



Liebert® AFC V1C Application

Reference Guide

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit <https://www.vertiv.com/en-us/support/> for additional assistance.

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1 Scope

This document provides the monitoring data point lists for Vertiv Thermal Management Units running the V1C software application. This monitoring manual covers the Vertiv™ Liebert® AFC with iCOM™ controller.

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2 Monitoring Protocols

All of the monitoring protocols provided are over IP through a dedicated Ethernet port that is physically disconnected from the rest of the other controller interfaces and communicates via serial RS485 protocol with the micro processor.

- Default IP Address of the Monitoring Port: 192.168.254.200

The web site is available at that address. At first access the user is guided by a “First Boot Access” wizard that forces the creation of web user accounts.

The following standard monitoring protocols are made available together in parallel:

- Modbus TCP/IP
 - Port 502
 - Default address: 1
- BACnet IP v19
 - UDP Port 47808
 - Default address: 1
 - Default device name: NHES1
- SNMP v2c
 - UDP Port 161
 - R/W community: private
 - RO community: public

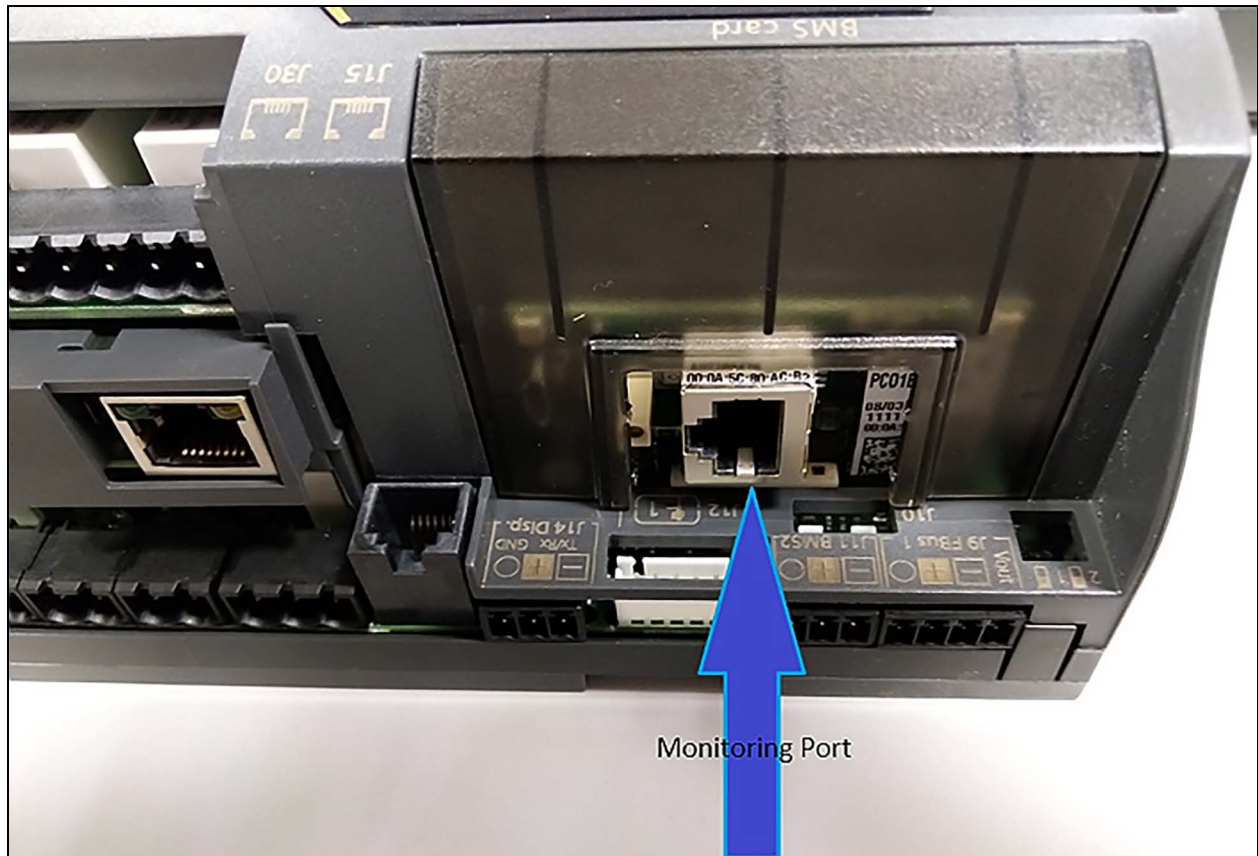
The last column on every data points table reports the software version from which the specific data point is made available.

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3 Connections

3.1 Ethernet Connection on Vertiv™ Liebert® iCOM™ Large

Figure 3.1 Monitoring Port



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4 Modbus TCP/IP

4.1 Input Status

The following Boolean read-only data points are available on: Input Status Command 02

IS	Description	Range	Type	Version
40501	Display OFF	0=Inactive; 1 = Active	Message	1.0.0
40502	Unit ON	0=Inactive; 1 = Active	Message	1.0.0
40503	System OFF	0=Inactive; 1 = Active	Message	1.0.0
40504	System ON	0=Inactive; 1 = Active	Message	1.0.0
40505	Standby	0=Inactive; 1 = Active	Message	1.0.0
40506	Evaporator Pump 1 Failure	0=Inactive; 1 = Active	Warning	1.0.0
40507	Evaporator Pump 2 Failure	0=Inactive; 1 = Active	Warning	1.0.0
40508	Missing Primary Water Flow	0=Inactive; 1 = Active	Alarm	1.0.0
40509	Manual Mode Enable	0=Inactive; 1 = Active	Message	1.0.0
40510	Evaporator Freeze protection	0=Inactive; 1 = Active	Alarm	1.0.0
40511	Unit Inlet Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40512	Evaporator Inlet Temperature Sensor Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40513	Unit Outlet Temperature Sensor Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40515	Ambient Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40516	Reserved			
40517	Reserved			
40518	Reserved			
40519	Reserved			
40520	Reserved			
40521	Reserved			
40522	Reserved			
40523	Reserved			
40524	Fans Communication Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40525	Circuit 1 - Fans Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40526	Circuit 2 - Fans Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40527	Circuit 1 - Single Fan Failures	0=Inactive; 1 = Active	Warning	1.0.0
40528	Circuit 2 - Single Fan Failures	0=Inactive; 1 = Active	Warning	1.0.0
40529	Compressors Off by Low Ambient Temperature	0=Inactive; 1 = Active	Message	---
40530	Circuit 1 - Fans Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0

IS	Description	Range	Type	Version
40531	Circuit 2 - Fans Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40533	Reserved			
40534	Free Cooling Valve Feedback Failure	0=Inactive; 1 = Active	Warning	1.0.0
40535	Circuit 1 - High Condensing Pressure	0=Inactive; 1 = Active	Alarm	1.0.0
40536	Circuit 1 - Low Evaporating Pressure	0=Inactive; 1 = Active	Alarm	1.0.0
40537	Circuit 1 - Very Low Superheat	0=Inactive; 1 = Active	Alarm	1.0.0
40538	Circuit 1 - Compressor 1 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.0.0
40539	Circuit 1 - Compressor 2 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.0.0
40540	Circuit 1 - Compressor 3 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.0.0
40541	Circuit 1 - Fans Override Enabled	0=Inactive; 1 = Active	Warning	1.0.0
40542	Circuit 1 - Compressors Unload Enabled	0=Inactive; 1 = Active	Warning	1.0.0
40543	Circuit 1 - Critical Condensing Pressure	0=Inactive; 1 = Active	Warning	1.0.0
40544	Reserved			
40545	Reserved			
40546	Circuit 1 - Compressor 1 Contactors Glued	0=Inactive; 1 = Active	Alarm	1.0.0
40547	Reserved			
40548	Reserved			
40549	Reserved			
40550	Circuit 1 - Condensing Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40551	Circuit 1 - Liquid Temperature Probe Failure	0=Inactive; 1 = Active	Warning	1.0.0
40552	Circuit 1 - Evaporating Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40553	Circuit 1 - Evaporating Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40554	Reserved			
40555	Circuit 1 - High Superheat	0=Inactive; 1 = Active	Warning	1.0.0
40556	Power Failure	0=Inactive; 1 = Active	Message	1.0.0
40557	EEV Driver 1 - Communication Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40558	EEV Driver 1 - Valve Motor Error	0=Inactive; 1 = Active	Alarm	1.0.0
40559	Evaporator Pump 1 Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40560	Evaporator Pump 2 Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40561	Circuit 2 - High Condensing Pressure	0=Inactive; 1 = Active	Alarm	1.0.0
40562	Circuit 2 - Low Evaporating Pressure	0=Inactive; 1 = Active	Alarm	1.0.0
40563	Circuit 2 - Very Low Superheat	0=Inactive; 1 = Active	Alarm	1.0.0
40564	Circuit 2 - Compressor 1 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.0.0
40565	Circuit 2 - Compressor 2 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.0.0

IS	Description	Range	Type	Version
40566	Circuit 2 - Compressor 3 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.0.0
40567	Circuit 2 - Fans Override Enabled	0=Inactive; 1 = Active	Warning	1.0.0
40568	Circuit 2 - Compressors Unload Enabled	0=Inactive; 1 = Active	Warning	1.0.0
40569	Circuit 2 - Critical Condensing Pressure	0=Inactive; 1 = Active	Warning	1.0.0
40570	Reserved			
40571	Reserved			
40572	Circuit 2 - Compressor 1 Contactors Glued	0=Inactive; 1 = Active	Alarm	1.0.0
40573	Reserved			
40574	Reserved			
40575	Unit Freeze Protection	0=Inactive; 1 = Active	Alarm	1.0.0
40576	Circuit 2 - Condensing Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40577	Circuit 2 - Liquid Temperature Probe Failure	0=Inactive; 1 = Active	Warning	---
40578	Circuit 2 - Evaporating Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	---
40579	Circuit 2 - Evaporating Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	---
40580	Reserved			
40581	Circuit 2 - High Superheat	0=Inactive; 1 = Active	Warning	1.0.0
40582	Power Failure Line B	0=Inactive; 1 = Active	Message	1.0.0
40583	EEV Driver 2 - Communication Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40584	EEV Driver 2 - Valve Motor Error	0=Inactive; 1 = Active	Alarm	1.0.0
40585	Evaporator Pump 1 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40586	Evaporator Pump 2 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40589	Remove Power From Unit	0=Inactive; 1 = Active	Message	1.0.0
40590	User Analog Input 1 Failure	0=Inactive; 1 = Active	Alarm	1.2.0
40591	Reserved			
40592	Energy Meter 1 Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40593	Reserved			
40594	Energy Meter 2 Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40595	Circuit 1 - Compressor 1 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40596	Circuit 1 - Compressor 2 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40597	Circuit 1 - Compressor 3 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40598	Circuit 2 - Compressor 1 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40599	Circuit 2 - Compressor 2 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40600	Circuit 2 - Compressor 3 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40601	Expansion Board Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0

IS	Description	Range	Type	Version
40602	Water Flow Meter Sensor Failure	0=Inactive; 1 = Active	Warning	1.0.0
40603	Remote OFF	0=Inactive; 1 = Active	Message	1.0.0
40604	Variable Water Flow Control Failure	0=Inactive; 1 = Active	Warning	1.0.0
40605	Low External Water Flow	0=Inactive; 1 = Active	Warning	1.0.0
40606	Reserved			
40607	Unstable External Water Flow	0=Inactive; 1 = Active	Warning	1.0.0
40608	Low Evaporator Water Flow	0=Inactive; 1 = Active	Warning	1.0.0
40609	High Evaporator Water Flow	0=Inactive; 1 = Active	Warning	1.0.0
40610	Low Evaporator Water Flow	0=Inactive; 1 = Active	Alarm	---
40611	High Evaporator Water Flow	0=Inactive; 1 = Active	Alarm	1.0.0
40612	Circuit 1 - Low Refrigerant Charge Warning	0=Inactive; 1 = Active	Warning	1.0.0
40613	Circuit 1 - Low Refrigerant Charge Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40614	Circuit 2 - Low Refrigerant Charge Warning	0=Inactive; 1 = Active	Warning	1.0.0
40615	Circuit 2 - Low Refrigerant Charge Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40616	Circuit 1 - Compressors Out of Envelope	0=Inactive; 1 = Active	Warning	1.0.0
40617	Circuit 2 - Compressors Out of envelope	0=Inactive; 1 = Active	Warning	---
40618	Reserved			
40619	Reserved			
40620	Reserved			
40621	Reserved			
40622	Reserved			
40623	Reserved			
40624	Reserved			
40625	Reserved			
40626	Too Fast Water Flow Variation	0=Inactive; 1 = Active	Warning	1.0.0
40627	Too Fast Water Flow Variation	0=Inactive; 1 = Active	Alarm	1.0.0
40628	Circuit 1 - Compressor Oil Level Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40629	Circuit 2 - Compressor Oil Level Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40630	Auxiliary Power Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40631	Circuit 1 - Compressors Off by Envelope Protection	0=Inactive; 1 = Active	Message	1.0.0
40632	Circuit 2 - Compressors Off by Envelope Protection	0=Inactive; 1 = Active	Message	1.0.0
40633	Circuit 1 - Compressors Unload Stop by Envelope Protection	0=Inactive; 1 = Active	Message	1.0.0
40634	Circuit 2 - Compressors Unload Stop by Envelope Protection	0=Inactive; 1 = Active	Message	1.0.0
40635	Circuit 1 - Compressors Out of Envelope (Level 2)	0=Inactive; 1 = Active	Message	1.0.0

