



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 <i>Rate Detection Value/100 (e.g. 38400 baud = 384)</i>	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	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 1V = 1000)	RO	0V
2001	402002	Room RH Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 1V = 1000)	RO	0V
2002	402003	Control Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 1V = 1000)	RO	0V
2003	402004	Board Temperature Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	RO	0V
2004	402005	Main Power Supply	Unsigned Scale 10	Unit: Volt (V), Range: 0V to 40V Value x 10 (e.g. 1V = 10)	RO	0V
4000	404001	Power Output Feedback Signal	Unsigned Scale 1000	Unit: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	RO	0V
6000	406001	Water Level Replace Interval	Unsigned Scale 1	Unit: Days, Range: 0 day to 7 days Value x 1 (e.g. 1 day = 1)	W	7 days
6001	406002	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
6002	406003	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
6003	406004	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
6004	406005	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

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6005	406006	Room RH	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	RO	0% RH
6006	406007	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
6007	406008	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
6008	406009	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
6009	406010	Control Input	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6010	406011	Control Min	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	0%
6011	406012	Control Max	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	0%
6012	406013	Control Bias	Signed Scale 100	Unit: % RH, Range: -10% RH to 10% RH Value x 100 (e.g. 10% RH = 1000)	W	0% RH
6013	406014	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
6014	406015	Power Output Feedback Bias	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	0V
6015	406016	Power Output Feedback Min	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	0V
6016	406017	Power Output Feedback Max	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	10V
6017	406018	Power Output Feedback	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6018	406019	Module 1 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6019	406020	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
6020	406021	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
6021	406022	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
6022	406023	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
6023	406024	Module 2 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6024	406025	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
6025	406026	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
6026	406027	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
6027	406028	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
6028	406029	Module 3 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6029	406030	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
6030	406031	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
6031	406032	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

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6032	406033	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
6033	406034	Module 4 Water Level	Unsigned Scale 10	Unit: %, Range: 0% to 120% Value x 100 (e.g. 10% = 1000)	RO	78%
6034	406035	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
6035	406036	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
6036	406037	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
6037	406038	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
6038	406039	Room RH Network Reading	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	W	0% RH
6039	406040	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
6040	406041	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
6041	406042	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
6042	406043	Room Demand Proportional Gain	Unsigned Scale 10	No Unit, Range: 1 to 200 Value x 10 (e.g. 1 = 10)	W	20
6043	406044	Room Demand Integral Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 900 sec Value x 10 (e.g. 10sec = 100)	W	0 sec
6044	406045	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
6045	406046	Room Demand	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 10% RH = 1000)	RO	0% RH

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
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	10
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	0 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	System Power Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6056	406057	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
6057	406058	Module 1 Chimney Temp	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
6058	406059	Module 1 Water Temp	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

