

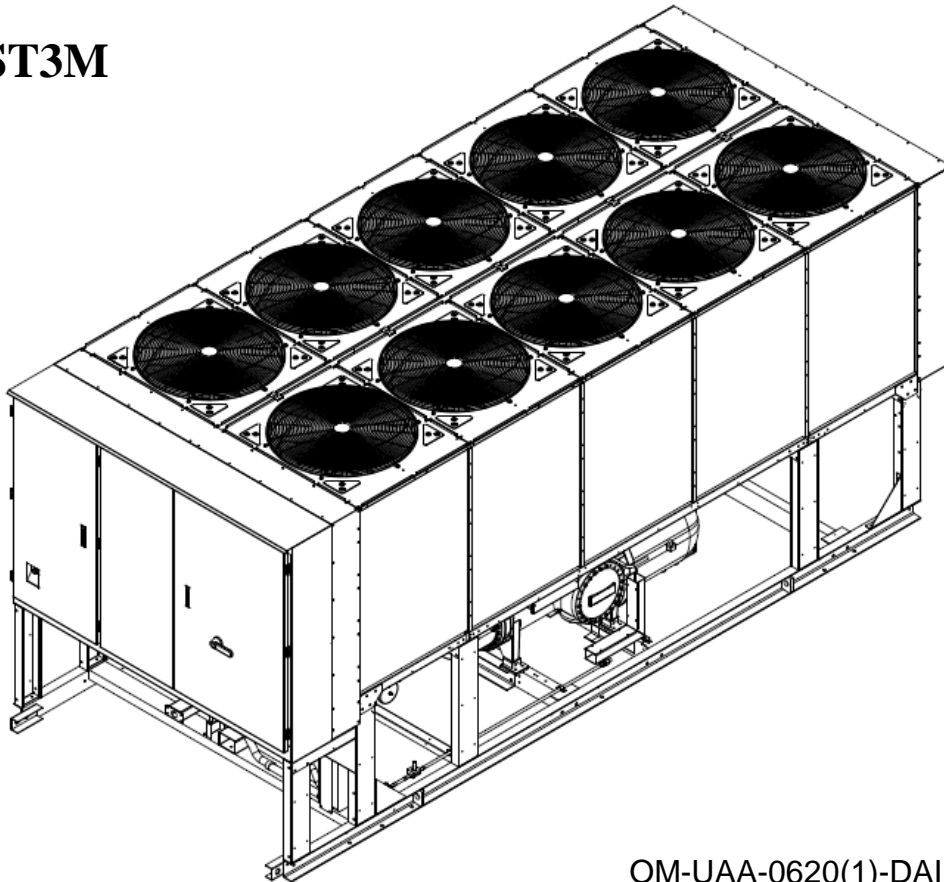


OPERATION

MANUAL

AIR -COOLED CHILLER
(SINGLE SCREW COMPRESSOR)

UAA-ST3M



OM-UAA-0620(1)-DAIKIN
Part Number: C08019049338

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1. INTRODUCTION

1.1 General

This manual provides setup, operating, troubleshooting and maintenance information for the DAIKIN Air Cooled Single Screw Chillers listed below with 1 and 2 circuits using MicroTech III Controller.

HAZARD IDENTIFICATION INFORMATION

DANGER

Dangers indicate a hazardous situation which will result in death or serious injury if not avoided.

WARNING

Warnings indicate potentially hazardous situations, which can result in property damage, severe personal injury, or death if not avoided.

CAUTION

Cautions indicate potentially hazardous situations, which can result in personal injury or equipment damage if not avoided.

Software Version:

This manual covers units with Software Version: **MHS010V1.31**

The unit's software version number can be viewed by selecting the "About chiller" menu item accessible without password.

 **CAUTION**

- Electric shock hazard: can cause personal injury or equipment damage. This equipment must be properly grounded. Connections to, and service of, the MicroTech III control panel must be performed only by personnel who are knowledgeable in the operation of this equipment.
- Static sensitive components. A static discharge while handling electronic circuit boards can cause damage to the components. Discharge any static electrical charge by touching the bare metal inside the control panel before performing any service work. Never unplug any cables, circuit board terminal blocks, or power plugs while power is applied to the panel.

NOTICE

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, can cause interference to radio communications. Operation of this equipment in a residential area can cause harmful interference, in which case the user will be required to correct the interference at the user's own expense. Daikin disclaims any liability resulting from any interference or for the correction thereof.

2. DEFINITION

Active Setpoint

The active setpoint is the parameter setting in effect at any given moment. This variation can occur on setpoints that can be altered during normal operation. Resetting the chilled water leaving temperature setpoint by one of several methods such as return water temperature is an example.

Active Capacity Limit

The active capacity setpoint is the setting in effect at any given moment. Any one of several external inputs can limit a compressor's capacity below its maximum value.

Dead Band

The dead band is a set of values associated with a setpoint such that a change in the variable occurring within the dead band causes no action from the controller. For example, if a temperature setpoint is 44F and it has a dead band of 0.2 degrees F, nothing will happen until the measured temperature is less than 43.8F or more than 44.2F.

LWT

Chilled / Evaporator leaving water temperature.

EWT

Chilled / Evaporator entering water temperature.

Discharge Superheat

Discharge superheat is calculated using the following equation:

Discharge Superheat = Discharge Temperature – Condenser Saturated Temperature

Suction Superheat (SSH)

SSH is calculated for each circuit using the following equation:

SSH = Suction Temperature – Evaporator Saturated Temperature

Evaporator Approach

The evaporator approach is calculated for each circuit. The equation is as follows:

Evaporator Approach = LWT – Evaporator Saturated Temperature.

EXV

Electronic expansion valve, used to control the flow of refrigerant to the evaporator, controlled by the circuit microprocessor.

Unload Evaporator Low Pressure Setpoint

The kPa suction pressure setting at which the controller will unload the compressor to maintain the minimum setting.

HMI

Operator Interface Touch Screen, one screen per unit provides operating data visually and accommodates setpoint entry.

Stage Up / Stage Down Delta-T

Staging is the act of starting or stopping a compressor or fan when another is still operating. Startup and Stop is the act of starting the first compressor or fan and stopping the last compressor or fan. The Delta-T is the “dead band” on either side the setpoint in which no action is taken.

Stage Up Delay

The time delay from the start of the first compressor to the start of the second.

3. ABOUT SAFETY

Electrical installation

⚠ CAUTION

- All electrical connections to the machine must be carried out in compliance with laws and regulations in force.
- All installation, operating and maintenance activities must be carried out by qualified personnel.
- Please refer to the specific wiring diagram for the machine that you have purchased, and which was sent with the unit.
- Should the wiring diagram not come with the machine, please contact your dealer for further action.
- Use copper conductors only. Failure to use copper conductors could cause overheating or corrosion at the connection points and damages the unit.
- To avoid interference, all control wires must be installed separately from the power wires. Use separate electrical conduits for this purpose.
- Before servicing the machine in any way, open the general disconnecting switch on the machine's main power supply.
- When the machine is off, but the disconnect switch is in the closed position, unused circuits are live as well.
- Never open the terminal board box of the compressors before having opened the unit's general disconnecting switch.
- In installations with power supply lines longer than 50 meters, inductive coupling between phases and between phase and earth generates significant electromagnetic field.
- In order to limit these phenomena, it is good practice to lay out the phase wires symmetrically, as described in the figure:



- Chiller unit compressors are single-direction rotation compressors and can be damaged if rotated in the wrong direction. For this reason, proper phasing of electrical power is important. Terminal block indicator (R, S, T). R=L1, S=L2, T=L3

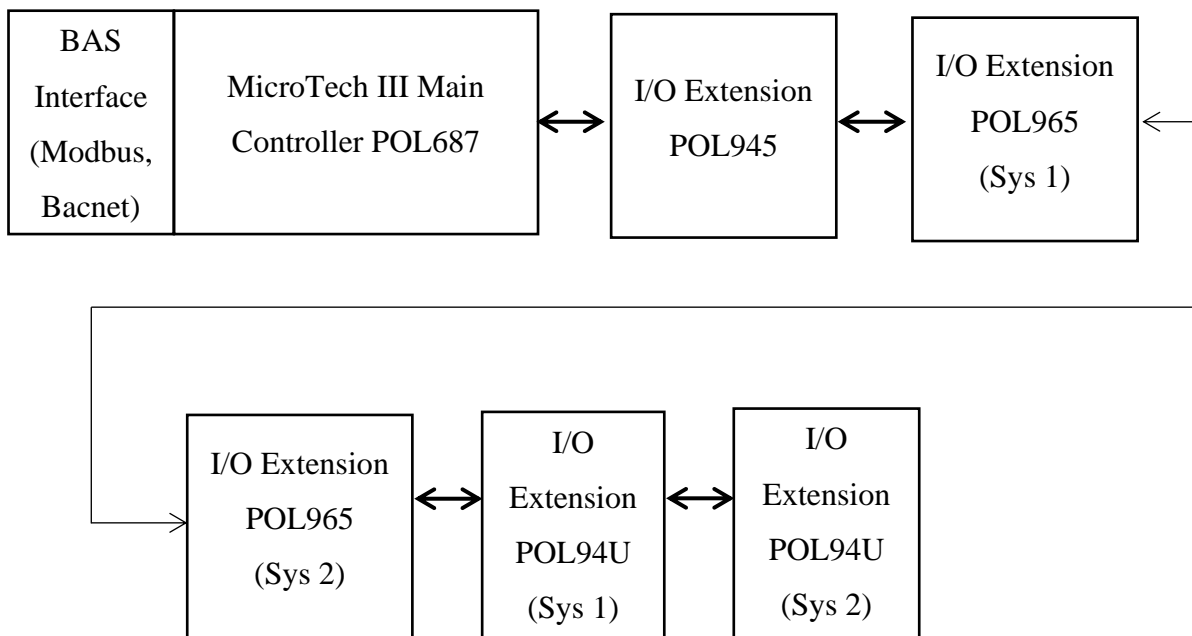
4. CONTROL PANEL

4.1 System Architecture

The MicroTech III control system for air cooled single screw chillers consists of a main unit controller with several extension I/O modules attached depending on the chiller size and configuration. Up to two optional BAS communication modules may be included on request.

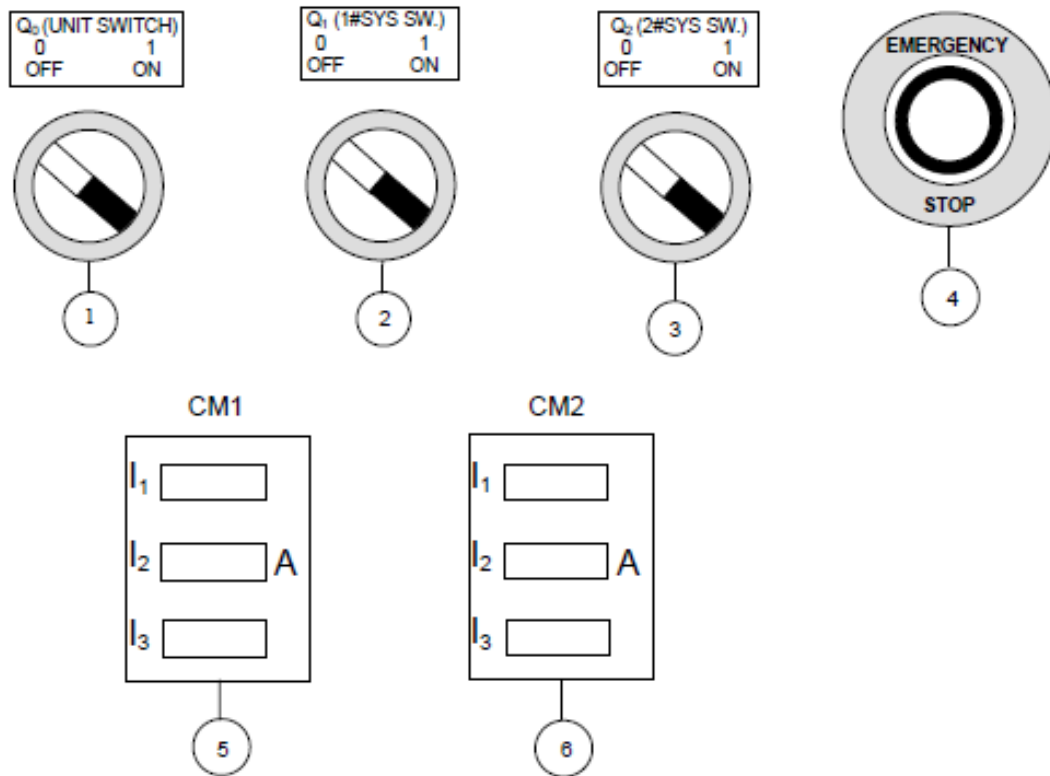
The overall controls architecture uses the following:

- One Microtech III main controller
- I/O extension modules as needed depending on the configuration of the unit
- Optional BAS interface as selected



Model	Controller Quantity			
	POL687.7	POL945	POL965	POL94U
UAA105– UAA220	1	1	1	1
UAA245-UAA450	1	1	2	2

4.2 Control Panel Layout



Item	Function	Description	
1	Q0 (Unit Switch)	OFF	Turn OFF the unit
		ON	Turn ON the unit
2	Q1 (1#SYS SW)	OFF	Turn OFF System 1
		ON	Turn ON System 1
3	Q2 (2#SYS SW)	OFF	Turn OFF System 2
		ON	Turn ON System 2
4	CM1	Indicating working current for 1#SYS Compressor	
5	CM2	Indicating working current for 2#SYS Compressor	

4.3 Controller features

1. Display following temperature and pressure readings:
 - i. Entering and leaving chilled water temperature
 - ii. Saturated evaporator refrigerant temperature and pressure
 - iii. Saturated condenser refrigerant temperature and pressure
 - iv. Suction line, and discharge line temperatures – calculated superheat for suction and discharge lines
2. Unit and system status display.
3. Selectable leaving or entering water temperature control based on application.
4. EXV auto control using suction superheat.
5. Condenser fans control based on condenser pressure.
6. Three levels of security password protection against unauthorized changing of setpoint and other control parameters.
7. Pre-emptive control for low evaporator pressure and high condenser pressure condition to take corrective action prior to fault trip.
8. Alarm display to inform operators of warning and fault conditions. All events and alarms are with time and date for identification of when the fault condition occurred.
9. Alarm history display with time and date for identification.
10. Test mode allows the service technician to manually control the controller's output and can be useful for system checkout
11. Building Automation System (BAS) communication capability via Modbus and BACnet standard protocols.

4.4 Main controller

4.4.1 Installation of controller battery

Every delivered unit is come with a lithium coin cell 3V battery, packed in a sealable plastic bag as illustrated in figure below:

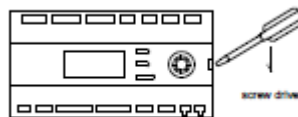


The battery acts as backup power for controller internal memory retention (setting and parameters) when there is power failure.

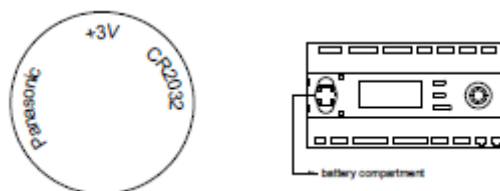
After the unit get to the site, must install the controller battery by the customer service technicians before commissioning. Adjust the controller time to local time is required.

