

146iQ - 118210-00

MODBUS Register Table

Rev Y
V 01.06.14.34444

Register	Type	Default	Min	Max	Units	Precision	Description
9	float				sccm		Zero Flow (sccm)
13	float				sccm		Total Flow (sccm)
501	string		6	9	characters		Formatted Time: HH:MM(:SS)
506	string		9	11	characters		Formatted Date: MM/DD/(YY)YY
512	unsigned16	0			sec		Last Calibration Time (Seconds from 01-Jan-1970)
513	unsigned16	0			sec		Previous Calibration Time (Seconds from 01-Jan-1970)
514	unsigned32	1	0				General Alarm Flag
516	string	empty	0	14	characters		Serial Number
524	string	empty	0	32	characters		Firmware Version
540	string	iQSeries	0	16	characters		HostName
548	unsigned32	1	0				General Warning Flag
550	unsigned16	0	0	1			Instrument Warmup Flag set to 1 initially if warm up is enabled and either after all the module alarms are cleared up or after 2 hours set to 0
651	integer16	1	0				Pressure Alarm Status
652	unsigned16	0	0	65535			Pressure Faults 3: Bit7 - Board Communication Failure Bit14 - Power supplies Bit15 - General when any faults detected
653	unsigned16	0	0	65535			Pressure Cal Status 0 - Do nothing 1 - Reset all values to defaults 2 - Update high point sensor 13 - Update low point sensor 14 - Update high point sensor 25 - Update low point sensor 26 - Update high point sensor 37 - Update low point sensor 391 - Reset all values to defaults done92 - Update high point sensor 1 done93 - Update low point sensor 1 done94 - Update high point sensor 2 done95 - Update low point sensor 2 done96 - Update high point sensor 3 done97 - Update low point sensor 3 done

Register	Type	Default	Min	Max	Units	Precision	Description
654	unsigned16	0	0	65535			Pressure Calibration Faults 1 (LSB): Bit 0-1: High point sensor 1 Offset is: 00=Ok 01=user input out of range 10=measurement out of range 11=No cal Bit2-3: Low point sensor 1 Offset is: 00=Ok 01=user input out of range10=measurement out of range 11=No calBit4-5: High point sensor 2 Offset is: 00=Ok 01=user input out of range10=measurement out of range 11=No calBit6-7: Low point sensor 2 Offset is: 00=Ok 01=user input out of range10=measurement out of range 11=No calBit8-9: High point sensor 3 Offset is: 00=Ok 01=user input out of range10=measurement out of range 11=No calBit10-11: Low point sensor 3 Offset is: 00=Ok 01=user input out of range10=measurement out of range 11=No calBit12-15=N/A
655	integer16	0	0	1			Flow/Pressure Communication Alarm Status
656	integer16	0	0	1			Flow/Pressure Power Supply Alarm Status
701	float				deg C		Permeation Oven Gas Temperature (deg C) [if Perm Oven installed]
703	float				deg C		Permeation Oven Oven Body Temperature (deg C) [if Perm Oven installed]
705	integer16	1	0				Permeation Oven Alarms [if Perm Oven installed]
706	integer16	0	0	1			Perm Oven Oven Temperature Alarm Status [if Perm Oven installed]
707	integer16	0	0	1			Perm Oven Board Communication Alarm Status [if Perm Oven installed]
708	integer16	0	0	1			Perm Oven 5V Alarm Status [if Perm Oven installed]
709	integer16	0	0	1			Perm Oven 3.3V Alarm Status [if Perm Oven installed]
710	integer16	0	0	1			Perm Oven 3V Alarm Status [if Perm Oven installed]
711	integer16	0	0	1			Perm Oven 2.5V Alarm Status [if Perm Oven installed]
712	integer16	0	0	1			Perm Oven 24V Alarm Status [if Perm Oven installed]

Register	Type	Default	Min	Max	Units	Precision	Description
713	unsigned16	0	0				Perm Oven Bit-packed faults 4: [if Perm Oven installed]Bit0 = UnusedBit1 = Heater status faultBit2 = heater power fault.Bit3 = 5 volts power fault.Bit 4 = 3.3 volts power fault.Bit5 = 2.5 volts power fault.Bit6 = 3 volts power fault.Bit7=Board communication failureBit8= Calibration fault.Bit9-13 = UnusedBit14 = Power supply failureBit 15 = Any faults in Fault 0 or and Fault 1
714	float	25			deg C		Min Oven temperature [if Perm Oven installed]
716	float	105			deg C		Max Oven temperature [if Perm Oven installed]
718	integer16	0	0	1			Perm Oven Body Thermistor Short Alarm Status [if Perm Oven installed]
719	integer16	0	0	1			Perm Oven Gas Thermistor Short Alarm Status [if Perm Oven installed]
720	integer16	0	0	1			Perm Oven Body Thermistor Open Alarm Status [if Perm Oven installed]
721	integer16	0	0	1			Perm Oven Gas Thermistor Short Alarm Status [if Perm Oven installed]
751	integer16	1	0				PSB Alarms Count
752	unsigned16	0	0	65535			Zero Gas Alicat's MFC Status Faults 0:Bit0 = Temperature Overflow(TOV)BIT1 = Temperature Underflow(TOV)BIT2 = Volumetric Overflow (VOV)BIT3 = Volumetric Underflow (VOV)BIT4 = Mass Overflow (MOV)Bit5 = Mass Underflow (MOV)Bit6 = Pressure Overflow (POV)Bit7 = Totalizer Overflow (OVR)Bit8 = PID Loop in Hold (HLD)Bit9 = ADC Error (ADC)Bit10= PID Exhaust (EXH)Bit11= Over Pressure Limit (OPL)Bit12= Flow Overflow during totalize (TMF)Bit13= Measurement was aborted
753	unsigned16	0	0	65535			Span Gas #1 Alicat's MFC Status Faults 1:Bit0 = Temperature Overflow(TOV)BIT1 = Temperature Underflow(TOV)BIT2 = Volumetric Overflow (VOV)BIT3 = Volumetric Underflow (VOV)BIT4 = Mass Overflow (MOV)Bit5 = Mass Underflow (MOV)Bit6 = Pressure Overflow (POV)Bit7 = Totalizer Overflow (OVR)Bit8 = PID Loop in Hold (HLD)Bit9 = ADC Error (ADC)Bit10= PID Exhaust (EXH)Bit11= Over Pressure Limit (OPL)Bit12= Flow Overflow during totalize (TMF)Bit13= Measurement was aborted

