DAIKIN APPLIED EUROPE S.p.A.

BAS integration guide

Modbus protocol

Doc. Name:
D-EIGOC00201-22_02EN_EWWD-VZ

Product Name:
EWWD/H-VZ

Control software name:
Adam

CE

Table of contents

1. Introduction

This document contains information to incorporate a MicroTech® III and Microtech 4 Unit Controllers into a building automation system (BAS) via Modbus communication protocols.

Microtech III and Microtech 4 are suitable for network integration. Data points accessible from a Modbus network are made available to a BAS provided that the proper communication module (Microtech III and Microtech 4) or the corresponding software option (Microtech 4) are installed / acrivated.

Modbus terms are not defined. Refer to the standard Modbus specifications for definitions and details about the protocol.

2. About this document

2.1 Notice

2.2 Before starting

Application range

This document refers to the following components:

Microtech III	Controller
Microtech 4	Controller
POL902.00/STD	Modbus MSTP module

Users

Users of this document are intended to be:

- Modbus systems integrators
- Service Technicians
- Plant Engineers
- Sales staff

Conventions

Microtech III e Microtech 4 further in this document and when proper will be referred to as “Microtech”

Abbreviation

BSP	**B**oard **S**upport **P**ackage (operating system)

References

- Siemens Building Technologies - CB1J3960en - **Modbus** communication, slave mode
- Siemens Building Technologies - CB1Q3934en - Climatix™ **Modbus** communication modules POL902.00
- The Modbus Organization - www.modbus.org

3. Safety information

Only personnel qualified in accordance with IEC (International Electrotechnical Commission) recommendations may be permitted access to electrical components. It is particularly recommended that all sources of electricity to the unit be shut off before any work is begun. Shut off main power supply at the main circuit breaker or isolator.

IMPORTANT: This equipment uses and emits electromagnetic signals. Tests have shown that the equipment conforms to all applicable codes with respect to electromagnetic compatibility.

	***RISK OF ELECTROCUTION: Even when the main circuit breaker or isolator is switched off, certain circuits may still be energized, since they may be connected to a separate power source.***
	***RISK OF BURNS: Electrical currents cause components to get hot either temporarily or permanently. Handle power cable, electrical cables and conduits, terminal box covers and motor frames with great care.***

Field of application		Use Modbus communication module only for control and monitoring functions in ventilation, air conditioning and refrigeration plants.
Intended use		Trouble-free and safe product operation of the above products presupposes transport, storage, mounting, installation, and commissioning as intended as well as careful operation.
Electrical installation		Fuses, switches, wiring and grounding must comply with local safety regulations for electrical installations.
Wiring		When wiring, strictly separate AC 230 V mains voltage from AC 24 V safety extralow voltage (SELV) to protect against electrical shock!
Commissioning and maintenance		Only qualified staff trained accordingly may prepare for use, commission, and maintain Modbus communication modules. Maintenance of Modbus communication modules generally only means regular cleaning. We recommend removing dust and dirt from system components installed in the control panels during standard service.
Faults		Only authorized staff may diagnose and correct faults and recommission the plant. This applies to working within the panel as well (e.g. testing or changing fuses).
Storage and transport		Refer to the environmental conditions specified in the respective data sheets for storage and transport. If in doubt, contact your supplier.
Disposal		Devices contain electrical and electronic components; do not dispose of them in household garbage. Observe all local and applicable laws.

4. Commission this unit in a Modbus network

4.1 General information

Unit controller is a Microtech III or a POL638

Microtech III controller can be integrated in a Modbus network provided that it is equipped with the proper communication module. See “Communication modules” section below in this page.

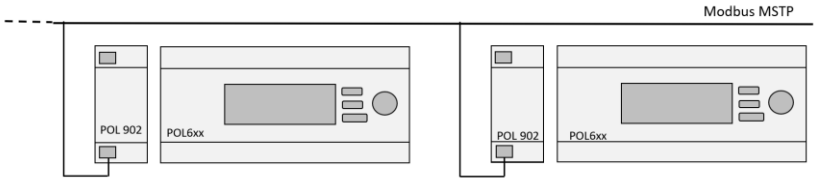
Unit controller is a Microtech 4

Microtech 4 controller can be integrated in a Modbus network provided one of the followings:

a) it is equipped with the proper communication module
b) the onboard communication has been made available (software option).

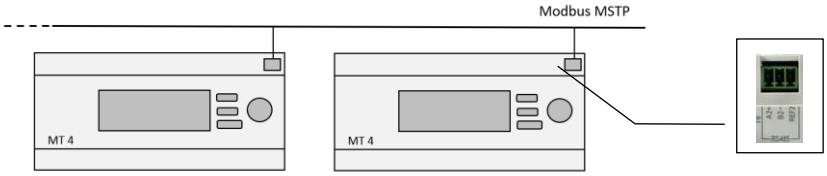
Modbus MSTP (POL902)

Communication module to configure Microtech controllers in Modbus network is the POL902:



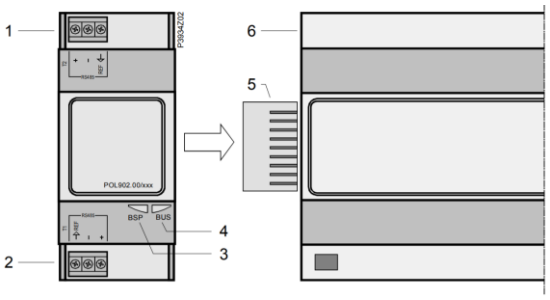
Communication software option

For Microtech 4, Modbus communication is also available onborad the controller as a software option.



4.2 Modbus MSTP module (POL902)

Module description



Part	Description
1	Modbus RS485 interface T1 (slave, channel 0).
2	Modbus RS485 interface T2 (slave, channel 1).
3	Status display "BSP" (Board Support Package).
4	Status display "BUS" (bus connections o.k. / bus traffic).
5	Plug connection "Communication extension bus".
6	Microtech III controller.