Please refer to procedure below for battery installation in the controller:

1. Power off the controller
2. Using a small screwdriver, remove the front cover on the controller MT3006 (POL687.70)

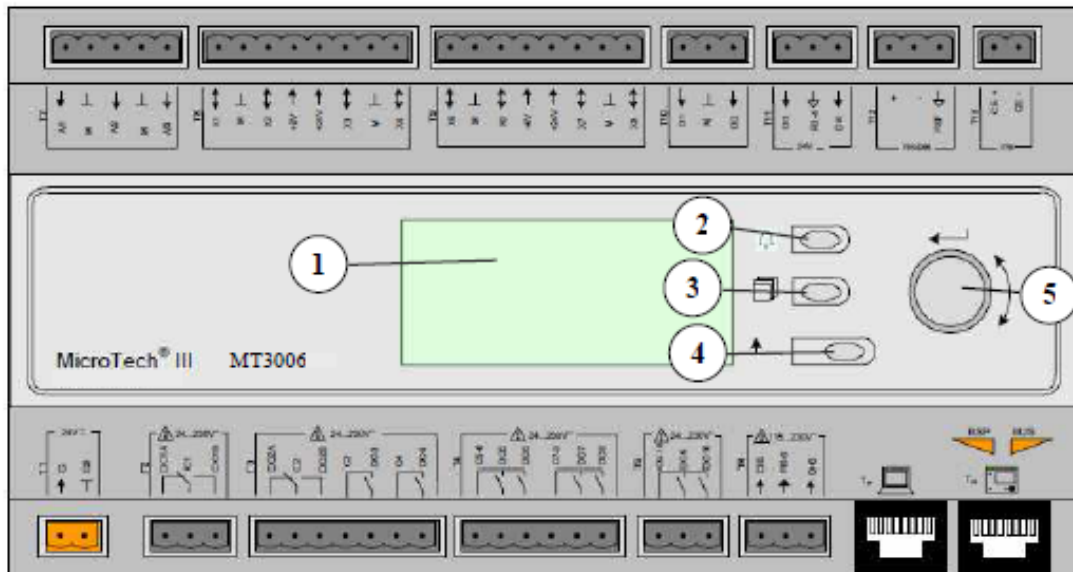


3. Insert the battery into the compartment on the side with the battery facing upward as shown in figure below:



4. Close the left side of the cover and then pressing on the right side with a finger.

4.4.2 Controller layout



Item	Function	Description	
1	LED backlight screen	Display information or data	
2	Alarm Query	Press the key to enter alarm menu	
3	Shortcut key	Return to main menu	
4	Return	Return to the upper-layer menu	
5	Turn Clockwise	Up	Page up while checking / Reduce value while parameter setting
	Turn Anti-Clockwise	Down	Page down while checking / increase value while parameter setting
	Press	Enter	Confirm Operation

5. OPERATING THE CONTROL SYSTEM

5.1 Start/Stop Unit

Unit start-up

Start-up procedure											
Steps	Description										
1	Pre-start check up										
1.1	Confirm the unit has been commissioned and ready for operation										
1.2	Check whether unit status meet the requirements of start-up.										
2	Start-up										
2.1	Supply power to the unit										
2.2	Turn the Emergency Stop clockwise until it springs up.										
2.3	Turn MCB (Moulded Circuit Breaker) Q12 at low voltage panel to ON. The following main menu displays in 30 seconds. <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table border="1"> <tr> <td style="text-align: right;">Main Menu</td> <td style="text-align: right;">1/12</td> </tr> <tr> <td>Enter Password</td> <td style="text-align: right;">▶</td> </tr> <tr> <td>Unit Status=</td> <td></td> </tr> <tr> <td>Off: Unit Sw</td> <td></td> </tr> <tr> <td>Active Setpt=</td> <td style="text-align: right;">7.0°C</td> </tr> </table> </div>	Main Menu	1/12	Enter Password	▶	Unit Status=		Off: Unit Sw		Active Setpt=	7.0°C
Main Menu	1/12										
Enter Password	▶										
Unit Status=											
Off: Unit Sw											
Active Setpt=	7.0°C										
2.4	Turn Q0 (Unit Switch) to ON, the screens display the following <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table border="1"> <tr> <td style="text-align: right;">Main Menu</td> <td style="text-align: right;">1/12</td> </tr> <tr> <td>Enter Password</td> <td style="text-align: right;">▶</td> </tr> <tr> <td>Unit Status=</td> <td></td> </tr> <tr> <td>Auto: Evap Recirc</td> <td></td> </tr> <tr> <td>Active Setpt =</td> <td style="text-align: right;">7.0°C</td> </tr> </table> </div> <p>After the unit and water circulation started, confirm whether the water system works properly. If the controller does not display “Auto: Evap Recirc”, see 10.1</p>	Main Menu	1/12	Enter Password	▶	Unit Status=		Auto: Evap Recirc		Active Setpt =	7.0°C
Main Menu	1/12										
Enter Password	▶										
Unit Status=											
Auto: Evap Recirc											
Active Setpt =	7.0°C										
2.5	Turn the Q1 (1#SYS SW.) and Q2 (2#SYS SW.) to ON, then unit will start and adjust load automatically. If it need circuit 1 or circuit 2 run alone, just turn the respective switch to ON.										

Unit shut down

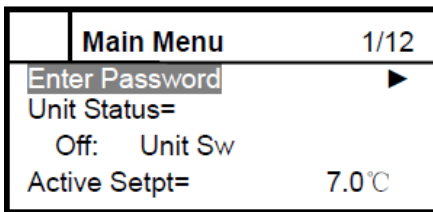
Shut down procedure	
Steps	Description
1	Shut down - Circuit
1.1	To shutdown circuit 1# or circuit 2#, turn the switch of the corresponding circuit to “OFF”. After these operations, the circuit will shut down automatically.
2	Shut down - Unit
2.1	Turn Q1(1#SYS SW.) and Q2(2#SYS SW.) to OFF
2.2	Turn Q0 (UNIT SWITCH) to OFF. After these operations, the unit will shut down automatically.

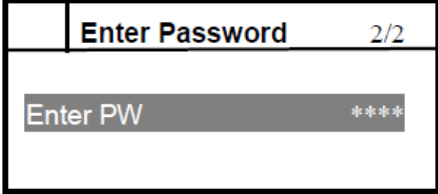
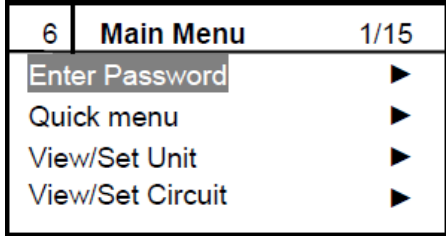
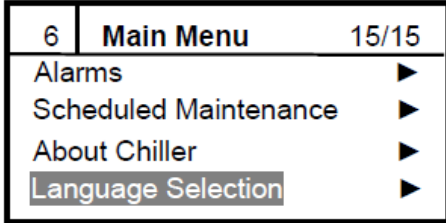
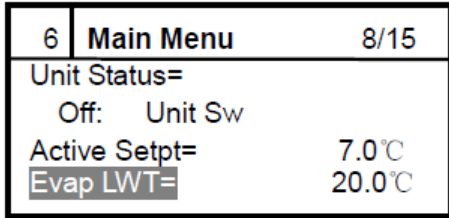
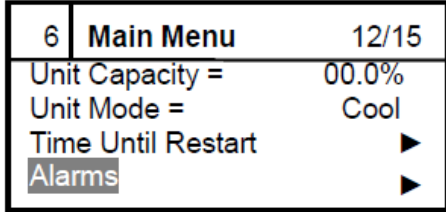
5.2 Parameter Viewing and setting

After entering the user password, you can view and modify parameters at the user level. The default user password is 1990. Parameter setting must be in accord with this operation manual. Improper setting can cause erratic chiller operation and damage to the chiller.

Below table shows different page accessibility:

Main Menu

Main Menu	
Steps	Description
1	<p>Press the shortcut key to go to the main menu</p> 

Main Menu	
Steps	Description
2	<p>Press the knob. The password input interface displays.</p> 
3	<p>Press the knob and enter the highest digit of the password and press the knob to confirm the entry. Enter other digits in turn in the same way. If the user password is correct, you can view and modify parameters at the user level. After you enter the password, the main menu displays as below and “6” displays at the upper-left corner.</p>  <p>Turn the knob clockwise. The following menu display in turn</p>   

Setting Temperature

Temperature setting procedure																
Steps	Description															
1	<p>Enter the user password and choose “View/Set Unit” in main menu then choose “Temperatures”. The following screen displays:</p> <table border="1" data-bbox="580 439 1018 629"> <tr> <td>6</td> <td>Temperatures</td> <td>1/8</td> </tr> <tr> <td></td> <td>Evap LWT=</td> <td>15.0°C</td> </tr> <tr> <td></td> <td>Evap EWT=</td> <td>20.0°C</td> </tr> <tr> <td></td> <td>Evap Delta T=</td> <td>0.0dK</td> </tr> <tr> <td></td> <td>Active Setpt=</td> <td>7.0°C</td> </tr> </table>	6	Temperatures	1/8		Evap LWT=	15.0°C		Evap EWT=	20.0°C		Evap Delta T=	0.0dK		Active Setpt=	7.0°C
6	Temperatures	1/8														
	Evap LWT=	15.0°C														
	Evap EWT=	20.0°C														
	Evap Delta T=	0.0dK														
	Active Setpt=	7.0°C														
2	<p>Turn the knob clockwise. The following menus display in turn:</p> <table border="1" data-bbox="580 745 1018 936"> <tr> <td>6</td> <td>Temperatures</td> <td>6/8</td> </tr> <tr> <td></td> <td>Active Setpt=</td> <td>45.0°C</td> </tr> <tr> <td></td> <td>Outside Air=</td> <td>45.0°C</td> </tr> <tr> <td></td> <td>Cool LWT 1=</td> <td>7.0°C</td> </tr> <tr> <td></td> <td>Cool LWT 2=</td> <td>7.0°C</td> </tr> </table> <p>“Cool LWT 1” indicates the setpoint of evaporator leaving water temperature in cooling mode. The value range is (4.0°C, 15.0°C). “Cool LWT 2” indicates the double setpoint temperature of leaving water in cooling mode. The value range is (4.0°C, 15.0°C).</p>	6	Temperatures	6/8		Active Setpt=	45.0°C		Outside Air=	45.0°C		Cool LWT 1=	7.0°C		Cool LWT 2=	7.0°C
6	Temperatures	6/8														
	Active Setpt=	45.0°C														
	Outside Air=	45.0°C														
	Cool LWT 1=	7.0°C														
	Cool LWT 2=	7.0°C														
3	<p>To set "Cool LWT 1" or "Cool LWT 2", select the item and press the knob. The following interface displays</p> <table border="1" data-bbox="571 1243 1027 1422"> <tr> <td>6</td> <td>Temperatures</td> <td>1/1</td> </tr> <tr> <td></td> <td>Cool LWT 1=</td> <td>7.0°C</td> </tr> </table> <p>Turn the knob clockwise to increase the value and press the knob to confirm the setting. Then the previous menu displays and the parameter setting takes effect. Other parameters can be set in the same way.</p>	6	Temperatures	1/1		Cool LWT 1=	7.0°C									
6	Temperatures	1/1														
	Cool LWT 1=	7.0°C														

Quick Menu

Quick Menu																
Steps	Description															
1	Choose Quick Menu <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table border="1"> <tr> <td>6</td> <td>Main Menu</td> <td>2/15</td> </tr> <tr> <td></td> <td>Enter Password</td> <td>▶</td> </tr> <tr> <td></td> <td>Quick Menu</td> <td>▶</td> </tr> <tr> <td></td> <td>View/Set Unit</td> <td>▶</td> </tr> <tr> <td></td> <td>View/Set Circuit</td> <td>▶</td> </tr> </table> </div>	6	Main Menu	2/15		Enter Password	▶		Quick Menu	▶		View/Set Unit	▶		View/Set Circuit	▶
6	Main Menu	2/15														
	Enter Password	▶														
	Quick Menu	▶														
	View/Set Unit	▶														
	View/Set Circuit	▶														
2	Press the knob to enter the Quick Menu <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table border="1"> <tr> <td>▼ 6</td> <td>Quick Menu</td> <td>1/13</td> </tr> <tr> <td></td> <td>Unit Status =</td> <td></td> </tr> <tr> <td></td> <td>Off: Unit Sw</td> <td></td> </tr> <tr> <td></td> <td>Active Setpt=</td> <td>7.0°C</td> </tr> <tr> <td></td> <td>Evap LWT=</td> <td>20.0°C</td> </tr> </table> </div> <p>Turn the knob clockwise or anticlockwise to view other parameters in the quick menu.</p>	▼ 6	Quick Menu	1/13		Unit Status =			Off: Unit Sw			Active Setpt=	7.0°C		Evap LWT=	20.0°C
▼ 6	Quick Menu	1/13														
	Unit Status =															
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	Evap LWT=	20.0°C														

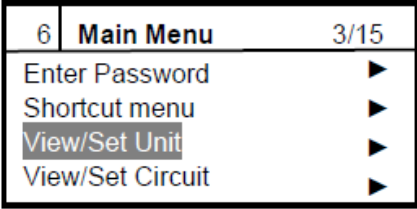
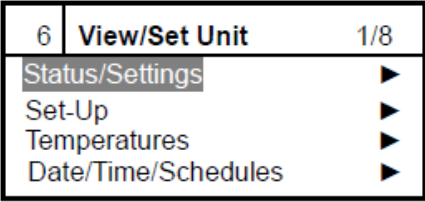
No.	Menu	Property	Unit	Description
1	Unit Status	R	-	View the current operation status of the unit. Auto: Off: Ice Mode Tmr Off: OAT Lockout Off: All Cir Disabled Off: Unit Alarm Off: Keypad Disable Off: Remote Sw Off: BAS Disable Off: Unit Sw Off: Time Schedule Off: Test Mode Auto: Noise Reduction Auto: Wait For Load Auto: Evap Recirc Auto: Wait For Flow Auto: Pumpdn Auto: Max Pulldn Auto: Unit Cap Lim Auto: Current Lim Off: Cfg Chg,Rst Ctlr Off : Mfg Loc Not Set Off: Comm Cfg Tmr

No.	Menu	Property	Unit	Description
2	Active Setpt	R	°C	View the actual setpoint of evaporator leaving water temperature
3	Evap LWT	R	°C	View the evaporator leaving water temperature
4	Evap EWT	R	°C	View the evaporator entering water temperature
5	Unit Capacity	R	°C	View the capacity of the unit
6	Unit Current	R	A	View the current of the unit
7	Softload Limit	R	%	View the softload capacity limitation of the unit
8	Network Limit	R	%	View the network capacity limitation of the unit
9	Demand Limit	R	%	View the demand capacity limitation of the unit
10	Unit Mode	R	-	View the current mode of the unit
11	Control Source	R/W	-	unit. The options are as follows: Local: The unit is controlled by control panel Network: The unit is controlled by local panel and network
12	Current Limit	R/W	A	View or set the current limitation of the unit

R: Read

R/W: Read and write by customer

View/Set Unit

View/Set Unit	
Steps	Description
1	Choose View/Set Unit 
2	Press the knob to enter the View/Set Unit  <p>Turn the knob clockwise or anticlockwise to view other parameters in the quick menu.</p>

User needs to press the enter knob to view details parameters

No.	Menu		Description
1.	Status/Settings	▶	Enter the menu. For details, see 41
2.	Set-Up	▶	Enter the menu. For details, see 42
3.	Temperatures	▶	Enter the menu. For details, see 43
4.	Date/Time/ Schedules	▶	Enter the menu. For details, see 44, 45
5.	Power Conservation	▶	Enter the menu. For details, see 45
6.	Ctrlr IP Setup	▶	Enter the menu. For details, see 46
7.	Design Conditions	▶	Enter the menu. For details, see 46
8.	Menu Password	▶	Enter the menu. For details, see 46

