



neptronic®

SKG4 Gas Fired Humidifier

Modbus Communication Module User Guide





Introduction

The SKG4 Modbus Communication Module User Guide provides information for using Neptronic® communication feature. The controller uses Modbus communication protocol over serial line in the RTU mode and provides a Modbus network interface between client devices and Neptronic SKG4 devices.

The SKG4 Modbus Guide assumes that you are familiar with Modbus terminology.

The following are the requirements for Modbus:

- **Data Model.** The SKG4 Gas Fired Humidifier Modbus server data model uses only the Modbus Registers table.
- **Register Address:**
 - As per protocol base (base 0); for PLC add 1 to protocol base.
 - As per holding register (base 400001).
-  **Note:** Ensure that the Modbus communication software used does not have a limit on the range of the register addresses that can be viewed and supports 6-digit holding registers.
- **Function Codes.** The SKG4 Gas Fired Humidifier Modbus server supports a limited function codes subset comprising:
 - Read Holding Registers (0x03)
 - Write Single Register (0x06)
 - Write Multiple Registers (0x10)
- **Exception Responses.** The SKG4 Gas Fired Humidifier Modbus server supports the following exception codes:
 - Illegal data address
 - Illegal data value
 - Slave device busy
- **Serial Line.** The SKG4 Gas Fired Humidifier Modbus over serial line uses RTU transmission mode over a two-wire configuration RS485 (EIA/TIA-485 standard) physical layer.
 - The physical layer can use fixed baud rate selection or automatic baud rate detection (default) as per the **Modbus Auto Baud Rate** device menu item or holding register index 1.
 - The supported baud rates are 9600, 19200, 38400, and 57600.
 - The physical layer also supports variable parity control and stop bit configuration as per the **Modbus Comport Config** device menu item or holding register index 2.
 - In auto baud rate configuration, if the device detects only consecutive bad frames (2 or more) for one second with any given baud rate, it will reinitialize itself to the next baud rate.
- **Addressing.** The SKG4 Gas Fired Humidifier device only answers at the following address:
 - The device's unique address (1 to 246) that can be set through the device menu or through holding register index 0.

Modbus Registers

Table Glossary

Name	Description	Name	Description
W	Writable Register	ASCII	For registers containing ASCII (8-bit) characters
RO	Read Only Register	MSB	Most Significant Byte
Unsigned	For range of values from 0 to 65,535, unless otherwise specified	LSB	Least Significant Byte
Signed	For range of values from -32,768 to 32,767, unless otherwise specified	MSW	Most Significant Word
Bit String	For registers with multiple values using bit mask (example, flags)	LSW	Least Significant Word

Modbus Registers Table

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
0	400001	Modbus Address and Product Type	Unsigned	MSB = Product type, not writable LSB = Modbus Address (1 to 247), writable	W	
1	400002	Device Baud Rate	Unsigned <i>Scale 100</i>	0, 9600, 19200, 38400, and 57600, 0 = Auto Baud Rate Detection Value/100 (e.g. 38400 baud = 384)	W	19200
2	400003	Modbus Slave Communication Port Configuration	Unsigned	0 = No parity, 2 Stop bits 1 = Even parity, 1 Stop bit 2 = Odd parity, 1 Stop bit	W	No parity, 2 Stops bits
3	400004	Product Name (characters 8 & 7)	ASCII	MSB = char 6, LSB = char 7	W	
4	400005	Product Name (characters 6 & 5)	ASCII	MSB = char 4, LSB = char 5	W	
5	400006	Product Name (characters 4 & 3)	ASCII	MSB = char 2, LSB = char 3	W	
6	400007	Product Name (characters 2 & 1)	ASCII	MSB = char 0, LSB = char 1	W	



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
7	400008	Product Actual Firmware Version (in Integer x100)	Unsigned Scale 100	1 to 65535 (e.g. 100)	RO	
8	400009	Product Actual EEPROM Version (in Integer x100)	Unsigned Scale 100	1 to 65535 (e.g. 100)	RO	
2000	402001	Supply RH Signal (0)	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 1V = 1000)	RO	0V
2001	402002	Supply RH Signal (1)		Units: Volt (V), Range: 0V to 15V		
2002	402003	Room RH Signal (0)	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 1V = 1000)	RO	0V
2003	402004	Room RH Signal (1)		Units: Volt (V), Range: 0V to 15V		
2004	402005	Control Signal (0)	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 1V = 1000)	RO	0V
2005	402006	Control Signal (1)		Units: Volt (V), Range: 0V to 15V		
2006	402007	Cabinet Temperature Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	RO	0V
2007	402008	Main Power Supply (0)	Unsigned Scale 10	Unit: Volt (V), Range: 0V to 40V Value x 10 (e.g. 1V = 10)	RO	0V
2008	402009	Main Power Supply (1)		Unit: Volt (V), Range: 0V to 40V		
4000	404001	Power Output Feedback Signal (0)	Unsigned Scale 1000	Unit: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	RO	0V
4001	404002	Power Output Feedback Signal (1)		Unit: Volt (V), Range: 0V to 10V		
6000	406001	Supply High Limit RH	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	RO	0% RH
6001	406002	Supply High Limit RH Min	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	0% RH