BSP Led

Color	Flashing frequency	Meaning
Green	Steady on	BSP operating and communication with controller working.
Yellow	Steady on	BSP operating, but no communication with controller.
Red	Steady on	Hardware fault.
Red/Yellow	Flashing at 1 Hz (1 second on/ 1 second off)	Upgrade mode running.
Red	Flashing at 2 Hz (0,5 second on/ 0,5 second off)	BSP error (software error).

BUS Led

Color	Flashing frequency	Meaning
Green	Steady on	Communication active.
Yellow	Steady on	Initializing
Red	Steady on	Communication interrupted.

Module connection

Step	Action
1	Power off the controller
2	Connect POL902 module to the controller via plug connection (part 5).
4	Power on the controller

Configuration procedure

Step	Action
1	Check that BUS led status is steady on green coloured.
2	Navigate the unit's keypad/display to the main menu page and set the "service" password
3	Navigate the unit's keypad/display following the path below: **Main menu→Commissioning→Modbus**
4	Set parameters in the table below as needed according to the local network

Configuration parameters

Parameter	Default value
Address T1	1
Parity T1	None
2 Stop bits T1	Yes
Baud rate T1	19200
Rspnce Dly T1	5 ms
Port T2	Passive
Address T2	1
Parity T2	None
2 Stop bits T2	Yes
Baud rate T2	19200
Rspnce Dly T2	5 ms

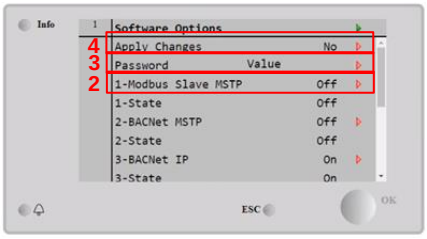
4.3 Modbus MSTP software option (Microtech 4)

Option enabling

1. From the HMI main menu choose:

   `Commissioning→ Configuration→ Software Options`

2. Select “On” for option #1-Modbus Slave MSTP
3. Insert the unlock password
4. Apply Changes

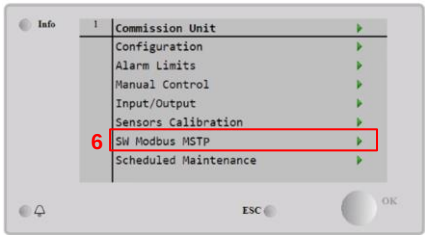


Option configuration

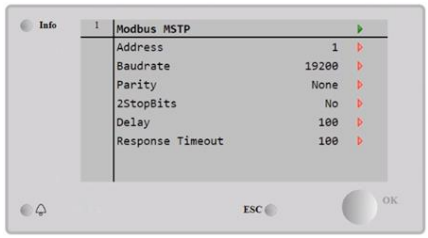
5. From the HMI main menu choose:

   `Commissioning→ Commission Unit`

6. Select “SW Modbus MSTP”



7. Select proper parameters for Modbus communication



Parameter	Default value
Address	Variable
Baudrate	19200
Parity	None
2StopBits	No
Delay	100 ms
Response Timeout	100 ms

5. Modbus integration list

All the register communicated by unit controller are HOLDING REGISTER.

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Unit - Control Source	UNSIGNED WORD	1	1	0 Network 1 Local	R
Unit - Enabled State	UNSIGNED WORD	2	1	0 Disabled 1 Enabled	R
Unit - Run Allowed	UNSIGNED WORD	3	1	0 Off 1 RunAllowed	R
Unit - Capacity Limited	UNSIGNED WORD	4	1	0 NotLimited 1 Limited	R
Unit - Alarm Output	UNSIGNED WORD	5	1	0 NoAlarm 1 Alarm	R
Evaporator - Water Flow State	UNSIGNED WORD	6	1	0 NoFlow 1 Flow	R
Condenser - Water Flow State	UNSIGNED WORD	7	1	0 NoFlow 1 Flow	R
Unit - Operating State	UNSIGNED WORD	8	1	0 Off 1 On	R
Unit - Enable Setpoint	UNSIGNED WORD	9	1	0 Disable 1 Enable	W
Unit - Alarm Reset Setpoint	UNSIGNED WORD	10	1	0 None 1 ClearAlarm	W

