



**neptronic®**

# **SKH4 High-Pressure Atomizer**

## Modbus Communication Module User Guide



## Introduction

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The SKH4 Modbus Communication Module User Guide provides information for using Neptronic<sup>®</sup> 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 SKH4 devices.

The SKH4 Modbus Guide assumes that you are familiar with Modbus terminology.

The following are the requirements for Modbus:

- *Data Model.* The SKH4 High-Pressure Atomizer 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 SKH4 High-Pressure Atomizer Modbus server supports a limited function codes subset comprising:
  - Read Holding Registers (0x03)
  - Write Single Register (0x06)
  - Write Multiple Registers (0x10)
- *Exception Responses.* The SKH4 High-Pressure Atomizer Modbus server supports the following exception codes:
  - Illegal data address
  - Illegal data value
  - Slave device busy
- *Serial Line.* The SKH4 High-Pressure Atomizer 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 SKH4 High-Pressure Atomizer 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	Writ able	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</i> (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	Writ able	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	Control Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 2V = 2000)	RO	0V
2001	402002	Room RH Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 2V = 2000)	RO	0V
2002	402003	Supply RH Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 2V = 2000)	RO	0V
2003	402004	Water Temperature Signal	Unsigned Scale 1	Unit: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 2V = 2000)	W	0V
2004	402005	Pressure Sensor Signal	Unsigned Scale 1000	Unit: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 2V = 2000)	W	0V
2005	402006	Board Temperature Signal	Unsigned Scale 1000	Unit: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 2V = 2000)	RO	0V
2006	402007	Main Power Supply	Unsigned Scale 10	Unit: Volt (V), Range: 0V to 40V Value x 10 (e.g. 2V = 20)	RO	0V
2007	402008	Room Temperature Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 2V = 2000)	RO	0V
2008	402009	Supply Temperature Signal	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 2V = 2000)	RO	0V
2009	402010	Control Signal (0)	Unsigned Scale 1000	Units: Volt (V), Range: 0V to 15V Value x 1000 (e.g. 2V = 2000)	RO	0V
2010	402011	Control Signal (1)		Units: Volt (V), Range: 0V to 15V		
4000	404001	Power Output Feedback Signal	Unsigned Scale 1000	Unit: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 2V = 2000)	RO	0V

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
4001	404002	Drive Signal	Unsigned Scale 1000	Unit: Volt (V), Range: 0V to 10V Value x 1000 (e.g. 2V = 2000)	RO	0V
6000	406001	Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6001	406002	Power Output	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	RO	0%
6002	406003	Control Input	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6003	406004	Control Min	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	0%
6004	406005	Control Max	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 1% = 100)	W	100%
6005	406006	Control Bias	Unsigned Scale 10	Unit: %, Range: -10% to 10% Value x 10 (e.g. 1% = 100)	W	0%
6006	406007	Room RH	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 1%RH = 100)	RO	0%RH
6007	406008	Room RH Min	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 1%RH = 100)	W	0%RH
6008	406009	Room RH Max	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 1%RH = 100)	W	100%RH
6009	406010	Room RH Bias	Unsigned Scale 10	Unit: %RH, Range: -10%RH to 10%RH Value x 10 (e.g. 1%RH = 100)	W	0%RH
6010	406011	Supply High Limit RH	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 1%RH = 100)	RO	100%RH
6011	406012	Supply High Limit RH Min	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 1%RH = 100)	W	0%RH

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6012	406013	Supply High Limit RH Max	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 1%RH = 100)	W	100%RH
6013	406014	Supply High Limit RH Bias	Unsigned Scale 10	Unit: %RH, Range: -10%RH to 10%RH Value x 10 (e.g. 1%RH = 100)	W	0%RH
6014	406015	Run Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6015	406016	Run Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6016	406017	On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6017	406018	On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6018	406019	On Time (2)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6019	406020	On Time (3)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6020	406021	Service On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6021	406022	Service On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6022	406023	Service On Time (2)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6023	406024	Service On Time (3)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6024	406025	Water Temperature	Unsigned Scale 10	Unit: °C/°F, Range: 0°C to 125°C or 32°F to 257°F Value x 10 (e.g. 5°C = 50 or 10°F = 100)	RO	0°C or 32°F
6025	406026	Pressure	Unsigned Scale 1	Unit: psi, Range: 0psi to 10000psi Value x 1 (e.g. 5psi = 5)	RO	0psi
6026	406027	Service Interval	Unsigned Scale 1	Unit: hours (h), Range: 500h to 3000h Value x 1 (e.g. 5h = 5)	W	1000h
6027	406028	Board Temperature	Unsigned Scale 10	Unit: °C/°F, Range: 0°C to 100°C or 32°F to 212°F Value x 10 (e.g. 5°C = 50 or 10°F = 100)	W	0°C or 32°F

