

LIFT STATION METER PROFILER

User Guide

Rev A

LIFT STATION METER PROFILER

Report Configuration | Diagnostics | Emails Configuration | Analog Input Configuration | Relay Configuration | Report From File

Lift Station & Date Configuration
Lift Station Meter IP Address: 10.0.0.75
FTP Time out(mS): 5000
Select Start Data Date: Monday, January 01, 2018
Select Last Data Date: Tuesday, April 03, 2018
Site Name: PSC_Demo

Profiler GPM Rates
PUMP 1 GPM: 5
PUMP 2 GPM: 10
PUMP 3 GPM: 15
PUMP 4 GPM: 20
PUMP 5 GPM: 25
PUMP 6 GPM: 30
PUMP 7 GPM: 35
Send Rates Zero Rates

Analog Log Retrieval
Get Log Listing
Select file to retrieve:
180109.CSV
180110.CSV
180111.CSV
180112.CSV
180115.CSV
180117.CSV
Select File To Open:
PSC_Demo_10_0_0_75_3_1_2018_4_3_201
PSC_Demo_10_0_0_75_1_1_2018_4_3_201
Open Report

Status: File retrieval COMPLETE! Offline. Failed FTP attempts: 0



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PC minimum operating system requirements:

- Windows 7 SP1 or greater (x86 and x64)

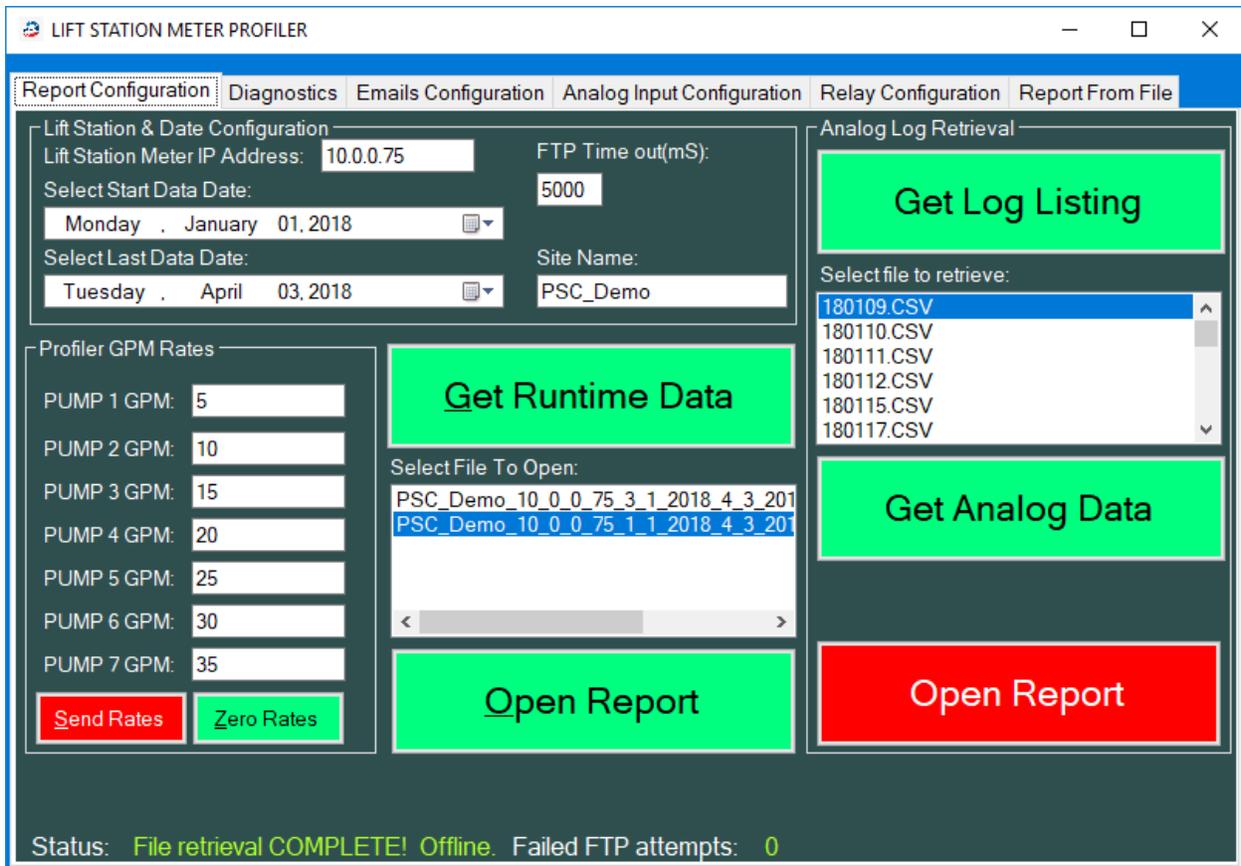
PC Hardware Requirements:

