

# MODELS 330 AND 331 HYDROGEN SULFIDE ANALYZER SOFTWARE OPERATION MANUAL

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The screenshot displays the Envent H2S Analyzer software interface. The window title is "Envent: H2S Analyzer" and it includes a menu bar with "File", "Interface", and "Help". The interface shows a "USB Serial Port (COM8)" connection and a "Current Date and Time" of "Apr. 3, 2009 10:08:24". A "Bypass: Off" indicator is present. The status of four inputs is shown: #1 (Open), #2 (Open), #3 (Off), and #4 (Off). Solenoid and Relay statuses are also displayed: Solenoid #1 (Open), #2 (Open), #3 (Open), #4 (Open); Relay #1 (Open), #2 (Open), #3 (Open), #4 (Closed). The H2S sensor is in "Rapid Resp. Mode". A table of sensor readings is shown below, and a "Start Polling" button is at the bottom.

	Reading	Time
Analysis RRA	9.64974	5.67
Sensor Value @ Zero	998.9297	
Sensor Value @ Start	898.9017	128.07
Sensor Value @ End	878.7730	153.67

## Introduction

Software is available for the Envent Engineering Ltd. Model 330 and 331 hydrogen sulfide analyzers. The software is available for download on the Envent website at [www.envent-eng.com/contact](http://www.envent-eng.com/contact). An user manual is included in the download.

The analyzer software is not required for normal calibration and maintenance operations.

The analyzer was configured at the factory according to the application information provided at the time of purchase. The software can be used to change the range and the operation of the relay and solenoid outputs if the application changes or the analyzer is re-puposed to anothe site.

**Warning! Incorrect configuration of the analyzer may cause incorrect operation. Injury and/or damage to facilities may occur. Check analyzer functionality after configuration changes have been made.**

## Logging in to the Envent Software

Open the Envent software.

Envent: H2S Analyzer - [SN 330-0157 Conoco Mar 18 2008]

File Interface Help

Unnamed Device Rev. 6.3 - 6.6

Auto

Apply Changes ?

Current Date and Time  
Jan. 0, 2000 00:00:00

Bypass:Off

	#1	#2	#3	#4
Input		Off	Off	Off
Solenoid	Closed	Open	Open	Open
Relay	Closed	Closed	Closed	Closed

No Stream

Idle

	Reading	Time
Analysis RRA	0.000000	0.00
Sensor Value @ Zero	0.000000	
Sensor Value @ Start	0.000000	0.00
Sensor Value @ End	0.000000	0.00

Start Polling

H2S Hi  
H2S HiHi  
RRA1  
RRA2  
SensorL  
SensorH

Enable communications by clicking on the downward facing flashlight. The software should begin uploading the configuration from the analyzer. This is indicated by a blue or grey progress bar at the bottom left of the application window. It is advisable to save the configuration before making any changes. Select File ---- Open, then navigate to a folder to use to save your configurations. The next step would be save the configuration as a new file before making changes.

## Polling.

During polling the following values will be updated from the analyzer.

The current date and time are updated in the box indicated. This time represents the time used for archiving. If this incorrect to the current time it can be synchronized with the time on the computer connected. Press the clock button next to the Apply Changes button.

The Status of Digital inputs, Solenoids and Relays are displayed. Indicates whether the current state is either Open or Closed.

Also indicates the values and variables available on the analyzer display. Most commonly PPM value, High Alarm value, High High Alarm value. The sensor millivolt value. The sensor Zero value, board temperature and gain of the level.