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6028	406029	Power Output Feedback Bias	Unsigned Scale 1000	Unit: V, Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	0V
6029	406030	Power Output Feedback Min	Unsigned Scale 1000	Unit: V, Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	10V
6030	406031	Power Output Feedback Max	Unsigned Scale 1000	Unit: V, Range: 0V to 10V Value x 1000 (e.g. 1V = 1000)	W	10V
6031	406032	Power Output Feedback	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 10 (e.g. 10% = 100)	RO	0%
6032	406033	Motor Speed	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 10 (e.g. 10% = 100)	RO	0%
6033	406034	Room RH Network Reading	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 10% = 1000)	W	0%RH
6034	406035	Room RH Setpoint	Unsigned Scale 10	Unit: %RH, Range: 0%RH to 100%RH Value x 10 (e.g. 10% = 100)	W	40%RH
6035	406036	Room RH Unoccupied Setpoint	Unsigned Scale 10	Unit: %RH, Range: 0%RH to 100%RH Value x 10 (e.g. 10% = 100)	W	30%RH
6036	406037	Room RH Vacant Setpoint	Unsigned Scale 10	Unit: %RH, Range: 0%RH to 100%RH Value x 10 (e.g. 10% = 100)	W	20%RH
6037	406038	Room RH Demand Proportional Gain	Unsigned Scale 10	No Units, Range: 1 to 200 Value x 10 (e.g. 10 = 100)	W	28.5
6038	406039	Room RH Demand Integral Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 900 sec Value x 10 (e.g. 10sec = 100)	W	0 sec
6039	406040	Room RH Demand Derivative Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 60 sec Value x 10 (e.g. 10sec = 100)	W	0 sec
6040	406041	Room RH Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6041	406042	RH Supply High Limit Network Reading	Unsigned Scale 100	Unit: %RH, Range: 0%RH to 100%RH Value x 100 (e.g. 10% = 1000)	W	0%RH



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6042	406043	RH Supply High Limit Setpoint	Unsigned Scale 10	Unit: %RH, Range: 0%RH to 100%RH Value x 10 (e.g. 10% = 100)	W	80%RH
6043	406044	RH Supply High Limit Unoccupied Setpoint	Unsigned Scale 10	Unit: %RH, Range: 0%RH to 100%RH Value x 10 (e.g. 10% = 100)	W	80%RH
6044	406045	RH Supply High Limit Vacant Setpoint	Unsigned Scale 10	Unit: %RH, Range: 0%RH to 100%RH Value x 10 (e.g. 10% = 100)	W	80%RH
6045	406046	RH Supply High Limit Proportional Gain	Unsigned Scale 10	No Units, Range: 1 to 200 Value x 10 (e.g. 10 = 100)	W	28.5
6046	406047	RH 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
6047	406048	RH 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
6048	406049	RH Supply High Limit Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6049	406050	Control Network Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	0%
6050	406051	Control Network High Limit	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	W	0%
6051	406052	User Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6052	406053	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. 10kg/hr = 100 or 10lb/hr = 100)	RO	0 kg/hr or 0 lb/hr
6053	406054	Room Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	RO	20°C or 68°F
6054	406055	Room Temperature Min	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	0°C or 32°F



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6055	406056	Room Temperature Max	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	40°C or 104°F
6056	406057	Room Temperature Bias	Signed Scale 100	Unit: Δ°C/Δ°F, Range: -10.0Δ°C to 10.0Δ°C or --18.0Δ°F to 18.0Δ°F Value x 100 (e.g. 5Δ°C = 500 or 10Δ°F = 1000)	W	0Δ°C/ or 0Δ°F
6057	406058	Room Temperature Network Reading	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 10°F = 1000)	W	0°C or 32°F
6058	406059	Room Temperature Setpoint (0)	Unsigned Scale 10	Unit: °C/°F, Range: 0°C to 40°C or 32°F to 104°F Value x 10 (e.g. 5°C = 50 or 10°F = 100)	W	22°C or 71.6°F
6059	406060	Room Temperature Setpoint (1)		Unit: °C/°F, Range: 0°C to 40°C or 32°F to 104°F		
6060	406061	Room Temperature Unoccupied Setpoint	Unsigned Scale 10	Unit: °C/°F, Range: 0°C to 40°C or 32°F to 104°F Value x 10 (e.g. 5°C = 50 or 10°F = 100)	W	24°C or 75.2°F
6061	406062	Room Temperature Vacant Setpoint	Unsigned Scale 10	Unit: °C/°F, Range: 0°C to 40°C or 32°F to 104°F Value x 10 (e.g. 5°C = 50 or 10°F = 100)	W	26°C or 78.8°F
6062	406063	Room Temperature Demand Proportional Gain (0)	Unsigned Scale 10	No Units, Range: 1 to 200 Value x 10 (e.g. 10 = 100)	W	28
6063	406064	Room Temperature Demand Proportional Gain (1)		No Units, Range: 1 to 200		
6064	406065	Room Temperature Demand Integral Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 900 sec Value x 10 (e.g. 10sec = 100)	W	0 sec
6065	406066	Room Temperature Demand Derivative Time	Unsigned Scale 10	Unit: Seconds (sec), Range: 0 to 60 sec Value x 10 (e.g. 10sec = 100)	W	0 sec
6066	406067	Room Temperature Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6067	406068	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 10°F = 1000)	RO	0°C or 32°F