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Unit - Active Operation Mode	UNSIGNED WORD	11	1	1 Ice 2 Cool 3 Heat 4 Pursuit	R
Unit - Active Temperature Setpoint	SIGNED WORD	12	0,1	°C	R
Unit - Actual Capacity	SIGNED WORD	13	0,1	%	R
Unit - Active Capacity Limit	SIGNED WORD	14	0,1	%	R
Unit - Status	UNSIGNED WORD	15	1	1 Off 2 Start 3 Run 4 PreShutdown 5 Service	R
Evaporator Entering Water Temperature	SIGNED WORD	16	0,1	°C	R
Evaporator Leaving Water Temperature	SIGNED WORD	17	0,1	°C	R
Condenser Entering Water Temperature	SIGNED WORD	19	0,1	°C	R
Condenser Leaving Water Temperature	SIGNED WORD	20	0,1	°C	R
Unit - Average Current	SIGNED WORD	25	1	A	R
Unit - Average Voltage	SIGNED WORD	26	0,1	V	R
Unit - Active Power	SIGNED WORD	27	0,1	kW	R
Unit Alarm - Warning Index	SIGNED WORD	28	1	See Paragraph 5.1	R
Unit Alarm - Problem Index	SIGNED WORD	29	1	See Paragraph 5.1	R
Unit Alarm - Fault Index	SIGNED WORD	30	1	See Paragraph 5.1	R
Unit Alarm - Warning Code	SIGNED WORD	31	1	See Paragraph 5.1	R
Unit Alarm - Problem Code	SIGNED WORD	32	1	See Paragraph 5.1	R
Unit Alarm - Fault Code	SIGNED WORD	33	1	See Paragraph 5.1	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Unit - Operation Mode Setpoint	UNSIGNED WORD	34	1	1 Ice 2 Cool 3 Heat 4 Pursuit	W
Unit - Cool Temperature Setpoint	SIGNED WORD	35	0,1	°C	W
Unit - Ice Temperature Setpoint	SIGNED WORD	36	0,1	°C	W
Unit - Heat Temperature Setpoint	SIGNED WORD	37	0,1	°C	W
Unit - Capacity Limit Setpoint	SIGNED WORD	38	0,1	%	W
Circuit 1 - Condenser Refrigerant Pressure	SIGNED WORD	39	0,1	kPa	R
Circuit 1 - Condeser Saturated Temperature	SIGNED WORD	40	0,1	°C	R
Circuit 1 - Evaporator Refrigerant Pressure	SIGNED WORD	41	0,1	kPa	R
Circuit 1 - Evaporator Saturated Temperature	SIGNED WORD	42	0,1	°C	R
Circuit 2 - Condenser Refrigerant Pressure	SIGNED WORD	43	0,1	kPa	R
Circuit 2 - Condeser Saturated Temperature	SIGNED WORD	44	0,1	°C	R
Circuit 2 - Evaporator Refrigerant Pressure	SIGNED WORD	45	0,1	kPa	R
Circuit 2 - Evaporator Saturated Temperature	SIGNED WORD	46	0,1	°C	R
Circuit 1 - Shutdown Alarm	UNSIGNED WORD	51	1	0 NoAlarm 1 Alarm	R
Circuit 2 - Shutdown Alarm	UNSIGNED WORD	52	1	0 NoAlarm 1 Alarm	R
Circ 1 Compressor 1 - Suction Temperature	SIGNED WORD	65	0,1	°C	R
Circ 1 Compressor 1 - Discharge Temperature	SIGNED WORD	68	0,1	°C	R
Circ 1 Compressor 1 - RLA Percentage	SIGNED WORD	69	1	%	R
Circ 1 Compressor 1 - Current	SIGNED WORD	70	1	A	R
Circ 1 Compressor 1 - Voltage	SIGNED WORD	71	1	V	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Circ 1 Compressor 1 - Power	SIGNED WORD	72	1	kW	R
Circ 1 Compressor 1 - Number of Starts	UNSIGNED WORD	73	1		W
Circ 1 Compressor 1 - Number of Running Hours	UNSIGNED DOUBLE	74-75	1	h	W
Circ 2 Compressor 1 - Suction Temperature	SIGNED WORD	104	0,1	°C	R
Circ 2 Compressor 1 - Discharge Temperature	SIGNED WORD	107	0,1	°C	R
Circ 2 Compressor 1 - RLA Percentage	SIGNED WORD	108	1	%	R
Circ 2 Compressor 1 - Current	SIGNED WORD	109	1	A	R
Circ 2 Compressor 1 - Voltage	SIGNED WORD	110	1	V	R
Circ 2 Compressor 1 - Power	SIGNED WORD	111	1	kW	R
Circ 2 Compressor 1 - Number of Starts	UNSIGNED WORD	112	1		W
Circ 2 Compressor 1 - Number of Running Hours	UNSIGNED DOUBLE	113-114	1	h	W
Performance - Unit Thermal Capacity	UNSIGNED DOUBLE	260-261	0,1	kW	R
Performance - Unit Power Input	UNSIGNED DOUBLE	262-263	0,1	kW	R
Performance - Unit Efficiency	UNSIGNED WORD	264	0,01	-	R
Performance - Unit Integrated Efficiency	UNSIGNED WORD	265	0,01	-	R
Performance - Unit Thermal Energy	UNSIGNED DOUBLE	266-267	0,1	MWh	R
Performance - Unit Electrical Energy	UNSIGNED DOUBLE	268-269	0,1	MWh	R
Condenser Pump 1 - Number of Running Hours	UNSIGNED DOUBLE	297	1	h	R
Condenser Pump 1 - Operating State	UNSIGNED WORD	299	1	0 OffRequest 1 OnRequest	R
Condenser Pump 2 - Number of Running Hours	UNSIGNED DOUBLE	300-301	1	h	R
Condenser Pump 2 - Operating State	UNSIGNED WORD	302	1	0 OffRequest 1 OnRequest	R
Evaporator Pump 1 - Number of Running Hours	UNSIGNED DOUBLE	303-303	1	h	R
Evaporator Pump 1 - Operating State	UNSIGNED WORD	305	1	0 OffRequest 1 OnRequest	R
Evaporator Pump 2 - Number of Running Hours	UNSIGNED DOUBLE	306-307	1		R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Evaporator Pump 2 - Operating State	UNSIGNED WORD	308	1	0 OffRequest 1 OnRequest	R
Unit - Measurement unit setpoint	UNSIGNED WORD	316	1	0 English 1 Metric	W
Unit - Model	UNSIGNED WORD	317	1	0 Centrifugal 1 Water Cooled 2 Air Cooled 3 HeatPump 4 Reserved 5 Reserved 6 Reserved 7 Reserved 8 Other	R
Unit Alarm - Condenser Entering Temperature Sensor Fault	UNSIGNED WORD	365	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Evaporator Entering Temperature Sensor Fault	UNSIGNED WORD	366	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Condenser Leaving Temperature Sensor Fault	UNSIGNED WORD	368	1	0 NoAlarm 1 Alarm	R
Unit Warning - Setpoint Reset Input Out of Range	UNSIGNED WORD	377	1	0 NoAlarm 1 Alarm	R
Unit Warning - Demand Limit Input Out of Range	UNSIGNED WORD	378	1	0 NoAlarm 1 Alarm	R
Circuit 1 Warning - Power Loss while Compressor Running	UNSIGNED WORD	384	1	0 NoAlarm 1 Alarm	R
Circuit 2 Warning - Power Loss while Compressor Running	UNSIGNED WORD	385	1	0 NoAlarm 1 Alarm	R
Circuit 1 Warning - Inhibition for Condenser High Pressure	SIGNED WORD	390	1	kPa	R
Circuit 2 Warning - Inhibition for Condenser High Pressure	SIGNED WORD	391	1	kPa	R
Circuit 1 Warning - Unload for Condenser High Pressure	SIGNED WORD	395	1	kPa	R
Circuit 2 Warning - Unload for Condenser High Pressure	SIGNED WORD	396	1	kPa	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Circuit 1 Warning - Inhibition for Evaporator Low Pressure	SIGNED WORD	411	1	kPa	R
Circuit 2 Warning - Inhibition for Evaporator Low Pressure	SIGNED WORD	412	1	kPa	R
Circuit 1 Warning - Unload for Evaporator Low Pressure	SIGNED WORD	416	1	kPa	R
Circuit 2 Warning - Unload for Evaporator Low Pressure	SIGNED WORD	417	1	kPa	R
Circ 1 Comp 1 Warning - Unload for High Current	SIGNED WORD	420	1	A	R
Circ 2 Comp 1 Warning - Unload for High Current	SIGNED WORD	422	1	A	R
Condenser Pump 1 - Fault	UNSIGNED WORD	428	1	0 NoAlarm 1 Alarm	R
Condenser Pump 2 - Fault	UNSIGNED WORD	429	1	0 NoAlarm 1 Alarm	R
Evaporator Pump 1 - Fault	UNSIGNED WORD	430	1	0 NoAlarm 1 Alarm	R
Evaporator Pump 2 - Fault	UNSIGNED WORD	431	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp 1 Alarm - Low Pressure Ratio	UNSIGNED WORD	440	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp 1 Alarm - Low Pressure Ratio	UNSIGNED WORD	442	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp 1 Alarm - High Motor Current	UNSIGNED WORD	447	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp 1 Alarm - High Motor Current	UNSIGNED WORD	449	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp 1 Alarm - High Motor Temperature	UNSIGNED WORD	478	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp 1 Alarm - High Motor Temperature	UNSIGNED WORD	480	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Condenser Pressure Sensor Fault	UNSIGNED WORD	509	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Condenser Pressure Sensor Fault	UNSIGNED WORD	511	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Condenser Water Freeze	UNSIGNED WORD	514	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Condenser Water Flow Loss	UNSIGNED WORD	515	1	0 NoAlarm 1 Alarm	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Circuit 1 Alarm - Condenser High Pressure	UNSIGNED WORD	517	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Condenser High Pressure	UNSIGNED WORD	519	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Discharge Temperature Sensor Fault	UNSIGNED WORD	529	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Discharge Temperature Sensor Fault	UNSIGNED WORD	531	