



sierra monitor corporation

Sentry Controller MODBUS Memory Map (Enhanced)

December 15, 1998

Updated March 4, 2005

Sentry Controller MODBUS Memory Map Detail

- 1 All Registers are MODBUS 16 bit registers
- 2 There are five different ways of using MODBUS registers (*see italic reference number in left column for each address*)
 - 2.1 As an Analog Value: In most cases these values are scaled by multiplying by 10.
 - 2.2 As eight packed digital states, packed into one register. In this case the remaining 8 bits are unused.
 - 2.3 As a digital state where the register value can only be “0” or “1”.
 - 2.4 As a computed value, such as where “0” = no alarm, “1” = low alarm, “2” = high alarm.
 - 2.5 Control registers, where the SCADA host can write a value, such as alarm reset to the Sentry, or to set calibration concentration, or alarm set point. Note that these registers are read or write.
- 3 Where a series of registers apply only to sensor number 1, the following sequences for sensors 2, through 8 are only referenced by the first applicable register number.
- 4 Some values can be found in more than one place in different formats. For example when Sensor Number 6 is in high alarm and latched:
 - Register 40001:5 is the bit which indicates present alarm condition.
 - Register 40007:5 is the bit which indicate a latched condition, regardless of the present sensor reading (until reset)
 - Register 40466 is a computed value of “2”
- 5 Registers starting at 40224 provide the raw data read from each of the eight sensors. The following describes the data for sensor 1, the remaining registers through 40463 are for sensors 2 through 8:

40224	Sensor 1 Input Value - Multiplex 0 – V0 (Reference value of 0 volts)	0 - 6553.5
40225	Sensor 1 Input Value - Multiplex 1 – Vsignal (Current sensor signal)	0 - 6553.5
40226	Sensor 1 Input Value - Multiplex 2 – CH2 (Auxiliary data by type)	0 - 6553.5
40227	Sensor 1 Input Value - Multiplex 3 – CH3(Auxiliary data by type)	0 - 6553.5
40228	Sensor 1 Input Value - Multiplex 4 – Type	0 - 6553.5
40229	Sensor 1 Input Value - Multiplex 5 – Vin (Channel voltage)	0 - 6553.5
40230	Sensor 1 Input Value - Multiplex 6 – Calibration Switch Position (0=On)	0 - 6553.5
40231	Sensor 1 Input Value - Multiplex 7 – Vref (Reference value of 2.5 volts)	0 - 6553.5
40232	Sensor 1 Calibration Due Days	

To calculate the raw signal voltage (for example), since we know Vref :

$$V = (V_{\text{signal}} - V_0) / (V_{\text{ref}} - V_0) * 2.5v$$



Read Only Parameters

<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
Discrete			
40001:0	High alarm bits - sensor 1		
40001:1	High alarm bits - sensor 2		
40001:2	High alarm bits - sensor 3		
40001:3	High alarm bits - sensor 4		
40001:4	High alarm bits - sensor 5		
40001:5	High alarm bits - sensor 6		
40001:6	High alarm bits - sensor 7		
40001:7	High alarm bits - sensor 8		
40002:0	Low alarm bits - sensor 1		
40002:1	Low alarm bits - sensor 2		
40002:2	Low alarm bits - sensor 3		
40002:3	Low alarm bits - sensor 4		
40002:4	Low alarm bits - sensor 5		
40002:5	Low alarm bits - sensor 6		
40002:6	Low alarm bits - sensor 7		
40002:7	Low alarm bits - sensor 8		
40003:0	Common (High or low) alarm bits - sensor 1		
40003:1	Common (High or low) alarm bits - sensor 2		
40003:2	Common (High or low) alarm bits - sensor 3		
40003:3	Common (High or low) alarm bits - sensor 4		
40003:4	Common (High or low) alarm bits - sensor 5		
40003:5	Common (High or low) alarm bits - sensor 6		
40003:6	Common (High or low) alarm bits - sensor 7		
40003:7	Common (High or low) alarm bits - sensor 8		
40004:0	Common high alarm, any sensor		
40004:1	Common low alarm, any sensor		
40004:2	Common any alarm, any sensor		
40004:3	Calibrate mode		
40004:4	Trouble alarm		
40004:5	Power Flash (Startup mode)		
40005:0	Sensor in calibration – sensor 1		
40005:1	Sensor in calibration – sensor 2		
40005:2	Sensor in calibration – sensor 3		
40005:3	Sensor in calibration – sensor 4		
40005:4	Sensor in calibration – sensor 5		
40005:5	Sensor in calibration – sensor 6		
40005:6	Sensor in calibration – sensor 7		
40005:7	Sensor in calibration – sensor 8		
40006:0	Bits indicating analog value is valid – sensor 1		
40006:1	Bits indicating analog value is valid – sensor 2		
40006:2	Bits indicating analog value is valid – sensor 3		
40006:3	Bits indicating analog value is valid – sensor 4		
40006:4	Bits indicating analog value is valid – sensor 5		
40006:5	Bits indicating analog value is valid – sensor 6		
40006:6	Bits indicating analog value is valid – sensor 7		
40006:7	Bits indicating analog value is valid – sensor 8		



