INSTALLATION AND OPERATION MANUAL FOR ACC 070 COMM LINK RS485 TO PC INTERFACE AND PRISM SOFTWARE

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APPLICABILITY

Information presented in this applies to ACC 070 COMM LINK and associated windows-based PRISM software. This RS485 interface and software is compatible with all IR-SNIF-1,2,3 and IR-SNIF-MCD refrigerant monitors with software version ***4261C and later*** versions *(requires RS485 option installed in monitor)*. To determine the version, press the "*" key. This will display momentary screens that provide contact information for SenTech Corporation, the software version and any options enabled in the monitor. If your monitor has a version that is older than 4261 (smaller version number ***such as 3017***), a retrofit chip to update the software may be available. A retrofit chip for older IR-SNIF-A series and IR-SNIF-S series monitors may also be available. Contact SenTech Corporation at 888-248-1988 for further details.

Contents

MATERIAL INCLUDED IN THIS PACKAGE

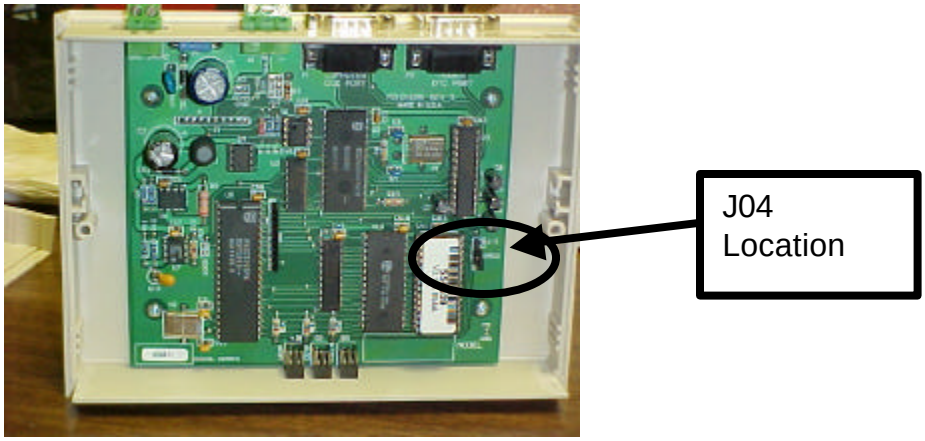
1. This Manual
2. COMM LINK II RS485 to PC Interface
3. PX000015 24 vac wall power supply
4. 4 piece computer cable kit consisting of:
   RJ12 Modular Phone Cable
   2 – 9 pin female adapters
   25 pin female adapter
5. COMM LINK to Modem Cable (9 pin female to 25 pin male connectors)
6. SenTech PRISM Software CD – Graphical Computer Interface for SenTech Gas Monitors

HARDWARE INSTALLATION

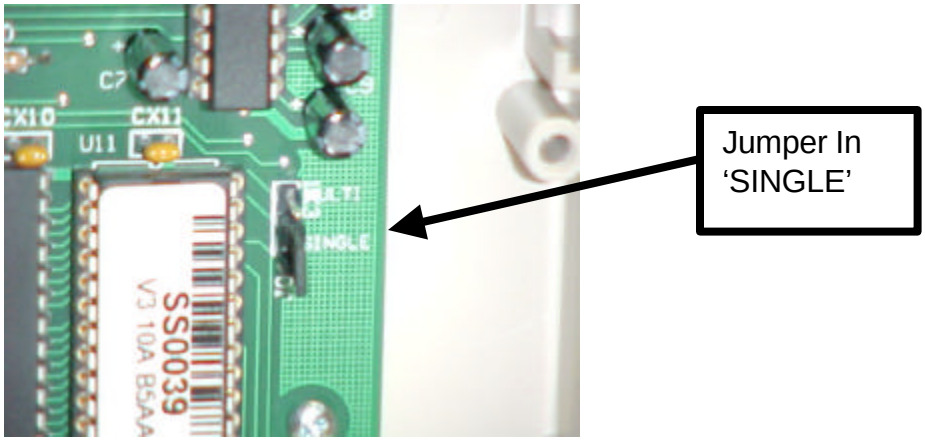
COMM LINK SETUP

Jumper setting –

1. Open COMM LINK by removing two screws from the bottom of the enclosure.
2. Remove top of COMM LINK.
3. Identify J04 jumper near edge of circuit card inside.



4. Verify that jumper is between center pin and pin labeled ‘SINGLE’. If jumper is connected between center pin and pin labeled ‘MULTI’, move to ‘SINGLE’ position.



5. Replace top cover and screws.

COMM LINK WIRING

Power wiring –

1. Identify the power connector. The power connector is a two pin screw terminal connector labeled '–24V' and '–GND'.

2. Remove warning label from power connector. When connecting multiple 24 VAC devices to power, all ground wires must be common. For most SenTech monitor applications, this unit is the ONLY 24 VAC device.
3. Connect power supply PX000015 to power connector. Note which conductor from the power supply has a stripe and insert it into the 'GND' terminal. Tighten the wire in the terminal with a small straight blade screwdriver. Insert the unmarked conductor in the '24V' terminal and tighten with a small straight blade screwdriver.

RS485 Wiring -

1. Identify the RS485 connector. The RS485 connector is labeled '485 LOOP', with each terminal of the connector labeled 'T', 'G' and 'R'.

2. Route 2 conductor twisted pair wire, or 4 conductor (two twisted pair) wire from SenTech monitor to COMM LINK.

a. If using 2 conductor wire, connect one wire to T on COMM LINK and to transmit terminal in SenTech monitor. Connect second wire to R on COMM LINK and to receive terminal in SenTech monitor. Connect shield to G on COMM LINK and to GND terminal in SenTech monitor. *(Refer to Refrigerant Monitor Installation and Operation Manual for terminal locations.)*
b. If using 4 conductor wire, connect one wire from one twisted pair to T on COMM LINK and to transmit terminal in SenTech monitor. Connect one wire from second twisted pair to R on COMM LINK and to receive terminal in SenTech monitor. Connect both remaining wires and shield to G on COMM LINK and to GND terminal in SenTech monitor. *(Refer to Refrigerant Monitor Installation and Operation Manual for terminal locations.)*

3. If multiple monitors are connected to the COMM LINK, connect all transmit terminals together, and all receive terminals together.

Computer Connection –

1. Identify the COMPUTER (DCE) connector. The computer connector is a 9 pin d-shell connector, similar to the comm port connector on a windows based pc.

2. Identify the comm. port on the back of the windows based pc. This will be either a 9 pin d-shell connector or a 25 pin d-shell connector.
3. Using the 4 piece computer cable kit, connect a 9 pin adapter to the COMM LINK. Connect either a 9 pin adaptor or a 25 pin adapter to the comm. port of the windows based pc. Connect the two adaptors using the supplied RJ12 modular phone cable. *(Note: a standard serial cable with the correct connectors will work in place of the supplied cable, though a null modem might be required.)*

Modem Connection –

1. The Remote LINK modem connection and cable are only required if the ACC 071 modem is purchased for remote site access to the COMM LINK.

Refer to the ACC 071 Installation and Operation Manual for further information.

PRISM SOFTWARE INSTALLATION

SYSTEM REQUIREMENTS

NOTE: This manual assumes the user has a working knowledge of either Windows 95, 98, ME, XP or 2000 operation and does not describe, in detail, the process of copying files or other windows related functions. Learning the operation of Windows is the responsibility of the operator using this equipment.

System Requirements
To use Prism you or your end user must have a computer that meets or exceeds the following items:

- IBM™ compatible computer
- Pentium 200 MHz or Faster Microprocessor
- 64 Meg RAM
- Windows 95 / 98 / ME / XP / 2000
- Super VGA Monitor w/ 1024 x 768 Resolution Minimum
- Available Serial Port for On-Site Installations
- Internal or External Modem for Remote Installations
- Network Card for TCP/IP Communications

You must be running Windows with **no other applications active**. If other applications are still running, you should terminate them before attempting to install PRISM. You must also terminate any virus protection programs while installing PRISM.

NOTE: If you are concerned about terminating a virus protection program, you can scan the installation disk for viruses prior to actually installing the program. Once the program is installed and the computer is rebooted, your virus program will automatically restart if it was originally installed to run whenever the computer is started.

NOTE: In some cases the installation will determine that some existing files on your hard disk need to be updated before the PRISM installation can continue. This is **your** decision to make. In some cases you may lose operational capabilities with preexisting programs if you decide to update the requested files. SenTech Corporation assumes no responsibility for any other program installed on your computer and cannot aid in restoring operation to any affected programs. *In most cases, but not* **all***, the updating of DLL files won't cause harmful effects, but you have been forewarned!*

If the Prism installation *does* update a file with your permission, the computer will need to be restarted and the *Setup program run again* to complete the

installation process. This does not occur automatically. Once again, you must check to make sure no other programs are running before beginning the installation.