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp 1 Alarm - High Discharge Temperature	UNSIGNED WORD	535	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp 1 Alarm - High Discharge Temperature	UNSIGNED WORD	537	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Evaporator Water Flow Loss	UNSIGNED WORD	542	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Evaporator Water Freeze	UNSIGNED WORD	543	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Evaporator Pressure Low	UNSIGNED WORD	545	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Evaporator Pressure Low	UNSIGNED WORD	547	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Evaporator Pressure Sensor Failure	UNSIGNED WORD	552	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Evaporator Pressure Sensor Failure	UNSIGNED WORD	554	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Too many restart	UNSIGNED WORD	583	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Too many restart	UNSIGNED WORD	585	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Evaporator Leaving Temperature Sensor Fault	UNSIGNED WORD	589	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Mechanical High Pressure	UNSIGNED WORD	601	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Mechanical High Pressure	UNSIGNED WORD	603	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Oil Level Low	UNSIGNED WORD	631	1	0 NoAlarm 1 Alarm	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Circuit 2 Alarm - Oil Level Low	UNSIGNED WORD	633	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Oil Filter High Pressure	UNSIGNED WORD	637	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Oil Filter High Pressure	UNSIGNED WORD	639	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Oil Pressure Sensor Failure	UNSIGNED WORD	643	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Oil Pressure Sensor Failure	UNSIGNED WORD	645	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Liquid Temperature Sensor Failure	UNSIGNED WORD	652	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Liquid Temperature Sensor Failure	UNSIGNED WORD	655	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Phase Voltage	UNSIGNED WORD	661	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp 1 Alarm - Starter Fault	UNSIGNED WORD	662	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp 1 Alarm - Starter Fault	UNSIGNED WORD	664	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - OverVoltage	UNSIGNED WORD	667	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - OverVoltage	UNSIGNED WORD	668	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - UnderVoltage	UNSIGNED WORD	670	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - UnderVoltage	UNSIGNED WORD	671	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp 1 Alarm - Suction Temperature Sensor Fault	UNSIGNED WORD	698	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp 1 Alarm - Suction Temperature Sensor Fault	UNSIGNED WORD	700	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - No Pressure at Start	UNSIGNED WORD	711	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - No Pressure at Start	UNSIGNED WORD	712	1	0 NoAlarm 1 Alarm	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Circuit 1 Alarm - Mechanical Low Pressure	UNSIGNED WORD	717	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Mechanical Low Pressure	UNSIGNED WORD	719	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Circuit 1 Board Offline	UNSIGNED WORD	723	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Circuit 2 Board Offline	UNSIGNED WORD	724	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Expansion Valve 1 Board Offline	UNSIGNED WORD	726	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Expansion Valve 2 Board Offline	UNSIGNED WORD	727	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Compressor 1 Board Offline	UNSIGNED WORD	729	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Compressor 2 Board Offline	UNSIGNED WORD	730	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp1 Alarm - Motor Temperature Sesnor Fault	UNSIGNED WORD	734	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp1 Alarm - Motor Temperature Sesnor Fault	UNSIGNED WORD	736	1	0 NoAlarm 1 Alarm	R
Unit - Power Restore	UNSIGNED WORD	740	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Pumpdown Failure	UNSIGNED WORD	741	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Pumpdown Failure	UNSIGNED WORD	742	1	0 NoAlarm 1 Alarm	R
Unit Alarm - External Event	UNSIGNED WORD	745	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - No Pressure change at Start	UNSIGNED WORD	747	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - No Pressure change at Start	UNSIGNED WORD	748	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - Pahse Voltage	UNSIGNED WORD	751	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - Pahse Voltage	UNSIGNED WORD	752	1	0 NoAlarm 1 Alarm	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Circ 1 Compr 1 Alarm - VFD Fault	UNSIGNED WORD	762	1	0 NoAlarm 1 Alarm	R
Circ 2 Compr 1 Alarm - VFD Fault	UNSIGNED WORD	764	1	0 NoAlarm 1 Alarm	R
Circ 1 Compr 1 Alarm - VFD High Temperature	UNSIGNED WORD	768	1	0 NoAlarm 1 Alarm	R
Circ 2 Compr 1 Alarm - VFD High Temperature	UNSIGNED WORD	770	1	0 NoAlarm 1 Alarm	R
Circ 1 Compr 1 Alarm - VFD Communication Failure	UNSIGNED WORD	774	1	0 NoAlarm 1 Alarm	R
Circ 2 Compr 1 Alarm - VFD Communication Failure	UNSIGNED WORD	776	1	0 NoAlarm 1 Alarm	R
Circ 1 Comp 1 Warning - Inhibition for High Current Absorption	SIGNED WORD	780	1	0 NoAlarm 1 Alarm	R
Circ 2 Comp 1 Warning - Inhibition for High Current Absorption	SIGNED WORD	782	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Emergency Stop Switch	UNSIGNED WORD	798	1	0 NoAlarm 1 Alarm	R
Unit Alarm - Evaporator Temperature Sensors Inverted	UNSIGNED WORD	799	1	0 NoAlarm 1 Alarm	R
Unit Alarm - External Alarm	UNSIGNED WORD	800	1	0 NoAlarm 1 Alarm	R
Circ 1 Compr 1 Problem - Low Discharge Superheat	UNSIGNED WORD	808	1	0 NoAlarm 1 Alarm	R
Circ 2 Compr 1 Problem - Low Discharge Superheat	UNSIGNED WORD	810	1	0 NoAlarm 1 Alarm	R
Unit Warning - Curennt Limit Input Out Of Range	UNSIGNED WORD	814	1	0 NoAlarm 1 Alarm	R
Circuit 1 Alarm - VFD Card High Temperature	UNSIGNED WORD	830	1	0 NoAlarm 1 Alarm	R
Circuit 2 Alarm - VFD Card High Temperature	UNSIGNED WORD	831	1	0 NoAlarm 1 Alarm	R
Unit Warning - Gas Leakage	UNSIGNED WORD	875	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Energy Meter Communication Failure	UNSIGNED WORD	898	1	0 NoAlarm 1 Alarm	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Controller Alarm - Rapid Restart Board Offline	UNSIGNED WORD	904	1	0 NoAlarm 1 Alarm	R
Controller Alarm - Marine Board Offline	UNSIGNED WORD	905	1	0 NoAlarm 1 Alarm	R
Circ 2 Compressor 1 - Actual Capacity	SIGNED WORD	1800	0,1	%	R
Circ 2 Compressor 1 - OffAuto Setpoint	UNSIGNED WORD	1801	1	0 Off 1 Auto	W
Circ 2 Compressor 1 - Full Load State	UNSIGNED WORD	1802	1	0 Normal 1 Full Load	R
Circ 2 Compressor 1 - VFD Output	SIGNED WORD	1805	1	%	R
Circ 2 Compressor 1 - Oil Feed Pressure	SIGNED WORD	1809	0,1	kPa	R
Circ 2 Compressor 1 - Oil Level State	UNSIGNED WORD	1811	1	0 Off 1 On	R
Circ 2 Compressor 1 - Operating State	UNSIGNED WORD	1812	1	0 Off 1 On	R
Circ 1 Compressor 1 - Actual Capacity	SIGNED WORD	1840	0,1	%	R
Circ 1 Compressor 1 - OffAuto Setpoint	UNSIGNED WORD	1841	1	0 Off 1 Auto	W
Circ 1 Compressor 1 - Full Load State	UNSIGNED WORD	1842	1	0 Normal 1 Full Load	R
Circ 1 Compressor 1 - VFD Output	SIGNED WORD	1845	1	Hz	R
Circ 1 Compressor 1 - Oil Feed Pressure	SIGNED WORD	1849	0,1	kPa	R
Circ 1 Compressor 1 - Oil Level State	UNSIGNED WORD	1851	1	0 Off 1 On	R
Circ 1 Compressor 1 - Operating State	UNSIGNED WORD	1852	1	0 Off 1 On	R

