OPERATING MANUAL

MicroTech III ® Controller
MODBUS PROTOCOL INFORMATION SUMMARY

Application Software name: ACZC-ACZH-ADZ-ATLAS-AWS-EWWD-MNG-PFS

D-EOMOC002(19)12-14EN

Table of Contents

Premise

The Modbus protocol is a standardized Application Level (OSI Level 7) protocol used in interoperable Industrial Control networks. Modbus provides the communication infrastructure necessary to integrate products manufactured by different vendors and to integrate control services that are now independent.

Introduction

This document describes the present status of Modbus communication profile for all MicroTech III application software, providing the necessary information to incorporate a MicroTech® III Chiller Unit Controller into a Building Automation System (BAS).

Modbus terms and principles are not defined. Refer to the appropriate specifications for definitions and details.

Revision History

1)	D-EOMOC00011-14EN	November 2014	Created	
2)	D-EOMOC002(17)12-14EN	17 December 2014	Improved	ADZ units
			Upgraded	ATLAS Holding Registers 40025, 40026
3)	D-EOMOC002(19)12-14EN	19 December 2014	Improved	ATLAS Holding Registers 40900, 40901, 40902
			Improved	Appendix B
			Upgraded	Holding Registers 40011, 40034
			Upgraded	Revision History

Reference Documents

Ref.#1 www.Modbus.org

Basic Information

Compatibility

The MicroTech III Chiller Unit Controller conforms to the published Modbus standards. Controllers can communicate on standard Modbus networks using ASCII or RTU transmission mode. The MicroTech III Chiller Unit Controller uses the RTU mode only. Refer to Ref.#1 for more detailed information.

Configuring the Microtech III for Modbus Network

The MicroTech III Chiller Unit Controller can be configured in an interoperable Modbus network. The controller must have the corresponding Modbus Communication Module installed.

The MicroTech III Chiller Unit Controller and the Modbus Communication Module are shipped with default parameter values. Default values may be changed with the unit keypad. Parameters must be adjusted to accommodate your particular network. See the appropriate Operation Manual for default values and keypad operating instructions. See the MicroTech III Modbus Communication Module Installation Manual for details regarding network parameters available via the unit controller keypad/display.

Once communication module is set up and communication with network is established, in order to control the MicroTech III over the network, the Unit control source must be turned in “Network” (default is Local). From keypad/display set the Main Menu_View/Set Unit_Status/Settings_Control Source to “Network”.

Modbus Registers Addressing

The Modbus Communication Module supports zero-based addressing. For example, holding register 40002 is addressed as 0001 in a Modbus message. The following tables assume 4xxxx addressing.

Minimum Integration

This section describes the information that assure compliance of Microtech III to the integration criteria for a Modbus network integration. The data/alarm points that represent the minimum integration data points are listed in Table 1 below and in boldface in Table 2 to Table 5.

Table 1. MicroTech III Chiller Unit Controller Registers for minimum integration

Data/Alarm points
Actual Capacity
Chiller Enable Setpoint
Chiller Mode Setpoint - Network
Chiller Status
Clear Alarms - Network
Evaporator Entering Fluid Temperature
Evaporator Leaving Fluid Temperature
Capacity Limit Setpoint – Network
Cool Setpoint – Network
Problem Alarm Code
Fault Alarm Code
Warning Alarm Code

Data Points

Data Points for Chiller Models

Table 2 contains the list of Modbus data points available from the MicroTech III Chiller Unit Controller depending on the chiller model and corresponding unit controller application software. Application software name is available in the unit HMI: see in Main Menu, “About Chiller”. The data points in boldface represent the minimum integration data points listed in Table 1.

Table 2. MicroTech III Unit Controller Data Points List for Chiller Model

Data Point	ACZC	ACZH	ADZ	ATLAS	AWS	EWWD	MNG	PFS
Active Capacity Limit Output	X	X	X	X	X	X	X	X
Active Energy		X		X				
Active Setpoint	X	X	X	X	X	X	X	X
Actual Capacity	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Alarm Digital Output	X	X	X	X	X	X	X	X
Application Software Version	X	X	X	X	X	X	X	X
Capacity Limit Setpoint - Network	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Chiller Capacity Limited	X	X	X	X	X	X	X	X
Chiller Current	X	X	X	X	X	X	X	X
Chiller Enable Output	X	X	X	X	X	X	X	X
Chiller Enable Setpoint	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Chiller Local/Remote	X	X	X	X	X	X	X	X
Chiller Location	X	X	X	X	X	X	X	X
Chiller Mode Output	X	X	X	X	X	X	X	X
Chiller Mode Setpoint – Network	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Chiller Model	X	X	X	X	X	X	X	X
Chiller On/Off	X	X	X	X	X	X	X	X
Chiller Status (Chiller Run Mode)	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Chiller Tons	X	X	X	X	X	X	X	X
Chiller Voltage		X		X				
Clear Alarms – Network	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Compressor Actual Capacity	X	X	X	X	X	X	X	X
Compressor Current				X	X[1]			
Compressor Discharge Refrigerant Temperature	X	X	X	X	X	X	X	X
Compressor Full Load	X	X	X	X	X	X	X	X
Compressor Off Auto	X	X	X	X	X	X	X	
Compressor Oil Feed Pressure	X	X	X	X	X	X	X	X
Compressor Oil Level Status	X	X	X	X	X	X	X	

[1] Available only for AWS with Inverter

Data Point	ACZC	ACZH	ADZ	ATLAS	AWS	EWWD	MNG	PFS
Compressor Percent RLA				X	X[1]			
Compressor Power				X	X[1]			
Compressor Run Hours	X	X	X	X	X	X	X	X
Compressor Starts	X	X	X	X	X	X	X	X
Compressor Status	X	X	X	X	X	X	X	
Compressor Suction Refrigerant Temperature	X	X	X	X	X	X	X	X
Compressor VFD Output				X	X[1]			
Compressor Voltage				X	X[1]			
Condenser Approach Temperature	X	X	X	X	X	X	X	X
Condenser Ent Water Temperature						X		X
Condenser Leaving Water Temperature						X		X
Condenser Pump Run Hours						X		X
Condenser Pump Status						X		X
Condenser Refrigerant Pressure	X	X	X	X	X	X	X	X
Condenser Saturated Refrigerant Temperature	X	X	X	X	X	X	X	X
Cool Setpoint – Network	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Date	X	X	X	X	X	X	X	X
Day of Week	X	X	X	X	X	X	X	X
Evaporator Approach Temperature	X	X	X	X	X	X	X	X
Evaporator Entering Water Temperature	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Evaporator Flow Switch Status	X	X	X	X	X	X	X	X
Evaporator Leaving Water Temperature	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Evaporator Pump #2 Status	X	X	X	X	X	X	X	X
Evaporator Refrigerant Pressure	X	X	X	X	X	X	X	X
Evaporator Saturated Refrigerant Temperature	X	X	X	X	X	X	X	X
Evaporator SuperHeat Setpoint	X	X	X	X	X	X	X	
Evaporator SuperHeat Temperature	X	X	X	X	X	X	X	X
EXV Position	X	X	X	X	X	X	X	X
Fault Alarm Code	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Fault Alarm Index	X	X	X	X	X	X	X	X
Heat Recovery Enable - Network					X			
Heat Recovery Ent Water Temperature				X	X			
Heat Recovery Leaving Water Temperature				X	X			
Heat Setpoint – Network		X		X	X	X		X
Hour	X	X	X	X	X	X	X	X
Ice Setpoint - Network	X	X	X	X	X	X	X	X
Liquid Temperature								X
Minute	X	X	X	X	X	X	X	X
Month	X	X	X	X	X	X	X	X
Noise Reduction Auto On	X	X	X	X	X		X	

Data Point	ACZC	ACZH	ADZ	ATLAS	AWS	EWWD	MNG	PFS
Noise Reduction Status	X	X	X	X	X		X	
Number of Circuits	X	X	X	X	X	X	X	X
Number of Compressors	X	X	X	X	X	X	X	X
Outdoor Air Temperature	X	X	X	X	X		X	
Outdoor Fan Speed	X	X	X	X	X	X	X	
Outdoor Fan Status	X	X	X	X	X	X	X	
Power Factor		X		X				
Power Input		X		X				
Problem Alarm Code	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Problem Alarm Index	X	X	X	X	X	X	X	X
Refrigerant Type	X	X	X	X	X	X	X	X
Run Enabled	X	X	X	X	X	X	X	X
Second	X	X	X	X	X	X	X	X
Units	X	X	X	X	X	X	X	X
Warning Alarm Code	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Warning Alarm Index	X	X	X	X	X	X	X	X
Year	X	X	X	X	X	X	X	X

Comprehensive Data Points List

Table 3 contains the complete list of Modbus data points available from the MicroTech III Chiller Unit Controller. The data points in boldface represent the minimum integration data points as identified in Table 1. Table 5 lists the available chiller alarm objects.

Table 3. MicroTech III Unit Controller Modbus Comprehensive Data Point List

Data Point	Holding Register (4xxxx)	R/W	Range/Description
Active Capacity Limit Output	14	R	0 - 100%
Active Energy	1900	R	Enabled whit Power meter optional
Active Setpoint	12	R	ACZC: 14.9°to 60.0 °F (-9.5 to 15.6°C)
			ACZH: 14.9°to 131.0 °F (-9.5 to 55.0°C)
			ADZ: 14.9°to 60.0 °F (-9.5 to 15.6°C)
			ATLAS: 17.6°to 122.0°F (-8.0 to 50.0°C)
			AWS: 17.6°to 122.0°F (-8.0 to 50.0°C)
			EWWD: 15.0°to 140.0°F (-9.4°to 60.0°C)
			MNG: 15.0°to 60.0 °F (-9.4°to 15.6°C)
			PFS: 15.0°to 149.0°F (-9.4°to 65.0°C)
Actual Capacity	**13**	**R**	**0 - 100%**
Alarm Digital Output	5	R	0=No Alarm, 1=Alarm