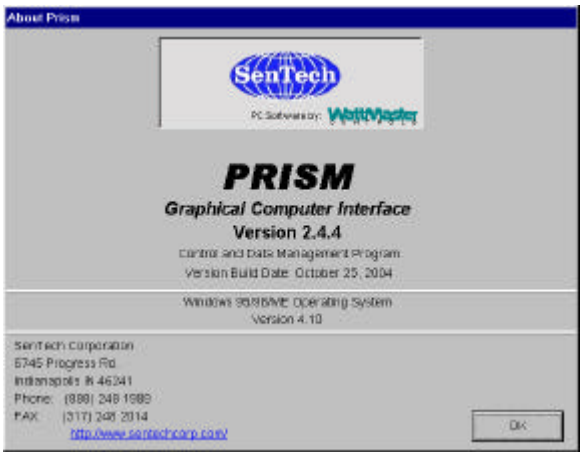
Installing from CD ROM -

1. Select **Run** from the **Start** button menu.
2. Enter the drive letter than contains the PRISM CD by "setup" (e.g. type "d:\setup"), then press <**Enter**> or select <**OK**> to begin the installation.

The setup program will copy all files from all the installation disks completely before the actual graphical installation screen appears. The setup program provides you with a default directory of **C:\Prism** for program installation. Unless you have specific reasons not to accept the default, you should allow the program to be installed in this directory. After all the files have been copied and uncompressed, the setup program will attempt to "register" the copied library files with the Windows registry program. This may take a few moments to complete. If the installation is successful, a new program group with the Prism **ICON** will be created and the Prism folder will be installed on the Programs Menu under the Start button.

1. When setup is complete, open window to display files on CD.
2. Copy 'sentech.cfg' from CD to C:\PRISM directory.

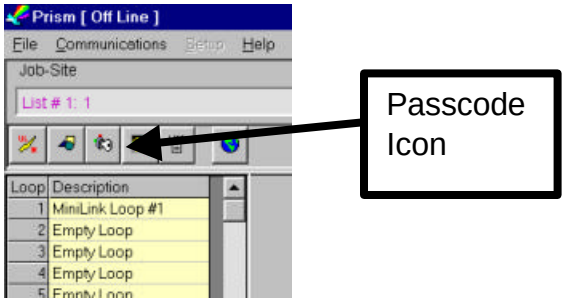
From the start menu on the PC, start PRISM software. PRISM should temporarily display the following screen, and then start normal operation. If the file 'sentech.cfg' has not been copied to the C:\PRISM directory, this screen will not display. A warning screen will display indicating that the proper cfg file is not installed. Close PRISM and copy the file as directed above.



CONFIGURE PRISM

Passcode Screen -
Before you can begin normal operations, PRISM needs to be configured to match your particular installation. You will need to enter the default passcode before proceeding. Select the Passcode Button (see below) and enter the default passcode of "**sm**" to gain access to all configuration menus. The passcode is case sensitive, so be sure to enter lower case text for this default value.

Select the Passcode ICON from the lower toolbar to access the User Passcode screen.



The passcode entry screen will appear when the passcode icon is pressed.

The passcode window consists of one entry field and three buttons.

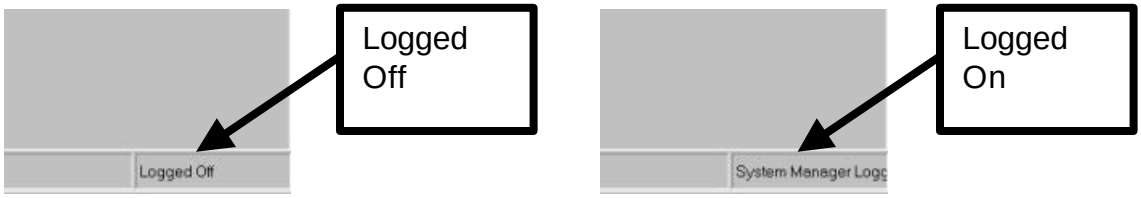
LOG OFF -
The **Log Off** button is used to secure the system and prevent any further modifications to PRISM and SenTech Monitor settings.

CANCEL -
The **Cancel** button is used if the screen has been accessed by mistake and don't wish to change the current access level.

Done -
The **Done** button is used to exit the screen once a passcode has been entered. *(The **enter** key on your keyboard has the same function as the **Done** button on this screen.)*

Passcode entry field –
The passcode field is used to type the passcode to gain access to the system.

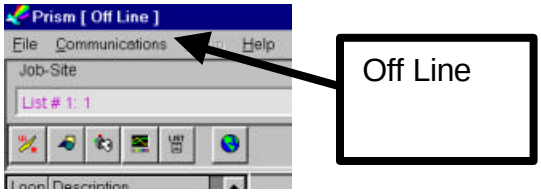
1. Type **sm** in the passcode entry field and press the **enter** key.



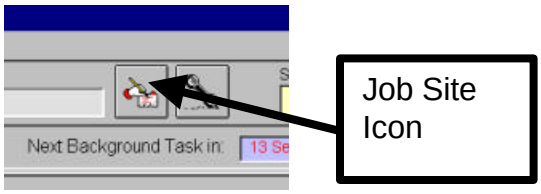
A status message in the lower right corner of the window will change from "Logged Off" to "System Manager Logged On".

Set PRISM to correct COMM Port –

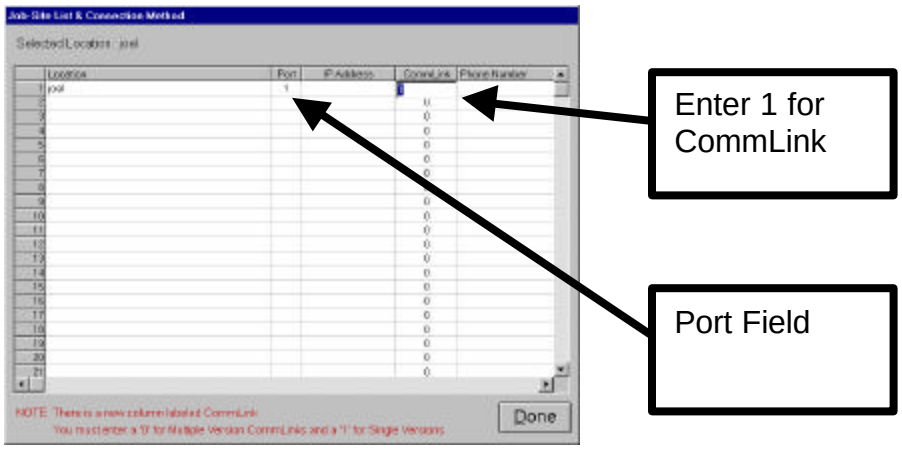
Notice the words **PRISM [Off Line]** on the very top status bar. This location will always indicate the current communications status of Prism. Note: If Prism displays the **On Line** message, access the Communications menu and select **Go Off Line**.



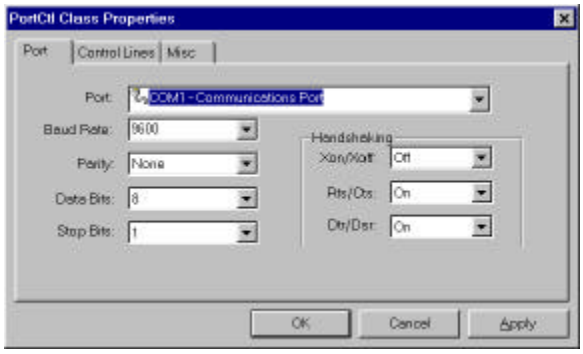
Press the Job Site List icon, and the Job Site List & Connection Method window will open.