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40007:0	High alarm relay latched – sensor 1		
40007:1	High alarm relay latched – sensor 2		
40007:2	High alarm relay latched – sensor 3		
40007:3	High alarm relay latched – sensor 4		
40007:4	High alarm relay latched – sensor 5		
40007:5	High alarm relay latched – sensor 6		
40007:6	High alarm relay latched – sensor 7		
40007:7	High alarm relay latched – sensor 8		
40008:0	Low alarm relay latched – sensor 1		
40008:1	Low alarm relay latched – sensor 2		
40008:2	Low alarm relay latched – sensor 3		
40008:3	Low alarm relay latched – sensor 4		
40008:4	Low alarm relay latched – sensor 5		
40008:5	Low alarm relay latched – sensor 6		
40008:6	Low alarm relay latched – sensor 7		
40008:7	Low alarm relay latched – sensor 8		
40009:0	Common high/low alarm relay latched – sensor 1		
40009:1	Common high/low alarm relay latched – sensor 2		
40009:2	Common high/low alarm relay latched – sensor 3		
40009:3	Common high/low alarm relay latched – sensor 4		
40009:4	Common high/low alarm relay latched – sensor 5		
40009:5	Common high/low alarm relay latched – sensor 6		
40009:6	Common high/low alarm relay latched – sensor 7		
40009:7	Common high/low alarm relay latched – sensor 8		
40011	Sensor 1 concentration	% / PPM	0 - 6553.5
40012	Sensor 2 concentration	% / PPM	0 - 6553.5
40013	Sensor 3 concentration	% / PPM	0 - 6553.5
40014	Sensor 4 concentration	% / PPM	0 - 6553.5
40015	Sensor 5 concentration	% / PPM	0 - 6553.5
40016	Sensor 6 concentration	% / PPM	0 - 6553.5
40017	Sensor 7 concentration	% / PPM	0 - 6553.5
40018	Sensor 8 concentration	% / PPM	0 - 6553.5



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40020:0	Sensor 1: Status 2 Sensor Disconnected		(Trouble Bits)
40020:2	Sensor 1: Voltage Regulator Failure		
40020:3	Sensor 1: Sensor Bad		
40020:4	Sensor 1: Duplicate Sensor		
40020:5	Sensor 1: Timer Failure		
40020:6	Sensor 1: Sensor Bridge Failure (CH ₄)		
40020:7	Sensor 1: Type Error		
40021:0	Sensor 1: Status 1 Enabled		
40021:1	Sensor 1: Auto Calibration Enabled		
40021:2	Sensor 1: Low Alarm Latch		
40021:3	Sensor 1: Calibrated		
40021:4	Sensor 1: Zone Option Enabled		
40021:5	Sensor 1: Calibration Table Initialized		
40021:6	Sensor 1: H ₂ S Sensor Resistance too high		
40021:7	Sensor 1: Operate Mode (as opposed to Warm Up Mode)		
40022:0	Sensor 1: Status 4 High Alarm Latch		
40022:1	Sensor 1: Low Sensitivity		
40022:2	Sensor 1: Sensor not Valid		
40024:0	Sensor 1: Concentration	% / PPM	0 - 6553.5
40030:0	Sensor 2: Sensor Disconnected		(Trouble Bits)
40030:2	Sensor 2: Voltage Regulator Failure		
40030:3	Sensor 2: Sensor Bad		
40030:4	Sensor 2: Duplicate Sensor		
40030:5	Sensor 2: Timer Failure		
40030:6	Sensor 2: Sensor Bridge Failure (Combustibles)		
40030:7	Sensor 2: Type Error		
40031:0	Sensor 2: Enabled		
40031:1	Sensor 2: Auto Calibration Enabled		
40031:2	Sensor 2: Low Alarm Latch		
40031:3	Sensor 2: Calibrated		
40031:4	Sensor 2: Zone Option Enabled		
40031:5	Sensor 2: Calibration Table Initialized		
40031:6	Sensor 2: H ₂ S Sensor Resistance too high		
40031:7	Sensor 2: Operate Mode (as opposed to Warm Up Mode)		
40032:0	Sensor 2: High Alarm Latch		
40032:1	Sensor 2: Low Sensitivity		
40032:2	Sensor 2: Sensor not Valid		
40034:0	Sensor 2: Concentration	% / PPM	0 - 6553.5



