711	Channel 7 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C8	712	Channel 8 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2C9	713	Channel 9 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2CA	714	Channel 10 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2CB	715	Channel 11 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high

2CC	716	Channel 12 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2CD	717	Channel 13 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2CE	718	Channel 14 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2CF	719	Channel 15 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D0	720	Channel 16 Relay 3High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D1	721	Channel 17 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D2	722	Channel 18 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D3	723	Channel 19 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D4	724	Channel 20 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D5	725	Channel 21 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D6	726	Channel 22 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D7	727	Channel 23 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D8	728	Channel 24 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2D9	729	Channel 25 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2DA	730	Channel 26 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2DB	731	Channel 27 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2DC	732	Channel 28 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2DD	733	Channel 29 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2DE	734	Channel 30 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2DF	735	Channel 31 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2E0	736	Channel 32 Relay 3 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
2E1	737	Channel 1 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2E3	739	Channel 2 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2E5	741	Channel 3 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2E7	743	Channel 4 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2E9	745	Channel 5 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2EB	747	Channel 6 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2ED	749	Channel 7 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2EF	751	Channel 8 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2F1	753	Channel 9 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2F3	755	Channel 10 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2F5	757	Channel 11 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2F7	759	Channel 12 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2F9	761	Channel 13 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2FB	763	Channel 14 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2FD	765	Channel 15 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
2FF	767	Channel 16 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
301	769	Channel 17 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
303	771	Channel 18 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
305	773	Channel 19 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
307	775	Channel 20 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
309	777	Channel 21 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
30B	779	Channel 22 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
30D	781	Channel 23 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
30F	783	Channel 24 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
311	785	Channel 25 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
313	787	Channel 26 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
315	789	Channel 27 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
317	791	Channel 28 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
319	793	Channel 29 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
31B	795	Channel 30 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
31D	797	Channel 31 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
31F	799	Channel 32 Relay 3 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
321	801	Channel 1 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
322	802	Channel 2 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
323	803	Channel 3 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
324	804	Channel 4 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
325	805	Channel 5 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
326	806	Channel 6 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
327	807	Channel 7 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
328	808	Channel 8 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
329	809	Channel 9 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
32A	810	Channel 10 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
32B	811	Channel 11 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
32C	812	Channel 12 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
32D	813	Channel 13 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
32E	814	Channel 14 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
32F	815	Channel 15 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
330	816	Channel 16 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
331	817	Channel 17 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
332	818	Channel 18 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
333	819	Channel 19 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
334	820	Channel 20 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
335	821	Channel 21 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
336	822	Channel 22 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch

337	823	Channel 23 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
338	824	Channel 24 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
339	825	Channel 25 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
33A	826	Channel 26 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
33B	827	Channel 27 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
33C	828	Channel 28 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
33D	829	Channel 29 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
33E	830	Channel 30 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
33F	831	Channel 31 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
340	832	Channel 32 Relay 3 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
341	833	Channel 1 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
342	834	Channel 2 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
343	835	Channel 3 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
344	836	Channel 4 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
345	837	Channel 5 Relay 4 On/4ff	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
346	838	Channel 6 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
347	839	Channel 7 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
348	840	Channel 8 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
349	841	Channel 9 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
34A	842	Channel 10 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
34B	843	Channel 11 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
34C	844	Channel 12 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
34D	845	Channel 13 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
34E	846	Channel 14 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
34F	847	Channel 15 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
350	848	Channel 16 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
351	849	Channel 17 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
352	850	Channel 18 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
353	851	Channel 19 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
354	852	Channel 20 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
355	853	Channel 21 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
356	854	Channel 22 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
357	855	Channel 23 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
358	856	Channel 24 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
359	857	Channel 25 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
35A	858	Channel 26 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
35B	859	Channel 27 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
35C	860	Channel 28 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
35D	861	Channel 29 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
35E	862	Channel 30 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
35F	863	Channel 31 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
360	864	Channel 32 Relay 4 On/Off	R/W	1	ENUMERATION	0 – 1, 0 means off, 1 means on
361	865	Channel 1 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
362	866	Channel 2 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
363	867	Channel 3 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
364	868	Channel 4 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
365	869	Channel 5 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
366	870	Channel 6 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
367	871	Channel 7 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
368	872	Channel 8 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
369	873	Channel 9 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
36A	874	Channel 10 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
36B	875	Channel 11 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
36C	876	Channel 12 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
36D	877	Channel 13 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
36E	878	Channel 14 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
36F	879	Channel 15 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
370	880	Channel 16 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
371	881	Channel 17 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
372	882	Channel 18 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
373	883	Channel 19 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
374	884	Channel 20 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
375	885	Channel 21 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
376	886	Channel 22 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
377	887	Channel 23 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
378	888	Channel 24 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
379	889	Channel 25 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
37A	890	Channel 26 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
37B	891	Channel 27 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
37C	892	Channel 28 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
37D	893	Channel 29 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
37E	894	Channel 30 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
37F	895	Channel 31 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
380	896	Channel 32 Relay 4 High/Low	R/W	1	ENUMERATION	0 - 1 ,0 means low, 1 means high
381	897	Channel 1 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0

