IR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor		
ieneral		- EtO		- H20	
Com Port:	COM1 🗸	Raw Reference	Cx7A	Raw Reference:	0x37
Unit Status;	0×00	Raw Apalytical	0x86	Baw Analytical	Qx2C
Error Code	bout H20 Win				K84BC
Unit Tempe		P	nduct Info		x0E94
Firmware V				-	<7038
Serial Numl			H2O win version 3.0.0.	D	<1694
	CENIC	200	All rights reserved.		k3DCF
	SEINE		ОК		KCD
	LLLOIN				kAE
Г		Copyright (C) 2006 Sen	sor Electronics Corporati	ion	h
	Waming: This comput	er program is protected b	y copyright law and inter	mational treaties.	
lser Defined	Unauthorized reproduc civil and criminal pena	ction or distribution of this Ities, and will be prosecut	program, or any portion ted to the maximum exte	of it, may result in severe nt possible under the law) /.
Update Time late	e	Range	T NG	adding onits	uas Type
Time and		-			

Current version of SEC software used with SEC Signature DIR. This software can be downloaded from the Sensor Electronics website. <u>www.sensorelectronics.com</u> Note: The SEC H2O Win software requires Microsoft.Net to run. The download process will prompt the operator to download this software. Download the x86 version.

The software is used on a PC connected to an SEC PC IR Link Kit (PN 1420636) via a 9 pin serial (straight through) cable. The SEC Signature is wired to the SEC PC IR Link, if the SEC Signature DIR is powered from a different 24 VDC power supply (external to the PC IR Link) only the white (communication wire) and black (DC Common) wire need to be connected to the PC IR Link to communicate.

DIR Sensor 3000 Senso	r Millenium Sensor	Signature Sensor		
General Selec	t a COM Port		- H20	
Com Port:	Raw Reference	e:	Raw Reference:	
Unit Status:	Raw Analytical	:	Raw Analytical:	
Error Code:	Balance Pot Va	alue:	Balance Pot Val	ue:
Unit Temperature:	Hot Zero Facto	or:	Hot Zero Factor:	
Firmware Version:	Cool Zero Fact	or:	Cool Zero Factor	n
Serial Number:	Span Pot Value	e:	Span Pot Value:	
	AGC Pot Value		AGC Pot Value:	
	Reference:		Reference:	
	Analytical:		Analytical:	
Refresh	Re	efresh	Ref	resh
User Defined - Timed Sensor R	eading)	C	
Update Time Interval	Range	Re	ading Units	Gas Type
OFF	0 -			4

Select the communication port used on the PC. If the computer does not have a 9 pin serial port a USB to 9 pin serial adaptor can be used.

DIR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor			
General				-H20-		
Com Port:	COM1 💌	Raw Reference:		Raw	Reference:	
Unit Status:	COM1 COM4	Raw Analytical:		Raw	Analytical:	l.
Error Code:	COM5	Balance Pot Value	e:	Balar	nce Pot Value	a:
Unit Temperatu	ure:	Hot Zero Factor:		Hot 2	Zero Factor:	
Firmware Versio	on:	Cool Zero Factor:		Cool	Zero Factor:	
Serial Number:		Span Pot Value:			Pot Value:	
		AGC Pot Value:		AGC	Pot Value:	
		Reference:		Refe	rence:	
		Analytical:		Analy	rtical:	
Re	efresh	Refre	esh		Refre	sh
User Defined - Ti	imed Sensor Readin	g				
Update		Range	F	eading	Units	Gas Type
OFF		D -				
			No	rmalized s Level		

The software recognizes the available ports on the PC. Select the one to be used.