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40040:0	Sensor 3: Sensor Disconnected		(Trouble Bits)
40040:2	Sensor 3: Voltage Regulator Failure		
40040:3	Sensor 3: Sensor Bad		
40040:4	Sensor 3: Duplicate Sensor		
40040:5	Sensor 3: Timer Failure		
40040:6	Sensor 3: Sensor Bridge Failure (Combustibles)		
40040:7	Sensor 3: Type Error		
40041:0	Sensor 3: Enabled		
40041:1	Sensor 3: Auto Calibration Enabled		
40041:2	Sensor 3: Low Alarm Latch		
40041:3	Sensor 3: Calibrated		
40041:4	Sensor 3: Zone Option Enabled		
40041:5	Sensor 3: Calibration Table Initialized		
40041:6	Sensor 3: H ₂ S Sensor Resistance too high		
40041:7	Sensor 3: Operate Mode (as opposed to Warm Up Mode)		
40042:0	Sensor 3: High Alarm Latch		
40042:1	Sensor 3: Low Sensitivity		
40042:2	Sensor 3: Sensor not Valid		
40044:0	Sensor 3: Concentration	% / PPM	0 - 6553.5
40050:0	Sensor 4: Sensor Disconnected		(Trouble Bits)
40050:2	Sensor 4: Voltage Regulator Failure		
40050:3	Sensor 4: Sensor Bad		
40050:4	Sensor 4: Duplicate Sensor		
40050:5	Sensor 4: Timer Failure		
40050:6	Sensor 4: Sensor Bridge Failure (Combustibles)		
40050:7	Sensor 4: Type Error		
40051:0	Sensor 4: Enabled		
40051:1	Sensor 4: Auto Calibration Enabled		
40051:2	Sensor 4: Low Alarm Latch		
40051:3	Sensor 4: Calibrated		
40051:4	Sensor 4: Zone Option Enabled		
40051:5	Sensor 4: Calibration Table Initialized		
40051:6	Sensor 4: H ₂ S Sensor Resistance too high		
40051:7	Sensor 4: Operate Mode (as opposed to Warm Up Mode)		
40052:0	Sensor 4: High Alarm Latch		
40052:1	Sensor 4: Low Sensitivity		
40052:2	Sensor 4: Sensor not Valid		
40054:0	Sensor 4: Concentration	% / PPM	0 - 6553.5

<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40060:0	Sensor 5: Sensor Disconnected		(Trouble Bits)
40060:2	Sensor 5: Voltage Regulator Failure		
40060:3	Sensor 5: Sensor Bad		
40060:4	Sensor 5: Duplicate Sensor		
40060:5	Sensor 5: Timer Failure		
40060:6	Sensor 5: Sensor Bridge Failure (Combustibles)		
40060:7	Sensor 5: Type Error		
40061:0	Sensor 5: Enabled		
40061:1	Sensor 5: Auto Calibration Enabled		
40061:2	Sensor 5: Low Alarm Latch		
40061:3	Sensor 5: Calibrated		
40061:4	Sensor 5: Zone Option Enabled		
40061:5	Sensor 5: Calibration Table Initialized		
40061:6	Sensor 5: H ₂ S Sensor Resistance too high		
40061:7	Sensor 5: Operate Mode (as opposed to Warm Up Mode)		
40062:0	Sensor 5: High Alarm Latch		
40062:1	Sensor 5: Low Sensitivity		
40062:2	Sensor 5: Sensor not Valid		
40064:0	Sensor 5: Concentration	% / PPM	0 - 6553.5
40070:0	Sensor 6: Sensor Disconnected		(Trouble Bits)
40070:2	Sensor 6: Voltage Regulator Failure		
40070:3	Sensor 6: Sensor Bad		
40070:4	Sensor 6: Duplicate Sensor		
40070:5	Sensor 6: Timer Failure		
40070:6	Sensor 6: Sensor Bridge Failure (Combustibles)		
40070:7	Sensor 6: Type Error		
40071:0	Sensor 6: Enabled		
40071:1	Sensor 6: Auto Calibration Enabled		
40071:2	Sensor 6: Low Alarm Latch		
40071:3	Sensor 6: Calibrated		
40071:4	Sensor 6: Zone Option Enabled		
40071:5	Sensor 6: Calibration Table Initialized		
40071:6	Sensor 6: H ₂ S Sensor Resistance too high		
40071:7	Sensor 6: Operate Mode (as opposed to Warm Up Mode)		
40072:0	Sensor 6: High Alarm Latch		
40072:1	Sensor 6: Low Sensitivity		
40072:2	Sensor 6: Sensor not Valid		
40074:0	Sensor 6: Concentration	% / PPM	0 - 6553.5



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40080:0	Sensor 7: Sensor Disconnected		(Trouble Bits)
40080:2	Sensor 7: Voltage Regulator Failure		
40080:3	Sensor 7: Sensor Bad		
40080:4	Sensor 7: Duplicate Sensor		
40080:5	Sensor 7: Timer Failure		
40080:6	Sensor 7: Sensor Bridge Failure (Combustibles)		
40080:7	Sensor 7: Type Error		
40081:0	Sensor 7: Enabled		
40081:1	Sensor 7: Auto Calibration Enabled		
40081:2	Sensor 7: Low Alarm Latch		
40081:3	Sensor 7: Calibrated		
40081:4	Sensor 7: Zone Option Enabled		
40081:5	Sensor 7: Calibration Table Initialized		
40081:6	Sensor 7: H ₂ S Sensor Resistance too high		
40081:7	Sensor 7: Operate Mode (as opposed to Warm Up Mode)		
40082:0	Sensor 7: High Alarm Latch		
40082:1	Sensor 7: Low Sensitivity		
40082:2	Sensor 7: Sensor not Valid		
40084:0	Sensor 7: Concentration	% / PPM 0 - 6553.5	
40090:0	Sensor 8: Sensor Disconnected		(Trouble Bits)
40090:2	Sensor 8: Voltage Regulator Failure		
40090:3	Sensor 8: Sensor Bad		
40090:4	Sensor 8: Duplicate Sensor		
40090:5	Sensor 8: Timer Failure		
40090:6	Sensor 8: Sensor Bridge Failure (Combustibles)		
40090:7	Sensor 8: Type Error		
40091:0	Sensor 8: Enabled		
40091:1	Sensor 8: Auto Calibration Enabled		
40091:2	Sensor 8: Low Alarm Latch		
40091:3	Sensor 8: Calibrated		
40091:4	Sensor 8: Zone Option Enabled		
40091:5	Sensor 8: Calibration Table Initialized		
40091:6	Sensor 8: H ₂ S Sensor Resistance too high		
40091:7	Sensor 8: Operate Mode (as opposed to Warm Up Mode)		
40092:0	Sensor 8: High Alarm Latch		
40092:1	Sensor 8: Low Sensitivity		
40092:2	Sensor 8: Sensor not Valid		
40094:0	Sensor 8: Concentration	% / PPM 0 - 6553.5	