- Status/Settings

No.	Menu	Property	Unit	Description
1.	Unit Status	R	-	View the current operation status of the unit
2.	Next Crkt On	R	-	View the next circuit to be started
3.	Next Crkt Off	R	-	View the next circuit to be stopped
4.	Chiller Enable	R	-	Used to enable the unit Enable: Allow the unit to be started Disable: Prohibit the unit to be started
5.	Control Source	R	-	View and set the control source of the unit. The options are as follows: Local: The unit is controlled by control panel Network: The unit is controlled by local panel and network
6.	Netwrk En SP	R	-	View the status of BAS switch
7.	Netwrk Mode SP	R	-	View the mode setting of BAS
8.	Netwrk Cool SP	R	°C	View the BAS cooling setpoint
9.	Netwrk Ice SP	R	°C	View the BAS ice storage setpoint
10.	Netwrk Cap Lim	R	%	View the network capacity limitation of the unit
11.	Stg Up Dly Rem	R	s	View remaining time before next compressor start
12.	Stg Dn Dly Rem	R	s	View remaining time before next compressor stop
13.	Ice Cycle Rem	R	min	View the remaining time of an ice storage cycle
14.	Evap Pmp 1Hrs	R	Hour	View the running time of pump 1
15.	Evap Pmp 2Hrs	R	Hour	View the running time of pump 2
16.	Remote Srv En	R/W	-	Reserved

- **Set-Up**

No.	Menu	Property	Unit	Description
1.	Available Modes	R	-	Set the available modes for the unit: Cool: Cooler only Cool/Ice w/Glycol: Cooler only, Ice Storage, Glycol Cool/Heat: Heat Pump Cool/Ice/Heat w/Glycol: Heat Pump Unit, Ice Storage, Glycol Test: Test mode
2.	Start Up DT	R	°C	View the start-up temperature difference
3.	Shut Dn DT	R	°C	View the stop temperature difference
4.	Stg Up DT	R	-	View the temperature difference for starting next compressor
5.	Stg Dn DT	R	-	View the temperature difference for stopping next compressor
6.	Max Pulldn	R	°C/min	View the evaporator entering water temperature maximum pull down rate for cooling mode
7.	Stg Up Delay	R	min	View the remaining time for starting the next compressor
8.	Stg Dn Delay	R	min	View the remaining time for stopping the next compressor
9.	Unit En Init	R	-	Reserved
10.	Ice Cycle Dly	R	hour	View the cycle time of ice storage mode

- **Temperature**

No.	Menu	Property	Unit	Description
1.	Evap LWT	R	°C	Current evaporator leaving water temperature
2.	Evap EWT	R	°C	Current evaporator entering water temperature
3.	Evap Delta T	R	°C	View the current difference between the leaving and entering water temperatures of evaporator
4.	Active Setpt	R	°C	View the current actual setpoint for leaving water temperature of the evaporator
5.	Outside Air	R	°C	View or set the first temperature setpoint for evaporator leaving water in cooling mode
6.	Cool LWT 1	R/W	°C	View the evaporator entering water temperature maximum pull down rate for cooling mode
7.	Cool LWT 2	R/W	°C	View or set the double setpoint for evaporator leaving water in cooling mode
8.	Ice LWT	R/W	°C	View or set the temperature setpoint for evaporator leaving water in ice storage mode

- **Date/Time/Schedule**

No.	Menu	Property	Unit	Description
1	Actual Time	R/W	--	View or set the current time
2	Actual Date	R/W	--	View or set the current date
3	En Schedule	R/W	--	View or set chiller operating schedule. The options are as follows: Disable: Schedule OFF Enable: Schedule ON When Schedule is enabled, chiller will start or stop by the defined timing.
4	Time Schedule	R/W	--	Set the start and stop time from Monday to Sunday Start time1: Set the first start time Stop time1: Set the first stop time Start time2: Set the second start time Stop time2: Set the second stop time Start time3: Set the third start time Stop time3: Set the third stop time
5	Holiday Schedule	R/W	--	When time schedule function is enabled, user can use the Holiday Schedule to disable the chiller on a specific day
				Holiday#: Set the # holiday Where # = 1 to 10
6	UTC diff	R/W	min	View or set the UTC time difference. UTC refers to Universal Time Coordinate
7	DLS Enable	R/W	--	View or set the daylight-saving time mode
8	DLS strt Month	R/W	--	View or set the month when the daylight-saving time mode takes effect
9	DLS Strt Week	R/W	--	View or set the week when the daylight-saving time mode takes effect
10	DLS End Month	R/W	--	View or set the month when the daylight-saving time mode finishes
11	DLS End Week	R/W	--	View or set the week when the daylight-saving time mode finishes
12	Quiet Mode	R/W	--	View or set the quiet mode

No.	Menu	Property	Unit	Description
13	QM Start Hr	R/W	--	View or set the hour when the quiet mode takes effect
14	QM Start Min	R/W	--	View or set the minute when the quiet mode takes effect
15	QM End Hr	R/W	--	View or set the hour when the quiet mode finishes
16	QM End Min	R/W	--	View or set the minute when the quiet mode finishes
17	QM Cond Offset	R/W	°C	View or set the condenser temperature difference for the quiet mode

- **Power Conservation**

No.	Menu	Property	Unit	Description
1	Unit Capacity	R	%	View the current capacity of the unit
2	Unit Current	R	A	View the working current of the unit
3	Demand Lim En	R	--	View whether demand capacity limitation is enabled
4	Demand Limit	R/W	%	View or set demand capacity limitation of the unit
5	Current @20mA	R	A	View the current for 20mA
6	Current Limit	R	A	View the current limitation of the unit
7	Setpoint Reset	R/W	--	Adjust the evaporator leaving water temperature setpoint: None: No adjust to the setpoint 4-20mA: Adjust the settings based on external current signal Return: Adjust the settings based on evaporator water temperature Oat: Adjust the settings based on ambient temperature
8	Max Reset	R/W	°C	View or set the maximum reset
9	Start Reset DT	R/W	°C	View or set the temperature difference between evaporator entering and leaving water using “Return” to adjust the evaporator leaving water temperature setpoint

No.	Menu	Property	Unit	Description
10	Max Reset OAT	R/W	°C	View or set the ambient temperature when it is the maximum adjustment using “Oat” to adjust the evaporator leaving water temperature setpoint
11	Strt Reset OAT	R/W	°C	View or set the ambient temperature when adjustment starts using “Oat” to adjust the evaporator leaving water temperature setpoint
12	Softload En	R/W	--	View or set the softload function
13	Softload Ramp	R/W	min	View or set the softload time
14	Starting Cap	R/W	%	View or set the capacity for softload function

- **Ctrlr IP Setup**

No.	Menu	Property	Unit	Description
1	Apply Changes	R/W	--	Any changes in this menu will be effective after confirmed here
2	DHCP	R/W	--	View or set the function of dynamically obtaining the controller IP address
3	Act IP	R	--	View the current IP address of the controller
4	Act Msk	R	--	View the current subnet mask of the controller
5	Act Gwy	R	--	View the current gateway of the controller
6	Gvn IP	R/W	--	View or set the IP address
7	Gvn Msk	R/W	--	View or set the subnet mask
8	Gvn Gwy	R/W	--	View or set the gateway

- **Design Conditions**

No.	Menu	Property	Unit	Description
1	Evap Dsn EWT	R	°C	Reserved
2	Evap Dsn LWT	R	°C	Reserved
3	Rated Cap	R	Tons	Reserved

- **Menu Password**

No.	Menu	Property	Unit	Description
1	Pwd Disable	R	--	View whether the menu password function is disabled

View/Set Circuit

View/Set Unit																
Steps	Description															
1	<p>Choose View/Set Circuit and press the knob to access.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>6</td> <td>Main Menu</td> <td>4/15</td> </tr> <tr> <td></td> <td>Enter Password</td> <td>▶</td> </tr> <tr> <td></td> <td>Quick menu</td> <td>▶</td> </tr> <tr> <td></td> <td>View/Set Unit</td> <td>▶</td> </tr> <tr> <td></td> <td>View/Set Circuit</td> <td>▶</td> </tr> </table>	6	Main Menu	4/15		Enter Password	▶		Quick menu	▶		View/Set Unit	▶		View/Set Circuit	▶
6	Main Menu	4/15														
	Enter Password	▶														
	Quick menu	▶														
	View/Set Unit	▶														
	View/Set Circuit	▶														
2	<p>Select Circuit#1 or Circuit#2</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>6</td> <td>View/Set Circuit</td> <td>1/2</td> </tr> <tr> <td></td> <td>Circuit #1</td> <td>▶</td> </tr> <tr> <td></td> <td>Circuit #2</td> <td>▶</td> </tr> </table> <p>After selecting circuit #1 or #2, then the key parameters or status of the circuit show. See the following table:</p>	6	View/Set Circuit	1/2		Circuit #1	▶		Circuit #2	▶						
6	View/Set Circuit	1/2														
	Circuit #1	▶														
	Circuit #2	▶														

User needs to press the enter knob to view details parameters:

No.	Menu		Description
1	Data	▶	View key operation parameters of circuit #1 and #2. For details, see 9.3.3.1
2	Status/Settings	▶	View the status and parameter settings of circuit #1 and #2. For details, see 9.3.3.2
3	Comp 1/2	▶	View parameter settings for compressor 1/2. For details, see 9.3.3.3
4	Condenser 1/2	▶	View parameter settings for condenser 1/2. For details, see 9.3.3.4

- **Data**

No.	Menu	Property	Unit	Description
1	Evap Pressure	R	kPa	View the evaporating pressure of circuit #1 or #2.
2	Cond Pressure	R	kPa	View the condensing pressure of circuit #1 or #2.
3	Suction Temp	R	°C	View the suction temperature of circuit #1 or #2.
4	Discharge Temp	R	°C	View the discharge temperature of circuit #1 or #2.
5	Suction SH	R	°C	View the suction gas superheat of circuit #1 or #2.
6	Discharge SH	R	°C	View the discharge gas superheat of circuit #1 or #2.
7	Oil Pressure	R	kPa	View the oil pressure of circuit #1 or #2.
8	Oil Pr Diff	R	kPa	View the oil pressure difference between circuit #1 or #2, namely discharge pressure minus oil pressure.
9	EXV Position	R	%	View the EXV opening of circuit #1 or #2.

- **Status/Settings**

No.	Menu	Property	Unit	Description
1	Circuit Status	R	--	View the status of circuit #1 or #2: Off: Ready Off: Stage Up Delay Off: Cycle Timer Off : BAS Disable Off: Keypad Disable Off : Circuit Switch Off: Refr In Oil Sump Off: Alarm Off: Test Mode EXV: Preopen Run: Pumpdown Run: Normal Run: Disch SH Low Run: Evap Press Low Run: Cond Press High Run: High LWT Limit Run: Defrost

No.	Menu	Property	Unit	Description
2	Circuit Mode	R	--	View the mode of circuit #1 or #2. The default value is “Enable”, it means the corresponding circuit can start
3	Circuit Cap	R	%	View the capacity of circuit #1 or #2

• **Comp 1/2**

No.	Menu	Property	Unit	Description
1	Size	R	--	View the model of the compressor
2	Run Hours	R	hour	View the running hours of compressor 1/2
3	No. Of Starts	R	--	View the number of starts of compressor 1/2
4	Capacity	R	%	View the capacity of compressor 1/2

• **Condenser 1/2**

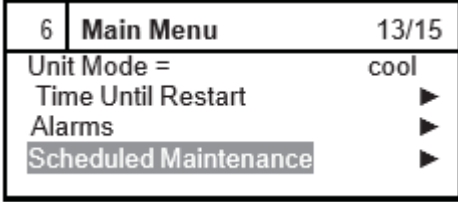
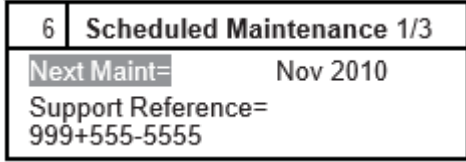
No.	Menu	Property	Unit	Description
1	No. Of Fans running	R	--	View the number of running fans of the circuit.
2	No. Of Fans	R	--	View the number of total fans of the circuit.

Time Until Restart

Time Until Restart																
Steps	Description															
1	<p>Choose Time Until Restart and press the knob to access.</p> <table border="1"> <tr> <td>6</td> <td>Main Menu</td> <td>11/15</td> </tr> <tr> <td></td> <td>Evap LWT=</td> <td>20.0C</td> </tr> <tr> <td></td> <td>Unit Capacity =</td> <td>00.0%</td> </tr> <tr> <td></td> <td>Unit Mode =</td> <td>Cool</td> </tr> <tr> <td></td> <td>Time Until Restart</td> <td>▶</td> </tr> </table>	6	Main Menu	11/15		Evap LWT=	20.0C		Unit Capacity =	00.0%		Unit Mode =	Cool		Time Until Restart	▶
6	Main Menu	11/15														
	Evap LWT=	20.0C														
	Unit Capacity =	00.0%														
	Unit Mode =	Cool														
	Time Until Restart	▶														
2	<p>Time left for each circuit will be displayed as follow:</p> <table border="1"> <tr> <td>6</td> <td>Time Until Restart</td> <td>1/2</td> </tr> <tr> <td></td> <td>C1 Cycle Tm Left</td> <td>0s</td> </tr> <tr> <td></td> <td>C2 Cycle Tm Left</td> <td>0s</td> </tr> </table>	6	Time Until Restart	1/2		C1 Cycle Tm Left	0s		C2 Cycle Tm Left	0s						
6	Time Until Restart	1/2														
	C1 Cycle Tm Left	0s														
	C2 Cycle Tm Left	0s														

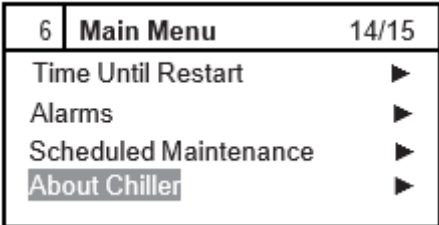
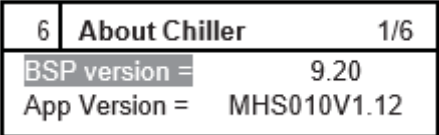
No.	Menu	Property	Unit	Description
1	C1 Cycle Tm Left	R	s	View the remaining time before compressor 1 can be restarted
2	C2 Cycle Tm Left	R	s	View the remaining time before compressor 2 can be restarted

Schedule Maintenance

Schedule Maintenance	
Steps	Description
1	<p>Choose Time Until Restart and press the knob to access.</p>  <p>The screenshot shows a menu with the following items: '6 Main Menu 13/15', 'Unit Mode = cool', 'Time Until Restart', 'Alarms', and 'Scheduled Maintenance' (highlighted with a grey background). Each item has a right-pointing arrow next to it.</p>
2	<p>Time left for each circuit will be displayed as follow:</p>  <p>The screenshot shows a screen titled '6 Scheduled Maintenance 1/3'. It displays 'Next Maint= Nov 2010' and 'Support Reference= 999+555-5555'.</p>

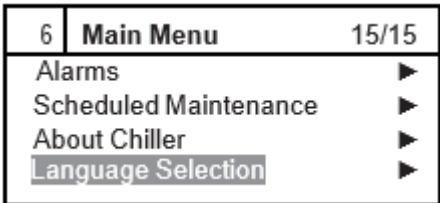
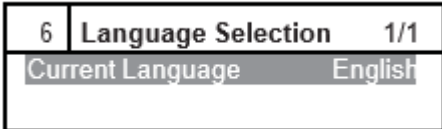
No.	Menu	Property	Unit	Description
1	Next Maint	R/W	--	View the next maintenance time
2	Support Reference	R	--	View the telephone number of technical support personnel

About chiller

About Chiller	
Steps	Description
1	<p>Choose About Chiller and press the knob to access.</p> 
2	<p>Software version and application version will be displayed as follow:</p> 

No.	Menu	Property	Unit	Description
1	BSP version	R	--	View the BSP version. BSP refers to Board Support Package. The version number must be 9.20 or higher.
2	App Version	R	--	View the application program version.