IS	Description	Range	Type	Version
40636	Circuit 2 - Compressors Out of Envelope (Level 2)	0=Inactive; 1 = Active	Message	1.0.0
40637	Circuit 1 - Low Differential Pressure	0=Inactive; 1 = Active	Alarm	1.0.0
40638	Circuit 2 - Low Differential Pressure	0=Inactive; 1 = Active	Alarm	1.0.0
40639	Reserved			
40640	Condenser Inlet Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40641	Condenser Outlet Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40642	Free Cooling Pump Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.0.0
40643	Reserved			
40644	Reserved			
40645	Free Cooling By-Pass Valve Feedback Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40646	Reserved			
40647	Reserved			
40648	Low Evaporator Water Pressure	0=Inactive; 1 = Active	Alarm	1.0.0
40649	Evaporator Water Pressure Sensors Failure	0=Inactive; 1 = Active	Warning	1.0.0
40650	Reserved			
40651	Evaporator Bypass Valve Feedback Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40652	Circuit 1 - Low Evaporating Temperature	0=Inactive; 1 = Active	Alarm	1.0.0
40653	Circuit 2 - Low Evaporating Temperature	0=Inactive; 1 = Active	Alarm	1.0.0
40654	Reserved			
40655	Reserved			
40656	Circuit 1 - Compressor Starts/h Limit Reached	0=Inactive; 1 = Active	Alarm	1.0.0
40657	Circuit 2 - Compressor Starts/h Limit Reached	0=Inactive; 1 = Active	Alarm	1.0.0
40658	Emergency Mode Active	0=Inactive; 1 = Active	Message	1.1.0
40659	CWM Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40660	Missing Unit Configuration	0=Inactive; 1 = Active	Alarm	1.0.0
40661	Reserved			
40662	Reserved			
40663	Reserved			
40664	Reserved			
40665	Reserved			
40666	Reserved			
40667	Reserved			
40668	Reserved			
40669	Reserved			

IS	Description	Range	Type	Version
40670	Reserved			
40671	Circuit 1 - Compressor Inverter Communication Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40672	Circuit 2 - Compressor Inverter Communication Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40673	Circuit 1 - Compressor Inverter Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40674	Circuit 2 - Compressor Inverter Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40675	EEV Driver 1 - Generic Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40676	EEV Driver 2 - Generic Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40677	Free Cooling Inlet Pressure Sensor Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40678	Free Cooling Outlet Pressure Sensor Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40679	Free Cooling Pump Alarm	0=Inactive; 1 = Active	Alarm	1.0.0
40680	Free Cooling Pump Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40681	Reserved			
40682	iCOM Memory Error	0=Inactive; 1 = Active	Alarm	1.0.0
40683	Critical Refrigerant Leakage Detected	0=Inactive; 1 = Active	Alarm	1.0.0
40684	Refrigerant Leakage Detected	0=Inactive; 1 = Active	Warning	1.0.0
40685	Gas Leak Detector Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40686	Gas Leak Detector Sensor Calibration Required	0=Inactive; 1 = Active	Warning	1.0.0
40687	Circuit 1 - Critical Refrigerant Depressurization	0=Inactive; 1 = Active	Alarm	1.0.0
40688	Circuit 2 - Critical Refrigerant Depressurization	0=Inactive; 1 = Active	Alarm	1.0.0
40689	ATS 1 Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40690	ATS 2 Communication Failure	0=Inactive; 1 = Active	Warning	1.0.0
40691	Freecooling Failure	0=Inactive; 1 = Active	Alarm	1.0.0
40692	Fans Rotation Error	0=Inactive; 1 = Active	Alarm	1.0.0
40693	Reserved			
40694	Network Failure	0=Inactive; 1 = Active	Warning	1.0.0
40695	No Connection to Unit 1	0=Inactive; 1 = Active	Warning	1.0.0
40696	Master Unit Changed	0=Inactive; 1 = Active	Message	1.0.0
40697	Master Unit not Available	0=Inactive; 1 = Active	Warning	1.0.0
40701	Free Cooling Circuit – Glycol Leakage	0=Inactive; 1 = Active	Alarm	1.1.3
40702	Free Cooling Circuit – High pressure	0=Inactive; 1 = Active	Alarm	1.1.3
40703	Current Fans Control Relays Fault	0=Inactive; 1 = Active	Warning	1.2.1
40704	Critical Current Fans Control Relays Fault	0=Inactive; 1 = Active	Alarm	1.2.1
40910	Evaporator 2 Freeze Protection	0=Inactive; 1 = Active	Alarm	1.0.0
40911	Unit Inlet Temperature Probe 2 Failure	0=Inactive; 1 = Active	Alarm	1.0.0

IS	Description	Range	Type	Version
40912	Evaporator Inlet Temperature Probe 2 Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40913	Unit Outlet Temperature Probe 2 Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40915	Ambient Temperature Probe 2 Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40925	Circuit 3 - Fans Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40926	Circuit 4 - Fans Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40927	Circuit 3 - Single Fans Failure	0=Inactive; 1 = Active	Warning	1.1.0
40928	Circuit 4 - Single Fans Failure	0=Inactive; 1 = Active	Warning	1.1.0
40930	Circuit 3 - Fans Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
40931	Circuit 4 - Fans Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
40934	Free Cooling Valve 2 Feedback Failure	0=Inactive; 1 = Active	Warning	1.1.0
40935	Circuit 3 - High Condensing Pressure	0=Inactive; 1 = Active	Alarm	1.1.0
40936	Circuit 3 - Low Evaporating Pressure	0=Inactive; 1 = Active	Alarm	1.1.0
40937	Circuit 3 - Very Low Superheat	0=Inactive; 1 = Active	Alarm	1.1.0
40938	Circuit 3 - Compressor 1 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.1.0
40939	Circuit 3 - Compressor 2 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.1.0
40940	Circuit 3 - Compressor 3 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.1.0
40941	Circuit 3 - Fans Override Enabled	0=Inactive; 1 = Active	Warning	1.1.0
40942	Circuit 3 - Compressors Unload Enabled	0=Inactive; 1 = Active	Warning	1.1.0
40943	Circuit 3 - Critical Condensing Pressure	0=Inactive; 1 = Active	Warning	1.1.0
40944	Reserved			
40945	Reserved			
40946	Circuit 3 - Compressor 1 Contactors Glued	0=Inactive; 1 = Active	Alarm	1.1.0
40947	Reserved			
40948	Reserved			
40950	Circuit 3 - Condensing Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40951	Circuit 3 - Liquid Temperature Probe Failure	0=Inactive; 1 = Active	Warning	1.1.0
40952	Circuit 3 - Evaporating Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40953	Circuit 3 - Evaporating Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40954	Reserved			
40955	Circuit 3 - High Superheat	0=Inactive; 1 = Active	Warning	1.1.0
40956	Reserved			
40957	EEV Driver 3 - Communication Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40958	EEV Driver 3 - Valve Motor Error	0=Inactive; 1 = Active	Alarm	1.1.0
40959	Evaporator Pump 1 Communication Failure	0=Inactive; 1 = Active	Alarm	1.1.0

IS	Description	Range	Type	Version
40960	Evaporator Pump 2 Communication Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40961	Circuit 4 - High Condensing Pressure	0=Inactive; 1 = Active	Alarm	1.1.0
40962	Circuit 4 - Low Evaporating Pressure	0=Inactive; 1 = Active	Alarm	1.1.0
40963	Circuit 4 - Very Low Superheat	0=Inactive; 1 = Active	Alarm	1.1.0
40964	Circuit 4 - Compressor 1 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.1.0
40965	Circuit 4 - Compressor 2 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.1.0
40966	Circuit 4 - Compressor 3 Thermal Protection	0=Inactive; 1 = Active	Alarm	1.1.0
40967	Circuit 4 - Fans Override Enabled	0=Inactive; 1 = Active	Warning	1.1.0
40968	Circuit 4 - Compressors Unload Enabled	0=Inactive; 1 = Active	Warning	1.1.0
40969	Circuit 4 - Critical Condensing Pressure	0=Inactive; 1 = Active	Warning	1.1.0
40970	Reserved			
40971	Reserved			
40972	Circuit 4 - Compressor 1 Contactors Glued	0=Inactive; 1 = Active	Alarm	1.1.0
40973	Reserved			
40974	Reserved			
40976	Circuit 4 - Condensing Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40977	Circuit 4 - Liquid Temperature Probe Failure	0=Inactive; 1 = Active	Warning	1.1.0
40978	Circuit 4 - Evaporating Pressure Probe Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40979	Circuit 4 - Evaporating Temperature Probe Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40980	Reserved			
40981	Circuit 4 - High Superheat	0=Inactive; 1 = Active	Warning	1.1.0
40983	EEV Driver 4 - Communication Failure	0=Inactive; 1 = Active	Alarm	1.1.0
40984	EEV Driver 4 - Valve Motor Error	0=Inactive; 1 = Active	Alarm	1.1.0
40995	Circuit 3 - Compressor 1 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
40996	Circuit 3 - Compressor 2 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
40997	Circuit 3 - Compressor 3 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
40998	Circuit 4 - Compressor 1 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
40999	Circuit 4 - Compressor 2 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
41000	Circuit 4 - Compressor 3 Working Hours Limit Exceeded	0=Inactive; 1 = Active	Warning	1.1.0
41002	Water Flow Meter Sensor 2 Failure	0=Inactive; 1 = Active	Warning	1.1.0
41012	Circuit 3 - Low Refrigerant Charge Warning	0=Inactive; 1 = Active	Warning	1.1.0
41013	Circuit 3 - Low Refrigerant Charge Alarm	0=Inactive; 1 = Active	Alarm	1.1.0
41014	Circuit 4 - Low Refrigerant Charge Warning	0=Inactive; 1 = Active	Warning	1.1.0
41015	Circuit 4 - Low Refrigerant Charge Alarm	0=Inactive; 1 = Active	Alarm	1.1.0

IS	Description	Range	Type	Version
41016	Circuit 3 - Compressors Out of Envelope	0=Inactive; 1 = Active	Warning	1.1.0
41017	Circuit 4 - Compressors Out of Envelope	0=Inactive; 1 = Active	Warning	1.1.0
41028	Circuit 3 - Compressor Oil Level Alarm	0=Inactive; 1 = Active	Alarm	1.1.0
41029	Circuit 4 - Compressor Oil Level Alarm	0=Inactive; 1 = Active	Alarm	1.1.0
41030	Reserved			
41031	Circuit 3 - Compressors Off by Envelope Protection	0=Inactive; 1 = Active	Message	1.1.0
41032	Circuit 4 - Compressors Off by Envelope Protection	0=Inactive; 1 = Active	Message	1.1.0
41033	Circuit 3 - Compressors Unload Stop by Envelope Protection	0=Inactive; 1 = Active	Message	1.1.0
41034	Circuit 4 - Compressors Unload Stop by Envelope Protection	0=Inactive; 1 = Active	Message	1.1.0
41035	Circuit 3 - Compressors Out of Envelope (Level 2)	0=Inactive; 1 = Active	Message	1.1.0
41036	Circuit 4 - Compressors Out of Envelope (Level 2)	0=Inactive; 1 = Active	Message	1.1.0
41037	Circuit 3 - Low Differential Pressure	0=Inactive; 1 = Active	Alarm	1.1.0
41038	Circuit 4 - Low Differential Pressure	0=Inactive; 1 = Active	Alarm	1.1.0
41043	Reserved			
41044	Reserved			
41045	Free Cooling By-Pass Valve 2 Feedback Failure	0=Inactive; 1 = Active	Warning	1.1.0
41049	Evaporator Water Pressure Sensors 2 Failure	0=Inactive; 1 = Active	Warning	1.1.0
41051	Reserved			
41052	Circuit 3 - Low Evaporating Temperature	0=Inactive; 1 = Active	Alarm	1.1.0
41053	Circuit 4 - Low Evaporating Temperature	0=Inactive; 1 = Active	Alarm	1.1.0
41056	Circuit 3 - Compressor Starts/h Limit Reached	0=Inactive; 1 = Active	Alarm	1.1.0
41057	Circuit 4 - Compressor Starts/h Limit Reached	0=Inactive; 1 = Active	Alarm	1.1.0
41075	EEV Driver 3 - Generic Alarm	0=Inactive; 1 = Active	Alarm	1.1.0
41076	EEV Driver 4 - Generic Alarm	0=Inactive; 1 = Active	Alarm	1.1.0
41081	Reserved			
41087	Circuit 3 - Critical Refrigerant Depressurization	0=Inactive; 1 = Active	Alarm	1.1.0
41088	Circuit 4 - Critical Refrigerant Depressurization	0=Inactive; 1 = Active	Alarm	1.1.0
41091	Freecooling Failure 2	0=Inactive; 1 = Active	Alarm	1.1.0

4.2 Holding Registers

The following Analog and Integer data points are available on: Holding Registers Command 03

