

Henry Pump POC
Modbus Register Map

COILS				
Register	Description	Access	Type	Notes
1	Terms & Conditions Accepted	RW	BOOL	
2	Autotune at next startup	RW	BOOL	
3	Gas Interference Override Enabled	RW	BOOL	
4	Gauge Off Manual Command	RW	BOOL	
5	Initialize	RW	BOOL	resets counters & totals
6	Analog Input 1 - Enabled	RW	BOOL	
7	Analog Input 2 - Enabled	RW	BOOL	
8	Analog Input 3 - Enabled	RW	BOOL	
9	Calibrate Inclinator Command	RW	BOOL	
10	Inclinometer Input - Enabled	RW	BOOL	
11	Load Cell Input - Enabled	RW	BOOL	
12	Minimum Fluid Load Shutdown Enabled	RW	BOOL	
13	Restart After Fault Allowed	RW	BOOL	
14	Update Tapers	RW	BOOL	
15	Use Wireless Load Cell	RW	BOOL	
16	Write VFD Mode Data	RW	BOOL	
17	Write VFD Nameplate Data	RW	BOOL	
18	Start Command	RW	BOOL	
19	Stop Command	RW	BOOL	

DISCRETE INPUTS				
Register	Description	Access	Type	Notes
1	Inclinometer is Calibrating	R	BOOL	
2	Inclinometer Stale Value	R	BOOL	

HOLDING REGISTERS				
Register	Description	Access	Type	Notes
1	Data Point Period	RW	REAL	
3	Casing ID	RW	REAL	
5	VFD Starting Speed	RW	REAL	in RPM
7	Electricity Cost per kWh	RW	REAL	in Dollars
9	Estimated Tubing Movement	RW	REAL	Estimated by top left corner - bottom left corner
11	Fluid Gradient	RW	REAL	in lbs/ft
13	Friction Estimate	RW	REAL	how much of fluid load is due to friction in well
15	Gauge Off Time Hour	RW	DINT	
16	Gauge Off Time Minute	RW	DINT	
17	Analog Input 1 - EU High	RW	REAL	
19	Analog Input 1 - EU Low	RW	REAL	
21	Analog Input 2 - EU High	RW	REAL	
23	Analog Input 2 - EU Low	RW	REAL	
25	Analog Input 3 - EU High	RW	REAL	
27	Analog Input 3 - EU Low	RW	REAL	
29	Inclinometer Input - EU High	RW	REAL	
31	Inclinometer Input - EU Low	RW	REAL	
33	Load Cell Input - EU High	RW	REAL	
35	Load Cell Input - EU Low	RW	REAL	
37	K-Factor	RW	REAL	
39	Minimum Fluid Load Shutdown Setpoint	RW	REAL	in % maximum
41	Analog Input 1 - Channel	RW	INT	
42	Analog Input 1 - Type	RW	INT	1=Inclinometer, 2=Casing Pressure, 3=Tubing Pressure, 4=Flow Line Pressure, 5=Flowmeter, 6=Other
43	Analog Input 2 - Channel	RW	INT	
44	Analog Input 2 - Type	RW	INT	1=Inclinometer, 2=Casing Pressure, 3=Tubing Pressure, 4=Flow Line Pressure, 5=Flowmeter, 6=Other
45	Analog Input 3 - Channel	RW	INT	
46	Analog Input 3 - Type	RW	INT	1=Inclinometer, 2=Casing Pressure, 3=Tubing Pressure, 4=Flow Line Pressure, 5=Flowmeter, 6=Other
47	Inclinometer Input - Channel	RW	INT	
48	Inclinometer Input - Type	RW	INT	
49	Load Cell Input - Channel	RW	INT	
50	Load Cell Input - Type	RW	INT	
51	Taper 1 Length	RW	REAL	
53	Taper 1 Diameter	RW	REAL	
55	Taper 1 Material	RW	DINT	1=Steel, 2=Fiberglass
56	Taper 2 Length	RW	REAL	
58	Taper 2 Diameter	RW	REAL	
60	Taper 2 Material	RW	DINT	1=Steel, 2=Fiberglass
61	Taper 3 Length	RW	REAL	
63	Taper 3 Diameter	RW	REAL	
65	Taper 3 Material	RW	DINT	1=Steel, 2=Fiberglass