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6002	406003	Supply High Limit RH Max	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	100% RH
6003	406004	Supply High Limit RH Bias	Signed Scale 100	Unit: % RH, Range: -10% RH to 10% RH Value x 100 (e.g. 10% RH = 1000)	W	0% RH
6004	406005	Room RH	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	RO	0% RH
6005	406006	Room RH Min	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	100% RH
6006	406007	Room RH Max	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	100% RH
6007	406008	Room RH Bias	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	100% RH
6008	406009	Control Input	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6009	406010	Control Min	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	0%
6010	406011	Control Max	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	0%
6011	406012	Control Bias	Signed Scale 100	Unit: % RH, Range: -10% RH to 10% RH Value x 100 (e.g. 10% RH = 1000)	W	0% RH
6012	406013	Board Temperature	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 100°C or 32°F to 212°F Value x 100 (e.g. 5°C = 500 or 32°F = 3200)	RO	0°C or 32°F
6013	406014	Power Output Feedback Bias	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	0V
6014	406015	Power Output Feedback Min	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	0V



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6015	406016	Power Output Feedback Max	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	10V
6016	406017	Power Output Feedback	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6017	406018	Module 1 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6018	406019	Module 1 Water Probe Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6019	406020	Module 1 Water Probe High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6020	406021	Module 1 Water Probe Abs Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6021	406022	Module 1 Water Probe Abs High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6022	406023	Module 2 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6023	406024	Module 2 Water Probe Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6024	406025	Module 2 Water Probe High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6025	406026	Module 2 Water Probe Abs Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6026	406027	Module 2 Water Probe Abs High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6027	406028	Module 3 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6028	406029	Module 3 Water Probe Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6029	406030	Module 3 Water Probe High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6030	406031	Module 3 Water Probe Abs Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6031	406032	Module 3 Water Probe Abs High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6032	406033	Module 4 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6033	406034	Module 4 Water Probe Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6034	406035	Module 4 Water Probe High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6035	406036	Module 4 Water Probe Abs Low Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000Hz
6036	406037	Module 4 Water Probe Abs High Pos Reading	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	30000HZ
6037	406038	Room RH Network Reading	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	RO	0% RH
6038	406039	Room RH Setpoint	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	40% RH
6039	406040	Room RH Unoccupied Setpoint	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	30% RH
6040	406041	Room RH Vacant Setpoint	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	20% RH
6041	406042	Room Demand Proportional Gain	Unsigned Scale 10	No Unit, Range: 1 to 200 Value x 10 (e.g. 1 = 10)	W	20
6042	406043	Room Demand Integral Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 900 sec Value x 10 (e.g. 10sec = 100)	W	15 sec