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6059	406060	Module 1 Water Frequency	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6060	406061	Module 1 Ambient Temp	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
6061	406062	Module 1 Fan Feedback	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6062	406063	Module 1 Fan PWM	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6063	406064	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
6064	406065	Module 1 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6065	406066	Module 1 Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6066	406067	Module 1 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6067	406068	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
6068	406069	Module 1 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6069	406070	Module 1 Service On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6070	406071	Module 1 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6071	406072	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
6072	406073	Module 1 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6073	406074	Module 1 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6074	406075	Module 1 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6075	406076	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
6076	406077	Module 1 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6077	406078	Module 1 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6078	406079	Module 1 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6079	406080	Module 1 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6080	406081	Module 1 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6081	406082	Module 2 Chimney Temp	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
6082	406083	Module 2 Water Temp	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
6083	406084	Module 2 Water Frequency	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6084	406085	Module 2 Ambient Temp	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
6085	406086	Module 2 Fan Feedback	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6086	406087	Module 2 Fan PWM	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6087	406088	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
6088	406089	Module 2 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6089	406090	Module 2 Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6090	406091	Module 2 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6091	406092	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
6092	406093	Module 2 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6093	406094	Module 2 Service 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
6094	406095	Module 2 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6095	406096	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
6096	406097	Module 2 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6097	406098	Module 2 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6098	406099	Module 2 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6099	406100	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
6100	406101	Module 2 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6101	406102	Module 2 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6102	406103	Module 2 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6103	406104	Module 2 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6104	406105	Module 2 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6105	406106	Module 3 Chimney Temp	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
6106	406107	Module 3 Water Temp	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
6107	406108	Module 3 Water Frequency	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6108	406109	Module 3 Ambient Temp	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
6109	406110	Module 3 Fan Feedback	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6110	406111	Module 3 Fan PWM	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6111	406112	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
6112	406113	Module 3 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6113	406114	Module 3 Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6114	406115	Module 3 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6115	406116	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
6116	406117	Module 3 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6117	406118	Module 3 Service On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6118	406119	Module 3 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6119	406120	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
6120	406121	Module 3 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6121	406122	Module 3 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6122	406123	Module 3 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6123	406124	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
6124	406125	Module 3 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6125	406126	Module 3 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6126	406127	Module 3 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6127	406128	Module 3 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6128	406129	Module 3 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6129	406130	Module 4 Chimney Temp	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
6130	406131	Module 4 Water Temp	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
6131	406132	Module 4 Water Frequency	Unsigned Scale 1	Unit: Hz, Range: 0 to 30000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6132	406133	Module 4 Ambient Temp	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
6133	406134	Module 4 Fan Feedback	Unsigned Scale 1	Unit: Hz, Range: 0 to 2000 Hz Value x 1 (e.g. 1 Hz = 1)	RO	0Hz
6134	406135	Module 4 Fan PWM	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6135	406136	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
6136	406137	Module 4 Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6137	406138	Module 4 Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6138	406139	Module 4 Run Time (4)		Units: Hours (h), Range: 0 to 2147483647 h		
6139	406140	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
6140	406141	Module 4 Service On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6141	406142	Module 4 Service On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6142	406143	Module 4 Service On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6143	406144	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
6144	406145	Module 4 Service Run Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6145	406146	Module 4 Service Run Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6146	406147	Module 4 Service Run Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6147	406148	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
6148	406149	Module 4 On Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6149	406150	Module 4 On Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6150	406151	Module 4 On Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6151	406152	Module 4 Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6152	406153	Module 4 Max Steam Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6153	406154	Boiler Blowdown Rate	Unsigned Scale 1	Unit: %, Range: 0% to 100% Value x 1 (e.g. 1% = 1)	W	0%
6154	406155	Boiler Drain Interval	Unsigned Scale 1	Units: Hours (h), Range: 0 to 24 h Value x 1 (e.g. 1 h = 1)	W	6h
6155	406156	Boiler Idle Temperature Setpoint	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	60°C or 140°F
6156	406157	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
6157	406158	Boiler Service Interval	Unsigned Scale 1	Unit: Hours (h), Range: 500 to 3000 h Value x 1 (e.g. 1500 h = 1500)	W	1000h
6158	406159	Network Timeout	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 900 sec Value x 1 (e.g. 10sec = 10)	W	900 sec
6159	406160	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
6160	406161	Boiler Minimum Steam Output	Unsigned Scale 1	Unit: %, Range: 0 to 25% Value x 1 (e.g. 1% = 1)	W	0%