Analog Process Variables

<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40111	Sensor 1 concentration	% / PPM	0 - 6553.5
40112	Sensor 2 concentration	% / PPM	0 - 6553.5
40113	Sensor 3 concentration	% / PPM	0 - 6553.5
40114	Sensor 4 concentration	% / PPM	0 - 6553.5
40115	Sensor 5 concentration	% / PPM	0 - 6553.5
40116	Sensor 6 concentration	% / PPM	0 - 6553.5
40117	Sensor 7 concentration	% / PPM	0 - 6553.5
40118	Sensor 8 concentration	% / PPM	0 - 6553.5
40119	Sensor 1 Highest Concentration		
40120	Sensor 2 Highest Concentration		
40121	Sensor 3 Highest Concentration		
40122	Sensor 4 Highest Concentration		
40123	Sensor 5 Highest Concentration		
40124	Sensor 6 Highest Concentration		
40125	Sensor 7 Highest Concentration		
40126	Sensor 8 Highest Concentration		
40127	Sensor 1 Lowest Concentration		
40128	Sensor 2 Lowest Concentration		
40129	Sensor 3 Lowest Concentration		
40130	Sensor 4 Lowest Concentration		
40131	Sensor 5 Lowest Concentration		
40132	Sensor 6 Lowest Concentration		
40133	Sensor 7 Lowest Concentration		
40134	Sensor 8 Lowest Concentration		
40135	Sensor 1 Maximum Input value (Voltage)		
40136	Sensor 2 Maximum Input value (Voltage)		
40137	Sensor 3 Maximum Input value (Voltage)		
40138	Sensor 4 Maximum Input value (Voltage)		
40139	Sensor 5 Maximum Input value (Voltage)		
40140	Sensor 6 Maximum Input value (Voltage)		
40141	Sensor 7 Maximum Input value (Voltage)		
40142	Sensor 8 Maximum Input value (Voltage)		
40143	Sensor 1 Minimum Input value (Voltage)		
40144	Sensor 2 Minimum Input value (Voltage)		
40145	Sensor 3 Minimum Input value (Voltage)		
40146	Sensor 4 Minimum Input value (Voltage)		
40147	Sensor 5 Minimum Input value (Voltage)		
40148	Sensor 6 Minimum Input value (Voltage)		
40149	Sensor 7 Minimum Input value (Voltage)		
40150	Sensor 8 Minimum Input value (Voltage)		
40151	Sensor 1 Power (H ₂ S and COMB only)		
40152	Sensor 2 Power (H ₂ S and COMB only)		
40153	Sensor 3 Power (H ₂ S and COMB only)		
40154	Sensor 4 Power (H ₂ S and COMB only)		
40155	Sensor 5 Power (H ₂ S and COMB only)		



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40156	Sensor 6 Power (H ₂ S and COMB only)		
40157	Sensor 7 Power (H ₂ S and COMB only)		
40158	Sensor 8 Power (H ₂ S and COMB only)		
40159	Sensor 1 Type (1,2,3 or 4)		
40160	Sensor 2 Type (1,2,3 or 4)		
40161	Sensor 3 Type (1,2,3 or 4)		
40162	Sensor 4 Type (1,2,3 or 4)		
40163	Sensor 5 Type (1,2,3 or 4)		
40164	Sensor 6 Type (1,2,3 or 4)		
40165	Sensor 7 Type (1,2,3 or 4)		
40166	Sensor 8 Type (1,2,3 or 4)		
40170	System Historical Reset Time Month		
40171	System Historical Reset Time Day		
40172	System Historical Reset Time Hr		
40173	System Historical Reset Time Min		
40174	System Power Up Time Month		
40175	System Power Up Time Day		
40176	System Power Up Time Hr		
40177	System Power Up Time Min		
40178	System Power Down Time Month		
40179	System Power Down Time Day		
40180	System Power Down Time Hr		
40181	System Power Down Time Min		
40200	Sensor 1 High Alarm Time Month		
40201	Sensor 1 High Alarm Time Day		
40202	Sensor 1 High Alarm Time Hr		
40203	Sensor 1 High Alarm Time Min		
40204	Sensor 1 Low Alarm Time Month		
40205	Sensor 1 Low Alarm Time Day		
40206	Sensor 1 Low Alarm Time Hr		
40207	Sensor 1 Low Alarm Time Min		
40208	Sensor 1 Calibration Time Month		
40209	Sensor 1 Calibration Time Day		
40210	Sensor 1 Calibration Time Hr		
40211	Sensor 1 Calibration Time Min		
40212	Sensor 1 High Conc. Time Month		
40213	Sensor 1 High Conc. Time Day		
40214	Sensor 1 High Conc. Time Hr		
40215	Sensor 1 High Conc. Time Min		
40216	Sensor 1 Low Conc. Time Month		
40217	Sensor 1 Low Conc. Time Day		
40218	Sensor 1 Low Conc. Time Hr		
40219	Sensor 1 Low Conc. Time Min		
40220	Sensor 1 Trouble Time Month		
40221	Sensor 1 Trouble Time Day		
40222	Sensor 1 Trouble Time Hr		
40223	Sensor 1 Trouble Time Min		