Double click on the CommLink field and change the COMM LINK from a '0' to a '1'. *(0 = multi–link jumper set inside COMM LINK. 1 = single-link jumper set inside COMM LINK.)*

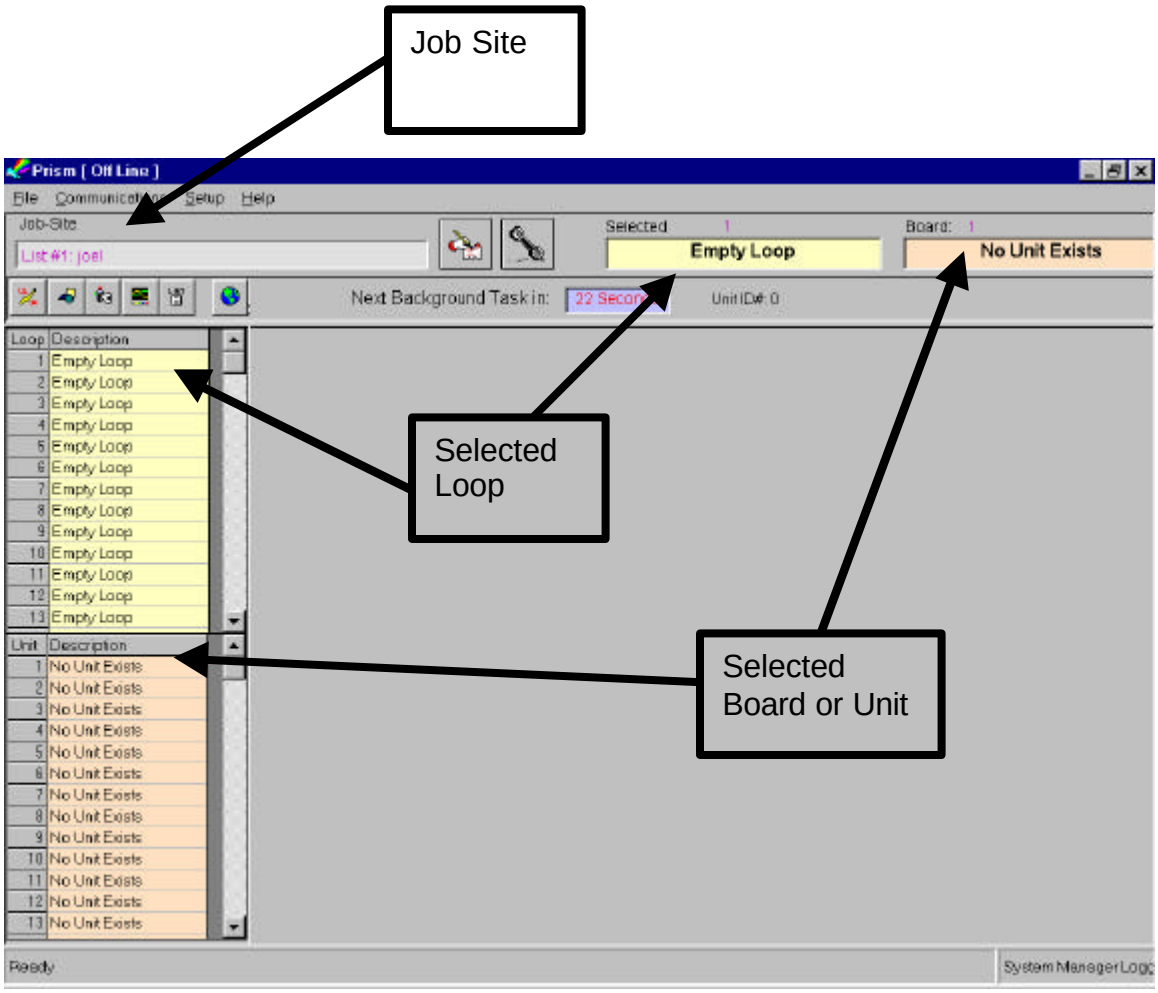


Double click on the Port field to configure the connection method. A 'Portctl Class Properties' window will open. Select the correct comm. port for your COMM LINK to PC connection. Set the comm. port for 9600 baud, no parity, 8 data bits, 1 stop bit and handshaking off. When complete, press the **OK** button.



The Job Site List & Connection Method window will reappear. Press the **DONE** button in the lower right corner of the window to return to the main PRISM window.

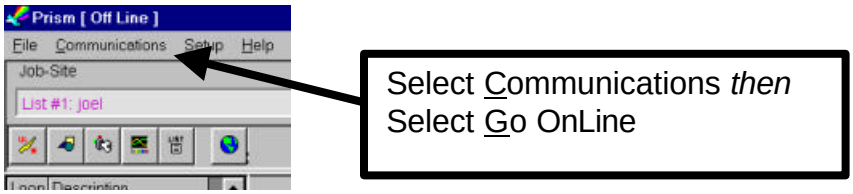
The PRISM window should now be 'logged in' as system manager *(see lower right corner of window)* and 'Off Line' *(see upper left corner)*. If PRISM has never been configured, the information across the top of the screen will show:
Job-Site – List # 1 Selected Loop – 1 "Empty Loop" and Selected Board – 1 "No Unit Exists".



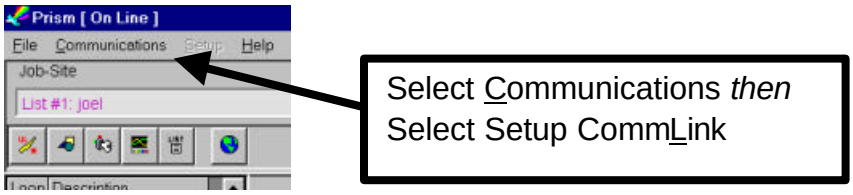
The Job Site selection allows the user to access multiple sites. This function only applies if ACC 071 Remote Modem is also installed, and should always be set to list #1 for SenTech monitor applications. *Refer to ACC 071 Installation and Operation Manual for more information.)*. The Selected Loop indicates the specific RS485 loop chosen to monitor. A COMM LINK an access up to 60 different RS485 loops. To change from one loop to another, simply double click on the loop to be selected. As with the List #, the selected loop should always be set to 1. The Selected Board or Selected Unit indicates the specific SenTech Monitor to access. For simple installations, there will be only one monitor and should always be set to 1. *(If multiple refrigerant monitors are connected to the RS485 loop, each monitor must be programmed with a different 'unit number' in the 'System Flags Setup Screen'. Refer to IR-SNIF Installation and Operation Manual for instructions to program unit numbers in the refrigerant monitor.)*

VERIFY COMMUNICATIONS WITH COMM LINK

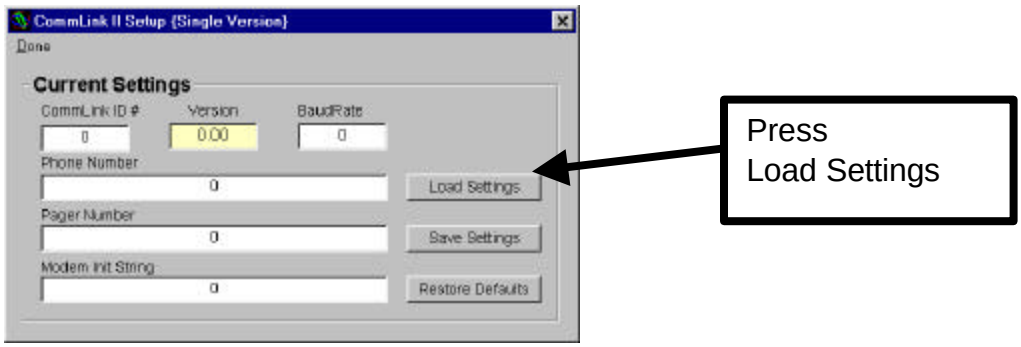
From the drop down menu, select Communications, then select Go OnLIne.



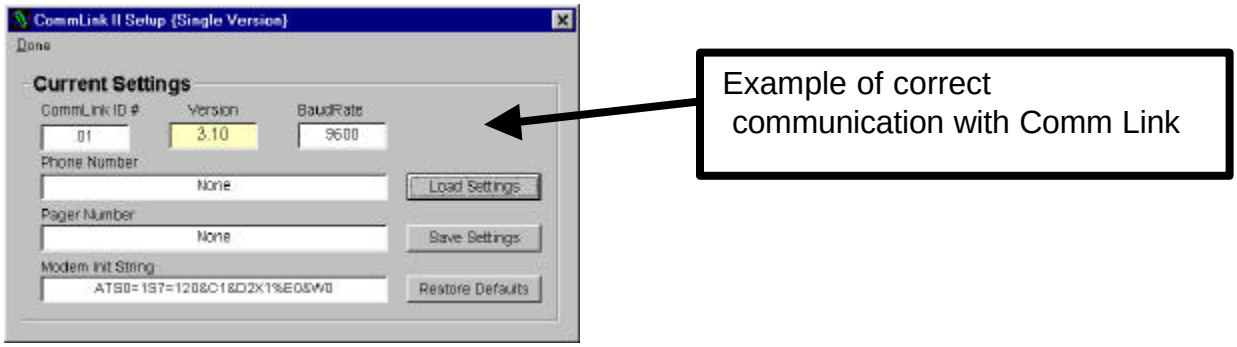
The Status in the upper left corner of the window should change from **Prism [Off Line]** to **Prism [On Line]**. From the drop down menu, select Communications, then select Setup CommLink.



The CommLink II window will appear, indicating that PRISM is configured to communicate with a Single Version jumpered Comm Link. Press the 'Load Settings' button to retrieve information from the Comm Link.