Henry Pump POC
Modbus Register Map

66	Taper 4 Length	RW	REAL	
68	Taper 4 Diameter	RW	REAL	
70	Taper 4 Material	RW	DINT	1=Steel, 2=Fiberglass
71	Taper 5 Length	RW	REAL	
73	Taper 5 Diameter	RW	REAL	
75	Taper 5 Material	RW	DINT	1=Steel, 2=Fiberglass
76	Taper 6 Length	RW	REAL	
78	Taper 6 Diameter	RW	REAL	
80	Taper 6 Material	RW	DINT	1=Steel, 2=Fiberglass
81	Taper 7 Length	RW	REAL	
83	Taper 7 Diameter	RW	REAL	
85	Taper 7 Material	RW	DINT	1=Steel, 2=Fiberglass
86	Taper 8 Length	RW	REAL	
88	Taper 8 Diameter	RW	REAL	
90	Taper 8 Material	RW	DINT	1=Steel, 2=Fiberglass
91	Taper 9 Length	RW	REAL	
93	Taper 9 Diameter	RW	REAL	
95	Taper 9 Material	RW	DINT	1=Steel, 2=Fiberglass
96	Taper 10 Length	RW	REAL	
98	Taper 10 Diameter	RW	REAL	
100	Taper 10 Material	RW	DINT	1=Steel, 2=Fiberglass
101	Motor Nameplate Volts	RW	REAL	
103	Motor Nameplate Amps	RW	REAL	
105	Motor Nameplate Hertz	RW	REAL	
107	Motor Nameplate Poles	RW	INT	
108	Motor Nameplate RPM	RW	REAL	
110	Motor Nameplate Service Factor	RW	REAL	
112	Motor Nameplate Horsepower	RW	REAL	
114	Pump Diameter	RW	REAL	
116	Anchor Depth	RW	REAL	
118	Total Stroke Length	RW	REAL	
120	Motor Sheave Size	RW	REAL	
122	Gearbox Sheave size	RW	REAL	
124	Gearbox Limit	RW	REAL	
126	Gearbox Ratio	RW	REAL	
128	Gearbox Rating	RW	REAL	
130	Structural Rating	RW	REAL	
132	Well Type	RW	SINT	
133	Total Vertical Depth	RW	REAL	
135	Tubing ID	RW	REAL	
137	Tubing OD	RW	REAL	
139	Oil API Gravity	RW	REAL	
141	Water Specific Gravity	RW	REAL	
143	Percent Water	RW	REAL	
145	Speed Setpoint	RW	REAL	SPM
147	Max Speed	RW	REAL	SPM
149	Min Speed	RW	REAL	SPM
151	POC Percentage Off	RW	REAL	
153	POC Auto Ramp Down Percentage	RW	REAL	
155	POC Auto Ramp Up Percentage	RW	REAL	
157	Operation Mode	RW	DINT	1=Auto, 2=POC, 3=Timer, 4=Manual

INPUT REGISTERS				
Register	Description	Access	Type	Notes
1	Firmware Revision	R	INT	Firmware Rev of the PLC
2	Program Revision	R	INT	
3	Last Stroke 1 - Card Type	R	SINT	0=Normal, 1=Shutdown, 2=Alarm
4	Last Stroke 1 - Downhole Adjusted Gross Stroke	R	REAL	
6	Last Stroke 1 - Downhole Fluid Load	R	REAL	
8	Last Stroke 1 - Downhole Gross Stroke	R	REAL	
10	Last Stroke 1 - Downhole Peak Load	R	REAL	
12	Last Stroke 1 - Downhole Max Position	R	REAL	
14	Last Stroke 1 - Downhole Min Load	R	REAL	
16	Last Stroke 1 - Downhole Min Position	R	REAL	
18	Last Stroke 1 - Downhole Net Stroke	R	REAL	
20	Last Stroke 1 - Pump Fill Percent	R	REAL	
22	Last Stroke 1 - Fluid Level	R	REAL	
24	Last Stroke 1 - Fluid Moved	R	REAL	
26	Last Stroke 1 - Stroke Number	R	DINT	
27	Last Stroke 1 - Number of Points	R	DINT	
28	Last Stroke 1 - Polished Rod HP	R	REAL	