Data Point	Holding Register (4xxxx)	R/W	Range/Description
Application Software Version[2]	334	R	
Application Software Version	338	R	
Capacity Limit Setpoint - Network	**38**	**RW**	**0 - 100%**
Chiller Capacity Limited	4	R	0=Not Limited, 1=Limited
Chiller Current	25	R	
Chiller Enable Output	2	R	0=Disable, 1=Enable
Chiller Enable Setpoint	**9**	**RW**	**0=Disable, 1=Enable, 2=Null**
Chiller Local/Remote	1	R	0=Remote, 1=Local
Chiller Location[3]	318	RW	
Chiller Location	327	RW	
Chiller Mode Output	11	R	ACZC: 0=Null, 1= Ice, 2= Cool
			ACZH: 0=Null, 1= Ice, 2=Cool/Heat
			ADZ: 0=Null, 1= Ice, 2=Cool
			ATLAS: 0=Null, 1= Ice, 2=Cool
			AWS: 0=Null, 1=Ice, 2=Cool
			EWWD: 0=Null, 1=Ice, 2=Cool, 3=Heat
			MNG: 0=Null, 1= Ice , 2=Cool, 3=Heat
			PFS: 0=Null, 1=Cool, 2=Ice, 3=Heat
Chiller Mode Setpoint – Network	34	RW	ACZC: 0=Null, 1= Ice, 2=Cool
			ACZH: 0=Null, 1= Ice, 2=Cool, 3=Heat
			ADZ: 0=Null, 1= Cool, 2=Ice
			ATLAS: 0=Null, 1= Ice, 2=Cool
			AWS: 0=Null, 1= Ice, 2=Cool
			EWWD: 0=Null, 1=Ice, 2 = Cool, 3 = Heat
			MNG: 0=Null, 1=Cool , 2= Ice, 3=Heat
			PFS: 0=Null, 1=Cool, 2=Ice, 3=Heat
Chiller Model	317	R	0=Centrifugal, 1=Water Cooled, 2=Air Cooled, 3=Heat Pump, 9=Other
Chiller On/Off	8	R	0=Off, 1=On
Chiller Status (Chiller Run Mode)	**15**	**R**	**1=Off, 2=Start, 3=Run, 4=Pre Shutdown, 5=Service**
Chiller Tons	1609	R	
Chiller Voltage	26	R	Enabled whit Power meter optional
Circuit #1 Comp #1 - Actual Capacity	1840	R	
Circuit #1 Comp #1 - Current	70	R	0 to10.000 Amps
Circuit #1 Comp #1 - Discharge Refrigerant Temp	68	R	-40°to 121℃ (-40℉to 250℉)
Circuit #1 Comp #1 - Full Load	1842	R	
Circuit #1 Comp #1 - Off Auto	1841	R	
Circuit #1 Comp #1 - Oil Feed Pressure	1849	R	-5.801473 to 17.54946 psi(-40 to 121 kPa)
Circuit #1 Comp #1 - Oil Feed Pressure (PFS)	1846	R	-5.801473 to 17.54946 psi(-40 to 121 kPa)
Circuit #1 Comp #2 - Oil Feed Pressure (PFS)	1832	R	-5.801473 to 17.54946 psi(-40 to 121 kPa)

[2] These registers will be a numerical value and need to be translated to a string using ASCII Character on next page. This will translate into a 10-character string.

[3] These registers will be a numerical value and need to be translated to a string using ASCII Character on next page. This will translate into a 20-character string. Unsupported characters are translated to a space.

Data Point	Holding Register (4xxxx)	R/W	Range/Description
Circuit #1 Comp #1 - Oil Level Status	1851	R	
Circuit #1 Comp #1 - Percent RLA	69	R	0-110%
Circuit #1 Comp #1 – Power	72	R	0-3500 kW
Circuit #1 Comp #1 - Run Hours	74	RW	0-999.999 (ACZC, ACZH, ADZ, ATLAS, AWS)
Circuit #1 Comp #1 - Run Hours	74	R	0-999.999 (EWWD, MNG, PFS)
Circuit #1 Comp #1 – Starts	73	RW	0 – 65.535 (ACZC, ACZH, ADZ, ATLAS, AWS)
Circuit #1 Comp #1 – Starts	73	R	0 – 65.535 (EWWD, MNG, PFS)
Circuit #1 Comp #1 – Status	1852	R	
Circuit #1 Comp #1 - Suction Refrigerant Temp	65	R	-40°-110°C (-40-230°F)
Circuit #1 Comp #1 - VFD Output	1845	R	
Circuit #1 Comp #1 – Voltage	71	R	0 to 15.000 V
Circuit #1 Comp #2 - Actual Capacity	1826	R	
Circuit #1 Comp #2 - Discharge Refrigerant Temp	81	R	-40°to 121℃ (-40°– 250℉)
Circuit #1 Comp #2 - Full Load	1828	R	
Circuit #1 Comp #2 - Off Auto	1827	R	
Circuit #1 Comp #2 - Run Hours	87	R	0-999,999
Circuit #1 Comp #2 – Starts	86	R	0 - 65,535
Circuit #1 Comp #2 – Status	1838	R	
Circuit #1 Comp #2 - Suction Refrigerant Temp	78	R	-40°-110°C (-40-230°F)
Circuit #1 Comp #3 - Off Auto	1814	RW	
Circuit #1 Comp #3 - Run Hours	100	RW	0-999,999
Circuit #1 Comp #3 – Starts	99	R	0 - 65,535
Circuit #1 Comp #3 – Status	1825	R	
Circuit #1 Condenser Approach Temp	1987	R	0 to 50 d℉ (0 to10 d℃)
Circuit #1 Condenser Refrigerant Pressure	39	R	0 to 410 psi (700 psi for R410A) – 0 to 2827 kPa (4826 kPa for R410A)
Circuit #1 Condenser Saturated Refrigerant Temp	40	R	-26.1 to 85℃ (-14.98-185℉)
Circuit #1 Evaporator Approach Temp	1988	R	0 to 50 d℉ (0 to10 d℃)
Circuit #1 Evaporator Refrigerant Pressure	41	R	-349.97 to 349.97 psi (-2413 kPa to 2413 kPa)
Circuit #1 Evaporator Saturated Refrigerant Temp	42	R	-26.1 to 85℃ (-14.98 to 185℉)
Circuit #1 EXV Position	1982	R	0 to 110%
Circuit #1 Outdoor Fan Speed	1986	R	
Circuit #1 Outdoor Fan Status	1997	R	
Circuit #2 Comp #1 - Actual Capacity	1800	R	
Circuit #2 Comp #1 - Current	109	R	0 to 10.000
Circuit #2 Comp #1 - Discharge Refrigerant Temp	107	R	-40°to 121℃ (-40°– 250℉)
Circuit #2 Comp #1 - Full Load	1802	R	
Circuit #2 Comp #1 - Off Auto	1801	RW	
Circuit #2 Comp #1 - Oil Feed Pressure	1809	R	-5.801473 to 17.54946 psi(-40 to 121 kPA)
Circuit #2 Comp #1 - Oil Level Status	1811	R	
Circuit #2 Comp #1 - Percent RLA	108	R	0-110%
Circuit #2 Comp #1 - Power	111	R	0-3500 kW
Circuit #2 Comp #1 - Run Hours	113	RW	0-999.999 (ACZC, ACZH, ADZ, ATLAS, AWS)

Data Point	Holding Register (4xxxx)	R/W	Range/Description
Circuit #2 Comp #1 - Run Hours	113	R	0-999.999 (EWWD,MNG)
Circuit #2 Comp #1 – Starts	112	RW	0 – 65.535 (ACZC, ACZH, ADZ, ATLAS, AWS)
Circuit #2 Comp #1 – Starts	112	R	0 – 65.535 (EWWD, MNG)
Circuit #2 Comp #1 - Status	1812	R	
Circuit #2 Comp #1 - VFD Output	1805	R	
Circuit #2 Comp #1 Suction Refrigerant Temp	104	R	-40°-110°C (-40-230°F)
Circuit #2 Comp #1 Voltage	110	R	0-15,000
Circuit #2 Comp #2- Run Hours	126	RW	0-999,999
Circuit #2 Comp #2- Starts	125	RW	0 - 65,535
Circuit #2 Comp #2 - Off Auto	1788	RW	
Circuit #2 Comp #2 - Status	1799	R	
Circuit #2 Comp #3 - Off Auto	1775	RW	
Circuit #2 Comp #3 - Run Hours	139	RW	0-999.999
Circuit #2 Comp #3 - Starts	138	RW	0 – 65.535
Circuit #2 Comp #3 - Status	1786	R	
Circuit #2 Condenser Approach Temp	1971	R	
Circuit #2 Condenser Refrigerant Pressure	43	R	0-410 psi (700 psi for R410A)
Circuit #2 Condenser Saturated Refrigerant Temp	44	R	-26.1-85℃ (-14.98-185℉)
Circuit #2 Evaporator Approach Temp	1972	R	
Circuit #2 Evaporator Refrigerant Pressure	45	R	-349.97–349.97 psi (-2413 kPa – 2413 kPa)
Circuit #2 Evaporator Saturated Refrigerant Temp	46	R	-26.1-85℃ (-14.98-185℉)
Circuit #2 EXV Position	1966	R	
Circuit #2 Outdoor Fan Speed	1970	R	
Circuit #2 Outdoor Fan Status	1981	R	
Circuit #3 Comp #1 - Actual Capacity	1761	R	
Circuit #3 Comp #1 - Current	148	R	0-10.000
Circuit #3 Comp #1 - Discharge Refrigerant Temp	146	R	-40°– 121℃ (-40°– 250℉)
Circuit #3 Comp #1 - Full Load	1763	R	
Circuit #3 Comp #1 - Off Auto	1762	R	
Circuit #3 Comp #1 - Oil Feed Pressure	1770	R	-5.801473 to 17.54946 psi(-40 to 121 kPA)
Circuit #3 Comp #1 - Oil Level Status	1772	R	
Circuit #3 Comp #1 - Percent RLA	147	R	0-110%
Circuit #3 Comp #1 - Power	150	R	0-3500 kW
Circuit #3 Comp #1 - Run Hours	152	RW	0-999.999 (ACZC, ACZH, ADZ, ATLAS, AWS)
Circuit #3 Comp #1 - Run Hours	152	R	0-999.999 (EWWD, MNG)
Circuit #3 Comp #1 – Starts	151	RW	0 – 65.535 (ACZC, ACZH, ADZ, ATLAS, AWS)
Circuit #3 Comp #1 – Starts	151	R	0 – 65.535 (EWWD, MNG)
Circuit #3 Comp #1 - Status	1773	R	
Circuit #3 Comp #1 - Suction Refrigerant Temp	143	R	-40°to110°C (-40-230°F)
Circuit #3 Comp #1 - VFD Output	1766	RW	
Circuit #3 Comp #1 - Voltage	149	R	0-15.000
Circuit #3 Condenser Approach Temp	1955	RW	