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6161	406162	Boiler Drain Volume	Unsigned Scale 1	Unit: %, Range: 25 to 100% Value x 1 (e.g. 30% = 30)	W	100%
6162	406163	Humidity Demand Low Dead Band (0)	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	1%
6163	406164	Humidity Demand Low Dead Band (1)		Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)		
6164	406165	Module 1 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6165	406166	Module 1 Ignition Count (1)		No unit, 0 to 214748364		
6166	406167	Module 1 Ignition Count (2)		No unit, 0 to 214748364		
6167	406168	Module 1 Ignition Count (3)		No unit, 0 to 214748364		
6168	406169	Module 2 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6169	406170	Module 2 Ignition Count (1)		No unit, 0 to 214748364		
6170	406171	Module 2 Ignition Count (2)		No unit, 0 to 214748364		
6171	406172	Module 2 Ignition Count (3)		No unit, 0 to 214748364		
6172	406173	Module 3 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6173	406174	Module 3 Ignition Count (1)		No unit, 0 to 214748364		
6174	406175	Module 3 Ignition Count (2)		No unit, 0 to 214748364		
6175	406176	Module 3 Ignition Count (3)		No unit, 0 to 214748364		
6176	406177	Module 4 Ignition Count (0)	Unsigned Scale 1	No unit, 0 to 214748364 Value x 1 (e.g. 1 = 1)	RO	0
6177	406178	Module 4 Ignition Count (1)		No unit, 0 to 214748364		
6178	406179	Module 4 Ignition Count (2)		No unit, 0 to 214748364		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6179	406180	Module 4 Ignition Count (3)		No unit, 0 to 214748364		
6180	406181	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
6181	406182	HRL Humidity	Unsigned Scale 100	Unit: % RH, Range: 0% RH to 100% RH Value x 100 (e.g. 1% RH = 100)	RO	0% RH
6182	406183	Room Demand Proportional Band	Unsigned Scale 10	Unit: %, Range: 0% to 100% Value x 10 (e.g. 10% = 100)	W	5%
6183	406184	Supply High Limit Proportional Band	Unsigned Scale 10	Unit: %, Range: 1% to 100% Value x 10 (e.g. 10% = 100)	W	10%
6184	406185	Modbus TCP IP Keep Alive Time Out	Unsigned Scale 1	Unit: Minutes (min), Range: 1 to 1440 mins Value x 1 (e.g. 5 mins = 5)	W	5 min
6185	406186	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
6186	406187	Module 1 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h	RO	0h
6187	406188	Module 1 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h	RO	0h
6188	406189	Module 1 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h	RO	0h
6189	406190	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
6190	406191	Module 2 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6191	406192	Module 2 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6192	406193	Module 2 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6193	406194	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
6194	406195	Module 3 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6195	406196	Module 3 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
6196	406197	Module 3 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6197	406198	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
6198	406199	Module 4 Manual Calibration Time (1)		Units: Hours (h), Range: 0 to 2147483647 h		
6199	406200	Module 4 Manual Calibration Time (2)		Units: Hours (h), Range: 0 to 2147483647 h		
6200	406201	Module 4 Manual Calibration Time (3)		Units: Hours (h), Range: 0 to 2147483647 h		
6201	406202	HRL Temperature Bias	Signed Scale 10	Unit: °C/°F, Range: -10°C to 10°C or -18°F to 18°F Value x 10 (e.g. 5°C = 50 or 14°F = 140)	W	0°C or 32°F
6202	406203	HRL Humidity Bias	Signed Scale 10	Unit: %RH, Range: -10%RH to 10%RH Value x 10 (e.g. 5%RH = 50)	W	0%RH
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
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

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
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	Module 1 Burner Inlet Pressure	Unsigned Scale 1	0 = Normal 1 = Blocked	RO	Normal
12001	412002	Module 1 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12002	412003	Module 1 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12003	412004	Module 1 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam
12004	412005	Module 1 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12005	412006	Module 1 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12006	412007	Module 1 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12007	412008	Module 1 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12008	412009	Module 1 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12009	412010	Module 1 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12010	412011	Module 1 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12011	412012	Module 2 Burner Inlet Pressure	Unsigned Scale 1	0 = Normal 1 = Blocked	RO	Normal
12012	412013	Module 2 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12013	412014	Module 2 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12014	412015	Module 2 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam
12015	412016	Module 2 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12016	412017	Module 2 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12017	412018	Module 2 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12018	412019	Module 2 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12019	412020	Module 2 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12020	412021	Boiler Line Rinse	Unsigned Scale 1	0 = Off 1 = On	W	On
12021	412022	Module 2 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12022	412023	Module 2 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12023	412024	Module 3 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
12024	412025	Module 3 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12025	412026	Module 3 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12026	412027	Module 3 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam
12027	412028	Module 3 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12028	412029	Module 3 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12029	412030	Module 3 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12030	412031	Module 3 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12031	412032	Module 3 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12032	412033	Module 3 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12033	412034	Module 3 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12034	412035	Module 4 Burner Inlet Pressure	Unsigned Scale 1	0 = Normal 1 = Blocked	RO	Normal
12035	412036	Module 4 Water Level Low	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12036	412037	Module 4 Water Level High	Unsigned Scale 1	0 = Inactive 1 = Active	RO	Inactive
12037	412038	Module 4 Foam Sensor	Unsigned Scale 1	0 = NoFoam 1 = Foam	RO	NoFoam

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12038	412039	Module 4 Gas Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12039	412040	Module 4 Tank Water Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12040	412041	Module 4 Water Level Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12041	412042	Module 4 Drain Cooler Valve	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12042	412043	Module 4 Drain Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12043	412044	Module 4 Ignition Control	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12044	412045	Module 4 AlarmLED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12045	412046	Boiler Service Operation	Unsigned Scale 1	0 = NotAllowed 1 = Allowed	W	Allowed
12046	412047	Module 1 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok
12047	412048	Module 1 Service Due	Unsigned Scale 1	0 = No 1 = Yes	RO	No
12048	412049	Module 2 Service Due	Unsigned Scale 1	0 = No 1 = Yes	RO	No
12049	412050	Module 3 Service Due	Unsigned Scale 1	0 = No 1 = Yes	RO	No
12050	412051	Module 4 Service Due	Unsigned Scale 1	0 = No 1 = Yes	RO	No

