iSonic Modbus Slave Address Map								
Item #	**Item Name**	**Name**	**Description**	**Holding/ Input Registers Addr**	**Data type**	**Number**		**Notes**
195	Static	MCU SW Part Number	MCU Software Version Part Number	2000	UINT16	1		
196		MCU SW Metrology	MCU Software Version Metrology Number	2001	UINT16	1		
197		MCU SW Major	MCU Software Version Major Number	2002	UINT16	1		
198		MCU SW Minor	MCU Software Version Minor Number	2003	UINT16	1		
199		APU SW Part Number	APU Software Version Part Number	2004	UINT16	1		
200		APU SW Metrology	APU Software Version Metrology Number	2005	UINT16	1		
201		APU SW Major	APU Software Version Major Number	2006	UINT16	1		
202		APU SW Minor	APU Software Version Minor Number	2007	UINT16	1		
203		FPGA SW Part Number	FPGA Software Version Part Number	2008	UINT16	1		
204		FPGA SW Metrology	FPGA Software Version Metrology Number	2009	UINT16	1		
205		FPGA SW Major	FPGA Software Version Major Number	2010	UINT16	1		
206		FPGA SW Minor	FPGA Software Version Minor Number	2011	UINT16	1		
207		Com SW Part Number	Communication Borad Software Version Part Number	2012	UINT16	1		
208		Com SW Major	Communication Borad Software Version Major Number	2013	UINT16	1		
209		Com SW Minor	Communication Borad Software Version Minor Number	2014	UINT16	1		
210		MCU Hw Part Number	MCU Hardware Version part Number	2015	UINT16	1		
211		MCU Hw Revision	MCU Hardware Version Revision Number	2016	UINT16	1		
212		APU Hw Part Number	APU Hardware Version part Number	2017	UINT16	1		
213		APU Hw Revision	APU Hardware Version Revision Number	2018	UINT16	1		
214		Com Hw Part Number	Communication board Hardware Version part Number	2019	UINT16	1		
215		Com Hw Revision	Communication PCB Version Revision Number	2020	UINT16	1		
216		Not Used	Not Used	2021	UINT16	1		Not Used
217		Serial Number	Serial Number	2022	String	20		
218		Device Name	Device Name	2032	String	20		
219		Device Model	Device Model	2042	String	20		

220		Meter State	Meter State	**2100**	UINT32	1		bit 0:Any alarm bit 1:Meter Path Failure bit 2:Meter SOS vs. AGA SOS bit 3:SWirl - High bit 4:SWirl - Low bit 5:Flatness/Profile Factor - High bit 6:Flatness/Profile Factor - Low bit 7:Asymmetry - High bit 8:Asymmetry - Low bit 9:Plane Balance - High bit 10:Plane Balance - Low bit 11:Path Low Pct Good bit 12:Calculation error bit 13:SOS path Difference bit 14:Gain too high bit 15:Gain Split bit 16:Path Settling bit 17:MCU Alarm bit 18:APU Alarm bit 19:Comm Alarm bit 20:WiFi Alarm bit 21:Analog Input 1 bit 22:Analog Input 2 bit 23:Analog Output 1 bit 24:Analog Output 2 bit 25:RTD Alarm bit 26:FPGA Alarm bit 27:APU No Present
221		MCU State	Mcu State	2102	UINT32	1		bit 0:Memory Failure bit 1:Configuration Failure bit 2:Program Failure bit 3:Watchdog bit 4:Reserve bit 5:Real Time Clock Failure bit 6:eMMC Failure bit 7:Communications APU Failure bit 8:Reserve bit 9:Reserve bit 10:Ethernet Failure/Comms bit 11:HART comms bit 12:Externa RTC Failure bit 13:Process Temperature Obtain Failure bit 14:Meter Body Temperature Obtain Failure bit 15:Pressure Obtain Failure bit 16:Density Obtain Failure bit 17:Viscosity Obtain Failure bit 18:Aga SOS Obtain Failure