Data Point	Holding Register (4xxxx)	R/W	Range/Description
Circuit #3 Condenser Refrigerant Pressure	47	RW	0-410 psi (700 psi for R410A)0-2827 kPa, (4826 kPa for R410A)
Circuit #3 Condenser Saturated Refrigerant Temp	48	RW	-26.1-85℃ (-14.98-185℉)
Circuit #3 Evaporator Approach Temp	1956	RW	
Circuit #3 Evaporator Refrigerant Pressure	49	RW	-349.97–349.97 psi (-2413 kPa – 2413 kPa)
Circuit #3 Evaporator Saturated Refrigerant Temp	50	RW	-26.1-85℃ (-14.98-185℉)
Circuit #3 EXV Position	1950	R	
Circuit #3 Outdoor Fan Speed	1954	RW	
Circuit #3 Outdoor Fan Status	1965	RW	
Clear Alarms – Network	**10**	**RW**	**0=Normal, 1=Clear Alarms, 2=Null**
Condenser Entering Water Temp	19	R	-40-230℉ (-40-1 10℃)
Condenser Leaving Water Temp	20	R	-40-230℉ (-40-11 0℃)
Condenser Pump Run Hours	297	R	0-999.999
Condenser Pump Status	299	R	0=Pump Off Request, 1=Pump On Request
Cool Setpoint – Network	35	RW	ACZC: 14.9°to 60.08℉ (-9.5 to 15.6 ℃)
			ACZH: 14.9°to 60.08℉ (-9.5 to 15.6 ℃)
			ADZ: 14.9°to 60.08℉ (-9.5 to 15.6 ℃)
			ATLAS: 17.6°to 59.0 ℉ (-8.0 to 15.0 ℃)
			AWS: 17.6°to 59.0 ℉ (-8.0 to 15.0 ℃)
			EWWD: 24.98°to 60.08 ℉ (-3.9 to 15.6 ℃)
			MNG: 24.98°to 60.08 ℉ (-3.9 to 15.6 ℃)
			PFS: 24.98°to 60.08 ℉ (-3.9 to 15.6 ℃)
Date	311	RW	
Day of Week	312	RW	0 (Monday) – 6 (Sunday).Calculated by the controller.
Evaporator Entering Fluid Temp	**16**	**R**	**-40-230℉ (-40- 110℃)**
Evaporator Flow Switch Status	6	R	0=No Flow, 1=Flow
Evaporator Leaving Fluid Temp	**17**	**R**	**-40-230℉ (-40-1 10℃)**
Evaporator Pump #1 Run Hours	303	RW	0-999.999(ACZC, ACZH, ADZ, ATLAS, AWS)
Evaporator Pump #1 Run Hours	303	R	0-999.999 (EWWD, MNG, PFS)
Evaporator Pump #1 Status	305	R	0=Pump Off Request, 1=Pump On Request
Evaporator Pump #2 Run Hours	306	RW	0-999.999 (ACZC, ACZH, ADZ, ATLAS, AWS)
Evaporator Pump #2 Run Hours	306	R	0-999.999 (EWWD, MNG, PFS)
Evaporator Pump #2 Status	308	R	0=Pump Off Request, 1=Pump On Request
Evaporator SuperHeat Setpoint	1897	R	
Evaporator SuperHeat Temp	1899	R	
Fault Alarm Code	**33**	**R**	0=No Alarms 32551=COMP SHUTDOWN–Low pressure ratio Circuit #1, Comp #1 32583=COMP SHUTDOWN – Low pressure ratio Circuit #2, Comp #1 32615=COMP SHUTDOWN–Low pressure ratio Circuit #3, Comp #1 32771=COMP SHUTDOWN-Outside Air Temp Sensor Fault, 33063=COMP SHUTDOWN-Current Overload Circuit #1, Comp #1 33095=COMP SHUTDOWN-Current Overload Circuit #2, Comp #1 33127= COMP SHUTDOWN-Current Overload Circuit #3, Comp #1 34087= COMP SHUTDOWN– Motor Protector Circuit #1 Comp #1 34119= COMP SHUTDOWN– Motor Protector Circuit #2 Comp #1 34599=COMP SHUTDOWN–Motor Temp High Circuit #1, Comp #1 34631=COMP SHUTDOWN-Motor Temp High Circuit #2, Comp #1 34663=COMP SHUTDOWN–Motor Temp High Circuit #3, Comp #1 34855= COMP SHUTDOWN–Motor Temp Sensor Fault Circuit #1, Comp #1 34887= COMP SHUTDOWN–Motor Temp Sensor Fault Circuit #2, Comp #1

Data Point	Holding Register (4xxxx)	R/W	Range/Description
			34919= COMP SHUTDOWN–Motor Temp Sensor Fault Circuit #3, Comp #1 36387=CIRCUIT SHUTDOWN – Condenser Pressure Sensor Circuit #1 Fault 36391=COMP SHUTDOWN-Condenser Pressure Sensor Fault Circuit #1, Comp #1 36419=CIRCUIT SHUTDOWN – Condenser Pressure Sensor Circuit #2 Fault 36423=COMP SHUTDOWN-Condenser Pressure Sensor Fault Circuit #2, Comp #1 36455=COMP SHUTDOWN-Condenser Pressure Sensor Fault Circuit #3, Comp #1 37155=CIRCUIT SHUTDOWN – Condenser Pressure High Circuit #1 Fault 37159=COMP SHUTDOWN-Condenser Pressure High Circuit #1, Comp #1 37187=CIRCUIT SHUTDOWN – Condenser Pressure High Circuit #2 Fault 37191=COMP SHUTDOWN-Condenser Pressure High Circuit #2, Comp #1 37223=COMP SHUTDOWN-Condenser Pressure High Circuit #3, Comp #1 37671=COMP SHUTDOWN-Discharge Temp Sensor Fault Circuit #1, Comp #1 37703=COMP SHUTDOWN-Discharge Temp Sensor Fault Circuit #2, Comp #1 37735=COMP SHUTDOWN-Discharge Temp Sensor Fault Circuit #3, Comp #1 37927=COMP SHUTDOWN-Discharge Temp High Circuit #1, Comp #1 37959=COMP SHUTDOWN-Discharge Temp High Circuit #2, Comp #1 37991=COMP SHUTDOWN-Discharge Temp High Circuit #3, Comp #1 38403=UNIT SHUTDOWN-Evaporator Water Flow Loss, 38659=UNIT SHUTDOWN–Evaporator Leaving Water Temp Low (Freeze) 38915=COMP SHUTDOWN-Evaporator Pressure Low 39203=CIRCUIT SHUTDOWN – Low Evaporator Pressure Circuit #1 Fault 39207=COMP SHUTDOWN-Evaporator Pressure Low Circuit #1, Comp #1 39235=CIRCUIT SHUTDOWN – Low Evaporator Pressure Circuit #2 Fault 39239=COMP SHUTDOWN–Evaporator Pressure Low Circuit #2, Comp #1 39271=COMP SHUTDOWN-Evaporator Pressure Low Circuit #3, Comp #1 39715=CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit #1 Fault 39719=COMP SHUTDOWN-Evaporator Pressure Sensor Fault Circuit #1, Comp #1 39747=CIRCUIT SHUTDOWN – Evaporator Pressure Sensor Circuit #2 Fault 39751=COMP SHUTDOWN-Evaporator Pressure Sensor Fault Circuit #2, Comp #1 39783=COMP SHUTDOWN-Evaporator Pressure Sensor Fault Circuit #3, Comp #1 41255=COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit #1, Comp #1 41287=COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit #2, Comp #1 41319=COMP LOCKOUT-Number of Allowed Re-Starts Exceeded Circuit #3, Comp #1 41475=UNIT SHUTDOWN-Evaporator Leaving Water Temp Sensor Fault 41731=UNIT SHUTDOWN-Evaporator Entering Water Temp Sensor Failure 42535=COMP SHUTDOWN-Mechanical High Pressure Circuit #1, Comp #1 42567=COMP SHUTDOWN-Mechanical High Pressure Circuit #2, Comp #1 42599=COMP SHUTDOWN-Mechanical High Pressure Circuit #3, Comp #1 44327=COMP SHUTDOWN-Oil Feed Pressure Sensor Fault Circuit #1, Comp #1 44359=COMP SHUTDOWN-Oil Feed Pressure Sensor Fault Circuit #2, Comp #1 44391=COMP SHUTDOWN-Oil Feed Pressure Sensor Fault Circuit #3, Comp #1 45059=SHUTDOWN-Phase Voltage Protection 45351=COMP SHUTDOWN–Starter Fault Comp Circuit #1, Comp #1 45383=COMP SHUTDOWN–Starter Fault Comp Circuit #2, Comp #1 45415=COMP SHUTDOWN–Starter Fault Comp Circuit #3, Comp #1 46887=COMP SHUTDOWN-Suction Temp Sensor Fault Circuit #1, Comp #1 46919=COMP SHUTDOWN-Suction Temp Sensor Fault Circuit #2, Comp #1 46951=COMP SHUTDOWN-Suction Temp Sensor Fault Circuit #3, Comp #1 47911=COMP SHUTDOWN–Mechanical Low Pressure Circuit #1, Comp #1 47943=COMP SHUTDOWN–Mechanical Low Pressure Circuit #2, Comp #1 47975=COMP SHUTDOWN–Mechanical Low Pressure Circuit #3, Comp #1 48131=Unit Controller offline 48163=Controller board offline Circuit #1 48195=Controller board offline Circuit #2 48227=Controller board offline Circuit #3 48419=COMP SHUTDOWN–No Pressure Change After Start Circuit #1 48451=COMP SHUTDOWN–No Pressure Change After Start Circuit #2 48483=COMP SHUTDOWN–No Pressure Change After Start Circuit #3 48675=COMP SHUTDOWN–No Pressure at Startup Circuit #1 48707=COMP SHUTDOWN–No Pressure at Startup Circuit #2

Data Point	Holding Register (4xxxx)	R/W	Range/Description
			48739=COMP SHUTDOWN–No Pressure at Startup Circuit #3 48935=COMP SHUTDOWN-Slide position sensor fault Circuit #1, Comp#1 48967=COMP SHUTDOWN-Slide position sensor fault Circuit #2, Comp#1 48999=COMP SHUTDOWN-Slide position sensor fault Circuit #3, Comp#1 49155=UNIT STOP–Emergency Stop Alarm 49411=UNIT STOP–Evaporator Water Temps Inverted 49667=UNIT STOP–External Alarm 49923=Evaporator Leaving Water Temp 1 Sensor Fault 50179=Evaporator Leaving Water Temp 2 Sensor Fault 50435=CIRCUIT SHUTDOWN-Evaporator 1 Freeze Protection 50691=CIRCUIT SHUTDOWN-Evaporator 2 Freeze Protection 50983=COMP SHUTDOWN-COMP VFD Fault Circuit #1, Comp #1 51015=COMP SHUTDOWN-COMP VFD Fault Circuit #2, Comp #1 51047=COMP SHUTDOWN-COMP VFD Fault Circuit #3, Comp #1 51239=COMP SHUTDOWN-COMP VFD Over Heat Fault Circuit #1, Comp #1 51271=COMP SHUTDOWN-COMP VFD Over Heat Fault Circuit #2, Comp #1 51303=COMP SHUTDOWN-COMP VFD Over Heat Fault Circuit #3, Comp #1 51495=COMP SHUTDOWN-COM ERROR With COMP VFD Circuit #1, Comp #1 51527=COMP SHUTDOWN-COM ERROR With COMP VFD Circuit #2, Comp #1 51559=COMP SHUTDOWN-COM ERROR With COMP VFD Circuit #3, Comp #1 51755 = COMP SHUTDOWN -Low Discharge Superheat Circuit #1, Comp #1 51783 = COMP SHUTDOWN -Low Discharge Superheat Circuit #2, Comp #1 51815 = COMP SHUTDOWN -Low Discharge Superheat Circuit #3, Comp #1 58371= UNIT STOP - PVM GFP Fault 58403= CIRCUIT SHUTDOWN- PVM GFP Circuit #1 Fault 58435= CIRCUIT SHUTDOWN- PVM GFP Circuit #2 Fault 58915=COMP SHUTDOWN-Refrig Charge Circuit #1 58947=COMP SHUTDOWN-Refrig Charge Circuit #2 58979==COMP SHUTDOWN-Refrig Charge Circuit #3