Register	Type	Default	Min	Max	Units	Precision	Description
754	unsigned16	0	0	65535			Span Gas #2 (optional) Alicat's MFC StatusFaults 2:Bit0 = Temperature Overflow(TOV)Bit1 = Temperature Underflow(TOV)Bit2 = Volumetric Overflow (VOV)Bit3 = Volumetric Underflow (VOV)Bit4 = Mass Overflow (MOV)Bit5 = Mass Underflow (MOV)Bit6 = Pressure Overflow (POV)Bit7 = Totalizer Overflow (OVR)Bit8 = PID Loop in Hold (HLD)Bit9 = ADC Error (ADC)Bit10= PID Exhaust (EXH)Bit11= Over Pressure Limit (OPL)Bit12= Flow Overflow during totalize (TMF)Bit13= Measurement was aborted
755	unsigned16	0	0	65535			PSB Board most significant word Faults 3:Bit0..6=N/ABIT7=Board communication failureBIT8=Reset info block to defaultBIT9=Verify info block failBIT10=Reset calibration block to defaultBIT11=Verify calibration block failBit 12 - 13 = N/ABit14=Power Supply FailureBit15=General when any faults detected
756	unsigned16	0	0	65535			Status bits from STEP board 1:Bit Description0 Channel A 0=OK 1=Error (current>4A)1 Channel B 0=OK 1=Error (current>4A)2 Channel C 0=OK 1=Error (current>4A)3 Channel D 0=OK 1=Error (current>4A)4 Channel A 0=Off 1=On5 Channel B 0=Off 1=On6 Channel C 0=Off 1=On7 Channel D 0=Off 1=On8-11 5V Supply 0=Fail 0xa=Good12-15 24V Supply 0=Fail 0xa=Good
757	unsigned16	0	0	65535			Status bits from STEP board 2:Bit Description0 Channel A 0=OK 1=Error (current>4A)1 Channel B 0=OK 1=Error (current>4A)2 Channel C 0=OK 1=Error (current>4A)3 Channel D 0=OK 1=Error (current>4A)4 Channel A 0=Off 1=On5 Channel B 0=Off 1=On6 Channel C 0=Off 1=On7 Channel D 0=Off 1=On8-11 5V Supply 0=Fail 0xa=Good12-15 24V Supply 0=Fail 0xa=Good

Register	Type	Default	Min	Max	Units	Precision	Description
758	unsigned16	0	0	65535			Status bits from STEP board 3:Bit Description0 Channel A 0=OK 1=Error (current>4A)1 Channel B 0=OK 1=Error (current>4A)2 Channel C 0=OK 1=Error (current>4A)3 Channel D 0=OK 1=Error (current>4A)4 Channel A 0=Off 1=On5 Channel B 0=Off 1=On6 Channel C 0=Off 1=On7 Channel D 0=Off 1=On8-11 5V Supply 0=Fail 0xa=Good12-15 24V Supply 0=Fail 0xa=Good
759	unsigned16	0	0	65535			Status bits from STEP board 4:Bit Description0 Channel A 0=OK 1=Error (current>4A)1 Channel B 0=OK 1=Error (current>4A)2 Channel C 0=OK 1=Error (current>4A)3 Channel D 0=OK 1=Error (current>4A)4 Channel A 0=Off 1=On5 Channel B 0=Off 1=On6 Channel C 0=Off 1=On7 Channel D 0=Off 1=On8-11 5V Supply 0=Fail 0xa=Good12-15 24V Supply 0=Fail 0xa=Good
760	integer16	0	0	1			PSB Communication Status
761	integer16	0	0	1			PSB Power Supply Status
762	integer16	0	0	1			Channel 1 Error from STEP board
763	integer16	0	0	1			Channel 2 Error from STEP board
764	integer16	0	0	1			Channel 3 Error from STEP board
765	integer16	0	0	1			Channel 4 Error from STEP board
766	integer16	0	0	1			STEP 1 5V Error
767	integer16	0	0	1			STEP 1 24V Error
768	integer16	0	0	1			Channel 1 Error from STEP board
769	integer16	0	0	1			Channel 2 Error from STEP board
770	integer16	0	0	1			Channel 3 Error from STEP board
771	integer16	0	0	1			Channel 4 Error from STEP board
772	integer16	0	0	1			STEP 2 5V Error
773	integer16	0	0	1			STEP 2 24V Error
774	integer16	0	0	1			Channel 1 Error from STEP board
775	integer16	0	0	1			Channel 2 Error from STEP board
776	integer16	0	0	1			Channel 3 Error from STEP board
777	integer16	0	0	1			Channel 4 Error from STEP board
778	integer16	0	0	1			STEP 3 5V Error
779	integer16	0	0	1			STEP 3 24V Error
780	integer16	0	0	1			Channel 1 Error from STEP board
781	integer16	0	0	1			Channel 2 Error from STEP board
782	integer16	0	0	1			Channel 3 Error from STEP board
783	integer16	0	0	1			Channel 4 Error from STEP board
784	integer16	0	0	1			STEP 4 5V Error
785	integer16	0	0	1			STEP 4 24V Error

Register	Type	Default	Min	Max	Units	Precision	Description
801	float	0					Analog Input 1 Reading
803	float	0					Analog Input 2 Reading
805	float	0					Analog Input 3 Reading
807	float	0					Analog Input 4 Reading
809	integer16	1	0				Analog Alarms
810	unsigned16	0	0	65535			Analog IO Faults 0: Bit-packed faults:Bit0 = 15V Status Diagnostic Failed Bit1 = Negative 15V Status Diagnostic Failed Bit2 = 5V Status Diagnostic Failed Bit3 = 3dot3V Status Diagnostic Failed Bit4 = 5V Reference Status Diagnostic Failed Bit5..15 = N/A
811	unsigned16	0	0	65535			Analog IO Faults 2: Bit-packed faults:Bit0 = Voltage Output Channel 1 Failed Bit1 = Voltage Output Channel 2 Failed Bit2 = Voltage Output Channel 3 Failed Bit3 = Voltage Output Channel 4 Failed Bit4 = Voltage Output Channel 5 Failed Bit5 = Voltage Output Channel 6 Failed Bit6 = Current Output Channel 1 Failed Bit7 = Current Output Channel 2 Failed Bit8 = Current Output Channel 3 Failed Bit9 = Current Output Channel 4 Failed Bit10 = Current Output Channel 5 Failed Bit11 = Current Output Channel 6 Failed Bit12 = AD5755 Temperautre Too HighBit13 = AD5755-1 SPI Communications AlertBit14 = AD5755-2 SPI Communications Alert Bit15 = AD5755-3 SPI Communications Alert
812	unsigned16	0	0	65535			Analog IO Faults 3: Bit-packed faults:Bit0..6 = N/ABit7 = Board Communication FailureBit8 = Information block set defaultBit9 = Information block corruptedBit10 = Calibration block set defaultBit11 = Calibration block corruptedBit12..13 = N/ABit14 = Power Supply FailureBit15 = General when any faults detected

Register	Type	Default	Min	Max	Units	Precision	Description
813	unsigned16	0	0	65535			Analog IO Calibration Status: 0 = Calibration IdleVoltage Input Calibration 1 = Calculate voltage input start2 = Calculate voltage input stop3 = Calculate voltage input default4 = Calibration voltage input done Voltage Output Calibration 5 = Calculate voltage output start6 = Calculate voltage output stop7 = Calculate voltage output default8 = Calibration voltage output done Current Output Calibration 9 = Calculate current output start10 = Calculate current output stop11 = Calculate current output default12 = Calibration voltage output done
814	unsigned16	0	0	65535			Analog IO Cal Faults 1: Bit-packed faults for voltage input calibration:Bit0-1 = Channel 1 voltage input calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit2-3 = Channel 2 voltage input calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit4-5 = Channel 3 voltage input calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit6-7= Channel 4 voltage input calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit8..15 = N/A
815	unsigned16	0	0	65535			Analog IO Cal Faults 2: Bit-packed faults for voltage output 5V range calibration:Bit0-1 = Channel 1 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit2-3 = Channel 2 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit4-5 = Channel 3 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit6-7 = Channel 4 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit8-9 = Channel 5 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit10-11 = Channel 6 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit12..15=N/A