222	State	APU State	Apu State	2104	UINT32	1		bit 0:RAM Fault bit 1:Data Acquisition Config Error bit 2:Application Flash CRC Failure bit 3:Watchdog Reset bit 4:Power-Up bit 5:MCU Comm CRC Failure bit 6:Accuracy Clock Failure bit 7:FPGA Comm CRC Failure bit 8:Data Processing Config Error bit 9:FPGA No Response Error
223		FPGA State	Fpga State	2106	UINT32	1		bit 0:Memory Failure bit 1:Configuration Failure bit 2:Program Failure bit 3:Watchdog bit 4:Power Reset bit 5:Communications MCU Failure bit 6:Accuracy Clock Failure bit 7:FPGA Comms
224		Wifi State	Wifi State	2108	UINT32	1		bit 0: Probe Module Failure bit 1: Restart bit 2: Upgrading bit 3: Server Start failed
225		Com State	Com State	2110	UINT32	1		bit 0:Reset bit 1:Network Failure bit 2:Server Connection Failure bit 3:Com Data Send Failure bit 4:Hard Error bit 5:MCU Send Data Failure bit 6:Module Failure
226		Checksum	Configration File Checksum	2112	UINT32	1		
227		Analog Input 1 State	Analog Input 1 State	2114	UINT32	1		bit 0:Input reject low bit 1:Input alarm low bit 2:Input reject high bit 3:Input alarm high bit 4:Input in override
228		Analog Input 2 State	Analog Input 2 State	2116	UINT32	1		bit 0:Input reject low bit 1:Input alarm low bit 2:Input reject high bit 3:Input alarm high bit 4:Input in override
229		RTD State	Rtd State	2118	UINT32	1		bit 0:RTD open bit 1:RTD too low bit 2:RTD too high bit 3:Uncalibrated
230		Analog Output 1 State	Analog Output 1 State	2120	UINT32	1		bit 0:Output reject low bit 1:Output alarm low bit 2:Output reject high bit 3:Output alarm high bit 4:Output in override

231		Analog Output 2 State	Analog Output 2 State	2122	UINT32	1									bit 0:Output reject low bit 1:Output alarm low bit 2:Output reject high bit 3:Output alarm high bit 4:Output in override
							P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	
232		Path State	Path State	2124	UINT32	8	2124	2126	2128	2130	2132	2134	2136	2138	Bit Function 15-6 Reserved 5 Path Settling 4 Gain Split 3 Gain High 2 SOS Error 1 Calculation Error 0 Low % Good
233		Path Event	Path Event	2140	UINT32	8	2140	2142	2144	2146	2148	2150	2152	2154	Bit Function 15-9 Reserved 8 DeltaT Deviation 7 Timing Limits 6 Deviation Down 5 Deviation Up 4 Correlation Test 3 Low SNR Down 2 Low SNR Up 1 No Signal Down 0 No Signal Up
234		Sample Rate	Number of samples	2156	UINT32	1									
235		In Warning	The value is not '0' if any warning	2158	UINT16	1									0: Normal
236		In Error	The value is not '0' if any error	2159	UINT16	1									0: Normal
285	Meter Time Data	Year	Year	**2200**	UINT16	1									Eg:2020
286		Month	Month	2201	UINT16	1									
287		Day	Day	2202	UINT16	1									
288				2203	UINT16	1									
289		Hour	Hour	2204	UINT16	1									
290		Minute	Minute	2205	UINT16	1									
291		Second	Second	2206	UINT16	1									
							Path 1	**Path 2**	**Path 3**	**Path 4**	**Path 5**	**Path 6**	**Path 7**	**Path 8**	
237	Path Acoustic Data	Pct Good	Good Percent(%)	**3000**	Float32	8	3000	3002	3004	3006	3008	3010	3012	3014	
238		Snr Down	SNR of Down	3016	Float32	8	3016	3018	3020	3022	3024	3026	3028	3030	
239		Snr Up	SNR of Up	3032	Float32	8	3032	3034	3036	3038	3040	3042	3044	3046	
240		Snr Avg	SNR of Average	3048	Float32	8	3048	3050	3052	3054	3056	3058	3060	3062	
241		T Down	Transit Time Downstream(s)	3064	Float32	8	3064	3066	3068	3070	3072	3074	3076	3078	