Fault Alarm Index	30	R	0=No Alarms
			127=COMP SHUTDOWN–Low pressure ratio #n
			128=COMP SHUTDOWN-Outside Air Temp Sensor Fault
			129=COMP SHUTDOWN-Current Overload Circuit #n, Comp #n
			135=COMP SHUTDOWN–Motor Temp High Circuit #n 136=COMP SHUTDOWN–Motor Temp Sensor Fault #n142=COMP SHUTDOWN-Condenser Pressure Sensor Fault #n 145=COMP SHUTDOWN-Condenser Pressure High #n,147=COMP SHUTDOWN-Discharge Temp Sensor Fault #n 148=COMP SHUTDOWN-Discharge Temp High #n
			150=UNIT SHUTDOWN-Evaporator Water Flow Loss
			151=UNIT SHUTDOWN–Evaporator Leaving Water Temp Low (Freeze)
			153=COMP SHUTDOWN-Evaporator Pressure Low #n, 155=COMP SHUTDOWN-Evaporator Pressure Sensor Fault #n 161=COMP LOCKOUT-Number of Allowed Re-Starts Exceeded #n
			162=UNIT SHUTDOWN-Evaporator Leaving Water Temp Sensor Fault
			163=UNIT SHUTDOWN-Evaporator Entering Water Temp Sensor Failure
			166=COMP SHUTDOWN-Mechanical High Pressure #n
			172=COM SHUTDOWN-Oil Delta Pressure High Circuit #1, Comp #1
			173=COMP SHUTDOWN-Oil Feed Pressure Sensor Fault #n
			176=SHUTDOWN–Phase Voltage Protection
			177=COMP SHUTDOWN–Starter Fault Comp #n
			183=COMP SHUTDOWN-Suction Temp Sensor Fault #n 187=COMP SHUTDOWN–Mechanical Low Pressure #n 188=Controller board offline Circuit #n
			189=COMP SHUTDOWN –No Pressure Change After Start 190=COMP SHUTDOWN–No Pressure at Startup 191=CIRCUIT SHUTDOWN–Evaporator Freeze Protection 192=UNIT STOP–Emergency Stop Alarm
			193=UNIT STOP–Evaporator Water Temps Inverted
			194=UNIT STOP–External Alarm
			195=Evaporator Leaving Water Temp 1 Sensor Fault 196=Evaporator Leaving Water Temp 2 Sensor Fault 197=CIRCUIT SHUTDOWN-Evaporator 1 Freeze Protection 198=CIRCUIT SHUTDOWN-Evaporator 2 Freeze Protection
			199=COMP SHUTDOWN-COMP VFD Fault Circuit #n, Comp #n
			200=COMP SHUTDOWN-COMP VFD Over Heat Fault Circuit #n, Comp #n
			201=COMP SHUTDOWN-COM ERROR With COMP VFD Circuit #n, Comp #n
			202 = COMP SHUTDOWN-Low Discharge Superheat Circuit #n, Comp #n
			230-COMP SHUTDOWN-Refrig Charge Circuit #n

Heat Recovery Enable - Network	18	RW	0=Disable, 1=Enable
Heat Recovery Entering Water Temp	22	R	Enabled whit Heat Recovery option
Heat Recovery Leaving Water Temp	23	R	Enabled whit Heat Recovery option

Data Point	Holding Register (4xxxx)	R/W	Range/Description
Heat Setpoint – Network	37	RW	ACZH: 77.0°to 131℉ (25.0 to 55.0 ℃)
			ATLAS: 86.0 to 122 ℉(30.0 to 50.0℃)
			AWS: 77.0°to 131℉ (25.0 to 55.0 ℃)
			EWWD: 77.0 to 140 ℉ (25.0 to 60.0 ℃)
			PFS: 77.0°to 149℉ (25.0°to 65.0 ℃)
Hour	313	RW	0-23
Ice Setpoint - Network	36	RW	ACZC: 14.9°to 39.9℉ (-9.5 to 4.4 ℃)
			ACZH: 14.9°to 39.9℉ (-9.5 to 4.4 ℃)
			ADZ: 14.9°to 39.9℉ (-9.5 to 4.4 ℃)
			ATLAS: 17.6°to 39.2 ℉ (-8.0 to 4.0 ℃)
			AWS: 17.6°to 39.2 ℉ (-8.0 to 4.0 ℃)
			EWWD: 15.08°to 38.12 ℉ (-9.4°to 3.4 ℃)
			MNG: 15.08°to 38.12 ℉ (-9.4°to 3.4 ℃)
			PFS: 15.08°to 38.12 ℉ (-9.4°to 3.4 ℃)
Liquid Temp	1984	R	
Minute	314	RW	0-59
Month	310	RW	1-12
Noise Reduction Auto On	1998	RW	
Noise Reduction Status	2000	R	
Number of Circuits	1607	R	
Number of Comps	1608	R	
Outdoor Air Temp	24	R	-40-230℉ (-40-110℃)
Power Factor	1902	R	Enabled with Power meter optional
Power Input	27	R	Enabled with Power meter optional
Problem Alarm Code	**32**	**R**	0=No Alarms, 16418=RESTART DELAYED - Power Loss While Running Circuit #1 16450=RESTART DELAYED - Power Loss While Running Circuit #2 16482=RESTART DELAYED - Power Loss While Running Circuit #3 16642=START INHIBITED - Ambient Temp Low 16898=INHIBIT LOAD – Condenser Pressure High 17186=INHIBIT LOAD – Condenser Pressure High Circuit #1 17218=INHIBIT LOAD – Condenser Pressure High Circuit #2 17250=INHIBIT LOAD – Condenser Pressure High Circuit #3 17282=INHIBIT LOAD –Condenser Pressure High Circuit #1 17730=UNLOAD Condenser Pressure High Circuit #2 17762=UNLOAD Condenser Pressure High Circuit #3 17794=UNLOAD LOAD - Evaporator Pressure Low Circuit #1 19522=INHIBIT LOAD - Evaporator Pressure Low Circuit #2 19554=INHIBIT LOAD - Evaporator Pressure Low Circuit #3 19586=INHIBIT LOAD - Evaporator Pressure Low Circuit #1 20034=UNLOAD - Evaporator Pressure Low Circuit #2 20066=UNLOAD - Evaporator Pressure Low Circuit #3 20098=UNLOAD - Evaporator 20262=UNLOAD-Comp Motor Current High Circuit #1, Comp #1 20294=UNLOAD-Comp Motor Current High Circuit #2, Comp #1 20326=UNLOAD-Comp Motor Current High Circuit #3, Comp #1 20738=PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure 20994=PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure 21542=INHIBIT LOAD-Comp Motor Current High Circuit #1, Comp #1 21574=INHIBIT LOAD-Comp Motor Current High Circuit #2, Comp #1 21606= INHIBIT LOAD-Comp Motor Current High Circuit #3, Comp #1

Problem Alarm Index	29	R	0=No Alarms
			64=RESTART DELAYED-Power Loss While Running Circuit #n
			65=START INHIBITED - Ambient Temp Low
			67=INHIBIT LOAD – Condenser Pressure High Circuit #n
			69=UNLOAD – Condenser Pressure High Circuit #n
			76=INHIBIT LOAD - Evaporator Pressure Low Circuit #n 78=UNLOAD - Evaporator Pressure Low Circuit #n
			79=UNLOAD - Comp Motor Current High Circuit #n, Comp #n
			81=PUMP #2 START ATTEMPTED - Evaporator Pump #1 Failure

Data Point	Holding Register (4xxxx)	R/W	Range/Description
			82=PUMP #1 START ATTEMPTED - Evaporator Pump #2 Failure 84= INHIBIT LOAD-Comp Motor Current High Circuit #n, Comp #n
Refrigerant Type	1606	R	
Run Enabled	3	R	0=Off, 1= Run Allowed
Second	315	RW	0-59
Units	316	RW	0=English, 1=Metric
Warning Alarm Code	**31**	**R**	0=No Alarms 513=Evaporator Entering Water Temp Sensor Failure 2049=Bad setpoint override input 2305=Bad demand limit input 2817=Unit power restore 3105=Circuit 1 failed pumpdown 3137=Circuit 2 Failed pumpdown 3169=Circuit 3 failed pumpdown 3201=Circuit 4 failed pumpdown 3329=External Event 3585=Bad Current Limit Input 3841=Option Controller Communication Failed 4128=Circuit 1 Low Refrigerant Charge 4160=Circuit 2 Low Refrigerant Charge 4192=Circuit 3 Low Refrigerant Charge 4352=Chiller Network Communication Failure
Warning Alarm Index	28	R	0=No Alarms 8=Bad setpoint override input 9=Bad demand limit input 11=Unit power restore 12=Circuit failed pumpdown 13=External Event 14 = Bad Current Limit Input 15=Option Controller Communication Failed 16=Low Refrigerant Charge 17=Chiller Network Communication Failure
Year	309	RW	-

Alarm Points

Alarm Points for Chiller Models

Table 4 contains the list of Modbus alarm points available from the MicroTech III Chiller Unit Controller depending on the chiller model and corresponding unit controller application software. Application software name is available in the unit HMI: see in Main Menu, “About Chiller”.