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6043	406044	Room Demand Derivative Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 60 sec Value x 10 (e.g. 10sec = 100)	W	0 sec
6044	406045	Room Demand	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	RO	0% RH
6045	406046	Room Demand Proportional Band	Unsigned Scale 10	Unit: %, Range: 0% to 100% Value x 10 (e.g. 10% = 100)	W	5%
6046	406047	Supply High Limit Network Reading	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	0% RH
6047	406048	Supply High Limit Setpoint	Unsigned Scale 100	Unit: %, RH Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	80% RH
6048	406049	Supply High Limit Proportional Gain	Unsigned Scale 10	No Unit, Range: 1 to 200 Value x 10 (e.g. 10 = 100)	W	20
6049	406050	Supply High Limit Integral Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 900 sec Value x 10 (e.g. 10sec = 100)	W	15 sec
6050	406051	Supply High Limit Derivative Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 60 sec Value x 10 (e.g. 10sec = 100)	W	0 sec
6051	406052	Supply High Limit Demand	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	RO	0% RH
6052	406053	Humidity Control Network Demand	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	0% RH
6053	406054	Humidity Control Network High Limit	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	100% RH
6054	406055	Humidity Demand	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 1% RH = 100)	RO	0% RH
6055	406056	Network Timeout (0)	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 900 sec Value x 1 (e.g. 10sec = 10)	W	900 sec
6056	406057	Network Timeout (1)		Unit: Seconds (sec), Range: 1 to 900 sec		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6057	406058	Humidity Demand Low Dead Band (0)	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	1%
6058	406059	Humidity Demand Low Dead Band (1)		Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)		
6059	406060	System Power Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6060	406061	System Steam Capacity	Unsigned Scale 10	Unit: kg/hr or lb/hr, Range: 0 to 3000 kg/hr or 0 to 6614 lb/hr Value x 10 (e.g. 10 kg/hr = 100 or 10 lb/hr = 100)	RO	0 kg/hr or 0 lb/hr
6061	406062	Module 1 Manual Calibration Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6062	406063	Module 1 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h	RO	0h
6063	406064	Module 1 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h	RO	0h
6064	406065	Module 1 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h	RO	0h
6065	406066	Module 1 Chimney Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6066	406067	Module 1 Chimney Temp (1)		Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F		
6067	406068	Module 1 Water Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6068	406069	Module 1 Water Temp (1)		Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F		
6069	406070	Module 1 Water Frequency (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6070	406071	Module 1 Water Frequency (1)		Unit: Hz, Range: 0 to 30000 Hz		
6071	406072	Module 1 Ambient Temp (0)	Signed Scale 100	Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6072	406073	Module 1 Ambient Temp (1)		Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6073	406074	Module 1 Fan Feedback (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6074	406075	Module 1 Fan Feedback (1)		Unit: Hz, Range: 0 to 2000 Hz		
6075	406076	Module 1 Fan PWM (0)	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6076	406077	Module 1 Fan PWM (1)		Unit: %, Range: 0% to 100%		
6077	406078	Module 1 Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6078	406079	Module 1 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6079	406080	Module 1 Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6080	406081	Module 1 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6081	406082	Module 1 Service On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6082	406083	Module 1 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6083	406084	Module 1 Service On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6084	406085	Module 1 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6085	406086	Module 1 Service Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6086	406087	Module 1 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6087	406088	Module 1 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6088	406089	Module 1 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6089	406090	Module 1 On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6090	406091	Module 1 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6091	406092	Module 1 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6092	406093	Module 1 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6093	406094	Module 1 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6094	406095	Module 1 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6095	406096	Module 1 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6096	406097	Module 1 Ignition Count (1)		No unit, 0 to 214748364		
6097	406098	Module 1 Ignition Count (2)		No unit, 0 to 214748364		
6098	406099	Module 1 Ignition Count (3)		No unit, 0 to 214748364		
6099	406100	Module 2 Chimney Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6100	406101	Module 2 Chimney Temp (1)		Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F		
6101	406102	Module 2 Water Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6102	406103	Module 2 Water Temp (1)		Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F		
6103	406104	Module 2 Water Frequency (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6104	406105	Module 2 Water Frequency (1)		Unit: Hz, Range: 0 to 30000 Hz		
6105	406106	Module 2 Ambient Temp (0)	Signed Scale 100	Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6106	406107	Module 2 Ambient Temp (1)		Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F		
6107	406108	Module 2 Fan Feedback (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6108	406109	Module 2 Fan Feedback (1)		Unit: Hz, Range: 0 to 2000 Hz		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6109	406110	Module 2 Fan PWM (0)	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6110	406111	Module 2 Fan PWM (1)		Unit: %, Range: 0% to 100%		
6111	406112	Module 2 Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6112	406113	Module 2 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6113	406114	Module 2 Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6114	406115	Module 2 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6115	406116	Module 2 Service On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6116	406117	Module 2 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6117	406118	Module 2 Service On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6118	406119	Module 2 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6119	406120	Module 2 Service Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6120	406121	Module 2 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6121	406122	Module 2 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6122	406123	Module 2 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6123	406124	Module 2 On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6124	406125	Module 2 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6125	406126	Module 2 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6126	406127	Module 2 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6127	406128	Module 2 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6128	406129	Module 2 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6129	406130	Module 2 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6130	406131	Module 2 Ignition Count (1)		No unit, 0 to 214748364		
6131	406132	Module 2 Ignition Count (2)		No unit, 0 to 214748364		
6132	406133	Module 2 Ignition Count (3)		No unit, 0 to 214748364		
6133	406134	Module 2 Manual Calibration Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	W	0h
6134	406135	Module 2 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6135	406136	Module 2 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6136	406137	Module 2 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6137	406138	Module 3 Chimney Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6138	406139	Module 3 Chimney Temp (1)		Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)		
6139	406140	Module 3 Water Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6140	406141	Module 3 Water Temp (1)		Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F		
6141	406142	Module 3 Water Frequency (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6142	406143	Module 3 Water Frequency (1)		Unit: Hz, Range: 0 to 30000 Hz		
6143	406144	Module 3 Ambient Temp (0)	Signed Scale 100	Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6144	406145	Module 3 Ambient Temp (1)		Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F		
6145	406146	Module 3 Fan Feedback (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6146	406147	6Module 3 Fan Feedback (1)		Unit: Hz, Range: 0 to 2000 Hz		
6147	406148	Module 3 Fan PWM (0)	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6148	406149	Module 3 Fan PWM (1)		Unit: %, Range: 0% to 100%		
6149	406150	Module 3 Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6150	406151	Module 3 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6151	406152	Module 3 Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6152	406153	Module 3 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6153	406154	Module 3 Service On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6154	406155	Module 3 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6155	406156	Module 3 Service On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6156	406157	Module 3 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6157	406158	Module 3 Service Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6158	406159	Module 3 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6159	406160	Module 3 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6160	406161	Module 3 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6161	406162	Module 3 On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6162	406163	Module 3 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6163	406164	Module 3 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6164	406165	Module 3 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6165	406166	Module 3 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6166	406167	Module 3 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6167	406168	Module 3 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6168	406169	Module 3 Ignition Count (1)		No unit, 0 to 214748364		
6169	406170	Module 3 Ignition Count (2)		No unit, 0 to 214748364		
6170	406171	Module 3 Ignition Count (3)		No unit, 0 to 214748364		
6171	406172	Module 3 Manual Calibration Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	W	0h
6172	406173	Module 3 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6173	406174	Module 3 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6174	406175	Module 3 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6175	406176	Module 4 Chimney Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6176	406177	Module 4 Chimney Temp (1)		Unit: °C/°F, Range: 0°C to 260°C or 32°F to 500°F		
6177	406178	Module 4 Water Temp (0)	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6178	406179	Module 4 Water Temp (1)		Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F		
6179	406180	Module 4 Water Frequency (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6180	406181	Module 4 Water Frequency (1)		Unit: Hz, Range: 0 to 30000 Hz		
6181	406182	Module 4 Ambient Temp (0)	Signed Scale 100	Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6182	406183	Module 4 Ambient Temp (1)		Unit: °C/°F, Range: -40°C to 100°C or -40°F to 212°F		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6183	406184	Module 4 Fan Feedback (0)	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6184	406185	Module 4 Fan Feedback (1)		Unit: Hz, Range: 0 to 2000 Hz		
6185	406186	Module 4 Fan PWM (0)	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6186	406187	Module 4 Fan PWM (1)		Unit: %, Range: 0% to 100%		
6187	406188	Module 4 Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6188	406189	Module 4 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6189	406190	Module 4 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6190	406191	Module 4 Run Time (4)		Units: Hours (h), Range: 0 to 2147483647 h		
6191	406192	Module 4 Service On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6192	406193	Module 4 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6193	406194	Module 4 Service On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6194	406195	Module 4 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6195	406196	Module 4 Service Run Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6196	406197	Module 4 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6197	406198	Module 4 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6198	406199	Module 4 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6199	406200	Module 4 On Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	RO	0h
6200	406201	Module 4 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6201	406202	Module 4 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6202	406203	Module 4 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6203	406204	Module 4 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6204	406205	Module 4 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6205	406206	Module 4 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6206	406207	Module 4 Ignition Count (1)		No unit, 0 to 214748364		
6207	406208	Module 4 Ignition Count (2)		No unit, 0 to 214748364		
6208	406209	Module 4 Ignition Count (3)		No unit, 0 to 214748364		
6209	406210	Module 4 Manual Calibration Time (0)	Unsigned Scale 100	Units: Hours (h), Range: 0 to 2147483647 h Value x 100 (e.g. 1h = 100)	W	0h
6210	406211	Module 4 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6211	406212	Module 4 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6212	406213	Module 4 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6213	406214	Water Level Replace Interval (0)	Unsigned Scale 1	Unit: Days, Range: 0 day to 7 days Value x 1 (e.g. 1 day = 1)	W	7 days
6214	406215	Water Level Replace Interval (1)		Unit: Days, Range: 0 day to 7 days		
6215	406216	Boiler Blowdown Rate	Unsigned Scale 1	Unit: %, Range: 0% to 100% Value x 1 (e.g. 1% = 1)	W	0%
6216	406217	Boiler Drain Interval	Unsigned Scale 1	Units: Hours (h), Range: 0 to 24 h Value x 1 (e.g. 1 h = 1)	W	6h
6217	406218	Boiler Idle Temperature Setpoint (0)	Unsigned Scale 1	Unit: °C/°F, Range: 0°C to 60°C or 32°F or 140°F Value x 1 (e.g. 5°C = 500 or 32°F = 3200)	W	0°C or 32°F
6218	406219	Boiler Idle Temperature Setpoint (1)		Unit: °C/°F, Range: 0°C to 60°C or 32°F or 140°F		
6219	406220	Boiler Idle Time Drain	Unsigned Scale 1	Unit: Hours (h), Range: 0 to 72 h Value x 1 (e.g. 1 h = 1)	W	24h



