

# 43iQ, 43iQHL, 43iQTL - 118207-00

## MODBUS Register Table

Rev AA

V 01.06.14.34444

Register	Type	Default	Min	Max	Units	Precision	Description
1	float	0			Basic Units		Auto Concentration in Basic Units for logging/streaming (ppb or ug/m3)
7	float	0			Basic Units		Single/Low Range Concentration (ppb or ug/m3)
13	float	0			Basic Units		High Range Concentration (ppb or ug/m3)
19	unsigned16	0	0	1			Indicates which Concentration is being used in Auto Range Mode 1 = high range 0 = low range
21	float	25			degC	1	Instrument Temperature (deg C)
23	float	45	-40	125	degC	1	Bench Temperature
31	float	750	500	1000	mmHg	1	Bench Pressure (mmHg)
33	float	0	0	2	L/min	3	Flow (L/min)
35	float	-600	-1515.2	0	Volts	1	PMT Voltage
37	float	800	0	1616.5	Volts	1	Lamp Voltage
39	float	99	90	100	%	1	Lamp Intensity
81	float	0			PPB		SO2 Bkg (ppb)
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 FailureBit14 - Power supplies Bit15 - General when any faults detected
653	unsigned16	0	0	65535			Pressure Cal Status0 - Do nothing1 - Reset all values to defaults2 - 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
654	unsigned16	0	0	65535			Pressure Calibration Faults 1 (LSB): Bit 0-1: High point sensor 10Offset is: 00=Ok 01=user input out of range 10=measurement out of range 11=No calBit2-3: Low point sensor 10Offset is: 00=Ok 01=user input out of range 10=measurement out of range 11=No calBit4-5: High point sensor 2Offset is: 00=Ok 01=user input out of range 10=measurement out of range 11=No calBit6-7: Low point sensor 2Offset is: 00=Ok 01=user input out of range 10=measurement out of range 11=No calBit8-9: High point sensor 3Offset is: 00=Ok 01=user input out of range 10=measurement out of range 11=No calBit10-11: Low point sensor 3Offset is: 00=Ok 01=user input out of range 10=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]

Register	Type	Default	Min	Max	Units	Precision	Description
706	integer16	0	0	1			Perm Oven Oven Tempature 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]
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
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

Register	Type	Default	Min	Max	Units	Precision	Description
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
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
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

Register	Type	Default	Min	Max	Units	Precision	Description
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 Temperature 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
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
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

Register	Type	Default	Min	Max	Units	Precision	Description
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
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
851	integer16	1	0				Bench Alarm Count
852	integer16	0	0	1			Flash Reference Percent Alarm Status
853	integer16	0	0	1			Lamp Voltage Alarm Status
854	integer16	0	0	1			Communication Alarm Status
855	integer16	0	0	1			Power Supply Alarm Status
856	integer16	0	0	1			Bench Temp Alarm Status
857	integer16	0	0	1			Bench Supply Lo Alarm Status
858	integer16	0	0	1			Bench Supply Hi Alarm Status
902	integer16	0	0	1			Conc/AutoZero/AutoSpan Alarms
903	integer16	0	0	1			Concentration Alarm Status
904	integer16	0	0	1			Bench Pressure Alarm Status
905	integer16	0	0	1			Flow Alarm Status
906	integer16	0	0	1			Instrument Temperature Alarm Status
907	integer16	0	0	1			Auto Zero Cal/Check Alarm Status
908	integer16	0	0	1			Auto Span Cal/Check Alarm Status
909	string	0	0	11			Single/Low Range Concentration String in User Defined Units
915	string	0	0	11			Hi Range Concentration String in User Defined Units
921	integer16	0	0	1			Bench Module Alarms (also includes Flow - Bench Pressure and Instrument Temperature from the Flow/Pres Status and Alarms screen)
922	float		0	1000	mmHg	1	Pump Pressure (mmHg)
925	float	0			Basic Units		Low Range Virtual Conc. for UI only
927	float	0			Basic Units		Hi Range Virtual Conc. for UI only
929	float	1	0.5	2		3	Lo Range User Coef for Calculations
931	float	1	0.5	2		3	Hi Range User Coef for Calculations
933	float	0			Basic Units		Background
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
956	unsigned16	0	0	1			Digital IO External Alarm 2