DIR Sensor 3	3000 Sensor	Millenium Sensor Sig	nature Sensor			
General		EtO		-H20		
Com Port:	COM1 💌	Raw Reference:		Raw	Reference:	
Unit Status:	0x00	Raw Analytical:		Raw	Analytical:	
Error Code:	0x00 Ch. 0	Balance Pot Value:		Balan	ice Pot Value	e
Unit Temperature:	42 C	Hot Zero Factor:		Hot Z	lero Factor:	ĺ.
Firmware Version:	08	Cool Zero Factor:		Cool	Zero Factor:	
Serial Number:	1065	Span Pot Value:		Span Pot Value:		1
		AGC Pot Value:		AGC	Pot Value:	
		Reference:		Refer	ence:	
		Analytical:		Analy	tical:	
Refres	:h	Refresh			Refre	sh
User Defined - Timed	Sensor Readin	g				
Update Time Interval		Range	Rea	ding	Units	Gas Type
OFF	<u>د</u>) -				-
			Norm	alized		

Once communication is established the "General" area is automatically updated. The General, EtO and H2O areas are all manually updated using the individual "Refresh" buttons.

DIR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor			
General		- EtO		-H20-		
Com Port:	COM1 🗸	Raw Reference:	0x7A	Raw	Reference:	
Unit Status:	0x00	Raw Analytical:	0x86	Raw	Analytical:	
Error Code:	0x00 Ch. 0	Balance Pot Value:	0x6709	Balar	nce Pot Value	6 📃
Unit Temperature:	42 C	Hot Zero Factor:	0x15BA	Hot Z	Zero Factor:	
Firmware Version:	08	Cool Zero Factor:	0x16B1	Cool	Zero Factor:	
Serial Number:	1065	Span Pot Value:	0x11E0	Span	Pot Value:	
		AGC Pot Value:	0x1BFD	AGC	Pot Value:	
		Reference:	0xCC	Refer	rence:	
		Analytical:	0xC9	Analy	rtical:	
Refre	sh	Refresh	1		Refre	sh
User Defined - Time	d Sensor Readin	g				
Update Time Interval	6	Range		Reading	Units	Gas Type
OFF	~ (0 -				
			N	ormalized as Level		

Example of selecting Refresh EtO channel.

DIR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor			
General		Et0		- H20		
Com Port:	COM1 💌	Raw Reference:	0x7A	Raw	Reference:	0x37
Unit Status:	0x00	Raw Analytical:	0x86	Raw	Analytical:	0x2C
Error Code:	0x00 Ch. 0	Balance Pot Value:	0x6709	Balan	nce Pot Value:	0x84BC
Unit Temperature:	42 C	Hot Zero Factor:	0x15BA	Hot Z	Zero Factor:	0x0E94
Firmware Version:	08	Cool Zero Factor:	0x16B1	Cool	Zero Factor:	0x7038
Serial Number:	1065	Span Pot Value:	0x11E0	Span	Pot Value:	0x1694
		AGC Pot Value:	0x1BFD	AGC	Pot Value:	0x3DCF
		Reference:	0xCC	Refer	rence:	0xCD
		Analytical:	0xC9	Analy	rtical:	0×B0
Refre	sh	Refresh	1		Refres	h
Jser Defined - Time	d Sensor Readin	g		Beading	Unite	Gae Tume
Time Interval	_ 6	Range		iouality	Grifty	ade Type
OFF	<u> </u>		N	ormalized as Level		

Example of selecting Refresh H2O channel.