Table 4. MicroTech III Unit Controller Alarm Points List for Chiller Model

Alarm Point	ACZC	ACZH	ADZ	ATLAS	AWS	EWWD	MNG	PFS
Bad Current Limit Input Warning				X	X	X	X	X
Bad demand limit input Warning	X	X	X	X	X	X	X	X
Bad setpoint override input Warning	X	X	X	X	X	X	X	X
Circuit Failed pumpdown Warning	X	X	X	X	X	X	X	
Circuit Fan Warning				X				
Circuit INHIBIT LOAD - High Current Problem	X	X	X	X	X	X	X	
Circuit INHIBIT LOAD - High Pressure Problem	X	X	X	X	X	X	X	X
Circuit INHIBIT LOAD - Low Pressure Problem				X	X	X	X	X
Circuit SHUTDOWN – Evap Pressure Sensor Fault	X	X	X	X	X	X	X	
Circuit SHUTDOWN – Low Evap Pressure Fault	X	X	X	X	X	X	X	
Circuit SHUTDOWN – No Pressure at Startup Fault	X	X	X	X	X	X	X	
Circuit SHUTDOWN – No Pressure Change After Start	X	X	X	X	X	X	X	X
Circuit SHUTDOWN – Phase Voltage Protection Fault	X	X	X	X	X	X	X	
CIRCUIT UNLOAD - High Pressure Problem				X	X	X	X	
CIRCUIT UNLOAD - Low Pressure Problem				X	X	X	X	
Comp LOCKOUT - Allowed Re-Starts Exceeded Fault	X	X	X	X	X	X	X	
Comp SHUTDOWN - COM ERROR With VFD Fault	X	X	X	X	X	X	X	
Comp SHUTDOWN - Discharge Temp High Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Discharge Temp Sensor Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Low pressure ratio Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Mechanical High Pressure Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Mechanical Low Pressure Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN – Motor Protector Fault	X	X	X					
Comp SHUTDOWN - Motor Temp High Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Motor Temp Sensor Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Oil Delta Pressure High Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Oil Feed Pressure Sensor Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Slide position Sensor Fault				X	X	X	X	X
Comp SHUTDOWN - Starter Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - Suction Temp Sensor Fault	X	X	X	X	X	X	X	X
Comp SHUTDOWN - VFD Fault	X	X	X	X	X	X	X	
Comp SHUTDOWN - VFD Over Heat Fault	X	X	X	X	X	X	X	

Alarm Point	ACZC	ACZH	ADZ	ATLAS	AWS	EWWD	MNG	PFS
Comp SHUTDOWN -Current Overload Fault	X	X	X	X	X	X	X	
Comp SHUTDOWN-Low Discharge Superheat Fault				X	X	X	X	X
Condenser Ent Water Temp Sensor Fault						X		X
Condenser Leav Water Temp Sensor Fault						X		X
Controller board offline Fault	X	X	X	X	X	X	X	X
Evap Ent Water Temp Sensor Fault	X	X	X					
Evap Leav Water Temp Sensor Fault	X	X	X	X	X	X	X	
Evap Pump #1 Failure - Pump #2 Start Attempted Problem	X	X	X	X	X			
Evap Pump #2 Failure - Pump #1 Start Attempted Problem	X	X	X	X	X			
External event Warning	X	X	X	X	X	X	X	X
Option Fan Alarm Controller Communication Failed Warning				X				
Option Controller Communication Failed Warning				X	X	X	X	X
RESTART DELAYED - Power Loss While Running Problem	X	X	X	X	X	X	X	X
SHUTDOWN – Condenser Pressure High Fault	X	X	X	X	X	X	X	X
CIRCUIT SHUTDOWN – Condenser Pressure Sensor Fault	X	X	X	X	X	X	X	
START INHIBITED - Ambient Temp Low Problem	X	X	X	X	X	X	X	
Unit Power Restore Warning				X	X	X	X	X
UNIT SHUTDOWN - Condenser Flow Loss								X
UNIT SHUTDOWN - Condenser High Pressure								X
UNIT SHUTDOWN - Discharge High Temp								X
UNIT SHUTDOWN - Evap Ent Water Temp Sensor Fault				X	X	X	X	X
UNIT SHUTDOWN - Evap Freeze Protection Fault	X	X	X	X	X	X	X	
UNIT SHUTDOWN - Evap Leav Water Temp Low	X	X	X	X	X	X	X	X
UNIT SHUTDOWN - Evap Leav Water Temp Sensor Fault	X	X	X	X	X	X	X	X
UNIT SHUTDOWN - Evap Low Pressure								X
UNIT SHUTDOWN – Evap Pressure Sensor Fault								X
UNIT SHUTDOWN - Evap Water Flow Loss	X	X	X	X	X	X	X	X
UNIT SHUTDOWN - Outside Air Temp Sensor Fault	X	X	X	X	X	X	X	
UNIT SHUTDOWN – Phase Voltage Protection Fault	X	X	X	X	X	X	X	X
UNIT STOP - Emergency Stop Alarm	X	X	X	X	X	X	X	X
UNIT STOP - Evap Water Temps Inverted	X	X	X	X	X	X	X	X
UNIT STOP - External Alarm	X	X	X	X	X	X	X	X
UNIT UNLOAD - High Pressure Problem								X
UNIT UNLOAD - Low Pressure Problem								X
UNIT UNLOAD - Hi Current Problem	X	X	X	X	X	X	X	
UNIT SHUTDOWN – Condenser Pressure Sensor Fault								X

Comprehensive Alarm Points List

Table 5 contains the complete list of Modbus Alarm points available from the MicroTech III Chiller Unit Controller. Detailed description of all Microtech III Alarms available to the network will be included in next release of this document.

Table 5. MicroTech III Unit Controller Modbus Comprehensive Alarm Point List

Alarm Point	Holding Register (4xxxx)	R/W	Range
Bad Current Limit Input Warning	814	R	0=Normal, 1=Alarm
Bad demand limit input Warning	378	R	0=Normal, 1=Alarm
Bad setpoint override input Warning	377	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - LOCKOUT - Number of Allowed Re-Starts Exceeded Fault	583	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - COM ERROR With VFD Fault	774	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN – Condenser Pressure Sensor Fault	509	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Current Overload Fault	447	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Discharge Temp High Fault	535	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Discharge Temp Sensor Fault	529	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Low pressure ratio Fault	440	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Mechanical High Pressure Fault	601	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Mechanical Low Pressure Fault	717	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN – Motor Protector Fault	466	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Motor Temp High Fault	478	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Motor Temp Sensor Fault	734	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Oil Delta Pressure High Fault	637	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault	643	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault (PFS)	649	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Starter Fault	662	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - Suction Temp Sensor Fault	698	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - VFD Fault	762	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN - VFD Over Heat Fault	768	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN -Slide position Sensor Fault	756	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - SHUTDOWN-Low Discharge Superheat Fault	808	R	0=Normal, 1=Alarm
Circuit #1 Comp #1 - UNLOAD - Hi Current Problem	420	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Discharge Temp High Fault (PFS)	536	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Discharge Temp Sensor Fault (PFS)	530	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Low Discharge SuperHeat Fault (PFS)	809	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Mechanical High Pressure Fault (PFS)	602	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Mechanical Low Pressure Fault	718	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN – Motor Protector Fault	467	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Motor Temp High Fault (PFS)	479	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Motor Temp Sensor Fault	735	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Oil Delta Pressure High Fault (PFS)	638	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Oil Feed Pressure Sensor Fault (PFS)	650	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Slide position Sensor Fault	757	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Starter Fault (PFS)	663	R	0=Normal, 1=Alarm
Circuit #1 Comp #2 - SHUTDOWN - Suction Temp Sensor Fault (PFS)	699	R	0=Normal, 1=Alarm
Circuit #1 Controller board offline Fault	723	R	0=Normal, 1=Alarm
Circuit #1 Failed pumpdown Warning	741	R	0=Normal, 1=Alarm
Circuit #1 Option Fan Alarm Warning	901	R	0=Normal, 1=Alarm

Alarm Point	Holding Register (4xxxx)	R/W	Range
Circuit #1 INHIBIT LOAD - High Current Problem	780	R	0=Normal, 1=Alarm
Circuit #1 INHIBIT LOAD - High Pressure Problem	390	R	0=Normal, 1=Alarm
Circuit #1 INHIBIT LOAD - Low Pressure Problem	411	R	0=Normal, 1=Alarm
Circuit #1 RESTART DELAYED - Power Loss While Running Problem	384	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN – Condenser Pressure High Fault	517	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN – Evaporator Pressure Sensor Fault	552	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN – Low Evaporator Pressure Fault	545	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN – No Pressure at Startup Fault	711	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN – No Pressure Change After Start	747	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN – Phase Voltage Protection Fault (ACZC, ACZH, ADZ)	817	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN – Phase Voltage Protection Fault (ATLAS, AWS, EWWD, MNG)	751	R	0=Normal, 1=Alarm
Circuit #1 SHUTDOWN– Motor ProtectorFault	466	R	0=Normal, 1=Alarm
Circuit #1 UNLOAD - High Pressure Problem	395	R	0=Normal, 1=Alarm
Circuit #1 UNLOAD - Low Pressure Problem	416	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - COM ERROR With VFD Fault	776	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Condenser Pressure Sensor Fault	511	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Discharge Temp High Fault	537	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Discharge Temp Sensor Fault	531	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Low Discharge SuperHeat Fault	810	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Low pressure ratio Fault	442	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Mechanical High Pressure Fault	603	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Mechanical Low Pressure Fault	719	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Motor Temp High Fault	480	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Motor Temp Sensor Fault	736	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Oil Delta Pressure High Fault	639	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault	645	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Slide position Sensor Fault	758	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Starter Fault	664	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - Suction Temp Sensor Fault	700	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - VFD Fault	764	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN - VFD Over Heat Fault	770	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN -Current Overload Fault	449	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - SHUTDOWN– Motor Protector Fault	468	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 - UNLOAD - Hi Current Problem	422	R	0=Normal, 1=Alarm
Circuit #2 Comp #1 -LOCKOUT - Number of Allowed Re-Starts Exceeded Fault	585	R	0=Normal, 1=Alarm
Circuit #2 Comp #2 - SHUTDOWN – Motor Protector Fault	469	R	0=Normal, 1=Alarm
Circuit #2 Controller board offline Fault	724	R	0=Normal, 1=Alarm
Circuit #2 Failed pumpdown Warning	742	R	0=Normal, 1=Alarm
Circuit #2 Option Fan Alarm Warning	902	R	0=Normal, 1=Alarm
Circuit #2 INHIBIT LOAD - High Current Problem	782	R	0=Normal, 1=Alarm
Circuit #2 INHIBIT LOAD - High Pressure Problem	391	R	0=Normal, 1=Alarm
Circuit #2 INHIBIT LOAD - Low Pressure Problem	412	R	0=Normal, 1=Alarm
Circuit #2 RESTART DELAYED - Power Loss While Running Problem	385	R	0=Normal, 1=Alarm