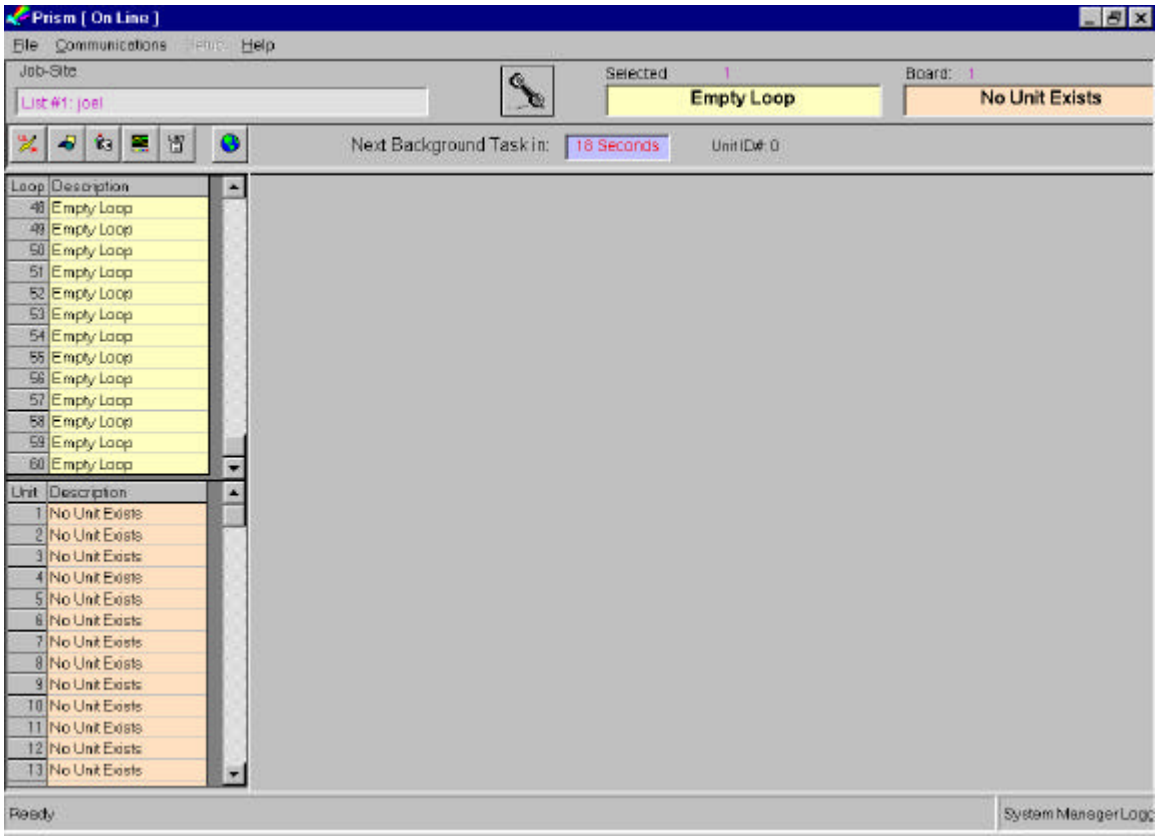
After retrieving data, the window will display the CommLink ID#, Version, Baud rate and other information. If the cable connections and Prism are set up correctly, valid information will be displayed in all fields. If the system is not connected and set up correctly, zeros, blanks, or unusual characters will appear.



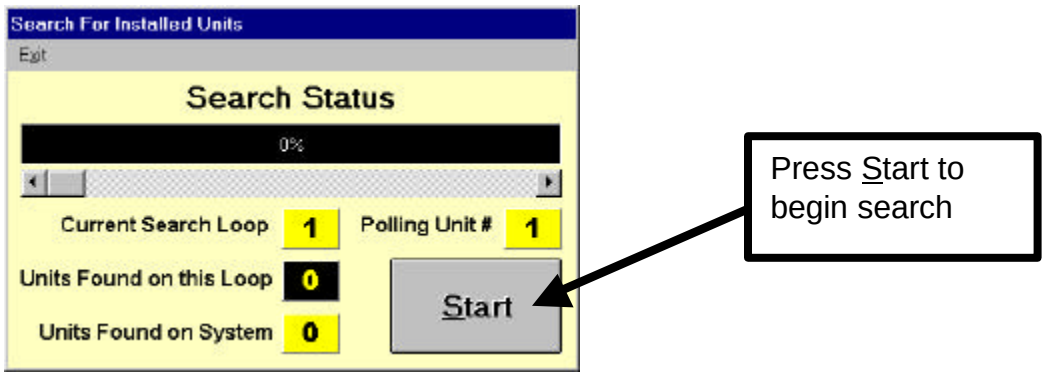
If information is retrieved, then the Comm Link and PC are set up and connected correctly. Press 'Done' in the drop down menu to close this window. If the information is not retrieved, then close the window and verify each step performed earlier in this manual.

COMMUNICATE WITH SENTECH MONITOR(S)

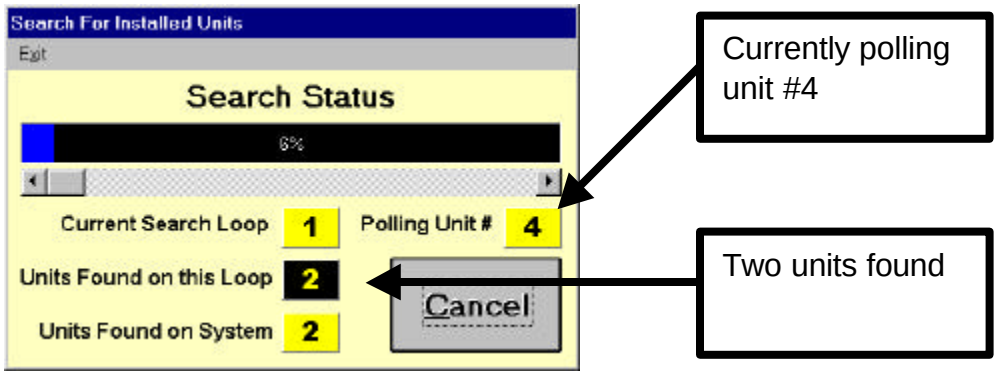
Verify that the PRISM Window is logged in as 'System Manager' and is 'On Line'. If needed log in using '**sm**' as passcode and select Communications, then select Go OnLIne using the drop down menu at the top of the window.



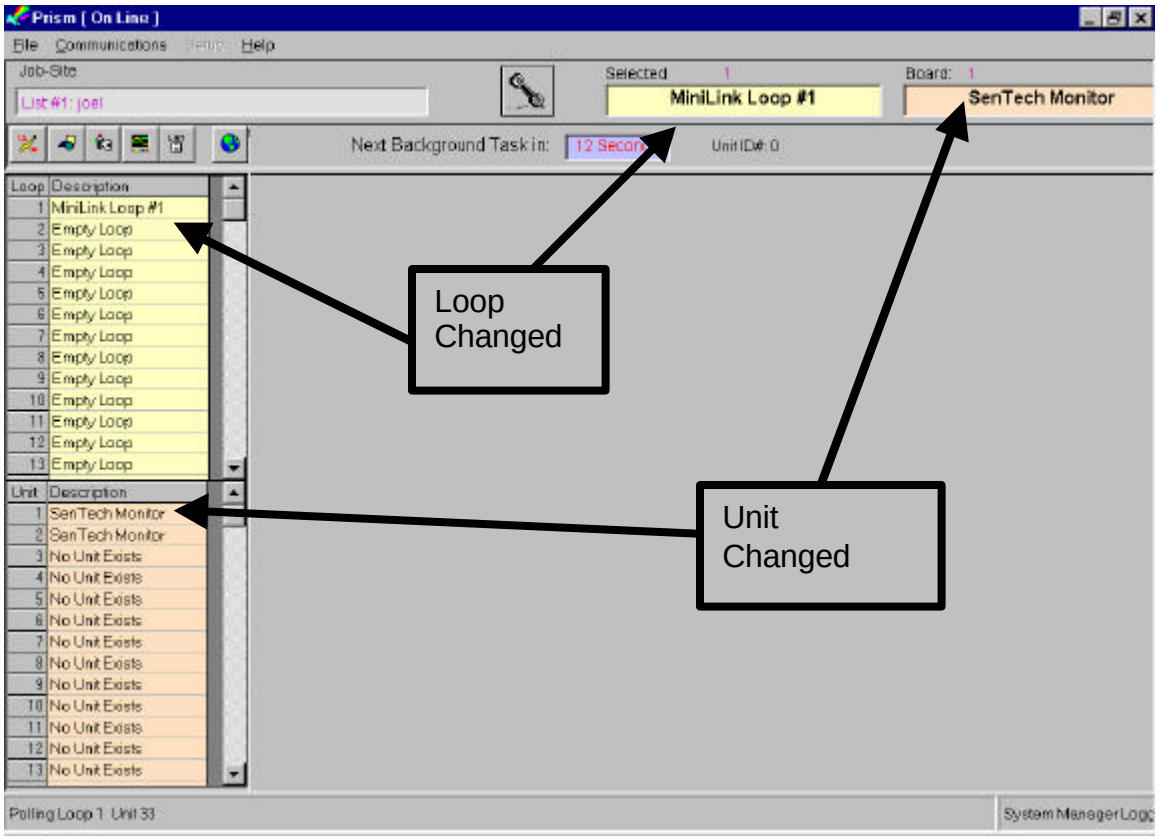
From the drop down menu, select Communications, then select Search for Units. The Search for Installed Units window will appear.