Register	Type	Default	Min	Max	Units	Precision	Description
816	unsigned16	0	0	65535			Analog IO Cal Faults 3: Bit-packed faults for voltage output 10V range calibration:Bit0-1 = Channel 1 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit2-3 = Channel 2 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit4-5 = Channel 3 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit6-7 = Channel 4 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit8-9 = Channel 5 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit10-11 = Channel 6 voltage output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit12..15=N/A
817	unsigned16	0	0	65535			Analog IO Cal Faults 4: Bit-packed faults for current output calibration:Bit0-1= Channel 1 current output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit2-3= Channel 2 current output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit4-5= Channel 3 current output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit6-7= Channel 4 current output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit8-9= Channel 5 current output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit10-11= Channel 6 current output calibration failureOffset is: 00 = Ok 01 = Low 10 = High 11 = No calBit12..15=N/A
818	integer16	0	0	1			Analog IO Voltage Output Channel 1 Alarm Status
819	integer16	0	0	1			Analog IO Voltage Output Channel 2 Alarm Status
820	integer16	0	0	1			Analog IO Voltage Output Channel 3 Alarm Status
821	integer16	0	0	1			Analog IO Voltage Output Channel 4 Alarm Status
822	integer16	0	0	1			Analog IO Voltage Output Channel 5 Alarm Status
823	integer16	0	0	1			Analog IO Voltage Output Channel 6 Alarm Status
824	integer16	0	0	1			Analog IO Current Output Channel 1 Alarm Status

Register	Type	Default	Min	Max	Units	Precision	Description
825	integer16	0	0	1			Analog IO Current Output Channel 2 Alarm Status
826	integer16	0	0	1			Analog IO Current Output Channel 3 Alarm Status
827	integer16	0	0	1			Analog IO Current Output Channel 4 Alarm Status
828	integer16	0	0	1			Analog IO Current Output Channel 5 Alarm Status
829	integer16	0	0	1			Analog IO Current Output Channel 6 Alarm Status
830	integer16	0	0	1			Analog IO Chip Temperatures Alarm Status
831	integer16	0	0	1			Analog IO Chip 1 Communication Alarm Status
832	integer16	0	0	1			Analog IO Chip 2 Communication Alarm Status
833	integer16	0	0	1			Analog IO Chip 3 Communication Alarm Status
834	integer16	0	0	1			Analog IO Communication Alarm Status
835	integer16	0	0	1			Analog IO Power Supply Alarm Status
951	integer16	1	0				Digital IO Alarms
952	unsigned16	0	0	65535			Digital IO Board fault register 1 least significant wordBit 0 = Solenoid1 above 500mA shut down and alarmBit 1 = Solenoid1 below 10mA and output is onBit 2 = Solenoid2 above 500mA shut down and alarmBit 3 = Solenoid2 below 10mA and output is onBit 4 = Solenoid3 above 500mA shut down and alarmBit 5 = Solenoid3 below 10mA and output is onBit 6 = Solenoid4 above 500mA shut down and alarmBit 7 = Solenoid4 below 10mA and output is onBit 8 = Solenoid5 above 500mA shut down and alarmBit 9 = Solenoid5 below 10mA and output is onBit 10 = Solenoid6 above 500mA shut down and alarmBit 11 = Solenoid6 below 10mA and output is onBit 12 = Solenoid7 above 500mA shut down and alarmBit 13 = Solenoid7 below 10mA and output is onBit 14 = Solenoid8 above 500mA shut down and alarmBit 15 = Solenoid8 below 10mA and output is on
953	unsigned16	0	0	65535			Digital IO Board fault register 2
954	unsigned16	0	0	65535			Digital IO Board fault register 4 most significant wordBit0..9= N/A Bit 7 = Board Communication FailureBit14 = Power Supply Bit15 = General when any faults detected
955	unsigned16	0	0	1			Digital IO External Alarm 1

Register	Type	Default	Min	Max	Units	Precision	Description
956	unsigned16	0	0	1			Digital IO External Alarm 2
957	unsigned16	0	0	1			Digital IO External Alarm 3
958	unsigned16	0	0	255			Reset the solenoid faultsBit0 = 24V Switchable Output 0 Bit1 = 24V Switchable Output 1 Bit2 = 24V Switchable Output 2Bit3 = 24V Switchable Output 3Bit4 = 24V Switchable Output 4Bit5 = 24V Switchable Output 5Bit6 = 24V Switchable Output 6Bit7 = 24V Switchable Output 7Bit8..15 = N/A
959	integer16		0	1			Digital I/O solenoid1 above 500mA alarm
960	integer16		0	1			Digital I/O solenoid1 below 10mA alarm
961	integer16		0	1			Digital I/O solenoid2 above 500mA alarm
962	integer16		0	1			Digital I/O solenoid2 below 10mA alarm
963	integer16		0	1			Digital I/O solenoid3 above 500mA alarm
964	integer16		0	1			Digital I/O solenoid3 below 10mA alarm
965	integer16		0	1			Digital I/O solenoid4 above 500mA alarm
966	integer16		0	1			Digital I/O solenoid4 below 10mA alarm
967	integer16		0	1			Digital I/O solenoid5 above 500mA alarm
968	integer16		0	1			Digital I/O solenoid5 below 10mA alarm
969	integer16		0	1			Digital I/O solenoid6 above 500mA alarm
970	integer16		0	1			Digital I/O solenoid6 below 10mA alarm
971	integer16		0	1			Digital I/O solenoid7 above 500mA alarm
972	integer16		0	1			Digital I/O solenoid7 below 10mA alarm
973	integer16		0	1			Digital I/O solenoid8 above 500mA alarm
974	integer16		0	1			Digital I/O solenoid8 below 10mA alarm
975	integer16		0	1			Digital I/O power supply alarm
976	integer16	0	0	1			Digital IO Communication Alarm
977	unsigned16	0	0	1			Digital IO Relay Test Mode Alarm
978	unsigned16	0	0	1			Digital IO Solenoid Test Mode Alarm
1001	integer16	0	-99	60			Maintenance History Calculated Months Left Photometer DMC Module
1002	integer16	0	-99	60			Maintenance History Calculated Months Left Lamp
1003	integer16	0	-99	60			Maintenance History Calculated Months Left Lamp Heater

Register	Type	Default	Min	Max	Units	Precision	Description
1004	integer16	0	-99	60			Maintenance History Calculated Months Left Detector
1005	integer16	0	-99	60			Maintenance History Calculated Months Left Ozonator
1006	integer16	0	-99	60			Maintenance History Calculated Months Left Ozonator Lamp
1007	integer16	0	-99	60			Maintenance History Calculated Months Left Ozonator Lamp Heater
1008	integer16	0	-99	60			Maintenance History Calculated Months Left Flow System
1009	integer16	0	-99	60			Maintenance History Calculated Months Left Pump
1010	integer16	0	-99	60			Maintenance History Calculated Months Left Capillary (Pump)
1011	integer16	0	-99	60			Maintenance History Calculated Months Left Capillary (Reference)
1012	integer16	0	-99	60			Maintenance History Calculated Months Left Capillary (Ozonator)
1013	integer16	0	-99	60			Maintenance History Calculated Months Left Capillary (Perm Oven)
1014	integer16	0	-99	60			Maintenance History Calculated Months Left DC Power Supply
1015	integer16	0	-99	60			Maintenance History Calculated Months Left Foam Fan Filter
1016	integer16	0	-99	60			Maintenance History Calculated Months Left System Components
1017	integer16	0	-99	60			Maintenance History Calculated Months Left Purafil
1018	integer16	0	-99	60			Maintenance History Calculated Months Left Charcoal
1019	integer16	0	-99	60			Maintenance History Calculated Months Left Dri-Rite
1020	integer16	0	-99	60			Maintenance History Calculated Months Left Permeation Tube
1021	integer16	0	-99	60			Maintenance History Calculated Months Left 21
1022	integer16	0	-99	60			Maintenance History Calculated Months Left 22
1023	integer16	0	-99	60			Maintenance History Calculated Months Left 23
1024	integer16	0	-99	60			Maintenance History Calculated Months Left 24
1025	integer16	0	-99	60			Maintenance History Calculated Months Left 25
1026	integer16	0	-99	60			Maintenance History Calculated Months Left 26
1027	integer16	0	-99	60			Maintenance History Calculated Months Left 27
1028	integer16	0	-99	60			Maintenance History Calculated Months Left 28
1029	integer16	0	-99	60			Maintenance History Calculated Months Left 29
1030	integer16	0	-99	60			Maintenance History Calculated Months Left 30