HR	Variable	Description	Range	Scale	Version
45101	BmsOnOff	Unit ON/OFF	Set 1 to change Status (Switch)	x1	1.0.0
45102	AlrmResByBms	Event Reset	Set 9999 to Reset Events	x1	1.0.0
45103	Cfg_Reg_SetP	Temperature Setpoint 1	0.0/40.0 °C	x10	1.0.0
45104	Cfg_Reg_SetP2	Temperature Setpoint 2	0.0/40.0 °C	x10	1.1.0
45105	Reserved	---	---	---	---
45106	Reserved	---	---	---	---
45107	Reserved	---	---	---	---
45108	Reserved	---	---	---	---
45109	Cfg_WH_ThrshPmp1	Limit Working Hours Evaporator Pump 1	0-32000 h	x1	1.0.0
45110	Cfg_WH_ThrshPmp2	Limit Working Hours Evaporator Pump 2	0-32000 h	x1	1.0.0
45111	Cfg_WH_ThrshFC_Pmp	Limit Working Hours FC Pump	0-32000 h	x1	1.0.0
45112	Cfg_WH_ThrshFanC1	Limit Working Hours Fans Circ.1	0-32000 h	x1	1.0.0
45113	Cfg_WH_ThrshFanC2	Limit Working Hours Fans Circ.2	0-32000 h	x1	1.0.0
45114	Reserved	---	---	---	---
45115	Cfg_WH_ThrshCmp1C1	Limit Working Hours Comp. 1 Circuit 1	0-32000 h	x1	1.0.0
45116	Cfg_WH_ThrshCmp2C1	Limit Working Hours Comp. 2 Circuit 1	0-32000 h	x1	1.0.0
45117	Reserved	---	---	---	---
45118	Cfg_WH_ThrshCmp1C2	Limit Working Hours Comp. 1 Circuit 2	0-32000 h	x1	1.0.0
45119	Cfg_WH_ThrshCmp2C2	Limit Working Hours Comp. 1 Circuit 2	0-32000 h	x1	1.0.0
45120	Reserved	---	---	---	---
45121	MuteBuzzerEn	Event Acknowledge	0=ON; 1=OFF	x10	1.0.0
45122	ManModeEn	Manual Mode Enabling via BMS	0/1 Toggle	x10	1.0.0
45123	BMS_EvPmpFlwReq	Remote water flow request	10-250 m ³ /h	x10	1.0.0
45124	Cfg_Pmp_DPsetP	DP Setpoint	0-10.0 bar	x10	1.0.0
45125	Reserved	---	---	---	---
45126	Reserved	---	---	---	---
45127	BmsSysOnOffCmd	System On/Off Toggle Command	Set 1 to change Status (Switch)	x1	1.1.0

HR	Variable	Description	Range	Scale	Version
45128	Reserved	---	---	---	---
45129	Reserved	---	---	---	---
45130	Reserved	---	---	---	---
45131	BmsEmgModeEn	Emergency Mode Activation Command	0=ON; 1=OFF	x1	1.1.0
45132	Reserved	---	---	---	---
45133	Reserved	---	---	---	---
45134	Reserved	---	---	---	---
45141	Cfg_WH_ThrshFanC3	Limit Working Hours Fans Circ.3	0-32000 h	x1	1.1.0
45142	Cfg_WH_ThrshFanC4	Limit Working Hours Fans Circ.4	0-32000 h	x1	1.1.0
45143	Cfg_WH_ThrshCmp1C3	Limit Working Hours Comp. 1 Circuit 3	0-32000 h	x1	1.1.0
45144	Reserved	---	---	---	---
45145	Reserved	---	---	---	---
45146	Cfg_WH_ThrshCmp1C4	Limit Working Hours Comp. 1 Circuit 4	0-32000 h	x1	1.1.0
45147	Reserved	---	---	---	---
45148	Reserved	---	---	---	---

4.3 Input Registers

The following Analog and Integer data points are available on: Input Registers Command 04

IR	Variable	Description	Range	Scale	Version
49201	BMS_UnitSts	Unit Status	0=Local On 2=Local Off 3=Remote Off 6=Manual 7=Alarm Off 8=Power Failure 9=Alarm On 10=Warning On 11=System Off 12=Standby	x1	1.0.0
49202	W_Reg_UserSetP	Current Temperature Setpoint	-10.0/+ 30.0 °C	x10	1.0.0
49203	UnitInletTempVal	Unit Inlet Temperature	-40.0/+110.0 °C	x10	1.0.0
49204	EvapInletTempVal	Evaporator Inlet Temperature	-40.0/+110.0 °C	x10	1.0.0
49205	EvapOutletTempVal	Unit Outlet Temperature	-40.0/+110.0 °C	x10	1.0.0
49206	AmbAirTempVal	Ambient Temperature	-40.0/+110.0 °C	x10	1.0.0
49207	FC_Active	Status of Freecooling	0=Not Active, 1=Active	---	1.0.0
49208	BMS_Pmp_Sts[0]	Evaporator Pump 1 Status	0=N.A.,1=ON, 2=Maintenance,	---	1.0.0
49209	BMS_Pmp_Sts[1]	Evaporator Pump 2 Status	3=OFF, 4=Alarm	---	1.0.0
49210	BMS_Pmp_Sts[2]	FC Pump Status	5=Starting, 6=Stopping	---	1.0.0
49211	FC_Info.FC_VlvReq	Freecooling Valve Position Request	0 – 100 %	x1	1.0.0
49212	FanSpeed[1]	Circuit 1 Fans Speed Request	0 – 100 %	x1	1.0.0
49213	FanSpeed[2]	Circuit 2 Fans Speed Request	0 – 100 %	x1	1.0.0
49214	Reserved	---	---	---	---
49215	BMS_Cmp_Sts[1]	Compressor 1 Circuit 1 Status	0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	---	1.0.0
49216	BMS_Cmp_Sts[2]	Compressor 2 Circuit 1 Status	0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	---	1.0.0
49217	Reserved	---	---	---	---

IR	Variable	Description	Range	Scale	Version
49218	BMS_Cmp_Sts[5]	Compressor 1 Circuit 2 Status	0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	---	1.0.0
49219	BMS_Cmp_Sts[6]	Compressor 2 Circuit 2 Status	0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	---	1.0.0
49220	Reserved	---	---	---	---
49221	HP_Circ1.Value	Condenser Pressure Circuit 1	-10.0/+50.0 bar	x10	1.0.0
49222	LP_Circ1.Value	Evaporating Pressure Circuit 1	-10.0/+50.0 bar	x10	1.0.0
49223	HP_Circ2.Value	Condenser Pressure Circuit 2	-10.0/+50.0 bar	x10	1.0.0
49224	LP_Circ2.Value	Evaporating Pressure Circuit 2	-10.0/+50.0 bar	x10	1.0.0
49225	Pmps[0].Wrk_h	Working Hours Evaporator Pump 1	0-32000 h	x1	1.0.0
49226	Pmps[1].Wrk_h	Working Hours Evaporator Pump 2	0-32000 h	x1	1.0.0
49227	WH_FC_Pmp	Working Hours FC Pump	0-32000 h	x1	1.0.0
49228	WH_FanC1	Working Hours Fans Circuit 1	0-32000 h	x1	1.0.0
49229	WH_FanC2	Working Hours Fans Circuit 2	0-32000 h	x1	1.0.0
49230	Reserved	---	---	---	---
49231	BMS_WH_Cmp1C1	Working Hours Compressor 1 Circuit 1	0-32000 h	---	1.0.0
49232	BMS_WH_Cmp2C1	Working Hours Compressor 2 Circuit 1	0-32000 h	---	1.0.0
49233	Reserved	---	---	---	---
49234	BMS_WH_Cmp1C2	Working Hours Compressor 1 Circuit 2	0-32000 h	---	1.0.0
49235	BMS_WH_Cmp2C2	Working Hours Compressor 2 Circuit 2	0-32000 h	---	1.0.0
49236	Reserved	---	---	---	---
49237	BMS_Starts_Cmp1C1	Starts Compressor 1 Circuit 1	0-32000	---	1.0.0
49238	BMS_Starts_Cmp2C1	Starts Compressor 2 Circuit 1	0-32000	---	1.0.0
49239	Reserved	---	---	---	---
49240	BMS_Starts_Cmp1C2	Starts Compressor 1 Circuit 2	0-32000	---	1.0.0
49241	BMS_Starts_Cmp2C2	Starts Compressor 2 Circuit 2	0-32000	---	1.0.0

IR	Variable	Description	Range	Scale	Version
49242	Reserved	---	---	---	---
49243	RemOnOffState	Remote On/Off Status	0=OFF, 1=ON	---	1.0.0
49244	FlwSwchState	Flow Switch Status	0=OK, 1=Alarm	---	1.0.0
49245	PwrMonitState	Power Monitoring Status	0=OK, 1=Power Failure	---	1.0.0
49246	Reserved	---	---	---	---
49247	Reserved	---	---	---	---
49252	Reserved	---	---	---	---
49253	kWtot	Instant Power Consumption	0 – 999.9 kW	x10	1.0.0
49254	EnEff_RollEERF	Instant EER	0 – 999.9	x10	1.0.0
49255	EnEff_RollViPUEF	Instant PPUE	0 – 999.9	x10	1.0.0
49256	EnEff_RollWUEF	Instant WUE	0 – 999.9 l/kWh	x10	1.0.0
49257	WaterFlowVal_m3h	Water Flow	0 – 300 m ³ /h	x10	1.0.0
49258	CmpStartState	Comp Start per Hour Status	0=all available, 1=at least 1 reach limit, 2=all reach limit	---	1.0.0
49259	TimeToNextCmpAvbl	Time to have next comp. available	0 – 3600 s	x1	1.0.0
49260	Pmp_CtrlInput	Water DP	0-10.0 bar	x10	1.0.0
49261	BypassVlvReq	Bypass Valve Position	0-100%	x1	1.0.0
49262	Reserved	---	---	---	---
49263	UsrAnlgInpState[1]	Analog User Input 1 Status	0=Off, 1=Act	---	1.0.0
49264	Reserved	---	---	---	---
49265	Reserved	---	---	---	---
49266	EventsActive	General Alarm	0=Off, 1=Act	---	1.2.2
49267	Reserved	---	---	---	---
49268	Reserved	---	---	---	---
49269	Reserved	---	---	---	---
49270	Reserved	---	---	---	---
49271	Reserved	---	---	---	---
49272	Reserved	---	---	---	---
49273	Reserved	---	---	---	---
49274	Reserved	---	---	---	---
49275	Reserved	---	---	---	---
49276	Reserved	---	---	---	---
49285	EmgModeActive	Emergency Mode status	0=OFF, 1=Act	x1	1.1.0
49286	UnitCoolingCap	Current unit cooling capacity	---	x1	1.2.2

IR	Variable	Description	Range	Scale	Version
49287	Reserved	---	---	---	---
49288	EnEff_TotalCapacityF	Total Capacity	0.0 – 2000.0 kW	x1	1.1.3
49289	EnEff_FCCapacityF	Freecooling Capacity	0.0 – 2000.0 kW	x1	1.1.3
49290	EnEff_MechCapacityF	Mechanical Capacity	0.0 – 2000.0 kW	x1	1.1.3
49294	Reserved	---	---	---	---
49309	Gvz1.Hz	Frequency Line 1 (ATS 1 or EM 1)	0.0 – 999.9 Hz	x10	1.1.3
49310	Gvz2. Hz	Frequency Line 2 (ATS 2 or EM 2)	0.0 – 999.9 Hz	x10	1.1.3
49311	Gvz1.VL1L2	Voltage L1-L2 (ATS 1 or EM 1)	0.0 – 999.9 V	x10	1.0.0
49312	Gvz1.VL2L3	Voltage L2-L3 (ATS 1 or EM 1)	0.0 – 999.9 V	x10	1.0.0
49313	Gvz1.VL3L1	Voltage L3-L1 (ATS 1 or EM 1)	0.0 – 999.9 V	x10	1.0.0
49314	Gvz2.VL1L2	Voltage L1-L2 (ATS 2 or EM 2)	0.0 – 999.9 V	x10	1.0.0
49315	Gvz2.VL2L3	Voltage L2-L3 (ATS 2 or EM 2)	0.0 – 999.9 V	x10	1.0.0
49316	Gvz2.VL3L1	Voltage L3-L1 (ATS 2 or EM 2)	0.0 – 999.9 V	x10	1.0.0
49317	Gvz1.AL1	Current L1 (ATS 1 or EM 1)	0.0 – 999.9 A	x10	1.0.0
49318	Gvz1.AL2	Current L2 (ATS 1 or EM 1)	0.0 – 999.9 A	x10	1.0.0
49319	Gvz1.AL3	Current L3 (ATS 1 or EM 1)	0.0 – 999.9 A	x10	1.0.0
49320	Gvz2.AL1	Current L1 (ATS 2 or EM 2)	0.0 – 999.9 A	x10	1.0.0
49321	Gvz2.AL2	Current L2 (ATS 2 or EM 2)	0.0 – 999.9 A	x10	1.0.0
49322	Gvz2.AL3	Current L3 (ATS 2 or EM 2)	0.0 – 999.9 A	x10	1.0.0
49323	Gvz1.kWtot	Total Power Consumption (ATS 1 or EM 1)	0.0 – 999.9 kW	x10	1.0.0
49324	Gvz2.kWtot	Total Power Consumption (ATS 2 or EM 2)	0.0 – 999.9 kW	x10	1.0.0
49325	Hmi.AtsState[1]	ATS 1 line status	0 = not installed, 1 = line 1, 2 = line 2, 3 = transition, 4 = communication error	---	1.0.0