- 1 GHz or faster processor
- 512 MB of RAM
- 850 MB of available hard disk space (x86)
- 2 GB of available hard disk space (x64)
- Network connection to Internet for obtaining .NET framework if needed

Installation Procedure:

1. [Click this link to go to the setup file download page.](#)
2. Click the Install button at the web page.
3. If prompted during the download, keep the setup.exe.
4. Run the downloaded setup.exe program.
5. If prompted about Windows protecting your PC, click the More Info link near the top left then click the Run Anyway button that appears.
6. Follow the onscreen instructions to complete the program install.

Once installed, the program should display for first use. If a software update is available, it will attempt to install at the time of restarting the program. This check can only be done if your PC has Internet connection.



How to collect and process data:

1. Enter IP address in the Lift Station IP Address text box on the Report Configuration tab form.
2. Enter the site name in the Site Name text box.
3. Get Runtime Data button should turn green and enable.
4. Select the desired date or date period for the data you want to collect.
5. If the meter is a Profiler and the GPM rates recipe file has not been setup on the meter, manually enter the GPM rates in the appropriate text boxes. Then click the Send Rates button to store the new rates on the lift station meter.
6. Click the Get Data button to begin the collect and processing of the data.
7. If the meter had a valid Profiler GPM rates recipe file, it will be downloaded and values filled in each totalizer GPM rate and totalizer MGD for each event.
8. A single spreadsheet will be created in the combined final reports folder indicated in the next section. If the meter is a Profiler, the spreadsheet will contain totalizer GPM and totalizer MGD rates along with the run times for each pump for that event.

Site Name text box: This text box allows the user to put a text identifier in the final report file name. When the user changes this box, it will also set all the GPM rates to zero to avoid using them for the wrong site.

Zero Rates button: To quickly change all the GPM rates to zero, click this button. This function also happens when the user changes the Site Name text box. This is to avoid using GPM rates for the wrong site.

Send Rates button: This feature is available for a Profiler meter. A Get Data function must be done for this feature to show and be enabled. If the IP address is changed, the button will disable and disappear until the next Get Data function is done. To use this feature, enter the GPM rates in the appropriate boxes and then click the Send Rates button to send the new rates for storage in the meter.

Failed FTP attempts value: This value shows how many failed attempts to get days of data from the meter. When the Get Data button is clicked, at the end of the process, with how many days of data were not retrievable. If the value is greater than zero, a listing of the days will show.

How much data can be stored on the meter?

Because the log files are stored on a 2GB memory card, approximately 50K days of runtime data can be retained on the meter. LIFT STATION METER PROFILER can retrieve any day of recording since first power up. It is up to the user to know what recording date was for what location monitored. Log files can be deleted via FTP or the system menu. The user can also remove the SD card and connect to a PC for manual changing of the SD card contents.

How to find and open a data report?

1. A list box between the Get Data and Open Report buttons contains a running list of available reports.
2. Select the desired report file listed in the list box.
3. Click the Open Report button.

How files are stored:

On the Horner XLE OCS, the micro SD card file structure is as follows:

\ALARMS	'Storage location for battery backup alarm log files.
\REPORTS	'Storage location for pump runtimes before current date.
DEFAULT.PGM	'OCS program file backup.
REPORT.CSV	'Current date pump runtime log file.

On the Horner XL4 OCS, the micro SD card file structure is as follows:

\ALARMS	'Storage location for alarm log files.
\REPORTS	'Storage location for pump runtimes before current date.
\webMI	'Storage location for Horner WebMI files.
NonProfiler.pgm	'OCS program file backup for non-profiler model.
Profiler.pgm	'OCS program file backup for profiler model.
REPORT.CSV	'Current date pump runtime log file.

When the LIFT STATION METER PROFILER program is started, it will attempt to create the following folder structure on your C drive:

C:\LIFT_STATION_METER_PROFILER

\ANALOG_DATA	'Storage location for analog log files
\COMBINED\FINAL	'Storage location for combined final reports
\PROFILER	'Storage location for collected Profiler recipes
\REPORTS\TEMP	'Storage location for raw collected reports.

The \REPORTS\TEMP folder should be emptied by the program when a new final report is generated.