Henry Pump POC
Modbus Register Map

30	Last Stroke 1 - Pump HP	R	REAL	
32	Last Stroke 1 - Pump Intake Pressure	R	REAL	
34	Last Stroke 1 - Stroke Speed	R	REAL	
36	Last Stroke 1 - Surface Peak Load	R	REAL	
38	Last Stroke 1 - Surface Max Position	R	REAL	
40	Last Stroke 1 - Surface Min Load	R	REAL	
42	Last Stroke 1 - Surface Min Position	R	REAL	
44	Last Stroke 1 - Surface Stroke Length	R	REAL	
46	Last Stroke 1 - Tubing Movement	R	REAL	
48	Last Stroke 2 - Card Type	R	SINT	0=Normal, 1=Shutdown, 2=Alarm
49	Last Stroke 2 - Downhole Adjusted Gross Stroke	R	REAL	
51	Last Stroke 2 - Downhole Fluid Load	R	REAL	
53	Last Stroke 2 - Downhole Gross Stroke	R	REAL	
55	Last Stroke 2 - Downhole Peak Load	R	REAL	
57	Last Stroke 2 - Downhole Max Position	R	REAL	
59	Last Stroke 2 - Downhole Min Load	R	REAL	
61	Last Stroke 2 - Downhole Min Position	R	REAL	
63	Last Stroke 2 - Downhole Net Stroke	R	REAL	
65	Last Stroke 2 - Pump Fill Percent	R	REAL	
67	Last Stroke 2 - Fluid Level	R	REAL	
69	Last Stroke 2 - Fluid Moved	R	REAL	
71	Last Stroke 2 - Stroke Number	R	DINT	
72	Last Stroke 2 - Number of Points	R	DINT	
73	Last Stroke 2 - Polished Rod HP	R	REAL	
75	Last Stroke 2 - Pump HP	R	REAL	
77	Last Stroke 2 - Pump Intake Pressure	R	REAL	
79	Last Stroke 2 - Stroke Speed	R	REAL	
81	Last Stroke 2 - Surface Peak Load	R	REAL	
83	Last Stroke 2 - Surface Max Position	R	REAL	
85	Last Stroke 2 - Surface Min Load	R	REAL	
87	Last Stroke 2 - Surface Min Position	R	REAL	
89	Last Stroke 2 - Surface Stroke Length	R	REAL	
91	Last Stroke 2 - Tubing Movement	R	REAL	
93	Last Stroke 3 - Card Type	R	SINT	0=Normal, 1=Shutdown, 2=Alarm
94	Last Stroke 3 - Downhole Adjusted Gross Stroke	R	REAL	
96	Last Stroke 3 - Downhole Fluid Load	R	REAL	
98	Last Stroke 3 - Downhole Gross Stroke	R	REAL	
100	Last Stroke 3 - Downhole Peak Load	R	REAL	
102	Last Stroke 3 - Downhole Max Position	R	REAL	
104	Last Stroke 3 - Downhole Min Load	R	REAL	
106	Last Stroke 3 - Downhole Min Position	R	REAL	
108	Last Stroke 3 - Downhole Net Stroke	R	REAL	
110	Last Stroke 3 - Pump Fill Percent	R	REAL	
112	Last Stroke 3 - Fluid Level	R	REAL	
114	Last Stroke 3 - Fluid Moved	R	REAL	
116	Last Stroke 3 - Stroke Number	R	DINT	
117	Last Stroke 3 - Number of Points	R	DINT	
118	Last Stroke 3 - Polished Rod HP	R	REAL	
120	Last Stroke 3 - Pump HP	R	REAL	
122	Last Stroke 3 - Pump Intake Pressure	R	REAL	
124	Last Stroke 3 - Stroke Speed	R	REAL	
126	Last Stroke 3 - Surface Peak Load	R	REAL	
128	Last Stroke 3 - Surface Max Position	R	REAL	
130	Last Stroke 3 - Surface Min Load	R	REAL	
132	Last Stroke 3 - Surface Min Position	R	REAL	
134	Last Stroke 3 - Surface Stroke Length	R	REAL	
136	Last Stroke 3 - Tubing Movement	R	REAL	
138	Last Stroke 4 - Card Type	R	SINT	0=Normal, 1=Shutdown, 2=Alarm
139	Last Stroke 4 - Downhole Adjusted Gross Stroke	R	REAL	
141	Last Stroke 4 - Downhole Fluid Load	R	REAL	
143	Last Stroke 4 - Downhole Gross Stroke	R	REAL	
145	Last Stroke 4 - Downhole Peak Load	R	REAL	
147	Last Stroke 4 - Downhole Max Position	R	REAL	
149	Last Stroke 4 - Downhole Min Load	R	REAL	
151	Last Stroke 4 - Downhole Min Position	R	REAL	
153	Last Stroke 4 - Downhole Net Stroke	R	REAL	
155	Last Stroke 4 - Pump Fill Percent	R	REAL	
157	Last Stroke 4 - Fluid Level	R	REAL	
159	Last Stroke 4 - Fluid Moved	R	REAL	
161	Last Stroke 4 - Stroke Number	R	DINT	
162	Last Stroke 4 - Number of Points	R	DINT	
163	Last Stroke 4 - Polished Rod HP	R	REAL	