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12051	412052	Network Control State	Unsigned Scale 1	0 = Normal 1 = Fault	W	Normal
12052	412053	Module 2 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok
12053	412054	Module 3 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok
12054	412055	Module 4 Foam State	Unsigned Scale 1	0 = Ok 1 = Detected	RO	Ok
12055	412056	HRL Lock Setpoint	Unsigned Scale 1	0 = Unlock 1 = Lock	W	Unlock
12056	412057	Module 1 Drain Valve	Unsigned Scale 1	0 = On 1 = Off	RO	On
12057	412058	Module 2 Drain Valve	Unsigned Scale 1	0 = On 1 = Off	RO	On
12058	412059	Module 3 Drain Valve	Unsigned Scale 1	0 = On 1 = Off	RO	On
12059	412060	Module 4 Drain Valve	Unsigned Scale 1	0 = On 1 = Off	RO	On
12060	412061	Inhibit Resistive Probe 1	Unsigned Scale 1	0 = No 1 = Yes	W	No
12061	412062	Inhibit Resistive Probe 2	Unsigned Scale 1	0 = No 1 = Yes	W	No
12062	412063	Inhibit Resistive Probe 3	Unsigned Scale 1	0 = No 1 = Yes	W	No
12063	412064	Inhibit Resistive Probe 4	Unsigned Scale 1	0 = No 1 = Yes	W	No

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
12064	412065	Notify Alarm	Unsigned Scale 1	0 = Off 1 = On	W	Off
12065	412066	Notify Warning	Unsigned Scale 1	0 = Off 1 = On	W	Off
12066	412067	Notify App Msg	Unsigned Scale 1	0 = Off 1 = On	W	Off
12067	412068	Module 1 Manual Water Calibration State	Unsigned Scale 1	0= Ok 1= Required	RO	Ok
12068	412069	Module 2 Manual Water Calibration State	Unsigned Scale 1	0= Ok 1= Required	RO	Ok
12069	412070	Module 3 Manual Water Calibration State	Unsigned Scale 1	0= Ok 1= Required	RO	Ok
12070	412071	Module 4 Manual Water Calibration State	Unsigned Scale 1	0= Ok 1= Required	RO	Ok
12071	412072	Module 1 AntiFreeze Warning	Unsigned Scale 1	0= Inactive 1= Drain	RO	Inactive
12072	412073	Module 2 AntiFreeze Warning	Unsigned Scale 1	0= Inactive 1= Drain	RO	Inactive
12073	412074	Module 3 AntiFreeze Warning	Unsigned Scale 1	0= Inactive 1= Drain	RO	Inactive
12074	412075	Module 4 AntiFreeze Warning	Unsigned Scale 1	0= Inactive 1= Drain	RO	Inactive
15000	415001	Modbus Server Units	Unsigned Scale 1	0 = Metric 1 = Imperial	W	Metric
15001	415002	Supply RH Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc 2 = 4-20mA 3 = 0-20mA	W	0-10Vdc