- Language Selection

Language Selection	
Steps	Description
1	<p>Choose Language Selection and press the knob to access.</p> 
2	<p>Choose the desire interface language by turning the knob anti-clockwise or clockwise, press the knob to confirm selection.</p> 

6. UNIT PARAMETERS

6.1 Unit Setpoints

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
1.View/Set ACSys(Master)						
1.1.Status/Settings						
ACSys Enable	Enable	Disable	Enable	--	U*	U
Control Source	Local	Local	Network	--	U	S
1.2.Set-Up						
Start Up DT	2.7	0.0	5.0	dK	U	S
C Shut Dn DT	1.5	0.0	1.7	dK	U	S
H Shut Dn DT	2.5	0.0	2.7	dK	U	S
Stg Up DT	0.5	0.0	1.7	dK	U	S
Stg Dn DT	0.7	0.0	1.7	dK	U	S
Max Pulldn	2.5	0.5	2.5	°C/min	U	S
Stg Up Delay	5.0	0.0	60.0	min	U	S
Stg Dn Delay	3.0	3.0	30.0	min	U	S
Lt Ld Stg Dn %	40.0	25.0	50.0	%	S	S
Hi Ld Stg Up %	80.0	50.0	100.0	%	S	S
M Sequence	1	1	2	--	S	S
S Sequence	1	1	2	--	S	S
Auto Restart	Yes	No	Yes	--	S	S
1.3.Temperatures						
Heat LWT 1	45.0	25.0	55.0	°C	U	U
Heat LWT 2	45.0	25.0	55.0	°C	U	U
Cool LWT 1	7.0	4.0	15.0	°C	U	U
Cool LWT 2	7.0	4.0	15.0	°C	U	U
Ice LWT	-4.0	-8.0	4.0	°C	U	U
1.4.Power Conservation						
Setpoint Reset	None	None 4-20mA ReturnOat		--	U	U
Max Reset	5.0	0.0	10.0	dK	U	U
Start Reset DT	5.0	0.0	10.0	dK	U	U
Max Reset OAT	15.5	10.0	29.4	°C	U	U
Strt Reset OAT	23.8	10.0	29.4	°C	U	U
1.5.Calibrate Sensors						
HP1 LWT Offset	0.0	-2.8	2.8	dK	S	S
HP2 LWT Offset	0.0	-2.8	2.8	dK	S	S
3.View/Set Unit						
3.1.Unit Status/Settings						
Chiller Enable	Enable	Disable	Enable	--	U*	U
Control Source	Local	Local	Network	--	U	S
Clr Stg Delays	Off	Off	On	--	S*	S
Clr Ice Dly	Off	Off	On	--	S	S

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
Evp Pmp Ctrl	#1 Only	#1 Only #2 Only Auto #1 Primary #2 Primary		--	S	S
Evap Recirc Tm	30	0	300	s	S	S
Evap Var Flow	No	No	Yes	--	S	S
Var Fl Unload Adj	2	1	5	--	S	S
Evap Nom DT	5.6	3.3	8.9	dK	S	M*
Evap Pmp 1 Hrs	--	0	999999	hour	U	M
Evap Pmp 2 Hrs	--	0	999999	hour	U	M
Water Valve En	No	No	Yes	--	S	S
Remote Srv En	Disable	Disable	Enable	--	U	U
3.2. Unit Set-Up						
Available Modes	Cool	Cool Cool/Ice w/Glycol Cool/Heat /Cool/Ice/Heat w/Glycol		--	U	S
Unit Type	Normal	Normal Low Oat Super Low		--	S	M
Start Up DT	2.7	0.0	5.0	dK	U	S
C Shut Dn DT	1.5	0.0	1.7	dK	U	S
H Shut Dn DT	2.5	0.0	2.7	dK	U	S
Stg Up DT	0.5	0.0	1.7	dK	U	S
Stg Dn DT	0.7	0.0	1.7	dK	U	S
Max Pulldn	2.5	0.5	2.5	°C/min	U	S
Stg Up Delay	5	0	60	min	U	S
Stg Dn Delay	3	3	60	min	U	S
Strt Strt Dly	20	15	60	min	S	M
Stop Strt Dly	5	3	20	min	S	M
Pumpdn Press	100.0	70.0	280.0	kPa	S	S
Pumpdn Time	60	0	180	s	S	S
Lt Ld Stg Dn %	40.0	25.0	50.0	%	S	S
Hi Ld Stg Up %	80.0	50.0	100.0	%	S	S
Liq Inject Act	85.0	80.0	100.0	°C	S	S
PVM Config	Single Point	Single Point Multi Point None		--	S	M
Max Ckts Run	1	1	2	--	S	S
C1 Sequence #	1	1	2	--	S	S
C2 Sequence #	1	1	2	--	S	S
Auto Restart	Yes	No	Yes		U	S
Ice Cycle Dly	12	1	23	hour	U	S
Ext Fault Cfg	Event	Event	Alarm	--	S	S
EnOilHeatCtrl	Enable	Disable	Enable	--	M	M
Oil Heating Control Set						
Discharge Temp.	50.0	30.0	70.0	°C	M	M

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
Start Setpoint	15.0	0.0	20.0	dK	M	M
Stop Setpoint	25.0	20.0	40.0	dK	M	M
Water Ele.Heater	Disable	Disable	Enable	--	U	U
Ele. Heater Del	30	1	120	min	U	S
Ele. Heater OAT Set	7.0	-15.0	20.0	°C	S	S
Cool LWT HL	15.0	15.0	35.0	°C	S	S
Dfrst Del	0	0.0	60.0	min	S	S
Inhibit Dfrst	30	15	60	min	S	S
Low DSH Kp Adj	2.0	1.0	3.0	--	S	S
Low DSH Kp Adj Del	3.0	3.0	20.0	min	S	S
En Heat Rec	Yes	No	Yes	--	U	U
Temp Ctrl Sw Close In Demand	Yes	No	Yes	--	U	U
HR Strt Stop Dly	180	30	300	s	S	S
Stg Up Unld	No	No	Yes	--	S	S
Unld Cap Sp	40%	25	80	%	S	S
3.3.Temperatures						
Heat LWT 1	45.0	25.0	55.0	°C	U	U
Heat LWT 2	45.0	25.0	55.0	°C	U	U
Cool LWT 1	7.0	4.0	15.0	°C	U	U
Cool LWT 2	7.0	4.0	15.0	°C	U	U
Ice LWT	-4.0	-8.0	4.0	°C	U	U
3.4.Date/Time/Schedules						
Actual Time	h/m/s	0:0:0	23:59:59	--	U	U
Actual Date	m/d/y	1/1/2000	12/31/2050	--	U	U
En Schedule	Disable	Disable	Enable	--	U	U
3.4.1.Time Schedule						
From Monday To Friday						
Start Time1	00:00	00:00	23:59	--	U	U
Stop Time1	00:00					
Start Time2	00:00					
Stop Time2	00:00					
Start Time3	00:00					
Stop Time3	00:00					
From Saturday To Sunday						
Start Time1	00:00	00:00	23:59	--	U	U
Stop Time1	00:00					
Start Time2	00:00					
Stop Time2	00:00					
Start Time3	00:00					
Stop Time3	00:00					
Holiday Schedule						
Holiday1	0mon 0day	0mon0day	12mon31day	--	U	U
Holiday2	0mon 0day					
Holiday3	0mon 0day					
Holiday4	0mon 0day					

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
Holiday5	0mon 0day					
Holiday6	0mon 0day					
Holiday7	0mon 0day					
Holiday8	0mon 0day					
Holiday9	0mon 0day					
Holiday10	0mon 0day					
Quiet Mode	Disable	Disable	Enable	--	U	U
QM Start Hr	21	18	23	hour	U	U
QM Start Min	0	0	59	min	U	U
QM End Hr	6	5	9	hour	U	U
QM End Min	0	0	59	min	U	U
QM Cond Offset	5.0	0.0	14.0	dK	U	U
3.5.Power Conservation						
Demand Lim En	Disable	Disable	Enable	--	U	U
Current @ 20mA	800.0	0.0	2000.0	A	U	S
Current Limit	800.0	0.0	2000.0	A	U	S
Setpoint Reset	None	--		--	U	U
Max Reset	5.0	0.0	10.0	dK	U	U
Start Reset DT	5.0	0.0	10.0	dK	U	U
Max Reset OAT	15.5	10.0	29.4	°C	U	U
Strt Reset OAT	23.8	10.0	29.4	°C	U	U
Softload En	Disable	Disable	Enable	--	U	U
Softload Ramp	20	1	60	min	U	U
Starting Cap	40.0	20.0	100.0	%	U	U
3.6.Configuration						
Apply Changes	No	No	Yes	--	S	S
M/A Setting	Single	Single Master Auxiliary		--	S	S
Number Of Ckts	1	1	2	--	S	M
Slide Pos Sens	No	No	Yes	--	S	M
Unit Model	ST3	ST3	SP3	--	S	S
Display Units	Metric	Metric	English	--	S	S
Comm Module 1	None	Modbud AWM MSTP LON IP None		--	S	S
Comm Module 2	None					
Comm Module 3	None					
Curr Prot Type	Switch	Switch	Current	--	S	S
3.7.Ctrlr IP Setup						
Apply Changes	No	No	Yes	--	U	U
DHCP	On	No	Yes	--	U	U
Gvn IP	192.168.1.42	0.0.0.0	255.255.255.25 5	--	U	U
Gvn Msk	255.255.255.0			--	U	U
Gvn Gwy	192.168.1.1			--	U	U

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
3.8.Design Conditions						
Evap Dsn EWT	0.0	-64.0	64.0	°C	U	M
Evap Dsn LWT						
Evap Dsn Flow	0.0	0.0	600000	l/h	S	M
Evap Dsn Approach Cir#1	0.0	-64.0	64.0	dK	S	M
Evap Dsn Approach Cir#2	0.0					
Cond Dsn Approach Cir#1	0.0					
Cond Dsn Approach Cir#2	0.0					
Design FL Eff	0.0	-64.0	64.0	%	M	M
Design IPLV	0.0	-64.0	64.0	--	M	M
Rated Cap	0	0	10000	Tons	U	M
3.9.Alarm Limits						
Low Press Hold	C:165.0	155	310.0	kPa	S	M
		0.0	310.0			
Low Press Unld	C:150.0	140.0	310.0	kPa	S	M
		0.0	310.0			
Hi Oil Pr Dly	30	10	180	s	S	S
Hi Oil Pr Diff	250.0	0.0	415.0	kPa	S	S
Hi Disch Temp	110.0	65.0	110.0	°C	S	S
Hi Cond Pr Dly	5	0	30	s	S	M
Lo Pr Ratio Dly	90	30	300	s	S	M
Low Disch SH	12	10.0	15.0	dK	S	S
Low DSH SSH Set	1.0	1.0	8.5	dK	S	S
Cool OAT Lockout	4.0	-23.0	15.0	°C	S	M
Heat OAT Lockout	-11.0	-23.0	15.0	°C	S	M
Strt Time Lim	60	20.0	180.0	s	S	S
Evap Water Frz	2.2	2.0	6.0	°C	S	M
Evap Flw Proof	15	5	15	s	S	S
Evp Rec Timeout	3	1	10	min	S	S
Heat HP Al Offset	0.0	0.0	-9.0	dK	S	M
Sld Pos Min Al1	1.0	0.1	1.0	mA	S	M
Sld Pos Min Al2	1.0	0.1	1.0	mA	S	M
HR Water Frz	3.0	2.0	6.0	°C	S	S
Comp Over Ld Dly	15	1	30	s	S	M
Min Curr Sp	15.0	0.0	30.0	A	S	S
3.10.Calibrate Sensors						
Evp LWT Offset	0.0	-2.8	2.8	dK	S	S
Evp EWT Offset	0.0					
OAT Offset	0.0					
HR LWT1 Offset	0.0					
HR LWT2 Offset	0.0					
3.11.Menu Password						
Pwd Disable	Off	Off	On	--	U	S

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
4.View/Set Circuit #1/#2						
4.1.Status/Settings						
Circuit Mode	Enable	Disable	Enable	--	S	S
Service Pumpdn	Off	Off	On	--	S	S
Defrost Time Clr						
Clr Dfrst Tmr	No	No	Yes	--	S	S
Unload Curr Limit	148.0	50.0	Corresponding to Comp Size	A	S	S
4.2.Comp 1 / 2						
Run Hours	--	0	999999	hour	U	M
No. Of Starts	--	0	65535	--	U	M
Clear Cycle Time	Off	Off	On	--	S	S
Cap Control	Auto	Auto	Manual	--	S	S
Manual Cap	0.0	0.0	100.0	%	S	S
50/60CompLoad2DelT	4	4	20	s	M	M
4.3.Condenser						
Cond Min Temp	36.0	26.0	43.0	°C	S	M
Cond Max Temp	43.0	32.0	50.0	°C	S	M
Stg On Db 0	C:4.0	1.0	10.0	dK	S	M
Stg On Db 1	C:5.0					
Stg On Db 2	C:5.5					
Stg On Db 3	C:6.0					
Stg On Db 4	C:6.5					
Stg On Db 5-13	C:6.5					
Stg Off Db 2	C:10.0	1.0	13.0	dK	S	M
Stg Off Db 3	C:8.0					
Stg Off Db 4	C:5.5					
Stg Off Db 5	C:4.0					
Stg Off Db 6-14	C:4.0					
4.4.EXV						
EXV Ctrl Mode	Auto	Auto	Manual	--	S	S
EXV Position	0.0	0.0	100.0	%	S	S
4.5.Configuration						
Apply Changes	No	No	Yes	--	S	S
Mtr Tmp Sensor	Disable	Disable	Enable	--	S	M
Fan VFD Enable	Disable	Disable	Enable	--	S	M
Number Of Fans	10	5	14	--	S	M

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
EXV Configuration						
Drive Current	140	0	150	mA	S	S
Hold Current	75		150	mA	S	S
Drive Speed	150		300	Hz	S	S
Over Close Steps	100		500	--	S	S
Over Open Steps	100		500	--	S	S
Dead Time Sync	5		60	min	S	S
Comp Size	HSS3221	HSS3219 、 HSS3220 、 HSS3221 、 HSS3222 、 HSS3223 、 HSS4224 、 HSS4225、 HSS4226、 HSS4227		--	U	S
4.6.Calibrate Sensors						
Evp Pr Offset	0.0	-100.0	100.0	kPa	S	S
Cnd Pr Offset	0.0					
Oil Pr Offset	0.0					
Suction Offset	0.0	-5.0	5.0	dK	S	S
Disch Offset	0.0					
De-Ice 1 Offst	0.0					
De-Ice 2 Offst	0.0					
Sld Pos Min mA	4.0	0.0	22.0	mA	S	S
Sld Pos Max mA	20.0	0.0	22.0	mA	S	S
CompCurrMin mA	4.0	0.0	22.0	mA	S	S
CompCurrMax mA	20.0	0.0	22.0	mA	S	S
5.Time Until Restart						
C1 Cycle Tmr Clr	Off	Off	On	--	S	S
C2 Cycle Tmr Clr	Off	Off	On	--	S	S
6.Alarms						
6.1.Alarm Active						
AlmClr	Off	Off	On	--	N	N
6.2.Alarm Log						
LogClr	Off	Off	On	--	N	M
6.3.ExportHisRecord						
ExportHisData	Off	Off	On	--	S	S
ClearHisData	Off	Off	On	--	S	S
7.Scheduled Maintenance						
Next Maint	Jan	Jan	Dec	--	N	S
	2009	2009	2100	--	N	S
Support Reference	(999)555-5555	--	--	--	N	S
8.Save/Restore						
Save Params	No	No	Yes	--	M	M
Rstr Params	No					
Save To File	No					
Rstr From File	No					
Rstr Factory	No					