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6068	406069	HRL Humidity	Unsigned Scale 10	Unit: %RH, Range: 0%RH to 100%RH Value x 10 (e.g. 10% = 100)	W	0%RH
6069	406070	Room Temp Demand Proportional Band	Unsigned Scale 10	Unit: %, Range: 1% to 100% Value x 10 (e.g. 10% = 100)	W	5%
6070	406071	Temp Supply High Limit Network Reading	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 10°F = 1000)	W	0°C or 32°F
6071	40672	Temp Supply High Limit Setpoint	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 40°C or 32°F to 104°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	15°C or 59°F
6072	406073	Temp Supply High Limit Unoccupied Setpoint	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 40°C or 32°F to 104°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	16°C or 60.8°F
6073	406074	Temp Supply High Limit Vacant Setpoint	Unsigned Scale 100	Unit: °C/°F, Range: 0°C to 40°C or 32°F to 104°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	17°C or 62.6°F
6074	406075	Temp Supply High Limit Proportional Gain	Unsigned Scale 10	No Units, Range: 1 to 200 Value x 10 (e.g. 10 = 100)	W	28
6075	406076	Temp 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
6076	406077	Modbus TCP IP Keep Alive Time Out (0)	Unsigned Scale 1	Unit: Minutes (min), Range: 1 to 1440 min Value x 1 (e.g. 1min = 1)	W	5 min
6077	406078	Modbus TCP IP Keep Alive Time Out (1)		Unit: Minutes (min), Range: 1 to 1440 min		
6078	406079	Temp 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
6079	406080	Temp Supply High Limit Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 10% = 1000)	RO	0%
6080	406081	Temp Supply High Limit Proportional Band	Unsigned Scale 1	Unit: %, Range: 1% to 100% Value x 1 (e.g. 10% = 10)	RO	10%

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6081	406082	Supply High Limit Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	RO	20°C or 68°F
6082	406083	Supply High Limit Temperature Min	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	40°C or 104°F
6083	406084	Supply High Limit Temperature Max	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	40°C or 104°F
6084	406085	Supply High Limit Temperature Bias	Signed Scale 100	Unit: Δ°C/Δ°F, Range: -10.0Δ°C to 10.0Δ°C or --18.0Δ°F to 18.0Δ°F Value x 100 (e.g. 5Δ°C = 500 or 10Δ°F = 1000)	W	0Δ°C/ or 0Δ°F
6085	406086	Demand Low Dead Band (0)	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 5% = 500)	W	1%
6086	406087	Demand Low Dead Band (1)		Unit: %, Range: 0% to 100%		
6087	406088	Network Timeout (0)	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 900 sec Value x 1 (e.g. 10sec = 10)	W	900 sec
6088	406089	Network Timeout (1)		Unit: Seconds (sec), Range: 1 to 900 sec		
6089	406090	Room RH Demand Proportional Band (0)	Unsigned Scale 10	Unit: %, Range: 1% to 100% Value x 10 (e.g. 5% = 50)	W	5%
6090	406091	Room RH Demand Proportional Band (1)		Unit: %, Range: 1% to 100%		
6091	406092	RH Supply High Limit Proportional Band (0)	Unsigned Scale 10	Unit: %, Range: 1% to 100% Value x 10 (e.g. 5% = 50)	RO	10%
6092	406093	RH Supply High Limit Proportional Band (1)		Unit: %, Range: 1% to 100%		
6093	406094	Water Temperature Bias	Signed Scale 100	Unit: Δ°C/Δ°F, Range: -10.0Δ°C to 10.0Δ°C or --18.0Δ°F to 18.0Δ°F Value x 100 (e.g. 5Δ°C = 500 or 10Δ°F = 1000)	RO	0Δ°C/ or 0Δ°F
6094	406095	Control Timer	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 120 sec Value x 1 (e.g. 10sec = 10)	W	15 sec