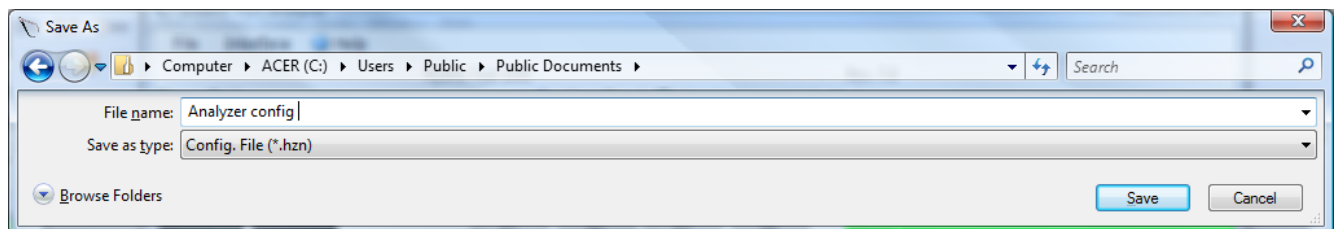
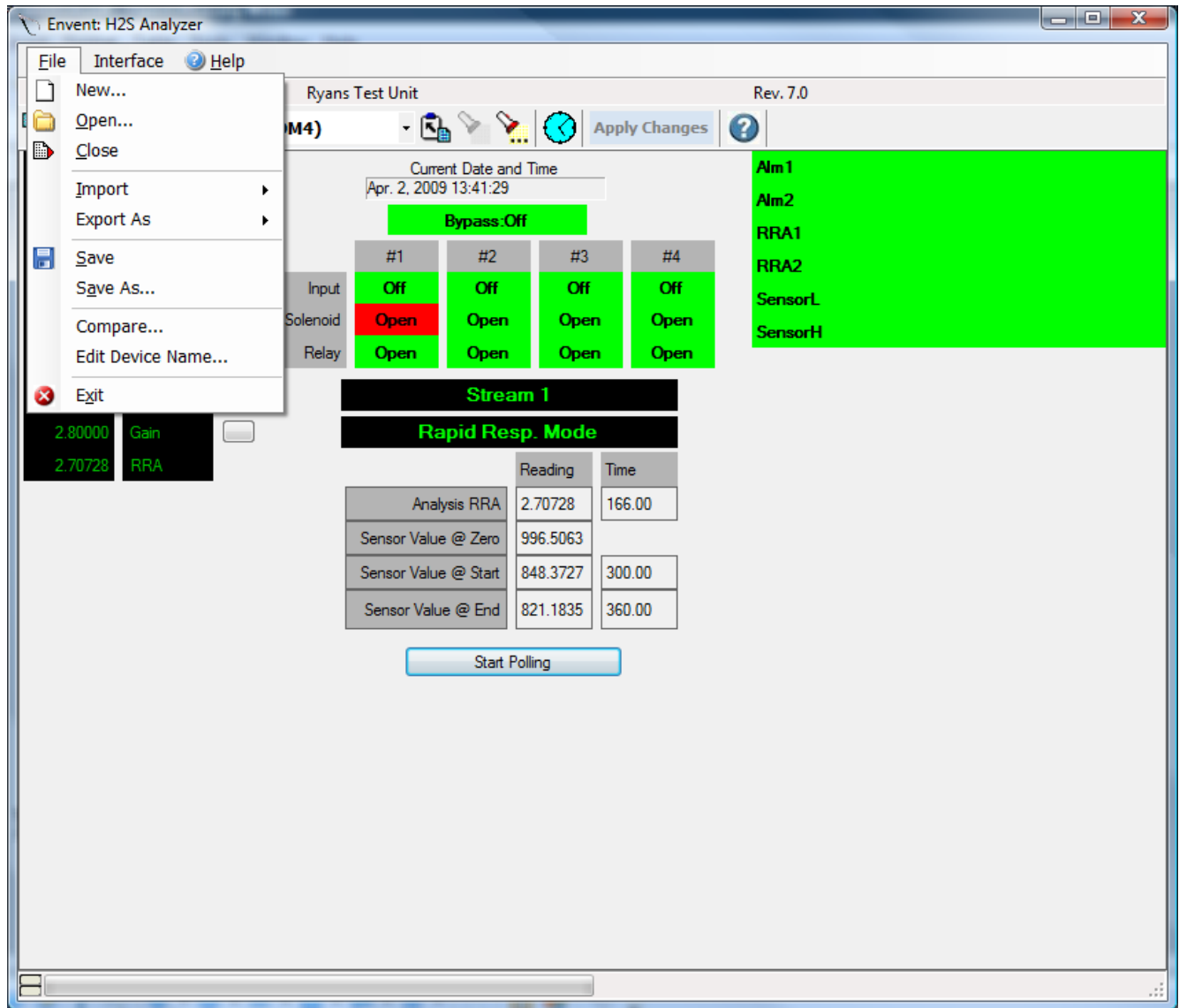
The screenshot displays the 'Envent: H2S Analyzer' software window. The title bar shows 'Envent: H2S Analyzer' and standard window controls. The menu bar includes 'File', 'Interface', and 'Help'. The main window is titled 'Ryans Test Unit' and 'Rev. 7.0'. The interface is divided into several sections:

- Left Panel:** A list of sensor readings and variables with checkboxes. The values are: ppm (2.70684), Alm 1 (5.00000), Alm 2 (10.0000), mv (949.4357), Zero (996.5063), Mtr Run (Off), Temp (33.5000), Ack (Off), Gain (2.80000), and RRA (2.69918).
- Top Center:** 'Current Date and Time' box showing 'Apr. 2, 2009 13:40:29' and a clock icon.
- Center:** A grid of status indicators for 'Input', 'Solenoid', and 'Relay' across four channels (#1, #2, #3, #4).