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6220	406221	Boiler Service Interval	Unsigned Scale 1	Unit: Hours (h), Range: 1000 to 3000 h Value x 1 (e.g. 1500 h = 1500)	W	1000h
6221	406222	Boiler Idle Tank Rinse Interval	Unsigned Scale 1	Unit: Days, Range: 1 to 7 days Value x 1 (e.g. 1 day = 1)	W	3 day
6222	406223	Boiler Minimum Steam Output	Unsigned Scale 1	Unit: %, Range: 0 to 25% Value x 1 (e.g. 1% = 1)	W	0%
6223	406224	Boiler Drain Volume	Unsigned Scale 1	Unit: %, Range: 25 to 100% Value x 1 (e.g. 30% = 30)	W	100%
6224	406225	HRL Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 260°C or -40°F to 500°F Value x 100 (e.g. 5°C = 500 or 40°F = 4000)	RO	0°C or 32°F
6225	406226	HRL Humidity	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 1% RH = 100)	RO	0% RH
6226	406227	Modbus TCP IP Keep Alive Time Out (0)	Unsigned Scale 1	Unit: Minutes (min), Range: 1 to 1440 mins Value x 1 (e.g. 5 mins = 5)	W	5 min
6227	406228	Modbus TCP IP Keep Alive Time Out (1)		Unit: Minutes (min), Range: 1 to 1440 mins		
10000	410001	Water Leak Detection	Unsigned Scale 1	0 = Ok 1 = Leak	RO	Ok
10001	410002	Binary External Demand	Unsigned Scale 1	0 = 0% 1 = 100%	RO	0%
10002	410003	Interlock	Unsigned Scale 1	0 = Closed 1 = Open	RO	Closed
10003	410004	Supply High Limit	Unsigned Scale 1	0 = Closed 1 = Open	RO	Closed
10004	410005	Air Flow	Unsigned Scale 1	0 = Closed 1 = Open	RO	Closed
10005	410006	RS485 Interface	Unsigned Scale 1	0 = No 1 = Yes	RO	No