<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40224	Sensor 1 Input Value - Multiplex 0		0 - 6553.5
40225	Sensor 1 Input Value - Multiplex 1		0 - 6553.5
40226	Sensor 1 Input Value - Multiplex 2		0 - 6553.5
40227	Sensor 1 Input Value - Multiplex 3		0 - 6553.5
40228	Sensor 1 Input Value - Multiplex 4		0 - 6553.5
40229	Sensor 1 Input Value - Multiplex 5		0 - 6553.5
40230	Sensor 1 Input Value - Multiplex 6		0 - 6553.5
40231	Sensor 1 Input Value - Multiplex 7		0 - 6553.5
40232	Sensor 1 Calibration Due Days		
40233	Sensor 2 High Alarm Time Month		
40234	Sensor 2 High Alarm Time Day		
40235	Sensor 2 High Alarm Time Hr		
40236	Sensor 2 High Alarm Time Min		
40237	Sensor 2 Low Alarm Time Month		
40238	Sensor 2 Low Alarm Time Day		
40239	Sensor 2 Low Alarm Time Hr		
40240	Sensor 2 Low Alarm Time Min		
40241	Sensor 2 Calibration Time Month		
40242	Sensor 2 Calibration Time Day		
40243	Sensor 2 Calibration Time Hr		
40244	Sensor 2 Calibration Time Min		
40245	Sensor 2 High Conc. Time Month		
40246	Sensor 2 High Conc. Time Day		
40247	Sensor 2 High Conc. Time Hr		
40248	Sensor 2 High Conc. Time Min		
40249	Sensor 2 Low Conc. Time Month		
40250	Sensor 2 Low Conc. Time Day		
40251	Sensor 2 Low Conc. Time Hr		
40252	Sensor 2 Low Conc. Time Min		
40253	Sensor 2 Trouble Time Month		
40254	Sensor 2 Trouble Time Day		
40255	Sensor 2 Trouble Time Hr		
40256	Sensor 2 Trouble Time Min		
40257	Sensor 2 Input Value - Multiplex 0		0 - 6553.5
40258	Sensor 2 Input Value - Multiplex 1		0 - 6553.5
40259	Sensor 2 Input Value - Multiplex 2		0 - 6553.5
40260	Sensor 2 Input Value - Multiplex 3		0 - 6553.5
40261	Sensor 2 Input Value - Multiplex 4		0 - 6553.5
40262	Sensor 2 Input Value - Multiplex 5		0 - 6553.5
40263	Sensor 2 Input Value - Multiplex 6		0 - 6553.5
40264	Sensor 2 Input Value - Multiplex 7		0 - 6553.5
40265	Sensor 2 Calibration Due Days		



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40266	Sensor 3 High Alarm Time	Month	
40267	Sensor 3 High Alarm Time	Day	
40268	Sensor 3 High Alarm Time	Hr	
40269	Sensor 3 High Alarm Time	Min	
40270	Sensor 3 Low Alarm Time	Month	
40271	Sensor 3 Low Alarm Time	Day	
40272	Sensor 3 Low Alarm Time	Hr	
40273	Sensor 3 Low Alarm Time	Min	
40274	Sensor 3 Calibration Time	Month	
40275	Sensor 3 Calibration Time	Day	
40276	Sensor 3 Calibration Time	Hr	
40277	Sensor 3 Calibration Time	Min	
40278	Sensor 3 High Conc. Time	Month	
40279	Sensor 3 High Conc. Time	Day	
40280	Sensor 3 High Conc. Time	Hr	
40281	Sensor 3 High Conc. Time	Min	
40282	Sensor 3 Low Conc. Time	Month	
40283	Sensor 3 Low Conc. Time	Day	
40284	Sensor 3 Low Conc. Time	Hr	
40285	Sensor 3 Low Conc. Time	Min	
40286	Sensor 3 Trouble Time	Month	
40287	Sensor 3 Trouble Time	Day	
40288	Sensor 3 Trouble Time	Hr	
40289	Sensor 3 Trouble Time	Min	
40290	Sensor 3 Input Value - Multiplex 0		0 - 6553.5
40291	Sensor 3 Input Value - Multiplex 1		0 - 6553.5
40292	Sensor 3 Input Value - Multiplex 2		0 - 6553.5
40293	Sensor 3 Input Value - Multiplex 3		0 - 6553.5
40294	Sensor 3 Input Value - Multiplex 4		0 - 6553.5
40295	Sensor 3 Input Value - Multiplex 5		0 - 6553.5
40296	Sensor 3 Input Value - Multiplex 6		0 - 6553.5
40297	Sensor 3 Input Value - Multiplex 7		0 - 6553.5
40298	Sensor 3 Calibration Due	Days	
40299	Sensor 4 High Alarm Time	Month	
40300	Sensor 4 High Alarm Time	Day	
40301	Sensor 4 High Alarm Time	Hr	
40302	Sensor 4 High Alarm Time	Min	
40303	Sensor 4 Low Alarm Time	Month	
40304	Sensor 4 Low Alarm Time	Day	
40305	Sensor 4 Low Alarm Time	Hr	
40306	Sensor 4 Low Alarm Time	Min	
40307	Sensor 4 Calibration Time	Month	
40308	Sensor 4 Calibration Time	Day	
40309	Sensor 4 Calibration Time	Hr	
40310	Sensor 4 Calibration Time	Min	