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6095	406096	Zone A Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 5% = 500)	W	0%
6096	406097	Zone A Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	20°C or 68°F
6097	406098	Zone A Humidity	Unsigned Scale 100	Unit: %RH, Range: 0 to 100%RH Value x 100 (e.g. 10%RH = 1000)	W	0%RH
6098	406099	Zone B Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 5% = 500)	W	0%
6099	406100	Zone B Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	20°C or 68°F
6100	406101	Zone B Humidity	Unsigned Scale 100	Unit: %RH, Range: 0 to 100%RH Value x 100 (e.g. 10%RH = 1000)	W	0%RH
6101	406102	Zone C Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 5% = 500)	W	0%
6102	406103	Zone C Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	20°C or 68°F
6103	406104	Zone C Humidity	Unsigned Scale 100	Unit: %RH, Range: 0 to 100%RH Value x 100 (e.g. 10%RH = 1000)	W	0%RH
6104	406105	Zone D Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 5% = 500)	W	0%
6105	406106	Zone D Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	20°C or 68°F
6106	406107	Zone D Humidity (0)	Unsigned Scale 100	Unit: %RH, Range: 0 to 100%RH Value x 100 (e.g. 10%RH = 1000)	W	0%RH
6107	406108	Zone D Humidity (1)		Unit: %RH, Range: 0 to 100%RH		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6108	406109	Zone E Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 5% = 500)	W	0%
6109	406110	Zone E Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	20°C or 68°F
6110	406111	Zone E Humidity	Unsigned Scale 100	Unit: %RH, Range: 0 to 100%RH Value x 100 (e.g. 10%RH = 1000)	W	0%RH
6111	406112	Zone F Demand	Unsigned Scale 100	Unit: %, Range: 0% to 100% Value x 100 (e.g. 5% = 500)	W	0%
6112	406113	Zone F Temperature	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	20°C or 68°F
6113	406114	Zone F Humidity (0)	Unsigned Scale 100	Unit: %RH, Range: 0 to 100%RH Value x 100 (e.g. 10%RH = 1000)	W	0%RH
6114	406115	Zone F Humidity (1)		Unit: %RH, Range: 0 to 100%RH		
6115	406116	Stage 1 Capacity	Unsigned Scale 1	Unit: Litre/hour (l/h), Range: 0 to 3000 l/h Value x 1 (e.g. 10l/h = 10)	W	500 l/h
6116	406117	Stage 1 Drain Volume (0)	Unsigned Scale 1	Unit: Litre (l), Range: 0 to 9999999 l Value x 1 (e.g. 10l = 10)	W	10 l
6117	406118	Stage 1 Drain Volume (1)		Unit: Litre (l), Range: 0 to 9999999 l		
6118	406119	Stage 2 Capacity	Unsigned Scale 1	Unit: Litre/hour (l/h), Range: 0 to 3000 l/h Value x 1 (e.g. 10l/h = 10)	W	500 l/h
6119	406120	Stage 2 Drain Volume (0)	Unsigned Scale 1	Unit: Litre (l), Range: 0 to 9999999 l Value x 1 (e.g. 10l = 10)	W	10 l
6120	406121	Stage 2 Drain Volume (1)		Unit: Litre (l), Range: 0 to 9999999 l		
6121	406122	Stage 3 Capacity	Unsigned Scale 1	Unit: Litre/hour (l/h), Range: 0 to 3000 l/h Value x 1 (e.g. 10l/h = 10)	W	500 l/h

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6122	406123	Stage 3 Drain Volume (0)	Unsigned Scale 1	Unit: Litre (l), Range: 0 to 9999999 l Value x 1 (e.g. 10l = 10)	W	10 l
6123	406124	Stage 3 Drain Volume (1)		Unit: Litre (l), Range: 0 to 9999999 l		
6124	406125	Stage 4 Capacity	Unsigned Scale 1	Unit: Litre/hour (l/h), Range: 0 to 3000 l/h Value x 1 (e.g. 10l/h = 10)	W	500 l/h
6125	406126	Stage 4 Drain Volume (0)	Unsigned Scale 1	Unit: Litre (l), Range: 0 to 9999999 l Value x 1 (e.g. 10l = 10)	W	10 l
6126	406127	Stage 4 Drain Volume (1)		Unit: Litre (l), Range: 0 to 9999999 l		
6127	406128	Stage 5 Capacity	Unsigned Scale 1	Unit: Litre/hour (l/h), Range: 0 to 3000 l/h Value x 1 (e.g. 10l/h = 10)	W	500 l/h
6128	406129	Stage 5 Drain Volume (0)	Unsigned Scale 1	Unit: Litre (l), Range: 0 to 9999999 l Value x 1 (e.g. 10l = 10)	W	10 l
6129	406130	Stage 5 Drain Volume (1)		Unit: Litre (l), Range: 0 to 9999999 l		
6130	406131	Stage 6 Capacity	Unsigned Scale 1	Unit: Litre/hour (l/h), Range: 0 to 3000 l/h Value x 1 (e.g. 10l/h = 10)	W	500 l/h
6131	406132	Stage 6 Drain Volume (0)	Unsigned Scale 1	Unit: Litre (l), Range: 0 to 9999999 l Value x 1 (e.g. 10l = 10)	W	10 l
6132	406133	Stage 6 Drain Volume (1)		Unit: Litre (l), Range: 0 to 9999999 l		
6133	406134	Stage 1 Drain Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 9999 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6134	406135	Stage 2 Drain Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 9999 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6135	406136	Stage 3 Drain Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 9999 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6136	406137	Stage 4 Drain Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 9999 sec Value x 1 (e.g. 10sec = 10)	W	0 sec