Menu	Factory Default Setting	Range		Unit	Authorisation	
		Minimum	Maximum		R*	W*
9.Manual Control						
9.1.Unit Manual Control						
Unit Alarm Out	Off	Off	On	--	S	S
C1 Alarm Out	Off					
C1 Alarm Out	Off					
Evap Pump 1	Off					
Evap Pump 2	Off					
Water Valve	Off					
Water Ele.Heater	Off					
HR Pump	Off					
C1 HR Ele.Heater	Off					
C2 HR Ele.Heater	Off					
9.2.Cir 1/2 Manual Control						
Test Sld Load1	Off	Off	On	--	S	S
Test Sld Load2	Off					
Test Sld Unld1	Off					
Tst Sld Assist	Off					
Test Liq Line	Off					
Test Liq Inj	Off					
Test Economizr	Off					
Test 4-Way Sv	Off					
Test EXV Pos	0.0	0.0	100.0	%	S	S
Test Fan 1	Off	Off	On	--	S	S
Test Fan 2	Off					
Test Fan 3	Off					
Test Fan 4	Off					
Test Fan 5	Off					
Test Fan 6	Off					
Test Oil Heater	Off					
10.LanguageSelection						
CurrentLanguage	English	English	Chinese	--	N	U

Pressure Safety protection

Devices		Value (kPa)
High pressure	relief valve	2400
	Switch (trip)	2000
	Hold	1800
	Unload	1850
Low pressure	Hold	165
	Unload	150
	Trip	135

7. TROUBLESHOOTING GUIDE

All repair activities on the machine must be carried out solely by qualified personnel who has experience with this type of equipment. DAIKIN is not responsible for any equipment damage, personal injury or death caused by negligence of operators failing to comply with these requirements. Stop the unit before troubleshooting when the unit alarms. Restart is allowed only when the malfunction is solved completely.

7.1 Startup Troubleshooting Guide

7.1.1 Without Alarm

After a unit is started, if no alarm is generated but the compressor does not work, troubleshoot the unit as follows:

Start-up Troubleshooting – Without Alarm	
Steps	Description
1	Check whether there are less than 2.7°C difference in the leaving water temperature between the set point and the actual value shown on the screen. If the difference is less than 2.7°C, it means the unit is in normal load control accommodate. If the difference is more than 2.7°C, compressor will start automatically and accommodate load. If the difference is more than 2.7°C and the compressor doesn't start, please get on with the next step
2	If the controller displays "OFF: All Cir Disabled", enter the View/Set menu and check the status of the system. If the system is in the following status, the compressor cannot be started normally:

Unit status	Troubleshooting
Off: Ice Mode Tmr	The unit is in the ice storage cycle (12 hours by default). Wait until the ice storage cycle time over
Off: OAT Lockout	The ambient temperature is too low. Wait until the ambient temperature increases
Off: All Cir Disabled	Both systems cannot be started (refer to the next item)
Off: Keypad Disable	The control panel disables the unit. Contact the service personnel for help
Off: Remote Sw	The remote switch is turned to OFF. Turn the remote switch to ON
Off: BAS Disable	The BAS switch is turned to OFF. Turn the BAS switch to ON
Off: Time Schedule	The time schedule is turned to OFF. Check the schedule time
Off: Test Mode	The unit is in test mode. Contact the service personnel for help.

7.1.2 With Alarm

Start-up Troubleshooting – With Alarm																
Steps	Description															
1	<p>Choose the Alarms menu in the main menu and press the knob</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>6</td> <td>Main Menu</td> <td>12/15</td> </tr> <tr> <td></td> <td>Unit Capacity =</td> <td>0.0%</td> </tr> <tr> <td></td> <td>Unit Mode =</td> <td>Cool</td> </tr> <tr> <td></td> <td>Time Until Restart</td> <td>▶</td> </tr> <tr> <td></td> <td>Alarms</td> <td>▶</td> </tr> </table>	6	Main Menu	12/15		Unit Capacity =	0.0%		Unit Mode =	Cool		Time Until Restart	▶		Alarms	▶
6	Main Menu	12/15														
	Unit Capacity =	0.0%														
	Unit Mode =	Cool														
	Time Until Restart	▶														
	Alarms	▶														
2	<p>Press the knob to view alarm log and active alarms</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>6</td> <td>Alarms</td> <td>1/2</td> </tr> <tr> <td></td> <td>Alarm Active</td> <td>0▶</td> </tr> <tr> <td></td> <td>Alarm Log</td> <td>50▶</td> </tr> </table>	6	Alarms	1/2		Alarm Active	0▶		Alarm Log	50▶						
6	Alarms	1/2														
	Alarm Active	0▶														
	Alarm Log	50▶														
3	<p>After entering the Alarm Active menu, you can view the number of alarms and clear alarms. See the following figure</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>6</td> <td>Alarm Active</td> <td>1/3</td> </tr> <tr> <td></td> <td>AlmCnt: 3</td> <td>AlmClr: Off</td> </tr> <tr> <td></td> <td>+UnitOffEmergencyStopOffNormal</td> <td>▶</td> </tr> <tr> <td></td> <td>+UnitOffPhaseVoltageOffNormal</td> <td>▶</td> </tr> </table> <p>By turning the knob clockwise or anticlockwise, you can select an alarm. Then press the knob to view the data and time when the alarm is generated.</p>	6	Alarm Active	1/3		AlmCnt: 3	AlmClr: Off		+UnitOffEmergencyStopOffNormal	▶		+UnitOffPhaseVoltageOffNormal	▶			
6	Alarm Active	1/3														
	AlmCnt: 3	AlmClr: Off														
	+UnitOffEmergencyStopOffNormal	▶														
	+UnitOffPhaseVoltageOffNormal	▶														
4	Record the alarm information displayed on the controller in the following table															

Unit Alarm Records			
Model:		Serial No.:	
No.	Alarm Information	Alarm Time	Service Personnel
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

7.2 Alarm Troubleshooting Guide

No.	Menu	Solution
1	UnitOffPhaseVoltageOffNormal	Check that the phases of the power supply meet the requirements of the unit.
2	UnitOffEvapWaterFlowOffNormal	Check and make sure the water flow meet requirement.
3	UnitOffEvapWaterTmpLoOffNormal	Increase the water flow. Manually reset the unit after the water temperature increases.
4	UnitOffEvpWTempInvrtdOffNormal	Check whether the temperature sensors for entering/leaving water works properly. Check whether the temperature sensors for entering/leaving water are correctly connected.
5	UnitOffEvpEntWTempOffNormal	Check whether entering water temperature sensor is working properly. Check whether entering water temperature sensor wiring is correct.
6	AlrmLimCtrlrCommFailOffNormal	Check whether the alarm output control panel and the main controller are properly connected.
7	UnitOffAmbTempOffNormal	Check whether ambient temperature sensor is working properly. Check whether ambient temperature sensor wiring is correct.
8	UnitOffExternalAlarmOffNormal	Check and eliminate external alarm conditions.
9	UnitOffEmergencyStopOffNormal	Check and eliminate the cause of the emergency shutdown.

No.	Menu	Property
10	UnitOffEvpLvgWTempFault	Check whether leaving water temperature sensor is working properly.
		Check whether leaving water temperature sensor wiring is correct.
11	StartInhbtAmbTempLowLimitActive	Start the unit only when the ambient temperature meets the related requirements (cooling > 4°C).
12	C1/2OffStrtFailEvpPrLowLimitActive	Check whether there is refrigerant leakage.
13	C1/2Cmp1 OffCndPressHighLimitActive	Check that the working conditions meet the related requirements.
		Refrigerant charge meets the requirement on the nameplate, not overcharged.
14	C1/2Cmp1 OffEvpPressLowLimitActive	Check that the working conditions meet the related requirements.
		Check whether there is refrigerant leakage.
15	C1/2Cmp1 OffPrRatioLoOffNormal	Check that the working conditions meet the related requirements.
		For standard cooling operation: ambient temperature: 5 ~ 50°C; leaving water: 4 ~ 35°C.
		For low ambient temperature cooling operation: ambient temperature: -10 ~ 50°C; leaving water: 4 ~ 35°C.
16	C1/2Cmp1 OffMechPressHiOffNormal	Check that the working conditions meet the related requirements.
		Refrigerant charge meets the requirement on the nameplate, not overcharged.
		Check whether the high-pressure switch is set to 20.5 bars.
17	C1/2Cmp1 OffDischTmpHighLimitActive	Check whether the spray pipeline is blocked.
		Check whether there is refrigerant leakage.
		Check that the working conditions meet the related requirements.
18	C1/2Cmp1 OffOilFeedPOffNormal	Exchange the oil filter of the compressor.
19	C1/2Cmp1 OffStarterFltOffNormal	Check the wiring of the compressor.
20	C1/2 OffNoPressChgStartOffNormal	Check whether there is refrigerant leakage.
		Check the suction and discharge pressure sensors and its wiring.

No.	Menu	Property
21	C1/2 OffNoPressAtStartOffNormal	Check whether there is refrigerant leakage.
		Check the suction and discharge pressure sensors and its wiring.
		Check the fan speed regulating governor.
22	C1/2 OffCmpCtrlrComFailOffNormal	Check whether compressor control panel and the main controller are properly connected.

Remarks:

- Ensure that unit is working in the designated envelope
- Ensure water flow is the rated water flow
- Ensure relative humidity if the unit operating environment should be 90% or less

Alarm	Phase Voltage Protection Circuit	Code: UnitOffPhaseVoltage OffNormal		
Category: Critical	<pre> graph TD Start(()) --> D1{Main controller has power up for 5 sec?} D1 -- No --> Start D1 -- Yes --> D2{Phase protector contact = Open?} D2 -- No --> Start D2 -- Yes --> D3{Phase protector configuration is "Single point"?} D3 -- No --> Start D3 -- Yes --> Alarm([Alarm]) </pre>			
Trigger				
Action			Unit immediate shutdown	
Reset method			Manual reset	
Reset Condition			Phase protector contact (NC) = Close for 5 Sec	
Solution	Check unit power supply quality			

Alarm	Evaporator Water Flow Loss	Code: UnitOffEvapWaterFlowOffNormal
Category: Critical	<pre> graph TD subgraph Case1 [Case 1] C1_1{Pump is running?} C1_2{Water flow switch contact = Open?} C1_3{Confirm Time = 15 sec?} C1_1 -- Yes --> C1_2 C1_2 -- Yes --> C1_3 C1_3 -- Yes --> Alarm C1_1 -- No --> Join1(()) C1_2 -- No --> Join1 C1_3 -- No --> Join1 end subgraph Case2 [Case 2] C2_1{Evap Pmp Ctrl = #1 Only?} C2_2{Pump runtime ≥ 30 Sec} C2_3{Water flow switch contact = Open?} C2_4{Confirm Time = 5 min?} C2_1 -- Yes --> C2_2 C2_2 -- Yes --> C2_3 C2_3 -- Yes --> C2_4 C2_4 -- Yes --> Alarm C2_1 -- No --> Join2(()) C2_2 -- No --> Join2 C2_3 -- No --> Join2 C2_4 -- No --> Join2 end Join1 --> Alarm Join2 --> Alarm </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Case 1: 1 st 2 alarms = Auto reset, 3 rd occurrence alarm = Manual reset Case 2: Manual reset	
Reset Condition	Water flow switch contact = Close	
Solution	Check and make sure water flow meet recommended requirement	

Alarm	Evaporator Water Temperature Low	Code: UnitOffEvapWaterTmpLoOffNormal
Category: Critical	<pre> graph TD D1{Evap entering/leaving water temp sensor = Alarm?} D2{Evap entering/leaving water temp ≤ 2.2°C?} D3{Confirm Time = 3 sec?} A([Alarm]) B[/Alarm: UnitOffEvpEntWTempOffNormal / UnitOffEvpLvgWTempFault/] D1 -- Yes --> B D1 -- No --> D2 D2 -- Yes --> D3 D2 -- No --> D2 D3 -- Yes --> A D3 -- No --> D2 </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Entering water temp. $\geq 2.2^{\circ}\text{C}$ Leaving water temp. $\geq 2.2^{\circ}\text{C}$	
Solution	Check and make sure water flow meet recommended requirement	

Alarm	Evap entering water temp sensor and evap leaving water temp sensor inverted	Code: UnitOffEvpWTempInvrtdOffNormal
Category: Critical	<pre> graph TD D1{Evap entering/leaving water temp sensor = Alarm?} -- Yes --> A1[/Alarm: UnitOffEvpEntWTempOffNormal / UnitOffEvpLvgWTempFault/] D1 -- No --> D2{No. of running compressor ≥ 1?} D2 -- No --> D1 D2 -- Yes --> D3{Evap LWT - Evap EWT > 1.5 °C?} D3 -- No --> D1 D3 -- Yes --> D4{Confirm time = 30 sec?} D4 -- No --> D1 D4 -- Yes --> A2([Alarm]) </pre>	
Trigger		
Action	Unit pump down shutdown	
Reset method	Manual reset	
Reset Condition	Evap Entering water temp \geq Evap Leaving water temp	
Solution	Check whether both temperature sensor condition are good Check whether both sensors are inverted.	

Alarm	Evap leaving water temp sensor Faulty	Code: UnitOffEvpLvgWTempO ffNormal
Category: Critical	<pre> graph TD Start(()) --> Decision{Evap entering water Temp = out of range?} Decision -- No --> Loop[] Loop --> Decision Decision -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Evap leaving water temperature in operating range	
Solution	Check sensor condition, wiring and connector condition.	

Alarm	Ambient temp. sensor faulty	Code: UnitOffAmbTemp
Category: Critical	<pre> graph TD Start(()) --> Decision{Ambient Temp = out of range?} Decision -- No --> Loop[] Loop --> Decision Decision -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Ambient temperature in operating range	
Solution	Check sensor condition, wiring and connector condition. Check operating ambient temperature.	

Alarm	Controller Communication Failure	Code: AlrmLimCtrlrCommFail
Category: Event	<pre> graph TD Start(()) --> D1{Main controller power up time = 60 Sec?} D1 -- No --> Loop1(()) Loop1 --> D1 D1 -- Yes --> D2{Ext. module no communication with Main controller?} D2 -- No --> Loop2(()) Loop2 --> D1 D2 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Communication between main controller and extension module is established for 5 Sec	
Solution	Check connection between Main controller and extension module	

Alarm	Emergency Stop Alarm	Code: UnitOffEmergencyStopOffNormal
Category: Critical	<pre> graph TD Start(()) --> D{Emergency stop contact = Open?} D -- No --> Loop(()) Loop --> D D -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Emergency stop contact = Closed for 5 Sec	
Solution	Check emergency stop switch condition Check and eliminate the cause of emergency shutdown	

Alarm	External Event Alarm	Code: UnitOffExternalAlarmOffNormal
Category: Critical	<pre> graph TD Start(()) --> D1{External Fault Cfg = Alarm?} D1 -- No --> Start D1 -- Yes --> D2{External Alarm contact = Open?} D2 -- No --> Start D2 -- Yes --> D3{Confirm Time = 5 sec?} D3 -- No --> Start D3 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manually reset	
Reset Condition	External alarm contact = Close for 5 Sec	
Solution	Check for field wiring, relay contact and control box internal wire connection.	