ile	Functi	ion H	Help								
D		Factory	Setting	9		Villenium Sensor	•	Signature Sensor	•		
G		Pressure Compensation Calibration Heater Configuration		ElO		(214-1)	H20				
					Raw Reference:		0x7A	Raw Reference:	0x36		
	Optical Compensation			Raw Analytical:		0x85	Raw	Analytical:	0x2B		
	Error Co	ode:	0	1B Ch. 1		Balance Po	t Value:	0x6709	Bala	nce Pot Value:	0x84BC
	Unit Te	mperatu	ure: 24			Hot Zero Fa	actor:	0x15BA	Hot	Zero Factor:	0x0E94
-	Firmwa	re Versi	on:	1		Cool Zero F	actor:	0x16B1	Cool	Zero Factor:	0x7038
	Serial N	lumber:	1()65		Span Pot V	alue:	0x11E0	Spar	Pot Value:	0x1694
						AGC Pot Va	alue:	0x1BEE	AGC	Pot Value:	0x3EAB
						Reference:		0xCC	Refe	rence:	0xCC
						Analytical:		0xC9	Anal	ytical:	0xAE
		R	efresh				Refresh	1		Refresh	
-U:	ser Defi	ined - T	imed Se	nsor Read	ing	L					
	Tim	Jpdate e Inter	val	1	0 -	Range			Reading	Units	Gas Type
	UT							N	ormalized		

The Function tab will allow the operator to configure the SEC Signature DIR. When prompted for a password the password is:

sec

First step is to configure the heater. The heater is configured by monitoring the SEC Signature DIR's temperature. The temperature should be a minimum of 5 degrees C above process temperature throughout the entire process cycle.

Insulating the SEC Signature DIR is recommended.

DIR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor				
General Com Port:	COM1 🗸	EtO Raw Reference	e: 0x7A	H20 Raw Reference:	0x36		
Unit Status:	0x09	Raw Analytical	0x85	Raw Analytical:	0x2B		
Error Code:	0x1B Ch. 1	Balance Pot Va	alue: 0x6709	Balance Pot Value:	0x84BC		
Unit Temperatu	Heater Configu	uration			0x0E94		
Firmware Versid	Heater Mode				0x7038		
Serial Number:		000 Ta	arget Temp.: 0		0x1694		
	0 00000						
	 Constant 	0xCC					
					0xAE		
Re	Update	כ		Close	h		
User Defined - Tin	nea Sensor Readin	g					
Update Time Interv	al	Range	Re	eading Units	Gas Type		
OFF	~ () - [

SEC recommends the SEC Signature be operated in the constant power mode. The SEC Signature DIR heat can be raised by increasing the Power Level number and lowered by decreasing the Power Level number. The Power Level number scale is 0-10. Once the number is changed, select Update to load the new number into the SEC Signature DIR.

		Eastern Cat	NG22				
D		Factory Set	ungs	Villenium Sensor	Signature Sensor		
G		Pressure Compensation Calibration Heater Configuration		C EtO	EtO		
				Raw Reference	ce: Ox7A	Raw Reference:	0x36
	Optical Compensation		Raw Analytica	al: 0x85	Raw Analytical:	0x2B	
0	Error	Code:	0x1B Ch. 1	Balance Pot \	/alue: 0x6709	Balance Pot Value:	0x84BC
	Unit	Temperature:	24 C	Hot Zero Fact	or: 0x15BA	Hot Zero Factor:	0x0E94
	Firmv	ware Version:	08	Cool Zero Fac	tor: 0x16B1	Cool Zero Factor:	0x7038
	Seria	al Number:	1065	Span Pot Valu	ue: Ox11E0	Span Pot Value:	0x1694
				AGC Pot Valu	e: Ox1BEE	AGC Pot Value:	0x3EAB
				Reference:	0xCC	Reference:	0xCC
				Analytical:	0xC9	Analytical:	0xAE
		Refres	h	F	Refresh	Refresh	1
-0	lser D	efined - Timed	Sensor Reading				
	Т	Update		Range	F	Reading Units	Gas Type
	OFF		•	-			
					N	malized	

Optical Compensation is used to cancel any EtO response on the H2O channel.