	#1	#2	#3	#4
Input	Off	Off	Off	Off
Solenoid	Open	Open	Open	Open
Relay	Open	Open	Open	Open
- Right Panel:** A list of alarm and sensor status indicators: Alm 1, Alm 2, RRA1, RRA2, SensorL, and SensorH.
- Bottom Center:** A table of 'Stream 1' data.

	Reading	Time
Analysis RRA	2.69918	105.73
Sensor Value @ Zero	996.5063	
Sensor Value @ Start	848.3727	300.00
Sensor Value @ End	821.1835	360.00
- Buttons:** 'Apply Changes' (with a question mark icon), 'Bypass: Off', 'Stream 1', 'Rapid Resp. Mode', and 'Halt Polling'.

**Saving the Configuration** Before entering Factory View it would be advisable to save the current configuration of the analyzer. To do this go to the top left of the window and select FILE. Then select SAVE or SAVE AS. Name the file and save it in a desired location on the hard drive.



# Factory View

To enter Factory View by selecting Interface in the top menu bar.

Envent: H2S Analyzer

File Interface Help

Ryans Test Unit Rev. 7.0

USB Serial Port (COM4) Apply Changes

Scan IO

	Raw	Linear	Polynomial	Logarithm 1	Logarithm 2	Scaled
Analog Input #1	198008560.0	922.1708	0.000000	0.000000	0.000000	922.1708
Analog Input #2	875.8750	33.4125	0.000000	0.000000	0.000000	33.4125
Analog Output #1	2.70684	1123.604	0.000000	0.000000	0.000000	1123.604
Analog Output #2	2.70684	799.5524	0.000000	0.000000	0.000000	799.5524

Discrete Inputs Off Off Off Off Bypass: Off

Solenoid Outputs On Off Off Off

Relay Outputs Off Off Off Off Rapid Resp. Mode

Alarm #	Alm 1	Alm 2		
Alarm #1	Alm1	Alm2		
Alarm #2	RRA1	RRA2		
Alarm #3	SensorL			
Alarm #4	SensorH			
Alarm #5				
Alarm #6				
Alarm #7				
Alarm #8				

	Reading	Time
Analysis RRA	2.70728	166.00
Sensor Value @ Zero	996.5063	
Sensor Value @ Start	848.3727	300.00
Sensor Value @ End	821.1835	360.00