Event Alarm

Alarm	Evap entering water temp sensor Faulty	Code: UnitOffEvpEntWTempO ffNormal
Category: Critical	<pre> graph TD Start(()) --> Decision{Evap entering water Temp = out of range?} Decision -- Yes --> Alarm([Alarm]) Decision -- No --> Loop(()) Loop --> Start </pre>	
Trigger		
Action	Unit pump down shutdown	
Reset method	Manual reset	
Reset Condition	Evap entering water temperature in operating range	
Solution	Check sensor condition, wiring and connector condition.	

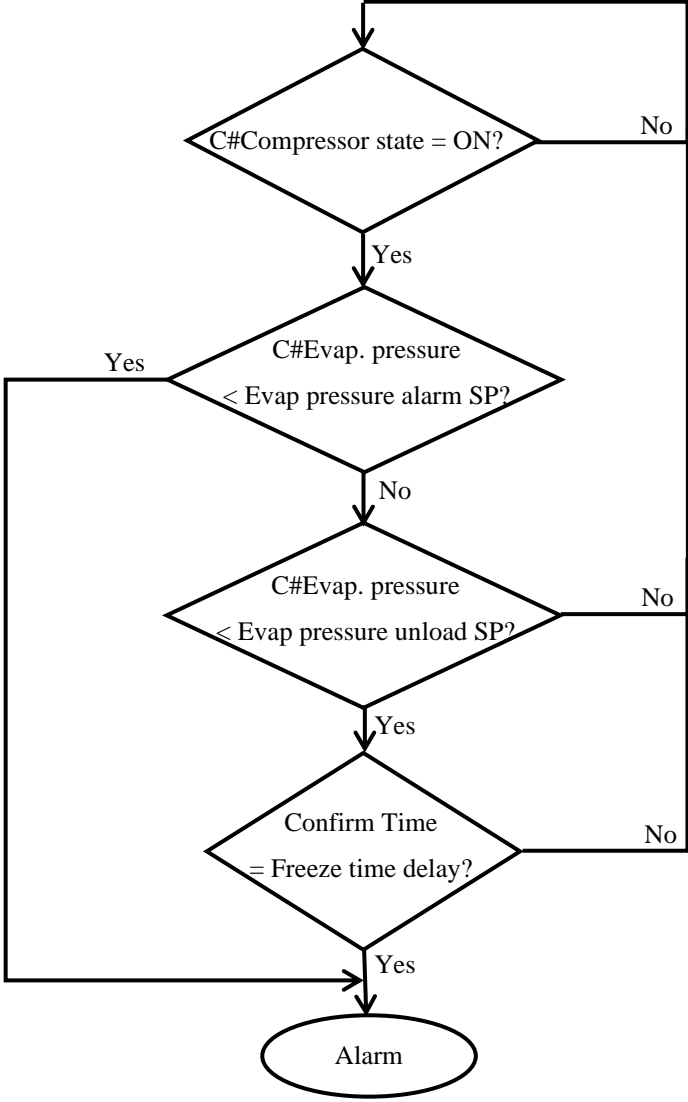
Alarm	Unit Power Restore	Code: UnitPowerRestore
Category: Critical	<pre> graph TD Start(()) --> Decision{Controller power supply cut off after power up?} Decision -- Yes --> Alarm([Alarm]) Decision -- No --> Loop(()) Loop --> Start </pre>	
Trigger		
Action	No action	
Reset method	Auto reset	
Reset Condition	Evap entering water temperature in operating range	
Solution	Check sensor condition, wiring and connector condition.	

Alarm	Start Inhibit Low Ambient Temp	Code: StartInhbtAmbTempLowLimitActive
Category: Critical	<pre> graph TD Start(()) --> D1{Unit Mode = Cooling?} D1 -- No --> Loop1[] Loop1 --> D1 D1 -- Yes --> D2{OAT Lockout SP > Ambient Temperature} D2 -- No --> Loop2[] Loop2 --> D1 D2 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit pump down shutdown if operating, idle Unit not allow to start	
Reset method	Auto reset	
Reset Condition	Ambient temperature > (Lockout SP + 2.5°C)	
Solution	Check for ambient temperature sensor condition Check for ambient air temperature manually, start unit when ambient temperature meets requirement	

Alarm	C# Fan Controller Comm Failure	Code: C#OffFnCtrlComFailOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{Main controller power up time > 60 Sec?} D1 -- No --> D1 D1 -- Yes --> D2{Fan ctrl.module communicate with Main controller?} D2 -- Yes --> D3{Confirm Time = 5 sec?} D3 --> D2 D2 -- No --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Communication between main controller and extension module is established for 5 sec	
Solution	Check connection between Main controller and extension module Check extension module or main controller condition	

Alarm	C#Fan Evap Pressure Low Start Fail	Code: C#OffStrtFailEvpPrLowLimitActive
Category: Event	<pre> graph TD Start(()) --> D1{C#Compressor state = ON?} D1 -- No --> Start D1 -- Yes --> D2{Cond. saturated temp < 15.5°C?} D2 -- No --> Start D2 -- Yes --> D3{Evap pressure < low pressure unload SP?} D3 -- No --> Start D3 -- Yes --> D4{Confirm Time = 60 sec?} D4 -- No --> Start D4 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Corresponding system immediate shutdown	
Reset method	Manual reset	
Reset Condition	C#Evap pressure > Low pressure unload SP	
Solution	Check for refrigerant leakage Check for filter drier clog Check for pressure transducer (suction and discharge) condition	

Alarm	C# Hi Condensing Pressure Off	Code: C1#Cmp#OffHighCndPressOffNormal						
Category: Event	<pre> graph TD Start(()) --> D1{C# Compressor state = ON?} D1 -- No --> Start D1 -- Yes --> D2{C#Cond. saturated temp > Cond. temp alarm SP?} D2 -- No --> Start D2 -- Yes --> D3{Confirm Time = 5 sec?} D3 -- No --> Start D3 -- Yes --> Alarm([Alarm]) </pre>							
Trigger								
	<p>Note:</p> <table border="1"> <thead> <tr> <th>Evap sat. temp (°C)</th> <th>Cond. sat. temp alarm SP (°C)</th> </tr> </thead> <tbody> <tr> <td>≥ 0</td> <td>68.3</td> </tr> <tr> <td><0</td> <td>68.3 + Evap sat. temp</td> </tr> </tbody> </table>		Evap sat. temp (°C)	Cond. sat. temp alarm SP (°C)	≥ 0	68.3	<0	68.3 + Evap sat. temp
Evap sat. temp (°C)	Cond. sat. temp alarm SP (°C)							
≥ 0	68.3							
<0	68.3 + Evap sat. temp							
Action	Corresponding system immediate shutdown							
Reset method	Manual reset							
Reset Condition	C#Cond sat. temp < Cond. sat temp Alarm SP							
Solution	Check chiller operating ambient temperature Check condensing coil condition Check refrigerant charge Check condenser fan motor and blade condition Check condenser fan contactor condition							

Alarm	C# Low Evap Pressure Off	Code: C#Cmp1OffLowEvpPressOffNormal
Category: Event	 <pre> graph TD Start(()) --> D1{C#Compressor state = ON?} D1 -- No --> Start D1 -- Yes --> D2{C#Evap. pressure < Evap pressure alarm SP?} D2 -- Yes --> Alarm((Alarm)) D2 -- No --> D3{C#Evap. pressure < Evap pressure unload SP?} D3 -- No --> Start D3 -- Yes --> D4{Confirm Time = Freeze time delay?} D4 -- No --> Start D4 -- Yes --> Alarm </pre> <p>Note: Evap pressure unload = 140 – 150kPa (depends on LWT) Evap pressure alarm SP = 0kPa Freeze time= 20 – 60 sec</p>	
Trigger		
Action	Corresponding system immediate shutdown	
Reset method	Manual reset	
Reset Condition	C#Cond sat. temp < Cond. sat temp Alarm SP	
Solution	Check unit operating environment Check filter drier for clog Check possible leakage Check water flow	

Alarm	C# Compressor# off low compression ratio	Code: C1Cmp1OffPrRatioLoOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{C#Compressor state = ON?} D1 -- No --> Start D1 -- Yes --> D2{Actual pressure ratio < PrRatio alarm SP?} D2 -- No --> Start D2 -- Yes --> D3{Confirm Time = 90 sec?} D3 -- No --> Start D3 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
	<p>Note: Actual pressure ratio = $\frac{(Cond.Pressure + 101.325)[kPa]}{Evap. Pressure [kPa]}$</p>	
Action	Corresponding system pump down shutdown	
Reset method	Manual reset	
Reset Condition	Cond sat. temp < Cond. sat temp Alarm SP	
Solution	Check refrigerant charge Check filter drier for clog Check possible leakage Check water flow	

Alarm	C# Compressor# off hi mechanical pressure switch off	Code: C#Cmp#OffMechPressHiOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{Hi mech. sw contact = open?} D1 -- No --> D1 D1 -- Yes --> D2{Confirm Time = 1 sec?} D2 -- No --> D1 D2 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Corresponding system pump down shutdown	
Reset method	Manual reset	
Reset Condition	Cond sat. temp < Cond. sat temp Alarm SP	
Solution	Check chiller operating ambient temperature Check condensing coil condition Check refrigerant charge Check condenser fan motor and blade condition Check condenser fan contactor condition	

Alarm	C# Compressor# off hi discharge temperature	Code: C#Cmp#OffHighDischTmpOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{Disch temp sensor = Alarm?} D1 -- Yes --> Alarm1[/Alarm: C#Cmp#OffDischTmpFault/] D1 -- No --> D2{C#Compressor state = ON?} D2 -- No --> D3{Disch temp > Hi Disch temp SP?} D3 -- Yes --> Alarm2((Alarm)) D3 -- No --> Start </pre>	
Trigger		
Action	Corresponding system pump down shutdown	
Reset method	Manual reset	
Reset Condition	Disch temp < Hi disch temp SP	
Solution	Check refrigerant charge Check filter drier for clog Check chiller operating environment	

Alarm	C#Compressor# off hi oil pressure different	Code: C#Cmp#OffOilPrDiffHiOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{C#Compressor state = ON?} D1 -- No --> Start D1 -- Yes --> D2{Actual oil pressure diff. < OilPrDiffHi SP?} D2 -- No --> Start D2 -- Yes --> D3{Confirm Time = 30 sec?} D3 -- No --> Start D3 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Corresponding system pump down shutdown	
Reset method	Manual reset	
Reset Condition	Actual oil pressure diff > OilPrDiffHi SP	
Solution	Check compressor oil filter	

Alarm	C#Compressor# off starter fault	Code: C#Cmp#OffStarterFltOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{PVM Config = Single Point?} D1 -- No --> Start D1 -- Yes --> D2{Starter fault input = Open?} D2 -- No --> Start D2 -- Yes --> D3{Confirm Time = 30 sec?} D3 -- No --> Start D3 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Corresponding system immediate shutdown	
Reset method	Manual reset	
Reset Condition	Starter fault input = Open	
Solution	Check starter condition and setting Check compressor wiring	

Alarm	C# off no pressure change at start	Code: C1OffNoPressChgStartOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{C#Compressor state = ON?} D1 -- No --> D1 D1 -- Yes --> D2{Cond. pressure = Evap pressure?} D2 -- No --> D2 D2 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Corresponding system immediate shutdown	
Reset method	Manual reset	
Reset Condition		
Solution	Check refrigerant leakage Check suction and discharge pressure sensor condition and wiring	

Alarm	C# off no pressure at start	Code: C#OffNoPressAtStartOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{C#Compressor state = ON?} D1 -- No --> Start D1 -- Yes --> D2{Evap/Cond. pressure < 35kPa?} D2 -- No --> Start D2 -- Yes --> D3{VFD unit} D3 -- Yes --> Start D3 -- No --> Alarm([Alarm]) </pre>	
Trigger		
Action	Corresponding system immediate shutdown	
Reset method	Manual reset	
Reset Condition	-	
Solution	Check refrigerant leakage Check discharge and suction pressure transducer condition and its wiring	

Alarm	C# off no pressure at start	Code: C#OffNoPressAtStartOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{C#Compressor state = ON?} D1 -- No --> Start D1 -- Yes --> D2{Evap/Cond. pressure < 35kPa?} D2 -- No --> Start D2 -- Yes --> D3{VFD fan control?} D3 -- Yes --> Start D3 -- No --> Alarm([Alarm]) </pre>	
Trigger		
Action	Corresponding system immediate shutdown	
Reset method	Manual reset	
Reset Condition	-	
Solution	Check refrigerant leakage Check discharge and suction pressure transducer condition and its wiring	

Alarm	C# off EXV Controller Comm Failure	Code: C#OffEXVCrtlrComFailOffNormal
Category: Event	<pre> graph TD Start(()) --> D1{Main controller power up time > 60 Sec?} D1 -- No --> Start D1 -- Yes --> D2{EEXV.module communicate with Main controller?} D2 -- No --> Alarm([Alarm]) D2 -- Yes --> D3{Confirm Time = 5 sec?} D3 -- No --> D2 D3 -- Yes --> Alarm </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Communication between main controller and extension module is established for 5 sec	
Solution	Check connection between Main controller and EEXV module Check EEXV module or main controller condition	

Alarm	C#Cmp# Off Suction Pressure Sensor Fault	Code: C#Cmp#OffEvpPressFault
Category: Critical	<pre> graph TD Start(()) --> Decision{Suction pressure = out of range?} Decision -- No --> Start Decision -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Suction pressure in operating range	
Solution	Check sensor condition, wiring and connector condition.	

Alarm	C#Cmp# Off Discharge Pressure Sensor Fault	Code: C#Cmp#OffCndPressFault
Category: Critical	<pre> graph TD Start(()) --> Decision{discharge pressure = out of range?} Decision -- No --> Start Decision -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Discharge pressure in operating range	
Solution	Check sensor condition, wiring and connector condition.	

Alarm	C#Cmp# Off Oil Feed Pressure Sensor Fault	Code: C#Cmp#OilFeedPFault
Category: Critical	<pre> graph TD Start(()) --> Decision{Oil pressure = out of range?} Decision -- Yes --> Alarm([Alarm]) Decision -- No --> Loop(()) Loop --> Start </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Oil pressure in operating range	
Solution	Check sensor condition, wiring and connector condition.	

Alarm	C#Cmp# Off Suction Temp. Sensor Fault	Code: C#Cmp#OffSuctTempFault
Category: Critical	<pre> graph TD Start(()) --> Decision{Suction temp = out of range?} Decision -- Yes --> Alarm([Alarm]) Decision -- No --> Loop(()) Loop --> Start </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Suction temperature in operating range	
Solution	Check sensor condition, wiring and connector condition.	

Alarm	C#Cmp# Off Discharge Temp. Sensor Fault	Code: C#Cmp#OffDischTempFault
Category: Critical	<pre> graph TD Start(()) --> Decision{Discharge temp = out of range?} Decision -- Yes --> Alarm([Alarm]) Decision -- No --> Loop[] Loop --> Start </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Discharge temperature in operating range	
Solution	Check sensor condition, wiring and connector condition.	