DIR Sensor	3000 Sense	or I	Millenium Sensor	Signature Sensor		
General			EtO		- H20	12210
Com Port:	COM1	~	Raw Reference:	0x7A	Raw Reference:	0x36
Unit Status:	0x09		Raw Analytical:	0x85	Raw Analytical:	0x2B
Error Code:	0x1B Ch	. 1	Balance Pot Value	e: 0x6709	Balance Pot Value:	0x84BC
Unit Temperature	24 C	Optica	I Compensation		Zero Factor:	0x0E94
Firmware Version:	08	Gen	eral		Zero Factor:	0x7038
Serial Number:	1065	Op	tical Compensation:	ON	Pot Value:	0x1694
		Co	mpensation Factor:	0x 18	Pot Value:	0x3EAB
					rence:	0xCC
		Co	mpensation Pot Value:	32654	vtical:	0xAE
Refre	esh		Update	Close	Refresh	1
User Defined - Time	ed Sensor F	Reading	-			
Update Time Interva	. /		Range	Re	ading Units	Gas Type
OFF	~ /	0 -				-
	/			Nor	nalized	
User Defined - Time Update Time Interva OFF	ed Sensor F	0 -	Range	Re	ading Units	Gas

The operator can turn the Optical Compensation ON or OFF If a change is made, select Update to send the information to the SEC Signature DIR.

ile	Function Help						
D	Factory Sett	ings	Villenium Sensor	Signature Sensor	1		
	Pressure Co	mpensation 🕨	EtO	-	100		
-6	Calibration	•	H20	0x7A	Raw Reference:	0x36	
	Optical Com	pensation	Raw Analytical:	0x85	Raw Analytical:	0x28	
	Error Code:	0x1B Ch. 1	Balance Pot Value:	0x6709	Balance Pot Value:	0x84BC	
	Unit Temperature:	24 C	Hot Zero Factor:	0x15BA	Hot Zero Factor:	0x0E94	
F	Firmware Version:	08	Cool Zero Factor:	0x16B1	Cool Zero Factor:	0x7038	
ŝ	Serial Number:	1065	Span Pot Value:	0x11E0	Span Pot Value:	0x1694	
			AGC Pot Value:	Ox1BEE	AGC Pot Value:	0x3EAB	
			Reference:	0xCC	Reference:	0xCC	
			Analytical:	0xC9	Analytical:	0xAE	
	Refres	h	Refresh	1	Refresh	1	
-U	ser Defined - Timed	Sensor Reading -	·				
	Update Time Interval		Range	F	leading Units	Gas Type	
	OFF	0 -					
ľ				No	rmalized is Level		

Pressure Compensation is used to cancel pressure effects on the H2O channel. If Pressure Compensation is disabled the SEC Signature DIR assumes all pressure rise in the chamber is due to water vapor. When other vapors such as nitrogen or EtO are injected into the chamber, there will be an effect on the H2O molecule absorption characteristics. If accurate H2O readings are recorded / required throughout the entire cycle, SEC recommends adding an absolute pressure transmitter to the SEC Signature DIR circuit and enabling the pressure compensation feature. Details can be found in the SEC Signature DIR Instruction Manual.

R Sensor	3000 Sensor Millenium Sensor Signature Sensor	
eneral P	ressure Compensation - H2O	
Unit State	Pressure Status (Read Only)	в
Error Cod	✓ Pressure Compensation Table Loaded ✓ Pressure Zero Value Loaded	4BC
Unit Tem	Pressure Compensation Enabled Pressure Span Value Loaded	E94
Firmware	Pressure Compensation ON Valid Pressure Input	038
Serial Nu		694
	Pressure (Read\Write)	EAB
	Pressure Reading: 0.000 PSI Pressure Comp Enable: OFF	✓ C
	Pressure Senar Zero: 0.490 PSI	Æ
or Defin	Pressure Sensor Full Scale: 29.450 PSI	
ser Denne		Train
Ur Time	Read Write Close	Туре
OFF		_
	Normalized Gas Level	

The page allows the operator to configure the pressure compensation features. The SEC Signature DIR only knows PSIA. If an absolute pressure transmitter with another measurement scale is used (inHg, bar, etc), the units must be converted to PSIA and input into the SEC Signature DIR as PSIA.