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6137	406138	Stage 5 Drain Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 9999 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6138	406139	Stage 6 Drain Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 1 to 9999 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6139	406140	Stage 1 Idle Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6140	406141	Stage 1 Idle Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6141	406142	Stage 2 Idle Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6142	406143	Stage 2 Idle Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6143	406144	Stage 3 Idle Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6144	406145	Stage 3 Idle Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6145	406146	Stage 4 Idle Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6146	406147	Stage 4 Idle Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6147	406148	Stage 5 Idle Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6148	406149	Stage 5 Idle Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6149	406150	Stage 6 Idle Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6150	406151	Stage 6 Idle Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6151	406152	Stage 1 Run Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6152	406153	Stage 1 Run Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6153	406154	Stage 2 Run Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6154	406155	Stage 2 Run Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6155	406156	Stage 3 Run Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6156	406157	Stage 3 Run Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6157	406158	Stage 4 Run Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6158	406159	Stage 4 Run Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6159	406160	Stage 5 Run Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6160	406161	Stage 5 Run Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6161	406162	Stage 6 Run Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6162	406163	Stage 6 Run Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6163	406164	Stage 1 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6164	406165	Stage 1 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6165	406166	Stage 2 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6166	406167	Stage 2 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6167	406168	Stage 3 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6168	406169	Stage 3 Cycle Count (1)		No Unit, Range: : 0 to 999999999		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6169	406170	Stage 4 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6170	406171	Stage 4 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6171	406172	Stage 5 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6172	406173	Stage 5 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6173	406174	Stage 6 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6174	406175	Stage 6 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6175	406176	Cool Drain Timer	Unsigned Scale 1	Unit: Minutes (min), Range: 0 to 60 mins Value x 1 (e.g. 5 mins = 5)	W	30 min
6176	406177	Depress Time 7	Unsigned Scale 10	Unit: Seconds (sec), Range: 1 to 10 sec Value x 1 (e.g. 10sec = 100)	RO	2 sec
6177	406178	Drain Flow 7	Unsigned Scale 10	Unit: l/min, Range: 1 to 60 l/min Value x 1 (e.g. 10l/min = 100)	RO	21 l/min
6178	406179	Depress Time 8	Unsigned Scale 10	Unit: Seconds (sec), Range: 1 to 10 sec Value x 1 (e.g. 10sec = 100)	RO	2 sec
6179	406180	Drain Flow 8	Unsigned Scale 10	Unit: l/min, Range: 1 to 60 l/min Value x 1 (e.g. 10l/min = 100)	RO	21 l/min
6180	406181	Depress Time 9	Unsigned Scale 10	Unit: Seconds (sec), Range: 1 to 10 sec Value x 1 (e.g. 10sec = 100)	RO	2 sec
6181	406182	Drain Flow 9	Unsigned Scale 10	Unit: l/min, Range: 1 to 60 l/min Value x 1 (e.g. 10l/min = 100)	RO	21 l/min
6182	406183	Depress Time 10	Unsigned Scale 10	Unit: Seconds (sec), Range: 1 to 10 sec Value x 1 (e.g. 10sec = 100)	RO	2 sec

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6183	406184	Drain Flow 10	Unsigned Scale 10	Unit: l/min, Range: 1 to 60 l/min Value x 1 (e.g. 10l/min = 100)	RO	21 l/min
6184	406185	Depress Time 11	Unsigned Scale 10	Unit: Seconds (sec), Range: 1 to 10 sec Value x 1 (e.g. 10sec = 100)	RO	2 sec
6185	406186	Drain Flow 11	Unsigned Scale 10	Unit: l/min, Range: 1 to 60 l/min Value x 1 (e.g. 10l/min = 100)	RO	21 l/min
6186	406187	Depress Time 12	Unsigned Scale 10	Unit: Seconds (sec), Range: 1 to 10 sec Value x 1 (e.g. 10sec = 100)	RO	2 sec
6187	406188	Drain Flow 12	Unsigned Scale 10	Unit: l/min, Range: 1 to 60 l/min Value x 1 (e.g. 10l/min = 100)	RO	21 l/min
6188	406189	Stage 1 Max On Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6189	406190	Stage 2 Max On Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6190	406191	Stage 3 Max On Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6191	406192	Stage 4 Max On Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6192	406193	Stage 5 Max On Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6193	406194	Stage 6 Max On Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6194	406195	Stage 1 Pause Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	15 sec
6195	406196	Stage 2 Pause Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	15 sec

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6196	406197	Stage 3 Pause Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	15 sec
6197	406198	Stage 4 Pause Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	15 sec
6198	406199	Stage 5 Pause Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	15 sec
6199	406200	Stage 6 Pause Time	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 1200 sec Value x 1 (e.g. 10sec = 10)	W	15 sec
6200	406201	Zone A Stage Opening Delay	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 900 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6201	406202	Zone B Stage Opening Delay	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 900 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6202	406203	Zone C Stage Opening Delay	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 900 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6203	406204	Zone D Stage Opening Delay	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 900 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6204	406205	Zone E Stage Opening Delay	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 900 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6205	406206	Zone F Stage Opening Delay	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 900 sec Value x 1 (e.g. 10sec = 10)	W	0 sec
6206	406207	Drain 1 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6207	406208	Drain 1 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6208	406209	Drain 2 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6209	406210	Drain 2 Cycle Count (1)		No Unit, Range: : 0 to 999999999		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6210	406211	Drain 3 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6211	406212	Drain 3 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6212	406213	Drain 4 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6213	406214	Drain 4 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6214	406215	Drain 5 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6215	406216	Drain 5 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6216	406217	Drain 6 Cycle Count (0)	Unsigned Scale 1	No Unit, Range: 0 to 999999999 Value x 1 (e.g. 10 = 10)	RO	0
6217	406218	Drain 6 Cycle Count (1)		No Unit, Range: : 0 to 999999999		
6218	406219	Stage 1 On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6219	406220	Stage 1 On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6220	406221	Stage 2 On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6221	406222	Stage 2 On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6222	406223	Stage 3 On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6223	406224	Stage 3 On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6224	406225	Stage 4 On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6225	406226	Stage 4 On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6226	406227	Stage 5 On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6227	406228	Stage 5 On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6228	406229	Stage 6 On Time (0)	Unsigned Scale 100	Unit: Hours (h), Range: 0 to 21474836.47 h Value x 100 (e.g. 1 h = 100)	RO	0h
6229	406230	Stage 6 On Time (1)		Unit: Hours (h), Range: 0 to 21474836.47 h		
6230	406231	Diagnostic Period	Unsigned Scale 1	Unit: Minutes (min), Range: 1 to 60 mins Value x 1 (e.g. 5 mins = 5)	W	5 min
6231	406232	Zone A MAC	Unsigned Scale 1	No Unit, Range: 1 to 127 Value x 1 (e.g. 10 = 10)	W	1
6232	406233	Zone B MAC	Unsigned Scale 1	No Unit, Range: 1 to 127 Value x 1 (e.g. 10 = 10)	W	1
6233	406234	Zone C MAC	Unsigned Scale 1	No Unit, Range: 1 to 127 Value x 1 (e.g. 10 = 10)	W	1
6234	406235	Zone D MAC	Unsigned Scale 1	No Unit, Range: 1 to 127 Value x 1 (e.g. 10 = 10)	W	1
6235	406236	Zone E MAC	Unsigned Scale 1	No Unit, Range: 1 to 127 Value x 1 (e.g. 10 = 10)	W	1
6236	406237	Zone F MAC	Unsigned Scale 1	No Unit, Range: 1 to 127 Value x 1 (e.g. 10 = 10)	W	1
6237	406238	Control Input	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	0°C or 32°F
6238	406239	Control Min	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	0°C or 32°F
6239	406240	Control Max	Signed Scale 100	Unit: °C/°F, Range: -40°C to 150°C or -40°F to 302°F Value x 100 (e.g. 5°C = 500 or 10°F = 1000)	W	0°C or 32°F