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
10006	410007	Ethernet Interface	Unsigned Scale 1	0 = No 1 = Yes	RO	No
11000	411001	Service Warning Relay	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11001	411002	Alarm Warning Relay	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11002	411003	Alarm LED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11003	411004	Power LED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11004	411005	Buzzer	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12000	412001	Network Control State	Unsigned Scale 1	0 = Normal 1 = Fault	W	Normal
12001	412002	Inhibit Resistive Probe	Unsigned Scale 1	0 = No 1 = Yes	W	No
12002	412003	Inhibit Resistive Probe	Unsigned Scale 1	0 = No 1 = Yes	W	No
12003	412004	Inhibit Resistive Probe	Unsigned Scale 1	0 = No 1 = Yes	W	No
12004	412005	Inhibit Resistive Probe	Unsigned Scale 1	0 = No 1 = Yes	W	No
12005	412006	Module 1 Burner Inlet Pressure	Unsigned Scale 1	0 = Normal 1 = Blocked	RO	Normal
12006	412007	Module 1 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12007	412008	Module 1 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12008	412009	Module 1 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam
12009	412010	Module 1 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12010	412011	Module 1 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12011	412012	Module 1 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12012	412013	Module 1 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12013	412014	Module 1 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12014	412015	Module 1 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12015	412016	Module 1 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12016	412017	Module 1 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok
12017	412018	Module 1 Service Due	Unsigned Scale 1	0 = Off 1 = Module1	RO	Off
12018	412019	Module 1 Drain Valve	Unsigned Scale 1	0 = On 1 = Off	RO	On
12019	412020	Module 1 Water Level Probe Alarm	Unsigned Scale 1	0= Ok 1= Defect	RO	Ok
12020	412021	Module 2 Burner Inlet Pressure	Unsigned Scale 1	0 = Normal 1 = Blocked	RO	Normal



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12021	412022	Module 2 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12022	412023	Module 2 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12023	412024	Module 2 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam
12024	412025	Module 2 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12025	412026	Module 2 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12026	412027	Module 2 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12027	412028	Module 2 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12028	412029	Module 2 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12029	412030	Module 2 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12030	412031	Module 2 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12031	412032	Module 2 Service Due	Unsigned Scale 1	0 = Off 1 = Module2	RO	Off
12032	412033	Module 2 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok
12033	412034	Module 2 Drain Valve	Unsigned Scale 1	0 = On 1 = Off	RO	On
12034	412035	Module 2 Water Level Probe Alarm	Unsigned Scale 1	0= Ok 1= Defect	RO	Ok