To turn the Pressure Compensation ON click the box and Write it to the SEC Signature DIR.

		100000				
C	Factory Set	tings	Millenium Sensor	Signature Sensor		
-0	Pressure Co	mpensation +			420	
	Calibration	+	EtO	0~74	Paw Peterance:	0x37
	Heater Conf	figuration pensation	H2O Haw Analytical:	0x86	Raw Analytical:	0x2C
	Error Code:	0x00 Ch. 0	Balance Pot Value:	0x6709	Balance Pot Value:	0x84BC
	Unit Temperature:	41 C	Hot Zero Factor:	0x15BA	Hot Zero Factor:	0x0E94
	Firmware Version:	08	Cool Zero Factor:	0x16B1	Cool Zero Factor:	0x7038
	Serial Number:	1065	Span Pot Value:	0x11E0	Span Pot Value:	0x1694
			AGC Pot Value:	Ox1BF5	AGC Pot Value:	0x3DCF
			Reference:	0xCD	Reference:	0xCD
			Analytical:	OxC9	Analytical:	0xAE
	Refresh		Refres	h	Refresh	
-1	Jser Defined - Timed	Sensor Reading -				
	Update Time Interval	_	Range	Re	ading Units	Gas Type
	OFF	• 0 -				
				Nor	nalized	

EtO channel Calibration

Note: If calibrating H2O channel with CO2 (20.5% volume), DISABLE both the Optical and Pressure Compensation before entering the calibration procedure. If calibrating the H2O channel with water vapor ENABLE both the Optical and Pressure Compensation if being used.

DIR Sensor 3	000 Sensor	Millenium Sensor	Signature Sensor		
General		Et0		H20	
Com Port:	COM1 💌	Raw Reference	0x7A	Raw Reference:	0x37
Unit Status:	0x00	Raw Analytical:	0x86	Raw Analytical:	0x2C
Error Code:	0x00 Ch.	alibration - EtO		hce Pot Value:	0x84BC
Unit Temperature:	41 C	Calibration	vration Date	Zero Factor:	0x0E94
Firmware Version: 08		Sunday . July 20, 2008 V Zero Factor:		0x7038	
Serial Number:	1065		<u>S</u> pan	Pot Value:	0x1694
				Pot Value:	0x3DCF
	7	4-20mA Adjust		rence:	0xCD
		4mA Zero Value:	166	} vtical:	0xAE
Befres		4mA Span Value:	167	Befresh	
- Honos				Thomas	·
User Defined - Timed	Sensor R	Read V	<u>/rite</u>]	
Update		Range	T NGG	units	Gas Type
OFF X	6	0 -			

This box allows the operator to zero, span, adjust the 4mA zero current output value and adjust the 4mA (actually 12mA) span current output value.

Zero

Apply 99.9% volume nitrogen to the SEC Signature DIR for approximately 5 minutes at 2 liter per minute flow rate. Select Zero button and the Authentication box (example on next page) will appear requiring the operator to enter the password. Enter password select OK and the EtO channel is zeroed. The H2O channel can be zeroed at this time also. The operator will have to close out of the Calibration EtO box and enter the Calibration H2O menu.

4mA Zero Value

Once the SEC Signature is zeroed, the operator can tweak the current output to read 4 $mA \pm 0.03 mA$ by changing the number up or down. Increasing the number raises the current output lowering the number decreases output current. One step change is approximately 0.03 mA. After the number is changed, the operator must select the Write button to load the new value into the SEC Signature DIR.