Current Date and Time  
Apr. 2, 2009 13:41:29

Start Polling

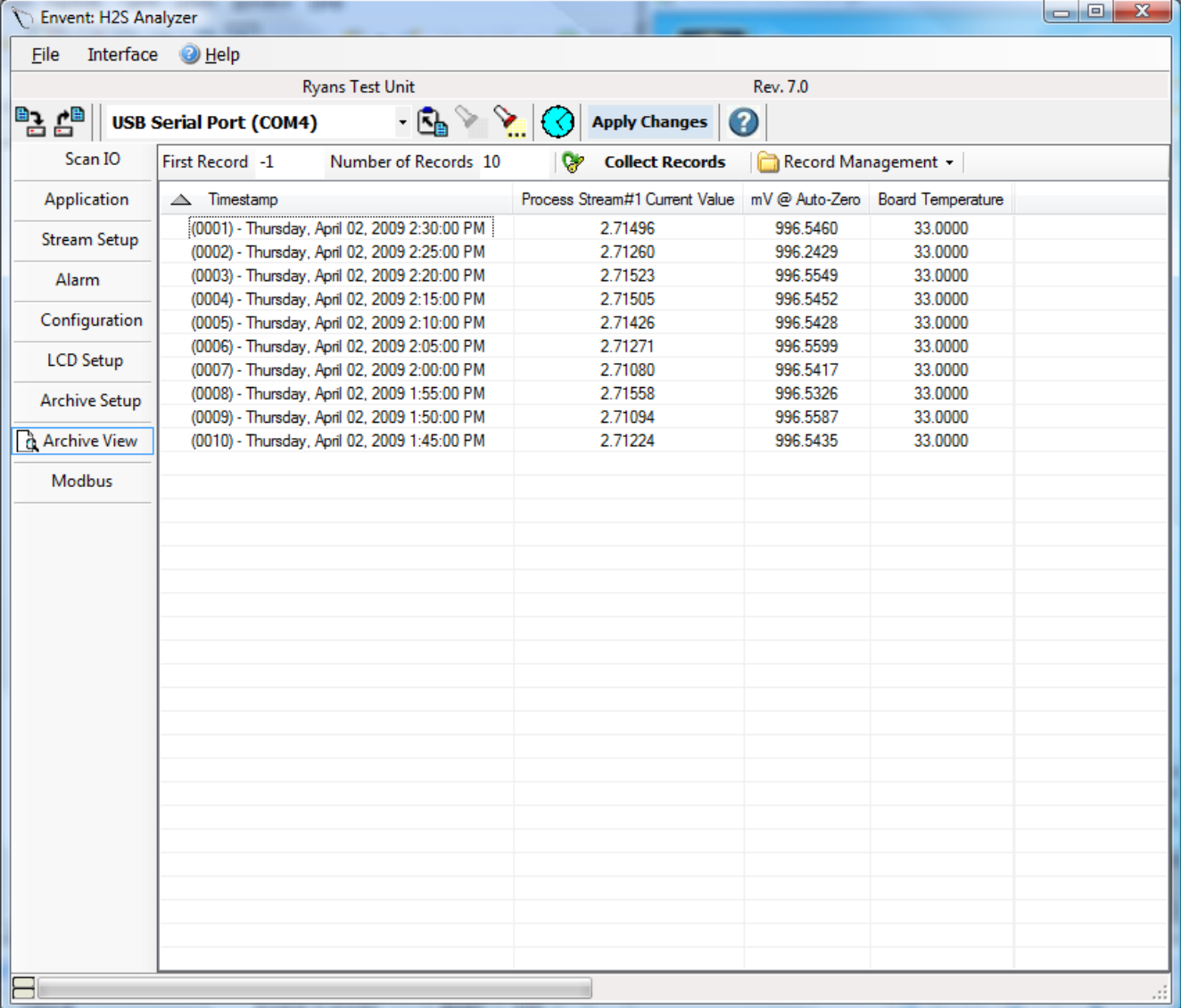
## Accessing Archives

On left side of window in Factory view is the tab to access Archive View.

To access the latest records. First Record value is -1. In Number of Records box select how many records you would like to view. Press Collect Records to view records.

To copy records to an excel spreadsheet press the Record Management drop down menu.

Press copy to clipboard. Then open a blank spreadsheet. In the menu press Edit then Paste.