The window shows the loop to be searched and the unit number searched. Press the Start button to search for installed units on the loop. Prism will search for all 60 units on each loop, or until the cancel button is pressed.



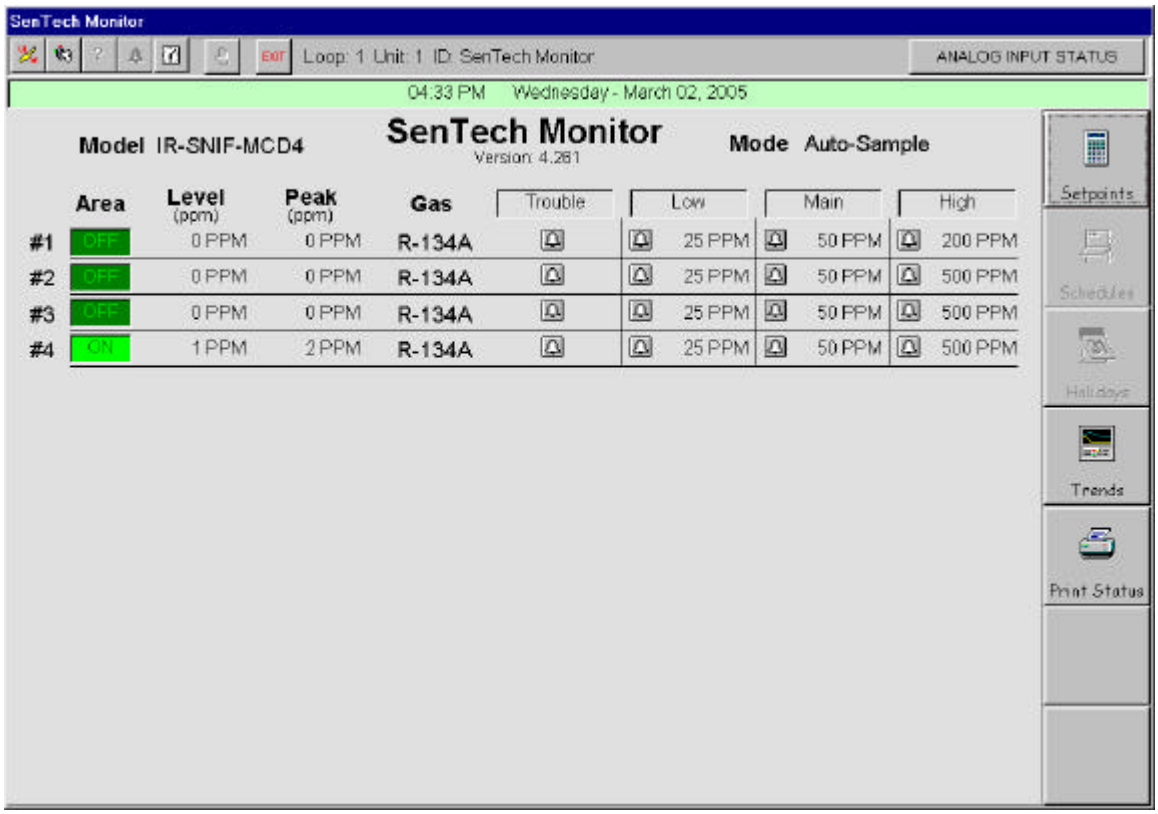
Once PRISM has searched passed the unit number of your SenTech monitor, press the Cancel button. The window will indicate the number of monitors found on the loop, and the total number of monitors found on the system. For most loops, this will be one monitor, unit number 1 on loop number 1. For the example listed above, there are two monitors, unit numbers 1 and 2 on loop number 1. Select Exit from the drop down menu to close this window. The PRISM window will have changed to show 'MiniLink Loop #1'in the selected loop field and 'SenTech Monitor' in the unit 1 field. *(In the example, there are monitors in Unit 1 and Unit 2 fields.)*



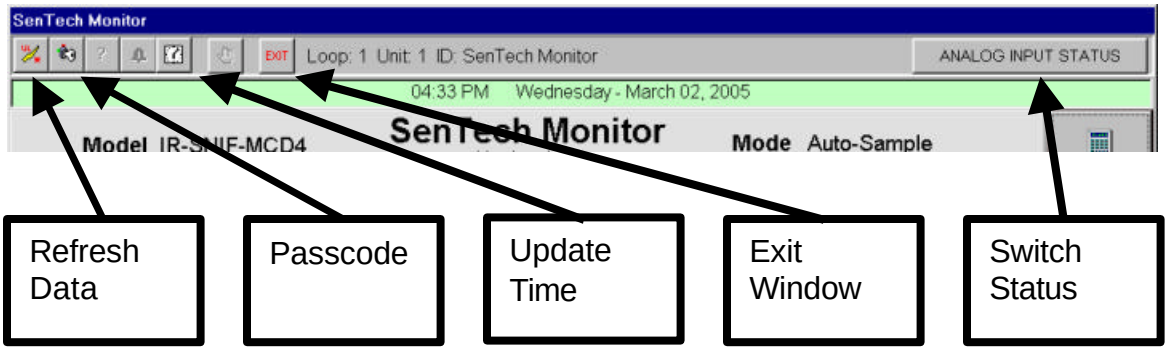
Once the SenTech monitor has been identified by PRISM, PRISM configuration is complete. No further changes are needed.

REFRIGERANT MONITOR STATUS

Double click on the words ‘SenTech Monitor’ in the left hand column to display the refrigerant monitor status screen.



The SenTech Monitor Status window is configured with buttons along the top and right side of the window. From left to right along the top, the buttons are ‘Refresh data’, ‘Passcode’, ‘Update Monitor Time and Date’, ‘Exit’ and ‘Switch to Analog Input Status’.



Refresh Data –
The Refresh Data button forces PRISM to poll the SenTech monitor and retrieve status information. However, the program automatically polls the monitor every 30 seconds, so this button is not normally used.

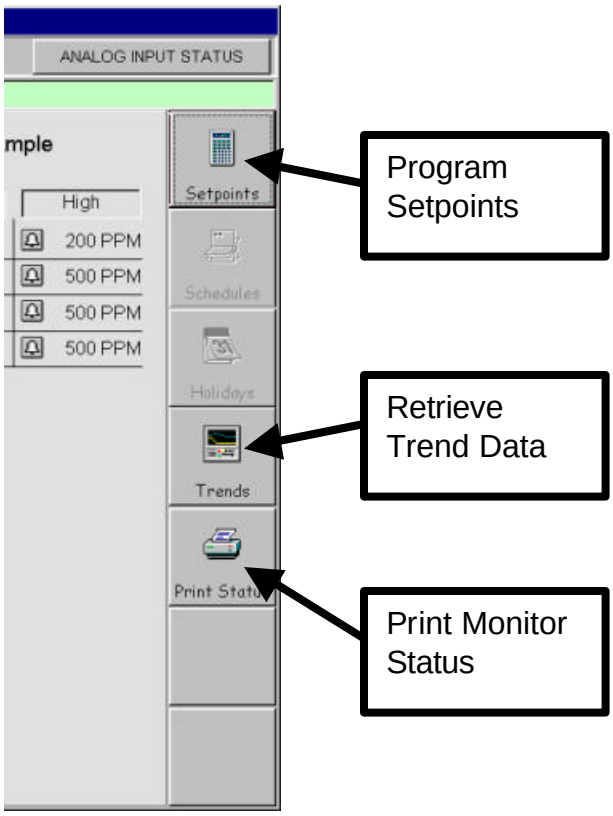
Passcode – If the user has not previously logged in as system manager, pressing the passcode button will access the log in window. *(The user must log in to modify refrigerant monitor settings. A passcode is not required to view the status and programming windows.)*

Update Time –
Pressing the Update Time and Date button will transmit the windows based PC's time and date to all monitors connected to the RS485 loop. This is a convenient method to synchronize all units on the RS485 network.

Exit –
The Exit button closes the monitor status window.

Analog Input Status –
The Analog Input Status button will close the refrigerant monitor status window and display the status of any remote sensor/transmitters connected to the monitor. This window will only display valid information for IR-SNIF-MCD refrigerant monitors with OP 006 4-20 mA Analog Input Option installed. *(Refer to the Installation and Operation Manual for OP 006 for more information.)* The Analog Input Status Window is discussed in more detail later in this manual.