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
6240	406241	Control Bias	Signed Scale 100	Unit: $\Delta^{\circ}\text{C}/\Delta^{\circ}\text{F}$ , Range: $-10.0\Delta^{\circ}\text{C}$ to $10.0\Delta^{\circ}\text{C}$ or $--18.0\Delta^{\circ}\text{F}$ to $18.0\Delta^{\circ}\text{F}$ <i>Value x 100 (e.g. <math>5\Delta^{\circ}\text{C} = 500</math> or <math>10\Delta^{\circ}\text{F} = 1000</math>)</i>	W	$0\Delta^{\circ}\text{C}/$ or $0\Delta^{\circ}\text{F}$
6241	406242	Zone Communication Timeout Delay	Unsigned Scale 1	Unit: Seconds (sec), Range: 0 to 600 sec <i>Value x 1 (e.g. <math>10\text{sec} = 10</math>)</i>	W	0 sec
10000	410001	Air Flow	Unsigned Scale 1	0 = Closed 1 = Open	RO	Closed
10001	410002	Supply High Limit	Unsigned Scale 1	0 = Closed 1 = Open	RO	Closed
10002	410003	Interlock	Unsigned Scale 1	0 = Closed 1 = Open	RO	Closed
10003	410004	Binary External Demand	Unsigned Scale 1	0 = 0% 1 = 100%	RO	0%
10004	410005	Water Leak Detection	Unsigned Scale 1	0 = Ok 1 = Leak	RO	Ok
10005	410006	Drive Status	Unsigned Scale 1	0 = Ok 1 = Fault	RO	Ok
10006	410007	Inlet Pressure Switch	Unsigned Scale 1	0 = Low 1 = Ok	RO	Low
10007	410008	RS485 Interface	Unsigned Scale 1	0 = No 1 = Yes	RO	No
10008	410009	Ethernet Interface	Unsigned Scale 1	0 = No 1 = Yes	RO	No
10009	410010	Relay Fuse	Unsigned Scale 1	0 = Normal 1 = Open Fuse	RO	Normal
10010	410011	Control PCB Fuse	Unsigned Scale 1	0 = Normal 1 = Open Fuse	RO	Normal



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
11000	411001	Alarm Warning Relay	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11001	411002	Service Warning Relay	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11002	411003	Valve 1	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11003	411004	Valve 2	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11004	411005	Valve 3	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11005	411006	Valve 4	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11006	411007	Valve 5	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11007	411008	Valve 6	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11008	411009	Valve 7	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11009	411010	Valve 8	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11010	411011	Valve 9	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11011	411012	Valve 10	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11012	411013	Valve 11	Unsigned Scale 1	0 = Off 1 = On	RO	Off

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
11013	411014	Valve 12	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11014	411015	Alarm LED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11015	411016	Power LED	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11016	411017	Buzzer	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11017	411018	Contacto Pump	Unsigned Scale 1	0 = Off 1 = On	RO	Off
11018	411019	Drive Enable	Unsigned Scale 1	0 = Off 1 = On	RO	Off
12000	412001	Service Due	Unsigned Scale 1	0 = No 1 = Yes	RO	No
12001	412002	Startup Line Rinse	Unsigned Scale 1	0 = Off 1 = On	W	Off
12002	412003	Run While Service Alarm	Unsigned Scale 1	0 = NotAllowed 1 = Allowed	W	Allowed
12003	412004	HRL Lock Setpoint	Unsigned Scale 1	0 = Unlock 1 = Lock	W	Unlock
12004	412005	Network Control State	Unsigned Scale 1	0 = Normal 1 = Fault	W	Normal
12005	412006	Notify Alarm	Unsigned Scale 1	0 = Off 1 = On	W	Off
12006	412007	Notify Warning	Unsigned Scale 1	0 = Off 1 = On	W	Off