IR	Variable	Description	Range	Scale	Version
49326	Hmi.AtsState[2]	ATS 2 line status	0 = not installed, 1 = line 1, 2 = line 2, 3 = transition, 4 = communication error	---	1.0.0
49327	FanSpeed[3]	Circuit 3 Fans Speed Request	0 – 100 %	x1	1.1.0
49328	FanSpeed[4]	Circuit 4 Fans Speed Request	0 – 100 %	x1	1.1.0
49329	BMS_Cmp_Sts[9]	Compressor 1 Circuit 3 Status	0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	---	1.1.0
49330	Reserved	---	---	---	---
49331	Reserved	---	---	---	---
49332	BMS_Cmp_Sts[13]	Compressor 1 Circuit 4 Status	0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	---	1.1.0
49333	Reserved	---	---	---	---
49334	Reserved	---	---	---	---
49335	HP_Circ3.Value	Condenser Pressure Circuit 3	-10.0/+50.0 bar	x10	1.1.0
49336	LP_Circ3.Value	Evaporating Pressure Circuit 3	-10.0/+50.0 bar	x10	1.1.0
49337	HP_Circ4.Value	Condenser Pressure Circuit 4	-10.0/+50.0 bar	x10	1.1.0
49338	LP_Circ4.Value	Evaporating Pressure Circuit 4	-10.0/+50.0 bar	x10	1.1.0
49339	BMS_WH_FanC3	Working Hours Fans Circuit 3	0-32000 h	x1	1.1.0
49340	BMS_WH_FanC4	Working Hours Fans Circuit 4	0-32000 h	x1	1.1.0
49341	BMS_WH_Cmp1C3	Working Hours Compressor 1 Circuit 3	0-32000 h	x1	1.1.0
49342	Reserved	---	---	---	---
49343	Reserved	---	---	---	---
49344	BMS_WH_Cmp1C4	Working Hours Compressor 1 Circuit 3	0-32000 h	x1	1.1.0
49345	Reserved	---	---	---	---
49346	Reserved	---	---	---	---
49347	BMS_Starts_Cmp1C3	Starts Compressor 1 Circuit 3	0-32000	x1	1.1.0
49348	Reserved	---	---	---	---

IR	Variable	Description	Range	Scale	Version
49349	Reserved	---	---	---	---
49350	BMS_Starts_Cmp1C4	Starts Compressor 1 Circuit 4	0-32000	x1	1.1.0
49351	Reserved	---	---	---	---
49352	Reserved	---	---	---	---
49353	FlwSwch2State	Flow Switch2Status	0=OK, 1=Alarm	---	1.1.3
49354	kWhTot	Total Kilo Watt Hour	0 - 999.9 kWh	x1	1.1.3
49355	VARtot	Total VAR Volt Ampere Reactive	0 - 999.9 VAR	x1	1.1.3
49356	VATot	Total Volt Ampere	0 - 999.9 VA	x1	1.1.3
49357	EnEff_TotalCapacity24	Total Capacity 24 (FC + DX)	0.0 – 2000.0 kW	x1	1.1.3
49358	EnEff_CoolingCapacity24	Cooling Capacity 24	0.0 – 2000.0 kW	x1	1.1.3
49359	EnEff_MechCapacity24	Mechanical Capacity 24	0.0 – 2000.0 kW	x1	1.1.3
49360	EnEff_RolIEER24	EER – Energy Efficiency Ratio	0 - 9999	x1	1.1.3
49361	EnEff_RollVirtualPUE24	Virtual Power Usage Efficiency – Virtual PUE 24	0 - 9999	x1	1.1.3
49362	EnEff_RollWUE24	Water Usage Efficiency - WUE 24	0 - 9999	x1	1.1.3

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5 BACnet

5.1 BACnet Implementation

The Monitoring Port features the following BACnet implementation on protocol rev. 19:

BACnet Standardized Device Profile: BACnet Application Specific Controller (B-ASC)

Building Blocks Supported:

DS-COV-B	DS-RP-A	DS-RP-B	DS-WP-A	DS-WP-B	DS-RPM-A	DS-RPM-B
DS-WPM-A	DS-WPM-B	DM-DDB-A	DM-DDB-B	DM-DOB-B	DM-DCC-B	

Segmentation Capability:

- Able to transmit segmented messages Window Size: 16
- Able to receive segmented messages Window Size: 16

Table 5.1 Standard Object Types Supported

Device	Analog Input (AI)
Analog Output (AO)	Analog Value (AV)
Binary Input (BI)	Binary Output (BO)
Binary Value (BV)	MultiState Input (MSI)
MultiState Output (MSO)	MultiState Value (MSV)
Positive Integer Value (PIV)	Integer Value (IV)

Data Link Layer Options:

- BACnet IP
- BACnet IP, Foreign Device

Character Sets Supported: ISO 10646 (UTF-8)

Network Security Options: Non-secure Device - is capable of operating without BACnet Network Security.

5.2 Binary Values

BV	Description	Event Type	Version
1	Reserved		
2	Reserved		
3	Reserved		
4	Reserved		
5	Reserved		
6	Evaporator Pump 1 Failure	Warning	1.0.0

BV	Description	Event Type	Version
7	Evaporator Pump 2 Failure	Warning	1.0.0
8	Missing Primary Water Flow	Alarm	1.0.0
9	Manual Mode Enable	Message	1.0.0
10	Evaporator Freeze protection	Alarm	1.0.0
11	Unit Inlet Temperature Probe Failure	Alarm	1.0.0
12	Evaporator Inlet Temperature Probe Failure	Alarm	1.0.0
13	Unit Outlet Temperature Sensor Failure	Alarm	1.0.0
15	Ambient Temperature Sensor Failure	Alarm	1.0.0
24	Fans Communication Failure	Alarm	1.0.0
25	Circuit 1 - Fans Failure	Alarm	1.0.0
26	Circuit 2 - Fans Failure	Alarm	1.0.0
27	Circuit 1 - Single Fan Failures	Warning	1.0.0
28	Circuit 2 - Single Fan Failures	Warning	1.0.0
29	Compressors Off by Low Ambient Temperature	Message	1.0.0
30	Circuit 1 - Fans Working Hours Limit Exceeded	Warning	1.0.0
31	Circuit 2 - Fans Working Hours Limit Exceeded	Warning	1.0.0
33	Reserved		
34	Free Cooling Valve Feedback Failure	Warning	1.0.0
35	Circuit 1 - High Condensing Pressure	Alarm	1.0.0
36	Circuit 1 - Low Evaporating Pressure	Alarm	1.0.0
37	Circuit 1 - Very Low Superheat	Alarm	1.0.0
38	Circuit 1 - Compressor 1 Thermal Protection	Alarm	1.0.0
39	Circuit 1 - Compressor 2 Thermal Protection	Alarm	1.0.0
40	Circuit 1 - Compressor 3 Thermal Protection	Alarm	1.0.0
41	Circuit 1 - Fans Override Enabled	Warning	1.0.0
42	Circuit 1 - Compressors Unload Enabled	Warning	1.0.0
43	Circuit 1 - Critical Condensing Pressure	Warning	1.0.0
46	Circuit 1 - Compressor 1 Contactors Glued	Alarm	1.0.0
47	Reserved		
48	Reserved		
50	Circuit 1 - Condensing Pressure Probe Failure	Alarm	1.0.0
51	Circuit 1 - Liquid Temperature Probe Failure	Warning	1.0.0
52	Circuit 1 - Evaporating Pressure Probe Failure	Alarm	1.0.0
53	Circuit 1 - Evaporating Temperature Probe Failure	Alarm	1.0.0

BV	Description	Event Type	Version
55	Circuit 1 - High Superheat	Warning	1.0.0
56	Power Failure	Message	1.0.0
57	EEV Driver 1 - Communication Failure	Alarm	1.0.0
58	EEV Driver 1 - Valve Motor Error	Alarm	1.0.0
59	Evaporator Pump 1 Communication Failure	Warning	1.0.0
60	Evaporator Pump 2 Communication Failure	Warning	1.0.0
61	Circuit 2 - High Condensing Pressure	Alarm	1.0.0
62	Circuit 2 - Low Evaporating Pressure	Alarm	1.0.0
63	Circuit 2 - Very Low Superheat	Alarm	1.0.0
64	Circuit 2 - Compressor 1 Thermal Protection	Alarm	1.0.0
65	Circuit 2 - Compressor 2 Thermal Protection	Alarm	1.0.0
66	Circuit 2 - Compressor 3 Thermal Protection	Alarm	1.0.0
67	Circuit 2 - Fans Override Enabled	Warning	1.0.0
68	Circuit 2 - Compressors Unload Enabled	Warning	1.0.0
69	Circuit 2 - Critical Condensing Pressure	Warning	1.0.0
72	Circuit 2 - Compressor 1 Contactors Glued	Alarm	1.0.0
73	Reserved		
74	Reserved		
75	Unit Freeze Protection	Alarm	1.0.0
76	Circuit 2 - Condensing Pressure Probe Failure	Alarm	1.0.0
77	Circuit 2 - Liquid Temperature Probe Failure	Warning	1.0.0
78	Circuit 2 - Evaporating Pressure Probe Failure	Alarm	1.0.0
79	Circuit 2 - Evaporating Temperature Probe Failure	Alarm	1.0.0
81	Circuit 2 - High Superheat	Warning	1.0.0
82	Power Failure Line B	Message	1.0.0
83	EEV Driver 2 - Communication Failure	Alarm	1.0.0
84	EEV Driver 2 - Valve Motor Error	Alarm	1.0.0
85	Evaporator Pump 1 Working Hours Limit Exceeded	Warning	1.0.0
86	Evaporator Pump 2 Working Hours Limit Exceeded	Warning	1.0.0
89	Remove power from unit	Message	1.0.0
90	User Analog Input 1 Failure	Alarm	1.2.0
91	Reserved		
92	Energy Meter 1 Communication Failure	Warning	1.0.0
94	Energy Meter 2 Communication Failure	Warning	1.0.0

BV	Description	Event Type	Version
95	Circuit 1 - Compressor 1 Working Hours Limit Exceeded	Warning	1.0.0
96	Circuit 1 - Compressor 2 Working Hours Limit Exceeded	Warning	1.0.0
97	Circuit 1 - Compressor 3 Working Hours Limit Exceeded	Warning	1.0.0
98	Circuit 2 - Compressor 1 Working Hours Limit Exceeded	Warning	1.0.0
99	Circuit 2 - Compressor 2 Working Hours Limit Exceeded	Warning	1.0.0
100	Circuit 2 - Compressor 3 Working Hours Limit Exceeded	Warning	1.0.0
101	Expansion Board Communication Failure	Warning	1.0.0
102	Water Flow Meter Sensor Failure	Warning	1.0.0
103	Remote OFF	Message	1.0.0
104	Variable Water Flow Control Failure	Warning	1.0.0
105	Low External Water Flow	Warning	1.0.0
107	Unstable External Water Flow	Warning	1.0.0
108	Low Evaporator Water Flow	Warning	1.0.0
109	High Evaporator Water Flow	Warning	1.0.0
110	Low Evaporator Water Flow	Alarm	1.0.0
111	High Evaporator Water Flow	Alarm	1.0.0
112	Circuit 1 - Low Refrigerant Charge Warning	Warning	1.0.0
113	Circuit 1 - Low Refrigerant Charge Alarm	Alarm	1.0.0
114	Circuit 2 - Low Refrigerant Charge Warning	Warning	1.0.0
115	Circuit 2 - Low Refrigerant Charge Alarm	Alarm	1.0.0
116	Circuit 1 - Compressors Out of Envelope	Warning	1.0.0
117	Circuit 2 - Compressors Out of envelope	Warning	1.0.0
126	Too Fast Water Flow Variation	Warning	1.0.0
127	Too Fast Water Flow Variation	Alarm	1.0.0
128	Circuit 1 - Compressor Oil Level Alarm	Alarm	1.0.0
129	Circuit 2 - Compressor Oil Level Alarm	Alarm	1.0.0
130	Auxiliary Power Failure	Alarm	1.0.0
131	Circuit 1 - Compressors Off by Envelope Protection	Message	1.0.0
132	Circuit 2 - Compressors Off by Envelope Protection	Message	1.0.0
133	Circuit 1 - Compressors Unload Stop by Envelope Protection	Message	1.0.0
134	Circuit 2 - Compressors Unload Stop by Envelope Protection	Message	1.0.0
135	Circuit 1 - Compressors Out of Envelope (Level 2)	Message	1.0.0
136	Circuit 2 - Compressors Out of Envelope (Level 2)	Message	1.0.0
137	Circuit 1 - Low Differential Pressure	Alarm	1.0.0

BV	Description	Event Type	Version
138	Circuit 2 - Low Differential Pressure	Alarm	1.0.0
140	Condenser Inlet Temperature Probe Failure	Alarm	1.0.0
141	Condenser Outlet Temperature Probe Failure	Alarm	1.0.0
142	Free Cooling Pump Working Hours Limit Exceeded	Warning	1.0.0
143	Reserved		
144	Reserved		
145	Free Cooling By-Pass Valve Feedback Failure	Warning	1.0.0
148	Low Evaporator Water Pressure	Alarm	1.0.0
149	Evaporator Water Pressure Sensors Failure	Warning	1.0.0
150	Reserved		
151	Evaporator Bypass Valve Feedback Failure	Warning	1.0.0
152	Circuit 1 - Low Evaporating Temperature	Alarm	1.0.0
153	Circuit 2 - Low Evaporating Temperature	Alarm	1.0.0
156	Circuit 1 - Compressor Starts/h Limit Reached	Alarm	1.0.0
157	Circuit 2 - Compressor Starts/h Limit Reached	Alarm	1.0.0
158	Emergency Mode Active	Message	1.1.0
159	CWM Communication Failure	Warning	1.1.0
160	Missing Unit Configuration	Alarm	1.1.0
171	Circuit 1 - Compressor Inverter Communication Failure	Alarm	1.1.0
172	Circuit 2 - Compressor Inverter Communication Failure	Alarm	1.1.0
173	Circuit 1 - Compressor Inverter Alarm	Alarm	1.1.0
174	Circuit 2 - Compressor Inverter Alarm	Alarm	1.1.0
175	EEV Driver 1 - Generic Alarm	Alarm	1.1.0
176	EEV Driver 2 - Generic Alarm	Alarm	1.1.0
177	Free Cooling Inlet Pressure Sensor Failure	Alarm	1.1.0
178	Free Cooling Outlet Pressure Sensor Failure	Alarm	1.1.0
179	Free Cooling Pump Alarm	Alarm	1.1.0
180	Free Cooling Pump Communication Failure	Warning	1.1.0
182	iCOM Memory Error	Alarm	1.1.0
183	Critical Refrigerant Leakage Detected	Alarm	1.1.0
184	Refrigerant Leakage Detected	Warning	1.1.0
185	Gas Leak Detector Communication Failure	Warning	1.1.0
186	Gas Leak Detector Sensor Calibration Required	Warning	1.1.0
187	Circuit 1 - Critical Refrigerant Depressurization	Alarm	1.1.0