Description	Type	Adrress (4xxxx)	Gain	Range	Read/ Write
Unit - Refrigerant type	UNSIGNED WORD	1854	1	1 R22 2 R134a 3 R407c 4 R410a 5 R1234ze 6 resv3 7 R513a	R
Unit - Number of Circuits	SIGNED WORD	1855	1	1..2	R
Unit - Number of Tons	SIGNED WORD	1857	1	kW	R
Circuit 2 - Evaporator Superheat Active Setpoint	SIGNED WORD	1896	0,1	dK	R
Circuit 1 - Evaporator Superheat Active Setpoint	SIGNED WORD	1897	0,1	dK	R
Circuit 2 - Evaporator Superheat Temperature	SIGNED WORD	1898	0,1	dK	R
Circuit 1 - Evaporator Superheat Temperature	SIGNED WORD	1899	0,1	dK	R
Unit - Active Energy	UNSIGNED DOUBLE	1900-1901	0,1	kWh	R
Unit - Power Factor	SIGNED WORD	1902	0,01	-	R
Circuit 2 - Expansion Valve Position	SIGNED WORD	1966	1	%	R
Circuit 2 - Condenser Approach Temperature	SIGNED WORD	1971	0,1	dK	R
Circuit 2 - Evaporator Approach Temperature	SIGNED WORD	1972	0,1	dK	R
Circuit 1 - Expansion Valve Position	SIGNED WORD	1982	1	%	R
Circuit 1 - Condenser Approach Temperature	SIGNED WORD	1987	0,1	dK	R
Circuit 1 - Evaporator Approach Temperature	SIGNED WORD	1988	0,1	dK	R