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
12007	412008	Notify App Msg	Unsigned Scale 1	0 = Off 1 = On	W	Off
12008	412009	Drive State	Unsigned Scale 1	0 = Ok 1 = Fault	RO	Ok
12009	412010	Stage 1 Diagnostic Enable	Unsigned Scale 1	0 = No 1 = Yes	W	No
12010	412011	Stage 2 Diagnostic Enable	Unsigned Scale 1	0 = No 1 = Yes	W	No
12011	412012	Stage 3 Diagnostic Enable	Unsigned Scale 1	0 = No 1 = Yes	W	No
12012	412013	Stage 4 Diagnostic Enable	Unsigned Scale 1	0 = No 1 = Yes	W	No
12013	412014	Stage 5 Diagnostic Enable	Unsigned Scale 1	0 = No 1 = Yes	W	No
12014	412015	Stage 6 Diagnostic Enable	Unsigned Scale 1	0 = No 1 = Yes	W	No
12015	412016	Zone A Communication Timeout	Unsigned Scale 1	0 = Ok 1 = Timeout	RO	Ok
12016	412017	Zone B Communication Timeout	Unsigned Scale 1	0 = Ok 1 = Timeout	RO	Ok
12017	412018	Zone C Communication Timeout	Unsigned Scale 1	0 = Ok 1 = Timeout	RO	Ok
12018	412019	Zone D Communication Timeout	Unsigned Scale 1	0 = Ok 1 = Timeout	RO	Ok
12019	412020	Zone E Communication Timeout	Unsigned Scale 1	0 = Ok 1 = Timeout	RO	Ok

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
12020	412021	Zone F Communication Timeout	Unsigned Scale 1	0 = Ok 1 = Timeout	RO	Ok
15000	415001	System Log Verbose Level	Unsigned Scale 1	0 = None 1 = Emergency 2 = Alert 3 = Critical 4 = Error 5 = Warning 6 = Notice 7 = Info 8 = Debug	W	Debug
15001	415002	Modbus Server Units	Unsigned Scale 1	0 = Metric 1 = Imperial	W	Metric
15002	415003	Control 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	Supply RH Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc 2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15005	415006	Request	Unsigned Scale 1	0 = None 1 = ResetAlarms 2 = Drain 3 = ResetServCnt	W	None
15006	415007	Control Profile	Unsigned Scale 1	0 = ExternAnalog 1 = ExternNetwork 2 = InternHumAnalog 3 = InternHumNetwork 4 = InternCoolAnalog 5 = InternCoolNetwork 6 = HRL Hum 7 = HRL Cool	W	ExternAnalog
15007	415008	Modulating High Limit Profile	Unsigned Scale 1	0 = Disabled 1 = ExternAnalog 2 = ExternNetwork 3 = InternHumAnalog 4 = InternHumNetwork 5 = InternCoolAnalog 6 = InternCoolNetwork 7 = Custom	W	Disabled
15008	415009	Occupancy State	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	RO	None
15009	415010	Room RH Source	Unsigned Scale 1	0 = None 1 = RoomRH 2 = Network 3 = HRL	W	None

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
15010	415011	Room RH Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal 2 = ControllInput	W	None
15011	415012	RH Supply High Limit Reading Source	Unsigned Scale 1	0 = None 1 = SupplyHLRH 2 = Network	W	None
15012	415013	RH Supply High Limit Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal 2 = ControllInput	W	ControllInput
15013	415014	Control Demand Source	Unsigned Scale 1	0 = None 1 = ControllInput 2 = HumRoomDemand 3 = Network 4 = TempRoomDemand	W	None
15014	415015	Control High Limit Source	Unsigned Scale 1	0 = None 1 = ControllInput 2 = RHSupplyHLDemand 3 = Network 4 = TempSupplyHLDemand	W	None
15015	415016	Control Cutout State	Unsigned Scale 1	0 = Off 1 = Normal 2 = LowLimit 3 = HighLimit 4 = NoAirFlow 5 = Interlock	RO	Off
15016	415017	State	Unsigned Scale 1	0 = Off 1 = Idle 2 = Spraying 3 = Draining 4 = Alarm	RO	Off
15017	415018	System Alarm	Unsigned Scale 1	0 = Normal 1 = WatHiTemp 2 = WatLoTemp 3 = OutHiPress 4 = OutLoPress 5 = InLowPress 6 = WaterLeak 7 = Service 8 = Config	RO	Normal
15018	415019	Room Temperature Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal 2 = ControllInput	W	None
15019	415020	Temp Supply High Limit Reading Source	Unsigned Scale 1	0 = None 1 = SupplyHLTemp 2 = Network	W	None
15020	415021	Temp Supply High Limit Setpoint Source	Unsigned Scale 1	0 = None 1 = Internal 2 = ControllInput	W	None
15021	415022	Room Temperature Source	Unsigned Scale 1	0 = None 1 = RoomTemp 2 = Network 3 = HRL	W	RoomTemp