BV	Description	Event Type	Version
188	Circuit 2 - Critical Refrigerant Depressurization	Alarm	1.1.0
189	ATS 1 Communication Failure	Warning	1.1.0
190	ATS 2 Communication Failure	Warning	1.1.0
191	Freecooling Failure	Alarm	1.0.0
192	Fans Rotation Error	Alarm	1.0.0
193	C3 and C4 Offline	Alarm	1.1.0
194	Network Failure	Warning	1.1.0
195	No Connection to Unit 1	Warning	1.1.0
196	Master Unit Changed	Message	1.1.0
197	Master Unit not Available	Warning	1.1.0
201	Free Cooling Circuit – Glycol Leakage	Alarm	1.1.3
202	Free Cooling Circuit – High pressure	Alarm	1.1.3
203	Current Fans Control Relay Fault	Warning	1.2.1
204	Critical Current Fans Control Relay Fault	Alarm	1.2.1
410	Evaporator 2 Freeze Protection	Alarm	1.1.0
411	Unit Inlet Temperature Probe 2 Failure	Alarm	1.1.0
412	Evaporator Inlet Temperature Probe 2 Failure	Alarm	1.1.0
413	Unit Outlet Temperature Probe 2 Failure	Alarm	1.1.0
415	Ambient Temperature Probe 2 Failure	Alarm	1.1.0
425	Circuit 3 - Fans Failure	Alarm	1.1.0
426	Circuit 4 - Fans Failure	Alarm	1.1.0
427	Circuit 3 - Single Fans Failure	Warning	1.1.0
428	Circuit 4 - Single Fans Failure	Warning	1.1.0
430	Circuit 3 - Fans Working Hours Limit Exceeded	Warning	1.1.0
431	Circuit 4 - Fans Working Hours Limit Exceeded	Warning	1.1.0
434	Free Cooling Valve 2 Feedback Failure	Warning	1.1.0
435	Circuit 3 - High Condensing Pressure	Alarm	1.1.0
436	Circuit 3 - Low Evaporating Pressure	Alarm	1.1.0
437	Circuit 3 - Very Low Superheat	Alarm	1.1.0
438	Circuit 3 - Compressor 1 Thermal Protection	Alarm	1.1.0
439	Circuit 3 - Compressor 2 Thermal Protection	Alarm	1.1.0
440	Circuit 3 - Compressor 3 Thermal Protection	Alarm	1.1.0
441	Circuit 3 - Fans Override Enabled	Warning	1.1.0
442	Circuit 3 - Compressors Unload Enabled	Warning	1.1.0

BV	Description	Event Type	Version
443	Circuit 3 - Critical Condensing Pressure	Warning	1.1.0
444	Reserved		
445	Reserved		
446	Circuit 3 - Compressor 1 Contactors Glued	Alarm	1.1.0
447	Reserved		
448	Reserved		
450	Circuit 3 - Condensing Pressure Probe Failure	Alarm	1.1.0
451	Circuit 3 - Liquid Temperature Probe Failure	Warning	1.1.0
452	Circuit 3 - Evaporating Pressure Probe Failure	Alarm	1.1.0
453	Circuit 3 - Evaporating Temperature Probe Failure	Alarm	1.1.0
454	Reserved		
455	Circuit 3 - High Superheat	Warning	1.1.0
456	Reserved		
457	EEV Driver 3 - Communication Failure	Alarm	1.1.0
458	EEV Driver 3 - Valve Motor Error	Alarm	1.1.0
461	Circuit 4 - High Condensing Pressure	Alarm	1.1.0
462	Circuit 4 - Low Evaporating Pressure	Alarm	1.1.0
463	Circuit 4 - Very Low Superheat	Alarm	1.1.0
464	Circuit 4 - Compressor 1 Thermal Protection	Alarm	1.1.0
465	Circuit 4 - Compressor 2 Thermal Protection	Alarm	1.1.0
466	Circuit 4 - Compressor 3 Thermal Protection	Alarm	1.1.0
467	Circuit 4 - Fans Override Enabled	Warning	1.1.0
468	Circuit 4 - Compressors Unload Enabled	Warning	1.1.0
469	Circuit 4 - Critical Condensing Pressure	Warning	1.1.0
470	Reserved		
471	Reserved		
472	Circuit 4 - Compressor 1 Contactors Glued	Alarm	1.1.0
473	Reserved		
474	Reserved		
476	Circuit 4 - Condensing Pressure Probe Failure	Alarm	1.1.0
477	Circuit 4 - Liquid Temperature Probe Failure	Warning	1.1.0
478	Circuit 4 - Evaporating Pressure Probe Failure	Alarm	1.1.0
479	Circuit 4 - Evaporating Temperature Probe Failure	Alarm	1.1.0
480	Reserved		

BV	Description	Event Type	Version
481	Circuit 4 - High Superheat	Warning	1.1.0
483	EEV Driver 4 - Communication Failure	Alarm	1.1.0
484	EEV Driver 4 - Valve Motor Error	Alarm	1.1.0
495	Circuit 3 - Compressor 1 Working Hours Limit Exceeded	Warning	1.1.0
496	Circuit 3 - Compressor 2 Working Hours Limit Exceeded	Warning	1.1.0
497	Circuit 3 - Compressor 3 Working Hours Limit Exceeded	Warning	1.1.0
498	Circuit 4 - Compressor 1 Working Hours Limit Exceeded	Warning	1.1.0
499	Circuit 4 - Compressor 2 Working Hours Limit Exceeded	Warning	1.1.0
500	Circuit 4 - Compressor 3 Working Hours Limit Exceeded	Warning	1.1.0
502	Water Flow Meter Sensor 2 Failure	Warning	1.1.0
512	Circuit 3 - Low Refrigerant Charge Warning	Warning	1.1.0
513	Circuit 3 - Low Refrigerant Charge Alarm	Alarm	1.1.0
514	Circuit 4 - Low Refrigerant Charge Warning	Warning	1.1.0
515	Circuit 4 - Low Refrigerant Charge Alarm	Alarm	1.1.0
516	Circuit 3 - Compressors Out of Envelope	Warning	1.1.0
517	Circuit 4 - Compressors Out of Envelope	Warning	1.1.0
518	Reserved		
519	Reserved		
520	Reserved		
521	Reserved		
522	Reserved		
523	Reserved		
528	Circuit 3 - Compressor Oil Level Alarm	Alarm	1.1.0
529	Circuit 4 - Compressor Oil Level Alarm	Alarm	1.1.0
530	Reserved		
531	Circuit 3 - Compressors Off by Envelope Protection	Message	1.1.0
532	Circuit 4 - Compressors Off by Envelope Protection	Message	1.1.0
533	Circuit 3 - Compressors Unload Stop by Envelope Protection	Message	1.1.0
534	Circuit 4 - Compressors Unload Stop by Envelope Protection	Message	1.1.0
535	Circuit 3 - Compressors Out of Envelope (Level 2)	Message	1.1.0
536	Circuit 4 - Compressors Out of Envelope (Level 2)	Message	1.1.0
537	Circuit 3 - Low Differential Pressure	Alarm	1.1.0
538	Circuit 4 - Low Differential Pressure	Alarm	1.1.0
543	Reserved		

BV	Description	Event Type	Version
544	Reserved		
545	Free Cooling By-Pass Valve 2 Feedback Failure	Warning	1.1.0
549	Evaporator Water Pressure Sensors 2 Failure	Warning	1.1.0
551	Reserved		
552	Circuit 3 - Low Evaporating Temperature	Alarm	1.1.0
553	Circuit 4 - Low Evaporating Temperature	Alarm	1.1.0
554	Reserved		
555	Reserved		
556	Circuit 3 - Compressor Starts/h Limit Reached	Alarm	1.1.0
557	Circuit 4 - Compressor Starts/h Limit Reached	Alarm	1.1.0
560	Reserved		
575	EEV Driver 3 - Generic Alarm	Alarm	1.1.0
576	EEV Driver 4 - Generic Alarm	Alarm	1.1.0
581	Reserved		
582	Reserved		
587	Circuit 3 - Critical Refrigerant Depressurization	Alarm	1.1.0
588	Circuit 4 - Critical Refrigerant Depressurization	Alarm	1.1.0
591	Freecooling Failure 2	Alarm	1.1.0

5.3 Analog Values

AV	Variable	Description	Range	Access	Version
0	W_Reg_UserSetP_R	Current Temperature Setpoint	10.0/+30.0°C	R	1.0.0
1	UnitInletTempVal_R	Unit Inlet Temperature	-40.0/+110.0°C	R	1.0.0
2	EvapInletTempVal_R	Evaporator Inlet Temperature	-40.0/+110.0°C	R	1.0.0
3	EvapOutletTempVal_R	Unit Outlet Temperature	-40.0/+110.0°C	R	1.0.0
4	AmbAirTempVal_R	Ambient Temperature	-40.0/+110.0°C	R	1.0.0
5	FC_Info.FC_VlvReq_R	Freecooling Valve Position Request	0 – 100%	R	1.0.0
6	FanSpeed[1]	Circuit 1 Fans Speed Request	0 – 100%	R	1.0.0
7	FanSpeed[2]	Circuit 2 Fans Speed Request	0 – 100%	R	1.0.0
8	Reserved	---	---	---	---
9	HP_Circ1.Value_R	Condenser Pressure Circuit 1	-100/+500; 1/10 bar	R	1.0.0
10	LP_Circ1.Value_R	Evaporating Pressure Circuit 1	-100/+500; 1/10 bar	R	1.0.0
11	HP_Circ2.Value_R	Condenser Pressure Circuit 2	-100/+500; 1/10 bar	R	1.0.0
12	LP_Circ2.Value_R	Evaporating Pressure Circuit 2	-100/+500; 1/10 bar	R	1.0.0

AV	Variable	Description	Range	Access	Version
13	BMS_WH_Pmp1	Working Hours Evaporator Pump 1	0-32000 h	R	1.0.0
14	BMS_WH_Pmp2	Working Hours Evaporator Pump 2	0-32000 h	R	1.0.0
15	BMS_WH_FC_Pmp	Working Hours FC Pump	0-32000 h	R	1.0.0
16	BMS_WH_FanC1	Working Hours Fans Circuit 1	0-32000 h	R	1.0.0
17	BMS_WH_FanC2	Working Hours Fans Circuit 2	0-32000 h	R	1.0.0
18	Reserved	---	---	---	---
19	BMS_WH_Cmp1C1	Working Hours Compressor 1 Circuit 1	0-32000 h	R	1.0.0
20	BMS_WH_Cmp2C1	Working Hours Compressor 2 Circuit 1	0-32000 h	R	1.0.0
21	Reserved	---	---	---	---
22	BMS_WH_Cmp1C2	Working Hours Compressor 1 Circuit 2	0-32000 h	R	1.0.0
23	BMS_WH_Cmp2C2	Working Hours Compressor 2 Circuit 2	0-32000 h	R	1.0.0
24	Reserved	---	---	---	---
25	BMS_Starts_Cmp1C1	Starts Compressor 1 Circuit 1	0-32000	R	1.0.0
26	BMS_Starts_Cmp2C1	Starts Compressor 2 Circuit 1	0-32000	R	1.0.0
27	Reserved	---	---	---	---
28	BMS_Starts_Cmp1C2	Starts Compressor 1 Circuit 2	0-32000	R	1.0.0
29	BMS_Starts_Cmp2C2	Starts Compressor 2 Circuit 2	0-32000	R	1.0.0
30	Reserved	---	---	---	---
33	kWtot_R	Instant Power Consumption	0 – 9999 kW	R	1.0.0
34	EnEff_RolIEERF_R	Instant EER	0 – 9999	R	1.0.0
35	EnEff_RolIViPUF_R	Instant PPUE	0 – 9999	R	1.0.0
36	EnEff_RolIWUEF_R	Instant WUE	0 – 9999 l/kWh	R	1.0.0
37	AlrmResByBms	Event Reset	Set 9999 to Reset Events	R/W	1.0.0
38	Cfg_Reg_SetP_R	Temperature Setpoint 1	0.0/40.0°C	R/W	1.0.0
39	Cfg_Reg_SetP2_R	Temperature Setpoint 2	0.0/40.0°C	R/W	1.1.0
40	Reserved	---	---	---	---
41	Reserved	---	---	---	---
42	Reserved	---	---	---	---
43	Reserved	---	---	---	---
44	Cfg_WH_ThrshPmp1	Limit Working Hours Evaporator Pump 1	0-32000 h	R/W	1.0.0
45	Cfg_WH_ThrshPmp2	Limit Working Hours Evaporator Pump 2	0-32000 h	R/W	1.0.0
46	Cfg_WH_ThrshFC_Pmp	Limit Working Hours FC Pump	0-32000 h	R/W	1.0.0
47	Cfg_WH_ThrshFanC1	Limit Working Hours Fans Circuit 1	0-32000 h	R/W	1.0.0
48	Cfg_WH_ThrshFanC2	Limit Working Hours Fans Circuit 2	0-32000 h	R/W	1.0.0