Alarm Point	Holding Register (4xxxx)	R/W	Range
Circuit #2 SHUTDOWN – Condenser Pressure HighFault	519	R	0=Normal, 1=Alarm
Circuit #2 SHUTDOWN – Evaporator Pressure Sensor Fault	554	R	0=Normal, 1=Alarm
Circuit #2 SHUTDOWN – Low Evaporator Pressure Fault	547	R	0=Normal, 1=Alarm
Circuit #2 SHUTDOWN – No Pressure at Startup Fault	712	R	0=Normal, 1=Alarm
Circuit #2 SHUTDOWN – No Pressure Change After Start	748	R	0=Normal, 1=Alarm
Circuit #2 SHUTDOWN – Phase Voltage Protection Fault (ACZC, ACZH, ADZ)	818	R	0=Normal, 1=Alarm
Circuit #2 SHUTDOWN – Phase Voltage Protection Fault (ATLAS, AWS, EWWD, MNG)	752	R	0=Normal, 1=Alarm
Circuit #2 UNLOAD - High Pressure Problem	396	R	0=Normal, 1=Alarm
Circuit #2 UNLOAD - Low Pressure Problem	417	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - COM ERROR With VFD Fault	778	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Condenser Pressure High Fault	521	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Condenser Pressure Sensor Fault	513	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Current Overload Fault	451	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Discharge Temp High Fault	539	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Discharge Temp Sensor Fault	533	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Evaporator Pressure Low Fault	549	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Evaporator Pressure Sensor Fault	556	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Low pressure ratio Fault	444	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Mechanical High Pressure Fault	605	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Mechanical Low Pressure Fault	721	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Motor Temp High Fault	482	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Motor Temp Sensor Fault	738	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Oil Delta Pressure High Fault	641	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault	647	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Slide position Sensor Fault	760	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Starter Fault	666	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - Suction Temp Sensor Fault	702	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - VFD Fault	766	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN - VFD Over Heat Fault	772	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - SHUTDOWN-Low Discharge Superheat Fault	812	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 - UNLOAD - Hi Current Problem	424	R	0=Normal, 1=Alarm
Circuit #3 Comp #1 -LOCKOUT - Number of Allowed Re-Starts Exceeded Fault	587	R	0=Normal, 1=Alarm
Circuit #3 Controller board offline Fault	725	R	0=Normal, 1=Alarm
Circuit #3 Failed pumpdown Warning	743	R	0=Normal, 1=Alarm
Circuit #3 INHIBIT LOAD - High Current Problem	784	R	0=Normal, 1=Alarm
Circuit #3 INHIBIT LOAD - High Pressure Problem	392	R	0=Normal, 1=Alarm
Circuit #3 INHIBIT LOAD - Low Pressure Problem	413	R	0=Normal, 1=Alarm
Circuit #3 RESTART DELAYED - Power Loss While Running Problem	386	R	0=Normal, 1=Alarm
Circuit #3 SHUTDOWN – No Pressure at Startup Fault	713	R	0=Normal, 1=Alarm
Circuit #3 SHUTDOWN – No Pressure Change After Start	749	R	0=Normal, 1=Alarm
Circuit #3 SHUTDOWN – Phase Voltage Protection Fault	753	R	0=Normal, 1=Alarm
Circuit #3 SHUTDOWN - PVM GFP Fault	819	R	0=Normal, 1=Alarm
Circuit #3 UNLOAD - High Pressure Problem	397	R	0=Normal, 1=Alarm

Alarm Point	Holding Register (4xxxx)	R/W	Range
Circuit #3 UNLOAD - Low Pressure Problem	418	R	0=Normal, 1=Alarm
Condenser Entering Water Temp Sensor Fault (EWWD)	365	R	0=Normal, 1=Alarm
Condenser Entering Water Temp Sensor Fault (PFS)	541	R	0=Normal, 1=Alarm
Condenser Leaving Water Temp Sensor Fault	368	R	0=Normal, 1=Alarm
Controller board offline Fault	746	R	0=Normal, 1=Alarm
Evaporator Entering Water Temp Sensor Fault	366	R	0=Normal, 1=Alarm
Evaporator Leaving Water Temp Sensor Fault	590	R	0=Normal, 1=Alarm
Evaporator Pump #1 Failure - Pump #2 Start Attempted Problem	430	R	0=Normal, 1=Alarm
Evaporator Pump #2 Failure - Pump #1 Start Attempted Problem	431	R	0=Normal, 1=Alarm
External event Warning	745	R	0=Normal, 1=Alarm
Option Fan Alarm Controller Communication Failed Warning	900	R	0=Normal, 1=Alarm
Option Controller Communication Failed Warning	815	R	0=Normal, 1=Alarm
RESTART DELAYED - Power Loss While Running Problem	379	R	0=Normal, 1=Alarm
START INHIBITED - Ambient Temp Low Problem	388	R	0=Normal, 1=Alarm
UNIT INHIBIT LOAD - High Pressure Problem	389	R	0=Normal, 1=Alarm
UNIT INHIBIT LOAD - High Pressure Problem	389	R	0=Normal, 1=Alarm
UNIT INHIBIT LOAD - Low Pressure Problem	410	R	0=Normal, 1=Alarm
UNIT INHIBIT LOAD - Low Pressure Problem	410	R	0=Normal, 1=Alarm
Unit Power Restore Warning	740	R	0=Normal, 1=Alarm
UNIT RESTART DELAYED - Power Loss While Running Problem	379	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Condenser Flow Loss	515	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Condenser High Pressure	516	R	0=Normal, 1=Alarm
UNIT SHUTDOWN – Condenser Pressure Sensor Fault (PFS)	508	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Evaporator Entering Water Temp Sensor Fault	755	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Evaporator Freeze Protection Fault	592	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Evaporator Leaving Water Temp Low (Freeze)	543	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Evaporator Leaving Water Temp Sensor Fault	589	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Evaporator Low Pressure	544	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Evaporator Pressure Sensor Fault	551	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Evaporator Water Flow Loss	542	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Low Pressure Ratio	441	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Mechanical High Pressure Switch	602	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Mechanical Low Pressure Switch	718	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Motor Temp High	479	R	0=Normal, 1=Alarm
UNIT SHUTDOWN – No Pressure Change After Start (PFS)	747	R	0=Normal, 1=Alarm
UNIT SHUTDOWN – Oil Delta Pressure High	638	R	0=Normal, 1=Alarm
UNIT SHUTDOWN - Outside Air Temp Sensor Fault	446	R	0=Normal, 1=Alarm
UNIT SHUTDOWN – Phase Voltage Protection (ACZC, ACHZ, ADZ)	816	R	0=Normal, 1=Alarm
UNIT SHUTDOWN – Phase Voltage Protection (ATLAS, AWS, EWWD, MNG, PFS)	661	R	0=Normal, 1=Alarm
UNIT STOP - Emergency Stop Alarm	798	R	0=Normal, 1=Alarm
UNIT STOP - Evaporator Water Temps Inverted	799	R	0=Normal, 1=Alarm
UNIT STOP - External Alarm	800	R	0=Normal, 1=Alarm
UNIT STOP - PVM GFP Fault	816	R	0=Normal, 1=Alarm

Alarm Point	Holding Register (4xxxx)	R/W	Range
UNIT UNLOAD - High Pressure Problem	394	R	0=Normal, 1=Alarm
UNIT UNLOAD - Low Pressure Problem	415	R	0=Normal, 1=Alarm

Appendix A – ASCII Characters Conversion Table

This table lists the ASCII characters and their decimal and hexadecimal numbers. **The MicroTech III Chiller Unit Controller does not support the characters in boldface type.** Also, non-printing characters, with the exception of the (Space) character, are not listed in this table and are not supported. Characters not supported are translated to a space.

Table 6. ASCII Characters Conversion Table

Char	Decimal	Hexadecimal	Char	Decimal	Hexadecimal	Char	Decimal	Hexadecimal
(Space)	32	0x20	@	64	0x40	`	96	0x60
!	33	0x21	A	65	0x41	a	97	0x61
“	**34**	**0x22**	B	66	0x42	b	98	0x62
#	35	0x23	C	67	0x43	c	99	0x63
$	**36**	**0x24**	D	68	0x44	d	100	0x64
%	37	0x25	E	69	0x45	e	101	0x65
&	38	0x26	F	70	0x46	f	102	0x66
‘	39	0x27	G	71	0x47	g	103	0x67
(	40	0x28	H	72	0x48	h	104	0x68
)	41	0x29	I	73	0x49	I	105	0x69
*	42	0x2a	J	74	0x4a	j	106	0x6a
+	43	0x2b	K	75	0x4b	k	107	0x6b
‘	44	0x2c	L	76	0x4c	l	108	0x6c
-	45	0x2d	M	77	0x4d	m	109	0x6d
.	46	0x2e	N	78	0x4e	n	110	0x6e
/	47	0x2f	O	79	0x4f	o	111	0x6f
0	48	0x30	P	80	0x50	p	112	0x70
1	49	0x31	Q	81	0x51	q	113	0x71
2	50	0x32	R	82	0x52	r	114	0x72
3	51	0x33	S	83	0x53	s	115	0x73
4	52	0x34	T	84	0x54	t	116	0x74
5	53	0x35	U	85	0x55	u	117	0x75
6	54	0x36	V	86	0x56	v	118	0x76
7	55	0x37	W	87	0x57	w	119	0x77
8	56	0x38	X	88	0x58	x	120	0x78
9	57	0x39	Y	89	0x59	y	121	0x79
:	58	0x3a	Z	90	0x5a	z	122	0x7a
;	59	0x3b	[	91	0x5b	{	123	0x7b
<	60	0x3c	\	92	0x5c	|	124	0x7c
=	61	0x3d	]	93	0x5d	}	125	0x7d
>	62	0x3e	^	94	0x5e	~	126	0x7e
?	63	0x3f	_	95	0x5f			

Appendix B – Overall Registers Table

This section summarizes all Data/Alarm Points Registers discussed above in the document and listed by Holding Register address.

Table 7. Overall Registers Table

Data/Alarm Point	Holding Register (4xxxx)	R/W
Chiller Local/Remote	1	R
Chiller Enable Output	2	R
Run Enabled	3	R
Chiller Capacity Limited	4	R
Alarm Digital Output	5	R
Evaporator Flow Switch Status	6	R
Chiller On/Off	8	R
Chiller Enable Setpoint	9	RW
Clear Alarms – Network	10	RW
Chiller Mode Output	11	R
Active Setpoint	12	R
Actual Capacity	13	R
Active Capacity Limit Output	14	R
Chiller Status (Chiller Run Mode)	15	R
Evaporator Entering Fluid Temp	16	R
Evaporator Leaving Fluid Temp	17	R
Heat Recovery Enable - Network	18	RW
Condenser Entering Water Temp	19	R
Condenser Leaving Water Temp	20	R
Heat Recovery Entering Water Temp	22	R
Heat Recovery Leaving Water Temp	23	R
Outdoor Air Temp	24	R
Chiller Current	25	R
Chiller Voltage	26	R
Power Input	27	R
Warning Alarm Index	28	R
Problem Alarm Index	29	R
Fault Alarm Index	30	R
Warning Alarm Code	31	R
Problem Alarm Code	32	R
Fault Alarm Code	33	R
Chiller Mode Setpoint – Network	34	RW
Cool Setpoint – Network	35	RW
Ice Setpoint - Network	36	RW
Heat Setpoint – Network	37	RW
Capacity Limit Setpoint - Network	38	RW
Circuit #1 Condenser Refrigerant Pressure	39	R
Circuit #1 Condenser Saturated Refrigerant Temp	40	R
Circuit #1 Evaporator Refrigerant Pressure	41	R
Circuit #1 Evaporator Saturated Refrigerant Temp	42	R
Circuit #2 Condenser Refrigerant Pressure	43	R
Circuit #2 Condenser Saturated Refrigerant Temp	44	R
Circuit #2 Evaporator Refrigerant Pressure	45	R
Circuit #2 Evaporator Saturated Refrigerant Temp	46	R
Circuit #3 Condenser Refrigerant Pressure	47	RW
Circuit #3 Condenser Saturated Refrigerant Temp	48	RW
Circuit #3 Evaporator Refrigerant Pressure	49	RW