The buttons on the right side of the window are ‘Program Setpoints’, ‘Retrieve Trend Data’ and ‘Print Monitor Status’.

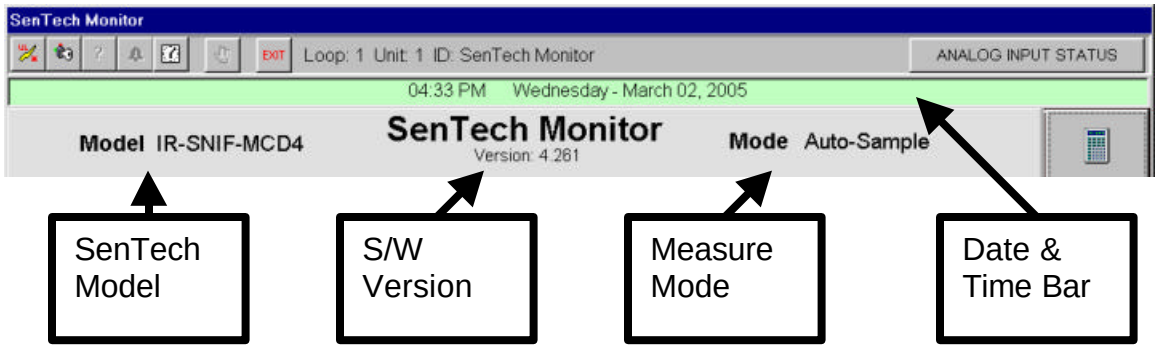


Program Setpoints –
The Setpoints button allows the user to access the Refrigerant monitor settings and change them if logged in as system manager. The Setpoints Window is discussed in more detail later in this manual.

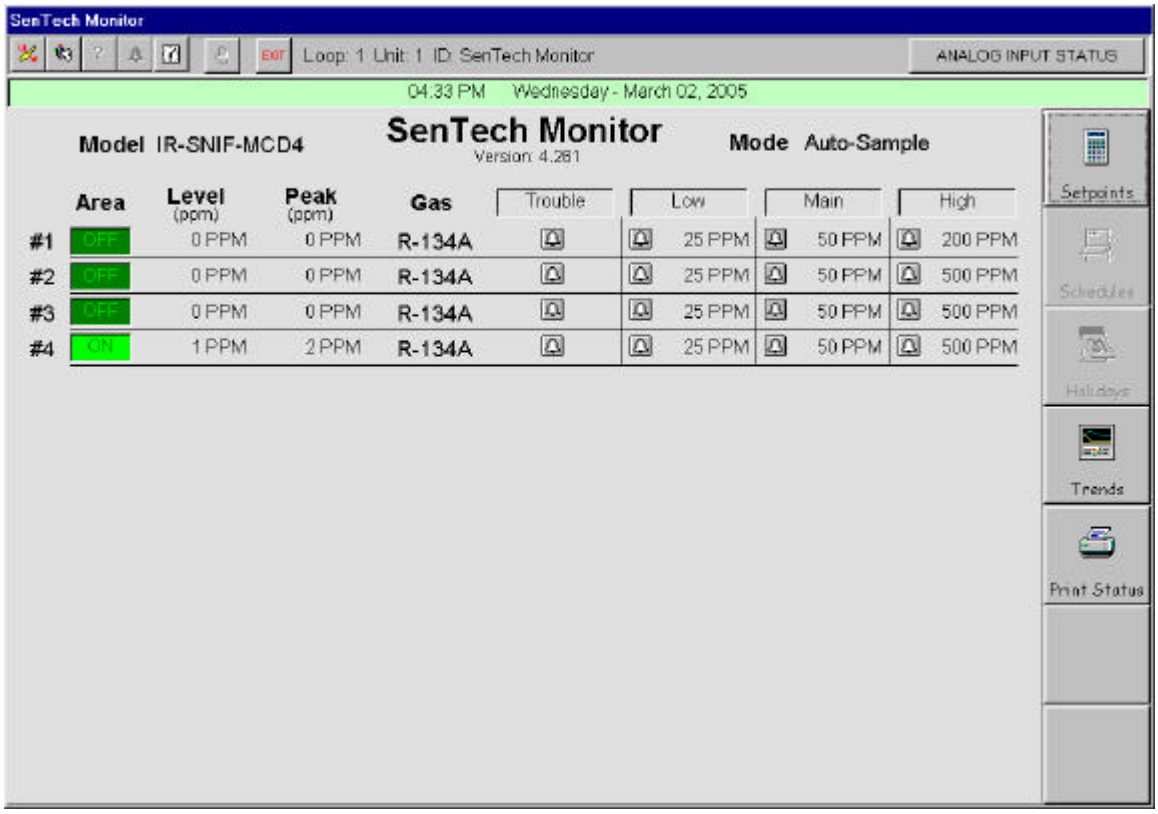
Retrieve Data –
The Trends button allows the user to either load log data from the controller inside the refrigerant monitor or view log data that has been saved on the PC. The Trends window is discussed in more detail later in this manual.

Print Monitor Status –
The Print Status button will print a time and date stamped summary of the current status of the refrigerant monitor. *(Note: This will use the default printer and settings for the PC.)*

The body of the window has status information for the monitor. Monitor time and date are displayed in a bar along the top of the window. The model, version and current measurement mode are below the time/date bar.



The remainder of the window is a matrix of up to 16 rows (one row for each zone) and 9 columns of information. From left to right, the columns are 'Area Number', 'Area'. 'Level (ppm)', 'Peak (ppm)', 'Gas', 'Trouble', 'Low', 'Main' and 'High'.



Area Number and Area –
The Area Number simply signifies how may areas or zones the refrigerant monitor has. The indicators under the Area column will either be dark green with the word 'OFF' or bright green with the word 'ON'. This signifies which area is currently being measured by the refrigerant monitor. If the refrigerant monitor is

in AUTO-SAMPLE, LEAK WAIT or MANUAL mode, one of the zones will be lit. If the monitor is in OPTICS WARMUP or AUTO-ZERO mode, all of the zones will be dark.

Level (ppm) –
The Level column will display the last known ppm level measures for each area or zone.

Peak (ppm) –
The Peak column will display the peak level measured since the last reset, or, if trending is enabled, since the last data saved by the refrigerant monitor. For the typical machine room, this might be between 0 and 15 ppm depending on the presence of small amounts of refrigerant, oil or interfering chemicals. This information can be used to watch for increasing levels over time, indicating the development of a leak.

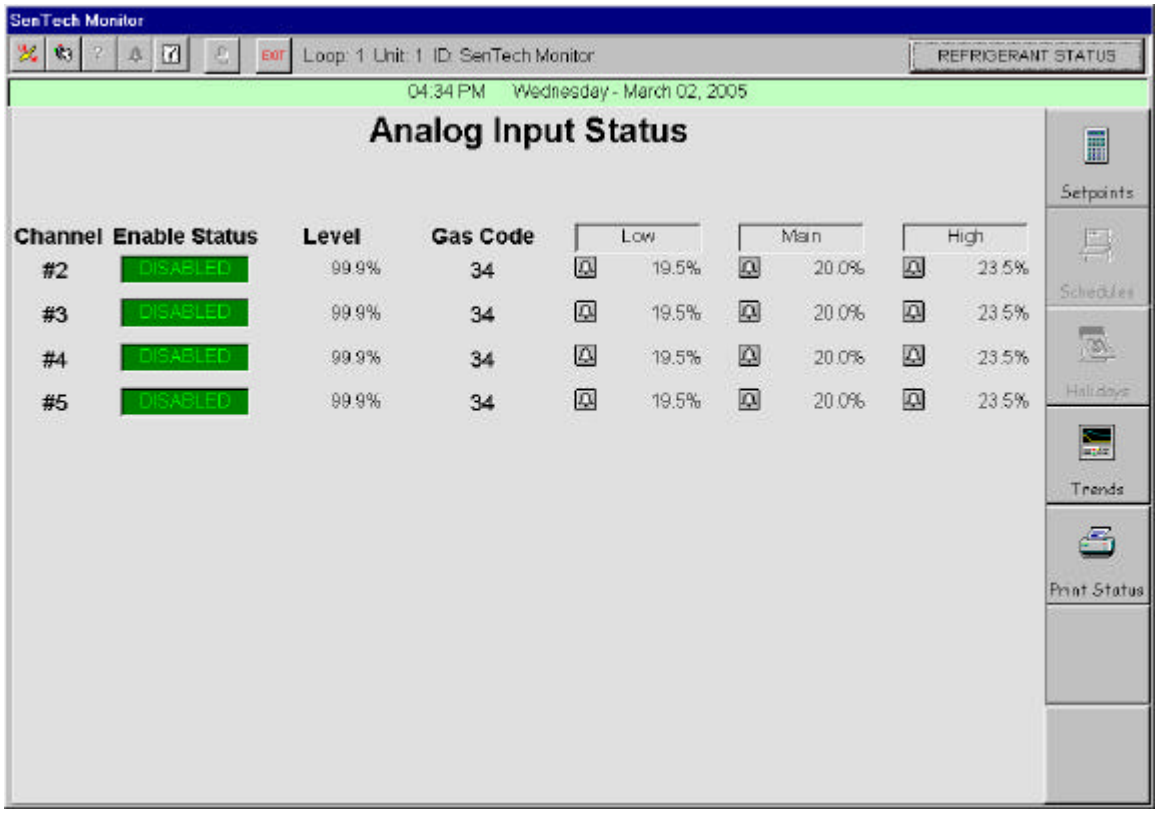
Gas –
The Gas column will display the refrigerant programmed for each area or zone.