DIR Sensor	8000 Sensor	Millenium Sensor	Signature Sensor		
General		EtO		- H20	
Com Port:	COM1	Raw Reference	: 0x7A	Raw Reference:	0x37
Unit Status: Error Code:	0x00	Raw Analytical	0x86	Baw Analytical:	0x2C
	0x00 Ch.	Calibration - EtO	hce Pot Value:	0x84BC	
Unit Temperature: 42 C Firmware Version: 08		Calibration		Zero Factor:	0x0E94
		🚽 Authentication		Zero Factor:	0x7038
Serial Number:	1065	Password		Pot Value:	0x1694
		Password:		Pot Value:	0x3DCF
				rence:	0xCD
		<u>O</u> K	Cancel	ytical:	0xB0
Refres	sh	<u></u>		Refresh	
User Defined - Timed	d Sensor Re	Read V	Vrite Close		
Update		Range	1 10-1	aang Units	Gas Type
OFF 4	~	0 -			

Password:

sec

e	Function Help		-			
۵	Eactory Set	tings	Villenium Sensor	Signature Sensor		
-0	Pressure Co	mpensation F			~ H20	
	Calibration	•	<u>E</u> tO	0x7A	Raw Reference:	0x37
	Heater Con	figuration pensation	H2O Raw Analytical:	0x86	Raw Analytical:	0x2C
	Error Code:	0x00 Ch. 0	Balance Pot Value	0x6709	Balance Pot Value:	0x84BC
	Unit Temperature:	41 C	Hot Zero Factor:	0x15BA	Hot Zero Factor:	0x0E94
	Firmware Version:	08	Cool Zero Factor:	0x16B1	Cool Zero Factor:	0x7038
	Serial Number:	1065	Span Pot Value:	0x11E0	Span Pot Value:	0x1694
			AGC Pot Value:	Ox1BF5	AGC Pot Value:	0x3DCF
			Reference:	0xCD	Reference:	0xCD
	Refresh		Analytical:	0xC9	Analytical:	0xAE
			Refres	sh	Refresh	
-1	Jser Defined - Timed	Sensor Reading -		Be	ading Unite	Gae Tume
	Update Time Interval OFF V 0 -		Range			das type
			/	Nor	malized	

H2O channel Calibration

Note: If calibrating H2O channel with CO2 (20.5% volume), DISABLE both the Optical and Pressure Compensation before entering the calibration procedure. If calibrating the H2O channel with water vapor ENABLE both the Optical and Pressure Compensation if being used.

DIR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor		
General		EtO		H20	
Com Port:	COM1 ·	Raw Reference	0x7A	Raw Reference:	0x37
Unit Status:	0x00	Baw Analytical:	0x86	Raw Analytical:	0x2C
Error Code:	0x00 Ch.	Calibration - H2O		nce Pot Value:	0x84BC
Unit Temperature:	41 C	Calibration	pration Date	Zero Factor:	0x0E94
Firmware Version:	08	Sunday Ju	iy 20, 2008 💉	Zero Factor:	0x7038
Serial Number:	1065	Zero	Span	1 Pot Value:	0x1694
				Pot Value:	0x3DCF
		4 20mA Adjust		rence:	0xCD
		4mA Zero Value:	166	/tical:	0xAE
Refres	sh	4mA Span Value:	165	Refresh	
User Defined - Timed	Sensor Re				
Update Time Interval		Range	T Wet	or Units	Gas Type
	5	0 -			

This box allows the operator to zero, span, adjust the 4mA zero current output value and adjust the 4mA (actually 8mA) span current output value.

Zero

Apply 99.9% volume nitrogen to the SEC Signature DIR for approximately 5 minutes at 2 liter per minute flow rate. Select Zero button and the Authentication box (example on next page) will appear requiring the operator to enter the password. Enter password select OK and the H2O channel is zeroed. The EtO channel can be zeroed at this time if it has not been done. The operator will have to close out of the Calibration H2O box and enter the Calibration EtO menu.

4mA Zero Value

Once the SEC Signature is zeroed, the operator can tweak the current output to read 4 $mA \pm 0.03$ mA by changing the number up or down. Increasing the number raises the current output lowering the number decreases the output current. One step change is approximately 0.03 mA. After the number is changed, the operator must select the Write button to load the new value into the SEC Signature DIR.