242		T Up	Transit Time Upstream(s)	3080	Float32	8	3080	3082	3084	3086	3088	3090	3092	3094	
243		Delta T	Delta Time(s)	3096	Float32	8	3096	3098	3100	3102	3104	3106	3108	3110	
244		Delta T Std Dev S	Delta T standard deviation	3112	Float32	8	3112	3114	3116	3118	3120	3122	3124	3126	
245		Turbulence (%)	Turbulence (%)	3128	Float32	8	3128	3130	3132	3134	3136	3138	3140	3142	
246		Delta T Dev Lim S	Delta standard deviation limit(s)	3144	Float32	8	3144	3146	3148	3150	3152	3154	3156	3158	
247		Gain Up Db	Up Gain(db)	3160	Float32	8	3160	3162	3164	3166	3168	3170	3172	3174	
248		Gain Down Db	Down Gain(db)	3176	Float32	8	3176	3178	3180	3182	3184	3186	3188	3190	
249		Gain Avg Db	Average Gain(db)	3192	Float32	8	3192	3194	3196	3198	3200	3202	3204	3206	
250	Path Computed Data	Velocity	Flow Velocity	**3300**	Float32	8	3300	3302	3304	3306	3308	3310	3312	3314	
251		Vnorm	Vnorm	3316	Float32	8	3316	3318	3320	3322	3324	3326	3328	3330	
252		Sos	Speed of Sound	3332	Float32	8	3332	3334	3336	3338	3340	3342	3344	3346	
253		Vnorm Saved	Vnorm Saved	3348	Float32	8	3348	3350	3352	3354	3356	3358	3360	3362	
254		Flow Units 1	Gross Flow 1	**3400**	Float32	1									
255		Flow Std Cond Units 1	Under Standard Conditions Flow 1	3402	Float32	1									
256		Flow Units 2	Gross Flow 2	3404	Float32	1									
257		Flow Std Cond Units 2	Under Standard Conditions Flow 2	3406	Float32	1									

258	Meter Data	Raw Gross Flow	Raw Gross Flow	3408	Float32	1		
259		Avg Axial Velocity	Meter Average Velocity	3410	Float32	1		
260		Totalizers (Volume)	Total Non-Resettable	3412	Double64	1		
			Total Resettable	3416	Double64	1		
			Positive Total	3420	Double64	1		
			Negative Total	3424	Double64	1		
			Total with errors	3428	Double64	1		
			Positive Total with errors	3432	Double64	1		
			Negative Total with errors	3436	Double64	1		
			Future	3440	Double64	1		
261		Temp Mb	Meter body Temperature	3444	Float32	1		
262		Rey N	Reynolds(n)	3446	Float32	1		
263		Avg Sos	Average Speed Of Sound	3448	Float32	1		
264		Aga10 Sos	Aga10 Calculate Speed of Sound	3450	Float32	1		
265		Meter Factor	Meter Factor	3452	Float32	1		
266		Flatness	Flatness	3454	Float32	1		
267		Swirl	Swirl	3456	Float32	1		
268		Asymmetry	Asymmetry	3458	Float32	1		
269		Plane Balance	Plane Balance	3460	Float32	1		
270	Input/Output Process Data	Analog Input 1 Eu	Analog Input 1 Engineering Units	3500	Float32	1		
271		Analog Input 1 Value	Analog Input 1 Value(mA)	3502	Float32	1		
272		Analog Input 1 Raw Value	Raw Analog Input 1 Value(mA)	3504	Float32	1		
273		Analog Input 2 Eu	Analog Input 2 Engineering Units	3506	Float32	1		
274		Analog Input 2 Value	Analog Input 2 Value(mA)	3508	Float32	1		
275		Analog Input 2 Raw Value	Raw Analog Input 2 Value(mA)	3510	Float32	1		
276		RTD Eu	RTD Engineering Units	3512	Float32	1		
277		RTD Ohms	RTD Value(Ohms)	3514	Float32	1		
278		RTD Ohms Raw	Raw RTD Value(Ohms)	3516	Float32	1		
279		Analog Output 1 Eu	Analog Output 1 Engineering Units	3518	Float32	1		
280		Analog Output 1 Value	Analog Output 1 Value(mA)	3520	Float32	1		
281		Analog Output 1 Raw Value	Raw Analog Output 1 Value(mA)	3522	Float32	1		
282		Analog Output 2 Eu	Analog Output 2 Engineering Units	3524	Float32	1		
283		Analog Output 2 Value	Analog Output 2 Value(mA)	3526	Float32	1		
284		Analog Output 2 Raw Value	Raw Analog Output 2 Value(mA)	3528	Float32	1		