Register	Type	Default	Min	Max	Units	Precision	Description
1031	integer16	0	-99	60			Maintenance History Calculated Months Left 31
1032	integer16	0	-99	60			Maintenance History Calculated Months Left 32
1033	integer16	0	-99	60			Maintenance History Calculated Months Left 33
1034	integer16	0	-99	60			Maintenance History Calculated Months Left 34
1035	integer16	0	-99	60			Maintenance History Calculated Months Left 35
1036	integer16	0	-99	60			Maintenance History Calculated Months Left 36
1037	integer16	0	-99	60			Maintenance History Calculated Months Left 37
1038	integer16	0	-99	60			Maintenance History Calculated Months Left 38
1039	integer16	0	-99	60			Maintenance History Calculated Months Left 39
1040	integer16	0	-99	60			Maintenance History Calculated Months Left 40
1041	integer16	0	-99	60			Maintenance History Calculated Months Left 41
1042	integer16	0	-99	60			Maintenance History Calculated Months Left 42
1043	integer16	0	-99	60			Maintenance History Calculated Months Left 43
1044	integer16	0	-99	60			Maintenance History Calculated Months Left 44
1045	integer16	0	-99	60			Maintenance History Calculated Months Left 45
1046	integer16	0	-99	60			Maintenance History Calculated Months Left 46
1047	integer16	0	-99	60			Maintenance History Calculated Months Left 47
1048	integer16	0	-99	60			Maintenance History Calculated Months Left 48
1049	integer16	0	-99	60			Maintenance History Calculated Months Left 49
1050	integer16	0	-99	60			Maintenance History Calculated Months Left 50
1051	unsigned16	0	0	1			Maintenance History Alert
1101	string		0	300			Predictive Diagnostics Alerts List
1301	integer16	0	0	1			Predictive Diagnostic Alert 1
1302	integer16	0	0	1			Predictive Diagnostic Alert 2
1303	integer16	0	0	1			Predictive Diagnostic Alert 3
1304	integer16	0	0	1			Predictive Diagnostic Alert 4
1305	integer16	0	0	1			Predictive Diagnostic Alert 5
1306	integer16	0	0	1			Predictive Diagnostic Alert 6
1307	integer16	0	0	1			Predictive Diagnostic Alert 7
1308	integer16	0	0	1			Predictive Diagnostic Alert 8
1309	integer16	0	0	1			Predictive Diagnostic Alert 9
1310	integer16	0	0	1			Predictive Diagnostic Alert 10

Register	Type	Default	Min	Max	Units	Precision	Description
1311	integer16	0	0	1			Predictive Diagnostic Alert 11
1312	integer16	0	0	1			Predictive Diagnostic Alert 12
1313	integer16	0	0	1			Predictive Diagnostic Alert 13
1314	integer16	0	0	1			Predictive Diagnostic Alert Capillary
1315	integer16	0	0	1			Predictive Diagnostic Alert Flow Path
1316	integer16	0	0	1			Predictive Diagnostic Alert Sample Pump
1317	integer16	0	0	1			Predictive Diagnostic Alert 17
1318	integer16	0	0	1			Predictive Diagnostic Alert 18
1319	integer16	0	0	1			Predictive Diagnostic Alert 19
1320	integer16	0	0	1			Predictive Diagnostic Alert 20
1321	unsigned16	0	0	1			Predictive Diagnostic Alerts
1401	integer16	0	0	999			Bench Alarm Count (also includes flow and photometer pressure from the flow/pres status and alarms screen)
1402	string	0	0	11			Virtual Concentration string for single/low range (user defined units)
1408	string	0	0	11			Virtual Concentration string for high range (user defined units) [not in 146iQ]
1414	float	0			L/Min		Calculated Flow A (L/Min)
1416	integer16	0	0	1			Concentration Alarm Status [not in 146iQ]
1417	float	0					Zero Check Conc in base units (ppb or ug/m3) [not in 146iQ]
1419	integer16	0	0	1			Zero Check Alarm Status [not in 146iQ]
1420	float	0					Span Check Concentration value in user units [not in 146iQ]
1422	integer16	0	0	1			Span Check Alarm Status [not in 146iQ]
1423	float	0			basic units		Ozonator Level 1 Check Conc base units (ppb or ug/m3) [not in 146iQ]
1425	integer16	0	0	1			Ozonator Level 1 Check Alarm Status [not in 146iQ]
1426	float	0			basic units		Ozonator Level 2 Check Conc base units (ppb or ug/m3) [not in 146iQ]
1428	integer16	0	0	1			Ozonator Level 2 Check Alarm Status [not in 146iQ]
1429	float	0			basic units		Ozonator Level 3 Check Conc base units (ppb or ug/m3) [not in 146iQ]
1431	integer16	0	0	1			Ozonator Level 3 Check Alarm Status [not in 146iQ]
1432	float	0			basic units		Ozonator Level 4 Check Conc base units (ppb or ug/m3) [not in 146iQ]
1434	integer16	0	0	1			Ozonator Level 4 Check Alarm Status [not in 146iQ]
1435	float	0			basic units		Ozonator Level 5 Check Conc base units (ppb or ug/m3) [not in 146iQ]
1437	integer16	0	0	1			Ozonator Level 5 Check Alarm Status [not in 146iQ]

Register	Type	Default	Min	Max	Units	Precision	Description
1438	float	0			basic units		Ozonator Level 6 Check Conc base units (ppb or ug/m3) [not in 146iQ]
1440	integer16	0	0	1			Ozonator Level 6 Check Alarm Status [not in 146iQ]
1441	integer16	0	0	1			Flow A Alarm Status [not in 146iQ]
1442	float	0	0	1000	mmHg	1	Photometer Pressure A (mmHg)
1444	integer16	0	0	1			Photometer Pressure Alarm Status [not in 146iQ]
1445	float	0	0	1000		1	Pump Pressure (mmHg)
1447	integer16	0	0	1			Module Alarm Count: non-zero if any alarms in this module active: Conc/AutoZero/AutoSpan
1448	float	0	0	1000	mmHg	1	Photometer Pressure B (mmHg)
1451	integer16	1	0				Number of active Photometer alarms
1452	float	0	0.01	1.4	A	2	Lamp Heater current (mA)
1454	float	0	5	200000	Hz	0	Channel A Frequency
1456	float	0	5	200000	Hz	0	Channel B Frequency
1458	integer16	0	0	1			Cell A frequency Max Alarm Status
1459	integer16	0	0	1			Cell B frequency Max Alarm Status
1460	integer16	0	0	1			Lamp Temp Sensor Short Alarm Status
1461	integer16	0	0	1			Lamp Temp Sensor Open Alarm Status
1462	integer16	0	0	1			Bench Temp Sensor Short Alarm Status
1463	integer16	0	0	1			Bench Temp Sensor Open Alarm Status
1464	integer16	0	0	1			Lamp Connection Alarm Status
1465	integer16	0	0	1			Lamp Short Alarm Status
1466	integer16	0	0	1			Communication Alarm Status
1467	integer16	0	0	1			Power Supply Alarm Status
1468	integer16	0	0	1			Lamp Current Alarm Status
1469	integer16	0	0	1			Lamp Temperature Alarm Status
1470	integer16	0	0	1			Bench Temp Alarm Status
1471	float	0	0	60	degC	1	Bench temperature (deg C)
1473	float	0	0	85	degC	1	Lamp temperature (deg C)
1475	float	0	2	17.5	mA	2	Lamp Current
1477	unsigned16	0	0	1			Enable/disable the module
1501	integer16	1	0				Number of active Ozonator Alarms
1502	float	0	0.01	1.4	A	2	Lamp Heater current (mA)
1504	float	0	0	60	°C	1	Bench temperature (deg C)
1506	float	0	5	200000	Hz	0	Channel A frequency
1508	unsigned16	0	0	1			Enable/disable the module
1510	integer16	0	0	1			Lamp Temp Sensor Short Alarm Status
1511	integer16	0	0	1			Lamp Temp Sensor Open Alarm Status
1512	integer16	0	0	1			Lamp Connection Alarm Status
1513	integer16	0	0	1			Lamp Short Alarm Status