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40311	Sensor 4 High Conc. Time	Month	
40312	Sensor 4 High Conc. Time	Day	
40313	Sensor 4 High Conc. Time	Hr	
40314	Sensor 4 High Conc. Time	Min	
40315	Sensor 4 Low Conc. Time	Month	
40316	Sensor 4 Low Conc. Time	Day	
40317	Sensor 4 Low Conc. Time	Hr	
40318	Sensor 4 Low Conc. Time	Min	
40319	Sensor 4 Trouble Time	Month	
40320	Sensor 4 Trouble Time	Day	
40321	Sensor 4 Trouble Time	Hr	
40322	Sensor 4 Trouble Time	Min	
40323	Sensor 4 Input Value - Multiplex 0		0 - 6553.5
40324	Sensor 4 Input Value - Multiplex 1		0 - 6553.5
40325	Sensor 4 Input Value - Multiplex 2		0 - 6553.5
40326	Sensor 4 Input Value - Multiplex 3		0 - 6553.5
40327	Sensor 4 Input Value - Multiplex 4		0 - 6553.5
40328	Sensor 4 Input Value - Multiplex 5		0 - 6553.5
40329	Sensor 4 Input Value - Multiplex 6		0 - 6553.5
40330	Sensor 4 Input Value - Multiplex 7		0 - 6553.5
40331	Sensor 4 Calibration Due	Days	
40332	Sensor 5 High Alarm Time	Month	
40333	Sensor 5 High Alarm Time	Day	
40334	Sensor 5 High Alarm Time	Hr	
40335	Sensor 5 High Alarm Time	Min	
40336	Sensor 5 Low Alarm Time	Month	
40337	Sensor 5 Low Alarm Time	Day	
40338	Sensor 5 Low Alarm Time	Hr	
40339	Sensor 5 Low Alarm Time	Min	
40340	Sensor 5 Calibration Time	Month	
40341	Sensor 5 Calibration Time	Day	
40342	Sensor 5 Calibration Time	Hr	
40343	Sensor 5 Calibration Time	Min	
40344	Sensor 5 High Conc. Time	Month	
40345	Sensor 5 High Conc. Time	Day	
40346	Sensor 5 High Conc. Time	Hr	
40347	Sensor 5 High Conc. Time	Min	
40348	Sensor 5 Low Conc. Time	Month	
40349	Sensor 5 Low Conc. Time	Day	
40350	Sensor 5 Low Conc. Time	Hr	
40351	Sensor 5 Low Conc. Time	Min	
40352	Sensor 5 Trouble Time	Month	
40353	Sensor 5 Trouble Time	Day	
40354	Sensor 5 Trouble Time	Hr	
40355	Sensor 5 Trouble Time	Min	

<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40356	Sensor 5 Input Value - Multiplex 0		0 - 6553.5
40357	Sensor 5 Input Value - Multiplex 1		0 - 6553.5
40358	Sensor 5 Input Value - Multiplex 2		0 - 6553.5
40359	Sensor 5 Input Value - Multiplex 3		0 - 6553.5
40360	Sensor 5 Input Value - Multiplex 4		0 - 6553.5
40361	Sensor 5 Input Value - Multiplex 5		0 - 6553.5
40362	Sensor 5 Input Value - Multiplex 6		0 - 6553.5
40363	Sensor 5 Input Value - Multiplex 7		0 - 6553.5
40364	Sensor 5 Calibration Due Days		
40365	Sensor 6 High Alarm Time Month		
40366	Sensor 6 High Alarm Time Day		
40367	Sensor 6 High Alarm Time Hr		
40368	Sensor 6 High Alarm Time Min		
40369	Sensor 6 Low Alarm Time Month		
40370	Sensor 6 Low Alarm Time Day		
40371	Sensor 6 Low Alarm Time Hr		
40372	Sensor 6 Low Alarm Time Min		
40373	Sensor 6 Calibration Time Month		
40374	Sensor 6 Calibration Time Day		
40375	Sensor 6 Calibration Time Hr		
40376	Sensor 6 Calibration Time Min		
40377	Sensor 6 High Conc. Time Month		
40378	Sensor 6 High Conc. Time Day		
40379	Sensor 6 High Conc. Time Hr		
40380	Sensor 6 High Conc. Time Min		
40381	Sensor 6 Low Conc. Time Month		
40382	Sensor 6 Low Conc. Time Day		
40383	Sensor 6 Low Conc. Time Hr		
40384	Sensor 6 Low Conc. Time Min		
40385	Sensor 6 Trouble Time Month		
40386	Sensor 6 Trouble Time Day		
40387	Sensor 6 Trouble Time Hr		
40388	Sensor 6 Trouble Time Min		
40389	Sensor 6 Input Value - Multiplex 0		0 - 6553.5
40390	Sensor 6 Input Value - Multiplex 1		0 - 6553.5
40391	Sensor 6 Input Value - Multiplex 2		0 - 6553.5
40392	Sensor 6 Input Value - Multiplex 3		0 - 6553.5
40393	Sensor 6 Input Value - Multiplex 4		0 - 6553.5
40394	Sensor 6 Input Value - Multiplex 5		0 - 6553.5
40395	Sensor 6 Input Value - Multiplex 6		0 - 6553.5
40396	Sensor 6 Input Value - Multiplex 7		0 - 6553.5
40397	Sensor 6 Calibration Due Days		