Henry Pump POC
Modbus Register Map

165	Last Stroke 4 - Pump HP	R	REAL
167	Last Stroke 4 - Pump Intake Pressure	R	REAL
169	Last Stroke 4 - Stroke Speed	R	REAL
171	Last Stroke 4 - Surface Peak Load	R	REAL
173	Last Stroke 4 - Surface Max Position	R	REAL
175	Last Stroke 4 - Surface Min Load	R	REAL
177	Last Stroke 4 - Surface Min Position	R	REAL
179	Last Stroke 4 - Surface Stroke Length	R	REAL
181	Last Stroke 4 - Tubing Movement	R	REAL
183	VFD Speed Reference SP	R	REAL
185	VFD Torque SP	R	REAL
187	Yesterday's Average SPM	R	REAL
189	Yesterday's Average Downhole Gross Stroke	R	REAL
191	Yesterday's Average Downhole Net Stroke	R	REAL
193	Yesterday's Electricity Cost	R	REAL
195	Yesterday's Average Fluid Level	R	REAL
197	Yesterday's Average Inflow Rate	R	REAL
199	Yesterday's kWh Consumed	R	REAL
201	Yesterday's kWh Regenerated	R	REAL
203	Yesterday's Lifting Cost	R	REAL
205	Yesterday's Peak Polished Rod Load	R	REAL
207	Yesterday's Min Polished Rod Load	R	REAL
209	Yesterday's Percent Run	R	REAL
211	Yesterday's Average Polished Rod Horsepower	R	REAL
213	Yesterday's Average Pump Intake Pressure	R	REAL
215	Yesterday's Average Surface Stroke Length	R	REAL
217	Yesterday's Calculated Production	R	REAL
219	Yesterday's Average Tubing Movement	R	REAL
221	Instantaneous Gearbox Loading	R	REAL
223	Instantaneous Gearbox Torque	R	REAL
225	Analog Input 1 - Value	R	REAL
227	Analog Input 2 - Value	R	REAL
229	Analog Input 3 - Value	R	REAL
231	Instantaneous SPM	R	REAL
233	Today's kWh usage	R	REAL
235	Max. Theoretical Fluid Load	R	REAL
237	Instantaneous Motor Torque	R	REAL
239	Run Status	R	DINT
240	Actual SPM	R	REAL
242	Pump Intake Pressure	R	REAL
244	Today's Calculated Production	R	REAL
246	Today's Projected Production	R	REAL
248	Today's Percent Run	R	REAL
250	Fluid Load	R	REAL
252	Last Stroke 1 - Surface Position	R	ARRAY
1752	Last Stroke 2 - Surface Position	R	ARRAY
3252	Last Stroke 3 - Surface Position	R	ARRAY
4752	Last Stroke 4 - Surface Position	R	ARRAY
6252	Last Stroke 1 - Surface Load	R	ARRAY
7752	Last Stroke 2 - Surface Load	R	ARRAY
9252	Last Stroke 3 - Surface Load	R	ARRAY
10752	Last Stroke 4 - Surface Load	R	ARRAY
12252	Last Stroke 1 - Downhole Position	R	ARRAY
13752	Last Stroke 2 - Downhole Position	R	ARRAY
15252	Last Stroke 3 - Downhole Position	R	ARRAY
16752	Last Stroke 4 - Downhole Position	R	ARRAY
18252	Last Stroke 1 - Downhole Load	R	ARRAY
19752	Last Stroke 2 - Downhole Load	R	ARRAY
21252	Last Stroke 3 - Downhole Load	R	ARRAY
22752	Last Stroke 4 - Downhole Load	R	ARRAY