Register	Type	Default	Min	Max	Units	Precision	Description
1514	integer16	0	0	1			Communication Alarm Status
1515	integer16	0	0	1			Power Supply Alarm Status
1516	integer16	0	0	1			Lamp Temperature Alarm Status
1517	float	0	0	65	°C	1	Lamp temperature (deg C)
1519	float	0	2	17.5	mA	2	Lamp current (mA) UNUSED IN THE CODE!!!
1601	string	--	0	12			Selected Tank Name
1607	float	0			PPM		Selected Zero/Span
1609	float	0			sccm		Requested Total Flow (sccm)
1611	float	0			PPM		Requested Concentration (ppm)
1613	float	0			sccm		Requested Zero Flow (sccm)
1615	float	0			sccm		Requested Gas Flow (sccm)
1617	integer16	0	0	1			Instrument Temperature Alarm Status
1618	integer16	0	0	1			MFC faults 0 bit 0:Temperature Overflow
1619	integer16	0	0	1			MFC faults 0 bit 1:Temperature Underflow
1620	integer16	0	0	1			Overflow
1621	integer16	0	0	1			MFC faults 0 bit 3:Volumetric Underflow
1622	integer16	0	0	1			MFC faults 0 bit 4:Mass Overflow
1623	integer16	0	0	1			MFC faults 0 bit 5:Mass Underflow
1624	integer16	0	0	1			MFC faults 0 bit 6:Pressure Overflow
1625	integer16	0	0	1			MFC faults 0 bit 11:Over Pressure Limit
1626	integer16	0	0	1			MFC faults 0 bit 12:Flow Overflow During Totalize
1627	integer16	0	0	1			MFC faults 0 bit 13:Measurment Was Aborted
1628	integer16	0	0	1			MFC faults 1 bit 0:Temperature Overflow
1629	integer16	0	0	1			MFC faults 1 bit 1:Temperature Underflow
1630	integer16	0	0	1			MFC faults 1 bit 2:Volumetric Overflow
1631	integer16	0	0	1			MFC faults 1 bit 3:Volumetric Underflow
1632	integer16	0	0	1			MFC faults 1 bit 4:Mass Overflow
1633	integer16	0	0	1			MFC faults 1 bit 5:Mass Underflow
1634	integer16	0	0	1			MFC faults 1 bit 6:Pressure Overflow
1635	integer16	0	0	1			MFC faults 1 bit 11Over Pressure Limit
1636	integer16	0	0	1			MFC faults 1 bit 12:Flow Overflow During Totalize
1637	integer16	0	0	1			MFC faults 1 bit 13:Measurment Was Aborted
1638	integer16	0	0	1			MFC faults 2 bit 0:Temperature Overflow
1639	integer16	0	0	1			MFC faults 2 bit 1:Temperature Underflow

Register	Type	Default	Min	Max	Units	Precision	Description
1640	integer16	0	0	1			MFC faults 2 bit 2:Volumetric Overflow
1641	integer16	0	0	1			MFC faults 2 bit 3:Volumetric Underflow
1642	integer16	0	0	1			MFC faults 2 bit 4:Mass Overflow
1643	integer16	0	0	1			MFC faults 2 bit 5:Mass Underflow
1644	integer16	0	0	1			MFC faults 2 bit 6:Pressure Overflow
1645	integer16	0	0	1			MFC faults 2 bit 11:Over Pressure Limit
1646	integer16	0	0	1			MFC faults 2 bit 12:Flow Overflow During Totalize
1647	integer16	0	0	1			MFC faults 2 bit 13:Measurment Was Aborted
1648	integer16	0					MFC Peripherals Module Alarm Count
1649	float				sccm	1	Ozonator Flow
1901	float	25	0	50	C	3	MFC Module Temperature
1903	float				sccm		Gas Flow (sccm)
1905	float				PPM		Gas Concentration (ppm)
1907	integer16	0					MFC Module Alarm Count
2051	unsigned16	0	0	1			User Digital Out 1
2052	unsigned16	0	0	1			User Digital Out 2
2053	unsigned16	0	0	1			User Digital Out 3
2054	unsigned16	0	0	1			User Digital Out 4
2055	unsigned16	0	0	1			User Digital Out 5
2056	unsigned16	0	0	1			User Digital Out 6
2057	unsigned16	0	0	1			User Digital Out 7
2058	unsigned16	0	0	1			User Digital Out 8
2059	unsigned16	0	0	1			User Digital Out 9
2060	unsigned16	0	0	1			User Digital Out 10
2061	unsigned16	0	0	1			User Digital Out 11
2062	unsigned16	0	0	1			User Digital Out 12
2063	unsigned16	0	0	1			User Digital Out 13
2064	unsigned16	0	0	1			User Digital Out 14
2065	unsigned16	0	0	1			User Digital Out 15
2066	unsigned16	0	0	1			User Digital Out 16
2101	float	0					Concentration for current range in base units (ppb or ug/m3) (user defined units)
2103	float	0			basic units		Single/Low Range Concentration in Basic Units (ppb or ug/m3)
2105	float	0			basic units		High Range Concentration in Basic Units (ppb or ug/m3) [not in 146iQ]
2107	unsigned16	0	0	1			Auto Range selection 0=low range 1=high range [not in 146iQ]
2109	float	0	0	1000000	Hz	6	Cell A Noise
2111	float	0	0	1000000	Hz	6	Cell B Noise [not in 146iQ]
2113	float	0	-1000	500000	basic units		Cell A concentration in ppb units for range low