How files are named:

Combined final reports are named in this format: Site name, IP address, start date, end date, collect date, collect time with csv extension.

Example: SiteName_192_168_1_10_8_2_2017_8_9_2017_892017_162112.csv

Profiler recipe files are named in this format: IP address with csv extension.

Example: 192_168_1_10.csv

Raw collected reports are named in this format: IP address, year, month, date, and "raw" with csv extension. These files are usually deleted by LIFT STATION METER PROFILER at the end of processing. It is advised to delete any files in this folder.

Example: 192_168_1_10170216raw.csv

How files are structured:

Combined non-Profiler final reports are formatted as 7 copies of this data arrangement:

Date, Time, Pump # Last On Time, Pump # Last Off Time, Pump Status

on and off times are in seconds.

Combined Profiler final reports are formatted as 7 copies of this data arrangement:

Date, Time, Pump # Last On Time, Pump # Last Off Time, Pump Status, TGPM, TMGD

Raw collected reports are formatted as 7 lines of this data arrangement per event:

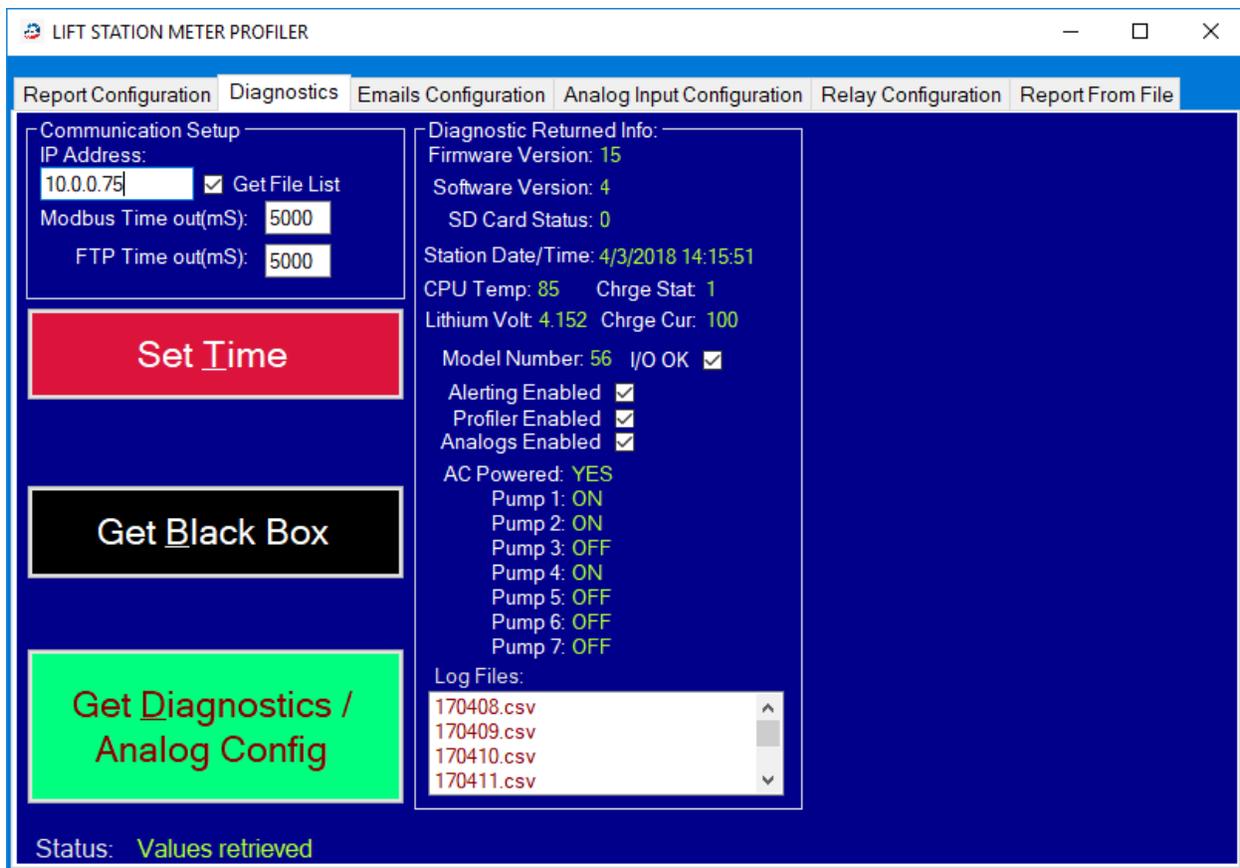
Date, Time, Last On Time, Last Off Time

A logged event will create 7 lines for the 7 pump inputs available.