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12035	412036	Module 3 Burner Inlet Pressure	Unsigned Scale 1	0 = Normal 1 = Blocked	RO	Normal
12036	412037	Module 3 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12037	412038	Module 3 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12038	412039	Module 3 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam
12039	412040	Module 3 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12040	412041	Module 3 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12041	412042	Module 3 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12042	412043	Module 3 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12043	412044	Module 3 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12044	412045	Module 3 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12045	412046	Module 3 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12046	412047	Module 3 Service Due	Unsigned Scale 1	0 = Off 1 = Module3	RO	Off
12047	412048	Module 3 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok
12048	412049	Module 3 Drain Valve	Unsigned Scale 1	0 = On 1 = Off	RO	On



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12049	412050	Module 3 Water Level Probe Alarm	Unsigned Scale 1	0= Ok 1= Defect	RO	Ok
12050	412051	Module 4 Burner Inlet Pressure	Unsigned Scale 1	0 = Normal 1 = Blocked	RO	Normal
12051	412052	Module 4 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12052	412053	Module 4 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12053	412054	Module 4 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam
12054	412055	Module 4 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12055	412056	Module 4 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12056	412057	Module 4 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12057	412058	Module 4 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12058	412059	Module 4 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12059	412060	Module 4 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12060	412061	Module 4 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12061	412062	Module 4 Service Due	Unsigned Scale 1	0 = Off 1 = Module4	RO	Off
12062	412063	Module 4 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts		Writable	Default Value
12063	412064	Module 4 Drain Valve	Unsigned Scale 1	0 = On 1 = Off		RO	On
12064	412065	Module 4 Water Level Probe Alarm	Unsigned Scale 1	0= Ok 1= Defect		RO	Ok
12065	412066	Boiler Service Operation	Unsigned Scale 1	0 = NotAllowed 1 = Allowed		W	Allowed
12066	412067	HRL Lock Setpoint	Unsigned Scale 1	0 = Unlock 1 = Lock		W	Unlock
12067	412068	Notify Alarm	Unsigned Scale 1	0 = Off 1 = On		W	Off
12068	412069	Notify Warning	Unsigned Scale 1	0 = Off 1 = On		W	Off
12069	412070	Notify App Msg	Unsigned Scale 1	0 = Off 1 = On		W	Off
15000	415001	System Power State	Unsigned Scale 1	0 = Off 1 = On		W	Off
15001	415002	Modbus Server Units	Unsigned Scale 1	0 = Metric	1 = Imperial	W	Metric
15002	415003	Supply RH Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc	2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15003	415004	Room RH Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc	2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15004	415005	Control Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc	2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15005	415006	Control Profile	Unsigned Scale 1	0 = ExternAnalog 1 = ExternNetwork 2 = InternAnalog	3 = InternNetwork 4 = HRL 5 = Custom	W	ExternAnalog



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts		Writable	Default Value
15006	415007	Modulating High Limit Profile	Unsigned Scale 1	0 = Disabled 1 = ExternAnalog 2 = ExternNetwork	3 = InternAnalog 4 = InternNetwork 5 = Custom	W	Disabled
15007	415008	Occupancy State	Unsigned Scale 1	0 = Occupied 1 = Unoccupied	2 = Vacant 3 = Off	RO	Occupied
15008	415009	Room RH Source	Unsigned Scale 1	0 = None 1 = RoomRH	2 = Network 3 = HRL	W	None
15009	415010	Room RH Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal	2 = ControllInput	W	None
15010	415011	Supply High Limit Reading Source	Unsigned Scale 1	0 = None 1 = Supply HLRH	2 = Network	W	None
15011	415012	Supply High Limit Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal	2 = ControllInput	W	None
15012	415013	Humidity Control Demand Source	Unsigned Scale 1	0 = None 1 = ControllInput	2 = RoomDemand 3 = Network	W	ControllInput
15013	415014	Humidity Control High Limit Source	Unsigned Scale 1	0 = None 1 = ControllInput	2 = SupplyHLDemand 3 = Network	W	None
15014	415015	Humidity Control Cutout State	Unsigned Scale 1	0 = Off 1 = Normal 2 = LowLimit	3 = HighLimit 4 = AirFlow 5 = Interlock	RO	Off
15015	415016	Module 1 State	Unsigned Scale 1	0 = Off 1 = Idle 2 = LineRinse 3 = TankRinse 4 = Filling	5 = Draining 6 = Heating 7 = Boiling 8 = Alarm 9 = PurgeAir	RO	Off
15016	415017	Module 1 Request	Unsigned Scale 1	0 = None 1 = Reset Alarms 2 = Drain	3 = Reset Counters 4 = Filling 5 = WaterCalib 6 = PurgeAir	W	None