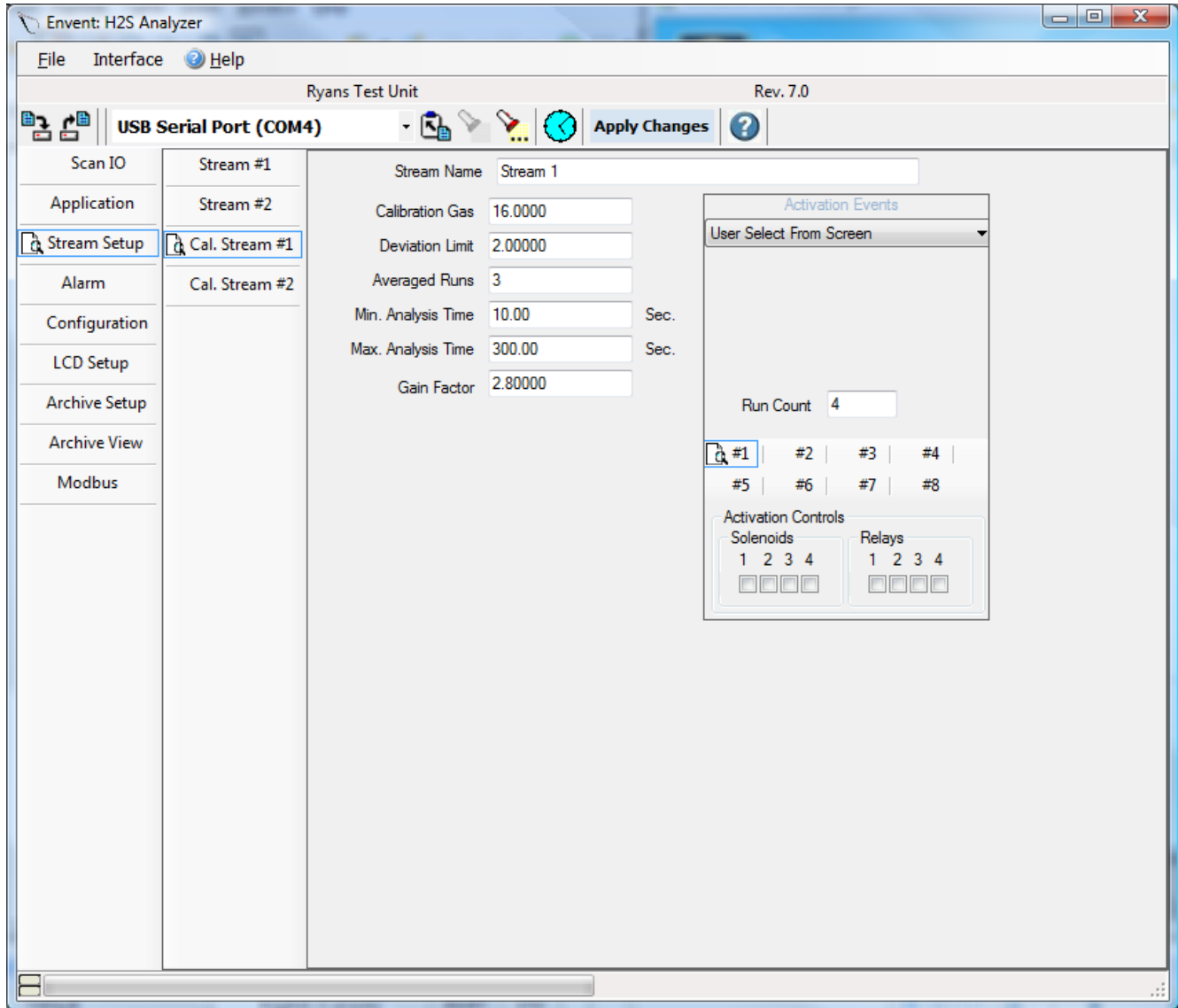


The screenshot displays the 'Envent: H2S Analyzer' software interface. The window title is 'Envent: H2S Analyzer'. The menu bar includes 'File', 'Interface', and 'Help'. The main window shows 'Ryans Test Unit' and 'Rev. 7.0'. The 'USB Serial Port (COM4)' is selected. The 'Apply Changes' button is visible. The 'Record Management' dropdown menu is open, showing options for 'Collect Records' and 'Record Management'. The 'Archive View' tab is selected in the left sidebar. The main data table is as follows:

Scan ID	First Record	Number of Records	Collect Records	Record Management
Application	Timestamp	Process Stream#1 Current Value	mV @ Auto-Zero	Board Temperature
Stream Setup	(0001) - Thursday, April 02, 2009 2:30:00 PM	2.71496	996.5460	33.0000
Alarm	(0002) - Thursday, April 02, 2009 2:25:00 PM	2.71260	996.2429	33.0000
Configuration	(0003) - Thursday, April 02, 2009 2:20:00 PM	2.71523	996.5549	33.0000
LCD Setup	(0004) - Thursday, April 02, 2009 2:15:00 PM	2.71505	996.5452	33.0000
Archive Setup	(0005) - Thursday, April 02, 2009 2:10:00 PM	2.71426	996.5428	33.0000
Modbus	(0006) - Thursday, April 02, 2009 2:05:00 PM	2.71271	996.5599	33.0000
	(0007) - Thursday, April 02, 2009 2:00:00 PM	2.71080	996.5417	33.0000
	(0008) - Thursday, April 02, 2009 1:55:00 PM	2.71558	996.5326	33.0000
	(0009) - Thursday, April 02, 2009 1:50:00 PM	2.71094	996.5587	33.0000
	(0010) - Thursday, April 02, 2009 1:45:00 PM	2.71224	996.5435	33.0000