Troubleshooting collecting and processing:

FTP Time out(mS) parameter: This parameter can be changed as needed for troubleshooting FTP time out issues. It is roughly the amount of seconds the program will wait for proper FTP communication with the meter. The default of 5000 is actually 5 seconds. This parameter should only be changed at the recommendation of PROCESS SOLUTIONS. It will default back to the original of 5000 at the next startup of the program.

Other diagnostics error message may appear for various conditions. If the error persists, contact PROCESS SOLUTIONS with the error message for support.



Diagnostics and Analog Logging Functionality / Configuration:

There is a diagnostics tab form area for the user to attempt communication with the meter to gather useful diagnostics info if needed. This should only be used in the event normal collection of reports does not work as expected. It obtains the Modbus values firmware version, software version, SD card status, Profiler enabler checkbox, current system hour, and then a file listing in the REPORTS directory of the SD card. With the latest software version of 4 and above, Alerting Enabled and Analogs Enabled checkboxes were added along with analog logging functionality.

How to use the diagnostics feature:

1. Enter the IP address of the meter you wish to diagnose.
2. Check the Get File List if you want to see the list of available log files to retrieve.
3. Click the Get Diagnostics button. This will be clickable only if an IP address is entered.

The program will attempt to request Modbus values and the SD card log file listing. The Modbus Timing and FTP Timing values can be adjusted if errors occur. Those tell the program how long to wait for valid responses before popping up an error message if it does not get the requested info in the expected time window.

Firmware version: This is the Horner XL4 operating system version number. This value should be at least 15.0.

Software version: This is the Horner XL4 logic program version number. This value enables and disables certain features in the LIFT STATION METER PROFILER PC program. The latest version as of this document revision is 4.

SD Card Status: This value should always be zero unless writing or an error has occurred. If the value continues to be not zero, contact PROCESS SOLUTIONS for support.

Station Date/Time: This value displays the actual time clock value of the Horner XL4. If the software version is at least 2, the Set Time button will appear and enable for use.

CPU Temp: This value is the Horner XL4 CPU temperature value in Fahrenheit. This value should be > 14F and < 140F for proper operation.

Lithium Volt: This value is a measurement of the Horner XL4 internal memory and clock backup battery. This value should be around 4.0 for proper operation. A more precise value range is awaiting release by Horner.

Model Number: This is the internal model number value of the Horner XL4. This should always be 56. If it is not 56, try conducting a power cycling of the Horner XL4 to correct. Contact PROCESS SOLUTIONS for support if it remains different.

I/O OK checkbox: This checkbox indicates if the IO board of the Horner XL4 is operating correctly. It will be checked if operating correctly. If it is not checked, contact PROCESS SOLUTIONS for support.

Profiler Enabled checkbox: This checkbox indicates if the Profiler option is enabled on the meter. If it is not and you wish it to be, contact PROCESS SOLUTIONS sales for enabling this feature.