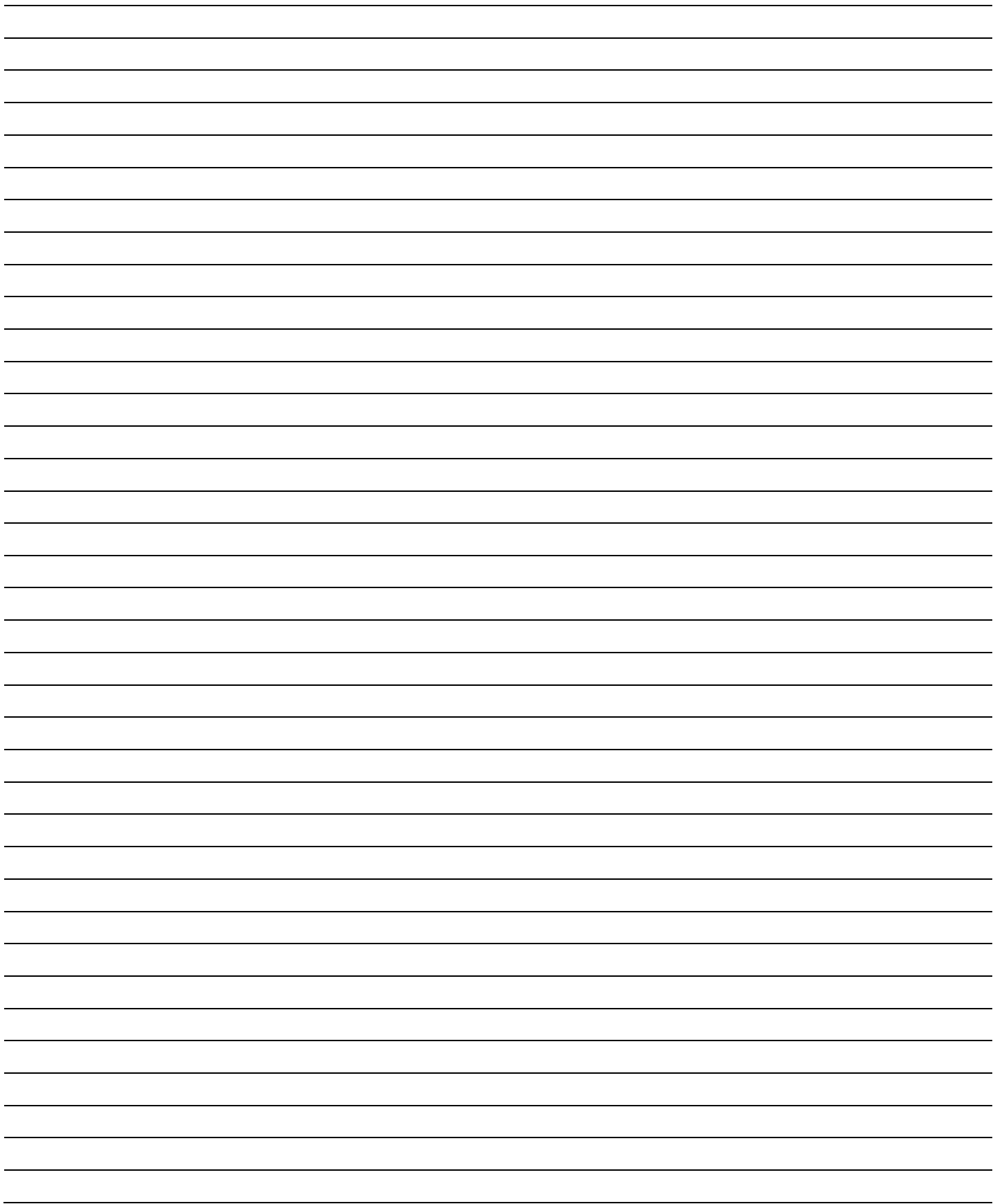
Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
15002	415003	Room RH Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc 2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15003	415004	Control Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc 2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15004	415005	Control Profile	Unsigned Scale 1	0 = ExternAnalog 1 = ExternNetwork 2 = InternAnalog 3 = InternNetwork 4 = HRL 5 = Custom	W	ExternAnalog
15005	415006	Modulating High Limit Profile	Unsigned Scale 1	0 = Disabled 1 = ExternAnalog 2 = ExternNetwork 3 = InternAnalog 4 = InternNetwork 5 = Custom	W	Disabled
15006	415007	Occupancy State	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	RO	Occupied
15007	415008	Room RH Source	Unsigned Scale 1	0 = None 1 = RoomRH 2 = Network 3 = HRL	W	None
15008	415009	Room RH Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal 2 = ControllInput	W	None
15009	415010	Supply High Limit Reading Source	Unsigned Scale 1	0 = None 1 = Supply HLRH 2 = Network	W	None
15010	415011	Supply High Limit Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal 2 = ControllInput	W	None
15011	415012	Humidity Control Demand Source	Unsigned Scale 1	0 = None 1 = ControllInput 2 = RoomDemand 3 = Network	W	ControllInput
15012	415013	Humidity Control High Limit Source	Unsigned Scale 1	0 = None 1 = ControllInput 2 = SupplyHLDemand 3 = Network	W	None
15013	415014	Humidity Control Cutout State	Unsigned Scale 1	0 = Off 1 = Normal 2 = LowLimit 3 = HighLimit 4 = AirFlow 5 = Interlock	RO	Off
15014	415015	System Power State	Unsigned Scale 1	0 = Off 1 = On	W	Off