DIR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor		
General	si —	Et0		- H20	<i>e</i>
Com Port:	COM1 🗸	Raw Reference	e: Ox7A	Raw Reference:	0x37
Unit Status:	0x00	Baw Analytical	0x86	Baw Analytical:	0x2C
Error Code:	0x00 Ch.	Calibration - H2O		hce Pot Value:	0x84BC
Unit Temperature:	42 C			Zero Factor:	0x0E94
Firmware Version:	08	Authentication		Zero Factor:	0x7038
Serial Number:	1065	Password		Pot Value:	0x1694
		Password:		Pot Value:	0x3DCF
				rence:	0xCD
		<u>O</u> K	Cancel	vtical:	0×B0
Refre	sh			Refresh	1
User Defined - Time	d Sensor Re	Read	Write Close		
Update Time Interval		Range	1.00	uumy Units	Gas Type
OFF	~	0 -			

Password:

sec

DIR Sensor 3	000 Sensor	Millenium Sensor	Signature Sensor		
General		EtO		H20	24 V
Com Port:	COM1 💌	Raw Reference	0x7A	Raw Reference:	0x37
Unit Status:	0x00	Raw Analytical	0x86	Raw Analytical:	0x2C
Error Code:	0x00 Ch. Ca	libration - H2O		hce Pot Value:	0x84BC
Unit Temperature:	41 C	Calibration Last Cali	bration Date	Zero Factor:	0x0E94
Firmware Version:	08	Sunday Ju	ily 20, 2008 💌	Zero Factor:	0x7038
Serial Number:	1065		<u>Span</u>	Pot Value:	Ox1694
				Pot Value:	0x3DCF
	1	4-20mA Adjust		rence:	0xCD
		4mA Zero Value:	166	/tical:	0xAE
Refres	h	4mA Span Valvie:	165	Refresh	
User Defined - Timed	Sensor R	Read V	<u>V</u> rite <u>C</u> lose		
Update Time Interval		Range	ricat	arrig Units	Gas Type
OFF	- /	0 -			
			Nom	hori	

This box allows the operator to zero, span, adjust the 4mA zero current output value and adjust the 4mA (actually 8mA) span current output value.

Span

Apply 20.5% volume CO2 to the SEC Signature DIR for approximately 5 minutes at 2 liter per minute flow rate. Allow the SEC Signature DIR to stabilize. Select Span button and the Authentication box will appear requiring the operator to enter the password. Enter password select OK and the H2O channel is spanned.

4mA Span Value

Once the SEC Signature is spanned, the operator can tweak the current output to read 8 $mA \pm 0.03$ mA by changing the number up or down. Increasing the number raises the current output lowering the number decreases the output current. One step change is approximately 0.03 mA. After the number is changed, the operator must select the Write button to load the new value into the SEC Signature DIR.

Eactory Satt	inas	<u> </u>			
Pactory Sett	ings	Villenium Sensor	Signature Sensor		
Pressure Co	mpensation •			-H20	
Calibration	+	EtO	0x7A	Raw Reference:	0x37
Heater Conf	iguration	H2O	urm	naw mercicice.	unor
Optical Comp	pensation	Raw Analytical:	0x86	Raw Analytical:	0x2C
Error Code:	0x00 Ch. 0	Balance Pot Value:	0x6709	Balance Pot Value:	0x84BC
Unit Temperature:	41 C	Hot Zero Factor:	0x15BA	Hot Zero Factor:	0x0E94
Firmware Version:	08	Cool Zero Factor:	0x16B1	Cool Zero Factor:	0x7038
Serial Number:	1065	Span Pot Value:	0x11E0	Span Pot Value:	0x1694
		AGC Pot Value:	Ox1BF5	AGC Pot Value:	0x3DCF
		Reference:	0xCD	Reference:	0xCD
		Analytical:	OxC9	Analytical:	0xAE
Refres	h	Refres	h	Refresh	1
Jser Defined - Timed	Sensor Reading -	L			
Update		Range	Re	ading Units	Gas Type
	0 -				
UFF V	1				

The final step is to span the EtO channel.