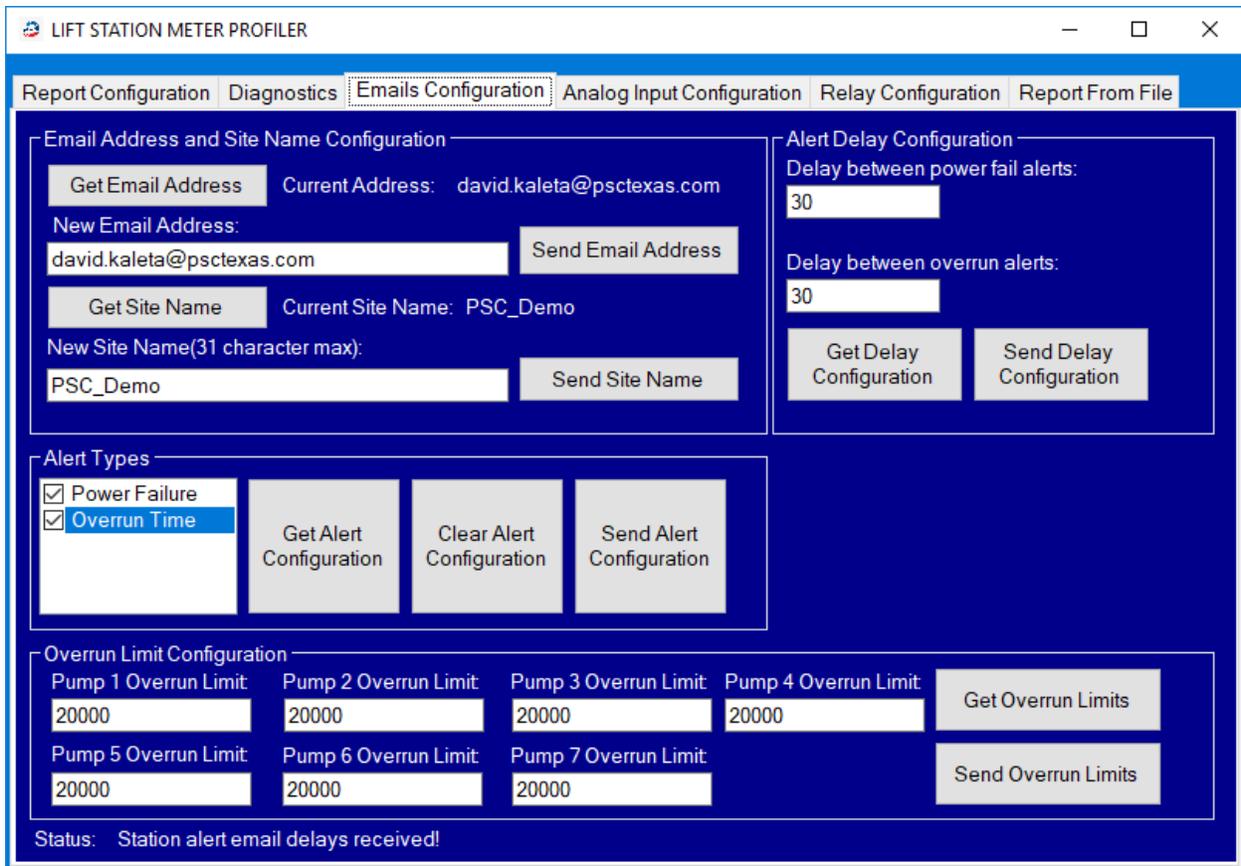
AC Powered status: This value will indicate if the meter has AC power supplied to its powering system or not. If it says "NO", the meter AC power input needs to be servicing.

Pump 1 to 7: These values indicate if the pump was on or off when the Modbus values were retrieved.

Log Files list box: This list box shows the collectable data log files stored on the meter SD card.

Set Time button: This button will appear and be enabled after the Get Diagnostics button is clicked, values are retrieved, and Software Version value is > 1. Clicking this button will set the meter with the current PC time and date.

Get Black Box button: This button will appear and be enabled after the Get Diagnostics button is clicked, values are retrieved, and Software Version value is > 1. Clicking this button will retrieve the meter black box diagnostics file and open it for viewing. Values in this file are for PROCESS SOLUTIONS to have more information for diagnosing problems that may happen.



Alerting Functionality and Configuration:

With the latest software version 4, we've added the ability to send out email alert notifications. At this time, only AC power failure and pump overrun alerting is available.

At this time, email alerts will come from the following email address: psctexas4134@gmail.com

The current programming uses the Google Gmail server to send alerts out. This, along with what address the alert comes from, is customizable.

Before using any functions on this tab, be sure to enter the IP address of the meter in the IP address text box on the diagnostics tab.

When AC power to the meter has turned off or on, an email with attached log file will be sent to the email address set in the meter. So, 2 emails will be sent for 1 cycling of power to the meter event.

When an overrun event has occurred, 1 email will be sent with alarm log file attachment. After the delay between overrun alerts time has elapsed, a second email will be sent with alarm log file attachment. This cycle will repeat until the alarm(s) condition(s) have cleared.

Email Address and Site Name Configuration Group functionality:

Get Email Address button: Clicking this button will retrieve the currently set email address for sending the alert to.

Send Email Address button: Clicking this button will send the email address entered in the New Email Address text box.

Get Site Name button: Clicking this button will retrieve the currently set site name set.

Send Site Name button: Clicking this button will send the site name entered in the New Site Name text box.

Alert Delay Configuration Group functionality:

Delay between power fail alerts: This value is for setting the delay in seconds between sending out email alerts for repeated power fail event alert conditions.

Delay between overrun alerts: This value is for setting the delay in seconds between sending out email alerts for repeated pump overrun event alert conditions.

Get Delay Configuration button: Clicking this button will retrieve the existing delay values the meter presenting has.

Send Delay Configuration button: Clicking this button will send the values in the delay value text boxes to the meter for use.

Alert Types Group functionality:

Get Alert Configuration button: Clicking this button will retrieve the existing alerting enabler checkbox states.