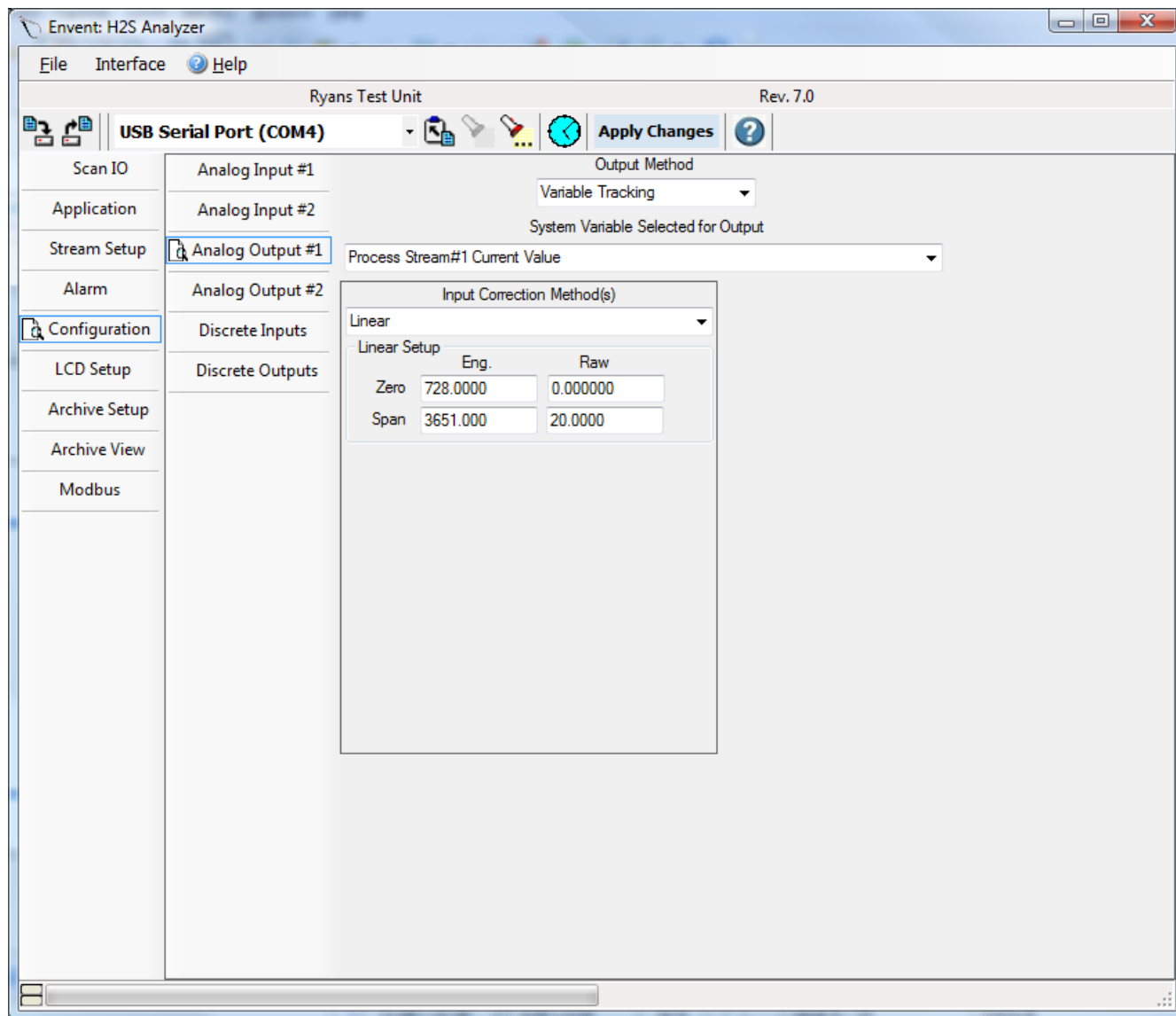
## Adjusting Gain

Changing the gain of the analyzer is recommended to be done through the display on the front of the analyzer. The gain can be adjusted in the software. This is accessed in Factory view under the tab Stream Setup , in Cal. Stream #1. To adjust the Gain simply change the Gain Factor and press Apply Changes.



## Changing range of 4-20 mA analog signals.

To re-range the analog output the scaling can be accessed in the Factory view. Select the configuration on the left side of the window. Then select the Analog Output in which needs to be re-scaled. The Eng. units of Zero and Span are mathematical units calibrated at the factory. The Raw units of Zero and Span are the values in which are required to adjust the scale. The 0.00 value is equal to the 4 mA signal. The Span value (commonly 20.00) is equal to 20 mA signal.