5.1 Alarm Codes and Indexes

Premise

Unit communicates to BAS the status alarm through Codes and Indexes.
Those are grouped in 3 level of alarm

Levels of Alarm

The three levels of alarms are as it follows:

Level	Description
Warning	They are notifications from unit or equipment of an incorrect status
Problem	They are notifications from unit or equipment of a status that does allow unit to work properly
Fault	They are notifications from unit or equipment (circuits, Compressors, Sensors, etc) that can cause stop of the unit or specific equipment

Index

Index describes the general cause of the notification

Code

Code describes which equipment or device of the unit is generating a notification

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
257	1	Warning	Unit	Condenser Entering Water Temperature Sensor Failure
513	2	Warning	Unit	Evaporator Entering Water Temperature Sensor Failure
769	3	Warning	Unit	Liquid Line Refrigerant Temperature Sensor Failure
1025	4	Warning	Unit	Condenser Leaving Water Temperature Sensor Failure (STOP if Heat)
1281	5	Warning	Unit	Evaporator pump maintenance
1537	6	Warning	Unit	Condenser pump maintenance
1829	7	Warning	C1.Comp1	Compressor maintenance #n
1833			C1.Comp2	
1837			C1.Comp3	
1861			C2.Comp1	
1865			C2.Comp2	
1869			C2.Comp3	

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
2049	8	Warning	Unit	Bad setpoint override input
WARNING				
2305	9	Warning	Unit	Bad demand limit input
2561	10	Warning	Unit	Power Loss While Running
2817	11	Warning	Unit	Unit Power Restore
3105	12	Warning	Circuit 1	Circuit Failed Pumpdown
3137			Circuit 2	
3329	13	Warning	Unit	External Event
3585	14	Warning	Unit	Bad Current Limit Input
3841	15	Warning	Unit	Option Controller Communication Failed
4128	16	Warning	Circuit 1	Low Refrigerant Charge
4160			Circuit 2	
4352	17	Warning	Unit	Chiller network Communication Failure
6177	24	Warning	Circuit 1	Economizer Pressure Sensor Fault #n
6209			Circuit 2	
6433	25	Warning	Circuit 1	Economizer Temperature Sensor Fault #n
6465			Circuit 2	
6689	26	Warning	Circuit 1	Economizer EXV Motor Fault
6721			Circuit 2	
6945	27	Warning	Circuit 1	DC Fan Fault
6977			Circuit 2	
7169	28	Warning	Unit	Economizer EXV Module Communications Fault
9729	38	Warning	Unit	Heat Recovery Entering Water Temperature Sensor Fault
9985	39	Warning	Unit	Heat Recovery Leaving Water Temperature Sensor Fault
PROBLEM				
16418	64	Problem	Circuit 1	Power Loss While Running #n

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
16450			Crcuit 2	
16642	65	Problem	Unit	START INHIBITED - Ambient Temperature Low
16898	66	Problem	Unit	INHIBIT LOAD – Condenser Pressure High
17186	67	Problem	Circuit 1	INHIBIT LOAD – Condenser Pressure High #n
17218			Crcuit 2	
17410	68	Problem	Unit	UNLOAD – Condenser Pressure High
17698	69	Problem	Circuit 1	UNLOAD – Condenser Pressure High #n
17730			Crcuit 2	
18178	71	Problem	Pump 1	PUMP START ATTEMPTED - Condenser Pump #1 Failure
18434	72	Problem	Pump 2	PUMP START ATTEMPTED - Condenser Pump #2 Failure
18722	73	Problem	Circuit 1	INHIBIT LOAD - Discharge Temperature High #n
18754			Crcuit 2	
18946	74	Problem	Unit	NO EWT RESET - Entering Evaporator Temperature Sensor Failure
19202	75	Problem	Unit	INHIBIT LOAD - Evaporator Pressure Low
19490	76	Problem	Circuit 1	INHIBIT LOAD - Evaporator Pressure Low #n
19522			Crcuit 2	
19714	77	Problem	Unit	UNLOAD - Evaporator Pressure Low
20002	78	Problem	Circuit 1	UNLOAD - Evaporator Pressure Low #n
20034			Crcuit 2	
20262	79	Problem	C1.Comp1	UNLOAD - Compressor Motor Current High #n
20266			C1.Comp2	
20294			C2.Comp1	
20298			C2.Comp2	
20738	81	Problem	Pump 1	PUMP START ATTEMPTED - Evaporator Pump #1 Failure
20994	82	Problem	Pump 2	PUMP START ATTEMPTED - Evaporator Pump #2 Failure
21250	83	Problem	Unit	(Check Chiller Display for Cause)

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
21542	84	Problem	C1.Comp1	INHIBIT LOAD - Compressor Motor Current High #n
21546			C1.Comp2	
21574			C2.Comp1	
21578			C2.Comp2	
FAULT				
1027	4	Fault	Unit	Condenser Leaving Water Temperature Sensor Failure
26151	102	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Discharge Pressure Sensor Fault
26155			C1.Comp2	
26407	103	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Suction Pressure Low
26411			C1.Comp2	
26663	104	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Discharge Pressure High
26667			C1.Comp2	
27943	109	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Surge Temperature
27947			C1.Comp2	
31015	121	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Suction Pressure Sensor Fault
31019			C1.Comp2	
32551	127	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Low pressure ratio #n
32555			C1.Comp2	
32583			C2.Comp1	
32587			C2.Comp2	
32771	128	Fault	Unit	UNIT SHUTDOWN - Outside Air Temperature Sensor Fault
33063	129	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Current Overload Trip #n
33067			C1.Comp2	
33095			C2.Comp1	
33099			C2.Comp2	
33063	129	Fault	Circuit 1	CIRCUIT SHUTDOWN - Motor Current High