Data/Alarm Point	Holding Register (4xxxx)	R/W
Circuit #3 Evaporator Saturated Refrigerant Temp	50	RW
Circuit #1 Comp #1 - Suction Refrigerant Temp	65	R
Circuit #1 Comp #1 - Discharge Refrigerant Temp	68	R
Circuit #1 Comp #1 - Percent RLA	69	R
Circuit #1 Comp #1 - Current	70	R
Circuit #1 Comp #1 – Voltage	71	R
Circuit #1 Comp #1 – Power	72	R
Circuit #1 Comp #1 – Starts	73	RW
Circuit #1 Comp #1 – Starts	73	R
Circuit #1 Comp #1 - Run Hours	74	RW
Circuit #1 Comp #1 - Run Hours	74	R
Circuit #1 Comp #2 - Suction Refrigerant Temp	78	R
Circuit #1 Comp #2 - Discharge Refrigerant Temp	81	R
Circuit #1 Comp #2 – Starts	86	R
Circuit #1 Comp #2 - Run Hours	87	R
Circuit #1 Comp #3 – Starts	99	R
Circuit #1 Comp #3 - Run Hours	100	RW
Circuit #2 Comp #1 Suction Refrigerant Temp	104	R
Circuit #2 Comp #1 - Discharge Refrigerant Temp	107	R
Circuit #2 Comp #1 - Percent RLA	108	R
Circuit #2 Comp #1 - Current	109	R
Circuit #2 Comp #1 Voltage	110	R
Circuit #2 Comp #1 - Power	111	R
Circuit #2 Comp #1 – Starts	112	RW
Circuit #2 Comp #1 – Starts	112	R
Circuit #2 Comp #1 - Run Hours	113	RW
Circuit #2 Comp #1 - Run Hours	113	R
Circuit #2 Comp #2- Starts	125	RW
Circuit #2 Comp #2- Run Hours	126	RW
Circuit #2 Comp #3 - Starts	138	RW
Circuit #2 Comp #3 - Run Hours	139	RW
Circuit #3 Comp #1 - Suction Refrigerant Temp	143	R
Circuit #3 Comp #1 - Discharge Refrigerant Temp	146	R
Circuit #3 Comp #1 - Percent RLA	147	R
Circuit #3 Comp #1 - Current	148	R
Circuit #3 Comp #1 - Voltage	149	R
Circuit #3 Comp #1 - Power	150	R
Circuit #3 Comp #1 – Starts	151	RW
Circuit #3 Comp #1 – Starts	151	R
Circuit #3 Comp #1 - Run Hours	152	RW
Circuit #3 Comp #1 - Run Hours	152	R
Condenser Pump Run Hours	297	R
Condenser Pump Status	299	R
Evaporator Pump #1 Run Hours	303	RW
Evaporator Pump #1 Run Hours	303	R
Evaporator Pump #1 Status	305	R
Evaporator Pump #2 Run Hours	306	RW
Evaporator Pump #2 Run Hours	306	R
Evaporator Pump #2 Status	308	R
Year	309	RW
Month	310	RW
Date	311	RW
Day of Week	312	RW
Hour	313	RW
Minute	314	RW
Second	315	RW

Data/Alarm Point	Holding Register (4xxxx)	R/W
Units	316	RW
Chiller Model	317	R
Chiller Location[2]	318	RW
Chiller Location	327	RW
Application Software Version[1]	334	R
Application Software Version	338	R
Condenser Entering Water Temp Sensor Fault (EWWD)	365	R
Evaporator Entering Water Temp Sensor Fault	366	R
Condenser Leaving Water Temp Sensor Fault	368	R
Bad setpoint override input Warning	377	R
Bad demand limit input Warning	378	R
RESTART DELAYED - Power Loss While Running Problem	379	R
UNIT RESTART DELAYED - Power Loss While Running Problem	379	R
Circuit #1 RESTART DELAYED - Power Loss While Running Problem	384	R
Circuit #2 RESTART DELAYED - Power Loss While Running Problem	385	R
Circuit #3 RESTART DELAYED - Power Loss While Running Problem	386	R
START INHIBITED - Ambient Temp Low Problem	388	R
UNIT INHIBIT LOAD - High Pressure Problem	389	R
UNIT INHIBIT LOAD - High Pressure Problem	389	R
Circuit #1 INHIBIT LOAD - High Pressure Problem	390	R
Circuit #2 INHIBIT LOAD - High Pressure Problem	391	R
Circuit #3 INHIBIT LOAD - High Pressure Problem	392	R
UNIT UNLOAD - High Pressure Problem	394	R
Circuit #1 UNLOAD - High Pressure Problem	395	R
Circuit #2 UNLOAD - High Pressure Problem	396	R
Circuit #3 UNLOAD - High Pressure Problem	397	R
UNIT INHIBIT LOAD - Low Pressure Problem	410	R
UNIT INHIBIT LOAD - Low Pressure Problem	410	R
Circuit #1 INHIBIT LOAD - Low Pressure Problem	411	R
Circuit #2 INHIBIT LOAD - Low Pressure Problem	412	R
Circuit #3 INHIBIT LOAD - Low Pressure Problem	413	R
UNIT UNLOAD - Low Pressure Problem	415	R
Circuit #1 UNLOAD - Low Pressure Problem	416	R
Circuit #2 UNLOAD - Low Pressure Problem	417	R
Circuit #3 UNLOAD - Low Pressure Problem	418	R
Circuit #1 Comp #1 - UNLOAD - Hi Current Problem	420	R
Circuit #2 Comp #1 - UNLOAD - Hi Current Problem	422	R
Circuit #3 Comp #1 - UNLOAD - Hi Current Problem	424	R
Evaporator Pump #1 Failure - Pump #2 Start Attempted Problem	430	R
Evaporator Pump #2 Failure - Pump #1 Start Attempted Problem	431	R
Circuit #1 Comp #1 - SHUTDOWN - Low pressure ratio Fault	440	R
UNIT SHUTDOWN - Low Pressure Ratio	441	R
Circuit #2 Comp #1 - SHUTDOWN - Low pressure ratio Fault	442	R
Circuit #3 Comp #1 - SHUTDOWN - Low pressure ratio Fault	444	R
UNIT SHUTDOWN - Outside Air Temp Sensor Fault	446	R
Circuit #1 Comp #1 - SHUTDOWN - Current Overload Fault	447	R
Circuit #2 Comp #1 - SHUTDOWN -Current Overload Fault	449	R
Circuit #3 Comp #1 - SHUTDOWN - Current Overload Fault	451	R
Circuit #1 Comp #1 - SHUTDOWN – Motor Protector Fault	466	R
Circuit #1 SHUTDOWN– Motor ProtectorFault	466	R
Circuit #1 Comp #2 - SHUTDOWN – Motor Protector Fault	467	R
Circuit #2 Comp #1 - SHUTDOWN– Motor Protector Fault	468	R
Circuit #2 Comp #2 - SHUTDOWN – Motor Protector Fault	469	R
Circuit #1 Comp #1 - SHUTDOWN - Motor Temp High Fault	478	R
Circuit #1 Comp #2 - SHUTDOWN - Motor Temp High Fault (PFS)	479	R
UNIT SHUTDOWN - Motor Temp High	479	R

Data/Alarm Point	Holding Register (4xxxx)	R/W
Circuit #2 Comp #1 - SHUTDOWN - Motor Temp High Fault	480	R
Circuit #3 Comp #1 - SHUTDOWN - Motor Temp High Fault	482	R
UNIT SHUTDOWN – Condenser Pressure Sensor Fault (PFS)	508	R
Circuit #1 Comp #1 - SHUTDOWN – Condenser Pressure Sensor Fault	509	R
Circuit #2 Comp #1 - SHUTDOWN - Condenser Pressure Sensor Fault	511	R
Circuit #3 Comp #1 - SHUTDOWN - Condenser Pressure Sensor Fault	513	R
UNIT SHUTDOWN - Condenser Flow Loss	515	R
UNIT SHUTDOWN - Condenser High Pressure	516	R
Circuit #1 SHUTDOWN – Condenser Pressure High Fault	517	R
Circuit #2 SHUTDOWN – Condenser Pressure HighFault	519	R
Circuit #3 Comp #1 - SHUTDOWN - Condenser Pressure High Fault	521	R
Circuit #1 Comp #1 - SHUTDOWN - Discharge Temp Sensor Fault	529	R
Circuit #1 Comp #2 - SHUTDOWN - Discharge Temp Sensor Fault (PFS)	530	R
Circuit #2 Comp #1 - SHUTDOWN - Discharge Temp Sensor Fault	531	R
Circuit #3 Comp #1 - SHUTDOWN - Discharge Temp Sensor Fault	533	R
Circuit #1 Comp #1 - SHUTDOWN - Discharge Temp High Fault	535	R
Circuit #1 Comp #2 - SHUTDOWN - Discharge Temp High Fault (PFS)	536	R
Circuit #2 Comp #1 - SHUTDOWN - Discharge Temp High Fault	537	R
Circuit #3 Comp #1 - SHUTDOWN - Discharge Temp High Fault	539	R
Condenser Entering Water Temp Sensor Fault (PFS)	541	R
UNIT SHUTDOWN - Evaporator Water Flow Loss	542	R
UNIT SHUTDOWN - Evaporator Leaving Water Temp Low (Freeze)	543	R
UNIT SHUTDOWN - Evaporator Low Pressure	544	R
Circuit #1 SHUTDOWN – Low Evaporator Pressure Fault	545	R
Circuit #2 SHUTDOWN – Low Evaporator Pressure Fault	547	R
Circuit #3 Comp #1 - SHUTDOWN - Evaporator Pressure Low Fault	549	R
UNIT SHUTDOWN - Evaporator Pressure Sensor Fault	551	R
Circuit #1 SHUTDOWN – Evaporator Pressure Sensor Fault	552	R
Circuit #2 SHUTDOWN – Evaporator Pressure Sensor Fault	554	R
Circuit #3 Comp #1 - SHUTDOWN - Evaporator Pressure Sensor Fault	556	R
Circuit #1 Comp #1 - LOCKOUT - Number of Allowed Re-Starts Exceeded Fault	583	R
Circuit #2 Comp #1 -LOCKOUT - Number of Allowed Re-Starts Exceeded Fault	585	R
Circuit #3 Comp #1 -LOCKOUT - Number of Allowed Re-Starts Exceeded Fault	587	R
UNIT SHUTDOWN - Evaporator Leaving Water Temp Sensor Fault	589	R
Evaporator Leaving Water Temp Sensor Fault	590	R
UNIT SHUTDOWN - Evaporator Freeze Protection Fault	592	R
Circuit #1 Comp #1 - SHUTDOWN - Mechanical High Pressure Fault	601	R
Circuit #1 Comp #2 - SHUTDOWN - Mechanical High Pressure Fault (PFS)	602	R
UNIT SHUTDOWN - Mechanical High Pressure Switch	602	R
Circuit #2 Comp #1 - SHUTDOWN - Mechanical High Pressure Fault	603	R
Circuit #3 Comp #1 - SHUTDOWN - Mechanical High Pressure Fault	605	R
Circuit #1 Comp #1 - SHUTDOWN - Oil Delta Pressure High Fault	637	R
Circuit #1 Comp #2 - SHUTDOWN - Oil Delta Pressure High Fault (PFS)	638	R
UNIT SHUTDOWN – Oil Delta Pressure High	638	R
Circuit #2 Comp #1 - SHUTDOWN - Oil Delta Pressure High Fault	639	R
Circuit #3 Comp #1 - SHUTDOWN - Oil Delta Pressure High Fault	641	R
Circuit #1 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault	643	R
Circuit #2 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault	645	R
Circuit #3 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault	647	R
Circuit #1 Comp #1 - SHUTDOWN - Oil Feed Pressure Sensor Fault (PFS)	649	R
Circuit #1 Comp #2 - SHUTDOWN - Oil Feed Pressure Sensor Fault (PFS)	650	R
UNIT SHUTDOWN – Phase Voltage Protection (ATLAS, AWS, EWWD, MNG, PFS)	661	R
Circuit #1 Comp #1 - SHUTDOWN - Starter Fault	662	R
Circuit #1 Comp #2 - SHUTDOWN - Starter Fault (PFS)	663	R
Circuit #2 Comp #1 - SHUTDOWN - Starter Fault	664	R
Circuit #3 Comp #1 - SHUTDOWN - Starter Fault	666	R