Trouble –
The Trouble column will indicate Trouble Alarms for the refrigerant monitor. If a trouble alarm is triggered, the heading ' Trouble' will change from a gray box to a red box. If the trouble alarm is found in a specific area or zone, the 'bell' icon will turn from gray to red. *(A trouble alarm only in one area or zone will indicate a flow failure, or blocked line. Trouble in multiple areas will indicate a pump failure, flow sensor failure or other internal monitor fault. Refer to the monitor front panel and Installation and Operation manual for more information.)*

Low, Main and High –
The Low, Main and High columns will indicate the alarm setting and status for each area. If any area is in alarm, the heading will change from a gray box to a red box, and the 'bell' icon for that area will turn from gray to red.

EXAMPLE: The following alarm status screen displays the status of an IR-SNIF-MCD1 refrigerant monitor. The monitor is in Auto-Sample mode, measuring Area 1 at 0 ppm. It has seen a peak ppm level of 64 ppm. Area 1 is programmed for R-134a. The monitor is currently in alarm, with the Low and Main alarms activated. *(The LOW and MAIN relays inside the monitor are energized, and the LOW and MAIN led's on the front of the monitor are lit. Any devices powered by the LOW and MAIN relays are turned on.)*

Analog Input Status –
The Analog Input Status button will close the refrigerant monitor status window and display the status of any remote sensor/transmitters connected to the monitor. The body of the window is a matrix of 4 rows (one for each sensor transmitter channel) and seven columns of information. From left to right, the columns are 'Channel', 'Enable Status', 'Level', 'Gas Code'. 'Low', 'Main' and 'High'.



Channel –
The Channel column corresponds to the sensor transmitter channel that may be connected to the refrigerant monitor. *(By convention, the refrigerant sensor inside the monitor is considered channel 1. The four remote wired 4-20 mA sensor/transmitters follow as channels 2 through 5.)*

Enable Status –
The indicators under the Enable Status column will either be dark green with the word 'DISABLED' or bright green with the word 'ENABLED'. This signifies which channel is connected to a remote sensor/transmitter. Any combination of channels can be enabled at one time. If the refrigerant monitor does not have this option enabled, all of the channels will be disabled.

Level –
The level column will indicate the level measured and units for each channel. If the channel is disabled, the level will be 999 or 99.9 depending on the units.

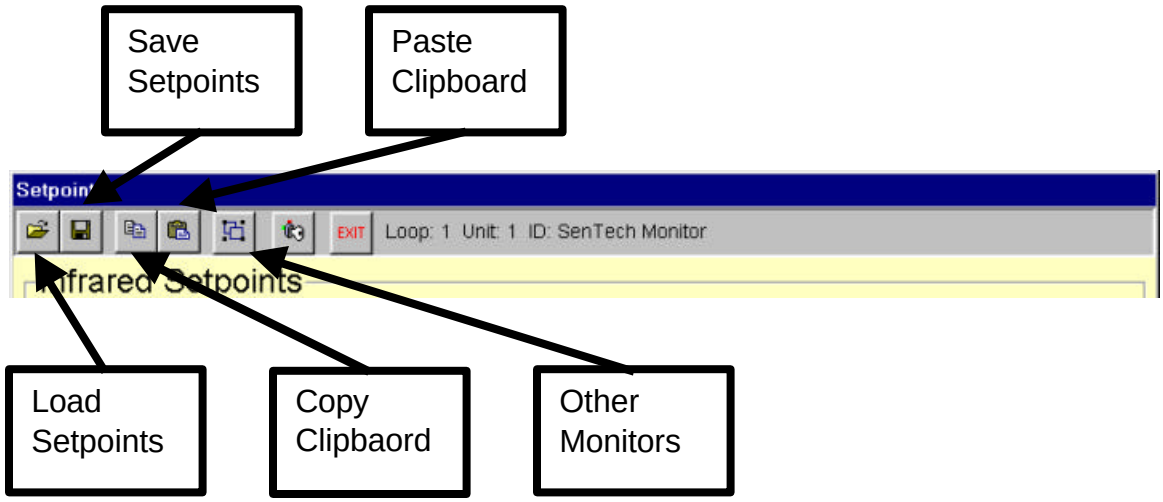
Gas Code –
The Gas Code column will display the gas code programmed for each channel. This code can be between 31 and 35, depending on the type of sensor/transmitter connected to the channel.

Low, Main and High –
The Low, Main and High columns will indicate the alarm setting and status for each area. If any area is in alarm, the heading will change from a gray box to a red box, and the 'bell' icon for that area will turn from gray to red.

REFRIGERANT MONITOR PROGRAMMING

The Setpoints button allows the user to access the Refrigerant monitor settings and change them if logged in as system manager. The Setpoints window is configured with buttons along the top and two buttons along the bottom of the window.

From left to right along the top, the buttons are 'Load Setpoints from File', 'Save Setpoints to File', 'Copy to Clipboard', 'Paste from Clipboard', 'Copy to Other Monitors on Loop', 'passcode' and 'exit'.



Load Setpoints from File –
The Load Setpoints button functions like the open file icon in windows. Pressing this button will open a window to select a file to load into the refrigerant monitor. *(This function is useful for locations with multiple monitors, and will not normally be used.)*

Save Setpoints to File –
The Save Setpoints button functions like the save file icon in windows. Pressing this button will open a window to select a file to save from the refrigerant monitor. *(This function is useful for locations with multiple monitors, and will not normally be used.)*

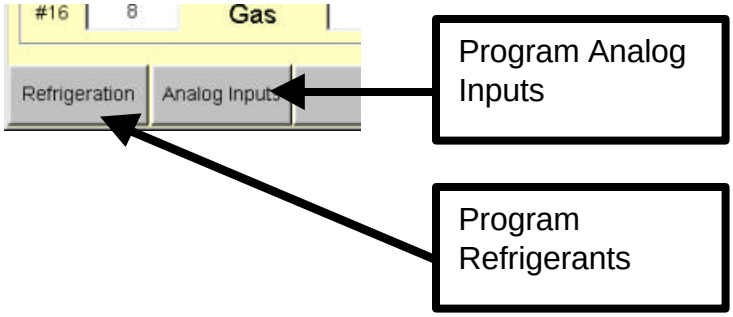
Copy to Clipboard –
The Copy button will copy the setpoints from the refrigerant monitor to the windows clipboard. *(This function is useful for locations with multiple monitors, and will not normally be used.)*

Paste from Clipboard –

The Paste button will copy the setpoints from the windows clipboard to the refrigerant monitor. *(This function is useful for locations with multiple monitors, and will not normally be used.)*