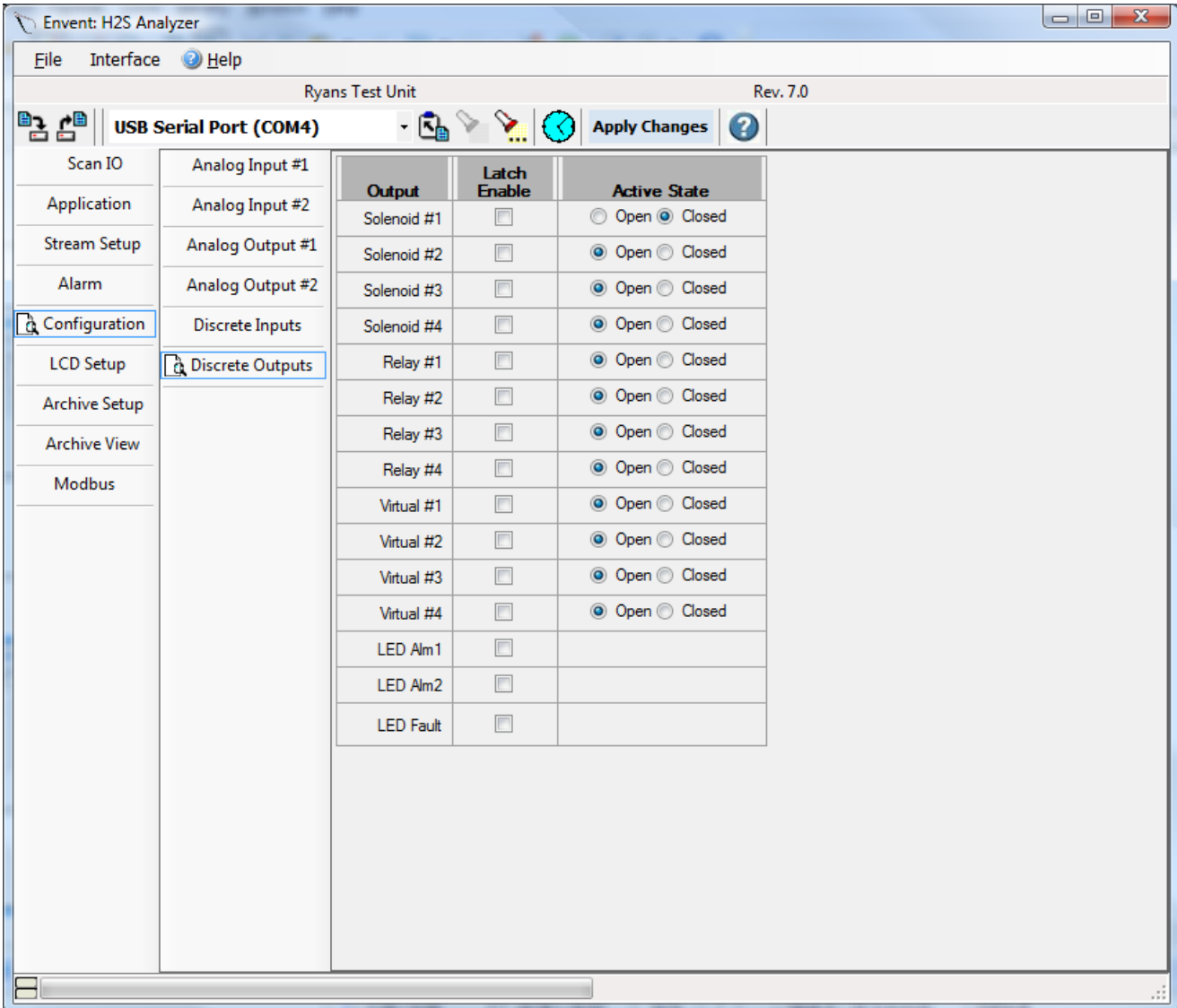


## Latching Alarms

By default none of the outputs from the analyzer are latching. To set any relay or solenoid to a latching stay go to the factory view. Under the Configuration tab select the Discrete Output sub menu. click the corresponding Latch Enable check box for the alarm in which you'd like to latch. Recommended is to latch the corresponding Alarm LED with the latch output. This way the display will still indicated if the alarm is in a latched state.

## Setting Output to Normal or Failsafe operation.

By default Solenoid #1 is set to failsafe condition. Under the Discrete Output page in the configuration tab. In the Active State column the selection can be either Open or Closed. This translates the output normal operating in a De-energized state or Energized state. In the case of output relays the wiring to either Normaly Closed or Normaly Open is also depending on your required outcome.



The screenshot shows the 'Envent: H2S Analyzer' software interface. The window title is 'Envent: H2S Analyzer' and the unit is 'Ryans Test Unit'. The interface includes a menu bar (File, Interface, Help), a toolbar with 'Apply Changes' and a help icon, and a main configuration area. The 'Configuration' tab is selected, and the 'Discrete Outputs' sub-tab is active. The main area displays a table with columns for 'Output', 'Latch Enable', and 'Active State'. The 'Active State' column contains radio buttons for 'Open' and 'Closed'. The 'LED Alm1', 'LED Alm2', and 'LED Fault' rows are currently empty.

Output	Latch Enable	Active State
Solenoid #1	<input type="checkbox"/>	<input type="radio"/> Open <input checked="" type="radio"/> Closed
Solenoid #2	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Solenoid #3	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Solenoid #4	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Relay #1	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Relay #2	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Relay #3	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Relay #4	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Virtual #1	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Virtual #2	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Virtual #3	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
Virtual #4	<input type="checkbox"/>	<input checked="" type="radio"/> Open <input type="radio"/> Closed
LED Alm1	<input type="checkbox"/>	
LED Alm2	<input type="checkbox"/>	
LED Fault	<input type="checkbox"/>	



## Modbus

There is a default value in the modbus registry.

### ModBus Configuration Page

Modbus Registry Commonly Used Addresses

#### (16 bit)

Stream 1 hydrogen sulfide Value	-	40001 or 40002
RRA Current Value	-	40009 or 40010
Sensor MV	-	40005 or 40006

#### (32 bit)

Stream 1 hydrogen sulfide Value	-	40029 or 40031
RRA Current Value	-	40045 or 40047
Sensor MV	-	40037 or 40039

#### (Float)

Stream 1 hydrogen sulfide Value	-	40085 or 40087
RRA Current Value	-	40101 or 40103
Sensor MV	-	40093 or 40095