Register	Type	Default	Min	Max	Units	Precision	Description
2115	float	0	-1000	500000	basic units		Cell A concentration in ppb units for range high
2117	float	0	-1000	500000	basic units		Cell B concentration in ppb units for range low [not in 146iQ]
2119	float	0	-1000	500000	basic units		Cell B concentration in ppb units for range high [not in 146iQ]
2121	unsigned16	0	0	2			0=49 [not in 146iQ]1=49PS old plumbing2=49PS new plumbing
2123	float	0	-25	25		2	Background
2125	float	0	-25	25		2	Background Auto Cal New
2127	float	1				2	Span Coefficient Auto Cal New Low
2129	float	1				2	Span Coefficient Auto Cal New High
2131	float	0	-1000	500000			Manual Calibration Adjusted Concentration in ppb units (user defined units)
2133	float	0	-1000	500000			Manual Calibration Adjusted Concentration in ppb units (user defined units)
2135	float	0			L/Min		Calculated Flow B (L/Min)
2137	integer16	0	0	1			Flow B Alarm Status [not in 146iQ]
2451	string	0.0.0.0	7	15	characters		Dynamic IP Address
2459	string	0.0.0.0	7	15	characters		Dynamic Subnet Mask
2467	string	0.0.0.0	7	15	characters		Dynamic Gateway Address
2475	string	00:00:00:0	17	17	characters		Wired MAC Address
2484	unsigned16	0	0	1			Ethernet Configuration Alarm Flag
2485	unsigned16	0	0	1			Ethernet IP Address Configuration Alarm Flag
2486	unsigned16	0	0	1			Ethernet Subnet Mask Configuration Alarm Flag
2487	unsigned16	0	0	1			Ethernet Gateway Configuration Alarm Flag
2488	unsigned16	0	0	1			Ethernet DNS Configuration Alarm Flag
2489	unsigned16	0	0	1			Ethernet DNS Configuration Alarm Flag
5158	string	0.0.0.0	7	15	characters		Wired DNS Address
5166	string	0.0.0.0	7	15	characters		Wired DNS Address 2
5174	unsigned16	0	0	1			Ethernet Configuration commit
5182	integer16	0	0	2			Date Format: 0=MM/DD/YYYY (US) 1=DD/MM/YYYY (EU)2=YYYY-MM-DD (ISO 8601)
5183	unsigned16	50	5	100	%		Screen Brightness
5184	unsigned16	0	0	1			Sleep Enable Status
5185	unsigned16	5	1	720	minutes		Sleep Timeout value in minutes
5186	unsigned16	0	0	23			Update clock time: Hours - set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0
5187	unsigned16	0	0	59			Update clock time: Minutes - set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0

Register	Type	Default	Min	Max	Units	Precision	Description
5188	unsigned16	0	0	59			Update clock time: Seconds - set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0
5189	unsigned16	1	1	12			Update clock time: Month - set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0
5190	unsigned16	1	1	31			Update clock time: Day - set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0
5191	unsigned16	1970	1970	2038			Update clock time: Year - set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0
5192	string	0	0	32	characters		Timezone Code (Hours from UTC):DLW+12NST+11HST+10YST+9PST+8PST+8PDTMST+7MST+7MDTCST+6CST+6CDT EST+5EST+5EDTCOT+4ART+3GST+2CVT+1UTC0 CET-1CET-2BST-3DLT-4CET-5FOX-6GLF-7CCT-8JST-9GST-10 LMA-11DLE-12
5208	unsigned16	0	0	3			Allows setting of time/date: set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0
5209	unsigned16	0	0	2			Signal to set time/date
5210	unsigned32	0			seconds		Seconds from 1/1/1970
5212	unsigned16	1	0	2			Enable Time Server
5213	string		0	30			Set Time Server
5228	unsigned16	0					User Data Logging Treatment mode to use: Average=0 Current=1 Max=2 Min=3
5229	unsigned16	0					Data Logging database is ready
5230	string	0	0	2	characters		The number of digits to display after the decimal for concentration data
5231	unsigned16	0	0	1			Low Dynamic Filtering Enable (On/Off)
5232	unsigned16	0	0	1			High Dynamic Filtering Enable (On/Off)
5233	unsigned16	0	0	1			Digital IO for Auto Background Calibration
5234	unsigned16	0	0	1			Digital IO for Low Range Auto Span Calibration
5235	unsigned16	0	0	1			Digital IO for High Range Auto Span Calibration
5236	integer16	0	0	2			Commit user time change: set 5208 to 2(GUI) or 3(Modbus) - set desired time registers - set 5236 to 1 - set 5208 to 0
5237	integer16	0	0	1			If any pop up is open on the GUI the register will read 1. To close the dialog set this register to 0.

Register	Type	Default	Min	Max	Units	Precision	Description
5500	unsigned16	0	0	1			Enable/disable the Digital IO module
5600	unsigned16	1	0	1			Allow Analog Outputs to go over or under range: 0 = Disable 1 = Enable
5601	unsigned16	0	0	1			Enable/Disable the Analog IO module
5602	float	0					Voltage Output Minimum 1
5604	float	0					Voltage Output Minimum 2
5606	float	0					Voltage Output Minimum 3
5608	float	0					Voltage Output Minimum 4
5610	float	0					Voltage Output Minimum 5
5612	float	0					Voltage Output Minimum 6
5614	float	100					Voltage Output Maximum 1
5616	float	100					Voltage Output Maximum 2
5618	float	100					Voltage Output Maximum 3
5620	float	100					Voltage Output Maximum 4
5622	float	100					Voltage Output Maximum 5
5624	float	100					Voltage Output Maximum 6
5626	float	0					Current Output Minimum 1
5628	float	0					Current Output Minimum 2
5630	float	0					Current Output Minimum 3
5632	float	0					Current Output Minimum 4
5634	float	0					Current Output Minimum 5
5636	float	0					Current Output Minimum 6
5638	float	0					Current Output Maximum 1
5640	float	0					Current Output Maximum 2
5642	float	0					Current Output Maximum 3
5644	float	0					Current Output Maximum 4
5646	float	0					Current Output Maximum 5
5648	float	0					Current Output Maximum 6
5700	unsigned16	1	0	1			Enable/Disable the Flow/Pressure module
6200	unsigned16	0	0	1			Enable/disable the module
6201	string	--	0	12			Permeation Tube Gas Name [if Perm Oven installed]
6207	float	190	1	99999.9			Permeation Tube Rate [if Perm Oven installed]
6209	float	0.382	0.0001	9.999			Permeation Tube Molar Constant [if Perm Oven installed]
6900	unsigned16	0	0	1			Enable/disable the Communication module
7000	unsigned16	0	0	1			Enable/Disable the Predictive Diagnostics module
7200	unsigned16	1	1	11			Selected Tank:1: Off2-7: Solenoid 1-68: GPT NO2 9: O310: PermOven11: Purge
7201	unsigned16	1	1	7			Selected Span:1: Zero2-7: Span 1-6
7202	unsigned16	0	0	1			Manual Control
7203	float	0			sccm	1	Tank 1 Zero Flow
7205	float	0			sccm	1	Tank 2 Zero Flow

Register	Type	Default	Min	Max	Units	Precision	Description
7207	float	0			sccm	1	Tank 3 Zero Flow
7209	float	0			sccm	1	Tank 4 Zero Flow
7211	float	0			sccm	1	Tank 5 Zero Flow
7213	float	0			sccm	1	Tank 6 Zero Flow
7215	float	0			sccm	1	Tank 1 Gas Flow
7217	float	0			sccm	1	Tank 2 Gas Flow
7219	float	0			sccm	1	Tank 3 Gas Flow
7221	float	0			sccm	1	Tank 4 Gas Flow
7223	float	0			sccm	1	Tank 5 Gas Flow
7225	float	0			sccm	1	Tank 6 Gas Flow
7227	float	0			PPM		Tank 1 Span 1
7229	float	0			PPM		Tank 1 Span 2
7231	float	0			PPM		Tank 1 Span 3
7233	float	0			PPM		Tank 1 Span 4
7235	float	0			PPM		Tank 1 Span 5
7237	float	0			PPM		Tank 1 Span 6
7239	float	0			PPM		Tank 2 Span 1
7241	float	0			PPM		Tank 2 Span 2
7243	float	0			PPM		Tank 2 Span 3
7245	float	0			PPM		Tank 2 Span 4
7247	float	0			PPM		Tank 2 Span 5
7249	float	0			PPM		Tank 2 Span 6
7251	float	0			PPM		Tank 3 Span 1
7253	float	0			PPM		Tank 3 Span 2
7255	float	0			PPM		Tank 3 Span 3
7257	float	0			PPM		Tank 3 Span 4
7259	float	0			PPM		Tank 3 Span 5
7261	float	0			PPM		Tank 3 Span 6
7263	float	0			PPM		Tank 4 Span 1
7265	float	0			PPM		Tank 4 Span 2
7267	float	0			PPM		Tank 4 Span 3
7269	float	0			PPM		Tank 4 Span 4
7271	float	0			PPM		Tank 4 Span 5
7273	float	0			PPM		Tank 4 Span 6
7275	float	0			PPM		Tank 5 Span 1
7277	float	0			PPM		Tank 5 Span 2
7279	float	0			PPM		Tank 5 Span 3
7281	float	0			PPM		Tank 5 Span 4
7283	float	0			PPM		Tank 5 Span 5
7285	float	0			PPM		Tank 5 Span 6
7287	float	0			PPM		Tank 6 Span 1
7289	float	0			PPM		Tank 6 Span 2
7291	float	0			PPM		Tank 6 Span 3
7293	float	0			PPM		Tank 6 Span 4
7295	float	0			PPM		Tank 6 Span 5
7297	float	0			PPM		Tank 6 Span 6