Alarm	C#Cmp# Off Nbr Restart Off Normal	Code: C#Cmp#OffNbrRestartsOffNormal		
Category: Critical	<pre> graph TD Start(()) --> D1{Low ambient application?} D1 -- No --> Loop1(()) Loop1 --> Start D1 -- Yes --> D2{C#OffStrtFailEvpPrLowLimitActive = Active?} D2 -- No --> Loop2(()) Loop2 --> Start D2 -- Yes --> D3{Occurrence counter = 3?} D3 -- No --> Loop3(()) Loop3 --> Start D3 -- Yes --> Alarm([Alarm]) </pre>			
Trigger				
Action			Unit immediate shutdown	
Reset method			Manual reset	
Reset Condition			Suction pressure > 35kPa	
Solution	Check refrigerant leakage			

Alarm	C#Cmp# Off Compressor Motor Hi Temp Normal	Code: C#Cmp#OffMotorTempHiOffNormal
Category: Critical	<pre> graph TD Start(()) --> D1{Motor protection input = Open?} D1 -- No --> D1 D1 -- Yes --> D2{Confirm Time = 2 sec?} D2 -- No --> D1 D2 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Motor protection input = closed	
Solution	Check refrigerant charge (overcharged)	

Alarm	C#Cmp# Off Compressor Overload Normal	Code: C#Cmp#CompOverloadOffNormal
Category: Critical	<pre> graph TD Start(()) --> D1{Motor Overload input = Open?} D1 -- No --> Start D1 -- Yes --> D2{Confirm Time = 2 sec?} D2 -- No --> Start D2 -- Yes --> Alarm([Alarm]) </pre>	
Trigger		
Action	Unit immediate shutdown	
Reset method	Manual reset	
Reset Condition	Motor overload input = closed	
Solution	Check ammeter setting as per recommended in wiring diagram Check ammeter wiring and condition Check CT condition and wiring	

7.3 Alarm Clearing

Clear Alarm													
Steps	Description												
1	<p>After entering the Alarm Active menu, you can view the number of alarms and clear alarms.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">6</td> <td style="text-align: center;">Alarm Active</td> <td style="text-align: right;">1/3</td> </tr> <tr> <td colspan="2">AlmCnt: 3</td> <td style="text-align: right;">AlmClr: Off</td> </tr> <tr> <td colspan="2">+UnitOffEmergencyStopOffNormal</td> <td style="text-align: right;">▶</td> </tr> <tr> <td colspan="2">+UnitOffPhaseVoltageOffNormal</td> <td style="text-align: right;">▶</td> </tr> </table> </div>	6	Alarm Active	1/3	AlmCnt: 3		AlmClr: Off	+UnitOffEmergencyStopOffNormal		▶	+UnitOffPhaseVoltageOffNormal		▶
6	Alarm Active	1/3											
AlmCnt: 3		AlmClr: Off											
+UnitOffEmergencyStopOffNormal		▶											
+UnitOffPhaseVoltageOffNormal		▶											
2	<p>Press the knob to view alarm log and active alarms</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">6</td> <td style="text-align: center;">Alarm Active</td> <td style="text-align: right;">1/1</td> </tr> <tr> <td colspan="2">AlmCnt: 3</td> <td style="text-align: right;">AlmClr: Off</td> </tr> </table> </div> <p>By turning the knob clockwise or anticlockwise, you can select an alarm. Then press the knob to view the data and time when the alarm is generated</p>	6	Alarm Active	1/1	AlmCnt: 3		AlmClr: Off						
6	Alarm Active	1/1											
AlmCnt: 3		AlmClr: Off											

7.4 Alarm Log

Clear Alarm																
Steps	Description															
1	<p>By turning the knob clockwise or anticlockwise, you can select an alarm. Then press the knob to view the data and time when the alarm is generated. The controller can record a maximum of 50 historic alarm records.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">▼ 6</td> <td style="text-align: center;">Alarm Log</td> <td style="text-align: right;">1/51</td> </tr> <tr> <td colspan="2">LogCnt: 50</td> <td style="text-align: right;">LogClr: No</td> </tr> <tr> <td colspan="2">- C1Cmp1 OffEvpPressFault</td> <td style="text-align: right;">▶</td> </tr> <tr> <td colspan="2">+ C1Cmp1 OffEvpPressFault</td> <td style="text-align: right;">▶</td> </tr> <tr> <td colspan="2">-C1 PwrLossRunOffNormal</td> <td style="text-align: right;">▶</td> </tr> </table> </div>	▼ 6	Alarm Log	1/51	LogCnt: 50		LogClr: No	- C1Cmp1 OffEvpPressFault		▶	+ C1Cmp1 OffEvpPressFault		▶	-C1 PwrLossRunOffNormal		▶
▼ 6	Alarm Log	1/51														
LogCnt: 50		LogClr: No														
- C1Cmp1 OffEvpPressFault		▶														
+ C1Cmp1 OffEvpPressFault		▶														
-C1 PwrLossRunOffNormal		▶														

8. BAS INTERFACE

8.1 General

The MicroTechIII controller is available with an exclusive Daikin feature that provides easy integration with a building automation system (BAS). If the unit is to be tied into a BAS system, the controller should have been purchased with the correct factory-installed communication module. The modules can also be added in the field during or after installation. If an interface module was ordered, one of the following BAS interface installation manuals was shipped with the unit. Contact your local Daikin sales office for a replacement, if necessary. This BAS interface can communicate using Modbus protocol or BACnet protocol.

8.2 Modbus protocol

8.2.1 MODBUS Data Points

No.	Register	Level <2>	Description	Units		DataType	R/W	Notes	Notes	
				English	Metric					
1	40009	Single	Chiller OnOff	--	--	unsigned word	R/W	0:Off 1:On		
2	40034	Single ACS	Chiller Mode Set	--	--	unsigned word	R/W	1:Ice 2:Cool 3:Heat	<1>	
3	40035		Cool Water SetPoint	°F×10	°C×10	signed word	R/W	---		
4	40036		Ice Water SetPoint	°F×10	°C×10					
5	40037		Heat Water Setpoint	°F×10	°C×10					
6	40012		Active Setpoint	°F×10	°C×10	R	---			
7	40838		Control Source	--	--	unsigned word	R	0:Local 1:Network		
8	40005		Single Master	Chiller Alarm	--	--	unsigned word	R		0:Normal 1:Alarm
9	40006	Evap Flow Status		--	--	0:Open 1:Close				
10	40013	Chiller Actual Capacity		%×10	%×10	---				
11	40015	Chiller Status		--	--	1:Off 3:Auto 4:Pumpdown 5:Test				
12	40016	Evap Inlet Water Temp		°F×10	°C×10	signed word	R	---		
13	40017	Evap Outlet Water Temp		°F×10	°C×10					
14	40024	Ambient Temp		°F×10	°C×10					
15	40031	Chiller Warn Code		--	--	unsigned word	R	---		
16	40032	Chiller Probble Code		--	--					
17	40033	Chiller Fault Code		--	--					
18	40303	Evap Pump #1 Run Hours		Hour	Hour	unsigned word	R	---		
19	40305	Evap Pump #1 Status	--	--	0:Off 1:Start					
20	40306	Evap Pump #2 Run Hours	Hour	Hour	unsigned word	R	---			
21	40308	Evap Pump #2 Status	--	--			0:Off 1:Start			
22	40832	Single	Unit Actual Status	--	--	unsigned word	R	---		
23	40039	Single Master	System #1 Cond Pressure	psix10	kPax10	signed word	R	---		
24	40040		System #1 Cond Sat Temp.	°F×10	°C×10					

No.	Register	Level <5>	Description	Units		Data Type	R/W	Notes	Notes				
25	40041		System #1 Evap Pressure	psix10	kPax10								
26	40042		System #1 Evap Sat Temp.	°Fx10	°Cx10								
27	40065		System #1 Suct Temp.	°Fx10	°Cx10								
28	40068		System #1 Disch Temp.	°Fx10	°Cx10								
29	40073		System #1 Comp Starts	--	--					unsigned word	R	---	
30	40074		System #1 Comp Run Hours	Hour	Hour								
31	41840	Single Master	System #1 Comp Actual Capacity	%x10	%x10	unsigned word	R	---					
32	41849		System #1 Oil Pressure	psix10	kPax10	signed word	R	---					
33	41852		System #1 Comp Status	--	--	unsigned word	R	0:Off 1:Start					
34	41982		System #1 EXV Position	%	%		---						
35	40833		System #1 Status	--	--		R	---					
36	40043	Single Master	System #2 Cond Pressure	psix10	kPax10	signed word	R	---					
37	40044		System #2 Cond Sat Temp.	°Fx10	°Cx10								
38	40045		System #2 Evap Pressure	psix10	kPax10								
39	40046		System #2 Evap Sat Temp.	°Fx10	°Cx10								
40	40104		System #2 Suct Temp.	°Fx10	°Cx10								
41	40107		System #2 Disch Temp.	°Fx10	°Cx10								
42	40112		System #2 Comp Starts	--	--	unsigned word	R	---					
43	40113		System #2 Comp Run Hours	Hour	Hour								
44	41800		System #2 Comp Actual Capacity	%x10	%x10					R	---		
45	41809		System #2 Oil Pressure	psix10	kPax10	signed word	R	---					
46	41812		System #2 Comp Status	--	--	unsigned word	R	0:Off 1:Start					
47	41966		System #2 EXV Position	%	%					---			
48	40834		System #2 Status	--	--					R	---		
49	40023	Single	Heat Recovery Outlet Water Temp #1	°Fx10	°Cx10	signed word	R	---					
50	40829		Heat Recovery Outlet Water Temp #2	°Fx10	°Cx10								
51	40830		Heat Recovery Status	--	--	unsigned word	R	---					
52	40331	ACS	Air-condition System OnOff	--	--	unsigned word	R/W	0:Off 1:On					
53	40332	Master	Air-condition System Master	--	--								
54	40333	Slave	Air-condition System Slave	--	--								
55	40340	ACS	Air-condition System Capacity	%x10	%x10	unsigned word	R	---					
56	40831		Air-condition System Actual Status	--	--								
57	40839		Air-condition System Alarm	--	--								
58	40840		Air-condition System Fault Code	--	--								
59	40841		Header Pipe Outlet Water Temp.	°Fx10	°Cx10	signed word		---					
60	40761	Slave	Chiller Alarm	--	--	unsigned word	R	0:Normal 1:Alarm					
61	40762		Evap Flow Status	--	--			0:Open 1:Close					
62	40763		Chiller Actual Capacity	%x10	%x10			---					
63	40764		Chiller Status	--	--	1:Off 3:Auto 4:Pumpdown 5:Test							
64	40765		Evap Inlet Water Temp	°Fx10	°Cx10	signed word	R	---					
65	40766		Evap Outlet Water Temp	°Fx10	°Cx10								
66	40767		Ambient Temp	°Fx10	°Cx10								
67	40768		Evap Pump #1 Run Hours	Hour	Hour	unsigned word	R	---					
68	40769	Evap Pump #1 Status	--	--	0:Off 1:Start								

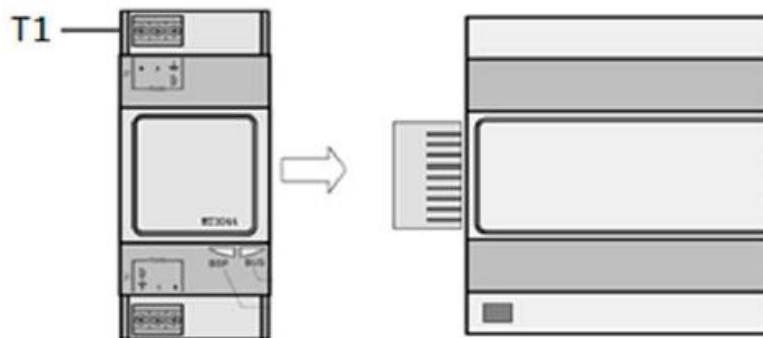
No.	Register	Level <5>	Description	Units		Data Type	R/W	Notes	Notes
				Imperial	Metric				
71	40772	Slave	Unit Actual Status	--	--	unsigned word	R	---	
72	40773		System #1 Cond Pressure	psix10	kPax10	signed word	R	---	
73	40774		System #1 Cond Sat Temp.	°F×10	°C×10				
74	40775		System #1 Evap Pressure	psix10	kPax10				
75	40776		System #1 Evap Sat Temp.	°F×10	°C×10				
76	40777		System #1 Suct Temp.	°F×10	°C×10				
77	40778		System #1 Disch Temp.	°F×10	°C×10				
78	40779		System #1 Comp Starts	--	--	unsigned word	R	---	
79	40780		System #1 Comp Run Hours	Hour	Hour	unsigned word	R	---	
80	40781		System #1 Comp Actual Capacity	%×10	%×10	unsigned word	R	---	
81	40782		System #1 Oil Pressure	psix10	kPax10	signed word	R	---	
82	40783		System #1 Comp Status	--	--	unsigned word	R	0:Off 1:Start/	
83	40784		System #1 EXV Position	%	%	---			
84	40785		System #1 Status	--	--	unsigned word	R	---	
85	40786		System #2 Cond Pressure	psix10	kPax10	signed word	R	---	
86	40787		System #2 Cond Sat Temp.	°F×10	°C×10				
87	40788		System #2 Evap Pressure	psix10	kPax10				
88	40789		System #2 Evap Sat Temp.	°F×10	°C×10				
89	40790		System #2 Suct Temp.	°F×10	°C×10				
90	40791		System #2 Disch Temp.	°F×10	°C×10				
91	40792		System #2 Comp Starts	--	--	unsigned word	R	---	
92	40793		System #2 Comp Run Hours	Hour	Hour	unsigned word	R	---	
93	40794		System #2 Comp Actual Capacity	%×10	%×10	unsigned word	R	---	
94	40795		System #2 Oil Pressure	psix10	kPax10	signed word	R	---	
95	40796		System #2 Comp Status	--	--	unsigned word	R	0:Off 1:Start	
96	40797		System #2 EXV Position	%	%	---			
97	40798		System #2 Status	--	--	unsigned word	R	---	
98	40835		Chiller Fault Code	--	--	unsigned word	R	---	
99	40836		Chiller Probble Code	--	--				
100	40837		Chiller Warn Code	--	--				

<1> The setting is available when "Control Source" is set to "network" in HMI.