DIR Sensor	3000 Sensor	Millenium Sensor	Signature Sensor		
General		Et0		H20	
Com Port:	COM1	Raw Reference	0x7A	Raw Reference:	0x37
Unit Status:	0x00	Raw Analytical	0x86	Raw Analytical:	0x2C
Error Code:	0x00 Ch.	Calibration - EtO		hce Pot Value:	0x84BC
Unit Temperature:	41 C	Calibration	hration Date	Zero Factor:	0x0E94
Firmware Version:	08	Sunday Ju	ly 20, 2008 💙	Zero Factor:	0x7038
Serial Number:	1065		Span	Pot Value:	0x1694
				Pot Value:	0x3DCF
		4-20mA Adjust		rence:	0xCD
		4mA Zero Value:	166	ytical:	0xAE
Refres	sh	4mA Span Value:	167	Refresh	
User Defined - Timed	d Sensor R	Read	Vrite Close]	
Update		Range	nea	ung Units	Gas Type
OFF	- /	0 -			

This box allows the operator to zero, span, adjust the 4mA zero current output value and adjust the 4mA (actually 12mA) span current output value.

Span

Charge the chamber with EtO to 50% full scale. Allow the SEC Signature DIR to stabilize (approximately 15 minutes into EtO dwell. Select Span button and the Authentication box will appear requiring the operator to enter the password. Enter password select OK and the EtO channel is spanned.

4mA Span Value

Once the SEC Signature is spanned, the operator can tweak the current output to read 12 $mA \pm 0.03 mA$ by changing the number up or down. Increasing the number raises the current output lowering the number decreases the output current. One step change is approximately 0.03 mA. After the number is changed, the operator must select the Write button to load the new value into the SEC Signature DIR.

SEC H2O Win Software for SEC Signature DIR EtO/H2O Monitor
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pration			Thermal Calibration
	Last Calibration Date		Channel 0 Calibration Parameters Channel 0 Commands
100 11 11	Sunday , July 20, 2006 💌		Road 0x1584 Hot Zero
annel U Calibration	Parameters	Channel 0 Commands	CHO Factor
Read 0x6709	CH0 "Zero Pot" Value		Read 0x16B1 Cool Zero Cool Zero Ch0 Cool Zero CH0
Read 0x11E0	CH0 "Span Pot" Value	Zero CH0	
Read OxA9	CH0 "Normal Gas" Value		Channel 1 Calibration Parameters Channel 1 Commands
		Span CHU	Read 0x0E94 Hot Zero Hot Zero CH1
W\R	-2 CH0 "Span Tweak" Value		
			Read Uk /038 CH1 Factor Cool Zero CH1
annel 1 Calibration	Parameters	Channel 1 Commands	
Read 0x84BC	CH1 " Zero Pot " Value		Status
		Zero CH1	Common
Read Ox1694	CH1 "Span Pot " Value		Read 1065 Serial Number Abort
Read OxFA	CH1 "Normal Gas" Value	Cour Club	Power Up
		Span CHT	Clear 11001111111111 Configuration
W\R	-9 CH1 "Span Tweak" Value		Channel 0
			Read 0x42 CH0 Choolmum
anced Compensati	on		Browse CH0 Linear Table Load
Zero Compensatio	n		Channel 1
		-	Read 0x5e CH1 Checksum
vvnte\Read	UX ID Compensation	n Factor	
Span Compensatio	n		Browse CH1 Linear Table Load
32 - Transmit and F	Receive Data		
			Qose

This page can only be reached with a special password. Only factory trained operators have access to this page.