Clear Alert Configuration button: Clicking this button will turn off all alerting in the meter at once.

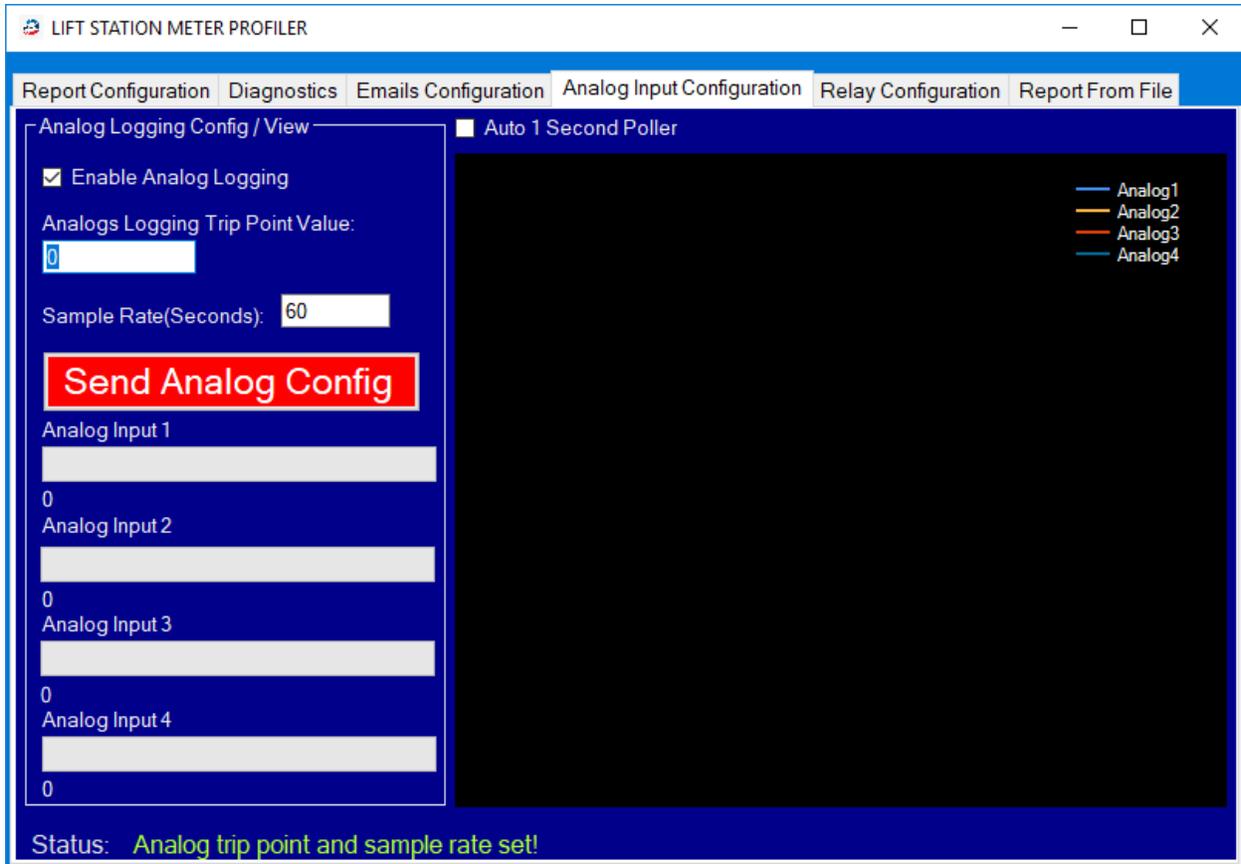
Send Alert Configuration button: Clicking this button will send the check box states to the meter.

Overrun Limit Group functionality:

Get Overrun Limits button: Clicking this button will retrieve the existing overrun limits in the meter.

Send Overrun Limits button: Clicking this button will send the values in the text boxes to the meter for use.

Overrun limit text box values are in seconds.