AV	Variable	Description	Range	Access	Version
49	Reserved	---	---	---	---
50	Cfg_WH_ThrshCmp1C1	Limit Working Hours Compressor 1 Circuit 1	0-32000 h	R/W	1.0.0
51	Cfg_WH_ThrshCmp2C1	Limit Working Hours Compressor 2 Circuit 1	0-32000 h	R/W	1.0.0
52	Reserved	---	---	---	---
53	Cfg_WH_ThrshCmp1C2	Limit Working Hours Compressor 1 Circuit 2	0-32000 h	R/W	1.0.0
54	Cfg_WH_ThrshCmp2C2	Limit Working Hours Compressor 2 Circuit 2	0-32000 h	R/W	1.0.0
55	Reserved	---	---	---	---
56	WaterFlowVal_m3h_R	Water Flow	0-300 m ³ /h	R	1.0.0
57	TimeToNextCmpAvbl	Remaining time to have next comp. available	0-3600 s	R	1.0.0
58	BMS_EvPmpFlwReq_R	Remote water flow request	10-250 m ³ /h	R/W	1.0.0
59	Cfg_Pmp_DPsetP	DP Setpoint	0-10.0 bar	R/W	1.0.0
60	Reserved	---	---	---	---
61	Reserved	---	---	---	---
62	Pmp_CtrlInput_R	Water DP	0-10.0 bar	R	1.0.0
63	BypassVlvReq_R	By-pass valve position	0-100%	R	1.0.0
64	UsrAnlgInpState[1]	Analog User Input 1 Status	0=Off, 1=Act	R	1.2.2
65	Reserved	---	---	---	---
66	Reserved	---	---	---	---
79	UnitCoolingCap	Current unit cooling capacity	0.0 – 2000.0 kW	R	1.2.2
80	Reserved	---	---	---	---
81	Reserved	---	---	---	---
82	Reserved	---	---	---	---
83	EnEff_TotalCapacityF	Total capacity	0.0 – 2000.0 kW	R	1.2.2
84	EnEff_FCCapacityF	Free-Cooling capacity	0.0 – 2000.0 kW	R	1.2.2
85	EnEff_MechCapacityF	Mechanical capacity	0.0 – 2000.0 kW	R	1.2.2
89	BmsEmgModeEn	Emergency Mode Activation Command	0=OFF, 1=Act	R/W	1.1.0
90	Reserved	---	---	---	---
91	Reserved	---	---	---	---
92	Reserved	---	---	---	---
103	Gvz1.Hz	Frequency Line1 (ATS 1 or EM 1)	0.0 – 999.9 Hz	R	1.1.3
104	Gvz2.Hz	Frequency Line 2 (ATS 2 or EM 2)	0.0 – 999.9 Hz	R	1.1.3
105	Gvz1.VL1L2_R	Voltage L1-L2 (ATS 1 or EM 1)	0.0 – 999.9 V	R	1.0.0
106	Gvz1.VL2L3_R	Voltage L2-L3 (ATS 1 or EM 1)	0.0 – 999.9 V	R	1.0.0
107	Gvz1.VL3L1_R	Voltage L3-L1 (ATS 1 or EM 1)	0.0 – 999.9 V	R	1.0.0

AV	Variable	Description	Range	Access	Version
108	Gvz2.VL1L2_R	Voltage L1-L2 (ATS 2 or EM 2)	0.0 – 999.9 V	R	1.0.0
109	Gvz2.VL2L3_R	Voltage L2-L3 (ATS 2 or EM 2)	0.0 – 999.9 V	R	1.0.0
110	Gvz2.VL3L1_R	Voltage L3-L1 (ATS 2 or EM 2)	0.0 – 999.9 V	R	1.0.0
111	Gvz1.AL1_R	Current L1 (ATS 1 or EM 1)	0.0 – 999.9 A	R	1.0.0
112	Gvz1.AL2_R	Current L2 (ATS 1 or EM 1)	0.0 – 999.9 A	R	1.0.0
113	Gvz1.AL3_R	Current L3 (ATS 1 or EM 1)	0.0 – 999.9 A	R	1.0.0
114	Gvz2.AL1_R	Current L1 (ATS 2 or EM 2)	0.0 – 999.9 A	R	1.0.0
115	Gvz2.AL2_R	Current L2 (ATS 2 or EM 2)	0.0 – 999.9 A	R	1.0.0
116	Gvz2.AL3_R	Current L3 (ATS 2 or EM 2)	0.0 – 999.9 A	R	1.0.0
117	Gvz1.kWtot_R	Total Power Consumption (ATS 1 or EM 1)	0.0 – 999.9 kW	R	1.0.0
118	Gvz2.kWtot_R	Total Power Consumption (ATS 2 or EM 2)	0.0 – 999.9 kW	R	1.0.0
119	FanSpeed[3]	Circuit 3 Fans Speed Request	0 – 100%	R	1.1.0
120	FanSpeed[4]	Circuit 4 Fans Speed Request	0 – 100%	R	1.1.0
121	HP_Circ3.Value_R	Condenser Pressure Circuit 3	-100/+500; 1/10 bar	R	1.1.0
122	LP_Circ3.Value_R	Evaporating Pressure Circuit 3	-100/+500; 1/10 bar	R	1.1.0
123	HP_Circ4.Value_R	Condenser Pressure Circuit 4	-100/+500; 1/10 bar	R	1.1.0
124	LP_Circ4.Value_R	Evaporating Pressure Circuit 4	-100/+500; 1/10 bar	R	1.1.0
125	BMS_WH_FanC3	Working Hours Fans Circuit 3	0-32000 h	R	1.1.0
126	BMS_WH_FanC4	Working Hours Fans Circuit 4	0-32000 h	R	1.1.0
127	BMS_WH_Cmp1C3	Working Hours Compressor 1 Circuit 3	0-32000 h	R	1.1.0
128	Reserved	---	---	---	---
129	Reserved	---	---	---	---
130	BMS_WH_Cmp1C4	Working Hours Compressor 1 Circuit 4	0-32000 h	R	1.1.0
131	Reserved	---	---	---	---
132	Reserved	---	---	---	---
133	BMS_Starts_Cmp1C3	Starts Compressor 1 Circuit 3	0-32000	R	1.1.0
134	Reserved	---	---	---	---
135	Reserved	---	---	---	---
136	BMS_Starts_Cmp1C4	Starts Compressor 1 Circuit 14	0-32000	R	1.1.0
137	Reserved	---	---	---	---
138	Reserved	---	---	---	---
139	Cfg_WH_ThrshFanC3	Limit Working Hours Fans Circuit 3	0-32000 h	R/W	1.1.0
140	Cfg_WH_ThrshFanC4	Limit Working Hours Fans Circuit 4	0-32000 h	R/W	1.1.0
141	Cfg_WH_ThrshCmp1C3	Limit Working Hours Compressor 1 Circuit 3	0-32000 h	R/W	1.1.0

AV	Variable	Description	Range	Access	Version
142	Reserved	---	---	---	---
143	Reserved	---	---	---	---
144	Cfg_WH_ThrshCmp1C4	Limit Working Hours Compressor 1 Circuit 4	0-32000 h	R/W	1.1.0
145	Reserved	---	---	---	---
146	Reserved	---	---	---	---
147	kWhTot_R	Total Kilo Watt Hour	0.0 - 9999.9 kWh	R	1.1.3
148	VARtot_R	Total VAR Volt Ampere Reactive	0.0 - 9999.9 VAR	R	1.1.3
149	VAtot_R	Total Volt Ampere	0.0 - 9999.9 VA	R	1.1.3
150	EnEff_TotalCapacity24_R	Total Capacity 24 (FC + DX)	0.0 – 20000.0 kW	R	1.1.3
151	EnEff_CoolingCapacity24_R	Cooling Capacity 24	0.0 – 20000.0 kW	R	1.1.3
152	EnEff_MechCapacity24_R	Mechanical Capacity 24	0.0 – 20000.0 kW	R	1.1.3
153	EnEff_RolIEER24_R	EER – Energy Efficiency Ratio	0 - 9999	R	1.1.3
154	EnEff_RolVirtualPUE24_R	Virtual Power Usage Efficiency – Virtual PUE 24	0 - 9999	R	1.1.3
155	EnEff_RolIWUE24_R	Water Usage Efficiency - WUE 24	0 - 9999 l/kWh	R	1.1.3

5.4 Multistate Values

MSV	Variable	Description	Nr States	Access	Version
0	BMS_UnitSts	Unit Status 0=LocalOn, 1=NULL, 2=LocalOff, 3=RemoteOff, 4=NULL, 5=NULL, 6=Manual, 7=AlarmOff, 8=PowerFailure, 9=AlarmOn, 10=WarningOn, 11=SystemOff, 12=Stby	13	R	1.0.0
1	FC_Active	Status of Freecooling; 0=Not Active, 1=Active	2	R	1.0.0
2	BMS_Pmp_Sts[0]	Pump 1 – Pump 2 – Pump FC Status: 0=NA, 1=ON, 2=Maintenance, 3=OFF, 4=Alarm, 5=Starting, 6=Stopping	6	R	1.0.0
3	BMS_Pmp_Sts[1]		6	R	1.0.0
4	BMS_Pmp_Sts[2]		6	R	1.0.0
5	BMS_Cmp_Sts[1]	Compressors Status: 0=NA, 1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	10	R	1.0.0
6	BMS_Cmp_Sts[2]		10	R	1.0.0
7	BMS_Cmp_Sts[3]		10	R	1.0.0
8	BMS_Cmp_Sts[5]		10	R	1.0.0
9	BMS_Cmp_Sts[6]		10	R	1.0.0
10	BMS_Cmp_Sts[7]		10	R	1.0.0
11	RemOnOffState	Remote On/Off Status; 0=OFF, 1=ON	2	R	1.0.0
12	FlwSwchState	Flow Switch Status; 0=OK, 1=Alarm	2	R	1.0.0
13	PwrMonitState	Power Monitoring Status; 0=OK, 1=Power Failure	2	R	1.0.0
14	Reserved	---	---	---	---
15	Reserved	---	---	---	---
16	Hmi.FansRevRot	Snow/Dirt PAD cleaning cycle; 0=Not Active, 1=Active	2	R	1.0.0
18	Reserved	---	---	---	---
19	BmsOnOff	Unit ON/OFF; 0=STAY, 1=TOGGLE	2	R/W	1.0.0
20	MuteBuzzerEn	Event Acknowledge; 1=TOGGLE	2	R/W	1.0.0
21	ManModeEn	0= NO, 1= YES	2	R/W	1.0.0
22	CmpStartState	0= all available, 1= at least 1 compressor in the unit reached the limit, 2 = all compressor reached the limit	3	R	1.0.0
23	UnitOpMode	Unit Operating Mode; 0=Cooling, 1=Heating	2	R	1.0.0
24	UsrDigInpState[1]	Digital User Input status; 0=Off, 1=Act	2	R	1.0.0
25	Reserved	---	---	---	---
26	BmsSysOnOffCmd	System On/Off Toggle Command	Set 1 to change Status (Switch)	R/W	1.1.0
27	EmgModeActive	Emergency Mode Status: 0 = Not active, 1 = Active	0=OFF, 1=Act	R	1.1.0
28	Reserved	---	---	---	---
29	Reserved	---	---	---	---

MSV	Variable	Description	Nr States	Access	Version
30	Reserved	---	---	---	---
40	Hmi.AtsState[1]	ATS 1 Status: 0 = not installed, 1 = line 1, 2 = line 2, 3 = transition, 4 = communication error	5	R	1.0.0
41	Hmi.AtsState[1]	ATS 2 Status: 0 = not installed, 1 = line 1, 2 = line 2, 3 = transition, 4 = communication error	5	R	1.0.0
42	BMS_Cmp_Sts[9]	Compressors Status: 0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING,14=UNLOADED	10	R	1.1.0
43	BMS_Cmp_Sts[10]		10	R	1.1.0
44	BMS_Cmp_Sts[11]		10	R	1.1.0
45	BMS_Cmp_Sts[13]		10	R	1.1.0
46	BMS_Cmp_Sts[14]		10	R	1.1.0
47	BMS_Cmp_Sts[15]		10	R	1.1.0
48	FlwSwch2State	Flow Switch 2 Status; 0=OK, 1=Alarm	2	R	1.1.0
49	EventsActive	General Alarm; 0=Off, 1=Act	2	R	1.1.7

6 SNMP

6.1 OID Table

The following OID table is available under the Liebert LIEBERT_GP_REG.MIB MIB in position 32 of ProductSpecific|AcProducts.