292	Meter Flow Process Data	Temp	Fluid Temperature	3600	Float32	1		
293		Pressure	Pressure	3602	Float32	1		
294		Density	Density	3604	Float32	1		
295		Viscosity	Viscosity	3606	Float32	1		
296	Gas Chromatography Data	GC Data - Element Compounds	Methane	3700	Double64	1		Methane
297			Nitrogen	3704	Double64	1		Nitrogen
298			Carbon Dioxide	3708	Double64	1		Carbon Dioxide
299			Ethane	3712	Double64	1		Ethane
300			Propane	3716	Double64	1		Propane
301			iso-Butane	3720	Double64	1		iso-Butane
302			n-Butane	3724	Double64	1		n-Butane
303			iso-Pentane	3728	Double64	1		iso-Pentane
304			n-Pentane	3732	Double64	1		n-Pentane
305			n-Hexane	3736	Double64	1		n-Hexane
306			n-Heptane	3740	Double64	1		n-Heptane
307			n-Octane	3744	Double64	1		n-Octane
308			n-Nonane	3748	Double64	1		n-Nonane
309			n-Decane	3752	Double64	1		n-Decane
310			Hydrogen	3756	Double64	1		Hydrogen
311			Oxygen	3760	Double64	1		Oxygen
312			Carbon Monoxide	3764	Double64	1		Carbon Monoxide

313			Water	3768	Double64	1		Water
314			Hydrogen Sulfide	3772	Double64	1		Hydrogen Sulfide
315			Helium	3776	Double64	1		Helium
316			Argon	3780	Double64	1		Argon
317	Flow	**Flow** (uncorrected/actual) same as above	Flow_Actual	**3800**	Double64	1		
318		Current Hourly total (uncorrected/actual)	Total_Act_Hr_cur	3804	Double64	1		
319		Previous Hourly total (uncorrected/actual)	Total_Act_Hr_last	3808	Double64	1		
320		Current Daily total (uncorrected/actual)	Total_Act_Day_cur	3812	Double64	1		
321		Previous Daily total (uncorrected/actual)	Total_Act_Day_last	3816	Double64	1		
322		Current Monthly total (uncorrected/actual)	Total_Act_Mon_cur	3820	Double64	1		
323		Previous Monthly total (uncorrected/actual)	Total_Act_Mon_last	3824	Double64	1		
324		**Flow** (base)	Flow_Base	3828	Double64	1		
325		Current Hourly total (Base)	Total_Base_Hr_cur	3832	Double64	1		
326		Previous Hourly total (Base)	Total_Base_Hr_last	3836	Double64	1		
327		Current Daily total (Base)	Total_Base_Day_cur	3840	Double64	1		
328		Previous Daily total (Base)	Total_Base_Day_last	3844	Double64	1		
329		Current Monthly total (Base)	Total_Base_Mon_cur	3848	Double64	1		
330		Previous Monthly total (Base)	Total_Base_Mon_last	3852	Double64	1		
331		Mass_Flow (Uncorrected)	Mass_Flow_uncorr	3800	Double64	1		
332		Current Hourly mass (Uncorrected)	Mass_uncorr_Hr_cur	3804	Double64	1		
333		Previous Hourly mass (Uncorrected)	Mass_uncorr_Hr_last	3808	Double64	1		
334		Current Daily mass (Uncorrected)	Mass_uncorr_Day_cur	3812	Double64	1		
335		Previous Daily mass (Uncorrected)	Mass_uncorr_Day_last	3816	Double64	1		
336		Current Monthly mass (Uncorrected)	Mass_uncorr_Mon_cur	3820	Double64	1		
337		Previous Monthly mass (Uncorrected)	Mass_uncorr_Mon_last	3824	Double64	1		
338		Mass_Flow (Corrected)	Mass_Flow_Corr	3828	Double64	1		
339		Current Hourly mass (Corrected)	Mass_Corr_Hr_cur	3832	Double64	1		
340		Previous Hourly mass (Corrected)	Mass_Corr_Hr_last	3836	Double64	1		
341		Current Daily mass (Corrected)	Mass_Corr_Day_cur	3840	Double64	1		
342		Previous Daily mass (Corrected)	Mass_Corr_Day_last	3844	Double64	1		
343		Current Monthly mass (Corrected)	Mass_Corr_Mon_cur	3848	Double64	1		
344		Previous Monthly mass (Corrected)	Mass_Corr_Mon_last	3852	Double64	1		