Data/Alarm Point	Holding Register (4xxxx)	R/W
Circuit #1 Comp #1 - SHUTDOWN - Suction Temp Sensor Fault	698	R
Circuit #1 Comp #2 - SHUTDOWN - Suction Temp Sensor Fault (PFS)	699	R
Circuit #2 Comp #1 - SHUTDOWN - Suction Temp Sensor Fault	700	R
Circuit #3 Comp #1 - SHUTDOWN - Suction Temp Sensor Fault	702	R
Circuit #1 SHUTDOWN – No Pressure at Startup Fault	711	R
Circuit #2 SHUTDOWN – No Pressure at Startup Fault	712	R
Circuit #3 SHUTDOWN – No Pressure at Startup Fault	713	R
Circuit #1 Comp #1 - SHUTDOWN - Mechanical Low Pressure Fault	717	R
Circuit #1 Comp #2 - SHUTDOWN - Mechanical Low Pressure Fault	718	R
UNIT SHUTDOWN - Mechanical Low Pressure Switch	718	R
Circuit #2 Comp #1 - SHUTDOWN - Mechanical Low Pressure Fault	719	R
Circuit #3 Comp #1 - SHUTDOWN - Mechanical Low Pressure Fault	721	R
Circuit #1 Controller board offline Fault	723	R
Circuit #2 Controller board offline Fault	724	R
Circuit #3 Controller board offline Fault	725	R
Circuit #1 Comp #1 - SHUTDOWN - Motor Temp Sensor Fault	734	R
Circuit #1 Comp #2 - SHUTDOWN - Motor Temp Sensor Fault	735	R
Circuit #2 Comp #1 - SHUTDOWN - Motor Temp Sensor Fault	736	R
Circuit #3 Comp #1 - SHUTDOWN - Motor Temp Sensor Fault	738	R
Unit Power Restore Warning	740	R
Circuit #1 Failed pumpdown Warning	741	R
Circuit #2 Failed pumpdown Warning	742	R
Circuit #3 Failed pumpdown Warning	743	R
External event Warning	745	R
Controller board offline Fault	746	R
Circuit #1 SHUTDOWN – No Pressure Change After Start	747	R
UNIT SHUTDOWN – No Pressure Change After Start (PFS)	747	R
Circuit #2 SHUTDOWN – No Pressure Change After Start	748	R
Circuit #3 SHUTDOWN – No Pressure Change After Start	749	R
Circuit #1 SHUTDOWN – Phase Voltage Protection Fault (ATLAS, AWS, EWWD, MNG)	751	R
Circuit #2 SHUTDOWN – Phase Voltage Protection Fault (ATLAS, AWS, EWWD, MNG)	752	R
Circuit #3 SHUTDOWN – Phase Voltage Protection Fault	753	R
UNIT SHUTDOWN - Evaporator Entering Water Temp Sensor Fault	755	R
Circuit #1 Comp #1 - SHUTDOWN -Slide position Sensor Fault	756	R
Circuit #1 Comp #2 - SHUTDOWN - Slide position Sensor Fault	757	R
Circuit #2 Comp #1 - SHUTDOWN - Slide position Sensor Fault	758	R
Circuit #3 Comp #1 - SHUTDOWN - Slide position Sensor Fault	760	R
Circuit #1 Comp #1 - SHUTDOWN - VFD Fault	762	R
Circuit #2 Comp #1 - SHUTDOWN - VFD Fault	764	R
Circuit #3 Comp #1 - SHUTDOWN - VFD Fault	766	R
Circuit #1 Comp #1 - SHUTDOWN - VFD Over Heat Fault	768	R
Circuit #2 Comp #1 - SHUTDOWN - VFD Over Heat Fault	770	R
Circuit #3 Comp #1 - SHUTDOWN - VFD Over Heat Fault	772	R
Circuit #1 Comp #1 - SHUTDOWN - COM ERROR With VFD Fault	774	R
Circuit #2 Comp #1 - SHUTDOWN - COM ERROR With VFD Fault	776	R
Circuit #3 Comp #1 - SHUTDOWN - COM ERROR With VFD Fault	778	R
Circuit #1 INHIBIT LOAD - High Current Problem	780	R
Circuit #2 INHIBIT LOAD - High Current Problem	782	R
Circuit #3 INHIBIT LOAD - High Current Problem	784	R
UNIT STOP - Emergency Stop Alarm	798	R
UNIT STOP - Evaporator Water Temps Inverted	799	R
UNIT STOP - External Alarm	800	R
Circuit #1 Comp #1 - SHUTDOWN-Low Discharge Superheat Fault	808	R
Circuit #1 Comp #2 - SHUTDOWN - Low Discharge SuperHeat Fault (PFS)	809	R
Circuit #2 Comp #1 - SHUTDOWN - Low Discharge SuperHeat Fault	810	R
Circuit #3 Comp #1 - SHUTDOWN-Low Discharge Superheat Fault	812	R

Data/Alarm Point	Holding Register (4xxxx)	R/W
Bad Current Limit Input Warning	814	R
Option Controller Communication Failed Warning	815	R
UNIT SHUTDOWN – Phase Voltage Protection (ACZC, ACHZ, ADZ)	816	R
UNIT STOP - PVM GFP Fault	816	R
Circuit #1 SHUTDOWN – Phase Voltage Protection Fault (ACZC, ACZH, ADZ)	817	R
Circuit #2 SHUTDOWN – Phase Voltage Protection Fault (ACZC, ACZH, ADZ)	818	R
Circuit #3 SHUTDOWN - PVM GFP Fault	819	R
Option Fan Alarm Controller Communication Failed Warning	900	R
Circuit #1 Option Fan Alarm Warning	901	R
Circuit #2 Option Fan Alarm Warning	902	R
Refrigerant Type	1606	R
Number of Circuits	1607	R
Number of Comps	1608	R
Chiller Tons	1609	R
Circuit #3 Comp #1 - Actual Capacity	1761	R
Circuit #3 Comp #1 - Off Auto	1762	R
Circuit #3 Comp #1 - Full Load	1763	R
Circuit #3 Comp #1 - VFD Output	1766	RW
Circuit #3 Comp #1 - Oil Feed Pressure	1770	R
Circuit #3 Comp #1 - Oil Level Status	1772	R
Circuit #3 Comp #1 - Status	1773	R
Circuit #2 Comp #3 - Off Auto	1775	RW
Circuit #2 Comp #3 - Status	1786	R
Circuit #2 Comp #2 - Off Auto	1788	RW
Circuit #2 Comp #2 - Status	1799	R
Circuit #2 Comp #1 - Actual Capacity	1800	R
Circuit #2 Comp #1 - Off Auto	1801	RW
Circuit #2 Comp #1 - Full Load	1802	R
Circuit #2 Comp #1 - VFD Output	1805	R
Circuit #2 Comp #1 - Oil Feed Pressure	1809	R
Circuit #2 Comp #1 - Oil Level Status	1811	R
Circuit #2 Comp #1 - Status	1812	R
Circuit #1 Comp #3 - Off Auto	1814	RW
Circuit #1 Comp #3 – Status	1825	R
Circuit #1 Comp #2 - Actual Capacity	1826	R
Circuit #1 Comp #2 - Off Auto	1827	R
Circuit #1 Comp #2 - Full Load	1828	R
Circuit #1 Comp #2 - Oil Feed Pressure (PFS)	1832	R
Circuit #1 Comp #2 – Status	1838	R
Circuit #1 Comp #1 - Actual Capacity	1840	R
Circuit #1 Comp #1 - Off Auto	1841	R
Circuit #1 Comp #1 - Full Load	1842	R
Circuit #1 Comp #1 - VFD Output	1845	R
Circuit #1 Comp #1 - Oil Feed Pressure (PFS)	1846	R
Circuit #1 Comp #1 - Oil Feed Pressure	1849	R
Circuit #1 Comp #1 - Oil Level Status	1851	R
Circuit #1 Comp #1 – Status	1852	R
Evaporator SuperHeat Setpoint	1897	R
Evaporator SuperHeat Temp	1899	R
Active Energy	1900	R
Power Factor	1902	R
Circuit #3 EXV Position	1950	R
Circuit #3 Outdoor Fan Speed	1954	RW
Circuit #3 Condenser Approach Temp	1955	RW
Circuit #3 Evaporator Approach Temp	1956	RW
Circuit #3 Outdoor Fan Status	1965	RW

Data/Alarm Point	Holding Register (4xxxx)	R/W
Circuit #2 EXV Position	1966	R
Circuit #2 Outdoor Fan Speed	1970	R
Circuit #2 Condenser Approach Temp	1971	R
Circuit #2 Evaporator Approach Temp	1972	R
Circuit #2 Outdoor Fan Status	1981	R
Circuit #1 EXV Position	1982	R
Liquid Temp	1984	R
Circuit #1 Outdoor Fan Speed	1986	R
Circuit #1 Condenser Approach Temp	1987	R
Circuit #1 Evaporator Approach Temp	1988	R
Circuit #1 Outdoor Fan Status	1997	R
Noise Reduction Auto On	1998	RW
Noise Reduction Status	2000	R

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