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.424.3.30.1.1.0	Unit Status	R	0=Local On 2=Local Off 3=Remote Off 6=Manual 7=Alarm Off 8=Power Failure 9=Alarm On 10=Warning On 11=System Off 12=Standby	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.2.0	Current Temperature Setpoint	R	-10.0/+30.0°C; 1/10°C	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.3.0	Unit Inlet Temperature	R	-40.0/110.0°C; 1/10°C	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.4.0	Evaporator Inlet Temperature	R	-40.0/+110.0°C; 1/10°C	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.5.0	Unit Outlet Temperature	R	-40.0/110.0°C; 1/1 °C	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.6.0	Ambient Temperature	R	-40.0/+110.0°C; 1/10°C	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.7.0	Status of Freecooling	R	0=Not Active, 1=Active	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.8.0	Evaporator Pump 1 Status	R	0=N.A., 1=ON, 2=Maintenance, 3=OFF, 4=Alarm, 5=Starting, 6=Stopping	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.9.0	Evaporator Pump 2 Status	R		1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.10.0	FC Pump Status	R		1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.11.0	Freecooling Valve Position Request	R	0 - 100	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.12.0	Circuit 1 Fans Speed Request	R	0 - 100	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.13.0	Circuit 2 Fans Speed Request	R	0 - 100	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.14.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.424.3.30.1.15.0	Compressor 1 Circuit 1 Status	R	0=N.A., 1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.16.0	Compressor 2 Circuit 1 Status	R		1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.17.0	Reserved	---		---
.1.3.6.1.4.1.476.1.424.3.30.1.18.0	Compressor 1 Circuit 2 Status	R		1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.19.0	Compressor 2 Circuit 2 Status	R		1.0.0
.1.3.6.1.4.1.476.1.424.3.30.1.20.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.424.3.30.1.21.0	Condenser Pressure Circuit 1	R	-100/+500; 1/10 bar	1.0.0

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.1.22.0	Evaporating Pressure Circuit 1	R	-100/+500; 1/10 bar	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.23.0	Condenser Pressure Circuit 2	R	-100/+500; 1/10 bar	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.24.0	Evaporating Pressure Circuit 2	R	-100/+500; 1/10 bar	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.25.0	Working Hours Evaporator Pump 1	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.26.0	Working Hours Evaporator Pump 2	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.27.0	Working Hours Evaporator FC Pump	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.28.0	Working Hours Fans Circuit 1	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.29.0	Working Hours Fans Circuit 2	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.30.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.31.0	Working Hours Comp. 1 Circuit 1	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.32.0	Working Hours Comp. 2 Circuit 1	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.33.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.34.0	Working Hours Comp. 1 Circuit 2	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.35.0	Working Hours Comp. 2 Circuit 2	R	0-32000 h	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.36.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.37.0	Starts Compressor 1 Circuit 1	R	0-32000	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.38.0	Starts Compressor 2 Circuit 1	R	0-32000	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.39.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.40.0	Starts Compressor 1 Circuit 2	R	0-32000	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.41.0	Starts Compressor 2 Circuit 2	R	0-32000	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.42.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.43.0	Remote On/Off Status	R	0=OFF, 1=ON	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.44.0	Flow Switch Status	R	0=OK, 1=Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.45.0	Power Monitoring Status	R	0=OK, 1=Power Failure	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.46.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.47.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.50.0	Snow/Dirt PAD cleaning cycle	R	0=Not Active, 1=Active	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.52.0	UltraCap Status	R	0=Not Ready, 1=Ready	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.53.0	Instant Power Consumption	R	0 – 9999 kW	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.54.0	Instant EER	R	0 – 9999	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.55.0	Instant PPUE	R	0 – 9999	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.56.0	Instant WUE	R	0 – 9999 l/kWh	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.57.0	Water Flow	R	0 – 300 m ³ /h	1.0.0

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.158.0	Comp Start per Hour Status	R	0=all available,1=at least 1 reach limit, 2=all reach limit	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.159.0	Time to have next comp. available	R	0 – 3600 s	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.160.0	Water DP	R	0-10.0 bar	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.161.0	By-pass valve position	R	0-100%	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.162.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.163.0	Digital User Input status	R	0=Off, 1=Act	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.164.0	Analog User Input 1 Status	R	0=Off, 1=Act	1.2.2
.1.3.6.1.4.1.476.1.42.4.3.30.165.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.166.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.183.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.186.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.187.0	Unit Cooling Capacity	R	0.0 – 2000.0 kW	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.188.0	Total Capacity	R	0.0 – 2000.0 kW	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.189.0	Free Cooling Capacity	R	0.0 – 2000.0 kW	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.190.0	Mechanical Capacity	R	0.0 – 2000.0 kW	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.194.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1109.0	Frequency Line1 (ATS 1 or EM 1)	R	0.0 – 999.9 Hz	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.1110.0	Frequency Line2 (ATS 1 or EM 1)	R	0.0 – 999.9 Hz	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.1111.0	Voltage L1-L2 (ATS 1 or EM 1)	R	0.0 – 999.9 V	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1112.0	Voltage L2-L3 (ATS 1 or EM 1)	R	0.0 – 999.9 V	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1113.0	Voltage L3-L1 (ATS 1 or EM 1)	R	0.0 – 999.9 V	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1114.0	Voltage L1-L2 (ATS 2 or EM 2)	R	0.0 – 999.9 V	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1115.0	Voltage L2-L3 (ATS 2 or EM 2)	R	0.0 – 999.9 V	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1116.0	Voltage L3-L1 (ATS 2 or EM 2)	R	0.0 – 999.9 V	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1117.0	Current L1 (ATS 1 or EM 1)	R	0.0 – 999.9 A	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1118.0	Current L2 (ATS 1 or EM 1)	R	0.0 – 999.9 A	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1119.0	Current L3 (ATS 1 or EM 1)	R	0.0 – 999.9 A	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1120.0	Current L1 (ATS 2 or EM 2)	R	0.0 – 999.9 A	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1121.0	Current L2 (ATS 2 or EM 2)	R	0.0 – 999.9 A	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1122.0	Current L3 (ATS 2 or EM 2)	R	0.0 – 999.9 A	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1123.0	Total Power Consumption (ATS 1 or EM 1)	R	0.0 – 999.9 kW	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1124.0	Total Power Consumption (ATS 2 or EM 2)	R	0.0 – 999.9 kW	1.0.0

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.1.125.0	ATS 1 line status	R	0 = not installed, 1 = line 1, 2 = line 2, 3 = transition, 4 = communication error	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.126.0	ATS 2 line status	R	0 = not installed, 1 = line 1, 2 = line 2, 3 = transition, 4 = communication error	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.127.0	Circuit 3 Fans Speed Request	R	0 – 100 %	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.128.0	Circuit 4 Fans Speed Request	R	0 – 100 %	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.129.0	Compressor 1 Circuit 3 Status	R	0=N.A.,1=ON, 2=MTN, 3=OFF, 4=ALARM, 10=STARTING, 11=LOADING, 12=LOADED 13=UNLOADING, 14=UNLOADED	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.130.0	Reserved	R		1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.131.0	Reserved	R		1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.132.0	Compressor 1 Circuit 4 Status	R		1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.133.0	Reserved	R		1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.134.0	Reserved	R		1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.135.0	Condenser Pressure Circuit 3	R	-100/+500; 1/10 bar	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.136.0	Evaporating Pressure Circuit 4	R	-100/+500; 1/10 bar	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.137.0	Condenser Pressure Circuit 4	R	-100/+500; 1/10 bar	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.138.0	Evaporating Pressure Circuit 4	R	-100/+500; 1/10 bar	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.139.0	Working Hours Fans Circuit 3	R	0-32000 h	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.140.0	Working Hours Fans Circuit 4	R	0-32000 h	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.141.0	Working Hours Comp. 1 Circuit 3	R	0-32000 h	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.142.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.143.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.144.0	Working Hours Comp. 1 Circuit 4	R	0-32000 h	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.145.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.146.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.147.0	Starts Compressor 1 Circuit 1	R	0-32000	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.148.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.149.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.150.0	Starts Compressor 1 Circuit 2	R	0-32000	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.1.151.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.1.152.0	Reserved	---	---	---

OID	Parameter Description	Access	Range; Unit	Version
.13.6.14.1476.1424.3.30.1153.0	Flow Switch 2 Status	R	0=OK, 1=Alarm	
.13.6.14.1476.1424.3.30.1154.0	Total Kilo Watt Hour	R	0.0 – 999.9 kWh	1.1.3
.13.6.14.1476.1424.3.30.1155.0	Total Volt Ampere Reactive	R	0.0 – 999.9 VAR	1.1.3
.13.6.14.1476.1424.3.30.1156.0	Total Volt Ampere	R	0.0 – 999.9 VA	1.1.3
.13.6.14.1476.1424.3.30.1157.0	Total Capacity 24 (FC + DX)	R	0.0 – 2000.0 kW	1.1.3
.13.6.14.1476.1424.3.30.1158.0	Free Cooling Capacity 24	R	0.0 – 2000.0 kW	1.1.3
.13.6.14.1476.1424.3.30.1159.0	Mechanical Cooling Capacity 24	R	0.0 – 2000.0 kW	1.1.3
.13.6.14.1476.1424.3.30.1160.0	EER – Energy Efficiency Ratio 24	R	0 – 9999	1.1.3
.13.6.14.1476.1424.3.30.1161.0	Virtual Power Usage Efficiency – Virtual PUE 24	R	0 – 9999	1.1.3
.13.6.14.1476.1424.3.30.1162.0	Water Usage Efficiency - WUE 24	R	0 – 9999 l/kWh	1.1.3
.13.6.14.1476.1424.3.30.1163.0	Cooling Capacity 24	R	0.0 – 2000.0 kW	1.1.7
.13.6.14.1476.1424.3.30.1164.0	Event Actives	R	0 : No events active 1: At least one event active	1.1.7
.13.6.14.1476.1424.3.30.2.1.0	Unit On/Off	R/W	Set 1 to change Status (Switch)	1.0.0
.13.6.14.1476.1424.3.30.2.2.0	Alarm Reset	R/W	Set 9999 to Reset Events	1.0.0
.13.6.14.1476.1424.3.30.2.3.0	Temperature Setpoint 1	R/W	5.0/30.0 °C; 1/10 °C	1.0.0
.13.6.14.1476.1424.3.30.2.4.0	Temperature Setpoint 2	R/W	5.0/30.0 °C; 1/10 °C	1.0.0
.13.6.14.1476.1424.3.30.2.5.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.6.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.7.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.8.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.9.0	Limit Working Hours Evap. Pump 1	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.10.0	Limit Working Hours Evap. Pump 2	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.11.0	Limit Working Hours FC Pump	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.12.0	Limit Working Hours Fans Circuit 1	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.13.0	Limit Working Hours Fans Circuit 2	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.14.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.15.0	Limit Working Hours Comp. 1 Circ. 1	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.16.0	Limit Working Hours Comp. 2 Circ. 1	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.17.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.18.0	Limit Working Hours Comp. 1 Circ. 2	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.19.0	Limit Working Hours Comp. 2 Circ. 2	R/W	0-32000 h	1.0.0
.13.6.14.1476.1424.3.30.2.20.0	Reserved	---	---	---

OID	Parameter Description	Access	Range; Unit	Version
.13.6.14.1476.1424.3.30.2.21.0	Event Acknowledge	R/W	0=OFF, 1=ON	1.0.0
.13.6.14.1476.1424.3.30.2.22.0	Manual Mode Enabling via BMS	R/W	0/1 Toggle	1.0.0
.13.6.14.1476.1424.3.30.2.23.0	Remote water flow request	R/W	10-250 m³/h	1.0.0
.13.6.14.1476.1424.3.30.2.24.0	DP Setpoint	R/W	0-10.0 bar	1.0.0
.13.6.14.1476.1424.3.30.2.25.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.26.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.27.0	System On/Off Toggle Command	R/W	Set 1 to change Status (Switch)	1.1.0
.13.6.14.1476.1424.3.30.2.28.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.29.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.30.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.31.0	Emergency Mode Status	R/W	0=Off, 1=Act	1.1.0
.13.6.14.1476.1424.3.30.2.41.0	Limit Working Hours Fans Circuit 3	R/W	0-32000 h	1.1.0
.13.6.14.1476.1424.3.30.2.42.0	Limit Working Hours Fans Circuit 4	R/W	0-32000 h	1.1.0
.13.6.14.1476.1424.3.30.2.43.0	Limit Working Hours Comp. 1 Circ. 3	R/W	0-32000 h	1.1.0
.13.6.14.1476.1424.3.30.2.44.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.45.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.2.46.0	Limit Working Hours Comp. 1 Circ. 4	R/W	0-32000 h	1.1.0
.13.6.14.1476.1424.3.30.3.6.0	Pump 1 Failure	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.3.7.0	Pump 2 Failure	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.3.8.0	No Water Flow	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.3.9.0	Manual Mode Enable	R	Message	1.0.0
.13.6.14.1476.1424.3.30.3.10.0	Evaporator Freeze protection	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.3.11.0	Unit Inlet Temperature Sensor Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.3.12.0	Evaporator Inlet Temperature Sensor Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.3.13.0	Unit Outlet Temperature Sensor Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.3.15.0	Ambient Temperature Probe Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.3.16.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.3.17.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.3.18.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.3.19.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.3.20.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.3.21.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.3.22.0	Reserved	---	---	---

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.23.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.24.0	Fans Communication Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.25.0	Fans Circuit 1 Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.26.0	Fans Circuit 2 Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.27.0	Circuit 1 - Single Fans Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.28.0	Circuit 2 - Single Fans Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.29.0	Compressors OFF by AMB Limit	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.30.0	Circuit 1 - Fans Working Hours Limit Exceeded	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.31.0	Circuit 2 - Fans Working Hours Limit Exceeded	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.33.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.34.0	Feedback FC Valve Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.35.0	High Pressure Circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.36.0	Low Pressure Circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.37.0	Low Superheat Circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.38.0	TH Compressor 1 Circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.39.0	TH Compressor 2 Circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.40.0	TH Compressor 3 Circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.41.0	Circuit 1 - Fans Override Enabled	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.42.0	Unload Circuit 1	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.43.0	Critical Condensing Pressure Circuit 1	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.44.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.45.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.46.0	Contactor Compressor 1 of Circuit 1 Glued	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.47.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.48.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.49.0	FREE			
.1.3.6.1.4.1.476.1.42.4.3.30.3.50.0	Condensing Pressure Sensor 1 Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.51.0	Liquid Temperature Sensor 1 Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.52.0	EEV1 Pressure Sensor Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.53.0	EEV1 Temperature Sensor Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.54.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.55.0	EEV1 High Superheating	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.56.0	Power failure	R	Message	1.0.0