Register	Type	Default	Min	Max	Units	Precision	Description
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 Optical Bench Module
1002	integer16	0	-99	60			Maintenance History Calculated Months Left UV Lamp
1003	integer16	0	-99	60			Maintenance History Calculated Months Left PMT
1004	integer16	0	-99	60			Maintenance History Calculated Months Left PMT Base Socket
1005	integer16	0	-99	60			Maintenance History Calculated Months Left Flash Intensity Assy
1006	integer16	0	-99	60			Maintenance History Calculated Months Left Mirrors
1007	integer16	0	-99	60			Maintenance History Calculated Months Left Flow System
1008	integer16	0	-99	60			Maintenance History Calculated Months Left Capillaries
1009	integer16	0	-99	60			Maintenance History Calculated Months Left Pump
1010	integer16	0	-99	60			Maintenance History Calculated Months Left DC Power Supply
1011	integer16	0	-99	60			Maintenance History Calculated Months Left Foam Fan Filter
1012	integer16	0	-99	60			Maintenance History Calculated Months Left System Components
1013	integer16	0	-99	60			Maintenance History Calculated Months Left Purafil
1014	integer16	0	-99	60			Maintenance History Calculated Months Left Charcoal
1015	integer16	0	-99	60			Maintenance History Calculated Months Left Dri-Rite
1016	integer16	0	-99	60			Maintenance History Calculated Months Left Permeation Tube
1017	integer16	0	-99	60			Maintenance History Calculated Months Left 17
1018	integer16	0	-99	60			Maintenance History Calculated Months Left 18
1019	integer16	0	-99	60			Maintenance History Calculated Months Left 19
1020	integer16	0	-99	60			Maintenance History Calculated Months Left 20
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
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

Register	Type	Default	Min	Max	Units	Precision	Description
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 Sample Pump
1302	integer16	0	0	1			Predictive Diagnostic Alert Capillary
1303	integer16	0	0	1			Predictive Diagnostic Alert Flow Path
1304	integer16	0	0	1			Predictive Diagnostic Alert Sample Valve
1305	integer16	0	0	1			Predictive Diagnostic Alert Zero Valve
1306	integer16	0	0	1			Predictive Diagnostic Alert Span Valve
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
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 14
1315	integer16	0	0	1			Predictive Diagnostic Alert 15
1316	integer16	0	0	1			Predictive Diagnostic Alert 16
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
2251	unsigned16	0	0	1			Enable/Disable the Zero/Span valve module
2252	integer16	0	0	1			Trigger zero check or cal.
2253	integer16	0	0	1			Trigger span check or cal.
2254	integer16	0	0	1			Trigger purge
2255	integer16	0	0	1			Trigger Ozonator Level 1
2256	integer16	0	0	1			Trigger Ozonator Level 2
2257	integer16	0	0	1			Trigger Ozonator Level 3
2258	integer16	0	0	1			Trigger Ozonator Level 4
2259	integer16	0	0	1			Trigger Ozonator Level 5
2260	integer16	0	0	1			Trigger Ozonator Level 6
2351	unsigned16	0	0	1			Enable(1)/disable(0) the module
2352	integer16	0	0	4			i0 Reference Mode [48iQTL only]
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	00:00:00:00	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

Register	Type	Default	Min	Max	Units	Precision	Description
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
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.
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



Register	Type	Default	Min	Max	Units	Precision	Description
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
6000	integer16	0	0	1			Purge Mode
6001	integer16	0	0	1			Zero Mode
6002	integer16	0	0	1			Span Mode
6003	integer16	1	0	1			Sample Mode
6004	integer16	0	0	1			Ext Span Mode (Optional)
6005	integer16	0	0	1			i0 Reference Mode [48iQTL only]
6006	integer16	0	0	9			Gas Mode: SAMPLE=0; ZERO=1; SPAN=2; PURGE=3; AUTO ZERO=4; AUTO SPAN=5; AUTO PURGE=6; EXTSPAN=7; i0 REFERENCE=8; WARMUP=9; NOTE: Scheduled calibrations should not be set via Modbus (AUTO ZERO; AUTO SPAN ; AUTO PURGE)
6100	unsigned16	1	0	1			Enable/disable the Dilution module
6101	float	1	1	500			Dilution ratio
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]
6600	string	ppb	0	6			Gas Units
6606	unsigned16	1	0	1			Single Range Mode Request
6607	unsigned16	0	0	1			Dual Range Mode Request
6608	unsigned16	0	0	1			Auto Range Mode Request
6609	integer16	300	1	300	sec		Single/Low Range Averaging Time (sec)
6610	integer16	300	1	300	sec		High Range Averaging Time (sec)
6611	integer16	0	0	99			Set to 1 to compute and save new calibration values
6612	float	0					Background Sepoint User Defined
6614	float	0					Single/Low Range Concentration User Defined
6616	float	0					High Range Concentration User Defined
6618	float	1				3	Single/Low Range User Coefficient Setpoint
6620	float	1				3	High Range User Coefficient Setpoint
6622	float				Basic Units		Logging Range Value
6624	float				Basic Units		Logging Range Value
6626	unsigned16	0	0	1			Extended Range Mode Request
6627	float	600	250	1000	mmHg	1	Pressure Alarm Minimum
6629	float	800	250	1000	mmHg	1	Pressure Alarm Maximum
6631	float	0.35	0	1.75	L/min	3	Flow Alarm Minimum
6633	float	1.5	0	1.75	L/min	3	Flow Alarm Maximum
6635	float	0	-5	50	degC	1	Instrument Temperature Alarm Minimum
6637	float	45	-5	50	degC	1	Instrument Temperature Alarm Maximum
6639	float	-999	-10000	5000000000			Concentration Alarm Minimum User Defined
6641	float	0	-10000	5000000000			Concentration Alarm Maximum User Defined
6900	unsigned16	0	0	1			Enable/disable the Communication module
7000	unsigned16	0	0	1			Enable/Disable the Predictive Diagnostics module
8000	unsigned16	0	0	7			Single/Low Range Multipoint Calibration Counter
8001	unsigned16	0	0	7			High Range Multipoint Calibration Counter
8002	float	1				6	Single/Low Range Multipoint Calibration Coefficient 1