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts		Writable	Default Value
15017	415018	Module 1 Alarm	Unsigned Scale 1	0 = Normal 1 = FailedPump 2 = FillTimeout 3 = BlockedPiping 4 = HeatTimeout 5 = OverHeat 6 = WaterLeak 7 = Service 8 = Foaming	9 = BurnerLocked 10 = FanDefect 11= FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBlck 16 = TankBlocked 17 = RefillDelay	RO	Normal
15018	415019	Water Probe 1 Auto Calib	Unsigned Scale 1	0 = Off	1 = On	W	On
15019	415020	Module 1 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Calib	2= Replace	RO	Ok
15020	415021	Water Level 1 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive	2 = Resistive 3 = Both	RO	None
15021	415022	Module 1 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect	2 = NoCalib	RO	Ok
15022	415023	Module 2 State	Unsigned Scale 1	0 = Off 1 = Idle 2 = LineRinse 3 = TankRinse 4 = Filling	5 = Draining 6 = Heating 7 = Boiling 8 = Alarm 9 = PurgeAir	RO	Off
15023	415024	Module 2 Request	Unsigned Scale 1	0 = None 1 = Reset Alarms 2 = Drain	3 = Reset Counters 4 = Filling 5 = WaterCalib 6 = PurgeAir	W	None



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts		Writable	Default Value
15024	415025	Module 2 Alarm	Unsigned Scale 1	0 = Normal 1 = FailedPump 2 = FillTimeout 3 = BlockedPiping 4 = HeatTimeout 5 = OverHeat 6 = WaterLeak 7 = Service 8 = Foaming	9 = BurnerLocked 10 = FanDefect 11= FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBlck 16 = TankBlocked 17 = RefillDelay	RO	Normal
15025	415026	Water Probe 2 Auto Calib	Unsigned Scale 1	0 = Off	1 = On	W	On
15026	415027	Module 2 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Calib	2= Replace	RO	Ok
15027	415028	Water Level 2 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive	2 = Resistive 3 = Both	RO	None
15028	415029	Module 2 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect	2 = NoCalib	RO	Ok
15029	415030	Module 3 State	Unsigned Scale 1	0 = Off 1 = Idle 2 = LineRinse 3 = TankRinse 4 = Filling	5 = Draining 6 = Heating 7 = Boiling 8 = Alarm 9 = PurgeAir	RO	Off
15030	415031	Module 3 Request	Unsigned Scale 1	0 = None 1 = Reset Alarms 2 = Drain	3 = Reset Counters 4 = Filling 5 = WaterCalib 6 = PurgeAir	W	None