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
33095			Circuit 2	
33795	132	Fault	Unit	UNIT SHUTDOWN - Motor Protector Trip
34087	133	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Motor Protector Trip #n
34091			C1.Comp2	
34119			C2.Comp1	
34123			C2.Comp2	
34083	133	Fault	Circuit 1	CIRCUIT SHUTDOWN - Motor Protector Trip
34115			Circuit 2	
34343	134	Fault	C1.Comp1	Compressor overload #n
34347			C1.Comp2	
34375			C2.Comp1	
34379			C2.Comp2	
34599	135	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Motor Temperature High #n
34603			C1.Comp2	
34631			C2.Comp1	
34635			C2.Comp2	
34855	136	Fault	C1.Comp1	Compressor Shutdown - Motor Tempeature Sensor Fault #n
34859			C1.Comp2	
34887			C2.Comp1	
34891			C2.Comp2	
35111	137	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Phase Loss #n
35115			C1.Comp2	
35143			C2.Comp1	
35147			C2.Comp2	
35367	138	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Phase Reversal #n
35371			C1.Comp2	

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
35399			C2.Comp1	
35403			C2.Comp2	
35623	139	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Overvoltage #n
35627			C1.Comp2	
35655			C2.Comp1	
35659			C2.Comp2	
35879	140	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Undervoltage #n
35883			C1.Comp2	
35911			C2.Comp1	
35915			C2.Comp2	
36099	141	Fault	Unit	COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault
36391	142	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Condenser Pressure Sensor Fault #n
36935			C1.Comp2	
36423			C2.Comp1	
36427			C2.Comp2	
36387	142	Fault	Circuit 1	CIRCUIT SHUTDOWN - Condenser Pressure Sensor Fault #n
36419			Circuit 2	
36611	143	Fault	Unit	COMPRESSOR SHUTDOWN - Condenser Water Flow Loss
36867	144	Fault	Unit	COMPRESSOR SHUTDOWN - Condenser Pressure High
37159	145	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Condenser Pressure High #n
37163			C1.Comp2	
37191			C2.Comp1	
37195			C2.Comp2	
37155	145	Fault	Circuit 1	CIRCUIT SHUTDOWN - Condenser Pressure High #n
37187			Circuit 2	
37415	146	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Current High with Compressor OFF #n

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
37419			C1.Comp2	
37447			C2.Comp1	
37451			C2.Comp2	
37671	147	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Discharge Temperature Sensor Fault #n
37675			C1.Comp2	
37703			C2.Comp1	
37707			C2.Comp2	
37927	148	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Discharge Temperature High #n
37931			C1.Comp2	
37959			C2.Comp1	
37963			C2.Comp2	
38147	149	Fault	Unit	UNIT SHUTDOWN - Condenser Entering Water Temperature Sensor Fault
38403	150	Fault	Unit	UNIT SHUTDOWN - Evaporator Water Flow Loss
38659	151	Fault	Unit	UNIT SHUTDOWN - Evaporator LWT or EWT Low (Freeze)
38915	152	Fault	Unit	COMPRESSOR SHUTDOWN - Evaporator Pressure Low
39207	153	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Evaporator (or Suction) Pressure Low #n
39211			C1.Comp2	
39239			C2.Comp1	
39243			C2.Comp2	
39203	153	Fault	Circuit 1	CIRCUIT SHUTDOWN - Evaporator (or Suction) Pressure Low
39235			Circuit 2	
39427	154	Fault	Unit	COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault
39719	155	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Evaporator Pressure Sensor Fault #n
39723			C1.Comp2	
39751			C2.Comp1	

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
39755			C2.Comp2	
39715	155	Fault	Circuit 1	CIRCUIT SHUTDOWN - Evaporator Pressure Sensor Fault #n
39747			Circuit 2	
39975	156	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Ground Fault Trip #n
39979			C1.Comp2	
40007			C2.Comp1	
40011			C2.Comp2	
40231	157	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Lift Pressure Low #n
40235			C1.Comp2	
40263			C2.Comp1	
40267			C2.Comp2	
40487	158	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Liquid Line Pressure Sensor Fault #n
40491			C1.Comp2	
40519			C2.Comp1	
40523			C2.Comp2	
40739	159	Fault	Circuit 1	CIRCUIT SHUTDOWN - Liquid Line Temperature Sensor Fault #n
40771			Circuit 2	
40963	160	Fault	Unit	UNIT LOCKOUT - Number of Allowed Re-Starts Exceeded
41255	161	Fault	C1.Comp1	COMPRESSOR LOCKOUT - Number of Allowed Re-Starts Exceeded #n
41259			C1.Comp2	
41287			C2.Comp1	
41291			C2.Comp2	
41251	161	Fault	Circuit 1	CIRCUIT LOCKOUT - Number of Allowed Re-Starts Exceeded #n
41283			Circuit 2	
41475	162	Fault	Unit	UNIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
41731	163	Fault	Unit	UNIT SHUTDOWN - Evaporator Entering Water Temperature Sensor Fault
42023	164	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault #n
42027			C1.Comp2	
42055			C2.Comp1	
42059			C2.Comp2	
42019	164	Fault	Circuit 1	CIRCUIT SHUTDOWN - Evaporator Leaving Water Temperature Sensor Fault #n
42051			Circuit 2	
42243	165	Fault	Unit	UNIT STOP - Mechanical High Pressure Trip
42535	166	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Mechanical High Pressure Trip #n
42539			C1.Comp2	
42567			C2.Comp1	
42571			C2.Comp2	
42531	166	Fault	Circuit 1	CIRCUIT SHUTDOWN - Mechanical High Pressure Trip #n
42563			Circuit 2	
42791	167	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Net Pressure Low #n
42795			C1.Comp2	
42823			C2.Comp1	
42827			C2.Comp2	
43047	168	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Feed Temperature High #n
43051			C1.Comp2	
43079			C2.Comp1	
43083			C2.Comp2	
43303	169	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Feed Temperature Low #n
43307			C1.Comp2	
43335			C2.Comp1	