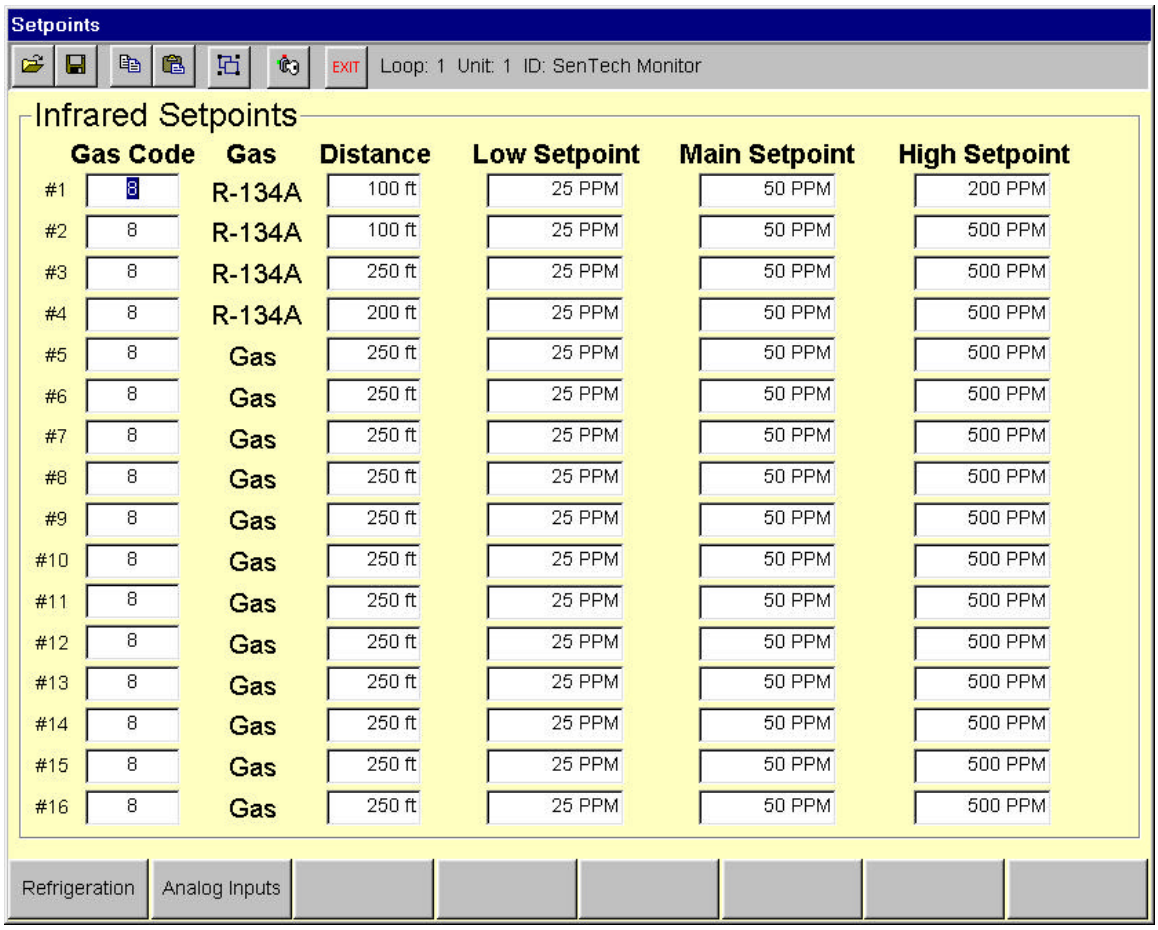
Copy to Other Monitors on Loop –
The Other Monitors button will open a window to allow the user to copy the setpoints from the refrigerant monitor to selected monitors, all monitors on the loop or even all monitors connected to all loops. *(This function is useful for locations with multiple monitors, and will not normally be used.)*

The buttons on the bottom are 'Refrigeration' and 'Analog Inputs'.



Refrigeration and Analog Inputs –
The Refrigeration and Analog Inputs buttons allow the user to toggle between the Infrared Refrigerant Monitor setpoint window and the Remote Sensor/Transmitter Analog Inputs setpoint window.

Refrigerant Setpoints
The body of the Infrared Setpoints window is a matrix of 16 rows (one for each area or zone) and seven columns of information. From left to right, the columns are 'Area Number', 'Gas Code'. 'Gas', 'Distance', 'Low Setpoint', 'Main Setpoint' and 'High Setpoint'. *(The Infrared Setpoints window will display 16 rows even for a monitor with less than 16 areas or zones.)*



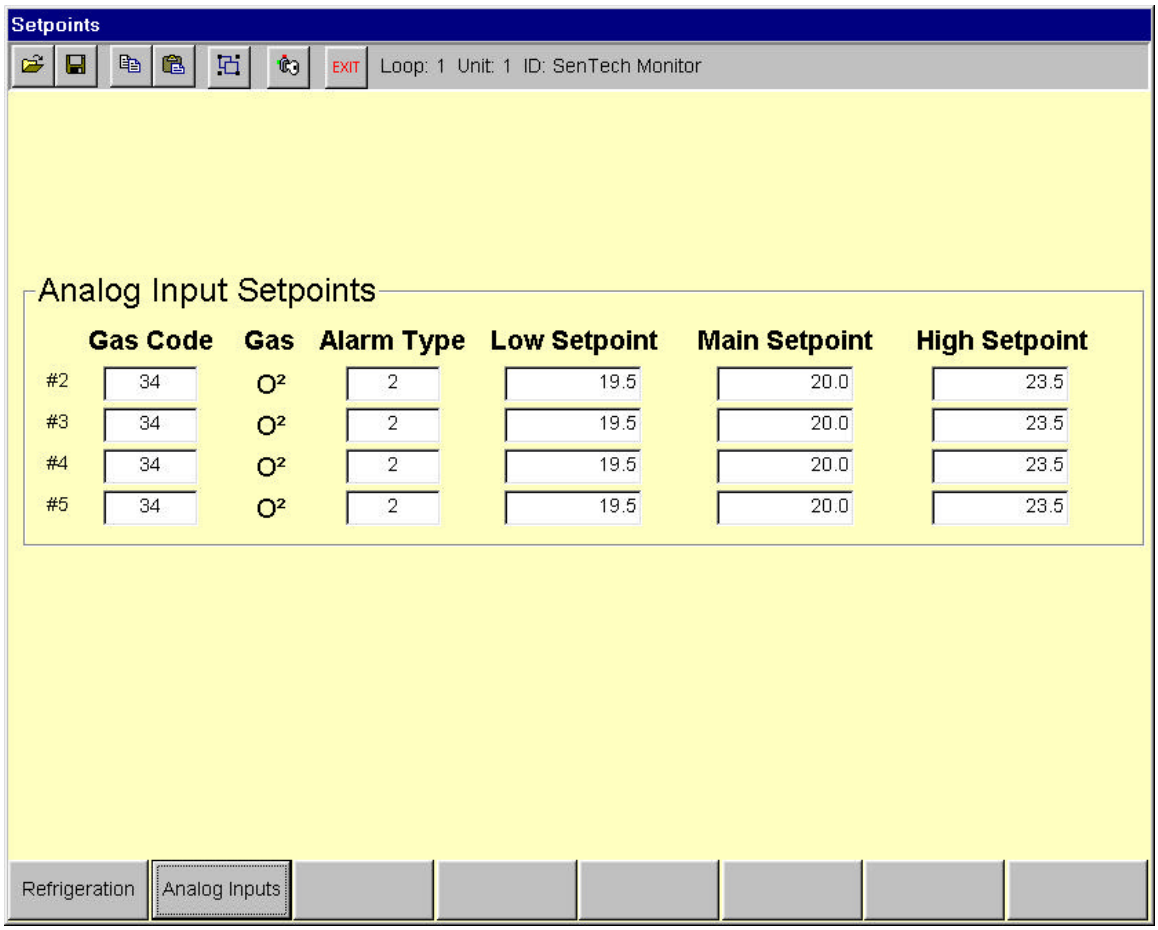
Gas Code and Gas–
The Gas Code and Gas columns display a gas code number assigned to each area and the corresponding name for that gas code. To change the gas code for an area or zone, highlight the entry, type the new gas code and press the enter key or the tab key on the PC keyboard. The PC should beep and update the refrigerant monitor settings. *(Note: the gas name might not change until the next time the window is opened. The gas number takes precedence over the name in the internal refrigerant monitor software.)*

Distance –
The Distance column displays the length of tube programmed for each area or zone. To change the distance, highlight the entry and type the new entry as above. Type only the number, PRISM will automatically add the correct units.

Low, Main and High Setpoints –
The Alarm Setpoints columns display the alarm level set for each area or zone. To change the setpoint, highlight the entry and type the new entry as above. Type only the number, PRISM will automatically add the correct units.

Analog Input Setpoints

The body of the window is a matrix of 4 rows (one for each sensor transmitter channel) and seven columns of information. From left to right, the columns are 'Channel Number', 'Gas Code', 'Gas', 'Alarm type'. 'Low Setpoint', 'Main Setpoint' and 'High Setpoint'.



Gas Code and Gas–

The Gas Code and Gas columns display a gas code number assigned to each area and the corresponding name for that gas code. To change the gas code for a channel, highlight the entry, type the new gas code and press the enter key or the tab key on the PC keyboard. The PC should beep and update the refrigerant monitor settings. *(Note: the gas name might not change until the next time the window is opened. The gas number takes precedence over the name in the internal refrigerant monitor software.)*

Alarm Type –

The Alarm Type column displays a 1 or 2, depending on the Alarm type for each channel. Alarm type 1 is a conventional threshold alarm, with alarms activated when the measured level exceeds the Low, Main and High setpoints. Alarm type 2 is a window alarm, with Low and Main alarms activated when the measured is

below the setpoint, while the High alarm is activated when the measured level is above the setpoint.

Low, Main and High Setpoints –
The Alarm Setpoints columns display the alarm level set for each area or channel. To change the setpoiint, highlight the entry and type the new entry as above. Type only the number, PRISM will automatically add the correct units.

Technical Support

If you have any questions, please feel free to fax, 317-248-2014 or call 317-248-1988 (toll free 888-248-1988.

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