383	899	Channel 2 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
385	901	Channel 3 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
387	903	Channel 4 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
389	905	Channel 5 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
38B	907	Channel 6 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
38D	909	Channel 7 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
38F	911	Channel 8 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
391	913	Channel 9 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
393	915	Channel 10 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
395	917	Channel 11 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
397	919	Channel 12 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
399	921	Channel 13 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
39B	923	Channel 14 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
39D	925	Channel 15 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
39F	927	Channel 16 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3A1	929	Channel 17 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3A3	931	Channel 18 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3A5	933	Channel 19 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3A7	935	Channel 20 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3A9	937	Channel 21 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3AB	939	Channel 22 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3AD	941	Channel 23 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3AF	943	Channel 24 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3B1	945	Channel 25 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3B3	947	Channel 26 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3B5	949	Channel 27 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3B7	951	Channel 28 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3B9	953	Channel 29 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3BB	955	Channel 30 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3BD	957	Channel 31 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3BF	959	Channel 32 Relay 4 Set Point	R/W	2	FLOAT	Any number 65000 or less and higher than 0
3C1	961	Channel 1 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C2	962	Channel 2 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C3	963	Channel 3 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C4	964	Channel 4 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C5	965	Channel 5 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C6	966	Channel 6 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C7	967	Channel 7 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C8	968	Channel 8 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3C9	969	Channel 9 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3CA	970	Channel 10 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3CB	971	Channel 11 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3CC	972	Channel 12 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3CD	973	Channel 13 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3CE	974	Channel 14 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3CF	975	Channel 15 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D0	976	Channel 16 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D1	977	Channel 17 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D2	978	Channel 18 Relay 4 Latch/Unlatch	R/W	2	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D3	979	Channel 19 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D4	980	Channel 20 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D5	981	Channel 21 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D6	982	Channel 22 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D7	983	Channel 23 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D8	984	Channel 24 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3D9	985	Channel 25 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3DA	986	Channel 26 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3DB	987	Channel 27 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3DC	988	Channel 28 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3DD	989	Channel 29 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3DE	990	Channel 30 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3DF	991	Channel 31 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3E0	992	Channel 32 Relay 4 Latch/Unlatch	R/W	1	ENUMERATION	0 - 1 ,0 means unlatch, 1 means latch
3E1	993	Channel 29 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
3E2	994	Channel 30 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
3E3	995	Channel 31 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
3E4	996	Channel 32 Select Wired or Radio	R/W	1	ENUMERATION	0 - 1 ,0 means wired, 1 means radio
3E5	997	Channel 29 Scale	R/W	1	INTEGER	1—65000
3E6	998	Channel 30 Scale	R/W	1	INTEGER	1—65000
3E7	999	Channel 31 Scale	R/W	1	INTEGER	1—65000
3E8	1000	Channel 32 Scale	R/W	1	INTEGER	1—65000

Modbus and Build Data

1771	6001	Modbus Address	R/W	1	INTEGER	1 – 247
1772	6002	Modbus Baud Rate	R/W	1	INTEGER	Any Valid Baud Rate. See Below.
1773	6003	Month	R	1	INTEGER	1 – 12
1774	6004	Day	R	1	INTEGER	1 – 31
1775	6005	Year	R	1	INTEGER	2009 –
1776	6006	Serial Number Character	R	1	ENUMERATION	0 – 26 See Serial Number below
1777	6007	Serial Number	R	2	LONG INT	1 – 99999

Settings in Startup Menu

177A	6010	Can Change Startup Menu Options	R	1	ENUMERATION	0 – 1, 1 can change startup menu items. 0 cannot change.
177B	6011	Restore to Factory Default	R/W	1	ENUMERATION	When read will be 0. When you want to restore write a 1.
177C	6012	Relay 4 as Fault Relay	R/W	1	ENUMERATION	0 – 1, 0 means normal relay, 1 means Fault Relay
177D	6013	Relay 1 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
177E	6014	Relay 2 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
177F	6015	Relay 3 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1780	6016	Relay 4 Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1781	6017	Fault Terminal Fail Safe	R/W	1	ENUMERATION	0 – 1, 0 means not Fail Safe, 1 means Fail Safe
1782	6018	Radio Timeout	R/W	1	INTEGER	6-255. This is the timeout in minutes.
1783	6019	Network Channel	R/W	1	INTEGER	1—78
1784	6020	Primary Secondary	R/W	1	ENUMERATION	0 – 1, 0 means Primary, 1 means Secondary.