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40398	Sensor 7 High Alarm Time	Month	
40399	Sensor 7 High Alarm Time	Day	
40400	Sensor 7 High Alarm Time	Hr	
40401	Sensor 7 High Alarm Time	Min	
40402	Sensor 7 Low Alarm Time	Month	
40403	Sensor 7 Low Alarm Time	Day	
40404	Sensor 7 Low Alarm Time	Hr	
40405	Sensor 7 Low Alarm Time	Min	
40406	Sensor 7 Calibration Time	Month	
40407	Sensor 7 Calibration Time	Day	
40408	Sensor 7 Calibration Time	Hr	
40409	Sensor 7 Calibration Time	Min	
40410	Sensor 7 High Conc. Time	Month	
40411	Sensor 7 High Conc. Time	Day	
40412	Sensor 7 High Conc. Time	Hr	
40413	Sensor 7 High Conc. Time	Min	
40414	Sensor 7 Low Conc. Time	Month	
40415	Sensor 7 Low Conc. Time	Day	
40416	Sensor 7 Low Conc. Time	Hr	
40417	Sensor 7 Low Conc. Time	Min	
40418	Sensor 7 Trouble Time	Month	
40419	Sensor 7 Trouble Time	Day	
40420	Sensor 7 Trouble Time	Hr	
40421	Sensor 7 Trouble Time	Min	
40422	Sensor 7 Input Value - Multiplex 0		0 - 6553.5
40423	Sensor 7 Input Value - Multiplex 1		0 - 6553.5
40424	Sensor 7 Input Value - Multiplex 2		0 - 6553.5
40425	Sensor 7 Input Value - Multiplex 3		0 - 6553.5
40426	Sensor 7 Input Value - Multiplex 4		0 - 6553.5
40427	Sensor 7 Input Value - Multiplex 5		0 - 6553.5
40428	Sensor 7 Input Value - Multiplex 6		0 - 6553.5
40429	Sensor 7 Input Value - Multiplex 7		0 - 6553.5
40430	Sensor 7 Calibration Due	Days	
40431	Sensor 8 High Alarm Time	Month	
40432	Sensor 8 High Alarm Time	Day	
40433	Sensor 8 High Alarm Time	Hr	
40434	Sensor 8 High Alarm Time	Min	
40435	Sensor 8 Low Alarm Time	Month	
40436	Sensor 8 Low Alarm Time	Day	
40437	Sensor 8 Low Alarm Time	Hr	
40438	Sensor 8 Low Alarm Time	Min	
40439	Sensor 8 Calibration Time	Month	
40440	Sensor 8 Calibration Time	Day	
40441	Sensor 8 Calibration Time	Hr	
40442	Sensor 8 Calibration Time	Min	



<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40443	Sensor 8 High Conc. Time	Month	
40444	Sensor 8 High Conc. Time	Day	
40445	Sensor 8 High Conc. Time	Hr	
40446	Sensor 8 High Conc. Time	Min	
40447	Sensor 8Low Conc. Time	Month	
40448	Sensor 8 Low Conc. Time	Day	
40449	Sensor 8 Low Conc. Time	Hr	
40450	Sensor 8 Low Conc. Time	Min	
40451	Sensor 8 Trouble Time	Month	
40452	Sensor 8 Trouble Time	Day	
40453	Sensor 8 Trouble Time	Hr	
40454	Sensor 8 Trouble Time	Min	
40455	Sensor 8 Input Value - Multiplex 0		0 - 6553.5
40456	Sensor 8 Input Value - Multiplex 1		0 - 6553.5
40457	Sensor 8 Input Value - Multiplex 2		0 - 6553.5
40458	Sensor 8 Input Value - Multiplex 3		0 - 6553.5
40459	Sensor 8 Input Value - Multiplex 4		0 - 6553.5
40460	Sensor 8 Input Value - Multiplex 5		0 - 6553.5
40461	Sensor 8 Input Value - Multiplex 6		0 - 6553.5
40462	Sensor 8 Input Value - Multiplex 7		0 - 6553.5
40463	Sensor 8 Calibration Due	Days	
40466	Contrived alarm - Sensor 1 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		
40467	Contrived alarm - Sensor 2 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		
40468	Contrived alarm - Sensor 3 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		
40469	Contrived alarm - Sensor 4 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		
40470	Contrived alarm - Sensor 5 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		
40471	Contrived alarm - Sensor 6 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		
40472	Contrived alarm - Sensor 7 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		
40473	Contrived alarm - Sensor 8 - 0 = no alarm, 1 = Low alarm, 2 = High alarm		