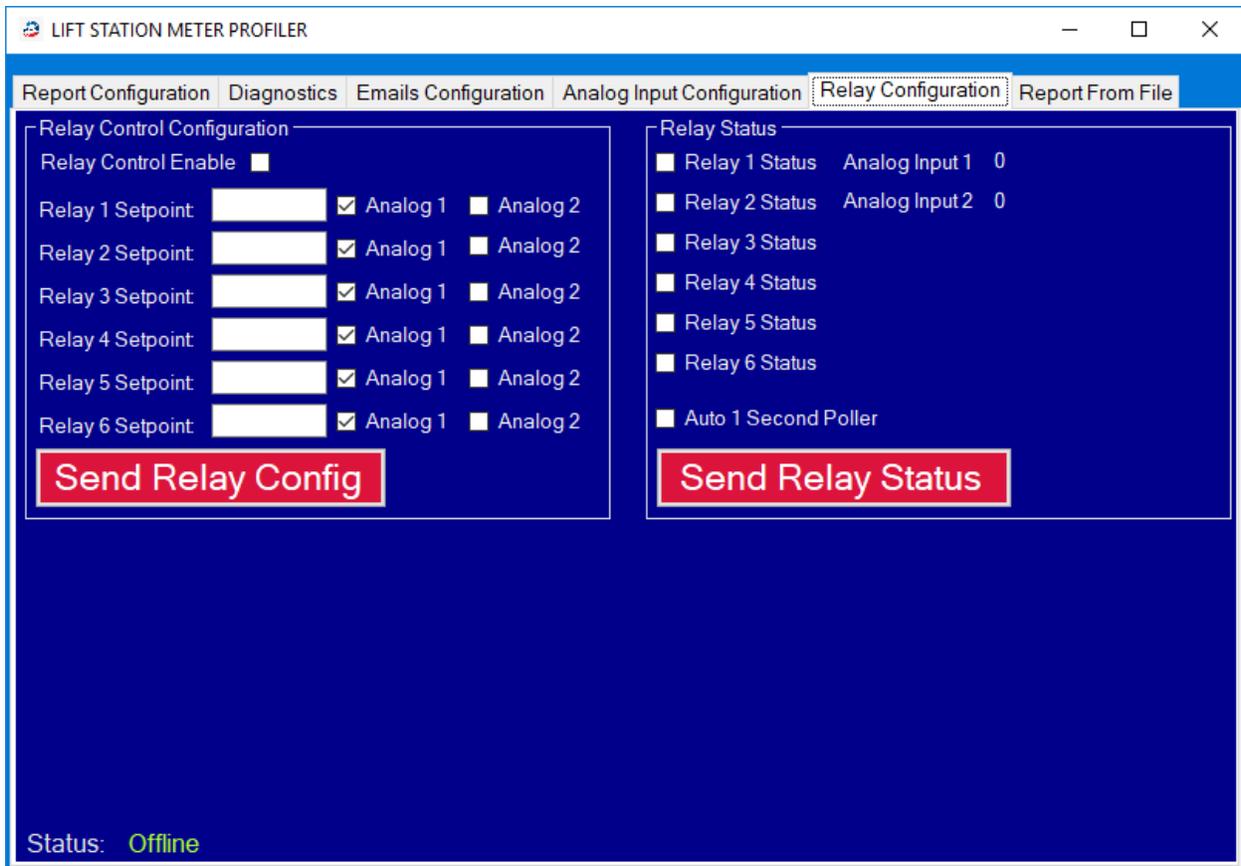
Analog Input Functionality and Configuration:

With the latest OCS software version 4, we've added the ability to measure the 4 channels of 4 to 20mA inputs on the OCS. Values shown are raw values from 0 to 32000.

Analog Logging: Analog logging to CSV file on the OCS SD card can be enabled by doing the following:

1. Check the Enable Analog Logging check box if not already checked.
2. Enter a sample rate in seconds in the Sample Rate box. A valid value is 1 to 65535.
3. Enter a value trip point for the analog values to start logging. This value will be compared to all analog input channels and if anyone is greater than this value logging will occur.
4. Click the Send Analog Config button to send the new configuration.

Auto 1 Second Poller: Checking this box will start 1 second interval monitoring of the analog input channels.



Relay Output Functionality and Configuration:

With the latest OCS software version 4, we've added the ability to control the 6 relays on the OCS. Relays can be controlled based on the values of the first 2 analog channel inputs or manually controlled.

Relay Control Configuration:

1. Check the Relay Control Enable checkbox.
2. Enter analog input setpoint values for each relay. Values -32000 to +32000 are valid.
3. Check which analog channel to compare with for each relay.
4. Click the Send Relay Config button to send the new configuration.