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
43339			C2.Comp2	
43559	170	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Feed Temperature Sensor Fault #n
43563			C1.Comp2	
43591			C2.Comp1	
43595			C2.Comp2	
43815	171	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Level Low #n
43819			C1.Comp2	
43847			C2.Comp1	
43851			C2.Comp2	
44071	172	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Delta Pressure High #n
44075			C1.Comp2	
44103			C2.Comp1	
44107			C2.Comp2	
44327	173	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Feed Pressure Sensor Fault #n
44331			C1.Comp2	
44359			C2.Comp1	
44363			C2.Comp2	
44583	174	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Sump Pressure Sensor Fault #n
44587			C1.Comp2	
44615			C2.Comp1	
44619			C2.Comp2	
44839	175	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Oil Sump Temperature Sensor Fault #n
44843			C1.Comp2	
44871			C2.Comp1	
44875			C2.Comp2	
45059	176	Fault	Unit	SHUTDOWN – Phase Voltage Protection

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
45091			Circuit 1	
45123			Circuit 2	
45351	177	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Starter Fault Compressor #n
45355			C1.Comp2	
45383			C2.Comp1	
45387			C2.Comp2	
45607	178	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - No Starter Transition #n
45611			C1.Comp2	
45639			C2.Comp1	
45643			C2.Comp2	
45863	179	Fault	C1.Comp1	COMPRESSOR START ABORT - Oil Pressure Low #n
45867			C1.Comp2	
45895			C2.Comp1	
45899			C2.Comp2	
46119	180	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Subcooling Low #n
46123			C1.Comp2	
46151			C2.Comp1	
46155			C2.Comp2	
46375	181	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Surge Suction Superheat High-Running #n
46379			C1.Comp2	
46417			C2.Comp1	
46411			C2.Comp2	
46631	182	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Surge Suction Superheat High-Starting #n
46635			C1.Comp2	
46663			C2.Comp1	
46667			C2.Comp2	

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
46887	183	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Suction Temperature Sensor Fault #n
46891			C1.Comp2	
46919			C2.Comp1	
46923			C2.Comp2	
46883	183	Fault	Circuit 1	CIRCUIT SHUTDOWN - Suction Temperature Sensor Fault #n
46915			Circuit 2	
47143	184	Fault	C1.Comp1	COMPRESSOR START ABORT - Vanes Open OR No Start – Interlock Switch #n
47147			C1.Comp2	
47175			C2.Comp1	
47179			C2.Comp2	
47399	185	Fault	C1.Comp1	COMPRESSOR SHUTDOWN – Compressor Fault #n
47403			C1.Comp2	
47431			C2.Comp1	
47435			C2.Comp2	
47619	186	Fault	Unit	UNIT STOP - Mechanical Low Pressure Trip
47911	187	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Mechanical Low Pressure Trip #n
47915			C1.Comp2	
47943			C2.Comp1	
47947			C2.Comp2	
48131	188	Fault	Unit	Controller board offline #n (Circuit number describe Control board number. 0=Unit alarm for Alarm/Limit extension module)
48163			Circuit 1	
48195			Circuit 2	
48419	189	Fault	Circuit 1	CIRCUIT SHUTDOWN - No Pressure Change After Start
48451			Circuit 2	
48675	190	Fault	Circuit 1	CIRCUIT SHUTDOWN - No Pressure at Startup
48707			Circuit 2	

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
48935	191	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Slide position sensor Fault #n
48939			C1.Comp2	
48967			C2.Comp1	
48971			C2.Comp2	
49155	192	Fault	Unit	UNIT STOP - Emergency Stop Alarm
49411	193	Fault	Unit	UNIT STOP - Evaporator Water Temperatures Inverted
49667	194	Fault	Unit	UNIT STOP - External Alarm
49923	195	Fault	Unit	Evaporator Leaving Water Temperature 1 Sensor Fault
50179	196	Fault	Unit	Evaporator Leaving Water Temperature 2 Sensor Fault
50435	197	Fault	Unit	CIRCUIT SHUTDOWN - Evaporator 1 Freeze Protection
50691	198	Fault	Unit	CIRCUIT SHUTDOWN - Evaporator 2 Freeze Protection
50983	199	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - COMPRESSOR VFD Fault #n
50987			C1.Comp2	
51015			C2.Comp1	
51019			C2.Comp2	
51239	200	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - COMPRESSOR VFD Overheat Fault #n (This Fault is detected by Controller, not VFD)
51243			C1.Comp2	
51271			C2.Comp1	
51275			C2.Comp2	
51495	201	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - COM ERROR With COMPRESSOR VFD #n
51499			C1.Comp2	
51527			C2.Comp1	
51531			C2.Comp2	
51751	202	Fault	C1.Comp1	COMPRESSOR SHUTDOWN - Low Discharge Superheat #n
51755			C1.Comp2	
51783			C2.Comp1	

CODE	INDEX	LEVEL	DEVICE	DESCRIPTION
51787			C2.Comp2	
52519	205	Fault	Circuit 1	COMPRESSOR SHUTDOWN - COMPRESSOR VFD Temperature Low #n
52551			Circuit 2	
57859	226	Fault	Unit	UNIT SHUTDOWN - High Water Temperature Fault
58371	228	Fault	Unit	UINT SHUTDOWN - Phase Voltage Monitoring Alarm
58403	228	Fault	Circuit 1	CIRCUIT SHUTDOWN - Phase Voltage Monitoring Alarm
58435			Circuit 2	
58915	230	Fault	Circuit 1	CIRCUIT SHUTDOWN - Refrig Charge
58947			Circuit 2	

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