Register	Type	Default	Min	Max	Units	Precision	Description
8004	float	1				6	High Range Multipoint Calibration Coefficient 1
8006	float	0				6	Single/Low Range Multipoint Calibration Coefficient 2
8008	float	0				6	High Range Multipoint Calibration Coefficient 2
8010	float	0				6	Single/Low Range Multipoint Calibration Coefficient 3
8012	float	0				6	High Range Multipoint Calibration Coefficient 3
8014	float				PPB		Single/Low Range Multipoint Cal Span Concentration 1(Basic Units ppb or ug/m3 for Logging and Protocols)
8016	float				PPB		High Range Multipoint Cal Span Concentration 1(Basic Units ppb or ug/m3 for Logging and Protocols)
8018	float				PPB		Single/Low Range Multipoint Cal Span Concentration 2(Basic Units ppb or ug/m3 for Logging and Protocols)
8020	float				PPB		High Range Multipoint Cal Span Concentration 2(Basic Units ppb or ug/m3 for Logging and Protocols)
8022	float				PPB		Single/Low Range Multipoint Cal Span Concentration 3(Basic Units ppb or ug/m3 for Logging and Protocols)
8024	float				PPB		High Range Multipoint Cal Span Concentration 3(Basic Units ppb or ug/m3 for Logging and Protocols)
8026	float	1	0.5	2		6	Single/Low Range Multipoint Cal Point 1 Coefficient
8028	float	1	0.5	2		6	High Range Multipoint Cal Point 1 Coefficient
8030	float	1	0.5	2		6	Single/Low Range Multipoint Cal Point 2 Coefficient
8032	float	1	0.5	2		6	High Range Multipoint Cal Point 2 Coefficient
8034	float	1	0.5	2		6	Single/Low Range Multipoint Cal Point 3 Coefficient
8036	float	1	0.5	2		6	High Range Multipoint Cal Point 3 Coefficient
8038	float						Single/Low Range Multipoint Cal Point 1 VarX
8040	float						High Range Multipoint Cal Point 1 VarX
8042	float						Single/Low Range Multipoint Cal Point 2 VarX
8044	float						High Range Multipoint Cal Point 2 VarX
8046	float						Single/Low Range Multipoint Cal Point 3 VarX
8048	float						High Range Multipoint Cal Point 3 VarX
8050	unsigned16	0	0	65535			remote input cal manager Directions to perform Calibrations using Modbus:Manual Bkg: set modbus register 8051 to desired background value in Base Gas Units (PPB or ug/m3) (to see Adjusted Conc value read 925 register); set modbus register 8050 to 1.Auto Bkg: set modbus register 8050 to 2;(To see Current Bkg read 933 and Calculated Bkg read 6612 in User Defined units)Manual Span or Manual Span Low: set modbus register 8051 to desired span coef value (to see Adjusted Conc read 925); set modbus register 8050 to 3.Manual Span High: set modbus register 8051 to desired span coef value (to see Adjusted High Range Conc read 927); set modbus register 8050 to 4.Auto Span or Auto Span Low: set modbus register 8051 to desired span conc in base gas units (PPB or ug/m3)(to see Current Span Coef read 929 and to see Calculated Span Coef read 6618); set modbus register 8050 to 5.Auto Span High: set modbus register 8051 to desired high span conc in base gas units (PPB or ug/m3)(to see Current High Range Conc read 13 to see Current High Range Span Coef read 931 and to see Calculated High Range Span Coef read 6620); set modbus register 8050 to 6.Manual Reset Defaults: set modbus register 8050 to 7.To see the new concentration value use register 7 single and low or 13 for high in BU units. To check what User Defined units are set to read register 6600.
8051	float	0	0	10000000			Target calibration value
8054	float	0	0	5000000000			User Defined
8056	float	0	0	5000000000			User Defined
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

Register	Type	Default	Min	Max	Units	Precision	Description
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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