Read/Write Parameters

High Alarm Limits

Modbus Address	Parameter	Units	FIX EGU
40501	Sensor 1	% / PPM	0 - 65535
40502	Sensor 2	% / PPM	0 - 65535
40503	Sensor 3	% / PPM	0 - 65535
40504	Sensor 4	% / PPM	0 - 65535
40505	Sensor 5	% / PPM	0 - 65535
40506	Sensor 6	% / PPM	0 - 65535
40507	Sensor 7	% / PPM	0 - 65535
40508	Sensor 8	% / PPM	0 - 65535

Low Alarm Limits

40511	Sensor 1	% / PPM	0 - 65535
40512	Sensor 2	% / PPM	0 - 65535
40513	Sensor 3	% / PPM	0 - 65535
40514	Sensor 4	% / PPM	0 - 65535
40515	Sensor 5	% / PPM	0 - 65535
40516	Sensor 6	% / PPM	0 - 65535
40517	Sensor 7	% / PPM	0 - 65535
40518	Sensor 8	% / PPM	0 - 65535

H₂S/CH₄/Oxy/CO

40520	Sensor 1 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40521		2	k2	vmin	vmax	vmin
40522		3	k3	vmax	-	vmax
40523		4	n1	gasfac	-	-
40524		5	n2	-	-	-
40525		6	n3	-	-	-
40526		7	bp12	-	-	-
40527		8	bp23	-	-	-
40528		9	ccn	-	-	-
40530	Sensor 2 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40521		2	k2	vmin	vmax	vmin
40532		3	k3	vmax	-	vmax
40533		4	n1	gasfac	-	-
40534		5	n2	-	-	-
40535		6	n3	-	-	-
40536		7	bp12	-	-	-
40537		8	bp23	-	-	-
40538		9	ccn	-	-	-
40540	Sensor 3 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40541		2	k2	vmin	vmax	vmin
40542		3	k3	vmax	-	vmax
40543		4	n1	gasfac	-	-
40544		5	n2	-	-	-
40545		6	n3	-	-	-
40546		7	bp12	-	-	-
40547		8	bp23	-	-	-
40548		9	ccn	-	-	-



40550	Sensor 4 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40551		2	k2	vmin	vmax	vmin
40552		3	k3	vmax	-	vmax
40553		4	n1	gasfac	-	-
40554		5	n2	-	-	-
40555		6	n3	-	-	-
40556		7	bp12	-	-	-
40557		8	bp23	-	-	-
40558		9	ccn	-	-	-
40560	Sensor 5 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40561		2	k2	vmin	vmax	vmin
40562		3	k3	vmax	-	vmax
40563		4	n1	gasfac	-	-
40564		5	n2	-	-	-
40565		6	n3	-	-	-
40566		7	bp12	-	-	-
40567		8	bp23	-	-	-
40568		9	ccn	-	-	-
40570	Sensor 6 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40571		2	k2	vmin	vmax	vmin
40572		3	k3	vmax	-	vmax
40573		4	n1	gasfac	-	-
40574		5	n2	-	-	-
40575		6	n3	-	-	-
40576		7	bp12	-	-	-
40577		8	bp23	-	-	-
40578		9	ccn	-	-	-
40580	Sensor 7 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40581		2	k2	vmin	vmax	vmin
40582		3	k3	vmax	-	vmax
40583		4	n1	gasfac	-	-
40584		5	n2	-	-	-
40585		6	n3	-	-	-
40586		7	bp12	-	-	-
40587		8	bp23	-	-	-
40588		9	ccn	-	-	-
40590	Sensor 8 Calib.	Coeff. 1	k1	ccn	ccn	ccn
40591		2	k2	vmin	vmax	vmin
40592		3	k3	vmax	-	vmax
40593		4	n1	gasfac	-	-
40594		5	n2	-	-	-
40595		6	n3	-	-	-
40596		7	bp12	-	-	-
40597		8	bp23	-	-	-
40598		9	ccn	-	-	-



Control Bits

<u>Modbus Address</u>	<u>Parameter</u>	<u>Units</u>	<u>FIX EGU</u>
40601	System Reset		
40602	Alarm Reset		
40603	History Reset		
40610	System Time Month		
40611	System Time Day		
40612	System Time Hr		
40613	System Time Min		
40614	Latch High Alarms - Sensor 1		
40615	Latch High Alarms - Sensor 2		
40616	Latch High Alarms - Sensor 3		
40617	Latch High Alarms - Sensor 4		
40618	Latch High Alarms - Sensor 5		
40619	Latch High Alarms - Sensor 6		
40620	Latch High Alarms - Sensor 7		
40621	Latch High Alarms - Sensor 8		
40622	Latch Low Alarms - Sensor 1		
40623	Latch Low Alarms - Sensor 2		
40624	Latch Low Alarms - Sensor 3		
40625	Latch Low Alarms - Sensor 4		
40626	Latch Low Alarms - Sensor 5		
40627	Latch Low Alarms - Sensor 6		
40628	Latch Low Alarms - Sensor 7		
40629	Latch Low Alarms - Sensor 8		
40631	Calibration Concentration Comb (Type 2)		
40632	Calibration Concentration Oxy (Type 3)		
40633	Calibration Concentration Toxic (Type 4)		