#### (Output Coils)

High hydrogen sulfide Alarm Status	-	00016 or 00017
High High hydrogen sulfide Alarm Status	-	00018 or 00019
Sensor Low Fault	-	00032 or 00033
Sensor High Fault	-	00040 or 00041
Relay 1	-	00008 or 00009
Relay 2	-	00010 or 00011
Relay 3	-	00012 or 00013
Relay 4 ( <i>Set as Fault Relay</i> )	-	00014 or 00015
Solenoid 1	-	00000 or 00001
Solenoid 2	-	00002 or 00003
Solenoid 3	-	00004 or 00005
Solenoid 4	-	00006 or 00007

Event: H2S Analyzer\*  
File Interface Help  
Unnamed Device Rev. 7.6  
COM6 Apply Changes  
Scan IO Protocol Variant Enron Device Address (0 to Disable) 2

Application  
Stream Setup  
Alarm  
Configuration  
LCD Setup  
Archive Setup  
Archive View  
Modbus

Stream Data

- Cal. Stream #1 - Initiate Run
- Cal. Stream #2 - Initiate Run
- Cal. Stream#1 Ave Count
- Cal. Stream#1 Cal. Gas
- Cal. Stream#1 Current Value
- Cal. Stream#1 Daily Average Value
- Cal. Stream#1 Daily Maximum Value
- Cal. Stream#1 Daily Minimum Value
- Cal. Stream#1 Dev. Limit
- Cal. Stream#1 Hourly Average Value
- Cal. Stream#1 Hourly Maximum Value
- Cal. Stream#1 Hourly Minimum Value
- Cal. Stream#1 Max Analysis Ticks
- Cal. Stream#1 Min Analysis Ticks
- Cal. Stream#1 Monthly Average Value
- Cal. Stream#1 Monthly Maximum Value
- Cal. Stream#1 Monthly Minimum Value
- Cal. Stream#2 Ave Count
- Cal. Stream#2 Cal. Gas
- Cal. Stream#2 Current Value
- Cal. Stream#2 Daily Average Value
- Cal. Stream#2 Daily Maximum Value
- Cal. Stream#2 Daily Minimum Value
- Cal. Stream#2 Dev. Limit
- Cal. Stream#2 Hourly Average Value
- Cal. Stream#2 Hourly Maximum Value
- Cal. Stream#2 Hourly Minimum Value
- Cal. Stream#2 Max Analysis Ticks
- Cal. Stream#2 Min Analysis Ticks
- Cal. Stream#2 Monthly Average Value
- Cal. Stream#2 Monthly Maximum Value
- Cal. Stream#2 Monthly Minimum Value
- Current Stream ID
- Last Stream Value
- Primary Stream Hold Hysteresis
- Primary Stream Hold Setpoint
- Process Stream #1 - Initiate Run
- Process Stream #2 - Initiate Run
- Process Stream#1 Cal. Stream
- Process Stream#1 Calc Coeff. #1
- Process Stream#1 Calc Coeff. #2
- Process Stream#1 Calc Coeff. #3
- Process Stream#1 Calc Coeff. #4
- Process Stream#1 Calc Coeff. #5
- Process Stream#1 Calc EU. Span
- Process Stream#1 Calc EU. Zero
- Process Stream#1 Calc Mode
- Process Stream#1 Calc Natural Log Factor#1
- Process Stream#1 Calc Natural Log Factor#2
- Process Stream#1 Calc Natural Log Offset#1
- Process Stream#1 Calc Natural Log Offset#2
- Process Stream#1 Calc Raw Soan

[88] Coils  
[28] Shorts (16 Bit Integers)  
[28] Longs (32 Bit Integers)  
(5001) - Process Stream#1 Current Value  
(5002) - Process Stream#1 Current Value  
(5003) - Process Stream#2 Current Value  
(5004) - Process Stream#2 Current Value  
(5005) - Analog Input Current#1  
(5006) - Analog Input Current#1  
(5007) - Analog Input Current#2  
(5008) - Analog Input Current#2  
(5009) - RRA Current Value  
(5010) - RRA Current Value  
(5011) - Alarm#1 Item#1 Hysteresis  
(5012) - Alarm#1 Item#1 Hysteresis  
(5013) - mV @ Sample Start  
(5014) - mV @ Sample Start  
(5015) - mV @ Sample End  
(5016) - mV @ Sample End  
(5017) - Alarm#1 Item#1 Hysteresis  
(5018) - Alarm#1 Item#1 Hysteresis  
(5019) - Alarm#1 Item#1 Hysteresis  
(5020) - Alarm#1 Item#1 Hysteresis  
(5021) - Alarm#1 Item#1 Hysteresis  
(5022) - Alarm#1 Item#1 Hysteresis  
(5023) - Board Temperature  
(5024) - Board Temperature  
(5025) - Cal Gain#1  
(5026) - Cal Gain#1  
(5027) - Cal Gain#2  
(5028) - Cal Gain#2  
[28] IEEE754 Single Precision Floating Points