Register	Type	Default	Min	Max	Units	Precision	Description
7299	float	0			PPM		Tank 6 GPT Span 1
7301	float	0			PPM		Tank 6 GPT Span 2
7303	float	0			PPM		Tank 6 GPT Span 3
7305	float	0			PPM		Tank 6 GPT Span 4
7307	float	0			PPM		Tank 6 GPT Span 5
7309	float	0			PPM		Tank 6 GPT Span 6
7311	float	0			PPM		Ozone Span 1
7313	float	0			PPM		Ozone Span 2
7315	float	0			PPM		Ozone Span 3
7317	float	0			PPM		Ozone Span 4
7319	float	0			PPM		Ozone Span 5
7321	float	0			PPM		Ozone Span 6
7323	float	0			PPM		PermOven Span 1
7325	float	0			PPM		PermOven Span 2
7327	float	0			PPM		PermOven Span 3
7329	float	0			PPM		PermOven Span 4
7331	float	0			PPM		PermOven Span 5
7333	float	0			PPM		PermOven Span 6
7335	float	0			sccm		Tank 1 Total Zero Flow
7337	float	0			sccm		Tank 1 Total Flow Span 1
7339	float	0			sccm		Tank 1 Total Flow Span 2
7341	float	0			sccm		Tank 1 Total Flow Span 3
7343	float	0			sccm		Tank 1 Total Flow Span 4
7345	float	0			sccm		Tank 1 Total Flow Span 5
7347	float	0			sccm		Tank 1 Total Flow Span 6
7349	float	0			sccm		Tank 2 Total Zero Flow
7351	float	0			sccm		Tank 2 Total Flow Span 1
7353	float	0			sccm		Tank 2 Total Flow Span 2
7355	float	0			sccm		Tank 2 Total Flow Span 3
7357	float	0			sccm		Tank 2 Total Flow Span 4
7359	float	0			sccm		Tank 2 Total Flow Span 5
7361	float	0			sccm		Tank 2 Total Flow Span 6
7363	float	0			sccm		Tank 3 Total Zero Flow
7365	float	0			sccm		Tank 3 Total Flow Span 1
7367	float	0			sccm		Tank 3 Total Flow Span 2
7369	float	0			sccm		Tank 3 Total Flow Span 3
7371	float	0			sccm		Tank 3 Total Flow Span 4
7373	float	0			sccm		Tank 3 Total Flow Span 5
7375	float	0			sccm		Tank 3 Total Flow Span 6
7377	float	0			sccm		Tank 4 Total Zero Flow
7379	float	0			sccm		Tank 4 Total Flow Span 1
7381	float	0			sccm		Tank 4 Total Flow Span 2
7383	float	0			sccm		Tank 4 Total Flow Span 3
7385	float	0			sccm		Tank 4 Total Flow Span 4
7387	float	0			sccm		Tank 4 Total Flow Span 5
7389	float	0			sccm		Tank 4 Total Flow Span 6

Register	Type	Default	Min	Max	Units	Precision	Description
7391	float	0			sccm		Tank 5 Total Zero Flow
7393	float	0			sccm		Tank 5 Total Flow Span 1
7395	float	0			sccm		Tank 5 Total Flow Span 2
7397	float	0			sccm		Tank 5 Total Flow Span 3
7399	float	0			sccm		Tank 5 Total Flow Span 4
7401	float	0			sccm		Tank 5 Total Flow Span 5
7403	float	0			sccm		Tank 5 Total Flow Span 6
7405	float	0			sccm		Tank 6 Total Zero Flow
7407	float	0			sccm		Tank 6 Total Flow Span 1
7409	float	0			sccm		Tank 6 Total Flow Span 2
7411	float	0			sccm		Tank 6 Total Flow Span 3
7413	float	0			sccm		Tank 6 Total Flow Span 4
7415	float	0			sccm		Tank 6 Total Flow Span 5
7417	float	0			sccm		Tank 6 Total Flow Span 6
7419	float	0			sccm		Tank 6 GPT Total Zero Flow - NOT USED
7421	float	0			sccm		Tank 6 GPT Total Flow Span 1
7423	float	0			sccm		Tank 6 GPT Total Flow Span 2
7425	float	0			sccm		Tank 6 GPT Total Flow Span 3
7427	float	0			sccm		Tank 6 GPT Total Flow Span 4
7429	float	0			sccm		Tank 6 GPT Total Flow Span 5
7431	float	0			sccm		Tank 6 GPT Total Flow Span 6
7433	float	0			sccm		Ozone Total Zero Flow
7435	float	0			sccm		Ozone Total Flow Span 1
7437	float	0			sccm		Ozone Total Flow Span 2
7439	float	0			sccm		Ozone Total Flow Span 3
7441	float	0			sccm		Ozone Total Flow Span 4
7443	float	0			sccm		Ozone Total Flow Span 5
7445	float	0			sccm		Ozone Total Flow Span 6
7447	float	0			sccm		PermOven Total Zero Flow
7449	float	0			sccm		PermOvenTotal Flow Span 1
7451	float	0			sccm		PermOven Total Flow Span 2
7453	float	0			sccm		PermOven Total Flow Span 3
7455	float	0			sccm		PermOven Total Flow Span 4
7457	float	0			sccm		PermOven Total Flow Span 5
7459	float	0			sccm		PermOven Total Flow Span 6
7500	float	1	0.5	2		2	Span Coefficient for Single/Low Range
7502	integer16	300	1	300	sec		Single/Low range concentration averaging time
7503	integer16	300	1	300	sec		High range concentration averaging time [not in 146iQ]
7504	float	900	0	500000			User Entered or Supplied Span Gas value for single/low range (user defined units)
7506	float	900	0	500000			User Entered or Supplied Span Gas value for high range (user defined units) [not in 146iQ]