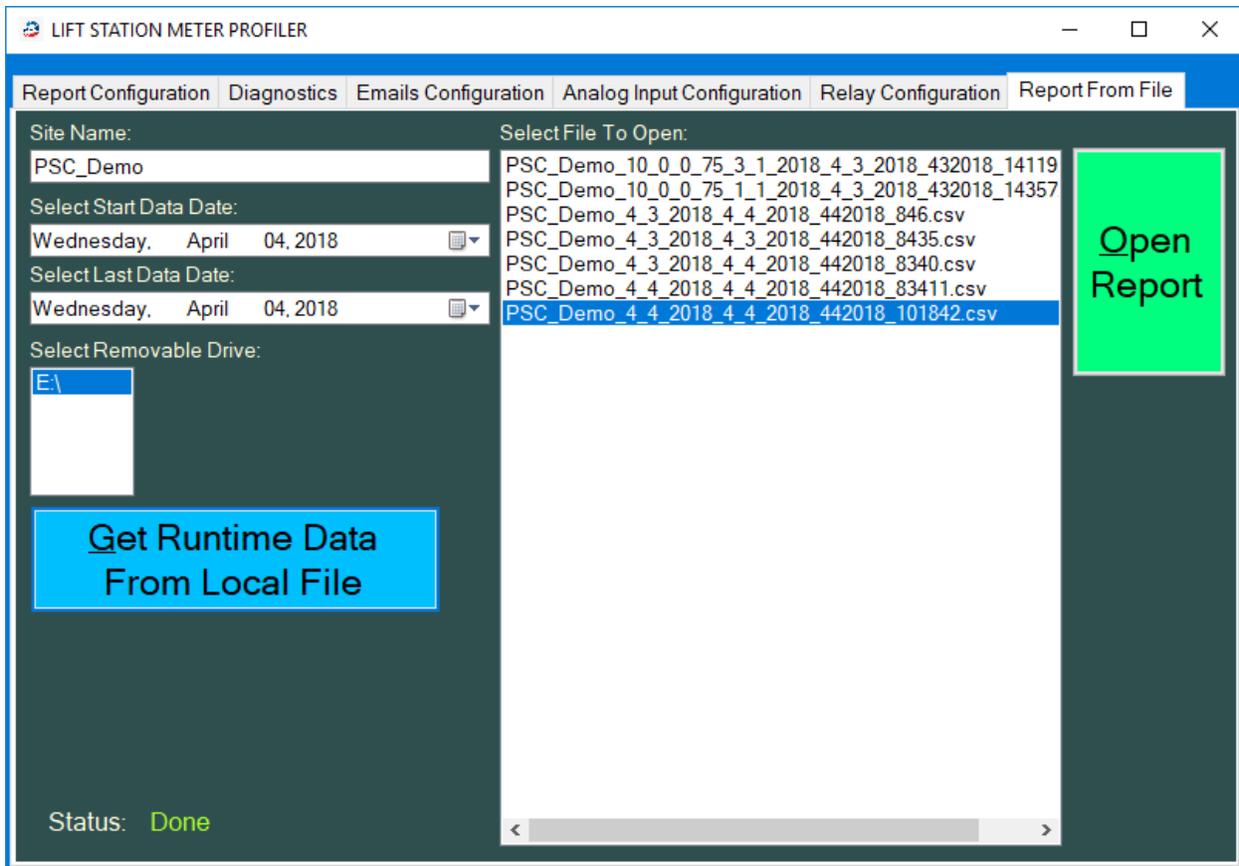
Relay Status:

This section allows for the status view and manual setting of the OCS 6 relays.

Manual Relay Control:

1. Check the checkboxes for the relays you want to turn on.
2. Uncheck the checkboxes for the relays you want to turn off.
3. Click the Send Relay Status button to send the new relay status to the meter.

Auto 1 Second Poller: Checking this box will start 1 second interval monitoring of the relays. Raw analog values of channels 1 & 2 will be displayed also. Values from -32000 to +32000 are valid.



Report From File:

The latest version of LIFT STATION METER PROFILER now allows for report generation by selecting a data file recovered from the micro SD card of the OCS. Upon entering this form, the program will scan your computer for removable drives and list them in the drive box. To update the list after inserting another drive, click on another tab then click on the Report From File tab again. At this time, Profiler meter GPM calculated rates will not included in final reports generated with this feature.

Report from file procedure:

1. Remove micro SD card from the OCS.
2. Connect micro SD card to PC with LIFT STATION METER PROFILER software installed.
3. Make note of the drive location of the micro SD card.
4. Start LIFT STATION METER PROFILER software.
5. Click the Report From File tab.
6. Enter a site name for the report file.
7. Select the start and end dates.
8. Select the drive the meter micro SD card is at.
9. Click the Get Runtime Data From Local File button.
10. Status value should change to Done and file listing should update.
11. Select new file in updated list if not already selected.
12. Click the Open Report button to view the imported data report file.