OID	Parameter Description	Access	Range; Unit	Version
.13.6.14.1476.1424.3.30.357.0	EEV1 Communication Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.358.0	EEV1 Motor Error	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.359.0	Pump 1 Modbus Failure	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.360.0	Pump 2 Modbus Failure	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.361.0	High Pressure Circuit 2	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.362.0	Low Pressure Circuit 2	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.363.0	Low Superheat Circuit 2	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.364.0	TH Compressor 1 Circuit 2	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.365.0	TH Compressor 2 Circuit 2	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.366.0	TH Compressor 3 Circuit 2	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.367.0	Fan Override Circuit 2	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.368.0	Unload Circuit 2	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.369.0	Critical Condensing Pressure Circuit 2	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.370.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.371.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.372.0	Contactors Compressor 1 of Circuit 2 Glued	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.373.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.374.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.375.0	Unit freeze protection	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.376.0	Condensing Pressure Sensor 2 Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.377.0	Liquid Temperature Sensor 2 Failure	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.378.0	EEV2 Pressure Sensor Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.379.0	EEV2 Temperature Sensor Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.380.0	Reserved	---	---	---
.13.6.14.1476.1424.3.30.381.0	EEV2 High Superheating	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.382.0	Power Failure line B	R	Message	1.0.0
.13.6.14.1476.1424.3.30.383.0	EEV2 Communication Failure	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.384.0	EEV2 Motor Error	R	Alarm	1.0.0
.13.6.14.1476.1424.3.30.385.0	Working hour limit exceeded pump 1	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.386.0	Working hour limit exceeded pump 2	R	Warning	1.0.0
.13.6.14.1476.1424.3.30.389.0	Remove power from unit	R	Message	1.0.0
.13.6.14.1476.1424.3.30.390.0	User Analog Input 1 Failure	R	Alarm	1.2.0
.13.6.14.1476.1424.3.30.391.0	Reserved	---	---	---

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.92.0	Energy Meter Communication Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.93.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.94.0	Energy Meter 2 Communication Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.95.0	Working hour limit compressor 1 circuit 1	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.96.0	Working hour limit compressor 2 circuit 1	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.97.0	Working hour limit compressor 3 circuit 1	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.98.0	Working hour limit compressor 1 circuit 2	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.99.0	Working hour limit compressor 2 circuit 2	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.100.0	Working hour limit compressor 3 circuit 2	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.101.0	Expansion module communication failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.102.0	Flow Meter Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.103.0	Remote off	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.104.0	Flow transmitter failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.105.0	Evaporator low flow protection	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.106.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.107.0	Instable water flow	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.108.0	Low water flow	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.109.0	High water flow	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.110.0	Low water flow	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.111.0	High water flow	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.112.0	Low Refrigerant charge circuit 1	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.113.0	Low Refrigerant charge circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.114.0	Low Refrigerant charge circuit 2	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.115.0	Low Refrigerant charge circuit 2	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.116.0	Out of envelop Circuit 1	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.117.0	Out of envelop Circuit 2	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.118.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.119.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.120.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.121.0	Reserved	---	---	---

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.122.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.123.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.124.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.125.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.126.0	Too Fast Speed Variation request	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.127.0	Too Fast Speed Variation request	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.128.0	Oil level Alarm Circuit 1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.129.0	Oil level Alarm Circuit 2	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.130.0	Aux Power Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.131.0	Compressor 1 OFF by abnormal pressure	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.132.0	Compressor 2 OFF by abnormal pressure	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.133.0	Unload C1 OFF by abnormal pressure	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.134.0	Unload C2 OFF by abnormal pressure	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.135.0	Critical Evaporating Pressure C1	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.136.0	Critical Evaporating Pressure C2	R	Message	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.137.0	No Differential pressure C1	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.138.0	No Differential pressure C2	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.139.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.140.0	Condenser Inlet Sensor Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.141.0	Condenser Outlet Sensor Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.142.0	Working hours limit No-G Pump	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.143.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.144.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.145.0	By-Pass Valve Feedback Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.146.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.147.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.148.0	Loss Of Water Pressure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.149.0	Water Pressure Sensor Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.150.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.151.0	Evaporator ByPass Valve Feedback Failure	R	Warning	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.152.0	Low Evaporating Temperature Circuit 1	R	Alarm	1.0.0

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.153.0	Low Evaporating Temperature Circuit 2	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.154.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.155.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.156.0	Starts/h Limit Compressor 1 Exceeded	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.157.0	Starts/h Limit Compressor 2 Exceeded	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.158.0	Emergency Mode Active	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.159.0	CWM Communication Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.160.0	Missing Unit Configuration	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.171.0	Circuit 1 - Compressor Inverter Comm. Failure	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.172.0	Circuit 2 - Compressor Inverter Comm. Failure	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.173.0	Circuit 1 - Compressor Inverter Alarm	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.174.0	Circuit 2 - Compressor Inverter Alarm	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.175.0	EEV Driver 1 - Generic Alarm	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.176.0	EEV Driver 2 - Generic Alarm	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.177.0	Free Cooling Inlet Pressure Sensor Failure	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.178.0	Free Cooling Outlet Pressure Sensor Failure	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.179.0	Free Cooling Pump Alarm	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.180.0	Free Cooling Pump Communication Failure	R	Warning	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.181.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.182.0	iCOM Memory Error	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.183.0	Critical Refrigerant Leakage Detected	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.184.0	Refrigerant Leakage Detected	R	Warning	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.185.0	Gas Leak Detector Communication Failure	R	Warning	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.186.0	Gas Leak Detector Sensor Calibration Required	R	Warning	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.187.0	Circuit 1 - Critical Refrigerant Depressurization	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.188.0	Circuit 2 - Critical Refrigerant Depressurization	R	Alarm	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.189.0	ATS 1 Communication Failure	R	Warning	1.1.7
.1.3.6.1.4.1.476.1.42.4.3.30.3.190.0	ATS 2 Communication Failure	R	Warning	1.1.7

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.191.0	Freecooling Failure	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.192.0	Fans Rotation Error	R	Alarm	1.0.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.193.0	C3 and C4 Offline	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.194.0	Network Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.195.0	No Connection to Unit 1	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.196.0	Master Unit Changed	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.197.0	Master Unit not Available	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.201.0	Free Cooling Circuit – Glycol Leakage	R	Alarm	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.3.202.0	Free Cooling Circuit – High pressure	R	Alarm	1.1.3
.1.3.6.1.4.1.476.1.42.4.3.30.3.203.0	Current Fans Control Relay Fault	R	Warning	1.2.1
.1.3.6.1.4.1.476.1.42.4.3.30.3.204.0	Critical Current Fans Control Relay Fault	R	Alarm	1.2.1
.1.3.6.1.4.1.476.1.42.4.3.30.3.410.0	Evaporator 2 Freeze Protection	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.411.0	Unit Inlet Temperature Probe 2 Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.412.0	Evaporator Inlet Temperature Probe 2 Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.413.0	Unit Outlet Temperature Probe 2 Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.415.0	Ambient Temperature Probe 2 Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.425.0	Circuit 3 - Fans Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.426.0	Circuit 4 - Fans Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.427.0	Circuit 3 - Single Fans Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.428.0	Circuit 4 - Single Fans Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.430.0	Circuit 3 - Fans Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.431.0	Circuit 4 - Fans Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.434.0	Free Cooling Valve 2 Feedback Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.435.0	Circuit 3 - High Condensing Pressure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.436.0	Circuit 3 - Low Evaporating Pressure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.437.0	Circuit 3 - Very Low Superheat	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.438.0	Circuit 3 - Compressor 1 Thermal Protection	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.439.0	Circuit 3 - Compressor 2 Thermal Protection	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.440.0	Circuit 3 - Compressor 3 Thermal Protection	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.441.0	Circuit 3 - Fans Override Enabled	R	Warning	1.1.0

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.442.0	Circuit 3 - Compressors Unload Enabled	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.443.0	Circuit 3 - Critical Condensing Pressure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.444.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.445.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.446.0	Circuit 3 - Compressor 1 Contactors Glued	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.447.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.448.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.450.0	Circuit 3 - Condensing Pressure Probe Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.451.0	Circuit 3 - Liquid Temperature Probe Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.452.0	Circuit 3 - Evaporating Pressure Probe Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.453.0	Circuit 3 - Evaporating Temperature Probe Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.454.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.455.0	Circuit 3 - High Superheat	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.456.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.457.0	EEV Driver 3 - Communication Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.458.0	EEV Driver 3 - Valve Motor Error	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.461.0	Circuit 4 - High Condensing Pressure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.462.0	Circuit 4 - Low Evaporating Pressure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.463.0	Circuit 4 - Very Low Superheat	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.464.0	Circuit 4 - Compressor 1 Thermal Protection	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.465.0	Circuit 4 - Compressor 2 Thermal Protection	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.466.0	Circuit 4 - Compressor 3 Thermal Protection	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.467.0	Circuit 4 - Fans Override Enabled	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.468.0	Circuit 4 - Compressors Unload Enabled	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.469.0	Circuit 4 - Critical Condensing Pressure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.470.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.471.0	Reserved	---	---	---

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.472.0	Circuit 4 - Compressor 1 Contactors Glued	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.473.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.474.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.476.0	Circuit 4 - Condensing Pressure Probe Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.477.0	Circuit 4 - Liquid Temperature Probe Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.478.0	Circuit 4 - Evaporating Pressure Probe Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.479.0	Circuit 4 - Evaporating Temperature Probe Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.480.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.481.0	Circuit 4 - High Superheat	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.483.0	EEV Driver 4 - Communication Failure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.484.0	EEV Driver 4 - Valve Motor Error	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.495.0	Circuit 3 - Compressor 1 Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.496.0	Circuit 3 - Compressor 2 Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.497.0	Circuit 3 - Compressor 3 Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.498.0	Circuit 4 - Compressor 1 Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.499.0	Circuit 4 - Compressor 2 Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.500.0	Circuit 4 - Compressor 3 Working Hours Limit Exceeded	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.502.0	Water Flow Meter Sensor 2 Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.512.0	Circuit 3 - Low Refrigerant Charge Warning	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.513.0	Circuit 3 - Low Refrigerant Charge Alarm	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.514.0	Circuit 4 - Low Refrigerant Charge Warning	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.515.0	Circuit 4 - Low Refrigerant Charge Alarm	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.516.0	Circuit 3 - Compressors Out of Envelope	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.517.0	Circuit 4 - Compressors Out of Envelope	R	Warning	1.1.0

OID	Parameter Description	Access	Range; Unit	Version
.1.3.6.1.4.1.476.1.42.4.3.30.3.518.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.519.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.528.0	Circuit 3 - Compressor Oil Level Alarm	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.529.0	Circuit 4 - Compressor Oil Level Alarm	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.530.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.531.0	Circuit 3 - Compressors Off by Envelope Protection	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.532.0	Circuit 4 - Compressors Off by Envelope Protection	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.533.0	Circuit 3 - Compressors Unload Stop by Envelope Protection	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.534.0	Circuit 4 - Compressors Unload Stop by Envelope Protection	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.535.0	Circuit 3 - Compressors Out of Envelope (Level 2)	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.536.0	Circuit 4 - Compressors Out of Envelope (Level 2)	R	Message	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.537.0	Circuit 3 - Low Differential Pressure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.538.0	Circuit 4 - Low Differential Pressure	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.543.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.544.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.545.0	Free Cooling By-Pass Valve 2 Feedback Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.549.0	Evaporator Water Pressure Sensors 2 Failure	R	Warning	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.551.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.552.0	Circuit 3 - Low Evaporating Temperature	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.553.0	Circuit 4 - Low Evaporating Temperature	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.554.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.555.0	Reserved	---	---	---
.1.3.6.1.4.1.476.1.42.4.3.30.3.556.0	Circuit 3 - Compressor Starts/h Limit Reached	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.557.0	Circuit 4 - Compressor Starts/h Limit Reached	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.575.0	EEV Driver 3 - Generic Alarm	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.576.0	EEV Driver 4 - Generic Alarm	R	Alarm	1.1.0
.1.3.6.1.4.1.476.1.42.4.3.30.3.581.0	Reserved	---	---	---

OID	Parameter Description	Access	Range; Unit	Version
.13.6.14.1476.1424.3.30.3.587.0	Circuit 3 - Critical Refrigerant Depressurization	R	Alarm	1.1.0
.13.6.14.1476.1424.3.30.3.588.0	Circuit 4 - Critical Refrigerant Depressurization	R	Alarm	1.1.0
.13.6.14.1476.1424.3.30.3.591.0	Freecooling Failure 2	R	Alarm	1.1.0

7 FAQs

The aim of this section is to collect a list of possible questions/issues directed primarily to the Vertiv service technical support team.

7.1 General FAQs

Question/Issue	Solution
Are the three monitoring protocols available simultaneously?	Yes, they are.

7.2 Modbus Related FAQs

Question/Issue	Solution
Is Multi-Master supported?	Yes, it is.
Is serial connection RS485 available?	Not directly, but it is possible to connect an ETH/RS485 modbus converter like Moxa MGate 3180 (code 276989).

7.3 SNMP Related FAQs

Question/Issue	Solution
Is the SNMP compatible with v1?	Yes, it is.
Is the SNMP v3 available?	No, it is not.
Is there a MIB available?	Yes, it comes bundled with the documentation.

7.4 BACnet Related FAQs

Question/Issue	Solution
Does the Monitoring Port feature the official BACnet certification?	Yes, it is BTL certified.

Appendices

Appendix A: Technical Support and Contacts

A.1 Technical Support/Service in the United States

Vertiv Group Corporation

24x7 dispatch of technicians for all products.

1-800-543-2378

Liebert® Thermal Management Products

1-800-543-2378

Liebert® Channel Products

1-800-222-5877

Liebert® AC and DC Power Products

1-800-543-2378

A.2 Locations

United States

Vertiv Headquarters

505 N. Cleveland Ave.

Westerville, OH 43082, USA

Europe

Via Leonardo Da Vinci 8 Zona Industriale Tognana

35028 Piove Di Sacco (PD) Italy

Asia

7/F, Dah Sing Financial Centre

3108 Gloucester Road, Wanchai

Hong Kong

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