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
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
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 is Reserved 9 = BurnerLocked 10 = FanDefect 11 = FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBlck 16 = TankBlocked 17 = RefillDelay	RO	Normal
15018	415019	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
15019	415020	Module 2 Request	Unsigned Scale 1	0 = None 1 = Reset Alarms 2 = Drain 3 = Reset Counters 4 = Filling 5 = WaterCalib 6 = PurgeAir	W	None
15020	415021	Module 2 Alarm	Unsigned Scale 1	0 = Normal 1 = FailedPump 2 = FillTimeout 3 = BlockedPiping 4 = HeatTimeout 5 = OverHeat 6 = WaterLeak 7 = Service 8 is Reserved 9 = BurnerLocked 10 = FanDefect 11 = FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBlck 16 = TankBlocked 17 = RefillDelay	RO	Normal

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
15021	415022	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
15022	415023	Module 3 Request	Unsigned Scale 1	0 = None 1 = Reset Alarms 2 = Drain 3 = Reset Counters 4 = Filling 5 = WaterCalib 6 = PurgeAir	W	None
15023	415024	Module 3 Alarm	Unsigned Scale 1	0 = Normal 1 = FailedPump 2 = FillTimeout 3 = BlockedPiping 4 = HeatTimeout 5 = OverHeat 6 = WaterLeak 7 = Service 8 is Reserved 9 = BurnerLocked 10 = FanDefect 11 = FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBlck 16 = TankBlocked 17 = RefillDelay	RO	Normal
15024	415025	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
15025	415026	Module 4 Request	Unsigned Scale 1	0 = None 1 = Reset Alarms 2 = Drain 3 = Reset Counters 4 = Filling 5 = WaterCalib 6 = PurgeAir	W	None
15026	415027	Module 4 Alarm	Unsigned Scale 1	0 = Normal 1 = FailedPump 2 = FillTimeout 3 = BlockedPiping 4 = HeatTimeout 5 = OverHeat 6 = WaterLeak 7 = Service 8 is Reserved 9 = BurnerLocked 10 = FanDefect 11 = FailedComm 12 = ChimTempHi 13 = RefillTimeout 14 = FanBlocked 15 = SystBlck 16 = TankBlocked 17 = RefillDelay	RO	Normal

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
15027	415028	Boiler Fill Mode	Unsigned Scale 1	0 = OneShot 1 = Pulsed	W	Pulsed
15028	415029	Boiler Idle Tank Rinse Off	Unsigned Scale 1	0 = Off 1 = On	W	Off
15029	415030	Boiler Idle Tank Rinse On	Unsigned Scale 1	0 = Off 1 = On	W	Off
15030	415031	Water Probe 1 Auto Calib	Unsigned Scale 1	0 = Off 1 = On	W	On
15031	415032	Water Probe 2 Auto Calib	Unsigned Scale 1	0 = Off 1 = On	W	On
15032	415033	Water Probe 3 Auto Calib	Unsigned Scale 1	0 = Off 1 = On	W	On
15033	415034	Water Probe 4 Auto Calib	Unsigned Scale 1	0 = Off 1 = On	W	On
15034	415035	System Mode	Unsigned Scale 1	0 = Parallel 1 = Sequential 2 = Hybrid	W	Sequential
15035	415036	Boiler Startup Tank Rinse	Unsigned Scale 1	0 = Off 1 = On	W	Off
15036	415037	Module 1 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Replace	RO	Ok
15037	415038	Module 2 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Replace	RO	Ok
15038	415039	Module 3 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Replace	RO	Ok
15039	415040	Module 4 Water Level Probe Warning	Unsigned Scale 1	0= Ok 1= Replace	RO	Ok

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writable	Default Value
15040	415041	Water Level 1 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive 2 = Resistive 3 = Both	RO	None
15041	415042	Water Level 2 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive 2 = Resistive 3 = Both	RO	None
15042	415043	Water Level 3 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive 2 = Resistive 3 = Both	RO	None
15043	415044	Water Level 4 Probe Failure	Unsigned Scale 1	0 = None 1 = Capacitive 2 = Resistive 3 = Both	RO	None
15044	415045	Module 1 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect 2 = NoCalib	RO	Ok
15045	415046	Module 2 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect 2 = NoCalib	RO	Ok
15046	415047	Module 3 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect 2 = NoCalib	RO	Ok
15047	415048	Module 4 Water Level Probe Alarm	Unsigned Scale 1	0 = Ok 1 = Defect 2 = NoCalib	RO	Ok





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