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
15022	415023	Room Temperature Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc 2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15023	415024	Supply Temperature Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc 2 = 4-20mA 3 = 0-20mA	W	0-10Vdc
15024	415025	System Power State	Unsigned Scale 1	0 = Off 1 = On	RO	Off
15025	415026	Zone A Control	Unsigned Scale 1	0 = Off 1 = Normal 2 = Airflow 3 = SupplyHighLimit 4 = Interlock	W	Normal
15026	415027	Zone A Occupancy	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	W	Occupied
15027	415028	Zone B Control	Unsigned Scale 1	0 = Off 1 = Normal 2 = Airflow 3 = SupplyHighLimit 4 = Interlock	W	Normal
15028	415029	Zone B Occupancy	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	W	Occupied
15029	415030	Zone C Control	Unsigned Scale 1	0 = Off 1 = Normal 2 = Airflow 3 = SupplyHighLimit 4 = Interlock	W	Normal
15030	415031	Zone C Occupancy	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	W	Occupied
15031	415032	Zone D Control	Unsigned Scale 1	0 = Off 1 = Normal 2 = Airflow 3 = SupplyHighLimit 4 = Interlock	W	Normal
15032	415033	Zone D Occupancy	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	W	Occupied
15033	415034	Zone E Control	Unsigned Scale 1	0 = Off 1 = Normal 2 = Airflow 3 = SupplyHighLimit 4 = Interlock	W	Normal

Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
15034	415035	Zone E Occupancy	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	W	Occupied
15035	415036	Zone F Control	Unsigned Scale 1	0 = Off 1 = Normal 2 = Airflow 3 = SupplyHighLimit 4 = Interlock	W	Normal
15036	415037	Zone F Occupancy	Unsigned Scale 1	0 = Occupied 1 = Unoccupied 2 = Vacant 3 = Off	W	Occupied
15037	415038	Stage 1 Zone	Unsigned Scale 1	0 = ZoneA 1 = ZoneB 2 = ZoneC 3 = ZoneD 4 = ZoneE 5 = ZoneF	W	ZoneA
15038	415039	Stage1 Drain	Unsigned Scale 1	0 = Drain7 1 = Drain8 2 = Drain9 3 = Drain10 4 = Drain11 5 = Drain12	W	Drain7
15039	415040	Stage 2 Zone	Unsigned Scale 1	0 = ZoneA 1 = ZoneB 2 = ZoneC 3 = ZoneD 4 = ZoneE 5 = ZoneF	W	ZoneB
15040	415041	Stage 2 Drain	Unsigned Scale 1	0 = Drain7 1 = Drain8 2 = Drain9 3 = Drain10 4 = Drain11 5 = Drain12	W	Drain8
15041	415042	Stage 3 Zone	Unsigned Scale 1	0 = ZoneA 1 = ZoneB 2 = ZoneC 3 = ZoneD 4 = ZoneE 5 = ZoneF	W	ZoneC
15042	415043	Stage 3 Drain	Unsigned Scale 1	0 = Drain7 1 = Drain8 2 = Drain9 3 = Drain10 4 = Drain11 5 = Drain12	W	Drain9
15043	415044	Stage 4 Zone	Unsigned Scale 1	0 = ZoneA 1 = ZoneB 2 = ZoneC 3 = ZoneD 4 = ZoneE 5 = ZoneF	W	ZoneD
15044	415045	Stage 4 Drain	Unsigned Scale 1	0 = Drain7 1 = Drain8 2 = Drain9 3 = Drain10 4 = Drain11 5 = Drain12	W	Drain10



Protocol Base	Holding Register	Description	Data Type	Units, Limits, State Texts	Writ able	Default Value
15045	415046	Stage 5 Zone	Unsigned Scale 1	0 = ZoneA 1 = ZoneB 2 = ZoneC 3 = ZoneD 4 = ZoneE 5 = ZoneF	W	ZoneE
15046	415047	Stage 5 Drain	Unsigned Scale 1	0 = Drain7 1 = Drain8 2 = Drain9 3 = Drain10 4 = Drain11 5 = Drain12	W	Drain11
15047	415048	Stage 6 Zone	Unsigned Scale 1	0 = ZoneA 1 = ZoneB 2 = ZoneC 3 = ZoneD 4 = ZoneE 5 = ZoneF	W	ZoneF
15048	415049	Stage 6 Drain	Unsigned Scale 1	0 = Drain7 1 = Drain8 2 = Drain9 3 = Drain10 4 = Drain11 5 = Drain12	W	Drain12
15049	415050	Cooling Drain Control Mode	Unsigned Scale 1	0 = Off 1 = TimeLatch	W	Off
15050	415051	Low Water Temperature Alarm	Unsigned Scale 1	0 = Alarm 1 = Warning	W	Alarm
15051	415052	Diagnostic State	Unsigned Scale 1	0 = Off 1 = On	W	Off
15052	415053	Diagnostic Command	Unsigned Scale 1	0 = Spray 1 = Drain	W	Spray
15053	415054	Control Signal Type	Unsigned Scale 1	0 = 0-10Vdc 1 = 2-10Vdc 2 = 4-20mA 3 = 0-20mA	W	0-10Vdc





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