Relays in Alarm State

1785	6021	Relay 1 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1786	6022	Relay 2 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1787	6023	Relay 3 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1788	6024	Relay 4 is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
1789	6025	Fault Relay is in Alarm	R	1	ENUMERATION	0 – 1, 0 means not in Alarm, 1 means in Alarm
178A	6026	Channels 1-32 in Alarm	R	2	ENUMERATION	Each bit corresponds to a Channel. 1 means in Alarm
178C	6028	Not used on 32 Channel 7010		2		
178E	6030	Reset Relays	R/W	1	ENUMERATION	Reads always a 0. Write 1 to reset the relays.
178F	6031	Channels in Fault	R	1	ENUMERATION	0 – 3, 0 no fault, 1 fault 1-16, 2 fault 17-32, 3 fault on both
1790	6032	Not used on 32 Channel 7010				
1791	6033	Fault: There is another Primary Monitor	R	1	ENUMERATION	0-1, 0 means no fault, 1 means there is another Primary

Diagnostics Data

2704	9988	Reset	R/W	1	INTEGER	Read 0. If user sets to 1, resets the unit.
2705	9989	Serial Receive Good Count	R	1	UINT	0 – 65535
2706	9990	Serial Receive Error Count	R	1	UINT	0 – 65535
2707	9991	Serial Transmit Good Count	R	1	UINT	0 – 65535
2708	9992	Serial Transmit Error Count	R	1	UINT	0 – 65535
2709	9993	Radio Receive Good Count	R	1	UINT	0 – 65535
270A	9994	Radio Receive Error Count	R	1	UINT	0 – 65535
270B	9995	Radio Transmit Good Count	R	1	UINT	0 – 65535
270C	9996	Radio Transmit Error Count	R	1	UINT	0 – 65535
270D	9997	Uptime Days	R	1	UINT	0 – 65535
270E	9998	Uptime Hours	R	1	UINT	0 – 65535
270F	9999	Uptime Minutes	R	1	UINT	0 – 65535

MODE SENSOR	MODE
0	NORMAL
1	NULL
2	CALIBRATION
3	RELAY
4	Radio ADD
5	Diagnostic/ Batt
6	Advanced Menu
7	Admin Menu

Valid Baud Rates
4800
9600
19200

GAS TYPE NUM	GAS
0	H2S
1	SO2
2	O2
3	CO
4	CL2
5	CO2
6	LEL
7	VOC
8	Ft. for tank
9	HCl
10	NH3
11	H2
12	ClO2
13	F2
14	HCN
15	HF
16..N	Future Gases

Sensor TYPE NUM	SENSOR
0	EC
1	IR
2	CB
3	MOS
4	PID
5..N	Future Sensors

FAULT	FAULT
0	NONE
1	Sensor Timeout
2	Future Error
3	Future Error
4	ADC not responding
5	Future Error
6	Future Error
7	Future Error
8	Two Sensors Same Add
9	Sensor Radio Timeout
10	When Sensor is wired, it means no sensor is connected
11...12	Future Error
13	Unspecified Error on sensor unit. Shown only on Monitor
14	No Primary Monitor at Sensor Head
15	Monitor Fault

Serial Number Char	Char
1	A
2	B
3	C
4	D
5	E
6	F
7	G
8	H
9	I
10	J
11	K
12	L
13	M
14	N
15	O
16	P
17	Q
18	R
19	S
20	T
21	U
22	V
23	W
24	X
25	Y
26	Z

Specifications

Operating Voltage:	12-35 Volts DC, 110/240 VAC
Compatibility:	Otis WireFree and wired (4-20mA input) sensor assemblies
Channels:	12 or 32
Gases:	All that are supported by the sensor assemblies
Wired Output:	RS-485 Modbus
Relays:	Four Dry-Contact (5 Amp) w/ 4 Amp Fuses
Protection:	Power EMI filter, surge suppression, 4-20mA and RS-485 surge suppression
Current Draw:	250mA at 12 VDC
Radio Options:	Can be configured with up to two radios: · 900 MHz (Legacy Option), 100mW · 2.4 GHz ISM, 100mW · 900 MHz, 200mW
Display	Two graphical LCD (128 x 64), transflective, sunlight readable, LED backlight
Enclosure:	Stahlin 10x8x6 fiberglass, clear window
Certifications:	NEMA 4 (enclosure only)
Warranty:	Hardware: 1 year (limited)

Warranty Statement for **WireFree *ProSafe* OI-7010-X-X-X-X**

Hardware

Otis Instruments, Inc. (Manufacturer) warrants its products to be free of defects in workmanship and materials—under normal use and service—from the date of purchase from the manufacturer or from the product's authorized reseller. The hardware for this device is under a one-year limited warranty.

The manufacturer is not liable (under this warranty) if its testing and examination disclose that the alleged defect in the product does not exist or was caused by the purchaser's (or any third party's) misuse, neglect, or improper installation, testing or calibrations. Any unauthorized attempt to repair or modify the product, or any other cause of damage beyond the range of the intended use, including damage by fire, lightening, water damage or other hazard, voids liability of the manufacturer.

In the event that a product should fail to perform up to manufacturer specifications during the applicable warranty period, contact the product's authorized reseller or return the product directly to the manufacturer with a Return Material Authorization (RMA). This number will be assigned upon contacting customer service at 979.776.7700 or Otis@otisinstruments.com. The manufacturer will--at its option and expense--repair or replace the product, or deliver an equivalent product or part to the purchaser at no additional charge.

Any replaced or repaired product or part has either a 90-day warranty or the remainder of the initial warranty period (whichever is longer).

Otis Instruments, Inc.

Corporate Office
2200 E. Villa Maria Dr.
Bryan, TX 77802
979.776.7700
www.otisinstruments.com