Register	Type	Default	Min	Max	Units	Precision	Description
7508	float	0			basic units	2	Background in base units (ppb or ug/m3)
7510	integer16	0	0	1			Reset Span and Background cal to their defaults.
7511	float	1	0.5	2		2	Span Coefficient for High Range [not in 146iQ]
7513	unsigned16	1	0	1			Set Sample Gas Mode [not in 146iQ]
7514	unsigned16	0	0	1			Set Zero Gas Mode [not in 146iQ]
7515	unsigned16	0	0	1			Set Span Gas Mode [not in 146iQ]
7516	unsigned16	0	0	1			Set Level1 Gas Mode [not in 146iQ]
7517	unsigned16	0	0	1			Set Level2 Gas Mode [not in 146iQ]
7518	unsigned16	0	0	1			Set Level3 Gas Mode [not in 146iQ]
7519	unsigned16	0	0	1			Set Level4 Gas Mode [not in 146iQ]
7520	unsigned16	0	0	1			Set Level5 Gas Mode [not in 146iQ]
7521	unsigned16	0	0	1			Set Level6 Gas Mode [not in 146iQ]
7522	unsigned16	0	0	65535			Gui signal to module for calibration. See description for tmoPhotometerO3SWCalManagerRW .0 for value table.
7523	integer16	0	0	1			GUI command used to accept current background calibration value.
7524	integer16	0	0	1			GUI command used to accept current span calibration value.
7525	unsigned16	1	0	1			Single Range Mode Enabled control [not in 146iQ]
7526	unsigned16	0	0	1			Dual Range Mode Enabled control [not in 146iQ]
7527	unsigned16	0	0	1			Auto Range Mode Enabled control
7528	float	0					user settable alarm [not in 146iQ]
7530	float	0					user settable alarm [not in 146iQ]
7532	float	0					Zero Check Alarm Max BU [not in 146iQ]
7534	float	0					Zero Check Alarm Max BU [not in 146iQ]
7536	float	0					Ozonator Level 1 Check Alarm Max BU [not in 146iQ]
7538	float	0					Ozonator Level 2 Check Alarm Max BU [not in 146iQ]
7540	float	0					Ozonator Level 3 Check Alarm Max BU [not in 146iQ]
7542	float	0					Ozonator Level 4 Check Alarm Max BU [not in 146iQ]
7544	float	0					Ozonator Level 5 Check Alarm Max BU [not in 146iQ]
7546	float	0					Ozonator Level 6 Check Alarm Max BU [not in 146iQ]
7548	float	200	200	1000			Alarm Bench Pressure Min [not in 146iQ]
7550	float	1000	200	1000			Alarm Bench Pressure Max [not in 146iQ]
7552	float	0.4	0.4	2.5			Alarm Bench Flow Min [not in 146iQ]

Register	Type	Default	Min	Max	Units	Precision	Description
7554	float	1.6	0.4	2.5			Alarm Bench Flow Max [not in 146iQ]
7556	string	ppb	0	6			Gas Units: ppb ppm % ug/m3 mg/m3 g/m3 [not in 146iQ]
7559	float	0					user settable alarm [not in 146iQ]
7561	float	0					user settable alarm [not in 146iQ]
7563	unsigned16	0	0	1			Gas Mode Purge [not in 146iQ]
7564	float	0	-25	25		2	Background Manual Cal Adjusted
7566	float	1	0.5	2		2	Span Coefficient Manual Cal Adjusted Low
7568	float	1	0.5	2		2	Span Coefficient Manual Cal Adjusted High
7700	float	6	2	10	mA	1	Min Lamp Current Alarm
7702	float	8	2	10	mA	1	Max Lamp Current Alarm
7704	float	15	5	50	C		Bench Temperature Alarm Min
7706	float	40	5	50	C		Bench Temperature Alarm Max
7708	float	45000	0	999999	Hz		Alarm Cell A frequency Min
7710	float	150000	0	999999	Hz		Alarm Cell A frequency Max
7712	float	45000	0	999999	Hz		Alarm Cell B frequency Min
7714	float	150000	0	999999	Hz		Alarm Cell B frequency Max
7716	float	55	55	85	C		Min Lamp Temperature Alarm
7718	float	65	55	85	C		Max Lamp Temperature Alarm
7800	float	60	60	80	degC	1	Min Lamp Temperature Alarm
7802	float	80	60	80	degC	1	Max Lamp Temperature Alarm

Register	Type	Default	Min	Max	Units	Precision	Description
7805	unsigned16	0	0	65535			Directions to perform Calibrations using Modbus:Manual Bkg: Set 7807 to desired value and set this register to 1 (to see Adjusted Conc value read 7813 register).Auto Bkg: set this register to 2; (To see Current Bkg read 7508).Manual Reset Defaults: set this register to 5 to finish the reset.Manual Span or Manual Span Low: Set 7807 to desired span coef value and set this register to 6 (to see Adjusted Conc; read 7813).Manual Span High [not in 146iQ]: Set 7807 to desired span coef value and set this register to 7 (to see Adjusted High Range Conc read 7815); Auto Span or Auto Span Low: Set 7807 to desired span conc value and set this register to 8 (to see Current Span Coef read 7500 and to see Calculated Span Coef read 2127); Auto Span High [not in 146iQ]: set 7807 to desired high span conc and then set this register to 9 (to see Current High Range Conc read 2105; to see Current High Range Span Coeff read 7511 and to see Calculated High Range Span Coef read 2129); To see the new concentration value use register 2103 single and low or 2105 for high.
7806	integer16	1	0	32767			Pump Control:0 = Off1 = On
7807	float	0	0				Remote target calibration
7809	float	900	0	500000	basic units		User Entered or Supplied Span Gas value for single/low range (basic units)
7811	float	900	0	500000	basic units		User Entered or Supplied Span Gas value for high range (basic units) [not in 146iQ]
7813	float	0	-1000	500000	basic units		Manual Calibration Adjusted Concentration in ppb units
7815	float	0	-1000	500000	basic units		Manual Calibration Adjusted Concentration in ppb units
7817	float	0			basic units		Custom O3 level 1 in basic units
7819	float	0			basic units		Custom O3 level 2 in basic units
7821	float	0			basic units		Custom O3 level 3 in basic units
7823	float	0			basic units		Custom O3 level 4 in basic units
7825	float	0			basic units		Custom O3 level 5 in basic units
7827	float	0			basic units		Custom O3 level 6 in basic units

Register	Type	Default	Min	Max	Units	Precision	Description
7829	unsigned16	0	0	19			Zero/Span/Sample/etc - enum representation [not in 146iQ]0=Sample1=Zero2=Span3=Level 14=Level 25=Level 36=Level 47=Level 58=Level 69=Purge10=Auto Zero11=Auto Span12=Auto Level 113=Auto Level 214=Auto Level 315=Auto Level 416=Auto Level 517=Auto Level 618=Auto Purge19=Warm UpNOTE:Scheduled calibrations should not be set via Modbus (AUTO ZERO;AUTO SPAN ;AUTO PURGE)
10000	string		0	50	characters		SMTP Server address for emails
10025	unsigned16	25	0				SMTP port for sending emails
10026	string		0	255	characters		E-mail From address for sending emails
10154	string		0	16	characters		E-mail password for sending emails
10162	string		0	255	characters		PCP email address
10290	string		0	255	characters		Contact Information: To: User email address
10418	string		0	255	characters		Contact Information: CC: User email address 1
10546	string		0	255	characters		Contact Information: CC: User email address 2
10674	string		0	255	characters		Contact Information: CC: User email address 3
10802	string		0	255	characters		Contact Information: CC: User email address 4
10930	string		0	255	characters		Contact Information: CC: User email address 5
11058	string		0	255	characters		Contact Information: CC: User email address 6
11186	string		0	255	characters		Contact Information: CC: User email address 7
11314	string		0	255	characters		Contact Information: CC: User email address 8
11442	string		0	255	characters		Contact Information: CC: User email address 9
11570	string		0	255	characters		Contact Information: CC: User email address 10

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Register	Type	Default	Min	Max	Units	Precision	Description
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