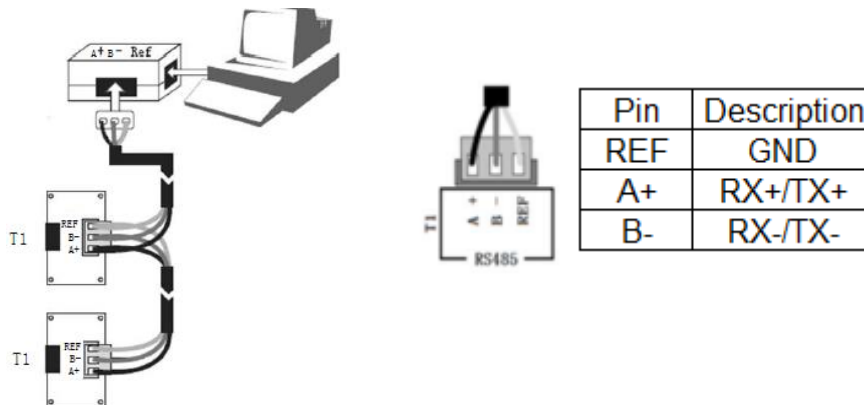
<2>"Air conditioning system" refers to the master and slave unit to form a dual-control system. "Master" refers to the master unit of the dual-control system. "Slave" refers to the slave unit of the dual-control system;

8.2.2 Modbus setup

The communication module POL902 should be connected to main controller POL687 as in shown in the picture below:



RS485 serial network connection should be as shown in below figure:



BSP and BUS LED on communication module can indicate connection status:



LED	Status	Description
BUS	Green On	Communication is normal
	Red On	Communication error
BSP	Green On	BSP running and communication with controller
	Yellow On	BSP running but no communication with controller
	Red light flashing at 2 Hz frequency	BSP error (software error)
	Red On	Hardware error
	Red and green light shining with 1 Hz frequency interval	BSP upgrade mode

8.3 BACnet protocol

8.3.1 BACnet Data Points

No.	Object Name	Obj Instance	Object Type	Level <4>	Details	R/W	Unit	Notes
1	ChillerEnableStp	2	binary_value	Single	Chiller On/Off 0: Off (Inactive) 1: On (Active)	R/W	--	<1>
2	ClearAlarm	8			Clear Unit Alarm 0: Off (Inactive) 1: On (Active)	R/W	--	
3	EvapWaterFlowStatus	2	binary_input	Single Master	Evap Flow Status 0: Off(Inactive) 1: On(Active)	R	--	
4	ChillerLocalRemote	3		Single ACS	Control Source 0: Network(Inactive) 1: Local(Active)	R	--	
5	EvapPump1State	8			Evap Pump #1 Status 0: Off(Inactive) 1: On(Active)	R	--	
6	EvapPump2State	9		Single	Evap Pump #1 Status 0: Off(Inactive) 1:On(Active)	R	--	
7	AlarmDigitalOutput	10		Single Master	Chiller Alarm 0: No Alarm(Inactive) 1: Alarm(Active)	R	--	
8	ChillerStatus	1		Single Master	Chiller Status 1:Off 3:Start 4:PumpDown 5:Testing	R	--	
9	ActiveMode	2	Single Master	Chiller Active Mode 1:Ice 2:Cool 3:Heat	R	--		
10	ChillerOperationMode	3	multi_state_value	Single ACS	Chiller Mode Set 1: Ice 2: cooling 3: heating	R/W	--	<1>
11	UnitStatus	192	Single Master	Unit Actual Status (precision: 1)		R	--	
12	Circuit1Status	193		System #1 Actual Status (precision: 1)		R	--	
13	Circuit2Status	194		System #2 Actual Status (precision: 1)		R	--	
14	HRStatus	505	Single	Heat Recovery Status (precision 1)		R	--	<2>
15	ChillerCapacity	2	Single Master	Chiller Actual Capacity (rang: 0.0%~100.0%)		R	%	
16	NetworkCoolTempSetpoint	4	analog_value	Single ACS	Cool Water SetPoint (precision: 0.1°C, range 4.0°C~15.0°C)	R/W	°C	<1>
17	ActiveLvgWaterTarget	5			Active Setpoint (precision: 0.1°C)	R	°C	
18	NetworkHeatTempSetpoint	6			Heat Water Setpoint (precision: 0.1°C, range 25.0°C~55.0°C)	R/W	°C	<1>
19	NetworkIceTempSetpoint	7			Ice Water SetPoint (precision: 0.1°C, range -4.0°C~15.0°C)	R/W	°C	

No.	Object Name	Obj Instance	Object type	Level <4>	Details	R/W	Unit	Notes
20	EvapPump1OperHours	112	analogue_value	Single Master	Evap Pump #1 Run Hours (precision: 1 Hour)	R	Hour	
21	EvapPump2OperHours	113		Single	Evap Pump #2 Run Hours (precision: 1 Hour)	R	Hour	
22	AVWarningAlarmCode	903		Single Master	Chiller Warn Code (precision: 1)	R	--	
23	AVProblemAlarmCode	904			Chiller Probble Code (precision: 1)	R	--	
24	AVFaultAlarmCode	905			Chiller Fault Code (precision: 1)	R	--	
25	Cond1SatRefTemp	44			System #1 Cond Sat Temp. (precision: 0.1°C)	R	°C	
26	Cond2SatRefTemp	45			System #2 Cond Sat Temp. (precision: 0.1°C)	R	°C	
27	C1EvapSatRefTemp	68			System #1 Evap Sat Temp. (precision: 0.1°C)	R	°C	
28	C2EvapSatRefTemp	69			System #2 Evap Sat Temp. (precision: 0.1°C)	R	°C	
29	Circuit1Comp1Hours	74			System #1 Comp Run Hours (precision: 1 Hour)	R	Hour	
30	Circuit2Comp1Hours	77			System #2 Comp Run Hours (precision: 1 Hour)	R	Hour	
31	Circuit1Comp1Starts	92			System #1 Comp Starts (precision: 1)	R	--	
32	Circuit2Comp1Starts	95		System #2 Comp Starts (precision: 1)	R	--		
33	EntEvapWaterTemp	1		analog_input	Single Master	Evap Inlet Water Temp. (precision: 0.1°C)	R	°C
34	LvgEvapWaterTempUnit	2	Evap Outlet Water Temp. (precision: 0.1°C)			R	°C	
35	OutdoorAirTemp	5	Ambient Temp. (precision: 0.1°C)			R	°C	
36	Circuit1Comp1DischargeTemp	63	System #1 Disch Temp. (precision: 0.1°C)			R	°C	
37	Circuit2Comp1DischargeTemp	66	System #2 Disch Temp. (precision: 0.1°C)			R	°C	
38	Cond1RefPressure	99	System #1 Cond Pressure (precision: 0.1kPa)			R	kPa	
39	Cond2RefPressure	100	System #2 Cond Pressure (precision: 0.1kPa)			R	kPa	
40	Circuit1Comp1SuctionTemp	105	System #1 Suct Temp. (precision: 0.1°C)			R	°C	
41	Circuit2Comp1SuctionTemp	108	System #1 Suct Temp. (precision: 0.1°C)			R	°C	
42	C1EvapRefPressure	141	System #1 Evap Pressure (precision: 0.1kPa)			R	kPa	
43	C2EvapRefPressure	142	System #2 Evap Pressure (precision: 0.1kPa)			R	kPa	
44	C1Comp1OilFeedPress	165	System #1 Oil Pressure (precision: 0.1kPa)			R	kPa	
45	C2Comp1OilFeedPress	166	System #2 Oil Pressure (precision: 0.1kPa)			R	kPa	
46	HRLwt1	503	Single			HR LWT1 (precision 0.1°C)	R	°C

No.	Object Name	Obj Instance	Object type	Level <4>	Details	R/W	Unit	Notes
47	HRLwt2	507	analog_input	Single	HR LWT2 (precision 0.1°C)	R	°C	
48	ACSysEnableStp	3	binary_value	ACS	Air-condition System On/Off 0: Off (Inactive) 1: On (Active)	R/W	--	
49	ACSysMasterEnableStp	4		Master	Air-condition System Master On/Off 0: Off (Inactive) 1: On (Active)	R/W	--	
50	ACSysSlaveEnableStp	5		Slave	Air-condition System Slave On/Off 0: Off (Inactive) 1: On (Active)	R/W	--	
51	SlaveCir1CompStatus	30		Slave	System #1 Comp 0: Off (Inactive) 1: On (Active)	R	--	
52	SlaveCir2CompStatus	31			System #2 Comp 0: Off (Inactive) 1: On(Active)	R	--	
53	ACSysAlarm	30	binary_input	ACS	Air-condition System Alarm 0: No Alarm(Inactive) 1: Alarm(Active)	R	--	
54	SlaveAlarmOutput	31		Slave	Chiller Alarm 0: No Alarm(Inactive) 1: Alarm(Active)	R	--	
55	SlaveEvapFlowStatus	32			Evap Flow Status 0: Off(Inactive) 1: On(Active)	R	--	
56	SlaveEvapPump1State	33			Evap Pump #1 Status 0: Off(Inactive) 1: On(Inactive)	R	--	
57	SlaveEvapPump2State	34			Evap Pump #1 Status 0: Off(Inactive) 1: On(Inactive)	R	--	
58	SlaveChillerStatus	10	Slave	Chiller Status 1:Off 3:Start 4:PumpDown 5:Testing	R	--		
59	SlaveStatus	11		Unit Actual Status (precision: 1)	R	--		
60	SlaveCir1Status	12		System #1 Status (precision: 1)	R	--		
61	SlaveCir2Status	13		System #2 Status (precision: 1)	R	--		
62	ACSysStatus	191	ACS	Air-condition System Actual Status (precision: 1)	R	--		
63	ACSysFitCode	30	ACS	Air-condition System Fault Code (precision: 1)	R	--		
64	ACSActualCapacity	182		Air-condition System Capacity (rang: 0.0%~100.0%)	R	%		
65	SlaveChillerCapacity	31	analog_value	Chiller Actual Capacity (rang: 0.0%~100.0%)	R	%		
66	SlaveEcpmpHrs1	32		Slave	Evap Pump #1 Run Hours (precision: 1 Hour)	R	Hour	
67	SlaveEcpmpHrs2	33		Evap Pump #2 Run Hours (precision: 1 Hour)	R	Hour		

No.	Object Name	Obj Instance	Object type	Level <4>	Details	R/W	Unit	Notes
68	SlaveCir1Starts	34	analog_value	Slave	System #1 Comp Starts (precision: 1)	R	--	
69	SlaveCir1Hours	35			System #1 Comp Run Hours (precision: 1 Hour)	R	Hour	
70	SlaveCir1TarCap	36			System #1 Actual Capacity (rang: 0.0%~100.0%)	R	%	
71	SlaveCir1ExvPos	37			System #1 EXV Position (rang: 0.0%~100.0%)	R	%	
72	SlaveCir2Starts	38			System #2 Comp Starts (precision: 1)	R	--	
73	SlaveCir2Hours	39			System #2 Comp Run Hours (precision: 1 Hour)	R	Hour	
74	SlaveCir2TarCap	40			System #2 Actual Capacity (rang: 0.0%~100.0%)	R	%	
75	SlaveCir2ExvPos	41			System #2 EXV Position (rang: 0.0%~100.0%)	R	%	
76	SlaveFltCode	42			Chiller Fault Code (precision: 1)	R	--	
77	SlaveProbCode	43			Chiller Probble Code (precision: 1)	R	--	
78	SlaveWarnCode	48			Chiller Warn Code (precision: 1)	R	--	
79	SlaveCir1SatCondT	80			System #1 Cond Sat Temp. (precision: 0.1°C)	R	°C	
80	SlaveCir1SatEvapT	81			System #1 Evap Sat Temp. (precision: 0.1°C)	R	°C	
81	SlaveCir2SatCondT	82			System #2 Cond Sat Temp. (precision: 0.1°C)	R	°C	
82	SlaveCir2SatEvapT	83			System #2 Evap Sat Temp. (precision: 0.1°C)	R	°C	
83	HPLvgWaterTemp	15			analog_input	ACS	Header Pipe Outlet Water Temp. (precision: 0.1°C)	R
84	SlaveEntEvapWaterTemp	16	Evap Inlet Water Temp. (precision: 0.1°C)	R		°C		
85	SlaveLvgEvapWaterTemp	17	Evap Outlet Water Temp. (precision: 0.1°C)	R		°C		
86	SlaveOutdoorAirTemp	18	Ambient Temp. (precision: 0.1°C)	R		°C		
87	SlaveCir1CondP	19	System #1 Cond Pressure (precision: 1kPa)	R		kPa		
88	SlaveCir1EvapP	20	System #1 Evap Pressure (precision: 0.1kPa)	R		kPa		
89	SlaveCir1SuctT	21	System #1 Suct Temp. (precision: 0.1°C)	R		°C		
90	SlaveCir1DishT	22	System #1 Disch Temp. (precision: 0.1°C)	R		°C		
91	SlaveCir1OilP	23	System #1 Oil Pressure (precision: 0.1kPa)	R		kPa		
92	SlaveCir2CondP	24	System #2 Cond Pressure (precision: 1kPa)	R		kPa		
93	SlaveCir2EvapP	25	System #2 Evap Pressure (precision: 0.1kPa)	R		kPa		

No.	Object Name	Obj Instance	Object type	Level <4>	Details	R/W	Unit	Notes
94	SlaveCir2SuctT	26			System #2 Suct Temp. (precision: 0.1°C)	R	°C	
95	SlaveCir2DishT	27			System #2 Disch Temp. (precision: 0.1°C)	R	°C	
96	SlaveCir2OilP	28			System #2 Oil Pressure (precision: 0.1kPa)	R	kPa	

Notes:

"R" means "readable", "W" means "Writable".

<1>The setting is available when "Control Source" is set to "network" in HMI.

<2>The details see to the Appendix A.

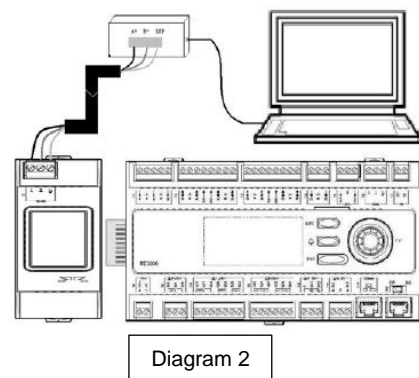
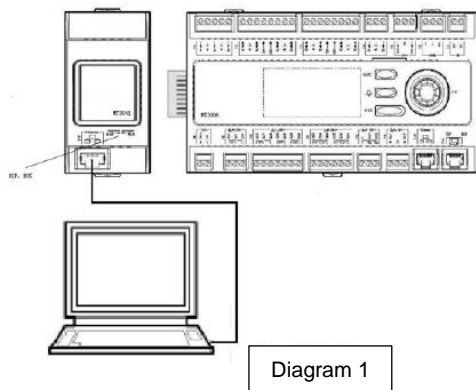
<3>Only for MHS_SP3 and "M/A Setting" is set to "Single".

<4>"Air conditioning system" refers to the master and slave unit to form a dual-control system.

- "Master" refers to the master unit of the dual-control system.
- "Slave" refers to the slave unit of the dual-control system.

8.3.2 BACnet setup

Connection methods diagram as below (Diagram 1: BACnet IP; Diagram 2: BACnet MS/TP):



BSP and BUS LED on communication module can indicate connection status:



BUS LED status	BACnet BUS Diagnostics Description	
	IP	MS/TP
Green on	BACnet IP running and communication ok	BACnet MS/TP running and communication ok
Yellow on	IP not running	MS/TP not running
Red on	Hardware error	Hardware error

BSP LED status	Description
Green on	BSP running and communication with controller
Yellow on	BSP running but no communication with controller
Red blinking at 2 Hz	BSP error (software error)
Red on	Hardware error
Every second alternating between red and yellow	BSP upgrade mode



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- ★ All material is carefully reviewed. In case of any printing errors, DAIKIN bears no responsibility. Models, parameters and performance may change due to product improvement without further notification. Please refer to the nameplate for detail.
- ★ The manufacturer reserves the right to revise any of the specification and design contain herein at any time without prior notice.



NOTE

For Chiller or Component (electrical & non-electrical) end-of-life disposal, in the interest of the environment, please contact your local authority for disposal method and authorised handling centre.

While for Refrigerant Recovering and Disposal, please contact the local Daikin Service Team or your local authority for disposal method and authorised handling centre.

DAIKIN INDUSTRIES, LTD.

Head office:
 Umeda Center Bldg., 2-4-12, Nakazaki-Nishi,
 Kita-ku, Osaka, 530-8323 Japan

DAIKIN REFRIGERATION MALAYSIA SDN. BHD.

No.11A Jalan Utas 15/7, Section 15, 40200 Shah Alam,
 Selangor DE, Malaysia