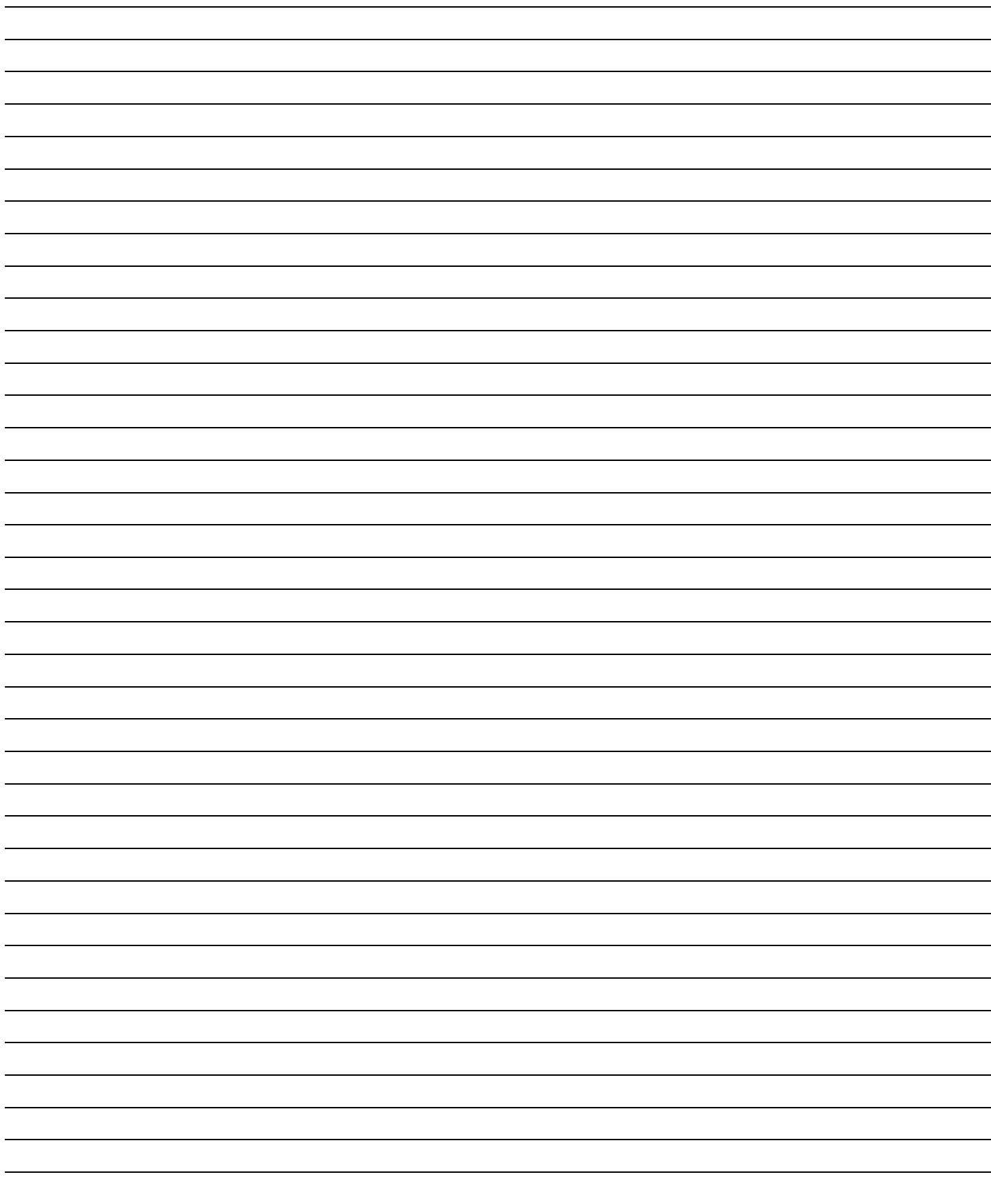


Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts		Writable	Default Value
15031	415032	Module 3 Alarm	Unsigned Scale 1	0 = Normal 1 = FailedPump 2 = FillTimeout 3 = BlockedPiping 4 = HeatTimeout 5 = OverHeat 6 = WaterLeak 7 = Service 8 = Foaming	9 = BurnerLocked 10 = FanDefect 11= FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBlck 16 = TankBlocked 17 = RefillDelay	RO	Normal
15032	415033	Water Probe 3 Auto Calib	Unsigned Scale 1	0 = Off	1 = On	W	On
15033	415034	Module 3 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Calib	2= Replace	RO	Ok
15034	415035	Water Level 3 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive	2 = Resistive 3 = Both	RO	None
15035	415036	Module 3 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect	2 = NoCalib	RO	Ok
15036	415037	Module 4 State	Unsigned Scale 1	0 = Off 1 = Idle 2 = LineRinse 3 = TankRinse 4 = Filling	5 = Draining 6 = Heating 7 = Boiling 8 = Alarm 9 = PurgeAir	RO	Off
15037	415038	Module 4 Request	Unsigned Scale 1	0 = None 1 = Reset Alarms 2 = Drain	3 = Reset Counters 4 = Filling 5 = WaterCalib 6 = PurgeAir	W	None



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts		Writable	Default Value
15038	415039	Module 4 Alarm	Unsigned Scale 1	0 = Normal 1 = FailedPump 2 = FillTimeout 3 = BlockedPiping 4 = HeatTimeout 5 = OverHeat 6 = WaterLeak 7 = Service 8 = Foaming	9 = BurnerLocked 10 = FanDefect 11= FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBck 16 = TankBlocked 17 = RefillDelay	RO	Normal
15039	415040	Water Probe 4 Auto Calib	Unsigned Scale 1	0 = Off	1 = On	W	On
15040	415041	Module 4 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Calib	2= Replace	RO	Ok
15041	415042	Water Level 4 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive	2 = Resistive 3 = Both	RO	None
15042	415043	Module 4 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect	2 = NoCalib	RO	Ok
15043	415044	Boiler Fill Mode	Unsigned Scale 1	0 = OneShot	1 = Pulsed	W	Pulsed
15044	415045	Boiler Idle Tank Rinse Off	Unsigned Scale 1	0 = Off	1 = On	W	Off
15045	415046	Boiler Idle Tank Rinse On	Unsigned Scale 1	0 = Off	1 = On	W	Off
15046	415047	System Mode	Unsigned Scale 1	0 = Parallel 1 = Sequential	2 = Hybrid	W	Sequential
15047	415048	Boiler Startup Tank Rinse	Unsigned Scale 1	0 = Off	1 = On	W	Off

[illegible]





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